[Sheldon L. Hitchcock]
[HSE Coordinator]

APPROVED
By Olivia Yu at 7:22 am, Sep 05, 2018

NMOCD approves
1RP-4812 for closure.

August 23, 2018

Olivia Yu
Oil Conservation Division, District 1
1625 N. French Dr.
Hobbs, NM 88240

Ryan Mann
New Mexico State Land Office
2827 N. Dal Paso Suite 117
Hobbs, NM 88240

Re: Closure Letter
Gunner 16 State SWD #001
API #: 30-025-40890
RP#: 1RP-4812
Unit Letter D Section 16, Township 26S, Range 34E
Lea County, NM

Ms. Yu/Mr. Mann,

COG Operating, LLC (COG) is pleased to submit for your consideration the following closure report for the Gunner 16 State SWD #001. This release occurred on September 15, 2017. Following the release an assessment of impacted soils was conducted. A remediation work plan was submitted to and subsequently approved by the New Mexico Oil Conservation Division (NMOCD) and New Mexico State Land Office (NMSLO). A copy of the approved work plan is attached in Appendix V.

BACKGROUND

The Gunner 16 State SWD #001 release is located in Unit Letter D, Section 16, Township 26 South and Range 34 East in Lea County, New Mexico. More specifically the latitude and longitude for this release are 32.049732 North and -103.4822998 West.

On September 15, 2017, a lightning strike caused a fire which resulted in the total loss of the facility. Approximately one-thousand 1000 barrels (bbls) of produced water and twenty 20 bbls of oil were released. Vacuum trucks were dispatched to recover freestanding fluids. Approximately two-hundred (200) bbls of produced water and five (5) bbls of oil were recovered.

Remediation activities were conducted in accordance with the approved work plan and NMOCD/NMSLO stipulations. The analytical results from the NMOCD and NMSLO stipulated confirmation soil sampling activities are summarized in the tables below. A site diagram of the excavated area is presented in Appendix I.

GROUNDWATER AND SITE RANKING

According to the New Mexico Office of the State Engineer (NMOSE) groundwater in the project vicinity is approximately one-hundred and forty (140) feet below ground surface (BGS) (Appendix II). No water well or surface water was observed within one-thousand (1,000) feet of the release site. Therefore the site ranking for this release is zero (0) based on the following:

Depth to groundwater	>100-feet
Distance to surface water body	>1000-feet
Wellhead Protection Area	>1000-feet

CONFIRMATION SOIL SAMPLING RESULTS

May 17, 2018

Sample ID	Depth (feet)	Benzene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)	Total TPH (mg/kg)	SOIL STATUS
L-N.SW	SIDEWALL	--	--	<4.95	--	IN-SITU
L-SW-1	SIDEWALL	--	--	213	--	IN-SITU
L-SW-2	SIDEWALL	--	--	155	--	IN-SITU
L-SW-3	SIDEWALL	--	--	149	--	IN-SITU
L-SW-4	SIDEWALL	--	--	21.6	--	IN-SITU
L-SW-5	SIDEWALL	--	--	136	--	IN-SITU
L-SW-6	SIDEWALL	--	--	<4.97	--	IN-SITU
L-S.SW	SIDEWALL	--	--	217	--	IN-SITU
L-BTTM-1	8	--	--	<5.00	--	IN-SITU
L-BTTM-2	8	--	--	7.32	--	IN-SITU
L-BTTM-3	8	--	--	<5.00	--	IN-SITU

May 18, 2018-May 22, 2018

Sample ID	Depth (feet)	Benzene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)	Total TPH (mg/kg)	SOIL STATUS
BH6/ROW	N/A	<0.002	<0.002	27.3	<15.0	IN-SITU
P-BTTM-1	4	--	--	51.0	--	IN-SITU
P-BTTM-2	4	--	--	254	--	IN-SITU
P-BTTM-3	4	--	--	65.3	--	IN-SITU
P-BTTM-4	4	--	--	594	--	IN-SITU
P-BTTM-5	4	--	--	230	--	IN-SITU
P-SW-1	SIDEWALL	--	--	1090	--	EX-SITU
P-SW-2	SIDEWALL	--	--	<5.00	--	IN-SITU

CONFIRMATION SOIL SAMPLING RESULTS CONTINUED

May 18, 2018-May 22, 2018

Sample ID	Depth (feet)	Benzene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)	Total TPH (mg/kg)	SOIL STATUS
P-SW-3	SIDEWALL	--	--	130	--	IN-SITU
P-SW-4	SIDEWALL	--	--	138	--	IN-SITU
P-SW-5	SIDEWALL	--	--	<5.00	--	IN-SITU
P-SW-6	SIDEWALL	--	--	<4.95	--	IN-SITU
P-SW-7	SIDEWALL	--	--	82.8	--	IN-SITU
P-SW-8	SIDEWALL	--	--	18.2	--	IN-SITU
P-SW-9	SIDEWALL	--	--	<4.98	--	IN-SITU
P-SW-10	SIDEWALL	--	--	358	--	IN-SITU
P-SW-11	SIDEWALL	--	--	507	--	IN-SITU
P-SW-12	SIDEWALL	--	--	38.7	--	IN-SITU

May 22, 2018

Sample ID	Depth (feet)	Benzene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)	Total TPH (mg/kg)	SOIL STATUS
ROW BTTM-1	0.5	<0.002	<0.002	206	<15.0	IN-SITU
ROW BTTM-2	0.5	<0.0019	<0.0019	278	<15.0	IN-SITU
ROW BTTM-3	0.5	<0.0019	<0.0019	199	<15.0	IN-SITU
ROW W. SW	SIDEWALL	<0.002	<0.002	509	<15.0	IN-SITU
ROW SW-1	SIDEWALL	<0.002	0.0786	656	<15.0	EX-SITU
ROW SW-2	SIDEWALL	<0.0019	<0.0019	205	<15.0	IN-SITU
ROW SW-3	SIDEWALL	<0.002	<0.002	519	<15.0	IN-SITU
ROW SW-4	SIDEWALL	<0.002	<0.002	489	<15.0	IN-SITU
ROW SW-5	SIDEWALL	<0.002	0.00291	317	<15.0	IN-SITU
ROW SW-6	SIDEWALL	<0.002	<0.002	110	<15.0	IN-SITU

May 25, 2018

Sample ID	Depth (feet)	Benzene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)	Total TPH (mg/kg)	SOIL STATUS
ROW SW-1	SIDEWALL	--	--	47.8	--	IN-SITU
P-SW-1	SIDEWALL	--	--	20.6	--	IN-SITU

CONFIRMATION SOIL SAMPLING RESULTS CONTINUED

May 17, 2018

Sample ID	Depth (feet)	Benzene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)	Total TPH (mg/kg)	SOIL STATUS
ROW AH-1	0	<0.002	<0.002	12400	<15.0	EX-SITU
ROW AH-1	1 (refusal)	<0.002	<0.002	93.6	<15.0	IN-SITU

May 25, 2018

Sample ID	Depth (feet)	Benzene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)	Total TPH (mg/kg)	SOIL STATUS
BH-1 / BH-2/3	3.5	--	--	163	--	IN-SITU
BH-2/3 / BH-5/6	3.5	--	--	439	--	IN-SITU

May 31, 2018

Sample ID	Depth (feet)	Benzene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)	Total TPH (mg/kg)	SOIL STATUS
P-BTTM-6	2	--	--	203	--	IN-SITU
P-SW-13	SIDEWALL	--	--	494	--	IN-SITU
P-SW-14	SIDEWALL	--	--	574	--	IN-SITU
P-SW-15	SIDEWALL	--	--	457	--	IN-SITU

June 12, 2018

Sample ID	Depth (feet)	Benzene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)	Total TPH (mg/kg)	SOIL STATUS
L-BTTM-4	3	--	--	47.6	--	IN-SITU
L-BTTM-5	3	--	--	73.0	--	IN-SITU
L-SW-7	SIDEWALL	--	--	152	--	IN-SITU
L-SW-8	SIDEWALL	--	--	464	--	IN-SITU
L-SW-9	SIDEWALL	--	--	75.3	--	IN-SITU
L-SW-10	SIDEWALL	--	--	53.1	--	IN-SITU

CONFIRMATION SOIL SAMPLING RESULTS CONTINUED

June 12, 2018

Sample ID	Depth (feet)	Benzene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)	Total TPH (mg/kg)	SOIL STATUS
L-BTTM-6	3	--	--	7.35	--	IN-SITU
L-BTTM-7	3	--	--	81.9	--	IN-SITU
L-SW-11	SIDEWALL	--	--	162	--	IN-SITU
L-SW-12	SIDEWALL	--	--	165	--	IN-SITU
L-SW-13	SIDEWALL	--	--	174	--	IN-SITU
L-SW-14	SIDEWALL	--	--	<4.94	--	IN-SITU
L-SW-15	SIDEWALL	--	--	65.5	--	IN-SITU

(--) Analyses not requested

REMEDIAL ACTIONS

- The impacted area in the vicinity of BH-1 was excavated to a depth of eight (8) feet BGS.
- The impacted area in the vicinity of sample locations BH-2 and BH-3 was excavated to a depth of three (3) feet BGS.
- The impacted area in the vicinity of sample locations BH-5 and BH-6 was excavated to a depth of four (4) feet BGS.
- In order to safeguard underground utilities a hand auger was utilized to conduct vertical delineation of the right-of-way area at sample location ROW AH-1 per NMOCD stipulations.
- The impacted area in the right-of-way was excavated to a depth of one-half (0.5) foot BGS.
- Field chloride titrations were used to guide the horizontal extent of the excavation. Confirmation soil samples were taken from the bottom and sidewalls of the excavated areas per NMOCD stipulations. Site diagrams detailing the excavation and confirmation soil sample locations of each area are attached in Appendix I.
- Upon receipt of laboratory results confirming that all of the impacted soil above NMOCD RRAL's was successfully removed the excavation was backfilled with clean "like" material and contoured to match the surrounding terrain.

REVEGETATION PLAN

The affected area in the pasture was backfilled with clean "like" material. The surface was left in a rough condition to approximate natural surface deviations. The site was seeded with SLO (L) seed mixture utilizing a seed drill. The site will be periodically monitored for revegetation and the development of noxious weeds. Should the site fail to re-vegetate or noxious weeds develop COG will contact NMSLO for a mitigation strategy.

CLOSURE REQUEST

COG Operating, LLC respectfully requests that the New Mexico Oil Conservation Division and the New Mexico State Land Office grant closure approval for the Gunner 16 State SWD #001 incident that occurred on September 15, 2017.

Should you have any questions or concerns please do not hesitate to contact me.

Sincerely,

Sheldon L. Hitchcock
HSE Coordinator
slhitchcock@concho.com

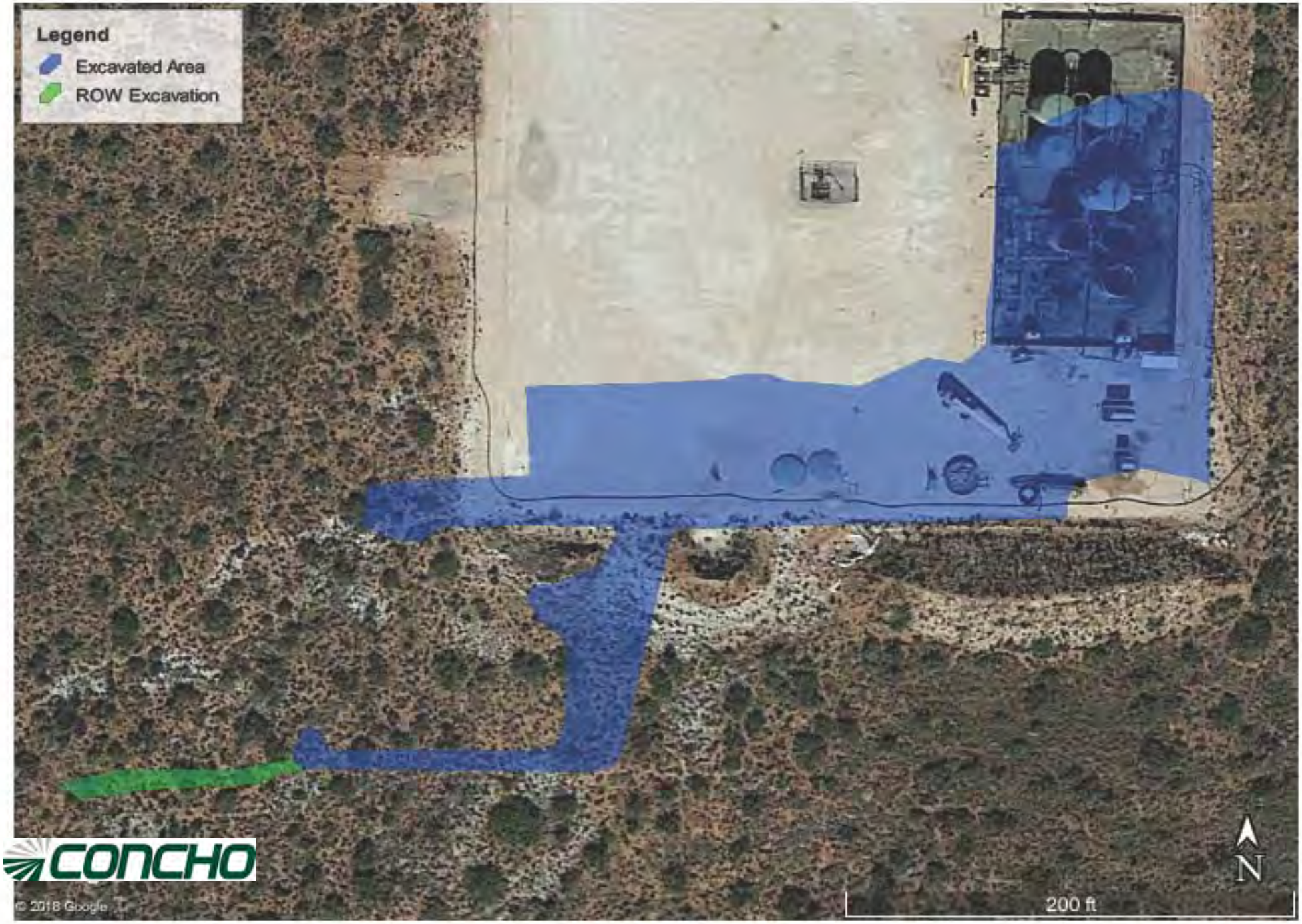
Enclosed:

Appendix I: Site Diagram
Appendix II: Groundwater Data
Appendix III: Initial C-141 (Copy)
Appendix IV: Final C-141
Appendix V: Work Plan (Copy)
Appendix VI: Analytical Reports and Chain-of-Custody Forms
Appendix VII: Photographic Documentation

APPENDIX I

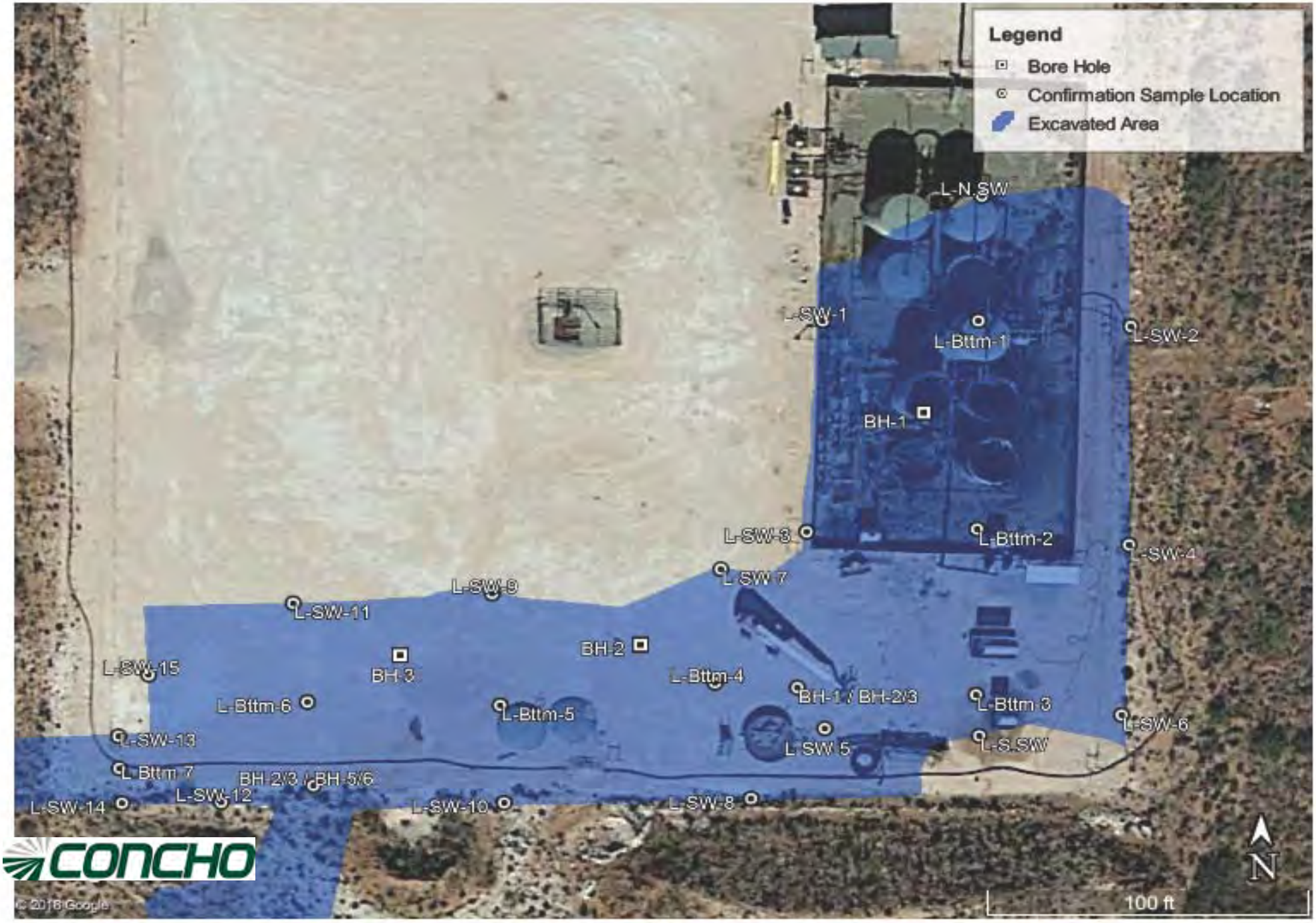
September 15, 2018

Gunner 16 State SWD #001



September 15, 2018

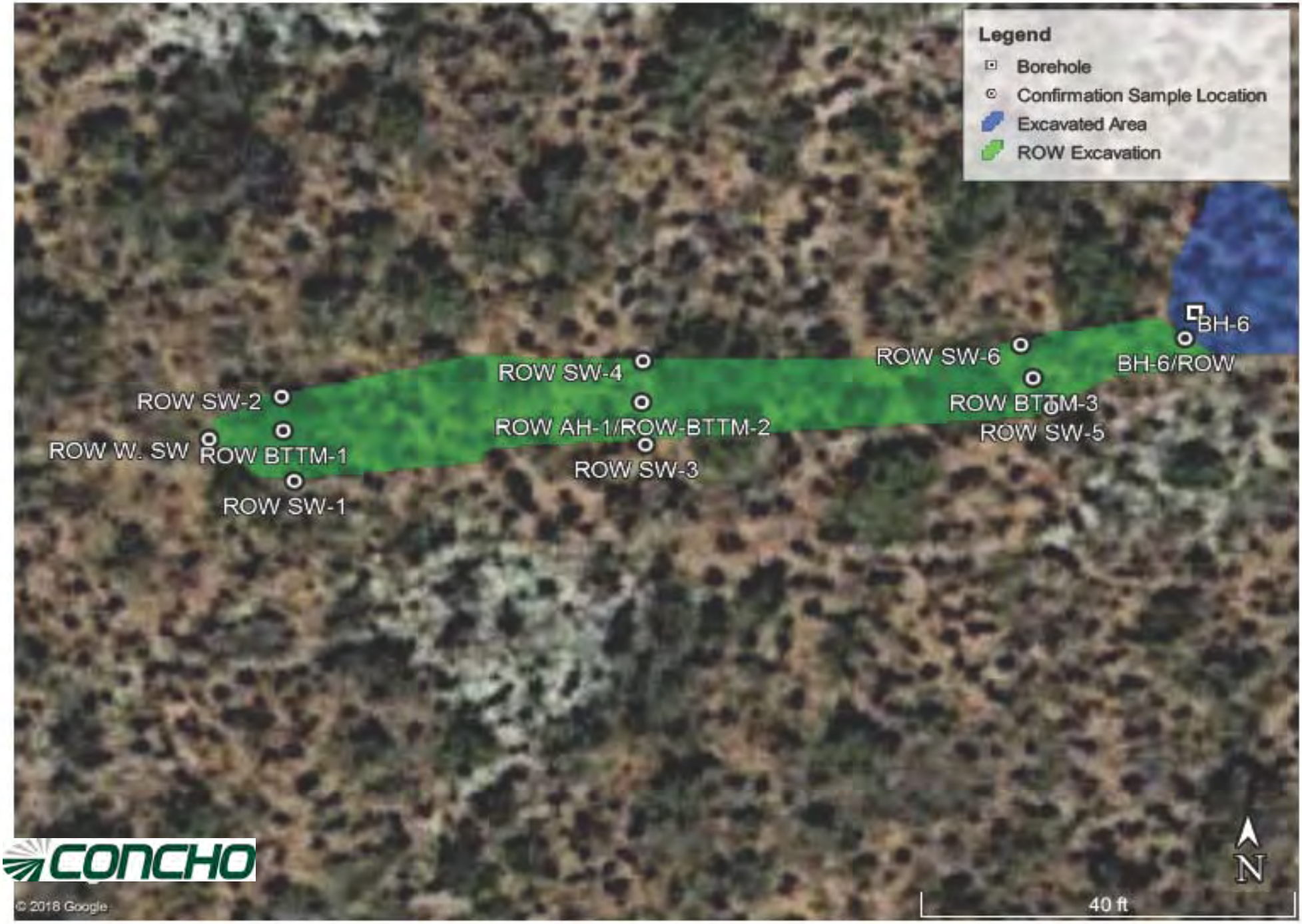
Gunner 16 State SWD #001



September 15, 2018

Gunner 16 State SWD #001

Gunner 16 State #001 SWD (ROW)



APPENDIX II

New Mexico Office of the State Engineer
Water Column/Average Depth to Water

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

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

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest) (NAD83 UTM in meters) (In feet)

POD Number	POD Sub-basin Code	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Distance	Depth Well	Depth Water	Water Column
C 02295	CUB	LE	2	2	4	12	26S	33E	639850	3547710*	3640	250	200	50
C 03442 POD1	C	LE	4	1	2	06	26S	34E	641056	3550028	3938	251		
C 02292 POD1	CUB	LE	4	1	2	06	26S	34E	640992	3549987	3944	200	140	60
C 03441 POD1	C	LE	4	1	2	06	26S	34E	640971	3550039	3998	250		
C 02291	CUB	LE	1	1	2	06	26S	34E	640825	3550140*	4167	220	160	60

Average Depth to Water: **166 feet**

Minimum Depth: **140 feet**

Maximum Depth: **200 feet**

Record Count: 5

Basin/County Search:

County: Lea

UTMNAD83 Radius Search (in meters):

Easting (X): 643389 **Northing (Y):** 3546855 **Radius:** 5000

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

APPENDIX III

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 Report

Name of Company: COG Operating LLC [OGRID] 229137	Contact: Robert McNeill
Address: 600 West Illinois Avenue, Midland TX 79701	Telephone No. 432-230-0077
Facility Name: Gunner 16 State SWD #1	Facility Type: SWD

Surface Owner: State/Federal	Mineral Owner: State	API No. 30-025-40890

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
D	16	26S	34E	330'	North	330'	West	Lea

Latitude 32.0497322 **Longitude** -103.4822998

NATURE OF RELEASE

Type of Release: Oil & Produced Water	Volume of Release: 1000 bbls pw; 20 bbls oil	Volume Recovered: 200 bbls pw; 5 bbls oil
Source of Release: Lightning Strike	Date and Hour of Occurrence: 9-15-2017 05:00 am	Date and Hour of Discovery: 9-15-2017 05:00 am
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Olivia Yu – NMOCD, Amber Groves-NMSLO	
By Whom? Rebecca Haskell	Date and Hour: 9-15-2017 12:57 pm	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

RECEIVED
By Olivia Yu at 11:15 am, Sep 18, 2017

Describe Cause of Problem and Remedial Action Taken.*
This release was caused by a lightning strike.

Describe Area Affected and Cleanup Action Taken.*

The facility and equipment were a total loss. The flow lines coming into the facility were isolated immediately to reduce further fluid loss. Once the fire was extinguished, vacuum trucks were dispatched to recover all standing fluid. The release impacted the location as well as the adjacent pasture and pipeline ROW.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature:	OIL CONSERVATION DIVISION
Printed Name: Dakota Neel	Approved by Environmental Specialist:
Title: Environmental Coordinator	Approval Date: 9/18/2017 Expiration Date:
E-mail Address: dneel2@concho.com	Conditions of Approval: see attached directive Attached ☐
Date: September 18, 2017 Phone: 575-746-2010	

* Attach Additional Sheets If Necessary

1RP-4812 nOY1726140783 pOY1726141166

APPENDIX IV

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 April 3, 2017

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

Release Notification and Corrective Action

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**: Gunner 16 State SWD #001**	Facility Type**: SWD**

Surface Owner: State	Mineral Owner: State	API No.: 30-025-40890

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
D	16	26S	34E	330	North	330	West	Lea

Latitude: 32.0497322 **Longitude**: -103.4822998 NAD83

NATURE OF RELEASE

Type of Release: Oil and Produced Water	Volume of Release: 1000bbls PW & 20bbls Oil	Volume Recovered: 200bbls PW & 5bbls Oil
Source of Release: Lightning Strike	Date and Hour of Occurrence: 9/15/2017 5:00am	Date and Hour of Discovery: 9/15/18 5:00 am
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Oliva Yu-NMOCD Amber Groves-NMSLO	
By Whom? Rebecca Haskell	Date and Hour: 9/15/2017 12:57pm	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

APPROVED
By Olivia Yu at 7:24 am, Sep 05, 2018

Describe Cause of Problem and Remedial Action Taken.*

A lightning strike caused a fire which resulted in the loss of the facility.

Describe Area Affected and Cleanup Action Taken.*

The facility and equipment were a total loss. The flow lines coming into the facility were isolated immediately to reduce further fluid loss. Once the fire was extinguished, vacuum trucks were dispatched to recover all standing fluid. The release impacted the location as well as the adjacent pasture and pipeline ROW. COG had the affected area evaluated and drafted a remediation work plan that was subsequently approved by NMOCD and NMSLO. The remediation was carried out in accordance with the approved work plan.

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: Sheldon Hitchcock

Printed Name: Sheldon L. Hitchcock

Title: HSE Coordinator

E-mail Address: slhitchcock@concho.com

Date: 8/23/18 Phone: 575-746-2010

OIL CONSERVATION DIVISION

Approved by Environmental Specialist: OY

Approval Date: 9/5/2018 Expiration Date: xx/xx/xxxx

Conditions of Approval:
Like approval from NMSLO.

Attached ☐

* Attach Additional Sheets If Necessary

1RP-4812

APPENDIX V

SITE INFORMATION

Report Type: Work Plan 1RP-4812

General Site Information:						
Site:	**Gunner 16 State SWD #1**					
Company:	**COG Operating LLC**					
Section, Township and Range	**Unit D**	**Sec. 16**	**T 26S**	**R 34E**		
County:	**Lea County**					
GPS:	**32.0497322º N**			**103.4822998º W**		
Surface Owner:	State/Federal					
Mineral Owner:						
Directions:	From the intersection of Hwy 285 and Whites City Rd, go west on Whites City Rd for 3 miles. Turn south onto unmarked lease road and drive 2 miles. Turn east onto unmarked lease road and drive 0.10 miles to location.					

Release Data:	
Date Released:	9/15/2017
Type Release:	Oil and Produced Water
Source of Contamination:	Lighting Strike
Fluid Released:	1000 bbls water and 20 bbls oil
Fluids Recovered:	200 bbls water and 5 bbls oil

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***	*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

April 5, 2018

Ms. Olivia Yu
Environmental Engineer Specialist
Oil Conservation Division, District 1
1625 North French Drive
Hobbs, New Mexico 88240

Re: Revised Work Plan for the COG Operating LLC., Gunner 16 State SWD #1, Unit D, Section 16, Township 26 South, Range 34 East, Lea County, New Mexico. 1RP-4812.

Ms. Yu:

Tetra Tech, Inc. (Tetra Tech) was contacted by COG Operating LLC., (COG) to assess and evaluate a release that occurred at Gunner 16 State SWD #1, Unit D, Section 16, Township 26 South, Range 34 East, Lea County, New Mexico (Site). The spill site coordinates are N 32.0497322º, W 103.4822998º. The site location is shown on Figures 1 and 2.

Background

According to the State of New Mexico C-141 Initial Report, the release was discovered on September 15, 2017, and released approximately 1,000 barrels of produced water and 20 barrels of oil, due to a lightning strike. The facility and equipment at the site were a total loss. Once the fire was extinguished, vacuum trucks were dispatched to remove all of the freestanding fluids, recovering approximately 200 barrels of produced water and 5 barrels of oil. The release impacted an area on the pad area measuring approximately 140' x 280' and migrated into the pasture impacting areas measuring approximately 65' x 150', 10'x10', and 15' x 20'. Additionally, the release migrated along an existing pipeline right-of-way and migrated into Section 17, measuring approximately 40' x 125'. Prior to the soil assessment, COG obtained a Right-of-Entry Permit (Permit No. RE-3481) from the New Mexico State Land Office. A copy of the Right-of-Entry permit is included in Appendix C. The Initial C-141 Form is included in Appendix A.

Groundwater

No wells are listed within Sections 16 or 17 in the New Mexico Office of the State Engineers database, the USGS National Water Information System, or the Geology and Groundwater Conditions in Southern Lea County, NM (Report 6). However, the State Engineers database reported a well in Section 06, approximately 2.5 miles northwest of the site, with a reported depth to water of 160' below surface, respectively. According to the Chevron Texaco Groundwater Trend map, the average depth to groundwater in the area is

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

approximately 125' 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 5,000 mg/kg.

Soil Assessment and Analytical Results

On December 18-19, 2017, Tetra Tech personnel were onsite to evaluate and sample the release area. A total of six (6) boreholes were installed in the impacted areas. Three (3) boreholes (BH-1, BH-2 and BH-3) were installed on the pad area and three (3) boreholes (BH-4, BH-5 and BH-6) were installed in the pasture area using an air rotary rig in order to define the extents. Due to safety concerns, a portion along the pipeline right-of-way was not sampled. Additionally, surface flowlines restricted access to the area southwest of the pad corner as well as the area southwest of the pipeline right-of-way. 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 the laboratory analysis and chain-of-custody documentation are included in Appendix E. The sampling results are summarized in Table 1. The borehole locations are shown in Figure 3.

<u>Pad Area</u>

Referring to Table 1, the areas of boreholes (BH-2 and BH-3) did not show any benzene, total BTEX, or TPH concentrations above the laboratory reporting limits. However, the area of borehole (BH-1) showed total BTEX concentrations below the RRALs, with concentrations of 0.179 mg/kg (0-1') and 0.740 mg/kg (2-3'). Additionally, elevated TPH concentrations were detected at borehole (BH-1) with a TPH high of 11,400 mg/kg at 2-3', which declined with depth to below the laboratory reporting limits at 4-5' below surface.

The areas of boreholes (BH-1, BH-2, and BH-3) showed chloride concentrations above the 600 mg/kg threshold in the shallow soils. The area of borehole (BH-1) showed chlorides that increased with depth to 7,120 mg/kg at 4-5', before declining with depth to 1,610 mg/kg at 6-7.0' and 29.0 mg/kg at 9-10' below surface. The areas of boreholes (BH-2 and BH-3) showed chloride highs of 891 mg/kg and 5,060 mg/kg at 2-3', before declining with depth to 466 mg/kg and 113 mg/kg at 4-5.0' below surface, respectively.

Pasture Area

Referring to Table 1, none of the samples analyzed from boreholes (BH-4, BH-5, and BH-6) showed benzene, total BTEX, or TPH concentrations above the RRALs or the laboratory reporting limits. However, the areas of boreholes (BH-5 and BH-6) showed elevated chloride concentrations in the shallow soils. The chloride concentrations increased with depth to 6,380 mg/kg at 2-3' (BH-5) and 3,890 mg/kg at 4-5' (BH-6). The chloride concentrations then declined to <4.99 mg/kg (BH-5) and 5.52 mg/kg (BH-6) at 6-7' below surface. The area of borehole (BH-4) showed insignificant chloride concentrations at 0-1' and 2-3', however a chloride spike of 813 mg/kg at 4-5' below surface was detected. The deeper samples in the area of borehole (BH-4) showed chloride concentrations of 5.60 mg/kg at 6-7', 43.4 mg/kg at 9.0-10' and 69.3 mg/kg at 14-15' below surface.

Work Plan

Based on the laboratory results, COG proposes to remove the impacted soils as shown on Figure 4 and highlighted (green) on Table 1. The area of borehole (BH-1) will be excavated to 6-7', the areas of boreholes (BH-5 and BH-6) will be excavated to 4-5', and the areas of boreholes (BH-2 and BH-3) will be excavated to 2-3' below surface. For the impacted area west of BH-6 along the pipeline ROW, EOG will be contacted to determine if any of the impacted soils can either be assessed or removed from the ROW. The excavated areas will then 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.

Revegetation Plan

The backfilled areas will be seeded in June 2018 in order to coincide with the rainy season in Southeastern New Mexico to aid in revegetation. Based on the soils at the site, the NMSLO Loamy (L) Sites Seed Mixture will be used for seeding and will be planted in the amount specified in the pounds pure live seed (PLS) per acre. The seed mixture will be spread by a drill equipped with a depth regulator or a hand-held broadcaster and raked. If a hand-held broadcaster is used for dispersal, the pounds pure live seed per acre will be doubled.

Site inspections will be performed to assess the revegetation progress and evaluate the site for the presence of primary or secondary noxious weeds. If noxious weeds are identified, the NMSLO will be contacted to determine an effective method for eradication. If the site does not show revegetation after one growing season, the area will be reseeded as appropriate. The NMSLO seed mixture details and corresponding pounds pure live seed per acre are included in Appendix D.

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.

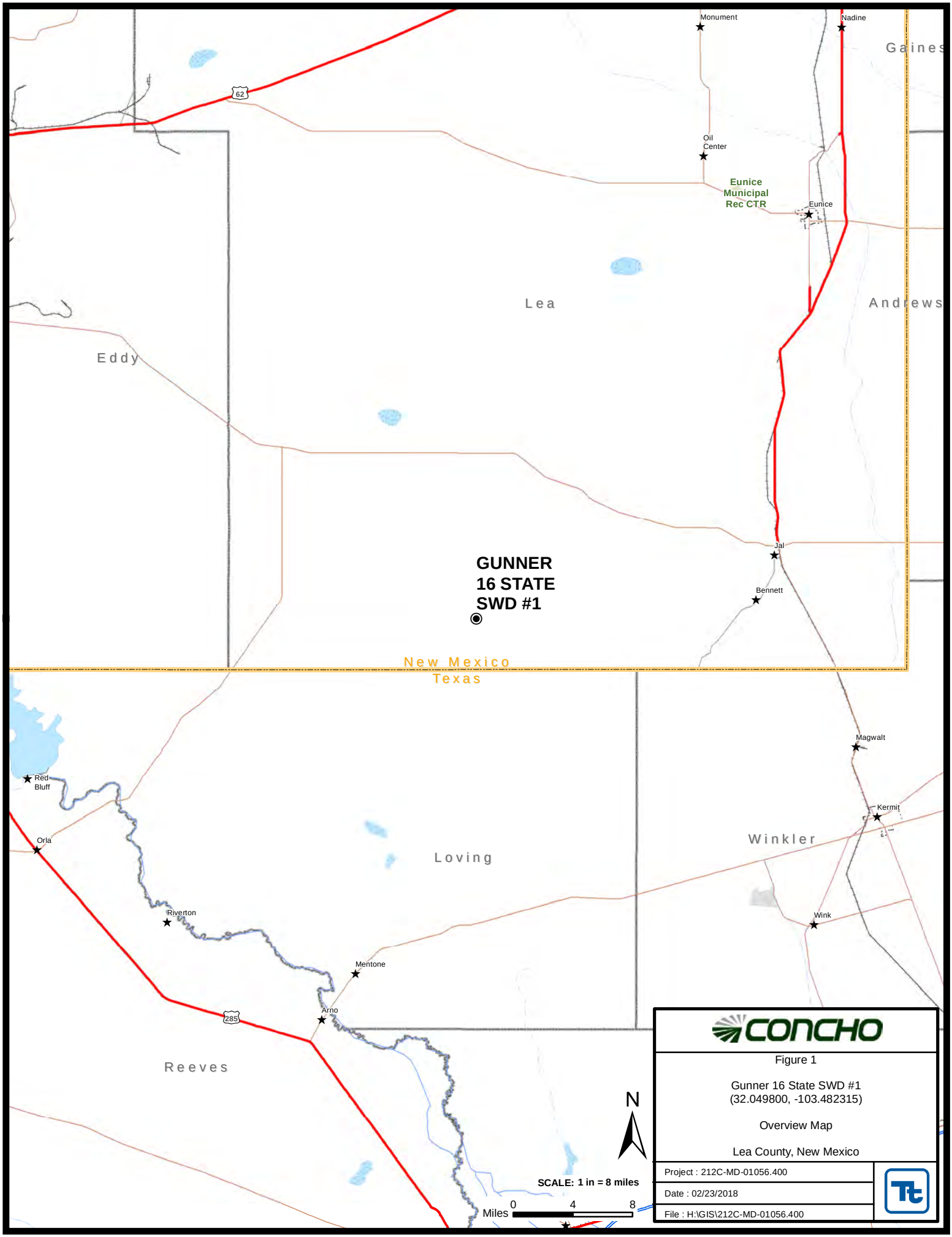
Respectfully submitted,
TETRA TECH

Clair Gonzales,
Project Manager

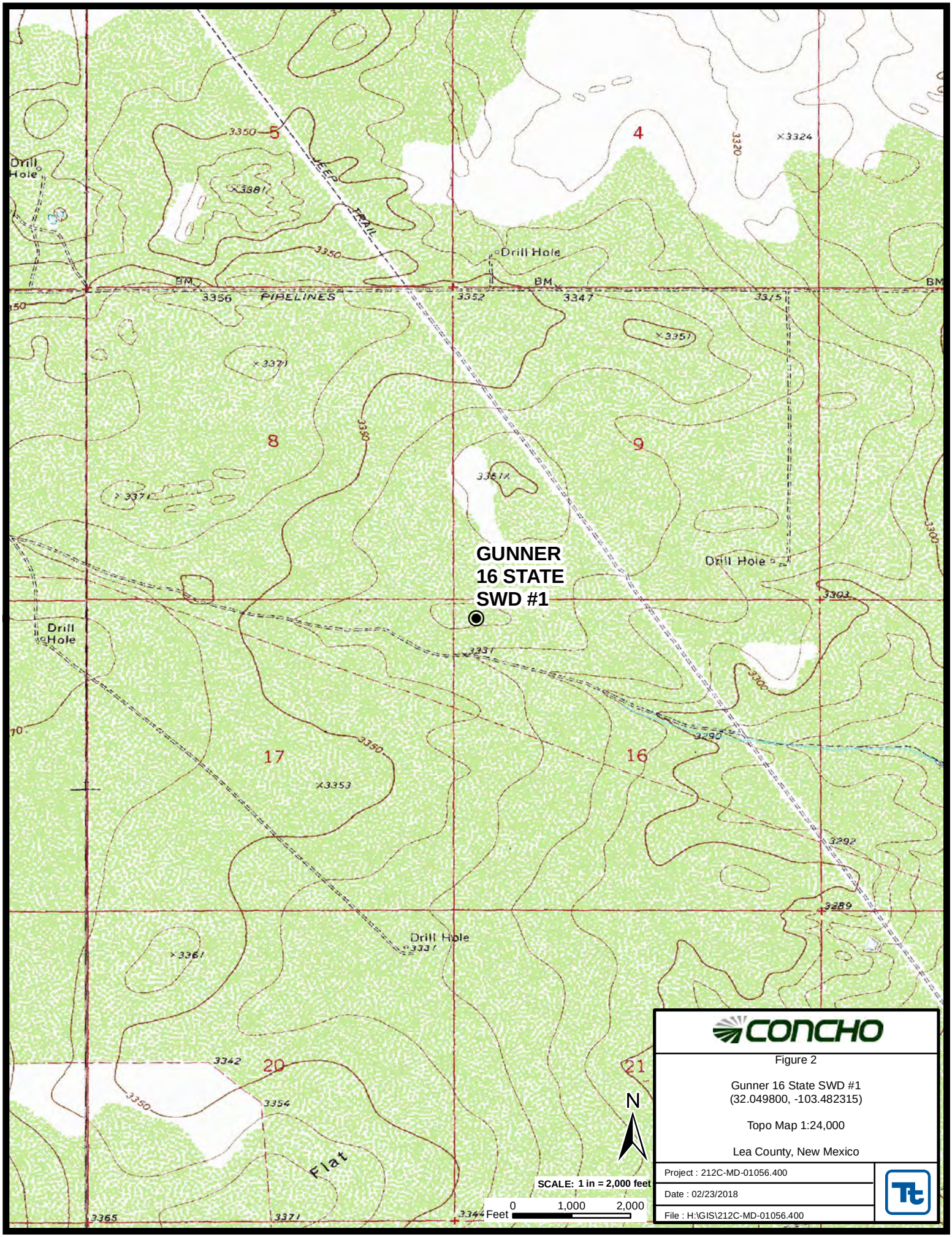
Ike Tavarez,
Senior Project Manager, P.G.

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

Figures



Mapped By: Isabel Marmolejo



CONCHO

Figure 2

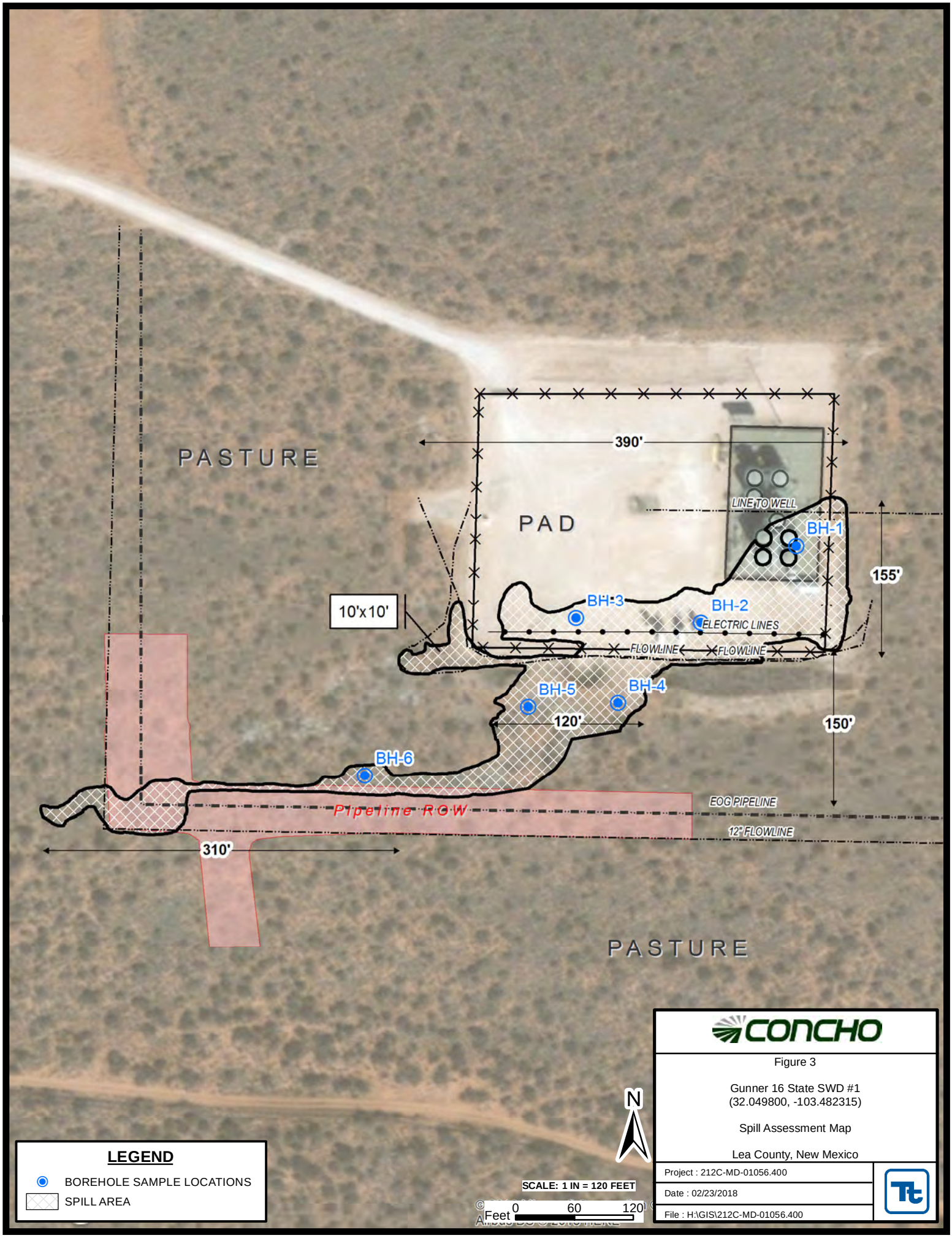
Gunner 16 State SWD #1
(32.049800, -103.482315)

Topo Map 1:24,000

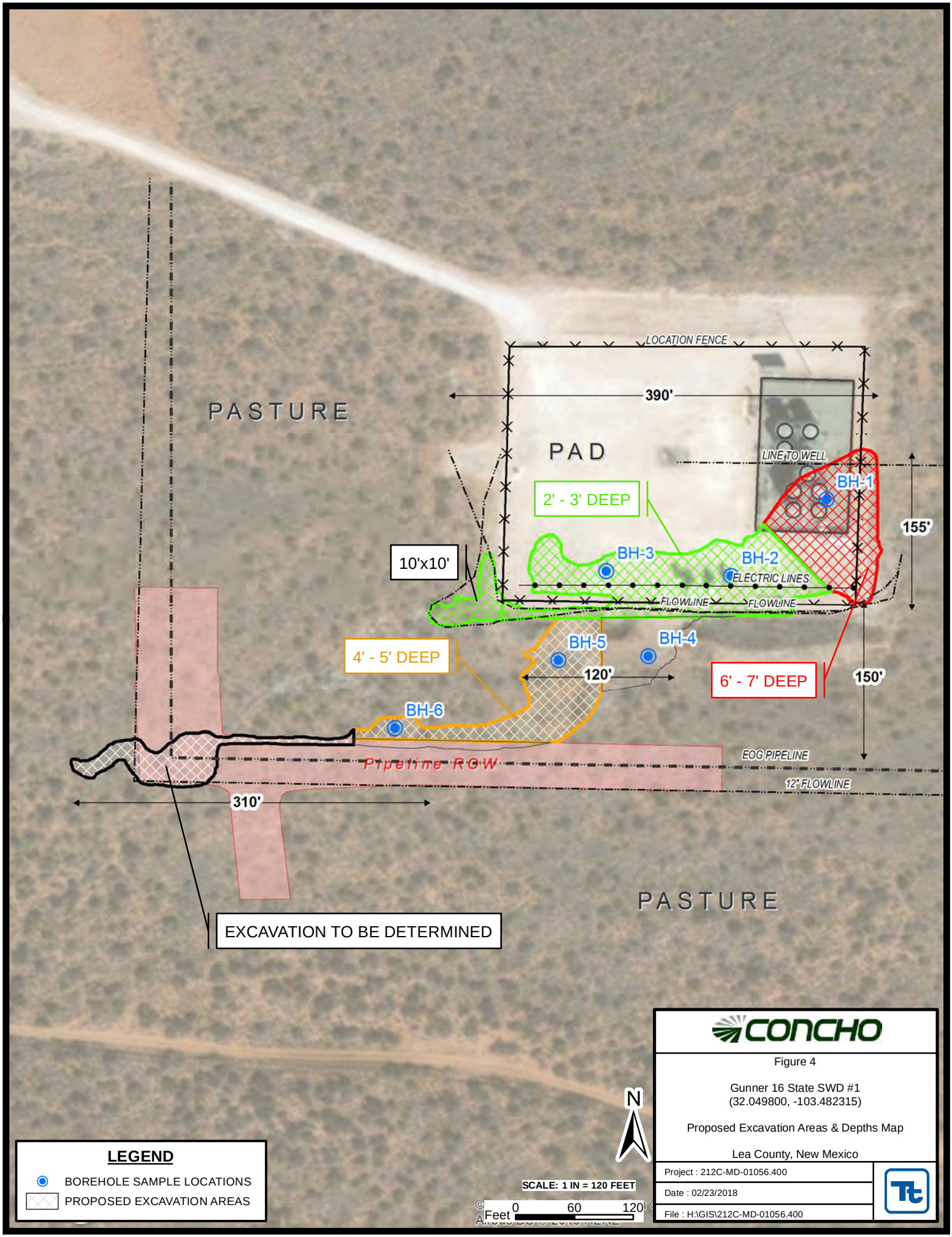
Lea County, New Mexico

Project : 212C-MD-01056.400	
Date : 02/23/2018	
File : H:\GIS\212C-MD-01056.400	

Mapped By: Isabel Marmolejo



Mapped By: Isabel Marmolejo


LOCATION FENCE
390'
PASTURE
PAD
LINE TO WELL
BH-1
2' - 3' DEEP
155'
10'x10'
BH-3
BH-2
ELECTRIC LINES
FLOWLINE
FLOWLINE
BH-5
BH-4
4' - 5' DEEP
120'
6' - 7' DEEP
150'
BH-6
Pipeline ROW
EOG PIPELINE
12" FLOWLINE
310'
PASTURE
EXCAVATION TO BE DETERMINED
N
SCALE: 1 IN = 120 FEET
Feet 0 60 120
LEGEND
BOREHOLE SAMPLE LOCATIONS
PROPOSED EXCAVATION AREAS
CONCHO
Figure 4
Gunner 16 State SWD #1
(32.049800, -103.482315)
Proposed Excavation Areas & Depths Map
Lea County, New Mexico
Project : 212C-MD-01056.400
Date : 02/23/2018
File : H:\GIS\212C-MD-01056.400
Mapped By: Isabel Marmolejo

Tables

Table 1
COG Operating LLC.
Gunner 16 State SWD #1
Lea 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						
Pad Area														
BH-1	12/18/2017	0-1	X		**608**	**6,970**	**1,900**	**9,480**	<0.00199	0.0101	0.0183	0.150	0.179	**1,270**
	"	2-3	X		**553**	**8,340**	**2,460**	**11,400**	<0.00201	0.00937	0.0214	0.143	0.740	**3,500**
	"	4-5	X		<15.0	<15.0	<15.0	<15.0	-	-	-	-	-	**7,120**
	"	6-7	X		-	-	-	-	-	-	-	-	-	**1,610**
	"	9-10	X		-	-	-	-	-	-	-	-	-	29.0
	"	14-15	X		-	-	-	-	-	-	-	-	-	168
	"	19-20	X		-	-	-	-	-	-	-	-	-	102
	"	24-25	X		-	-	-	-	-	-	-	-	-	116
BH-2	12/18/2017	0-1	X		<15.0	<15.0	<15.0	<15.0	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	**866**
	"	2-3	X		<15.0	<15.0	<15.0	<15.0	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	**891**
	"	4-5	X		-	-	-	-	-	-	-	-	-	466
	"	6-7	X		-	-	-	-	-	-	-	-	-	335
	"	9-10	X		-	-	-	-	-	-	-	-	-	8.96
	"	14-15	X		-	-	-	-	-	-	-	-	-	45.1
BH-3	12/18/2017	0-1	X		<15.0	<15.0	<15.0	<15.0	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	**4,500**
	"	2-3	X		-	-	-	-	-	-	-	-	-	**5,060**
	"	4-5	X		-	-	-	-	-	-	-	-	-	113
	"	6-7	X		-	-	-	-	-	-	-	-	-	22.5
	"	9-10	X		-	-	-	-	-	-	-	-	-	16.6
	"	14-15	X		-	-	-	-	-	-	-	-	-	186
Pasture Area														
BH-4	12/19/2017	0-1	X		<15.0	<15.0	<15.0	<15.0	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	10.0
	"	2-3	X		<14.9	<14.9	<14.9	<14.9	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	40.2
	"	4-5	X		-	-	-	-	-	-	-	-	-	**813**
	"	6-7	X		-	-	-	-	-	-	-	-	-	5.60
	"	9-10	X		-	-	-	-	-	-	-	-	-	43.4
	"	14-15	X		-	-	-	-	-	-	-	-	-	69.3
BH-5	12/19/2017	0-1	X		<15.0	<15.0	<15.0	<15.0	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	**2,850**
	"	2-3	X		<15.0	<15.0	<15.0	<15.0	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	**6,380**
	"	4-5	X		-	-	-	-	-	-	-	-	-	**864**
	"	6-7	X		-	-	-	-	-	-	-	-	-	<4.99
	"	9-10	X		-	-	-	-	-	-	-	-	-	8.35
	"	14-15	X		-	-	-	-	-	-	-	-	-	67.1
BH-6	12/19/2017	0-1	X		<15.0	<15.0	<15.0	<15.0	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	39.2
	"	2-3	X		<15.0	<15.0	<15.0	<15.0	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	**3,390**
	"	4-5	X		-	-	-	-	-	-	-	-	-	**3,890**
	"	6-7	X		-	-	-	-	-	-	-	-	-	5.52
	"	9-10	X		-	-	-	-	-	-	-	-	-	85.6
	"	14-15	X		-	-	-	-	-	-	-	-	-	209

(-) Not Analyzed

Proposed Excavation Depths

Photos

COG Operating LLC
Gunner 16 State SWD #1
Lea County, New Mexico

View South – Area of BH-1

View East – Area of BH-2

COG Operating LLC
Gunner 16 State SWD #1
Lea County, New Mexico

View East – Area of BH-3

View North – Area of BH-4

COG Operating LLC
Gunner 16 State SWD #1
Lea County, New Mexico

View West – Area of BH-5

View North – Area of BH-6

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 Report

Name of Company: COG Operating LLC [OGRID] 229137	Contact: Robert McNeill
Address: 600 West Illinois Avenue, Midland TX 79701	Telephone No. 432-230-0077
Facility Name: Gunner 16 State SWD #1	Facility Type: SWD

Surface Owner: State/Federal	Mineral Owner: State	API No. 30-025-40890

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
D	16	26S	34E	330'	North	330'	West	Lea

Latitude 32.0497322 **Longitude** -103.4822998

NATURE OF RELEASE

Type of Release: Oil & Produced Water	Volume of Release: 1000 bbls pw; 20 bbls oil	Volume Recovered: 200 bbls pw; 5 bbls oil
Source of Release: Lightning Strike	Date and Hour of Occurrence: 9-15-2017 05:00 am	Date and Hour of Discovery: 9-15-2017 05:00 am
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Olivia Yu – NMOCD, Amber Groves-NMSLO	
By Whom? Rebecca Haskell	Date and Hour: 9-15-2017 12:57 pm	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

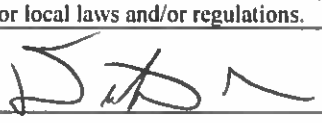
If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*
This release was caused by a lightning strike.

Describe Area Affected and Cleanup Action Taken.*

The facility and equipment were a total loss. The flow lines coming into the facility were isolated immediately to reduce further fluid loss. Once the fire was extinguished, vacuum trucks were dispatched to recover all standing fluid. The release impacted the location as well as the adjacent pasture and pipeline ROW.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature: 	OIL CONSERVATION DIVISION	
Printed Name: Dakota Neel	Approved by Environmental Specialist:	
Title: Environmental Coordinator	Approval Date:	Expiration Date:
E-mail Address: dneel2@concho.com	Conditions of Approval:	Attached ☐
Date: September 18, 2017 Phone: 575-746-2010		

* Attach Additional Sheets If Necessary

Appendix B

Water Well Data
Average Depth to Groundwater (ft)
COG - Gunner 16 SWD #1
Lea County, New Mexico

25 South 33 East

6	5	4	3 172	2	1
7	8	9	10	11 140	12 200
18	17	16	15	14	13
19	20 200	21 120	22	23	24
30	29	28	27 125	26	25
31 257	32	33	34	35	36

25 South 34 East

6	5	4	3	2	1 260
7	8	9	10	11	12
18	17	16	15 135	14	13
19	20	21	22	23	24 300
30	29 50	28	27	26	25
31	32	33	34	35	36

25 South 35 East

6	5 165	4	3 108	2	1
7	8	9	10	11	12
18 230	17	16	15	14	13
19	20	21 218	22	23	24
30 80	29	28	27	26	25
31	32	33	34	35	36

26 South 33 East

6	5	4	3 175	2	1
7	8	9	10	11 145	12 200
18	17	16	15	14 135	13
19	20	21 120	22	23	24
30	29	28	27 125	26	25
31	32	33	34	35	36

26 South 34 East

6 160 175	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

26 South 35 East

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13 230
19	20	21	22	23	24 250
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 02291		CUB	LE	1	1	2	06	26S	34E	640825	3550140*	220	160	60
C 02292 POD1		C	LE	4	1	2	06	26S	34E	640992	3549987	200	140	60
C 03441 POD1		C	LE	4	1	2	06	26S	34E	640971	3550039	250		
C 03442 POD1		C	LE	4	1	2	06	26S	34E	641056	3550028	251		

Average Depth to Water: **150 feet**

Minimum Depth: **140 feet**

Maximum Depth: **160 feet**

Record Count: 4

PLSS Search:

Township: 26S **Range:** 34E

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

2/20/18 9:39 AM

WATER COLUMN/ AVERAGE DEPTH TO WATER

Appendix C

Aubrey Dunn
COMMISSIONER

State of New Mexico
Commissioner of Public Lands
310 OLD SANTA FE TRAIL
P.O. BOX 1148
SANTA FE, NEW MEXICO 87504-1148

COMMISSIONER'S OFFICE
Phone (505) 827-5760
Fax (505) 827-5766
www.nmstatelands.org

November 29, 2017

COG Operating LLC
600 West Illinois Ave.
Midland, Texas 79701

Attn: Sheldon Hitchock

Re: Right-of-Entry Permit No.: RE-3481 (Gunner 16 SWD #1)

Dear Mr. Hitchock:

Enclosed is the completed captioned Right-of-Entry permit. If any corrections are necessary, please let us know and we will retype or amend this permit as necessary.

If you have any questions, or if we may be of further assistance, please do not hesitate to contact Anthony Vigil at 505-827-5710.

Sincerely,

Aubrey Dunn
Commissioner of Public Lands

AD/av

Enclosures

NEW MEXICO STATE LAND OFFICE
Commissioner of Public Lands
Aubrey Dunn
New Mexico State Land Office Building
P.O. Box 1148, Santa Fe, NM 87504-1148

RIGHT OF ENTRY PERMIT
CONTRACT NO. RE - 3481

1. RIGHT OF ENTRY PERMIT

This permit is issued under the authority of NMSA 1978, Section 19-1-2. Therefore, and in consideration of and subject to the terms, covenants, conditions, agreements, obligations and reservations contained in the permit and all other existing rights, the Commissioner of Public Lands, New Mexico State Land Office, State Of New Mexico, hereinafter called "COMMISSIONER," grants to **COG OPERATING LLC**. State of Incorporation (if applicable) , whose address is **ONE CONCHO CENTER, 600 W. ILLINOIS AVE, MIDLAND, TX, 79701** called "PERMITTEE," authorized use of a specific tract(s) of State Trust Land only for the term, and only for the permitted use, described in this permit.

2. TERM AND LAND DESCRIPTION

Right of entry is granted for a term of **180 days**, commencing on the execution date of this document by the Commissioner of Public Lands, to the following State Trust Lands.

Section	Township	Range	Subdivision	County
16	26S	34E	NW4NW4	Lea

3. APPLICATION and PROCESSING FEE

$ 50.00 Application Fee
$ 500.00 Permit Fee
$ 550.00 Total Fee

4. PERMITTED USE, PERSONNEL, EQUIPMENT AND MATERIALS

Permitted use is for the purpose of: **conduct soil sampling, delineation and remediation of an oil produced water release (Please note that this permit does not allow for any off road traffic)**

Personnel present on State Trust Land: **COG and contract personnel**

Equipment & Materials present on State Trust Land: **excavator, backhoe, loader and air rotary drill rig**

Prior to execution of project company must contact the Surface Lessees.

The granting of this permit does not allow access across private lands.

5. IMPROVEMENTS

No improvements shall be placed on the premises without the prior written consent of the Commissioner.

6. RESERVATIONS

Commissioner reserves the right to execute leases, rights of way, easements, permits, exchange agreements, sale agreements, permits and other lawful rights on or across the land covered by this permit, including but not limited to any such rights for mining purposes and for the extraction of oil, gas, salt, geothermal resources, and other mineral deposits there from and the right to go upon, explore for, mine, remove and sell same.

7. COMPLIANCE WITH LAWS

Permittee shall at its own expense comply fully with and be subject to all applicable regulations, rules, ordinances, and requirements of law or of the Commissioner, including but not limited to the regulations of the State Land Office; Chapter 19 NMSA governing State Trust Lands; federal and state environmental laws and regulations; and the New Mexico Cultural Properties Act, NMSA 1978 Sections 18-6-1 through 18-6-23. It is illegal for any person or his agent to appropriate, excavate, injure, or destroy any historic, or prehistoric ruin or monument, or any object of historical, archaeological, architectural, or scientific value situated on lands owned or controlled by the State Land Office without a valid permit issued by the Cultural Properties Review Committee and approved by the Commissioner of Public Lands.

8. HOLD HARMLESS AND IMDEMNIFICATION

Permittee shall save, hold harmless, indemnify and defend Commissioner, the State Land Office, the State of New Mexico, and any of their officers, employees or agents, in their official and individual capacities, of and from any and all liability, claims, losses, damages, costs, and fees arising out of or alleged to arise out of, or directly or indirectly connected with, the operations of Permittee under this permit on or off State Trust Lands or arising out of the presence on State Trust Lands of any equipment, material, agent, invitee, contractor or subcontractor of Permittee. This Hold Harmless and Indemnification clause covers any claim, including any brought in any court or before any administrative agency, of any loss or alleged loss, and any damages or alleged damages asserted with respect to any violation or alleged violation of any state, federal or local law or regulation, including but not limited to any environmental law or regulation, any cultural properties law (including the New Mexico Cultural Properties Act, cited above) or regulation, and any alleged damage to the property, rights or interests of any State Land Office lessee, right-of-way holder, or other permittee.

9. AMENDMENT

This permit shall not be altered, changed, or amended except by an instrument in writing executed by Commissioner and Permittee.

10. WITHDRAWAL

Commissioner reserves the right to withdraw any or all of the land authorized for use under this permit. If applicable, Permittee shall vacate the acreage specified within 30 days after receipt of written notification of withdrawal from the Commissioner.

11. CANCELLATION

The violation by Permittee of any of the terms, conditions, or covenants of this permit or the nonpayment by Permittee of the fees due under this permit shall at the option of the Commissioner be considered a default and shall cause the cancellation of this permit 30 days after Permittee has been sent written notice of such.

12. PRESERVE AND PROTECT

The Permittee agrees to preserve and protect the natural environmental conditions of the land encompassed in this permit, and to take those reclamation or corrective actions that are accepted soil and water conservation practices and that are deemed necessary by the Commissioner to protect the land from pollution, erosion, or other environmental degradation. The Permittee further agrees not to injure the property of, or interfere with the operations or rights of, any State Land Office lessee, right-of-way holder, easement holder or other permittee who has rights to use the State Trust Land subject to this permit.

13. PIPELINE IDENTIFICATION AND SPACING REQUIREMENTS

The Permittee shall label each aboveground pipeline crossing State Trust Lands with the Permittee's name, and contact information. Such information shall be placed at both the inlet and outlet of the pipeline, and every 2,500 feet between the two points. Pipelines must be spaced a minimum of 12" apart from existing surface pipelines to allow for livestock to cross. If the minimum line spacing cannot be met to allow livestock to cross, berms 3 feet in width must be placed in areas where established cattle trails exist, but no less than every tenth of a mile.

14. RECLAMATION, REMOVAL OF EQUIPMENT, MATERIALS, AND WASTE

The Permittee agrees to reclaim those areas that may be damaged by activities conducted thereon.

The Permittee agrees to remove from the State Trust Lands, no later than the end of the term of this permit, all equipment, and materials it has placed or brought upon the land and to clean up and remove from the land any trash, waste, effluent, or other products used or brought upon the land in connection with this permit.

15. SPECIAL INSTRUCTIONS AND/OR RESTRICTIONS

1. No off road traffic allowed.

2. No wood collection or tree cutting allowed.

3. Disturbing, dislodging, damaging, defacing, destroying or removing historical archaeological, paleontological or cultural sites or artifacts in a manner inconsistent with the provisions of the granted permit is prohibited.

4. Disturbing, dislodging, damaging, defacing, destroying any improvement, fixture, item, object or thing placed or located in, under or upon the land is prohibited.

5. This permit does not grant a right to enter State Trust Lands to which there is no public access.

6. Any uses or activities not within the scope of this permit are not allowed unless prior written approval from the Commissioner of Public Lands is granted.

7. Line pressure not to exceed 125 psi.

By: _____
Clay Bateman, Vice-President of New Mexico

ACKNOWLEDGMENT

STATE OF TEXAS)
) ss.
COUNTY OF MIDLAND)

The foregoing instrument was acknowledged before me this 27th day of November, 20 17, by Clay Bateman, of COG Operating LLC, a Delaware LLC corporation, on behalf of said corporation.

My Commission Expires:

1-29-2021

_____
NOTARY PUBLIC

Jana Asebedo
Notary Public, State of Texas
Notary ID 1075101-9
My Commission Exp. 01-29-2021

STATE OF NEW MEXICO

BY: _____
AUBREY DUNN
COMMISSIONER OF PUBLIC LANDS

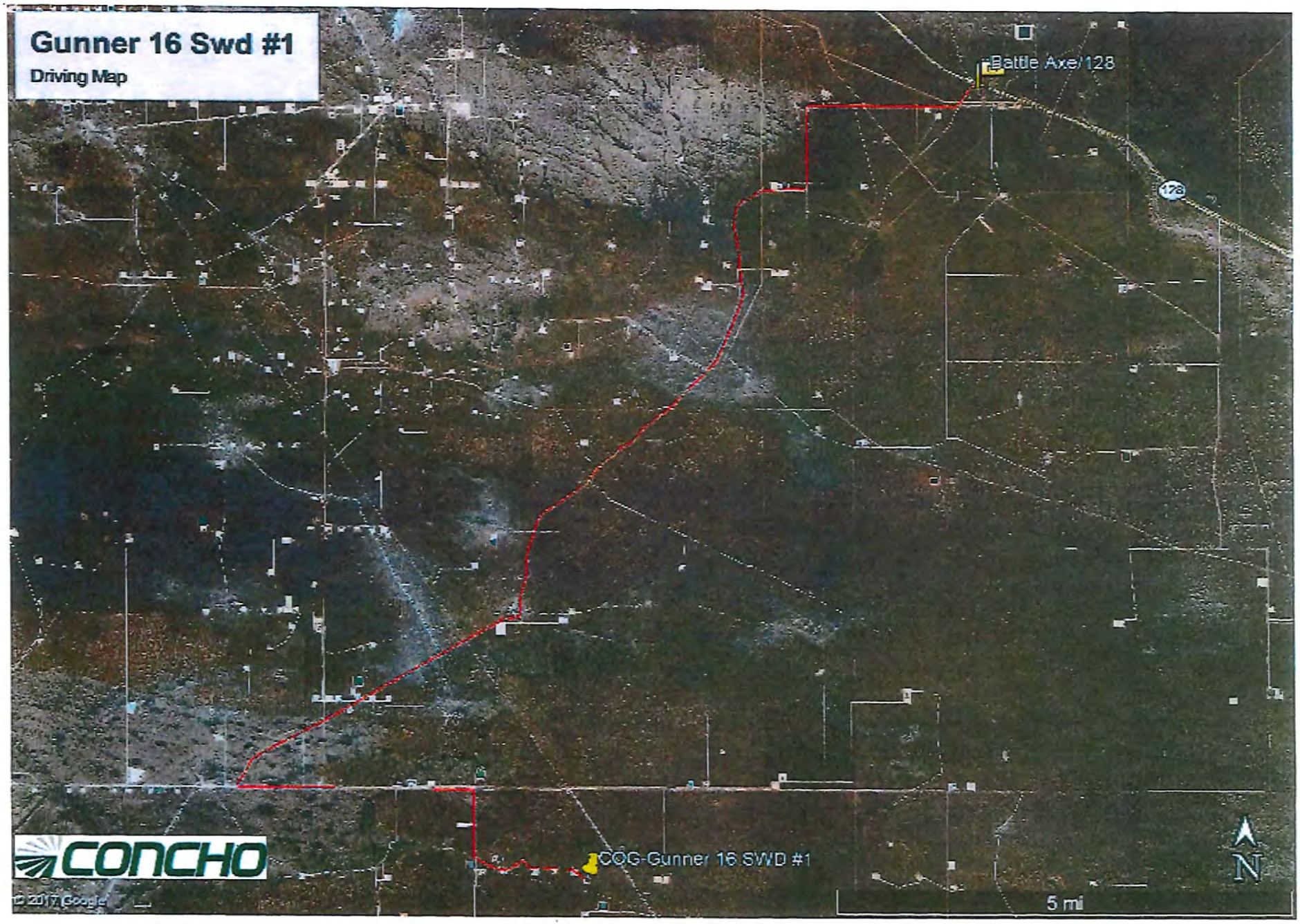
DATE: 12-4-17

SEAL

RE - 3481

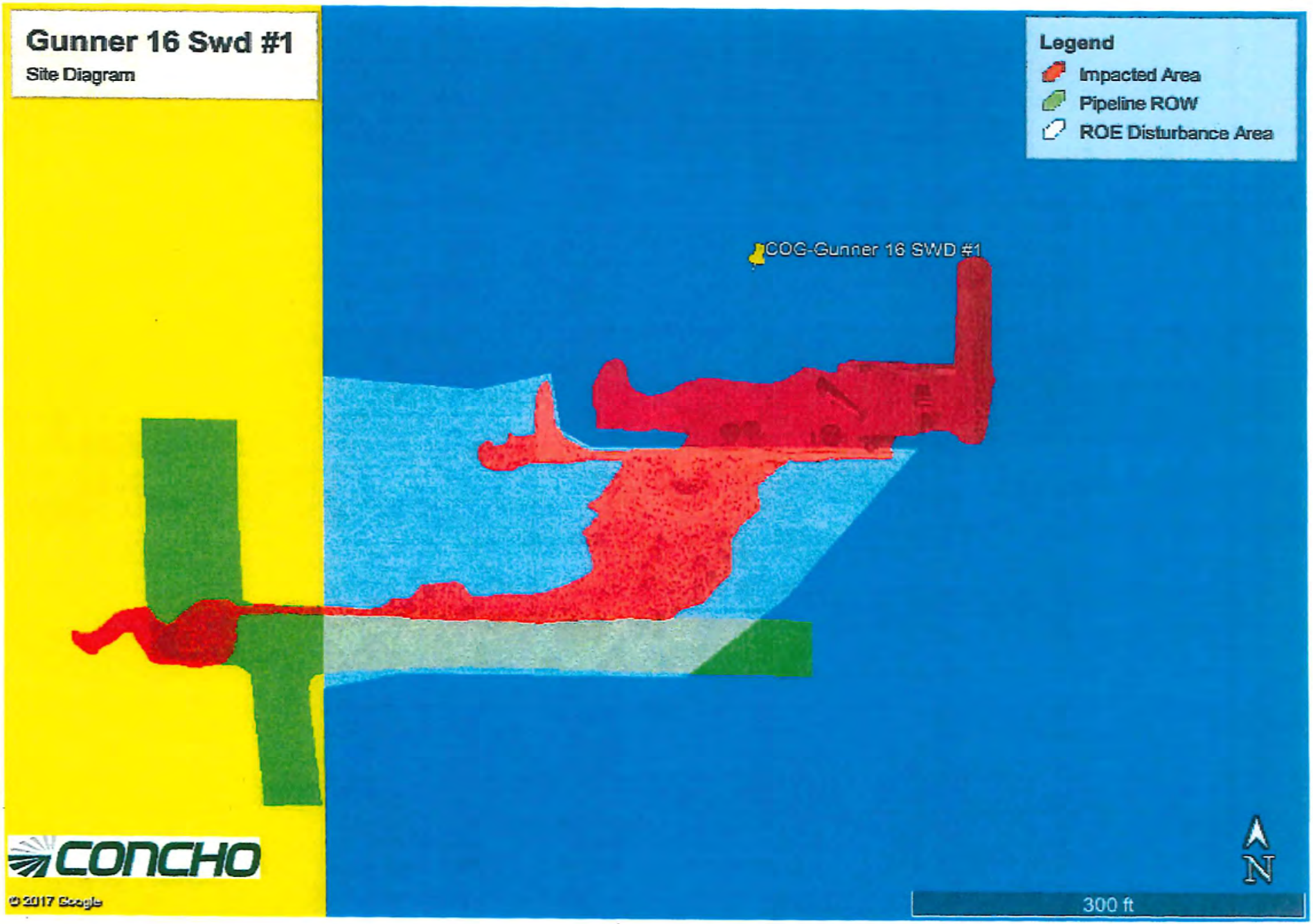
October 13, 2017

Gunner 16 SWD #1



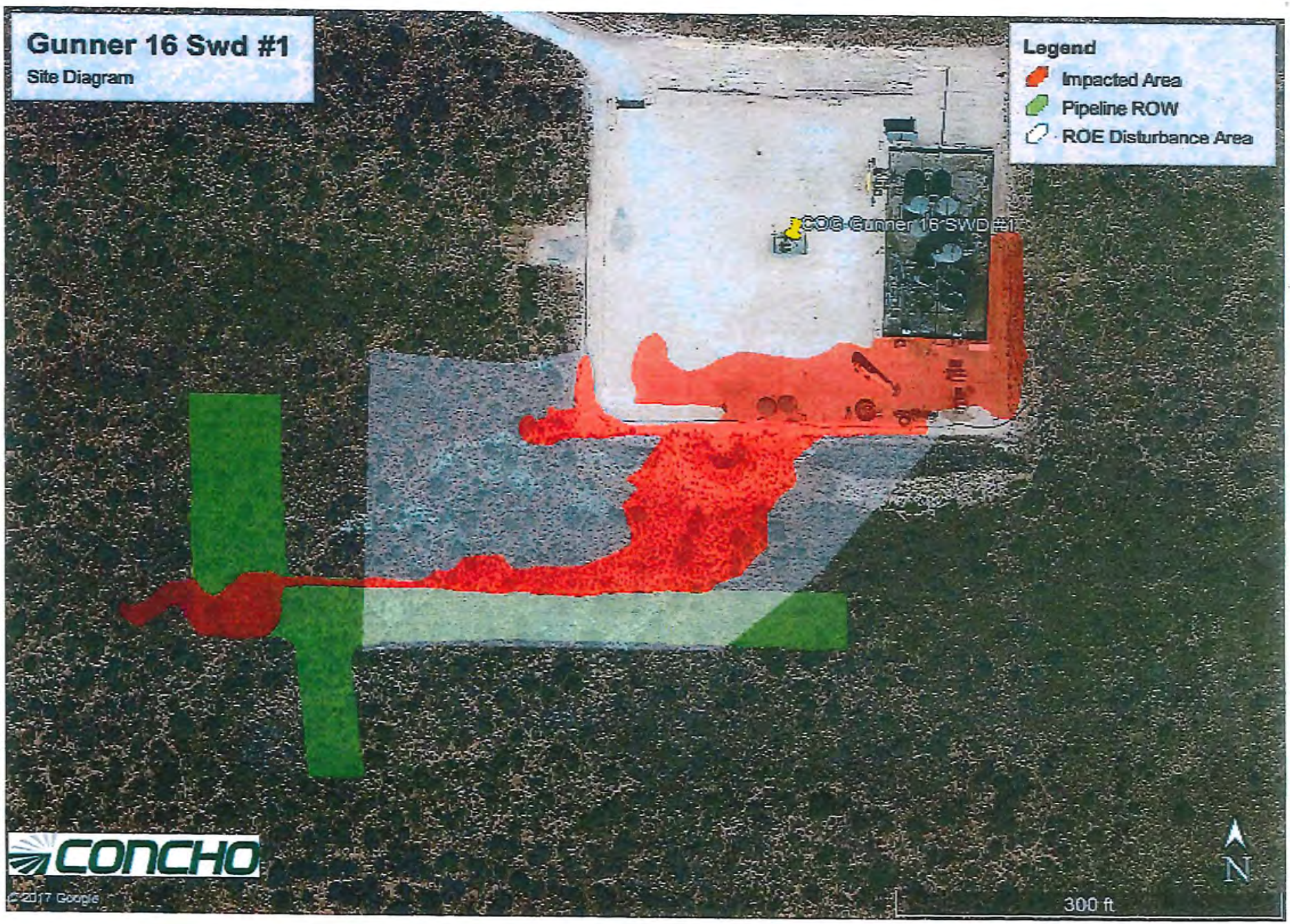
October 13, 2017

Gunner 16 SWD #1



October 13, 2017

Gunner 16 SWD #1



Surface Lessee Contact Information

Please notify all lessee's provided below prior to the start of your project.

- GT-2459- Dinwiddie Cattle Company, LLC
  P.O. Box 374, Roswell, New Mexico 88202-0374

Appendix D

NMSLO Seed Mix — Loamy (L)

LOAMY (L) SITES SEED MIXTURE:

COMMON NAME	VARIETY	APPLICATION RATE (PLS/Acre)	DRILL BOX
Grasses:			
Black grama	VNS, Southern	1.0	D
Blue grama	Lovington	1.0	D
Sideoats grama	Vaughn, El Reno	4.0	F
Sand dropseed	VNS, Southern	2.0	S
Alkali sacaton	VNS, Southern	1.0	
Little bluestem	Cimarron, Pastura	1.5	F
Forbs:			
Firewheel (*Gaillardia*)	VNS, Southern	1.0	D
Shrubs:			
Fourwing saltbush	Marana, Santa Rita	1.0	D
Common winterfat	VNS, Southern	0.5	F
	Total PLS/acre	18.0	

S = Small seed drill box, D = Standard seed drill box, F = Fluffy seed drill box
VNS = Variety Not Stated, PLS = Pure Live Seed

- Seed mixes should be provided in bags separating seed types into the three categories: small (S), standard (D) and fluffy (F).
- VNS, Southern – Seed should be from a southern latitude collection of this species.
- Double seed application rate for broadcast or hydroseeding.
- If one species is not available, contact the SLO for an approved substitute; alternatively the SLO may require other species proportionately increased.
- Additional information on these seed species can be found on the USDA Plants Database website at http://plants.usda.gov.

Lea County, New Mexico

PU—Pyote and maljamar fine sands

Map Unit Setting

National map unit symbol: dmqq
Elevation: 3,000 to 3,900 feet
Mean annual precipitation: 10 to 12 inches
Mean annual air temperature: 60 to 62 degrees F
Frost-free period: 190 to 205 days
Farmland classification: Not prime farmland

Map Unit Composition

Pyote and similar soils: 45 percent
Maljamar and similar soils: 45 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Pyote

Setting

Landform: Plains
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Sandy eolian deposits derived from sedimentary rock

Typical profile

A - 0 to 30 inches: fine sand
Bt - 30 to 60 inches: fine sandy loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 5 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 2.0
Available water storage in profile: Low (about 5.1 inches)

Interpretive groups

Land capability classification (irrigated): 6e

Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: A
Ecological site: Loamy Sand (R042XC003NM)
Hydric soil rating: No

Description of Maljamar

Setting

Landform: Plains
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Sandy eolian deposits derived from sedimentary rock

Typical profile

A - 0 to 24 inches: fine sand
Bt - 24 to 50 inches: sandy clay loam
Bkm - 50 to 60 inches: cemented material

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: 40 to 60 inches to petrocalcic
Natural drainage class: Well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 5 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 2.0
Available water storage in profile: Low (about 5.6 inches)

Interpretive groups

Land capability classification (irrigated): 6e
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: B
Ecological site: Loamy Sand (R042XC003NM)
Hydric soil rating: No

Minor Components

Kermit

Percent of map unit: 10 percent
Ecological site: Sandhills (R042XC022NM)

Hydric soil rating: No

Data Source Information

Soil Survey Area: Lea County, New Mexico
Survey Area Data: Version 14, Sep 10, 2017

Appendix E

Analytical Report 571798

for

Tetra Tech- Midland

Project Manager: Ike Tavarez

COG-Gunner 16 SWD #1 (Pad Area)

29-DEC-17

Collected By: Client

1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-17-23), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab code: TX01468):
Texas (T104704295-17-15), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab code: TX00127): Texas (T104704221-17-12)
Xenco-Lubbock (EPA Lab code: TX00139): Texas (T104704219-17-16)
Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-17-13)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-17-3)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757)
Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)

29-DEC-17

Project Manager: **Ike Tavarez**
Tetra Tech- Midland
4000 N. Big Spring Suite 401
Midland, TX 79705

Reference: XENCO Report No(s): **571798**
COG-Gunner 16 SWD #1 (Pad Area)
Project Address: Lea County NM

Ike Tavarez:

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) 571798. 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. 571798 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 571798

Tetra Tech- Midland, Midland, TX

COG-Gunner 16 SWD #1 (Pad Area)

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
BH-1 0-1	S	12-18-17 00:00	0 - 1	571798-001
BH-1 2-3	S	12-18-17 00:00	2 - 3	571798-002
BH-1 4-5	S	12-18-17 00:00	4 - 5	571798-003
BH-1 6-7	S	12-18-17 00:00	6 - 7	571798-004
BH-1 9-10	S	12-18-17 00:00	9 - 10	571798-005
BH-1 14-15	S	12-18-17 00:00	14 - 15	571798-006
BH-1 19-20	S	12-18-17 00:00	19 - 20	571798-007
BH-1 24-25	S	12-18-17 00:00	24 - 25	571798-008
BH-2 0-1	S	12-18-17 00:00	0 - 1	571798-009
BH-2 2-3	S	12-18-17 00:00	2 - 3	571798-010
BH-2 4-5	S	12-18-17 00:00	4 - 5	571798-011
BH-2 6-7	S	12-18-17 00:00	6 - 7	571798-012
BH-2 9-10	S	12-18-17 00:00	9 - 10	571798-013
BH-2 14-15	S	12-18-17 00:00	14 - 15	571798-014
BH-3 0-1	S	12-18-17 00:00	0 - 1	571798-015
BH-3 2-3	S	12-18-17 00:00	2 - 3	571798-016
BH-3 4-5	S	12-18-17 00:00	4 - 5	571798-017
BH-3 6-7	S	12-18-17 00:00	6 - 7	571798-018
BH-3 9-10	S	12-18-17 00:00	9 - 10	571798-019
BH-3 14-15	S	12-18-17 00:00	14 - 15	571798-020

Client Name: Tetra Tech- Midland

Project Name: COG-Gunner 16 SWD #1 (Pad Area)

Project ID:
Work Order Number(s): *571798*

Report Date: *29-DEC-17*
Date Received: *12/19/2017*

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3036624 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3036675 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.
Lab Sample ID 571798-009 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD).
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: 571798-002, -009, -010, -015.
The Laboratory Control Sample for o-Xylene is within laboratory Control Limits, therefore the data was accepted.

Certificate of Analysis Summary 571798

Tetra Tech- Midland, Midland, TX

Project Name: COG-Gunner 16 SWD #1 (Pad Area)

Project Id:
Contact: Ike Tavarez
Project Location: Lea County NM

Date Received in Lab: Tue Dec-19-17 04:05 pm
Report Date: 29-DEC-17
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	571798-001		571798-002		571798-003		571798-004		571798-005		571798-006	
	Field Id:	BH-1 0-1		BH-1 2-3		BH-1 4-5		BH-1 6-7		BH-1 9-10		BH-1 14-15	
	Depth:	0-1		2-3		4-5		6-7		9-10		14-15	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Dec-18-17 00:00		Dec-18-17 00:00		Dec-18-17 00:00		Dec-18-17 00:00		Dec-18-17 00:00		Dec-18-17 00:00	
BTEX by EPA 8021B	***Extracted:***	Dec-21-17 13:00		Dec-21-17 17:00									
	Analyzed:	Dec-21-17 23:12		Dec-22-17 05:10									
	Units/RL:	mg/kg	RL	mg/kg	RL								
Benzene		<0.00199	0.00199	<0.00201	0.00201								
Toluene		0.0101	0.00199	0.00937	0.00201								
Ethylbenzene		0.0183	0.00199	0.0214	0.00201								
m,p-Xylenes		0.0874	0.00398	0.0821	0.00402								
o-Xylene		0.0628	0.00199	0.0611	0.00201								
Total Xylenes		0.150	0.00199	0.143	0.00201								
Total BTEX		0.179	0.00199	0.174	0.00201								
Inorganic Anions by EPA 300/300.1	***Extracted:***	Dec-26-17 10:30		Dec-26-17 10:30		Dec-26-17 10:30		Dec-26-17 10:30		Dec-26-17 12:06		Dec-26-17 12:06	
	Analyzed:	Dec-26-17 19:15		Dec-26-17 19:22		Dec-26-17 19:29		Dec-26-17 19:36		Dec-27-17 10:38		Dec-27-17 10:59	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		1270	24.9	3500	24.9	7120	49.1	1610	24.8	29.0	4.99	168	4.97
TPH By SW8015 Mod	***Extracted:***	Dec-21-17 07:00		Dec-21-17 07:00		Dec-28-17 10:00							
	Analyzed:	Dec-21-17 23:25		Dec-21-17 23:44		Dec-28-17 13:17							
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL						
Gasoline Range Hydrocarbons (GRO)		608	74.8	553	74.9	<15.0	15.0						
Diesel Range Organics (DRO)		6970	74.8	8340	74.9	<15.0	15.0						
Oil Range Hydrocarbons (ORO)		1900	74.8	2460	74.9	<15.0	15.0						
Total TPH		9480	74.8	11400	74.9	<15.0	15.0						

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 571798

Tetra Tech- Midland, Midland, TX

Project Name: COG-Gunner 16 SWD #1 (Pad Area)

Project Id:
Contact: Ike Tavarez
Project Location: Lea County NM

Date Received in Lab: Tue Dec-19-17 04:05 pm
Report Date: 29-DEC-17
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	571798-007		571798-008		571798-009		571798-010		571798-011		571798-012	
	Field Id:	BH-1 19-20		BH-1 24-25		BH-2 0-1		BH-2 2-3		BH-2 4-5		BH-2 6-7	
	Depth:	19-20		24-25		0-1		2-3		4-5		6-7	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Dec-18-17 00:00		Dec-18-17 00:00		Dec-18-17 00:00		Dec-18-17 00:00		Dec-18-17 00:00		Dec-18-17 00:00	
BTEX by EPA 8021B	***Extracted:***					Dec-21-17 17:00		Dec-21-17 17:00					
	Analyzed:					Dec-22-17 02:22		Dec-22-17 02:40					
	Units/RL:					mg/kg	RL	mg/kg	RL				
Benzene						<0.00199	0.00199	<0.00200	0.00200				
Toluene						<0.00199	0.00199	<0.00200	0.00200				
Ethylbenzene						<0.00199	0.00199	<0.00200	0.00200				
m,p-Xylenes						<0.00398	0.00398	<0.00399	0.00399				
o-Xylene						<0.00199	0.00199	<0.00200	0.00200				
Total Xylenes						<0.00199	0.00199	<0.00200	0.00200				
Total BTEX						<0.00199	0.00199	<0.00200	0.00200				
Inorganic Anions by EPA 300/300.1	***Extracted:***	Dec-26-17 12:06		Dec-26-17 12:06		Dec-26-17 12:06		Dec-26-17 12:06		Dec-26-17 12:06		Dec-26-17 12:06	
	Analyzed:	Dec-27-17 11:06		Dec-27-17 11:13		Dec-27-17 11:20		Dec-27-17 11:41		Dec-27-17 11:48		Dec-27-17 11:55	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		102	4.93	116	4.93	866	4.96	891	4.93	466	4.93	335	4.99
TPH By SW8015 Mod	***Extracted:***					Dec-21-17 07:00		Dec-21-17 07:00					
	Analyzed:					Dec-22-17 00:07		Dec-22-17 00:27					
	Units/RL:					mg/kg	RL	mg/kg	RL				
Gasoline Range Hydrocarbons (GRO)						<15.0	15.0	<15.0	15.0				
Diesel Range Organics (DRO)						<15.0	15.0	<15.0	15.0				
Oil Range Hydrocarbons (ORO)						<15.0	15.0	<15.0	15.0				
Total TPH						<15.0	15.0	<15.0	15.0				

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 571798

Tetra Tech- Midland, Midland, TX

Project Name: COG-Gunner 16 SWD #1 (Pad Area)

Project Id:
Contact: Ike Tavarez
Project Location: Lea County NM

Date Received in Lab: Tue Dec-19-17 04:05 pm
Report Date: 29-DEC-17
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	571798-013		571798-014		571798-015		571798-016		571798-017		571798-018	
	Field Id:	BH-2 9-10		BH-2 14-15		BH-3 0-1		BH-3 2-3		BH-3 4-5		BH-3 6-7	
	Depth:	9-10		14-15		0-1		2-3		4-5		6-7	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Dec-18-17 00:00		Dec-18-17 00:00		Dec-18-17 00:00		Dec-18-17 00:00		Dec-18-17 00:00		Dec-18-17 00:00	
BTEX by EPA 8021B	***Extracted:***					Dec-21-17 17:00							
	Analyzed:					Dec-22-17 02:59							
	Units/RL:					mg/kg	RL						
Benzene						<0.00202	0.00202						
Toluene						<0.00202	0.00202						
Ethylbenzene						<0.00202	0.00202						
m,p-Xylenes						<0.00403	0.00403						
o-Xylene						<0.00202	0.00202						
Total Xylenes						<0.00202	0.00202						
Total BTEX						<0.00202	0.00202						
Inorganic Anions by EPA 300/300.1	***Extracted:***	Dec-26-17 12:06		Dec-26-17 12:06		Dec-26-17 12:06		Dec-26-17 12:06		Dec-26-17 12:06		Dec-26-17 12:06	
	Analyzed:	Dec-27-17 12:02		Dec-27-17 12:16		Dec-27-17 12:09		Dec-27-17 12:37		Dec-27-17 12:44		Dec-27-17 13:05	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		8.96	4.98	45.1	4.90	4500	24.8	5060	49.4	113	4.96	22.5	4.94
TPH By SW8015 Mod	***Extracted:***					Dec-21-17 07:00							
	Analyzed:					Dec-22-17 00:47							
	Units/RL:					mg/kg	RL						
Gasoline Range Hydrocarbons (GRO)						<15.0	15.0						
Diesel Range Organics (DRO)						<15.0	15.0						
Oil Range Hydrocarbons (ORO)						<15.0	15.0						
Total TPH						<15.0	15.0						

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 571798

Tetra Tech- Midland, Midland, TX

Project Name: COG-Gunner 16 SWD #1 (Pad Area)

Project Id:
Contact: Ike Tavarez
Project Location: Lea County NM

Date Received in Lab: Tue Dec-19-17 04:05 pm
Report Date: 29-DEC-17
Project Manager: Kelsey Brooks

Analysis Requested									
	Lab Id:	571798-019		571798-020					
	Field Id:	BH-3 9-10		BH-3 14-15					
	Depth:	9-10		14-15					
	Matrix:	SOIL		SOIL					
	Sampled:	Dec-18-17 00:00		Dec-18-17 00:00					
Inorganic Anions by EPA 300/300.1	***Extracted:***	Dec-26-17 12:06		Dec-26-17 12:06					
	Analyzed:	Dec-27-17 13:12		Dec-27-17 13:19					
	Units/RL:	mg/kg	RL	mg/kg	RL				
Chloride		16.6	4.92	186	4.96				

Kelsey Brooks
Project Manager

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

	Phone	Fax
4147 Greenbriar Dr, Stafford, TX 77477	(281) 240-4200	(281) 240-4280
9701 Harry Hines Blvd , Dallas, TX 75220	(214) 902 0300	(214) 351-9139
5332 Blackberry Drive, San Antonio TX 78238	(210) 509-3334	(210) 509-3335
1211 W Florida Ave, Midland, TX 79701	(432) 563-1800	(432) 563-1713
2525 W. Huntington Dr. - Suite 102, Tempe AZ 85282	(602) 437-0330	

Form 2 - Surrogate Recoveries

Project Name: COG-Gunner 16 SWD #1 (Pad Area)

Work Orders : 571798,

Project ID:

Lab Batch #: 3036624 **Sample:** 571798-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 12/21/17 23:12

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0251	0.0300	84	80-120	
4-Bromofluorobenzene	0.0310	0.0300	103	80-120	

Lab Batch #: 3036672 **Sample:** 571798-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 12/21/17 23:25

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	97.5	99.7	98	70-135	
o-Terphenyl	43.4	49.9	87	70-135	

Lab Batch #: 3036672 **Sample:** 571798-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 12/21/17 23:44

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	95.7	99.8	96	70-135	
o-Terphenyl	44.1	49.9	88	70-135	

Lab Batch #: 3036672 **Sample:** 571798-009 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 12/22/17 00:07

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	81.8	99.9	82	70-135	
o-Terphenyl	42.8	50.0	86	70-135	

Lab Batch #: 3036672 **Sample:** 571798-010 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 12/22/17 00:27

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	85.6	100	86	70-135	
o-Terphenyl	43.9	50.0	88	70-135	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: COG-Gunner 16 SWD #1 (Pad Area)

Work Orders : 571798,

Project ID:

Lab Batch #: 3036672 **Sample:** 571798-015 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 12/22/17 00:47

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	86.9	99.7	87	70-135	
o-Terphenyl	44.4	49.9	89	70-135	

Lab Batch #: 3036675 **Sample:** 571798-009 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 12/22/17 02:22

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0282	0.0300	94	80-120	
4-Bromofluorobenzene	0.0265	0.0300	88	80-120	

Lab Batch #: 3036675 **Sample:** 571798-010 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 12/22/17 02:40

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0288	0.0300	96	80-120	
4-Bromofluorobenzene	0.0262	0.0300	87	80-120	

Lab Batch #: 3036675 **Sample:** 571798-015 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 12/22/17 02:59

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0277	0.0300	92	80-120	
4-Bromofluorobenzene	0.0275	0.0300	92	80-120	

Lab Batch #: 3036675 **Sample:** 571798-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 12/22/17 05:10

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0297	0.0300	99	80-120	
4-Bromofluorobenzene	0.0347	0.0300	116	80-120	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: COG-Gunner 16 SWD #1 (Pad Area)

Work Orders : 571798,

Project ID:

Lab Batch #: 3037188 **Sample:** 571798-003 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 12/28/17 13:17

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	82.0	100	82	70-135	
o-Terphenyl	42.4	50.0	85	70-135	

Lab Batch #: 3036624 **Sample:** 7636429-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 12/21/17 16:12

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0278	0.0300	93	80-120	
4-Bromofluorobenzene	0.0248	0.0300	83	80-120	

Lab Batch #: 3036672 **Sample:** 7636449-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 12/21/17 17:13

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	83.4	100	83	70-135	
o-Terphenyl	43.3	50.0	87	70-135	

Lab Batch #: 3036675 **Sample:** 7636472-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 12/22/17 02:03

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0269	0.0300	90	80-120	
4-Bromofluorobenzene	0.0241	0.0300	80	80-120	

Lab Batch #: 3037188 **Sample:** 7636777-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 12/28/17 12:16

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	81.7	100	82	70-135	
o-Terphenyl	42.9	50.0	86	70-135	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: COG-Gunner 16 SWD #1 (Pad Area)

Work Orders : 571798,

Project ID:

Lab Batch #: 3036624 **Sample:** 7636429-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 12/21/17 13:48

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0335	0.0300	112	80-120	
4-Bromofluorobenzene	0.0331	0.0300	110	80-120	

Lab Batch #: 3036672 **Sample:** 7636449-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 12/21/17 17:33

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	84.1	100	84	70-135	
o-Terphenyl	45.3	50.0	91	70-135	

Lab Batch #: 3036675 **Sample:** 7636472-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 12/22/17 00:09

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0309	0.0300	103	80-120	
4-Bromofluorobenzene	0.0299	0.0300	100	80-120	

Lab Batch #: 3037188 **Sample:** 7636777-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 12/28/17 12:36

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	89.6	100	90	70-135	
o-Terphenyl	53.1	50.0	106	70-135	

Lab Batch #: 3036624 **Sample:** 7636429-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 12/21/17 14:35

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0329	0.0300	110	80-120	
4-Bromofluorobenzene	0.0357	0.0300	119	80-120	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: COG-Gunner 16 SWD #1 (Pad Area)

Work Orders : 571798,

Project ID:

Lab Batch #: 3036672 **Sample:** 7636449-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 12/21/17 17:53

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	83.7	100	84	70-135	
o-Terphenyl	45.4	50.0	91	70-135	

Lab Batch #: 3036675 **Sample:** 7636472-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 12/22/17 00:28

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0290	0.0300	97	80-120	
4-Bromofluorobenzene	0.0276	0.0300	92	80-120	

Lab Batch #: 3037188 **Sample:** 7636777-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 12/28/17 12:58

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	85.4	100	85	70-135	
o-Terphenyl	50.7	50.0	101	70-135	

Lab Batch #: 3036672 **Sample:** 571792-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 12/21/17 18:36

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	82.7	99.8	83	70-135	
o-Terphenyl	44.6	49.9	89	70-135	

Lab Batch #: 3036624 **Sample:** 571522-005 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 12/21/17 23:31

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0310	0.0300	103	80-120	
4-Bromofluorobenzene	0.0293	0.0300	98	80-120	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: COG-Gunner 16 SWD #1 (Pad Area)

Work Orders : 571798,

Project ID:

Lab Batch #: 3036675 **Sample:** 571798-009 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 12/22/17 00:47

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0304	0.0300	101	80-120	
4-Bromofluorobenzene	0.0303	0.0300	101	80-120	

Lab Batch #: 3037188 **Sample:** 572153-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 12/28/17 17:56

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	76.9	100	77	70-135	
o-Terphenyl	41.2	50.0	82	70-135	

Lab Batch #: 3036624 **Sample:** 571522-005 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 12/21/17 15:15

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0268	0.0300	89	80-120	
4-Bromofluorobenzene	0.0275	0.0300	92	80-120	

Lab Batch #: 3036672 **Sample:** 571792-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 12/21/17 18:56

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	80.3	100	80	70-135	
o-Terphenyl	42.9	50.0	86	70-135	

Lab Batch #: 3036675 **Sample:** 571798-009 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 12/22/17 01:06

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0324	0.0300	108	80-120	
4-Bromofluorobenzene	0.0325	0.0300	108	80-120	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: COG-Gunner 16 SWD #1 (Pad Area)

Work Orders : 571798,

Project ID:

Lab Batch #: 3037188 **Sample:** 572153-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 12/28/17 18:15

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	88.4	100	88	70-135	
o-Terphenyl	43.9	50.0	88	70-135	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

BS / BSD Recoveries

Project Name: COG-Gunner 16 SWD #1 (Pad Area)

Work Order #: 571798 **Project ID:**

Analyst: ALJ **Date Prepared:** 12/21/2017 **Date Analyzed:** 12/21/2017

Lab Batch ID: 3036624 **Sample:** 7636429-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00202	0.101	0.0826	82	0.100	0.0851	85	3	70-130	35	
Toluene	<0.00202	0.101	0.0764	76	0.100	0.0786	79	3	70-130	35	
Ethylbenzene	<0.00202	0.101	0.0828	82	0.100	0.0850	85	3	71-129	35	
m,p-Xylenes	<0.00403	0.202	0.165	82	0.201	0.169	84	2	70-135	35	
o-Xylene	<0.00202	0.101	0.0770	76	0.100	0.0785	79	2	71-133	35	

Analyst: ALJ **Date Prepared:** 12/21/2017 **Date Analyzed:** 12/22/2017

Lab Batch ID: 3036675 **Sample:** 7636472-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00200	0.0998	0.0872	87	0.100	0.0854	85	2	70-130	35	
Toluene	<0.00200	0.0998	0.0805	81	0.100	0.0788	79	2	70-130	35	
Ethylbenzene	<0.00200	0.0998	0.0871	87	0.100	0.0848	85	3	71-129	35	
m,p-Xylenes	<0.00399	0.200	0.172	86	0.201	0.167	83	3	70-135	35	
o-Xylene	<0.00200	0.0998	0.0824	83	0.100	0.0798	80	3	71-133	35	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

BS / BSD Recoveries

Project Name: COG-Gunner 16 SWD #1 (Pad Area)

Work Order #: 571798 **Project ID:**

Analyst: LRI **Date Prepared:** 12/26/2017 **Date Analyzed:** 12/26/2017

Lab Batch ID: 3036899 **Sample:** 7636590-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<5.00	250	244	98	250	241	96	1	90-110	20	

Analyst: LRI **Date Prepared:** 12/26/2017 **Date Analyzed:** 12/27/2017

Lab Batch ID: 3036946 **Sample:** 7636593-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<5.00	250	253	101	250	250	100	1	90-110	20	

Analyst: ARM **Date Prepared:** 12/21/2017 **Date Analyzed:** 12/21/2017

Lab Batch ID: 3036672 **Sample:** 7636449-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	1000	881	88	1000	882	88	0	70-135	35	
Diesel Range Organics (DRO)	<15.0	1000	914	91	1000	919	92	1	70-135	35	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

BS / BSD Recoveries

Project Name: COG-Gunner 16 SWD #1 (Pad Area)

Work Order #: 571798 **Project ID:**

Analyst: JUM **Date Prepared:** 12/28/2017 **Date Analyzed:** 12/28/2017

Lab Batch ID: 3037188 **Sample:** 7636777-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	1000	939	94	1000	866	87	8	70-135	35	
Diesel Range Organics (DRO)	<15.0	1000	975	98	1000	920	92	6	70-135	35	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

Form 3 - MS / MSD Recoveries

Project Name: COG-Gunner 16 SWD #1 (Pad Area)

Work Order # : 571798 **Project ID:**

Lab Batch ID: 3036624 **QC- Sample ID:** 571522-005 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 12/21/2017 **Date Prepared:** 12/21/2017 **Analyst:** ALJ

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00199	0.0994	0.0734	74	0.0998	0.0880	88	18	70-130	35	
Toluene	<0.00199	0.0994	0.0689	69	0.0998	0.0833	83	19	70-130	35	X
Ethylbenzene	<0.00199	0.0994	0.0721	73	0.0998	0.0767	77	6	71-129	35	
m,p-Xylenes	<0.00398	0.199	0.142	71	0.200	0.138	69	3	70-135	35	X
o-Xylene	<0.00199	0.0994	0.0675	68	0.0998	0.0685	69	1	71-133	35	X

Lab Batch ID: 3036675 **QC- Sample ID:** 571798-009 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 12/22/2017 **Date Prepared:** 12/21/2017 **Analyst:** ALJ

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00201	0.100	0.0767	77	0.101	0.0767	76	0	70-130	35	
Toluene	<0.00201	0.100	0.0707	71	0.101	0.0702	70	1	70-130	35	
Ethylbenzene	<0.00201	0.100	0.0745	75	0.101	0.0747	74	0	71-129	35	
m,p-Xylenes	<0.00402	0.201	0.146	73	0.202	0.147	73	1	70-135	35	
o-Xylene	<0.00201	0.100	0.0694	69	0.101	0.0702	70	1	71-133	35	X

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable
N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

Form 3 - MS / MSD Recoveries

Project Name: COG-Gunner 16 SWD #1 (Pad Area)

Work Order # : 571798 **Project ID:**

Lab Batch ID: 3036899 **QC- Sample ID:** 571456-002 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 12/26/2017 **Date Prepared:** 12/26/2017 **Analyst:** LRI

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	1050	245	1210	65	245	1210	65	0	90-110	20	X

Lab Batch ID: 3036899 **QC- Sample ID:** 572053-007 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 12/26/2017 **Date Prepared:** 12/26/2017 **Analyst:** LRI

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	292	246	551	105	246	550	105	0	90-110	20	

Lab Batch ID: 3036946 **QC- Sample ID:** 571798-005 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 12/27/2017 **Date Prepared:** 12/26/2017 **Analyst:** LRI

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	29.0	250	289	104	250	290	104	0	90-110	20	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable

N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

Form 3 - MS / MSD Recoveries

Project Name: COG-Gunner 16 SWD #1 (Pad Area)

Work Order # : 571798 **Project ID:**

Lab Batch ID: 3036946 **QC- Sample ID:** 571798-014 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 12/27/2017 **Date Prepared:** 12/26/2017 **Analyst:** LRI

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	45.1	245	295	102	245	295	102	0	90-110	20	

Lab Batch ID: 3036672 **QC- Sample ID:** 571792-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 12/21/2017 **Date Prepared:** 12/21/2017 **Analyst:** ARM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	998	858	86	1000	841	84	2	70-135	35	
Diesel Range Organics (DRO)	<15.0	998	869	87	1000	857	86	1	70-135	35	

Lab Batch ID: 3037188 **QC- Sample ID:** 572153-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 12/28/2017 **Date Prepared:** 12/28/2017 **Analyst:** JUM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	1000	798	80	1000	916	92	14	70-135	35	
Diesel Range Organics (DRO)	18.0	1000	771	75	1000	755	74	2	70-135	35	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable

N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

Analysis Request of Chain of Custody Record

571798 Page 1 of 2

Tetra Tech, Inc.

4000 N. Big Spring Street, Ste
401 Midland, Texas 79705
Tel (432) 682-4559
Fax (432) 682-3946

Client Name: COG

Site Manager: Ike Tavarez

Project Name: Gunner 16 SWD #1 (Pad Area)

Project Location (county, state): Lea Co. NM

Project #:

Invoice to: COG

Receiving Laboratory: Xenco

Sampler Signature: Juan Cinzalez

Comments: Run deeper samples if benzene exceeds 10 mg/kg, total BTEX exceeds 50 mg/kg, or TPH exceeds 5,000 mg/kg

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING DATE	SAMPLING TIME	MATRIX WATER	MATRIX SOIL	PRESERVATIVE HCL	PRESERVATIVE HNO_3	PRESERVATIVE ICE	# CONTAINERS	FILTERED (Y/N)
	BH-1 0-1	12/18/17			X			X		
	" 2-3				X			X		
	" 4-5				X			X		
	" 6-7				X			X		
	" 9-10				X			X		
	" 14-15				X			X		
	" 19-20				X			X		
	" 24-25				X			X		
	BH-2 0-1				X			X		
	2-3				X			X		

ANALYSIS REQUEST (Circle or Specify Method No.)

BTEX 8021B BTEX 8260B	TPH TX1005 (Ext to C35)	TPH 8015M (GRO - DRO - ORO - MRO)	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC/MS Vol. 8260B / 624	GC/MS Semi. Vol. 8270C/625	PCB's 8082 / 608	NORM	PLM (Asbestos)	Chloride	Chloride Sulfate TDS	General Water Chemistry (see attached list)	Anion/Cation Balance	Hold
X														X				
X		X												X				
														X				
														X				
														X				
														X				
														X				
														X				
														X				
														X				
														X				

Relinquished by: Date: 12/19/17 Time: 2:35

Received by: Jasmine Hreaves Date: 12/19 Time: 2:35

Relinquished by: Date: 12-19-17 Time: 1605

Received by: KRAMER Date: 12.20.17 Time: 1522

Relinquished by: Date: Time:

Received by: Date: Time:

LAB USE ONLY

Sample Temperature: 0.1

(Circle) HAND DEL

REMARKS:

RUSH: Same Day 24 hr

Temp: 1.2 IR ID:R-8

CF:(0-6: -0.2°C)
(6-23: +0.2°C)

Corrected Temp: 1.0

ORIGINAL COPY

Final 1.001

Page 23 of 25

Analysis Request of Chain of Custody Record

571798 Page 2 of 2

Tetra Tech, Inc.

4000 N. Big Spring Street, Ste
401 Midland,Texas 79705
Tel (432) 682-4559
Fax (432) 682-3946

Client Name: COG

Site Manager: Ike Tavarez

Project Name: Gunner 16 SWD #1 (Pad Area)

Project Location: (county, state) Lea Co NM

Project #:

Invoice to: COG

Receiving Laboratory: Xenco

Sampler Signature: Dan Cinzals

Comments: see page 1 of 2

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING DATE	SAMPLING TIME	MATRIX WATER	MATRIX SOIL	PRESERVATIVE HCL	PRESERVATIVE HNO_3	PRESERVATIVE ICE	# CONTAINERS	FILTERED (Y/N)
	BH-2 4-5	12/18/17			X			X		
	" 6-7				X			X		
	" 9-10				X			X		
	" 14-15				X			X		
	BH-3 0-1				X			X		
	" 2-3				X			X		
	" 4-5				X			X		
	" 6-7				X			X		
	" 9-10				X			X		
	" 14-15				X			X		

ANALYSIS REQUEST
(Circle or Specify Method No.)

BTEX 8021B	BTEX 8260B	TPH TX1005 (Ext to C35)	TPH 8015M (GRO - DRO - ORO - MRO)	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC/MS Vol. 8260B / 624	GC/MS Semi. Vol. 8270C/625	PCB's 8082 / 608	NORM	PLM (Asbestos)	Chloride	Sulfate	TDS	General Water Chemistry (see attached list)	Anion/Cation Balance					Hold
X		X													X									

Relinquished by: Date: 12/19/17 Time: 236

Received by: Jennifer Stevens Date: 12/19 Time: 2:35

Relinquished by: Date: 12-19-17 Time: 1605

Received by: Date: Time:

Relinquished by: Date: Time:

Received by: Date: Time:

LAB USE ONLY

REMARKS:

RUSH: Same Day 24 hr 48 hr 72 hr

Sample Temper

0.1

Temp: 1.7 IR ID:R-8

CF:(0-6: -0.2°C)
(6-23: +0.2°C)

Corrected Temp: 1.0

(Circle) HAND

ORIGINAL COPY

Final 1.001

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: Tetra Tech- Midland

Date/ Time Received: 12/19/2017 04:05:00 PM

Work Order #: 571798

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)?	1
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seals intact on shipping container/ cooler?	**Yes**
#5 Custody Seals intact on sample bottles?	**Yes**
#6*Custody Seals Signed and dated?	**Yes**
#7 *Chain of Custody present?	**Yes**
#8 Any missing/extra samples?	**No**
#9 Chain of Custody signed when relinquished/ received?	**Yes**
#10 Chain of Custody agrees with sample labels/matrix?	**Yes**
#11 Container label(s) legible and intact?	**Yes**
#12 Samples in proper container/ bottle?	**Yes**
#13 Samples properly preserved?	**Yes**
#14 Sample container(s) intact?	**Yes**
#15 Sufficient sample amount for indicated test(s)?	**Yes**
#16 All samples received within hold time?	**Yes**
#17 Subcontract of sample(s)?	**N/A**
#18 Water 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: Jessica Kramer Date: 12/20/2017
Jessica Kramer

Checklist reviewed by: Kelsey Brooks Date: 12/26/2017
Kelsey Brooks

Analytical Report 571800

for

Tetra Tech- Midland

Project Manager: Ike Tavarez

COG-Gunner 16 SWD #1 (Pasture)

28-DEC-17

Collected By: Client

1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-17-23), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab code: TX01468):
Texas (T104704295-17-15), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab code: TX00127): Texas (T104704221-17-12)
Xenco-Lubbock (EPA Lab code: TX00139): Texas (T104704219-17-16)
Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-17-13)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-17-3)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757)
Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)

28-DEC-17

Project Manager: **Ike Tavarez**
Tetra Tech- Midland
4000 N. Big Spring Suite 401
Midland, TX 79705

Reference: XENCO Report No(s): **571800**
COG-Gunner 16 SWD #1 (Pasture)
Project Address: Lea County NM

Ike Tavarez:

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) 571800. 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. 571800 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,

Mike Kimmel
Client Services Manager

Sample Cross Reference 571800

Tetra Tech- Midland, Midland, TX

COG-Gunner 16 SWD #1 (Pasture)

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
BH-4 0-1	S	12-19-17 00:00	0 - 1	571800-001
BH-4 2-3	S	12-19-17 00:00	2 - 3	571800-002
BH-4 4-5	S	12-19-17 00:00	4 - 5	571800-003
BH-4 6-7	S	12-19-17 00:00	6 - 7	571800-004
BH-4 9-10	S	12-19-17 00:00	9 - 10	571800-005
BH-4 14-15	S	12-19-17 00:00	14 - 15	571800-006
BH-5 0-1	S	12-19-17 00:00	0 - 1	571800-007
BH-5 2-3	S	12-19-17 00:00	2 - 3	571800-008
BH-5 4-5	S	12-19-17 00:00	4 - 5	571800-009
BH-5 6-7	S	12-19-17 00:00	6 - 7	571800-010
BH-5 9-10	S	12-19-17 00:00	9 - 10	571800-011
BH-5 14-15	S	12-19-17 00:00	14 - 15	571800-012
BH-6 0-1	S	12-19-17 00:00	0 - 1	571800-013
BH-6 2-3	S	12-19-17 00:00	2 - 3	571800-014
BH-6 4-6	S	12-19-17 00:00	4 - 6	571800-015
BH-6 6-7	S	12-19-17 00:00	6 - 7	571800-016
BH-6 9-10	S	12-19-17 00:00	9 - 10	571800-017
BH-6 14-15	S	12-19-17 00:00	14 - 15	571800-018

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3036675 BTEX by EPA 8021B

Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Certificate of Analysis Summary 571800

Tetra Tech- Midland, Midland, TX

Project Name: COG-Gunner 16 SWD #1 (Pasture)

Project Id:
Contact: Ike Tavarez
Project Location: Lea County NM

Date Received in Lab: Tue Dec-19-17 04:05 pm
Report Date: 28-DEC-17
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	571800-001		571800-002		571800-003		571800-004		571800-005		571800-006	
	Field Id:	BH-4 0-1		BH-4 2-3		BH-4 4-5		BH-4 6-7		BH-4 9-10		BH-4 14-15	
	Depth:	0-1		2-3		4-5		6-7		9-10		14-15	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Dec-19-17 00:00		Dec-19-17 00:00		Dec-19-17 00:00		Dec-19-17 00:00		Dec-19-17 00:00		Dec-19-17 00:00	
BTEX by EPA 8021B	***Extracted:***	Dec-21-17 17:00		Dec-21-17 17:00									
	Analyzed:	Dec-22-17 03:18		Dec-22-17 03:37									
	Units/RL:	mg/kg	RL	mg/kg	RL								
Benzene		<0.00202	0.00202	<0.00200	0.00200								
Toluene		<0.00202	0.00202	<0.00200	0.00200								
Ethylbenzene		<0.00202	0.00202	<0.00200	0.00200								
m,p-Xylenes		<0.00404	0.00404	<0.00401	0.00401								
o-Xylene		<0.00202	0.00202	<0.00200	0.00200								
Total Xylenes		<0.00202	0.00202	<0.00200	0.00200								
Total BTEX		<0.00202	0.00202	<0.00200	0.00200								
Inorganic Anions by EPA 300/300.1	***Extracted:***	Dec-26-17 12:06		Dec-26-17 12:06		Dec-26-17 12:06		Dec-26-17 12:06		Dec-26-17 12:50		Dec-26-17 12:50	
	Analyzed:	Dec-27-17 13:26		Dec-27-17 13:33		Dec-27-17 13:40		Dec-27-17 13:47		Dec-28-17 10:10		Dec-27-17 15:03	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		10.0	4.97	40.2	4.99	813	4.98	5.60	4.93	43.4	4.91	69.3	4.95
TPH By SW8015 Mod	***Extracted:***	Dec-21-17 07:00		Dec-21-17 07:00									
	Analyzed:	Dec-22-17 01:07		Dec-22-17 01:29									
	Units/RL:	mg/kg	RL	mg/kg	RL								
Gasoline Range Hydrocarbons (GRO)		<15.0	15.0	<14.9	14.9								
Diesel Range Organics (DRO)		<15.0	15.0	<14.9	14.9								
Oil Range Hydrocarbons (ORO)		<15.0	15.0	<14.9	14.9								
Total TPH		<15.0	15.0	<14.9	14.9								

Mike Kimmel
Client Services Manager

Certificate of Analysis Summary 571800

Tetra Tech- Midland, Midland, TX

Project Name: COG-Gunner 16 SWD #1 (Pasture)

Project Id:
Contact: Ike Tavarez
Project Location: Lea County NM

Date Received in Lab: Tue Dec-19-17 04:05 pm
Report Date: 28-DEC-17
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	571800-007		571800-008		571800-009		571800-010		571800-011		571800-012	
	Field Id:	BH-5 0-1		BH-5 2-3		BH-5 4-5		BH-5 6-7		BH-5 9-10		BH-5 14-15	
	Depth:	0-1		2-3		4-5		6-7		9-10		14-15	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Dec-19-17 00:00		Dec-19-17 00:00		Dec-19-17 00:00		Dec-19-17 00:00		Dec-19-17 00:00		Dec-19-17 00:00	
BTEX by EPA 8021B	***Extracted:***	Dec-21-17 17:00		Dec-21-17 17:00									
	Analyzed:	Dec-22-17 03:56		Dec-22-17 04:14									
	Units/RL:	mg/kg	RL	mg/kg	RL								
Benzene		<0.00200	0.00200	<0.00200	0.00200								
Toluene		<0.00200	0.00200	<0.00200	0.00200								
Ethylbenzene		<0.00200	0.00200	<0.00200	0.00200								
m,p-Xylenes		<0.00399	0.00399	<0.00400	0.00400								
o-Xylene		<0.00200	0.00200	<0.00200	0.00200								
Total Xylenes		<0.00200	0.00200	<0.00200	0.00200								
Total BTEX		<0.00200	0.00200	<0.00200	0.00200								
Inorganic Anions by EPA 300/300.1	***Extracted:***	Dec-26-17 12:50		Dec-26-17 12:50		Dec-26-17 12:50		Dec-26-17 12:50		Dec-26-17 12:50		Dec-26-17 12:50	
	Analyzed:	Dec-27-17 15:10		Dec-27-17 15:17		Dec-27-17 15:24		Dec-27-17 15:44		Dec-27-17 15:51		Dec-27-17 15:58	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		2850	24.7	6380	49.2	864	4.92	<4.99	4.99	8.35	4.96	67.1	5.00
TPH By SW8015 Mod	***Extracted:***	Dec-21-17 07:00		Dec-21-17 07:00									
	Analyzed:	Dec-22-17 01:49		Dec-22-17 02:09									
	Units/RL:	mg/kg	RL	mg/kg	RL								
Gasoline Range Hydrocarbons (GRO)		<15.0	15.0	<15.0	15.0								
Diesel Range Organics (DRO)		<15.0	15.0	<15.0	15.0								
Oil Range Hydrocarbons (ORO)		<15.0	15.0	<15.0	15.0								
Total TPH		<15.0	15.0	<15.0	15.0								

Mike Kimmel
Client Services Manager

Certificate of Analysis Summary 571800

Tetra Tech- Midland, Midland, TX

Project Name: COG-Gunner 16 SWD #1 (Pasture)

Project Id:
Contact: Ike Tavarez
Project Location: Lea County NM

Date Received in Lab: Tue Dec-19-17 04:05 pm
Report Date: 28-DEC-17
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	571800-013		571800-014		571800-015		571800-016		571800-017		571800-018	
	Field Id:	BH-6 0-1		BH-6 2-3		BH-6 4-6		BH-6 6-7		BH-6 9-10		BH-6 14-15	
	Depth:	0-1		2-3		4-6		6-7		9-10		14-15	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Dec-19-17 00:00		Dec-19-17 00:00		Dec-19-17 00:00		Dec-19-17 00:00		Dec-19-17 00:00		Dec-19-17 00:00	
BTEX by EPA 8021B	***Extracted:***	Dec-21-17 17:00		Dec-21-17 17:00									
	Analyzed:	Dec-22-17 04:33		Dec-22-17 04:52									
	Units/RL:	mg/kg	RL	mg/kg	RL								
Benzene		<0.00201	0.00201	<0.00199	0.00199								
Toluene		<0.00201	0.00201	<0.00199	0.00199								
Ethylbenzene		<0.00201	0.00201	<0.00199	0.00199								
m,p-Xylenes		<0.00402	0.00402	<0.00398	0.00398								
o-Xylene		<0.00201	0.00201	<0.00199	0.00199								
Total Xylenes		<0.00201	0.00201	<0.00199	0.00199								
Total BTEX		<0.00201	0.00201	<0.00199	0.00199								
Inorganic Anions by EPA 300/300.1	***Extracted:***	Dec-26-17 12:50		Dec-26-17 12:50		Dec-26-17 12:50		Dec-26-17 12:50		Dec-26-17 12:50		Dec-26-17 12:50	
	Analyzed:	Dec-27-17 16:05		Dec-27-17 16:12		Dec-27-17 16:40		Dec-28-17 10:45		Dec-27-17 16:47		Dec-27-17 17:08	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		39.2	4.97	3390	24.6	3890	24.9	5.52	4.90	85.6	4.99	209	4.92
TPH By SW8015 Mod	***Extracted:***	Dec-21-17 16:00		Dec-21-17 16:00									
	Analyzed:	Dec-22-17 03:54		Dec-22-17 04:54									
	Units/RL:	mg/kg	RL	mg/kg	RL								
Gasoline Range Hydrocarbons (GRO)		<15.0	15.0	<15.0	15.0								
Diesel Range Organics (DRO)		<15.0	15.0	<15.0	15.0								
Oil Range Hydrocarbons (ORO)		<15.0	15.0	<15.0	15.0								
Total TPH		<15.0	15.0	<15.0	15.0								

Mike Kimmel
Client Services Manager

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

Form 2 - Surrogate Recoveries

Project Name: COG-Gunner 16 SWD #1 (Pasture)

Work Orders : 571800,

Project ID:

Lab Batch #: 3036672 **Sample:** 571800-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 12/22/17 01:07

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	76.1	99.8	76	70-135	
o-Terphenyl	39.9	49.9	80	70-135	

Lab Batch #: 3036672 **Sample:** 571800-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 12/22/17 01:29

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	80.7	99.6	81	70-135	
o-Terphenyl	41.8	49.8	84	70-135	

Lab Batch #: 3036672 **Sample:** 571800-007 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 12/22/17 01:49

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	83.5	99.8	84	70-135	
o-Terphenyl	43.2	49.9	87	70-135	

Lab Batch #: 3036672 **Sample:** 571800-008 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 12/22/17 02:09

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	89.0	99.8	89	70-135	
o-Terphenyl	45.5	49.9	91	70-135	

Lab Batch #: 3036675 **Sample:** 571800-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 12/22/17 03:18

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0273	0.0300	91	80-120	
4-Bromofluorobenzene	0.0270	0.0300	90	80-120	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: COG-Gunner 16 SWD #1 (Pasture)

Work Orders : 571800,

Project ID:

Lab Batch #: 3036675 **Sample:** 571800-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 12/22/17 03:37

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0289	0.0300	96	80-120	
4-Bromofluorobenzene	0.0261	0.0300	87	80-120	

Lab Batch #: 3036677 **Sample:** 571800-013 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 12/22/17 03:54

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	73.5	99.9	74	70-135	
o-Terphenyl	39.6	50.0	79	70-135	

Lab Batch #: 3036675 **Sample:** 571800-007 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 12/22/17 03:56

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0278	0.0300	93	80-120	
4-Bromofluorobenzene	0.0261	0.0300	87	80-120	

Lab Batch #: 3036675 **Sample:** 571800-008 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 12/22/17 04:14

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0283	0.0300	94	80-120	
4-Bromofluorobenzene	0.0282	0.0300	94	80-120	

Lab Batch #: 3036675 **Sample:** 571800-013 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 12/22/17 04:33

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0288	0.0300	96	80-120	
4-Bromofluorobenzene	0.0260	0.0300	87	80-120	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: COG-Gunner 16 SWD #1 (Pasture)

Work Orders : 571800,

Project ID:

Lab Batch #: 3036675 **Sample:** 571800-014 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 12/22/17 04:52

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0287	0.0300	96	80-120	
4-Bromofluorobenzene	0.0279	0.0300	93	80-120	

Lab Batch #: 3036677 **Sample:** 571800-014 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 12/22/17 04:54

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	83.3	99.7	84	70-135	
o-Terphenyl	43.6	49.9	87	70-135	

Lab Batch #: 3036672 **Sample:** 7636449-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 12/21/17 17:13

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	83.4	100	83	70-135	
o-Terphenyl	43.3	50.0	87	70-135	

Lab Batch #: 3036675 **Sample:** 7636472-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 12/22/17 02:03

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0269	0.0300	90	80-120	
4-Bromofluorobenzene	0.0241	0.0300	80	80-120	

Lab Batch #: 3036677 **Sample:** 7636450-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 12/22/17 02:51

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	80.3	100	80	70-135	
o-Terphenyl	41.5	50.0	83	70-135	

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: COG-Gunner 16 SWD #1 (Pasture)

Work Orders : 571800,

Project ID:

Lab Batch #: 3036672 **Sample:** 7636449-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 12/21/17 17:33

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	84.1	100	84	70-135	
o-Terphenyl	45.3	50.0	91	70-135	

Lab Batch #: 3036675 **Sample:** 7636472-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 12/22/17 00:09

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0309	0.0300	103	80-120	
4-Bromofluorobenzene	0.0299	0.0300	100	80-120	

Lab Batch #: 3036677 **Sample:** 7636450-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 12/22/17 03:10

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	77.3	100	77	70-135	
o-Terphenyl	40.7	50.0	81	70-135	

Lab Batch #: 3036672 **Sample:** 7636449-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 12/21/17 17:53

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	83.7	100	84	70-135	
o-Terphenyl	45.4	50.0	91	70-135	

Lab Batch #: 3036675 **Sample:** 7636472-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 12/22/17 00:28

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0290	0.0300	97	80-120	
4-Bromofluorobenzene	0.0276	0.0300	92	80-120	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: COG-Gunner 16 SWD #1 (Pasture)

Work Orders : 571800,

Project ID:

Lab Batch #: 3036677 **Sample:** 7636450-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 12/22/17 03:32

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	79.2	100	79	70-135	
o-Terphenyl	41.8	50.0	84	70-135	

Lab Batch #: 3036672 **Sample:** 571792-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 12/21/17 18:36

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	82.7	99.8	83	70-135	
o-Terphenyl	44.6	49.9	89	70-135	

Lab Batch #: 3036675 **Sample:** 571798-009 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 12/22/17 00:47

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0304	0.0300	101	80-120	
4-Bromofluorobenzene	0.0303	0.0300	101	80-120	

Lab Batch #: 3036677 **Sample:** 571800-013 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 12/22/17 04:14

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	74.4	99.8	75	70-135	
o-Terphenyl	40.5	49.9	81	70-135	

Lab Batch #: 3036672 **Sample:** 571792-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 12/21/17 18:56

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	80.3	100	80	70-135	
o-Terphenyl	42.9	50.0	86	70-135	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: COG-Gunner 16 SWD #1 (Pasture)

Work Orders : 571800,

Project ID:

Lab Batch #: 3036675 **Sample:** 571798-009 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 12/22/17 01:06

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0324	0.0300	108	80-120	
4-Bromofluorobenzene	0.0325	0.0300	108	80-120	

Lab Batch #: 3036677 **Sample:** 571800-013 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 12/22/17 04:34

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	82.6	99.9	83	70-135	
o-Terphenyl	43.6	50.0	87	70-135	

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

BS / BSD Recoveries

Project Name: COG-Gunner 16 SWD #1 (Pasture)

Work Order #: 571800 **Project ID:**

Analyst: ALJ **Date Prepared:** 12/21/2017 **Date Analyzed:** 12/22/2017

Lab Batch ID: 3036675 **Sample:** 7636472-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00200	0.0998	0.0872	87	0.100	0.0854	85	2	70-130	35	
Toluene	<0.00200	0.0998	0.0805	81	0.100	0.0788	79	2	70-130	35	
Ethylbenzene	<0.00200	0.0998	0.0871	87	0.100	0.0848	85	3	71-129	35	
m,p-Xylenes	<0.00399	0.200	0.172	86	0.201	0.167	83	3	70-135	35	
o-Xylene	<0.00200	0.0998	0.0824	83	0.100	0.0798	80	3	71-133	35	

Analyst: LRI **Date Prepared:** 12/26/2017 **Date Analyzed:** 12/27/2017

Lab Batch ID: 3036946 **Sample:** 7636593-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<5.00	250	253	101	250	250	100	1	90-110	20	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

Version: 1.%

BS / BSD Recoveries

Project Name: COG-Gunner 16 SWD #1 (Pasture)

Work Order #: 571800 **Project ID:**

Analyst: LRI **Date Prepared:** 12/26/2017 **Date Analyzed:** 12/27/2017

Lab Batch ID: 3037043 **Sample:** 7636594-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<5.00	250	254	102	250	252	101	1	90-110	20	

Analyst: ARM **Date Prepared:** 12/21/2017 **Date Analyzed:** 12/21/2017

Lab Batch ID: 3036672 **Sample:** 7636449-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	1000	881	88	1000	882	88	0	70-135	35	
Diesel Range Organics (DRO)	<15.0	1000	914	91	1000	919	92	1	70-135	35	

Analyst: ARM **Date Prepared:** 12/21/2017 **Date Analyzed:** 12/22/2017

Lab Batch ID: 3036677 **Sample:** 7636450-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	1000	813	81	1000	851	85	5	70-135	35	
Diesel Range Organics (DRO)	<15.0	1000	845	85	1000	866	87	2	70-135	35	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

Version: 1.%

Form 3 - MS / MSD Recoveries

Project Name: COG-Gunner 16 SWD #1 (Pasture)

Work Order # : 571800 **Project ID:**

Lab Batch ID: 3036675 **QC- Sample ID:** 571798-009 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 12/22/2017 **Date Prepared:** 12/21/2017 **Analyst:** ALJ

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00201	0.100	0.0767	77	0.101	0.0767	76	0	70-130	35	
Toluene	<0.00201	0.100	0.0707	71	0.101	0.0702	70	1	70-130	35	
Ethylbenzene	<0.00201	0.100	0.0745	75	0.101	0.0747	74	0	71-129	35	
m,p-Xylenes	<0.00402	0.201	0.146	73	0.202	0.147	73	1	70-135	35	
o-Xylene	<0.00201	0.100	0.0694	69	0.101	0.0702	70	1	71-133	35	X

Lab Batch ID: 3036946 **QC- Sample ID:** 571798-005 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 12/27/2017 **Date Prepared:** 12/26/2017 **Analyst:** LRI

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	29.0	250	289	104	250	290	104	0	90-110	20	

Lab Batch ID: 3036946 **QC- Sample ID:** 571798-014 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 12/27/2017 **Date Prepared:** 12/26/2017 **Analyst:** LRI

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	45.1	245	295	102	245	295	102	0	90-110	20	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable
N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

Form 3 - MS / MSD Recoveries

Project Name: COG-Gunner 16 SWD #1 (Pasture)

Work Order # : 571800 **Project ID:**

Lab Batch ID: 3037043 **QC- Sample ID:** 571800-005 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 12/28/2017 **Date Prepared:** 12/26/2017 **Analyst:** LRI

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	43.4	246	287	99	246	288	99	0	90-110	20	

Lab Batch ID: 3037043 **QC- Sample ID:** 571800-016 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 12/28/2017 **Date Prepared:** 12/26/2017 **Analyst:** LRI

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	5.52	245	242	97	245	251	100	4	90-110	20	

Lab Batch ID: 3036672 **QC- Sample ID:** 571792-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 12/21/2017 **Date Prepared:** 12/21/2017 **Analyst:** ARM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	998	858	86	1000	841	84	2	70-135	35	
Diesel Range Organics (DRO)	<15.0	998	869	87	1000	857	86	1	70-135	35	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable

N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

Form 3 - MS / MSD Recoveries

Project Name: COG-Gunner 16 SWD #1 (Pasture)

Work Order # : 571800 **Project ID:**

Lab Batch ID: 3036677 **QC- Sample ID:** 571800-013 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 12/22/2017 **Date Prepared:** 12/21/2017 **Analyst:** ARM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	998	823	82	999	830	83	1	70-135	35	
Diesel Range Organics (DRO)	<15.0	998	851	85	999	853	85	0	70-135	35	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable

N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

Analysis Request of Chain of Custody Record

571800 Page 1 of 2

Tetra Tech, Inc.

4000 N. Big Spring Street, Ste
401 Midland, Texas 79705
Tel (432) 682-4559
Fax (432) 682-3946

Client Name: COG

Site Manager: Ike Tavarez

Project Name: Gunner 16 SWD #1 (Pasture)

Project Location: (county, state) Lea Co. NM

Project #:

Invoice to: COG

Receiving Laboratory: Xenco

Sampler Signature: Alan Gonzales

Comments: Run deeper samples if benzene exceeds 10 mg/kg, total BTEX exceeds 50mg/kg or TPH exceeds 5,000 mg/kg

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING DATE	SAMPLING TIME	MATRIX: WATER	MATRIX: SOIL	MATRIX:	PRESERVATIVE METHOD: HCL	PRESERVATIVE METHOD: HNO_3	PRESERVATIVE METHOD: ICE	PRESERVATIVE METHOD:	PRESERVATIVE METHOD:	# CONTAINERS	FILTERED (Y/N)
	BH-4 0-1	12/19/17			X				X				
	" 2-3				X				X				
	" 4-5				X				X				
	" 6-7				X				X				
	" 9-10				X				X				
	" 14-15				X				X				
	BH-5 0-1				X				X				
	" 2-3				X				X				
	" 4-5				X				X				
	" 6-7				X				X				

ANALYSIS REQUEST (Circle or Specify Method No.)

BTEX 8021B	BTEX 8260B	TPH TX1005 (Ext to C35)	TPH 8015M (GRO - DRO - ORO - MRO)	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC/MS Vol. 8260B / 624	GC/MS Semi. Vol. 8270C/625	PCB's 8082 / 608	NORM	PLM (Asbestos)	Chloride	Chloride	Sulfate	TDS	General Water Chemistry (see attached list)	Anion/Cation Balance					Hold
X		X	X												X										
X		X	X												X										
															X										
															X										
															X										
															X										
															X										
X		X	X												X										
X		X	X												X										
															X										
															X										

Relinquished by: Date: 12/19/17 Time: 23:5

Received by: Jasmine Shearer Date: 12/19 Time: 7:35

Relinquished by: J Shearer Date: 12-19-17 Time: 1605

Received by: [illegible] Date: 12.20.17 Time: 1520

Relinquished by: Date: Time:

Received by: Date: Time:

LAB USE ONLY

Sample Temperature 0.1

(Circle) HAND DELIV

REMARKS:

☐ RUSH: Same Day 24 hr 48 hr 72 hr

☐ Rush Charges Authorized

Temp: 1.2 IR ID:R-8

CF:(0-6: -0.2°C)
(6-23: +0.2°C)

Corrected Temp: 1.0

ORIGINAL COPY

Final 1.000

Page 20 of 22

Analysis Request of Chain of Custody Record

571800 Page 2 of 2

Tetra Tech, Inc.

4000 N. Big Spring Street, Ste
401 Midland,Texas 79705
Tel (432) 682-4559
Fax (432) 682-3946

Client Name: COG

Site Manager: Ike Tavarez

Project Name: Gunner 16 SWD #1 (Pasture)

Project Location: (county, state) Lea Co NM

Project #:

Invoice to: COG

Receiving Laboratory: Xeno

Sampler Signature: Dan Gonzales

Comments: See page 1 of 2

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING DATE	SAMPLING TIME	MATRIX WATER	MATRIX SOIL	MATRIX	PRESERVATIVE METHOD HCL	PRESERVATIVE METHOD HNO_3	PRESERVATIVE METHOD ICE	PRESERVATIVE METHOD	PRESERVATIVE METHOD	# CONTAINERS	FILTERED (Y/N)
	BH-5 9-10	12/11/17			X				X				
	" 14-15				X				X				
	BH-6 0-1				X				X				
	" 2-3				X				X				
	" 4-5				X				X				
	" 6-7				X				X				
	" 9-10				X				X				
	" 14-15				X				X				

ANALYSIS REQUEST
(Circle or Specify Method No.)

BTEX 8021B	BTEX 8260B	TPH TX1005 (Ext to C35)	TPH 8015M (GRO - DRO - ~~GRO~~ MRO)	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC/MS Vol. 8260B / 624	GC/MS Semi. Vol. 8270C/625	PCB's 8082 / 608	NORM	PLM (Asbestos)	Chloride	Chloride Sulfate TDS	General Water Chemistry (see attached list)	Anion/Cation Balance	Hold
X		X	X												X				
X		X	X												X				
															X				
															X				
															X				
															X				
															X				
															X				

Relinquished by: Date: Time: 12/19/17 2:35

Received by: Jasmine Shearer 12/19 2:35

Relinquished by: J Shearer Date: 12-19-17 Time: 1605

Received by: DRAMOS Date: Time:

Relinquished by: Date: Time:

Received by: Date: Time:

ORIGINAL COPY

LAB USE ONLY

Sample Temperature

REMARKS:

☐ RUSH: Same Day 24 hr 48 hr 72 hr

☐ Rush Charges Authorized

Temp: 1.2 IR ID:R-8

(Circle) CF:(0-6: -0.2°C)
(6-23: +0.2°C)

Corrected Temp: 1.0

Final 1.000

Page 21 of 22

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: Tetra Tech- Midland

Date/ Time Received: 12/19/2017 04:05:00 PM

Work Order #: 571800

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)?	1
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seals intact on shipping container/ cooler?	**Yes**
#5 Custody Seals intact on sample bottles?	**Yes**
#6*Custody Seals Signed and dated?	**Yes**
#7 *Chain of Custody present?	**Yes**
#8 Any missing/extra samples?	**No**
#9 Chain of Custody signed when relinquished/ received?	**Yes**
#10 Chain of Custody agrees with sample labels/matrix?	**Yes**
#11 Container label(s) legible and intact?	**Yes**
#12 Samples in proper container/ bottle?	**Yes**
#13 Samples properly preserved?	**Yes**
#14 Sample container(s) intact?	**Yes**
#15 Sufficient sample amount for indicated test(s)?	**Yes**
#16 All samples received within hold time?	**Yes**
#17 Subcontract of sample(s)?	**N/A**
#18 Water 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: Jessica Kramer
Jessica Kramer
Date: 12/20/2017

Checklist reviewed by: Kelsey Brooks
Kelsey Brooks
Date: 12/26/2017

APPENDIX VI

CONCHO COG Operating LLC

GUNNER 16 STATE SWD #1

UNIT D, SEC. 16-T16S-R34E

330' FNL & 330' FWL

LEA COUNTY, NEW MEXICO

API #30-025-40890

NW N NE

300 330 0 30

348°N (T) 32.048943°, -103.483055° ±45934.0ft ▲ 3337ft


SE
S
SW
W
150
180
210
240
270
206°SW (T)
32.049404°, -103.482567° ±16.4ft
3336ft
22 May 2018, 14:22

SW W NW

210 240 270 300

258°W (T) 32.049072°, -103.482597° ±16.4ft 3338ft

SW W NW

210 240 270 300 330

274°W (T) 32.049019°, -103.483109° ±16.4ft ▲ 3340ft

22 May 2018, 14:23

NE E SE

30 60 90 120

78°E (T) 32.049145°, -103.482986° ±16.4ft ▲ 3311ft

S SW W
180 210 270 300

242°SW (T) 32.049461°, -103.481903° ±98.4ft ▲ 3387ft

E SE S
90 120 150 180 210

148°SE (T) 32.049404°, -103.482002° ±16.4ft ▲ 3337ft

APPENDIX VI

Certificate of Analysis Summary 586658

COG Operating LLC, Artesia, NM

Project Name: Gunner 16St. SWD #1

Project Id:
Contact: Sheldon Hitchcock
Project Location: Lea Co. NM

Date Received in Lab: Mon May-21-18 09:56 am
Report Date: 22-MAY-18
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	586658-001		586658-002		586658-003		586658-004		586658-005		586658-006	
	Field Id:	L-N. SW		L-SW-1		L-SW-2		L-SW-3		L-SW-4		L-SW-5	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	May-17-18 00:00		May-17-18 00:00		May-17-18 00:00		May-17-18 00:00		May-17-18 00:00		May-17-18 00:00	
Chloride by EPA 300	***Extracted:***	May-21-18 15:00		May-21-18 15:00		May-21-18 15:00		May-21-18 15:00		May-21-18 15:00		May-21-18 15:00	
	Analyzed:	May-21-18 20:16		May-21-18 20:22		May-21-18 20:40		May-21-18 20:46		May-21-18 20:52		May-21-18 20:58	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		<4.95	4.95	213	4.95	155	4.95	149	4.97	21.6	4.96	136	4.99

Jessica Kramer
Project Assistant

Certificate of Analysis Summary 586658

COG Operating LLC, Artesia, NM

Project Name: Gunner 16St. SWD #1

Project Id:
Contact: Sheldon Hitchcock
Project Location: Lea Co. NM

Date Received in Lab: Mon May-21-18 09:56 am
Report Date: 22-MAY-18
Project Manager: Jessica Kramer

Analysis Requested											
	Lab Id:	586658-007		586658-008		586658-009		586658-010		586658-011	
	Field Id:	L-SW-6		L-S. SW		L- Bttm-1 8'		L- Bttm-2 8'		L- Bttm-3 8'	
	Depth:					8- ft		8- ft		8- ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	May-17-18 00:00		May-17-18 00:00		May-17-18 08:00		May-17-18 08:02		May-17-18 08:04	
Chloride by EPA 300	***Extracted:***	May-21-18 15:00		May-21-18 15:00		May-21-18 15:00		May-22-18 08:30		May-22-18 08:30	
	Analyzed:	May-21-18 21:04		May-21-18 21:10		May-21-18 21:16		May-22-18 10:02		May-22-18 11:26	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		<4.97	4.97	217	4.99	<5.00	5.00	7.32	5.00	<5.00	5.00

Jessica Kramer
Project Assistant

Analytical Report 586658

for

COG Operating LLC

Project Manager: Sheldon Hitchcock

Gunner 16St. SWD #1

22-MAY-18

Collected By: Client

1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-18-25), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-17-16), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-17-12)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-17-16)
Xenco-Odessa (EPA Lab Code: TX00158): Texas (T104704400-18-14)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-17-3)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Phoenix Mobile (EPA Lab Code: AZ00901): Arizona (AZM757)
Xenco-Atlanta (LELAP Lab ID #04176)
Xenco-Tampa: Florida (E87429)
Xenco-Lakeland: Florida (E84098)

22-MAY-18

Project Manager: **Sheldon Hitchcock**
COG Operating LLC
2407 Pecos Avenue
Artesia, NM 88210

Reference: XENCO Report No(s): **586658**
Gunner 16St. SWD #1
Project Address: Lea Co. NM

Sheldon Hitchcock:

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) 586658. 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. 586658 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,

Jessica Kramer

Jessica Kramer
Project Assistant

Sample Cross Reference 586658

COG Operating LLC, Artesia, NM

Gunner 16St. SWD #1

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
L-N. SW	S	05-17-18 00:00		586658-001
L-SW-1	S	05-17-18 00:00		586658-002
L-SW-2	S	05-17-18 00:00		586658-003
L-SW-3	S	05-17-18 00:00		586658-004
L-SW-4	S	05-17-18 00:00		586658-005
L-SW-5	S	05-17-18 00:00		586658-006
L-SW-6	S	05-17-18 00:00		586658-007
L-S. SW	S	05-17-18 00:00		586658-008
L- Bttm-1 8'	S	05-17-18 08:00	8 ft	586658-009
L- Bttm-2 8'	S	05-17-18 08:02	8 ft	586658-010
L- Bttm-3 8'	S	05-17-18 08:04	8 ft	586658-011

CASE NARRATIVE

Client Name: COG Operating LLC

Project Name: Gunner 16St. SWD #1

Project ID:
Work Order Number(s): *586658*

Report Date: *22-MAY-18*
Date Received: *05/21/2018*

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3050914 Chloride by EPA 300

Lab Sample ID 586658-011 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered below QC limits in the Matrix Spike. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 586658-010, -011.

The Laboratory Control Sample for Chloride is within laboratory Control Limits, therefore the data was accepted.

Certificate of Analytical Results 586658

COG Operating LLC, Artesia, NM

Gunner 16St. SWD #1

Sample Id:	**L-N. SW**	Matrix:	Soil	Date Received:	05.21.18 09.56
Lab Sample Id:	586658-001	Date Collected:	05.17.18 00.00		
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	05.21.18 15.00	Basis:	Wet Weight
Seq Number:	3050896				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.95	4.95	mg/kg	05.21.18 20.16	U	1

Certificate of Analytical Results 586658

COG Operating LLC, Artesia, NM

Gunner 16St. SWD #1

Sample Id:	**L-SW-1**	Matrix:	Soil	Date Received:	05.21.18 09.56
Lab Sample Id:	586658-002	Date Collected:	05.17.18 00.00		
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	05.21.18 15.00	Basis:	Wet Weight
Seq Number:	3050896				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**213**	4.95	mg/kg	05.21.18 20.22		1

Certificate of Analytical Results 586658

COG Operating LLC, Artesia, NM

Gunner 16St. SWD #1

Sample Id:	**L-SW-2**	Matrix:	Soil	Date Received:	05.21.18 09.56
Lab Sample Id:	586658-003	Date Collected:	05.17.18 00.00		
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	05.21.18 15.00	Basis:	Wet Weight
Seq Number:	3050896				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**155**	4.95	mg/kg	05.21.18 20.40		1

Certificate of Analytical Results 586658

COG Operating LLC, Artesia, NM

Gunner 16St. SWD #1

Sample Id:	**L-SW-3**	Matrix:	Soil	Date Received:	05.21.18 09.56
Lab Sample Id:	586658-004	Date Collected:	05.17.18 00.00		
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	05.21.18 15.00	Basis:	Wet Weight
Seq Number:	3050896				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**149**	4.97	mg/kg	05.21.18 20.46		1

Certificate of Analytical Results 586658

COG Operating LLC, Artesia, NM

Gunner 16St. SWD #1

Sample Id:	**L-SW-4**	Matrix:	Soil	Date Received:	05.21.18 09.56
Lab Sample Id:	586658-005	Date Collected:	05.17.18 00.00		
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	05.21.18 15.00	Basis:	Wet Weight
Seq Number:	3050896				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**21.6**	4.96	mg/kg	05.21.18 20.52		1

Certificate of Analytical Results 586658

COG Operating LLC, Artesia, NM

Gunner 16St. SWD #1

Sample Id:	**L-SW-5**	Matrix:	Soil	Date Received:	05.21.18 09.56
Lab Sample Id:	586658-006	Date Collected:	05.17.18 00.00		
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	05.21.18 15.00	Basis:	Wet Weight
Seq Number:	3050896				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**136**	4.99	mg/kg	05.21.18 20.58		1

Certificate of Analytical Results 586658

COG Operating LLC, Artesia, NM

Gunner 16St. SWD #1

Sample Id:	**L-SW-6**	Matrix:	Soil	Date Received:	05.21.18 09.56
Lab Sample Id:	586658-007	Date Collected:	05.17.18 00.00		
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	05.21.18 15.00	Basis:	Wet Weight
Seq Number:	3050896				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.97	4.97	mg/kg	05.21.18 21.04	U	1

Certificate of Analytical Results 586658

COG Operating LLC, Artesia, NM

Gunner 16St. SWD #1

Sample Id:	**L-S. SW**	Matrix:	Soil	Date Received:	05.21.18 09.56
Lab Sample Id:	586658-008	Date Collected:	05.17.18 00.00		
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	05.21.18 15.00	Basis:	Wet Weight
Seq Number:	3050896				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**217**	4.99	mg/kg	05.21.18 21.10		1

Certificate of Analytical Results 586658

COG Operating LLC, Artesia, NM

Gunner 16St. SWD #1

Sample Id:	**L- Bttm-1 8'**	Matrix:	Soil	Date Received:	05.21.18 09.56
Lab Sample Id:	586658-009	Date Collected:	05.17.18 08.00	Sample Depth:	8 ft
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	05.21.18 15.00	Basis:	Wet Weight
Seq Number:	3050896				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.00	5.00	mg/kg	05.21.18 21.16	U	1

Certificate of Analytical Results 586658

COG Operating LLC, Artesia, NM

Gunner 16St. SWD #1

Sample Id:	**L- Bttm-2 8'**	Matrix:	Soil	Date Received:	05.21.18 09.56
Lab Sample Id:	586658-010	Date Collected:	05.17.18 08.02	Sample Depth:	8 ft
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	05.22.18 08.30	Basis:	Wet Weight
Seq Number:	3050914				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**7.32**	5.00	mg/kg	05.22.18 10.02		1

Certificate of Analytical Results 586658

COG Operating LLC, Artesia, NM

Gunner 16St. SWD #1

Sample Id:	**L- Bttm-3 8'**	Matrix:	Soil	Date Received:	05.21.18 09.56
Lab Sample Id:	586658-011	Date Collected:	05.17.18 08.04	Sample Depth:	8 ft
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	05.22.18 08.30	Basis:	Wet Weight
Seq Number:	3050914				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.00	5.00	mg/kg	05.22.18 11.26	U	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

SMP Client Sample **BLK** Method Blank

BKS/LCS Blank Spike/Laboratory Control Sample **BKSD/LCSD** Blank Spike Duplicate/Laboratory Control Sample Duplicate

MD/SD Method Duplicate/Sample Duplicate **MS** Matrix Spike **MSD:** Matrix Spike Duplicate

+ NELAC certification not offered for this compound.

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

QC Summary 586658

COG Operating LLC

Gunner 16St. SWD #1

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3050896 Matrix: Solid Date Prep: 05.21.18
MB Sample Id: 7645179-1-BLK LCS Sample Id: 7645179-1-BKS LCSD Sample Id: 7645179-1-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	227	91	230	92	90-110	1	20	mg/kg	05.21.18 18:23	

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3050914 Matrix: Solid Date Prep: 05.22.18
MB Sample Id: 7645182-1-BLK LCS Sample Id: 7645182-1-BKS LCSD Sample Id: 7645182-1-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	244	98	244	98	90-110	0	20	mg/kg	05.22.18 09:50	

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3050896 Matrix: Soil Date Prep: 05.21.18
Parent Sample Id: 586386-001 MS Sample Id: 586386-001 S MSD Sample Id: 586386-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	188	249	429	97	437	100	90-110	2	20	mg/kg	05.21.18 18:41	

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3050896 Matrix: Soil Date Prep: 05.21.18
Parent Sample Id: 586657-010 MS Sample Id: 586657-010 S MSD Sample Id: 586657-010 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	352	248	242	0	239	0	90-110	1	20	mg/kg	05.21.18 20:04	X

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3050914 Matrix: Soil Date Prep: 05.22.18
Parent Sample Id: 586658-010 MS Sample Id: 586658-010 S MSD Sample Id: 586658-010 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	7.32	250	262	102	262	102	90-110	0	20	mg/kg	05.22.18 10:08	

MS/MSD Percent Recovery
Relative Percent Difference
LCS/LCSD Recovery
Log Difference

[D] = 100*(C-A) / B
RPD = 200* | (C-E) / (C+E) |
[D] = 100 * (C) / [B]
Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample
A = Parent Result
C = MS/LCS Result
E = MSD/LCSD Result

MS = Matrix Spike
B = Spike Added
D = MSD/LCSD % Rec

QC Summary 586658

COG Operating LLC

Gunner 16St. SWD #1

Analytical Method: **Chloride by EPA 300** Prep Method: E300P

Seq Number: 3050914 Matrix: Soil Date Prep: 05.22.18

Parent Sample Id: 586658-011 MS Sample Id: 586658-011 S MSD Sample Id: 586658-011 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	218	87	227	91	90-110	4	20	mg/kg	05.22.18 11:32	X

MS/MSD Percent Recovery
Relative Percent Difference
LCS/LCSD Recovery
Log Difference

[D] = 100*(C-A) / B
RPD = 200* | (C-E) / (C+E) |
[D] = 100 * (C) / [B]
Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample
A = Parent Result
C = MS/LCS Result
E = MSD/LCSD Result

MS = Matrix Spike
B = Spike Added
D = MSD/LCSD % Rec

CHAIN OF CUSTODY

Page 1 Of 2

XENCO LABORATORIES

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San Antonio, Texas (210-509-3334)
Midland, Texas (432-704-5251)
Phoenix, Arizona (480-355-0900)
www.xenco.com

Xenco Quote #
Xenco Job # 58606058

Client / Reporting Information

Company Name / Branch: COG Operating, LLC
Company Address: 2407 Pecos Ave. Artesia NM 88210
Email: slhitchcock@concho.com Phone No: 575-703-6475
dneel2@concho.com; alieb@concho.com; rhaskell@concho.com
Project Contact: Sheldon Hitchcock
Samplers's Name: Sheldon Hitchcock

Project Information

Project Name/Number: Gunner 16 St. SWD #1
Project Location: Lea co, NM
Invoice To: COG Operating, LLC
Attn: Robert McNeill
600 W. Illnois Ave.
Midland Tx, 79701
PO Number:

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	Analytical Information: TPH EXTENDED	BTEX	CHLORIDES	Field Comments
1	L - N. SW	N/A	5/17/19		S	1								✓			✓	
2	L - SW-1				S	1								✓			✓	
3	L - SW-2				S	1								✓			✓	
4	L SW-3				S	1								✓			✓	
5	L SW-4				S	1								✓			✓	
6	L SW-5				S	1								✓			✓	
7	L-SW-6				S	1								✓			✓	
8	L - S. SW				S	1								✓			✓	
9	L - B tt m - 1 8'	8'		8:00	S	1								✓			✓	
10	L B tt m - 2 8'	8'		8:02	S	1								✓			✓	

Turnaround Time (Business days)

- [X] 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	Sheldon Hitchcock		1	2	5/18 15:30	2
3	Relinquished by:	5-21-19 9:45	3	Relinquished By:	Date Time:	4
5	Relinquished by:	Date Time:	Received By: 5	Custody Seal #	Preserved where applicable	On Ice / Cooler Temp. 22.3 R8 / Thermo. Corr. Factor 0.0

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)
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Midland, Texas (432-704-5251)
Phoenix, Arizona (480-355-0900)
www.xenco.com

Xenco Quote #
Xenco Job # 580658

Client / Reporting Information

Company Name / Branch: COG Operating, LLC
Company Address: 2407 Pecos Ave. Artesia NM 88210
Email: slhitchcock@concho.com Phone No: 575-703-6475
dneel2@concho.com; alieb@concho.com; rhaskell@concho.com
Project Contact: Sheldon Hitchcock
Samplers's Name: Sheldon Hitchcock

Project Information

Project Name/Number: Gunner 16 St. SWD #1
Project Location: Lea Co, NM
Invoice To: COG Operating, LLC
Attn: Robert McNeill
600 W. Illnois Ave.
Midland Tx, 79701
PO Number:

Analytical Information

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	CHLORIDES	Field Comments
1	L - Bttm - 3 8'	5/12/16		8:04	S	1								X			X	
2					S	1												
3					S	1												
4					S	1												
5					S	1												
6					S	1												
7					S	1												
8					S	1												
9					S	1												
10					S	1												

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

Turnaround Time (Business days)

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- [ ] 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	Shelby Hernandez		1	2	5/13 15:30	2
3	Relinquished by:	Date Time: 5/13 9:45	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. 22.3 R8 / Thermo. Corr. Factor 0.0

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: 05/21/2018 09:56:16 AM

Work Order #: 586658

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)?	22.3	
#2 *Shipping container in good condition?	**Yes**	
#3 *Samples received on ice?	**Yes**	Ice had melted before we received the sample
#4 *Custody Seals intact on shipping container/ cooler?	**N/A**	
#5 Custody Seals intact on sample bottles?	**N/A**	
#6*Custody Seals Signed and dated?	**N/A**	
#7 *Chain of Custody present?	**Yes**	
#8 Any missing/extra samples?	**No**	
#9 Chain of Custody signed when relinquished/ received?	**Yes**	
#10 Chain of Custody agrees with sample labels/matrix?	**Yes**	
#11 Container label(s) legible and intact?	**Yes**	
#12 Samples in proper container/ bottle?	**Yes**	
#13 Samples properly preserved?	**Yes**	
#14 Sample container(s) intact?	**Yes**	
#15 Sufficient sample amount for indicated test(s)?	**Yes**	
#16 All samples received within hold time?	**Yes**	
#17 Subcontract of sample(s)?	**No**	
#18 Water 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: Katie Lowe Date: 05/21/2018

Checklist reviewed by: Jessica Kramer Date: 05/21/2018

Jessica Kramer

Certificate of Analysis Summary 587060

COG Operating LLC, Artesia, NM

Project Name: Gunner 16 State SWD #001

Project Id:
Contact: Sheldon Hitchcock
Project Location: Lea County, NM

Date Received in Lab: Thu May-24-18 10:20 am
Report Date: 25-MAY-18
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	587060-001		587060-002		587060-003		587060-004		587060-005		587060-006	
	Field Id:	BH-6/Row		P-Bttm-1 4'		P-Bttm-2 4'		P-Bttm-3 4'		P-Bttm- 4 4'		P Bttm-5 4'	
	Depth:			4		4		4		4		4	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	May-18-18 08:00		May-18-18 08:05		May-18-18 08:10		May-18-18 08:15		May-22-18 14:00		May-22-18 14:05	
BTEX by EPA 8021B	***Extracted:***	May-24-18 17:00											
	Analyzed:	May-24-18 21:27											
	Units/RL:	mg/kg	RL										
Benzene		<0.00201	0.00201										
Toluene		<0.00201	0.00201										
Ethylbenzene		<0.00201	0.00201										
m,p-Xylenes		<0.00402	0.00402										
o-Xylene		<0.00201	0.00201										
Total Xylenes		<0.00201	0.00201										
Total BTEX		<0.00201	0.00201										
Chloride by EPA 300	***Extracted:***	May-24-18 16:00		May-24-18 16:00		May-24-18 16:00		May-24-18 16:00		May-24-18 16:00		May-24-18 16:00	
	Analyzed:	May-24-18 17:05		May-24-18 17:23		May-24-18 17:29		May-24-18 17:40		May-24-18 17:46		May-24-18 18:04	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		27.3	4.97	51.0	4.96	254	5.00	65.3	5.00	594	4.95	230	4.98
TPH By SW8015 Mod	***Extracted:***	May-24-18 11:00											
	Analyzed:	May-24-18 17:20											
	Units/RL:	mg/kg	RL										
Gasoline Range Hydrocarbons (GRO)		<15.0	15.0										
Diesel Range Organics (DRO)		<15.0	15.0										
Oil Range Hydrocarbons (ORO)		<15.0	15.0										
Total TPH		<15.0	15.0										

Jessica Kramer
Project Assistant

Certificate of Analysis Summary 587060

COG Operating LLC, Artesia, NM

Project Name: Gunner 16 State SWD #001

Project Id:
Contact: Sheldon Hitchcock
Project Location: Lea County, NM

Date Received in Lab: Thu May-24-18 10:20 am
Report Date: 25-MAY-18
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	587060-007		587060-008		587060-009		587060-010		587060-011		587060-012	
	Field Id:	P-SW-1		P-SW-2		P-SW-3		P-SW-4		P-SW-5		P-SW-6	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	May-18-18 08:20		May-18-18 08:25		May-18-18 08:30		May-18-18 08:35		May-18-18 08:40		May-18-18 08:40	
Chloride by EPA 300	***Extracted:***	May-24-18 16:00		May-24-18 16:00		May-24-18 16:00		May-24-18 16:00		May-24-18 16:00		May-24-18 16:00	
	Analyzed:	May-24-18 18:10		May-24-18 18:16		May-24-18 18:22		May-24-18 18:28		May-24-18 18:34		May-24-18 18:52	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		1090	4.95	<5.00	5.00	130	4.98	138	5.00	<5.00	5.00	<4.95	4.95

Jessica Kramer
Project Assistant

Certificate of Analysis Summary 587060

COG Operating LLC, Artesia, NM

Project Name: Gunner 16 State SWD #001

Project Id:
Contact: Sheldon Hitchcock
Project Location: Lea County, NM

Date Received in Lab: Thu May-24-18 10:20 am
Report Date: 25-MAY-18
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	587060-013		587060-014		587060-015		587060-016		587060-017		587060-018	
	Field Id:	P-SW-7		P-SW-8		P-SW-9		P-SW-10		P-SW-11		P-SW-12	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	May-22-18 14:20		May-22-18 14:25		May-22-18 14:30		May-22-18 14:35		May-22-18 14:40		May-22-18 14:45	
Chloride by EPA 300	***Extracted:***	May-24-18 16:00		May-24-18 16:00		May-24-18 16:00		May-24-18 16:00		May-24-18 16:00		May-24-18 16:00	
	Analyzed:	May-24-18 18:58		May-24-18 19:16		May-24-18 19:22		May-24-18 19:28		May-24-18 19:34		May-24-18 19:40	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		82.8	5.00	18.2	4.99	<4.98	4.98	358	5.00	507	5.00	38.7	4.99

Jessica Kramer
Project Assistant

Analytical Report 587060

for

COG Operating LLC

Project Manager: Sheldon Hitchcock

Gunner 16 State SWD #001

25-MAY-18

Collected By: Client

1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-18-25), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-17-16), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-17-12)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-17-16)
Xenco-Odessa (EPA Lab Code: TX00158): Texas (T104704400-18-14)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-17-3)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Phoenix Mobile (EPA Lab Code: AZ00901): Arizona (AZM757)
Xenco-Atlanta (LELAP Lab ID #04176)
Xenco-Tampa: Florida (E87429)
Xenco-Lakeland: Florida (E84098)

25-MAY-18

Project Manager: **Sheldon Hitchcock**
COG Operating LLC
2407 Pecos Avenue
Artesia, NM 88210

Reference: XENCO Report No(s): **587060**
Gunner 16 State SWD #001
Project Address: Lea County, NM

Sheldon Hitchcock:

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) 587060. 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. 587060 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,

Jessica Kramer

Jessica Kramer
Project Assistant

Sample Cross Reference 587060

COG Operating LLC, Artesia, NM

Gunner 16 State SWD #001

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
BH-6/Row	S	05-18-18 08:00		587060-001
P-Bttm-1 4'	S	05-18-18 08:05	- 4	587060-002
P-Bttm-2 4'	S	05-18-18 08:10	- 4	587060-003
P-Bttm-3 4'	S	05-18-18 08:15	- 4	587060-004
P-Bttm- 4 4'	S	05-22-18 14:00	- 4	587060-005
P Bttm-5 4'	S	05-22-18 14:05	- 4	587060-006
P-SW-1	S	05-18-18 08:20		587060-007
P-SW-2	S	05-18-18 08:25		587060-008
P-SW-3	S	05-18-18 08:30		587060-009
P-SW-4	S	05-18-18 08:35		587060-010
P-SW-5	S	05-18-18 08:40		587060-011
P-SW-6	S	05-18-18 08:40		587060-012
P-SW-7	S	05-22-18 14:20		587060-013
P-SW-8	S	05-22-18 14:25		587060-014
P-SW-9	S	05-22-18 14:30		587060-015
P-SW-10	S	05-22-18 14:35		587060-016
P-SW-11	S	05-22-18 14:40		587060-017
P-SW-12	S	05-22-18 14:45		587060-018

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3051416 BTEX by EPA 8021B
Lab Sample ID 587060-001 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.
Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 587060-001.
The Laboratory Control Sample for Toluene, Benzene, m,p-Xylenes, Ethylbenzene, o-Xylene is within laboratory Control Limits, therefore the data was accepted.

Benzene, Ethylbenzene, Toluene, m,p-Xylenes, o-Xylene Relative Percent Difference (RPD) between matrix spike and duplicate were above quality control limits.
Samples in the analytical batch are: 587060-001
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Certificate of Analytical Results 587060

COG Operating LLC, Artesia, NM

Gunner 16 State SWD #001

Sample Id:	**BH-6/Row**	Matrix:	Soil	Date Received:	05.24.18 10.20
Lab Sample Id:	587060-001	Date Collected:	05.18.18 08.00		

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	05.24.18 16.00	Basis:	Wet Weight
Seq Number:	3051340				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**27.3**	4.97	mg/kg	05.24.18 17.05		1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	05.24.18 11.00	Basis:	Wet Weight
Seq Number:	3051431				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	05.24.18 17.20	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	05.24.18 17.20	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	05.24.18 17.20	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.24.18 17.20	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	89	%	70-135	05.24.18 17.20	
o-Terphenyl	84-15-1	88	%	70-135	05.24.18 17.20	

Certificate of Analytical Results 587060

COG Operating LLC, Artesia, NM

Gunner 16 State SWD #001

Sample Id:	**BH-6/Row**	Matrix:	Soil	Date Received:	05.24.18 10.20
Lab Sample Id:	587060-001	Date Collected:	05.18.18 08.00		
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	05.24.18 17.00	Basis:	Wet Weight
Seq Number:	3051416				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	05.24.18 21.27	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	05.24.18 21.27	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	05.24.18 21.27	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	05.24.18 21.27	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	05.24.18 21.27	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	05.24.18 21.27	U	1
Total BTEX		<0.00201	0.00201	mg/kg	05.24.18 21.27	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	100	%	70-130	05.24.18 21.27	
4-Bromofluorobenzene	460-00-4	104	%	70-130	05.24.18 21.27	

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COG Operating LLC, Artesia, NM

Gunner 16 State SWD #001

Sample Id:	**P-Bttm-1 4'**	Matrix:	Soil	Date Received:	05.24.18 10.20
Lab Sample Id:	587060-002	Date Collected:	05.18.18 08.05	Sample Depth:	4
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	05.24.18 16.00	Basis:	Wet Weight
Seq Number:	3051340				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**51.0**	4.96	mg/kg	05.24.18 17.23		1

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COG Operating LLC, Artesia, NM

Gunner 16 State SWD #001

Sample Id:	**P-Bttm-2 4'**	Matrix:	Soil	Date Received:	05.24.18 10.20
Lab Sample Id:	587060-003	Date Collected:	05.18.18 08.10	Sample Depth:	4
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	05.24.18 16.00	Basis:	Wet Weight
Seq Number:	3051340				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**254**	5.00	mg/kg	05.24.18 17.29		1

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COG Operating LLC, Artesia, NM

Gunner 16 State SWD #001

Sample Id:	**P-Bttm-3 4'**	Matrix:	Soil	Date Received:	05.24.18 10.20
Lab Sample Id:	587060-004	Date Collected:	05.18.18 08.15	Sample Depth:	4
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	05.24.18 16.00	Basis:	Wet Weight
Seq Number:	3051340				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**65.3**	5.00	mg/kg	05.24.18 17.40		1

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COG Operating LLC, Artesia, NM

Gunner 16 State SWD #001

Sample Id:	**P-Bttm- 4 4'**	Matrix:	Soil	Date Received:	05.24.18 10.20
Lab Sample Id:	587060-005	Date Collected:	05.22.18 14.00	Sample Depth:	4
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	05.24.18 16.00	Basis:	Wet Weight
Seq Number:	3051340				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**594**	4.95	mg/kg	05.24.18 17.46		1

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COG Operating LLC, Artesia, NM

Gunner 16 State SWD #001

Sample Id:	**P Bttm-5 4'**	Matrix:	Soil	Date Received:	05.24.18 10.20
Lab Sample Id:	587060-006	Date Collected:	05.22.18 14.05	Sample Depth:	4
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	05.24.18 16.00	Basis:	Wet Weight
Seq Number:	3051340				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**230**	4.98	mg/kg	05.24.18 18.04		1

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COG Operating LLC, Artesia, NM

Gunner 16 State SWD #001

Sample Id:	**P-SW-1**	Matrix:	Soil	Date Received:	05.24.18 10.20
Lab Sample Id:	587060-007	Date Collected:	05.18.18 08.20		
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	05.24.18 16.00	Basis:	Wet Weight
Seq Number:	3051340				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**1090**	4.95	mg/kg	05.24.18 18.10		1

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COG Operating LLC, Artesia, NM

Gunner 16 State SWD #001

Sample Id:	**P-SW-2**	Matrix:	Soil	Date Received:	05.24.18 10.20
Lab Sample Id:	587060-008	Date Collected:	05.18.18 08.25		
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	05.24.18 16.00	Basis:	Wet Weight
Seq Number:	3051340				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.00	5.00	mg/kg	05.24.18 18.16	U	1

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COG Operating LLC, Artesia, NM

Gunner 16 State SWD #001

Sample Id:	**P-SW-3**	Matrix:	Soil	Date Received:	05.24.18 10.20
Lab Sample Id:	587060-009	Date Collected:	05.18.18 08.30		
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	05.24.18 16.00	Basis:	Wet Weight
Seq Number:	3051340				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**130**	4.98	mg/kg	05.24.18 18.22		1

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COG Operating LLC, Artesia, NM

Gunner 16 State SWD #001

Sample Id:	**P-SW-4**	Matrix:	Soil	Date Received:	05.24.18 10.20
Lab Sample Id:	587060-010	Date Collected:	05.18.18 08.35		
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	05.24.18 16.00	Basis:	Wet Weight
Seq Number:	3051340				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**138**	5.00	mg/kg	05.24.18 18.28		1

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COG Operating LLC, Artesia, NM

Gunner 16 State SWD #001

Sample Id:	**P-SW-5**	Matrix:	Soil	Date Received:	05.24.18 10.20
Lab Sample Id:	587060-011	Date Collected:	05.18.18 08.40		
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	05.24.18 16.00	Basis:	Wet Weight
Seq Number:	3051340				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.00	5.00	mg/kg	05.24.18 18.34	U	1

Certificate of Analytical Results 587060

COG Operating LLC, Artesia, NM

Gunner 16 State SWD #001

Sample Id:	**P-SW-6**	Matrix:	Soil	Date Received:	05.24.18 10.20
Lab Sample Id:	587060-012	Date Collected:	05.18.18 08.40		
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	05.24.18 16.00	Basis:	Wet Weight
Seq Number:	3051340				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.95	4.95	mg/kg	05.24.18 18.52	U	1

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COG Operating LLC, Artesia, NM

Gunner 16 State SWD #001

Sample Id:	**P-SW-7**	Matrix:	Soil	Date Received:	05.24.18 10.20
Lab Sample Id:	587060-013	Date Collected:	05.22.18 14.20		
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	05.24.18 16.00	Basis:	Wet Weight
Seq Number:	3051340				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**82.8**	5.00	mg/kg	05.24.18 18.58		1

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COG Operating LLC, Artesia, NM

Gunner 16 State SWD #001

Sample Id:	**P-SW-8**	Matrix:	Soil	Date Received:	05.24.18 10.20
Lab Sample Id:	587060-014	Date Collected:	05.22.18 14.25		
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	05.24.18 16.00	Basis:	Wet Weight
Seq Number:	3051340				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**18.2**	4.99	mg/kg	05.24.18 19.16		1

Certificate of Analytical Results 587060

COG Operating LLC, Artesia, NM

Gunner 16 State SWD #001

Sample Id:	**P-SW-9**	Matrix:	Soil	Date Received:	05.24.18 10.20
Lab Sample Id:	587060-015	Date Collected:	05.22.18 14.30		
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	05.24.18 16.00	Basis:	Wet Weight
Seq Number:	3051340				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.98	4.98	mg/kg	05.24.18 19.22	U	1

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COG Operating LLC, Artesia, NM

Gunner 16 State SWD #001

Sample Id:	**P-SW-10**	Matrix:	Soil	Date Received:	05.24.18 10.20
Lab Sample Id:	587060-016	Date Collected:	05.22.18 14.35		
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	05.24.18 16.00	Basis:	Wet Weight
Seq Number:	3051340				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**358**	5.00	mg/kg	05.24.18 19.28		1

Certificate of Analytical Results 587060

COG Operating LLC, Artesia, NM

Gunner 16 State SWD #001

Sample Id:	**P-SW-11**	Matrix:	Soil	Date Received:	05.24.18 10.20
Lab Sample Id:	587060-017	Date Collected:	05.22.18 14.40		
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	05.24.18 16.00	Basis:	Wet Weight
Seq Number:	3051340				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**507**	5.00	mg/kg	05.24.18 19.34		1

Certificate of Analytical Results 587060

COG Operating LLC, Artesia, NM

Gunner 16 State SWD #001

Sample Id:	**P-SW-12**	Matrix:	Soil	Date Received:	05.24.18 10.20
Lab Sample Id:	587060-018	Date Collected:	05.22.18 14.45		
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	05.24.18 16.00	Basis:	Wet Weight
Seq Number:	3051340				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**38.7**	4.99	mg/kg	05.24.18 19.40		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

SMP Client Sample **BLK** Method Blank

BKS/LCS Blank Spike/Laboratory Control Sample **BKSD/LCSD** Blank Spike Duplicate/Laboratory Control Sample Duplicate

MD/SD Method Duplicate/Sample Duplicate **MS** Matrix Spike **MSD:** Matrix Spike Duplicate

+ NELAC certification not offered for this compound.

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

QC Summary 587060

COG Operating LLC

Gunner 16 State SWD #001

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3051340 Matrix: Solid Date Prep: 05.24.18
MB Sample Id: 7655441-1-BLK LCS Sample Id: 7655441-1-BKS LCSD Sample Id: 7655441-1-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	229	92	231	92	90-110	1	20	mg/kg	05.24.18 16:53	

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3051340 Matrix: Soil Date Prep: 05.24.18
Parent Sample Id: 587060-001 MS Sample Id: 587060-001 S MSD Sample Id: 587060-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	27.3	249	298	109	297	108	90-110	0	20	mg/kg	05.24.18 17:11	

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3051340 Matrix: Soil Date Prep: 05.24.18
Parent Sample Id: 587060-011 MS Sample Id: 587060-011 S MSD Sample Id: 587060-011 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<4.99	250	247	99	245	99	90-110	1	20	mg/kg	05.24.18 18:40	

Analytical Method: **TPH By SW8015 Mod** Prep Method: TX1005P
Seq Number: 3051431 Matrix: Solid Date Prep: 05.24.18
MB Sample Id: 7655483-1-BLK LCS Sample Id: 7655483-1-BKS LCSD Sample Id: 7655483-1-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	977	98	1030	103	70-135	5	20	mg/kg	05.24.18 12:13	
Diesel Range Organics (DRO)	<15.0	1000	1050	105	1130	113	70-135	7	20	mg/kg	05.24.18 12:13	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	98		109		123		70-135	%	05.24.18 12:13
o-Terphenyl	100		101		109		70-135	%	05.24.18 12:13

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike
Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added
LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec
Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

QC Summary 587060

COG Operating LLC

Gunner 16 State SWD #001

Analytical Method: **TPH By SW8015 Mod** Prep Method: TX1005P
Seq Number: 3051431 Matrix: Soil Date Prep: 05.24.18
Parent Sample Id: 586753-001 MS Sample Id: 586753-001 S MSD Sample Id: 586753-001 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	998	979	98	989	99	70-135	1	20	mg/kg	05.24.18 13:35	
Diesel Range Organics (DRO)	<15.0	998	1030	103	1040	104	70-135	1	20	mg/kg	05.24.18 13:35	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	108		108		70-135	%	05.24.18 13:35
o-Terphenyl	97		97		70-135	%	05.24.18 13:35

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3051416 Matrix: Solid Date Prep: 05.24.18
MB Sample Id: 7655458-1-BLK LCS Sample Id: 7655458-1-BKS LCSD Sample Id: 7655458-1-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	0.0986	99	0.0901	90	70-130	9	35	mg/kg	05.24.18 19:38	
Toluene	<0.00200	0.0998	0.0940	94	0.0885	89	70-130	6	35	mg/kg	05.24.18 19:38	
Ethylbenzene	<0.00200	0.0998	0.100	100	0.0914	91	70-130	9	35	mg/kg	05.24.18 19:38	
m,p-Xylenes	<0.00399	0.200	0.211	106	0.192	96	70-130	9	35	mg/kg	05.24.18 19:38	
o-Xylene	<0.00200	0.0998	0.106	106	0.0955	96	70-130	10	35	mg/kg	05.24.18 19:38	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	86		101		89		70-130	%	05.24.18 19:38
4-Bromofluorobenzene	108		102		88		70-130	%	05.24.18 19:38

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3051416 Matrix: Soil Date Prep: 05.24.18
Parent Sample Id: 587060-001 MS Sample Id: 587060-001 S MSD Sample Id: 587060-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00199	0.0996	0.0635	64	0.0974	97	70-130	42	35	mg/kg	05.24.18 20:15	XF
Toluene	<0.00199	0.0996	0.0624	63	0.0947	95	70-130	41	35	mg/kg	05.24.18 20:15	XF
Ethylbenzene	<0.00199	0.0996	0.0542	54	0.0949	95	70-130	55	35	mg/kg	05.24.18 20:15	XF
m,p-Xylenes	<0.00398	0.199	0.133	67	0.198	99	70-130	39	35	mg/kg	05.24.18 20:15	XF
o-Xylene	<0.00199	0.0996	0.0670	67	0.101	101	70-130	40	35	mg/kg	05.24.18 20:15	XF

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	94		96		70-130	%	05.24.18 20:15
4-Bromofluorobenzene	82		121		70-130	%	05.24.18 20:15

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike
Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added
LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec
Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

CHAIN OF CUSTODY

Page 1 Of 2

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 # 587060

Client / Reporting Information

Company Name / Branch: COG Operating, LLC

Company Address: 2407 Pecos Ave. Artesia NM 88210

Email: slhitchcock@concho.com Phone No: 575-703-6475

dneel2@concho.com; cgray@concho.com; rhaskell@concho.com

Project Contact: Sheldon Hitchcock

Samplers's Name: Sheldon Hitchcock

Project Information

Project Name/Number: Gunner 16 State SWD #001

Project Location: Lea County, NM

Invoice To: COG Operating, LLC
Attn: Robert McNeill
600 W. Illnois Ave.
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 (EPA8015M)	BTEX (EPA 8021B)	CHLORIDES (EPA 300)	Field Comments
1	BH-6 / ROW	N/A	5/18/18	8:00	S	1								X	X	X	X	
2	P-Bttm-1 4'	4'	5/18/18	8:05	S	1												
3	P-Bttm-2 4'	"	5/18/18	8:10	S	1												
4	P-Bttm-3 4'	"	5/18/18	8:15	S	1												
5	P-Bttm-4 4'	"	5/24/18	2:00	S	1												
6	P-Bttm-5 4'	"	5/24/18	2:05	S	1												
7	P-SW-1	N/A	5/18/18	8:20	S	1												
8	P-SW-2	"	5/18/18	8:25	S	1												
9	P-SW-3	"	5/18/18	8:30	S	1												
10	P-SW-4	"	5/18/18	8:35	S	1												

Turnaround Time (Business days)

- [x] 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	Date Time	Received By	Relinquished By	Date Time	Received By
1	Sheldon Hitchcock	5/23 1310	1	2	5/23 15:30	2 5/24/18 1030
3			3	4		4
5			5	Custody Seal #	Preserved where applicable	On Ice: Cooler Temp. 1.8 KB; Thermo. Corr. Factor 0.0

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

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San Antonio, Texas (210-509-3334)

Midland, Texas (432-704-5251)

Phoenix, Arizona (480-355-0900)

www.xenco.com

Xenco Quote #

Xenco Job # 587060

Client / Reporting Information

Company Name / Branch: COG Operating, LLC

Company Address: 2407 Pecos Ave. Artesia NM 88210

Email: slhitchcock@concho.com Phone No: 575-703-6475

dneel2@concho.com; cgray@concho.com; rhaskell@concho.com

Project Contact: Sheldon Hitchcock

Samplers's Name: Sheldon Hitchcock

Project Information

Project Name/Number: Gunner 16 State SWD #001

Project Location: Lea County, NM

Invoice To: COG Operating, LLC
Attn: Robert McNeill
600 W. Illnois Ave.
Midland Tx, 79701

PO Number:

Analytical Information

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 (EPA8015M)	BTEX (EPA 8021B)	CHLORIDES (EPA 300)	Field Comments
1	P-SW-5	N/A	5/18/18	8:40	S	1								X			X	
2	P-SW-6		5/18/18	8:45	S	1											X	
3	P-SW-7		5/22/18	2:20	S	1											X	
4	P-SW-8		5/22/18	2:25	S	1											X	
5	P-SW-9		5/22/18	2:30	S	1											X	
6	P-SW-10		5/22/18	2:35	S	1											X	
7	P-SW-11		5/22/18	2:40	S	1											X	
8	P-SW-12		5/22/18	2:45	S	1											X	
9					S	1												
10					S	1												

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

Turnaround Time (Business days)

- [x] Same Day TAT
- [ ] 5 Day TAT
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- [ ] 2 Day EMERGENCY
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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	Sheldon Hitchcock	5/23 1310	1	2	5/23 15:30	2 Received 5/24/18 1020
3	Relinquished by:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
5	Relinquished by:	Date Time:	Received By:	Custody Seal #	Preserved where applicable	On Ice / Cooler Temp. / Thermo. Corr. Factor
			5			1.8 / 1.8 / 0.0

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: 05/24/2018 10:20:00 AM

Work Order #: 587060

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)?	1.8	
#2 *Shipping container in good condition?	**Yes**	
#3 *Samples received on ice?	**Yes**	
#4 *Custody Seals intact on shipping container/ cooler?	**N/A**	
#5 Custody Seals intact on sample bottles?	**N/A**	
#6*Custody Seals Signed and dated?	**N/A**	
#7 *Chain of Custody present?	**Yes**	
#8 Any missing/extra samples?	**No**	
#9 Chain of Custody signed when relinquished/ received?	**Yes**	
#10 Chain of Custody agrees with sample labels/matrix?	**Yes**	
#11 Container label(s) legible and intact?	**Yes**	
#12 Samples in proper container/ bottle?	**Yes**	TPH WAS IN BULK CONTAINER
#13 Samples properly preserved?	**Yes**	
#14 Sample container(s) intact?	**Yes**	
#15 Sufficient sample amount for indicated test(s)?	**Yes**	
#16 All samples received within hold time?	**Yes**	
#17 Subcontract of sample(s)?	**N/A**	
#18 Water 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: Brianna Teel Date: 05/24/2018
Brianna Teel

Checklist reviewed by: Jessica Kramer Date: 05/24/2018
Jessica Kramer

Certificate of Analysis Summary 587061

COG Operating LLC, Artesia, NM

Project Name: Gunner 16 State SWD #001

Project Id:

Contact: Sheldon Hitchcock

Project Location: Lea County, NM

Date Received in Lab: Thu May-24-18 10:21 am

Report Date: 25-MAY-18

Project Manager: Jessica Kramer

Analysis Requested	*Lab Id:*	587061-001		587061-002		587061-003		587061-004		587061-005		587061-006	
	Field Id:	Row Bttm-1 0.5'		Row Bttm-2 0.5'		Row Bttm-3 0.5'		Row w. sw		Row sw-1		Row sw-2	
	Depth:	0.5 ft		0.5 ft		0.5 ft							
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	May-22-18 07:30		May-22-18 07:40		May-22-18 07:50		May-22-18 07:00		May-22-18 07:05		May-22-18 07:10	
BTEX by EPA 8021B	*Extracted:*	May-24-18 17:00		May-24-18 17:00		May-24-18 17:00		May-24-18 17:00		May-24-18 17:00		May-24-18 17:00	
	Analyzed:	May-24-18 21:45		May-24-18 22:04		May-24-18 22:22		May-24-18 22:40		May-24-18 22:58		May-24-18 23:16	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		<0.00200	0.00200	<0.00199	0.00199	<0.00198	0.00198	<0.00202	0.00202	<0.00202	0.00202	<0.00199	0.00199
Toluene		<0.00200	0.00200	<0.00199	0.00199	<0.00198	0.00198	<0.00202	0.00202	<0.00202	0.00202	<0.00199	0.00199
Ethylbenzene		<0.00200	0.00200	<0.00199	0.00199	<0.00198	0.00198	<0.00202	0.00202	0.0786	0.00202	<0.00199	0.00199
m,p-Xylenes		<0.00399	0.00399	<0.00398	0.00398	<0.00396	0.00396	<0.00403	0.00403	<0.00404	0.00404	<0.00398	0.00398
o-Xylene		<0.00200	0.00200	<0.00199	0.00199	<0.00198	0.00198	<0.00202	0.00202	<0.00202	0.00202	<0.00199	0.00199
Total Xylenes		<0.00200	0.00200	<0.00199	0.00199	<0.00198	0.00198	<0.00202	0.00202	<0.00202	0.00202	<0.00199	0.00199
Total BTEX		<0.00200	0.00200	<0.00199	0.00199	<0.00198	0.00198	<0.00202	0.00202	0.0786	0.00202	<0.00199	0.00199
Chloride by EPA 300	*Extracted:*	May-24-18 16:00		May-24-18 16:00		May-24-18 17:30		May-24-18 17:30		May-24-18 17:30		May-24-18 17:30	
	Analyzed:	May-24-18 19:46		May-24-18 19:52		May-24-18 20:46		May-24-18 20:28		May-24-18 20:52		May-24-18 20:58	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		206	5.00	278	5.00	199	5.00	509	5.00	656	4.98	205	5.00
TPH By SW8015 Mod	*Extracted:*	May-24-18 11:00		May-24-18 11:00		May-24-18 11:00		May-24-18 11:00		May-24-18 11:00		May-24-18 11:00	
	Analyzed:	May-24-18 17:47		May-24-18 18:14		May-24-18 19:35		May-24-18 20:02		May-24-18 20:28		May-24-18 20:56	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	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	<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	<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	<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	<15.0	15.0	<15.0	15.0	<15.0	15.0

Jessica Kramer
Project Assistant

Certificate of Analysis Summary 587061

COG Operating LLC, Artesia, NM

Project Name: Gunner 16 State SWD #001

Project Id:

Contact: Sheldon Hitchcock

Project Location: Lea County, NM

Date Received in Lab: Thu May-24-18 10:21 am

Report Date: 25-MAY-18

Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	587061-007		587061-008		587061-009		587061-010					
	Field Id:	Row sw-3		Row sw-4		Row sw-5		Row sw-6					
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL					
	Sampled:	May-22-18 07:15		May-22-18 07:20		May-22-18 07:25		May-22-18 07:55					
BTEX by EPA 8021B	***Extracted:***	May-24-18 17:00		May-24-18 17:00		May-24-18 17:00		May-24-18 17:00					
	Analyzed:	May-24-18 23:35		May-24-18 23:53		May-25-18 00:11		May-25-18 01:05					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Benzene		<0.00200	0.00200	<0.00200	0.00200	<0.00201	0.00201	<0.00199	0.00199				
Toluene		<0.00200	0.00200	<0.00200	0.00200	<0.00201	0.00201	<0.00199	0.00199				
Ethylbenzene		<0.00200	0.00200	<0.00200	0.00200	0.00291	0.00201	<0.00199	0.00199				
m,p-Xylenes		<0.00399	0.00399	<0.00401	0.00401	<0.00402	0.00402	<0.00398	0.00398				
o-Xylene		<0.00200	0.00200	<0.00200	0.00200	<0.00201	0.00201	<0.00199	0.00199				
Total Xylenes		<0.00200	0.00200	<0.00200	0.00200	<0.00201	0.00201	<0.00199	0.00199				
Total BTEX		<0.00200	0.00200	<0.00200	0.00200	0.00291	0.00201	<0.00199	0.00199				
Chloride by EPA 300	***Extracted:***	May-24-18 17:30		May-24-18 17:30		May-24-18 17:30		May-24-18 17:30					
	Analyzed:	May-24-18 21:04		May-24-18 21:22		May-24-18 21:28		May-24-18 21:33					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Chloride		519	4.97	489	4.99	317	5.00	110	4.99				
TPH By SW8015 Mod	***Extracted:***	May-24-18 11:00		May-24-18 11:00		May-24-18 11:00		May-24-18 11:00					
	Analyzed:	May-24-18 21:23		May-24-18 21:50		May-24-18 22:17		May-24-18 22:45					
	Units/RL:	mg/kg	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	<15.0	15.0				
Diesel Range Organics (DRO)		<15.0	15.0	<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	<15.0	15.0				
Total TPH		<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0				

Jessica Kramer
Project Assistant

Analytical Report 587061

for

COG Operating LLC

Project Manager: Sheldon Hitchcock

Gunner 16 State SWD #001

25-MAY-18

Collected By: Client

1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-18-25), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-17-16), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-17-12)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-17-16)
Xenco-Odessa (EPA Lab Code: TX00158): Texas (T104704400-18-14)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-17-3)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Phoenix Mobile (EPA Lab Code: AZ00901): Arizona (AZM757)
Xenco-Atlanta (LELAP Lab ID #04176)
Xenco-Tampa: Florida (E87429)
Xenco-Lakeland: Florida (E84098)

25-MAY-18

Project Manager: **Sheldon Hitchcock**
COG Operating LLC
2407 Pecos Avenue
Artesia, NM 88210

Reference: XENCO Report No(s): **587061**
Gunner 16 State SWD #001
Project Address: Lea County, NM

Sheldon Hitchcock:

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) 587061. 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. 587061 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,

Jessica Kramer

Jessica Kramer
Project Assistant

Sample Cross Reference 587061

COG Operating LLC, Artesia, NM

Gunner 16 State SWD #001

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
Row Bttm-1 0.5'	S	05-22-18 07:30	- 0.5 ft	587061-001
Row Bttm-2 0.5'	S	05-22-18 07:40	- 0.5 ft	587061-002
Row Bttm-3 0.5'	S	05-22-18 07:50	- 0.5 ft	587061-003
Row w. sw	S	05-22-18 07:00	ft	587061-004
Row sw-1	S	05-22-18 07:05	ft	587061-005
Row sw-2	S	05-22-18 07:10	ft	587061-006
Row sw-3	S	05-22-18 07:15	ft	587061-007
Row sw-4	S	05-22-18 07:20	ft	587061-008
Row sw-5	S	05-22-18 07:25	ft	587061-009
Row sw-6	S	05-22-18 07:55	ft	587061-010

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3051347 Inorganic Anions by EPA 300

Lab Sample ID 587133-002 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered below QC limits in the Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 587061-003, -004, -005, -006, -007, -008, -009, -010. The Laboratory Control Sample for Chloride is within laboratory Control Limits, therefore the data was accepted.

Batch: LBA-3051416 BTEX by EPA 8021B

Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Certificate of Analytical Results 587061

COG Operating LLC, Artesia, NM

Gunner 16 State SWD #001

Sample Id:	**Row Bttm-1 0.5'**	Matrix:	Soil	Date Received:	05.24.18 10.21
Lab Sample Id:	587061-001	Date Collected:	05.22.18 07.30	Sample Depth:	0.5 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	05.24.18 16.00	Basis:	Wet Weight
Seq Number:	3051340				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**206**	5.00	mg/kg	05.24.18 19.46		1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	05.24.18 11.00	Basis:	Wet Weight
Seq Number:	3051431				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	05.24.18 17.47	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	05.24.18 17.47	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	05.24.18 17.47	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.24.18 17.47	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	05.24.18 17.47	
o-Terphenyl	84-15-1	93	%	70-135	05.24.18 17.47	

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COG Operating LLC, Artesia, NM

Gunner 16 State SWD #001

Sample Id:	**Row Bttm-1 0.5'**	Matrix:	Soil	Date Received:	05.24.18 10.21
Lab Sample Id:	587061-001	Date Collected:	05.22.18 07.30	Sample Depth:	0.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	05.24.18 17.00	Basis:	Wet Weight
Seq Number:	3051416				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	05.24.18 21.45	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	05.24.18 21.45	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	05.24.18 21.45	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	05.24.18 21.45	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	05.24.18 21.45	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	05.24.18 21.45	U	1
Total BTEX		<0.00200	0.00200	mg/kg	05.24.18 21.45	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	102	%	70-130	05.24.18 21.45	
4-Bromofluorobenzene	460-00-4	107	%	70-130	05.24.18 21.45	

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COG Operating LLC, Artesia, NM

Gunner 16 State SWD #001

Sample Id:	**Row Bttm-2 0.5'**	Matrix:	Soil	Date Received:	05.24.18 10.21
Lab Sample Id:	587061-002	Date Collected:	05.22.18 07.40	Sample Depth:	0.5 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	05.24.18 16.00	Basis:	Wet Weight
Seq Number:	3051340				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**278**	5.00	mg/kg	05.24.18 19.52		1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	05.24.18 11.00	Basis:	Wet Weight
Seq Number:	3051431				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	05.24.18 18.14	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	05.24.18 18.14	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	05.24.18 18.14	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.24.18 18.14	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	05.24.18 18.14	
o-Terphenyl	84-15-1	92	%	70-135	05.24.18 18.14	

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COG Operating LLC, Artesia, NM

Gunner 16 State SWD #001

Sample Id:	**Row Bttm-2 0.5'**	Matrix:	Soil	Date Received:	05.24.18 10.21
Lab Sample Id:	587061-002	Date Collected:	05.22.18 07.40	Sample Depth:	0.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	05.24.18 17.00	Basis:	Wet Weight
Seq Number:	3051416				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	05.24.18 22.04	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	05.24.18 22.04	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	05.24.18 22.04	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	05.24.18 22.04	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	05.24.18 22.04	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	05.24.18 22.04	U	1
Total BTEX		<0.00199	0.00199	mg/kg	05.24.18 22.04	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	98	%	70-130	05.24.18 22.04	
4-Bromofluorobenzene	460-00-4	102	%	70-130	05.24.18 22.04	

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COG Operating LLC, Artesia, NM

Gunner 16 State SWD #001

Sample Id:	**Row Bttm-3 0.5'**	Matrix:	Soil	Date Received:	05.24.18 10.21
Lab Sample Id:	587061-003	Date Collected:	05.22.18 07.50	Sample Depth:	0.5 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	05.24.18 17.30	Basis:	Wet Weight
Seq Number:	3051347				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**199**	5.00	mg/kg	05.24.18 20.46		1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	05.24.18 11.00	Basis:	Wet Weight
Seq Number:	3051431				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	05.24.18 19.35	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	05.24.18 19.35	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	05.24.18 19.35	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.24.18 19.35	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	90	%	70-135	05.24.18 19.35	
o-Terphenyl	84-15-1	91	%	70-135	05.24.18 19.35	

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COG Operating LLC, Artesia, NM

Gunner 16 State SWD #001

Sample Id:	**Row Bttm-3 0.5'**	Matrix:	Soil	Date Received:	05.24.18 10.21
Lab Sample Id:	587061-003	Date Collected:	05.22.18 07.50	Sample Depth:	0.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	05.24.18 17.00	Basis:	Wet Weight
Seq Number:	3051416				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	05.24.18 22.22	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	05.24.18 22.22	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	05.24.18 22.22	U	1
m,p-Xylenes	179601-23-1	<0.00396	0.00396	mg/kg	05.24.18 22.22	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	05.24.18 22.22	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	05.24.18 22.22	U	1
Total BTEX		<0.00198	0.00198	mg/kg	05.24.18 22.22	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	95	%	70-130	05.24.18 22.22	
4-Bromofluorobenzene	460-00-4	112	%	70-130	05.24.18 22.22	

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COG Operating LLC, Artesia, NM

Gunner 16 State SWD #001

Sample Id:	**Row w. sw**	Matrix:	Soil	Date Received:	05.24.18 10.21
Lab Sample Id:	587061-004	Date Collected:	05.22.18 07.00		

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	05.24.18 17.30	Basis:	Wet Weight
Seq Number:	3051347				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**509**	5.00	mg/kg	05.24.18 20.28		1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	05.24.18 11.00	Basis:	Wet Weight
Seq Number:	3051431				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	05.24.18 20.02	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	05.24.18 20.02	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	05.24.18 20.02	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.24.18 20.02	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	84	%	70-135	05.24.18 20.02	
o-Terphenyl	84-15-1	83	%	70-135	05.24.18 20.02	

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COG Operating LLC, Artesia, NM

Gunner 16 State SWD #001

Sample Id:	**Row w. sw**	Matrix:	Soil	Date Received:	05.24.18 10.21
Lab Sample Id:	587061-004	Date Collected:	05.22.18 07.00		
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	05.24.18 17.00	Basis:	Wet Weight
Seq Number:	3051416				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	05.24.18 22.40	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	05.24.18 22.40	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	05.24.18 22.40	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	05.24.18 22.40	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	05.24.18 22.40	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	05.24.18 22.40	U	1
Total BTEX		<0.00202	0.00202	mg/kg	05.24.18 22.40	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	110	%	70-130	05.24.18 22.40	
4-Bromofluorobenzene	460-00-4	104	%	70-130	05.24.18 22.40	

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COG Operating LLC, Artesia, NM

Gunner 16 State SWD #001

Sample Id:	**Row sw-1**	Matrix:	Soil	Date Received:	05.24.18 10.21
Lab Sample Id:	587061-005	Date Collected:	05.22.18 07.05		

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	05.24.18 17.30	Basis:	Wet Weight
Seq Number:	3051347				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**656**	4.98	mg/kg	05.24.18 20.52		1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	05.24.18 11.00	Basis:	Wet Weight
Seq Number:	3051431				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	05.24.18 20.28	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	05.24.18 20.28	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	05.24.18 20.28	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.24.18 20.28	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	85	%	70-135	05.24.18 20.28	
o-Terphenyl	84-15-1	85	%	70-135	05.24.18 20.28	

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COG Operating LLC, Artesia, NM

Gunner 16 State SWD #001

Sample Id:	**Row sw-1**	Matrix:	Soil	Date Received:	05.24.18 10.21
Lab Sample Id:	587061-005	Date Collected:	05.22.18 07.05		
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	05.24.18 17.00	Basis:	Wet Weight
Seq Number:	3051416				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	05.24.18 22.58	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	05.24.18 22.58	U	1
Ethylbenzene	100-41-4	**0.0786**	0.00202	mg/kg	05.24.18 22.58		1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	05.24.18 22.58	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	05.24.18 22.58	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	05.24.18 22.58	U	1
Total BTEX		**0.0786**	0.00202	mg/kg	05.24.18 22.58		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	116	%	70-130	05.24.18 22.58	
4-Bromofluorobenzene	460-00-4	112	%	70-130	05.24.18 22.58	

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COG Operating LLC, Artesia, NM

Gunner 16 State SWD #001

Sample Id:	**Row sw-2**	Matrix:	Soil	Date Received:	05.24.18 10.21
Lab Sample Id:	587061-006	Date Collected:	05.22.18 07.10		

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	05.24.18 17.30	Basis:	Wet Weight
Seq Number:	3051347				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**205**	5.00	mg/kg	05.24.18 20.58		1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	05.24.18 11.00	Basis:	Wet Weight
Seq Number:	3051431				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	05.24.18 20.56	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	05.24.18 20.56	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	05.24.18 20.56	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.24.18 20.56	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	88	%	70-135	05.24.18 20.56	
o-Terphenyl	84-15-1	87	%	70-135	05.24.18 20.56	

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COG Operating LLC, Artesia, NM

Gunner 16 State SWD #001

Sample Id:	**Row sw-2**	Matrix:	Soil	Date Received:	05.24.18 10.21
Lab Sample Id:	587061-006	Date Collected:	05.22.18 07.10		
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	05.24.18 17.00	Basis:	Wet Weight
Seq Number:	3051416				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	05.24.18 23.16	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	05.24.18 23.16	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	05.24.18 23.16	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	05.24.18 23.16	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	05.24.18 23.16	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	05.24.18 23.16	U	1
Total BTEX		<0.00199	0.00199	mg/kg	05.24.18 23.16	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	86	%	70-130	05.24.18 23.16	
4-Bromofluorobenzene	460-00-4	100	%	70-130	05.24.18 23.16	

Certificate of Analytical Results 587061

COG Operating LLC, Artesia, NM

Gunner 16 State SWD #001

Sample Id:	**Row sw-3**	Matrix:	Soil	Date Received:	05.24.18 10.21
Lab Sample Id:	587061-007	Date Collected:	05.22.18 07.15		

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	05.24.18 17.30	Basis:	Wet Weight
Seq Number:	3051347				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**519**	4.97	mg/kg	05.24.18 21.04		1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	05.24.18 11.00	Basis:	Wet Weight
Seq Number:	3051431				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	05.24.18 21.23	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	05.24.18 21.23	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	05.24.18 21.23	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.24.18 21.23	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	84	%	70-135	05.24.18 21.23	
o-Terphenyl	84-15-1	83	%	70-135	05.24.18 21.23	

Certificate of Analytical Results 587061

COG Operating LLC, Artesia, NM

Gunner 16 State SWD #001

Sample Id:	**Row sw-3**	Matrix:	Soil	Date Received:	05.24.18 10.21
Lab Sample Id:	587061-007	Date Collected:	05.22.18 07.15		
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	05.24.18 17.00	Basis:	Wet Weight
Seq Number:	3051416				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	05.24.18 23.35	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	05.24.18 23.35	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	05.24.18 23.35	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	05.24.18 23.35	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	05.24.18 23.35	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	05.24.18 23.35	U	1
Total BTEX		<0.00200	0.00200	mg/kg	05.24.18 23.35	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	81	%	70-130	05.24.18 23.35	
4-Bromofluorobenzene	460-00-4	93	%	70-130	05.24.18 23.35	

Certificate of Analytical Results 587061

COG Operating LLC, Artesia, NM

Gunner 16 State SWD #001

Sample Id:	**Row sw-4**	Matrix:	Soil	Date Received:	05.24.18 10.21
Lab Sample Id:	587061-008	Date Collected:	05.22.18 07.20		

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	05.24.18 17.30	Basis:	Wet Weight
Seq Number:	3051347				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**489**	4.99	mg/kg	05.24.18 21.22		1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	05.24.18 11.00	Basis:	Wet Weight
Seq Number:	3051431				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	05.24.18 21.50	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	05.24.18 21.50	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	05.24.18 21.50	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.24.18 21.50	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	86	%	70-135	05.24.18 21.50	
o-Terphenyl	84-15-1	83	%	70-135	05.24.18 21.50	

Certificate of Analytical Results 587061

COG Operating LLC, Artesia, NM

Gunner 16 State SWD #001

Sample Id:	**Row sw-4**	Matrix:	Soil	Date Received:	05.24.18 10.21
Lab Sample Id:	587061-008	Date Collected:	05.22.18 07.20		
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	05.24.18 17.00	Basis:	Wet Weight
Seq Number:	3051416				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	05.24.18 23.53	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	05.24.18 23.53	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	05.24.18 23.53	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	05.24.18 23.53	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	05.24.18 23.53	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	05.24.18 23.53	U	1
Total BTEX		<0.00200	0.00200	mg/kg	05.24.18 23.53	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	84	%	70-130	05.24.18 23.53	
4-Bromofluorobenzene	460-00-4	92	%	70-130	05.24.18 23.53	

Certificate of Analytical Results 587061

COG Operating LLC, Artesia, NM

Gunner 16 State SWD #001

Sample Id:	**Row sw-5**	Matrix:	Soil	Date Received:	05.24.18 10.21
Lab Sample Id:	587061-009	Date Collected:	05.22.18 07.25		

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	05.24.18 17.30	Basis:	Wet Weight
Seq Number:	3051347				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**317**	5.00	mg/kg	05.24.18 21.28		1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	05.24.18 11.00	Basis:	Wet Weight
Seq Number:	3051431				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	05.24.18 22.17	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	05.24.18 22.17	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	05.24.18 22.17	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.24.18 22.17	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	87	%	70-135	05.24.18 22.17	
o-Terphenyl	84-15-1	84	%	70-135	05.24.18 22.17	

Certificate of Analytical Results 587061

COG Operating LLC, Artesia, NM

Gunner 16 State SWD #001

Sample Id:	**Row sw-5**	Matrix:	Soil	Date Received:	05.24.18 10.21
Lab Sample Id:	587061-009	Date Collected:	05.22.18 07.25		
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	05.24.18 17.00	Basis:	Wet Weight
Seq Number:	3051416				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	05.25.18 00.11	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	05.25.18 00.11	U	1
Ethylbenzene	100-41-4	**0.00291**	0.00201	mg/kg	05.25.18 00.11		1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	05.25.18 00.11	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	05.25.18 00.11	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	05.25.18 00.11	U	1
Total BTEX		**0.00291**	0.00201	mg/kg	05.25.18 00.11		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	96	%	70-130	05.25.18 00.11	
1,4-Difluorobenzene	540-36-3	86	%	70-130	05.25.18 00.11	

Certificate of Analytical Results 587061

COG Operating LLC, Artesia, NM

Gunner 16 State SWD #001

Sample Id:	**Row sw-6**	Matrix:	Soil	Date Received:	05.24.18 10.21
Lab Sample Id:	587061-010	Date Collected:	05.22.18 07.55		

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	05.24.18 17.30	Basis:	Wet Weight
Seq Number:	3051347				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**110**	4.99	mg/kg	05.24.18 21.33		1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	05.24.18 11.00	Basis:	Wet Weight
Seq Number:	3051431				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	05.24.18 22.45	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	05.24.18 22.45	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	05.24.18 22.45	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.24.18 22.45	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	86	%	70-135	05.24.18 22.45	
o-Terphenyl	84-15-1	83	%	70-135	05.24.18 22.45	

Certificate of Analytical Results 587061

COG Operating LLC, Artesia, NM

Gunner 16 State SWD #001

Sample Id:	**Row sw-6**	Matrix:	Soil	Date Received:	05.24.18 10.21
Lab Sample Id:	587061-010	Date Collected:	05.22.18 07.55		
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	05.24.18 17.00	Basis:	Wet Weight
Seq Number:	3051416				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	05.25.18 01.05	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	05.25.18 01.05	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	05.25.18 01.05	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	05.25.18 01.05	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	05.25.18 01.05	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	05.25.18 01.05	U	1
Total BTEX		<0.00199	0.00199	mg/kg	05.25.18 01.05	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	82	%	70-130	05.25.18 01.05	
4-Bromofluorobenzene	460-00-4	85	%	70-130	05.25.18 01.05	

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

SMP Client Sample **BLK** Method Blank

BKS/LCS Blank Spike/Laboratory Control Sample **BKSD/LCSD** Blank Spike Duplicate/Laboratory Control Sample Duplicate

MD/SD Method Duplicate/Sample Duplicate **MS** Matrix Spike **MSD:** Matrix Spike Duplicate

+ NELAC certification not offered for this compound.

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

QC Summary 587061

COG Operating LLC

Gunner 16 State SWD #001

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3051340 Matrix: Solid Date Prep: 05.24.18
MB Sample Id: 7655441-1-BLK LCS Sample Id: 7655441-1-BKS LCSD Sample Id: 7655441-1-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	229	92	231	92	90-110	1	20	mg/kg	05.24.18 16:53	

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3051347 Matrix: Solid Date Prep: 05.24.18
MB Sample Id: 7655442-1-BLK LCS Sample Id: 7655442-1-BKS LCSD Sample Id: 7655442-1-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	238	95	235	94	90-110	1	20	mg/kg	05.24.18 20:16	

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3051340 Matrix: Soil Date Prep: 05.24.18
Parent Sample Id: 587060-001 MS Sample Id: 587060-001 S MSD Sample Id: 587060-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	27.3	249	298	109	297	108	90-110	0	20	mg/kg	05.24.18 17:11	

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3051340 Matrix: Soil Date Prep: 05.24.18
Parent Sample Id: 587060-011 MS Sample Id: 587060-011 S MSD Sample Id: 587060-011 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<4.99	250	247	99	245	99	90-110	1	20	mg/kg	05.24.18 18:40	

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3051347 Matrix: Soil Date Prep: 05.24.18
Parent Sample Id: 587061-004 MS Sample Id: 587061-004 S MSD Sample Id: 587061-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	509	250	748	96	730	88	90-110	2	20	mg/kg	05.24.18 20:34	X

MS/MSD Percent Recovery
Relative Percent Difference
LCS/LCSD Recovery
Log Difference

[D] = 100*(C-A) / B
RPD = 200* | (C-E) / (C+E) |
[D] = 100 * (C) / [B]
Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample
A = Parent Result
C = MS/LCS Result
E = MSD/LCSD Result

MS = Matrix Spike
B = Spike Added
D = MSD/LCSD % Rec

Final 1.000

QC Summary 587061

COG Operating LLC

Gunner 16 State SWD #001

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3051347 Matrix: Soil Date Prep: 05.24.18
Parent Sample Id: 587133-002 MS Sample Id: 587133-002 S MSD Sample Id: 587133-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	691	249	915	90	927	95	90-110	1	20	mg/kg	05.24.18 21:57	

Analytical Method: **TPH By SW8015 Mod** Prep Method: TX1005P
Seq Number: 3051431 Matrix: Solid Date Prep: 05.24.18
MB Sample Id: 7655483-1-BLK LCS Sample Id: 7655483-1-BKS LCSD Sample Id: 7655483-1-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	977	98	1030	103	70-135	5	20	mg/kg	05.24.18 12:13	
Diesel Range Organics (DRO)	<15.0	1000	1050	105	1130	113	70-135	7	20	mg/kg	05.24.18 12:13	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	98		109		123		70-135	%	05.24.18 12:13
o-Terphenyl	100		101		109		70-135	%	05.24.18 12:13

Analytical Method: **TPH By SW8015 Mod** Prep Method: TX1005P
Seq Number: 3051431 Matrix: Soil Date Prep: 05.24.18
Parent Sample Id: 586753-001 MS Sample Id: 586753-001 S MSD Sample Id: 586753-001 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	998	979	98	989	99	70-135	1	20	mg/kg	05.24.18 13:35	
Diesel Range Organics (DRO)	<15.0	998	1030	103	1040	104	70-135	1	20	mg/kg	05.24.18 13:35	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	108		108		70-135	%	05.24.18 13:35
o-Terphenyl	97		97		70-135	%	05.24.18 13:35

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike
Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added
LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec
Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

QC Summary 587061

COG Operating LLC

Gunner 16 State SWD #001

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

Seq Number: 3051416 Matrix: Solid Date Prep: 05.24.18

MB Sample Id: 7655458-1-BLK LCS Sample Id: 7655458-1-BKS LCSD Sample Id: 7655458-1-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	0.0986	99	0.0901	90	70-130	9	35	mg/kg	05.24.18 19:38	
Toluene	<0.00200	0.0998	0.0940	94	0.0885	89	70-130	6	35	mg/kg	05.24.18 19:38	
Ethylbenzene	<0.00200	0.0998	0.100	100	0.0914	91	70-130	9	35	mg/kg	05.24.18 19:38	
m,p-Xylenes	<0.00399	0.200	0.211	106	0.192	96	70-130	9	35	mg/kg	05.24.18 19:38	
o-Xylene	<0.00200	0.0998	0.106	106	0.0955	96	70-130	10	35	mg/kg	05.24.18 19:38	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	86		101		89		70-130	%	05.24.18 19:38
4-Bromofluorobenzene	108		102		88		70-130	%	05.24.18 19:38

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

Seq Number: 3051416 Matrix: Soil Date Prep: 05.24.18

Parent Sample Id: 587060-001 MS Sample Id: 587060-001 S MSD Sample Id: 587060-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00199	0.0996	0.0635	64	0.0974	97	70-130	42	35	mg/kg	05.24.18 20:15	XF
Toluene	<0.00199	0.0996	0.0624	63	0.0947	95	70-130	41	35	mg/kg	05.24.18 20:15	XF
Ethylbenzene	<0.00199	0.0996	0.0542	54	0.0949	95	70-130	55	35	mg/kg	05.24.18 20:15	XF
m,p-Xylenes	<0.00398	0.199	0.133	67	0.198	99	70-130	39	35	mg/kg	05.24.18 20:15	XF
o-Xylene	<0.00199	0.0996	0.0670	67	0.101	101	70-130	40	35	mg/kg	05.24.18 20:15	XF

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	94		96		70-130	%	05.24.18 20:15
4-Bromofluorobenzene	82		121		70-130	%	05.24.18 20:15

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike

Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added

LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec

Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

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 # 597061

Client / Reporting Information

Company Name / Branch: COG Operating, LLC
Company Address: 2407 Pecos Ave. Artesia NM 88210
Email: slhitchcock@concho.com Phone No: 575-703-6475
dneel2@concho.com; cgray@concho.com; rhaskell@concho.com
Project Contact: Sheldon Hitchcock
Samplers's Name: Sheldon Hitchcock

Project Information

Project Name/Number: Gunner 16 State SWD #001
Project Location: Lea County, NM
Invoice To: COG Operating, LLC
Attn: Robert McNeill
600 W. Illnois Ave.
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 (EPA8015M)	BTEX (EPA 8021B)	CHLORIDES (EPA 300)	Field Comments
1	ROW B+tm-1 0.5'	0.5'	5/22/18	7:30	S	1								/	X	X	X	
2	ROW B+tm-2 0.5'			7:40	S	1								/	X	X	X	
3	ROW B+tm-3 0.5'			7:50	S	1								/	X	X	X	
4	ROW W. SW	N/A		7:00	S	1								/	X	X	X	
5	ROW SW-1			7:05	S	1								/	X	X	X	
6	ROW SW-2			7:10	S	1								/	X	X	X	
7	ROW SW-3			7:15	S	1								/	X	X	X	
8	ROW SW-4			7:20	S	1								/	X	X	X	
9	ROW SW-5			7:25	S	1								/	X	X	X	
10	ROW SW-6			7:55	S	1								/	X	X	X	

Turnaround Time (Business days)

- [x] 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	Sheldon Hitchcock	5/23 1310	1	2	5/23 15:20	2 5/23/18 1019
3	Relinquished by:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
			3	4		4
5	Relinquished by:	Date Time:	Received By:	Custody Seal #	Preserved where applicable	On Ice / Cooler Temp. / Thermo. Corr. Factor
			5			1.8 1.8 0.0

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: 05/24/2018 10:21:31 AM

Work Order #: 587061

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)?	1.8	
#2 *Shipping container in good condition?	**Yes**	
#3 *Samples received on ice?	**Yes**	
#4 *Custody Seals intact on shipping container/ cooler?	**N/A**	
#5 Custody Seals intact on sample bottles?	**N/A**	
#6*Custody Seals Signed and dated?	**N/A**	
#7 *Chain of Custody present?	**Yes**	
#8 Any missing/extra samples?	**No**	
#9 Chain of Custody signed when relinquished/ received?	**Yes**	
#10 Chain of Custody agrees with sample labels/matrix?	**Yes**	
#11 Container label(s) legible and intact?	**Yes**	
#12 Samples in proper container/ bottle?	**Yes**	THP was recevied in bulk container
#13 Samples properly preserved?	**Yes**	
#14 Sample container(s) intact?	**Yes**	
#15 Sufficient sample amount for indicated test(s)?	**Yes**	
#16 All samples received within hold time?	**Yes**	
#17 Subcontract of sample(s)?	**N/A**	
#18 Water 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: Brianna Teel Date: 05/24/2018
Brianna Teel

Checklist reviewed by: Jessica Kramer Date: 05/24/2018
Jessica Kramer

Certificate of Analysis Summary 587063

COG Operating LLC, Artesia, NM

Project Name: Gunner 16 State SWD #001

Project Id:

Contact: Sheldon Hitchcock

Project Location: Lea County, NM

Date Received in Lab: Thu May-24-18 10:19 am

Report Date: 25-MAY-18

Project Manager: Jessica Kramer

Analysis Requested									
	Lab Id:	587063-001		587063-002					
	Field Id:	Row AH-1 0'		Row AH-1 1' Refasal					
	Depth:	0- ft		1- ft					
	Matrix:	SOIL		SOIL					
	Sampled:	May-17-18 09:00		May-17-18 09:15					
BTEX by EPA 8021B	***Extracted:***	May-24-18 17:00		May-24-18 17:00					
	Analyzed:	May-25-18 01:23		May-25-18 01:42					
	Units/RL:	mg/kg	RL	mg/kg	RL				
Benzene		<0.00202	0.00202	<0.00200	0.00200				
Toluene		<0.00202	0.00202	<0.00200	0.00200				
Ethylbenzene		<0.00202	0.00202	<0.00200	0.00200				
m,p-Xylenes		<0.00403	0.00403	<0.00401	0.00401				
o-Xylene		<0.00202	0.00202	<0.00200	0.00200				
Total Xylenes		<0.00202	0.00202	<0.00200	0.00200				
Total BTEX		<0.00202	0.00202	<0.00200	0.00200				
Chloride by EPA 300	***Extracted:***	May-24-18 17:30		May-24-18 17:30					
	Analyzed:	May-24-18 21:39		May-24-18 21:45					
	Units/RL:	mg/kg	RL	mg/kg	RL				
Chloride		12400	250	93.6	4.99				
TPH By SW8015 Mod	***Extracted:***	May-24-18 11:00		May-24-18 11:00					
	Analyzed:	May-24-18 23:12		May-24-18 23:39					
	Units/RL:	mg/kg	RL	mg/kg	RL				
Gasoline Range Hydrocarbons (GRO)		<15.0	15.0	<15.0	15.0				
Diesel Range Organics (DRO)		<15.0	15.0	<15.0	15.0				
Oil Range Hydrocarbons (ORO)		<15.0	15.0	<15.0	15.0				
Total TPH		<15.0	15.0	<15.0	15.0				

Jessica Kramer
Project Assistant

Analytical Report 587063

for

COG Operating LLC

Project Manager: Sheldon Hitchcock

Gunner 16 State SWD #001

25-MAY-18

Collected By: Client

1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-18-25), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-17-16), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-17-12)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-17-16)
Xenco-Odessa (EPA Lab Code: TX00158): Texas (T104704400-18-14)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-17-3)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Phoenix Mobile (EPA Lab Code: AZ00901): Arizona (AZM757)
Xenco-Atlanta (LELAP Lab ID #04176)
Xenco-Tampa: Florida (E87429)
Xenco-Lakeland: Florida (E84098)

25-MAY-18

Project Manager: **Sheldon Hitchcock**
COG Operating LLC
2407 Pecos Avenue
Artesia, NM 88210

Reference: XENCO Report No(s): **587063**
Gunner 16 State SWD #001
Project Address: Lea County, NM

Sheldon Hitchcock:

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) 587063. 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. 587063 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,

Jessica Kramer

Jessica Kramer
Project Assistant

Sample Cross Reference 587063

COG Operating LLC, Artesia, NM

Gunner 16 State SWD #001

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
Row AH-1 0'	S	05-17-18 09:00	0 ft	587063-001
Row AH-1 1' Refasal	S	05-17-18 09:15	1 ft	587063-002

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3051416 BTEX by EPA 8021B

Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Certificate of Analytical Results 587063

COG Operating LLC, Artesia, NM

Gunner 16 State SWD #001

Sample Id:	**Row AH-1 0'**	Matrix:	Soil	Date Received:	05.24.18 10.19
Lab Sample Id:	587063-001	Date Collected:	05.17.18 09.00	Sample Depth:	0 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	05.24.18 17.30	Basis:	Wet Weight
Seq Number:	3051347				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**12400**	250	mg/kg	05.24.18 21.39		50

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	05.24.18 11.00	Basis:	Wet Weight
Seq Number:	3051431				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	05.24.18 23.12	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	05.24.18 23.12	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	05.24.18 23.12	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.24.18 23.12	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	98	%	70-135	05.24.18 23.12	
o-Terphenyl	84-15-1	95	%	70-135	05.24.18 23.12	

Certificate of Analytical Results 587063

COG Operating LLC, Artesia, NM

Gunner 16 State SWD #001

Sample Id:	**Row AH-1 0'**	Matrix:	Soil	Date Received:	05.24.18 10.19
Lab Sample Id:	587063-001	Date Collected:	05.17.18 09.00	Sample Depth:	0 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	05.24.18 17.00	Basis:	Wet Weight
Seq Number:	3051416				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	05.25.18 01.23	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	05.25.18 01.23	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	05.25.18 01.23	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	05.25.18 01.23	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	05.25.18 01.23	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	05.25.18 01.23	U	1
Total BTEX		<0.00202	0.00202	mg/kg	05.25.18 01.23	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	88	%	70-130	05.25.18 01.23	
4-Bromofluorobenzene	460-00-4	111	%	70-130	05.25.18 01.23	

Certificate of Analytical Results 587063

COG Operating LLC, Artesia, NM

Gunner 16 State SWD #001

Sample Id:	**Row AH-1 1' Refasal**	Matrix:	Soil	Date Received:	05.24.18 10.19
Lab Sample Id:	587063-002	Date Collected:	05.17.18 09.15	Sample Depth:	1 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	05.24.18 17.30	Basis:	Wet Weight
Seq Number:	3051347				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**93.6**	4.99	mg/kg	05.24.18 21.45		1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	05.24.18 11.00	Basis:	Wet Weight
Seq Number:	3051431				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	05.24.18 23.39	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	05.24.18 23.39	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	05.24.18 23.39	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.24.18 23.39	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	83	%	70-135	05.24.18 23.39	
o-Terphenyl	84-15-1	76	%	70-135	05.24.18 23.39	

Certificate of Analytical Results 587063

COG Operating LLC, Artesia, NM

Gunner 16 State SWD #001

Sample Id:	**Row AH-1 1' Refasal**	Matrix:	Soil	Date Received:	05.24.18 10.19
Lab Sample Id:	587063-002	Date Collected:	05.17.18 09.15	Sample Depth:	1 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	05.24.18 17.00	Basis:	Wet Weight
Seq Number:	3051416				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	05.25.18 01.42	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	05.25.18 01.42	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	05.25.18 01.42	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	05.25.18 01.42	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	05.25.18 01.42	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	05.25.18 01.42	U	1
Total BTEX		<0.00200	0.00200	mg/kg	05.25.18 01.42	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	114	%	70-130	05.25.18 01.42	
4-Bromofluorobenzene	460-00-4	99	%	70-130	05.25.18 01.42	

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

SMP Client Sample **BLK** Method Blank

BKS/LCS Blank Spike/Laboratory Control Sample **BKSD/LCSD** Blank Spike Duplicate/Laboratory Control Sample Duplicate

MD/SD Method Duplicate/Sample Duplicate **MS** Matrix Spike **MSD:** Matrix Spike Duplicate

+ NELAC certification not offered for this compound.

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

QC Summary 587063

COG Operating LLC

Gunner 16 State SWD #001

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3051347 Matrix: Solid Date Prep: 05.24.18
MB Sample Id: 7655442-1-BLK LCS Sample Id: 7655442-1-BKS LCSD Sample Id: 7655442-1-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	238	95	235	94	90-110	1	20	mg/kg	05.24.18 20:16	

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3051347 Matrix: Soil Date Prep: 05.24.18
Parent Sample Id: 587061-004 MS Sample Id: 587061-004 S MSD Sample Id: 587061-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	509	250	748	96	730	88	90-110	2	20	mg/kg	05.24.18 20:34	X

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3051347 Matrix: Soil Date Prep: 05.24.18
Parent Sample Id: 587133-002 MS Sample Id: 587133-002 S MSD Sample Id: 587133-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	691	249	915	90	927	95	90-110	1	20	mg/kg	05.24.18 21:57	

Analytical Method: **TPH By SW8015 Mod** Prep Method: TX1005P
Seq Number: 3051431 Matrix: Solid Date Prep: 05.24.18
MB Sample Id: 7655483-1-BLK LCS Sample Id: 7655483-1-BKS LCSD Sample Id: 7655483-1-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	977	98	1030	103	70-135	5	20	mg/kg	05.24.18 12:13	
Diesel Range Organics (DRO)	<15.0	1000	1050	105	1130	113	70-135	7	20	mg/kg	05.24.18 12:13	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	98		109		123		70-135	%	05.24.18 12:13
o-Terphenyl	100		101		109		70-135	%	05.24.18 12:13

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike
Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added
LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec
Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

QC Summary 587063

COG Operating LLC

Gunner 16 State SWD #001

Analytical Method: **TPH By SW8015 Mod** Prep Method: TX1005P
Seq Number: 3051431 Matrix: Soil Date Prep: 05.24.18
Parent Sample Id: 586753-001 MS Sample Id: 586753-001 S MSD Sample Id: 586753-001 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	998	979	98	989	99	70-135	1	20	mg/kg	05.24.18 13:35	
Diesel Range Organics (DRO)	<15.0	998	1030	103	1040	104	70-135	1	20	mg/kg	05.24.18 13:35	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	108		108		70-135	%	05.24.18 13:35
o-Terphenyl	97		97		70-135	%	05.24.18 13:35

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3051416 Matrix: Solid Date Prep: 05.24.18
MB Sample Id: 7655458-1-BLK LCS Sample Id: 7655458-1-BKS LCSD Sample Id: 7655458-1-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	0.0986	99	0.0901	90	70-130	9	35	mg/kg	05.24.18 19:38	
Toluene	<0.00200	0.0998	0.0940	94	0.0885	89	70-130	6	35	mg/kg	05.24.18 19:38	
Ethylbenzene	<0.00200	0.0998	0.100	100	0.0914	91	70-130	9	35	mg/kg	05.24.18 19:38	
m,p-Xylenes	<0.00399	0.200	0.211	106	0.192	96	70-130	9	35	mg/kg	05.24.18 19:38	
o-Xylene	<0.00200	0.0998	0.106	106	0.0955	96	70-130	10	35	mg/kg	05.24.18 19:38	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	86		101		89		70-130	%	05.24.18 19:38
4-Bromofluorobenzene	108		102		88		70-130	%	05.24.18 19:38

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3051416 Matrix: Soil Date Prep: 05.24.18
Parent Sample Id: 587060-001 MS Sample Id: 587060-001 S MSD Sample Id: 587060-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00199	0.0996	0.0635	64	0.0974	97	70-130	42	35	mg/kg	05.24.18 20:15	XF
Toluene	<0.00199	0.0996	0.0624	63	0.0947	95	70-130	41	35	mg/kg	05.24.18 20:15	XF
Ethylbenzene	<0.00199	0.0996	0.0542	54	0.0949	95	70-130	55	35	mg/kg	05.24.18 20:15	XF
m,p-Xylenes	<0.00398	0.199	0.133	67	0.198	99	70-130	39	35	mg/kg	05.24.18 20:15	XF
o-Xylene	<0.00199	0.0996	0.0670	67	0.101	101	70-130	40	35	mg/kg	05.24.18 20:15	XF

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	94		96		70-130	%	05.24.18 20:15
4-Bromofluorobenzene	82		121		70-130	%	05.24.18 20:15

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike
Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added
LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec
Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

CHAIN OF CUSTODY

Page 1 Of 1

XENCO LABORATORIES

Setting the Standard since 1990

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

Xenco Quote # | Xenco Job # 587063

Client / Reporting Information

Company Name / Branch: COG Operating, LLC
Company Address: 2407 Pecos Ave. Artesia NM 88210
Email: slhitchcock@concho.com Phone No: 575-703-6475
dneel2@concho.com; cgray@concho.com; rhaskell@concho.com
Project Contact: Sheldon Hitchcock
Samplers's Name: Sheldon Hitchcock

Project Information

Project Name/Number: Gunner 16 State SWD #001
Project Location: Lea County, NM
Invoice To: COG Operating, LLC
Attn: Robert McNeill
600 W. Illnois Ave.
Midland Tx, 79701
PO Number:

Analytical Information

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 (EPA8015M)	BTEX (EPA 8021B)	CHLORIDES (EPA 300)	Field Comments
1	ROW AH-1 0'	0'	5/17/18	9:00	S	1								/	X	X	X	
2	ROW AH-1 1' refusal	1'	5/17/18	9:15	S	1								/	X	X	X	
3					S	1												
4					S	1												
5					S	1												
6					S	1												
7					S	1												
8					S	1												
9					S	1												
10					S	1												

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

Turnaround Time (Business days)

- [x] 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	Sheldon Hitchcock	5/23 1310	1	2	5/23 1530	2 Mitzel 5/24/18
3	Relinquished by:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
			3	4		4
5	Relinquished by:	Date Time:	Received By:	Custody Seal #	Preserved where applicable	On Ice / Cooler Temp. / Thermo. Corr. Factor
			5			1.8 1.0 0.0

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: 05/24/2018 10:19:00 AM

Work Order #: 587063

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)?	1.8
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seals intact on shipping container/ cooler?	**N/A**
#5 Custody Seals intact on sample bottles?	**N/A**
#6*Custody Seals Signed and dated?	**N/A**
#7 *Chain of Custody present?	**Yes**
#8 Any missing/extra samples?	**No**
#9 Chain of Custody signed when relinquished/ received?	**Yes**
#10 Chain of Custody agrees with sample labels/matrix?	**Yes**
#11 Container label(s) legible and intact?	**Yes**
#12 Samples in proper container/ bottle?	**Yes**
#13 Samples properly preserved?	**Yes**
#14 Sample container(s) intact?	**Yes**
#15 Sufficient sample amount for indicated test(s)?	**Yes**
#16 All samples received within hold time?	**Yes**
#17 Subcontract of sample(s)?	**N/A**
#18 Water 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: Brianna Teel Date: 05/24/2018
Brianna Teel

Checklist reviewed by: Jessica Kramer Date: 05/24/2018
Jessica Kramer

Certificate of Analysis Summary 587370

COG Operating LLC, Artesia, NM

Project Name: Gunner 16 st SWD #1

Project Id:
Contact: Sheldon Hitchcock
Project Location: Lea Co. NM

Date Received in Lab: Tue May-29-18 08:09 am
Report Date: 30-MAY-18
Project Manager: Jessica Kramer

Analysis Requested									
	Lab Id:	587370-001		587370-002					
	Field Id:	BH-1/BH-2/3 3.5'		BH-2/3 / BH-5/6 3.5"					
	Depth:	3.5 ft		3.5 ft					
	Matrix:	SOIL		SOIL					
	Sampled:	May-25-18 12:00		May-25-18 12:05					
Chloride by EPA 300	***Extracted:***	May-29-18 14:00		May-29-18 14:00					
	Analyzed:	May-29-18 20:46		May-29-18 20:51					
	Units/RL:	mg/kg	RL	mg/kg	RL				
Chloride		163	4.99	439	4.97				

Jessica Kramer
Project Assistant

Analytical Report 587370

for

COG Operating LLC

Project Manager: Sheldon Hitchcock

Gunner 16 st SWD #1

30-MAY-18

Collected By: Client

1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-18-25), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-17-16), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-17-12)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-17-16)
Xenco-Odessa (EPA Lab Code: TX00158): Texas (T104704400-18-14)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-17-3)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Phoenix Mobile (EPA Lab Code: AZ00901): Arizona (AZM757)
Xenco-Atlanta (LELAP Lab ID #04176)
Xenco-Tampa: Florida (E87429)
Xenco-Lakeland: Florida (E84098)

30-MAY-18

Project Manager: **Sheldon Hitchcock**
COG Operating LLC
2407 Pecos Avenue
Artesia, NM 88210

Reference: XENCO Report No(s): **587370**
Gunner 16 st SWD #1
Project Address: Lea Co. NM

Sheldon Hitchcock:

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) 587370. 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. 587370 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,

Jessica Kramer

Jessica Kramer
Project Assistant

Sample Cross Reference 587370

COG Operating LLC, Artesia, NM

Gunner 16 st SWD #1

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
BH-1/BH-2/3 3.5'	S	05-25-18 12:00	- 3.5 ft	587370-001
BH-2/3 / BH-5/6 3.5"	S	05-25-18 12:05	- 3.5 ft	587370-002

CASE NARRATIVE

Client Name: COG Operating LLC

Project Name: Gunner 16 st SWD #1

Project ID:
Work Order Number(s): *587370*

Report Date: *30-MAY-18*
Date Received: *05/29/2018*

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Certificate of Analytical Results 587370

COG Operating LLC, Artesia, NM

Gunner 16 st SWD #1

Sample Id:	**BH-1/BH-2/3 3.5'**	Matrix:	Soil	Date Received:	05.29.18 08.09
Lab Sample Id:	587370-001	Date Collected:	05.25.18 12.00	Sample Depth:	3.5 ft
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	05.29.18 14.00	Basis:	Wet Weight
Seq Number:	3051658				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**163**	4.99	mg/kg	05.29.18 20.46		1

Certificate of Analytical Results 587370

COG Operating LLC, Artesia, NM

Gunner 16 st SWD #1

Sample Id:	**BH-2/3 / BH-5/6 3.5"**	Matrix:	Soil	Date Received:	05.29.18 08.09
Lab Sample Id:	587370-002	Date Collected:	05.25.18 12.05	Sample Depth:	3.5 ft
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	05.29.18 14.00	Basis:	Wet Weight
Seq Number:	3051658				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**439**	4.97	mg/kg	05.29.18 20.51		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

SMP Client Sample **BLK** Method Blank

BKS/LCS Blank Spike/Laboratory Control Sample **BKSD/LCSD** Blank Spike Duplicate/Laboratory Control Sample Duplicate

MD/SD Method Duplicate/Sample Duplicate **MS** Matrix Spike **MSD:** Matrix Spike Duplicate

+ NELAC certification not offered for this compound.

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

QC Summary 587370

COG Operating LLC

Gunner 16 st SWD #1

Analytical Method: **Chloride by EPA 300** Prep Method: E300P

Seq Number: 3051658 Matrix: Solid Date Prep: 05.29.18

MB Sample Id: 7655591-1-BLK LCS Sample Id: 7655591-1-BKS LCSD Sample Id: 7655591-1-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	267	107	262	105	90-110	2	20	mg/kg	05.29.18 18:28	

Analytical Method: **Chloride by EPA 300** Prep Method: E300P

Seq Number: 3051658 Matrix: Soil Date Prep: 05.29.18

Parent Sample Id: 587245-009 MS Sample Id: 587245-009 S MSD Sample Id: 587245-009 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	19.9	248	278	104	279	104	90-110	0	20	mg/kg	05.29.18 18:44	

Analytical Method: **Chloride by EPA 300** Prep Method: E300P

Seq Number: 3051658 Matrix: Soil Date Prep: 05.29.18

Parent Sample Id: 587245-019 MS Sample Id: 587245-019 S MSD Sample Id: 587245-019 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	36.0	250	278	97	280	98	90-110	1	20	mg/kg	05.29.18 19:58	

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike

Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added

LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec

Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

CHAIN OF CUSTODY

Revision 2016.1

XENCO LABORATORIES

Setting the Standard since 1990

Page 1 Of 1

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Xenco Quote # | Xenco Job # 587370

Client / Reporting Information

Company Name / Branch: COG Operating
Company Address:
Email: Shitchcock@conchoresources.com Phone No:
Project Contact: Sheldon Hitchcock
Samplers's Name: Sheldon Hitchcock

Project Information

Project Name/Number: Gunner 16 St SWD #1
Project Location: Lea Co, NM
Invoice To: @ COG - Robert McNeill
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	Chlorides EPA 300	Field Comments
1	BH-1 / BH-2/3 3.5'	3.5'	5/25/17	12:00	S	1								/	/	
2	BH-2/3 / BH-5/6 3.5'	3.5'		12:05	S	1								/	/	
3																
4																
5																
6																
7																
8																
9																
10																

Turnaround Time (Business days)

- [X] 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
- [ ] Level II Report with TRRP checklist

Notes:

FED-EX / UPS: Tracking #

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

	Relinquished by Samples:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1	Sheldon Hitchcock	5/25/18/1:20	Timothy R. Elliott		5/25 1530	
2						5/29/18 0807
3	Relinquished by:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
4						
5	Relinquished by:	Date Time:	Received By:	Custody Seal #	Preserved where applicable	On Ice / Cooler Temp. / Thermo. Corr. Factor
						2.9 / 2.8 / 0.0

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 losses 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: 05/29/2018 08:09:51 AM

Work Order #: 587370

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)?	2.4
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seals intact on shipping container/ cooler?	**N/A**
#5 Custody Seals intact on sample bottles?	**N/A**
#6*Custody Seals Signed and dated?	**N/A**
#7 *Chain of Custody present?	**Yes**
#8 Any missing/extra samples?	**No**
#9 Chain of Custody signed when relinquished/ received?	**Yes**
#10 Chain of Custody agrees with sample labels/matrix?	**Yes**
#11 Container label(s) legible and intact?	**Yes**
#12 Samples in proper container/ bottle?	**Yes**
#13 Samples properly preserved?	**Yes**
#14 Sample container(s) intact?	**Yes**
#15 Sufficient sample amount for indicated test(s)?	**Yes**
#16 All samples received within hold time?	**Yes**
#17 Subcontract of sample(s)?	**N/A**
#18 Water 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: Brianna Teel Date: 05/29/2018
Brianna Teel

Checklist reviewed by: Jessica Kramer Date: 05/29/2018
Jessica Kramer

Certificate of Analysis Summary 587369

COG Operating LLC, Artesia, NM

Project Name: Gunner 16 st SWD #1

Project Id:
Contact: Sheldon Hitchcock
Project Location: Lea Co. NM

Date Received in Lab: Tue May-29-18 08:02 am
Report Date: 30-MAY-18
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	587369-001		587369-002									
	Field Id:	ROW SW-1		P- SW-1									
	Depth:												
	Matrix:	SOIL		SOIL									
	Sampled:	May-25-18 13:00		May-25-18 13:30									
Chloride by EPA 300	***Extracted:***	May-29-18 14:00		May-29-18 14:00									
	Analyzed:	May-29-18 20:35		May-29-18 20:40									
	Units/RL:	mg/kg	RL	mg/kg	RL								
Chloride		47.8	4.93	20.6	4.93								

Jessica Kramer
Project Assistant

Analytical Report 587369

for

COG Operating LLC

Project Manager: Sheldon Hitchcock

Gunner 16 st SWD #1

30-MAY-18

Collected By: Client

1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-18-25), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-17-16), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-17-12)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-17-16)
Xenco-Odessa (EPA Lab Code: TX00158): Texas (T104704400-18-14)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-17-3)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Phoenix Mobile (EPA Lab Code: AZ00901): Arizona (AZM757)
Xenco-Atlanta (LELAP Lab ID #04176)
Xenco-Tampa: Florida (E87429)
Xenco-Lakeland: Florida (E84098)

30-MAY-18

Project Manager: **Sheldon Hitchcock**
COG Operating LLC
2407 Pecos Avenue
Artesia, NM 88210

Reference: XENCO Report No(s): **587369**
Gunner 16 st SWD #1
Project Address: Lea Co. NM

Sheldon Hitchcock:

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) 587369. 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. 587369 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,

Jessica Kramer

Jessica Kramer
Project Assistant

Sample Cross Reference 587369

COG Operating LLC, Artesia, NM

Gunner 16 st SWD #1

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
ROW SW-1	S	05-25-18 13:00		587369-001
P- SW-1	S	05-25-18 13:30		587369-002

CASE NARRATIVE

Client Name: COG Operating LLC

Project Name: Gunner 16 st SWD #1

Project ID:
Work Order Number(s): *587369*

Report Date: *30-MAY-18*
Date Received: *05/29/2018*

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Certificate of Analytical Results 587369

COG Operating LLC, Artesia, NM

Gunner 16 st SWD #1

Sample Id:	**ROW SW-1**	Matrix:	Soil	Date Received:	05.29.18 08.02
Lab Sample Id:	587369-001	Date Collected:	05.25.18 13.00		
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	05.29.18 14.00	Basis:	Wet Weight
Seq Number:	3051658				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**47.8**	4.93	mg/kg	05.29.18 20.35		1

Certificate of Analytical Results 587369

COG Operating LLC, Artesia, NM

Gunner 16 st SWD #1

Sample Id:	**P- SW-1**	Matrix:	Soil	Date Received:	05.29.18 08.02
Lab Sample Id:	587369-002	Date Collected:	05.25.18 13.30		
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	05.29.18 14.00	Basis:	Wet Weight
Seq Number:	3051658				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**20.6**	4.93	mg/kg	05.29.18 20.40		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

SMP Client Sample **BLK** Method Blank

BKS/LCS Blank Spike/Laboratory Control Sample **BKSD/LCSD** Blank Spike Duplicate/Laboratory Control Sample Duplicate

MD/SD Method Duplicate/Sample Duplicate **MS** Matrix Spike **MSD:** Matrix Spike Duplicate

+ NELAC certification not offered for this compound.

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

QC Summary 587369

COG Operating LLC

Gunner 16 st SWD #1

Analytical Method: **Chloride by EPA 300** Prep Method: E300P

Seq Number: 3051658 Matrix: Solid Date Prep: 05.29.18

MB Sample Id: 7655591-1-BLK LCS Sample Id: 7655591-1-BKS LCSD Sample Id: 7655591-1-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	267	107	262	105	90-110	2	20	mg/kg	05.29.18 18:28	

Analytical Method: **Chloride by EPA 300** Prep Method: E300P

Seq Number: 3051658 Matrix: Soil Date Prep: 05.29.18

Parent Sample Id: 587245-009 MS Sample Id: 587245-009 S MSD Sample Id: 587245-009 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	19.9	248	278	104	279	104	90-110	0	20	mg/kg	05.29.18 18:44	

Analytical Method: **Chloride by EPA 300** Prep Method: E300P

Seq Number: 3051658 Matrix: Soil Date Prep: 05.29.18

Parent Sample Id: 587245-019 MS Sample Id: 587245-019 S MSD Sample Id: 587245-019 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	36.0	250	278	97	280	98	90-110	1	20	mg/kg	05.29.18 19:58	

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike

Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added

LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec

Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

CHAIN OF CUSTODY

Page 1 Of 1

Revision 2016.1

XENCO LABORATORIES

Setting the Standard since 1990

Stafford, TX (281) 240-4200 | El Paso, TX (915) 585-3443 | Midland, TX (432) 704-5440 | Phoenix, AZ (480) 355-0900 | Service Center- Amarillo, TX (806)678-4514
Dallas, TX (214) 902-0300 | Lubbock, TX (806) 794-1296 | San Antonio, TX (210) 509-3334 | Service Center - Baton Rouge, LA (832) 712-8143 | Service Center- Hobbs, NM (575) 392-7550

www.xenco.com

Xenco Quote #: | Xenco Job #: 587369

Client / Reporting Information

Company Name / Branch: COG Operating, LLC
Company Address:
Email: slhitchcock@concho.com
Project Contact: Sheldon Hitchcock
Samplers's Name: Sheldon Hitchcock

Project Information

Project Name/Number: Gunner 16 St SWD #1
Project Location: Lea Co. NM
Invoice To: Robert McNeill COG Operating
PO Number:

Analytical Information

Chlorides EPA 300

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	Chlorides EPA 300	Field Comments
1	ROW SW-1	N/A	5/25/17	11:00	S	1								/	/	
2	P-SW-1	N/A	5/25/17	11:30	S	1								/	/	
3																
4																
5																
6																
7																
8																
9																
10																

Turnaround Time (Business days)

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

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

Data Deliverable Information

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

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	Sheldon Hitchcock	5/25/18 1:20	Timothy P. Elliott		5/25 1530	
2						5/29/18 0800
3	Relinquished by:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
4						
5	Relinquished by:	Date Time:	Received By:	Custody Seal #	Preserved where applicable	On Ice / Cooler Temp. / Thermo Corr. Factor
						2.4 2.8 0.0

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 losses 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: 05/29/2018 08:02:11 AM

Work Order #: 587369

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)?	2.4
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seals intact on shipping container/ cooler?	**N/A**
#5 Custody Seals intact on sample bottles?	**N/A**
#6*Custody Seals Signed and dated?	**N/A**
#7 *Chain of Custody present?	**Yes**
#8 Any missing/extra samples?	**No**
#9 Chain of Custody signed when relinquished/ received?	**Yes**
#10 Chain of Custody agrees with sample labels/matrix?	**Yes**
#11 Container label(s) legible and intact?	**Yes**
#12 Samples in proper container/ bottle?	**Yes**
#13 Samples properly preserved?	**Yes**
#14 Sample container(s) intact?	**Yes**
#15 Sufficient sample amount for indicated test(s)?	**Yes**
#16 All samples received within hold time?	**Yes**
#17 Subcontract of sample(s)?	**N/A**
#18 Water 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: Brianna Teel Date: 05/29/2018
Brianna Teel

Checklist reviewed by: Jessica Kramer Date: 05/29/2018
Jessica Kramer

Certificate of Analysis Summary 587889

COG Operating LLC, Artesia, NM

Project Name: Gunner 16 st SWD #1

Project Id:

Contact: Sheldon Hitchcock

Project Location: Lea Co. NM

Date Received in Lab: Fri Jun-01-18 01:15 pm

Report Date: 04-JUN-18

Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	587889-001		587889-002		587889-003		587889-004					
	Field Id:	P-Bttm-6 2'		P-SW-13		P-SW-14		P-SW-15					
	Depth:	2 ft											
	Matrix:	SOIL		SOIL		SOIL		SOIL					
	Sampled:	May-31-18 13:00		May-31-18 13:10		May-31-18 13:15		May-31-18 13:20					
Chloride by EPA 300	***Extracted:***	Jun-01-18 15:30		Jun-01-18 15:30		Jun-02-18 10:00		Jun-02-18 10:00					
	Analyzed:	Jun-02-18 12:32		Jun-01-18 21:24		Jun-02-18 13:37		Jun-02-18 13:59					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Chloride		203	5.00	494	5.00	574	5.00	457	4.95				

Jessica Kramer
Project Assistant

Analytical Report 587889

for

COG Operating LLC

Project Manager: Sheldon Hitchcock

Gunner 16 st SWD #1

04-JUN-18

Collected By: Client

1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-18-26), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-17-16), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-17-12)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-17-16)
Xenco-Odessa (EPA Lab Code: TX00158): Texas (T104704400-18-14)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-17-3)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Phoenix Mobile (EPA Lab Code: AZ00901): Arizona (AZM757)
Xenco-Atlanta (LELAP Lab ID #04176)
Xenco-Tampa: Florida (E87429)
Xenco-Lakeland: Florida (E84098)

04-JUN-18

Project Manager: **Sheldon Hitchcock**
COG Operating LLC
2407 Pecos Avenue
Artesia, NM 88210

Reference: XENCO Report No(s): **587889**
Gunner 16 st SWD #1
Project Address: Lea Co. NM

Sheldon Hitchcock:

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) 587889. 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.

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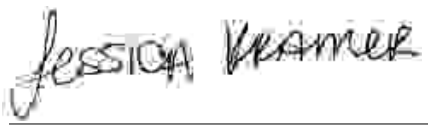
We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,



Jessica Kramer
Project Assistant

Sample Cross Reference 587889

COG Operating LLC, Artesia, NM

Gunner 16 st SWD #1

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
P-Bttm-6 2'	S	05-31-18 13:00	- 2 ft	587889-001
P-SW-13	S	05-31-18 13:10	ft	587889-002
P-SW-14	S	05-31-18 13:15	ft	587889-003
P-SW-15	S	05-31-18 13:20	ft	587889-004

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3052139 Inorganic Anions by EPA 300

Lab Sample ID 587889-002 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered above QC limits in the Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 587889-001, -002.

The Laboratory Control Sample for Chloride is within laboratory Control Limits, therefore the data was accepted.

Certificate of Analytical Results 587889

COG Operating LLC, Artesia, NM

Gunner 16 st SWD #1

Sample Id:	**P-Bttm-6 2'**	Matrix:	Soil	Date Received:	06.01.18 13.15
Lab Sample Id:	587889-001	Date Collected:	05.31.18 13.00	Sample Depth:	2 ft
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	06.01.18 15.30	Basis:	Wet Weight
Seq Number:	3052139				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**203**	5.00	mg/kg	06.02.18 12.32		1

Certificate of Analytical Results 587889

COG Operating LLC, Artesia, NM

Gunner 16 st SWD #1

Sample Id:	**P-SW-13**	Matrix:	Soil	Date Received:	06.01.18 13.15
Lab Sample Id:	587889-002	Date Collected:	05.31.18 13.10		
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	06.01.18 15.30	Basis:	Wet Weight
Seq Number:	3052139				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**494**	5.00	mg/kg	06.01.18 21.24		1

Certificate of Analytical Results 587889

COG Operating LLC, Artesia, NM

Gunner 16 st SWD #1

Sample Id:	**P-SW-14**	Matrix:	Soil	Date Received:	06.01.18 13.15
Lab Sample Id:	587889-003	Date Collected:	05.31.18 13.15		
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	06.02.18 10.00	Basis:	Wet Weight
Seq Number:	3052147				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**574**	5.00	mg/kg	06.02.18 13.37		1

Certificate of Analytical Results 587889

COG Operating LLC, Artesia, NM

Gunner 16 st SWD #1

Sample Id:	**P-SW-15**	Matrix:	Soil	Date Received:	06.01.18 13.15
Lab Sample Id:	587889-004	Date Collected:	05.31.18 13.20		
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	06.02.18 10.00	Basis:	Wet Weight
Seq Number:	3052147				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**457**	4.95	mg/kg	06.02.18 13.59		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

SMP Client Sample **BLK** Method Blank

BKS/LCS Blank Spike/Laboratory Control Sample **BKSD/LCSD** Blank Spike Duplicate/Laboratory Control Sample Duplicate

MD/SD Method Duplicate/Sample Duplicate **MS** Matrix Spike **MSD:** Matrix Spike Duplicate

+ NELAC certification not offered for this compound.

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

QC Summary 587889

COG Operating LLC

Gunner 16 st SWD #1

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3052139 Matrix: Solid Date Prep: 06.01.18
MB Sample Id: 7655885-1-BLK LCS Sample Id: 7655885-1-BKS LCSD Sample Id: 7655885-1-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	275	110	274	110	90-110	0	20	mg/kg	06.02.18 12:21	

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3052147 Matrix: Solid Date Prep: 06.02.18
MB Sample Id: 7655887-1-BLK LCS Sample Id: 7655887-1-BKS LCSD Sample Id: 7655887-1-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	275	110	275	110	90-110	0	20	mg/kg	06.02.18 13:26	

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3052139 Matrix: Soil Date Prep: 06.01.18
Parent Sample Id: 587889-001 MS Sample Id: 587889-001 S MSD Sample Id: 587889-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	203	250	471	107	481	111	90-110	2	20	mg/kg	06.02.18 12:38	X

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3052139 Matrix: Soil Date Prep: 06.01.18
Parent Sample Id: 587889-002 MS Sample Id: 587889-002 S MSD Sample Id: 587889-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	494	250	741	99	742	99	90-110	0	20	mg/kg	06.01.18 21:30	

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3052147 Matrix: Soil Date Prep: 06.02.18
Parent Sample Id: 587889-003 MS Sample Id: 587889-003 S MSD Sample Id: 587889-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	574	250	807	93	813	96	90-110	1	20	mg/kg	06.02.18 13:42	

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike
Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added
LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec
Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

QC Summary 587889

COG Operating LLC

Gunner 16 st SWD #1

Analytical Method: **Chloride by EPA 300** Prep Method: E300P

Seq Number: 3052147 Matrix: Soil Date Prep: 06.02.18

Parent Sample Id: 587936-001 MS Sample Id: 587936-001 S MSD Sample Id: 587936-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	54.9	247	329	111	348	119	90-110	6	20	mg/kg	06.02.18 14:58	X

MS/MSD Percent Recovery
Relative Percent Difference
LCS/LCSD Recovery
Log Difference

[D] = 100*(C-A) / B
RPD = 200* | (C-E) / (C+E) |
[D] = 100 * (C) / [B]
Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample
A = Parent Result
C = MS/LCS Result
E = MSD/LCSD Result

MS = Matrix Spike
B = Spike Added
D = MSD/LCSD % Rec

CHAIN OF CUSTODY

Page 1 Of 1

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

Xenco Quote #: | Xenco Job #: 587889

Client / Reporting Information

Company Name / Branch: COG Operating, LLC
Company Address: 2407 Pecos Ave, Artesia NM 88210
Email: slhitchcock@concho.com Phone No: 575-703-6475
dneel2@concho.com; cgray@concho.com; rhaskell@concho.com
Project Contact: Sheldon Hitchcock
Samplers's Name: Sheldon Hitchcock

Project Information

Project Name/Number: Gunner 16 St. SWD #1
Project Location: Lea Co. NM.
Invoice To: COG Operating, LLC
Attn: Robert McNeill
600 W. Illinois Ave.
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 (EPA8015M)	BTEX (EPA 8021B)	CHLORIDES (EPA 300)	Field Comments
1	P-B+tm-6	2'	5/31/18	11:00	S	1								✓			✓	
2	P-SW-13	N/A	"	11:10	S	1								✓			✓	
3	P-SW-14	"	"	11:15	S	1								✓			✓	
4	P-SW-15	"	"	11:20	S	1								✓			✓	
5					S	1												
6					S	1												
7					S	1												
8					S	1												
9					S	1												
10					S	1												

Turnaround Time (Business days)

- [X] 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	Sheldon Hitchcock	5/31/18 11:24	Timothy Elliott		5/31 15:30	
2						6/1/18 13:15
3	Relinquished by:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
4						
5	Relinquished by:	Date Time:	Received By:	Custody Seal #	Preserved where applicable	On Ice / Cooler Temp. / Thermo. Corr. Factor
						✓ 3.5 RB 0.0

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

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XENCO LABORATORIES

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Midland, Texas (432-704-5251)

Phoenix, Arizona (480-355-0900)

www.xenco.com

Xenco Quote #

Xenco Job # 587884

Client / Reporting Information

Company Name / Branch: COG Operating, LLC

Company Address: 2407 Pecos Ave. Artesia NM 88210

Email: slhitchcock@concho.com Phone No: 575-703-6475

dneel2@concho.com; cgray@concho.com; rhaskell@concho.com

Project Contact: Sheldon Hitchcock

Samplers's Name: Sheldon Hitchcock

Project Information

Project Name/Number: Gunner 16 St. SWD #1

Project Location: Lea Co. NM

Invoice To: COG Operating, LLC
Attn: Robert McNeill
600 W. Illinois Ave.
Midland Tx, 79701

PO Number:

Analytical Information

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 (EPA8015M)	BTEX (EPA 8021B)	CHLORIDES (EPA 300)	Field Comments
1	P-B+tm-6	2'	5/31/18	1:00	S	1								✓			✓	
2	P-SW-13	N/A		1:10	S	1								✓			✓	
3	P-SW-14	"		1:15	S	1								✓			✓	
4	P-SW-15	"		1:20	S	1								✓			✓	
5					S	1												
6					S	1												
7					S	1												
8					S	1												
9					S	1												
10					S	1												

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

Turnaround Time (Business days)

- [X] Same Day TAT
- [ ] 5 Day TAT
- [ ] Next Day EMERGENCY
- [ ] 7 Day TAT
- [ ] 2 Day EMERGENCY
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TAT Starts Day received by Lab, if received by 5:00 pm

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- [ ] 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	Sheldon Hitchcock	5/31/18 11:24	Timothy P. Elliott	2	5/31 15:30	2 6/1/18 13:15
3	Relinquished by:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
5	Relinquished by:	Date Time:	Received By:	Custody Seal #	Preserved where applicable	On Ice ✓ Cooler Temp. 3.5 R 0.0 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: 06/01/2018 01:15:00 PM

Work Order #: 587889

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)?	3.5
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seals intact on shipping container/ cooler?	**N/A**
#5 Custody Seals intact on sample bottles?	**N/A**
#6*Custody Seals Signed and dated?	**N/A**
#7 *Chain of Custody present?	**Yes**
#8 Any missing/extra samples?	**No**
#9 Chain of Custody signed when relinquished/ received?	**Yes**
#10 Chain of Custody agrees with sample labels/matrix?	**Yes**
#11 Container label(s) legible and intact?	**Yes**
#12 Samples in proper container/ bottle?	**Yes**
#13 Samples properly preserved?	**Yes**
#14 Sample container(s) intact?	**Yes**
#15 Sufficient sample amount for indicated test(s)?	**Yes**
#16 All samples received within hold time?	**Yes**
#17 Subcontract of sample(s)?	**No**
#18 Water 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: Katie Lowe Date: 06/01/2018

Checklist reviewed by: Jessica Kramer Date: 06/01/2018

Certificate of Analysis Summary 588639

COG Operating LLC, Artesia, NM

Project Name: Gunner 16 St SWD #1

Project Id:
Contact: Sheldon Hitchcock
Project Location: Lea Co. NM

Date Received in Lab: Fri Jun-08-18 10:09 am
Report Date: 11-JUN-18
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	588639-001		588639-002		588639-003		588639-004		588639-005		588639-006	
	Field Id:	L-Bttm-4 3'		L-Bttm-5 3'		L-SW-7		L-SW-8		L-SW-9		L-SW-10	
	Depth:	3- ft		3- ft									
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jun-06-18 07:30		Jun-06-18 07:40		Jun-06-18 07:45		Jun-06-18 07:50		Jun-06-18 07:55		Jun-06-18 08:00	
Chloride by EPA 300	***Extracted:***	Jun-08-18 15:15		Jun-08-18 15:15		Jun-08-18 15:15		Jun-08-18 15:15		Jun-08-18 15:15		Jun-08-18 15:15	
	Analyzed:	Jun-09-18 00:15		Jun-09-18 00:32		Jun-09-18 00:37		Jun-09-18 00:42		Jun-09-18 00:48		Jun-09-18 01:04	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		47.6	4.93	73.0	4.97	152	4.98	464	4.96	75.3	4.97	53.1	4.97

Jessica Kramer
Project Assistant

Analytical Report 588639

for

COG Operating LLC

Project Manager: Sheldon Hitchcock

Gunner 16 St SWD #1

11-JUN-18

Collected By: Client

1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-18-26), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-17-16), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-17-12)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-17-16)
Xenco-Odessa (EPA Lab Code: TX00158): Texas (T104704400-18-14)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-17-3)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Phoenix Mobile (EPA Lab Code: AZ00901): Arizona (AZM757)
Xenco-Atlanta (LELAP Lab ID #04176)
Xenco-Tampa: Florida (E87429)
Xenco-Lakeland: Florida (E84098)

11-JUN-18

Project Manager: **Sheldon Hitchcock**
COG Operating LLC
2407 Pecos Avenue
Artesia, NM 88210

Reference: XENCO Report No(s): **588639**
Gunner 16 St SWD #1
Project Address: Lea Co. NM

Sheldon Hitchcock:

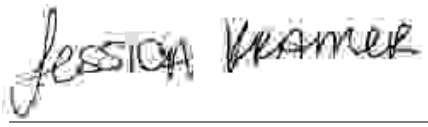
We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 588639. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory 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. 588639 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,



Jessica Kramer
Project Assistant

Sample Cross Reference 588639

COG Operating LLC, Artesia, NM

Gunner 16 St SWD #1

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
L-Bttm-4 3'	S	06-06-18 07:30	3 ft	588639-001
L-Bttm-5 3'	S	06-06-18 07:40	3 ft	588639-002
L-SW-7	S	06-06-18 07:45	N/A	588639-003
L-SW-8	S	06-06-18 07:50	N/A	588639-004
L-SW-9	S	06-06-18 07:55	N/A	588639-005
L-SW-10	S	06-06-18 08:00	N/A	588639-006

CASE NARRATIVE

Client Name: COG Operating LLC

Project Name: Gunner 16 St SWD #1

Project ID:
Work Order Number(s): *588639*

Report Date: *11-JUN-18*
Date Received: *06/08/2018*

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3052933 Inorganic Anions by EPA 300

Lab Sample ID 588640-005 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: 588639-001, -002, -003, -004, -005, -006.

The Laboratory Control Sample for Chloride is within laboratory Control Limits, therefore the data was accepted.

Certificate of Analytical Results 588639

COG Operating LLC, Artesia, NM

Gunner 16 St SWD #1

Sample Id:	**L-Bttm-4 3'**	Matrix:	Soil	Date Received:	06.08.18 10.09
Lab Sample Id:	588639-001	Date Collected:	06.06.18 07.30	Sample Depth:	3 ft
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	OJS			% Moisture:	
Analyst:	SCM	Date Prep:	06.08.18 15.15	Basis:	Wet Weight
Seq Number:	3052933				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**47.6**	4.93	mg/kg	06.09.18 00.15		1

Certificate of Analytical Results 588639

COG Operating LLC, Artesia, NM

Gunner 16 St SWD #1

Sample Id:	**L-Bttm-5 3'**	Matrix:	Soil	Date Received:	06.08.18 10.09
Lab Sample Id:	588639-002	Date Collected:	06.06.18 07.40	Sample Depth:	3 ft
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	OJS			% Moisture:	
Analyst:	SCM	Date Prep:	06.08.18 15.15	Basis:	Wet Weight
Seq Number:	3052933				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**73.0**	4.97	mg/kg	06.09.18 00.32		1

Certificate of Analytical Results 588639

COG Operating LLC, Artesia, NM

Gunner 16 St SWD #1

Sample Id:	**L-SW-7**	Matrix:	Soil	Date Received:	06.08.18 10.09
Lab Sample Id:	588639-003	Date Collected:	06.06.18 07.45		
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	OJS			% Moisture:	
Analyst:	SCM	Date Prep:	06.08.18 15.15	Basis:	Wet Weight
Seq Number:	3052933				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**152**	4.98	mg/kg	06.09.18 00.37		1

Certificate of Analytical Results 588639

COG Operating LLC, Artesia, NM

Gunner 16 St SWD #1

Sample Id:	**L-SW-8**	Matrix:	Soil	Date Received:	06.08.18 10.09
Lab Sample Id:	588639-004	Date Collected:	06.06.18 07.50		
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	OJS			% Moisture:	
Analyst:	SCM	Date Prep:	06.08.18 15.15	Basis:	Wet Weight
Seq Number:	3052933				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**464**	4.96	mg/kg	06.09.18 00.42		1

Certificate of Analytical Results 588639

COG Operating LLC, Artesia, NM

Gunner 16 St SWD #1

Sample Id:	**L-SW-9**	Matrix:	Soil	Date Received:	06.08.18 10.09
Lab Sample Id:	588639-005	Date Collected:	06.06.18 07.55		
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	OJS			% Moisture:	
Analyst:	SCM	Date Prep:	06.08.18 15.15	Basis:	Wet Weight
Seq Number:	3052933				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**75.3**	4.97	mg/kg	06.09.18 00.48		1

Certificate of Analytical Results 588639

COG Operating LLC, Artesia, NM

Gunner 16 St SWD #1

Sample Id:	**L-SW-10**	Matrix:	Soil	Date Received:	06.08.18 10.09
Lab Sample Id:	588639-006	Date Collected:	06.06.18 08.00		
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	OJS			% Moisture:	
Analyst:	SCM	Date Prep:	06.08.18 15.15	Basis:	Wet Weight
Seq Number:	3052933				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**53.1**	4.97	mg/kg	06.09.18 01.04		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

SMP Client Sample **BLK** Method Blank

BKS/LCS Blank Spike/Laboratory Control Sample **BKSD/LCSD** Blank Spike Duplicate/Laboratory Control Sample Duplicate

MD/SD Method Duplicate/Sample Duplicate **MS** Matrix Spike **MSD:** Matrix Spike Duplicate

+ NELAC certification not offered for this compound.

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

QC Summary 588639

COG Operating LLC

Gunner 16 St SWD #1

Analytical Method: **Chloride by EPA 300** Prep Method: E300P

Seq Number: 3052933 Matrix: Solid Date Prep: 06.08.18

MB Sample Id: 7656302-1-BLK LCS Sample Id: 7656302-1-BKS LCSD Sample Id: 7656302-1-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	270	108	267	107	90-110	1	20	mg/kg	06.09.18 00:05	

Analytical Method: **Chloride by EPA 300** Prep Method: E300P

Seq Number: 3052933 Matrix: Soil Date Prep: 06.08.18

Parent Sample Id: 588639-001 MS Sample Id: 588639-001 S MSD Sample Id: 588639-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	47.6	247	345	120	337	117	90-110	2	20	mg/kg	06.09.18 00:21	X

Analytical Method: **Chloride by EPA 300** Prep Method: E300P

Seq Number: 3052933 Matrix: Soil Date Prep: 06.08.18

Parent Sample Id: 588640-005 MS Sample Id: 588640-005 S MSD Sample Id: 588640-005 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	325	248	583	104	584	104	90-110	0	20	mg/kg	06.09.18 01:36	

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike

Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added

LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec

Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

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 # 580639

Client / Reporting Information

Company Name / Branch: COG Operating, LLC
Company Address: 2407 Pecos Ave. Artesia NM 88210
Email: slhitchcock@concho.com Phone No: 575-703-6475
dneel2@concho.com; cgray@concho.com; rhaskell@concho.com
Project Contact: Sheldon Hitchcock
Samplers's Name: Sheldon Hitchcock

Project Information

Project Name/Number: Gunner 16 St. SVD #1
Project Location: Lea Co. NM
Invoice To: COG Operating, LLC
Attn: Robert McNeill
600 W. Illnois Ave.
Midland Tx, 79701
PO Number:

Analytical Information

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 (EPA8015M)	BTEX (EPA 8021B)	CHLORIDES (EPA 300)	Field Comments
1	L-Bttm-4 3'	3'	6/6/18	7:30	S	1								✓			✓	
2	L-Bttm-5 3'	3'		7:40	S	1								✓			✓	
3	L-SW-7	N/A		7:45	S	1								✓			✓	
4	L-SW-8			7:50	S	1								✓			✓	
5	L-SW-9			7:55	S	1								✓			✓	
6	L-SW-10			8:00	S	1								✓			✓	
7					S	1												
8					S	1												
9					S	1												
10					S	1												

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

Turnaround Time (Business days)

- [X] 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	Sheldon Neel	6/6/18 4:14	Timothy R. Elliott	2		6/8/18 1009
3	Relinquished by:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
5	Relinquished by:	Date Time:	Received By:	Custody Seal #	Preserved where applicable	On Ice / Cooler Temp. 4.2 / Thermo. Corr. Factor 0.0

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: 06/08/2018 10:09:23 AM

Work Order #: 588639

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)?	4.2
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seals intact on shipping container/ cooler?	**N/A**
#5 Custody Seals intact on sample bottles?	**N/A**
#6*Custody Seals Signed and dated?	**N/A**
#7 *Chain of Custody present?	**Yes**
#8 Any missing/extra samples?	**No**
#9 Chain of Custody signed when relinquished/ received?	**Yes**
#10 Chain of Custody agrees with sample labels/matrix?	**Yes**
#11 Container label(s) legible and intact?	**Yes**
#12 Samples in proper container/ bottle?	**Yes**
#13 Samples properly preserved?	**Yes**
#14 Sample container(s) intact?	**Yes**
#15 Sufficient sample amount for indicated test(s)?	**Yes**
#16 All samples received within hold time?	**Yes**
#17 Subcontract of sample(s)?	**N/A**
#18 Water 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: Brianna Teel Date: 06/08/2018
Brianna Teel

Checklist reviewed by: Jessica Kramer Date: 06/08/2018
Jessica Kramer

Certificate of Analysis Summary 589043

COG Operating LLC, Artesia, NM

Project Name: Gunner 16 st #1 SWD

Project Id:

Contact: Sheldon Hitchcock

Project Location:

Date Received in Lab: Wed Jun-13-18 10:41 am

Report Date: 23-AUG-18

Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	589043-001		589043-002		589043-003		589043-004		589043-005		589043-006	
	Field Id:	L-Bttm-6 3'		L-Bttm-7 3'		L-SW-11		L-SW-12		L-SW-13		L-SW-14	
	Depth:	3- ft		3- ft									
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jun-12-18 11:00		Jun-12-18 11:05		Jun-12-18 11:10		Jun-12-18 11:15		Jun-12-18 11:20		Jun-12-18 11:25	
Chloride by EPA 300	***Extracted:***	Jun-14-18 08:30		Jun-14-18 08:30		Jun-14-18 08:30		Jun-14-18 08:30		Jun-14-18 08:30		Jun-14-18 08:30	
	Analyzed:	Jun-14-18 12:40		Jun-14-18 12:56		Jun-14-18 13:02		Jun-14-18 13:07		Jun-14-18 13:13		Jun-14-18 13:29	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		7.35	4.93	81.9	4.99	162	4.90	165	4.91	174	4.95	<4.94	4.94

Jessica Kramer
Project Assistant

Certificate of Analysis Summary 589043

COG Operating LLC, Artesia, NM

Project Name: Gunner 16 st #1 SWD

Project Id:
Contact: Sheldon Hitchcock
Project Location:

Date Received in Lab: Wed Jun-13-18 10:41 am
Report Date: 23-AUG-18
Project Manager: Jessica Kramer

Analysis Requested							
	Lab Id:	589043-007					
	Field Id:	L-SW-15					
	Depth:						
	Matrix:	SOIL					
	Sampled:	Jun-12-18 11:30					
Chloride by EPA 300	***Extracted:***	Jun-14-18 08:30					
	Analyzed:	Jun-14-18 13:34					
	Units/RL:	mg/kg	RL				
Chloride		65.5	5.00				

Jessica Kramer
Project Assistant

Analytical Report 589043

for

COG Operating LLC

Project Manager: Sheldon Hitchcock

Gunner 16 st #1 SWD

23-AUG-18

Collected By: Client

1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-18-27), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-18-17), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-13)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-18-17)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-16)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Phoenix Mobile (EPA Lab Code: AZ00901): Arizona (AZM757)
Xenco-Atlanta (LELAP Lab ID #04176)
Xenco-Tampa: Florida (E87429)
Xenco-Lakeland: Florida (E84098)

23-AUG-18

Project Manager: **Sheldon Hitchcock**
COG Operating LLC
2407 Pecos Avenue
Artesia, NM 88210

Reference: XENCO Report No(s): **589043**
Gunner 16 st #1 SWD
Project Address:

Sheldon Hitchcock:

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) 589043. 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. 589043 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,

Jessica Kramer

Jessica Kramer
Project Assistant

Sample Cross Reference 589043

COG Operating LLC, Artesia, NM

Gunner 16 st #1 SWD

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
L-Bttm-6 3'	S	06-12-18 11:00	3 ft	589043-001
L-Bttm-7 3'	S	06-12-18 11:05	3 ft	589043-002
L-SW-11	S	06-12-18 11:10	N/A	589043-003
L-SW-12	S	06-12-18 11:15	N/A	589043-004
L-SW-13	S	06-12-18 11:20	N/A	589043-005
L-SW-14	S	06-12-18 11:25	N/A	589043-006
L-SW-15	S	06-12-18 11:30	N/A	589043-007

Sample receipt non conformances and comments:

New Version generated, corrected sample 003. removed depth. JKR 08/23/18

Sample receipt non conformances and comments per sample:

None

Certificate of Analytical Results 589043

COG Operating LLC, Artesia, NM

Gunner 16 st #1 SWD

Sample Id:	**L-Bttm-6 3'**	Matrix:	Soil	Date Received:	06.13.18 10.41
Lab Sample Id:	589043-001	Date Collected:	06.12.18 11.00	Sample Depth:	3 ft
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	06.14.18 08.30	Basis:	Wet Weight
Seq Number:	3053433				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**7.35**	4.93	mg/kg	06.14.18 12.40		1

Certificate of Analytical Results 589043

COG Operating LLC, Artesia, NM

Gunner 16 st #1 SWD

Sample Id:	**L-Bttm-7 3'**	Matrix:	Soil	Date Received:	06.13.18 10.41
Lab Sample Id:	589043-002	Date Collected:	06.12.18 11.05	Sample Depth:	3 ft
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	06.14.18 08.30	Basis:	Wet Weight
Seq Number:	3053433				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**81.9**	4.99	mg/kg	06.14.18 12.56		1

Certificate of Analytical Results 589043

COG Operating LLC, Artesia, NM

Gunner 16 st #1 SWD

Sample Id:	**L-SW-11**	Matrix:	Soil	Date Received:	06.13.18 10.41
Lab Sample Id:	589043-003	Date Collected:	06.12.18 11.10		
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	06.14.18 08.30	Basis:	Wet Weight
Seq Number:	3053433				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**162**	4.90	mg/kg	06.14.18 13.02		1

Certificate of Analytical Results 589043

COG Operating LLC, Artesia, NM

Gunner 16 st #1 SWD

Sample Id:	**L-SW-12**	Matrix:	Soil	Date Received:	06.13.18 10.41
Lab Sample Id:	589043-004	Date Collected:	06.12.18 11.15		
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	06.14.18 08.30	Basis:	Wet Weight
Seq Number:	3053433				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**165**	4.91	mg/kg	06.14.18 13.07		1

Certificate of Analytical Results 589043

COG Operating LLC, Artesia, NM

Gunner 16 st #1 SWD

Sample Id:	**L-SW-13**	Matrix:	Soil	Date Received:	06.13.18 10.41
Lab Sample Id:	589043-005	Date Collected:	06.12.18 11.20		
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	06.14.18 08.30	Basis:	Wet Weight
Seq Number:	3053433				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**174**	4.95	mg/kg	06.14.18 13.13		1

Certificate of Analytical Results 589043

COG Operating LLC, Artesia, NM

Gunner 16 st #1 SWD

Sample Id:	**L-SW-14**	Matrix:	Soil	Date Received:	06.13.18 10.41
Lab Sample Id:	589043-006	Date Collected:	06.12.18 11.25		
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	06.14.18 08.30	Basis:	Wet Weight
Seq Number:	3053433				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.94	4.94	mg/kg	06.14.18 13.29	U	1

Certificate of Analytical Results 589043

COG Operating LLC, Artesia, NM

Gunner 16 st #1 SWD

Sample Id:	**L-SW-15**	Matrix:	Soil	Date Received:	06.13.18 10.41
Lab Sample Id:	589043-007	Date Collected:	06.12.18 11.30		
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	06.14.18 08.30	Basis:	Wet Weight
Seq Number:	3053433				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**65.5**	5.00	mg/kg	06.14.18 13.34		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

SMP Client Sample **BLK** Method Blank

BKS/LCS Blank Spike/Laboratory Control Sample **BKSD/LCSD** Blank Spike Duplicate/Laboratory Control Sample Duplicate

MD/SD Method Duplicate/Sample Duplicate **MS** Matrix Spike **MSD:** Matrix Spike Duplicate

+ NELAC certification not offered for this compound.

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

QC Summary 589043

COG Operating LLC

Gunner 16 st #1 SWD

Analytical Method: **Chloride by EPA 300** Prep Method: E300P

Seq Number: 3053433 Matrix: Solid Date Prep: 06.14.18

MB Sample Id: 7656636-1-BLK LCS Sample Id: 7656636-1-BKS LCSD Sample Id: 7656636-1-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	257	103	257	103	90-110	0	20	mg/kg	06.14.18 12:29	

Analytical Method: **Chloride by EPA 300** Prep Method: E300P

Seq Number: 3053433 Matrix: Soil Date Prep: 06.14.18

Parent Sample Id: 589043-001 MS Sample Id: 589043-001 S MSD Sample Id: 589043-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	7.35	247	270	106	264	104	90-110	2	20	mg/kg	06.14.18 12:46	

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike

Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added

LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec

Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

CHAIN OF CUSTODY

Revision 2016.1

Page 1 Of 1

XENCO LABORATORIES

Setting the Standard since 1990

Stafford, TX (281) 240-4200 | El Paso, TX (915) 585-3443 | Midland, TX (432) 704-5440 | Phoenix, AZ (480) 355-0900 | Service Center- Amarillo, TX (806)678-4514
Dallas, TX (214) 902-0300 | Lubbock, TX (806) 794-1296 | San Antonio, TX (210) 509-3334 | Service Center - Baton Rouge, LA (832) 712-8143 | Service Center- Hobbs, NM (575) 392-7550

www.xenco.com

Xenco Quote # | Xenco Job # 589043

Client / Reporting Information

Company Name / Branch: COG Artesia
Company Address:
Email: shitchcock@concho.com
Phone No:
Project Contact: Sheldon Hitchcock
Samplers's Name: Sheldon Hitchcock

Project Information

Project Name/Number: Gunner 16 St #1 SWD
Project Location:
Invoice To:
PO Number:

Analytical Information

Chlorides EPA 300

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	Chlorides EPA 300	Field Comments
1	L-Bttm-6 3'	3'	6/12/18	11:00										/	/	
2	L-Bttm-7 3'	3'		11:05										/	/	
3	L-SW-11	N/A		11:10										/	/	
4	L-SW-12			11:15										/	/	
5	L-SW-13			11:20										/	/	
6	L-SW-14			11:25										/	/	
7	L-SW-15			11:30										/	/	
8																
9																
10																

Turnaround Time (Business days)

- [X] 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
- [ ] Level II Report with 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	Sheldon Hitchcock	6/12/18 15:01	Jamie Wier	Jamie Wier	6/12/18 15:30	2 KRAMER 6/13/18 1041
3	Relinquished by:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
4						
5	Relinquished by:	Date Time:	Received By:	Custody Seal #	Preserved where applicable	On Ice: X — Cooler Temp. 1.6 — Thermo. Corr. Factor RB 1.6

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 losses 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.

After printing this label:
1. Use the 'Print' button on this page to print your label to your laser or inkjet printer.
2. Fold the printed page along the horizontal line.
3. Place label in shipping pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

Warning: Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your FedEx account number.
Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on fedex.com.FedEx will not be responsible for any claim in excess of $100 per package, whether the result of loss, damage, delay, non-delivery,misdelivery,or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim.Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental,consequential, or special is limited to the greater of $100 or the authorized declared value. Recovery cannot exceed actual documented loss.Maximum for items of extraordinary value is $1,000, e.g. jewelry, precious metals, negotiable instruments and other items listed in our ServiceGuide. Written claims must be filed within strict time limits, see current FedEx Service Guide.

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: COG Operating LLC

Date/ Time Received: 06/13/2018 10:41:00 AM

Work Order #: 589043

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)?	1.6
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seals intact on shipping container/ cooler?	**N/A**
#5 Custody Seals intact on sample bottles?	**N/A**
#6*Custody Seals Signed and dated?	**N/A**
#7 *Chain of Custody present?	**Yes**
#8 Any missing/extra samples?	**No**
#9 Chain of Custody signed when relinquished/ received?	**Yes**
#10 Chain of Custody agrees with sample labels/matrix?	**Yes**
#11 Container label(s) legible and intact?	**Yes**
#12 Samples in proper container/ bottle?	**Yes**
#13 Samples properly preserved?	**Yes**
#14 Sample container(s) intact?	**Yes**
#15 Sufficient sample amount for indicated test(s)?	**Yes**
#16 All samples received within hold time?	**Yes**
#17 Subcontract of sample(s)?	**N/A**
#18 Water 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: Brianna Teel Date: 06/13/2018

Brianna Teel

Checklist reviewed by: Jessica Kramer Date: 06/13/2018

Jessica Kramer