



March 31, 2020

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

**Re: Closure Report - Site Reclamation
Salvador Fee 2H (9/5/18)
RP#: 1RP-5183
GPS: 32.225843, -103.453993
Unit Letter O, Section 10, Township 24 South, Range 34 East
Lea County, New Mexico**

To Whom It May Concern,

COG Operating, LLC (COG) is pleased to submit the following closure report in response to a release that occurred at the Salvador Fee 2H flowline located in Unit Letter O, Section 10, Township 24 South and Range 34 East in Lea County, New Mexico.

BACKGROUND

The release was discovered on September 5, 2018 and a C-141 initial report was submitted and approved by the New Mexico Oil Conservation Division (NMOCD). The release was caused by a flowline rupture in the pasture. Approximately seventy (70) barrels of produced water was released and recovered approximately forty (40) barrels of fluid. The initial C-141 is shown in Appendix A.

GROUNDWATER AND REGULATORY FRAMEWORK

According to the USGS groundwater data, there are three (3) reported water wells in Section 10, with reported depths of 63', 70' and 71' below surface, respectively. According to the GPS provided by the USGS, the water well locations do not appear to be spotted correctly. The reported water wells are located south (approximately 2,000') of the two windmills located north as shown on the topographic map (attached). The water well information is shown in Appendix B.

An evaluation and site determinations were performed in accordance to the New Mexico Oil Conservation Division (NMOCD) Rule (Title 19 Chapter 15 Part 29) for releases on oil and gas development and production facilities in New Mexico (effective August 14, 2018). According to the site characterization evaluation, no other receptors (water wells, playas, karst, water course, lake beds or ordinance boundaries) were located within each specific boundaries or distance from the site. The groundwater data and the site characterization evaluation data are summarized in Appendix B. The delineation and closure criteria are listed below:

General Site Characterization and Groundwater:

Site Characterization	Average Groundwater Depth (ft.)
None Encountered	50-100 feet

Delineation and Closure Criteria:

Remedial Action Levels (RALs)	
Chlorides	10,000 mg/kg
TPH (GRO and DRO and MRO)	2,500 mg/kg
TPH (GRO and DRO)	1,000 mg/kg
Benzene	10 mg/kg
Total BTEX	50 mg/kg

REMEDIATION PLAN

All samples were below the Table 1 closure criteria and thus no remediation will occur.

SITE RECLAMATION AND RESTORATION

Per NMED 19.15.29.13 reclamation of the pasture area has been performed by removing the impacted soil containing chloride concentrations greater than 600 mg/kg within the first four (4) feet BGS. Once excavated, soil samples were collected from the sidewalls of the excavation to confirm the removal of impacted soil. The backfill material was non-contaminated with concentrations below 600 mg/kg of chlorides. Approximately two-hundred and eighty-eight (288) cubic yards of material was removed and hauled to an NMOCD approved solid waste disposal facility. The surface was left in a rough condition to approximate natural surface deviations. The confirmation sample results are summarized in Table 1. The sampling locations are shown on the attached Figure.

CLOSURE REQUEST

Based on the reclamation activities, COG requesting closure of the release. The signed C-141 Final is included in Appendix A. Should you have any questions or concerns on the closure report, please do not hesitate to contact me.

Sincerely,
Concho Operating, LLC



Ike Tavarez, P. G.
Senior HSE Supervisor
itavarez@concho.com

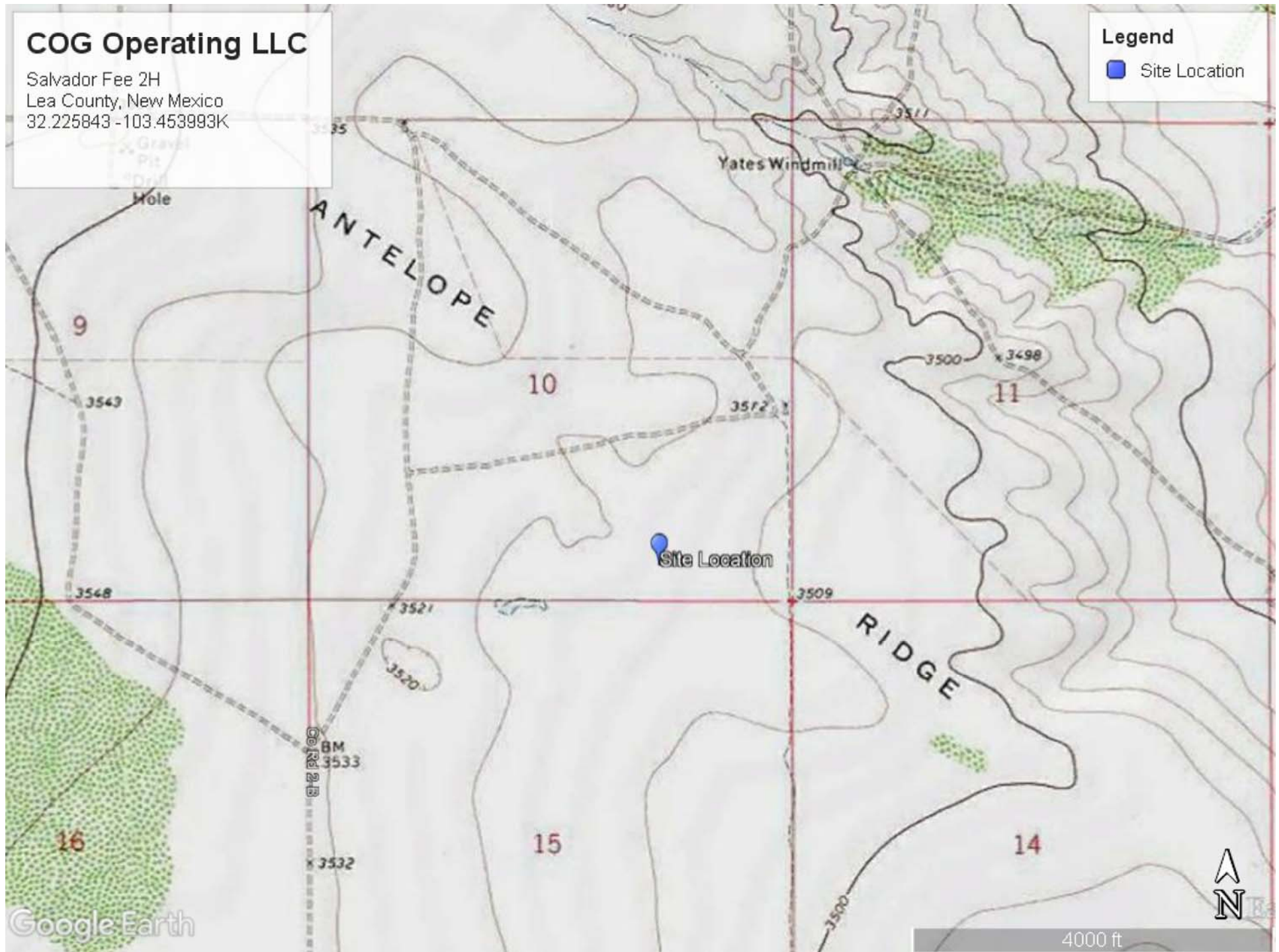
Figures

COG Operating LLC

Salvador Fee 2H
Lea County, New Mexico
32.225843 -103.453993K

Legend

Site Location

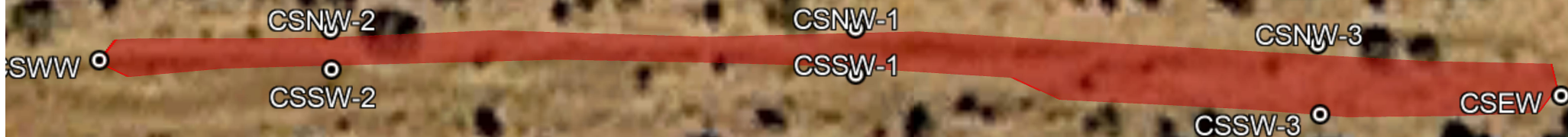


COG Operating LLC

Salvador Fee #2H
Lea County, New Mexico
32.225843 -103.453993

Legend

-  Excavation Area
-  Confirmation Sampling Locations



Google Earth

50 ft

Tables

**COG Operating
Summary of Analytical
Salvador Fee 2H (09/05/19) 1RP-5183
Lea County, NM**

Sample ID	Sample Date	Sample Depth (ft)	In Situ	Removed	Gasoline Range Hydrocarbons (mg/kg)	Diesel Range Organics (mg/kg)	Motor Oil Range Hydrocarbons (MRO) (mg/kg)	Total TPH (mg/kg)	Benzene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)
CS East Wall	1/16/2020	Sidewall Composite	X		<50.0	<50.0	<50.0	<50.0	<0.00199	<0.00199	47.8
CS-1 North Wall	1/16/2020	Sidewall Composite	X		<48.1	<48.1	<48.1	<48.1	<0.00199	<0.00199	<4.99
CS-1 South Wall	1/16/2020	Sidewall Composite	X		<50.0	<50.0	<50.0	<50.0	<0.00202	<0.00202	<5.04
CS-2 North Wall	1/16/2020	Sidewall Composite	X		<50.0	<50.0	<50.0	<50.0	<0.00199	<0.00199	<5.02
CS-2 South Wall	1/16/2020	Sidewall Composite	X		<49.9	<49.9	<49.9	<49.9	<0.00200	<0.00200	<4.98
CS-3 North Wall	1/16/2020	Sidewall Composite	X		<50.0	<50.0	<50.0	<50.0	<0.00199	<0.00199	<4.96
CS-3 South Wall	1/16/2020	Sidewall Composite	X		<49.9	<49.9	<49.9	<49.9	<0.00201	<0.00201	<5.00
CS West Wall	1/16/2020	Sidewall Composite	X		<49.9	209	94.9	304	<0.00199	<0.00199	5.16
CS West Wall (Re-Sampled)	4/1/2020	Sidewall Composite	X		<50.0	<50.0	<50.0	<50.0	<0.0198	<0.0198	<5.0

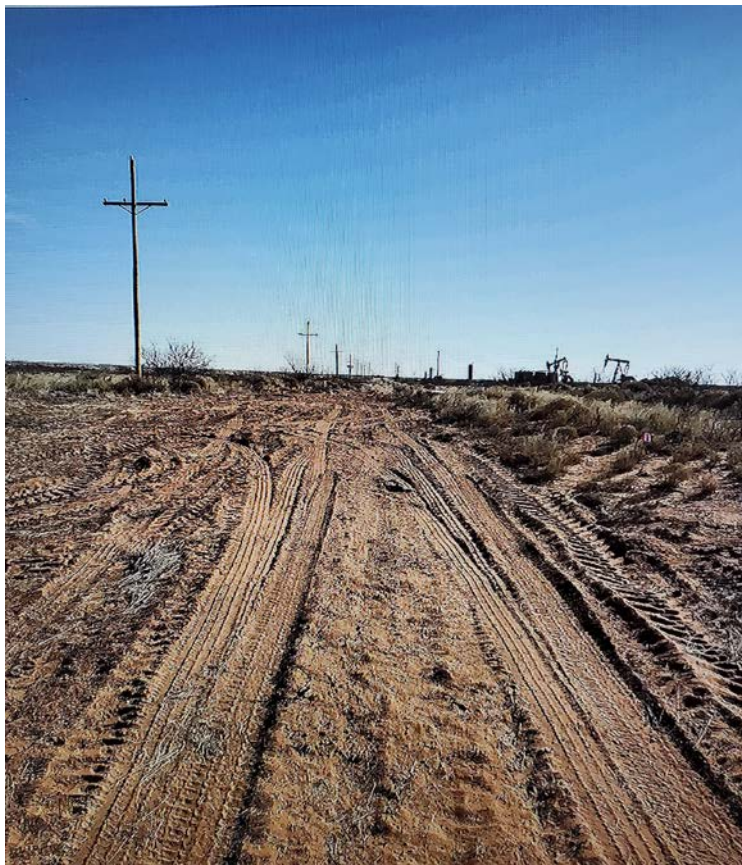
Sidewall Re-sampled

Photos

COG-Salvador Fee 2H
Lea County, New Mexico



View of Excavation



View of Backfilled Excavation

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 Department

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised August 24, 2018
Submit to appropriate OCD District office

Incident ID	
District RP	
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party	OGRID
Contact Name	Contact Telephone
Contact email	Incident # (assigned by OCD)
Contact mailing address	

Location of Release Source

Latitude _____ Longitude _____
(NAD 83 in decimal degrees to 5 decimal places)

Site Name	Site Type
Date Release Discovered	API# (if applicable)

Unit Letter	Section	Township	Range	County

Surface Owner: ☐ State ☐ Federal ☐ Tribal ☐ Private (Name: _____)

Nature and Volume of Release

Material(s) Released (Select all that apply and attach calculations or specific justification for the volumes provided below)

☐ Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
☐ Produced Water	Volume Released (bbls)	Volume Recovered (bbls)
	Is the concentration of total dissolved solids (TDS) in the produced water >10,000 mg/l?	☐ Yes ☐ No
☐ Condensate	Volume Released (bbls)	Volume Recovered (bbls)
☐ Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
☐ Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release

Incident ID	
District RP	
Facility ID	
Application ID	

Was this a major release as defined by 19.15.29.7(A) NMAC? ☐ Yes ☐ No	If YES, for what reason(s) does the responsible party consider this a major release?
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?	

Initial Response

The responsible party must undertake the following actions immediately unless they could create a safety hazard that would result in injury

☐ The source of the release has been stopped.	
☐ The impacted area has been secured to protect human health and the environment.	
☐ Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices.	
☐ All free liquids and recoverable materials have been removed and managed appropriately.	
If all the actions described above have <u>not</u> been undertaken, explain why:	
Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.	
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD 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 OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD 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.	
Printed Name: _____	Title: _____
Signature: <u>Sheldon Gitau</u>	Date: _____
email: _____	Telephone: _____
<u>OCD Only</u>	
Received by: _____	Date: _____

Incident ID	
District RP	
Facility ID	
Application ID	

Closure

The responsible party must attach information demonstrating they have complied with all applicable closure requirements and any conditions or directives of the OCD. This demonstration should be in the form of a comprehensive report (electronic submittals in .pdf format are preferred) including a scaled site map, sampling diagrams, relevant field notes, photographs of any excavation prior to backfilling, laboratory data including chain of custody documents of final sampling, and a narrative of the remedial activities. Refer to 19.15.29.12 NMAC.

Closure Report Attachment Checklist: Each of the following items must be included in the closure report.

- ☐ A scaled site and sampling diagram as described in 19.15.29.11 NMAC
- ☐ Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)
- ☐ Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)
- ☐ Description of remediation activities

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD 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 OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD 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. The responsible party acknowledges they must substantially restore, reclaim, and re-vegetate the impacted surface area to the conditions that existed prior to the release or their final land use in accordance with 19.15.29.13 NMAC including notification to the OCD when reclamation and re-vegetation are complete.

Printed Name: _____ Title: _____

Signature:  _____ Date: _____

email: _____ Telephone: _____

OCD Only

Received by: _____ Date: _____

Closure approval by the OCD does not relieve the responsible party of liability should their operations have failed to adequately investigate and remediate contamination that poses a threat to groundwater, surface water, human health, or the environment nor does not relieve the responsible party of compliance with any other federal, state, or local laws and/or regulations.

Closure Approved by: _____ Date: _____

Printed Name: _____ Title: _____

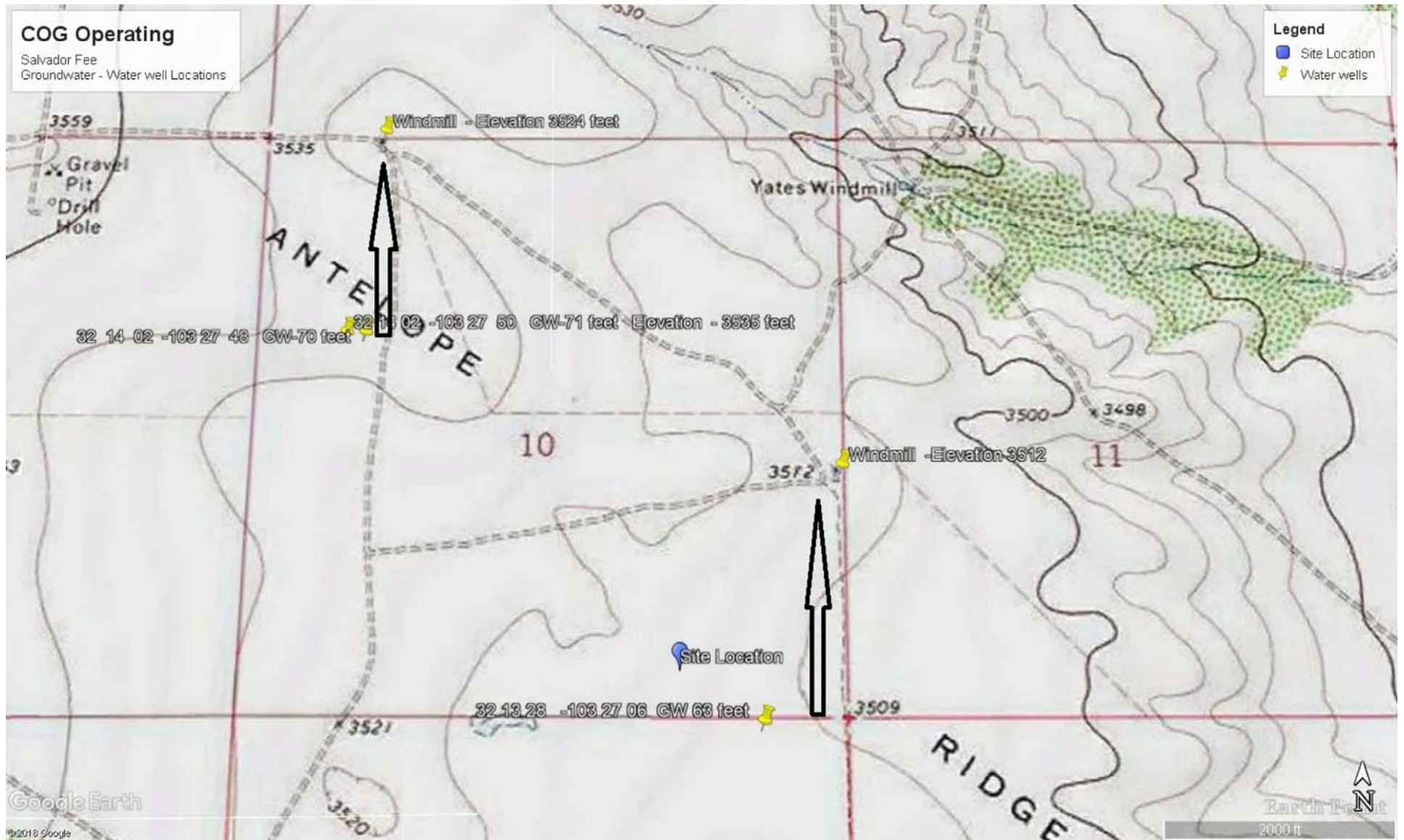
Appendix B

COG Operating

Salvador Fee
Groundwater - Water well Locations

Legend

- Site Location
- Water wells



COG Operating, LLC

Salvador Fee 2H flowline
32.225843 -103.453993

Legend

- High
- Low
- Medium

Site Location



Google Earth



200 ft



- Data Layers
- ☒ FEMA National Flood Hazard Layer
 - ☒ NFHL Data as of 7/05/2016
 - ☒ Flood Control Structures
 - Bridge
 - Dam, Weir
 - All Other Structures
 - Levees
 - Cross Sections
 - Base Flood Elevations (BFE)
 - Water Features
 - ☒ Letter of Map Revision (LOMR)
 - Water Areas
 - ☒ Flood Hazard Areas
 - 1% Annual Chance Flood Hazard (A, AE)
 - Shallow Flooding (AO, AH)
 - 0.2% Annual Chance Flood Hazard
 - Area with reduced risk due to levee
 - Unstudied Area, Flooding Possible (D)
 - FIRM Panels
 - Census Populated Places
 - Community Anchor Institutions
 - HUC Boundaries

Measure

Print

Bookmarks

Switch Basemap

32.225843 -103.453993

Search Result
Y:32.225843 X:-103.453993

0.2km
600ft

Photos



USGS Home
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Search USGS

National Water Information System: Web Interface

[USGS Water Resources](#)

Data Category:

Groundwater

Geographic Area:

New Mexico

GO

Click to hideNews Bulletins

- [Please see news on new formats](#)
- **UPDATE, 10/31:** The USGS continues to make progress on restoring all of the gages. As of noon Wednesday, October 31, approximately 6 percent of USGS streamgages are still not transmitting due to an issue with the telemetry system that records and transmits streamgage data. Read [more](#)
- [Full News](#) 

Groundwater levels for New Mexico

Click to hide state-specific text

Search Results -- 1 sites found

Agency code = usgs

site_no list =

- 321402103274801

Minimum number of levels = 1

[Save file of selected sites](#) to local disk for future upload

USGS 321402103274801 24S.34E.10.11221

Available data for this site Groundwater: Field measurements

GO

Lea County, New Mexico

Hydrologic Unit Code 13070007

Latitude 32°14'02", Longitude 103°27'48" NAD27

Land-surface elevation 3,535 feet above NAVD88

This well is completed in the Ogallala Formation (121OGLL) local aquifer.

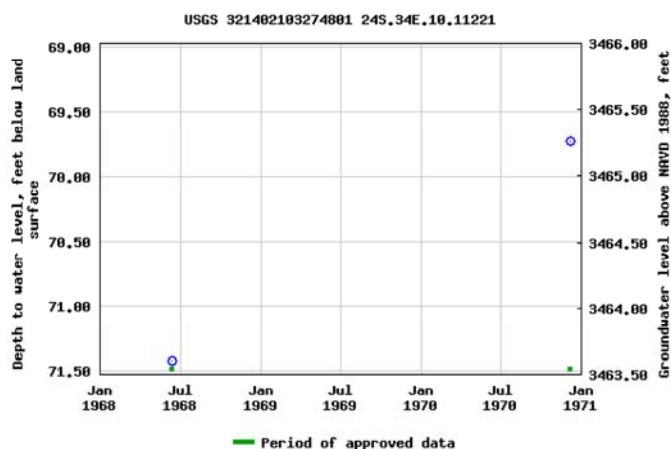
Output formats

[Table of data](#)

[Tab-separated data](#)

[Graph of data](#)

[Reselect period](#)



Breaks in the plot represent a gap of at least one year between field measurements.

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Data Category: Geographic Area:

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- [Full News](#)

Groundwater levels for New Mexico

Click to hide state-specific text

Search Results -- 1 sites found

Agency code = usgs

site_no list =

- 321402103275001

Minimum number of levels = 1

[Save file of selected sites](#) to local disk for future upload

USGS 321402103275001 24S.34E.10.11212

Available data for this site

Lea County, New Mexico

Hydrologic Unit Code 13070007

Latitude 32°14'02", Longitude 103°27'50" NAD27

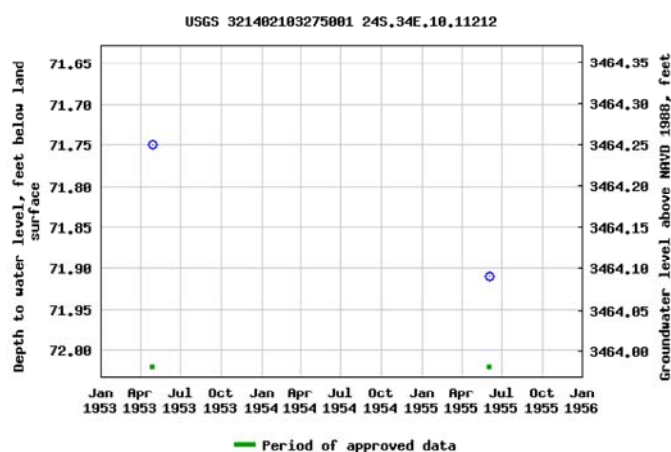
Land-surface elevation 3,536 feet above NAVD88

The depth of the well is 83 feet below land surface.

This well is completed in the Ogallala Formation (121OGLL) local aquifer.

Output formats

Table of data
Tab-separated data
Graph of data
Reselect period



Breaks in the plot represent a gap of at least one year between field measurements.

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Data Category: Geographic Area:

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- [Full News](#)

Groundwater levels for the Nation

Search Results -- 1 sites found

site_no list =
• 321328103270601

Minimum number of levels = 1

[Save file of selected sites](#) to local disk for future upload

USGS 321328103270601 24S.34E.10.42243

Available data for this site

Lea County, New Mexico

Hydrologic Unit Code 13070007

Latitude 32°13'28", Longitude 103°27'06" NAD27

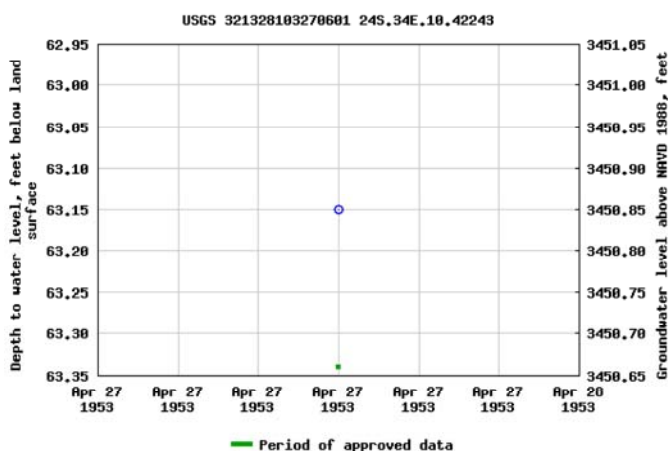
Land-surface elevation 3,514 feet above NAVD88

The depth of the well is 93 feet below land surface.

This well is completed in the Ogallala Formation (121OGLL) local aquifer.

Output formats

Table of data
Tab-separated data
Graph of data
Reselect period



Breaks in the plot represent a gap of at least one year between field measurements.

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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	DepthWell	DepthWater	Water Column
C_02373		CUB	LE	4	1	32	24S	34E		641979	3560916*	☐	600	
C_02386		CUB	LE	4	1	2	04	24S	34E	643962	3569290*	☐	575	475 100
C_02387		CUB	LE			1	11	24S	34E	646513	3567613*	☐	62	40 22
C_02397		CUB	LE	4	1	2	04	24S	34E	643962	3569290*	☐	575	475 100
C_03932 POD13		CUB	LE	4	2	3	15	24S	34E	645314	3565203	☐	90	
C_03932 POD3		CUB	LE	4	3	2	05	24S	34E	642442	3568787	☐	100	
C_03932 POD8		CUB	LE	4	2	4	07	24S	34E	641120	3566769	☐	72	
C_03943 POD1		CUB	LE	2	4	2	21	24S	34E	644523	3564266	☐	610	431 179
C_04014 POD1		CUB	LE	1	1	3	06	24S	34E	639811	3568638	☐	91	81 10

Average Depth to Water:

300 feet

Minimum Depth:

40 feet

Maximum Depth:

475 feet

Record Count: 9

PLSS Search:

Township: 24S

Range: 34E

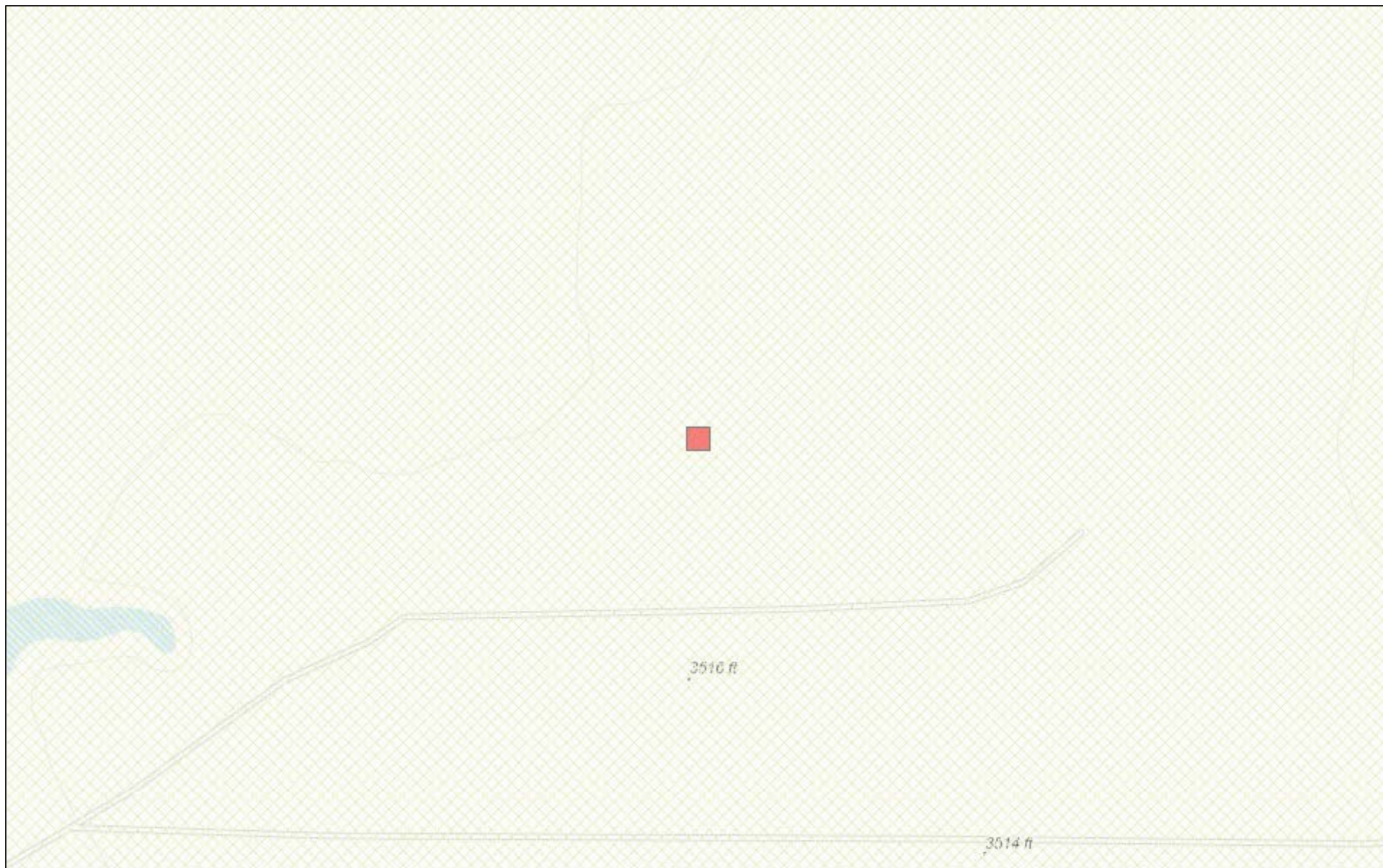
***UTM location was derived from PLSS - see Help**

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

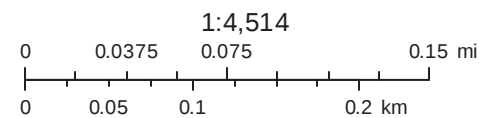
11/1/18 7:05 AM

WATER COLUMN/ AVERAGE DEPTH TO
WATER

New Mexico NFHL Data



December 4, 2018



FEMA
Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS,

Appendix C



Certificate of Analysis Summary 649539

COG Operating LLC, Artesia, NM

Project Name: COG- Salvador Fee 2H (09/05/19) 1rp-5183



Project Id:

Contact: Ike Tavaréz

Project Location: Lea County, NM

Date Received in Lab: Mon Jan-20-20 08:00 am

Report Date: 21-JAN-20

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	649539-001	649539-002	649539-003	649539-004	649539-005	649539-006
	<i>Field Id:</i>	CS East Wall	CS-1 North Wall	CS-1 South Wall	CS-2 North Wall	CS-2 South Wall	CS-3 North Wall
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Jan-16-20 00:00	Jan-16-20 00:00	Jan-16-20 00:00	Jan-16-20 00:00	Jan-16-20 00:00	Jan-16-20 00:00
BTEX by EPA 8021B	<i>Extracted:</i>	Jan-20-20 16:30	Jan-20-20 16:30	Jan-20-20 16:30	Jan-20-20 16:30	Jan-20-20 16:30	Jan-20-20 16:30
	<i>Analyzed:</i>	Jan-21-20 00:11	Jan-21-20 00:31	Jan-21-20 00:52	Jan-21-20 01:12	Jan-21-20 01:32	Jan-21-20 01:52
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00199 0.00199	<0.00199 0.00199	<0.00202 0.00202	<0.00199 0.00199	<0.00200 0.00200	<0.00199 0.00199
Toluene		<0.00199 0.00199	<0.00199 0.00199	<0.00202 0.00202	<0.00199 0.00199	<0.00200 0.00200	<0.00199 0.00199
Ethylbenzene		<0.00199 0.00199	<0.00199 0.00199	<0.00202 0.00202	<0.00199 0.00199	<0.00200 0.00200	<0.00199 0.00199
m,p-Xylenes		<0.00398 0.00398	<0.00398 0.00398	<0.00403 0.00403	<0.00398 0.00398	<0.00400 0.00400	<0.00398 0.00398
o-Xylene		<0.00199 0.00199	<0.00199 0.00199	<0.00202 0.00202	<0.00199 0.00199	<0.00200 0.00200	<0.00199 0.00199
Total Xylenes		<0.00199 0.00199	<0.00199 0.00199	<0.00202 0.00202	<0.00199 0.00199	<0.00200 0.00200	<0.00199 0.00199
Total BTEX		<0.00199 0.00199	<0.00199 0.00199	<0.00202 0.00202	<0.00199 0.00199	<0.00200 0.00200	<0.00199 0.00199
Chloride by EPA 300	<i>Extracted:</i>	Jan-20-20 13:50	Jan-20-20 13:50	Jan-20-20 13:50	Jan-20-20 13:50	Jan-20-20 13:50	Jan-20-20 13:50
	<i>Analyzed:</i>	Jan-20-20 17:58	Jan-21-20 08:19	Jan-21-20 08:31	Jan-21-20 08:42	Jan-21-20 09:36	Jan-21-20 09:05
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		47.8 4.97	<4.99 4.99	<5.04 5.04	<5.02 5.02	<4.98 4.98	<4.96 4.96
TPH By SW8015 Mod	<i>Extracted:</i>	Jan-20-20 14:00	Jan-20-20 14:00	Jan-20-20 14:00	Jan-20-20 14:00	Jan-20-20 14:00	Jan-20-20 14:00
	<i>Analyzed:</i>	Jan-20-20 19:43	Jan-20-20 20:47	Jan-20-20 21:08	Jan-20-20 21:29	Jan-20-20 21:50	Jan-20-20 22:11
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons		<50.0 50.0	<48.1 48.1	<50.0 50.0	<50.0 50.0	<49.9 49.9	<50.0 50.0
Diesel Range Organics		<50.0 50.0	<48.1 48.1	<50.0 50.0	<50.0 50.0	<49.9 49.9	<50.0 50.0
Motor Oil Range Hydrocarbons (MRO)		<50.0 50.0	<48.1 48.1	<50.0 50.0	<50.0 50.0	<49.9 49.9	<50.0 50.0
Total TPH		<50.0 50.0	<48.1 48.1	<50.0 50.0	<50.0 50.0	<49.9 49.9	<50.0 50.0

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

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Version: 1.0%

Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 649539

COG Operating LLC, Artesia, NM

Project Name: COG- Salvador Fee 2H (09/05/19) 1rp-5183



Project Id:

Contact: Ike Tavaréz

Project Location: Lea County, NM

Date Received in Lab: Mon Jan-20-20 08:00 am

Report Date: 21-JAN-20

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	649539-007	649539-008				
	Field Id:	CS-3 South Wall	CS West Wall				
	Depth:						
	Matrix:	SOIL	SOIL				
	Sampled:	Jan-16-20 00:00	Jan-16-20 00:00				
BTEX by EPA 8021B	Extracted:	Jan-20-20 16:30	Jan-20-20 16:30				
	Analyzed:	Jan-21-20 02:12	Jan-21-20 02:32				
	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				
Chloride by EPA 300	Extracted:	Jan-20-20 13:50	Jan-20-20 13:50				
	Analyzed:	Jan-20-20 19:53	Jan-20-20 20:04				
	Units/RL:	mg/kg RL	mg/kg RL				
Chloride		<5.00 5.00	5.16 4.95				
TPH By SW8015 Mod	Extracted:	Jan-20-20 14:00	Jan-20-20 14:00				
	Analyzed:	Jan-20-20 22:32	Jan-21-20 09:23				
	Units/RL:	mg/kg RL	mg/kg RL				
Gasoline Range Hydrocarbons		<49.9 49.9	<49.9 49.9				
Diesel Range Organics		<49.9 49.9	209 49.9				
Motor Oil Range Hydrocarbons (MRO)		<49.9 49.9	94.9 49.9				
Total TPH		<49.9 49.9	304 49.9				

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

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Version: 1.0%

Jessica Kramer

Jessica Kramer
Project Assistant

Analytical Report 649539

for COG Operating LLC

Project Manager: Ike Tavaréz

COG- Salvador Fee 2H (09/05/19) 1rp-5183

21-JAN-20

Collected By: Client



**1211 W. Florida Ave
Midland TX 79701**

Xenco-Houston (EPA Lab Code: TX00122):

Texas (T104704215-19-30), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2019-058), North Carolina (681), Arkansas (19-037-0)

Xenco-Dallas (EPA Lab Code: TX01468):

Texas (TX104704295-19-22), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-19-16)

Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-21)

Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)

Xenco-Carlsbad (LELAP): Louisiana (05092)

Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-19-5)

Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)

Xenco-Tampa: Florida (E87429), North Carolina (483)



21-JAN-20

Project Manager: **Ike Tavaréz**
COG Operating LLC
2407 Pecos Avenue
Artesia, NM 88210

Reference: XENCO Report No(s): **649539**
COG- Salvador Fee 2H (09/05/19) 1rp-5183
Project Address: Lea County, NM

Ike Tavaréz:

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) 649539. 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. 649539 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

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Sample Cross Reference 649539



COG Operating LLC, Artesia, NM

COG- Salvador Fee 2H (09/05/19) 1rp-5183

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
CS East Wall	S	01-16-20 00:00		649539-001
CS-1 North Wall	S	01-16-20 00:00		649539-002
CS-1 South Wall	S	01-16-20 00:00		649539-003
CS-2 North Wall	S	01-16-20 00:00		649539-004
CS-2 South Wall	S	01-16-20 00:00		649539-005
CS-3 North Wall	S	01-16-20 00:00		649539-006
CS-3 South Wall	S	01-16-20 00:00		649539-007
CS West Wall	S	01-16-20 00:00		649539-008



CASE NARRATIVE

Client Name: COG Operating LLC

Project Name: COG- Salvador Fee 2H (09/05/19) 1rp-5183

Project ID:

Work Order Number(s): 649539

Report Date: 21-JAN-20

Date Received: 01/20/2020

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3113844 BTEX by EPA 8021B

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



Certificate of Analytical Results 649539



COG Operating LLC, Artesia, NM COG- Salvador Fee 2H (09/05/19) 1rp-5183

Sample Id: **CS East Wall** Matrix: Soil Date Received: 01.20.20 08.00
Lab Sample Id: 649539-001 Date Collected: 01.16.20 00.00
Analytical Method: Chloride by EPA 300 Prep Method: E300P
Tech: CHE % Moisture:
Analyst: CHE Date Prep: 01.20.20 13.50 Basis: Wet Weight
Seq Number: 3113886

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	47.8	4.97	mg/kg	01.20.20 17.58		1

Analytical Method: TPH By SW8015 Mod Prep Method: SW8015P
Tech: DVM % Moisture:
Analyst: ARM Date Prep: 01.20.20 14.00 Basis: Wet Weight
Seq Number: 3113872

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<50.0	50.0	mg/kg	01.20.20 19.43	U	1
Diesel Range Organics	C10C28DRO	<50.0	50.0	mg/kg	01.20.20 19.43	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	01.20.20 19.43	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	01.20.20 19.43	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	83	%	70-135	01.20.20 19.43		
o-Terphenyl	84-15-1	90	%	70-135	01.20.20 19.43		



Certificate of Analytical Results 649539



COG Operating LLC, Artesia, NM COG- Salvador Fee 2H (09/05/19) 1rp-5183

Sample Id: **CS East Wall**
Lab Sample Id: 649539-001

Matrix: Soil
Date Collected: 01.16.20 00.00

Date Received: 01.20.20 08.00

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 01.20.20 16.30

Basis: Wet Weight

Seq Number: 3113844

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	01.21.20 00.11	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	01.21.20 00.11	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	01.21.20 00.11	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	01.21.20 00.11	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	01.21.20 00.11	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	01.21.20 00.11	U	1
Total BTEX		<0.00199	0.00199	mg/kg	01.21.20 00.11	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	91	%	70-130	01.21.20 00.11		
1,4-Difluorobenzene	540-36-3	111	%	70-130	01.21.20 00.11		



Certificate of Analytical Results 649539



COG Operating LLC, Artesia, NM COG- Salvador Fee 2H (09/05/19) 1rp-5183

Sample Id: **CS-1 North Wall** Matrix: Soil Date Received: 01.20.20 08.00
Lab Sample Id: 649539-002 Date Collected: 01.16.20 00.00
Analytical Method: Chloride by EPA 300 Prep Method: E300P
Tech: CHE % Moisture:
Analyst: CHE Date Prep: 01.20.20 13.50 Basis: Wet Weight
Seq Number: 3113886

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.99	4.99	mg/kg	01.21.20 08.19	U	1

Analytical Method: TPH By SW8015 Mod Prep Method: SW8015P
Tech: DVM % Moisture:
Analyst: ARM Date Prep: 01.20.20 14.00 Basis: Wet Weight
Seq Number: 3113872

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<48.1	48.1	mg/kg	01.20.20 20.47	U	1
Diesel Range Organics	C10C28DRO	<48.1	48.1	mg/kg	01.20.20 20.47	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<48.1	48.1	mg/kg	01.20.20 20.47	U	1
Total TPH	PHC635	<48.1	48.1	mg/kg	01.20.20 20.47	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	78	%	70-135	01.20.20 20.47	
o-Terphenyl	84-15-1	85	%	70-135	01.20.20 20.47	



Certificate of Analytical Results 649539



COG Operating LLC, Artesia, NM COG- Salvador Fee 2H (09/05/19) 1rp-5183

Sample Id: **CS-1 North Wall**

Matrix: Soil

Date Received: 01.20.20 08.00

Lab Sample Id: 649539-002

Date Collected: 01.16.20 00.00

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 01.20.20 16.30

Basis: Wet Weight

Seq Number: 3113844

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	01.21.20 00.31	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	01.21.20 00.31	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	01.21.20 00.31	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	01.21.20 00.31	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	01.21.20 00.31	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	01.21.20 00.31	U	1
Total BTEX		<0.00199	0.00199	mg/kg	01.21.20 00.31	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	84	%	70-130	01.21.20 00.31		
1,4-Difluorobenzene	540-36-3	108	%	70-130	01.21.20 00.31		



Certificate of Analytical Results 649539



COG Operating LLC, Artesia, NM COG- Salvador Fee 2H (09/05/19) 1rp-5183

Sample Id: **CS-1 South Wall** Matrix: Soil Date Received: 01.20.20 08.00
Lab Sample Id: 649539-003 Date Collected: 01.16.20 00.00
Analytical Method: Chloride by EPA 300 Prep Method: E300P
Tech: CHE % Moisture:
Analyst: CHE Date Prep: 01.20.20 13.50 Basis: Wet Weight
Seq Number: 3113886

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.04	5.04	mg/kg	01.21.20 08.31	U	1

Analytical Method: TPH By SW8015 Mod Prep Method: SW8015P
Tech: DVM % Moisture:
Analyst: ARM Date Prep: 01.20.20 14.00 Basis: Wet Weight
Seq Number: 3113872

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<50.0	50.0	mg/kg	01.20.20 21.08	U	1
Diesel Range Organics	C10C28DRO	<50.0	50.0	mg/kg	01.20.20 21.08	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	01.20.20 21.08	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	01.20.20 21.08	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	74	%	70-135	01.20.20 21.08		
o-Terphenyl	84-15-1	75	%	70-135	01.20.20 21.08		



Certificate of Analytical Results 649539



COG Operating LLC, Artesia, NM COG- Salvador Fee 2H (09/05/19) 1rp-5183

Sample Id: **CS-1 South Wall**

Matrix: Soil

Date Received: 01.20.20 08.00

Lab Sample Id: 649539-003

Date Collected: 01.16.20 00.00

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 01.20.20 16.30

Basis: Wet Weight

Seq Number: 3113844

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	01.21.20 00.52	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	01.21.20 00.52	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	01.21.20 00.52	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	01.21.20 00.52	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	01.21.20 00.52	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	01.21.20 00.52	U	1
Total BTEX		<0.00202	0.00202	mg/kg	01.21.20 00.52	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	109	%	70-130	01.21.20 00.52		
4-Bromofluorobenzene	460-00-4	82	%	70-130	01.21.20 00.52		



Certificate of Analytical Results 649539



COG Operating LLC, Artesia, NM COG- Salvador Fee 2H (09/05/19) 1rp-5183

Sample Id: **CS-2 North Wall** Matrix: Soil Date Received: 01.20.20 08.00
Lab Sample Id: 649539-004 Date Collected: 01.16.20 00.00
Analytical Method: Chloride by EPA 300 Prep Method: E300P
Tech: CHE % Moisture:
Analyst: CHE Date Prep: 01.20.20 13.50 Basis: Wet Weight
Seq Number: 3113886

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.02	5.02	mg/kg	01.21.20 08.42	U	1

Analytical Method: TPH By SW8015 Mod Prep Method: SW8015P
Tech: DVM % Moisture:
Analyst: ARM Date Prep: 01.20.20 14.00 Basis: Wet Weight
Seq Number: 3113872

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<50.0	50.0	mg/kg	01.20.20 21.29	U	1
Diesel Range Organics	C10C28DRO	<50.0	50.0	mg/kg	01.20.20 21.29	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	01.20.20 21.29	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	01.20.20 21.29	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	75	%	70-135	01.20.20 21.29	
o-Terphenyl	84-15-1	79	%	70-135	01.20.20 21.29	



Certificate of Analytical Results 649539



COG Operating LLC, Artesia, NM COG- Salvador Fee 2H (09/05/19) 1rp-5183

Sample Id: CS-2 North Wall

Matrix: Soil

Date Received: 01.20.20 08.00

Lab Sample Id: 649539-004

Date Collected: 01.16.20 00.00

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 01.20.20 16.30

Basis: Wet Weight

Seq Number: 3113844

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	01.21.20 01.12	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	01.21.20 01.12	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	01.21.20 01.12	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	01.21.20 01.12	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	01.21.20 01.12	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	01.21.20 01.12	U	1
Total BTEX		<0.00199	0.00199	mg/kg	01.21.20 01.12	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	109	%	70-130	01.21.20 01.12		
4-Bromofluorobenzene	460-00-4	81	%	70-130	01.21.20 01.12		



Certificate of Analytical Results 649539



COG Operating LLC, Artesia, NM COG- Salvador Fee 2H (09/05/19) 1rp-5183

Sample Id: **CS-2 South Wall** Matrix: Soil Date Received: 01.20.20 08.00
Lab Sample Id: 649539-005 Date Collected: 01.16.20 00.00
Analytical Method: Chloride by EPA 300 Prep Method: E300P
Tech: CHE % Moisture:
Analyst: CHE Date Prep: 01.20.20 13.50 Basis: Wet Weight
Seq Number: 3113886

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.98	4.98	mg/kg	01.21.20 09.36	U	1

Analytical Method: TPH By SW8015 Mod Prep Method: SW8015P
Tech: DVM % Moisture:
Analyst: ARM Date Prep: 01.20.20 14.00 Basis: Wet Weight
Seq Number: 3113872

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<49.9	49.9	mg/kg	01.20.20 21.50	U	1
Diesel Range Organics	C10C28DRO	<49.9	49.9	mg/kg	01.20.20 21.50	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	01.20.20 21.50	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	01.20.20 21.50	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	78	%	70-135	01.20.20 21.50		
o-Terphenyl	84-15-1	83	%	70-135	01.20.20 21.50		



Certificate of Analytical Results 649539



COG Operating LLC, Artesia, NM COG- Salvador Fee 2H (09/05/19) 1rp-5183

Sample Id: **CS-2 South Wall**

Matrix: Soil

Date Received: 01.20.20 08.00

Lab Sample Id: 649539-005

Date Collected: 01.16.20 00.00

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 01.20.20 16.30

Basis: Wet Weight

Seq Number: 3113844

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	01.21.20 01.32	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	01.21.20 01.32	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	01.21.20 01.32	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	01.21.20 01.32	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	01.21.20 01.32	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	01.21.20 01.32	U	1
Total BTEX		<0.00200	0.00200	mg/kg	01.21.20 01.32	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	107	%	70-130	01.21.20 01.32		
4-Bromofluorobenzene	460-00-4	80	%	70-130	01.21.20 01.32		



Certificate of Analytical Results 649539



COG Operating LLC, Artesia, NM COG- Salvador Fee 2H (09/05/19) 1rp-5183

Sample Id: **CS-3 North Wall** Matrix: Soil Date Received: 01.20.20 08.00
Lab Sample Id: 649539-006 Date Collected: 01.16.20 00.00
Analytical Method: Chloride by EPA 300 Prep Method: E300P
Tech: CHE % Moisture:
Analyst: CHE Date Prep: 01.20.20 13.50 Basis: Wet Weight
Seq Number: 3113886

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.96	4.96	mg/kg	01.21.20 09.05	U	1

Analytical Method: TPH By SW8015 Mod Prep Method: SW8015P
Tech: DVM % Moisture:
Analyst: ARM Date Prep: 01.20.20 14.00 Basis: Wet Weight
Seq Number: 3113872

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<50.0	50.0	mg/kg	01.20.20 22.11	U	1
Diesel Range Organics	C10C28DRO	<50.0	50.0	mg/kg	01.20.20 22.11	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	01.20.20 22.11	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	01.20.20 22.11	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	76	%	70-135	01.20.20 22.11	
o-Terphenyl	84-15-1	81	%	70-135	01.20.20 22.11	



Certificate of Analytical Results 649539



COG Operating LLC, Artesia, NM COG- Salvador Fee 2H (09/05/19) 1rp-5183

Sample Id: CS-3 North Wall

Matrix: Soil

Date Received: 01.20.20 08.00

Lab Sample Id: 649539-006

Date Collected: 01.16.20 00.00

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 01.20.20 16.30

Basis: Wet Weight

Seq Number: 3113844

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	01.21.20 01.52	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	01.21.20 01.52	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	01.21.20 01.52	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	01.21.20 01.52	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	01.21.20 01.52	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	01.21.20 01.52	U	1
Total BTEX		<0.00199	0.00199	mg/kg	01.21.20 01.52	U	1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	87		%	70-130	01.21.20 01.52	
1,4-Difluorobenzene	540-36-3	110		%	70-130	01.21.20 01.52	



Certificate of Analytical Results 649539



COG Operating LLC, Artesia, NM COG- Salvador Fee 2H (09/05/19) 1rp-5183

Sample Id: **CS-3 South Wall** Matrix: Soil Date Received: 01.20.20 08.00
Lab Sample Id: 649539-007 Date Collected: 01.16.20 00.00
Analytical Method: Chloride by EPA 300 Prep Method: E300P
Tech: CHE % Moisture:
Analyst: CHE Date Prep: 01.20.20 13.50 Basis: Wet Weight
Seq Number: 3113886

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.00	5.00	mg/kg	01.20.20 19.53	U	1

Analytical Method: TPH By SW8015 Mod Prep Method: SW8015P
Tech: DVM % Moisture:
Analyst: ARM Date Prep: 01.20.20 14.00 Basis: Wet Weight
Seq Number: 3113872

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<49.9	49.9	mg/kg	01.20.20 22.32	U	1
Diesel Range Organics	C10C28DRO	<49.9	49.9	mg/kg	01.20.20 22.32	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	01.20.20 22.32	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	01.20.20 22.32	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	79	%	70-135	01.20.20 22.32	
o-Terphenyl	84-15-1	86	%	70-135	01.20.20 22.32	



Certificate of Analytical Results 649539



COG Operating LLC, Artesia, NM COG- Salvador Fee 2H (09/05/19) 1rp-5183

Sample Id: **CS-3 South Wall**

Matrix: Soil

Date Received: 01.20.20 08.00

Lab Sample Id: 649539-007

Date Collected: 01.16.20 00.00

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 01.20.20 16.30

Basis: Wet Weight

Seq Number: 3113844

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	01.21.20 02.12	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	01.21.20 02.12	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	01.21.20 02.12	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	01.21.20 02.12	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	01.21.20 02.12	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	01.21.20 02.12	U	1
Total BTEX		<0.00201	0.00201	mg/kg	01.21.20 02.12	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	110	%	70-130	01.21.20 02.12		
4-Bromofluorobenzene	460-00-4	85	%	70-130	01.21.20 02.12		



Certificate of Analytical Results 649539



COG Operating LLC, Artesia, NM COG- Salvador Fee 2H (09/05/19) 1rp-5183

Sample Id: **CS West Wall** Matrix: Soil Date Received: 01.20.20 08.00
Lab Sample Id: 649539-008 Date Collected: 01.16.20 00.00
Analytical Method: Chloride by EPA 300 Prep Method: E300P
Tech: CHE % Moisture:
Analyst: CHE Date Prep: 01.20.20 13.50 Basis: Wet Weight
Seq Number: 3113886

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5.16	4.95	mg/kg	01.20.20 20.04		1

Analytical Method: TPH By SW8015 Mod Prep Method: SW8015P
Tech: DVM % Moisture:
Analyst: ARM Date Prep: 01.20.20 14.00 Basis: Wet Weight
Seq Number: 3113872

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<49.9	49.9	mg/kg	01.21.20 09.23	U	1
Diesel Range Organics	C10C28DRO	209	49.9	mg/kg	01.21.20 09.23		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	94.9	49.9	mg/kg	01.21.20 09.23		1
Total TPH	PHC635	304	49.9	mg/kg	01.21.20 09.23		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	85	%	70-135	01.21.20 09.23	
o-Terphenyl	84-15-1	94	%	70-135	01.21.20 09.23	



Certificate of Analytical Results 649539



COG Operating LLC, Artesia, NM COG- Salvador Fee 2H (09/05/19) 1rp-5183

Sample Id: **CS West Wall**

Matrix: Soil

Date Received: 01.20.20 08.00

Lab Sample Id: 649539-008

Date Collected: 01.16.20 00.00

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 01.20.20 16.30

Basis: Wet Weight

Seq Number: 3113844

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	01.21.20 02.32	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	01.21.20 02.32	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	01.21.20 02.32	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	01.21.20 02.32	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	01.21.20 02.32	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	01.21.20 02.32	U	1
Total BTEX		<0.00199	0.00199	mg/kg	01.21.20 02.32	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	78	%	70-130	01.21.20 02.32		
1,4-Difluorobenzene	540-36-3	108	%	70-130	01.21.20 02.32		

- 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 649539

COG Operating LLC COG- Salvador Fee 2H (09/05/19) 1rp-5183

Analytical Method: Chloride by EPA 300

Seq Number: 3113886

MB Sample Id: 7694779-1-BLK

Matrix: Solid

LCS Sample Id: 7694779-1-BKS

Prep Method: E300P

Date Prep: 01.20.20

LCSD Sample Id: 7694779-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.858	250	238	95	239	96	90-110	0	20	mg/kg	01.20.20 17:35	

Analytical Method: Chloride by EPA 300

Seq Number: 3113886

Parent Sample Id: 649539-001

Matrix: Soil

MS Sample Id: 649539-001 S

Prep Method: E300P

Date Prep: 01.20.20

MSD Sample Id: 649539-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	47.8	249	286	96	295	99	90-110	3	20	mg/kg	01.20.20 18:09	

Analytical Method: Chloride by EPA 300

Seq Number: 3113886

Parent Sample Id: 649559-001

Matrix: Soil

MS Sample Id: 649559-001 S

Prep Method: E300P

Date Prep: 01.20.20

MSD Sample Id: 649559-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	8.94	250	235	90	235	90	90-110	0	20	mg/kg	01.20.20 20:50	

Analytical Method: TPH By SW8015 Mod

Seq Number: 3113872

MB Sample Id: 7694782-1-BLK

Matrix: Solid

LCS Sample Id: 7694782-1-BKS

Prep Method: SW8015P

Date Prep: 01.20.20

LCSD Sample Id: 7694782-1-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	<15.0	1000	1050	105	1160	116	70-135	10	20	mg/kg	01.20.20 19:00	
Diesel Range Organics	<15.0	1000	921	92	1030	103	70-135	11	20	mg/kg	01.20.20 19:00	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	83		88		100		70-135	%	01.20.20 19:00
o-Terphenyl	94		88		88		70-135	%	01.20.20 19:00

Analytical Method: TPH By SW8015 Mod

Seq Number: 3113872

Matrix: Solid

MB Sample Id: 7694782-1-BLK

Prep Method: SW8015P

Date Prep: 01.20.20

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	01.20.20 18:39	

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

COG Operating LLC
COG- Salvador Fee 2H (09/05/19) 1rp-5183

Analytical Method: TPH By SW8015 Mod

Seq Number: 3113872

Parent Sample Id: 649539-001

Matrix: Soil

MS Sample Id: 649539-001 S

Prep Method: SW8015P

Date Prep: 01.20.20

MSD Sample Id: 649539-001 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	23.3	998	1090	107	1080	106	70-135	1	20	mg/kg	01.20.20 20:04	
Diesel Range Organics	<15.0	998	979	98	975	98	70-135	0	20	mg/kg	01.20.20 20:04	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	96		93		70-135	%	01.20.20 20:04
o-Terphenyl	99		97		70-135	%	01.20.20 20:04

Analytical Method: BTEX by EPA 8021B

Seq Number: 3113844

MB Sample Id: 7694757-1-BLK

Matrix: Solid

LCS Sample Id: 7694757-1-BKS

Prep Method: SW5030B

Date Prep: 01.20.20

LCSD Sample Id: 7694757-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000385	0.100	0.120	120	0.116	116	70-130	3	35	mg/kg	01.20.20 16:52	
Toluene	<0.000456	0.100	0.111	111	0.102	102	70-130	8	35	mg/kg	01.20.20 16:52	
Ethylbenzene	<0.000565	0.100	0.105	105	0.0952	95	70-130	10	35	mg/kg	01.20.20 16:52	
m,p-Xylenes	<0.00101	0.200	0.210	105	0.186	93	70-130	12	35	mg/kg	01.20.20 16:52	
o-Xylene	<0.000344	0.100	0.104	104	0.0929	93	70-130	11	35	mg/kg	01.20.20 16:52	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	103		107		105		70-130	%	01.20.20 16:52
4-Bromofluorobenzene	82		99		89		70-130	%	01.20.20 16:52

Analytical Method: BTEX by EPA 8021B

Seq Number: 3113844

Parent Sample Id: 649554-001

Matrix: Soil

MS Sample Id: 649554-001 S

Prep Method: SW5030B

Date Prep: 01.20.20

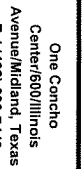
MSD Sample Id: 649554-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000382	0.0992	0.112	113	0.113	113	70-130	1	35	mg/kg	01.20.20 17:32	
Toluene	0.000675	0.0992	0.101	101	0.0992	99	70-130	2	35	mg/kg	01.20.20 17:32	
Ethylbenzene	<0.000560	0.0992	0.0944	95	0.0925	93	70-130	2	35	mg/kg	01.20.20 17:32	
m,p-Xylenes	<0.00101	0.198	0.186	94	0.181	91	70-130	3	35	mg/kg	01.20.20 17:32	
o-Xylene	<0.000342	0.0992	0.0927	93	0.0898	90	70-130	3	35	mg/kg	01.20.20 17:32	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	113		114		70-130	%	01.20.20 17:32
4-Bromofluorobenzene	97		92		70-130	%	01.20.20 17:32

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



16490539

ANALYSIS REQUEST or Specify Method

(Circle or Specify Method No.)

Final 1.000



Certificate of Analysis Summary 657566

COG Operating LLC, Artesia, NM

Project Name: Salvador Fee 2H (09/05/19) 1RP-5183



Project Id:

Contact: Robert Grubbs

Project Location: Lea County, NM

Date Received in Lab: Wed Apr-01-20 02:05 pm

Report Date: 02-APR-20

Project Manager: Jessica Kramer

Analysis Requested	Lab Id: Field Id: Depth: Matrix: Sampled:	657566-001 CS West Wall SOIL Apr-01-20 00:00					
BTEX by EPA 8021B	Extracted: Analyzed: Units/RL:	Apr-01-20 16:00 Apr-02-20 06:45 mg/kg RL					
Benzene		<0.00198 0.00198					
Toluene		<0.00198 0.00198					
Ethylbenzene		<0.00198 0.00198					
m,p-Xylenes		<0.00397 0.00397					
o-Xylene		<0.00198 0.00198					
Total Xylenes		<0.00198 0.00198					
Total BTEX		<0.00198 0.00198					
Chloride by EPA 300	Extracted: Analyzed: Units/RL:	Apr-01-20 16:50 Apr-01-20 18:49 mg/kg RL					
Chloride		<5.04 5.04					
TPH By SW8015 Mod	Extracted: Analyzed: Units/RL:	Apr-01-20 16:00 Apr-02-20 06:50 mg/kg RL					
Gasoline Range Hydrocarbons		<50.0 50.0					
Diesel Range Organics		<50.0 50.0					
Motor Oil Range Hydrocarbons (MRO)		<50.0 50.0					
Total TPH		<50.0 50.0					

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico

Version: 1.0%

Jessica Kramer

Jessica Kramer
Project Manager

Analytical Report 657566

for COG Operating LLC

Project Manager: Robert Grubbs
Salvador Fee 2H (09/05/19) 1RP-5183

02-APR-20

Collected By: Client



1211 W. Florida Ave
Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-19-30), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2019-058), North Carolina (681), Arkansas (19-037-0)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (TX104704295-19-22), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-19-16)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-21)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-19-5)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Tampa: Florida (E87429), North Carolina (483)



02-APR-20

Project Manager: **Robert Grubbs**

COG Operating LLC

2407 Pecos Avenue

Artesia, NM 88210

Reference: XENCO Report No(s): **657566**

Salvador Fee 2H (09/05/19) 1RP-5183

Project Address: Lea County, NM

Robert Grubbs:

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) 657566. 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. 657566 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 Manager

Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.

Certified and approved by numerous States and Agencies.

A Small Business and Minority Status Company that delivers SERVICE and QUALITY

Houston - Dallas - Midland - San Antonio - Phoenix - Oklahoma - Latin America



Sample Cross Reference 657566



COG Operating LLC, Artesia, NM

Salvador Fee 2H (09/05/19) 1RP-5183

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
CS West Wall	S	04-01-20 00:00		657566-001



CASE NARRATIVE

Client Name: COG Operating LLC

Project Name: Salvador Fee 2H (09/05/19) 1RP-5183

Project ID:

Work Order Number(s): 657566

Report Date: 02-APR-20

Date Received: 04/01/2020

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3121690 BTEX by EPA 8021B

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



Certificate of Analytical Results 657566



COG Operating LLC, Artesia, NM

Salvador Fee 2H (09/05/19) 1RP-5183

Sample Id: CS West Wall

Matrix: Soil

Date Received: 04.01.20 14.05

Lab Sample Id: 657566-001

Date Collected: 04.01.20 00.00

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: SPC

% Moisture:

Analyst: CHE

Date Prep: 04.01.20 16.50

Basis: Wet Weight

Seq Number: 3121668

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.04	5.04	mg/kg	04.01.20 18.49	U	1

Analytical Method: TPH By SW8015 Mod

Prep Method: SW8015P

Tech: DVM

% Moisture:

Analyst: ARM

Date Prep: 04.01.20 16.00

Basis: Wet Weight

Seq Number: 3121715

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<50.0	50.0	mg/kg	04.02.20 06.50	U	1
Diesel Range Organics	C10C28DRO	<50.0	50.0	mg/kg	04.02.20 06.50	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	04.02.20 06.50	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	04.02.20 06.50	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-130	04.02.20 06.50	
o-Terphenyl	84-15-1	98	%	70-130	04.02.20 06.50	



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Sample Id: **CS West Wall**

Matrix: Soil

Date Received: 04.01.20 14.05

Lab Sample Id: 657566-001

Date Collected: 04.01.20 00.00

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 04.01.20 16.00

Basis: Wet Weight

Seq Number: 3121690

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	04.02.20 06.45	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	04.02.20 06.45	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	04.02.20 06.45	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	04.02.20 06.45	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	04.02.20 06.45	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	04.02.20 06.45	U	1
Total BTEX		<0.00198	0.00198	mg/kg	04.02.20 06.45	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	110	%	70-130	04.02.20 06.45		
1,4-Difluorobenzene	540-36-3	114	%	70-130	04.02.20 06.45		

- 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 657566

COG Operating LLC Salvador Fee 2H (09/05/19) 1RP-5183

Analytical Method: Chloride by EPA 300

Seq Number: 3121668

MB Sample Id: 7700277-1-BLK

Matrix: Solid

LCS Sample Id: 7700277-1-BKS

Prep Method: E300P

Date Prep: 04.01.20

LCSD Sample Id: 7700277-1-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	240	96	243	97	90-110	1	20	mg/kg	04.01.20 17:14	

Analytical Method: Chloride by EPA 300

Seq Number: 3121668

Parent Sample Id: 657413-008

Matrix: Soil

MS Sample Id: 657413-008 S

Prep Method: E300P

Date Prep: 04.01.20

MSD Sample Id: 657413-008 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	70.2	250	314	98	312	97	90-110	1	20	mg/kg	04.01.20 17:32	

Analytical Method: Chloride by EPA 300

Seq Number: 3121668

Parent Sample Id: 657557-001

Matrix: Soil

MS Sample Id: 657557-001 S

Prep Method: E300P

Date Prep: 04.01.20

MSD Sample Id: 657557-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	3.92	250	251	99	253	100	90-110	1	20	mg/kg	04.01.20 19:28	

Analytical Method: TPH By SW8015 Mod

Seq Number: 3121715

MB Sample Id: 7700294-1-BLK

Matrix: Solid

LCS Sample Id: 7700294-1-BKS

Prep Method: SW8015P

Date Prep: 04.01.20

LCSD Sample Id: 7700294-1-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	<50.0	1000	1020	102	987	99	70-130	3	20	mg/kg	04.01.20 21:56	
Diesel Range Organics	<50.0	1000	1080	108	1030	103	70-130	5	20	mg/kg	04.01.20 21:56	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	115		106		102		70-130	%	04.01.20 21:56
o-Terphenyl	125		111		112		70-130	%	04.01.20 21:56

Analytical Method: TPH By SW8015 Mod

Seq Number: 3121715

Matrix: Solid

MB Sample Id: 7700294-1-BLK

Prep Method: SW8015P

Date Prep: 04.01.20

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	04.01.20 21:34	

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 657566

COG Operating LLC Salvador Fee 2H (09/05/19) 1RP-5183

Analytical Method: TPH By SW8015 Mod

Seq Number: 3121715

Parent Sample Id: 657295-001

Matrix: Soil

MS Sample Id: 657295-001 S

Prep Method: SW8015P

Date Prep: 04.01.20

MSD Sample Id: 657295-001 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	<49.9	997	929	93	927	93	70-130	0	20	mg/kg	04.01.20 23:01	
Diesel Range Organics	<49.9	997	987	99	982	99	70-130	1	20	mg/kg	04.01.20 23:01	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	100		99		70-130	%	04.01.20 23:01
o-Terphenyl	106		102		70-130	%	04.01.20 23:01

Analytical Method: BTEX by EPA 8021B

Seq Number: 3121690

MB Sample Id: 7700315-1-BLK

Matrix: Solid

LCS Sample Id: 7700315-1-BKS

Prep Method: SW5030B

Date Prep: 04.01.20

LCSD Sample Id: 7700315-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.0861	86	0.0835	84	70-130	3	35	mg/kg	04.02.20 02:58	
Toluene	<0.00200	0.100	0.0904	90	0.0865	87	70-130	4	35	mg/kg	04.02.20 02:58	
Ethylbenzene	<0.00200	0.100	0.0927	93	0.0870	87	70-130	6	35	mg/kg	04.02.20 02:58	
m,p-Xylenes	<0.00400	0.200	0.184	92	0.174	87	70-130	6	35	mg/kg	04.02.20 02:58	
o-Xylene	<0.00200	0.100	0.0934	93	0.0895	90	70-130	4	35	mg/kg	04.02.20 02:58	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	108		105		107		70-130	%	04.02.20 02:58
4-Bromofluorobenzene	101		97		99		70-130	%	04.02.20 02:58

Analytical Method: BTEX by EPA 8021B

Seq Number: 3121690

Parent Sample Id: 657072-001

Matrix: Soil

MS Sample Id: 657072-001 S

Prep Method: SW5030B

Date Prep: 04.01.20

MSD Sample Id: 657072-001 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	0.0994	0.0758	76	0.0841	84	70-130	10	35	mg/kg	04.02.20 03:39	
Toluene	<0.00199	0.0994	0.0794	80	0.0854	86	70-130	7	35	mg/kg	04.02.20 03:39	
Ethylbenzene	<0.00199	0.0994	0.0795	80	0.0846	85	70-130	6	35	mg/kg	04.02.20 03:39	
m,p-Xylenes	<0.00398	0.199	0.160	80	0.169	85	70-130	5	35	mg/kg	04.02.20 03:39	
o-Xylene	<0.00199	0.0994	0.0825	83	0.0869	87	70-130	5	35	mg/kg	04.02.20 03:39	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	106		109		70-130	%	04.02.20 03:39
4-Bromofluorobenzene	103		107		70-130	%	04.02.20 03:39

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

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

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



CONCHO

One Concho
Center/600 Illinois
Avenue/Midland, Texas
Tel (432) 683-7443

Client Name:

COG

Site Manager:

Ike Tavaréz itavaréz@concho.com
Robert Grubbs Jr rgrubbs@concho.com

Project Name:

Salvador Fee 2H (09/05/19) 1RP-5183

Project Location:
(county, state)

Lea County, NM

Project #:

Invoice ID:

COG

Receiving Laboratory:

Xenco

Sampler Signature:

Robert Grubbs Jr

Comments:

SAMPLE IDENTIFICATION

LAB #
(LAB USE ONLY)

CS West Wall

SAMPLING

YEAR: 2020

DATE

TIME

4/1/2020

MATRIX

PRESERVATIVE METHOD

WATER

SOIL

HCL

HNO₃

ICE

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

BTEX 8021B

TPH TX1005 (Ext to C35)

TPH 8015M (GRO - DRO - 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

EC Electrical Conductivity

Hold

ANALYSIS REQUEST
(Circle or Specify Method No.)

1057504

Relinquished by:

Date: Time:

Received by:

Date: Time:

Relinquished by:

Date: Time:

Received by:

Date: Time:

Relinquished by:

Date: Time:

Received by:

Date: Time:

LAB USE ONLY

Sample Temperature

10.3/10.0

-0.3/0.9

REMARKS:

X

RUSH: Same Day 24 hr 48 hr 72 hr

Rush Charges Authorized

Special Report Limits or TRRP Report

ORIGINAL COPY

(Circle) HAND DELIVERED FEDEX UPS Tracking #