

February 23, 2017

Oil Conservation Division District 2 — Artesia, NM 811 S. First Street Artesia, New Mexico 88210

Re: Pilum 15 Fee #002H 30-015-42644 Sec. 16, T18S-R26E Eddy County, NM

Mr. Bratcher/Ms. Weaver,

COG Operating LLC would like to submit for your consideration the enclosed work plan for the above captioned well. The plan is in response to the C-141 Initial report dated April 19, 2016.

### Background

The release was caused when an unknown person shot a hole in a poly flow line resulting in the release of 5 barrels of produced water. Upon discovery, the line was isolated and crews were dispatched to repair the line. The release occurred in the pasture alongside the road.

### Groundwater

Based on the information obtained through the use of the Chevron-Texaco Maps and the New Mexico State Engineers Well Reports, the release area would be classified at a site ranking of **10** with depth to groundwater averaging 50-99 ft. in the area.

### Soil Assessment and Analytical Results

Sample points for the release area are labeled as S1 and S2 on the attached Site Diagram. According to the analytical results obtained, S1 has elevated concentration of chloride to a depth of 6' with delineation showing a decrease in concentration. S2 resulted in elevated chloride concentrations to a depth of 4' with delineation results showing a decrease in concentration. Chloride results were delineated to 14' and 12' due to the inability of the backhoe to dig through a rock layer at mentioned depths. Copies of the analytical results along with a site diagram and sample summary table are attached for your consideration.

| PILL     | JM 15 FEE #2H              |  |  |  |
|----------|----------------------------|--|--|--|
| Sit      | e Ranking: 10              |  |  |  |
| Depth to | GW per SEO: 50-99          |  |  |  |
|          | ft.                        |  |  |  |
| Delin    | eation Samples<br>07/07/16 |  |  |  |
| T1       | CI-                        |  |  |  |
| 1'       |                            |  |  |  |
| 2'       | 8260                       |  |  |  |
| 3'       | 14700                      |  |  |  |
| 4'       | 20000                      |  |  |  |
| 6'       | 5600                       |  |  |  |
| 8'       | 352                        |  |  |  |
| 10'      | 80                         |  |  |  |
| 12'      | 80                         |  |  |  |
| 14'      | 320                        |  |  |  |
| T2       | CI-                        |  |  |  |
| 1'       | 4960                       |  |  |  |
| 2'       | 2240                       |  |  |  |
| 3'       | 832                        |  |  |  |
| 4'       | 3720                       |  |  |  |
| 6'       | 240                        |  |  |  |
| 8'       | 160                        |  |  |  |
| 10'      | 128                        |  |  |  |
| 12'      | 32                         |  |  |  |

### **Work Plan**

COG Operating LLC proposes the following excavations for remediation of the release area:

S1- Excavate to a depth of approximately 6-7 ft.

S2 – Excavate to a depth of approximately 4-5 ft.

All areas excavated will be backfilled with like materials and bottom hole confirmation samples will be taken after the excavation is complete and before the site is backfilled. All areas affected during excavation will be returned to their normal state and will be reseeded in June of 2017.

NMOCD February 23, 2017 Page 3

If there are no objections or further stipulations, COG Operating LLC would like to begin the remediation process based on approval of this work plan. Please feel free to contact me with any questions or concerns.

Sincerely,

Dakota Neel,

**Environmental Coordinator** 

Enclosure(s): Site Diagram

Sample Summary Table Analytical Results C-141 Initial (Copy)

Sample Points Delineation Samples 07/07/16 Depth to GW per SEO: 50-99 ft. 4-5 ft 8-7 ft. -egend 8260 14700 2000 2240 832 3720 PILUM 15 FEE #2H 6930 4960 2600 240 160 128 32 320 88 82 12 12 14 17 10 12 ର୍ଜ ଫ 4 9 ōο m 4 83 c<sub>S</sub>1 PILUM 15 Fee #2H 32.721212\*, -104.378311\*

# PILUM 15 FEE #2H

<u>District I</u> 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

\* Attach Additional Sheets If Necessary .

### State of New Mexico Energy Minerals and Natural Resources

Form C-141 Revised August 8, 2011

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

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

|                  |                 |                 | Rele         | ase Notific                             | ation       | and Co               | rrective A                  | ction       | 1                 |                            |             |              |
|------------------|-----------------|-----------------|--------------|---|-------------|----------------------|-----------------------------|-------------|-------------------|----------------------------|-------------|--------------|
|                  |                 |                 |              |   |             | OPERA:               | ГOR                         |             | ✓ Initia          | l Report                   |             | Final Report |
|                  | mpany: CO       |                 |              | _                                       |             |                      | bert McNeill                |             |                   |                            |             |              |
|                  | 0 West Illin    |                 |              | d TX 79701                              |             |                      | No. 432-230-00              | 77          |                   |                            |             |              |
| Facility Nar     | ne: PILUM       | 15 FEE #00      | J2H          |   | _           | Facility Typ         | e: well                     |             |                   |                            |             |              |
| Surface Ow       | ner: Fee        |                 |              | Mineral O                               | wner:       | Fee                  |                             |             | API No            | . 30-015-4                 | 2644        |              |
|                  |                 |                 |              | LOCA                                    | OITA        | OF RE                | LEASE                       |             |                   |                            |             |              |
| Unit Letter<br>P | Section 16      | Township<br>18S | Range<br>26E | Feet from the 789'                      |             | /South Line<br>South | Feet from the 450'          |             | West Line<br>East |                            | Cour<br>Edd |              |
|                  |                 |                 |              |   |             | OF REL               | -104.37926734               | 4           |                   |                            |             |              |
| Type of Rele     | 968'            |                 | -            | INAI                                    | UKE         | Volume of            |                             |             | Volume P          | lecovered:                 |             |              |
| Produced Wa      |                 |                 |              |   |             | 5 bbls               |                             |             | 0 bbls            | ecovered.                  |             |              |
| Source of Re     | lease:          |                 |              |   | ΑÝ          |                      | lour of Occurrence:00:00 AM | e:          |                   | Hour of Dis<br>7:00:00 AM  |             | <b>:</b>     |
|                  | ate Notice Giv  |                 |              |   |             | If YES, To           |                             |             | 4/4/2010          | 7.00.00 AIV                |             |              |
|                  |                 |                 | Yes _        | No 🛛 Not Re                             | equired     |                      |                             |             |                   |                            |             |              |
| By Whom?         |                 |                 |              | <u>.</u>                                |             | Date and H           |                             |             |                   |                            |             |              |
| Was a Water      | course Reache   |                 | Yes 🛛        | No                                      |             | If YES, Vo           | lume Impacting t            | the Wate    | ercourse.         |                            |             |              |
| If a Watercou    | ırse was İmpa   |                 |              |   |             | <u> </u>             |                             |             |                   |                            |             |              |
| II a Watercoo    | nae waa mpa     | orou, Desern    | be I dily.   |   |             |                      |                             |             |                   |                            |             |              |
|                  |                 |                 |              |   |             |                      |                             |             |                   |                            |             |              |
|                  |                 |                 |              |   |             |                      |                             |             |                   |                            |             |              |
|                  | se of Problem   |                 |              |   |             |                      |                             |             |                   |                            |             |              |
|                  | was caused w    | hen an unkn     | own pers     | on shot at the flow                     | vline cau   | using damage         | to the poly flowl           | ine. The    | leak was st       | topped and                 | the po      | lyline       |
| repaired.        |                 |                 |              |   |             |                      |                             |             |                   |                            |             |              |
|                  |                 |                 |              |   |             |                      |                             |             |                   |                            |             |              |
| Describe Are     | a Affected an   | d Cleanup A     | ction Tak    | en.*                                    |             |                      |                             |             |                   |                            |             |              |
| This release     | occurred withi  | in the pasture  | e, alongsi   | de the road. Conc                       | ho will l   | have the spill       | site sampled to d           | elineate    | any possibl       | le contamin                | ation f     | rom the      |
|                  |                 |                 |              | lan to the NMOC                         |             |                      |                             |             |                   |                            |             |              |
|                  |                 |                 |              |   |             |                      |                             |             |                   |                            |             |              |
| I hereby certi   | fy that the inf | ormation giv    | en above     | is true and compl                       | lete to th  | ne best of my        | knowledge and u             | nderstar    | nd that purs      | uant to NM                 | OCD r       | ules and     |
| regulations a    | ll operators an | e required to   | report an    | d/or file certain re                    | elease ne   | otifications ar      | nd perform correct          | tive acti   | ions for rele     | ases which                 | may e       | ndanger      |
|                  |                 |                 |              | e of a C-141 repo<br>investigate and re |             |                      |                             |             |                   |                            |             |              |
| or the environ   | operations hav  | lition, NMO     | CD accep     | tance of a C-141                        | report de   | oes not reliev       | e the operator of           | responsi    | bility for co     | , suriace wa<br>muliance w | ith an      | v other      |
|                  | or local laws   |                 |              |   | ·           |                      | <u> </u>                    |             |                   | <u> </u>                   |             |              |
|                  |                 |                 |              |   |             |                      | OIL CON                     | <u>SERV</u> | <u>ATION</u>      | <u>DIVISIO</u>             | <u>N</u>    |              |
| C:               | Ret.            | Sent.           |              |   |             |                      |                             |             |                   |                            |             |              |
| Signature:       |                 |                 | _            |   | <del></del> | Approved by          | Environmental S             | pecialist   | t:                |                            |             |              |
| Printed Name     | : Robert Gru    | bbs Jr.         |              | (Alter                                  |             | •                    |                             |             |                   |                            |             |              |
| Title: Senior    | Environmenta    | al Coordinate   | Or .         |   |             | Approval Dat         | e:                          | 1           | Expiration I      | Date:                      |             |              |
| E-mail Addre     | ss: rgrubbs@    | concho.com      |              |   |             | Conditions of        | Approval:                   |             |                   | Attached                   |             | 10           |
| Date: April 1    | 9, 2016         | PI              | hone: 432    | -683-7443                               |             |                      |                             |             |                   |                            | _           | 1.0          |



# New Mexico Office of the State Engineer

## Water Column/Average Depth to Water

POD suffix indicates the POD has been replaced & no longer serves a water right file.)

(R=POD has been replaced,

O=orphaned, C=the file is closed)

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

(quarters are smallest to largest) (NAD83 UTM in meters) (In feet)

|               |      | POD<br>Sub- |        | -  | Q  | _ |     | _   |     |        |           |                 |         | Vater |
|---------------|------|-------------|--------|----|----|---|-----|-----|-----|--------|-----------|-----------------|---------|-------|
| POD Number    | Code | basin       | County | 64 | 16 | 4 | Sec | Tws | Rng | X      | Y         | DepthWellDepth\ | Water C | olumn |
| RA 03421      |      |             | ED     | 1  | 2  | 2 | 16  | 185 | 26E | 557942 | 3624213*  | 665             | 130     | 535   |
| RA 05241      |      |             | ED     |    | 3  | 4 | 16  | 185 | 26E | 557644 | 3622903*  | 200             | 100     | 100   |
| RA 11682 POD2 |      |             | ED     | 4  | 2  | 2 | 16  | 185 | 26E | 558236 | 3623959   | 98              |         |       |
| RA 11682 POD5 |      |             | ED     | 4  | 2  | 1 | 16  | 185 | 26E | 558214 | 3624632 🕙 | 66              | 51      | 15    |

Average Depth to Water:

93 feet

Minimum Depth:

51 feet

Maximum Depth:

130 feet

Record Count: 4

PLSS Search:

Section(s): 16

Township: 18S

Range: 26E

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

2/23/17 10:15 AM

WATER COLUMN/ AVERAGE DEPTH TO WATER

<sup>\*</sup>UTM location was derived from PLSS - see Help



July 19, 2016

LUPE CARRASCO
COG Operating, LLC
500 W. ILLINOIS
Midland, TX 79701

RE: PILUM 15 FEE #2H

Enclosed are the results of analyses for samples received by the laboratory on 07/13/16 10:30.

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

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

Method EPA 552.2

Haloacetic Acids (HAA-5)

Method EPA 524.2

Total Trihalomethanes (TTHM)

Method EPA 524.4

Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

Celey D. Keena

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

Sincerely,

Celey D. Keene

Lab Director/Quality Manager



COG Operating, LLC LUPE CARRASCO 500 W. ILLINOIS Midland TX, 79701 Fax To: None

Received:

07/13/2016

Reported:

07/19/2016

Project Name:

PILUM 15 FEE #2H

Project Number:

NONE GIVEN

Project Location:

NONE GIVEN

Sampling Date:

07/07/2016

Sampling Type:

Soil

Sampling Condition:

Cool & Intact

Sample Received By:

Jodi Henson

Sample ID: S1-1' (H601574-01)

| BTEX 8021B                           | mg/    | 'kg             | Analyza    | d By: MS     |      |            |               |       |           |
|--------------------------------------|--------|-----------------|------------|--------------|------|------------|---------------|-------|-----------|
| Analyte                              | Result | Reporting Limit | Analyzed   | Method Blank | BS   | % Recovery | True Value QC | RPD   | Qualifler |
| Benzene*                             | <0.050 | 0.050           | 07/14/2016 | ND           | 2.05 | 102        | 2.00          | 0.758 |           |
| Toluene*                             | <0.050 | 0,050           | 07/14/2016 | ND           | 2.20 | 110        | 2.00          | 0.562 |           |
| Ethylbenzene*                        | <0.050 | 0.050           | 07/14/2016 | ND           | 2.15 | 107        | 2.00          | 0.497 |           |
| Total Xylenes*                       | <0.150 | 0.150           | 07/14/2016 | ND           | 6.48 | 108        | 6.00          | 0.501 |           |
| Total BTEX                           | <0.300 | 0.300           | 07/14/2016 | ND           |      |            |               |       |           |
| Surrogate: 4-Bromofluorobenzene (PID | 102 9  | 6 73,6-14       | 0          |              |      |            |               |       |           |
| Chloride, SM4500Cl-B                 | mg/    | log             | Analyze    | d By: AP     |      |            |               |       |           |
| Analyte                              | Result | Reporting Limit | Analyzed   | Method Blank | BS   | % Recovery | True Value QC | RPD   | Qualifier |
| Chloride                             | 6930   | 16.0            | 07/15/2016 | ND           | 400  | 100        | 400           | 0.00  |           |
| TPH 8015M                            | mg/    | kg              | Analyze    | d By: MS     |      |            |               |       |           |
| Analyte                              | Result | Reporting Limit | Analyzed   | Method Blank | BS   | % Recovery | True Value QC | RPD   | Qualifier |
| GRO C6-C10                           | <10.0  | 10.0            | 07/14/2016 | ND           | 178  | 88.9       | 200           | 3.28  |           |
| DRO >C10-C28                         | <10.0  | 10.0            | 07/14/2016 | ND           | 188  | 93.9       | 200           | 3.89  |           |
| Surrogate: 1-Chlorooctane            | 78.2   | 96 35-147       |            |              |      |            |               |       |           |
| Surrogate: 1-Chlorooctadecane        | 80.5   | % 28-171        |            |              |      |            |               |       |           |

### Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Domagous. Continuits liability and clients exclusive remady for any claim arising, whether based in contract or lort, shall be liveted to the arreased and y client for analyses. All claims, including those for negligence are any other cause whethousever shall be deviewed welves made in writing and incomed by Cardinal widths lithing (30) days after compatition of the applicable service. In no event shall be liable for incidental or consequential demagos including, without limitation, which limitation, the limitation is unknown in the performance of the services hereigned by Cardinal, regardless of whether excitation to besed upon any of the above stated measures or otherwise, Results related only to the semples biuntified above. This report shall not be reproduced except in full with writing approval of Cardinal Laboratories.

Celling & Keens



COG Operating, LLC **LUPE CARRASCO** 500 W. ILLINOIS Midland TX, 79701 Fax To: None

Received:

07/13/2016

Reported:

07/19/2016

Project Name:

PILUM 15 FEE #2H

Project Number: Project Location: NONE GIVEN **NONE GIVEN**  Sampling Date:

07/07/2016

Sampling Type:

Soil

Sampling Condition:

Cool & Intact Jodl Henson

Sample Received By:

Sample ID: S1-2' (H601574-02)

| BTEX 8021B                           | mg/    | kg              | Analyze    | d By: MS     |      |            |               |       |           |
|--------------------------------------|--------|-----------------|------------|--------------|------|------------|---------------|-------|-----------|
| Analyte                              | Result | Reporting Limit | Analyzed   | Method Blank | BS   | % Recovery | True Value QC | RPD   | Qualifier |
| Benzene*                             | <0.050 | 0.050           | 07/14/2016 | ND           | 2.05 | 102        | 2.00          | 0.758 |           |
| Toluene*                             | <0.050 | 0.050           | 07/14/2016 | ND           | 2.20 | 110        | 2.00          | 0.562 |           |
| Ethylbenzene*                        | <0.050 | 0.050           | 07/14/2016 | ND           | 2.15 | 107        | 2.00          | 0.497 |           |
| Total Xylenes*                       | <0.150 | 0.150           | 07/14/2016 | ND           | 6.48 | 108        | 6.00          | 0.501 |           |
| Total BTEX                           | <0.300 | 0.300           | 07/14/2016 | ND           |      |            |               |       |           |
| Surrogate: 4-Bromofluorobenzene (PID | 103 9  | 6 73.6-14       | 0          |              |      |            |               |       |           |
| Chloride, SM4500CI-B                 | mg/    | kg              | Analyze    | d By: AP     |      |            |               |       |           |
| Analyte                              | Result | Reporting Limit | Analyzed   | Method Blank | BS   | % Recovery | True Value QC | RPD   | Qualifier |
| Chloride                             | 8260   | 16.0            | 07/15/2016 | ND           | 400  | 100        | 400           | 0.00  |           |
| TPH 8015M                            | mg/    | kg              | Analyza    | d By: MS     |      |            | 3.            |       |           |
| Analyte                              | Result | Reporting Limit | Analyzed   | Method Blank | BS   | % Recovery | True Value QC | RPD   | Qualifier |
| GRO C6-C10                           | <10.0  | 10.0            | 07/14/2016 | ND           | 178  | 88.9       | 200           | 3.28  |           |
| DRO >C10-C28                         | <10.0  | 10.0            | 07/14/2016 | ND           | 198  | 93.9       | 200           | 3.89  |           |
| Surrogate: 1-Chlorooctane            | 84.9   | 6 35-147        | ,          |              |      |            |               |       |           |
| Surrogate: 1-Chlorooctadecane        | 88.3 9 | 6 28-171        |            |              |      |            |               |       |           |

### Sample ID: S1-3' (H601574-03)

| Chioride, SM4500CI-B | mg,    | /kg             | Analyze    | d By: AP     |     |            |               |      |           |
|----------------------|--------|-----------------|------------|--------------|-----|------------|---------------|------|-----------|
| Analyte              | Result | Reporting Limit | Analyzed   | Method Blank | BS  | % Recovery | True Value QC | RPD  | Qualifier |
| Chloride             | 14700  | 16.0            | 07/15/2016 | ND           | 400 | 100        | 400           | 0.00 |           |

### Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Continue's Robility and client's exclu only other cause whitesomer shall be deemed wahed union made in witing and received by Cartillo including, without it is initiation, business interruptions, loss of use, or loss of profits incurred by client, its sale claim is based upon any of the above stated resoons or otherwise. Results relate only to the samples teartified above. This repor

Celly 2. Kanne -



COG Operating, LLC LUPE CARRASCO 500 W. ILLINOIS Midland TX, 79701 Fax To: None

Received:

07/13/2016

Reported:

Chloride, SM4500Cl-B

07/19/2016 PILUM 15 FEE #2H

Project Name: Project Number:

NONE GIVEN

mg/kg

82.3 %

28-171

Project Location:

NONE GIVEN

Sampling Date:

07/07/2016

Sampling Type:

Soil

Sampling Condition:

Cool & Intact

Sample Received By:

Jodi Henson

### Sample ID: S1-4' (H601574-04)

| Analyte                              | Result | Reporting Limit | Analyzed   | Method Blank | BS   | % Recovery | True Value QC | RPD   | Qualifier |
|--------------------------------------|--------|-----------------|------------|--------------|------|------------|---------------|-------|-----------|
| Chloride                             | 20000  | 16.0            | 07/15/2016 | ND           | 416  | 104        | 400           | 0.00  | QM-07     |
| Sample ID: S2-1' (H601574-05         | )      |                 |            |              |      |            |               |       |           |
| BTEX 8021B                           | mg/    | 'kg             | Analyze    | d By: MS     |      |            |               |       |           |
| Analyte                              | Result | Reporting Limit | Analyzed   | Method Blank | BS   | % Recovery | True Value QC | RPD   | Qualifier |
| Benzene*                             | <0.050 | 0.050           | 07/14/2016 | ND           | 2.05 | 102        | 2.00          | 0.758 |           |
| Toluene*                             | <0.050 | 0.050           | 07/14/2016 | ND           | 2.20 | 110        | 2.00          | 0.562 |           |
| Ethylbenzene*                        | <0.050 | 0.050           | 07/14/2016 | ND           | 2.15 | 107        | 2.00          | 0.497 |           |
| Total Xylenes*                       | <0.150 | 0.150           | 07/14/2016 | ND           | 6.48 | 108        | 6.00          | 0.501 |           |
| Total BTEX                           | <0.300 | 0.300           | 07/14/2016 | ND           |      |            |               |       |           |
| Surrogate: 4-Bromofluorobenzene (PID | 101 :  | % 73.6-14       | 0          |              |      |            |               | 83    |           |
| Chloride, SM4500Cl-B                 | mg/    | kg :            | Analyze    | d By: AP     |      |            |               |       |           |
| Analyte                              | Result | Reporting Limit | Analyzed   | Method Blank | BS   | % Recovery | True Value QC | RPD   | Qualifier |
| Chloride                             | 4960   | 16.0            | 07/15/2016 | ND           | 416  | 104        | 400           | 0.00  |           |
| TPH 8015M                            | mg/    | 'kg             | Analyzo    | d By: MS     |      |            |               |       |           |
| Analyte                              | Result | Reporting Limit | Analyzed   | Method Blank | BS   | % Recovery | True Value QC | RPD   | Qualifier |
| GRO C6-C10                           | <10.0  | 10.0            | 07/14/2016 | ND           | 178  | 88.9       | 200           | 3.28  |           |
| DRO >C10-C28                         | <10.0  | 10.0            | 07/14/2016 | ND           | 188  | 93.9       | 200           | 3.89  |           |
| Surrogate: 1-Chlorooctane            | 83.5   | % 35-147        |            |              |      |            |               |       |           |

Analyzed By: AP

### Cardinal Laboratories

Surrogate: I-Chlorooctadecane

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardina's liability and clients exclusive retiredy for any client artising, whether based in contract or text, shall be limited to the amount paid by client for analyses. All clients, including stress for negligarous and any other cause whethere while the deemed waterd unfeat unfeat made in writing and received by Cardinal within thirty (30) days after conspicution of the applicable service. In no event, shall Cardinal be liable for incliental or consequential demages including, without limitation, business between places, loss of use, or loss of profits incurred by client, its nationalists or naccessors arising out of or related to the performance of the services harounder by Cardinal, regardless of whether such clients beared upon any of the above stated resource or otherwise. Results related only to the services destinated and the representation scoops in that with writing approved of Cardinal Laboratories.

Celeny & Keens



COG Operating, LLC LUPE CARRASCO 500 W. ILLINOIS Midland TX, 79701 Fax To: None

Received:

07/13/2016

Reported:

07/19/2016

Project Name:

PILUM 15 FEE #2H

Project Number: Project Location: NONE GIVEN

NONE GIVEN

Sampling Date:

07/07/2016

Sampling Type:

Soll

Sampling Condition:

Cool & Intact

Sample Received By:

Jodi Henson

Sample ID: S2-2' (H601574-06)

| BTEX 80215                           | mg/    | kg              | Analyze    | d By: MS     |      |            |               |       |           |
|--------------------------------------|--------|-----------------|------------|--------------|------|------------|---------------|-------|-----------|
| Analyte                              | Result | Reporting Limit | Analyzed   | Method Blank | BS   | % Recovery | True Value QC | RPD   | Qualifier |
| Benzene*                             | <0.050 | 0.050           | 07/14/2016 | ND           | 2.05 | 102        | 2.00          | 0.758 |           |
| Toluene*                             | <0.050 | 0.050           | 07/14/2016 | ND           | 2.20 | 110        | 2.00          | 0.562 |           |
| Ethylbenzene*                        | <0.050 | 0.050           | 07/14/2016 | ND           | 2.15 | 107        | 2.00          | 0.497 |           |
| Total Xylenes*                       | <0.150 | 0.150           | 07/14/2016 | ND           | 6.48 | 108        | 6.00          | 0.501 |           |
| Total BTEX                           | <0.300 | 0.300           | 07/14/2016 | ND           |      |            |               |       |           |
| Surrogate: 4-Bromofluorobenzene (PID | 103 9  | 6 73.6-14       | o          |              |      |            |               | -     |           |
| Chloride, SM4500CI-B                 | mg/    | kg              | Analyze    | d By: AP     |      |            |               |       |           |
| Analyte                              | Result | Reporting Limit | Analyzed   | Method Blank | BS   | % Recovery | True Value QC | RPD   | Qualiffer |
| Chloride                             | 2440   | 16.0            | 07/15/2016 | ND           | 416  | 104        | 400           | 0.00  |           |
| TPH 8015M                            | mg/    | kg              | Analyze    | d By: MS     |      |            |               |       |           |
| Analyte                              | Result | Reporting Limit | Analyzed   | Method Blank | BS   | % Recovery | True Value QC | RPD   | Qualifier |
| GRO C6-C10                           | <10.0  | 10.0            | 07/14/2016 | ND           | 178  | 88.9       | 200           | 3.2B  |           |
| DRO >C10-C28                         | <10.0  | 10.0            | 07/14/2016 | ND           | 188  | 93.9       | 200           | 3.89  |           |
| Surrogate: 1-Chlorooctane            | 88.1   | 6 35-147        |            | 202 2        |      |            |               |       |           |
| Surrogate: 1-Chlorooctadecane        | 88.6   | 6 28-171        |            |              |      |            |               |       |           |

### Sample ID: S2-3' (H601574-07)

| Chloride, SM4500Cl-8 | mg     | /kg             | Analyze    | d By: AP     |     |            |               |      |           |
|----------------------|--------|-----------------|------------|--------------|-----|------------|---------------|------|-----------|
| Analyte              | Result | Reporting Limit | Analyzed   | Method Blank | BS  | % Recovery | True Value QC | RPD  | Qualifier |
| Chloride             | 832    | 16.0            | 07/15/2016 | ND           | 416 | 104        | 400           | 0.00 |           |
|                      |        |                 |            |              |     |            |               |      |           |

### Cardinal Laboratories

\*=Accredited Analyte

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COG Operating, LLC **LUPE CARRASCO** 500 W. ILLINOIS Midland TX, 79701 Fax To: None

Received:

07/13/2016

Reported:

07/19/2016

Project Name:

PILUM 15 FEE #2H

Project Number:

NONE GIVEN

Project Location:

**NONE GIVEN** 

Sampling Date:

07/07/2016

Sampling Type:

Soil

Sampling Condition: Sample Received By: Cool & Intact Jodi Henson

### Sample ID: S2-4' (H601574-08)

| Chloride, SM4500CI-B | mg/    | kg              | Analyze    | d By: AP     |     |            |               |      |           |
|----------------------|--------|-----------------|------------|--------------|-----|------------|---------------|------|-----------|
| Analyte              | Result | Reporting Limit | Analyzed   | Method Blank | BS  | % Recovery | True Value QC | RPD  | Qualifier |
| Chloride             | 3720   | 16.0            | 07/15/2016 | ND           | 416 | 104        | 400           | 0.00 |           |

**Cardinal Laboratories** 

\*=Accredited Analyte

Celly 2 treens -



### **Notes and Definitions**

QM-07 The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS

recovery.

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

\*\* Samples not received at proper temperature of 6°C or below.

\*\*\* Insufficient time to reach temperature.

Chloride by SM4500Cl-B does not require samples be received at or below 6°C

Samples reported on an as received basis (wet) unless otherwise noted on report

\*=Accredited Analyte

REASE NOTE: Unlikely and Demagnes. Confinal's labelity and clears, including these for negligence and any other cause whatcover shall be deemed webed unless made in writing and received by Cardinal whitely (30) days after completion of the applicable service. In no event shall be labele for incidental or consequential demagnes, histolings, without limitations, business intermeditions, have or labeled in the performance of the services hereunder by Cardinal, regardless or successors arting out of or related to the performance of the services hereunder by Cardinal, regardless or successors arting out of or related to the performance of the services hereunder by Cardinal, regardless or successors arting out of or related to the performance of the services hereunder by Cardinal, regardless or successors.

College T. Kanne-



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

| Company Name:  | COG Operating LLC   |  | 1         |  |                               |         | 0.70   |   |      | 1                |                  |  | ANALYSIS |                | REQUEST |
|--|---|--|-----------|--|-------------------------------|---------|--|---|------|------------------|------------------|--|----------|----------------|---------|
| Project Manager:   |   | Н  |           | .0   | P.O. #:                       |         | garden de de la constante de l |   | _    |                  | $\perp$          | $\sqcup$                               | _        |                | - 1     |
| Address: 2208  | ≨⊟  | ==   |           | ć  | Company:                      | 1       | COG Operating LLC  | DTLC.   |      |                  |                  |  |          |                |         |
| 溹  | State: NM   |  | 길         | 88210 A  | Attn:                         |         | Robert McNeil  | è   |      |                  |                  |  |          |                |         |
| 34   | (575) 748-6940 Fax #:   |  |           | >  | Address:                      |         | 600 W Illinois   | OS.   |      |                  |                  |  |          |                |         |
| Project #:   | Project Owner:  | ä  |           | 0  | City:                         |         | Midland  |   |      |                  |                  |  |          | ,              |         |
| E S  | Pilum 15 Fee #2H  |  |           | Q  | State: TX                     |         | Zip: 79701   |   |      |                  |                  |  |          | _              |         |
| Project Location:  |   |  |           | 9  | horse #                       | : (432) | Phone #: (432) 221-0388  |   |      |                  |                  |  |          |                |         |
| i loject moderne   |   |  |           |  |                               |         |  |   |      |                  |                  | _                                      |          |                |         |
| Sampler Name:  | Lupe Carrasco   |  |           | L  | Fax #:                        | l       |  |   |      |                  |                  |  |          |                |         |
| ATMO 350 BYT BOJ   |   | MP.  |           | MATRIX   | PRESERV                       | ERV     | SAMPLING   | G   |      | _                |                  |  |          |                |         |
| Lab I.D.   | Sample I.D.   | RAB OR (C)C  | ONTAINERS | ROUNDWATER ASTEWATER DIL L .UDGE   | DID/BASE:                     | THER :  |  |   | TEX  | PH               | hloride          |  |          |                |         |
| השטוטיי  | \$1-1   | ×  |           |  |                               |         | 7/7/16   |   | ×    | ×                | ×                |  |          | 1              |         |
| - D S1-2'  | 51-2'   | ×  | L-PC      |  |                               |         | 7/7/16   |   | ×    | ×                | ×                |  |          | 1              |         |
|  | \$1-3   | ×  |           |  |                               |         | 7/7/16   |   | 1    |                  | ×                |  |          |                |         |
|  | \$14  | ×  |           |  |                               |         | 7/7/16   |   |      |                  | ×                |  |          |                |         |
| 1  | S2-1'   | ×  |           |  |                               |         | 7/7/16   |   | ×    | ×                | ×                |  |          |                |         |
| 5  | \$2-2'  | ×  | 2 - 75    |  |                               |         | 7/7/16   |   | ×    | ×                | ×                |  |          |                |         |
| ,,   | S2-3'   | ×  |           |  |                               |         | 7/7/16   |   |      |                  | ×                |  |          |                |         |
| -53  | S2-4'   | ×  |           |  |                               |         | 7/7/16   |   |      |                  | ×                |  |          |                |         |
|  |   |  |           |  | Dr. September 1               |         | As pred turburer du  | To change to the  |      |                  |                  | L                                      |          |                | 1       |
| PLEASE MOTE: Listary and Dan<br>praigns. At claims behaling the<br>praise for present shall Continue | ages. Candral's balany and clarify exclusion is<br>a far negligance and any other cause admission<br>be hable for incidental or consequenced develop- | e habita especial and the second seco |           | ang whealing beauth in contexts or Ext. Which be lamited to the associate part by the closest the second closest make it inviting and invasted by Caudinal wider. 20 days after completent of the applicable closest make it inviting and invasted by Caudinal and the applicable lateral terminal beautiful and of the context of policy invasted by Caudinal to Authorities. | of the or to                  |         | to associate part by<br>30 days after on<br>a recurred by client   |   |      |                  |                  |  | -        |                |         |
| Relinquished By:   | out of an existed to the performance o  |  | 2         | Booked By:   | months but to fast until page | 1       |  | Phone Result:   | F    | 7                | 0                | <b>3 3</b>                             | Add'I P  | Add'l Phone #: | eT.     |
| K  | 10:30   |  | -         | market abrona  | me                            | 2       |  | Fax Result: D Yes REMARKS: <u>QCarrasco</u> atrufflo@concho.com | 20 E | Carrason cho.con | ם <u>אוני</u> ים | is U No AddT Fax #:<br>coldiconcho.com |          | 79             |         |
| 1  | Carron 1000   | -  | •         | Contract of the second   | 1                             | 1       | -  | September 1   |      |                  | ŀ                |  |          |                |         |

Sample Condition Cool Intact Dres 19 Yes

CHECKED BY:

Relinquished By:

Date:

Time:

Sampler - UPS - Bus - Other: FORM-005 R Z.0 Delivered By: (Circle One)



July 19, 2016

LUPE CARRASCO

COG Operating, LLC 500 W. ILLINOIS

Midland, TX 79701

RE: PILUM 15 FEE #2H

Enclosed are the results of analyses for samples received by the laboratory on 07/13/16 10:30.

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

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

Method EPA 552.2

Haloacetic Acids (HAA-5)

Method EPA 524.2

Total Trihalomethanes (TTHM)

Method EPA 524.4

Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

Celey D. Keine

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

Sincerely,

Celey D. Keene

Lab Director/Quality Manager



COG Operating, LLC LUPE CARRASCO 500 W. ILLINOIS Midland TX, 79701 Fax To: None

Received:

07/13/2016

Reported:

07/19/2016

Project Name:

PILUM 15 FEE #2H

Project Number:

Analyte

Analyte

NONE GIVEN

Project Location:

**NONE GIVEN** 

Sampling Date:

07/07/2016

Sampling Type:

416

BS

416

Soll

Sampling Condition:

Cool & Intact

Sample Received By:

Jodl Henson

Sample ID: S1-6' (H601575-01)

Chloride, SM4500CI-B

Chloride

Chloride

Chloride

Chloride

mg/kg

Analyzed By: AP

Result

Reporting Limit

Reporting Limit

16.0

16.0

Reporting Limit

16.0

Analyzed 07/15/2016

Method Blank ND BS % Recovery

True Value QC 400 RPD 0.00

RPD

0.00

Qualifier

Sample ID: S1-8' (H601575-02)

Chioride, SM4500Ci-B

mg/kg

Result

352

80.0

Result

80.0

Analyzed By: AP

Analyzed Met

Method Blank

%

% Recovery

104

True Value QC

400

400

Qualifler

Sample ID: S1-10' (H601575-03)

Chlorida, SM4500CI-B

mg/kg

Analyzed By: AP

Analyte Result Reporting Limit

Analyzed

07/15/2016

Analyzed

07/15/2016

07/15/2016

Method Blank ND

ND

85 416 % Recovery True Value QC

RPD 0.00 Qualifier

Sample ID: S1-12' (H601575-04)

Analyte

Chloride, SM4500Cl-B

mg/kg

Analyzed By: AP

Method Blank

ND

BS 416

% Recovery 104

104

True Value QC

400

RPD 0.00

Qualifler

Cardinal Laboratories

\*=Accredited Analyte

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Celen Z. Kenne

Celey D. Keene, Lab Director/Quality Manager



COG Operating, LLC **LUPE CARRASCO** 500 W. ILLINOIS Midland TX, 79701 Fax To: None

Received:

07/13/2016

Reported:

07/19/2016

Project Name:

PILUM 15 FEE #2H

Project Number: Project Location: **NONE GIVEN NONE GIVEN**  Sampling Date:

07/07/2016

Sampling Type:

Soll

Sampling Condition:

Cool & Intact

Sample Received By:

Jodi Henson

Sample ID: S1-14' (H601575-05)

Chloride, SM4500CI-B

mg/kg

320

Result

240

Result

160

Result

128

Analyzed By: AP

Analyte

Result Reporting Limit

Analyzed

Analyzed

07/15/2016

Analyzed

07/15/2016

Method Blank

BS

% Recovery True Value QC **RPD** 

0.00

0.00

RPD

0.00

Qualifler

Chloride

Chloride

Chioride

16.0

Reporting Limit

16.0

Reporting Limit

16.0

Reporting Limit

16.0

07/15/2016

ND

416

BS

416

104

Sample ID: S2-6' (H601575-06)

Analyte

Analyte

Analyte

Chloride, SM4500CI-B

mg/kg

Analyzed By: AP

Method Blank

% Recovery

104

% Recovery

104

True Value QC 400

400

**RPD** 

Qualifier

Sample ID: S2-8' (H601575-07)

Chloride, SM4500Cl-B

mg/kg

Analyzed By: AP

Method Blank

ND

ND

**R**5

416

True Value QC

400

Qualifier

Sample ID: S2-10' (H601575-08)

Chloride, SM4500CI-B

mg/kg

07/15/2016

Analyzed By: AP

Analyzed

Method Blank

ND

BS

416

% Recovery

True Value QC

400

RPD

Qualifier

Chloride

Chloride

Sample ID: \$2-12' (H601575-09)

Chloride, SM4500CI-B

mg/kg

Analyzed By: AP

Analyte

Result Reporting Limit 32.0 16.0

Analyzed 07/15/2016 Method Blank ND

BS

416

% Recovery

104

104

True Value QC

400

0.00

RPD

0.00

Qualifler

Cardinal Laboratories

\*=Accredited Analyte

FLEASE NOTE: LinkSty and Dar

Celly & Kenne

Celey D. Keene, Lab Director/Quality Manager



### **Notes and Definitions**

QM-07 The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.

ND Analyte NOT DETECTED at or above the reporting limit

RPO Relative Percent Difference

\*\* Samples not received at proper temperature of 6°C or below.

\*\*\* Insufficient time to reach temperature.

Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

### Cardinal Laboratories

\*=Accredited Analyte

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Celley Z. Kanna



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

CHECKED BY:

Sampler - UPS - Bus - Other: FORM-005 R 2.0

30°C

Delivered By: (Circle One)

Relinquished By:

(E:0]

Time: