

Hall, Brittany, EMNRD

From: Price, Henryetta <hprice@blm.gov>
Sent: Thursday, June 7, 2018 6:18 PM
To: Sheldon Hitchcock
Cc: Bratcher, Mike, EMNRD; Weaver, Crystal, EMNRD; Robert McNeill; Rebecca Haskell; Dakota Neel; DeAnn Grant
Subject: Re: [EXTERNAL] (Closure Letter) Burch Keely Water Flood Satellite C (30-015-02971) 12-22-2016 (2RP-4052)

**** External email. Use caution. ****

Closure report accepted and approved. Thank you!

Henryetta Price

Environmental Protection Specialist
Bureau Of Land Management

[Hprice@blm.gov](mailto:hprice@blm.gov)

Phone 575-234-5951

Cell 575-706-2780

Fax 575-234-5927

*** Lesser Prairie Chicken (LPC) timing stipulations are in effect 1 Mar- 15 June annually.

*** Tis the season for African Rue. Please do a 360 scan around your well locations and lease roads.

The **BLM acceptance/approval does not** relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that may pose a threat to groundwater, surface water, human health or the environment or if the location fails to reclaim properly. In such an event that the location does not revegetate, or future issues with contaminants are encountered, the operator will be asked to address the issues until the contaminant issues are fully mitigated and the location is successfully reclaimed. In addition, BLM approval does not relieve the operator of responsibility for compliance with any other federal, state or local laws/regulations.

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On Thu, Jun 7, 2018 at 11:26 AM, Sheldon Hitchcock <SLHitchcock@concho.com> wrote:

Mr. Bratcher/Ms. Price,

Please find the attached closure report for the Burch Keely Water Flood Satellite C release that occurred on December 22, 2016. If you have any questions or concerns please do not hesitate to contact me.

Thank you,

Sheldon L. Hitchcock

HSE Coordinator

COG Operating LLC

2407 Pecos Avenue | Artesia, NM 88210
Cell: 575-703-6475 | Office: 575-746-2010

slhitchcock@concho.com



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[Sheldon L. Hitchcock]
[HSE Coordinator]

June 7, 2018

Mike Bratcher
Oil Conservation Division, District 2
811 S First St.
Artesia, NM 88210

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

**Re: Closure Letter
Burch Keely Water Flood Satellite C
API #: 30-015-02971
RP#: 2RP-4052
Unit Letter H Section 13, Township 17S, Range 29E
Eddy County, NM**

Mr. Bratcher/Ms. Price

COG Operating, LLC (COG) is pleased to submit for your consideration the following closure report for the Burch Keely Water Flood Satellite C. This release occurred on December 22, 2016. Following the release an assessment of impacted soils was conducted. A remediation work plan was submitted to and subsequently approved by the New Mexico Oil Conservation Division (NMOCD) and Bureau of Land Management (BLM). A copy of the approved work plan is attached in appendix V.

BACKGROUND

The Burch Keely Water Flood Satellite C release is located in Unit Letter H, Section 13, Township 17 South and Range 29 East in Eddy County, New Mexico. More specifically the latitude and longitude for this release are 32.836181 North and -104.022354 West.

On December 22, 2017, a buried flowline failed resulting in the release of approximately fifteen (15) barrels (bbls) of oil and twenty-five (25) bbls of produced water. A vacuum truck was dispatched to recover freestanding fluids. Approximately ten (10) bbls of Oil and twenty (20) bbls of produced water were recovered.

On March 8, 2018, remediation activities began in accordance with the approved work plan. The analytical results from the NMOCD and BLM stipulated confirmation soil sampling activities are summarized in the table below. A site diagram of the excavated area is presented in appendix I.

June 7, 2018

GROUNDWATER AND SITE RANKING

According to the New Mexico Office of the State Engineer (NMOSE) groundwater in the project vicinity is approximately seventy-six (76) feet below ground surface (BGS) (Appendix II). No water well or surface water was observed within one-thousand (1,000) feet of the release site. Therefore the site ranking for this release is ten (10) based on the following:

Depth to groundwater 50-100-feet
 Distance to surface water body >1000-feet
 Wellhead Protection Area >1000-feet

CONFIRMATION SOIL SAMPLING RESULTS

Sample ID	Sample Date	Chloride (mg/kg)
T-1 E Sidewall	03/05/18 08:00	13.5
T-1 W Sidewall	03/06/18 08:05	6.92
T-1 S./T-2 N.	03/07/18 08:10	<5.00
T-2 E. Sidewall	03/08/18 08:15	<4.99
T-2 W. Sidewall	03/09/18 08:20	<5.00
T-2 S./ T-3 N.	03/09/18 08:25	589
T-3 E. Sidewall	03/09/18 08:30	27.3
T-3 W. Sidewall	03/09/18 08:35	23.7
T-3 S./ T-5 N.	03/09/18 08:40	<5.00
T-5 E. Sidewall	03/09/18 08:45	18.4
T-5 W. Sidewall	03/05/18 08:50	22.6
T-5 S./ T-4 N.	03/06/18 08:55	<4.99
T-4 E. Sidewall	03/07/18 09:00	<5.00
T-4 W. Sidewall	03/08/18 09:05	<4.99
T-4 S. Sidewall	03/09/18 09:10	<5.00

June 7, 2018

REMEDIAL ACTIONS

- The impacted area in the vicinity of sample location T-1 was excavated to a depth of one (1) foot BGS.
- The impacted area in the vicinity of sample location T-2 was excavated to a depth of two (2) feet BGS.
- The impacted area in the vicinity of sample locations T-3 and T-4 were excavated to a depth of three (3) feet BGS.
- The impacted area in the vicinity of sample location T-5 was excavated to a depth of four (4) feet BGS.
- All of the excavated material was hauled to an NMOCD approved solid waste disposal facility.
- Confirmation soil samples were collected from the sidewalls of the excavation and at the borders between the varying excavation depths per NMOCD and BLM stipulations. See Appendix VI for the complete laboratory reports and chain-of-custody forms.
- A 20-mil poly liner was installed at the bottom of the excavation in the area of T-5 to encapsulate the remaining chloride impacts.
- The excavation was backfilled with top soil, contoured to match the surrounding terrain and seeded with BLM #1 seed mixture.

June 7, 2018

CLOSURE REQUEST

COG Operating, LLC respectfully requests that the New Mexico Oil Conservation Division and Bureau of Land Management grant closure approval for the Burch Keely Water Flood Satellite C incident that occurred on December 22, 2016.

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

Sincerely,



Sheldon L. Hitchcock
HSE Coordinator
slhitchcock@concho.com

Enclosed:

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

APPENDIX I

Burch Keely Satellite C



APPENDIX II



New Mexico Office of the State Engineer

Water Column/Average Depth to Water

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

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

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest)

(NAD83 UTM in meters)

(In feet)

POD Number	POD Sub-Code	basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Distance	Depth Well	Depth Water	Water Column
RA 11914 POD1			ED	2	4	2	20	17S	30E	594801	3632002	3613	85	80	5
RA 11807 POD1			ED	1	2	3	22	17S	29E	587360	3631585	4628	131	76	55

Average Depth to Water: **78 feet**
 Minimum Depth: **76 feet**
 Maximum Depth: **80 feet**

Record Count: 2

Basin/County Search:

County: Eddy

UTMNAD83 Radius Search (in meters):

Easting (X): 591543

Northing (Y): 3633566

Radius: 5000

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

APPENDIX III

NM OIL CONSERVATION

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

ARTESIA DISTRICT
DEC 28 2016
RECEIVED

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

Form C-141
Revised August 8, 2011

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

Release Notification and Corrective Action

NAB1700438955 OPERATOR Initial Report Final Report

Name of Company: COG Operating LLC <i>229137</i>	Contact: Robert McNeill
Address: 600 West Illinois Avenue, Midland TX 79701	Telephone No. 432-683-7443
Facility Name: Burch Keely Water Flood Satellite C	Facility Type: Flowline
Surface Owner: Federal	Mineral Owner: _____ API No. 30-015-02971

LOCATION OF RELEASE

Unit Letter H	Section 13	Township 17S	Range 29E	Feet from the 1980	North/South Line North	Feet from the 735	East/West Line East	County Eddy
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Latitude 32.8364334 Longitude 104.0220566

NATURE OF RELEASE

Type of Release: Oil and Produced Water	Volume of Release: 15bbls Oil & 25bbls PW	Volume Recovered: 10bbls Oil & 20bbls PW
Source of Release: Flowline	Date and Hour of Occurrence: December 22, 2016 7:00 am	Date and Hour of Discovery: December 22, 2016 7:00 am
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Mr. Bratcher - NMOCD / Ms. Tucker - BLM	
By Whom? Dakota Neel	Date and Hour: December 22, 2016 3:08 pm	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*

The release was caused by a flowline leak on a buried flowline. The old flowline was abandoned and installed a new line.

Describe Area Affected and Cleanup Action Taken.*

The release was within a pasture. A vacuum truck was dispatched to remove all freestanding fluids. Concho will have the spill area sampled to delineate 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: <i>Rebecca Haskell</i>	OIL CONSERVATION DIVISION	
Printed Name: Rebecca Haskell	Approved by Environmental Specialist: <i>Crystal Weene</i>	
Title: Senior HSE Coordinator	Approval Date: <i>11/4/17</i>	Expiration Date: <i>NIA</i>
E-mail Address: rhaskell@concho.com	Conditions of Approval: <i>see attached</i>	Attached <input checked="" type="checkbox"/>
Date: 12/28/2016 Phone: 432-683-7443		

* Attach Additional Sheets If Necessary

APP 4052

APPENDIX IV

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

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

Form C-141
Revised April 3, 2017

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

Release Notification and Corrective Action

OPERATOR

Initial Report Final Report

Name of Company: COG Operating, LLC (OGRID# 229137)	Contact: Robert McNeill
Address: 600 West Illinois Avenue, Midland TX 79701	Telephone No.: 432-683-7443
Facility Name: Burch Keely Water Flood Satellite C	Facility Type: Flowline

Surface Owner: BLM	Mineral Owner:	API No.: 30-015-02971
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LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
H	13	17S	29E					Eddy

Latitude: 32.8364334 Longitude: -104.0220566 NAD83

NATURE OF RELEASE

Type of Release: Oil and Produced Water	Volume of Release: 15bbls Oil & 25bbls PW	Volume Recovered: 10bbls Oil & 20bbls PW
Source of Release: Flowline	Date and Hour of Occurrence: 12/22/2016	Date and Hour of Discovery: 12/22/2016 7:00am
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Mike Bratcher-NMOCD Shelly Tucker-BLM	
By Whom? Dakota Neel	Date and Hour: 12/22/2016 3:08pm	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*

The release was caused by the failure of a buried flowline. The damaged section of flowline was replaced.

Describe Area Affected and Cleanup Action Taken.*

The release occurred within the pasture. Following site assessment activities a remediation work plan was drafted and subsequently approved by NMOCD and BLM. Remediation of the affected area was carried out in accordance with the approved work plan.

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

Signature: <i>Sheldon Hitchcock</i>		OIL CONSERVATION DIVISION	
Printed Name: Sheldon L. Hitchcock		Approved by Environmental Specialist: <i>Ashley Maxwell</i>	
Title: HSE Coordinator	Approval Date: 4/28/2023	Expiration Date:	
E-mail Address: slhitchcock@concho.com	Conditions of Approval:		Attached <input type="checkbox"/>
Date: 6/7/2018	Phone: 575-746-2010		

* Attach Additional Sheets If Necessary

APPENDIX V



REMEDIATION WORK PLAN

Property:

**Concho Operating, LLC.
Burch Keely Water Flood Satellite C
Eddy County, New Mexico
Unit Letter "H", Section 13, Township 17 South, Range 29 East
Latitude 32.8364334, Longitude -104.0220566
2RP-4052**

September 2017

Prepared for:

**Concho Operating, LLC.
600 West Illinois Avenue
Midland, TX 79701
Attn: Mrs. Rebecca Haskell**

Prepared by:

Ryan Reich
Environmental Project Manager

Jack Zimmerman, P.G., C.P.G.
Senior Geologist

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- Figure 2 – Topography Map
- Figure 3 – Release Footprint Map
- Figure 4 – Trench and Soil Bore Locations Map
- Figure 5 – Proposed Excavated Depths Map

Appendix B

- Table 1 – Soil Analytical Summary Table

Appendix C

- Laboratory Analysis and Chain-of-Custody

Appendix D

- Initial C-141

WORK PLAN

**Concho Operating, LLC.
Burch Keely Water Flood Satellite C
Eddy County, New Mexico
Unit Letter "H", Section 13, Township 17 South, Range 29 East
Latitude 32.8364334, Longitude -104.0220566
2RP-4052**

September 2017

1.0 INTRODUCTION

1.1 Site Description & Background

American Safety Services Inc. (ASSI) has prepared this Work Plan for the Concho Operating, LLC. (COG) Burch Keely Water Flood Satellite C (referred to hereinafter as the "Site" or "subject Site"). This Work Plan is based upon the interpretation of the data collected by ASSI.

The Burch Keely Water Flood Satellite C is located in Unit Letter "H", Section 13, Township 17 South, Range 29 East, Eddy County, New Mexico (GPS 32.8364334, -104.0220566).

Remedial actions were conducted by ASSI in accordance with New Mexico Energy, Minerals, and Natural Resources Department (EMNRD), Oil Conservation Division (NMOCD) rules (*NMAC 19.15.29 Release Notification*) and the *NMOCD Guidelines for Remediation of Leaks, Spills and Releases* as guidance.

1.2 Project Objective

The objective of the Work Plan is to present documentation of the activities that were performed to date and to request an effective means to remediate the Site.

1.3 Standard of Care

ASSI's services are performed in accordance with standards provided by a firm rendering the same or similar services in the area during the same time period. ASSI makes no warranties, express or implied, as to the services performed hereunder. Additionally, ASSI does not warranty the work of third parties supplying information used in the report (e.g. laboratories, regulatory agencies, or other third parties). This scope of services will be performed in accordance with the scope of work agreed with the client.

1.4 Reliance

This report has been prepared for the exclusive use of COG, and any authorization for use or reliance by any other party (except a governmental entity having jurisdiction over the Site) is prohibited without the express written authorization of COG and ASSI. Any unauthorized distribution or reuse is at the sole risk of COG. Notwithstanding the foregoing, reliance by authorized parties will be subject to the terms, conditions and limitations stated in the proposal, the report, and ASSI's Agreement. The limitation of liability defined in the agreement is the aggregate limit of ASSI's liability to the client.

2.0 SITE RANKING & PROPOSED REMEDIAL ACTION GOALS

The Site is subject to regulatory oversight by the NMOCD. To address activities related to releases, the NMOCD utilizes the *Guidelines for Remediation of Leaks, Spills and Releases* as guidance, in addition to the NMOCD rules, specifically NMAC 19.15.29 *Release Notification*. These documents establish investigation and abatement action requirements for sites subject to reporting and/or corrective action.

In accordance with the NMOCD's *Guidelines for Remediation of Leaks, Spills and Releases*, ASSI utilized the general site characteristics to determine the appropriate "ranking" for the Site. The ranking criteria and associated scoring are provided in the table below:

Ranking Criteria			Ranking Score
Depth to Groundwater	<50 feet	20	0
	50 to 99 feet	10	
	>100 feet	0	
Wellhead Protection Area, <1,000 feet from a water source, or; <200 feet from private domestic water source.	Yes	20	0
	No	0	
Distance to Surface Water Body	<200 feet	20	0
	200 to 1,000 feet	10	
	>1,000 feet	0	
Total Ranking Score			0

Based on ASSI's evaluation of the scoring criteria, the Site would have a Total Ranking Score of 0. This ranking is based on the following:

- The depth to the initial groundwater-bearing zone is 150 – 200 feet at the Site.
- The impacted area is greater than 200 feet from a private domestic water source.
- Distance to the nearest surface water body is greater than 1,000 ft.

Based on a Total Ranking Score of 0, cleanup goals for soils remaining in place include: 10 milligrams per kilogram (mg/Kg) for Benzene, 50 mg/Kg for Total Benzene, Toluene, Ethylbenzene, and Xylene (BTEX), 5,000 mg/Kg for Total Petroleum Hydrocarbons (TPH), and 600 mg/Kg for Chloride.

Figures 1 and 2 show the location of COG's Burch Keely Water Flood Satellite C facility in Eddy County, New Mexico and surrounding topography.

3.0 INITIAL RESPONSE & ACTIVITIES

3.1 Initial Response

On January 9, 2017, COG and GCI Construction personnel collected samples by means of trenching using mechanical means (i.e., backhoe tractor) in an effort to vertically delineate existing Total Petroleum Hydrocarbon (TPH) and Chloride in soil. Sampling activities were in response to a reportable release directly to the ground that occurred on December 22, 2016. Fifteen (15) barrels (bbls) of crude oil and twenty-five (25) bbls of produced water was released caused by a leak on a buried flowline. Ten (10) bbls of crude oil and twenty (20) bbls of produced water were recovered. The release impacted approximately seven thousand (7000) square feet of pasture area (Figure 3).

3.2 Trenching activities

The January 9th sampling event achieved vertical delineation at sample locations T1, T2, T3, T4, and T5 for TPH only. Vertical delineation for existing Chloride in soil was achieved at sample locations T1, T2, T3, and T4. However, at sample location T5 vertical delineation was not achieved (Table 1).

Additional samples were collected at location T5 on April 20th in a second attempt to vertically delineate existing Chloride in soil. COG and GCI Construction personnel utilized mechanical means (i.e., track—excavator) to collect samples at depths below sixteen (16) feet below ground surface (bgs). The ending depth was twenty-six and one-half (26.5) feet bgs. Vertical delineation was, once again, not achieved (Table 1).

3.3 Drilling Activities

On July 27th ASSI and COG personnel along with Scarborough Drilling, utilizing air rotary drilling techniques, continued vertical delineation efforts below twenty-six and one-half (26.5) feet bgs at location T5. Mr. Ryan Reich, an ASSI environmental professional, was present to document onsite activities (written and photographic).

One (1) soil boring (i.e., Soil Bore 1 @ T5), were advanced to vertically delineate Chloride below twenty-six and one-half (26.5) feet bgs with proximity to location T5. A total of five (5) samples were collected from Soil Bore 1 @ T5 and were analyzed for Chloride only (Table 1).

While drilling operations were ongoing, discrete samples were collected from Soil Bore 1 @ T5 at the following depths: 30', 40', 50', 60', and 65', bgs. Vertical delineation was achieved at a depth of fifty (50) feet bgs. However, drilling/sampling activities continued

an additional fifteen (15) feet — to a depth of sixty-five (65) feet bgs. This action confirmed a downward trend in Chloride concentration levels as depth increased.

Soil was field screened for Chloride utilizing electro conductivity during drilling operations. Soil boring locations are shown on Figure 4.

3.4 Soil Sampling Analytical Results

Analytical results were compared to the NMOCD *Guidelines for Remediation of Leaks, Spills and Releases* (Section VI A. Contaminated Soils) and show TPH and Chloride exceedances exist in soil above the NMOCD clean-up goals as discussed in Section 2.0 at sample locations. In the area of T1, Chloride was below regulatory guidelines, vertical delineation for TPH was achieved at two (2) feet bgs with a concentration of 18.5 mg/kg. In the area of T2, TPH was below regulatory guidelines, vertical delineation of Chloride was achieved at a depth of six (6) feet bgs with a concentration of 560 mg/kg. In the area of T3, TPH was below regulatory guidelines, vertical delineation of Chloride was achieved at a depth of four (4) feet with a concentration level of 48.0 mg/kg. In the area of T4, TPH was below regulatory guidelines, vertical delineation of Chloride was achieved at four (4) feet bgs with a concentration of 64.0 mg/kg. In the area of Soil Bore-1 @ T5 (T5), TPH was below regulatory guidelines, vertical delineation of Chloride was achieved at a depth of fifty (50) feet bgs with a concentration of 511.79 mg/Kg. All sample locations meet the NMOCD clean-up goal criteria.

4.0 LABORATORY ANALYTICAL METHODS

The samples were analyzed for TPH GRO/DRO utilizing EPA method SW-846 8015, BTEX using EPA method SW-846 8021B, and Chloride utilizing EPA method SW-846 300.1. Copies of the laboratory analysis are provided in Appendix D.

Soil was collected in laboratory prepared glassware, placed on ice, and packed in a cooler. The sample coolers and completed chain-of-custody forms were relinquished to Cardinal Laboratories in Hobbs New Mexico for the January 9th sampling event and to Xenco Laboratories in Midland, Texas for the April 20th and July 31st sampling events (Table 1).

Figure 4 shows the approximate location of the sampling (i.e., Soil Bore and Trench) locations.

5.0 WORK PLAN

Based upon the data collected and the work completed by ASSI, the constituents of concern (COC) (i.e., TPH and Chloride) has been vertically delineated at all the sample locations. Furthermore, laboratory analysis shows that COC concentrations are below the NMOCD clean-up goals (Table 1).

Based on the analytical data presented in Table 1, COG and ASSI propose to complete a removal action of the impacted material.

Figure 5 shows the excavation areas and proposed excavation depths based on analytical results. Locations of these areas are in relation to pertinent land features and general Site boundaries, which is included in Appendix A.

Excavations, as part of the proposed removal action, are as follows: specifically, in the area of T1, excavate to one (1) foot bgs, in the area of T2, excavate to two (2) feet bgs, for areas T3 and T4, excavate to three (3) feet bgs, and at Soil Bore 1 @ T5 (i.e. area of T5) excavate to four (4) feet bgs. Additionally, at location T5, a liner will be installed (approved 20 mil material thickness) at the bottom of the excavated area prior to backfilling. All material will be excavated (i.e., removed) by mechanical means, be temporarily stockpiled onsite and subsequently removed (hailed away) offsite to a proper disposal facility under appropriate manifest.

Prior to beginning backfilling operations, sidewall samples will be collected from each excavation in their prospective cardinal direction for Chloride only and submitted for laboratory analysis. The excavated areas will be backfilled to grade with clean imported material and the surface grade contoured to the surrounding landscape.

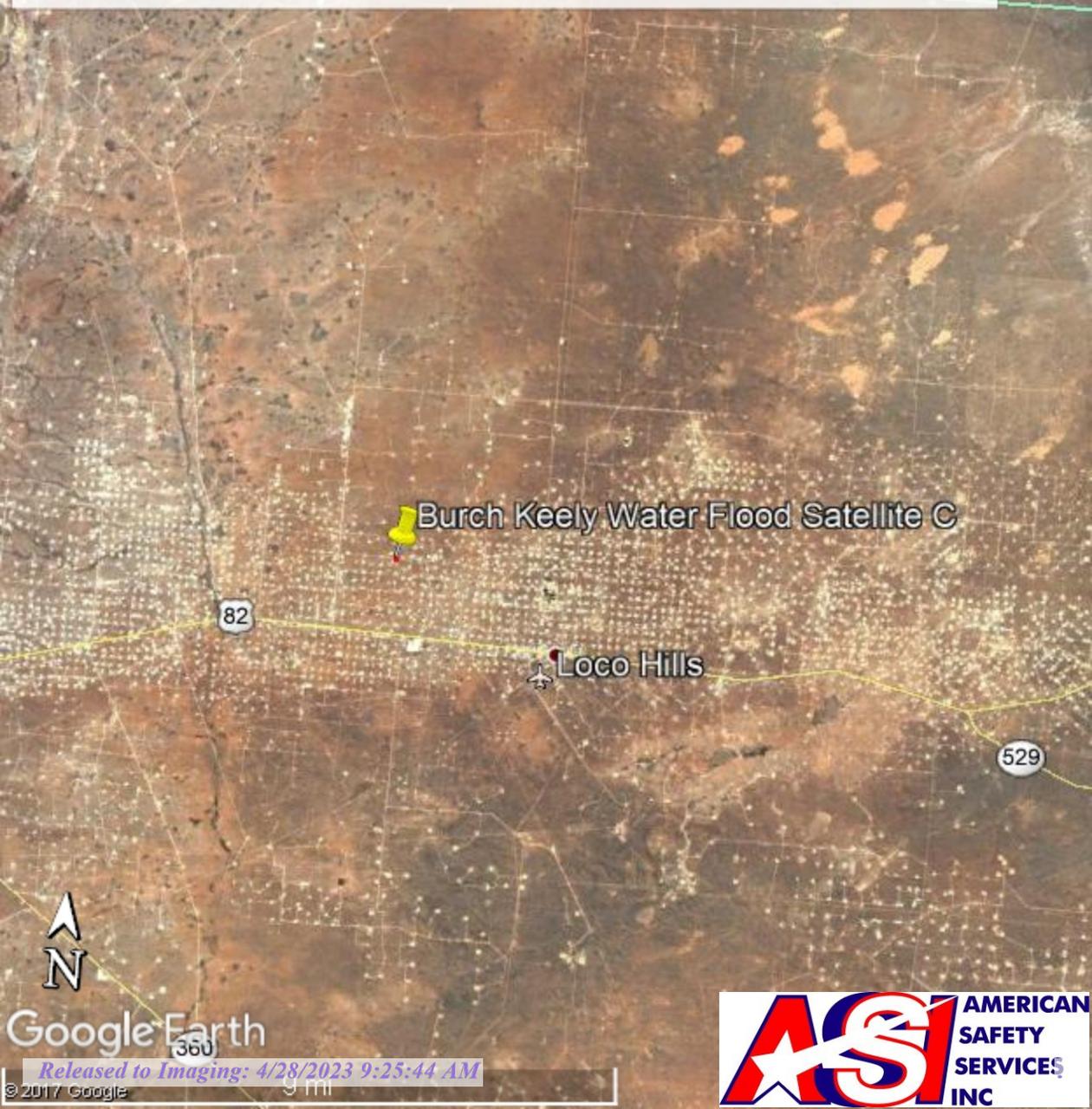


APPENDIX A

Figures

COG - Burch Keely Unit Water Flood Satellite C

Figure 1



Burch Keely Water Flood Satellite C

Loco Hills

82

529



Google Earth 360



COG - Burch Keely Unit Water Flood Satellite C

Figure 3

Legend

-  BKU Sat. C Release Footprint
-  Burch Keely Water Flood Satellite C

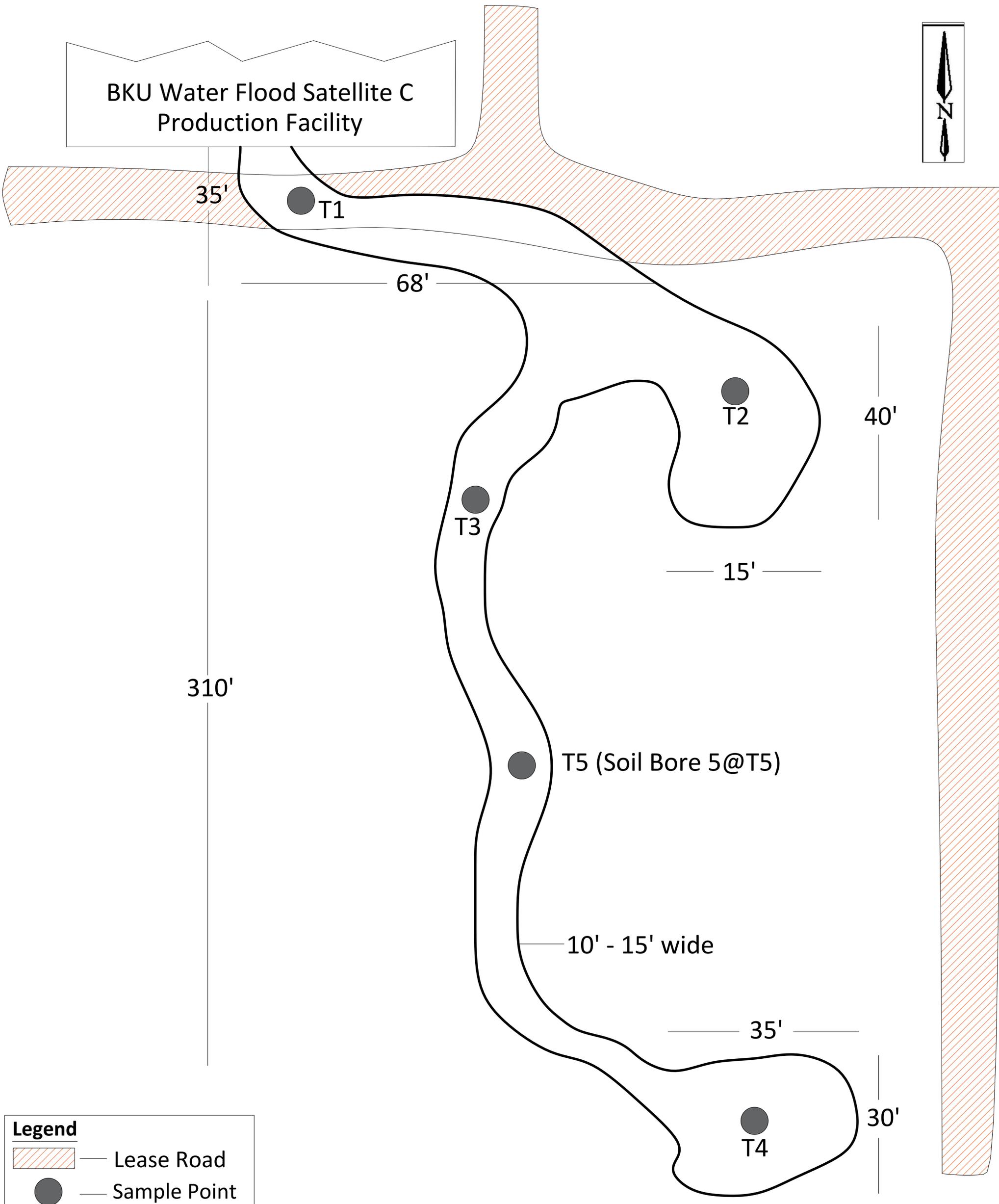


Burch Keely Water Flood Satellite C



Google Earth





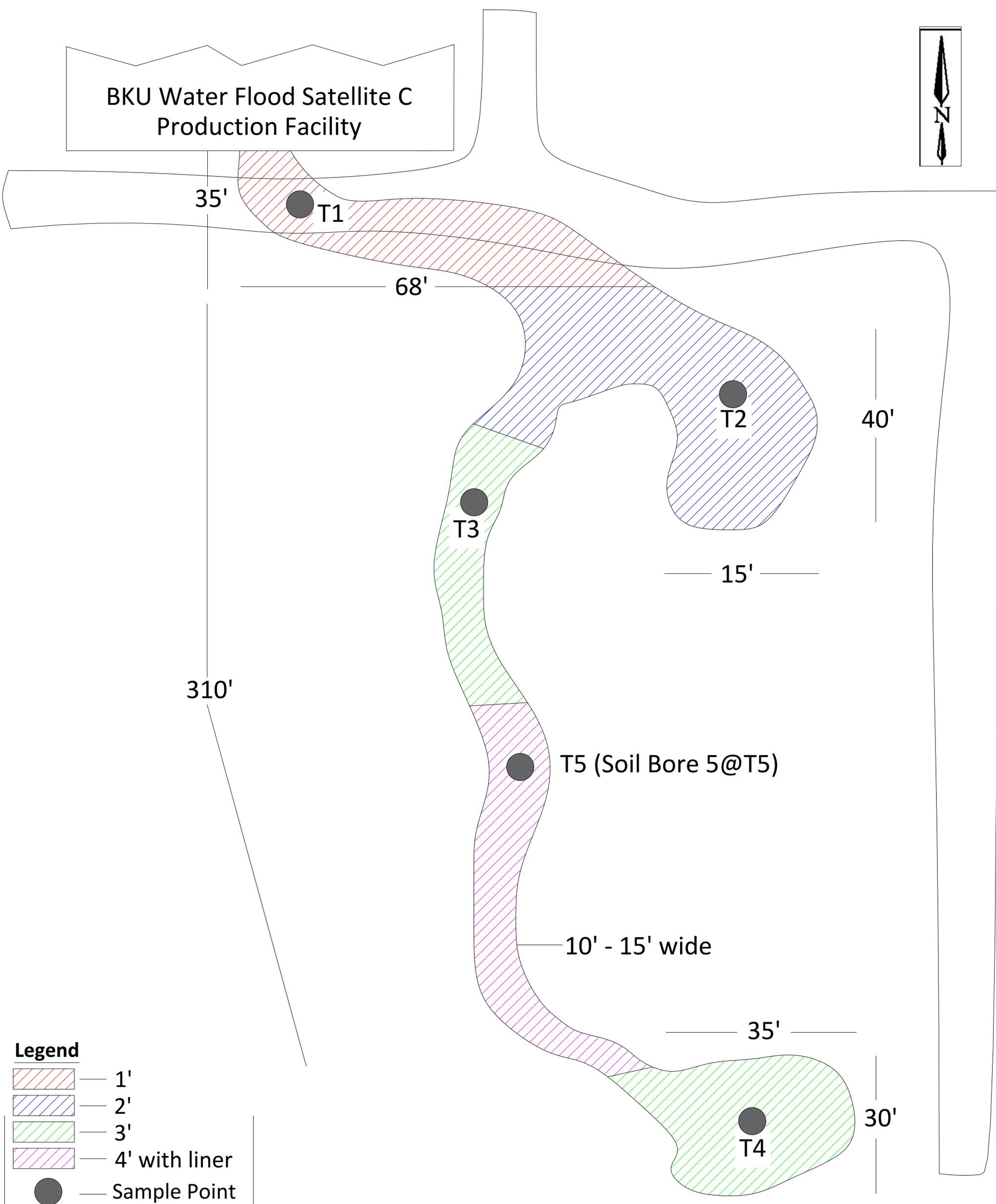
Legend
 — Lease Road
 — Sample Point

**Concho Operating, LLC. -
 BKU Water Flood Satellite C
 Eddy County, New Mexico
 32.8364N, -104.0220W**



**AMERICAN
 SAFETY
 SERVICES
 INC**
 American Safety Services, Inc
 8715 Andrews Hwy
 Odessa, TX 79765
 Phone: (432) 552-7625

**FIGURE 4
 Trench and Soil Bore
 Locations**



**Concho Operating, LLC. -
 BKU Water Flood Satellite C
 Eddy County, New Mexico
 32.8364N, -104.0220W**

**AMERICAN
 SAFETY
 SERVICES
 INC**

American Safety Services, Inc
 8715 Andrews Hwy
 Odessa, TX 79765
 Phone: (432) 552-7625

**FIGURE 5
 Excavation Depths**



APPENDIX B

Table 1

TABLE 1 Summary of Delineation Sampling Analytical Results Concentrations of Benzene, BTEX, TPH & Chloride in Soil Concho Operating, LLC Burch Keely Water Flood Satellite C Eddy, New Mexico NMOCD REF: 2RP-4052												
SAMPLE LOCATION	SAMPLE DEPTH (bgs)	SAMPLE DATE	SOIL STATUS	8021B					8015M			300.0
				BENZENE (mg/Kg)	TOLUENE (mg/Kg)	ETHYLBENZENE (mg/Kg)	TOTAL XYLENES (mg/Kg)	TOTAL BTEX (mg/Kg)	GRO (mg/Kg)	DRO (mg/Kg)	Total TPH (mg/Kg)	CHLORIDE (mg/Kg)
NMOCD - Guidelines for Remediation of Leaks, Spills and Releases				10	NE	NE	NE	50	NE	NE	5,000	600
Vertical Delineation Sampling												
T1	1'	1/9/2017	In-Situ	14.8	129	101	159	404	3,800	11,900	15,700	208.0
T1	2'	1/9/2017	In-Situ	<0.050	0.077	<0.050	<0.150	<0.300	<10.0	18.5	18.5	<16.0
T1	3'	1/9/2017	In-Situ	<0.050	<0.050	<0.050	<0.050	<0.300	<10.0	11.4	11.4	<16.0
T1	4'	1/9/2017	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	16.0
T1	5'	1/9/2017	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<16.0
T1	6'	1/9/2017	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<16.0
T1	7'	1/9/2017	In-Situ	-	-	-	-	-	-	-	-	<16.0
T1	8'	1/9/2017	In-Situ	-	-	-	-	-	-	-	-	<16.0
T1	10'	1/9/2017	In-Situ	-	-	-	-	-	-	-	-	16.0
T1	12'	1/9/2017	In-Situ	-	-	-	-	-	-	-	-	32.0
T2	1'	1/9/2017	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	4,640
T2	2'	1/9/2017	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	62.9	62.9	5,040
T2	3'	1/9/2017	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	832
T2	4'	1/9/2017	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	1,100
T2	5'	1/9/2017	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	1,020
T2	6'	1/9/2017	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	560
T2	7'	1/9/2017	In-Situ	-	-	-	-	-	-	-	-	512
T2	8'	1/9/2017	In-Situ	-	-	-	-	-	-	-	-	352
T2	10'	1/9/2017	In-Situ	-	-	-	-	-	-	-	-	288
T2	12'	1/9/2017	In-Situ	-	-	-	-	-	-	-	-	112
T3	1'	1/9/2017	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	4,480
T3	2'	1/9/2017	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	6,320
T3	3'	1/9/2017	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	10,900
T3	4'	1/9/2017	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	48.0
T3	5'	1/9/2017	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	64.0
T3	6'	1/9/2017	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	32.0
T3	7'	1/9/2017	In-Situ	-	-	-	-	-	-	-	-	48.0
T3	8'	1/9/2017	In-Situ	-	-	-	-	-	-	-	-	48.0
T3	10'	1/9/2017	In-Situ	-	-	-	-	-	-	-	-	112
T3	12'	1/9/2017	In-Situ	-	-	-	-	-	-	-	-	80.0

mg/Kg - milligrams per Kilogram

- = Not Established

Concentrations in **BOLD** exceed the NMOCD Guidelines

 Proposed excavated area

TABLE 1 Summary of Delineation Sampling Analytical Results Concentrations of Benzene, BTEX, TPH & Chloride in Soil Concho Operating, LLC Burch Keely Water Flood Satellite C Eddy, New Mexico NMOCD REF: 2RP-4052												
SAMPLE LOCATION	SAMPLE DEPTH (bgs)	SAMPLE DATE	SOIL STATUS	8021B					8015M			300.0
				BENZENE (mg/Kg)	TOLUENE (mg/Kg)	ETHYLBENZENE (mg/Kg)	TOTAL XYLENES (mg/Kg)	TOTAL BTEX (mg/Kg)	GRO (mg/Kg)	DRO (mg/Kg)	Total TPH (mg/Kg)	CHLORIDE (mg/Kg)
NMOCD - Guidelines for Remediation of Leaks, Spills and Releases				10	NE	NE	NE	50	NE	NE	5,000	600
Vertical Delineation Sampling												
T4	1'	1/9/2017	In-Situ	<0.200	4.48	4.92	8.07	17.5	105	391	496	3,600
T4	2'	1/9/2017	In-Situ	<0.050	0.069	0.227	0.559	0.855	<10.0	77.1	77.1	1,040
T4	3'	1/9/2017	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	5,040
T4	4'	1/9/2017	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	64.0
T4	5'	1/9/2017	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	16.0
T4	6'	1/9/2017	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	64.0
T4	7'	1/9/2017	In-Situ	-	-	-	-	-	-	-	-	32.0
T4	8'	1/9/2017	In-Situ	-	-	-	-	-	-	-	-	32.0
T5	1'	1/9/2017	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	256
T5	2'	1/9/2017	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	1,010
T5	3'	1/9/2017	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	896
T5	4'	1/9/2017	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	960
T5	5'	1/9/2017	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	512
T5	6'	1/9/2017	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	1,550
T5	7'	1/9/2017	In-Situ	-	-	-	-	-	-	-	-	1,580
T5	8'	1/9/2017	In-Situ	-	-	-	-	-	-	-	-	1,340
T5	10'	1/9/2017	In-Situ	-	-	-	-	-	-	-	-	1,540
T5	12'	1/9/2017	In-Situ	-	-	-	-	-	-	-	-	1,470
T5	14'	1/9/2017	In-Situ	-	-	-	-	-	-	-	-	1,230
T5	16'	1/9/2017	In-Situ	-	-	-	-	-	-	-	-	1,010
T5	17.5'	4/20/2017	In-Situ	-	-	-	-	-	-	-	-	793
T5	19'	4/20/2017	In-Situ	-	-	-	-	-	-	-	-	1,390
T5	22'	4/20/2017	In-Situ	-	-	-	-	-	-	-	-	1,120
T5	24'	4/20/2017	In-Situ	-	-	-	-	-	-	-	-	3,380
T5	25'	4/20/2017	In-Situ	-	-	-	-	-	-	-	-	2,880
T5	26.5'	4/20/2017	In-Situ	-	-	-	-	-	-	-	-	1,150
Soil Bore 1 @ T5	29'-30'	7/31/2017	In-Situ	-	-	-	-	-	-	-	-	2,450.7
Soil Bore 1 @ T5	39'-40'	7/31/2017	In-Situ	-	-	-	-	-	-	-	-	716.49
Soil Bore 1 @ T5	49'-50'	7/31/2017	In-Situ	-	-	-	-	-	-	-	-	511.79
Soil Bore 1 @ T5	59'-60'	7/31/2017	In-Situ	-	-	-	-	-	-	-	-	130.80
Soil Bore 1 @ T5	64'-65'	7/31/2017	In-Situ	-	-	-	-	-	-	-	-	254.54

mg/Kg - milligrams per Kilogram
 - = Not Established
 Concentrations in **BOLD** exceed the NMOCD Guidelines
 Proposed excavated area
 Proposed liner



APPENDIX C

Laboratory Analysis



Certificate of Analysis Summary 552080

COG Operating LLC, Artesia, NM

Project Name: BKU Satellite C Flowline

Project Id:

Contact: Aaron Lieb

Project Location: BKU Satellite C Flowline

Date Received in Lab: Fri Apr-28-17 11:00 am

Report Date: 04-MAY-17

Project Manager: Liz Givens

<i>Analysis Requested</i>	<i>Lab Id:</i>	552080-001	552080-002	552080-003	552080-004	552080-005	552080-006
	<i>Field Id:</i>	T-5 - 17.5'	T-5 - 19'	T-5 - 22'	T-5 - 24'	T-5 - 25'	T-5 - 26.5'
	<i>Depth:</i>	17.5 ft	19 ft	22 ft	24 ft	25 ft	2.5 ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Apr-20-17 10:30					
Inorganic Anions by EPA 300/300.1	<i>Extracted:</i>	May-04-17 09:00					
	<i>Analyzed:</i>	May-04-17 10:19	May-04-17 10:42	May-04-17 10:50	May-04-17 10:57	May-04-17 11:05	May-04-17 11:28
	<i>Units/RL:</i>	mg/kg RL					
Chloride		793 4.96	1390 24.5	1120 4.96	3380 25.0	2880 24.6	1150 4.97

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

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

Brandi Ritcherson
Project Manager

Analytical Report 552080

for
COG Operating LLC

Project Manager: Aaron Lieb
BKU Satellite C Flowline

04-MAY-17

Collected By: Client



1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215), Arizona (AZ0765), Florida (E871002), Louisiana (03054)
Oklahoma (9218)

Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295)
Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400)
Xenco-San Antonio: Texas (T104704534)

Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757)
Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)



04-MAY-17

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

Reference: XENCO Report No(s): **552080**
BKU Satelite C Flowline
Project Address: BKU Satelite C Flowline

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) 552080. 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. 552080 will be filed for 60 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,

Brandi Ritcherson

Project Manager

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Sample Cross Reference 552080

COG Operating LLC, Artesia, NM

BKU Satellite C Flowline

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
T-5 - 17.5'	S	04-20-17 10:30	- 17.5 ft	552080-001
T-5 - 19'	S	04-20-17 10:30	- 19 ft	552080-002
T-5 - 22'	S	04-20-17 10:30	- 22 ft	552080-003
T-5 - 24'	S	04-20-17 10:30	- 24 ft	552080-004
T-5 - 25'	S	04-20-17 10:30	- 25 ft	552080-005
T-5 - 26.5'	S	04-20-17 10:30	- 2.5 ft	552080-006



CASE NARRATIVE

Client Name: COG Operating LLC
Project Name: BKU Satelite C Flowline

Project ID:
Work Order Number(s): 552080

Report Date: 04-MAY-17
Date Received: 04/28/2017

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None



Certificate of Analytical Results 552080

COG Operating LLC, Artesia, NM BKU Satellite C Flowline

Sample Id: T-5 - 17.5'	Matrix: Soil	Date Received: 04.28.17 11.00
Lab Sample Id: 552080-001	Date Collected: 04.20.17 10.30	Sample Depth: 17.5 ft
Analytical Method: Inorganic Anions by EPA 300/300.1		Prep Method: E300P
Tech: MGO		% Moisture:
Analyst: MGO	Date Prep: 05.04.17 09.00	Basis: Wet Weight
Seq Number: 3016516		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	793	4.96	mg/kg	05.04.17 10.19		1



Certificate of Analytical Results 552080

COG Operating LLC, Artesia, NM BKU Satellite C Flowline

Sample Id: T-5 - 19'	Matrix: Soil	Date Received: 04.28.17 11.00
Lab Sample Id: 552080-002	Date Collected: 04.20.17 10.30	Sample Depth: 19 ft
Analytical Method: Inorganic Anions by EPA 300/300.1		Prep Method: E300P
Tech: MGO		% Moisture:
Analyst: MGO	Date Prep: 05.04.17 09.00	Basis: Wet Weight
Seq Number: 3016516		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1390	24.5	mg/kg	05.04.17 10.42		5



Certificate of Analytical Results 552080

COG Operating LLC, Artesia, NM BKU Satellite C Flowline

Sample Id: **T-5 - 22'** Matrix: Soil Date Received: 04.28.17 11.00
 Lab Sample Id: 552080-003 Date Collected: 04.20.17 10.30 Sample Depth: 22 ft
 Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P
 Tech: MGO % Moisture:
 Analyst: MGO Date Prep: 05.04.17 09.00 Basis: Wet Weight
 Seq Number: 3016516

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1120	4.96	mg/kg	05.04.17 10.50		1



Certificate of Analytical Results 552080

COG Operating LLC, Artesia, NM BKU Satellite C Flowline

Sample Id: T-5 - 24'	Matrix: Soil	Date Received: 04.28.17 11.00
Lab Sample Id: 552080-004	Date Collected: 04.20.17 10.30	Sample Depth: 24 ft
Analytical Method: Inorganic Anions by EPA 300/300.1		Prep Method: E300P
Tech: MGO		% Moisture:
Analyst: MGO	Date Prep: 05.04.17 09.00	Basis: Wet Weight
Seq Number: 3016516		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3380	25.0	mg/kg	05.04.17 10.57		5



Certificate of Analytical Results 552080

COG Operating LLC, Artesia, NM BKU Satellite C Flowline

Sample Id: T-5 - 25'	Matrix: Soil	Date Received: 04.28.17 11.00
Lab Sample Id: 552080-005	Date Collected: 04.20.17 10.30	Sample Depth: 25 ft
Analytical Method: Inorganic Anions by EPA 300/300.1		Prep Method: E300P
Tech: MGO		% Moisture:
Analyst: MGO	Date Prep: 05.04.17 09.00	Basis: Wet Weight
Seq Number: 3016516		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2880	24.6	mg/kg	05.04.17 11.05		5



Certificate of Analytical Results 552080

COG Operating LLC, Artesia, NM BKU Satellite C Flowline

Sample Id: **T-5 - 26.5'** Matrix: Soil Date Received: 04.28.17 11.00
 Lab Sample Id: 552080-006 Date Collected: 04.20.17 10.30 Sample Depth: 2.5 ft
 Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P
 Tech: MGO % Moisture:
 Analyst: MGO Date Prep: 05.04.17 09.00 Basis: Wet Weight
 Seq Number: 3016516

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1150	4.97	mg/kg	05.04.17 11.28		1



Flagging Criteria



- X** In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the quantitation limit and above the detection limit.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.
- JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

+ NELAC certification not offered for this compound.

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

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1211 W Florida Ave, Midland, TX 79701	(210) 509-3334	(210) 509-3335
2525 W. Huntington Dr. - Suite 102, Tempe AZ 85282	(432) 563-1800	(432) 563-1713
	(602) 437-0330	



COG Operating LLC
BKU Satellite C Flowline

Analytical Method: Inorganic Anions by EPA 300/300.1

Seq Number: 3016516

MB Sample Id: 724076-1-BLK

Matrix: Solid

LCS Sample Id: 724076-1-BKS

Prep Method: E300P

Date Prep: 05.04.17

LCSD Sample Id: 724076-1-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	232	93	234	94	90-110	1	20	mg/kg	05.04.17 10:04	

Analytical Method: Inorganic Anions by EPA 300/300.1

Seq Number: 3016516

Parent Sample Id: 551955-002

Matrix: Soil

MS Sample Id: 551955-002 S

Prep Method: E300P

Date Prep: 05.04.17

MSD Sample Id: 551955-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	9.04	250	260	100	263	102	90-110	1	20	mg/kg	05.04.17 12:13	

Analytical Method: Inorganic Anions by EPA 300/300.1

Seq Number: 3016516

Parent Sample Id: 552080-001

Matrix: Soil

MS Sample Id: 552080-001 S

Prep Method: E300P

Date Prep: 05.04.17

MSD Sample Id: 552080-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	793	248	1030	96	1020	92	90-110	1	20	mg/kg	05.04.17 10:27	



Setting the Standard since 1990
 Stafford, Texas (281-240-4200)
 Dallas Texas (214-902-0300)

CHAIN OF CUSTODY

Page 7 of 7

San Antonio, Texas (210-509-3334)
 Midland, Texas (432-704-5251)

Phoenix, Arizona (480-355-0900)

www.xenco.com

Client / Reporting Information Company Name / Branch: COG Operating LLC Company Address: 2407 PECOS Avenue Artesia NM 88210 Email: alleh@concho.com Phone No: 575-748-1553 Project Contact: Aaron Lieb Samplers Name: Aaron Lieb		Project Information Project Name/Number: BKU Satellite C Flowline Project Location: BKU Satellite C Flow Invoice To: COG Operating LLC Attn: Robert McCrell 600 W. Illinois Midland TX 79701		Xenco Quote # Xenco Job # 552080
--	--	---	--	-------------------------------------

No.	Field ID / Point of Collection	Collection			Matrix	# of bottles	Number of preserved bottles							Field Comments					
		Sample Depth	Date	Time			HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH		NONE				
1	TS - 17.5'	17.5	4/26/17	1030AM	S	1													
2	TS - 19'	19	4/26/17	1030AM	S	1													
3	TS - 22'	22	4/26/17	1030AM	S	1													
4	TS - 24'	24				1													
5	TS - 25'	25				1													
6	TS - 26.5'	26.5				1													
7																			
8																			
9																			
10																			

XXXXXX chloride

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

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

Relinquished by Sampler: [Signature]
 Date Time: 4-26-17
 Received By: [Signature]
 Date Time: 4-28-17
 Relinquished By: [Signature]
 Date Time: 4-29-17
 Received By: [Signature]

Relinquished by: [Signature]
 Date Time: []
 Received By: [Signature]
 Date Time: []

Relinquished by: [Signature]
 Date Time: []
 Received By: [Signature]
 Date Time: []

Relinquished by: [Signature]
 Date Time: []
 Received By: [Signature]
 Date Time: []

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 services. 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.

On Ice Cooler Temp. Thermo. Corr. Factor
 50°C



Certificate of Analysis Summary 558911

American Safety Services, Odessa, TX

Project Name: Burch Keely Water Flood Satellite C

Project Id:
Contact: Thomas Franklin
Project Location: Eddy Co.,NM

Date Received in Lab: Tue Aug-01-17 08:10 am
Report Date: 03-AUG-17
Project Manager: Brandi Ritcherson

<i>Analysis Requested</i>	<i>Lab Id:</i>	558911-001	558911-002	558911-003	558911-004	558911-005	
	<i>Field Id:</i>	Soil Bore-1 @ T5					
	<i>Depth:</i>	29-30 ft	39-40 ft	49-50 ft	59-60 ft	64-65 ft	
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	
	<i>Sampled:</i>	Jul-31-17 14:00	Jul-31-17 14:05	Jul-31-17 14:10	Jul-31-17 14:15	Jul-31-17 14:40	
Chloride by EPA 300	<i>Extracted:</i>	Aug-02-17 09:15					
	<i>Analyzed:</i>	Aug-02-17 10:23	Aug-02-17 10:00	Aug-02-17 10:31	Aug-02-17 10:39	Aug-02-17 10:46	
	<i>Units/RL:</i>	mg/L RL					
Chloride		2450.7 24.558	716.49 4.9310	511.79 4.9505	130.80 4.9900	254.54 4.9801	

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

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

Brandi Ritcherson
 Project Manager

Analytical Report 558911

for
American Safety Services

Project Manager: Thomas Franklin
Burch Keely Water Flood Satellite C

03-AUG-17

Collected By: Client



1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215), Arizona (AZ0765), Florida (E871002), Louisiana (03054)
Oklahoma (9218)

Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295)

Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400)

Xenco-San Antonio: Texas (T104704534)

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

Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)



03-AUG-17

Project Manager: **Thomas Franklin**
American Safety Services
8715 Andrews Hwy
Odessa, TX 79765

Reference: XENCO Report No(s): **558911**
Burch Keely Water Flood Satellite C
Project Address: Eddy Co.,NM

Thomas Franklin:

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) 558911. 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. 558911 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,

Brandi Ritcherson

Project Manager

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Sample Cross Reference 558911

American Safety Services, Odessa, TX

Burch Keely Water Flood Satellite C

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
Soil Bore-1 @ T5	S	07-31-17 14:00	29 - 30 ft	558911-001
Soil Bore-1 @ T5	S	07-31-17 14:05	39 - 40 ft	558911-002
Soil Bore-1 @ T5	S	07-31-17 14:10	49 - 50 ft	558911-003
Soil Bore-1 @ T5	S	07-31-17 14:15	59 - 60 ft	558911-004
Soil Bore-1 @ T5	S	07-31-17 14:40	64 - 65 ft	558911-005



CASE NARRATIVE

Client Name: American Safety Services

Project Name: Burch Keely Water Flood Satellite C

Project ID:
Work Order Number(s): 558911

Report Date: 03-AUG-17
Date Received: 08/01/2017

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3023912 Chloride by EPA 300

Lab Sample ID 558912-008 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 558911-001, -002, -003, -004, -005.

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



Certificate of Analytical Results 558911

American Safety Services, Odessa, TX

Burch Keely Water Flood Satellite C

Sample Id: Soil Bore-1 @ T5	Matrix: Soil	Date Received: 08.01.17 08.10
Lab Sample Id: 558911-001	Date Collected: 07.31.17 14.00	Sample Depth: 29 - 30 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: RHE		% Moisture:
Analyst: MGO	Date Prep: 08.02.17 09.15	Basis: Wet Weight
Seq Number: 3023912		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2450.7	24.558	mg/L	08.02.17 10.23		5



Certificate of Analytical Results 558911

American Safety Services, Odessa, TX

Burch Keely Water Flood Satellite C

Sample Id: **Soil Bore-1 @ T5**

Matrix: Soil

Date Received: 08.01.17 08.10

Lab Sample Id: 558911-002

Date Collected: 07.31.17 14.05

Sample Depth: 39 - 40 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: RHE

% Moisture:

Analyst: MGO

Date Prep: 08.02.17 09.15

Basis: Wet Weight

Seq Number: 3023912

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	716.49	4.9310	mg/L	08.02.17 10.00		1



Certificate of Analytical Results 558911

American Safety Services, Odessa, TX

Burch Keely Water Flood Satellite C

Sample Id: **Soil Bore-1 @ T5**

Matrix: Soil

Date Received: 08.01.17 08.10

Lab Sample Id: 558911-003

Date Collected: 07.31.17 14.10

Sample Depth: 49 - 50 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: RHE

% Moisture:

Analyst: MGO

Date Prep: 08.02.17 09.15

Basis: Wet Weight

Seq Number: 3023912

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	511.79	4.9505	mg/L	08.02.17 10.31		1



Certificate of Analytical Results 558911

American Safety Services, Odessa, TX

Burch Keely Water Flood Satellite C

Sample Id: **Soil Bore-1 @ T5**

Matrix: Soil

Date Received: 08.01.17 08.10

Lab Sample Id: 558911-004

Date Collected: 07.31.17 14.15

Sample Depth: 59 - 60 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: RHE

% Moisture:

Analyst: MGO

Date Prep: 08.02.17 09.15

Basis: Wet Weight

Seq Number: 3023912

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	130.80	4.9900	mg/L	08.02.17 10.39		1



Certificate of Analytical Results 558911

American Safety Services, Odessa, TX

Burch Keely Water Flood Satellite C

Sample Id: **Soil Bore-1 @ T5**

Matrix: Soil

Date Received: 08.01.17 08.10

Lab Sample Id: 558911-005

Date Collected: 07.31.17 14.40

Sample Depth: 64 - 65 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: RHE

% Moisture:

Analyst: MGO

Date Prep: 08.02.17 09.15

Basis: Wet Weight

Seq Number: 3023912

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	254.54	4.9801	mg/L	08.02.17 10.46		1



Flagging Criteria



- X** In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the quantitation limit and above the detection limit.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.
- JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

+ NELAC certification not offered for this compound.

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

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 9701 Harry Hines Blvd , Dallas, TX 75220
 5332 Blackberry Drive, San Antonio TX 78238
 1211 W Florida Ave, Midland, TX 79701
 2525 W. Huntington Dr. - Suite 102, Tempe AZ 85282

Phone	Fax
(281) 240-4200	(281) 240-4280
(214) 902 0300	(214) 351-9139
(210) 509-3334	(210) 509-3335
(432) 563-1800	(432) 563-1713
(602) 437-0330	



American Safety Services
Burch Keely Water Flood Satellite C

Analytical Method: Chloride by EPA 300

Seq Number: 3023912

MB Sample Id: 728598-1-BLK

Matrix: Solid

LCS Sample Id: 728598-1-BKS

Prep Method: E300P

Date Prep: 08.02.17

LCSD Sample Id: 728598-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.0000	250.00	262.15	105	261.22	104	90-110	0	20	mg/L	08.02.17 09:45	

Analytical Method: Chloride by EPA 300

Seq Number: 3023912

Parent Sample Id: 558911-002

Matrix: Soil

MS Sample Id: 558911-002 S

Prep Method: E300P

Date Prep: 08.02.17

MSD Sample Id: 558911-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	716.49	246.55	936.87	89	935.65	89	90-110	0	20	mg/L	08.02.17 10:08	X

Analytical Method: Chloride by EPA 300

Seq Number: 3023912

Parent Sample Id: 558912-008

Matrix: Soil

MS Sample Id: 558912-008 S

Prep Method: E300P

Date Prep: 08.02.17

MSD Sample Id: 558912-008 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	1021.3	248.51	1222.3	81	1223.3	81	90-110	0	20	mg/L	08.02.17 11:55	X



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Phoenix, Arizona (480-355-0900)

CHAIN OF CUSTODY

Page 1 of 1

Client / Reporting Information		Project Information		Analytical Information		Matrix Codes									
Company Name / Branch: American Safety Services Inc. Company Address: 8715 Andrews Hwy, Odessa, TX 79765 Email: tfranklin@americansafety.net Project Contact: zimmerman@americansafety.net Thomas Franklin Sampler's Name: PRT/MD		Project Name/Number: Band Keeley Water Flood Site/like C Project Location: Eddy Co NM Invoice To: COG - ATTD Betty Hasbell PO Number:		Xenco Quote # Xenco Job # 55891		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	Sample Depth	Date	Time	Matrix	# of bottles	FCI	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	Notes
1	Soil Bore -1 @ TS	21-30	7/31/17	1400	S	1									Chloride (method 300)
2		31-40		1405											DR Ice
3		41-50		1410											
4		50-60		1415											
5		61-65		1440											
6															
7															
8															
9															
10															
Turnaround Time (Business days)															
Data Deliverable Information															
<input type="checkbox"/> Same Day TAT <input type="checkbox"/> 5 Day TAT <input type="checkbox"/> Level II Std QC <input type="checkbox"/> Level IV /Full Data Pkg /raw data <input type="checkbox"/> Next Day EMERGENCY <input type="checkbox"/> 7 Day TAT <input type="checkbox"/> Level III Std QC+ Forms <input type="checkbox"/> TRRP Level IV <input type="checkbox"/> 2 Day EMERGENCY <input checked="" type="checkbox"/> Contract TAT <input type="checkbox"/> Level 3 (CLP Forms) <input type="checkbox"/> UST / RG -411 <input type="checkbox"/> 3 Day EMERGENCY <input type="checkbox"/> TRRP Checklist															
TAT Starts Day received by Lab, if received by 5:00 pm															
SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY															
Relinquished by Sampler:				Date Time:				Received By:				Date Time:			
1				8/1/17 08:10				1				10/1/17 08:10			
Relinquished by:				Date Time:				Received By:				Date Time:			
3								3							
Relinquished by:				Date Time:				Received By:				Date Time:			
5								5							
TAT Starts Day received by Lab, if received by 5:00 pm				FED-EX / UPS: Tracking:				Temp: 3.5				IR ID: R-8			
CF: (0-6: -0.2°C)				(6-23: +0.2°C)				Corrected Temp: 3.3				Cooler Temp: In memo. Corr. Factor			

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



XENCO Laboratories Prelogin/Nonconformance Report- Sample Log-In

Client: American Safety Services

Date/ Time Received: 08/01/2017 08:10:00 AM

Work Order #: 558911

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

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	3.3
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seal present on shipping container/ cooler?	N/A
#5 *Custody Seals intact on shipping container/ cooler?	N/A
#6 Custody Seals intact on sample bottles?	N/A
#7 *Custody Seals Signed and dated?	N/A
#8 *Chain of Custody present?	Yes
#9 Sample instructions complete on Chain of Custody?	Yes
#10 Any missing/extra samples?	No
#11 Chain of Custody signed when relinquished/ received?	Yes
#12 Chain of Custody agrees with sample label(s)?	Yes
#13 Container label(s) legible and intact?	Yes
#14 Sample matrix/ properties agree with Chain of Custody?	Yes
#15 Samples in proper container/ bottle?	Yes
#16 Samples properly preserved?	Yes
#17 Sample container(s) intact?	Yes
#18 Sufficient sample amount for indicated test(s)?	Yes
#19 All samples received within hold time?	Yes
#20 Subcontract of sample(s)?	No
#21 VOC samples have zero headspace?	N/A

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

Analyst:

PH Device/Lot#:

Checklist completed by: Shawnee Smith Date: 08/01/2017
Shawnee Smith

Checklist reviewed by: Brandi Ritcherson Date: 08/01/2017
Brandi Ritcherson



APPENDIX D

Initial C-141

NM OIL CONSERVATION

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

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

Form C-141
Revised August 8, 2011

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

Release Notification and Corrective Action

Operator information form including fields for Name of Company (COG Operating LLC), Contact (Robert McNeill), Address (600 West Illinois Avenue, Midland TX 79701), Telephone No. (432-683-7443), Facility Name (Burch Keely Water Flood Satellite C), Facility Type (Flowline), Surface Owner (Federal), Mineral Owner, and API No. (30-015-02971).

LOCATION OF RELEASE

Table with 8 columns: Unit Letter (H), Section (13), Township (17S), Range (29E), Feet from the (1980), North/South Line (North), Feet from the (735), East/West Line (East), County (Eddy).

Latitude 32.8364334 Longitude 104.0220566

NATURE OF RELEASE

Nature of Release form with fields for Type of Release (Oil and Produced Water), Source of Release (Flowline), Volume of Release (15bbls Oil & 25bbls PW), Date and Hour of Occurrence (December 22, 2016 7:00 am), and other details.

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*

The release was caused by a flowline leak on a buried flowline. The old flowline was abandoned and installed a new line.

Describe Area Affected and Cleanup Action Taken.*

The release was within a pasture. A vacuum truck was dispatched to remove all freestanding fluids. Concho will have the spill area sampled to delineate 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.

Signature and Approval section including fields for Signature (Rebecca Haskell), Printed Name (Rebecca Haskell), Title (Senior HSE Coordinator), and Approval by Environmental Specialist (Crystal Weene).

* Attach Additional Sheets If Necessary

Handwritten note: ARP 4052

APPENDIX VI



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

January 24, 2017

AARON LIEB
COG OPERATING
P. O. BOX 1630
ARTESIA, NM 88210

RE: BURCH-KEELY WATER FLOOD SATELLITE 'C' FLOWLINE

Enclosed are the results of analyses for samples received by the laboratory on 01/19/17 10:48.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-16-8. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Celey D. Keene".

Celey D. Keene
Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

COG OPERATING
 AARON LIEB
 P. O. BOX 1630
 ARTESIA NM, 88210
 Fax To: NONE

Received:	01/19/2017	Sampling Date:	01/09/2017
Reported:	01/24/2017	Sampling Type:	Soil
Project Name:	BURCH-KEELY WATER FLOOD SATELLITI	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Angela Cabrera
Project Location:	NONE GIVEN		

Sample ID: T1 -1' (H700132-01)

BTEX 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	14.8	5.00	01/21/2017	ND	1.79	89.3	2.00	0.878	
Toluene*	129	5.00	01/21/2017	ND	1.76	88.1	2.00	0.639	
Ethylbenzene*	101	5.00	01/21/2017	ND	1.82	90.8	2.00	1.11	
Total Xylenes*	159	15.0	01/21/2017	ND	5.30	88.4	6.00	1.11	
Total BTEX	404	30.0	01/21/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 107 % 73.6-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	208	16.0	01/20/2017	ND	416	104	400	3.77	

TPH 8015M		mg/kg		Analyzed By: MS						S-06
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	3800	100	01/20/2017	ND	190	95.1	200	0.847		
DRO >C10-C28	11900	100	01/20/2017	ND	197	98.5	200	2.76		

Surrogate: 1-Chlorooctane 200 % 35-147

Surrogate: 1-Chlorooctadecane 291 % 28-171

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Analytical Results For:

COG OPERATING
 AARON LIEB
 P. O. BOX 1630
 ARTESIA NM, 88210
 Fax To: NONE

Received:	01/19/2017	Sampling Date:	01/09/2017
Reported:	01/24/2017	Sampling Type:	Soil
Project Name:	BURCH-KEELY WATER FLOOD SATELLITI	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Angela Cabrera
Project Location:	NONE GIVEN		

Sample ID: T1 -2' (H700132-02)

BTEX 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/21/2017	ND	1.79	89.3	2.00	0.878	
Toluene*	0.077	0.050	01/21/2017	ND	1.76	88.1	2.00	0.639	
Ethylbenzene*	<0.050	0.050	01/21/2017	ND	1.82	90.8	2.00	1.11	
Total Xylenes*	<0.150	0.150	01/21/2017	ND	5.30	88.4	6.00	1.11	
Total BTEX	<0.300	0.300	01/21/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 101 % 73.6-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	01/20/2017	ND	416	104	400	3.77	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	01/20/2017	ND	190	95.1	200	0.847	
DRO >C10-C28	18.5	10.0	01/20/2017	ND	197	98.5	200	2.76	

Surrogate: 1-Chlorooctane 73.5 % 35-147

Surrogate: 1-Chlorooctadecane 86.4 % 28-171

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Analytical Results For:

COG OPERATING
 AARON LIEB
 P. O. BOX 1630
 ARTESIA NM, 88210
 Fax To: NONE

Received:	01/19/2017	Sampling Date:	01/09/2017
Reported:	01/24/2017	Sampling Type:	Soil
Project Name:	BURCH-KEELY WATER FLOOD SATELLITI	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Angela Cabrera
Project Location:	NONE GIVEN		

Sample ID: T1 -3' (H700132-03)

BTEX 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/21/2017	ND	1.79	89.3	2.00	0.878	
Toluene*	<0.050	0.050	01/21/2017	ND	1.76	88.1	2.00	0.639	
Ethylbenzene*	<0.050	0.050	01/21/2017	ND	1.82	90.8	2.00	1.11	
Total Xylenes*	<0.150	0.150	01/21/2017	ND	5.30	88.4	6.00	1.11	
Total BTEX	<0.300	0.300	01/21/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 103 % 73.6-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	01/20/2017	ND	416	104	400	3.77	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	01/20/2017	ND	190	95.1	200	0.847	
DRO >C10-C28	11.4	10.0	01/20/2017	ND	197	98.5	200	2.76	

Surrogate: 1-Chlorooctane 83.6 % 35-147

Surrogate: 1-Chlorooctadecane 96.8 % 28-171

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Analytical Results For:

COG OPERATING
 AARON LIEB
 P. O. BOX 1630
 ARTESIA NM, 88210
 Fax To: NONE

Received:	01/19/2017	Sampling Date:	01/09/2017
Reported:	01/24/2017	Sampling Type:	Soil
Project Name:	BURCH-KEELY WATER FLOOD SATELLITI	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Angela Cabrera
Project Location:	NONE GIVEN		

Sample ID: T1 -4' (H700132-04)

BTEX 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/21/2017	ND	1.79	89.3	2.00	0.878	
Toluene*	<0.050	0.050	01/21/2017	ND	1.76	88.1	2.00	0.639	
Ethylbenzene*	<0.050	0.050	01/21/2017	ND	1.82	90.8	2.00	1.11	
Total Xylenes*	<0.150	0.150	01/21/2017	ND	5.30	88.4	6.00	1.11	
Total BTEX	<0.300	0.300	01/21/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 101 % 73.6-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	01/20/2017	ND	416	104	400	3.77	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	01/20/2017	ND	190	95.1	200	0.847	
DRO >C10-C28	<10.0	10.0	01/20/2017	ND	197	98.5	200	2.76	

Surrogate: 1-Chlorooctane 82.8 % 35-147

Surrogate: 1-Chlorooctadecane 97.6 % 28-171

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Analytical Results For:

COG OPERATING
 AARON LIEB
 P. O. BOX 1630
 ARTESIA NM, 88210
 Fax To: NONE

Received:	01/19/2017	Sampling Date:	01/09/2017
Reported:	01/24/2017	Sampling Type:	Soil
Project Name:	BURCH-KEELY WATER FLOOD SATELLITI	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Angela Cabrera
Project Location:	NONE GIVEN		

Sample ID: T1 -5' (H700132-05)

BTEX 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/21/2017	ND	1.79	89.3	2.00	0.878	
Toluene*	<0.050	0.050	01/21/2017	ND	1.76	88.1	2.00	0.639	
Ethylbenzene*	<0.050	0.050	01/21/2017	ND	1.82	90.8	2.00	1.11	
Total Xylenes*	<0.150	0.150	01/21/2017	ND	5.30	88.4	6.00	1.11	
Total BTEX	<0.300	0.300	01/21/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 102 % 73.6-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	01/20/2017	ND	416	104	400	3.77	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	01/20/2017	ND	190	95.1	200	0.847	
DRO >C10-C28	<10.0	10.0	01/20/2017	ND	197	98.5	200	2.76	

Surrogate: 1-Chlorooctane 82.2 % 35-147

Surrogate: 1-Chlorooctadecane 94.2 % 28-171

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Analytical Results For:

COG OPERATING
 AARON LIEB
 P. O. BOX 1630
 ARTESIA NM, 88210
 Fax To: NONE

Received:	01/19/2017	Sampling Date:	01/09/2017
Reported:	01/24/2017	Sampling Type:	Soil
Project Name:	BURCH-KEELY WATER FLOOD SATELLITI	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Angela Cabrera
Project Location:	NONE GIVEN		

Sample ID: T1 -6' (H700132-06)

BTEX 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/21/2017	ND	1.79	89.3	2.00	0.878	
Toluene*	<0.050	0.050	01/21/2017	ND	1.76	88.1	2.00	0.639	
Ethylbenzene*	<0.050	0.050	01/21/2017	ND	1.82	90.8	2.00	1.11	
Total Xylenes*	<0.150	0.150	01/21/2017	ND	5.30	88.4	6.00	1.11	
Total BTEX	<0.300	0.300	01/21/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 102 % 73.6-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	01/20/2017	ND	416	104	400	3.77	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	01/20/2017	ND	190	95.1	200	0.847	
DRO >C10-C28	<10.0	10.0	01/20/2017	ND	197	98.5	200	2.76	

Surrogate: 1-Chlorooctane 75.4 % 35-147

Surrogate: 1-Chlorooctadecane 88.1 % 28-171

Sample ID: T1 -7' (H700132-07)

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	01/20/2017	ND	416	104	400	3.77	

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Analytical Results For:

COG OPERATING
 AARON LIEB
 P. O. BOX 1630
 ARTESIA NM, 88210
 Fax To: NONE

Received:	01/19/2017	Sampling Date:	01/09/2017
Reported:	01/24/2017	Sampling Type:	Soil
Project Name:	BURCH-KEELY WATER FLOOD SATELLITI	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Angela Cabrera
Project Location:	NONE GIVEN		

Sample ID: T1 -8' (H700132-08)

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	01/20/2017	ND	416	104	400	3.77	

Sample ID: T1 -10' (H700132-09)

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	01/20/2017	ND	416	104	400	3.77	

Sample ID: T1 -12' (H700132-10)

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	01/20/2017	ND	416	104	400	3.77	

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Analytical Results For:

COG OPERATING
 AARON LIEB
 P. O. BOX 1630
 ARTESIA NM, 88210
 Fax To: NONE

Received:	01/19/2017	Sampling Date:	01/09/2017
Reported:	01/24/2017	Sampling Type:	Soil
Project Name:	BURCH-KEELY WATER FLOOD SATELLITI	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Angela Cabrera
Project Location:	NONE GIVEN		

Sample ID: T2 -1' (H700132-11)

BTEX 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/21/2017	ND	1.79	89.3	2.00	0.878	
Toluene*	<0.050	0.050	01/21/2017	ND	1.76	88.1	2.00	0.639	
Ethylbenzene*	<0.050	0.050	01/21/2017	ND	1.82	90.8	2.00	1.11	
Total Xylenes*	<0.150	0.150	01/21/2017	ND	5.30	88.4	6.00	1.11	
Total BTEX	<0.300	0.300	01/21/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 101 % 73.6-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	4640	16.0	01/20/2017	ND	416	104	400	3.77	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	01/20/2017	ND	190	95.1	200	0.847	
DRO >C10-C28	<10.0	10.0	01/20/2017	ND	197	98.5	200	2.76	

Surrogate: 1-Chlorooctane 77.4 % 35-147

Surrogate: 1-Chlorooctadecane 96.7 % 28-171

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Analytical Results For:

COG OPERATING
 AARON LIEB
 P. O. BOX 1630
 ARTESIA NM, 88210
 Fax To: NONE

Received:	01/19/2017	Sampling Date:	01/09/2017
Reported:	01/24/2017	Sampling Type:	Soil
Project Name:	BURCH-KEELY WATER FLOOD SATELLITI	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Angela Cabrera
Project Location:	NONE GIVEN		

Sample ID: T2 -2' (H700132-12)

BTEX 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/21/2017	ND	1.79	89.3	2.00	0.878	
Toluene*	<0.050	0.050	01/21/2017	ND	1.76	88.1	2.00	0.639	
Ethylbenzene*	<0.050	0.050	01/21/2017	ND	1.82	90.8	2.00	1.11	
Total Xylenes*	<0.150	0.150	01/21/2017	ND	5.30	88.4	6.00	1.11	
Total BTEX	<0.300	0.300	01/21/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 101 % 73.6-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	5040	16.0	01/20/2017	ND	416	104	400	3.77	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	01/20/2017	ND	190	95.1	200	0.847	
DRO >C10-C28	62.9	10.0	01/20/2017	ND	197	98.5	200	2.76	

Surrogate: 1-Chlorooctane 92.4 % 35-147

Surrogate: 1-Chlorooctadecane 98.1 % 28-171

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Analytical Results For:

COG OPERATING
 AARON LIEB
 P. O. BOX 1630
 ARTESIA NM, 88210
 Fax To: NONE

Received:	01/19/2017	Sampling Date:	01/09/2017
Reported:	01/24/2017	Sampling Type:	Soil
Project Name:	BURCH-KEELY WATER FLOOD SATELLITI	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Angela Cabrera
Project Location:	NONE GIVEN		

Sample ID: T2 -3' (H700132-13)

BTEX 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/21/2017	ND	1.79	89.3	2.00	0.878	
Toluene*	<0.050	0.050	01/21/2017	ND	1.76	88.1	2.00	0.639	
Ethylbenzene*	<0.050	0.050	01/21/2017	ND	1.82	90.8	2.00	1.11	
Total Xylenes*	<0.150	0.150	01/21/2017	ND	5.30	88.4	6.00	1.11	
Total BTEX	<0.300	0.300	01/21/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 102 % 73.6-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	832	16.0	01/20/2017	ND	416	104	400	3.77	

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	01/20/2017	ND	193	96.5	200	8.62	
DRO >C10-C28	<10.0	10.0	01/20/2017	ND	180	89.9	200	8.94	QR-03

Surrogate: 1-Chlorooctane 91.4 % 35-147

Surrogate: 1-Chlorooctadecane 88.5 % 28-171

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

COG OPERATING
 AARON LIEB
 P. O. BOX 1630
 ARTESIA NM, 88210
 Fax To: NONE

Received:	01/19/2017	Sampling Date:	01/09/2017
Reported:	01/24/2017	Sampling Type:	Soil
Project Name:	BURCH-KEELY WATER FLOOD SATELLITI	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Angela Cabrera
Project Location:	NONE GIVEN		

Sample ID: T2 -4' (H700132-14)

BTEX 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/21/2017	ND	1.79	89.3	2.00	0.878	
Toluene*	<0.050	0.050	01/21/2017	ND	1.76	88.1	2.00	0.639	
Ethylbenzene*	<0.050	0.050	01/21/2017	ND	1.82	90.8	2.00	1.11	
Total Xylenes*	<0.150	0.150	01/21/2017	ND	5.30	88.4	6.00	1.11	
Total BTEX	<0.300	0.300	01/21/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 102 % 73.6-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1100	16.0	01/20/2017	ND	416	104	400	3.77	

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	01/20/2017	ND	193	96.5	200	8.62	
DRO >C10-C28	<10.0	10.0	01/20/2017	ND	180	89.9	200	8.94	

Surrogate: 1-Chlorooctane 93.7 % 35-147

Surrogate: 1-Chlorooctadecane 92.4 % 28-171

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Analytical Results For:

COG OPERATING
 AARON LIEB
 P. O. BOX 1630
 ARTESIA NM, 88210
 Fax To: NONE

Received:	01/19/2017	Sampling Date:	01/09/2017
Reported:	01/24/2017	Sampling Type:	Soil
Project Name:	BURCH-KEELY WATER FLOOD SATELLITI	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Angela Cabrera
Project Location:	NONE GIVEN		

Sample ID: T2 -5' (H700132-15)

BTEX 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/21/2017	ND	1.77	88.6	2.00	0.222	
Toluene*	<0.050	0.050	01/21/2017	ND	1.76	88.0	2.00	0.118	
Ethylbenzene*	<0.050	0.050	01/21/2017	ND	1.82	90.8	2.00	0.0725	
Total Xylenes*	<0.150	0.150	01/21/2017	ND	5.30	88.4	6.00	0.0667	
Total BTEX	<0.300	0.300	01/21/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 101 % 73.6-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1020	16.0	01/20/2017	ND	416	104	400	3.77	

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	01/20/2017	ND	193	96.5	200	8.62	
DRO >C10-C28	<10.0	10.0	01/20/2017	ND	180	89.9	200	8.94	

Surrogate: 1-Chlorooctane 84.9 % 35-147

Surrogate: 1-Chlorooctadecane 82.8 % 28-171

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Analytical Results For:

COG OPERATING
 AARON LIEB
 P. O. BOX 1630
 ARTESIA NM, 88210
 Fax To: NONE

Received:	01/19/2017	Sampling Date:	01/09/2017
Reported:	01/24/2017	Sampling Type:	Soil
Project Name:	BURCH-KEELY WATER FLOOD SATELLITI	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Angela Cabrera
Project Location:	NONE GIVEN		

Sample ID: T2 -6' (H700132-16)

BTEX 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/21/2017	ND	1.77	88.6	2.00	0.222	
Toluene*	<0.050	0.050	01/21/2017	ND	1.76	88.0	2.00	0.118	
Ethylbenzene*	<0.050	0.050	01/21/2017	ND	1.82	90.8	2.00	0.0725	
Total Xylenes*	<0.150	0.150	01/21/2017	ND	5.30	88.4	6.00	0.0667	
Total BTEX	<0.300	0.300	01/21/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 102 % 73.6-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	560	16.0	01/20/2017	ND	416	104	400	3.77	

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	01/20/2017	ND	192	95.9	200	2.88	
DRO >C10-C28	<10.0	10.0	01/20/2017	ND	200	99.9	200	15.9	

Surrogate: 1-Chlorooctane 92.8 % 35-147

Surrogate: 1-Chlorooctadecane 82.8 % 28-171

Sample ID: T2 -7' (H700132-17)

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	512	16.0	01/20/2017	ND	416	104	400	3.77	

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Analytical Results For:

COG OPERATING
 AARON LIEB
 P. O. BOX 1630
 ARTESIA NM, 88210
 Fax To: NONE

Received:	01/19/2017	Sampling Date:	01/09/2017
Reported:	01/24/2017	Sampling Type:	Soil
Project Name:	BURCH-KEELY WATER FLOOD SATELLITI	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Angela Cabrera
Project Location:	NONE GIVEN		

Sample ID: T2 -8' (H700132-18)

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	352	16.0	01/20/2017	ND	416	104	400	3.77	

Sample ID: T2 -10' (H700132-19)

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	288	16.0	01/20/2017	ND	416	104	400	3.77	

Sample ID: T2 -12' (H700132-20)

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	112	16.0	01/23/2017	ND	416	104	400	0.00	

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Analytical Results For:

COG OPERATING
 AARON LIEB
 P. O. BOX 1630
 ARTESIA NM, 88210
 Fax To: NONE

Received:	01/19/2017	Sampling Date:	01/09/2017
Reported:	01/24/2017	Sampling Type:	Soil
Project Name:	BURCH-KEELY WATER FLOOD SATELLITI	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Angela Cabrera
Project Location:	NONE GIVEN		

Sample ID: T3 -1' (H700132-21)

BTEX 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/21/2017	ND	1.77	88.6	2.00	0.222	
Toluene*	<0.050	0.050	01/21/2017	ND	1.76	88.0	2.00	0.118	
Ethylbenzene*	<0.050	0.050	01/21/2017	ND	1.82	90.8	2.00	0.0725	
Total Xylenes*	<0.150	0.150	01/21/2017	ND	5.30	88.4	6.00	0.0667	
Total BTEX	<0.300	0.300	01/21/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 102 % 73.6-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	4480	16.0	01/23/2017	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	01/20/2017	ND	192	95.9	200	2.88	
DRO >C10-C28	<10.0	10.0	01/20/2017	ND	200	99.9	200	15.9	

Surrogate: 1-Chlorooctane 97.5 % 35-147

Surrogate: 1-Chlorooctadecane 86.3 % 28-171

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Analytical Results For:

COG OPERATING
 AARON LIEB
 P. O. BOX 1630
 ARTESIA NM, 88210
 Fax To: NONE

Received:	01/19/2017	Sampling Date:	01/09/2017
Reported:	01/24/2017	Sampling Type:	Soil
Project Name:	BURCH-KEELY WATER FLOOD SATELLITI	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Angela Cabrera
Project Location:	NONE GIVEN		

Sample ID: T3 -2' (H700132-22)

BTEX 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/21/2017	ND	1.77	88.6	2.00	0.222	
Toluene*	<0.050	0.050	01/21/2017	ND	1.76	88.0	2.00	0.118	
Ethylbenzene*	<0.050	0.050	01/21/2017	ND	1.82	90.8	2.00	0.0725	
Total Xylenes*	<0.150	0.150	01/21/2017	ND	5.30	88.4	6.00	0.0667	
Total BTEX	<0.300	0.300	01/21/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 103 % 73.6-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	6320	16.0	01/23/2017	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	01/20/2017	ND	192	95.9	200	2.88	
DRO >C10-C28	<10.0	10.0	01/20/2017	ND	200	99.9	200	15.9	

Surrogate: 1-Chlorooctane 96.0 % 35-147

Surrogate: 1-Chlorooctadecane 85.7 % 28-171

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Analytical Results For:

COG OPERATING
 AARON LIEB
 P. O. BOX 1630
 ARTESIA NM, 88210
 Fax To: NONE

Received:	01/19/2017	Sampling Date:	01/09/2017
Reported:	01/24/2017	Sampling Type:	Soil
Project Name:	BURCH-KEELY WATER FLOOD SATELLITI	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Angela Cabrera
Project Location:	NONE GIVEN		

Sample ID: T3 -3' (H700132-23)

BTEX 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/21/2017	ND	1.77	88.6	2.00	0.222	
Toluene*	<0.050	0.050	01/21/2017	ND	1.76	88.0	2.00	0.118	
Ethylbenzene*	<0.050	0.050	01/21/2017	ND	1.82	90.8	2.00	0.0725	
Total Xylenes*	<0.150	0.150	01/21/2017	ND	5.30	88.4	6.00	0.0667	
Total BTEX	<0.300	0.300	01/21/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 101 % 73.6-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	10900	16.0	01/23/2017	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	01/20/2017	ND	192	95.9	200	2.88	
DRO >C10-C28	<10.0	10.0	01/20/2017	ND	200	99.9	200	15.9	

Surrogate: 1-Chlorooctane 94.3 % 35-147

Surrogate: 1-Chlorooctadecane 83.4 % 28-171

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Analytical Results For:

COG OPERATING
 AARON LIEB
 P. O. BOX 1630
 ARTESIA NM, 88210
 Fax To: NONE

Received:	01/19/2017	Sampling Date:	01/09/2017
Reported:	01/24/2017	Sampling Type:	Soil
Project Name:	BURCH-KEELY WATER FLOOD SATELLITI	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Angela Cabrera
Project Location:	NONE GIVEN		

Sample ID: T3 -4' (H700132-24)

BTEX 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/21/2017	ND	1.77	88.6	2.00	0.222	
Toluene*	<0.050	0.050	01/21/2017	ND	1.76	88.0	2.00	0.118	
Ethylbenzene*	<0.050	0.050	01/21/2017	ND	1.82	90.8	2.00	0.0725	
Total Xylenes*	<0.150	0.150	01/21/2017	ND	5.30	88.4	6.00	0.0667	
Total BTEX	<0.300	0.300	01/21/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 102 % 73.6-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	01/23/2017	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	01/20/2017	ND	192	95.9	200	2.88	
DRO >C10-C28	<10.0	10.0	01/20/2017	ND	200	99.9	200	15.9	

Surrogate: 1-Chlorooctane 96.7 % 35-147

Surrogate: 1-Chlorooctadecane 83.8 % 28-171

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Analytical Results For:

COG OPERATING
 AARON LIEB
 P. O. BOX 1630
 ARTESIA NM, 88210
 Fax To: NONE

Received:	01/19/2017	Sampling Date:	01/09/2017
Reported:	01/24/2017	Sampling Type:	Soil
Project Name:	BURCH-KEELY WATER FLOOD SATELLITI	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Angela Cabrera
Project Location:	NONE GIVEN		

Sample ID: T3 -5' (H700132-25)

BTEX 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/21/2017	ND	1.77	88.6	2.00	0.222	
Toluene*	<0.050	0.050	01/21/2017	ND	1.76	88.0	2.00	0.118	
Ethylbenzene*	<0.050	0.050	01/21/2017	ND	1.82	90.8	2.00	0.0725	
Total Xylenes*	<0.150	0.150	01/21/2017	ND	5.30	88.4	6.00	0.0667	
Total BTEX	<0.300	0.300	01/21/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 103 % 73.6-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	64.0	16.0	01/23/2017	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	01/20/2017	ND	192	95.9	200	2.88	
DRO >C10-C28	<10.0	10.0	01/20/2017	ND	200	99.9	200	15.9	

Surrogate: 1-Chlorooctane 88.4 % 35-147

Surrogate: 1-Chlorooctadecane 80.3 % 28-171

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

COG OPERATING
 AARON LIEB
 P. O. BOX 1630
 ARTESIA NM, 88210
 Fax To: NONE

Received:	01/19/2017	Sampling Date:	01/09/2017
Reported:	01/24/2017	Sampling Type:	Soil
Project Name:	BURCH-KEELY WATER FLOOD SATELLITI	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Angela Cabrera
Project Location:	NONE GIVEN		

Sample ID: T3 -6' (H700132-26)

BTEX 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/21/2017	ND	1.77	88.6	2.00	0.222	
Toluene*	<0.050	0.050	01/21/2017	ND	1.76	88.0	2.00	0.118	
Ethylbenzene*	<0.050	0.050	01/21/2017	ND	1.82	90.8	2.00	0.0725	
Total Xylenes*	<0.150	0.150	01/21/2017	ND	5.30	88.4	6.00	0.0667	
Total BTEX	<0.300	0.300	01/21/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 102 % 73.6-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	01/23/2017	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	01/20/2017	ND	192	95.9	200	2.88	
DRO >C10-C28	<10.0	10.0	01/20/2017	ND	200	99.9	200	15.9	

Surrogate: 1-Chlorooctane 84.1 % 35-147

Surrogate: 1-Chlorooctadecane 73.4 % 28-171

Sample ID: T3 -7' (H700132-27)

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	01/23/2017	ND	416	104	400	0.00	

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Analytical Results For:

COG OPERATING
 AARON LIEB
 P. O. BOX 1630
 ARTESIA NM, 88210
 Fax To: NONE

Received:	01/19/2017	Sampling Date:	01/09/2017
Reported:	01/24/2017	Sampling Type:	Soil
Project Name:	BURCH-KEELY WATER FLOOD SATELLITI	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Angela Cabrera
Project Location:	NONE GIVEN		

Sample ID: T3 -8' (H700132-28)

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	01/23/2017	ND	416	104	400	0.00	

Sample ID: T3 -10' (H700132-29)

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	112	16.0	01/23/2017	ND	416	104	400	0.00	

Sample ID: T3 -12' (H700132-30)

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	80.0	16.0	01/23/2017	ND	416	104	400	0.00	

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Analytical Results For:

COG OPERATING
 AARON LIEB
 P. O. BOX 1630
 ARTESIA NM, 88210
 Fax To: NONE

Received:	01/19/2017	Sampling Date:	01/09/2017
Reported:	01/24/2017	Sampling Type:	Soil
Project Name:	BURCH-KEELY WATER FLOOD SATELLITI	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Angela Cabrera
Project Location:	NONE GIVEN		

Sample ID: T4 -1' (H700132-31)

BTEX 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.200	0.200	01/21/2017	ND	1.77	88.6	2.00	0.222	
Toluene*	4.48	0.200	01/21/2017	ND	1.76	88.0	2.00	0.118	
Ethylbenzene*	4.92	0.200	01/21/2017	ND	1.82	90.8	2.00	0.0725	
Total Xylenes*	8.07	0.600	01/21/2017	ND	5.30	88.4	6.00	0.0667	
Total BTEX	17.5	1.20	01/21/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 109 % 73.6-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	3600	16.0	01/23/2017	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	105	10.0	01/20/2017	ND	192	95.9	200	2.88	
DRO >C10-C28	391	10.0	01/20/2017	ND	200	99.9	200	15.9	

Surrogate: 1-Chlorooctane 105 % 35-147

Surrogate: 1-Chlorooctadecane 86.4 % 28-171

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Analytical Results For:

COG OPERATING
 AARON LIEB
 P. O. BOX 1630
 ARTESIA NM, 88210
 Fax To: NONE

Received:	01/19/2017	Sampling Date:	01/09/2017
Reported:	01/24/2017	Sampling Type:	Soil
Project Name:	BURCH-KEELY WATER FLOOD SATELLITI	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Angela Cabrera
Project Location:	NONE GIVEN		

Sample ID: T4 -2' (H700132-32)

BTEX 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/21/2017	ND	1.77	88.6	2.00	0.222	
Toluene*	0.069	0.050	01/21/2017	ND	1.76	88.0	2.00	0.118	
Ethylbenzene*	0.227	0.050	01/21/2017	ND	1.82	90.8	2.00	0.0725	
Total Xylenes*	0.559	0.150	01/21/2017	ND	5.30	88.4	6.00	0.0667	
Total BTEX	0.855	0.300	01/21/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 105 % 73.6-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1040	16.0	01/23/2017	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	01/20/2017	ND	192	95.9	200	2.88	
DRO >C10-C28	77.1	10.0	01/20/2017	ND	200	99.9	200	15.9	

Surrogate: 1-Chlorooctane 90.9 % 35-147

Surrogate: 1-Chlorooctadecane 79.6 % 28-171

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Analytical Results For:

COG OPERATING
 AARON LIEB
 P. O. BOX 1630
 ARTESIA NM, 88210
 Fax To: NONE

Received:	01/19/2017	Sampling Date:	01/09/2017
Reported:	01/24/2017	Sampling Type:	Soil
Project Name:	BURCH-KEELY WATER FLOOD SATELLITI	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Angela Cabrera
Project Location:	NONE GIVEN		

Sample ID: T4 -3' (H700132-33)

BTEX 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/21/2017	ND	1.77	88.6	2.00	0.222	
Toluene*	<0.050	0.050	01/21/2017	ND	1.76	88.0	2.00	0.118	
Ethylbenzene*	<0.050	0.050	01/21/2017	ND	1.82	90.8	2.00	0.0725	
Total Xylenes*	<0.150	0.150	01/21/2017	ND	5.30	88.4	6.00	0.0667	
Total BTEX	<0.300	0.300	01/21/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 101 % 73.6-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	5040	16.0	01/23/2017	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	01/20/2017	ND	192	95.9	200	2.88	
DRO >C10-C28	<10.0	10.0	01/20/2017	ND	200	99.9	200	15.9	

Surrogate: 1-Chlorooctane 92.8 % 35-147

Surrogate: 1-Chlorooctadecane 83.4 % 28-171

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Analytical Results For:

COG OPERATING
 AARON LIEB
 P. O. BOX 1630
 ARTESIA NM, 88210
 Fax To: NONE

Received:	01/19/2017	Sampling Date:	01/09/2017
Reported:	01/24/2017	Sampling Type:	Soil
Project Name:	BURCH-KEELY WATER FLOOD SATELLITI	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Angela Cabrera
Project Location:	NONE GIVEN		

Sample ID: T4 -4' (H700132-34)

BTEX 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/21/2017	ND	1.77	88.6	2.00	0.222	
Toluene*	<0.050	0.050	01/21/2017	ND	1.76	88.0	2.00	0.118	
Ethylbenzene*	<0.050	0.050	01/21/2017	ND	1.82	90.8	2.00	0.0725	
Total Xylenes*	<0.150	0.150	01/21/2017	ND	5.30	88.4	6.00	0.0667	
Total BTEX	<0.300	0.300	01/21/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 102 % 73.6-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	64.0	16.0	01/23/2017	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	01/20/2017	ND	192	95.9	200	2.88	
DRO >C10-C28	<10.0	10.0	01/20/2017	ND	200	99.9	200	15.9	

Surrogate: 1-Chlorooctane 96.3 % 35-147

Surrogate: 1-Chlorooctadecane 95.8 % 28-171

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Analytical Results For:

COG OPERATING
 AARON LIEB
 P. O. BOX 1630
 ARTESIA NM, 88210
 Fax To: NONE

Received:	01/19/2017	Sampling Date:	01/09/2017
Reported:	01/24/2017	Sampling Type:	Soil
Project Name:	BURCH-KEELY WATER FLOOD SATELLITI	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Angela Cabrera
Project Location:	NONE GIVEN		

Sample ID: T4 -5' (H700132-35)

BTEX 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/21/2017	ND	1.77	88.6	2.00	0.222	
Toluene*	<0.050	0.050	01/21/2017	ND	1.76	88.0	2.00	0.118	
Ethylbenzene*	<0.050	0.050	01/21/2017	ND	1.82	90.8	2.00	0.0725	
Total Xylenes*	<0.150	0.150	01/21/2017	ND	5.30	88.4	6.00	0.0667	
Total BTEX	<0.300	0.300	01/21/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 102 % 73.6-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	01/23/2017	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	01/20/2017	ND	192	95.9	200	2.88	
DRO >C10-C28	<10.0	10.0	01/20/2017	ND	200	99.9	200	15.9	

Surrogate: 1-Chlorooctane 88.7 % 35-147

Surrogate: 1-Chlorooctadecane 94.7 % 28-171

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Analytical Results For:

COG OPERATING
 AARON LIEB
 P. O. BOX 1630
 ARTESIA NM, 88210
 Fax To: NONE

Received:	01/19/2017	Sampling Date:	01/09/2017
Reported:	01/24/2017	Sampling Type:	Soil
Project Name:	BURCH-KEELY WATER FLOOD SATELLITI	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Angela Cabrera
Project Location:	NONE GIVEN		

Sample ID: T4 -6' (H700132-36)

BTEX 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/21/2017	ND	1.77	88.6	2.00	0.222	
Toluene*	<0.050	0.050	01/21/2017	ND	1.76	88.0	2.00	0.118	
Ethylbenzene*	<0.050	0.050	01/21/2017	ND	1.82	90.8	2.00	0.0725	
Total Xylenes*	<0.150	0.150	01/21/2017	ND	5.30	88.4	6.00	0.0667	
Total BTEX	<0.300	0.300	01/21/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 103 % 73.6-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	64.0	16.0	01/23/2017	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	01/20/2017	ND	192	95.9	200	2.88	
DRO >C10-C28	<10.0	10.0	01/20/2017	ND	200	99.9	200	15.9	

Surrogate: 1-Chlorooctane 95.7 % 35-147

Surrogate: 1-Chlorooctadecane 84.9 % 28-171

Sample ID: T4 -7' (H700132-37)

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	01/23/2017	ND	416	104	400	0.00	

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Analytical Results For:

COG OPERATING
 AARON LIEB
 P. O. BOX 1630
 ARTESIA NM, 88210
 Fax To: NONE

Received:	01/19/2017	Sampling Date:	01/09/2017
Reported:	01/24/2017	Sampling Type:	Soil
Project Name:	BURCH-KEELY WATER FLOOD SATELLITI	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Angela Cabrera
Project Location:	NONE GIVEN		

Sample ID: T4 -8' (H700132-38)

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	01/23/2017	ND	416	104	400	0.00	

Sample ID: T5 -1' (H700132-39)

BTEX 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/21/2017	ND	1.77	88.6	2.00	0.222	
Toluene*	<0.050	0.050	01/21/2017	ND	1.76	88.0	2.00	0.118	
Ethylbenzene*	<0.050	0.050	01/21/2017	ND	1.82	90.8	2.00	0.0725	
Total Xylenes*	<0.150	0.150	01/21/2017	ND	5.30	88.4	6.00	0.0667	
Total BTEX	<0.300	0.300	01/21/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 101 % 73.6-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	256	16.0	01/23/2017	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	01/20/2017	ND	192	95.9	200	2.88	
DRO >C10-C28	<10.0	10.0	01/20/2017	ND	200	99.9	200	15.9	

Surrogate: 1-Chlorooctane 78.6 % 35-147

Surrogate: 1-Chlorooctadecane 82.7 % 28-171

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

COG OPERATING
 AARON LIEB
 P. O. BOX 1630
 ARTESIA NM, 88210
 Fax To: NONE

Received:	01/19/2017	Sampling Date:	01/09/2017
Reported:	01/24/2017	Sampling Type:	Soil
Project Name:	BURCH-KEELY WATER FLOOD SATELLITI	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Angela Cabrera
Project Location:	NONE GIVEN		

Sample ID: T5 -2' (H700132-40)

BTEX 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/21/2017	ND	1.77	88.6	2.00	0.222	
Toluene*	<0.050	0.050	01/21/2017	ND	1.76	88.0	2.00	0.118	
Ethylbenzene*	<0.050	0.050	01/21/2017	ND	1.82	90.8	2.00	0.0725	
Total Xylenes*	<0.150	0.150	01/21/2017	ND	5.30	88.4	6.00	0.0667	
Total BTEX	<0.300	0.300	01/21/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 101 % 73.6-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1010	16.0	01/23/2017	ND	416	104	400	3.92	

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	01/20/2017	ND	192	95.9	200	2.88	
DRO >C10-C28	<10.0	10.0	01/20/2017	ND	200	99.9	200	15.9	

Surrogate: 1-Chlorooctane 80.2 % 35-147

Surrogate: 1-Chlorooctadecane 86.2 % 28-171

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Analytical Results For:

COG OPERATING
 AARON LIEB
 P. O. BOX 1630
 ARTESIA NM, 88210
 Fax To: NONE

Received:	01/19/2017	Sampling Date:	01/09/2017
Reported:	01/24/2017	Sampling Type:	Soil
Project Name:	BURCH-KEELY WATER FLOOD SATELLITI	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Angela Cabrera
Project Location:	NONE GIVEN		

Sample ID: T5 -3' (H700132-41)

BTEX 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/21/2017	ND	1.77	88.6	2.00	0.222	
Toluene*	<0.050	0.050	01/21/2017	ND	1.76	88.0	2.00	0.118	
Ethylbenzene*	<0.050	0.050	01/21/2017	ND	1.82	90.8	2.00	0.0725	
Total Xylenes*	<0.150	0.150	01/21/2017	ND	5.30	88.4	6.00	0.0667	
Total BTEX	<0.300	0.300	01/21/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 102 % 73.6-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	896	16.0	01/23/2017	ND	416	104	400	3.92	

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	01/20/2017	ND	192	95.9	200	2.88	
DRO >C10-C28	<10.0	10.0	01/20/2017	ND	200	99.9	200	15.9	

Surrogate: 1-Chlorooctane 70.4 % 35-147

Surrogate: 1-Chlorooctadecane 75.1 % 28-171

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

COG OPERATING
 AARON LIEB
 P. O. BOX 1630
 ARTESIA NM, 88210
 Fax To: NONE

Received:	01/19/2017	Sampling Date:	01/09/2017
Reported:	01/24/2017	Sampling Type:	Soil
Project Name:	BURCH-KEELY WATER FLOOD SATELLITI	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Angela Cabrera
Project Location:	NONE GIVEN		

Sample ID: T5 -4' (H700132-42)

BTEX 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/21/2017	ND	1.77	88.6	2.00	0.222	
Toluene*	<0.050	0.050	01/21/2017	ND	1.76	88.0	2.00	0.118	
Ethylbenzene*	<0.050	0.050	01/21/2017	ND	1.82	90.8	2.00	0.0725	
Total Xylenes*	<0.150	0.150	01/21/2017	ND	5.30	88.4	6.00	0.0667	
Total BTEX	<0.300	0.300	01/21/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 101 % 73.6-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	960	16.0	01/23/2017	ND	416	104	400	3.92	

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	01/20/2017	ND	192	95.9	200	2.88	
DRO >C10-C28	<10.0	10.0	01/20/2017	ND	200	99.9	200	15.9	

Surrogate: 1-Chlorooctane 73.2 % 35-147

Surrogate: 1-Chlorooctadecane 81.8 % 28-171

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Analytical Results For:

COG OPERATING
 AARON LIEB
 P. O. BOX 1630
 ARTESIA NM, 88210
 Fax To: NONE

Received:	01/19/2017	Sampling Date:	01/09/2017
Reported:	01/24/2017	Sampling Type:	Soil
Project Name:	BURCH-KEELY WATER FLOOD SATELLITI	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Angela Cabrera
Project Location:	NONE GIVEN		

Sample ID: T5 -5' (H700132-43)

BTEX 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/21/2017	ND	1.77	88.6	2.00	0.222	
Toluene*	<0.050	0.050	01/21/2017	ND	1.76	88.0	2.00	0.118	
Ethylbenzene*	<0.050	0.050	01/21/2017	ND	1.82	90.8	2.00	0.0725	
Total Xylenes*	<0.150	0.150	01/21/2017	ND	5.30	88.4	6.00	0.0667	
Total BTEX	<0.300	0.300	01/21/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 101 % 73.6-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	512	16.0	01/23/2017	ND	416	104	400	3.92	

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	01/20/2017	ND	192	95.9	200	2.88	
DRO >C10-C28	<10.0	10.0	01/20/2017	ND	200	99.9	200	15.9	

Surrogate: 1-Chlorooctane 88.3 % 35-147

Surrogate: 1-Chlorooctadecane 92.6 % 28-171

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Analytical Results For:

COG OPERATING
 AARON LIEB
 P. O. BOX 1630
 ARTESIA NM, 88210
 Fax To: NONE

Received:	01/19/2017	Sampling Date:	01/09/2017
Reported:	01/24/2017	Sampling Type:	Soil
Project Name:	BURCH-KEELY WATER FLOOD SATELLITI	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Angela Cabrera
Project Location:	NONE GIVEN		

Sample ID: T5 -6' (H700132-44)

BTEX 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/21/2017	ND	1.77	88.6	2.00	0.222	
Toluene*	<0.050	0.050	01/21/2017	ND	1.76	88.0	2.00	0.118	
Ethylbenzene*	<0.050	0.050	01/21/2017	ND	1.82	90.8	2.00	0.0725	
Total Xylenes*	<0.150	0.150	01/21/2017	ND	5.30	88.4	6.00	0.0667	
Total BTEX	<0.300	0.300	01/21/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 102 % 73.6-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1550	16.0	01/23/2017	ND	416	104	400	3.92	

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	01/20/2017	ND	192	95.9	200	2.88	
DRO >C10-C28	<10.0	10.0	01/20/2017	ND	200	99.9	200	15.9	

Surrogate: 1-Chlorooctane 93.1 % 35-147

Surrogate: 1-Chlorooctadecane 92.7 % 28-171

Sample ID: T5 -7' (H700132-45)

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1580	16.0	01/23/2017	ND	416	104	400	3.92	

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Analytical Results For:

COG OPERATING
 AARON LIEB
 P. O. BOX 1630
 ARTESIA NM, 88210
 Fax To: NONE

Received:	01/19/2017	Sampling Date:	01/09/2017
Reported:	01/24/2017	Sampling Type:	Soil
Project Name:	BURCH-KEELY WATER FLOOD SATELLITI	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Angela Cabrera
Project Location:	NONE GIVEN		

Sample ID: T5 -8' (H700132-46)

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1340	16.0	01/23/2017	ND	416	104	400	3.92	

Sample ID: T5 -10' (H700132-47)

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1540	16.0	01/23/2017	ND	416	104	400	3.92	

Sample ID: T5 -12' (H700132-48)

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1470	16.0	01/23/2017	ND	416	104	400	3.92	

Sample ID: T5 -14' (H700132-49)

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1230	16.0	01/23/2017	ND	416	104	400	3.92	

Sample ID: T5 -16' (H700132-50)

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1010	16.0	01/23/2017	ND	416	104	400	3.92	

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Celey D. Keene, Lab Director/Quality Manager



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Notes and Definitions

- S-06 The recovery of this surrogate is outside control limits due to sample dilution required from high analyte concentration and/or matrix interference's.
QR-03 The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
QR-02 The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.
QM-07 The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
ND Analyte NOT DETECTED at or above the reporting limit
RPD Relative Percent Difference
** Samples not received at proper temperature of 6°C or below.
*** Insufficient time to reach temperature.
- Chloride by SM4500Cl-B does not require samples be received at or below 6°C
Samples reported on an as received basis (wet) unless otherwise noted on report

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Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager



101 East Marland, Hobbs, NM 88240
(575) 393-2326 FAX (575) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

ANALYSIS REQUEST

BILL TO

Company Name: COG Operating LLC
 Project Manager: Aaron Lieb
 Address: 2407 Pecos Avenue
 City: Artesia State: NM Zip: 88210
 Phone #: 575-748-1553 Fax #:
 Project #: Project Owner:
 Project Name: Burch-Keely Water Flood Satellite "C" Flowline
 Project Location:
 Sampler Name: Aaron Lieb
 P.O. #:
 Company: COG Operating LLC
 Attn: Robert McNeill
 Address: 600 W Illinois
 City: Midland
 State: TX Zip: 79701
 Phone #: (432) 221-0388
 Fax #:

Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX						DATE	TIME	BTEX	TPH	Chloride
				GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :					
H1D01122														
	1	T1-1'								1/9/17	2:30 PM	X	X	X
	2	T1-2'								1/9/17	2:30 PM	X	X	X
	3	T1-3'								1/9/17	2:30 PM	X	X	X
	4	T1-4'								1/9/17	2:30 PM	X	X	X
	5	T1-5'								1/9/17	2:30 PM	X	X	X
	6	T1-6'								1/9/17	2:30 PM	X	X	X
	7	T1-7'								1/9/17	2:30 PM	X	X	X
	8	T1-8'								1/9/17	2:30 PM	X	X	X
	9	T1-10'								1/9/17	2:30 PM	X	X	X
	10	T1-12'								1/9/17	2:30 PM	X	X	X

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Relinquished By: *[Signature]*
 Date: 1-19-17
 Time: *[Signature]*
 Received By: *[Signature]*
 Date: *[Signature]*
 Time: *[Signature]*

Phone Result: Yes No Add'l Phone #:
 Fax Result: Yes No Add'l Fax #:
 REMARKS:
 dneel2@concho.com
 alieeb@concho.com
 rgrubbs@concho.com
 thaskell@concho.com

Delivered By: (Circle One)
 Sampler - UPS - Bus - Other: #75 1.10
 Sample Condition
 Cool Intact
 Yes No
 No No

CHECKED BY: *[Signature]*
 (Initials)

1065



101 East Marland, Hobbs, NM 88240
(575) 393-2326 FAX (575) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

BILL TO

ANALYSIS REQUEST

Company Name: COG Operating LLC
 Project Manager: Aaron Lieb
 Address: 2407 Pecos Avenue
 City: Artesia State: NM Zip: 88210
 Phone #: 575-748-1553 Fax #: 600 W Illinois
 Project #: Project Owner: Midland
 Project Name: Burch-Keely Water Flood Satellite "C" Flowline
 Project Location: State: TX Zip: 79701
 Sampler Name: Aaron Lieb Phone #: (432) 221-0388
 Fax #:

Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX						DATE	TIME	BTX	TPH	Chloride
				GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :					
H100132														
11	T2-1'								1/9/17	3:00 PM	X	X	X	
12	T2-2'								1/9/17	3:00 PM	X	X	X	
13	T2-3'								1/9/17	3:00 PM	X	X	X	
14	T2-4'								1/9/17	3:00 PM	X	X	X	
15	T2-5'								1/9/17	3:00 PM	X	X	X	
16	T2-6'								1/9/17	3:00 PM	X	X	X	
17	T2-7'								1/9/17	3:00 PM	X	X	X	
18	T2-8'								1/9/17	3:00 PM	X	X	X	
19	T2-10'								1/9/17	3:00 PM	X	X	X	
20	T2-12'								1/9/17	3:00 PM	X	X	X	

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Relinquished By: *[Signature]* Date: 1-19-17
 Received By: *[Signature]* Date: 10:43 AM
 Phone Result: Yes No
 Fax Result: Yes No
 Add'l Phone #:
 Add'l Fax #:
 REMARKS: dneel2@concho.com
 alieb@concho.com
 rgrubbs@concho.com
 mskell@concho.com

Delivered By: (Circle One) UPS Bus Other: #75
 Sampler - UPS - Bus - Other: #75
 Sample Condition: Cool Intact
 Checked By: *[Signature]*

205



101 East Marland, Hobbs, NM 88240
(575) 393-2326 FAX (575) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

BILL TO

ANALYSIS REQUEST

Company Name: COG Operating LLC
 Project Manager: Aaron Lieb
 Address: 2407 Pecos Avenue
 City: Artesia State: NM Zip: 88210
 Phone #: 575-748-1553 Fax #: 575-748-1553
 Project #: Project Owner: Midland
 Project Name: Burch-Keely Water Flood Satellite "C" Flowline
 Project Location: State: TX Zip: 79701
 Sampler Name: Aaron Lieb Phone #: (432) 221-0388
 FOR LAB USE ONLY

Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX						DATE	TIME	BTX	TPH	Chloride
				GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :					
H100152	21								1/9/17	3:30 PM	X	X	X	
	22								1/9/17	3:30 PM	X	X	X	
	23								1/9/17	3:30 PM	X	X	X	
	24								1/9/17	3:30 PM	X	X	X	
	25								1/9/17	3:30 PM	X	X	X	
	26								1/9/17	3:30 PM	X	X	X	
	27								1/9/17	3:30 PM	X	X	X	
	28								1/9/17	3:30 PM	X	X	X	
	29								1/9/17	3:30 PM	X	X	X	
	30								1/9/17	3:30 PM	X	X	X	

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Relinquished By: *SK* Date: 1-19-17
 Received By: *[Signature]* Date: 10/14/8
 Phone Result: Yes No Add'l Phone #:
 Fax Result: Yes No Add'l Fax #:
 REMARKS: dneel2@concho.com
 alieb@concho.com
 rrrubbs@concho.com
 rhaskell@concho.com

Delivered By: (Circle One) UPS Bus Other: #75 1.10
 Sample Condition: Cool Intact
 Yes No
 Checked By: *[Signature]*

505



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 (575) 393-2326 FAX (575) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

BILL TO

ANALYSIS REQUEST

Company Name: COG Operating LLC
 Project Manager: Aaron Lieb
 Address: 2407 Pecos Avenue
 City: Artesia State: NM Zip: 88210
 Phone #: 575-748-1553 Fax #: 600 W Illinois
 Project #: Project Owner: Midland
 Project Name: Burch-Keely Water Flood Satellite "C" Flowline
 Project Location: State: TX Zip: 79701
 Phone #: (432) 221-0388
 Sampler Name: Aaron Lieb Fax #:

Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX						PRESERV.	SAMPLING	DATE	TIME	BTEX	TPH	Chloride
				GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:							
31	T4-1'									X	1/9/17	3:30 PM	X	X	X	
32	T4-2'									X	1/9/17	3:30 PM	X	X	X	
33	T4-3'									X	1/9/17	3:30 PM	X	X	X	
34	T4-4'									X	1/9/17	3:30 PM	X	X	X	
35	T4-5'									X	1/9/17	3:30 PM	X	X	X	
36	T4-6'									X	1/9/17	3:30 PM	X	X	X	
37	T4-7'									X	1/9/17	3:30 PM	X	X	X	
38	T4-8'									X	1/9/17	3:30 PM	X	X	X	
39	T5-1'									X	1/9/17	3:45 PM	X	X	X	
40	T5-2'									X	1/9/17	3:45 PM	X	X	X	

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Relinquished By: [Signature] Date: 1-19-17 Time: 10:48
 Received By: [Signature] Date: 1-19-17 Time: 10:48
 Delivered By: (Circle One) #75
 Sampler - UPS - Bus - Other: 1.10
 Sample Condition: Cool Intact Yes Yes No No
 CHECKED BY: [Signature]

REMARKS: dneal2@concho.com
 alleb@concho.com
 rgrubbs@concho.com
 thaskell@concho.com
 Phone Result: Yes No Add'l Phone #:
 Fax Result: Yes No Add'l Fax #:



101 East Marland, Hobbs, NM 88240
 (575) 393-2326 FAX (575) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

BILL TO

ANALYSIS REQUEST

Company Name: COG Operating LLC		P.O. #:
Project Manager: Aaron Lieb		Company: COG Operating LLC
Address: 2407 Peccos Avenue		Attn: Robert McNeill
City: Artesia	State: NM Zip: 88210	Address: 600 W Illinois
Phone #: 575-748-1553	Fax #: _____	City: Midland
Project #:	Project Owner:	State: TX Zip: 79701
Project Name: Burch-Keely Water Flood Satellite "C" Flowline	Project Location:	Phone #: (432) 221-0388
Sampler Name: Aaron Lieb	Fax #:	

Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX						PRESERV.	DATE	TIME	BTEX	TPH	Chloride
				GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :						
H700152	41										1/9/17	3:45 PM	X	X	X
	42										1/9/17	3:45 PM	X	X	X
	43										1/9/17	3:45 PM	X	X	X
	44										1/9/17	3:45 PM	X	X	X
	45										1/9/17	3:45 PM	X	X	X
	46										1/9/17	3:45 PM	X	X	X
	47										1/9/17	3:45 PM	X	X	X
	48										1/9/17	3:45 PM	X	X	X
	49										1/9/17	3:45 PM	X	X	X
	50										1/9/17	3:45 PM	X	X	X

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Relinquished By: *[Signature]* Date: 1-19-17
 Received By: *[Signature]* Date: 10:48
 Relinquished By: _____ Date: _____
 Received By: *[Signature]* Date: _____

REMARKS:
 Phone Result: Yes No Add'l Phone #: _____
 Fax Result: Yes No Add'l Fax #: _____
 Email: adineel2@concho.com
alieb@concho.com
rgrubbs@concho.com
thaskell@concho.com

Delivered By: (Circle One) UPS Bus Other: #75

Sample Condition: Cool Intact
 Yes No

CHECKED BY: *[Signature]*



Certificate of Analysis Summary 552080

COG Operating LLC, Artesia, NM

Project Name: BKU Satellite C Flowline

Project Id:
Contact: Aaron Lieb
Project Location: BKU Satellite C Flowline

Date Received in Lab: Fri Apr-28-17 11:00 am
Report Date: 04-MAY-17
Project Manager: Liz Givens

<i>Analysis Requested</i>	<i>Lab Id:</i>	552080-001	552080-002	552080-003	552080-004	552080-005	552080-006
	<i>Field Id:</i>	T-5 - 17.5'	T-5 - 19'	T-5 - 22'	T-5 - 24'	T-5 - 25'	T-5 - 26.5'
	<i>Depth:</i>	17.5 ft	19 ft	22 ft	24 ft	25 ft	2.5 ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Apr-20-17 10:30					
Inorganic Anions by EPA 300/300.1	<i>Extracted:</i>	May-04-17 09:00					
	<i>Analyzed:</i>	May-04-17 10:19	May-04-17 10:42	May-04-17 10:50	May-04-17 10:57	May-04-17 11:05	May-04-17 11:28
	<i>Units/RL:</i>	mg/kg RL					
Chloride		793 4.96	1390 24.5	1120 4.96	3380 25.0	2880 24.6	1150 4.97

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

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

Brandi Ritcherson
Project Manager

Analytical Report 552080

for
COG Operating LLC

Project Manager: Aaron Lieb
BKU Satellite C Flowline

04-MAY-17

Collected By: Client



1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215), Arizona (AZ0765), Florida (E871002), Louisiana (03054)
Oklahoma (9218)

Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295)
Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400)
Xenco-San Antonio: Texas (T104704534)

Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757)
Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)



04-MAY-17

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

Reference: XENCO Report No(s): **552080**
BKU Satelite C Flowline
Project Address: BKU Satelite C Flowline

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) 552080. 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. 552080 will be filed for 60 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,

Brandi Ritcherson

Project Manager

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



Sample Cross Reference 552080

COG Operating LLC, Artesia, NM

BKU Satellite C Flowline

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
T-5 - 17.5'	S	04-20-17 10:30	- 17.5 ft	552080-001
T-5 - 19'	S	04-20-17 10:30	- 19 ft	552080-002
T-5 - 22'	S	04-20-17 10:30	- 22 ft	552080-003
T-5 - 24'	S	04-20-17 10:30	- 24 ft	552080-004
T-5 - 25'	S	04-20-17 10:30	- 25 ft	552080-005
T-5 - 26.5'	S	04-20-17 10:30	- 2.5 ft	552080-006



CASE NARRATIVE

Client Name: COG Operating LLC
Project Name: BKU Satelite C Flowline

Project ID:
Work Order Number(s): 552080

Report Date: 04-MAY-17
Date Received: 04/28/2017

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None



Certificate of Analytical Results 552080



COG Operating LLC, Artesia, NM BKU Satellite C Flowline

Sample Id: T-5 - 17.5'	Matrix: Soil	Date Received: 04.28.17 11.00
Lab Sample Id: 552080-001	Date Collected: 04.20.17 10.30	Sample Depth: 17.5 ft
Analytical Method: Inorganic Anions by EPA 300/300.1		Prep Method: E300P
Tech: MGO		% Moisture:
Analyst: MGO	Date Prep: 05.04.17 09.00	Basis: Wet Weight
Seq Number: 3016516		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	793	4.96	mg/kg	05.04.17 10.19		1



Certificate of Analytical Results 552080

COG Operating LLC, Artesia, NM BKU Satellite C Flowline

Sample Id: T-5 - 19'	Matrix: Soil	Date Received: 04.28.17 11.00
Lab Sample Id: 552080-002	Date Collected: 04.20.17 10.30	Sample Depth: 19 ft
Analytical Method: Inorganic Anions by EPA 300/300.1		Prep Method: E300P
Tech: MGO		% Moisture:
Analyst: MGO	Date Prep: 05.04.17 09.00	Basis: Wet Weight
Seq Number: 3016516		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1390	24.5	mg/kg	05.04.17 10.42		5



Certificate of Analytical Results 552080

COG Operating LLC, Artesia, NM BKU Satellite C Flowline

Sample Id: T-5 - 22'	Matrix: Soil	Date Received: 04.28.17 11.00
Lab Sample Id: 552080-003	Date Collected: 04.20.17 10.30	Sample Depth: 22 ft
Analytical Method: Inorganic Anions by EPA 300/300.1		Prep Method: E300P
Tech: MGO		% Moisture:
Analyst: MGO	Date Prep: 05.04.17 09.00	Basis: Wet Weight
Seq Number: 3016516		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1120	4.96	mg/kg	05.04.17 10.50		1



Certificate of Analytical Results 552080

COG Operating LLC, Artesia, NM BKU Satellite C Flowline

Sample Id: T-5 - 24'	Matrix: Soil	Date Received: 04.28.17 11.00
Lab Sample Id: 552080-004	Date Collected: 04.20.17 10.30	Sample Depth: 24 ft
Analytical Method: Inorganic Anions by EPA 300/300.1		Prep Method: E300P
Tech: MGO		% Moisture:
Analyst: MGO	Date Prep: 05.04.17 09.00	Basis: Wet Weight
Seq Number: 3016516		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3380	25.0	mg/kg	05.04.17 10.57		5



Certificate of Analytical Results 552080

COG Operating LLC, Artesia, NM BKU Satellite C Flowline

Sample Id: T-5 - 25'	Matrix: Soil	Date Received: 04.28.17 11.00
Lab Sample Id: 552080-005	Date Collected: 04.20.17 10.30	Sample Depth: 25 ft
Analytical Method: Inorganic Anions by EPA 300/300.1		Prep Method: E300P
Tech: MGO		% Moisture:
Analyst: MGO	Date Prep: 05.04.17 09.00	Basis: Wet Weight
Seq Number: 3016516		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2880	24.6	mg/kg	05.04.17 11.05		5



Certificate of Analytical Results 552080

COG Operating LLC, Artesia, NM BKU Satellite C Flowline

Sample Id: T-5 - 26.5'	Matrix: Soil	Date Received: 04.28.17 11.00
Lab Sample Id: 552080-006	Date Collected: 04.20.17 10.30	Sample Depth: 2.5 ft
Analytical Method: Inorganic Anions by EPA 300/300.1		Prep Method: E300P
Tech: MGO		% Moisture:
Analyst: MGO	Date Prep: 05.04.17 09.00	Basis: Wet Weight
Seq Number: 3016516		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1150	4.97	mg/kg	05.04.17 11.28		1



Flagging Criteria



- X** In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the quantitation limit and above the detection limit.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.
- JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

+ NELAC certification not offered for this compound.

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

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



COG Operating LLC
BKU Satellite C Flowline

Analytical Method: Inorganic Anions by EPA 300/300.1

Seq Number: 3016516

MB Sample Id: 724076-1-BLK

Matrix: Solid

LCS Sample Id: 724076-1-BKS

Prep Method: E300P

Date Prep: 05.04.17

LCSD Sample Id: 724076-1-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	232	93	234	94	90-110	1	20	mg/kg	05.04.17 10:04	

Analytical Method: Inorganic Anions by EPA 300/300.1

Seq Number: 3016516

Parent Sample Id: 551955-002

Matrix: Soil

MS Sample Id: 551955-002 S

Prep Method: E300P

Date Prep: 05.04.17

MSD Sample Id: 551955-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	9.04	250	260	100	263	102	90-110	1	20	mg/kg	05.04.17 12:13	

Analytical Method: Inorganic Anions by EPA 300/300.1

Seq Number: 3016516

Parent Sample Id: 552080-001

Matrix: Soil

MS Sample Id: 552080-001 S

Prep Method: E300P

Date Prep: 05.04.17

MSD Sample Id: 552080-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	793	248	1030	96	1020	92	90-110	1	20	mg/kg	05.04.17 10:27	



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 Stafford, Texas (281-240-4200)
 Dallas Texas (214-902-0300)

CHAIN OF CUSTODY

Page 1 OF 1

San Antonio, Texas (210-509-3334)
 Midland, Texas (432-704-5251)

Phoenix, Arizona (480-355-0900)

www.xenco.com

Client / Reporting Information		Project Information		Xenco Quote #	Xenco Job #
Company Name / Branch: COG Operating LLC		Project Name/Number: BKU Satellite C Flowline			
Company Address: 2407 PECOS Avenue Artesia NM 88210		Project Location: BKU Satellite C Flow			
Email: alieb@concho.com dneel2@concho.com maskell@concho.com		Invoice To: COG Operating LLC Attn: Robert McCrell 600 W. Illinois Midland TX 79701			
Project Contact: Aaron Liebh		PO Number:			
Samplers Name: Aaron Liebh					

No.	Field ID / Point of Collection	Collection			Matrix	# of bottles	Number of preserved bottles							Notes					
		Sample Depth	Date	Time			HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH		NONE				
1	TS - 17.5'	17.5	4/26/17	1030AM	S	1													
2	TS - 19'	19	4/26/17	1030AM	S	1													
3	TS - 22'	22	4/26/17	1030AM	S	1													
4	TS - 24'	24				1													
5	TS - 25'	25				1													
6	TS - 26.5'	26.5				1													
7																			
8																			
9																			
10																			

XXXXXX chloride

*Need to Run ASAP

<input type="checkbox"/> Same Day TAT <input type="checkbox"/> Next Day EMERGENCY <input type="checkbox"/> 2 Day EMERGENCY <input type="checkbox"/> 3 Day EMERGENCY		<input checked="" type="checkbox"/> 5 Day TAT <input type="checkbox"/> 7 Day TAT <input type="checkbox"/> Contract TAT		<input type="checkbox"/> Level II Std QC <input type="checkbox"/> Level III Std QC+ Forms <input type="checkbox"/> Level 3 (CLP Forms) <input type="checkbox"/> TRRP Checklist		<input type="checkbox"/> Level IV (Full Data Pkg /raw data) <input type="checkbox"/> TRRP Level IV <input type="checkbox"/> UST / RG -411		Data Deliverable Information		Notes:	
TAT Starts Day received by Lab, if received by 5:00 pm											
SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY											
Relinquished by Sampler:		Date Time:		Received By:		Date Time:		Relinquished By:		Date Time:	
1		4-26-17 10:30		A. Liebh		4-28-17		M. [unclear]		4-29-17	
3		Date Time:		Received By:		Date Time:		Relinquished By:		Date Time:	
5		Date Time:		Received By:		Date Time:		Relinquished By:		Date Time:	

On Ice Cooler Temp. Thermo. Corr. Factor



Client: COG Operating LLC

Date/ Time Received: 04/28/2017 11:00:00 AM

Work Order #: 552080

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R9

Sample Receipt Checklist

Comments

#1 *Temperature of cooler(s)?	5
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seal present on shipping container/ cooler?	Yes
#5 *Custody Seals intact on shipping container/ cooler?	Yes
#6 Custody Seals intact on sample bottles?	N/A
#7 *Custody Seals Signed and dated?	N/A
#8 *Chain of Custody present?	Yes
#9 Sample instructions complete on Chain of Custody?	Yes
#10 Any missing/extra samples?	No
#11 Chain of Custody signed when relinquished/ received?	Yes
#12 Chain of Custody agrees with sample label(s)?	Yes
#13 Container label(s) legible and intact?	Yes
#14 Sample matrix/ properties agree with Chain of Custody?	Yes
#15 Samples in proper container/ bottle?	Yes
#16 Samples properly preserved?	Yes
#17 Sample container(s) intact?	Yes
#18 Sufficient sample amount for indicated test(s)?	Yes
#19 All samples received within hold time?	Yes
#20 Subcontract of sample(s)?	No
#21 VOC samples have zero headspace?	N/A
#22 <2 for all samples preserved with HNO3,HCL, H2SO4? Except for samples for the analysis of HEM or HEM-SGT which are verified by the analysts.	N/A
#23 >10 for all samples preserved with NaAsO2+NaOH, ZnAc+NaOH?	N/A

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

Analyst:

PH Device/Lot#:

Checklist completed by: Jessica Kramer
Jessica Kramer

Date: 05/01/2017

Checklist reviewed by: Brandi Ritcherson
Brandi Ritcherson

Date: 05/01/2017



Certificate of Analysis Summary 579573

COG Operating LLC, Artesia, NM

Project Name: Burch Keely Flood Sattelite C

Project Id:
Contact: Sheldon Hitchcock
Project Location: Eddy CO NM

Date Received in Lab: Mon Mar-19-18 08:00 am
Report Date: 22-MAR-18
Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	579573-001	579573-002	579573-003	579573-004	579573-005	579573-006
	<i>Field Id:</i>	T-1 E Sidewall	T-1 W Sidewall	T-1 S./T-2 N.	T-2 E. Sidewall	T-2 W. Sidewall	T-2 S./ T-3 N.
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
<i>Sampled:</i>	Mar-05-18 08:00	Mar-06-18 08:05	Mar-07-18 08:10	Mar-08-18 08:15	Mar-09-18 08:20	Mar-09-18 08:25	
Chloride by EPA 300	<i>Extracted:</i>	Mar-21-18 09:00					
	<i>Analyzed:</i>	Mar-21-18 10:10	Mar-21-18 10:15	Mar-21-18 10:21	Mar-21-18 10:26	Mar-21-18 10:31	Mar-21-18 10:47
	<i>Units/RL:</i>	mg/kg RL					
Chloride		13.5 5.00	6.92 4.99	<5.00 5.00	<4.99 4.99	<5.00 5.00	589 5.00

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

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Version: 1.9%

Jessica Kramer
 Project Assistant



Certificate of Analysis Summary 579573

COG Operating LLC, Artesia, NM

Project Name: Burch Keely Flood Sattelite C

Project Id:
Contact: Sheldon Hitchcock
Project Location: Eddy CO NM

Date Received in Lab: Mon Mar-19-18 08:00 am
Report Date: 22-MAR-18
Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	579573-007	579573-008	579573-009	579573-010	579573-011	579573-012
	<i>Field Id:</i>	T-3 E. Sidewall	T-3 W. Sidewall	T-3 S./ T-5 N.	T-5 E. Sidewall	T-5 W. Sidewall	T-5 S./ T-4 N.
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
<i>Sampled:</i>	Mar-09-18 08:30	Mar-09-18 08:35	Mar-09-18 08:40	Mar-09-18 08:45	Mar-05-18 08:50	Mar-06-18 08:55	
Chloride by EPA 300	<i>Extracted:</i>	Mar-21-18 09:00					
	<i>Analyzed:</i>	Mar-21-18 10:52	Mar-21-18 11:08	Mar-21-18 11:14	Mar-21-18 11:19	Mar-21-18 11:24	Mar-21-18 11:30
	<i>Units/RL:</i>	mg/kg RL					
Chloride		27.3 5.00	23.7 5.00	<5.00 5.00	18.4 5.00	22.6 5.00	<4.99 4.99

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Version: 1.9%

Jessica Kramer
 Project Assistant



Certificate of Analysis Summary 579573

COG Operating LLC, Artesia, NM

Project Name: Burch Keely Flood Sattelite C

Project Id:
Contact: Sheldon Hitchcock
Project Location: Eddy CO NM

Date Received in Lab: Mon Mar-19-18 08:00 am
Report Date: 22-MAR-18
Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	579573-013	579573-014	579573-015			
	<i>Field Id:</i>	T-4 E. Sidewall	T-4 W. Sidewall	T-4 S. Sidewall			
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL			
	<i>Sampled:</i>	Mar-07-18 09:00	Mar-08-18 09:05	Mar-09-18 09:10			
Chloride by EPA 300	<i>Extracted:</i>	Mar-21-18 09:00	Mar-21-18 09:00	Mar-21-18 11:00			
	<i>Analyzed:</i>	Mar-21-18 11:40	Mar-21-18 11:45	Mar-21-18 12:17			
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL			
Chloride		<5.00 5.00	<4.99 4.99	<5.00 5.00			

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Version: 1.0%

Jessica Kramer
 Project Assistant

Analytical Report 579573

for
COG Operating LLC

Project Manager: Sheldon Hitchcock
Burch Keely Flood Sattelite C

22-MAR-18

Collected By: Client



1211 W. Florida Ave, Midland TX 79701

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)



22-MAR-18

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

Reference: XENCO Report No(s): **579573**
Burch Keely Flood Sattelite C
Project Address: Eddy CO NM

Sheldon Hitchcock:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 579573. 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. 579573 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer
Project Assistant

*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*

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Sample Cross Reference 579573

COG Operating LLC, Artesia, NM

Burch Keely Flood Sattelite C

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
T-1 E Sidewall	S	03-05-18 08:00		579573-001
T-1 W Sidewall	S	03-06-18 08:05	ft	579573-002
T-1 S./T-2 N.	S	03-07-18 08:10	ft	579573-003
T-2 E. Sidewall	S	03-08-18 08:15	ft	579573-004
T-2 W. Sidewall	S	03-09-18 08:20	ft	579573-005
T-2 S./ T-3 N.	S	03-09-18 08:25	ft	579573-006
T-3 E. Sidewall	S	03-09-18 08:30	ft	579573-007
T-3 W. Sidewall	S	03-09-18 08:35	ft	579573-008
T-3 S./ T-5 N.	S	03-09-18 08:40	ft	579573-009
T-5 E. Sidewall	S	03-09-18 08:45	ft	579573-010
T-5 W. Sidewall	S	03-05-18 08:50	ft	579573-011
T-5 S./ T-4 N.	S	03-06-18 08:55	ft	579573-012
T-4 E. Sidewall	S	03-07-18 09:00	ft	579573-013
T-4 W. Sidewall	S	03-08-18 09:05	ft	579573-014
T-4 S. Sidewall	S	03-09-18 09:10	ft	579573-015



CASE NARRATIVE

Client Name: COG Operating LLC

Project Name: Burch Keely Flood Sattelite C

Project ID:
Work Order Number(s): 579573

Report Date: 22-MAR-18
Date Received: 03/19/2018

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3044438 Chloride by EPA 300

Lab Sample ID 579577-006 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered above QC limits in the Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 579573-015.

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



Certificate of Analytical Results 579573

COG Operating LLC, Artesia, NM

Burch Keely Flood Sattelite C

Sample Id: **T-1 E Sidewall**

Matrix: Soil

Date Received: 03.19.18 08.00

Lab Sample Id: 579573-001

Date Collected: 03.05.18 08.00

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: LRI

% Moisture:

Analyst: SCM

Date Prep: 03.21.18 09.00

Basis: Wet Weight

Seq Number: 3044435

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	13.5	5.00	mg/kg	03.21.18 10.10		1



Certificate of Analytical Results 579573

COG Operating LLC, Artesia, NM

Burch Keely Flood Sattelite C

Sample Id: **T-1 W Sidewall**

Matrix: Soil

Date Received: 03.19.18 08.00

Lab Sample Id: 579573-002

Date Collected: 03.06.18 08.05

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: LRI

% Moisture:

Analyst: SCM

Date Prep: 03.21.18 09.00

Basis: Wet Weight

Seq Number: 3044435

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	6.92	4.99	mg/kg	03.21.18 10.15		1



Certificate of Analytical Results 579573

COG Operating LLC, Artesia, NM

Burch Keely Flood Sattelite C

Sample Id: T-1 S./T-2 N.

Matrix: Soil

Date Received: 03.19.18 08.00

Lab Sample Id: 579573-003

Date Collected: 03.07.18 08.10

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: LRI

% Moisture:

Analyst: SCM

Date Prep: 03.21.18 09.00

Basis: Wet Weight

Seq Number: 3044435

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.00	5.00	mg/kg	03.21.18 10.21	U	1



Certificate of Analytical Results 579573

COG Operating LLC, Artesia, NM

Burch Keely Flood Sattelite C

Sample Id: **T-2 E. Sidewall**

Matrix: Soil

Date Received: 03.19.18 08.00

Lab Sample Id: 579573-004

Date Collected: 03.08.18 08.15

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: LRI

% Moisture:

Analyst: SCM

Date Prep: 03.21.18 09.00

Basis: Wet Weight

Seq Number: 3044435

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.99	4.99	mg/kg	03.21.18 10.26	U	1



Certificate of Analytical Results 579573

COG Operating LLC, Artesia, NM

Burch Keely Flood Sattelite C

Sample Id: **T-2 W. Sidewall**

Matrix: Soil

Date Received: 03.19.18 08.00

Lab Sample Id: 579573-005

Date Collected: 03.09.18 08.20

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: LRI

% Moisture:

Analyst: SCM

Date Prep: 03.21.18 09.00

Basis: Wet Weight

Seq Number: 3044435

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.00	5.00	mg/kg	03.21.18 10.31	U	1



Certificate of Analytical Results 579573

COG Operating LLC, Artesia, NM

Burch Keely Flood Sattelite C

Sample Id: T-2 S./ T-3 N.

Matrix: Soil

Date Received: 03.19.18 08.00

Lab Sample Id: 579573-006

Date Collected: 03.09.18 08.25

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: LRI

% Moisture:

Analyst: SCM

Date Prep: 03.21.18 09.00

Basis: Wet Weight

Seq Number: 3044435

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	589	5.00	mg/kg	03.21.18 10.47		1



Certificate of Analytical Results 579573

COG Operating LLC, Artesia, NM

Burch Keely Flood Sattelite C

Sample Id: **T-3 E. Sidewall**

Matrix: Soil

Date Received: 03.19.18 08.00

Lab Sample Id: 579573-007

Date Collected: 03.09.18 08.30

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: LRI

% Moisture:

Analyst: SCM

Date Prep: 03.21.18 09.00

Basis: Wet Weight

Seq Number: 3044435

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	27.3	5.00	mg/kg	03.21.18 10.52		1



Certificate of Analytical Results 579573

COG Operating LLC, Artesia, NM

Burch Keely Flood Sattelite C

Sample Id: **T-3 W. Sidewall**

Matrix: Soil

Date Received: 03.19.18 08.00

Lab Sample Id: 579573-008

Date Collected: 03.09.18 08.35

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: LRI

% Moisture:

Analyst: SCM

Date Prep: 03.21.18 09.00

Basis: Wet Weight

Seq Number: 3044435

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	23.7	5.00	mg/kg	03.21.18 11.08		1



Certificate of Analytical Results 579573

COG Operating LLC, Artesia, NM

Burch Keely Flood Sattelite C

Sample Id: T-3 S./ T-5 N.

Matrix: Soil

Date Received: 03.19.18 08.00

Lab Sample Id: 579573-009

Date Collected: 03.09.18 08.40

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: LRI

% Moisture:

Analyst: SCM

Date Prep: 03.21.18 09.00

Basis: Wet Weight

Seq Number: 3044435

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.00	5.00	mg/kg	03.21.18 11.14	U	1



Certificate of Analytical Results 579573

COG Operating LLC, Artesia, NM

Burch Keely Flood Sattelite C

Sample Id: **T-5 E. Sidewall**

Matrix: Soil

Date Received: 03.19.18 08.00

Lab Sample Id: 579573-010

Date Collected: 03.09.18 08.45

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: LRI

% Moisture:

Analyst: SCM

Date Prep: 03.21.18 09.00

Basis: Wet Weight

Seq Number: 3044435

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	18.4	5.00	mg/kg	03.21.18 11.19		1



Certificate of Analytical Results 579573

COG Operating LLC, Artesia, NM

Burch Keely Flood Sattelite C

Sample Id: **T-5 W. Sidewall**

Matrix: Soil

Date Received: 03.19.18 08.00

Lab Sample Id: 579573-011

Date Collected: 03.05.18 08.50

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: LRI

% Moisture:

Analyst: SCM

Date Prep: 03.21.18 09.00

Basis: Wet Weight

Seq Number: 3044435

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	22.6	5.00	mg/kg	03.21.18 11.24		1



Certificate of Analytical Results 579573

COG Operating LLC, Artesia, NM

Burch Keely Flood Sattelite C

Sample Id: T-5 S./ T-4 N.

Matrix: Soil

Date Received: 03.19.18 08.00

Lab Sample Id: 579573-012

Date Collected: 03.06.18 08.55

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: LRI

% Moisture:

Analyst: SCM

Date Prep: 03.21.18 09.00

Basis: Wet Weight

Seq Number: 3044435

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.99	4.99	mg/kg	03.21.18 11.30	U	1



Certificate of Analytical Results 579573

COG Operating LLC, Artesia, NM

Burch Keely Flood Sattelite C

Sample Id: **T-4 E. Sidewall**

Matrix: Soil

Date Received: 03.19.18 08.00

Lab Sample Id: 579573-013

Date Collected: 03.07.18 09.00

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: LRI

% Moisture:

Analyst: SCM

Date Prep: 03.21.18 09.00

Basis: Wet Weight

Seq Number: 3044435

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.00	5.00	mg/kg	03.21.18 11.40	U	1



Certificate of Analytical Results 579573

COG Operating LLC, Artesia, NM

Burch Keely Flood Sattelite C

Sample Id: **T-4 W. Sidewall**

Matrix: Soil

Date Received: 03.19.18 08.00

Lab Sample Id: 579573-014

Date Collected: 03.08.18 09.05

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: LRI

% Moisture:

Analyst: SCM

Date Prep: 03.21.18 09.00

Basis: Wet Weight

Seq Number: 3044435

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.99	4.99	mg/kg	03.21.18 11.45	U	1



Certificate of Analytical Results 579573

COG Operating LLC, Artesia, NM

Burch Keely Flood Sattelite C

Sample Id: **T-4 S. Sidewall**

Matrix: Soil

Date Received: 03.19.18 08.00

Lab Sample Id: 579573-015

Date Collected: 03.09.18 09.10

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 03.21.18 11.00

Basis: Wet Weight

Seq Number: 3044438

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.00	5.00	mg/kg	03.21.18 12.17	U	1



COG Operating LLC
Burch Keely Flood Sattelite C

Analytical Method: Chloride by EPA 300

Seq Number: 3044435

MB Sample Id: 7641170-1-BLK

Matrix: Solid

LCS Sample Id: 7641170-1-BKS

Prep Method: E300P

Date Prep: 03.21.18

LCSD Sample Id: 7641170-1-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	233	93	233	93	90-110	0	20	mg/kg	03.21.18 09:06	

Analytical Method: Chloride by EPA 300

Seq Number: 3044438

MB Sample Id: 7641195-1-BLK

Matrix: Solid

LCS Sample Id: 7641195-1-BKS

Prep Method: E300P

Date Prep: 03.21.18

LCSD Sample Id: 7641195-1-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	268	107	239	96	90-110	11	20	mg/kg	03.21.18 12:07	

Analytical Method: Chloride by EPA 300

Seq Number: 3044435

Parent Sample Id: 579572-014

Matrix: Soil

MS Sample Id: 579572-014 S

Prep Method: E300P

Date Prep: 03.21.18

MSD Sample Id: 579572-014 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	265	106	256	102	90-110	3	20	mg/kg	03.21.18 09:22	

Analytical Method: Chloride by EPA 300

Seq Number: 3044435

Parent Sample Id: 579573-005

Matrix: Soil

MS Sample Id: 579573-005 S

Prep Method: E300P

Date Prep: 03.21.18

MSD Sample Id: 579573-005 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	245	98	242	97	90-110	1	20	mg/kg	03.21.18 10:37	

Analytical Method: Chloride by EPA 300

Seq Number: 3044438

Parent Sample Id: 579573-015

Matrix: Soil

MS Sample Id: 579573-015 S

Prep Method: E300P

Date Prep: 03.21.18

MSD Sample Id: 579573-015 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	262	105	311	124	90-110	17	20	mg/kg	03.21.18 12:23	X

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

[D] = 100*(C-A) / B
RPD = 200* | (C-E) / (C+E) |
[D] = 100 * (C) / [B]

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

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



COG Operating LLC
Burch Keely Flood Sattelite C

Analytical Method: Chloride by EPA 300

Seq Number: 3044438

Parent Sample Id: 579577-006

Matrix: Soil

MS Sample Id: 579577-006 S

Prep Method: E300P

Date Prep: 03.21.18

MSD Sample Id: 579577-006 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD	Limit	Units	Analysis Date	Flag
Chloride	147	250	392	98	420	109	90-110	7	20		mg/kg	03.21.18 13:37	

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

$[D] = 100 * (C - A) / B$
 $RPD = 200 * |(C - E) / (C + E)|$
 $[D] = 100 * (C) / [B]$

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

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



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Phoenix, Arizona (480-355-0900)

CHAIN OF CUSTODY

Page 1 OF 2

Client / Reporting Information		Project Information		Xenco Quote #		Xenco Job #		Matrix Codes												
Company Name / Branch: COG Operating, LLC		Project Name/Number: Burch Keely Water Flood Satellite C		579573		579573		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												
Company Address: 2407 Pecos Ave. Artesia NM 88210		Project Location: Eddy CO, NM																		
Email: slhitchcock@concho.com dineid2@concho.com; cgray@concho.com; rhaskell@concho.com		Invoice to: COG Operating, LLC Attn: Robert McNeill 600 W. Illinois Ave. Midland TX, 79701																		
Phone No: 575-703-6475		PO Number:																		
Project Contact: Sheldon Hitchcock																				
Sampler's Name: Sheldon Hitchcock																				
No.	Field ID / Point of Collection	Collection	Matrix	# of bottles	HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	TPH EXTENDED (EPA8015M)	BTEX (EPA 8021B)	CHLORIDES (EPA 300)	Analytical Information	Matrix Codes			
1	T-1 E. SIDEWALL	3/5/2018	S	1								X	X							
2	T-1 W. SIDEWALL	3/6/2018	S	1								X	X							
3	T-1 S./T-2 N.	3/7/2018	S	1								X	X							
4	T-2 E. SIDEWALL	3/8/2018	S	1								X	X							
5	T-2 W. SIDEWALL	3/9/2018	S	1								X	X							
6	T-2 S./T-3 N.	3/9/2018	S	1								X	X							
7	T-3 E. SIDEWALL	#####	S	1								X	X							
8	T-3 W. SIDEWALL	#####	S	1								X	X							
9	T-3 S./T-5 N.	#####	S	1								X	X							
10	T-5 E. SIDEWALL	#####	S	1								X	X							
Turnaround Time (Business days)													Data Deliverable Information							
<input type="checkbox"/> Same Day TAT		<input type="checkbox"/> 5 Day TAT		<input type="checkbox"/> Level II Std QC		<input type="checkbox"/> Level IV (Full Data Pkg/raw data)														
<input type="checkbox"/> Next Day EMERGENCY		<input type="checkbox"/> 7 Day TAT		<input type="checkbox"/> Level III Std QC+ Forms		<input type="checkbox"/> TRRP Level IV														
<input type="checkbox"/> 2 Day EMERGENCY		<input checked="" type="checkbox"/> Contract TAT		<input type="checkbox"/> Level 3 (CLP Forms)		<input type="checkbox"/> UST/ RG-411														
<input type="checkbox"/> 3 Day EMERGENCY				<input type="checkbox"/> TRRP Checklist																
TAT Starts Day received by Lab, if received by 5:00 pm													FED-EX / UPS: Tracking #							
SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY																				
Relinquished by Sampler:		Date: 3/6-18		Received By: 1/10/18		3-16-18		Relinquished By: 2/24/18		3-16-18		1/4/18		Received By: 2/3/18		3/19/18				
Relinquished by:		Date Time: 10:00		Received By: 1/10/18		10:00		Relinquished By: 2/24/18		10:00		1/4/18		Received By: 2/3/18		8:00				
Relinquished by:		Date Time:		Received By:				Custody Seal #		4		Preserved where applicable		On Ice		Cooler Temp.		Thermo. Corr. Factor		
5				5																

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 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 \$3 per sample. These terms will be enforced unless previously negotiated under a fully executed client contract.



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Phoenix, Arizona (480-355-0900)

Client / Reporting Information		Project Information		Xenco Quote #		Xenco Job #											
Company Name / Branch: COG Operating, LLC Company Address: 2407 Pecos Ave. Artesia NM 88210 Email: slhitchcock@concho.com Phone No: 575-703-6475 dnee12@concho.com; cgray@concho.com; raskell@concho.com		Project Name/Number: Burch Keely Water Flood Satellite C Project Location: Eddy CO, NM Invoice to: COG Operating, LLC Attn: Robert McNeill 600 W. Illinois Ave. Midland TX, 79701		579573		579573											
Project Contact: Sheldon Hitchcock		PO Number:		TPH EXTENDED (EPA8015M)		BTEX (EPA 8021B)											
Sampler's Name: Sheldon Hitchcock				CHLORIDES (EPA 300)													
No.	Field ID / Point of Collection	Sample Depth	Date	Time	Matrix	# of bottles	HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MeOH	NONE	Analytical Information	Matrix Codes	
1	T-5 W. SIDEWALL	N/A	3/5/2018	8:50	S	1								X			
2	T-5 S./T-4 N.	N/A	3/6/2018	8:55	S	1								X			
3	T-4 E. SIDEWALL	N/A	3/7/2018	9:00	S	1								X			
4	T-4 W. SIDEWALL	N/A	3/8/2018	9:05	S	1								X			
5	T-4 S. SIDEWALL	N/A	3/9/2018	9:10	S	1								X			
6														X			
7														X			
8														X			
9														X			
10														X			
Turnaround Time (Business days)																Data Deliverable Information	
<input type="checkbox"/> Same Day TAT <input type="checkbox"/> 5 Day TAT <input type="checkbox"/> Level II Std QC <input type="checkbox"/> Level IV (Full Data Pkg/raw data)																Note:	
<input type="checkbox"/> Next Day EMERGENCY <input type="checkbox"/> 7 Day TAT <input type="checkbox"/> Level III Std QC+ Forms <input type="checkbox"/> TRRP Level IV Temp: 14 IR ID: R-8 CF: (0-6: -0.2°C) (6-23: +0.2°C) Corrected Temp: 1.2																	
<input type="checkbox"/> 2 Day EMERGENCY <input checked="" type="checkbox"/> Contract TAT <input type="checkbox"/> Level 3 (CLP Forms) <input type="checkbox"/> UST / RG 411 TAT Starts Day received by Lab, if received by 5:00 pm																	
<input type="checkbox"/> 3 Day EMERGENCY <input type="checkbox"/> TRRP Checklist																	
TAT Starts Day received by Lab, if received by 5:00 pm																FED-EX / UPS: Tracking #	
SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY																	
Relinquished by Sampler		Date Time: 3-16-18		Received By: Ed Butler		3-16-18		Relinquished By: Ed Butler		Date Time: 3-16-18		Received By: Ed Butler		Date Time: 3-16-18		Received By: Ed Butler	
Relinquished by:		Date Time:		Received By:		Date Time:		Relinquished By:		Date Time:		Received By:		Date Time:		Received By:	
3 Relinquished by:		Date Time:		Received By:		Date Time:		Relinquished By:		Date Time:		Received By:		Date Time:		Received By:	
5 Relinquished by:		Date Time:		Received By:		Date Time:		Relinquished By:		Date Time:		Received By:		Date Time:		Received By:	
Notice: Signatures of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Xenco. A minimum charge of \$75 will be applied to each project. Xenco's liability will be limited to the cost of samples. Any samples received by Xenco but not analyzed will be invoiced at \$5 per sample. These terms will be enforced unless previously negotiated under a fully executed client contract.																	



XENCO Laboratories Prelogin/Nonconformance Report- Sample Log-In

Client: COG Operating LLC

Date/ Time Received: 03/19/2018 08:00:00 AM

Work Order #: 579573

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

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	1.2
#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: 03/19/2018

Checklist reviewed by: Jessica Kramer Date: 03/19/2018

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 206711

CONDITIONS

Operator: Spur Energy Partners LLC 9655 Katy Freeway Houston, TX 77024	OGRID: 328947
	Action Number: 206711
	Action Type: [IM-SD] Incident File Support Doc (ENV) (IM-BNF)

CONDITIONS

Created By	Condition	Condition Date
amaxwell	Historical documents uploaded. Closure approved.	4/28/2023