CONCHO

January 28, 2021

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

Bureau of Land Management, CFO
620 E. Green Street
Carlsbad, NM 88220

Work Plan

Lusk Deep Unit A #029H
Incident #: NRM2020236260
DOR: July 3, 2020
GPS: 32.666785 -103.794723
Unit Letter D, Section 17, Township 19 South, Range 32 East
Lea County, New Mexico

To Whom It May Concern,

COG Operating, LLC (COG) is pleased to submit the following work plan in response to a release that occurred at the Lusk Deep Unit A #029H. The release is located in Unit Letter D, Section 17, Township 19 South and Range 32 East in Lea County, New Mexico. More specifically the latitude and longitude for the release are 32.66785 North and -103.794723 West.

BACKGROUND

The release was discovered on July 3, 2020. A C-141 initial report was submitted to the New Mexico Oil Conservation Division (NMOCD) and the Bureau of Land Management (BLM). The initial C-141 is presented in Appendix A. Internal corrosion of a fitting resulted in the release of approximately twelve (12) barrels (bbls) of produced water.

On December 18, 2020, a hand auger was utilized to vertically delineate the impacted area. Horizontal delineation samples were taken on the perimeter of the impacted area.

GROUNDWATER AND REGULATORY FRAMEWORK

According to the United States Geological Survey (USGS) the nearest water well (324046103464101) indicates that groundwater in the project vicinity is approximately three-hundred and sixty-eight (368) feet below ground surface (BGS). The water well information is shown in Appendix B.

A risk based 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 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 is summarized in Appendix B. The delineation and closure criteria are listed below:

General Site Characterization and Groundwater:

Site Characterization	Average Groundwater Depth (ft.)
None Located	>100 feet

Delineation and Closure Criteria:

Recommended Remedial Action Levels (RRALs)	
Chlorides	20,000 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

PROPOSED WORK PLAN

- The impacted area will be excavated to a depth of one (1) foot BGS.
- All of the excavated material will be hauled to an NMOCD approved solid waste disposal facility.
- The excavation will be backfilled with clean “like” material and contoured to match the surrounding terrain.

SAMPLING PLAN

Once the excavation is complete, confirmation soil samples will be collected from the excavated areas. To collect representative samples, composite samples (5-point composite) will be collected every 200 square feet from the bottom and sidewalls of the excavated area. The soil samples will be laboratory analyzed for the constituents of concern. Discrete soil samples will be collected from the excavation if any "hot spots" are encountered during the excavation.

REMEDIATION TIMEFRAME AND ESTIMATED VOLUME

The remediation will be performed 90 days after the work plan has been approved. Approximately two-hundred and eighteen (218) cubic yards of soil will be excavated and hauled offsite for proper disposal.

SITE RECLAMATION AND RESTORATION

All of the fluid remained on the well pad. No reclamation activities will be required at this site.

Should you have any questions or concerns on the proposed remediation activities, please do not hesitate to contact me.

Sincerely,

Sincerely,

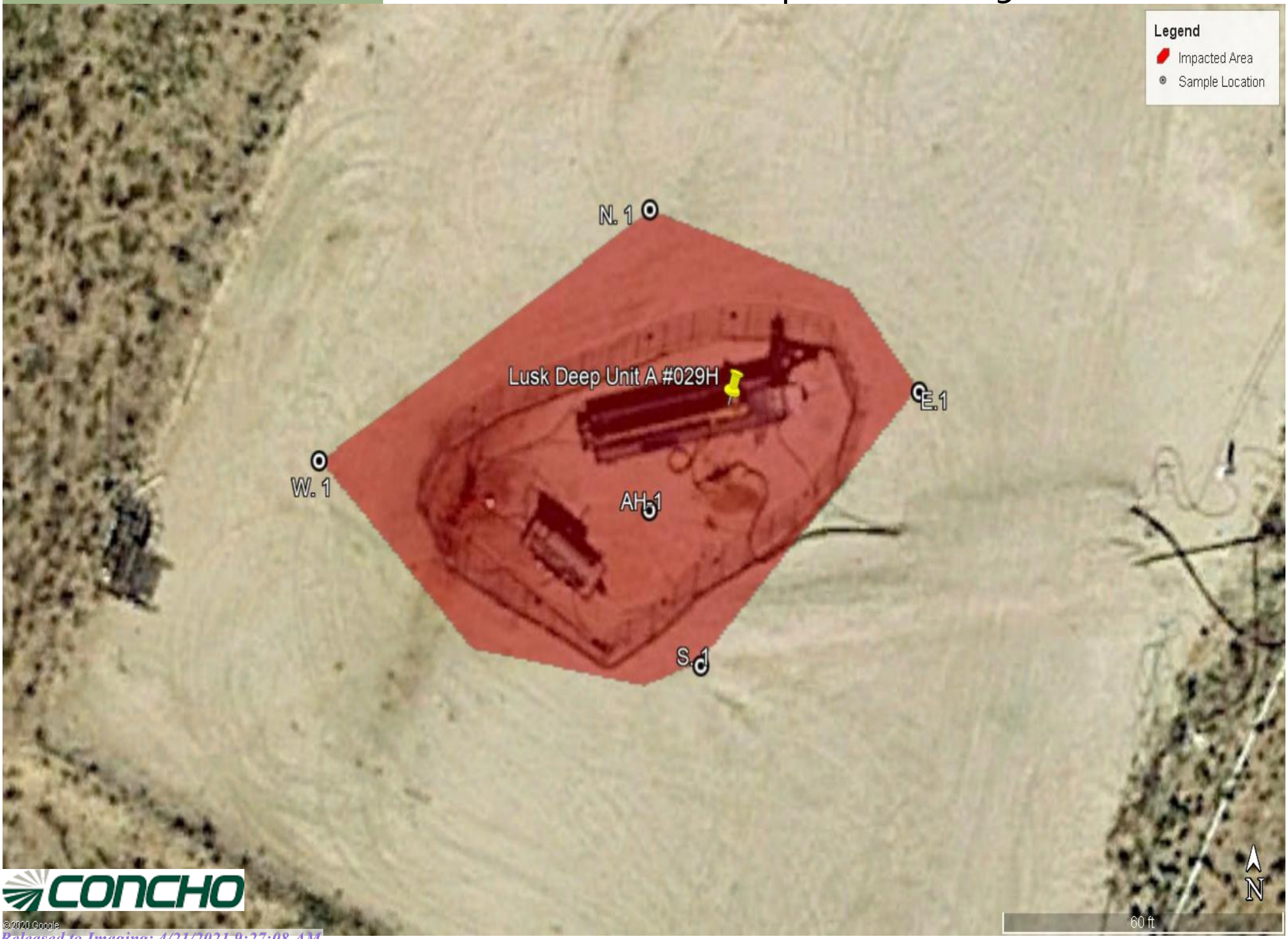
Sheldon Hitchcock

Sheldon L. Hitchcock
HSE Coordinator
slhitchcock@concho.com

FIGURES

July 3, 2020

Lusk Deep Unit A #029H



TABLES

Table 1
COG Operating LLC.
Lusk Deep Unit A #029H
Lea County, New Mexico

Sample ID	Sample Depth (ft)	Sample Date	Soil Status		TPH (mg/kg)							Benzene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)
			In-Situ	Removed	GRO	DRO	MRO	*Total*	GRO	DRO	*Total*			
NMOCD RRAL Limits (mg/kg)					**-**	**-**	**-**	**2,500**	**-**	**-**	**1,000**	**10**	**50**	**20,000**
AH-1	0-0.5	12/18/2020	X		<50.0	1200	341	1541.0	<50.0	1200	1,200.0	<0.002	<0.002	36,300
AH-1	1	12/18/2020	X		<50.0	<50.0	<50.0	0.0	<50.0	<50.0	0.0	<0.002	<0.002	2,860
AH-1	2	12/18/2020	X		<50.0	<50.0	<50.0	0.0	<50.0	<50.0	0.0	<0.002	<0.002	6,740
AH-1	3	12/18/2020	X		<50.0	<50.0	<50.0	0.0	<50.0	<50.0	0.0	<0.002	<0.002	3280
AH-1	4	12/18/2020	X		<50.0	<50.0	<50.0	0.0	<50.0	<50.0	0.0	<0.002	<0.002	1350
AH-1	5	12/18/2020	X		<50.0	<50.0	<50.0	0.0	<50.0	<50.0	0.0	<0.002	<0.002	1180
N.1	N/A	1/21/2020	X		<50.0	186	<50.0	186.0	<50.0	186	186.0	<0.002	<0.002	97
S.1	N/A	1/21/2020	X		<50.0	<50.0	<50.0	0.0	<50.0	<50.0	0.0	<0.002	<0.002	294
E.1	N/A	1/21/2020	X		<50.0	<50.0	<50.0	0.0	<50.0	<50.0	0.0	<0.002	<0.002	274
W.1	N/A	1/21/2020	X		<50.0	440	<50.0	440.0	<50.0	440	440.0	<0.002	<0.002	84.6

Proposed Excavation Depth

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 dissolved chloride 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		

State of New Mexico
Oil Conservation Division

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 not 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: Sheldon Hitson Date: _____

email: _____ Telephone: _____

OCD Only

Received by: _____ Date: _____

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

Site Assessment/Characterization

This information must be provided to the appropriate district office no later than 90 days after the release discovery date.

What is the shallowest depth to groundwater beneath the area affected by the release?	_____ (ft bgs)
Did this release impact groundwater or surface water?	☐ Yes ☐ No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	☐ Yes ☐ No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	☐ Yes ☐ No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	☐ Yes ☐ No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	☐ Yes ☐ No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	☐ Yes ☐ No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	☐ Yes ☐ No
Are the lateral extents of the release within 300 feet of a wetland?	☐ Yes ☐ No
Are the lateral extents of the release overlying a subsurface mine?	☐ Yes ☐ No
Are the lateral extents of the release overlying an unstable area such as karst geology?	☐ Yes ☐ No
Are the lateral extents of the release within a 100-year floodplain?	☐ Yes ☐ No
Did the release impact areas **not** on an exploration, development, production, or storage site?	☐ Yes ☐ No

Attach a comprehensive report (electronic submittals in .pdf format are preferred) demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined. Refer to 19.15.29.11 NMAC for specifics.

Characterization Report Checklist: ***Each of the following items must be included in the report.***

- ☐ Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells.
- ☐ Field data
- ☐ Data table of soil contaminant concentration data
- ☐ Depth to water determination
- ☐ Determination of water sources and significant watercourses within ½-mile of the lateral extents of the release
- ☐ Boring or excavation logs
- ☐ Photographs including date and GIS information
- ☐ Topographic/Aerial maps
- ☐ Laboratory data including chain of custody

If the site characterization report does not include completed efforts at remediation of the release, the report must include a proposed remediation plan. That plan must include the estimated volume of material to be remediated, the proposed remediation technique, proposed sampling plan and methods, anticipated timelines for beginning and completing the remediation. The closure criteria for a release are contained in Table 1 of 19.15.29.12 NMAC, however, use of the table is modified by site- and release-specific parameters.

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

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: Sheldon Hitson Date: _____

email: _____ Telephone: _____

OCD Only

Received by: _____ Date: _____

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

Remediation Plan

Remediation Plan Checklist: ***Each of the following items must be included in the plan.***

- ☐ Detailed description of proposed remediation technique
- ☐ Scaled sitemap with GPS coordinates showing delineation points
- ☐ Estimated volume of material to be remediated
- ☐ Closure criteria is to Table 1 specifications subject to 19.15.29.12(C)(4) NMAC
- ☐ Proposed schedule for remediation (note if remediation plan timeline is more than 90 days OCD approval is required)

Deferral Requests Only: ***Each of the following items must be confirmed as part of any request for deferral of remediation.***

☐ Contamination must be in areas immediately under or around production equipment where remediation could cause a major facility deconstruction.

☐ Extents of contamination must be fully delineated.

☐ Contamination does not cause an imminent risk to human health, the environment, or groundwater.

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: Sheldon Hitson _____ Date: _____

email: _____ Telephone: _____

OCD Only

Received by: _____ Date: _____

☐ Approved ☐ Approved with Attached Conditions of Approval ☐ Denied ☐ Deferral Approved

Signature: _____ Date: 04/21/2021

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: Sheldon Hitson _____ 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.

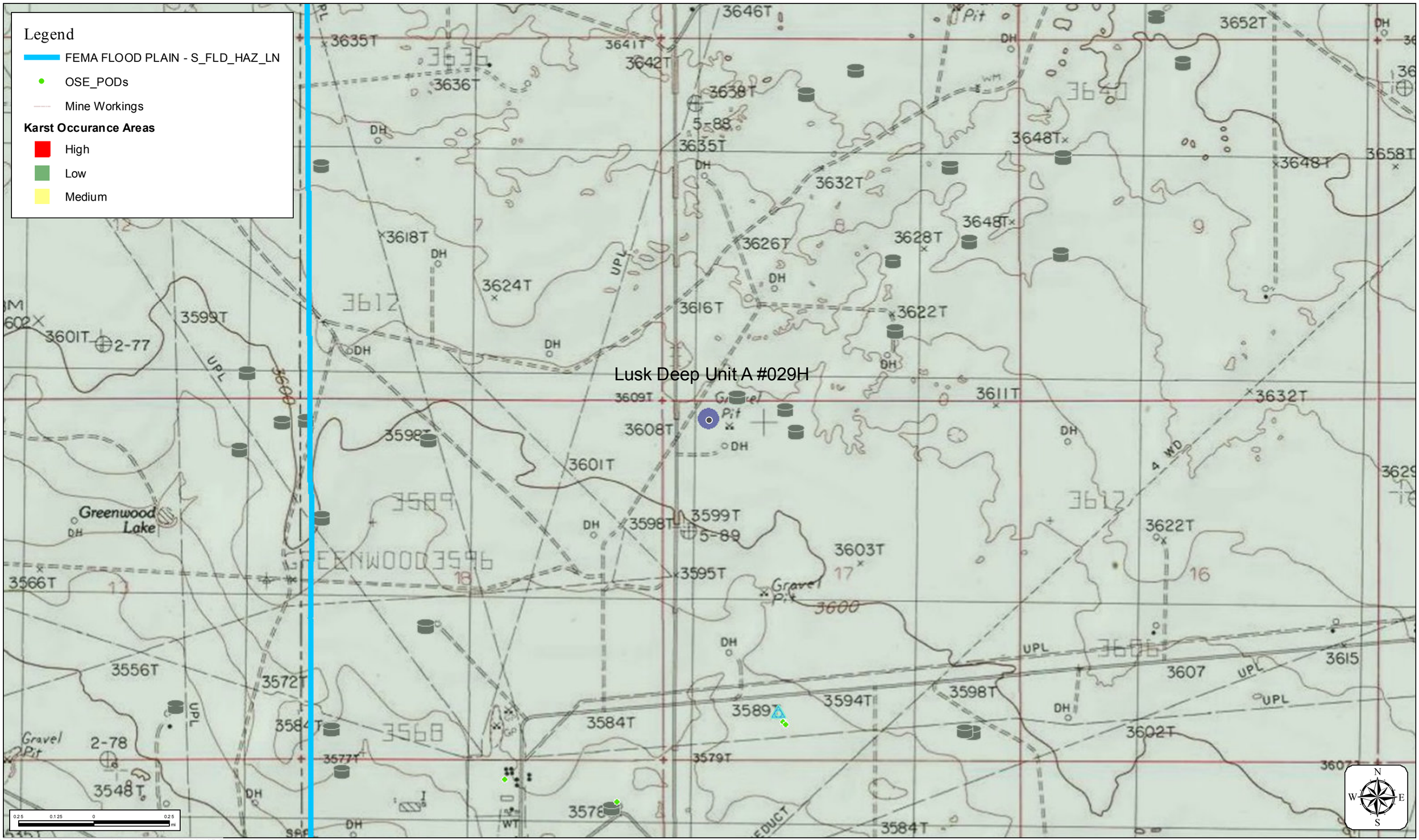
Closure Approved by: _____ Date: _____

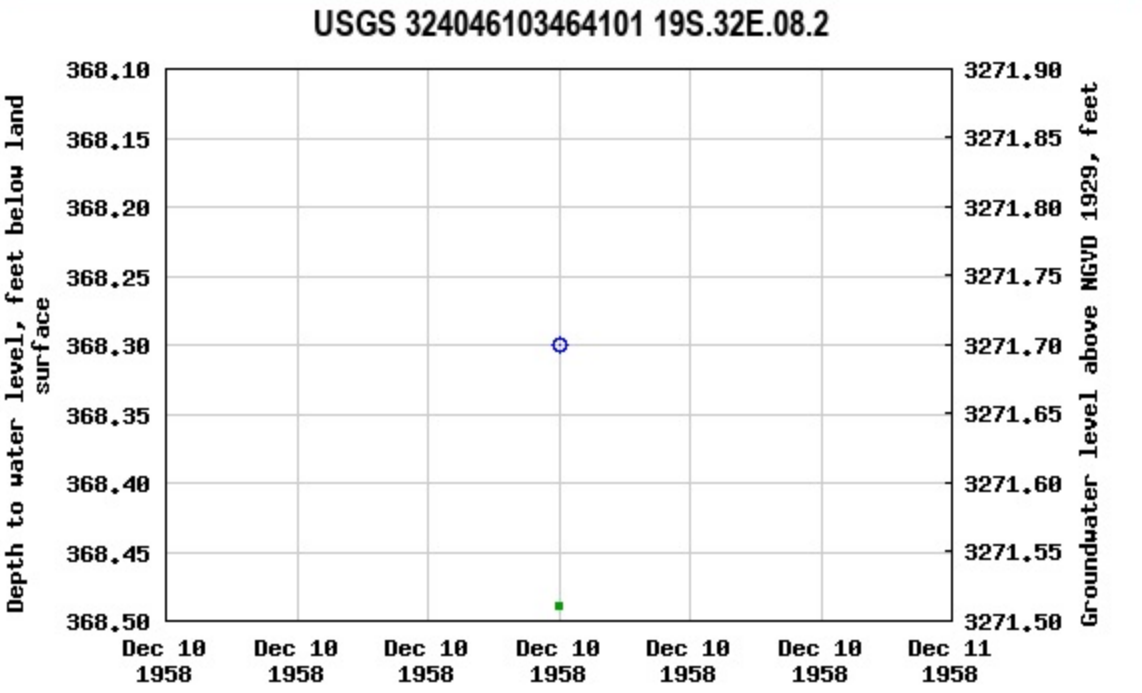
Printed Name: _____ Title: _____

APPENDIX B

CONCHO

Lusk Deep Unit A #029




USGS 324046103464101 19S.32E.08.2
Depth to water level, feet below land surface
368.10
368.15
368.20
368.25
368.30
368.35
368.40
368.45
368.50
Groundwater level above NGVD 1929, feet
3271.90
3271.85
3271.80
3271.75
3271.70
3271.65
3271.60
3271.55
3271.50
Dec 10 1958
Dec 10 1958
Dec 10 1958
Dec 10 1958
Dec 10 1958
Dec 10 1958
Dec 11 1958
Period of approved data

APPENDIX C

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Certificate of Analysis Summary 682198

COG Operating LLC, Artesia, NM

Project Name: Lusk Deep 29

Project Id:

Contact: Sheldon Hitchcock

Project Location: Lea County, New Mexico

Date Received in Lab: Tue 12.22.2020 10:19

Report Date: 12.23.2020 13:52

Project Manager: Jessica Kramer

Analysis Requested		682198-001		682198-002		682198-003		682198-004		682198-005		682198-006	
	Field Id:	AH-1 0-0.5'		AH-1 1'		AH-1 2'		AH-1 3'		AH-1 4'		AH-1 5'	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	12.18.2020 16:00		12.18.2020 16:05		12.18.2020 16:10		12.18.2020 16:15		12.18.2020 16:20		12.18.2020 16:25	
BTEX by EPA 8021B SUB: T104704400-20-21	*Extracted:*	12.22.2020 13:15		12.22.2020 13:15		12.22.2020 13:15		12.22.2020 13:15		12.22.2020 13:15		12.22.2020 13:15	
	Analyzed:	12.22.2020 22:23		12.22.2020 22:44		12.22.2020 23:04		12.22.2020 23:25		12.22.2020 23:46		12.23.2020 00:06	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		<0.00198	0.00198	<0.00202	0.00202	<0.00200	0.00200	<0.00200	0.00200	<0.00201	0.00201	<0.00200	0.00200
Toluene		<0.00198	0.00198	<0.00202	0.00202	<0.00200	0.00200	<0.00200	0.00200	<0.00201	0.00201	<0.00200	0.00200
Ethylbenzene		<0.00198	0.00198	<0.00202	0.00202	<0.00200	0.00200	<0.00200	0.00200	<0.00201	0.00201	<0.00200	0.00200
m,p-Xylenes		<0.00397	0.00397	<0.00403	0.00403	<0.00401	0.00401	<0.00401	0.00401	<0.00402	0.00402	<0.00399	0.00399
o-Xylene		<0.00198	0.00198	<0.00202	0.00202	<0.00200	0.00200	<0.00200	0.00200	<0.00201	0.00201	<0.00200	0.00200
Total Xylenes		<0.00198	0.00198	<0.00202	0.00202	<0.00200	0.00200	<0.00200	0.00200	<0.00201	0.00201	<0.00200	0.00200
Total BTEX		<0.00198	0.00198	<0.00202	0.00202	<0.00200	0.00200	<0.00200	0.00200	<0.00201	0.00201	<0.00200	0.00200
Chloride by EPA 300 SUB: T104704400-20-21	*Extracted:*	12.22.2020 17:00		12.22.2020 17:00		12.22.2020 17:00		12.22.2020 17:00		12.22.2020 17:00		12.22.2020 17:00	
	Analyzed:	12.22.2020 20:01		12.22.2020 20:07		12.22.2020 20:22		12.22.2020 20:28		12.22.2020 20:33		12.22.2020 19:46	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		36300	250	2860	24.8	6740	49.8	3280	25.2	1350	5.02	1180 X	4.98
TPH By SW8015 Mod SUB: T104704400-20-21	*Extracted:*	12.22.2020 17:00		12.22.2020 17:00		12.22.2020 17:00		12.22.2020 17:00		12.22.2020 17:00		12.22.2020 17:00	
	Analyzed:	12.23.2020 00:46		12.23.2020 01:07		12.23.2020 01:29		12.23.2020 02:12		12.23.2020 02:34		12.23.2020 02:56	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons		<49.8	49.8	<50.0	50.0	<50.0	50.0	<50.0	50.0	<49.9	49.9	<50.0	50.0
Diesel Range Organics		1200	49.8	<50.0	50.0	<50.0	50.0	<50.0	50.0	<49.9	49.9	<50.0	50.0
Motor Oil Range Hydrocarbons (MRO)		341	49.8	<50.0	50.0	<50.0	50.0	<50.0	50.0	<49.9	49.9	<50.0	50.0
Total TPH		1540	49.8	<50.0	50.0	<50.0	50.0	<50.0	50.0	<49.9	49.9	<50.0	50.0

BRL - Below Reporting Limit

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

Jessica Kramer

eurofins | Environment Testing Xenco

Analytical Report 682198

for

COG Operating LLC

Project Manager: Sheldon Hitchcock

Lusk Deep 29

12.23.2020

Collected By: Client

1089 N Canal Street
Carlsbad, NM 88220

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-20-38), Arizona (AZ0765), Florida (E871002-33), Louisiana (03054)
Oklahoma (2020-014), North Carolina (681), Arkansas (20-035-0)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-20-26), Arizona (AZ0809)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-20-18)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-20-23)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-21)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-20-8)
Xenco-Tampa: Florida (E87429), North Carolina (483)

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12.23.2020

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

Reference: Eurofins Xenco, LLC Report No(s): **682198**
Lusk Deep 29
Project Address: Lea County, New Mexico

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 Eurofins Xenco, LLC Report Number(s) 682198. 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 Eurofins Xenco, LLC. 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. 682198 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 Eurofins Xenco, LLC 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 Manager

A Small Business and Minority Company

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

eurofins | Environment Testing Xenco

Sample Cross Reference 682198

COG Operating LLC, Artesia, NM

Lusk Deep 29

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
AH-1 0-0.5'	S	12.18.2020 16:00		682198-001
AH-1 1'	S	12.18.2020 16:05		682198-002
AH-1 2'	S	12.18.2020 16:10		682198-003
AH-1 3'	S	12.18.2020 16:15		682198-004
AH-1 4'	S	12.18.2020 16:20		682198-005
AH-1 5'	S	12.18.2020 16:25		682198-006

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CASE NARRATIVE

Client Name: COG Operating LLC

Project Name: Lusk Deep 29

Project ID:
Work Order Number(s): *682198*

Report Date: *12.23.2020*
Date Received: *12.22.2020*

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3145795 TPH By SW8015 Mod

Surrogate 1-Chlorooctane recovered below QC limits. Matrix interferences is suspected.
Samples affected are: 682198-002.
Surrogate o-Terphenyl recovered above QC limits. Samples affected are: 7717730-1-BKS,7717730-1-BSD,682198-004,682198-005.

Batch: LBA-3145822 Chloride by EPA 300

Lab Sample ID 682198-006 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD).
Chloride 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: 682198-001, -002, -003, -004, -005, -006.
The Laboratory Control Sample for Chloride is within laboratory Control Limits, therefore the data was accepted.

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Certificate of Analytical Results 682198

COG Operating LLC, Artesia, NM

Lusk Deep 29

Sample Id: **AH-1 0-0.5'** Matrix: Soil Date Received:12.22.2020 10:19

Lab Sample Id: 682198-001 Date Collected: 12.18.2020 16:00

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Tech: CHE

Analyst: CHE Date Prep: 12.22.2020 17:00 % Moisture:

Seq Number: 3145822 Basis: Wet Weight

SUB: T104704400-20-21

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**36300**	250	mg/kg	12.22.2020 20:01		50

Analytical Method: TPH By SW8015 Mod Prep Method: SW8015P

Tech: DVM

Analyst: ARM Date Prep: 12.22.2020 17:00 % Moisture:

Seq Number: 3145795 Basis: Wet Weight

SUB: T104704400-20-21

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<49.8	49.8	mg/kg	12.23.2020 00:46	U	1
Diesel Range Organics	C10C28DRO	**1200**	49.8	mg/kg	12.23.2020 00:46		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**341**	49.8	mg/kg	12.23.2020 00:46		1
Total TPH	PHC635	**1540**	49.8	mg/kg	12.23.2020 00:46		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	115	%	70-130	12.23.2020 00:46	
o-Terphenyl	84-15-1	124	%	70-130	12.23.2020 00:46	

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Certificate of Analytical Results 682198

COG Operating LLC, Artesia, NM

Lusk Deep 29

Sample Id:	**AH-1 0-0.5'**	Matrix:	Soil	Date Received:	12.22.2020 10:19
Lab Sample Id:	682198-001	Date Collected:	12.18.2020 16:00		
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5035A
Tech:	KTL				
Analyst:	KTL	Date Prep:	12.22.2020 13:15	% Moisture:	
Seq Number:	3145806			Basis:	Wet Weight
				SUB:	T104704400-20-21

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	12.22.2020 22:23	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	12.22.2020 22:23	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	12.22.2020 22:23	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	12.22.2020 22:23	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	12.22.2020 22:23	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	12.22.2020 22:23	U	1
Total BTEX		<0.00198	0.00198	mg/kg	12.22.2020 22:23	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	104	%	70-130	12.22.2020 22:23	
4-Bromofluorobenzene	460-00-4	105	%	70-130	12.22.2020 22:23	

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Certificate of Analytical Results 682198

COG Operating LLC, Artesia, NM

Lusk Deep 29

Sample Id: **AH-1 1'** Matrix: Soil Date Received:12.22.2020 10:19

Lab Sample Id: 682198-002 Date Collected: 12.18.2020 16:05

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Tech: CHE

Analyst: CHE Date Prep: 12.22.2020 17:00 % Moisture:

Seq Number: 3145822 Basis: Wet Weight

SUB: T104704400-20-21

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**2860**	24.8	mg/kg	12.22.2020 20:07		5

Analytical Method: TPH By SW8015 Mod Prep Method: SW8015P

Tech: DVM

Analyst: ARM Date Prep: 12.22.2020 17:00 % Moisture:

Seq Number: 3145795 Basis: Wet Weight

SUB: T104704400-20-21

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<50.0	50.0	mg/kg	12.23.2020 01:07	U	1
Diesel Range Organics	C10C28DRO	<50.0	50.0	mg/kg	12.23.2020 01:07	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	12.23.2020 01:07	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	12.23.2020 01:07	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	69	%	70-130	12.23.2020 01:07	**
o-Terphenyl	84-15-1	75	%	70-130	12.23.2020 01:07	

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Certificate of Analytical Results 682198

COG Operating LLC, Artesia, NM

Lusk Deep 29

Sample Id:	**AH-1 1'**	Matrix:	Soil	Date Received:	12.22.2020 10:19
Lab Sample Id:	682198-002	Date Collected:	12.18.2020 16:05		
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5035A
Tech:	KTL				
Analyst:	KTL	Date Prep:	12.22.2020 13:15	% Moisture:	
Seq Number:	3145806			Basis:	Wet Weight
				SUB:	T104704400-20-21

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	12.22.2020 22:44	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	12.22.2020 22:44	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	12.22.2020 22:44	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	12.22.2020 22:44	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	12.22.2020 22:44	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	12.22.2020 22:44	U	1
Total BTEX		<0.00202	0.00202	mg/kg	12.22.2020 22:44	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	100	%	70-130	12.22.2020 22:44	
4-Bromofluorobenzene	460-00-4	116	%	70-130	12.22.2020 22:44	

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Certificate of Analytical Results 682198

COG Operating LLC, Artesia, NM

Lusk Deep 29

Sample Id: **AH-1 2'** Matrix: Soil Date Received:12.22.2020 10:19

Lab Sample Id: 682198-003 Date Collected: 12.18.2020 16:10

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Tech: CHE

Analyst: CHE Date Prep: 12.22.2020 17:00 % Moisture:

Seq Number: 3145822 Basis: Wet Weight

SUB: T104704400-20-21

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**6740**	49.8	mg/kg	12.22.2020 20:22		10

Analytical Method: TPH By SW8015 Mod Prep Method: SW8015P

Tech: DVM

Analyst: ARM Date Prep: 12.22.2020 17:00 % Moisture:

Seq Number: 3145795 Basis: Wet Weight

SUB: T104704400-20-21

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<50.0	50.0	mg/kg	12.23.2020 01:29	U	1
Diesel Range Organics	C10C28DRO	<50.0	50.0	mg/kg	12.23.2020 01:29	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	12.23.2020 01:29	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	12.23.2020 01:29	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	119	%	70-130	12.23.2020 01:29	
o-Terphenyl	84-15-1	129	%	70-130	12.23.2020 01:29	

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Certificate of Analytical Results 682198

COG Operating LLC, Artesia, NM

Lusk Deep 29

Sample Id:	**AH-1 2'**	Matrix:	Soil	Date Received:	12.22.2020 10:19
Lab Sample Id:	682198-003	Date Collected:	12.18.2020 16:10		
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5035A
Tech:	KTL				
Analyst:	KTL	Date Prep:	12.22.2020 13:15	% Moisture:	
Seq Number:	3145806			Basis:	Wet Weight
				SUB:	T104704400-20-21

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	12.22.2020 23:04	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	12.22.2020 23:04	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	12.22.2020 23:04	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	12.22.2020 23:04	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	12.22.2020 23:04	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	12.22.2020 23:04	U	1
Total BTEX		<0.00200	0.00200	mg/kg	12.22.2020 23:04	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	110	%	70-130	12.22.2020 23:04	
1,4-Difluorobenzene	540-36-3	95	%	70-130	12.22.2020 23:04	

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Certificate of Analytical Results 682198

COG Operating LLC, Artesia, NM

Lusk Deep 29

Sample Id: **AH-1 3'** Matrix: Soil Date Received:12.22.2020 10:19

Lab Sample Id: 682198-004 Date Collected: 12.18.2020 16:15

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Tech: CHE

Analyst: CHE Date Prep: 12.22.2020 17:00 % Moisture:

Seq Number: 3145822 Basis: Wet Weight

SUB: T104704400-20-21

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**3280**	25.2	mg/kg	12.22.2020 20:28		5

Analytical Method: TPH By SW8015 Mod Prep Method: SW8015P

Tech: DVM

Analyst: ARM Date Prep: 12.22.2020 17:00 % Moisture:

Seq Number: 3145795 Basis: Wet Weight

SUB: T104704400-20-21

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<50.0	50.0	mg/kg	12.23.2020 02:12	U	1
Diesel Range Organics	C10C28DRO	<50.0	50.0	mg/kg	12.23.2020 02:12	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	12.23.2020 02:12	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	12.23.2020 02:12	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	120	%	70-130	12.23.2020 02:12	
o-Terphenyl	84-15-1	133	%	70-130	12.23.2020 02:12	**

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Certificate of Analytical Results 682198

COG Operating LLC, Artesia, NM

Lusk Deep 29

Sample Id: **AH-1 3'** Matrix: Soil Date Received:12.22.2020 10:19

Lab Sample Id: 682198-004 Date Collected: 12.18.2020 16:15

Analytical Method: BTEX by EPA 8021B Prep Method: SW5035A

Tech: KTL

Analyst: KTL Date Prep: 12.22.2020 13:15 % Moisture:

Seq Number: 3145806 Basis: Wet Weight

SUB: T104704400-20-21

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	12.22.2020 23:25	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	12.22.2020 23:25	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	12.22.2020 23:25	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	12.22.2020 23:25	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	12.22.2020 23:25	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	12.22.2020 23:25	U	1
Total BTEX		<0.00200	0.00200	mg/kg	12.22.2020 23:25	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	96	%	70-130	12.22.2020 23:25	
4-Bromofluorobenzene	460-00-4	107	%	70-130	12.22.2020 23:25	

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Certificate of Analytical Results 682198

COG Operating LLC, Artesia, NM

Lusk Deep 29

Sample Id: **AH-1 4'** Matrix: Soil Date Received:12.22.2020 10:19

Lab Sample Id: 682198-005 Date Collected: 12.18.2020 16:20

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Tech: CHE

Analyst: CHE Date Prep: 12.22.2020 17:00 % Moisture:

Seq Number: 3145822 Basis: Wet Weight

SUB: T104704400-20-21

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**1350**	5.02	mg/kg	12.22.2020 20:33		1

Analytical Method: TPH By SW8015 Mod Prep Method: SW8015P

Tech: DVM

Analyst: ARM Date Prep: 12.22.2020 17:00 % Moisture:

Seq Number: 3145795 Basis: Wet Weight

SUB: T104704400-20-21

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<49.9	49.9	mg/kg	12.23.2020 02:34	U	1
Diesel Range Organics	C10C28DRO	<49.9	49.9	mg/kg	12.23.2020 02:34	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	12.23.2020 02:34	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	12.23.2020 02:34	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	122	%	70-130	12.23.2020 02:34	
o-Terphenyl	84-15-1	135	%	70-130	12.23.2020 02:34	**

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Certificate of Analytical Results 682198

COG Operating LLC, Artesia, NM

Lusk Deep 29

Sample Id: **AH-1 4'** Matrix: Soil Date Received:12.22.2020 10:19

Lab Sample Id: 682198-005 Date Collected: 12.18.2020 16:20

Analytical Method: BTEX by EPA 8021B Prep Method: SW5035A

Tech: KTL

Analyst: KTL Date Prep: 12.22.2020 13:15 % Moisture:

Seq Number: 3145806 Basis: Wet Weight

SUB: T104704400-20-21

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	12.22.2020 23:46	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	12.22.2020 23:46	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	12.22.2020 23:46	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	12.22.2020 23:46	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	12.22.2020 23:46	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	12.22.2020 23:46	U	1
Total BTEX		<0.00201	0.00201	mg/kg	12.22.2020 23:46	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	114	%	70-130	12.22.2020 23:46	
1,4-Difluorobenzene	540-36-3	100	%	70-130	12.22.2020 23:46	

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Certificate of Analytical Results 682198

COG Operating LLC, Artesia, NM

Lusk Deep 29

Sample Id: **AH-1 5'** Matrix: Soil Date Received:12.22.2020 10:19

Lab Sample Id: 682198-006 Date Collected: 12.18.2020 16:25

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Tech: CHE

Analyst: CHE Date Prep: 12.22.2020 17:00 % Moisture:

Seq Number: 3145822 Basis: Wet Weight

SUB: T104704400-20-21

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**1180**	4.98	mg/kg	12.22.2020 19:46	X	1

Analytical Method: TPH By SW8015 Mod Prep Method: SW8015P

Tech: DVM

Analyst: ARM Date Prep: 12.22.2020 17:00 % Moisture:

Seq Number: 3145795 Basis: Wet Weight

SUB: T104704400-20-21

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<50.0	50.0	mg/kg	12.23.2020 02:56	U	1
Diesel Range Organics	C10C28DRO	<50.0	50.0	mg/kg	12.23.2020 02:56	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	12.23.2020 02:56	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	12.23.2020 02:56	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	118	%	70-130	12.23.2020 02:56	
o-Terphenyl	84-15-1	129	%	70-130	12.23.2020 02:56	

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Certificate of Analytical Results 682198

COG Operating LLC, Artesia, NM

Lusk Deep 29

Sample Id:	**AH-1 5'**	Matrix:	Soil	Date Received:	12.22.2020 10:19
Lab Sample Id:	682198-006	Date Collected:	12.18.2020 16:25		
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5035A
Tech:	KTL				
Analyst:	KTL	Date Prep:	12.22.2020 13:15	% Moisture:	
Seq Number:	3145806			Basis:	Wet Weight
				SUB:	T104704400-20-21

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	12.23.2020 00:06	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	12.23.2020 00:06	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	12.23.2020 00:06	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	12.23.2020 00:06	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	12.23.2020 00:06	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	12.23.2020 00:06	U	1
Total BTEX		<0.00200	0.00200	mg/kg	12.23.2020 00:06	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	99	%	70-130	12.23.2020 00:06	
4-Bromofluorobenzene	460-00-4	111	%	70-130	12.23.2020 00:06	

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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. **ND** Not Detected.

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

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QC Summary 682198

COG Operating LLC

Lusk Deep 29

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3145822 — Matrix: Solid — Date Prep: 12.22.2020
MB Sample Id: 7717704-1-BLK — LCS Sample Id: 7717704-1-BKS — LCSD Sample Id: 7717704-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	254	102	253	101	90-110	0	20	mg/kg	12.22.2020 18:22	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3145822 — Matrix: Soil — Date Prep: 12.22.2020
Parent Sample Id: 681506-003 — MS Sample Id: 681506-003 S — MSD Sample Id: 681506-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	654	249	867	86	873	88	90-110	1	20	mg/kg	12.22.2020 18:38	X

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3145822 — Matrix: Soil — Date Prep: 12.22.2020
Parent Sample Id: 682198-006 — MS Sample Id: 682198-006 S — MSD Sample Id: 682198-006 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	1180	249	1370	76	1370	76	90-110	0	20	mg/kg	12.22.2020 19:51	X

Analytical Method: TPH By SW8015 Mod — Prep Method: SW8015P
Seq Number: 3145795 — Matrix: Solid — Date Prep: 12.22.2020
MB Sample Id: 7717730-1-BLK — LCS Sample Id: 7717730-1-BKS — LCSD Sample Id: 7717730-1-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	1100	110	1070	107	70-130	3	20	mg/kg	12.22.2020 20:51	
Diesel Range Organics	<50.0	1000	1170	117	1180	118	70-130	1	20	mg/kg	12.22.2020 20:51	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	108		123		122		70-130	%	12.22.2020 20:51
o-Terphenyl	128		133	**	132	**	70-130	%	12.22.2020 20:51

Analytical Method: TPH By SW8015 Mod — Prep Method: SW8015P
Seq Number: 3145795 — Matrix: Solid — Date Prep: 12.22.2020
MB Sample Id: 7717730-1-BLK

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	12.22.2020 20:29	

MS/MSD Percent Recovery [D] = 100*(C-A) / B
Relative Percent Difference RPD = 200* | (C-E) / (C+E) |
LCS/LCSD Recovery [D] = 100 * (C) / [B]
Log Difference 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

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QC Summary 682198

COG Operating LLC

Lusk Deep 29

Analytical Method: **TPH By SW8015 Mod** Prep Method: SW8015P
Seq Number: 3145795 Matrix: Soil Date Prep: 12.22.2020
Parent Sample Id: 681836-001 MS Sample Id: 681836-001 S MSD Sample Id: 681836-001 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	1160	116	1110	111	70-130	4	20	mg/kg	12.22.2020 21:55	
Diesel Range Organics	83.7	997	1180	110	1190	111	70-130	1	20	mg/kg	12.22.2020 21:55	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	115		116		70-130	%	12.22.2020 21:55
o-Terphenyl	119		123		70-130	%	12.22.2020 21:55

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5035A
Seq Number: 3145806 Matrix: Solid Date Prep: 12.22.2020
MB Sample Id: 7717738-1-BLK LCS Sample Id: 7717738-1-BKS LCSD Sample Id: 7717738-1-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	0.0969	97	0.102	102	70-130	5	35	mg/kg	12.23.2020 01:09	
Toluene	<0.00200	0.100	0.102	102	0.105	105	70-130	3	35	mg/kg	12.23.2020 01:09	
Ethylbenzene	<0.00200	0.100	0.0914	91	0.0953	95	70-130	4	35	mg/kg	12.23.2020 01:09	
m,p-Xylenes	<0.00400	0.200	0.180	90	0.189	95	70-130	5	35	mg/kg	12.23.2020 01:09	
o-Xylene	<0.00200	0.100	0.0890	89	0.0942	94	70-130	6	35	mg/kg	12.23.2020 01:09	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	92		99		99		70-130	%	12.23.2020 01:09
4-Bromofluorobenzene	108		102		105		70-130	%	12.23.2020 01:09

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5035A
Seq Number: 3145806 Matrix: Soil Date Prep: 12.22.2020
Parent Sample Id: 682228-001 MS Sample Id: 682228-001 S MSD Sample Id: 682228-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00202	0.101	0.0743	74	0.0880	88	70-130	17	35	mg/kg	12.23.2020 01:50	
Toluene	<0.00202	0.101	0.0695	69	0.0856	86	70-130	21	35	mg/kg	12.23.2020 01:50	X
Ethylbenzene	<0.00202	0.101	0.0559	55	0.0751	75	70-130	29	35	mg/kg	12.23.2020 01:50	X
m,p-Xylenes	<0.00404	0.202	0.0963	48	0.131	66	70-130	31	35	mg/kg	12.23.2020 01:50	X
o-Xylene	<0.00202	0.101	0.0523	52	0.0701	70	70-130	29	35	mg/kg	12.23.2020 01:50	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	99		102		70-130	%	12.23.2020 01:50
4-Bromofluorobenzene	105		107		70-130	%	12.23.2020 01:50

MS/MSD Percent Recovery [D] = 100*(C-A) / B
Relative Percent Difference RPD = 200* | (C-E) / (C+E) |
LCS/LCSD Recovery [D] = 100 * (C) / [B]
Log Difference 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

682198

Analysis Request of Chain of Custody Record

Page 1 of 1

CONCHO

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

Client Name: COG-Artesia	Site Manager: Sheldon Hitchcock
Project Name: Lusk Deep 29	
Project Location: (county, state) Lea, NM	Project #:
Invoice to: Sheldon Hitchcock	
Receiving Laboratory: Xenco	Sampler Name: Sheldon Hitchcock
Comments:	

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING DATE	SAMPLING TIME	MATRIX: WATER	MATRIX: SOIL	PRESERVATIVE METHOD: HCL	PRESERVATIVE METHOD: HNO_3	PRESERVATIVE METHOD: ICE	# CONTAINERS	(C)omposite/(G)rab	TPH 8015M (GRO - DRO - MRO)	BTEX 8021B	Chloride	Hold
	AH-1 0-0.5'	12/18	4:00		X			X	1	G	X	X	X	
	AH-1 1'		4:05											
	AH-1 2'		4:10											
	AH-1 3'		4:15											
	AH-1 4'		4:20											
	AH-1 5'		4:25											

ANALYSIS REQUEST (Circle or Specify Method No.)

Relinquished by:	Date:	Time:	Received by:	Date:	Time:
[signature]			Cloe Cuff	12.22.20	1019
Relinquished by:	Date:	Time:	Received by:	Date:	Time:
Relinquished by:	Date:	Time:	Received by:	Date:	Time:

LAB USE ONLY

Sample Temperature 1.2/1.6

REMARKS:

- [X] RUSH: Same Day 24 hr 48 hr 72 hr
- [ ] Rush Charges Authorized
- [ ] Special Report Limits or TRRP Report

(Circle) HAND DELIVERED FEDEX UPS Tracking #: _____

ORIGINAL COPY

Inter-Office Shipment

IOS Number : 75421

Date/Time: 12.22.2020
Lab# From: **Carlsbad**
Lab# To: **Midland**
Created by: Cloe Clifton
Delivery Priority:
Air Bill No.:
Please send report to: Jessica Kramer
Address: 1089 N Canal Street
E-Mail: jessica.kramer@eurofinset.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
682198-001	S	AH-1 0-0.5'	12.18.2020 16:00	SW8015MOD_NM	TPH By SW8015 Mod	12.23.2020	01.01.2021	JKR	PHCC10C28 PHCC28C3	
682198-001	S	AH-1 0-0.5'	12.18.2020 16:00	SW8021B	BTEX by EPA 8021B	12.23.2020	01.01.2021	JKR	BR4FBZ BZ BZME EBZ	
682198-001	S	AH-1 0-0.5'	12.18.2020 16:00	E300_CL	Chloride by EPA 300	12.23.2020	01.15.2021	JKR	CL	
682198-002	S	AH-1 1'	12.18.2020 16:05	SW8015MOD_NM	TPH By SW8015 Mod	12.23.2020	01.01.2021	JKR	PHCC10C28 PHCC28C3	
682198-002	S	AH-1 1'	12.18.2020 16:05	E300_CL	Chloride by EPA 300	12.23.2020	01.15.2021	JKR	CL	
682198-002	S	AH-1 1'	12.18.2020 16:05	SW8021B	BTEX by EPA 8021B	12.23.2020	01.01.2021	JKR	BR4FBZ BZ BZME EBZ	
682198-003	S	AH-1 2'	12.18.2020 16:10	SW8021B	BTEX by EPA 8021B	12.23.2020	01.01.2021	JKR	BR4FBZ BZ BZME EBZ	
682198-003	S	AH-1 2'	12.18.2020 16:10	SW8015MOD_NM	TPH By SW8015 Mod	12.23.2020	01.01.2021	JKR	PHCC10C28 PHCC28C3	
682198-003	S	AH-1 2'	12.18.2020 16:10	E300_CL	Chloride by EPA 300	12.23.2020	01.15.2021	JKR	CL	
682198-004	S	AH-1 3'	12.18.2020 16:15	SW8021B	BTEX by EPA 8021B	12.23.2020	01.01.2021	JKR	BR4FBZ BZ BZME EBZ	
682198-004	S	AH-1 3'	12.18.2020 16:15	SW8015MOD_NM	TPH By SW8015 Mod	12.23.2020	01.01.2021	JKR	PHCC10C28 PHCC28C3	
682198-004	S	AH-1 3'	12.18.2020 16:15	E300_CL	Chloride by EPA 300	12.23.2020	01.15.2021	JKR	CL	
682198-005	S	AH-1 4'	12.18.2020 16:20	SW8015MOD_NM	TPH By SW8015 Mod	12.23.2020	01.01.2021	JKR	PHCC10C28 PHCC28C3	
682198-005	S	AH-1 4'	12.18.2020 16:20	E300_CL	Chloride by EPA 300	12.23.2020	01.15.2021	JKR	CL	
682198-005	S	AH-1 4'	12.18.2020 16:20	SW8021B	BTEX by EPA 8021B	12.23.2020	01.01.2021	JKR	BR4FBZ BZ BZME EBZ	
682198-006	S	AH-1 5'	12.18.2020 16:25	SW8015MOD_NM	TPH By SW8015 Mod	12.23.2020	01.01.2021	JKR	PHCC10C28 PHCC28C3	
682198-006	S	AH-1 5'	12.18.2020 16:25	E300_CL	Chloride by EPA 300	12.23.2020	01.15.2021	JKR	CL	
682198-006	S	AH-1 5'	12.18.2020 16:25	SW8021B	BTEX by EPA 8021B	12.23.2020	01.01.2021	JKR	BR4FBZ BZ BZME EBZ	

Inter Office Shipment or Sample Comments:

Relinquished By: Cloe Clifton
Cloe Clifton

Date Relinquished: 12.22.2020

Received By: Jessica Kramer
Jessica Kramer

Date Received: 12.22.2020

Cooler Temperature: 2.3

Environment Testing Xenco

Eurofins Xenco, LLC

Inter Office Report- Sample Receipt Checklist

Sent To: Midland

IOS #: 75421

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

Sent By: Cloe Clifton **Date Sent:** 12.22.2020 11.43 AM

Received By: Jessica Kramer **Date Received:** 12.22.2020 03.06 PM

Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?	2.3	
#2 *Shipping container in good condition?	**Yes**	
#3 *Samples received with appropriate temperature?	**Yes**	
#4 *Custody Seals intact on shipping container/ cooler?	**Yes**	
#5 *Custody Seals Signed and dated for Containers/coolers	**Yes**	
#6 *IOS present?	**Yes**	
#7 Any missing/extra samples?	**No**	
#8 IOS agrees with sample label(s)/matrix?	**Yes**	
#9 Sample matrix/ properties agree with IOS?	**Yes**	
#10 Samples in proper container/ bottle?	**Yes**	
#11 Samples properly preserved?	**Yes**	
#12 Sample container(s) intact?	**Yes**	
#13 Sufficient sample amount for indicated test(s)?	**Yes**	
#14 All samples received within hold time?	**Yes**	

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

NonConformance:

Corrective Action Taken:

Nonconformance Documentation

Contact: _____ **Contacted by :** _____ **Date:** _____

Checklist reviewed by: Jessica Kramer Date: 12.22.2020

Jessica Kramer

Eurofins Xenco, LLC

Prelogin/Nonconformance Report- Sample Log-In

Client: COG Operating LLC

Date/ Time Received: 12.22.2020 10.19.00 AM

Work Order #: 682198

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

Temperature Measuring device used : T_NM_007

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**	Samples received in bulk containers.
#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)?	**Yes**	Samples sent to Midland.
#18 Water VOC samples have zero headspace?	**Yes**	

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

Analyst: PH Device/Lot#:

Checklist completed by: Cloe Clifton Date: 12.22.2020

Checklist reviewed by: Jessica Kramer Date: 12.23.2020

Jessica Kramer

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Certificate of Analysis Summary 685569

COG Operating LLC, Artesia, NM

Project Name: Lusk Deep 24

Project Id:

Contact: Sheldon Hitchcock

Project Location: Lea, New Mexico

Date Received in Lab: Thu 01.21.2021 12:55

Report Date: 01.26.2021 08:29

Project Manager: Jessica Kramer

Analysis Requested															
	Lab Id:	685569-001		685569-002		685569-003		685569-004							
	Field Id:	N. 1		S. 1		E. 1		W. 1							
	Depth:														
	Matrix:	SOIL		SOIL		SOIL		SOIL							
	Sampled:	01.21.2021 08:40		01.21.2021 08:45		01.21.2021 08:50		01.21.2021 08:55							
BTEX by EPA 8021B	***Extracted:***	01.21.2021 18:16		01.21.2021 18:16		01.21.2021 18:16		01.21.2021 18:16							
	Analyzed:	01.22.2021 03:36		01.22.2021 03:59		01.22.2021 04:21		01.22.2021 04:44							
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL						
Benzene		<0.00198	0.00198	<0.00200	0.00200	<0.00198	0.00198	<0.00200	0.00200						
Toluene		<0.00198	0.00198	<0.00200	0.00200	<0.00198	0.00198	<0.00200	0.00200						
Ethylbenzene		<0.00198	0.00198	<0.00200	0.00200	<0.00198	0.00198	<0.00200	0.00200						
m,p-Xylenes		<0.00397	0.00397	<0.00401	0.00401	<0.00397	0.00397	<0.00401	0.00401						
o-Xylene		<0.00198	0.00198	<0.00200	0.00200	<0.00198	0.00198	<0.00200	0.00200						
Total Xylenes		<0.00198	0.00198	<0.00200	0.00200	<0.00198	0.00198	<0.00200	0.00200						
Total BTEX		<0.00198	0.00198	<0.00200	0.00200	<0.00198	0.00198	<0.00200	0.00200						
Chloride by EPA 300	***Extracted:***	01.21.2021 18:12		01.21.2021 18:12		01.21.2021 18:12		01.21.2021 18:12							
	Analyzed:	01.21.2021 19:03		01.21.2021 19:08		01.21.2021 19:14		01.21.2021 19:20							
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL						
Chloride		97.2	9.98	294	9.98	274	9.90	84.6	9.98						
TPH By SW8015 Mod SUB: T104704400-20-21	***Extracted:***	01.22.2021 17:00		01.22.2021 17:00		01.22.2021 17:00		01.22.2021 17:00							
	Analyzed:	01.23.2021 04:26		01.23.2021 04:47		01.23.2021 05:09		01.23.2021 05:30							
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL						
Gasoline Range Hydrocarbons		<49.9	49.9	<49.8	49.8	<50.0	50.0	<50.0	50.0						
Diesel Range Organics		186	49.9	<49.8	49.8	<50.0	50.0	440	50.0						
Motor Oil Range Hydrocarbons (MRO)		<49.9	49.9	<49.8	49.8	<50.0	50.0	<50.0	50.0						
Total TPH		186	49.9	<49.8	49.8	<50.0	50.0	440	50.0						

BRL - Below Reporting Limit

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

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Analytical Report 685569

for

COG Operating LLC

Project Manager: Sheldon Hitchcock

Lusk Deep 24

01.26.2021

Collected By: Client

1089 N Canal Street
Carlsbad, NM 88220

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-20-38), Arizona (AZ0765), Florida (E871002-33), Louisiana (03054)
Oklahoma (2020-014), North Carolina (681), Arkansas (20-035-0)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-20-26), Arizona (AZ0809)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-20-18)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-20-24)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-20-21)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-20-8)
Xenco-Tampa: Florida (E87429), North Carolina (483)

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01.26.2021

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

Reference: Eurofins Xenco, LLC Report No(s): **685569**
Lusk Deep 24
Project Address: Lea, New Mexico

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 Eurofins Xenco, LLC Report Number(s) 685569. 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 Eurofins Xenco, LLC. 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. 685569 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 Eurofins Xenco, LLC 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 Manager

A Small Business and Minority Company

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

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Sample Cross Reference 685569

COG Operating LLC, Artesia, NM

Lusk Deep 24

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
N. 1	S	01.21.2021 08:40		685569-001
S. 1	S	01.21.2021 08:45		685569-002
E. 1	S	01.21.2021 08:50		685569-003
W. 1	S	01.21.2021 08:55		685569-004

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CASE NARRATIVE

Client Name: COG Operating LLC

Project Name: Lusk Deep 24

Project ID:
Work Order Number(s): *685569*

Report Date: *01.26.2021*
Date Received: *01.21.2021*

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

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Certificate of Analytical Results 685569

COG Operating LLC, Artesia, NM

Lusk Deep 24

Sample Id: **N. 1** Matrix: Soil Date Received:01.21.2021 12:55

Lab Sample Id: 685569-001 Date Collected: 01.21.2021 08:40

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Tech: MAB

Analyst: MAB Date Prep: 01.21.2021 18:12 % Moisture:

Seq Number: 3148605 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**97.2**	9.98	mg/kg	01.21.2021 19:03		1

Analytical Method: TPH By SW8015 Mod Prep Method: SW8015P

Tech: DVM

Analyst: ARM Date Prep: 01.22.2021 17:00 % Moisture:

Seq Number: 3148777 Basis: Wet Weight

SUB: T104704400-20-21

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<49.9	49.9	mg/kg	01.23.2021 04:26	U	1
Diesel Range Organics	C10C28DRO	**186**	49.9	mg/kg	01.23.2021 04:26		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	01.23.2021 04:26	U	1
Total TPH	PHC635	**186**	49.9	mg/kg	01.23.2021 04:26		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	113	%	70-130	01.23.2021 04:26	
o-Terphenyl	84-15-1	123	%	70-130	01.23.2021 04:26	

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Certificate of Analytical Results 685569

COG Operating LLC, Artesia, NM

Lusk Deep 24

Sample Id:	**N. 1**	Matrix:	Soil	Date Received:	01.21.2021 12:55
Lab Sample Id:	685569-001	Date Collected:	01.21.2021 08:40		
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5035A
Tech:	MAB				
Analyst:	MAB	Date Prep:	01.21.2021 18:16	% Moisture:	
Seq Number:	3148598			Basis:	Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	01.22.2021 03:36	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	01.22.2021 03:36	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	01.22.2021 03:36	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	01.22.2021 03:36	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	01.22.2021 03:36	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	01.22.2021 03:36	U	1
Total BTEX		<0.00198	0.00198	mg/kg	01.22.2021 03:36	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	100	%	70-130	01.22.2021 03:36	
4-Bromofluorobenzene	460-00-4	113	%	70-130	01.22.2021 03:36	

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Certificate of Analytical Results 685569

COG Operating LLC, Artesia, NM

Lusk Deep 24

Sample Id: **S. 1** Matrix: Soil Date Received:01.21.2021 12:55

Lab Sample Id: 685569-002 Date Collected: 01.21.2021 08:45

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Tech: MAB

Analyst: MAB Date Prep: 01.21.2021 18:12 % Moisture:

Seq Number: 3148605 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**294**	9.98	mg/kg	01.21.2021 19:08		1

Analytical Method: TPH By SW8015 Mod Prep Method: SW8015P

Tech: DVM

Analyst: ARM Date Prep: 01.22.2021 17:00 % Moisture:

Seq Number: 3148777 Basis: Wet Weight

SUB: T104704400-20-21

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<49.8	49.8	mg/kg	01.23.2021 04:47	U	1
Diesel Range Organics	C10C28DRO	<49.8	49.8	mg/kg	01.23.2021 04:47	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	01.23.2021 04:47	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	01.23.2021 04:47	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	114	%	70-130	01.23.2021 04:47	
o-Terphenyl	84-15-1	122	%	70-130	01.23.2021 04:47	

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Certificate of Analytical Results 685569

COG Operating LLC, Artesia, NM

Lusk Deep 24

Sample Id:	**S. 1**	Matrix:	Soil	Date Received:	01.21.2021 12:55
Lab Sample Id:	685569-002	Date Collected:	01.21.2021 08:45		
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5035A
Tech:	MAB				
Analyst:	MAB	Date Prep:	01.21.2021 18:16	% Moisture:	
Seq Number:	3148598			Basis:	Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	01.22.2021 03:59	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	01.22.2021 03:59	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	01.22.2021 03:59	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	01.22.2021 03:59	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	01.22.2021 03:59	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	01.22.2021 03:59	U	1
Total BTEX		<0.00200	0.00200	mg/kg	01.22.2021 03:59	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	100	%	70-130	01.22.2021 03:59	
4-Bromofluorobenzene	460-00-4	115	%	70-130	01.22.2021 03:59	

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Certificate of Analytical Results 685569

COG Operating LLC, Artesia, NM

Lusk Deep 24

Sample Id: **E. 1** Matrix: Soil Date Received:01.21.2021 12:55

Lab Sample Id: 685569-003 Date Collected: 01.21.2021 08:50

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Tech: MAB

Analyst: MAB Date Prep: 01.21.2021 18:12 % Moisture:

Seq Number: 3148605 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**274**	9.90	mg/kg	01.21.2021 19:14		1

Analytical Method: TPH By SW8015 Mod Prep Method: SW8015P

Tech: DVM

Analyst: ARM Date Prep: 01.22.2021 17:00 % Moisture:

Seq Number: 3148777 Basis: Wet Weight

SUB: T104704400-20-21

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<50.0	50.0	mg/kg	01.23.2021 05:09	U	1
Diesel Range Organics	C10C28DRO	<50.0	50.0	mg/kg	01.23.2021 05:09	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	01.23.2021 05:09	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	01.23.2021 05:09	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	111	%	70-130	01.23.2021 05:09	
o-Terphenyl	84-15-1	119	%	70-130	01.23.2021 05:09	

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Certificate of Analytical Results 685569

COG Operating LLC, Artesia, NM

Lusk Deep 24

Sample Id:	**E. 1**	Matrix:	Soil	Date Received:	01.21.2021 12:55
Lab Sample Id:	685569-003	Date Collected:	01.21.2021 08:50		
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5035A
Tech:	MAB				
Analyst:	MAB	Date Prep:	01.21.2021 18:16	% Moisture:	
Seq Number:	3148598			Basis:	Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	01.22.2021 04:21	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	01.22.2021 04:21	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	01.22.2021 04:21	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	01.22.2021 04:21	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	01.22.2021 04:21	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	01.22.2021 04:21	U	1
Total BTEX		<0.00198	0.00198	mg/kg	01.22.2021 04:21	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	109	%	70-130	01.22.2021 04:21	
4-Bromofluorobenzene	460-00-4	127	%	70-130	01.22.2021 04:21	

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Certificate of Analytical Results 685569

COG Operating LLC, Artesia, NM

Lusk Deep 24

Sample Id: **W. 1** Matrix: Soil Date Received:01.21.2021 12:55

Lab Sample Id: 685569-004 Date Collected: 01.21.2021 08:55

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Tech: MAB

Analyst: MAB Date Prep: 01.21.2021 18:12 % Moisture:

Seq Number: 3148605 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**84.6**	9.98	mg/kg	01.21.2021 19:20		1

Analytical Method: TPH By SW8015 Mod Prep Method: SW8015P

Tech: DVM

Analyst: ARM Date Prep: 01.22.2021 17:00 % Moisture:

Seq Number: 3148777 Basis: Wet Weight

SUB: T104704400-20-21

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<50.0	50.0	mg/kg	01.23.2021 05:30	U	1
Diesel Range Organics	C10C28DRO	**440**	50.0	mg/kg	01.23.2021 05:30		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	01.23.2021 05:30	U	1
Total TPH	PHC635	**440**	50.0	mg/kg	01.23.2021 05:30		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	115	%	70-130	01.23.2021 05:30	
o-Terphenyl	84-15-1	127	%	70-130	01.23.2021 05:30	

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Certificate of Analytical Results 685569

COG Operating LLC, Artesia, NM

Lusk Deep 24

Sample Id:	**W. 1**	Matrix:	Soil	Date Received:	01.21.2021 12:55
Lab Sample Id:	685569-004	Date Collected:	01.21.2021 08:55		
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5035A
Tech:	MAB				
Analyst:	MAB	Date Prep:	01.21.2021 18:16	% Moisture:	
Seq Number:	3148598			Basis:	Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	01.22.2021 04:44	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	01.22.2021 04:44	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	01.22.2021 04:44	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	01.22.2021 04:44	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	01.22.2021 04:44	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	01.22.2021 04:44	U	1
Total BTEX		<0.00200	0.00200	mg/kg	01.22.2021 04:44	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	121	%	70-130	01.22.2021 04:44	
1,4-Difluorobenzene	540-36-3	109	%	70-130	01.22.2021 04:44	

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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. **ND** Not Detected.

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

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QC Summary 685569

COG Operating LLC

Lusk Deep 24

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3148605 — Matrix: Solid — Date Prep: 01.21.2021
MB Sample Id: 7719712-1-BLK — LCS Sample Id: 7719712-1-BKS — LCSD Sample Id: 7719712-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	200	212	106	210	105	90-110	1	20	mg/kg	01.21.2021 16:52	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3148605 — Matrix: Soil — Date Prep: 01.21.2021
Parent Sample Id: 685561-001 — MS Sample Id: 685561-001 S — MSD Sample Id: 685561-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	2850	201	3040	95	3040	94	90-110	0	20	mg/kg	01.21.2021 17:09	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3148605 — Matrix: Soil — Date Prep: 01.21.2021
Parent Sample Id: 685561-011 — MS Sample Id: 685561-011 S — MSD Sample Id: 685561-011 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	484	200	696	106	698	106	90-110	0	20	mg/kg	01.21.2021 18:29	

Analytical Method: TPH By SW8015 Mod — Prep Method: SW8015P
Seq Number: 3148777 — Matrix: Solid — Date Prep: 01.22.2021
MB Sample Id: 7719881-1-BLK — LCS Sample Id: 7719881-1-BKS — LCSD Sample Id: 7719881-1-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	1100	110	1150	115	70-130	4	20	mg/kg	01.22.2021 22:02	
Diesel Range Organics	<50.0	1000	1160	116	1130	113	70-130	3	20	mg/kg	01.22.2021 22:02	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	108		115		112		70-130	%	01.22.2021 22:02
o-Terphenyl	125		124		120		70-130	%	01.22.2021 22:02

Analytical Method: TPH By SW8015 Mod — Prep Method: SW8015P
Seq Number: 3148777 — Matrix: Solid — Date Prep: 01.22.2021
MB Sample Id: 7719881-1-BLK

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	01.22.2021 21:41	

MS/MSD Percent Recovery [D] = 100*(C-A) / B
Relative Percent Difference RPD = 200* | (C-E) / (C+E) |
LCS/LCSD Recovery [D] = 100 * (C) / [B]
Log Difference 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

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QC Summary 685569

COG Operating LLC

Lusk Deep 24

Analytical Method: **TPH By SW8015 Mod** Prep Method: SW8015P
Seq Number: 3148777 Matrix: Soil Date Prep: 01.22.2021
Parent Sample Id: 685561-001 MS Sample Id: 685561-001 S MSD Sample Id: 685561-001 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	<50.0	999	1080	108	1100	110	70-130	2	20	mg/kg	01.22.2021 23:06	
Diesel Range Organics	<50.0	999	1100	110	1110	111	70-130	1	20	mg/kg	01.22.2021 23:06	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	110		110		70-130	%	01.22.2021 23:06
o-Terphenyl	117		120		70-130	%	01.22.2021 23:06

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5035A
Seq Number: 3148598 Matrix: Solid Date Prep: 01.21.2021
MB Sample Id: 7719714-1-BLK LCS Sample Id: 7719714-1-BKS LCSD Sample Id: 7719714-1-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	0.0966	97	0.0929	93	70-130	4	35	mg/kg	01.21.2021 19:43	
Toluene	<0.00200	0.100	0.0864	86	0.0877	88	70-130	1	35	mg/kg	01.21.2021 19:43	
Ethylbenzene	<0.00200	0.100	0.0913	91	0.0944	94	71-129	3	35	mg/kg	01.21.2021 19:43	
m,p-Xylenes	<0.00400	0.200	0.189	95	0.192	96	70-135	2	35	mg/kg	01.21.2021 19:43	
o-Xylene	<0.00200	0.100	0.0922	92	0.0959	96	71-133	4	35	mg/kg	01.21.2021 19:43	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	105		100		98		70-130	%	01.21.2021 19:43
4-Bromofluorobenzene	111		107		104		70-130	%	01.21.2021 19:43

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5035A
Seq Number: 3148598 Matrix: Soil Date Prep: 01.21.2021
Parent Sample Id: 685561-001 MS Sample Id: 685561-001 S MSD Sample Id: 685561-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.0920	92	0.0889	89	70-130	3	35	mg/kg	01.22.2021 12:15	
Toluene	<0.00200	0.100	0.0864	86	0.0809	81	70-130	7	35	mg/kg	01.22.2021 12:15	
Ethylbenzene	<0.00200	0.100	0.0902	90	0.0770	77	71-129	16	35	mg/kg	01.22.2021 12:15	
m,p-Xylenes	<0.00401	0.200	0.181	91	0.159	80	70-135	13	35	mg/kg	01.22.2021 12:15	
o-Xylene	<0.00200	0.100	0.0887	89	0.0818	82	71-133	8	35	mg/kg	01.22.2021 12:15	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	103		102		70-130	%	01.22.2021 12:15
4-Bromofluorobenzene	107		110		70-130	%	01.22.2021 12:15

MS/MSD Percent Recovery [D] = 100*(C-A) / B
Relative Percent Difference RPD = 200* | (C-E) / (C+E) |
LCS/LCSD Recovery [D] = 100 * (C) / [B]
Log Difference 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

6855369

Analysis Request of Chain of Custody Record

Page 1 of 1

CONCHO

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

Client Name: COG-Artesia	**Site Manager:** Sheldon Hitchcock
Project Name: Lusk Deep 29	
Project Location: (county, state) Lea, NM	**Project #:**
Invoice to: Sheldon Hitchcock	
Receiving Laboratory: Xenco	**Sampler Name:** Sheldon Hitchcock
Comments:	

ANALYSIS REQUEST
(Circle or Specify Method No.)

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING YEAR: 2021 DATE	SAMPLING TIME	MATRIX WATER	MATRIX SOIL	PRESERVATIVE METHOD HCL	PRESERVATIVE METHOD HNO_3	PRESERVATIVE METHOD ICE	# CONTAINERS	(C)omposite/(G)rab	TPH 8015M (GRO - DRO - MRO)	BTEX 8021B	Chloride	Hold
	N. 1	1/21	8:40		X			X	1	G	X	X	X	
	S. 1	"	8:45		X			X	1	G	X	X	X	
	E. 1	"	8:50		X			X	1	G	X	X	X	
	W. 1	"	8:55		X			X	1	G	X	X	X	

	Relinquished by:	Date:	Time:	Received by:	Date:	Time:
1		1/21/21	12:55		1/21/21	12:55
2						
3						

LAB USE ONLY

Sample Temperature: 0.4/0.2

REMARKS:

- [X] RUSH: Same Day 24 hr 48 hr 72 hr
- [ ] Rush Charges Authorized
- [ ] Special Report Limits or TRRP Report

(Circle) HAND DELIVERED FEDEX UPS Tracking #: _____

ORIGINAL COPY

Inter-Office Shipment

IOS Number : 76896

Date/Time:	01.22.2021	Created by:	Cloe Clifton	Please send report to:	Jessica Kramer
Lab# From:	**Carlsbad**	Delivery Priority:		Address:	1089 N Canal Street
Lab# To:	**Midland**	Air Bill No.:		E-Mail:	jessica.kramer@eurofinset.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
685569-001	S	N. 1	01.21.2021 08:40	SW8015MOD_NM	TPH By SW8015 Mod	01.25.2021	02.04.2021	JKR	PHCC10C28 PHCC28C3	
685569-002	S	S. 1	01.21.2021 08:45	SW8015MOD_NM	TPH By SW8015 Mod	01.25.2021	02.04.2021	JKR	PHCC10C28 PHCC28C3	
685569-003	S	E. 1	01.21.2021 08:50	SW8015MOD_NM	TPH By SW8015 Mod	01.25.2021	02.04.2021	JKR	PHCC10C28 PHCC28C3	
685569-004	S	W. 1	01.21.2021 08:55	SW8015MOD_NM	TPH By SW8015 Mod	01.25.2021	02.04.2021	JKR	PHCC10C28 PHCC28C3	

Inter Office Shipment or Sample Comments:

Relinquished By: Cloe Clifton

Cloe Clifton

Date Relinquished: 01.22.2021

Received By: Jessica Kramer

Jessica Kramer

Date Received: 01.22.2021

Cooler Temperature: 1.5

Eurofins Xenco, LLC

Environment Testing Xenco

Inter Office Report- Sample Receipt Checklist

Sent To: Midland

IOS #: 76896

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

Sent By: Cloe Clifton **Date Sent:** 01.22.2021 10.02 AM

Received By: Jessica Kramer **Date Received:** 01.22.2021 02.07 PM

Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?	1.5	
#2 *Shipping container in good condition?	**Yes**	
#3 *Samples received with appropriate temperature?	**Yes**	
#4 *Custody Seals intact on shipping container/ cooler?	**Yes**	
#5 *Custody Seals Signed and dated for Containers/coolers	**Yes**	
#6 *IOS present?	**Yes**	
#7 Any missing/extra samples?	**No**	
#8 IOS agrees with sample label(s)/matrix?	**Yes**	
#9 Sample matrix/ properties agree with IOS?	**Yes**	
#10 Samples in proper container/ bottle?	**Yes**	
#11 Samples properly preserved?	**Yes**	
#12 Sample container(s) intact?	**Yes**	
#13 Sufficient sample amount for indicated test(s)?	**Yes**	
#14 All samples received within hold time?	**Yes**	

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

NonConformance:

Corrective Action Taken:

Nonconformance Documentation

Contact: _____ **Contacted by :** _____ **Date:** _____

Checklist reviewed by: Jessica Kramer Date: 01.22.2021

Jessica Kramer

Eurofins Xenco, LLC

Prelogin/Nonconformance Report- Sample Log-In

Client: COG Operating LLC

Date/ Time Received: 01.21.2021 12.55.00 PM

Work Order #: 685569

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

Temperature Measuring device used : T_NM_007

Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?	.2	
#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**	Samples received in bulk containers.
#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)?	**Yes**	TPH sent to Midland
#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: Cloe Clifton Date: 01.22.2021

Checklist reviewed by: Jessica Kramer Date: 01.22.2021

Jessica Kramer

APPENDIX D


DANGER
HIGH PRESSURE
Energy Services

District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720
District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

CONDITIONS

Action 16423

CONDITIONS OF APPROVAL

Operator:			OGRID:	Action Number:	Action Type:
COG OPERATING LLC	600 W Illinois Ave	Midland, TX79701	229137	16423	C-141

OCD Reviewer	Condition
ceads	The depth to groundwater has not been adequately determined. When nearby wells are used to determine depth to groundwater, the wells should be no further than ½ mile away from the site, and data should be no more than 25 years old, and well construction information should be provided in the submission. The responsible party may choose to remediate to the most stringent levels listed in Table 1 of 19.15.29 NMAC in lieu of drilling to determine the depth to groundwater. Additional delineation may be required.