



Dakota Neel
HSE Coordinator

June 11, 2018

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

Henryetta Price
Bureau of Land Management
620 E. Greene St.
Carlsbad, NM 88220

**Re: Closure Request
RJU Central Tank Battery (2RP-4479)
Unit Letter C, Section 35, 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 RJU Central Tank Battery. This closure report is in response to a produced water release that occurred on November 4, 2017. A workplan was submitted to the New Mexico Oil Conservation Division (NMOCD) and the Bureau of Land Management (BLM) on March 8th 2018 and was approved on April 18, 2018.

BACKGROUND

On November 4, 2017, a steel flow line developed a hole resulting in the release of approximately eight (8) bbls of produced water in the unlined facility. Approximately six (6) bbls of produced water were recovered. The RP number NMOCD assigned to this release was 2RP-4479.

NMOCD
June 11, 2018
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REMDIAL ACTIONS

- The area of T1 was excavated to a depth of two (2) foot bgs
- The area of T2 was excavated to a depth six (6) inches bgs
- All of the excavated material was hauled to an NMOCD approved solid waste disposal facility
- The excavation was backfilled with like material and contoured to match the surrounding location.

Based on the information provided, COG Operating LLC, would like to request closure of the RP number 2RP-4479 associated with this release. Please feel free to contact me with any questions or concerns at (432) 215-2783.

Sincerely,



Dakota Neel
HSE Coordinator

Enclosed:

- C-141 Final
- C-141 Initial Copy
- Approved Work Plan

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: RJU- Central Tank Battery | Facility Type: Battery |

| | | |
|------------------------|------------------------|----------|
| Surface Owner: Federal | Mineral Owner: Federal | API No.: |
|------------------------|------------------------|----------|

LOCATION OF RELEASE

| Unit Letter | Section | Township | Range | Feet from the | North/South Line | Feet from the | East/West Line | County |
|-------------|---------|----------|-------|---------------|------------------|---------------|----------------|--------|
| C | 35 | 17S | 29E | 1280 | North | 1345 | West | Eddy |

Latitude: 32.794375 Longitude: -104.050066 NAD83

NATURE OF RELEASE

| | | |
|---|---|--|
| Type of Release: Produced Water | Volume of Release: 8 bbls of PW | Volume Recovered: 6 bbls of PW |
| Source of Release: Flowline | Date and Hour of Occurrence: 11-04-17 | Date and Hour of Discovery: 11-04-17 8:00am |
| Was Immediate Notice Given? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/> Not Required | If YES, To Whom? | |
| By Whom? | Date and Hour: | |
| 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.*

This release was due to a hole in a steel pipe caused by corrosion. The damaged portion of the steel pipe has been replaced.

Describe Area Affected and Cleanup Action Taken.*

The release remained within the unlined facility. A vacuum truck was dispatched to recover all freestanding fluids. This release has been remediated according to the workplan approved by the NMOCD and the BLM.

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

| | | | |
|--|-------------------|---|-----------------------------------|
| Signature:  | | OIL CONSERVATION DIVISION | |
| | | Approved by Environmental Specialist:  | |
| Printed Name: | Dakota Neel | Approval Date: | 11/18/2022 |
| Title: | HSE Coordinator | Expiration Date: | |
| E-mail Address: | dneel2@concho.com | Conditions of Approval: | Attached <input type="checkbox"/> |
| Date: June 11, 2018 Phone: 575-746-2010 | | none | |

* Attach Additional Sheets If Necessary

NM OIL CONSERVATION
ARTEZIA DISTRICT

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State of New Mexico
Energy Minerals and Natural Resources

NOV 07 2017

Form C-141
Revised April 3, 2017

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

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

RECEIVED

FAB1731258135
NAB1731258240

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: RJU-Central Tank Battery | Facility Type: Battery |

| | | |
|-------------------------------|-------------------------------|---------|
| Surface Owner: Federal | Mineral Owner: Federal | API No. |
|-------------------------------|-------------------------------|---------|

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|-------------|---------|----------|-------|---------------|------------------|---------------|----------------|--------|
| C | 35 | 17S | 29E | 1280 | North | 1345 | West | Eddy |

Latitude: 32.794375 Longitude: -104.050066 NAD83

NATURE OF RELEASE

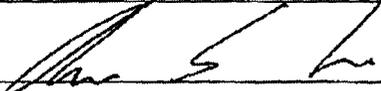
| | | |
|---|--|--|
| Type of Release: Produced Water | Volume of Release: 8bbls | Volume Recovered: 6bbls |
| Source of Release: Piping | Date and Hour of Occurrence: 11-04-2017 | Date and Hour of Discovery: 11-04-2017 8:00am |
| Was Immediate Notice Given? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/> Not Required | If YES, To Whom? | |
| By Whom? | Date and Hour | |
| 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.*
This release was due to a hole in a steel pipe caused by corrosion. A clamp was placed on the pipe to control the release. The bad section of piping will be replaced.

Describe Area Affected and Cleanup Action Taken.*
The release occurred within the unlined facility. Vacuum trucks were dispatched to recover all standing fluid. Concho will have the spill area evaluated for any possible impact from the release and we will present a remediation work plan to the NMOCD for approval prior to any significant remediation activities.

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

| | | |
|--|---|-----------------------------|
| Signature:  | OIL CONSERVATION DIVISION | |
| Printed Name: Aaron Lieb | Approved by Environmental Specialist:  | |
| Title: Senior HSE Coordinator | Approval Date: 11/8/17 | Expiration Date: N/A |
| E-mail Address: alieb@concho.com | Conditions of Approval: See Attached | Attached: REP-4479 |
| Date: 11-07-2017 | Phone: 575-748-1553 | |

* Attach Additional Sheets If Necessary

Operator/Responsible Party,

The OCD has received the form C-141 you provided on 11/7/2017 regarding an unauthorized release. The information contained on that form has been entered into our incident database and remediation case number RRP-4479 has been assigned. **Please refer to this case number in all future correspondence.**

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

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

Release characterization is the first phase of corrective action unless the release is ongoing or is of limited volume and all impacts can be immediately addressed. Proper and cost-effective remediation typically cannot occur without adequate characterization of the impacts of any release. Furthermore, the Division has the ability to impose reasonable conditions upon the efforts it oversees. **As such, the Division is requiring a workplan for the characterization of impacts associated with this release be submitted to the OCD District 2 office in ARTESIA on or before 12/7/2017. If and when the release characterization workplan is approved, there will be an associated deadline for submittal of the resultant investigation report. Modest extensions of time to these deadlines may be granted, but only with acceptable justification.**

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

- Horizontal delineation of soil impacts in each of the four cardinal compass directions. Adsorbed soil contamination must be characterized for the following constituents using the associated laboratory methods: benzene, toluene, ethylbenzene, and total xylenes by either Method 8260 or 8021, total petroleum hydrocarbons by Method 8015 extended range (GRO+DRO+MRO; C₆ thru C₃₆), and for chloride by Method 300. This is not an exclusive list of potential contaminants. Analyzed parameters should be modified based on the nature of the released substance(s). Soil sampling must be both within the impacted area and beyond.
- Vertical delineation of soil impacts. Adsorbed soil contamination must be characterized for the following constituents using the associated laboratory methods: benzene, toluene, ethylbenzene, and total xylenes by either Method 8260 or 8021, total petroleum hydrocarbons by Method 8015 extended range (GRO+DRO+MRO; C₆ thru C₃₆), and for chloride by Method 300. As above, this is not an exclusive list of potential contaminants and can be modified. Vertical characterization samples should be taken at depth intervals no greater than five feet apart. Lithologic description of encountered soils must also be provided. At least ten vertical feet of soils with contaminant concentrations at or below these values must be demonstrated as existing above the water table.
- Nominal detection limits for field and laboratory analyses must be provided.
- Composite sampling is not generally allowed.
- Field screening and assessment techniques are acceptable (headspace, titration, EC [include algorithm for validation purposes], EM, etc.), but the sampling and assay procedures must be clearly defined. Copies of field notes are highly desirable. A statistically significant set of split samples must be submitted for confirmatory laboratory analysis, including the laterally farthest and vertically deepest sets of soil samples. Make sure there are at least two soil samples submitted

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

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

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

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

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

Jim Griswold

OCD Environmental Bureau Chief

1220 South St. Francis Drive

Santa Fe, New Mexico 87505

505-476-3465

jim.griswold@state.nm.us

Bratcher, Mike, EMNRD

From: Aaron Lieb <ALieb@concho.com>
Sent: Tuesday, November 7, 2017 3:12 PM
To: Bratcher, Mike, EMNRD; 'stucker@blm.gov'
Cc: 'jamos@blm.gov'; Weaver, Crystal, EMNRD; Robert McNeill; Rebecca Haskell; Sheldon Hitchcock; Christopher Gray; Dakota Neel
Subject: (C-141 Initial) RJU-Central Tank Battery 11-04-2017
Attachments: (C-141 Initial) RJU-Central Tank Battery 11-04-2017.pdf

Mr. Bratcher/Ms. Tucker,

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

Thank you,

Aaron Lieb

Senior HSE Coordinator
COG Operating LLC
Cell: 432.557.5355
Office: 575.748.1553
alieb@concho.com
2407 Pecos Avenue
Artesia, NM 88210



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NOTICE: The information in this email may be confidential and/or privileged. If you are not the intended recipient or an authorized representative of the intended recipient, you are hereby notified that any review, dissemination or copying of this email and its attachments, if any, or the information contained herein, is prohibited. If you have received this email in error, please immediately notify the sender by return email and delete this email from your system. Further, any contract terms proposed or purportedly accepted in this email are not binding and are subject to management's final approval as memorialized in a separate written instrument, excluding electronic correspondence, executed by an authorized representative of COG Operating LLC or its affiliates.



Dakota Neel
HSE Coordinator

March 8, 2018

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

Shelly Tucker
Bureau of Land Management
620 E. Greene St.
Carlsbad, NM 88220

Re: Work Plan
RJU Central Tank Battery (2RP-4479)
Unit Letter C, Section 35, Township 17S, Range 29E
Eddy County, NM

Mr. Bratcher/Ms. Tucker,

COG Operating LLC is pleased to submit for your consideration the following work plan for the RJU Central Tank Battery. The work plan is in response to a produced water release that occurred on November 4, 2017. Subsequent to the release a C-141 Initial Report was submitted to the New Mexico Oil Conservation Division (NMOCD) and the Bureau of Land Management (BLM) on November 7, 2017.

BACKGROUND

On November 4, 2017, a steel flow line developed a hole resulting in the release of approximately eight (8) bbls of produced water in the unlined facility. Approximately six (6) bbls of produced water were recovered. The RP number NMOCD assigned to this release was 2RP-4479.

SITE RANKING

According to the 2005 Chevron Texaco groundwater trend map, groundwater in the project vicinity is approximately one-hundred and eighty (180) feet below ground surface (BGS). No water well or surface water was observed within one-thousand (1,000) feet of the release site. Therefore the site ranking for this release is zero (0).

CORPORATE ADDRESS
One Concho Center | 600 West Illinois Avenue | Midland, Texas 79701
PHONE 432.683.7443 | FAX 432.683.7441

LOCAL ADDRESS
Concho West | 2208 Main Street | Artesia, New Mexico 88210
PHONE 575.748.6940 | FAX 575.746.2096

NMOCD
 March 8, 2018
 Page 2

Analytical Results

On December 4, 2017, a site assessment and soil sampling were conducted in order to vertically and horizontally define the area impacted by the release. A site diagram is included in Appendix I. The analytical results from the soil sampling activities are summarized in the table below.

| RJ Unit South Tank Battery November 4, 2017 | | | | | |
|---|-----------|----------------|---------------|------------|-----------|
| C-35-17S-29E | | | | | |
| Sample ID | Date | Chloride mg/Kg | Benzene mg/Kg | BTEX mg/Kg | TPH mg/Kg |
| S-1 0' | 12/4/2017 | 10,500 | <0.00199 | <0.00199 | 2,930 |
| S-1 1' | 12/4/2017 | 591 | <0.00200 | <0.00200 | 1,970 |
| S-1 2' | 12/4/2017 | 1,330 | <0.00198 | <0.00198 | 318 |
| S-1 3' | 12/4/2017 | 79.6 | <0.00201 | <0.00201 | <15.0 |
| S-1 4' | 12/4/2017 | 83.8 | <0.00200 | <0.00200 | <15.0 |
| S-1 5' | 12/4/2017 | 90.5 | <0.00200 | <0.00200 | 25.4 |
| S-2 0' | 12/4/2017 | 3,730 | <0.00201 | <0.00201 | 8,170 |
| S-2 1' | 12/4/2017 | 132 | <0.00199 | <0.00199 | 2,460 |
| S-2 2' | 12/4/2017 | 32.4 | <0.00200 | <0.00200 | 48.6 |
| S-2 3' | 12/4/2017 | 42.8 | <0.00199 | <0.00199 | 509 |
| S-2 4' | 12/4/2017 | 60.8 | <0.00198 | <0.00198 | 81.4 |

Work Plan

Based on the analytical results of soil samples, COG proposes the excavation of two (2) foot of material in the area of T1 and six (6) inches of material in the area of T2. The excavated soil will be transported to a NMOCD approved disposal facility and non-impacted soil will be utilized to backfill the excavated area. If there are no objections or further stipulations, COG Operating

NMOCD
March 8, 2018
Page 3

LLC, would like to begin remediation at this time. Please feel free to contact me with any questions or concerns at (432) 215-2783.

Sincerely,



Dakota Neel
HSE Coordinator

Enclosed:

Appendix I: Site Diagram
Appendix II: Initial C-141 (Copy)
Appendix III: Analytical Reports and Chain-of-Custody Forms

APPENDIX I

RJU Central Tank Battery



Legend

- 2' Excavation
- 6" Excavation
- Sample Points

N
90 ft



APPENDIX II

NM OIL CONSERVATION
ARTEZIA DISTRICT

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Form C-141
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Release Notification and Corrective Action

OPERATOR

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| Address: 600 West Illinois Avenue, Midland TX 79701 | Telephone No. 432-683-7443 |
| Facility Name: RJU-Central Tank Battery | Facility Type: Battery |

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LOCATION OF RELEASE

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Latitude: 32.794375 Longitude: -104.050066 NAD83

NATURE OF RELEASE

| | | |
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| Type of Release: Produced Water | Volume of Release: 8bbls | Volume Recovered: 6bbls |
| Source of Release: Piping | Date and Hour of Occurrence: 11-04-2017 | Date and Hour of Discovery: 11-04-2017 8:00am |
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| | | |
|--|---|-----------------------------|
| Signature:  | OIL CONSERVATION DIVISION | |
| Printed Name: Aaron Lieb | Approved by Environmental Specialist:  | |
| Title: Senior HSE Coordinator | Approval Date: 11/8/17 | Expiration Date: N/A |
| E-mail Address: alieb@concho.com | Conditions of Approval: See Attached | Attached: REP-4479 |
| Date: 11-07-2017 | Phone: 575-748-1553 | |

* Attach Additional Sheets If Necessary

Operator/Responsible Party,

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

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

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

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

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

Jim Griswold

OCD Environmental Bureau Chief

1220 South St. Francis Drive

Santa Fe, New Mexico 87505

505-476-3465

jim.griswold@state.nm.us

Bratcher, Mike, EMNRD

From: Aaron Lieb <ALieb@concho.com>
Sent: Tuesday, November 7, 2017 3:12 PM
To: Bratcher, Mike, EMNRD; 'stucker@blm.gov'
Cc: 'jamos@blm.gov'; Weaver, Crystal, EMNRD; Robert McNeill; Rebecca Haskell; Sheldon Hitchcock; Christopher Gray; Dakota Neel
Subject: (C-141 Initial) RJU-Central Tank Battery 11-04-2017
Attachments: (C-141 Initial) RJU-Central Tank Battery 11-04-2017.pdf

Mr. Bratcher/Ms. Tucker,

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

Thank you,

Aaron Lieb

Senior HSE Coordinator
COG Operating LLC
Cell: 432.557.5355
Office: 575.748.1553
alieb@concho.com
2407 Pecos Avenue
Artesia, NM 88210



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APPENDIX III

Analytical Report 570434

for
COG Operating, LLC

Project Manager: Sheldon Hitchcock
RJU CTB

15-DEC-17

Collected By: Client



1211 W. Florida Ave, Midland TX 79701

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

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

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



15-DEC-17

Project Manager: **Sheldon Hitchcock**
COG Operating, LLC
600 W Illinois
Midland, TX 79701

Reference: XENCO Report No(s): **570434**
RJU CTB
Project Address:

Sheldon Hitchcock:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 570434. 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. 570434 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Mike Kimmel

Client Services Manager

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



Sample Cross Reference 570434

COG Operating, LLC, Midland, TX

RJU CTB

| Sample Id | Matrix | Date Collected | Sample Depth | Lab Sample Id |
|-----------|--------|----------------|--------------|---------------|
| S-1 0' | S | 12-04-17 11:30 | 0 | 570434-001 |
| S-1 1' | S | 12-04-17 11:32 | 1 | 570434-002 |
| S-1 2' | S | 12-04-17 11:34 | 2 | 570434-003 |
| S-1 3' | S | 12-04-17 11:36 | 3 | 570434-004 |
| S-1 4' | S | 12-04-17 11:38 | 4 | 570434-005 |
| S-1 5' | S | 12-04-17 11:40 | 5 | 570434-006 |
| S-2 0' | S | 12-04-17 12:00 | 0 | 570434-007 |
| S-2 1' | S | 12-04-17 12:02 | 1 | 570434-008 |
| S-2 2' | S | 12-04-17 12:04 | 2 | 570434-009 |
| S-2 3' | S | 12-04-17 12:06 | 3 | 570434-010 |
| S-2 4' | S | 12-04-17 12:08 | 4 | 570434-011 |



CASE NARRATIVE

Client Name: COG Operating, LLC

Project Name: RJU CTB

Project ID:
Work Order Number(s): 570434

Report Date: 15-DEC-17
Date Received: 12/07/2017

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3035735 BTEX by EPA 8021B

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

Batch: LBA-3035740 BTEX by EPA 8021B

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



Certificate of Analysis Summary 570434

COG Operating, LLC, Midland, TX

Project Name: RJU CTB



Project Id:
Contact: Sheldon Hitchcock
Project Location:

Date Received in Lab: Thu Dec-07-17 11:15 am
Report Date: 15-DEC-17
Project Manager: Kelsey Brooks

| <i>Analysis Requested</i> | <i>Lab Id:</i> | 570434-001 | 570434-002 | 570434-003 | 570434-004 | 570434-005 | 570434-006 |
|----------------------------|-----------------------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| | <i>Field Id:</i> | S-1 0' | S-1 1' | S-1 2' | S-1 3' | S-1 4' | S-1 5' |
| | <i>Depth:</i> | 0- | 1- | 2- | 3- | 4- | 5- |
| | <i>Matrix:</i> | SOIL | SOIL | SOIL | SOIL | SOIL | SOIL |
| | <i>Sampled:</i> | Dec-04-17 11:30 | Dec-04-17 11:32 | Dec-04-17 11:34 | Dec-04-17 11:36 | Dec-04-17 11:38 | Dec-04-17 11:40 |
| BTEX by EPA 8021B | <i>Extracted:</i> | Dec-10-17 09:30 |
| | <i>Analyzed:</i> | Dec-12-17 02:53 | Dec-12-17 04:27 | Dec-12-17 03:12 | Dec-12-17 03:30 | Dec-12-17 04:08 | Dec-12-17 03:49 |
| | <i>Units/RL:</i> | mg/kg RL |
| | Benzene | <0.00199 0.00199 | <0.00200 0.00200 | <0.00198 0.00198 | <0.00201 0.00201 | <0.00200 0.00200 | <0.00200 0.00200 |
| | Toluene | <0.00199 0.00199 | <0.00200 0.00200 | <0.00198 0.00198 | <0.00201 0.00201 | <0.00200 0.00200 | <0.00200 0.00200 |
| | Ethylbenzene | <0.00199 0.00199 | <0.00200 0.00200 | <0.00198 0.00198 | <0.00201 0.00201 | <0.00200 0.00200 | <0.00200 0.00200 |
| | m,p-Xylenes | <0.00398 0.00398 | <0.00399 0.00399 | <0.00397 0.00397 | <0.00402 0.00402 | <0.00401 0.00401 | <0.00401 0.00401 |
| | o-Xylene | <0.00199 0.00199 | <0.00200 0.00200 | <0.00198 0.00198 | <0.00201 0.00201 | <0.00200 0.00200 | <0.00200 0.00200 |
| Total Xylenes | <0.00199 0.00199 | <0.00200 0.00200 | <0.00198 0.00198 | <0.00201 0.00201 | <0.00200 0.00200 | <0.00200 0.00200 | |
| Total BTEX | <0.00199 0.00199 | <0.00200 0.00200 | <0.00198 0.00198 | <0.00201 0.00201 | <0.00200 0.00200 | <0.00200 0.00200 | |
| Chloride by EPA 300 | <i>Extracted:</i> | Dec-08-17 12:30 | Dec-08-17 16:00 |
| | <i>Analyzed:</i> | Dec-08-17 18:53 | Dec-08-17 18:11 | Dec-08-17 18:59 | Dec-08-17 19:05 | Dec-08-17 19:11 | Dec-09-17 02:00 |
| | <i>Units/RL:</i> | mg/kg RL |
| Chloride | 10500 99.0 | 591 4.95 | 1330 4.95 | 79.6 4.99 | 83.8 4.97 | 90.5 4.95 | |
| TPH by SW8015 Mod | <i>Extracted:</i> | Dec-08-17 17:00 |
| | <i>Analyzed:</i> | Dec-09-17 13:38 | Dec-09-17 13:59 | Dec-09-17 14:19 | Dec-09-17 00:44 | Dec-09-17 01:46 | Dec-09-17 02:06 |
| | <i>Units/RL:</i> | mg/kg RL |
| | Gasoline Range Hydrocarbons (GRO) | 19.4 15.0 | 19.7 15.0 | <15.0 15.0 | <15.0 15.0 | <15.0 15.0 | <15.0 15.0 |
| | Diesel Range Organics (DRO) | 2080 15.0 | 1480 15.0 | 221 15.0 | <15.0 15.0 | <15.0 15.0 | 25.4 15.0 |
| | Oil Range Hydrocarbons (ORO) | 833 15.0 | 469 15.0 | 96.7 15.0 | <15.0 15.0 | <15.0 15.0 | <15.0 15.0 |
| Total TPH | 2930 15.0 | 1970 15.0 | 318 15.0 | <15.0 15.0 | <15.0 15.0 | 25.4 15.0 | |

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

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

Mike Kimmel
 Client Services Manager



Certificate of Analysis Summary 570434

COG Operating, LLC, Midland, TX

Project Name: RJU CTB



Project Id:
Contact: Sheldon Hitchcock
Project Location:

Date Received in Lab: Thu Dec-07-17 11:15 am
Report Date: 15-DEC-17
Project Manager: Kelsey Brooks

| <i>Analysis Requested</i> | <i>Lab Id:</i> | 570434-007 | 570434-008 | 570434-009 | 570434-010 | 570434-011 | |
|----------------------------|-----------------------------------|------------------|------------------|------------------|------------------|------------------|--|
| | <i>Field Id:</i> | S-2 0' | S-2 1' | S-2 2' | S-2 3' | S-2 4' | |
| | <i>Depth:</i> | 0- | 1- | 2- | 3- | 4- | |
| | <i>Matrix:</i> | SOIL | SOIL | SOIL | SOIL | SOIL | |
| | <i>Sampled:</i> | Dec-04-17 12:00 | Dec-04-17 12:02 | Dec-04-17 12:04 | Dec-04-17 12:06 | Dec-04-17 12:08 | |
| BTEX by EPA 8021B | <i>Extracted:</i> | Dec-12-17 08:30 | |
| | <i>Analyzed:</i> | Dec-12-17 16:33 | Dec-12-17 14:58 | Dec-12-17 15:17 | Dec-12-17 15:36 | Dec-12-17 15:55 | |
| | <i>Units/RL:</i> | mg/kg RL | |
| | Benzene | <0.00201 0.00201 | <0.00199 0.00199 | <0.00200 0.00200 | <0.00199 0.00199 | <0.00198 0.00198 | |
| | Toluene | <0.00201 0.00201 | <0.00199 0.00199 | <0.00200 0.00200 | <0.00199 0.00199 | <0.00198 0.00198 | |
| | Ethylbenzene | <0.00201 0.00201 | <0.00199 0.00199 | <0.00200 0.00200 | <0.00199 0.00199 | <0.00198 0.00198 | |
| | m,p-Xylenes | <0.00402 0.00402 | <0.00398 0.00398 | <0.00401 0.00401 | <0.00398 0.00398 | <0.00397 0.00397 | |
| | o-Xylene | <0.00201 0.00201 | <0.00199 0.00199 | <0.00200 0.00200 | <0.00199 0.00199 | <0.00198 0.00198 | |
| Total Xylenes | <0.00201 0.00201 | <0.00199 0.00199 | <0.00200 0.00200 | <0.00199 0.00199 | <0.00198 0.00198 | | |
| Total BTEX | <0.00201 0.00201 | <0.00199 0.00199 | <0.00200 0.00200 | <0.00199 0.00199 | <0.00198 0.00198 | | |
| Chloride by EPA 300 | <i>Extracted:</i> | Dec-08-17 16:00 | |
| | <i>Analyzed:</i> | Dec-09-17 02:05 | Dec-09-17 02:11 | Dec-09-17 02:29 | Dec-09-17 02:35 | Dec-09-17 02:53 | |
| | <i>Units/RL:</i> | mg/kg RL | |
| Chloride | 3730 24.8 | 132 4.95 | 32.4 4.99 | 42.8 4.98 | 60.8 4.97 | | |
| TPH by SW8015 Mod | <i>Extracted:</i> | Dec-08-17 17:00 | Dec-08-17 17:00 | Dec-08-17 17:00 | Dec-08-17 17:00 | Dec-08-17 11:00 | |
| | <i>Analyzed:</i> | Dec-09-17 14:39 | Dec-09-17 15:00 | Dec-09-17 03:05 | Dec-09-17 15:21 | Dec-08-17 22:02 | |
| | <i>Units/RL:</i> | mg/kg RL | |
| | Gasoline Range Hydrocarbons (GRO) | 26.1 15.0 | 25.4 15.0 | <15.0 15.0 | <15.0 15.0 | <15.0 15.0 | |
| | Diesel Range Organics (DRO) | 6290 15.0 | 1830 15.0 | 32.8 15.0 | 281 15.0 | 63.1 15.0 | |
| | Oil Range Hydrocarbons (ORO) | 1850 15.0 | 607 15.0 | 15.8 15.0 | 228 15.0 | 18.3 15.0 | |
| Total TPH | 8170 15.0 | 2460 15.0 | 48.6 15.0 | 509 15.0 | 81.4 15.0 | | |

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

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Mike Kimmel
 Client Services Manager



Flagging Criteria



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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

+ NELAC certification not offered for this compound.

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

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 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 | |



Form 2 - Surrogate Recoveries

Project Name: RJU CTB

Work Orders : 570434,

Project ID:

Lab Batch #: 3035462

Sample: 570434-011 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/08/17 22:02

SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| 1-Chlorooctane | 76.3 | 99.9 | 76 | 70-135 | |
| o-Terphenyl | 40.4 | 50.0 | 81 | 70-135 | |

Lab Batch #: 3035464

Sample: 570434-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/09/17 00:44

SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| 1-Chlorooctane | 94.1 | 99.9 | 94 | 70-135 | |
| o-Terphenyl | 49.0 | 50.0 | 98 | 70-135 | |

Lab Batch #: 3035464

Sample: 570434-005 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/09/17 01:46

SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| 1-Chlorooctane | 74.4 | 100 | 74 | 70-135 | |
| o-Terphenyl | 40.3 | 50.0 | 81 | 70-135 | |

Lab Batch #: 3035464

Sample: 570434-006 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/09/17 02:06

SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| 1-Chlorooctane | 91.9 | 99.7 | 92 | 70-135 | |
| o-Terphenyl | 48.4 | 49.9 | 97 | 70-135 | |

Lab Batch #: 3035464

Sample: 570434-007 / DL

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/09/17 02:26

SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| 1-Chlorooctane | 80.6 | 99.9 | 81 | 70-135 | |
| o-Terphenyl | 46.2 | 50.0 | 92 | 70-135 | |

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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



Form 2 - Surrogate Recoveries

Project Name: RJU CTB

Work Orders : 570434,

Project ID:

Lab Batch #: 3035464

Sample: 570434-009 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/09/17 03:05

SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| 1-Chlorooctane | 76.3 | 99.8 | 76 | 70-135 | |
| o-Terphenyl | 38.8 | 49.9 | 78 | 70-135 | |

Lab Batch #: 3035464

Sample: 570434-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/09/17 13:38

SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| 1-Chlorooctane | 87.3 | 99.9 | 87 | 70-135 | |
| o-Terphenyl | 44.0 | 50.0 | 88 | 70-135 | |

Lab Batch #: 3035464

Sample: 570434-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/09/17 13:59

SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| 1-Chlorooctane | 84.8 | 99.9 | 85 | 70-135 | |
| o-Terphenyl | 45.3 | 50.0 | 91 | 70-135 | |

Lab Batch #: 3035464

Sample: 570434-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/09/17 14:19

SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| 1-Chlorooctane | 89.0 | 99.7 | 89 | 70-135 | |
| o-Terphenyl | 44.3 | 49.9 | 89 | 70-135 | |

Lab Batch #: 3035464

Sample: 570434-007 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/09/17 14:39

SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| 1-Chlorooctane | 85.0 | 99.9 | 85 | 70-135 | |
| o-Terphenyl | 38.1 | 50.0 | 76 | 70-135 | |

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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



Form 2 - Surrogate Recoveries

Project Name: RJU CTB

Work Orders : 570434,

Project ID:

Lab Batch #: 3035464

Sample: 570434-008 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/09/17 15:00

SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| 1-Chlorooctane | 84.0 | 99.7 | 84 | 70-135 | |
| o-Terphenyl | 41.0 | 49.9 | 82 | 70-135 | |

Lab Batch #: 3035464

Sample: 570434-010 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/09/17 15:21

SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| 1-Chlorooctane | 88.0 | 100 | 88 | 70-135 | |
| o-Terphenyl | 43.3 | 50.0 | 87 | 70-135 | |

Lab Batch #: 3035735

Sample: 570434-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/12/17 02:53

SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| 1,4-Difluorobenzene | 0.0275 | 0.0300 | 92 | 80-120 | |
| 4-Bromofluorobenzene | 0.0273 | 0.0300 | 91 | 80-120 | |

Lab Batch #: 3035735

Sample: 570434-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/12/17 03:12

SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| 1,4-Difluorobenzene | 0.0279 | 0.0300 | 93 | 80-120 | |
| 4-Bromofluorobenzene | 0.0291 | 0.0300 | 97 | 80-120 | |

Lab Batch #: 3035735

Sample: 570434-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/12/17 03:30

SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| 1,4-Difluorobenzene | 0.0271 | 0.0300 | 90 | 80-120 | |
| 4-Bromofluorobenzene | 0.0269 | 0.0300 | 90 | 80-120 | |

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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



Form 2 - Surrogate Recoveries

Project Name: RJU CTB

Work Orders : 570434,

Project ID:

Lab Batch #: 3035735

Sample: 570434-006 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/12/17 03:49

SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| 1,4-Difluorobenzene | 0.0275 | 0.0300 | 92 | 80-120 | |
| 4-Bromofluorobenzene | 0.0276 | 0.0300 | 92 | 80-120 | |

Lab Batch #: 3035735

Sample: 570434-005 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/12/17 04:08

SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| 1,4-Difluorobenzene | 0.0281 | 0.0300 | 94 | 80-120 | |
| 4-Bromofluorobenzene | 0.0286 | 0.0300 | 95 | 80-120 | |

Lab Batch #: 3035735

Sample: 570434-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/12/17 04:27

SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| 1,4-Difluorobenzene | 0.0272 | 0.0300 | 91 | 80-120 | |
| 4-Bromofluorobenzene | 0.0249 | 0.0300 | 83 | 80-120 | |

Lab Batch #: 3035740

Sample: 570434-008 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/12/17 14:58

SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| 1,4-Difluorobenzene | 0.0266 | 0.0300 | 89 | 80-120 | |
| 4-Bromofluorobenzene | 0.0259 | 0.0300 | 86 | 80-120 | |

Lab Batch #: 3035740

Sample: 570434-009 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/12/17 15:17

SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| 1,4-Difluorobenzene | 0.0264 | 0.0300 | 88 | 80-120 | |
| 4-Bromofluorobenzene | 0.0274 | 0.0300 | 91 | 80-120 | |

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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



Form 2 - Surrogate Recoveries

Project Name: RJU CTB

Work Orders : 570434,

Lab Batch #: 3035740

Sample: 570434-010 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/12/17 15:36

SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| 1,4-Difluorobenzene | 0.0272 | 0.0300 | 91 | 80-120 | |
| 4-Bromofluorobenzene | 0.0272 | 0.0300 | 91 | 80-120 | |

Lab Batch #: 3035740

Sample: 570434-011 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/12/17 15:55

SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| 1,4-Difluorobenzene | 0.0289 | 0.0300 | 96 | 80-120 | |
| 4-Bromofluorobenzene | 0.0270 | 0.0300 | 90 | 80-120 | |

Lab Batch #: 3035740

Sample: 570434-007 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/12/17 16:33

SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| 1,4-Difluorobenzene | 0.0279 | 0.0300 | 93 | 80-120 | |
| 4-Bromofluorobenzene | 0.0297 | 0.0300 | 99 | 80-120 | |

Lab Batch #: 3035462

Sample: 7635721-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/08/17 13:14

SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| 1-Chlorooctane | 93.8 | 100 | 94 | 70-135 | |
| o-Terphenyl | 52.2 | 50.0 | 104 | 70-135 | |

Lab Batch #: 3035464

Sample: 7635722-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/08/17 22:41

SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| 1-Chlorooctane | 88.1 | 100 | 88 | 70-135 | |
| o-Terphenyl | 47.8 | 50.0 | 96 | 70-135 | |

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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



Form 2 - Surrogate Recoveries

Project Name: RJU CTB

Work Orders : 570434,

Project ID:

Lab Batch #: 3035735

Sample: 7635894-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/11/17 21:37

SURROGATE RECOVERY STUDY

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

Lab Batch #: 3035740

Sample: 7635895-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/12/17 09:36

SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| 1,4-Difluorobenzene | 0.0277 | 0.0300 | 92 | 80-120 | |
| 4-Bromofluorobenzene | 0.0281 | 0.0300 | 94 | 80-120 | |

Lab Batch #: 3035462

Sample: 7635721-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/08/17 13:36

SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| 1-Chlorooctane | 98.4 | 100 | 98 | 70-135 | |
| o-Terphenyl | 52.9 | 50.0 | 106 | 70-135 | |

Lab Batch #: 3035464

Sample: 7635722-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/08/17 23:01

SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| 1-Chlorooctane | 88.9 | 100 | 89 | 70-135 | |
| o-Terphenyl | 46.8 | 50.0 | 94 | 70-135 | |

Lab Batch #: 3035735

Sample: 7635894-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/11/17 19:45

SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| 1,4-Difluorobenzene | 0.0277 | 0.0300 | 92 | 80-120 | |
| 4-Bromofluorobenzene | 0.0293 | 0.0300 | 98 | 80-120 | |

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



Form 2 - Surrogate Recoveries

Project Name: RJU CTB

Work Orders : 570434,

Lab Batch #: 3035740

Sample: 7635895-1-BKS / BKS

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/12/17 07:42

SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| 1,4-Difluorobenzene | 0.0251 | 0.0300 | 84 | 80-120 | |
| 4-Bromofluorobenzene | 0.0250 | 0.0300 | 83 | 80-120 | |

Lab Batch #: 3035462

Sample: 7635721-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/08/17 13:56

SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| 1-Chlorooctane | 92.6 | 100 | 93 | 70-135 | |
| o-Terphenyl | 49.6 | 50.0 | 99 | 70-135 | |

Lab Batch #: 3035464

Sample: 7635722-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/08/17 23:21

SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| 1-Chlorooctane | 93.5 | 100 | 94 | 70-135 | |
| o-Terphenyl | 49.8 | 50.0 | 100 | 70-135 | |

Lab Batch #: 3035735

Sample: 7635894-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/11/17 20:04

SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| 1,4-Difluorobenzene | 0.0278 | 0.0300 | 93 | 80-120 | |
| 4-Bromofluorobenzene | 0.0288 | 0.0300 | 96 | 80-120 | |

Lab Batch #: 3035740

Sample: 7635895-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/12/17 08:01

SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| 1,4-Difluorobenzene | 0.0285 | 0.0300 | 95 | 80-120 | |
| 4-Bromofluorobenzene | 0.0290 | 0.0300 | 97 | 80-120 | |

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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



Form 2 - Surrogate Recoveries

Project Name: RJU CTB

Work Orders : 570434,

Project ID:

Lab Batch #: 3035462

Sample: 570433-002 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/08/17 14:57

SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| 1-Chlorooctane | 90.3 | 99.9 | 90 | 70-135 | |
| o-Terphenyl | 45.6 | 50.0 | 91 | 70-135 | |

Lab Batch #: 3035464

Sample: 570434-004 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/09/17 01:04

SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| 1-Chlorooctane | 89.5 | 99.8 | 90 | 70-135 | |
| o-Terphenyl | 48.3 | 49.9 | 97 | 70-135 | |

Lab Batch #: 3035735

Sample: 570433-006 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/11/17 20:23

SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| 1,4-Difluorobenzene | 0.0285 | 0.0300 | 95 | 80-120 | |
| 4-Bromofluorobenzene | 0.0300 | 0.0300 | 100 | 80-120 | |

Lab Batch #: 3035740

Sample: 570435-002 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/12/17 08:20

SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| 1,4-Difluorobenzene | 0.0305 | 0.0300 | 102 | 80-120 | |
| 4-Bromofluorobenzene | 0.0324 | 0.0300 | 108 | 80-120 | |

Lab Batch #: 3035462

Sample: 570433-002 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/08/17 15:17

SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| 1-Chlorooctane | 79.7 | 99.9 | 80 | 70-135 | |
| o-Terphenyl | 42.1 | 50.0 | 84 | 70-135 | |

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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



Form 2 - Surrogate Recoveries

Project Name: RJU CTB

Work Orders : 570434,

Project ID:

Lab Batch #: 3035464

Sample: 570434-004 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/09/17 01:26

SURROGATE RECOVERY STUDY

| TPH by SW8015 Mod Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| 1-Chlorooctane | 78.4 | 99.8 | 79 | 70-135 | |
| o-Terphenyl | 41.7 | 49.9 | 84 | 70-135 | |

Lab Batch #: 3035735

Sample: 570433-006 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/11/17 20:40

SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| 1,4-Difluorobenzene | 0.0275 | 0.0300 | 92 | 80-120 | |
| 4-Bromofluorobenzene | 0.0292 | 0.0300 | 97 | 80-120 | |

Lab Batch #: 3035740

Sample: 570435-002 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/12/17 08:39

SURROGATE RECOVERY STUDY

| BTEX by EPA 8021B Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| 1,4-Difluorobenzene | 0.0337 | 0.0300 | 112 | 80-120 | |
| 4-Bromofluorobenzene | 0.0344 | 0.0300 | 115 | 80-120 | |

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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



BS / BSD Recoveries



Project Name: RJU CTB

Work Order #: 570434

Project ID:

Analyst: ALJ

Date Prepared: 12/10/2017

Date Analyzed: 12/11/2017

Lab Batch ID: 3035735

Sample: 7635894-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

| BTEX by EPA 8021B | Blank Sample Result [A] | Spike Added [B] | Blank Spike Result [C] | Blank Spike %R [D] | Spike Added [E] | Blank Spike Duplicate Result [F] | Blk. Spk Dup. %R [G] | RPD % | Control Limits %R | Control Limits %RPD | Flag |
|--------------------------|--------------------------------|------------------------|-------------------------------|---------------------------|------------------------|---|-----------------------------|--------------|--------------------------|----------------------------|-------------|
| Analytes | | | | | | | | | | | |
| Benzene | <0.00202 | 0.101 | 0.110 | 109 | 0.100 | 0.106 | 106 | 4 | 70-130 | 35 | |
| Toluene | <0.00202 | 0.101 | 0.106 | 105 | 0.100 | 0.101 | 101 | 5 | 70-130 | 35 | |
| Ethylbenzene | <0.00202 | 0.101 | 0.106 | 105 | 0.100 | 0.102 | 102 | 4 | 71-129 | 35 | |
| m,p-Xylenes | <0.00403 | 0.202 | 0.204 | 101 | 0.200 | 0.196 | 98 | 4 | 70-135 | 35 | |
| o-Xylene | <0.00202 | 0.101 | 0.100 | 99 | 0.100 | 0.0960 | 96 | 4 | 71-133 | 35 | |

Analyst: ALJ

Date Prepared: 12/12/2017

Date Analyzed: 12/12/2017

Lab Batch ID: 3035740

Sample: 7635895-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

| BTEX by EPA 8021B | Blank Sample Result [A] | Spike Added [B] | Blank Spike Result [C] | Blank Spike %R [D] | Spike Added [E] | Blank Spike Duplicate Result [F] | Blk. Spk Dup. %R [G] | RPD % | Control Limits %R | Control Limits %RPD | Flag |
|--------------------------|--------------------------------|------------------------|-------------------------------|---------------------------|------------------------|---|-----------------------------|--------------|--------------------------|----------------------------|-------------|
| Analytes | | | | | | | | | | | |
| Benzene | <0.00201 | 0.100 | 0.107 | 107 | 0.0998 | 0.111 | 111 | 4 | 70-130 | 35 | |
| Toluene | <0.00201 | 0.100 | 0.103 | 103 | 0.0998 | 0.106 | 106 | 3 | 70-130 | 35 | |
| Ethylbenzene | <0.00201 | 0.100 | 0.105 | 105 | 0.0998 | 0.108 | 108 | 3 | 71-129 | 35 | |
| m,p-Xylenes | <0.00402 | 0.201 | 0.200 | 100 | 0.200 | 0.208 | 104 | 4 | 70-135 | 35 | |
| o-Xylene | <0.00201 | 0.100 | 0.0992 | 99 | 0.0998 | 0.102 | 102 | 3 | 71-133 | 35 | |

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

Blank Spike Recovery [D] = 100*(C)/[B]

Blank Spike Duplicate Recovery [G] = 100*(F)/[E]

All results are based on MDL and Validated for QC Purposes



BS / BSD Recoveries



Project Name: RJU CTB

Work Order #: 570434

Project ID:

Analyst: MNV

Date Prepared: 12/08/2017

Date Analyzed: 12/08/2017

Lab Batch ID: 3035517

Sample: 7635642-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

| Chloride by EPA 300 | Blank Sample Result [A] | Spike Added [B] | Blank Spike Result [C] | Blank Spike %R [D] | Spike Added [E] | Blank Spike Duplicate Result [F] | Blk. Spk Dup. %R [G] | RPD % | Control Limits %R | Control Limits %RPD | Flag |
|----------------------------|--------------------------------|------------------------|-------------------------------|---------------------------|------------------------|---|-----------------------------|--------------|--------------------------|----------------------------|-------------|
| Analytes | | | | | | | | | | | |
| Chloride | <5.00 | 200 | 208 | 104 | 200 | 211 | 106 | 1 | 90-110 | 20 | |

Analyst: MNV

Date Prepared: 12/08/2017

Date Analyzed: 12/09/2017

Lab Batch ID: 3035752

Sample: 7635709-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

| Chloride by EPA 300 | Blank Sample Result [A] | Spike Added [B] | Blank Spike Result [C] | Blank Spike %R [D] | Spike Added [E] | Blank Spike Duplicate Result [F] | Blk. Spk Dup. %R [G] | RPD % | Control Limits %R | Control Limits %RPD | Flag |
|----------------------------|--------------------------------|------------------------|-------------------------------|---------------------------|------------------------|---|-----------------------------|--------------|--------------------------|----------------------------|-------------|
| Analytes | | | | | | | | | | | |
| Chloride | <5.00 | 250 | 255 | 102 | 250 | 259 | 104 | 2 | 90-110 | 20 | |

Analyst: ARM

Date Prepared: 12/08/2017

Date Analyzed: 12/08/2017

Lab Batch ID: 3035462

Sample: 7635721-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

| TPH by SW8015 Mod | Blank Sample Result [A] | Spike Added [B] | Blank Spike Result [C] | Blank Spike %R [D] | Spike Added [E] | Blank Spike Duplicate Result [F] | Blk. Spk Dup. %R [G] | RPD % | Control Limits %R | Control Limits %RPD | Flag |
|-----------------------------------|--------------------------------|------------------------|-------------------------------|---------------------------|------------------------|---|-----------------------------|--------------|--------------------------|----------------------------|-------------|
| Analytes | | | | | | | | | | | |
| Gasoline Range Hydrocarbons (GRO) | <15.0 | 1000 | 1040 | 104 | 1000 | 972 | 97 | 7 | 70-135 | 35 | |
| Diesel Range Organics (DRO) | <15.0 | 1000 | 1060 | 106 | 1000 | 1030 | 103 | 3 | 70-135 | 35 | |

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

Blank Spike Recovery [D] = 100*(C)/[B]

Blank Spike Duplicate Recovery [G] = 100*(F)/[E]

All results are based on MDL and Validated for QC Purposes



BS / BSD Recoveries



Project Name: RJU CTB

Work Order #: 570434

Project ID:

Analyst: ARM

Date Prepared: 12/08/2017

Date Analyzed: 12/08/2017

Lab Batch ID: 3035464

Sample: 7635722-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

| TPH by SW8015 Mod | Blank Sample Result [A] | Spike Added [B] | Blank Spike Result [C] | Blank Spike %R [D] | Spike Added [E] | Blank Spike Duplicate Result [F] | Blk. Spk Dup. %R [G] | RPD % | Control Limits %R | Control Limits %RPD | Flag |
|-----------------------------------|--------------------------------|------------------------|-------------------------------|---------------------------|------------------------|---|-----------------------------|--------------|--------------------------|----------------------------|-------------|
| Analytes | | | | | | | | | | | |
| Gasoline Range Hydrocarbons (GRO) | <15.0 | 1000 | 922 | 92 | 1000 | 928 | 93 | 1 | 70-135 | 35 | |
| Diesel Range Organics (DRO) | <15.0 | 1000 | 994 | 99 | 1000 | 1010 | 101 | 2 | 70-135 | 35 | |

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

Blank Spike Recovery [D] = $100 * (C)/[B]$

Blank Spike Duplicate Recovery [G] = $100 * (F)/[E]$

All results are based on MDL and Validated for QC Purposes



Form 3 - MS / MSD Recoveries



Project Name: RJU CTB

Work Order # : 570434

Project ID:

Lab Batch ID: 3035735

QC- Sample ID: 570433-006 S

Batch #: 1 **Matrix:** Soil

Date Analyzed: 12/11/2017

Date Prepared: 12/10/2017

Analyst: ALJ

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

| BTEX by EPA 8021B Analytes | Parent Sample Result [A] | Spike Added [B] | Spiked Sample Result [C] | Spiked Sample %R [D] | Spike Added [E] | Duplicate Spiked Sample Result [F] | Spiked Dup. %R [G] | RPD % | Control Limits %R | Control Limits %RPD | Flag |
|---|---------------------------------|------------------------|---------------------------------|-----------------------------|------------------------|---|---------------------------|--------------|--------------------------|----------------------------|-------------|
| Benzene | <0.00200 | 0.0998 | 0.0895 | 90 | 0.100 | 0.0944 | 94 | 5 | 70-130 | 35 | |
| Toluene | 0.00202 | 0.0998 | 0.0826 | 81 | 0.100 | 0.0851 | 83 | 3 | 70-130 | 35 | |
| Ethylbenzene | <0.00200 | 0.0998 | 0.0776 | 78 | 0.100 | 0.0795 | 80 | 2 | 71-129 | 35 | |
| m,p-Xylenes | <0.00399 | 0.200 | 0.148 | 74 | 0.201 | 0.152 | 76 | 3 | 70-135 | 35 | |
| o-Xylene | <0.00200 | 0.0998 | 0.0735 | 74 | 0.100 | 0.0745 | 75 | 1 | 71-133 | 35 | |

Lab Batch ID: 3035740

QC- Sample ID: 570435-002 S

Batch #: 1 **Matrix:** Soil

Date Analyzed: 12/12/2017

Date Prepared: 12/12/2017

Analyst: ALJ

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

| BTEX by EPA 8021B Analytes | Parent Sample Result [A] | Spike Added [B] | Spiked Sample Result [C] | Spiked Sample %R [D] | Spike Added [E] | Duplicate Spiked Sample Result [F] | Spiked Dup. %R [G] | RPD % | Control Limits %R | Control Limits %RPD | Flag |
|---|---------------------------------|------------------------|---------------------------------|-----------------------------|------------------------|---|---------------------------|--------------|--------------------------|----------------------------|-------------|
| Benzene | <0.00200 | 0.100 | 0.0959 | 96 | 0.0996 | 0.102 | 102 | 6 | 70-130 | 35 | |
| Toluene | <0.00200 | 0.100 | 0.0885 | 89 | 0.0996 | 0.0889 | 89 | 0 | 70-130 | 35 | |
| Ethylbenzene | <0.00200 | 0.100 | 0.0849 | 85 | 0.0996 | 0.0827 | 83 | 3 | 71-129 | 35 | |
| m,p-Xylenes | <0.00401 | 0.200 | 0.163 | 82 | 0.199 | 0.159 | 80 | 2 | 70-135 | 35 | |
| o-Xylene | <0.00200 | 0.100 | 0.0811 | 81 | 0.0996 | 0.0798 | 80 | 2 | 71-133 | 35 | |

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

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

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



Form 3 - MS / MSD Recoveries



Project Name: RJU CTB

Work Order # : 570434

Project ID:

Lab Batch ID: 3035517

QC- Sample ID: 570434-002 S

Batch #: 1 **Matrix:** Soil

Date Analyzed: 12/08/2017

Date Prepared: 12/08/2017

Analyst: MNV

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

| Chloride by EPA 300 Analytes | Parent Sample Result [A] | Spike Added [B] | Spiked Sample Result [C] | Spiked Sample %R [D] | Spike Added [E] | Duplicate Spiked Sample Result [F] | Spiked Dup. %R [G] | RPD % | Control Limits %R | Control Limits %RPD | Flag |
|---------------------------------|--------------------------|-----------------|--------------------------|----------------------|-----------------|------------------------------------|--------------------|-------|-------------------|---------------------|------|
| Chloride | 591 | 248 | 816 | 91 | 248 | 817 | 91 | 0 | 90-110 | 20 | |

Lab Batch ID: 3035517

QC- Sample ID: 570435-018 S

Batch #: 1 **Matrix:** Soil

Date Analyzed: 12/08/2017

Date Prepared: 12/08/2017

Analyst: MNV

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

| Chloride by EPA 300 Analytes | Parent Sample Result [A] | Spike Added [B] | Spiked Sample Result [C] | Spiked Sample %R [D] | Spike Added [E] | Duplicate Spiked Sample Result [F] | Spiked Dup. %R [G] | RPD % | Control Limits %R | Control Limits %RPD | Flag |
|---------------------------------|--------------------------|-----------------|--------------------------|----------------------|-----------------|------------------------------------|--------------------|-------|-------------------|---------------------|------|
| Chloride | <4.93 | 247 | 272 | 110 | 247 | 270 | 109 | 1 | 90-110 | 20 | |

Lab Batch ID: 3035752

QC- Sample ID: 570433-012 S

Batch #: 1 **Matrix:** Soil

Date Analyzed: 12/09/2017

Date Prepared: 12/08/2017

Analyst: MNV

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

| Chloride by EPA 300 Analytes | Parent Sample Result [A] | Spike Added [B] | Spiked Sample Result [C] | Spiked Sample %R [D] | Spike Added [E] | Duplicate Spiked Sample Result [F] | Spiked Dup. %R [G] | RPD % | Control Limits %R | Control Limits %RPD | Flag |
|---------------------------------|--------------------------|-----------------|--------------------------|----------------------|-----------------|------------------------------------|--------------------|-------|-------------------|---------------------|------|
| Chloride | 672 | 248 | 886 | 86 | 248 | 902 | 93 | 2 | 90-110 | 20 | X |

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

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

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



Form 3 - MS / MSD Recoveries



Project Name: RJU CTB

Work Order # : 570434

Project ID:

Lab Batch ID: 3035752

QC- Sample ID: 570434-008 S

Batch #: 1 **Matrix:** Soil

Date Analyzed: 12/09/2017

Date Prepared: 12/08/2017

Analyst: MNV

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

| Chloride by EPA 300 Analytes | Parent Sample Result [A] | Spike Added [B] | Spiked Sample Result [C] | Spiked Sample %R [D] | Spike Added [E] | Duplicate Spiked Sample Result [F] | Spiked Dup. %R [G] | RPD % | Control Limits %R | Control Limits %RPD | Flag |
|---------------------------------|--------------------------|-----------------|--------------------------|----------------------|-----------------|------------------------------------|--------------------|-------|-------------------|---------------------|------|
| Chloride | 132 | 248 | 372 | 97 | 248 | 375 | 98 | 1 | 90-110 | 20 | |

Lab Batch ID: 3035462

QC- Sample ID: 570433-002 S

Batch #: 1 **Matrix:** Soil

Date Analyzed: 12/08/2017

Date Prepared: 12/08/2017

Analyst: ARM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

| TPH by SW8015 Mod Analytes | Parent Sample Result [A] | Spike Added [B] | Spiked Sample Result [C] | Spiked Sample %R [D] | Spike Added [E] | Duplicate Spiked Sample Result [F] | Spiked Dup. %R [G] | RPD % | Control Limits %R | Control Limits %RPD | Flag |
|-----------------------------------|--------------------------|-----------------|--------------------------|----------------------|-----------------|------------------------------------|--------------------|-------|-------------------|---------------------|------|
| Gasoline Range Hydrocarbons (GRO) | <15.0 | 999 | 1010 | 101 | 999 | 888 | 89 | 13 | 70-135 | 35 | |
| Diesel Range Organics (DRO) | <15.0 | 999 | 1080 | 108 | 999 | 988 | 99 | 9 | 70-135 | 35 | |

Lab Batch ID: 3035464

QC- Sample ID: 570434-004 S

Batch #: 1 **Matrix:** Soil

Date Analyzed: 12/09/2017

Date Prepared: 12/08/2017

Analyst: ARM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

| TPH by SW8015 Mod Analytes | Parent Sample Result [A] | Spike Added [B] | Spiked Sample Result [C] | Spiked Sample %R [D] | Spike Added [E] | Duplicate Spiked Sample Result [F] | Spiked Dup. %R [G] | RPD % | Control Limits %R | Control Limits %RPD | Flag |
|-----------------------------------|--------------------------|-----------------|--------------------------|----------------------|-----------------|------------------------------------|--------------------|-------|-------------------|---------------------|------|
| Gasoline Range Hydrocarbons (GRO) | <15.0 | 998 | 997 | 100 | 998 | 869 | 87 | 14 | 70-135 | 35 | |
| Diesel Range Organics (DRO) | <15.0 | 998 | 1080 | 108 | 998 | 940 | 94 | 14 | 70-135 | 35 | |

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

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

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



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

Phoenix, Arizona (480-355-0900)

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Xenco Quote #

Xenco Job #

570434

| Client / Reporting Information | | Project Information | | Analytical Information | | Matrix Codes | | | | | | | | |
|---|--------------------------------|---|-----------------|---|------------------|---------------|--------------|-----------------|------------------|---------------|--------------|---------------|------------------|----------------|
| Company Name / Branch: COG Operating, LLC Company Address: 2407 Peacos Ave, Artesia NM 88210 Email: shitchcock@concho.com Phone No: 575-703-6475 dneel2@concho.com; ailleb@concho.com; thaskell@concho.com | | Project Name/Number: Project Location: | | Invoice To: COG Operating, LLC Attn: Robert McNeill 600 W. Illinois Ave. Midland Tx, 79701 | | | | | | | | | | |
| Project Contact: Sheldon Hitchcock | | PO Number: | | TPH EXTENDED | | | | | | | | | | |
| Sampler's Name: Sheldon Hitchcock | | | | BTEX | | | | | | | | | | |
| | | | | CHLORIDES | | | | | | | | | | |
| No. | Field ID / Point of Collection | Sample Depth | Collection Date | Time | Matrix | # of bottles | CI | NaOH/Zn Acetate | HNO3 | H2SO4 | NaOH | NaHSO4 | MEOH | Field Comments |
| 1 | 5-10' | 0 | 12/11/17 | 11:36 | S | 1 | | | | | | | | |
| 2 | 5-11' | 1 | | 11:32 | S | 1 | | | | | | | | |
| 3 | 5-12' | 2 | | 11:34 | S | 1 | | | | | | | | |
| 4 | 5-13' | 3 | | 11:36 | S | 1 | | | | | | | | |
| 5 | 5-14' | 4 | | 11:38 | S | 1 | | | | | | | | |
| 6 | 5-15' | 5 | | 11:40 | S | 1 | | | | | | | | |
| 7 | 5-20' | 0 | | 12:00 | S | 1 | | | | | | | | |
| 8 | 5-21' | 1 | | 12:00 | S | 1 | | | | | | | | |
| 9 | 5-22' | 2 | | 12:04 | S | 1 | | | | | | | | |
| 10 | 5-23' | 3 | | 12:06 | S | 1 | | | | | | | | |
| 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: | Relinquished By: | Date Time: | Received By: | Date Time: | Relinquished By: | Date Time: | Received By: | Date Time: | Relinquished By: | Date Time: |
| 1. Sheldon Peirin | | 12-6-17 09:41 | 578 | 12-6-17 09:41 | 578 | 12-6-17 09:41 | 578 | 12-6-17 09:41 | 578 | 12-6-17 09:41 | 578 | 12-6-17 09:41 | 578 | 12-6-17 09:41 |
| Relinquished by: | | Date Time: | Received By: | Date Time: | Relinquished By: | Date Time: | Received By: | Date Time: | Relinquished By: | Date Time: | Received By: | Date Time: | Relinquished By: | Date Time: |
| 3. Relinquished by: | | 3 | Received By: | 3 | Received By: | 3 | Received By: | 3 | Received By: | 3 | Received By: | 3 | Received By: | 3 |
| 5. Relinquished by: | | 5 | Received By: | 5 | Received By: | 5 | Received By: | 5 | Received By: | 5 | Received By: | 5 | Received By: | 5 |
| Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco. Its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for losses or expenses incurred by the Client if such 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. | | | | | | | | | | | | | | |

Temp: 2.30°C IR ID: R-8
 CF: (0-6: -0.2°C)
 Corrected Temp: 2.10°C



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Phoenix, Arizona (480-355-0900)

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Xenco Quote # 570434

Xenco Job #

| Client / Reporting Information | | Project Information | | Analytical Information | | Matrix Codes | | | | | | | | | | | | | |
|---|--------------------------------|---|--------|------------------------|-----|--|------|--------------|------|------------|------|--|------|------------|----------------|--|--|--|--|
| Company Name / Branch: COG Operating, LLC | | Project Name/Number: | | Date Time: | | 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 MW = Waste Water A = Air | | | | | | | | | | | | | |
| Company Address: 2407 Pecos Ave, Artesia NM 88210 | | Project Location: | | Date Time: | | | | | | | | | | | | | | | |
| Email: slhitchcock@concho.com Phone No: 575-703-6475 dhree12@concho.com, allebd@concho.com, thaskell@concho.com | | Invoice To: COG Operating, LLC Attn: Robert McNeill 600 W. Illinois Ave. Midland TX, 79701 | | Date Time: | | | | | | | | | | | | | | | |
| Project Contact: Sheldon Hitchcock | | PO Number: | | Date Time: | | | | | | | | | | | | | | | |
| Samplers Name: Sheldon Hitchcock | | | | Date Time: | | | | | | | | | | | | | | | |
| No. | Field ID / Point of Collection | Collection | Matrix | # of bottles | HCl | NaOH/Zn Acetate | HNO3 | H2SO4 | NaOH | NaHSO4 | MEOH | TPH EXTENDED | BTEX | CHLORIDES | Field Comments | | | | |
| 1 | 5-10' | 0 | 12/17 | 11:30 | S | 1 | | | | | | X | X | X | | | | | |
| 2 | 5-11' | 1 | | 11:32 | S | 1 | | | | | | X | X | X | | | | | |
| 3 | 5-12' | 2 | | 11:34 | S | 1 | | | | | | X | X | X | | | | | |
| 4 | 5-13' | 3 | | 11:36 | S | 1 | | | | | | X | X | X | | | | | |
| 5 | 5-14' | 4 | | 11:38 | S | 1 | | | | | | X | X | X | | | | | |
| 6 | 5-15' | 5 | | 11:40 | S | 1 | | | | | | X | X | X | | | | | |
| 7 | 5-20' | 0 | | 12:00 | S | 1 | | | | | | X | X | X | | | | | |
| 8 | 5-21' | 1 | | 12:02 | S | 1 | | | | | | X | X | X | | | | | |
| 9 | 5-22' | 2 | | 12:04 | S | 1 | | | | | | X | X | X | | | | | |
| 10 | 5-23' | 3 | | 12:06 | S | 1 | | | | | | X | X | X | | | | | |
| Turnaround Time (Business days) | | | | | | | | | | | | Data Deliverable Information | | | | | | | |
| <input type="checkbox"/> Same Day TAT <input type="checkbox"/> 5 Day TAT <input type="checkbox"/> Next Day EMERGENCY <input type="checkbox"/> 7 Day TAT <input type="checkbox"/> 2 Day EMERGENCY <input checked="" type="checkbox"/> Contract TAT <input type="checkbox"/> 3 Day EMERGENCY <input type="checkbox"/> TRRP Checklist | | | | | | | | | | | | <input type="checkbox"/> Level II Std QC <input type="checkbox"/> Level IV (Full Data Pkg/raw data) <input type="checkbox"/> Level III Std QC+ Forms <input type="checkbox"/> TRRP Level IV <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 | | | | | | | | | | | | FED-EX / UPS: Tracking # | | | | | | | |
| SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY | | | | | | | | | | | | | | | | | | | |
| Relinquished by Sampler: | | Date Time: | | Received By: | | Date Time: | | Received By: | | Date Time: | | Received By: | | Date Time: | | | | | |
| 1. Sheldon Keim | | 12-6-17 09:24 | | 5/10/18 | | 2 | | 5/10/18 | | 4 | | 5/10/18 | | 4 | | | | | |
| Relinquished by: | | Date Time: | | Received By: | | Date Time: | | Received By: | | Date Time: | | Received By: | | Date Time: | | | | | |
| 3 | | | | | | | | | | | | | | | | | | | |
| Relinquished by: | | Date Time: | | Received By: | | Date Time: | | Received By: | | Date Time: | | Received By: | | Date Time: | | | | | |
| 5 | | | | | | | | | | | | | | | | | | | |

Temp: 2.30c IR ID: R-8
 CF: (0-6: -0.2°C)
 (6-23: +0.2°C)
 Corrected Temp: 2.10c



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Xenco Job #

570434

| Client / Reporting Information | | Project Information | | Analytical Information | | Matrix Codes | | | | | | | | | | | |
|--|--------------------------------|---|-----------------|------------------------------|--------|--|-----|-----------------|------|--------------|------|------------------|------|--------------|------|--------------|--|
| Company Name / Branch: COG Operating, LLC Company Address: 2407 Pecos Ave. Arnesia NM 88210 Email: slhitchcock@concho.com Phone No: 575-703-6475 dhee12@concho.com; ailebb@concho.com; raskell@concho.com Project Contact: Sheldon Hitchcock Project Name: Sheldon Hitchcock | | Project Name/Number: R274 CTB Project Location: Invoice To: COG Operating, LLC Attn: Robert McNeill 600 W. Illinois Ave. Midland Tx, 79701 PO Number: | | Xenco Quote # Xenco Job # | | 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 | Collection Date | Time | Matrix | # of bottles | HCl | NaOH/Zn Acetate | HNO3 | H2SO4 | NaOH | NaHSO4 | MEOH | TPH EXTENDED | BTEX | CHLORIDES | |
| 1 | 5-24' | 4 | 12/17/22 | 12:08 | S | 1 | | | | | | | | | | | |
| 2 | | | | | S | 1 | | | | | | | | | | | |
| 3 | | | | | S | 1 | | | | | | | | | | | |
| 4 | | | | | S | 1 | | | | | | | | | | | |
| 5 | | | | | S | 1 | | | | | | | | | | | |
| 6 | | | | | S | 1 | | | | | | | | | | | |
| 7 | | | | | S | 1 | | | | | | | | | | | |
| 8 | | | | | S | 1 | | | | | | | | | | | |
| 9 | | | | | S | 1 | | | | | | | | | | | |
| 10 | | | | | S | 1 | | | | | | | | | | | |
| 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: | | Relinquished By: | | Date Time: | | Received By: | | Relinquished By: | | Date Time: | | Received By: | |
| 1 Sheldon Arnesia | | 02-07-09 | | 1 Sidarta | | 2 | | 12/17 | | 4 | | 12/17 | | 11:15 | | 5.6 | |
| 3 Relinquished by: | | Date Time: | | Received By: | | Relinquished By: | | Date Time: | | Received By: | | Relinquished By: | | Date Time: | | Received By: | |
| 5 | | | | 3 | | 4 | | | | 4 | | | | | | | |

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



XENCO Laboratories Prelogin/Nonconformance Report- Sample Log-In

Client: COG Operating, LLC

Date/ Time Received: 12/07/2017 11:15:00 AM

Work Order #: 570434

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

| Sample Receipt Checklist | Comments |
|---|----------|
| #1 *Temperature of cooler(s)? | 2.1 |
| #2 *Shipping container in good condition? | Yes |
| #3 *Samples received on ice? | Yes |
| #4 *Custody Seals intact on shipping container/ cooler? | No |
| #5 Custody Seals intact on sample bottles? | N/A |
| #6*Custody Seals Signed and dated? | N/A |
| #7 *Chain of Custody present? | Yes |
| #8 Any missing/extra samples? | No |
| #9 Chain of Custody signed when relinquished/ received? | Yes |
| #10 Chain of Custody agrees with sample labels/matrix? | Yes |
| #11 Container label(s) legible and intact? | Yes |
| #12 Samples in proper container/ bottle? | Yes |
| #13 Samples properly preserved? | Yes |
| #14 Sample container(s) intact? | Yes |
| #15 Sufficient sample amount for indicated test(s)? | Yes |
| #16 All samples received within hold time? | Yes |
| #17 Subcontract of sample(s)? | No |
| #18 Water VOC samples have zero headspace? | N/A |

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

Analyst:

PH Device/Lot#:

Checklist completed by: Shawnee Smith Date: 12/07/2017
Shawnee Smith

Checklist reviewed by: Mike Kimmel Date: 12/15/2017
Mike Kimmel

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 160025

CONDITIONS

| | |
|---|--|
| Operator: COG OPERATING LLC 600 W Illinois Ave Midland, TX 79701 | OGRID: 229137 |
| | Action Number: 160025 |
| | Action Type: [IM-SD] Incident File Support Doc (ENV) (IM-BNF) |

CONDITIONS

| Created By | Condition | Condition Date |
|------------|-----------|----------------|
| bhall | None | 11/18/2022 |