Closure Report

Site Description	
Site Name:	COG Operating LLC
Company:	Burch Keely Unit Satellite B
Legal Description:	U/L F, Section 19, T17S, R30E
County:	Eddy County, NM
GPS Coordinates:	N 32.82039º W-104.02491º

Release Data	
Date of Release:	10/11/2017
Type of Release:	Oil and produced water
Source of Release:	Flowline/pipeline
Volume of Release:	3 bbls oil, 7 bbls produced water
Volume Recovered:	0.5 bbls oil, 1 bbl produced water

Remediation Specifications		
Remediation Parameters:	In the process of initially delineating the site, chloride impact was substantial so approximately 14 ft of impacted soil in the area of T-2 was excavated and disposed of. The area around T-1 was excavated 1 ft. The site was backfilled with clean soil. After discussions with Mike Bratcher of the NMOCD on June 8, 2018, OCD granted closure of this site.	
Remediation Activities:	01/24/2018 to 01/31//2018	
Plan Sent to OCD:	06/08/2018	*See above remark concerning OCD
OCD Approval of Plan:	06/08/2018	*See above remark concerning OCD
Plan Sent to BLM:	n/a	n/a
BLM Approval of Plan:	n/a	n/a

Supporting Documentation	
Initial C-141	Signed 10/13/2017
Final C-141	Signed 07/11/2018
Site Diagram	January 2018
Groundwater Plot	200’
TOPO Maps	January 2018
Lab Summary	11/16/2017, 01/24/2018, 03/28/2018
Lab Analysis	11/16/2017, 01/24/2018, 03/28/2018
Correspondence	Request and approval of remediation plan via email

Request for Closure

Based on the completion of the remediation plan, BBC International requests closure approval from NMOCD.

Cliff Brunson, President, BBC International, Inc. 07/13/2018

NM OIL CONSERVATION
ARTESIA DISTRICT
OCT 13 2017
RECEIVED

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

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

Form C-141
Revised April 3, 2017

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

fAB1728932481
nAB1728932701

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company: COG Operating LLC [OGRID] 229137	Contact: Robert McNeill
Address: 600 West Illinois Avenue, Midland TX 79701	Telephone No. 432-230-0077
Facility Name: Burch Keely Unit Satellite B	Facility Type: Battery

Surface Owner: Federal	Mineral Owner: Federal	API No.

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
F	19	17S	30E					Eddy

Latitude 32.820329 **Longitude** -104.024918 NAD83

NATURE OF RELEASE

Type of Release: Produced Water & Oil	Volume of Release: 7 bbls pw; 3 bbls oil	Volume Recovered: 1 bbls pw; 0.5 bbls oil
Source of Release: Flowline/Pipeline	Date and Hour of Occurrence: 10-11-2017 4:00 pm	Date and Hour of Discovery: 10-11-2017 4:00 pm
Was Immediate Notice Given? ☐ Yes ☒ No ☒ Not Required	If YES, To Whom?	
By Whom?	Date and Hour:	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*

The release occurred when the flow line ruptured. The damaged portion of the flowline has been removed and replaced.

Describe Area Affected and Cleanup Action Taken.*

The release occurred in the pasture. The line was isolated until repaired. Vacuum trucks were dispatched to recover all standing fluids. Concho will have the spill area evaluated for any possible impact from the release and we will present a remediation work plan to the NMOCD for approval prior to any significant remediation activities.

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

Signature: Dakota Neel	OIL CONSERVATION DIVISION Approved by Environmental Specialist: Signed By Mike Bratcher	
Printed Name: Dakota Neel		
Title: HSE Coordinator	Approval Date: 10/16/17	Expiration Date: N/A
E-mail Address: dneel2@concho.com	Conditions of Approval: See attached	Attached ☒ 2RP-4444
Date: October 13, 2017 Phone: 575-746-2010		

* Attach Additional Sheets If Necessary

Operator/Responsible Party,

The OCD has received the form C-141 you provided on 10/13/2017 regarding an unauthorized release. The information contained on that form has been entered into our incident database and remediation case number 2RP-4444 has been assigned. **Please refer to this case number in all future correspondence.**

It is the Division's obligation under both the Oil & Gas Act and Water Quality Act to provide for the protection of public health and the environment. Our regulations (19.15.29.11 NMAC) state the following,

> *The responsible person shall complete division-approved corrective action for releases that endanger public health or the environment. The responsible person shall address releases in accordance with a remediation plan submitted to and approved by the division or with an abatement plan submitted in accordance with 19.15.30 NMAC.* [emphasis added]

Release characterization is the first phase of corrective action unless the release is ongoing or is of limited volume and all impacts can be immediately addressed. Proper and cost-effective remediation typically cannot occur without adequate characterization of the impacts of any release. Furthermore, the Division has the ability to impose reasonable conditions upon the efforts it oversees. **As such, the Division is requiring a workplan for the characterization of impacts associated with this release be submitted to the OCD District 2 office in ARTESIA on or before 11/13/2017. If and when the release characterization workplan is approved, there will be an associated deadline for submittal of the resultant investigation report. Modest extensions of time to these deadlines may be granted, but only with acceptable justification.**

The goals of a characterization effort are: 1) determination of the lateral and vertical extents along with the magnitude of soil contamination. 2) determine if groundwater or surface waters have been impacted. 3) If groundwater or surface waters have been impacted, what are the extents and magnitude of that impact. 4) The characterization of any other adverse impacts that may have occurred (examples: impacts on vegetation, impacts on wildlife, air quality, loss of use of property, etc.). To meet these goals as quickly as possible, the following items must, at a minimum, be addressed in the release characterization workplan and subsequent reporting:

- Horizontal delineation of soil impacts in each of the four cardinal compass directions. Adsorbed soil contamination must be characterized for the following constituents using the associated laboratory methods: benzene, toluene, ethylbenzene, and total xylenes by either Method 8260 or 8021, total petroleum hydrocarbons by Method 8015 extended range (GRO+DRO+MRO; C_6 thru C_{36}), and for chloride by Method 300. This is not an exclusive list of potential contaminants. Analyzed parameters should be modified based on the nature of the released substance(s). Soil sampling must be both within the impacted area and beyond.

- Vertical delineation of soil impacts. Adsorbed soil contamination must be characterized for the following constituents using the associated laboratory methods: benzene, toluene, ethylbenzene, and total xylenes by either Method 8260 or 8021, total petroleum hydrocarbons by Method 8015 extended range (GRO+DRO+MRO; C_6 thru C_{36}), and for chloride by Method 300. As above, this is not an exclusive list of potential contaminants and can be modified. Vertical characterization samples should be taken at depth intervals no greater than five feet apart. Lithologic description of encountered soils must also be provided. At least ten vertical feet of soils with contaminant concentrations at or below these values must be demonstrated as existing above the water table.

- Nominal detection limits for field and laboratory analyses must be provided.

- Composite sampling is not generally allowed.

- Field screening and assessment techniques are acceptable (headspace, titration, EC [include algorithm for validation purposes], EM, etc.), but the sampling and assay procedures must be clearly defined. Copies of field notes are highly desirable. A statistically significant set of split samples must be submitted for confirmatory laboratory analysis, including the laterally farthest and vertically deepest sets of soil samples. Make sure there are at least two soil samples submitted

for laboratory analysis from each borehole or test pit (highest observed contamination and deepest depth investigated). Copies of the actual laboratory results must be provided including chain of custody documentation.

•Probable depth to shallowest protectable groundwater and lateral distance to nearest surface water. If there is an estimate of groundwater depth, the information used to arrive at that estimate must be provided. If there is a reasonable assumption that the depth to protectable water is 50 feet or less, the responsible party should anticipate the need for at least one groundwater monitoring well to be installed in the area of likely maximum contamination.

• If groundwater contamination is encountered, an additional investigation workplan may be required to determine the extents of that contamination. Groundwater and/or surface water samples, if any, must be analyzed by a competent laboratory for volatile organic hydrocarbons (typically Method 8260 full list), total dissolved solids, pH, major anions and cations including chloride and sulfate, dissolved iron, and dissolved manganese. The investigation workplan must provide the groundwater sampling method(s) and sample handling protocols. To the fullest extent possible, aqueous analyses must be undertaken using nominal method detection limits. As with the soil analyses, copies of the actual laboratory results must be provided including chain of custody documentation.

• Accurately scaled and well-drafted site maps must be provided providing the location of borings, test pits, monitoring wells, potentially impacted areas, and significant surface features including roads and site infrastructure that might limit either the release characterization or remedial efforts. Field sketches may be included in subsequent reporting, but should not be considered stand-alone documentation of the site's layout. Digital photographic documentation of the location and fieldwork is recommended, especially if unusual circumstances are encountered.

Nothing herein should be interpreted to preclude emergency response actions or to imply immediate remediation by removal cannot proceed as warranted. Nonetheless, characterization of impacts and confirmation of the effectiveness of remedial efforts must still be provided to the OCD before any release incident will be closed.

Jim Griswold
OCD Environmental Bureau Chief
1220 South St. Francis Drive
Santa Fe, New Mexico 87505
505-476-3465
jim.griswold@state.nm.us

Bratcher, Mike, EMNRD

From:	Dakota Neel <DNeel2@concho.com>
Sent:	Friday, October 13, 2017 2:37 PM
To:	Weaver, Crystal, EMNRD; stucker@blm.gov
Cc:	James_Amos@blm.gov; Bratcher, Mike, EMNRD; Sheldon Hitchcock; Aaron Lieb; Rebecca Haskell; Robert McNeill
Subject:	(C-141 Initial) Burch Keely Unit Satellite B 10-11-2017
Attachments:	C-141 Initial BKU SATELLITE B 10-11-2017.pdf

Ms. Weaver/Ms. Tucker,

Attached is a C-141 for your consideration. If you have any additional questions please feel free to contact me.

Thank You,

Dakota Neel
HSE Coordinator
COG Operating LLC
Cell: 432-215-2783
dneel2@concho.com

2407 Pecos Ave.
Artesia , NM 88210

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1625 N. French Dr., Hobbs, NM 88240
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Revised April 3, 2017

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☐ Initial Report ☒ Final Report

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Address 600 West Illinois Avenue, Midland, TX	Telephone No. 432-230-0077
Facility Name Burch Keely Unit Satellite B	Facility Type Battery

Surface Owner Federal	Mineral Owner Federal	API No.

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
F	19	17S	30E					Eddy County, NM

Latitude N 32.820329 **Longitude** W-104.024918 NAD83

NATURE OF RELEASE

Type of Release Oil and Produced water	Volume of Release 3 bbls oil, 7 bbls produced water	Volume Recovered 0.5 bbls oil, 1 bbl produced water
Source of Release Compromised flowline/pipeline	Date and Hour of Occurrence 10/11/2017 @ 4:00 pm	Date and Hour of Discovery 10/11/2017 @ 4:00 pm
Was Immediate Notice Given? ☐ Yes ☒ No ☒ Not Required	If YES, To Whom? n/a	
By Whom? n/a	Date and Hour n/a	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse. n/a	

If a Watercourse was Impacted, Describe Fully.*
n/a

Describe Cause of Problem and Remedial Action Taken.*

The release occurred when the flowline ruptured. The damaged portion of the flowline was removed and replaced. A vacuum truck recovered 0.5 bbls oil and 1 bbl produced water.

Describe Area Affected and Cleanup Action Taken.*

The release occurred in the pasture. The line was isolated until repaired. Vacuum trucks were dispatched and recovered all free-standing fluids. The site was delineated to establish appropriate remediation depths. Remediation was completed by removing 14 feet of impacted soil from the area of T1/SB1 and by removing 1 foot of impacted soil from the remaining area.

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

Signature: Rebecca Haskell

Printed Name: Rebecca Haskell

Title: Senior HSE Coordinator

E-mail Address: rhaskell@concho.com

Date: July 11, 2018 Phone: 432-683-7443

OIL CONSERVATION DIVISION

Approved by Environmental Specialist: Ashley Maxwell

Approval Date: 05/05/2023 Expiration Date:

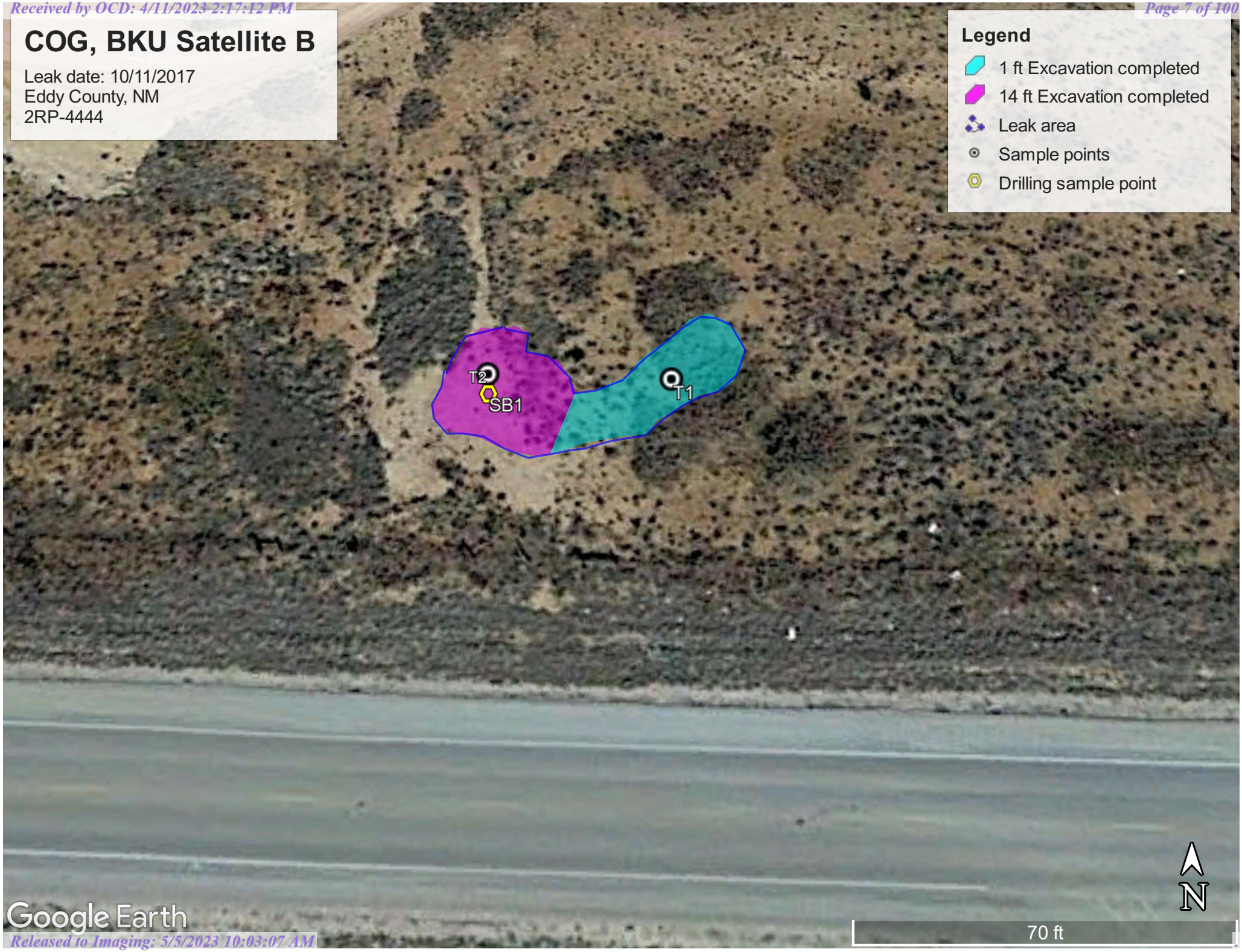
Conditions of Approval:

Attached ☐

* Attach Additional Sheets If Necessary

COG, BKU Satellite B

Leak date: 10/11/2017
Eddy County, NM
2RP-4444



COG, BKU Satellite B

Sample points

T1, N 32.82031 W-104.02493

T2, N 32.82031 W-104.02506

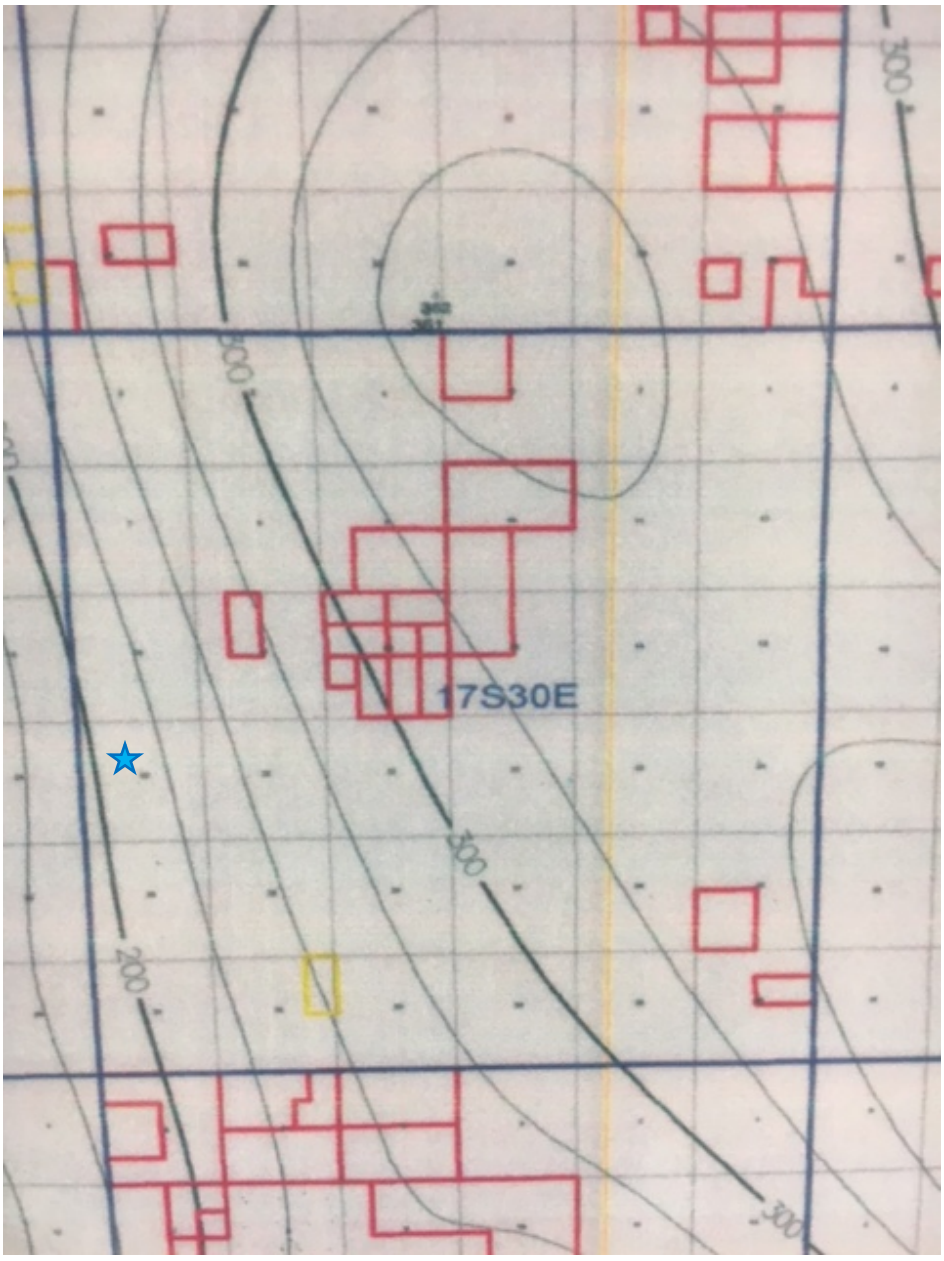
Drilling sample point

SB1, N 32.82030 W-104.02506

COG, BKU Satellite B

U/L F, Section 19, T17S, R30E

Groundwater: 200’



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

No records found.

UTMNAD83 Radius Search (in meters):

Easting (X): 592338 **Northing (Y):** 3631965 **Radius:** 1700

Public Land Survey System (PLSS)

Q64: Q16: SE Q4: NW Sec: 19 Tws: 17S Rng: 30E

State Plane Coordinate System - NAD27

X: 0 ft Y: 0 ft Zone:

State Plane Coordinate System - NAD83

X: 0 ft Y: 0 ft Zone:

Degrees/Minutes/Seconds

Longitude (X): Degrees: 0 ° Minutes: 0 ' Seconds: 0 "

Latitude (Y): Degrees: 0 ° Minutes: 0 ' Seconds: 0 "

UTM - NAD27

Easting (X): 0 mtrs Northing (Y): 0 mtrs Zone:

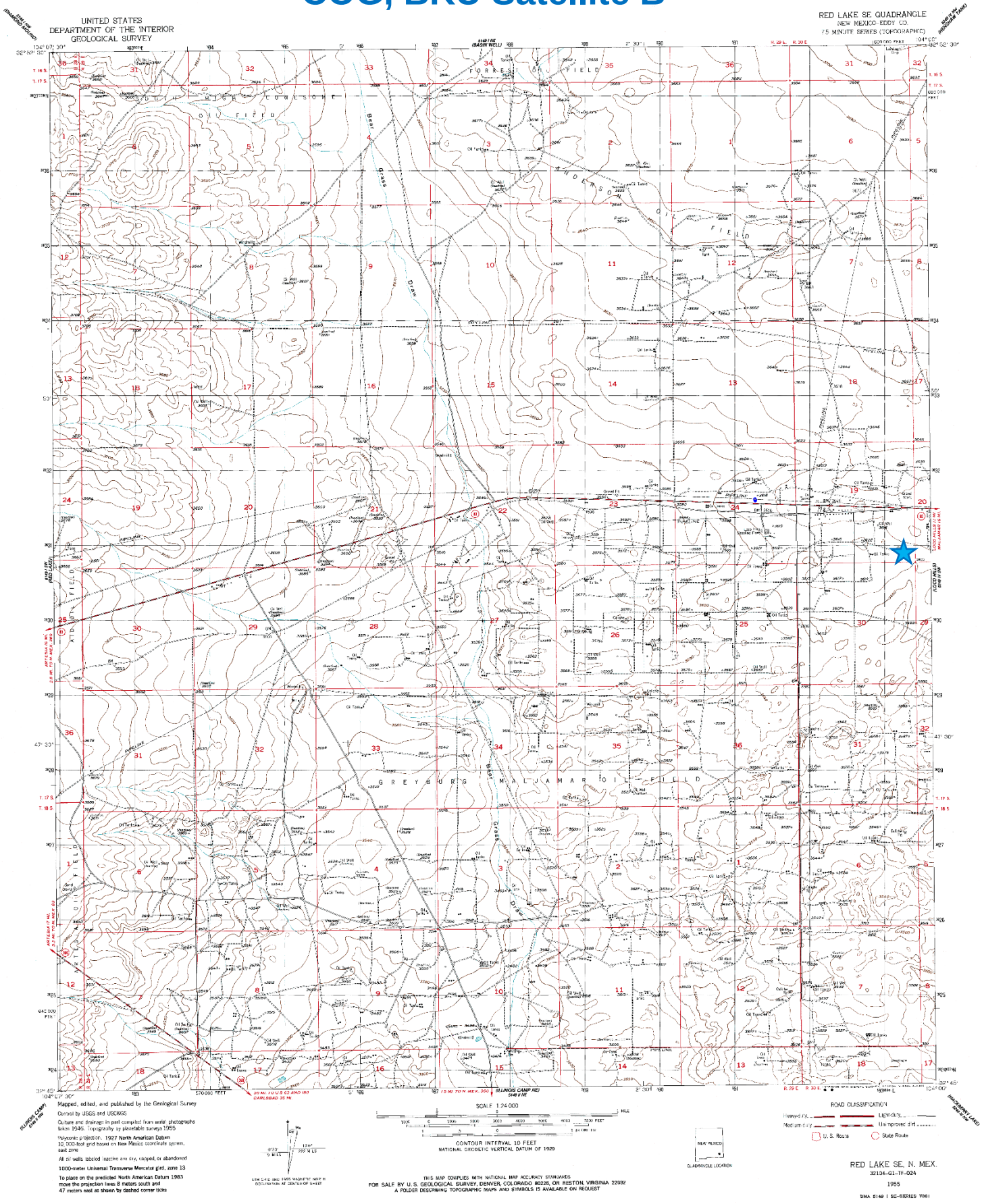
SUBMIT

All Conversion Results are displayed as NAD 1983 UTM Zone 13

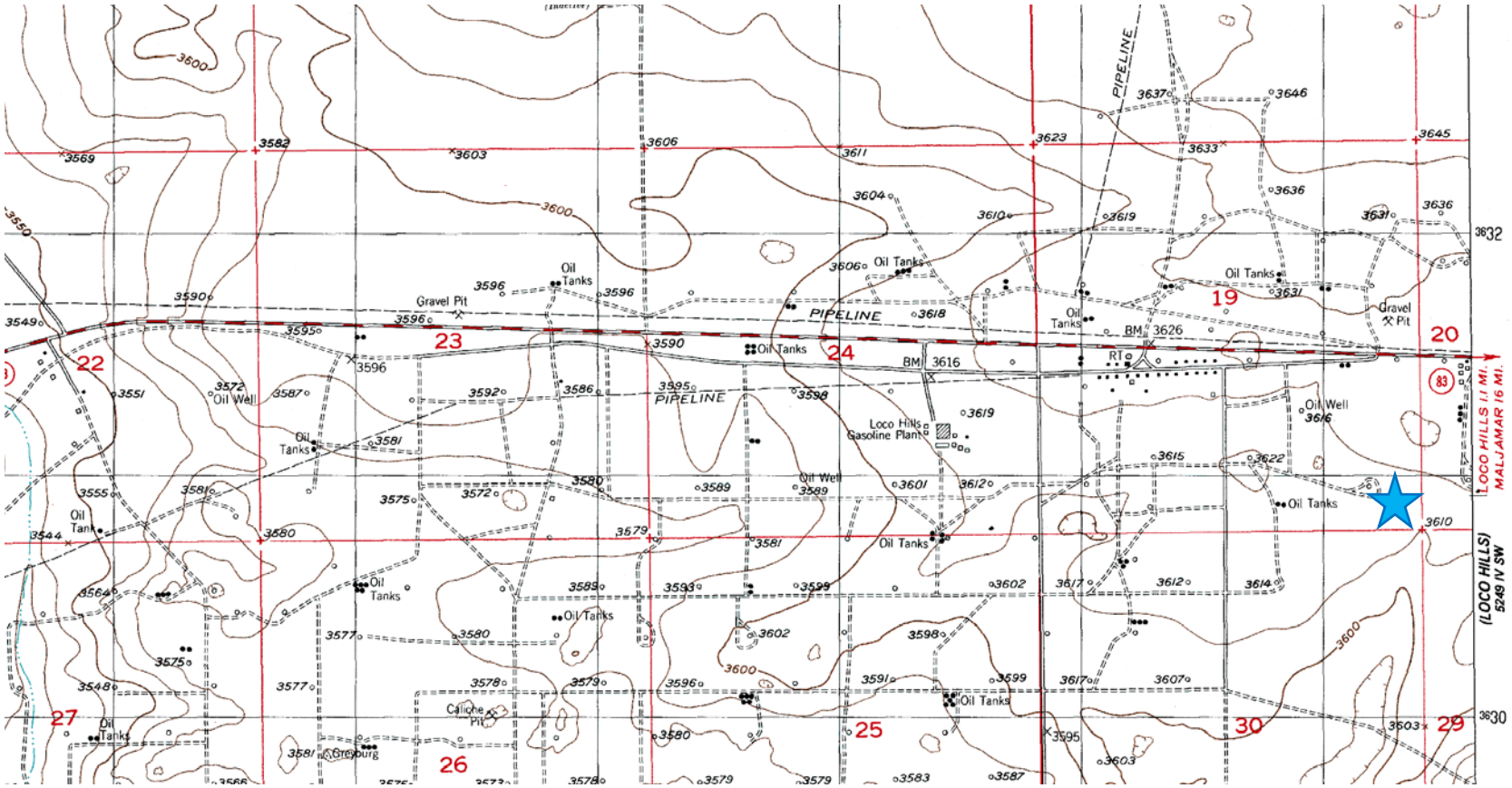
Easting (X): 592338.0 mtrs Northing (Y): 3631965.0 mtrs

~~ Please keep screen open to copy UTM values for Reports. ~~

COG, BKU Satellite B



COG, BKU Satellite B



Laboratory Analytical Results Summary
BKU Satellite B

		Sample ID	T1 @ SURFACE	T1 @ 1'	T1 @ 2'	T1 @ 3'	T1 @ 4'	T1 @ 6'	T1 @ 9'
Analyte	Method	Date	11/16/17	11/16/17	11/16/17	11/16/17	11/16/17	11/16/17	11/16/17
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Benzene	EPA 8021B		<0.00328	<0.00332	<0.00334	<0.00331	<0.00329	n/a	<0.00346
Toluene	EPA 8021B		0.0671	<0.00332	<0.00334	<0.00331	<0.00329	n/a	<0.00346
Ethylbenzene	EPA 8021B		0.325	<0.00332	<0.00334	<0.00331	<0.00329	n/a	<0.00346
m,p,-Xylenes	EPA 8021B		0.469	0.0342	<0.00669	<0.00662	<0.00658	n/a	<0.00692
o-Xylene	EPA 8021B		0.249	0.0213	<0.00334	<0.00331	<0.00329	n/a	<0.00346
Total Xylenes	EPA 8021B		0.718	0.0555	<0.00334	<0.00331	<0.00329	n/a	<0.00346
Total BTEX	EPA 8021B		1.11	0.0555	<0.00334	<0.00331	<0.00329	n/a	<0.00346
Chloride	EPA 300		329	29.9	16.6	85.6	312	111	157
GRO	SW2015 Mod		413	85.9	<15.0	<15.0	<15.0	n/a	<15.0
DRO	SW2015 Mod		16100	1180	<15.0	<15.0	<15.0	n/a	<15.0
ORO	SW2015 Mod		3540	213	<15.0	<15.0	<15.0	n/a	<15.0
Total TPH	SW2015 Mod		20100	1480	<15.0	<15.0	<15.0	n/a	<15.0

		Sample ID	EAST @ SURFACE	EAST @ 1'
Analyte	Method	Date	11/16/17	11/16/17
			mg/kg	mg/kg
Benzene	EPA 8021B		<0.00351	<0.00348
Toluene	EPA 8021B		<0.00351	<0.00348
Ethylbenzene	EPA 8021B		<0.00351	<0.00348
m,p,-Xylenes	EPA 8021B		<0.00702	<0.00697
o-Xylene	EPA 8021B		<0.00351	<0.00348
Total Xylenes	EPA 8021B		<0.00351	<0.00348
Total BTEX	EPA 8021B		<0.00351	<0.00348
Chloride	EPA 300		31.5	11.3
GRO	SW2015 Mod		<15.0	<15.0
DRO	SW2015 Mod		<15.0	<15.0
ORO	SW2015 Mod		<15.0	<15.0
Total TPH	SW2015 Mod		<15.0	<15.0

		Sample ID	NORTH @ SURFACE	NORTH @ 1'
Analyte	Method	Date	11/16/17	11/16/17
			mg/kg	mg/kg
Benzene	EPA 8021B		<0.00201	<0.00332
Toluene	EPA 8021B		<0.00201	<0.00332
Ethylbenzene	EPA 8021B		<0.00201	<0.00332
m,p,-Xylenes	EPA 8021B		<0.00402	<0.00664
o-Xylene	EPA 8021B		<0.00201	<0.00332
Total Xylenes	EPA 8021B		<0.00201	<0.00332
Total BTEX	EPA 8021B		<0.00201	<0.00332
Chloride	EPA 300		40	11.5
GRO	SW2015 Mod		<15.0	<15.0
DRO	SW2015 Mod		<15.0	<15.0
ORO	SW2015 Mod		<15.0	<15.0
Total TPH	SW2015 Mod		<15.0	<15.0

		Sample ID	WEST @ SURFACE	WEST @ 1'
Analyte	Method	Date	11/16/17	11/16/17
			mg/kg	mg/kg
Benzene	EPA 8021B		<0.00350	<0.00331
Toluene	EPA 8021B		<0.00350	<0.00331
Ethylbenzene	EPA 8021B		<0.00350	<0.00331
m,p,-Xylenes	EPA 8021B		<0.00699	<0.00662
o-Xylene	EPA 8021B		<0.00350	<0.00331
Total Xylenes	EPA 8021B		<0.00350	<0.00331
Total BTEX	EPA 8021B		<0.00350	<0.00331
Chloride	EPA 300		5.11	<4.96
GRO	SW2015 Mod		<15.0	<15.0
DRO	SW2015 Mod		619	70.3
ORO	SW2015 Mod		356	19.6
Total TPH	SW2015 Mod		975	89.9

		Sample ID	SOUTH @ SURFACE	SOUTH @ 1'
Analyte	Method	Date	11/16/17	11/16/17
			mg/kg	mg/kg
Benzene	EPA 8021B		<0.00330	<0.00346
Toluene	EPA 8021B		<0.00330	<0.00346
Ethylbenzene	EPA 8021B		<0.00330	<0.00346
m,p,-Xylenes	EPA 8021B		<0.00660	<0.00692
o-Xylene	EPA 8021B		<0.00330	<0.00346
Total Xylenes	EPA 8021B		<0.00330	<0.00346
Total BTEX	EPA 8021B		<0.00330	<0.00346
Chloride	EPA 300		68.2	47.9
GRO	SW2015 Mod		<15.0	<15.0
DRO	SW2015 Mod		121	136
ORO	SW2015 Mod		53.5	70.2
Total TPH	SW2015 Mod		175	400

		Sample ID	T2 @ 16'
Analyte	Method	Date	1/24/18
			mg/kg
Benzene	EPA 8021B		0.225
Toluene	EPA 8021B		9.01
Ethylbenzene	EPA 8021B		14.2
m,p,-Xylenes	EPA 8021B		15.3
o-Xylene	EPA 8021B		6.93
Total Xylenes	EPA 8021B		22.2
Total BTEX	EPA 8021B		45.7
Chloride	EPA 300		5070
GRO	SW2015 Mod		867
DRO	SW2015 Mod		1800
ORO	SW2015 Mod		253
Total TPH	SW2015 Mod		2920

Laboratory Analytical Results Summary
BKU Satellite B

		Sample ID	SB1 @ 14	SB1 @ 20	SB1 @ 25	SB1 @ 30	SB1 @ 35	SB1 @ 40	SB1 @ 45
Analyte	**Method**	**Date**	3/19/18	3/19/18	3/19/18	3/19/18	3/19/18	3/19/18	3/19/18
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Benzene	EPA 8021B		**0.438**	**4.44**	<0.0193	<0.0189	<0.0190	<0.0189	<0.0190
Toluene	EPA 8021B		**4.5**	**25.4**	<0.0193	<0.0189	<0.0190	<0.0189	<0.0190
Ethylbenzene	EPA 8021B		**8.21**	**30.8**	**0.0425**	<0.0189	<0.0190	<0.0189	<0.0190
m,p,-Xylenes	EPA 8021B		**11.4**	**37.6**	**0.0792**	<0.0378	<0.0381	<0.0377	<0.0380
o-Xylene	EPA 8021B		**4.34**	**22.2**	**0.0483**	<0.0189	<0.0190	<0.0189	<0.0190
Total Xylenes	EPA 8021B		**15.7**	**59.8**	**0.128**	<0.0189	<0.0190	<0.0189	<0.0190
Total BTEX	EPA 8021B		**28.9**	**120**	**0.17**	<0.0189	<0.0190	<0.0189	<0.0190
Chloride	EPA 300		**6280**	**5890**	**2440**	**1390**	**409**	**207**	<25.0
GRO	SW2015 Mod		**714**	**1920**	**22.9**	<15.0	<15.0	<15.0	<15.0
DRO	SW2015 Mod		**2590**	**5170**	**214**	**17.1**	<15.0	<15.0	<15.0
ORO	SW2015 Mod		**117**	**234**	<15.0	<15.0	<15.0	<15.0	<15.0
Total TPH	SW2015 Mod		**3420**	**7320**	**237**	**17.1**	<15.0	<15.0	<15.0

Certificate of Analysis Summary 568955

COG Operating LLC, Artesia, NM

Project Name: BKU Satellite B

Project Id:
Contact: Aaron Lieb
Project Location: BKU Satellite B

Date Received in Lab: Fri Nov-17-17 12:00 pm
Report Date: 29-NOV-17
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	568955-001		568955-002		568955-003		568955-004		568955-005		568955-006	
	Field Id:	North - Surface		North - 1'		South - Surface		South - 1'		East - Surface		East - 1'	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Nov-16-17 11:00		Nov-16-17 11:00		Nov-16-17 11:15		Nov-16-17 11:15		Nov-16-17 11:30		Nov-16-17 11:30	
BTEX by EPA 8021B	***Extracted:***	Nov-21-17 09:30		Nov-27-17 08:00		Nov-27-17 08:00		Nov-27-17 08:00		Nov-27-17 08:00		Nov-27-17 08:00	
	Analyzed:	Nov-21-17 20:54		Nov-27-17 15:26		Nov-27-17 11:17		Nov-27-17 10:39		Nov-27-17 10:58		Nov-27-17 11:36	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		<0.00201	0.00201	<0.00332	0.00332	<0.00330	0.00330	<0.00346	0.00346	<0.00351	0.00351	<0.00348	0.00348
Toluene		<0.00201	0.00201	<0.00332	0.00332	<0.00330	0.00330	<0.00346	0.00346	<0.00351	0.00351	<0.00348	0.00348
Ethylbenzene		<0.00201	0.00201	<0.00332	0.00332	<0.00330	0.00330	<0.00346	0.00346	<0.00351	0.00351	<0.00348	0.00348
m,p-Xylenes		<0.00402	0.00402	<0.00664	0.00664	<0.00660	0.00660	<0.00692	0.00692	<0.00702	0.00702	<0.00697	0.00697
o-Xylene		<0.00201	0.00201	<0.00332	0.00332	<0.00330	0.00330	<0.00346	0.00346	<0.00351	0.00351	<0.00348	0.00348
Total Xylenes		<0.00201	0.00201	<0.00332	0.00332	<0.00330	0.00330	<0.00346	0.00346	<0.00351	0.00351	<0.00348	0.00348
Total BTEX		<0.00201	0.00201	<0.00332	0.00332	<0.00330	0.00330	<0.00346	0.00346	<0.00351	0.00351	<0.00348	0.00348
Chloride by EPA 300	***Extracted:***	Nov-28-17 09:30		Nov-28-17 11:00		Nov-28-17 11:00		Nov-28-17 11:00		Nov-28-17 11:00		Nov-28-17 11:00	
	Analyzed:	Nov-28-17 13:08		Nov-28-17 14:01		Nov-28-17 14:18		Nov-28-17 14:24		Nov-28-17 14:30		Nov-28-17 14:36	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		40.0	4.95	11.5	4.94	68.2	4.93	47.9	4.98	31.5	4.96	11.3	4.97
TPH By SW8015 Mod	***Extracted:***	Nov-20-17 15:00		Nov-20-17 15:00		Nov-20-17 15:00		Nov-20-17 15:00		Nov-20-17 15:00		Nov-20-17 15:00	
	Analyzed:	Nov-21-17 05:55		Nov-21-17 06:59		Nov-21-17 07:19		Nov-21-17 07:40		Nov-21-17 08:01		Nov-21-17 08:21	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons (GRO)		<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0
Diesel Range Organics (DRO)		<15.0	15.0	<15.0	15.0	121	15.0	136	15.0	<15.0	15.0	<15.0	15.0
Oil Range Hydrocarbons (ORO)		<15.0	15.0	<15.0	15.0	53.5	15.0	70.2	15.0	<15.0	15.0	<15.0	15.0
Total TPH		<15.0	15.0	<15.0	15.0	175	15.0	400	15.0	<15.0	15.0	<15.0	15.0

Houston - Dallas - San Antonio - Atlanta - Tampa - Boca Raton - Latin America - Odessa - Corpus Christi

Mike Kimmel
Client Services Manager

Certificate of Analysis Summary 568955

COG Operating LLC, Artesia, NM

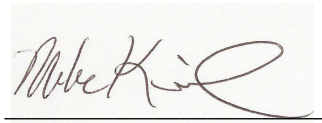
Project Name: BKU Satellite B

Project Id:
Contact: Aaron Lieb
Project Location: BKU Satellite B

Date Received in Lab: Fri Nov-17-17 12:00 pm
Report Date: 29-NOV-17
Project Manager: Kelsey Brooks

Analysis Requested									
	Lab Id:	568955-007		568955-008					
	Field Id:	West - Surface		West - 1'					
	Depth:								
	Matrix:	SOIL		SOIL					
	Sampled:	Nov-16-17 11:40		Nov-16-17 11:40					
BTEX by EPA 8021B	***Extracted:***	Nov-27-17 08:00		Nov-27-17 08:00					
	Analyzed:	Nov-27-17 11:55		Nov-27-17 12:14					
	Units/RL:	mg/kg	RL	mg/kg	RL				
Benzene		<0.00350	0.00350	<0.00331	0.00331				
Toluene		<0.00350	0.00350	<0.00331	0.00331				
Ethylbenzene		<0.00350	0.00350	<0.00331	0.00331				
m,p-Xylenes		<0.00699	0.00699	<0.00662	0.00662				
o-Xylene		<0.00350	0.00350	<0.00331	0.00331				
Total Xylenes		<0.00350	0.00350	<0.00331	0.00331				
Total BTEX		<0.00350	0.00350	<0.00331	0.00331				
Chloride by EPA 300	***Extracted:***	Nov-28-17 11:00		Nov-28-17 11:00					
	Analyzed:	Nov-28-17 14:54		Nov-28-17 15:00					
	Units/RL:	mg/kg	RL	mg/kg	RL				
Chloride		5.11	4.97	<4.96	4.96				
TPH By SW8015 Mod	***Extracted:***	Nov-20-17 15:00		Nov-20-17 15:00					
	Analyzed:	Nov-21-17 08:42		Nov-21-17 09:03					
	Units/RL:	mg/kg	RL	mg/kg	RL				
Gasoline Range Hydrocarbons (GRO)		<15.0	15.0	<15.0	15.0				
Diesel Range Organics (DRO)		619	15.0	70.3	15.0				
Oil Range Hydrocarbons (ORO)		356	15.0	19.6	15.0				
Total TPH		975	15.0	89.9	15.0				

Houston - Dallas - San Antonio - Atlanta - Tampa - Boca Raton - Latin America - Odessa - Corpus Christi



Mike Kimmel
Client Services Manager

Final 1.000

Analytical Report 568955

for

COG Operating LLC

Project Manager: Aaron Lieb

BKU Satellite B

29-NOV-17

Collected By: Client

1211 W. Florida Ave, Midland TX 79701

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

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

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

29-NOV-17

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

Reference: XENCO Report No(s): **568955**
BKU Satellite B
Project Address: BKU Satellite B

Aaron Lieb:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 568955. 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. 568955 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Mike Kimmel
Client Services Manager

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 568955

COG Operating LLC, Artesia, NM

BKU Satellite B

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
North - Surface	S	11-16-17 11:00		568955-001
North - 1'	S	11-16-17 11:00		568955-002
South - Surface	S	11-16-17 11:15		568955-003
South - 1'	S	11-16-17 11:15		568955-004
East - Surface	S	11-16-17 11:30		568955-005
East - 1'	S	11-16-17 11:30		568955-006
West - Surface	S	11-16-17 11:40		568955-007
West - 1'	S	11-16-17 11:40		568955-008

CASE NARRATIVE

Client Name: COG Operating LLC

Project Name: BKU Satellite B

Project ID:
Work Order Number(s): *568955*

Report Date: *29-NOV-17*
Date Received: *11/17/2017*

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3034040 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3034261 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Certificate of Analytical Results 568955

COG Operating LLC, Artesia, NM

BKU Satellite B

Sample Id:	**North - Surface**	Matrix:	Soil	Date Received:	11.17.17 12.00
Lab Sample Id:	568955-001	Date Collected:	11.16.17 11.00		

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MNV			% Moisture:	
Analyst:	MNV	Date Prep:	11.28.17 09.30	Basis:	Wet Weight
Seq Number:	3034324				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**40.0**	4.95	mg/kg	11.28.17 13.08		1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	JUM			% Moisture:	
Analyst:	JUM	Date Prep:	11.20.17 15.00	Basis:	Wet Weight
Seq Number:	3033962				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	11.21.17 05.55	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	11.21.17 05.55	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	11.21.17 05.55	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	11.21.17 05.55	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	11.21.17 05.55	
o-Terphenyl	84-15-1	97	%	70-135	11.21.17 05.55	

Certificate of Analytical Results 568955

COG Operating LLC, Artesia, NM

BKU Satellite B

Sample Id:	**North - Surface**	Matrix:	Soil	Date Received:	11.17.17 12.00
Lab Sample Id:	568955-001	Date Collected:	11.16.17 11.00		
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	11.21.17 09.30	Basis:	Wet Weight
Seq Number:	3034040				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	11.21.17 20.54	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	11.21.17 20.54	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	11.21.17 20.54	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	11.21.17 20.54	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	11.21.17 20.54	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	11.21.17 20.54	U	1
Total BTEX		<0.00201	0.00201	mg/kg	11.21.17 20.54	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	97	%	80-120	11.21.17 20.54	
4-Bromofluorobenzene	460-00-4	93	%	80-120	11.21.17 20.54	

Certificate of Analytical Results 568955

COG Operating LLC, Artesia, NM

BKU Satellite B

Sample Id:	**North - 1'**	Matrix:	Soil	Date Received:	11.17.17 12.00
Lab Sample Id:	568955-002	Date Collected:	11.16.17 11.00		

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MNV			% Moisture:	
Analyst:	MNV	Date Prep:	11.28.17 11.00	Basis:	Wet Weight
Seq Number:	3034338				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**11.5**	4.94	mg/kg	11.28.17 14.01		1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	JUM			% Moisture:	
Analyst:	JUM	Date Prep:	11.20.17 15.00	Basis:	Wet Weight
Seq Number:	3033962				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	11.21.17 06.59	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	11.21.17 06.59	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	11.21.17 06.59	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	11.21.17 06.59	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	88	%	70-135	11.21.17 06.59	
o-Terphenyl	84-15-1	92	%	70-135	11.21.17 06.59	

Certificate of Analytical Results 568955

COG Operating LLC, Artesia, NM

BKU Satellite B

Sample Id:	**North - 1'**	Matrix:	Soil	Date Received:	11.17.17 12.00
Lab Sample Id:	568955-002	Date Collected:	11.16.17 11.00		
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	11.27.17 08.00	Basis:	Wet Weight
Seq Number:	3034261				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00332	0.00332	mg/kg	11.27.17 15.26	U	1
Toluene	108-88-3	<0.00332	0.00332	mg/kg	11.27.17 15.26	U	1
Ethylbenzene	100-41-4	<0.00332	0.00332	mg/kg	11.27.17 15.26	U	1
m,p-Xylenes	179601-23-1	<0.00664	0.00664	mg/kg	11.27.17 15.26	U	1
o-Xylene	95-47-6	<0.00332	0.00332	mg/kg	11.27.17 15.26	U	1
Total Xylenes	1330-20-7	<0.00332	0.00332	mg/kg	11.27.17 15.26	U	1
Total BTEX		<0.00332	0.00332	mg/kg	11.27.17 15.26	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	88	%	80-120	11.27.17 15.26	
1,4-Difluorobenzene	540-36-3	95	%	80-120	11.27.17 15.26	

Certificate of Analytical Results 568955

COG Operating LLC, Artesia, NM

BKU Satellite B

Sample Id:	**South - Surface**	Matrix:	Soil	Date Received:	11.17.17 12.00
Lab Sample Id:	568955-003	Date Collected:	11.16.17 11.15		

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MNV			% Moisture:	
Analyst:	MNV	Date Prep:	11.28.17 11.00	Basis:	Wet Weight
Seq Number:	3034338				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**68.2**	4.93	mg/kg	11.28.17 14.18		1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	JUM			% Moisture:	
Analyst:	JUM	Date Prep:	11.20.17 15.00	Basis:	Wet Weight
Seq Number:	3033962				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	11.21.17 07.19	U	1
Diesel Range Organics (DRO)	C10C28DRO	**121**	15.0	mg/kg	11.21.17 07.19		1
Oil Range Hydrocarbons (ORO)	PHCG2835	**53.5**	15.0	mg/kg	11.21.17 07.19		1
Total TPH	PHC635	**175**	15.0	mg/kg	11.21.17 07.19		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	99	%	70-135	11.21.17 07.19	
o-Terphenyl	84-15-1	101	%	70-135	11.21.17 07.19	

Certificate of Analytical Results 568955

COG Operating LLC, Artesia, NM

BKU Satellite B

Sample Id:	**South - Surface**	Matrix:	Soil	Date Received:	11.17.17 12.00
Lab Sample Id:	568955-003	Date Collected:	11.16.17 11.15		
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	11.27.17 08.00	Basis:	Wet Weight
Seq Number:	3034261				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00330	0.00330	mg/kg	11.27.17 11.17	U	1
Toluene	108-88-3	<0.00330	0.00330	mg/kg	11.27.17 11.17	U	1
Ethylbenzene	100-41-4	<0.00330	0.00330	mg/kg	11.27.17 11.17	U	1
m,p-Xylenes	179601-23-1	<0.00660	0.00660	mg/kg	11.27.17 11.17	U	1
o-Xylene	95-47-6	<0.00330	0.00330	mg/kg	11.27.17 11.17	U	1
Total Xylenes	1330-20-7	<0.00330	0.00330	mg/kg	11.27.17 11.17	U	1
Total BTEX		<0.00330	0.00330	mg/kg	11.27.17 11.17	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	97	%	80-120	11.27.17 11.17	
1,4-Difluorobenzene	540-36-3	101	%	80-120	11.27.17 11.17	

Certificate of Analytical Results 568955

COG Operating LLC, Artesia, NM

BKU Satellite B

Sample Id:	**South - 1'**	Matrix:	Soil	Date Received:	11.17.17 12.00
Lab Sample Id:	568955-004	Date Collected:	11.16.17 11.15		

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MNV			% Moisture:	
Analyst:	MNV	Date Prep:	11.28.17 11.00	Basis:	Wet Weight
Seq Number:	3034338				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**47.9**	4.98	mg/kg	11.28.17 14.24		1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	JUM			% Moisture:	
Analyst:	JUM	Date Prep:	11.20.17 15.00	Basis:	Wet Weight
Seq Number:	3033962				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	11.21.17 07.40	U	1
Diesel Range Organics (DRO)	C10C28DRO	**136**	15.0	mg/kg	11.21.17 07.40		1
Oil Range Hydrocarbons (ORO)	PHCG2835	**70.2**	15.0	mg/kg	11.21.17 07.40		1
Total TPH	PHC635	**400**	15.0	mg/kg	11.21.17 07.40		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	89	%	70-135	11.21.17 07.40	
o-Terphenyl	84-15-1	88	%	70-135	11.21.17 07.40	

Certificate of Analytical Results 568955

COG Operating LLC, Artesia, NM

BKU Satellite B

Sample Id:	**South - 1'**	Matrix:	Soil	Date Received:	11.17.17 12.00
Lab Sample Id:	568955-004	Date Collected:	11.16.17 11.15		
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	11.27.17 08.00	Basis:	Wet Weight
Seq Number:	3034261				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00346	0.00346	mg/kg	11.27.17 10.39	U	1
Toluene	108-88-3	<0.00346	0.00346	mg/kg	11.27.17 10.39	U	1
Ethylbenzene	100-41-4	<0.00346	0.00346	mg/kg	11.27.17 10.39	U	1
m,p-Xylenes	179601-23-1	<0.00692	0.00692	mg/kg	11.27.17 10.39	U	1
o-Xylene	95-47-6	<0.00346	0.00346	mg/kg	11.27.17 10.39	U	1
Total Xylenes	1330-20-7	<0.00346	0.00346	mg/kg	11.27.17 10.39	U	1
Total BTEX		<0.00346	0.00346	mg/kg	11.27.17 10.39	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	97	%	80-120	11.27.17 10.39	
4-Bromofluorobenzene	460-00-4	96	%	80-120	11.27.17 10.39	

Certificate of Analytical Results 568955

COG Operating LLC, Artesia, NM

BKU Satellite B

Sample Id:	**East - Surface**	Matrix:	Soil	Date Received:	11.17.17 12.00
Lab Sample Id:	568955-005	Date Collected:	11.16.17 11.30		

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MNV			% Moisture:	
Analyst:	MNV	Date Prep:	11.28.17 11.00	Basis:	Wet Weight
Seq Number:	3034338				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**31.5**	4.96	mg/kg	11.28.17 14.30		1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	JUM			% Moisture:	
Analyst:	JUM	Date Prep:	11.20.17 15.00	Basis:	Wet Weight
Seq Number:	3033962				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	11.21.17 08.01	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	11.21.17 08.01	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	11.21.17 08.01	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	11.21.17 08.01	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	91	%	70-135	11.21.17 08.01	
o-Terphenyl	84-15-1	94	%	70-135	11.21.17 08.01	

Certificate of Analytical Results 568955

COG Operating LLC, Artesia, NM

BKU Satellite B

Sample Id:	**East - Surface**	Matrix:	Soil	Date Received:	11.17.17 12.00
Lab Sample Id:	568955-005	Date Collected:	11.16.17 11.30		
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	11.27.17 08.00	Basis:	Wet Weight
Seq Number:	3034261				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00351	0.00351	mg/kg	11.27.17 10.58	U	1
Toluene	108-88-3	<0.00351	0.00351	mg/kg	11.27.17 10.58	U	1
Ethylbenzene	100-41-4	<0.00351	0.00351	mg/kg	11.27.17 10.58	U	1
m,p-Xylenes	179601-23-1	<0.00702	0.00702	mg/kg	11.27.17 10.58	U	1
o-Xylene	95-47-6	<0.00351	0.00351	mg/kg	11.27.17 10.58	U	1
Total Xylenes	1330-20-7	<0.00351	0.00351	mg/kg	11.27.17 10.58	U	1
Total BTEX		<0.00351	0.00351	mg/kg	11.27.17 10.58	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	101	%	80-120	11.27.17 10.58	
1,4-Difluorobenzene	540-36-3	100	%	80-120	11.27.17 10.58	

Certificate of Analytical Results 568955

COG Operating LLC, Artesia, NM

BKU Satellite B

Sample Id:	**East - 1'**	Matrix:	Soil	Date Received:	11.17.17 12.00
Lab Sample Id:	568955-006	Date Collected:	11.16.17 11.30		

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MNV			% Moisture:	
Analyst:	MNV	Date Prep:	11.28.17 11.00	Basis:	Wet Weight
Seq Number:	3034338				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**11.3**	4.97	mg/kg	11.28.17 14.36		1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	JUM			% Moisture:	
Analyst:	JUM	Date Prep:	11.20.17 15.00	Basis:	Wet Weight
Seq Number:	3033962				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	11.21.17 08.21	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	11.21.17 08.21	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	11.21.17 08.21	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	11.21.17 08.21	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	11.21.17 08.21	
o-Terphenyl	84-15-1	94	%	70-135	11.21.17 08.21	

Certificate of Analytical Results 568955

COG Operating LLC, Artesia, NM

BKU Satellite B

Sample Id:	**East - 1'**	Matrix:	Soil	Date Received:	11.17.17 12.00
Lab Sample Id:	568955-006	Date Collected:	11.16.17 11.30		
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	11.27.17 08.00	Basis:	Wet Weight
Seq Number:	3034261				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00348	0.00348	mg/kg	11.27.17 11.36	U	1
Toluene	108-88-3	<0.00348	0.00348	mg/kg	11.27.17 11.36	U	1
Ethylbenzene	100-41-4	<0.00348	0.00348	mg/kg	11.27.17 11.36	U	1
m,p-Xylenes	179601-23-1	<0.00697	0.00697	mg/kg	11.27.17 11.36	U	1
o-Xylene	95-47-6	<0.00348	0.00348	mg/kg	11.27.17 11.36	U	1
Total Xylenes	1330-20-7	<0.00348	0.00348	mg/kg	11.27.17 11.36	U	1
Total BTEX		<0.00348	0.00348	mg/kg	11.27.17 11.36	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	103	%	80-120	11.27.17 11.36	
4-Bromofluorobenzene	460-00-4	99	%	80-120	11.27.17 11.36	

Certificate of Analytical Results 568955

COG Operating LLC, Artesia, NM

BKU Satellite B

Sample Id:	**West - Surface**	Matrix:	Soil	Date Received:	11.17.17 12.00
Lab Sample Id:	568955-007	Date Collected:	11.16.17 11.40		

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MNV			% Moisture:	
Analyst:	MNV	Date Prep:	11.28.17 11.00	Basis:	Wet Weight
Seq Number:	3034338				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**5.11**	4.97	mg/kg	11.28.17 14.54		1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	JUM			% Moisture:	
Analyst:	JUM	Date Prep:	11.20.17 15.00	Basis:	Wet Weight
Seq Number:	3033962				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	11.21.17 08.42	U	1
Diesel Range Organics (DRO)	C10C28DRO	**619**	15.0	mg/kg	11.21.17 08.42		1
Oil Range Hydrocarbons (ORO)	PHCG2835	**356**	15.0	mg/kg	11.21.17 08.42		1
Total TPH	PHC635	**975**	15.0	mg/kg	11.21.17 08.42		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	103	%	70-135	11.21.17 08.42	
o-Terphenyl	84-15-1	102	%	70-135	11.21.17 08.42	

Certificate of Analytical Results 568955

COG Operating LLC, Artesia, NM

BKU Satellite B

Sample Id:	**West - Surface**	Matrix:	Soil	Date Received:	11.17.17 12.00
Lab Sample Id:	568955-007	Date Collected:	11.16.17 11.40		
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	11.27.17 08.00	Basis:	Wet Weight
Seq Number:	3034261				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00350	0.00350	mg/kg	11.27.17 11.55	U	1
Toluene	108-88-3	<0.00350	0.00350	mg/kg	11.27.17 11.55	U	1
Ethylbenzene	100-41-4	<0.00350	0.00350	mg/kg	11.27.17 11.55	U	1
m,p-Xylenes	179601-23-1	<0.00699	0.00699	mg/kg	11.27.17 11.55	U	1
o-Xylene	95-47-6	<0.00350	0.00350	mg/kg	11.27.17 11.55	U	1
Total Xylenes	1330-20-7	<0.00350	0.00350	mg/kg	11.27.17 11.55	U	1
Total BTEX		<0.00350	0.00350	mg/kg	11.27.17 11.55	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	103	%	80-120	11.27.17 11.55	
4-Bromofluorobenzene	460-00-4	95	%	80-120	11.27.17 11.55	

Certificate of Analytical Results 568955

COG Operating LLC, Artesia, NM

BKU Satellite B

Sample Id:	**West - 1'**	Matrix:	Soil	Date Received:	11.17.17 12.00
Lab Sample Id:	568955-008	Date Collected:	11.16.17 11.40		

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MNV			% Moisture:	
Analyst:	MNV	Date Prep:	11.28.17 11.00	Basis:	Wet Weight
Seq Number:	3034338				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.96	4.96	mg/kg	11.28.17 15.00	U	1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	JUM			% Moisture:	
Analyst:	JUM	Date Prep:	11.20.17 15.00	Basis:	Wet Weight
Seq Number:	3033962				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	11.21.17 09.03	U	1
Diesel Range Organics (DRO)	C10C28DRO	**70.3**	15.0	mg/kg	11.21.17 09.03		1
Oil Range Hydrocarbons (ORO)	PHCG2835	**19.6**	15.0	mg/kg	11.21.17 09.03		1
Total TPH	PHC635	**89.9**	15.0	mg/kg	11.21.17 09.03		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	78	%	70-135	11.21.17 09.03	
o-Terphenyl	84-15-1	82	%	70-135	11.21.17 09.03	

Certificate of Analytical Results 568955

COG Operating LLC, Artesia, NM

BKU Satellite B

Sample Id:	**West - 1'**	Matrix:	Soil	Date Received:	11.17.17 12.00
Lab Sample Id:	568955-008	Date Collected:	11.16.17 11.40		
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	11.27.17 08.00	Basis:	Wet Weight
Seq Number:	3034261				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00331	0.00331	mg/kg	11.27.17 12.14	U	1
Toluene	108-88-3	<0.00331	0.00331	mg/kg	11.27.17 12.14	U	1
Ethylbenzene	100-41-4	<0.00331	0.00331	mg/kg	11.27.17 12.14	U	1
m,p-Xylenes	179601-23-1	<0.00662	0.00662	mg/kg	11.27.17 12.14	U	1
o-Xylene	95-47-6	<0.00331	0.00331	mg/kg	11.27.17 12.14	U	1
Total Xylenes	1330-20-7	<0.00331	0.00331	mg/kg	11.27.17 12.14	U	1
Total BTEX		<0.00331	0.00331	mg/kg	11.27.17 12.14	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	102	%	80-120	11.27.17 12.14	
4-Bromofluorobenzene	460-00-4	100	%	80-120	11.27.17 12.14	

Flagging Criteria

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

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

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

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

F RPD exceeded lab control limits.

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

U Analyte was not detected.

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

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

K Sample analyzed outside of recommended hold time.

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

+ NELAC certification not offered for this compound.

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

QC Summary 568955

COG Operating LLC

BKU Satellite B

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3034324 — Matrix: Solid — Date Prep: 11.28.17
MB Sample Id: 7634996-1-BLK — LCS Sample Id: 7634996-1-BKS — LCSD Sample Id: 7634996-1-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	239	96	237	95	90-110	1	20	mg/kg	11.28.17 10:11	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3034338 — Matrix: Solid — Date Prep: 11.28.17
MB Sample Id: 7635005-1-BLK — LCS Sample Id: 7635005-1-BKS — LCSD Sample Id: 7635005-1-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	251	100	266	106	90-110	6	20	mg/kg	11.28.17 13:38	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3034324 — Matrix: Soil — Date Prep: 11.28.17
Parent Sample Id: 568803-003 — MS Sample Id: 568803-003 S — MSD Sample Id: 568803-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	416	248	657	97	652	95	90-110	1	20	mg/kg	11.28.17 10:29	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3034324 — Matrix: Soil — Date Prep: 11.28.17
Parent Sample Id: 568803-012 — MS Sample Id: 568803-012 S — MSD Sample Id: 568803-012 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	53.5	246	306	103	300	100	90-110	2	20	mg/kg	11.28.17 12:03	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3034338 — Matrix: Soil — Date Prep: 11.28.17
Parent Sample Id: 568955-002 — MS Sample Id: 568955-002 S — MSD Sample Id: 568955-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	11.5	247	266	103	267	103	90-110	0	20	mg/kg	11.28.17 14:06	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3034338 — Matrix: Soil — Date Prep: 11.28.17
Parent Sample Id: 568956-004 — MS Sample Id: 568956-004 S — MSD Sample Id: 568956-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	85.6	245	345	106	341	104	90-110	1	20	mg/kg	11.28.17 15:29	

QC Summary 568955

COG Operating LLC

BKU Satellite B

Analytical Method: TPH By SW8015 Mod — Prep Method: TX1005P
Seq Number: 3033962 — Matrix: Solid — Date Prep: 11.20.17
MB Sample Id: 7634803-1-BLK — LCS Sample Id: 7634803-1-BKS — LCSD Sample Id: 7634803-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	1000	998	100	1030	103	70-135	3	35	mg/kg	11.21.17 05:15	
Diesel Range Organics (DRO)	<15.0	1000	1070	107	1140	114	70-135	6	35	mg/kg	11.21.17 05:15	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	96		107		109		70-135	%	11.21.17 05:15
o-Terphenyl	99		118		102		70-135	%	11.21.17 05:15

Analytical Method: TPH By SW8015 Mod — Prep Method: TX1005P
Seq Number: 3033962 — Matrix: Soil — Date Prep: 11.20.17
Parent Sample Id: 568955-001 — MS Sample Id: 568955-001 S — MSD Sample Id: 568955-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	1000	900	90	838	84	70-135	7	35	mg/kg	11.21.17 06:17	
Diesel Range Organics (DRO)	<15.0	1000	944	94	904	90	70-135	4	35	mg/kg	11.21.17 06:17	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	107		100		70-135	%	11.21.17 06:17
o-Terphenyl	103		99		70-135	%	11.21.17 06:17

Analytical Method: BTEX by EPA 8021B — Prep Method: SW5030B
Seq Number: 3034040 — Matrix: Solid — Date Prep: 11.21.17
MB Sample Id: 7634836-1-BLK — LCS Sample Id: 7634836-1-BKS — LCSD Sample Id: 7634836-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00198	0.0992	0.122	123	0.104	104	70-130	16	35	mg/kg	11.21.17 11:51	
Toluene	<0.00198	0.0992	0.114	115	0.0967	97	70-130	16	35	mg/kg	11.21.17 11:51	
Ethylbenzene	<0.00198	0.0992	0.117	118	0.0994	100	71-129	16	35	mg/kg	11.21.17 11:51	
m,p-Xylenes	<0.00397	0.198	0.226	114	0.193	97	70-135	16	35	mg/kg	11.21.17 11:51	
o-Xylene	<0.00198	0.0992	0.112	113	0.0973	98	71-133	14	35	mg/kg	11.21.17 11:51	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	101		96		85		80-120	%	11.21.17 11:51
4-Bromofluorobenzene	97		99		88		80-120	%	11.21.17 11:51

QC Summary 568955

COG Operating LLC

BKU Satellite B

Analytical Method: BTEX by EPA 8021B — Prep Method: SW5030B
Seq Number: 3034261 — Matrix: Solid — Date Prep: 11.27.17
MB Sample Id: 7634983-1-BLK — LCS Sample Id: 7634983-1-BKS — LCSD Sample Id: 7634983-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.0998	0.108	108	0.111	111	70-130	3	35	mg/kg	11.27.17 08:19	
Toluene	<0.00200	0.0998	0.105	105	0.108	108	70-130	3	35	mg/kg	11.27.17 08:19	
Ethylbenzene	<0.00200	0.0998	0.110	110	0.112	112	71-129	2	35	mg/kg	11.27.17 08:19	
m,p-Xylenes	<0.00399	0.200	0.209	105	0.214	107	70-135	2	35	mg/kg	11.27.17 08:19	
o-Xylene	<0.00200	0.0998	0.102	102	0.104	104	71-133	2	35	mg/kg	11.27.17 08:19	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	96		104		103		80-120	%	11.27.17 08:19
4-Bromofluorobenzene	84		102		101		80-120	%	11.27.17 08:19

Analytical Method: BTEX by EPA 8021B — Prep Method: SW5030B
Seq Number: 3034040 — Matrix: Soil — Date Prep: 11.21.17
Parent Sample Id: 568546-001 — MS Sample Id: 568546-001 S — MSD Sample Id: 568546-001 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	0.0942	94	0.0959	96	70-130	2	35	mg/kg	11.21.17 12:29	
Toluene	<0.00200	0.100	0.0852	85	0.0883	89	70-130	4	35	mg/kg	11.21.17 12:29	
Ethylbenzene	<0.00200	0.100	0.0860	86	0.0823	83	71-129	4	35	mg/kg	11.21.17 12:29	
m,p-Xylenes	0.00654	0.200	0.169	81	0.162	78	70-135	4	35	mg/kg	11.21.17 12:29	
o-Xylene	<0.00200	0.100	0.0870	87	0.0821	82	71-133	6	35	mg/kg	11.21.17 12:29	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	94		107		80-120	%	11.21.17 12:29
4-Bromofluorobenzene	92		109		80-120	%	11.21.17 12:29

Analytical Method: BTEX by EPA 8021B — Prep Method: SW5030B
Seq Number: 3034261 — Matrix: Soil — Date Prep: 11.27.17
Parent Sample Id: 568956-007 — MS Sample Id: 568956-007 S — MSD Sample Id: 568956-007 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00353	0.177	0.178	101	0.180	103	70-130	1	35	mg/kg	11.27.17 08:55	
Toluene	<0.00353	0.177	0.173	98	0.175	100	70-130	1	35	mg/kg	11.27.17 08:55	
Ethylbenzene	<0.00353	0.177	0.181	102	0.181	103	71-129	0	35	mg/kg	11.27.17 08:55	
m,p-Xylenes	<0.00707	0.353	0.346	98	0.346	99	70-135	0	35	mg/kg	11.27.17 08:55	
o-Xylene	<0.00353	0.177	0.170	96	0.169	97	71-133	1	35	mg/kg	11.27.17 08:55	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	103		102		80-120	%	11.27.17 08:55
4-Bromofluorobenzene	110		104		80-120	%	11.27.17 08:55

CHAIN OF CUSTODY

Page 1 Of 1

XENCO LABORATORIES

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

www.xenco.com

Xenco Quote # | Xenco Job # 568955

Client / Reporting Information

Company Name / Branch: COG Operating LLC

Company Address: 2407 PECOS Avenue Artesia NM 88210

Email: alieb@concho.com dneel2@concho.com rhaskell@concho.com slhitchcock@concho.com | Phone No: 575-748-1553

Project Contact: Aaron Lieb

Samplers's Name- Aaron Lieb

Project Information

Project Name/Number: BKU Satellite B

Project Location: BKU Satellite B

Invoice To: COG Operating LLC, Attn: Robert Mcneill, 600 W. Illinois, Midland TX 79701

PO Number:

Analytical Information

Matrix Codes

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

No.	Field ID / Point of Collection	Collection: Sample Depth	Date	Time	Matrix	# of bottles	Number of preserved bottles: HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	TPH/ EXTENDED	BTEX	Chloride	Field Comments
1	North - Surface	–	11/16/17	11:00am	S	1									X	X	X	
2	North - 1'	1'		1		1									X	X	X	
3	South - Surface	–		11:15am		1									X	X	X	
4	South - 1'	1'		1		1									X	X	X	
5	East - Surface	–		11:30am		1									X	X	X	
6	East - 1'	1'		1		1									X	X	X	
7	West - Surface	–		11:40pm		1									X	X	X	
8	West - 1'	1'		1		1									X	X	X	
9																		
10																		

Turnaround Time (Business days)

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

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

Data Deliverable Information

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

FED

Notes:

Temp: 2.1 IR ID:R-8

CF:(0-6: -0.2°C)

(6-23: +0.2°C)

Corrected Temp: ~~3.9~~ 1.9

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

Relinquished by Sampler: 1		Date Time: 11/17/17 9:50 Am	Received By: 1 Sid Butler	11-17-17 9:50A	Relinquished By: 2 Sid Butler	Date Time: 11-17-17 12N	Received By: 2
Relinquished by: 3		Date Time:	Received By: 3		Relinquished By: 4	Date Time:	Received By: 4
Relinquished by: 5	Date Time:	Received By: 5	Custody Seal #	Preserved where applicable ☐	On Ice ☐	Cooler Temp. 4.0c	Thermo. Corr. Factor

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

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: COG Operating LLC

Date/ Time Received: 11/17/2017 12:00:00 PM

Work Order #: 568955

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

Temperature Measuring device used : R8

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	1.9
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seals intact on shipping container/ cooler?	**N/A**
#5 Custody Seals intact on sample bottles?	**N/A**
#6*Custody Seals Signed and dated?	**N/A**
#7 *Chain of Custody present?	**Yes**
#8 Any missing/extra samples?	**No**
#9 Chain of Custody signed when relinquished/ received?	**Yes**
#10 Chain of Custody agrees with sample labels/matrix?	**Yes**
#11 Container label(s) legible and intact?	**Yes**
#12 Samples in proper container/ bottle?	**Yes**
#13 Samples properly preserved?	**Yes**
#14 Sample container(s) intact?	**Yes**
#15 Sufficient sample amount for indicated test(s)?	**Yes**
#16 All samples received within hold time?	**Yes**
#17 Subcontract of sample(s)?	**No**
#18 Water VOC samples have zero headspace?	**N/A**

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

Analyst: PH Device/Lot#:

Checklist completed by: Connie Hernandez Date: 11/20/2017

Checklist reviewed by: Holly Taylor Date: 11/22/2017

Certificate of Analysis Summary 568956

COG Operating LLC, Artesia, NM

Project Name: BKU Satellite B

Project Id:
Contact: Aaron Lieb
Project Location: BKU Satellite B

Date Received in Lab: Fri Nov-17-17 12:00 pm
Report Date: 30-NOV-17
Project Manager: Kelsey Brooks

Analysis Requested		Lab Id:	568956-001		568956-002		568956-003		568956-004		568956-005		568956-006	
		Field Id:	T1-Surface		T1- 1'		T1-2'		T1-3'		T1-4'		T1-6'	
		Depth:			1'-		2'-		3'-		4'-		6'-	
		Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
		Sampled:	Nov-16-17 10:00		Nov-16-17 10:10		Nov-16-17 10:15		Nov-16-17 10:17		Nov-16-17 10:20		Nov-16-17 10:25	
BTEX by EPA 8021B		Extracted:	Nov-27-17 08:00		Nov-27-17 08:00		Nov-27-17 08:00		Nov-27-17 08:00		Nov-27-17 08:00			
		Analyzed:	Nov-27-17 13:27		Nov-27-17 13:10		Nov-27-17 12:33		Nov-27-17 12:51		Nov-27-17 14:27			
		Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL		
Benzene			<0.00328	0.00328	<0.00332	0.00332	<0.00334	0.00334	<0.00331	0.00331	<0.00329	0.00329		
Toluene			0.0671	0.00328	<0.00332	0.00332	<0.00334	0.00334	<0.00331	0.00331	<0.00329	0.00329		
Ethylbenzene			0.325	0.00328	<0.00332	0.00332	<0.00334	0.00334	<0.00331	0.00331	<0.00329	0.00329		
m,p-Xylenes			0.469	0.00656	0.0342	0.00664	<0.00669	0.00669	<0.00662	0.00662	<0.00658	0.00658		
o-Xylene			0.249	0.00328	0.0213	0.00332	<0.00334	0.00334	<0.00331	0.00331	<0.00329	0.00329		
Total Xylenes			0.718	0.00328	0.0555	0.00332	<0.00334	0.00334	<0.00331	0.00331	<0.00329	0.00329		
Total BTEX			1.11	0.00328	0.0555	0.00332	<0.00334	0.00334	<0.00331	0.00331	<0.00329	0.00329		
Chloride by EPA 300		Extracted:	Nov-28-17 11:00		Nov-28-17 11:00		Nov-28-17 11:00		Nov-28-17 11:00		Nov-28-17 11:00		Nov-28-17 11:00	
		Analyzed:	Nov-28-17 15:06		Nov-28-17 15:12		Nov-28-17 15:18		Nov-28-17 15:23		Nov-28-17 15:41		Nov-28-17 15:47	
		Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride			329	4.92	29.9	4.99	16.6	4.96	85.6	4.90	312	4.91	111	4.92
TPH By SW8015 Mod		Extracted:	Nov-22-17 08:00		Nov-22-17 08:00		Nov-22-17 08:00		Nov-22-17 08:00		Nov-22-17 08:00			
		Analyzed:	Nov-22-17 15:53		Nov-22-17 16:53		Nov-22-17 14:13		Nov-22-17 14:33		Nov-22-17 14:54			
		Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL		
Gasoline Range Hydrocarbons (GRO)			413	150	85.9	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0		
Diesel Range Organics (DRO)			16100	150	1180	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0		
Oil Range Hydrocarbons (ORO)			3540	150	213	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0		
Total TPH			20100	150	1480	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0		

Houston - Dallas - San Antonio - Atlanta - Tampa - Boca Raton - Latin America - Odessa - Corpus Christi

Mike Kimmel
Client Services Manager

Final 1.000

Certificate of Analysis Summary 568956

COG Operating LLC, Artesia, NM

Project Name: BKU Satellite B

Project Id:
Contact: Aaron Lieb
Project Location: BKU Satellite B

Date Received in Lab: Fri Nov-17-17 12:00 pm
Report Date: 30-NOV-17
Project Manager: Kelsey Brooks

Analysis Requested								
	Lab Id:	568956-007						
	Field Id:	T1-9'						
	Depth:	9'-						
	Matrix:	SOIL						
	Sampled:	Nov-16-17 10:30						
BTEX by EPA 8021B	***Extracted:***	Nov-27-17 08:00						
	Analyzed:	Nov-27-17 15:05						
	Units/RL:	mg/kg	RL					
Benzene		<0.00346	0.00346					
Toluene		<0.00346	0.00346					
Ethylbenzene		<0.00346	0.00346					
m,p-Xylenes		<0.00692	0.00692					
o-Xylene		<0.00346	0.00346					
Total Xylenes		<0.00346	0.00346					
Total BTEX		<0.00346	0.00346					
Chloride by EPA 300	***Extracted:***	Nov-28-17 11:00						
	Analyzed:	Nov-28-17 16:05						
	Units/RL:	mg/kg	RL					
Chloride		157	4.97					
TPH By SW8015 Mod	***Extracted:***	Nov-22-17 08:00						
	Analyzed:	Nov-22-17 15:33						
	Units/RL:	mg/kg	RL					
Gasoline Range Hydrocarbons (GRO)		<15.0	15.0					
Diesel Range Organics (DRO)		<15.0	15.0					
Oil Range Hydrocarbons (ORO)		<15.0	15.0					
Total TPH		<15.0	15.0					

Houston - Dallas - San Antonio - Atlanta - Tampa - Boca Raton - Latin America - Odessa - Corpus Christi

Mike Kimmel
Client Services Manager

Final 1.000

Analytical Report 568956

for

COG Operating LLC

Project Manager: Aaron Lieb

BKU Satellite B

30-NOV-17

Collected By: Client

1211 W. Florida Ave, Midland TX 79701

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

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

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

30-NOV-17

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

Reference: XENCO Report No(s): **568956**
BKU Satellite B
Project Address: BKU Satellite B

Aaron Lieb:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 568956. 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. 568956 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Mike Kimmel
Client Services Manager

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

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

Sample Cross Reference 568956

COG Operating LLC, Artesia, NM

BKU Satellite B

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
T1-Surface	S	11-16-17 10:00		568956-001
T1- 1'	S	11-16-17 10:10	1'	568956-002
T1-2'	S	11-16-17 10:15	2'	568956-003
T1-3'	S	11-16-17 10:17	3'	568956-004
T1-4'	S	11-16-17 10:20	4'	568956-005
T1-6'	S	11-16-17 10:25	6'	568956-006
T1-9'	S	11-16-17 10:30	9'	568956-007

CASE NARRATIVE

Client Name: COG Operating LLC

Project Name: BKU Satellite B

Project ID:
Work Order Number(s): *568956*

Report Date: *30-NOV-17*
Date Received: *11/17/2017*

Sample receipt non conformances and comments:

Per Aaron on 11/20/17 sample #6 should be labeled TI-6ft.

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3034261 BTEX by EPA 8021B

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

Certificate of Analytical Results 568956

COG Operating LLC, Artesia, NM

BKU Satellite B

Sample Id:	**T1-Surface**	Matrix:	Soil	Date Received:	11.17.17 12.00
Lab Sample Id:	568956-001	Date Collected:	11.16.17 10.00		

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MNV			% Moisture:	
Analyst:	MNV	Date Prep:	11.28.17 11.00	Basis:	Wet Weight
Seq Number:	3034338				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**329**	4.92	mg/kg	11.28.17 15.06		1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	11.22.17 08.00	Basis:	Wet Weight
Seq Number:	3034077				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	**413**	150	mg/kg	11.22.17 15.53		10
Diesel Range Organics (DRO)	C10C28DRO	**16100**	150	mg/kg	11.22.17 15.53		10
Oil Range Hydrocarbons (ORO)	PHCG2835	**3540**	150	mg/kg	11.22.17 15.53		10
Total TPH	PHC635	**20100**	150	mg/kg	11.22.17 15.53		10

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	102	%	70-135	11.22.17 15.53	
o-Terphenyl	84-15-1	96	%	70-135	11.22.17 15.53	

Certificate of Analytical Results 568956

COG Operating LLC, Artesia, NM

BKU Satellite B

Sample Id:	**T1-Surface**	Matrix:	Soil	Date Received:	11.17.17 12.00
Lab Sample Id:	568956-001	Date Collected:	11.16.17 10.00		
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	11.27.17 08.00	Basis:	Wet Weight
Seq Number:	3034261				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00328	0.00328	mg/kg	11.27.17 13.27	U	1
Toluene	108-88-3	**0.0671**	0.00328	mg/kg	11.27.17 13.27		1
Ethylbenzene	100-41-4	**0.325**	0.00328	mg/kg	11.27.17 13.27		1
m,p-Xylenes	179601-23-1	**0.469**	0.00656	mg/kg	11.27.17 13.27		1
o-Xylene	95-47-6	**0.249**	0.00328	mg/kg	11.27.17 13.27		1
Total Xylenes	1330-20-7	**0.718**	0.00328	mg/kg	11.27.17 13.27		1
Total BTEX		**1.11**	0.00328	mg/kg	11.27.17 13.27		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	91	%	80-120	11.27.17 13.27	
1,4-Difluorobenzene	540-36-3	90	%	80-120	11.27.17 13.27	

Certificate of Analytical Results 568956

COG Operating LLC, Artesia, NM

BKU Satellite B

Sample Id:	**T1- 1'**	Matrix:	Soil	Date Received:	11.17.17 12.00
Lab Sample Id:	568956-002	Date Collected:	11.16.17 10.10	Sample Depth:	1'

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MNV			% Moisture:	
Analyst:	MNV	Date Prep:	11.28.17 11.00	Basis:	Wet Weight
Seq Number:	3034338				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**29.9**	4.99	mg/kg	11.28.17 15.12		1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	11.22.17 08.00	Basis:	Wet Weight
Seq Number:	3034077				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	**85.9**	15.0	mg/kg	11.22.17 16.53		1
Diesel Range Organics (DRO)	C10C28DRO	**1180**	15.0	mg/kg	11.22.17 16.53		1
Oil Range Hydrocarbons (ORO)	PHCG2835	**213**	15.0	mg/kg	11.22.17 16.53		1
Total TPH	PHC635	**1480**	15.0	mg/kg	11.22.17 16.53		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	11.22.17 16.53	
o-Terphenyl	84-15-1	86	%	70-135	11.22.17 16.53	

Certificate of Analytical Results 568956

COG Operating LLC, Artesia, NM

BKU Satellite B

Sample Id:	**T1- 1'**	Matrix:	Soil	Date Received:	11.17.17 12.00
Lab Sample Id:	568956-002	Date Collected:	11.16.17 10.10	Sample Depth:	1'
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	11.27.17 08.00	Basis:	Wet Weight
Seq Number:	3034261				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00332	0.00332	mg/kg	11.27.17 13.10	U	1
Toluene	108-88-3	<0.00332	0.00332	mg/kg	11.27.17 13.10	U	1
Ethylbenzene	100-41-4	<0.00332	0.00332	mg/kg	11.27.17 13.10	U	1
m,p-Xylenes	179601-23-1	**0.0342**	0.00664	mg/kg	11.27.17 13.10		1
o-Xylene	95-47-6	**0.0213**	0.00332	mg/kg	11.27.17 13.10		1
Total Xylenes	1330-20-7	**0.0555**	0.00332	mg/kg	11.27.17 13.10		1
Total BTEX		**0.0555**	0.00332	mg/kg	11.27.17 13.10		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	104	%	80-120	11.27.17 13.10	
4-Bromofluorobenzene	460-00-4	114	%	80-120	11.27.17 13.10	

Certificate of Analytical Results 568956

COG Operating LLC, Artesia, NM

BKU Satellite B

Sample Id:	**T1-2'**	Matrix:	Soil	Date Received:	11.17.17 12.00
Lab Sample Id:	568956-003	Date Collected:	11.16.17 10.15	Sample Depth:	2'

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MNV			% Moisture:	
Analyst:	MNV	Date Prep:	11.28.17 11.00	Basis:	Wet Weight
Seq Number:	3034338				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**16.6**	4.96	mg/kg	11.28.17 15.18		1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	11.22.17 08.00	Basis:	Wet Weight
Seq Number:	3034077				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	11.22.17 14.13	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	11.22.17 14.13	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	11.22.17 14.13	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	11.22.17 14.13	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	11.22.17 14.13	
o-Terphenyl	84-15-1	100	%	70-135	11.22.17 14.13	

Certificate of Analytical Results 568956

COG Operating LLC, Artesia, NM

BKU Satellite B

Sample Id:	**T1-2'**	Matrix:	Soil	Date Received:	11.17.17 12.00
Lab Sample Id:	568956-003	Date Collected:	11.16.17 10.15	Sample Depth:	2'
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	11.27.17 08.00	Basis:	Wet Weight
Seq Number:	3034261				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00334	0.00334	mg/kg	11.27.17 12.33	U	1
Toluene	108-88-3	<0.00334	0.00334	mg/kg	11.27.17 12.33	U	1
Ethylbenzene	100-41-4	<0.00334	0.00334	mg/kg	11.27.17 12.33	U	1
m,p-Xylenes	179601-23-1	<0.00669	0.00669	mg/kg	11.27.17 12.33	U	1
o-Xylene	95-47-6	<0.00334	0.00334	mg/kg	11.27.17 12.33	U	1
Total Xylenes	1330-20-7	<0.00334	0.00334	mg/kg	11.27.17 12.33	U	1
Total BTEX		<0.00334	0.00334	mg/kg	11.27.17 12.33	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	103	%	80-120	11.27.17 12.33	
4-Bromofluorobenzene	460-00-4	98	%	80-120	11.27.17 12.33	

Certificate of Analytical Results 568956

COG Operating LLC, Artesia, NM

BKU Satellite B

Sample Id:	**T1-3'**	Matrix:	Soil	Date Received:	11.17.17 12.00
Lab Sample Id:	568956-004	Date Collected:	11.16.17 10.17	Sample Depth:	3'

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MNV			% Moisture:	
Analyst:	MNV	Date Prep:	11.28.17 11.00	Basis:	Wet Weight
Seq Number:	3034338				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**85.6**	4.90	mg/kg	11.28.17 15.23		1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	11.22.17 08.00	Basis:	Wet Weight
Seq Number:	3034077				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	11.22.17 14.33	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	11.22.17 14.33	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	11.22.17 14.33	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	11.22.17 14.33	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	11.22.17 14.33	
o-Terphenyl	84-15-1	98	%	70-135	11.22.17 14.33	

Certificate of Analytical Results 568956

COG Operating LLC, Artesia, NM

BKU Satellite B

Sample Id:	**T1-3'**	Matrix:	Soil	Date Received:	11.17.17 12.00
Lab Sample Id:	568956-004	Date Collected:	11.16.17 10.17	Sample Depth:	3'
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	11.27.17 08.00	Basis:	Wet Weight
Seq Number:	3034261				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00331	0.00331	mg/kg	11.27.17 12.51	U	1
Toluene	108-88-3	<0.00331	0.00331	mg/kg	11.27.17 12.51	U	1
Ethylbenzene	100-41-4	<0.00331	0.00331	mg/kg	11.27.17 12.51	U	1
m,p-Xylenes	179601-23-1	<0.00662	0.00662	mg/kg	11.27.17 12.51	U	1
o-Xylene	95-47-6	<0.00331	0.00331	mg/kg	11.27.17 12.51	U	1
Total Xylenes	1330-20-7	<0.00331	0.00331	mg/kg	11.27.17 12.51	U	1
Total BTEX		<0.00331	0.00331	mg/kg	11.27.17 12.51	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	102	%	80-120	11.27.17 12.51	
1,4-Difluorobenzene	540-36-3	99	%	80-120	11.27.17 12.51	

Certificate of Analytical Results 568956

COG Operating LLC, Artesia, NM

BKU Satellite B

Sample Id:	**T1-4'**	Matrix:	Soil	Date Received:	11.17.17 12.00
Lab Sample Id:	568956-005	Date Collected:	11.16.17 10.20	Sample Depth:	4'

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MNV			% Moisture:	
Analyst:	MNV	Date Prep:	11.28.17 11.00	Basis:	Wet Weight
Seq Number:	3034338				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**312**	4.91	mg/kg	11.28.17 15.41		1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	11.22.17 08.00	Basis:	Wet Weight
Seq Number:	3034077				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	11.22.17 14.54	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	11.22.17 14.54	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	11.22.17 14.54	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	11.22.17 14.54	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	87	%	70-135	11.22.17 14.54	
o-Terphenyl	84-15-1	92	%	70-135	11.22.17 14.54	

Certificate of Analytical Results 568956

COG Operating LLC, Artesia, NM

BKU Satellite B

Sample Id:	**T1-4'**	Matrix:	Soil	Date Received:	11.17.17 12.00
Lab Sample Id:	568956-005	Date Collected:	11.16.17 10.20	Sample Depth:	4'
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	11.27.17 08.00	Basis:	Wet Weight
Seq Number:	3034261				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00329	0.00329	mg/kg	11.27.17 14.27	U	1
Toluene	108-88-3	<0.00329	0.00329	mg/kg	11.27.17 14.27	U	1
Ethylbenzene	100-41-4	<0.00329	0.00329	mg/kg	11.27.17 14.27	U	1
m,p-Xylenes	179601-23-1	<0.00658	0.00658	mg/kg	11.27.17 14.27	U	1
o-Xylene	95-47-6	<0.00329	0.00329	mg/kg	11.27.17 14.27	U	1
Total Xylenes	1330-20-7	<0.00329	0.00329	mg/kg	11.27.17 14.27	U	1
Total BTEX		<0.00329	0.00329	mg/kg	11.27.17 14.27	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	102	%	80-120	11.27.17 14.27	
1,4-Difluorobenzene	540-36-3	98	%	80-120	11.27.17 14.27	

Certificate of Analytical Results 568956

COG Operating LLC, Artesia, NM

BKU Satellite B

Sample Id:	**T1-6'**	Matrix:	Soil	Date Received:	11.17.17 12.00
Lab Sample Id:	568956-006	Date Collected:	11.16.17 10.25	Sample Depth:	6'
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MNV			% Moisture:	
Analyst:	MNV	Date Prep:	11.28.17 11.00	Basis:	Wet Weight
Seq Number:	3034338				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**111**	4.92	mg/kg	11.28.17 15.47		1

Certificate of Analytical Results 568956

COG Operating LLC, Artesia, NM

BKU Satellite B

Sample Id:	**T1-9'**	Matrix:	Soil	Date Received:	11.17.17 12.00
Lab Sample Id:	568956-007	Date Collected:	11.16.17 10.30	Sample Depth:	9'

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MNV			% Moisture:	
Analyst:	MNV	Date Prep:	11.28.17 11.00	Basis:	Wet Weight
Seq Number:	3034338				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**157**	4.97	mg/kg	11.28.17 16.05		1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	11.22.17 08.00	Basis:	Wet Weight
Seq Number:	3034077				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	11.22.17 15.33	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	11.22.17 15.33	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	11.22.17 15.33	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	11.22.17 15.33	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	90	%	70-135	11.22.17 15.33	
o-Terphenyl	84-15-1	94	%	70-135	11.22.17 15.33	

Certificate of Analytical Results 568956

COG Operating LLC, Artesia, NM

BKU Satellite B

Sample Id:	**T1-9'**	Matrix:	Soil	Date Received:	11.17.17 12.00
Lab Sample Id:	568956-007	Date Collected:	11.16.17 10.30	Sample Depth:	9'
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	11.27.17 08.00	Basis:	Wet Weight
Seq Number:	3034261				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00346	0.00346	mg/kg	11.27.17 15.05	U	1
Toluene	108-88-3	<0.00346	0.00346	mg/kg	11.27.17 15.05	U	1
Ethylbenzene	100-41-4	<0.00346	0.00346	mg/kg	11.27.17 15.05	U	1
m,p-Xylenes	179601-23-1	<0.00692	0.00692	mg/kg	11.27.17 15.05	U	1
o-Xylene	95-47-6	<0.00346	0.00346	mg/kg	11.27.17 15.05	U	1
Total Xylenes	1330-20-7	<0.00346	0.00346	mg/kg	11.27.17 15.05	U	1
Total BTEX		<0.00346	0.00346	mg/kg	11.27.17 15.05	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	100	%	80-120	11.27.17 15.05	
4-Bromofluorobenzene	460-00-4	100	%	80-120	11.27.17 15.05	

Flagging Criteria

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

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

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

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

F RPD exceeded lab control limits.

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

U Analyte was not detected.

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

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

K Sample analyzed outside of recommended hold time.

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

+ 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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2525 W. Huntington Dr. - Suite 102, Tempe AZ 85282	(602) 437-0330	

QC Summary 568956

COG Operating LLC

BKU Satellite B

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3034338 — Matrix: Solid — Date Prep: 11.28.17
MB Sample Id: 7635005-1-BLK — LCS Sample Id: 7635005-1-BKS — LCSD Sample Id: 7635005-1-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	251	100	266	106	90-110	6	20	mg/kg	11.28.17 13:38	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3034338 — Matrix: Soil — Date Prep: 11.28.17
Parent Sample Id: 568955-002 — MS Sample Id: 568955-002 S — MSD Sample Id: 568955-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	11.5	247	266	103	267	103	90-110	0	20	mg/kg	11.28.17 14:06	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3034338 — Matrix: Soil — Date Prep: 11.28.17
Parent Sample Id: 568956-004 — MS Sample Id: 568956-004 S — MSD Sample Id: 568956-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	85.6	245	345	106	341	104	90-110	1	20	mg/kg	11.28.17 15:29	

Analytical Method: TPH By SW8015 Mod — Prep Method: TX1005P
Seq Number: 3034077 — Matrix: Solid — Date Prep: 11.22.17
MB Sample Id: 7634875-1-BLK — LCS Sample Id: 7634875-1-BKS — LCSD Sample Id: 7634875-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	1000	999	100	979	98	70-135	2	35	mg/kg	11.22.17 11:27	
Diesel Range Organics (DRO)	<15.0	1000	1030	103	1010	101	70-135	2	35	mg/kg	11.22.17 11:27	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	86		89		99		70-135	%	11.22.17 11:27
o-Terphenyl	91		114		109		70-135	%	11.22.17 11:27

QC Summary 568956

COG Operating LLC

BKU Satellite B

Analytical Method: TPH By SW8015 Mod — Prep Method: TX1005P
Seq Number: 3034077 — Matrix: Soil — Date Prep: 11.22.17
Parent Sample Id: 568179-057 — MS Sample Id: 568179-057 S — MSD Sample Id: 568179-057 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	235	998	949	72	1030	80	70-135	8	35	mg/kg	11.22.17 12:52	
Diesel Range Organics (DRO)	1440	998	1860	42	2000	56	70-135	7	35	mg/kg	11.22.17 12:52	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	104		111		70-135	%	11.22.17 12:52
o-Terphenyl	102		107		70-135	%	11.22.17 12:52

Analytical Method: BTEX by EPA 8021B — Prep Method: SW5030B
Seq Number: 3034261 — Matrix: Solid — Date Prep: 11.27.17
MB Sample Id: 7634983-1-BLK — LCS Sample Id: 7634983-1-BKS — LCSD Sample Id: 7634983-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.0998	0.108	108	0.111	111	70-130	3	35	mg/kg	11.27.17 08:19	
Toluene	<0.00200	0.0998	0.105	105	0.108	108	70-130	3	35	mg/kg	11.27.17 08:19	
Ethylbenzene	<0.00200	0.0998	0.110	110	0.112	112	71-129	2	35	mg/kg	11.27.17 08:19	
m,p-Xylenes	<0.00399	0.200	0.209	105	0.214	107	70-135	2	35	mg/kg	11.27.17 08:19	
o-Xylene	<0.00200	0.0998	0.102	102	0.104	104	71-133	2	35	mg/kg	11.27.17 08:19	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	96		104		103		80-120	%	11.27.17 08:19
4-Bromofluorobenzene	84		102		101		80-120	%	11.27.17 08:19

Analytical Method: BTEX by EPA 8021B — Prep Method: SW5030B
Seq Number: 3034261 — Matrix: Soil — Date Prep: 11.27.17
Parent Sample Id: 568956-007 — MS Sample Id: 568956-007 S — MSD Sample Id: 568956-007 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00353	0.177	0.178	101	0.180	103	70-130	1	35	mg/kg	11.27.17 08:55	
Toluene	<0.00353	0.177	0.173	98	0.175	100	70-130	1	35	mg/kg	11.27.17 08:55	
Ethylbenzene	<0.00353	0.177	0.181	102	0.181	103	71-129	0	35	mg/kg	11.27.17 08:55	
m,p-Xylenes	<0.00707	0.353	0.346	98	0.346	99	70-135	0	35	mg/kg	11.27.17 08:55	
o-Xylene	<0.00353	0.177	0.170	96	0.169	97	71-133	1	35	mg/kg	11.27.17 08:55	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	103		102		80-120	%	11.27.17 08:55
4-Bromofluorobenzene	110		104		80-120	%	11.27.17 08:55

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Page 1 Of 1

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Xenco Quote #
Xenco Job # 568956

Client / Reporting Information

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

Project Information

Project Name/Number: BKU Satellite B
Project Location: BKU Satellite B
Invoice To: COG Operating LLC, Attn: Robert Mcneill, 600 W. Illinois, Midland TX 79701
PO Number:

Analytical Information

Matrix Codes

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

No.	Field ID / Point of Collection	Collection: Sample Depth	Collection: Date	Collection: Time	Matrix	# of bottles	Number of preserved bottles: HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	TPH/ EXTENDED	BTEX	Chloride	Field Comments
1	TI - SURFACE	SURF	11/16/17	10:00 AM	S	1									X	X	X	
2	TI - 1'	1'		10:10		1									X	X	X	
3	TI - 2'	2'		10:15		1									X	X	X	
4	TI - 3'	3'		10:17		1									X	X	X	
5	TI - 4'	4'		10:20		1									X	X	X	
6	TI - 5'	5'		10:25		1											X	
7	TI - 9'	9'		10:30		1									X	X	X	
8																		
9																		
10																		

Turnaround Time (Business days)

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

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

Data Deliverable Information

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

Notes:

Temp: 2.1 IR ID:R-8
CF:(0-6: -0.2°C)
(6-23: +0.2°C)
Corrected Temp: 1.9

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

	Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1		11/17/17 9:50 AM	Sid Butler 11-17-17 9:50A	Sid Butler 11-17-17 12:N		
2						
3	Relinquished by:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
4						
5	Relinquished by:	Date Time:	Received By:	Custody Seal #	Preserved where applicable	On Ice / Cooler Temp. / Thermo. Corr. Factor
						4.0°

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

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: COG Operating LLC

Date/ Time Received: 11/17/2017 12:00:00 PM

Work Order #: 568956

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

Temperature Measuring device used : R8

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	1.9
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seals intact on shipping container/ cooler?	**N/A**
#5 Custody Seals intact on sample bottles?	**N/A**
#6*Custody Seals Signed and dated?	**N/A**
#7 *Chain of Custody present?	**Yes**
#8 Any missing/extra samples?	**No**
#9 Chain of Custody signed when relinquished/ received?	**Yes**
#10 Chain of Custody agrees with sample labels/matrix?	**Yes**
#11 Container label(s) legible and intact?	**Yes**
#12 Samples in proper container/ bottle?	**Yes**
#13 Samples properly preserved?	**Yes**
#14 Sample container(s) intact?	**Yes**
#15 Sufficient sample amount for indicated test(s)?	**Yes**
#16 All samples received within hold time?	**Yes**
#17 Subcontract of sample(s)?	**No**
#18 Water VOC samples have zero headspace?	**N/A**

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

Analyst: PH Device/Lot#:

Checklist completed by: Connie Hernandez Date: 11/20/2017

Checklist reviewed by: Holly Taylor Date: 11/22/2017

Certificate of Analysis Summary 574883

COG Operating LLC, Artesia, NM

Project Name: Burch Keely Unit .Sat B

Project Id:
Contact: Dakota Neel
Project Location: Eddy County,NM

Date Received in Lab: Mon Jan-29-18 03:00 pm
Report Date: 05-FEB-18
Project Manager: Kelsey Brooks

Analysis Requested								
	Lab Id:	574883-001						
	Field Id:	T2						
	Depth:	16- ft						
	Matrix:	SOIL						
	Sampled:	Jan-24-18 10:00						
BTEX by EPA 8021B	***Extracted:***	Feb-01-18 07:00						
	Analyzed:	Feb-01-18 15:00						
	Units/RL:	mg/kg	RL					
Benzene		0.225	0.201					
Toluene		9.01	0.201					
Ethylbenzene		14.2	0.201					
m,p-Xylenes		15.3	0.402					
o-Xylene		6.93	0.201					
Total Xylenes		22.2	0.201					
Total BTEX		45.7	0.201					
Chloride by EPA 300	***Extracted:***	Feb-01-18 09:00						
	Analyzed:	Feb-01-18 12:35						
	Units/RL:	mg/kg	RL					
Chloride		5070	24.9					
TPH By SW8015 Mod	***Extracted:***	Jan-30-18 16:00						
	Analyzed:	Jan-31-18 06:56						
	Units/RL:	mg/kg	RL					
Gasoline Range Hydrocarbons (GRO)		867	74.8					
Diesel Range Organics (DRO)		1800	74.8					
Oil Range Hydrocarbons (ORO)		253	74.8					
Total TPH		2920	74.8					

Kelsey Brooks
Project Manager

Final 1.000

Analytical Report 574883

for

COG Operating LLC

Project Manager: Dakota Neel

Burch Keely Unit .Sat B

05-FEB-18

Collected By: Client

1211 W. Florida Ave, Midland TX 79701

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

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

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

05-FEB-18

Project Manager: **Dakota Neel**
COG Operating LLC
2407 Pecos Avenue
Artesia, NM 88210

Reference: XENCO Report No(s): **574883**
Burch Keely Unit .Sat B
Project Address: Eddy County,NM

Dakota Neel:

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) 574883. 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. 574883 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Kelsey Brooks
Project Manager

Sample Cross Reference 574883

COG Operating LLC, Artesia, NM

Burch Keely Unit .Sat B

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
T2	S	01-24-18 10:00	16 ft	574883-001

CASE NARRATIVE

Client Name: COG Operating LLC

Project Name: Burch Keely Unit .Sat B

Project ID:
Work Order Number(s): *574883*

Report Date: *05-FEB-18*
Date Received: *01/29/2018*

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3039856 BTEX by EPA 8021B

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

Certificate of Analytical Results 574883

COG Operating LLC, Artesia, NM

Burch Keely Unit .Sat B

Sample Id:	**T2**	Matrix:	Soil	Date Received:	01.29.18 15.00
Lab Sample Id:	574883-001	Date Collected:	01.24.18 10.00	Sample Depth:	16 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	OJS			% Moisture:	
Analyst:	OJS	Date Prep:	02.01.18 09.00	Basis:	Wet Weight
Seq Number:	3039878				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**5070**	24.9	mg/kg	02.01.18 12.35		5

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	01.30.18 16.00	Basis:	Wet Weight
Seq Number:	3039742				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	**867**	74.8	mg/kg	01.31.18 06.56		5
Diesel Range Organics (DRO)	C10C28DRO	**1800**	74.8	mg/kg	01.31.18 06.56		5
Oil Range Hydrocarbons (ORO)	PHCG2835	**253**	74.8	mg/kg	01.31.18 06.56		5
Total TPH	PHC635	**2920**	74.8	mg/kg	01.31.18 06.56		5

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	108	%	70-135	01.31.18 06.56	
o-Terphenyl	84-15-1	96	%	70-135	01.31.18 06.56	

Certificate of Analytical Results 574883

COG Operating LLC, Artesia, NM

Burch Keely Unit .Sat B

Sample Id:	**T2**	Matrix:	Soil	Date Received:	01.29.18 15.00
Lab Sample Id:	574883-001	Date Collected:	01.24.18 10.00	Sample Depth:	16 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	02.01.18 07.00	Basis:	Wet Weight
Seq Number:	3039856				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	**0.225**	0.201	mg/kg	02.01.18 15.00		100
Toluene	108-88-3	**9.01**	0.201	mg/kg	02.01.18 15.00		100
Ethylbenzene	100-41-4	**14.2**	0.201	mg/kg	02.01.18 15.00		100
m,p-Xylenes	179601-23-1	**15.3**	0.402	mg/kg	02.01.18 15.00		100
o-Xylene	95-47-6	**6.93**	0.201	mg/kg	02.01.18 15.00		100
Total Xylenes	1330-20-7	**22.2**	0.201	mg/kg	02.01.18 15.00		100
Total BTEX		**45.7**	0.201	mg/kg	02.01.18 15.00		100

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	100	%	80-120	02.01.18 15.00	
4-Bromofluorobenzene	460-00-4	98	%	80-120	02.01.18 15.00	

Flagging Criteria

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

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

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

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

F RPD exceeded lab control limits.

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

U Analyte was not detected.

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

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

K Sample analyzed outside of recommended hold time.

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

+ NELAC certification not offered for this compound.

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

QC Summary 574883

COG Operating LLC

Burch Keely Unit .Sat B

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3039878 — Matrix: Solid — Date Prep: 02.01.18
MB Sample Id: 7638393-1-BLK — LCS Sample Id: 7638393-1-BKS — LCSD Sample Id: 7638393-1-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	274	110	275	110	90-110	0	20	mg/kg	02.01.18 09:41	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3039878 — Matrix: Soil — Date Prep: 02.01.18
Parent Sample Id: 574882-009 — MS Sample Id: 574882-009 S — MSD Sample Id: 574882-009 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	38.6	250	301	105	311	109	90-110	3	20	mg/kg	02.01.18 11:39	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3039878 — Matrix: Soil — Date Prep: 02.01.18
Parent Sample Id: 575054-001 — MS Sample Id: 575054-001 S — MSD Sample Id: 575054-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	232	93	239	96	90-110	3	20	mg/kg	02.01.18 10:02	

Analytical Method: TPH By SW8015 Mod — Prep Method: TX1005P
Seq Number: 3039742 — Matrix: Solid — Date Prep: 01.30.18
MB Sample Id: 7638359-1-BLK — LCS Sample Id: 7638359-1-BKS — LCSD Sample Id: 7638359-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	1000	868	87	857	86	70-135	1	35	mg/kg	01.31.18 00:08	
Diesel Range Organics (DRO)	<15.0	1000	933	93	916	92	70-135	2	35	mg/kg	01.31.18 00:08	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	107		110		108		70-135	%	01.31.18 00:08
o-Terphenyl	111		100		99		70-135	%	01.31.18 00:08

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

QC Summary 574883

COG Operating LLC

Burch Keely Unit .Sat B

Analytical Method: TPH By SW8015 Mod — Prep Method: TX1005P
Seq Number: 3039742 — Matrix: Soil — Date Prep: 01.30.18
Parent Sample Id: 574882-002 — MS Sample Id: 574882-002 S — MSD Sample Id: 574882-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	997	887	89	919	92	70-135	4	35	mg/kg	01.31.18 01:34	
Diesel Range Organics (DRO)	62.6	997	896	84	1020	96	70-135	13	35	mg/kg	01.31.18 01:34	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	106		116		70-135	%	01.31.18 01:34
o-Terphenyl	90		103		70-135	%	01.31.18 01:34

Analytical Method: BTEX by EPA 8021B — Prep Method: SW5030B
Seq Number: 3039856 — Matrix: Solid — Date Prep: 02.01.18
MB Sample Id: 7638412-1-BLK — LCS Sample Id: 7638412-1-BKS — LCSD Sample Id: 7638412-1-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	0.0856	86	0.0860	86	70-130	0	35	mg/kg	02.01.18 04:27	
Toluene	<0.00200	0.100	0.0890	89	0.0901	90	70-130	1	35	mg/kg	02.01.18 04:27	
Ethylbenzene	<0.00200	0.100	0.0947	95	0.0950	95	71-129	0	35	mg/kg	02.01.18 04:27	
m,p-Xylenes	<0.00401	0.200	0.186	93	0.187	94	70-135	1	35	mg/kg	02.01.18 04:27	
o-Xylene	<0.00200	0.100	0.0933	93	0.0935	94	71-133	0	35	mg/kg	02.01.18 04:27	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	84		89		89		80-120	%	02.01.18 04:27
4-Bromofluorobenzene	83		95		98		80-120	%	02.01.18 04:27

Analytical Method: BTEX by EPA 8021B — Prep Method: SW5030B
Seq Number: 3039856 — Matrix: Soil — Date Prep: 02.01.18
Parent Sample Id: 574885-007 — MS Sample Id: 574885-007 S — MSD Sample Id: 574885-007 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00201	0.100	0.0739	74	0.0754	75	70-130	2	35	mg/kg	02.01.18 05:05	
Toluene	<0.00201	0.100	0.0770	77	0.0781	77	70-130	1	35	mg/kg	02.01.18 05:05	
Ethylbenzene	<0.00201	0.100	0.0785	79	0.0799	79	71-129	2	35	mg/kg	02.01.18 05:05	
m,p-Xylenes	<0.00402	0.201	0.153	76	0.156	77	70-135	2	35	mg/kg	02.01.18 05:05	
o-Xylene	<0.00201	0.100	0.0777	78	0.0783	78	71-133	1	35	mg/kg	02.01.18 05:05	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	92		89		80-120	%	02.01.18 05:05
4-Bromofluorobenzene	108		93		80-120	%	02.01.18 05:05

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

CHAIN OF CUSTODY

Page 1 Of 1

XENCO LABORATORIES

Setting the Standard since 1990

Stafford,Texas (281-240-4200)

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San Antonio, Texas (210-509-3334)

Midland, Texas (432-704-5251)

www.xenco.com

Phoenix, Arizona (480-355-0900)

Xenco Quote #

Xenco Job # 574883

Client / Reporting Information

Company Name / Branch: COG Operating LLC

Company Address: 2407 Pecos Ave. Artesia NM 88210

Email: dneel2@concho.com; slhitchcock@concho.com; cgray@concho.com; rhaskell@concho.com

Phone No: 575-746-2010

Project Contact: DAKOTA NEEL

Samplers's Name:

Project Information

Project Name/Number: BURCH KEELY UNIT SAT B

Project Location: EDDY COUNTY, NM

Invoice To: COG Operating LLC
Attn: Robert Mcneill
600 W. Illinois Ave.
Midland TX, 79701

PO Number:

Analytical Information

Matrix Codes

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

No.	Field ID / Point of Collection	Collection: Sample Depth	Collection: Date	Collection: Time	Matrix	# of bottles	Number of preserved bottles: HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	TPH Extended	BTEX	CHLORIDES	Field Comments
1	T2	16'	1-24-18	10:00 AM	S										X	X	X	
2																		
3																		
4																		
5																		
6																		
7																		
8																		
9																		
10																		

Turnaround Time (Business days)

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

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

Data Deliverable Information

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

FED-E

Notes:

Temp: 2.9 IR ID:R-8
CF:(0-6: -0.2°C)
(6-23: +0.2°C)
Corrected Temp: 2.7

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

	Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1	[signature]	1-27-18 1000 AM	Sid Butler 1-29-18 1:00p	2 Sid Butler 1-29-18 3:00p		2 [signature] 01-30-18 10:30
3	Relinquished by:	Date Time:	Received By:	Relinquished By: 4	Date Time:	Received By: 4
5	Relinquished by:	Date Time:	Received By: 5	Custody Seal #	Preserved where applicable	On Ice: X Cooler Temp. Thermo. Corr. Factor

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

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: COG Operating LLC

Date/ Time Received: 01/29/2018 03:00:00 PM

Work Order #: 574883

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

Temperature Measuring device used : R8

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	2.7
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seals intact on shipping container/ cooler?	**N/A**
#5 Custody Seals intact on sample bottles?	**N/A**
#6*Custody Seals Signed and dated?	**N/A**
#7 *Chain of Custody present?	**Yes**
#8 Any missing/extra samples?	**No**
#9 Chain of Custody signed when relinquished/ received?	**Yes**
#10 Chain of Custody agrees with sample labels/matrix?	**Yes**
#11 Container label(s) legible and intact?	**Yes**
#12 Samples in proper container/ bottle?	**Yes**
#13 Samples properly preserved?	**Yes**
#14 Sample container(s) intact?	**Yes**
#15 Sufficient sample amount for indicated test(s)?	**Yes**
#16 All samples received within hold time?	**Yes**
#17 Subcontract of sample(s)?	**No**
#18 Water VOC samples have zero headspace?	**N/A**

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

Analyst: PH Device/Lot#:

Checklist completed by: Shawnee Smith Date: 01/30/2018
Shawnee Smith

Checklist reviewed by: Kelsey Brooks Date: 01/30/2018
Kelsey Brooks

Analytical Report 580037

for

COG Operating, LLC

Project Manager: Becky Haskell

BKU Satellite B

28-MAR-18

Collected By: Client

6701 Aberdeen, Suite 9 Lubbock, TX 79424

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

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

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

28-MAR-18

Project Manager: **Becky Haskell**
COG Operating, LLC
600 W Illinois
Midland, TX 79701

Reference: XENCO Report No(s): **580037**
BKU Satellite B
Project Address: BKU Satellite B

Becky Haskell:

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) 580037. 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. 580037 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer

Jessica Kramer
Project Assistant

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 580037

COG Operating, LLC, Midland, TX

BKU Satellite B

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SB1 @ 14	S	03-19-18 14:15		580037-001
SB1 @ 20	S	03-19-18 14:30		580037-002
SB1 @ 25	S	03-19-18 14:45		580037-003
SB1 @ 30	S	03-19-18 14:50		580037-004
SB1 @ 35	S	03-19-18 15:00		580037-005
SB1 @ 40	S	03-19-18 15:08		580037-006
SB1 @ 45	S	03-19-18 15:17		580037-007

Version: 1.%

CASE NARRATIVE

Client Name: COG Operating, LLC

Project Name: BKU Satellite B

Project ID:
Work Order Number(s): *580037*

Report Date: *28-MAR-18*
Date Received: *03/22/2018*

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3044730 BTEX by EPA 8021B
Surrogate a,a,a-Trifluorotoluene recovered above QC limits. Matrix interferences is suspected; data confirmed by re-analysis.
Samples affected are: 580037-002.
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3044820 Inorganic Anions by EPA 300
Lab Sample ID 580038-001 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered above QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 580037-001, -002, -003, -004, -005, -006, -007.
The Laboratory Control Sample for Chloride is within laboratory Control Limits, therefore the data was accepted.

Certificate of Analysis Summary 580037

COG Operating, LLC, Midland, TX

Project Name: BKU Satellite B

Project Id:
Contact: Becky Haskell
Project Location: BKU Satellite B

Date Received in Lab: Thu Mar-22-18 09:10 am
Report Date: 28-MAR-18
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	580037-001		580037-002		580037-003		580037-004		580037-005		580037-006	
	Field Id:	SB1 @ 14		SB1 @ 20		SB1 @ 25		SB1 @ 30		SB1 @ 35		SB1 @ 40	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Mar-19-18 14:15		Mar-19-18 14:30		Mar-19-18 14:45		Mar-19-18 14:50		Mar-19-18 15:00		Mar-19-18 15:08	
BTEX by EPA 8021B	***Extracted:***	Mar-23-18 12:30		Mar-23-18 12:30		Mar-23-18 12:30		Mar-23-18 12:30		Mar-23-18 12:30		Mar-23-18 12:30	
	Analyzed:	Mar-23-18 22:32		Mar-23-18 22:04		Mar-23-18 21:37		Mar-23-18 21:10		Mar-23-18 20:43		Mar-23-18 20:16	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		0.438	0.0952	4.44	0.0896	<0.0193	0.0193	<0.0189	0.0189	<0.0190	0.0190	<0.0189	0.0189
Toluene		4.50	0.0952	25.4	0.0896	<0.0193	0.0193	<0.0189	0.0189	<0.0190	0.0190	<0.0189	0.0189
Ethylbenzene		8.21	0.0952	30.8	0.0896	0.0425	0.0193	<0.0189	0.0189	<0.0190	0.0190	<0.0189	0.0189
m,p-Xylenes		11.4	0.190	37.6	0.179	0.0792	0.0386	<0.0378	0.0378	<0.0381	0.0381	<0.0377	0.0377
o-Xylene		4.34	0.0952	22.2	0.0896	0.0483	0.0193	<0.0189	0.0189	<0.0190	0.0190	<0.0189	0.0189
Total Xylenes		15.7	0.0952	59.8	0.0896	0.128	0.0193	<0.0189	0.0189	<0.0190	0.0190	<0.0189	0.0189
Total BTEX		28.9	0.0952	120	0.0896	0.170	0.0193	<0.0189	0.0189	<0.0190	0.0190	<0.0189	0.0189
Chloride by EPA 300	***Extracted:***	Mar-26-18 09:30		Mar-26-18 09:30		Mar-26-18 09:30		Mar-26-18 09:30		Mar-26-18 09:30		Mar-26-18 09:30	
	Analyzed:	Mar-26-18 15:30		Mar-26-18 16:20		Mar-26-18 16:33		Mar-26-18 16:45		Mar-26-18 16:57		Mar-26-18 17:10	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		6280 D	1250	5890	1250	2440	250	1390	125	409	125	207	125
TPH by SW8015 Mod SUB: T104704400-18-14	***Extracted:***	Mar-23-18 12:00		Mar-23-18 12:00		Mar-23-18 12:00		Mar-23-18 12:00		Mar-23-18 12:00		Mar-23-18 12:00	
	Analyzed:	Mar-24-18 02:04		Mar-24-18 02:32		Mar-24-18 02:58		Mar-24-18 03:25		Mar-24-18 03:52		Mar-24-18 04:19	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons (GRO)		714	74.8	1920	74.9	22.9	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0
Diesel Range Organics (DRO)		2590	74.8	5170	74.9	214	15.0	17.1	15.0	<15.0	15.0	<15.0	15.0
Oil Range Hydrocarbons (ORO)		117	74.8	234	74.9	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0
Total TPH		3420	74.8	7320	74.9	237	15.0	17.1	15.0	<15.0	15.0	<15.0	15.0

Houston - Dallas - San Antonio - Atlanta - Tampa - Boca Raton - Latin America - Odessa - Corpus Christi

Version: 1.%

Jessica Kramer
Project Assistant

Final 1.000

Certificate of Analysis Summary 580037

COG Operating, LLC, Midland, TX

Project Name: BKU Satellite B

Project Id:
Contact: Becky Haskell
Project Location: BKU Satellite B

Date Received in Lab: Thu Mar-22-18 09:10 am
Report Date: 28-MAR-18
Project Manager: Jessica Kramer

Analysis Requested								
	Lab Id:	580037-007						
	Field Id:	SB1 @ 45						
	Depth:							
	Matrix:	SOIL						
	Sampled:	Mar-19-18 15:17						
BTEX by EPA 8021B	***Extracted:***	Mar-23-18 12:30						
	Analyzed:	Mar-23-18 18:26						
	Units/RL:	mg/kg	RL					
Benzene		<0.0190	0.0190					
Toluene		<0.0190	0.0190					
Ethylbenzene		<0.0190	0.0190					
m,p-Xylenes		<0.0380	0.0380					
o-Xylene		<0.0190	0.0190					
Total Xylenes		<0.0190	0.0190					
Total BTEX		<0.0190	0.0190					
Chloride by EPA 300	***Extracted:***	Mar-26-18 09:30						
	Analyzed:	Mar-26-18 17:22						
	Units/RL:	mg/kg	RL					
Chloride		<25.0	25.0					
TPH by SW8015 Mod SUB: T104704400-18-14	***Extracted:***	Mar-23-18 12:00						
	Analyzed:	Mar-24-18 04:46						
	Units/RL:	mg/kg	RL					
Gasoline Range Hydrocarbons (GRO)		<15.0	15.0					
Diesel Range Organics (DRO)		<15.0	15.0					
Oil Range Hydrocarbons (ORO)		<15.0	15.0					
Total TPH		<15.0	15.0					

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Version: 1.%

Jessica Kramer
Project Assistant

Final 1.000

Flagging Criteria

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

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

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

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

F RPD exceeded lab control limits.

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

U Analyte was not detected.

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

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

K Sample analyzed outside of recommended hold time.

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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

Form 2 - Surrogate Recoveries

Project Name: BKU Satellite B

Work Orders : 580037,

Project ID:

Lab Batch #: 3044730 **Sample:** 580037-007 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/23/18 18:26

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0999	0.100	100	68-120	
a,a,a-Trifluorotoluene	1.78	1.90	94	71-121	

Lab Batch #: 3044730 **Sample:** 580037-006 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/23/18 20:16

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0982	0.100	98	68-120	
a,a,a-Trifluorotoluene	1.83	1.89	97	71-121	

Lab Batch #: 3044730 **Sample:** 580037-005 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/23/18 20:43

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0969	0.100	97	68-120	
a,a,a-Trifluorotoluene	1.76	1.90	93	71-121	

Lab Batch #: 3044730 **Sample:** 580037-004 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/23/18 21:10

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0985	0.100	99	68-120	
a,a,a-Trifluorotoluene	1.75	1.89	93	71-121	

Lab Batch #: 3044730 **Sample:** 580037-003 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/23/18 21:37

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0988	0.100	99	68-120	
a,a,a-Trifluorotoluene	1.82	1.93	94	71-121	

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

Version: 1.%

Form 2 - Surrogate Recoveries

Project Name: BKU Satellite B

Work Orders : 580037,

Project ID:

Lab Batch #: 3044730 **Sample:** 580037-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/23/18 22:04

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.119	0.100	119	68-120	
a,a,a-Trifluorotoluene	19.2	8.96	214	71-121	**

Lab Batch #: 3044730 **Sample:** 580037-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/23/18 22:32

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0882	0.100	88	68-120	
a,a,a-Trifluorotoluene	7.10	9.52	75	71-121	

Lab Batch #: 3044787 **Sample:** 580037-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/24/18 02:04

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	124	99.7	124	70-135	
o-Terphenyl	64.0	49.9	128	70-135	

Lab Batch #: 3044787 **Sample:** 580037-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/24/18 02:32

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	122	99.9	122	70-135	
o-Terphenyl	41.0	50.0	82	70-135	

Lab Batch #: 3044787 **Sample:** 580037-003 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/24/18 02:58

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	96.7	99.7	97	70-135	
o-Terphenyl	49.5	49.9	99	70-135	

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

Version: 1.%

Form 2 - Surrogate Recoveries

Project Name: BKU Satellite B

Work Orders : 580037,

Project ID:

Lab Batch #: 3044787 **Sample:** 580037-004 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/24/18 03:25

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	102	100	102	70-135	
o-Terphenyl	50.9	50.0	102	70-135	

Lab Batch #: 3044787 **Sample:** 580037-005 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/24/18 03:52

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	97.5	99.8	98	70-135	
o-Terphenyl	48.0	49.9	96	70-135	

Lab Batch #: 3044787 **Sample:** 580037-006 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/24/18 04:19

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	106	99.8	106	70-135	
o-Terphenyl	52.0	49.9	104	70-135	

Lab Batch #: 3044787 **Sample:** 580037-007 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/24/18 04:46

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	95.5	99.9	96	70-135	
o-Terphenyl	46.8	50.0	94	70-135	

Lab Batch #: 3044787 **Sample:** 7641465-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 03/23/18 15:06

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	100	100	100	70-135	
o-Terphenyl	51.1	50.0	102	70-135	

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

Version: 1.%

Form 2 - Surrogate Recoveries

Project Name: BKU Satellite B

Work Orders : 580037,

Project ID:

Lab Batch #: 3044730 **Sample:** 7641359-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 03/23/18 17:58

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0877	0.100	88	68-120	
a,a,a-Trifluorotoluene	1.76	2.00	88	71-121	

Lab Batch #: 3044787 **Sample:** 7641465-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 03/23/18 15:34

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	107	100	107	70-135	
o-Terphenyl	51.9	50.0	104	70-135	

Lab Batch #: 3044730 **Sample:** 7641359-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 03/23/18 16:36

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0885	0.100	89	68-120	
a,a,a-Trifluorotoluene	1.54	2.00	77	71-121	

Lab Batch #: 3044787 **Sample:** 7641465-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 03/23/18 15:59

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	107	100	107	70-135	
o-Terphenyl	51.2	50.0	102	70-135	

Lab Batch #: 3044730 **Sample:** 7641359-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 03/23/18 17:04

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0875	0.100	88	68-120	
a,a,a-Trifluorotoluene	1.60	2.00	80	71-121	

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

Version: 1.%

Form 2 - Surrogate Recoveries

Project Name: BKU Satellite B

Work Orders : 580037,

Project ID:

Lab Batch #: 3044730 **Sample:** 580037-007 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/23/18 18:53

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0951	0.100	95	68-120	
a,a,a-Trifluorotoluene	1.68	1.98	85	71-121	

Lab Batch #: 3044787 **Sample:** 579817-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/23/18 19:16

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	111	100	111	70-135	
o-Terphenyl	50.1	50.0	100	70-135	

Lab Batch #: 3044730 **Sample:** 580037-007 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/23/18 19:21

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0945	0.100	95	68-120	
a,a,a-Trifluorotoluene	1.81	2.00	91	71-121	

Lab Batch #: 3044787 **Sample:** 579817-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/23/18 19:44

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	113	99.9	113	70-135	
o-Terphenyl	50.4	50.0	101	70-135	

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

Version: 1.%

BS / BSD Recoveries

Project Name: BKU Satellite B

Work Order #: 580037 **Project ID:**

Analyst: MIT **Date Prepared:** 03/23/2018 **Date Analyzed:** 03/23/2018

Lab Batch ID: 3044730 **Sample:** 7641359-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.0200	2.00	1.86	93	2.00	1.87	94	1	55-120	20	
Toluene	<0.0200	2.00	1.90	95	2.00	1.86	93	2	77-120	20	
Ethylbenzene	<0.0200	2.00	1.93	97	2.00	1.87	94	3	77-120	20	
m,p-Xylenes	<0.0400	4.00	3.88	97	4.00	3.79	95	2	78-120	20	
o-Xylene	<0.0200	2.00	1.93	97	2.00	1.89	95	2	78-120	20	

Analyst: RNL **Date Prepared:** 03/26/2018 **Date Analyzed:** 03/26/2018

Lab Batch ID: 3044820 **Sample:** 7641494-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<25.0	250	269	108	250	267	107	1	90-110	20	

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

Version: 1.%

BS / BSD Recoveries

Project Name: BKU Satellite B

Work Order #: 580037 **Project ID:**

Analyst: ARM **Date Prepared:** 03/23/2018 **Date Analyzed:** 03/23/2018

Lab Batch ID: 3044787 **Sample:** 7641465-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	1000	1010	101	1000	1010	101	0	70-135	35	
Diesel Range Organics (DRO)	<15.0	1000	1050	105	1000	1050	105	0	70-135	35	

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

Version: 1.%

Form 3 - MS / MSD Recoveries

Project Name: BKU Satellite B

Work Order # : 580037 **Project ID:**

Lab Batch ID: 3044730 **QC- Sample ID:** 580037-007 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 03/23/2018 **Date Prepared:** 03/23/2018 **Analyst:** MIT

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.0198	1.98	1.77	89	2.00	1.80	90	2	54-120	25	
Toluene	<0.0198	1.98	1.85	93	2.00	1.84	92	1	57-120	25	
Ethylbenzene	<0.0198	1.98	1.97	99	2.00	1.95	98	1	58-131	25	
m,p-Xylenes	<0.0396	3.96	3.94	99	4.00	3.93	98	0	62-124	25	
o-Xylene	<0.0198	1.98	1.95	98	2.00	1.94	97	1	62-124	25	

Lab Batch ID: 3044820 **QC- Sample ID:** 580037-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 03/26/2018 **Date Prepared:** 03/26/2018 **Analyst:** RNL

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	5390	250	6150	304	250	6350	384	3	80-120	20	X

Lab Batch ID: 3044820 **QC- Sample ID:** 580038-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 03/26/2018 **Date Prepared:** 03/26/2018 **Analyst:** RNL

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	1080	250	1440	144	250	1470	156	2	80-120	20	X

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

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

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

Form 3 - MS / MSD Recoveries

Project Name: BKU Satellite B

Work Order # : 580037 **Project ID:**

Lab Batch ID: 3044787 **QC- Sample ID:** 579817-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 03/23/2018 **Date Prepared:** 03/23/2018 **Analyst:** ARM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	1000	1000	100	999	1010	101	1	70-135	35	
Diesel Range Organics (DRO)	<15.0	1000	1100	110	999	1110	111	1	70-135	35	

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

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

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

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

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

CHAIN OF CUSTODY

Page 1 Of 1

Revision 2016.1

XENCO LABORATORIES

Setting the Standard since 1990

Stafford, TX (281) 240-4200 | Dallas, TX (214) 902-0300 | El Paso, TX (915) 585-3443 | Lubbock, TX (806) 794-1296 | Midland, TX (432) 704-5440 | San Antonio, TX (210) 509-3334 | Phoenix, AZ (480) 355-0900 | Service Center- Baton Rouge, LA (832) 712-8143 | Service Center- Amarillo, TX (806) 678-4514 | Service Center- Hobbs, NM (575) 392-7550

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580037

Xenco Quote #

Xenco Job # 580037

Client / Reporting Information

Company Name / Branch: COG Operating LLC

Company Address: Attn: Robert McNeill
600 W. Illinois Ave, Midland, Texas 79701

Email: rhaskell@concho.com, dneel2@concho.com, slhitchcock@concho.com
cbrunson@bbcinternational.com

Phone No: 432-818-2372

Project Contact: Becky Haskell

Samplers's Name: Jeff Ornelas

Project Information

Project Name/Number: BKU Satellite B

Project Location: BKU Satellite B

Invoice To: COG Operating LLC
Attn: Robert McNeill
600 W. Illinois
Midland, Texas 79701

PO Number:

Analytical Information

Matrix Codes

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

No.	Field ID / Point of Collection	Collection: Sample Depth	Collection: Date	Collection: Time	Matrix	# of bottles	Number of preserved bottles: HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	TPH/EXTENDED	BTEX	CHLORIDE	Field Comments
1	SB1 @	14	3-19	215	S	1								X	X	X	X	1
2	SB1 @	20	3-19	230	S	1								X	X	X	X	2
3	SB1 @	25	3-19	245	S	1								X	X	X	X	3
4	SB1 @	30	3-19	250	S	1								X	X	X	X	4
5	SB1 @	35	3-19	300	S	1								X	X	X	X	5
6	SB1 @	40	3-19	305	S	1								X	X	X	X	6
7	SB1 @	45	3-19	317	S	1								X	X	X	X	7
8																		
9																		
10																		

Turnaround Time (Business days)

Data Deliverable Information

Notes:

- [ ] Same Day TAT
- [ ] 5 Day TAT
- [ ] Next Day EMERGENCY
- [ ] 7 Day TAT
- [ ] 2 Day EMERGENCY
- [ ] Contract TAT
- [ ] 3 Day EMERGENCY
- [ ] Level II Std QC
- [ ] Level IV (Full Data Pkg /raw data)
- [ ] Level III Std QC+ Forms
- [ ] TRRP Level IV
- [ ] Level 3 (CLP Forms)
- [ ] UST / RG -411
- [ ] Level II Report with TRRP checklist

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

FED-EX / UPS: Tracking # 6606 3911 4701

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

	Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1	Jeff Ornelas	3-20-18 9:19	Kaney Jimenez			
2				Lucy Jones	3/21/18 4:30	2
3	Relinquished by:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
			3	4		4
5	Relinquished by:	Date Time: 9:10	Received By:	Custody Seal #	Preserved where applicable	On Ice / Cooler Temp. / Thermo. Corr. Factor
		3/22/18	5 Brenda Wood			X -1.7°C 3.9/3.9 FR

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

Inter-Office Shipment

IOS Number **1058010**

Date/Time: 03/22/18 16:23
Lab# From: **Lubbock**
Lab# To: **Midland**

Created by: Brenda Ward
Delivery Priority:
Air Bill No.:

Please send report to: Jessica Kramer
Address: 6701 Aberdeen, Suite 9 Lubbock, TX 79424
Phone:
E-Mail: jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
580037-001	S	SB1 @ 14	03/19/18 14:15	SW8015MOD_NM	TPH by SW8015 Mod	03/28/18	04/02/18	JKR	PHCC10C28 PHCC28C35]	
580037-002	S	SB1 @ 20	03/19/18 14:30	SW8015MOD_NM	TPH by SW8015 Mod	03/28/18	04/02/18	JKR	PHCC10C28 PHCC28C35]	
580037-003	S	SB1 @ 25	03/19/18 14:45	SW8015MOD_NM	TPH by SW8015 Mod	03/28/18	04/02/18	JKR	PHCC10C28 PHCC28C35]	
580037-004	S	SB1 @ 30	03/19/18 14:50	SW8015MOD_NM	TPH by SW8015 Mod	03/28/18	04/02/18	JKR	PHCC10C28 PHCC28C35]	
580037-005	S	SB1 @ 35	03/19/18 15:00	SW8015MOD_NM	TPH by SW8015 Mod	03/28/18	04/02/18	JKR	PHCC10C28 PHCC28C35]	
580037-006	S	SB1 @ 40	03/19/18 15:08	SW8015MOD_NM	TPH by SW8015 Mod	03/28/18	04/02/18	JKR	PHCC10C28 PHCC28C35]	
580037-007	S	SB1 @ 45	03/19/18 15:17	SW8015MOD_NM	TPH by SW8015 Mod	03/28/18	04/02/18	JKR	PHCC10C28 PHCC28C35]	

Inter Office Shipment or Sample Comments:

Relinquished By: Brenda Ward
Brenda Ward

Date Relinquished: 03/22/2018

Received By: Katie Lowe
Katie Lowe

Date Received: 03/23/2020 12:01

Cooler Temperature: 1.2

XENCO Laboratories

Inter Office Report- Sample Receipt Checklist

Sent To: Midland

IOS #: 1058010

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient
Temperature Measuring device used : R8

Sent By: Brenda Ward **Date Sent:** 03/22/2018 04:23 PM

Received By: Katie Lowe **Date Received:** 03/23/2020 12:01 PM

Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?	1.2	
#2 *Shipping container in good condition?	**Yes**	
#3 *Samples received with appropriate temperature?	**Yes**	
#4 *Custody Seals intact on shipping container/ cooler?	**N/A**	
#5 *Custody Seals Signed and dated for Containers/coolers	**N/A**	
#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**	TPH in bulk container
#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: Katie Lowe Date: 03/23/2018

Katie Lowe

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: COG Operating, LLC

Date/ Time Received: 03/22/2018 09:10:00 AM

Work Order #: 580037

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

Temperature Measuring device used : IR-3

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	3.9
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seals intact on shipping container/ cooler?	**N/A**
#5 Custody Seals intact on sample bottles?	**N/A**
#6*Custody Seals Signed and dated?	**N/A**
#7 *Chain of Custody present?	**Yes**
#8 Any missing/extra samples?	**No**
#9 Chain of Custody signed when relinquished/ received?	**Yes**
#10 Chain of Custody agrees with sample labels/matrix?	**Yes**
#11 Container label(s) legible and intact?	**Yes**
#12 Samples in proper container/ bottle?	**Yes**
#13 Samples properly preserved?	**Yes**
#14 Sample container(s) intact?	**Yes**
#15 Sufficient sample amount for indicated test(s)?	**Yes**
#16 All samples received within hold time?	**Yes**
#17 Subcontract of sample(s)?	**N/A**
#18 Water VOC samples have zero headspace?	**N/A**

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

Analyst: PH Device/Lot#:

Checklist completed by: Brenda Ward Date: 03/22/2018
Brenda Ward

Checklist reviewed by: Jessica Kramer Date: 03/22/2018
Jessica Kramer

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 206436

CONDITIONS

Operator: COG OPERATING LLC 600 W Illinois Ave Midland, TX 79701	OGRID: 229137
	Action Number: 206436
	Action Type: [IM-SD] Incident File Support Doc (ENV) (IM-BNF)

CONDITIONS

Created By	Condition	Condition Date
amaxwell	None	5/5/2023