District I 1625 N. French Dr., Hobbs, NM 88240 District II 1301 W. Grand Avenue, Artesia, NM 88210

State of New Mexico Energy Minerals and Natural Resources **4 9 44**Form C-141

Revised October 10, 2003

PJXK 1535251239

District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505 Submit 2 Copies to appropriate District Office in accordance with Rule 116 on back side of form

### **Release Notification and Corrective Action**

|                  |   |                 |              |   |          | OPERA'            | ГOR                                      |                      | ☐ Initía                       | l Report                    | $\square$         | Final Report        |
|------------------|---|-----------------|--------------|---|----------|-------------------|--|----------------------|--------------------------------|-----------------------------|-------------------|---------------------|
| Name of Co       | mpany   | COG O           | perating     | LLC   | (        | Contact           |  | at Ellis             |                                |                             |                   |                     |
| Address          |   |                 |              | and, Texas 7970                             |          | Telephone 1       |  | 230-00               |                                |                             |                   |                     |
| Facility Nar     | ne  | BC Federa       | l #10 Tai    | nk Battery                                  |          | Facility Typ      | e Tanl                                   | k Batte              | ery                            |                             |                   | _                   |
| Surface Ow       | ner: Feder  | al              |              | Mineral O                                   | wner     |                   |  |                      | Lease N                        | lo. (API#)                  | 30-025            | 5-37021             |
|                  |   |                 |              | LOCA  | TION     | OF RE             | LEASE                                    |                      |                                |                             |                   |                     |
| Unit Letter<br>F | Section<br>19   | Township<br>17S | Range<br>32E | Feet from the                               | North/   | South Line        | Feet from the                            | East/                | West Line                      | County                      | Lea               |                     |
|                  |   |                 | I            | Latitude N32.82                             | 264°     | Longitud          | e W103.80886                             | °                    |                                |                             |                   |                     |
|                  |   |                 |              | NAT   | URE      | OF REL            |  |                      |                                |                             |                   |                     |
| Type of Relea    |   |                 |              |   |          |                   | Release 10bbls                           |                      |                                | lecovered 9                 |                   |                     |
| Source of Re     |   |                 |              |   |          | 05/17/2012        |  | e                    |                                | Hour of Disc<br>2 8:00 a.m. |                   |                     |
| Was Immedia      | ite Notice G  |                 | Yes 🛚        | No 🛛 Not Red                                | quired   | If YES, To        | Whom?                                    |                      |                                |                             |                   |                     |
| By Whom?         |   |                 |              |   |          | Date and H        | lour                                     |                      |                                |                             |                   |                     |
| Was a Watero     | ourse Reac  |                 | Yes 🗵        | No  |          | If YES, Vo<br>N/A | olume Impacting t                        | he Wat               | ercourse.                      | ""                          |                   |                     |
| If a Watercou    | rse was Imp   | pacted, Descri  | be Fully.*   |   |          | <u> </u>          |  |                      |                                |                             |                   | <u></u>             |
| Describe Cau     | Describe Cause of Problem and Remedial Action Taken.* |                 |              |   |          |                   |  |                      |                                |                             |                   |                     |
| Tank did not     | equalize due  | e to the valve  | being shu    | t. The equalizer va                         | alve has | since been o      | ppened.                                  |                      |                                |                             |                   |                     |
| Describe Area    | Affected a  | nd Cleanup A    | ction Tak    | en.*  |          |                   |  |                      |                                |                             |                   | - "                 |
|                  |   |                 |              | I samples to define                         |          |                   |  |                      |                                |                             |                   |                     |
| closure report   |   |                 |              |   | on brou  | giit up to sui    | race grade with cr                       | can oac              | Killi materi                   | n. rena ree                 | л ргера           | arca a              |
| I hereby certi   | y that the in   | nformation gi   | ven above    | is true and comple                          | te to th | e best of my      | knowledge and u                          | ndersta              | nd that purs                   | uant to NM(                 | OCD ru            | iles and            |
| regulations al   | l operators a   | are required to | report an    | d/or file certain rel<br>e of a C-141 repor | lease no | tifications as    | nd perform correct<br>arked as "Final Re | tive act<br>enort" c | ions for rele<br>loes not reli | ases which<br>eve the oper  | may en<br>ator of | danger<br>liability |
|                  |   |                 |              | investigate and re                          |          |                   |  |                      |                                |                             |                   |                     |
|                  |   |                 |              | tance of a C-141 re                         | port do  | es not reliev     | e the operator of r                      | espons               | ibility for co                 | mpliance w                  | ith any           | other               |
| federal, state,  | or local law  | /s and/or regu  | lations.     | · · · · · · · · · · · · · · · · · · ·       |          |                   | OIL CONS                                 | CEDV                 | ATION                          | DIVICIO                     | N.I               |                     |
| Signatura        |   | 1//             |              |   |          |                   | OIL CON                                  | <u> DEK v</u>        | AHON                           | DIVISIO                     | IN                |                     |
| Signature/       |   | · ·             |              |   | /        | Annroved by       | District Superviso                       | or.                  |                                |                             |                   |                     |
| Printed Name     | : Ike Tavar   | ez (agent for   | COG)         |   |          |                   | District Supervise                       | <u></u>              |                                |                             |                   |                     |
| Title: Project   | Manager   |                 |              |   |          | Approval Dat      | e:                                       |                      | Expiration I                   | Date:                       |                   |                     |
| E-mail Addre     | ss: ike.tava  | arez@tetratec   | h.com        |   |          | Conditions of     | Approval:                                |                      |                                | Attached                    | П                 |                     |
| Date: /b-        | -17-1   | 2               | Phone:       | (432) 686-3023                              |          |                   |  |                      |                                | Attachai                    |                   |                     |
| Attach Addit     | ional Shee  | ts If Necessa   |              |   |          |                   |  |                      |                                |                             |                   |                     |

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# State of New Mexico Energy Minerals and Natural Resources

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505 Submit 2 Copies to appropriate District Office in accordance with Rule 116 on back side of form

Form C-141

Revised October 10, 2003

# **Release Notification and Corrective Action**

|   |  |  |  |   |                                    | <u>OPERA</u>                              | TOR   |   | 🗵 Initi   | al Report  | Final R  |
|---|--|--|--|---|------------------------------------|---|---|---|---|--|--|
| Name of Co  |  | COG OP   |  |   |                                    | Contact                                   |   | at Ellis  |   |  |  |
| Address   |  |  |  | dland, TX 7970  | )1                                 | Telephone l                               |   | 230-00  |   |  |  |
| Facility Nar  | ne   | BC Federa  | al #10 Ta                                | nk Battery  |                                    | Facility Typ                              | e Tan   | k Batter  | у   |  |  |
| Surface Ow  | ner Fed  | eral   |  | Mineral (   | Owner                              |   |   |   | Lease 1<br>Closest  | No. (API#) 30<br>well  | -025-37021   |
|   |  |  |  | LOCA  | ATIO                               | N OF RE                                   | LEASE   |   |   | •  |  |
| Unit Letter<br>F  | Section<br>19  | Township<br>17S                                    | Range<br>32E                             | Feet from the   | North                              | /South Line                               | Feet from the   | East/W  | est Line  | County<br>Les  | 1  |
|   |  | <u> </u>   | J  | Latitude 3  | 32.823                             | Longit                                    | ude 103.809   |   |   | 110000000000000000000000000000000000000                              |  |
|   |  |  |  | NAT   | URE                                | OF REL                                    |   |   |   |  |  |
| Type of Rele  |  | r\   | _ <del></del>                            |   |                                    |   | Release 10bbls  |   |   | Recovered 9bb  |  |
| Source of Re  |  | ·····  |  |   |                                    | 05/17/2012                                |   | e   |   | Hour of Discov<br>2 8:00 a.m.  | very   |
| Was Immedia   | ate Notice (   |  | Yes 🗵                                    | No 🛭 Not Re   | equired                            | If YES, To                                | Whom?   |   |   |  |  |
| By Whom?  |  |  |  |   |                                    | Date and I-                               |   |   |   |  |  |
| Was a Water   | course Read  |  | Yes 🛚                                    | No  |                                    | If YES, Vo                                | olume Impacting t   | he Wate   | rcourse.  |  |  |
| If a Watercou   | rse was Im   | pacted, Descri                                     | ibe Fully.*                              | 1   |                                    | 1   |   |   |   |  |  |
| Describe Cau  | se of Proble   | em and Remed                                       | dial Action                              | Taken.*   |                                    |   |   | -   |   |  | <del></del>  |
| Tank did not  | equalize du  | e to the valve                                     | being shu                                | t. The equalizer  | valve ha                           | ıs since been o                           | pened.  |   |   |  |  |
| Describe Are  | a Affected a   | and Cleanup A                                      | Action Tak                               | en.*  |                                    |   |   |   |   |  |  |
| inside the fac  | ility walls.<br>amination fi                               | All free fluid                                     | has been p                               | picked up and the   | tank ha                            | s been steam o                            | with a vacuum to<br>cleaned. Tetra Te<br>the NMOCD/BL   | ch will s   | ample the   | spill site area t  | o delineate an   |
| regulations al<br>public health<br>should their o<br>or the environ | l operators:<br>or the envir<br>perations ha<br>ment. In a | are required to<br>conment. The<br>ave failed to a | report an acceptance dequately CD accept | d/or file certain re<br>e of a C-141 repo<br>investigate and re | elease n<br>ort by the<br>emediate | otifications and NMOCD made contamination | knowledge and used perform correct<br>arked as "Final Recon that pose a threet the operator of reconstruction of the contract of the operator of reconstruction of the operator op | tive action<br>port" do<br>eat to gro<br>esponsib | ons for rele<br>es not reli-<br>und water<br>ility for co | ases which ma<br>eve the operato<br>, surface water<br>mpliance with | y endanger<br>er of liability<br>, human healti<br>any other |
| Signature:  |  | 25   | 7  |   |                                    |   | OIL CONS  |   | ATION   | DIVISION   |  |
| Printed Name  | : [  | Josh   | Russo                                    |   |                                    | Approved by                               | District Superviso  | r:  |   |  | <del>,</del>   |
| Title:  |  | HSE Co   | ordinator                                |   |                                    | Approval Date                             | <b>:</b>  | E   | xpiration I   | Pate:  |  |
| E-mail Addre  | ss:  | jrusso@concl                                       | horesource                               | es.com  | _ '                                | Conditions of                             | Approval:   |   |   | Attached [   | ]  |
|   | /01/2012   | ts If Necessa                                      | Phone:                                   | 432-212-2399  |                                    |   |   |   |   |  |  |

|                  |                   | ;            | SITE INFOR                               | RMATION          |  |  |
|------------------|-------------------|--------------|--|------------------|--|--|
|                  |                   | Re           | eport Type:                              | Work Pl          | an   | HOBBSOCD   |
| General Site Inf | ormation:         |              |  |                  | ((2.447) hi) <b>(3</b>   |  |
| Site:            |                   |              | al #10 Tank Ba                           |                  |  | · · · · · · · · · · · · · · · · · · ·  |
| Company:         |                   |              | rating LLC                               |                  |  | SEP 2 8 2012   |
| Section, Towns   | hip and Range     | Unit F       | Sec 19                                   | T17S             | R32E   |  |
| Lease Number:    |                   | API-30-02    | 5-37021                                  |                  |  | RECEIVED   |
| County:          |                   | Lea Cour     | nty                                      |                  |  |  |
| GPS:             |                   | 32.82264°    | N  |                  | 103.80886°   | W  |
| Surface Owner:   |                   | Federal      |  |                  |  |  |
| Mineral Owner:   |                   |              |  |                  |  | 1 Hwy 82 for 3.2 miles, turn right   |
|                  |                   | (SE) on CF   | 1 224 and travel fo                      | r 1.7 miles, tun | n left (North) and   | I travel 0.1 miles to location.  |
| Release Data:    |                   |              |  |                  |  |  |
| Date Released:   |                   | 5/17/2012    |  |                  |  | A STATE OF THE STA |
| Type Release:    |                   | Oil          |  |                  |  | · · · · · · · · · · · · · · · · · · ·  |
| Source of Contai | mination:         | Oil Tank     | •  |                  |  |  |
| Fluid Released:  |                   | 10 bbls      |  |                  | e a de la figura de la composición della composi |  |
| Fluids Recovered | d:                | 9 bbls       |  | · · ·            |  |  |
| Official Commu   | nication:         |              | (18 1 · 18 · 18 · 18 · 18 · 18 · 18 · 18 | 医二氢苯乙基           |  |  |
| Name:            | Pat Ellis         |              |  | •                | lke Tavarez  |  |
| Company:         | COG Operating, i  | .LC          |  |                  | Tetra Tech   |  |
| Address:         | 550 W. Texas Ave  | e. Ste. 1300 |  |                  | 1910 N. Big 5  | Sprina   |
| P.O. Box         |                   |              |  |                  | ,  |  |
| City:            | Midland Texas, 79 | 701          |  |                  | Midland, Tex   | as   |
| Phone number:    | (432) 686-3023    |              |  |                  | (432) 682-45   | <del></del>  |
| Fax:             | (432) 684-7137    | <del> </del> |  |                  |  |  |
| Email:           | pellis@conchores  | ources com   |  |                  | · Ika tayaraz  | Øtetratech.com   |

| Depth to Groundwater:                 |         | Ranking Score     |       | Site Data        |                 |
|---------------------------------------|---------|-------------------|-------|------------------|-----------------|
| <50 ft                                |         | 20                |       |                  |                 |
| 50-99 ft                              |         | 10                |       | * '              |                 |
| >100 ft.                              |         | 0                 |       | 0                |                 |
|                                       | ** **   |                   |       |                  |                 |
| WellHead Protection:                  |         | Ranking Score     | . 4.  | Site Data        |                 |
| Water Source <1,000 ft., Private <200 |         | 20                |       | ***              |                 |
| Water Source >1,000 ft., Private >200 |         | 0                 | L     | 0                |                 |
| Surface Body of Water:                | •. •.   | Ranking Score     |       | Site Data        |                 |
| <200 ft.                              |         | 20                |       |                  | * * *           |
| 200 ft - 1,000 ft.                    |         | 10                |       |                  |                 |
| >1,000 ft.                            |         | 0                 |       | 0                |                 |
| Total Ranking Score                   | 9:4     | <b>)</b> 0        |       | approved         |                 |
| <b>.</b>                              | Accept  | able Soll RRAL (n |       | an Alas          | wh:             |
|                                       |         |                   |       | THOUSE THE       | more ~          |
|                                       | Benzene |                   | TPH   | Time diagrams of | 1.1 (           |
| · •                                   | 1 10    | 50                | 5,000 | Environmen       | ital Specialist |

NMOCD-DIST ! 10/2/12



### August 15, 2011

Mr. Geoffrey Leking **Environmental Engineer Specialist** Oil Conservation Division, District 1 1625 North French Drive Hobbs, New Mexico 88240

Work Plan for the COG Operating LLC., BC Federal #10 Tank Re: Battery, Unit F, Section 19, Township 17 South, Range 32 East, Lea County, New Mexico.

Mr. Leking:

Tetra Tech, Inc. (Tetra Tech) was contacted by COG Operating LLC. (COG) to assess a spill from the BC Federal #10 Tank Battery, Unit F, Section 19, Township 17 South, Range 32 East, Lea County, New Mexico (Site). The spill site coordinates are N 32.82264°, W 103.80886°. The site location is shown on Figures 1 and 2.

#### Background

According to the State of New Mexico C-141 Initial Report, the leak was discovered on May 17, 2012, and released approximately ten (10) barrels of oil due to the equalizer valve being shut causing the oil tank to overflow. To alleviate the problem, COG personnel opened the equalizer valve. Nine (9) barrels of standing fluids were recovered. The spill measured approximately 10' x 100' and was contained inside the tank battery firewalls. The initial C-141 form is enclosed in Appendix A.

#### Groundwater

No water wells were listed within Section 21. According to the NMOCD groundwater map, the depth to groundwater in this area is approximately 200' below surface. The groundwater data is shown in Appendix B.



#### Regulatory

A risk-based evaluation was performed for the Site in accordance with the New Mexico Oil Conservation Division (NMOCD) Guidelines for Remediation of Leaks, Spills and Releases, dated August 13, 1993. The guidelines require a risk-based evaluation of the site to determine recommended remedial action levels (RRAL) for benzene, toluene, ethylbenzene and xylene (collectively referred to as BTEX) and total petroleum hydrocarbons (TPH) in soil. The proposed RRAL for benzene was determined to be 10 parts per million (ppm) or milligrams per kilogram (mg/kg) and 50 ppm for total BTEX (sum of benzene, toluene, ethylbenzene, and xylene). Based upon the depth to groundwater, the proposed RRAL for TPH is 5,000 mg/kg.

#### Soil Assessment and Analytical Results

On August 1, 2012, Tetra Tech personnel inspected and sampled the spill area. Three (3) auger holes (AH-1, AH-2 and AH-3) were installed using a stainless steel hand auger to assess the impacted soils. Soil samples were not collected on the east side of the tank battery, due to the limited impacted area and multiple lines in the area. Selected samples were analyzed for TPH analysis by EPA method 8015 modified, BTEX by EPA Method 8021B and chloride by EPA method 300.0. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix C. The sampling results are summarized in Table 1. The auger hole locations are shown on Figure 3.

Referring to Table 1, all of the submitted samples were all below the RRAL for BTEX and TPH. The chlorides detected in the areas of AH-1 and AH-2 did not show significant impact to these areas. Elevated chloride concentrations were detected in AH-3 in the shallow soils, with a chloride high of 2,890 mg/kg at 0-1', which declined to 653 mg/kg at 3-3.5' below surface.

#### Work Plan

COG proposes to remove impacted material as highlighted (green) in Table 1 and shown on Figure 4. The area of AH-3 will be excavated to a depth of approximately 2.0' below surface. Based on the depth to groundwater (200' below surface), the areas of AH-1 and AH-2 do not appear to be an environmental concern.



Once excavated to the appropriate depth, the excavation will be backfilled with clean soil. The excavated soil will be transported offsite to proper disposal.

The proposed excavation depths may not be reached due to safety concerns for onsite personnel. In addition, impacted soil around oil and gas equipment, structures or lines may not be feasible or practicable to be removed due to safety concerns. As such, Tetra Tech will excavate the soils to the maximum extent practicable.

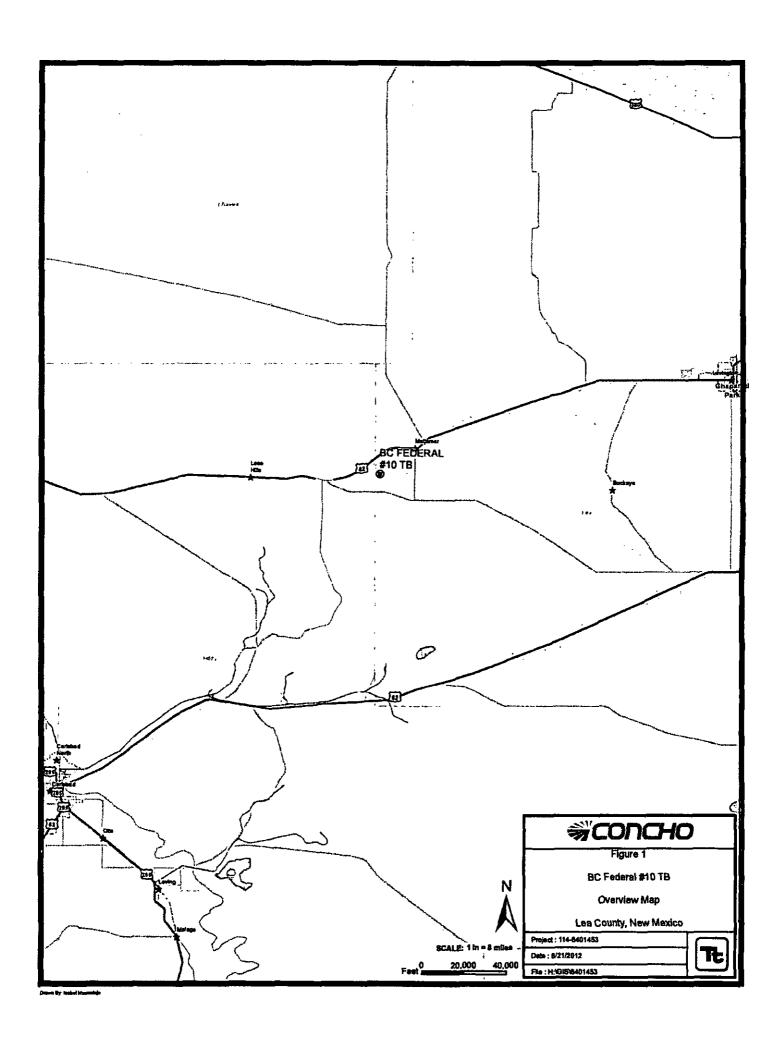
If you have any questions or comments concerning the assessment or the proposed remediation activities for this site, please call me at (432) 682-4559.

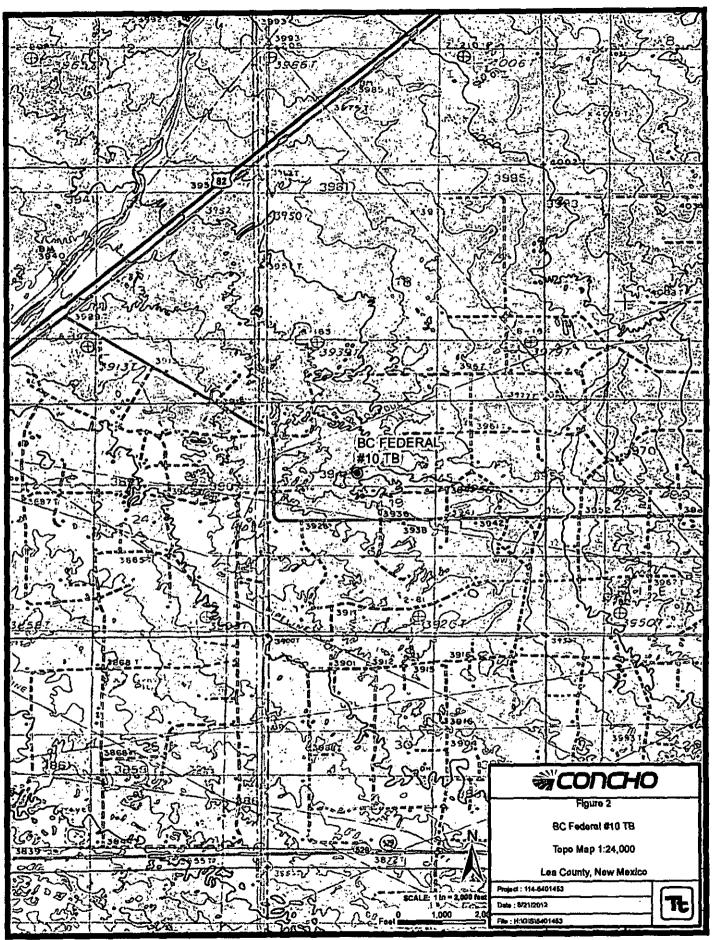
Respectfully submitted,

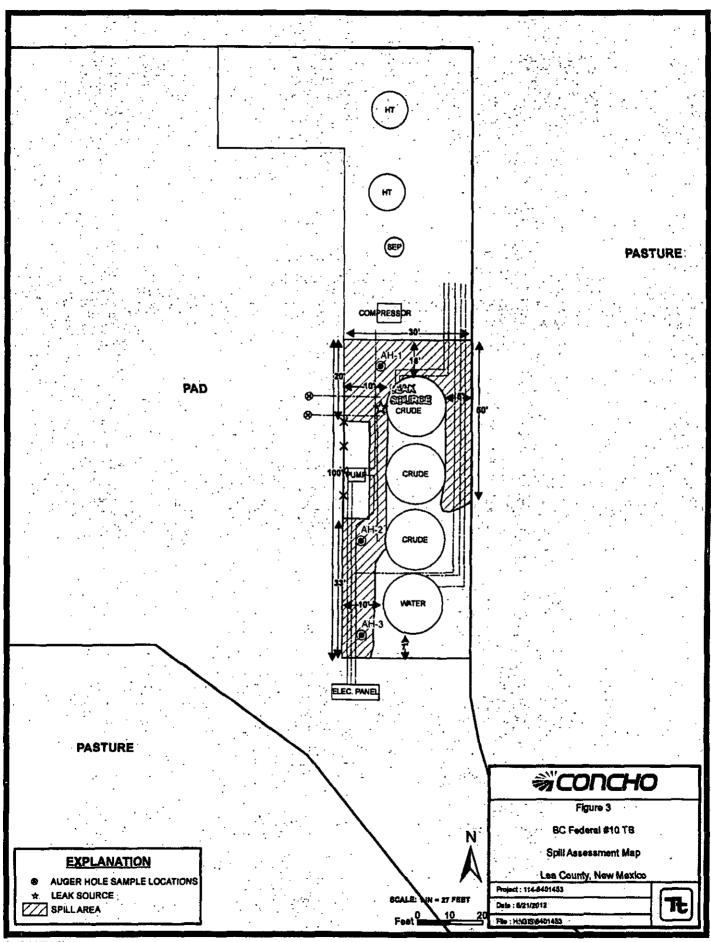
TETRATEGH

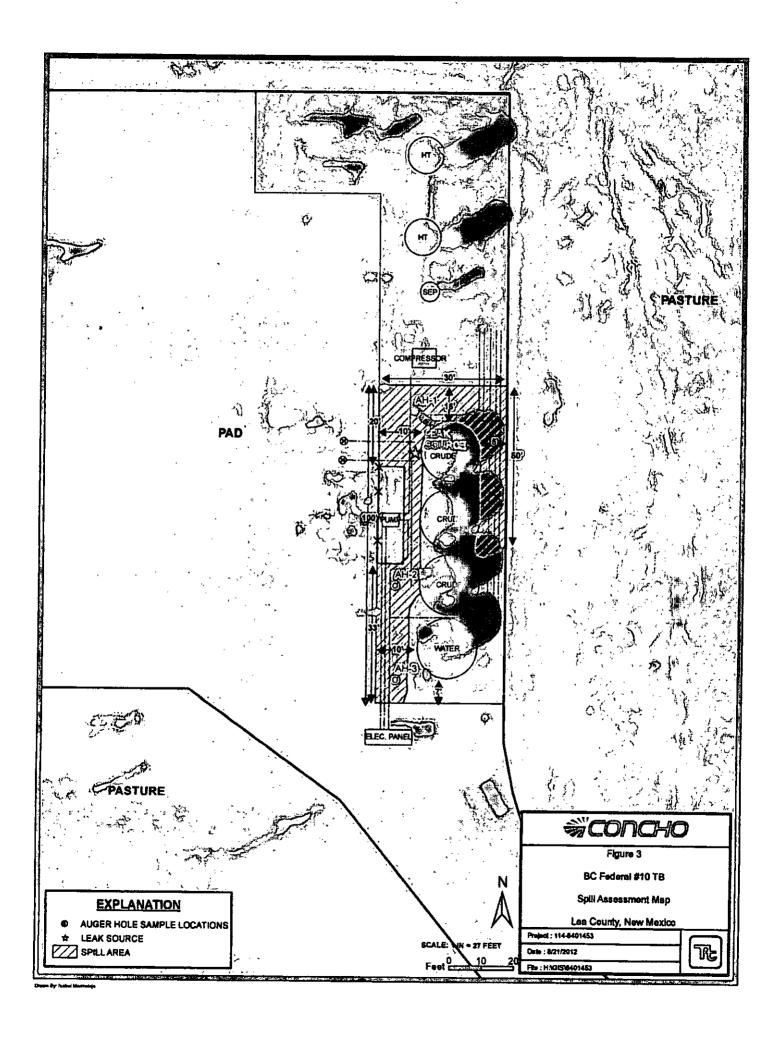
Ike Tavarez, PG Project Manage

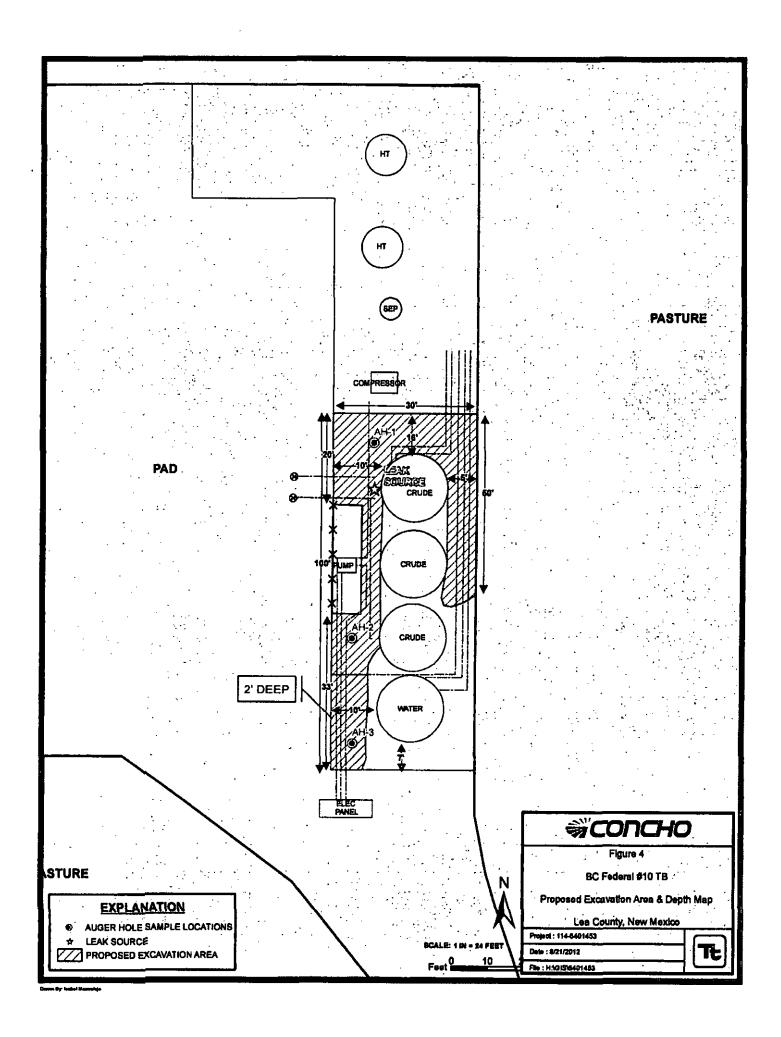
cc: Pat Ellis - COG cc: Jim Amos - BLM











Lea County, New Mexico Table 1 COG Operating LLC. BC Federal #10

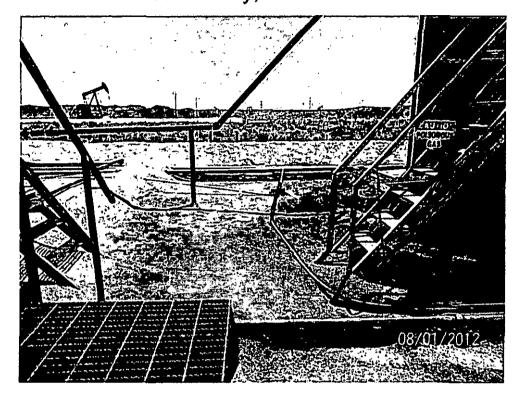
| Sample | Sample   | Sample     | Soil    | Soil Status |       | TPH (mg/kg) | g)      | Benzene | Toluene | Ethlybenzene | Xvlene  | Total                 | Chloride |
|--------|----------|------------|---------|-------------|-------|-------------|---------|---------|---------|--------------|---------|-----------------------|----------|
| ₽      | Date     | Depth (ft) | In-Situ | Removed     | GRO   | DRO         | Total   | (mg/kg) | (mg/kg) | (mg/kg)      | (mg/kg) | BTEX<br>(mg/kg)       | (mg/kg)  |
| AH-1   | 8/1/2012 | 0-1        | ×       |             | 102   | 457         | 559     | <0.100  | <0.100  | <0.100       | 0.112   | 0.112                 | 139      |
|        |          | 1-1.5      | ×       |             | •     |             | •       |         | •       | ,            |         |                       | 91.8     |
|        |          | 2-2.5      | ×       |             | •     |             | •       | •       | •       | •            | -       | 1                     | 266      |
|        | <b>S</b> | 3-3.5      | ×       | ,           | •     | -           | •       | •       |         | ,            |         |                       | 207      |
|        |          | 4-4.5      | ×       | ,           |       |             |         |         | •       | •            |         | 2 <b>8</b>            | 41.3     |
| AH-2   | 8/1/2102 | 0-1        | ×       |             | 0.44  | 1,590       | 1,634   | <0.100  | <0.100  | <0.100       | <0.100  | <0.100                | 872      |
|        |          | 1-1.5      | ×       |             |       | ,           |         | •       |         |              | 1.3     |                       | 335      |
|        |          | 2-2.5      | ×       |             | •     | •           |         |         |         | ŧ            |         | 5. <sub>p</sub> s<br> | 253      |
|        | 2 s      | 3-3.5      | ×       |             |       | •           |         |         |         | ,<br>•       |         |                       | 395      |
|        |          | 4-4.5      | ×       |             | •     |             |         |         |         | •            |         |                       | 422      |
| AH-3   | 8/1/2012 | 9-1        | ×       |             | <4.00 | <50.0       | <50.0   | <0.0200 | 0020,0> | 0.020.0      | 0020102 | 2010-100200           | 2.850    |
|        |          | 1-1.5      | ×       | 1           |       | 1           | - mc20m |         |         |              |         |                       | 1,320    |
|        | 8        | 2-2.5      | ×       |             | •     | •           |         |         |         |              |         |                       | 902      |
|        |          | 3-3.5      | ×       |             |       | -           |         | •       |         | •            |         | •                     | 653      |
|        |          | 4-4.5      | ×       |             |       | •           |         |         |         |              | -       | •                     | 069      |

(-) Not Analyzed
Proposed Excavated Depths

# TETRATECH

# COG Operating LLC BC Federal #10 Tank Battery Lea County, New Mexico





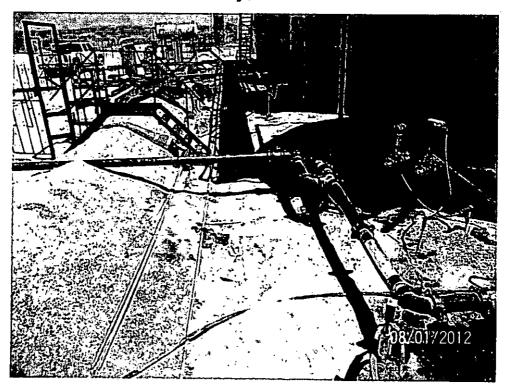
View West - Area of AH-1



View South - Area of AH-2

# E TETRA TECH

# COG Operating LLC BC Federal #10 Tank Battery Lea County, New Mexico



View North - Area of AH-3

# Water Well Data Average Depth to Groundwater (ft) COG - BC Federal #10 Tank Battery Lea County, New Mexico

|              | 161  | South         | 3   | i East                                 |   |             | 16             | South |               | 2 East                                       |                |           | 16 S   | outh         | 33       | Eest      |  |
|--------------|------|---------------|-----|--|---|-------------|----------------|-------|---------------|--|----------------|-----------|--------|--------------|----------|-----------|--|
| )            | 5    | 7             | 3   | 3                                      | 1   | 8           | 5              | •     | 3             | 65 <b>2</b> 26                               | 5 1 265        | 6         | 5 180  | 4 15         | 3 130    | 148       | 1 . 1                                  |
| -            | 8    | 10            | 10  | 11-                                    | 12  | 7           | В              | 19    | 10            | 11   | 12             | 7         | 8      | 0            | 10       | 11        | 12                                     |
|              |      | _1            | ľ   | 1                                      | 288   |             | . L            |       |               |  | 215            |           | 200    |              | 182      |           | 142                                    |
| )            | 17   | 16            | 15  | 14                                     | 13  | 10          | 17             | 16    | 15            | 14   | 13             | 18        | 17 .   | 16           | 15       | 14        | 13                                     |
|              |      |               |     |  | 113   | <u> </u>    |                | 221   |               |  | 215            | <u>Li</u> | 182    | 180          | 175      | 143       | 110                                    |
| 9            | 20   | 31            | 22  | 25                                     | 24  | 19          | 20             | . 21  | 22            | 23   | 24             | 10        | 20     | 21           | 22       | 23        | 24                                     |
|              |      | <u> </u>      |     |  | <del>  </del>                                     | 2 <u>20</u> | <del> </del> _ | 210   |               | 210  | -              |           |        |              | <u> </u> | 120       | <u> </u>                               |
| 0            | 29   | 26            | 27  | 26                                     | 25  | 50          | 20             | 20    | 27            | 26   | 25             | 30        | 29     | 28           |          | 26        | 25                                     |
| _            | 32   | 33            | 34  | 35                                     | 36  | 21          | 82             | 33    | 34            | 243<br>36                                    | 1              | 191       |        | 193          | 130      | 143       | 120                                    |
| 1<br>90.     | 32   | <sup>33</sup> | ~   |  | 130   | P'          |                | 133   | 3             | 30   | 36             | 31        | 32     | 33           | 34 .     | 36        | 30                                     |
| Ų.           |      | <u> </u>      | 15  | خـــــــــــــــــــــــــــــــــــــ | 1.  | -           | <u> </u>       |       | <del>-1</del> |  | 260            | 190       | 168    | <u> </u>     | 180      |           | ــــــــــــــــــــــــــــــــــــــ |
|              | 17 9 | South         | 3   | li East                                |   |             | 17 5           | South | 3             | 2 East                                       |                |           | 17 \$  | outh         | 33       | East      |  |
|              | 5    | 14            | 3   | 2                                      | 1   |             | 6 -            | 4 ,   | 3             | 2  | 1 225          | 8         | 5      | 4 -          | 3 155    | 2 165     | 1 1                                    |
|              |      |               |     |  |   | <u> </u>    | · L            | 82    | 176           | 60   | Li             | 90        |        |              | į.       |           |  |
|              | В    | 0             | 10  | 11                                     | 12  | 7           | В .            | 0 -   | 10            | 11   | 12             | 7 167     | 8 173  |              | 10       | 11        | 12                                     |
|              |      | ٠             | 1   | <del> </del>                           | <b></b>   | <u></u>     |                |       | 1.            |  | 120            |           |        | 161          | <u></u>  | <u> </u>  | <u> </u>                               |
| 9            | 17   | 16            | 15  | 14                                     | 13  | 18          | 17             | 16    | 15            | 14   | 13             | 18        | 17     | 18           | 15       | 14        | 13                                     |
| <del>-</del> | 20   | 21            | 22  | 23                                     | 24  | 19          | 20 .           | 21    | 22            | 23   | 24 .           | 188       | 180    | 21           | 22       | -         | 185                                    |
| •            | 2    | 12'           | ۳   | 2                                      | -   | SITE        | , m            | ٠,۴٠  | ZZ            | ۳  | P              | lia .     | 180    | <b>F</b> ' ' | <b> </b> | 23<br>115 | 24                                     |
| 0            | 29   | 28            | 27  | 26                                     | 25  | 20 ⊗        | 29             | 28    | 27            | 26   | 25             | 50        | 29     | 28           | 27       |           | 25                                     |
| •            | _    |               | 1   | 1                                      | -   | [ w.        | <br>           |       | Г             | <b>F</b>                                     |                |           |        |              | Γ'       |           | Γ.                                     |
| 1            | 32   | 33            | 34  | 35                                     | 36  | 31          | 32             | 33    | 34            | 35 (8)                                       | 36             | 31        | 22     | 33           | 34       | 35        | 36                                     |
|              |      |               | 271 | j                                      |   | <u> </u>    | <u> </u>       | .1`.  | <u>L</u>      |  | <u>'</u>       |           |        |              |          | 155 .     | ľ                                      |
|              | 18 1 | South         | 3   | 1 East                                 |   |             | 10.6           | cuth  | 9             | 2 East                                       |                |           | 18 80  |              | 99       | East      |  |
|              | TK   | 14            | 3   | 2                                      | н   |             | B              | I 85  |               | 12   | 1              | 14        | 10 04  | 7001         | 33       | EBSI      |  |
|              | F    | Γ             | Γ   | Г                                      | 1 1   | Γ           | Г              | Γ     | Γ             | Γ .  | ľ              | Γ.        | ۲.     | דו           | Γ.       | • -       | ľ                                      |
|              | 8    | 9             | 10  | 111                                    | 12  | 7 480       | 8              | 10    | 10            | 11-8   | 12             | 7         | 8 100  |              | 10       | 11        | 12 14                                  |
|              | 1    | 1             |     | 1                                      | 400   | 82          |                |       |               | 130° Day                                     | <sup>լ</sup> . | ,         | ,      | ľ            | 62       |           | 140                                    |
| 3            | 17   | 16            | 15  | 14                                     | 13  | 18.         | 17             | 16    | 15            | 14   | 13             | 18        | 17     | 16           |          | 14        | 13                                     |
|              |      |               | J   | 317                                    |   |             |                | 84    | <u> </u>      | <u>'                                    </u> | <u> </u>       | 1         | 85     |              |          | 36        |  |
| )            | 20   | 21            | 22  | 23                                     | 24  | 10          | 20 ,           | 21    | 22 .          | 50   | 24             | 10        |        | 21           | 22       | 23        | 24                                     |
|              |      | <u> </u>      | 1   | <del></del>                            |   | <b></b>     | 164            | 1:.:  | 429           | 1  |                | >140      | ^-     |              | ,        |           | 195                                    |
|              | 29   | 28            | 27  | 26                                     | 25  | 30          | 29             | 28    | 27            | 26   | 25             |           |        | 25           | 27       | 26        | 25 .                                   |
| _            |      | <del></del>   | 100 | 105                                    | <del>                                      </del> |             |                | 1     |               | <del></del>                                  | النيا          | 25        |        |              |          |           |  |
|              | 35   | 33            | 34  | 35                                     | 38  | 31          | 32             | 33    | 34            | 35   | 36             | 31        | 32     | 33           | 34       | 36        | 8                                      |
|              |      |               |     | 761                                    | أــــــــــــــــــــــــــــــــــــــ           | <u> </u>    | <u> </u>       |       | 117           | <u> </u>                                     |                |           | أحنيها |              | 177      |           |  |

|     | New Maxico State Engineers Well Reports                         |
|-----|---|
|     | USGS Well Reports   |
|     | Geology and Groundwater Conditions in Southern Eddy, County, NM |
|     | NMOCD - Groundwater Data  |
|     | Field water level   |
| 327 | New Mexico Water and Infrastructure Data System                 |
|     | Site - GC Federal #1  |
| 8   | Tetra Tech Temporary we'l                                       |

# **Summary Report**

Ike Tavarez Tetra Tech

1910 N. Big Spring Street Midland, TX 79705

Report Date: August 14, 2012

Work Order: 12080318 

Project Location: Lea Co., NM

COG/BC Federal #10 Project Name:

Project Number: 114-6401453

|        |             |        | Date       | Time  | Date       |
|--------|-------------|--------|------------|-------|------------|
| Sample | Description | Matrix | Taken      | Taken | Received   |
| 305783 | AH-1 0-1'   | soil   | 2012-08-01 | 00:00 | 2012-08-02 |
| 305784 | AH-1 1-1.5' | soil   | 2012-08-01 | 00:00 | 2012-08-02 |
| 305785 | AH-1 2-2.5' | soil   | 2012-08-01 | 00:00 | 2012-08-02 |
| 305786 | AH-1 3-3.5' | soil   | 2012-08-01 | 00:00 | 2012-08-02 |
| 305787 | AH-1 4-4.5' | soil   | 2012-08-01 | 00:00 | 2012-08-02 |
| 305788 | AH-2 0-1'   | soil   | 2012-08-01 | 00:00 | 2012-08-02 |
| 305789 | AH-2 1-1.5' | soil   | 2012-08-01 | 00:00 | 2012-08-02 |
| 305790 | AH-2 2-2.5' | soil   | 2012-08-01 | 00:00 | 2012-08-02 |
| 305791 | AH-2 3-3.5' | soil   | 2012-08-01 | 00:00 | 2012-08-02 |
| 305792 | AH-2 4-4.5' | soil   | 2012-08-01 | 00:00 | 2012-08-02 |
| 305793 | AH-3 0-1'   | soil   | 2012-08-01 | 00:00 | 2012-08-02 |
| 305794 | AH-3 1-1.5' | soil   | 2012-08-01 | 00:00 | 2012-08-02 |
| 305795 | AH-3 2-2.5' | soil   | 2012-08-01 | 00:00 | 2012-08-02 |
| 305796 | AH-3 3-3.5' | soil   | 2012-08-01 | 00:00 | 2012-08-02 |
| 305797 | AH-3 4-4.5' | soil   | 2012-08-01 | 00:00 | 2012-08-02 |

|                     |                      | ]        | 3TEX         |          | TPH DRO - NEW | TPH GRO            |
|---------------------|----------------------|----------|--------------|----------|---------------|--------------------|
| ]                   | Benzene              | Toluene  | Ethylbenzene | Xylene   | DRO           | GRO                |
| Sample - Field Code | (mg/Kg)              | (mg/Kg)  | (mg/Kg)      | (mg/Kg)  | (mg/Kg)       | (mg/Kg)            |
| 305783 - AH-1 0-1'  | <0.100 1             | < 0.100  | < 0.100      | 0.112    | 457 q.        | 102 c <sub>p</sub> |
| 805788 - AH-2 0-1'  | < 0.100 <sup>2</sup> | < 0.100  | < 0.100      | <0.100   | 1590 ga       | 44.0 q.            |
| 305793 - AH-3 0-1'  | < 0.0200             | < 0.0200 | < 0.0200     | < 0.0200 | <50.0 α₌      | <4.00 Qs           |

Sample: 305783 - AH-1 0-1'

<sup>&</sup>lt;sup>1</sup>Dilution due to excessive hydrocarbons.

<sup>&</sup>lt;sup>2</sup>Dilution due to excessive hydrocarbons.

| Report Date: Augu | st 14, 2012   | Work Order: 12080318 | Page           | Number: 2 of 3 |
|-------------------|---------------|----------------------|----------------|----------------|
| Param             | Flag          | Result               | Units          | RL             |
| Chloride          |               | 139                  | mg/Kg          | 4              |
| Sample: 305784 -  | - AH-1 1-1.5' |                      |                |                |
| Param             | Flag          | Result               | Units          | $\mathbf{RL}$  |
| Chloride          |               | 91.8                 | mg/Kg          | 4              |
| Sample: 305785    | · AH-1 2-2.5' |                      |                |                |
| Param             | Flag          | Result               | Units          | RL             |
| Chloride          |               | 266                  | mg/Kg          | 4              |
| Sample: 305786 -  | · AH-1 3-3.5' |                      |                |                |
| Param             | Flag          | Result               | Units          | RL             |
| Chloride          |               | 207                  | mg/Kg          | 4              |
| C                 | ATT 1 4 4 ET  | ito sa               |                |                |
| Sample: 305787 -  |               |                      |                |                |
| Param<br>Chloride | Flag          | Result<br>41.3       | Units<br>mg/Kg | RL<br>4        |
| Сполае            |               | *1.4                 |                |                |
| Sample: 305788 -  | AH-2 0-1'     |                      |                |                |
| Param             | Flag          | Result               | Units          | RL_            |
| Chloride          |               | 872                  | mg/Kg          | 4              |
| Sample: 305789 -  | AH-2 1-1.5'   |                      |                | g.             |
| Param             | Flag          | Result               | Units          | RL             |
| Chloride          |               | 335                  | mg/Kg          | 4              |
| Sample: 305790 -  | AH-2 2-2.5'   |                      |                |                |
| Param             | Flag          | Result               | Units          | RL             |
| Chloride          |               | 253                  | mg/Kg          | 4              |

|                   |                   | s              | ITE INFORM          | AOITAN          | l                |              |   |  |
|-------------------|-------------------|----------------|---------------------|-----------------|------------------|--------------|---|--|
|                   |                   | Re             | eport Type:         | Closu           | re               |              |   |  |
| General Site Info | rmation:          |                |                     | c 授 被 "我们"      |                  | <b>经的基础</b>  |   |  |
| Site:             |                   |                | #10 Tank Batte      |                 | •                |              |   |  |
| Company:          |                   | COG Opera      | ating LLC           |                 |                  |              |   |  |
| Section, Townsh   | ip and Range      | Unit F         | Sec 19              | T17S            | R32E             |              |   |  |
| Lease Number:     |                   | API-30-025     |                     |                 |                  |              |   |  |
| County:           |                   | Lea County     |                     |                 |                  |              |   |  |
| GPS:              |                   | 32.82264° N    | <u> </u>            |                 | 103.808          | 36° W        |   |  |
| Surface Owner:    |                   | Federal        |                     |                 |                  |              |   |  |
| Mineral Owner:    |                   |                |                     |                 |                  |              | ·   |  |
| Directions:       |                   |                |                     |                 |                  |              | 2 for 3.2 miles, turn right<br>0.1 miles to location. |  |
|                   |                   | - (SL) 01 CH 2 | 224 and haver for i | .7 1111165, tui | ii ieit (Nottri) | ano traver ( | D. I Thires to location.                              |  |
|                   |                   |                |                     | <u> </u>        |                  |              |   |  |
|                   |                   |                |                     |                 |                  |              |   |  |
|                   |                   |                |                     |                 |                  |              |   |  |
| Release Data:     |                   | <b>经验的</b>     | <b>第四次等级</b> 次比较    | OWN TANKS       | <b>。在一次原体系</b> 是 | ing Straight |   |  |
| Date Released:    |                   | 5/17/2012      |                     |                 |                  |              | <del></del>   |  |
| Type Release:     |                   | Oil Oil Tank   |                     |                 |                  |              |   |  |
| Source of Contam  | ination:          |                |                     |                 |                  |              |   |  |
| Fluid Released:   |                   | 10 bbls        |                     |                 |                  |              |   |  |
| Fluids Recovered: |                   | 9 bbls         |                     |                 |                  |              |   |  |
| Official Commun   | ication:          |                | <b>参加科罗</b> 罗尔公司。   |                 | XX GARGE         |              |   |  |
| Name:             | Pat Ellis         |                |                     |                 | Ike Tavar        | ez           |   |  |
| Company:          | COG Operating, L  | LC .           |                     |                 | Tetra Tech       |              |   |  |
| Address:          | 550 W. Texas Ave  | , Ste. 1300    |                     |                 | 1910 N. E        | ig Spring    |   |  |
| P.O. Box          |                   | <u> </u>       |                     |                 |                  |              |   |  |
| City:             | Midland Texas, 79 | 701            |                     |                 | Midland,         | Texas        |   |  |
| Phone number:     | (432) 686-3023    |                |                     |                 | (432) 682        | -4559        |   |  |
| Fax:              | (432) 684-7137    |                |                     |                 |                  |              |   |  |
| Email:            | pellis@conchores  | ources.com     |                     |                 | lke.tavar        | ez@tetrate   | ech.com   |  |
|                   |                   |                |                     |                 |                  |              |   |  |

| Depth to Groundwater:                     | Ranking Score | Site Data |
|---|---------------|-----------|
| <50 ft                                    | 20            |           |
| 50-99 ft                                  | 10            |           |
| >100 ft.                                  | 0             | 0         |
| WellHead Protection:                      | Ranking Score | Site Data |
| Water Source <1,000 ft., Private <200 ft. | 20            |           |
| Water Source >1,000 ft., Private >200 ft. | 0             | 0         |
| Surface Body of Water:                    | Ranking Score | Site Data |
| <200 ft.                                  | 20            |           |
| 200 ft - 1,000 ft.                        | 10            |           |
| >1,000 ft.                                | 0             | 0         |
|   |               | HOBBS OCD |
| Total Ranking Score                       | 0             | OCD       |

| Accepta | ble Soil RRAL (r | ng/kg) |
|---------|------------------|--------|
| Benzene | Total BTEX       | TPH    |
| 10      | 50               | 5,000  |

NOV 0 1 2012

RECEIVED



October 17, 2012

Mr. Geoffrey Leking **Environmental Engineer Specialist** Oil Conservation Division, District 1 1625 North French Drive Hobbs, New Mexico 88240

Closure Report for the COG Operating LLC., BC Federal #10 Re: Tank Battery, Unit F, Section 19, Township 17 South, Range 32 East, Lea County, New Mexico.

Mr. Leking:

Tetra Tech, Inc. (Tetra Tech) was contacted by COG Operating LLC. (COG) to assess a spill from the BC Federal #10 Tank Battery, Unit F, Section 19, Township 17 South, Range 32 East, Lea County, New Mexico (Site). The spill site coordinates are N 32.82264°, W 103.80886°. The site location is shown on Figures 1 and 2.

#### Background

According to the State of New Mexico C-141 Initial Report, the leak was discovered on May 17, 2012, and released approximately ten (10) barrels of oil due to the equalizer valve being shut causing the oil tank to overflow. To alleviate the problem, COG personnel opened the equalizer Nine (9) barrels of standing fluids were recovered. The spill measured approximately 10' x 100' and was contained inside the tank battery firewalls. The initial C-141 form is enclosed in Appendix A.

#### Groundwater

No water wells were listed within Section 21. According to the NMOCD groundwater map, the depth to groundwater in this area is approximately 200' below surface. The groundwater data is shown in Appendix B.



#### Regulatory

A risk-based evaluation was performed for the Site in accordance with the New Mexico Oil Conservation Division (NMOCD) Guidelines for Remediation of Leaks, Spills and Releases, dated August 13, 1993. The guidelines require a risk-based evaluation of the site to determine recommended remedial action levels (RRAL) for benzene, toluene, ethylbenzene and xylene (collectively referred to as BTEX) and total petroleum hydrocarbons (TPH) in soil. The proposed RRAL for benzene was determined to be 10 parts per million (ppm) or milligrams per kilogram (mg/kg) and 50 ppm for total BTEX (sum of benzene, toluene, ethylbenzene, and xylene). Based upon the depth to groundwater, the proposed RRAL for TPH is 5,000 mg/kg.

### Soil Assessment and Analytical Results

On August 1, 2012, Tetra Tech personnel inspected and sampled the spill area. Three (3) auger holes (AH-1, AH-2 and AH-3) were installed using a stainless steel hand auger to assess the impacted soils. Soil samples were not collected on the east side of the tank battery, due to the limited impacted area and multiple lines in the area. Selected samples were analyzed for TPH analysis by EPA method 8015 modified, BTEX by EPA Method 8021B and chloride by EPA method 300.0. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix C. The sampling results are summarized in Table 1. The auger hole locations are shown on Figure 3.

Referring to Table 1, all of the submitted samples were all below the RRAL for BTEX and TPH. The chlorides detected in the areas of AH-1 and AH-2 did not show significant impact to these areas. Elevated chloride concentrations were detected in AH-3 in the shallow soils, with a chloride high of 2,890 mg/kg at 0-1', which declined to 653 mg/kg at 3-3.5' below surface.

#### **Remediation and Conclusion**

Based on the approved work plan, Tetra Tech personnel supervised the excavation of the site. The excavated area and depths are highlighted in Table 1. The final excavation depths of the soil remediation were met as stated in the approved work plan. Approximately 12 cubic yards of soil were excavated and transported to R360 facility for proper disposal. The excavated area measured approximately 5' x 15' at a depth of approximately 2.0' below surface. The excavated area was then backfilled to grade with clean material.



Based on the remedial activities performed, COG request closure of the site. A copy of the C-141 (Final) is included in Appendix A. If you have any questions or comments concerning the remedial activities, please call at (432) 682-4559.

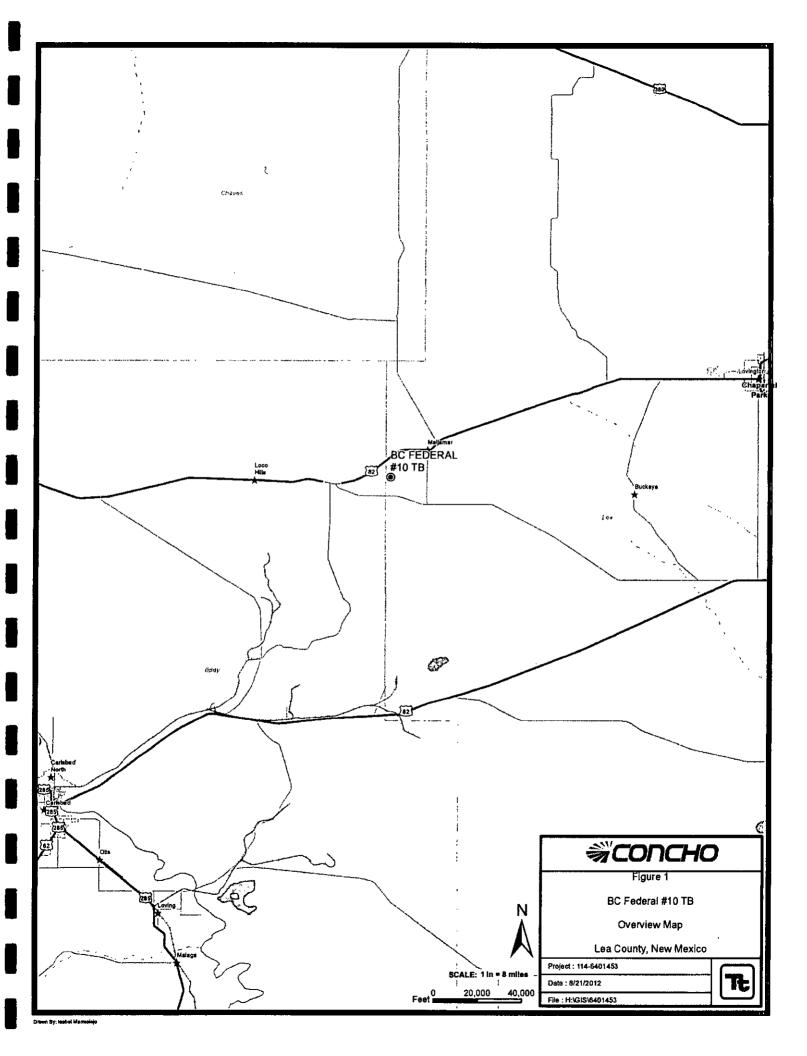
Respectfully submitted,

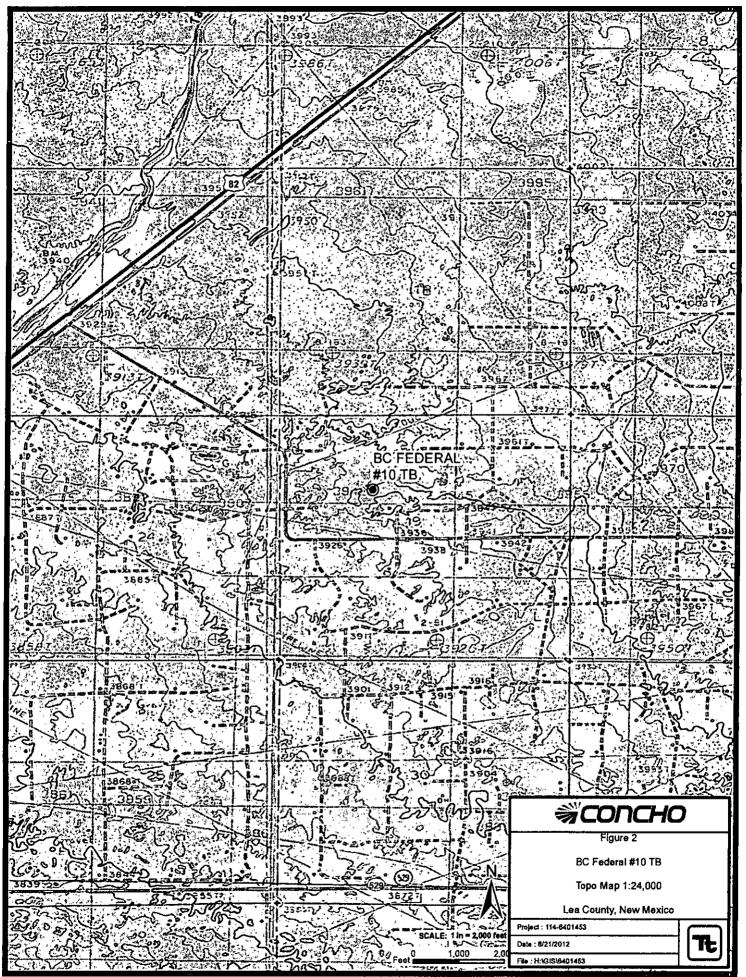
TETRATECH

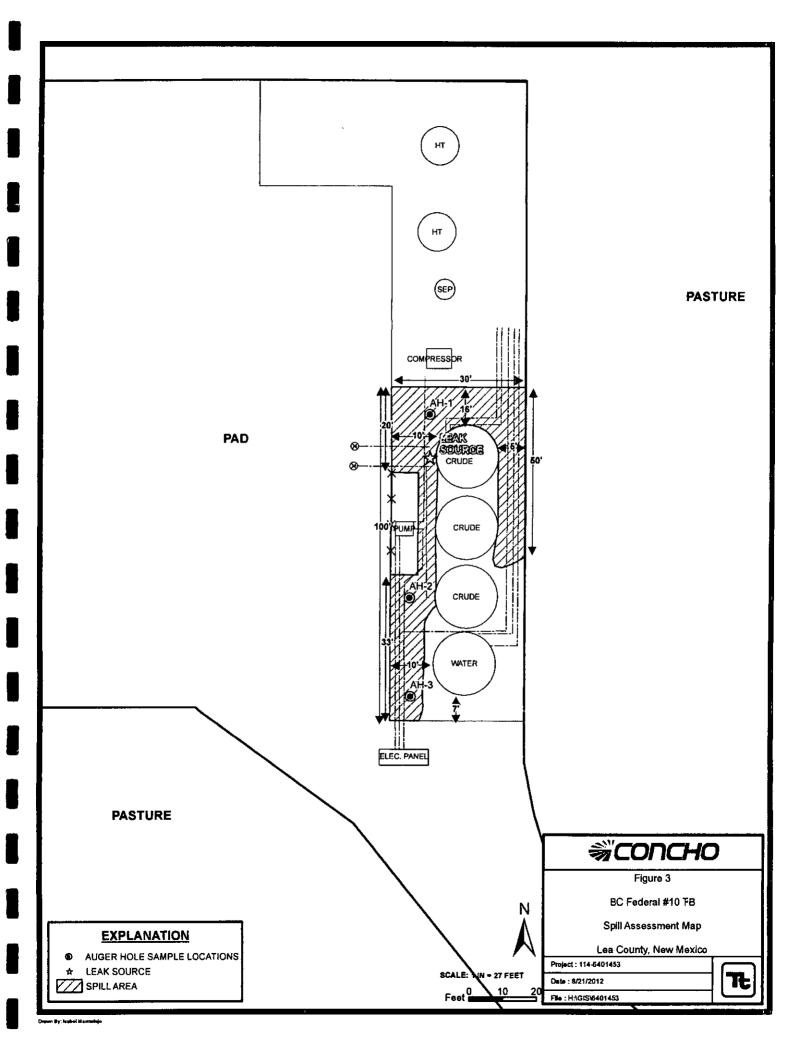
Ike Tavarez PG

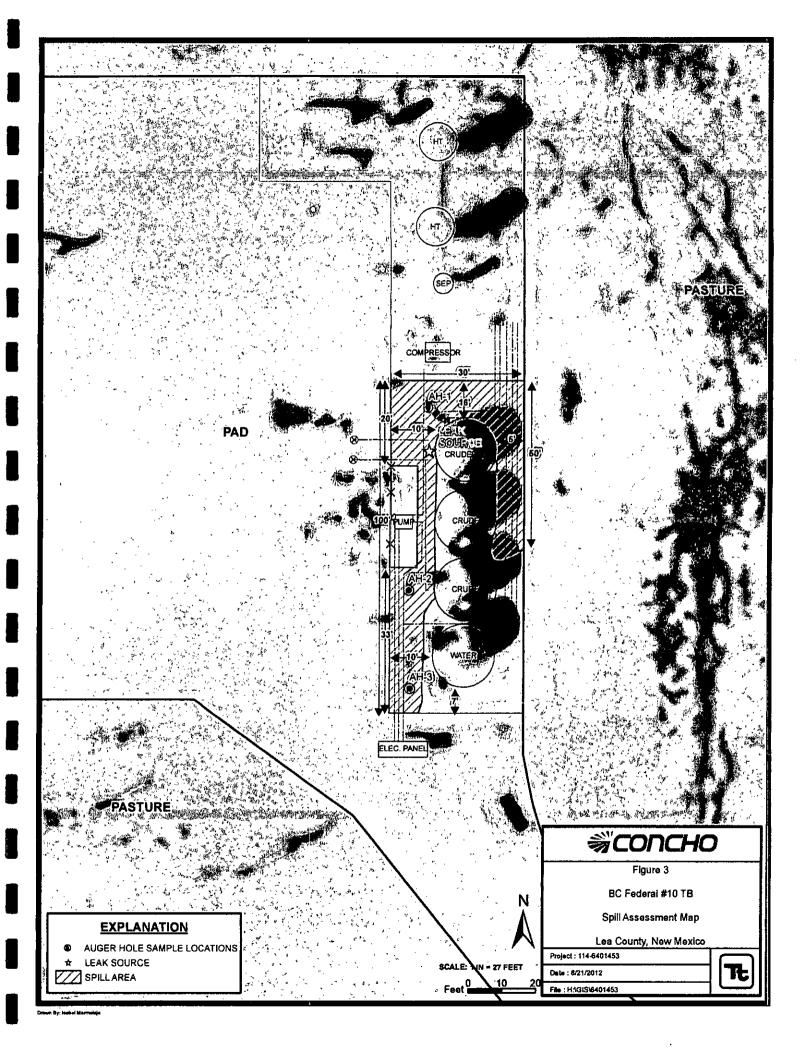
Senior Project Manager

cc: Pat Ellis - COG cc: Jim Amos - BLM









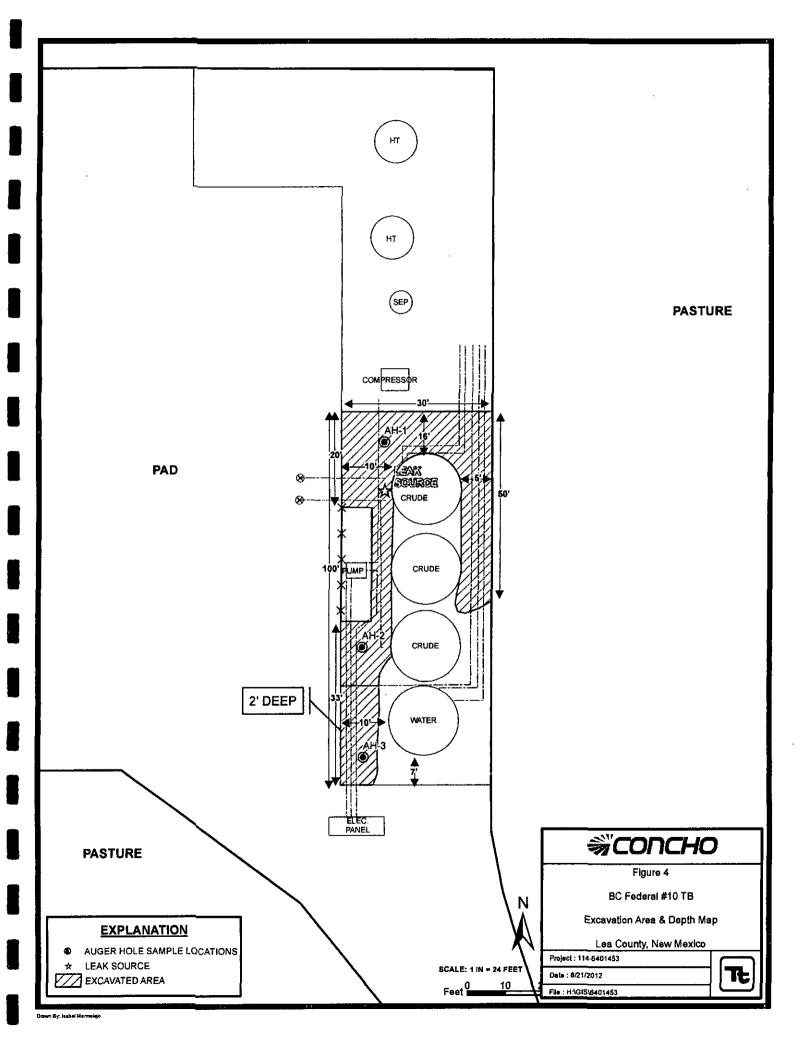


Table 1
COG Operating LLC.
BC Federal #10
Lea County, New Mexico

| Sample | Sample   | Sample     | Soil (                                | Soil Status | <b>;</b> — | TPH (mg/kg) | g)    | Benzene | Toluene | Ethlybenzene | Xviene  | Total           | Chloride |
|--------|----------|------------|---------------------------------------|-------------|------------|-------------|-------|---------|---------|--------------|---------|-----------------|----------|
| ıD     |          | Depth (ft) | In-Situ                               | Removed     | GRO        | DRO         | Total | (mg/kg) | (mg/kg) | (mg/kg)      | (mg/kg) | BTEX<br>(mg/kg) | (mg/kg)  |
| AH-1   | 8/1/2012 | 0-1        | ×                                     |             | 102        | 457         | 559   | <0.100  | <0.100  | <0.100       | 0.112   | 0.112           | 139      |
|        |          | 1-1.5      | X                                     |             | -          | ı           | 1     | -       | •       | •            | -       | ţ               | 91.8     |
|        |          | 2-2.5      | ×                                     |             | -          | 1           | •     | •       | •       | •            | -       | -               | 266      |
|        | п        | 3-3.5      | ×                                     |             | -          | •           | -     | ŀ       | f       | ı            | ı       | •               | 207      |
|        | =        | 4-4.5      | ×                                     |             | ,          | •           | •     | ,       | 1       | •            | -       | ,               | 41.3     |
| AH-2   | 8/1/2102 | 0-1        | ×                                     |             | 44.0       | 1,590       | 1,634 | <0.100  | <0.100  | <0.100       | <0.100  | <0.100          | 872      |
|        | п        | 1-1.5      | ×                                     |             | -          | •           | ,     | 1       | -       | 1            | t       | 1               | 335      |
|        | Ħ        | 2-5.5      | ×                                     | :           | ,          | ,           | 1     | -       | ŀ       | 1            | ,       | 1               | 253      |
|        | =        | 3-3.5      | ×                                     |             | 1          | 1           | •     | •       | ı       | •            | -       | •               | 395      |
|        | =        | 4-4.5      | ×                                     |             | •          | ı           | 1     | 1       | 1       | ŧ            | -       |                 | 422      |
| AH-3   | 8/1/2012 | F-0        | , , , , , , , , , , , , , , , , , , , | ×           | <4.00      | <50.0       | <50.0 | <0,0200 | <0.0200 | . <0:0200    |         | <0.0200 <0.0200 | 2,890    |
|        | =        | 1-1.5      |                                       | ×           |            | "魔"         |       |         |         |              | Col May |                 | 1,320    |
|        | =        | 2-2.5      | ×                                     |             | ,          | ð           | •     | 1       |         | r            | •       | •               | 905      |
|        | =        | 3-3.5      | ×                                     |             | 1          | ,           | -     | 1       | ,       | 1            | į       |                 | 653      |
|        | =        | 4-4.5      | ×                                     |             | 1          | •           | 1     | 1       | •       |              | 1       | t               | 069      |
|        |          |            |                                       |             |            |             |       |         |         |              |         |                 |          |

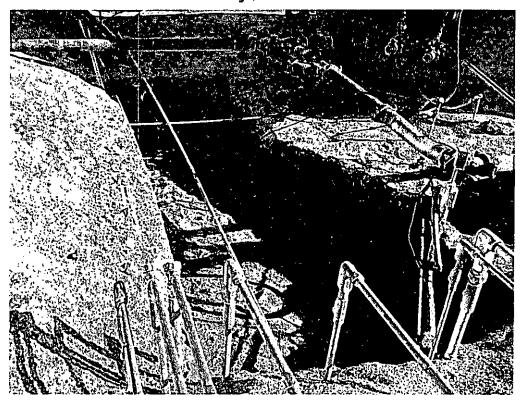
(-) Not Analyzed

Excavated Depths

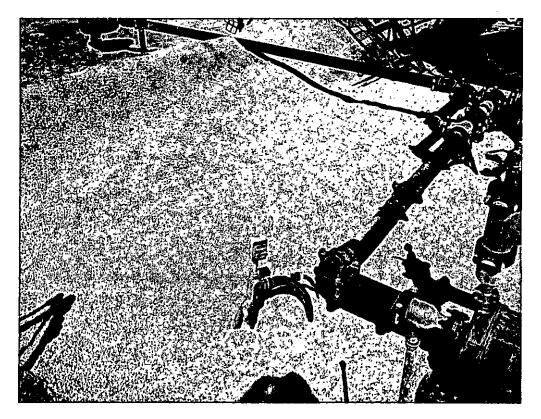
# TETRATECH

# COG Operating LLC BC Federal #10 Tank Battery Lea County, New Mexico





View North - Area of AH-3



Backfill

# Water Well Data Average Depth to Groundwater (ft) COG - BC Federai #10 Tank Battery Lea County, New Mexico

|            | 16       | South       | 3            | 1 East       |   |          | 16  | South |          | 32 East  |       |          | 16 S      | outh     | 33  | East     |          |
|------------|----------|-------------|--------------|--------------|---|----------|---|-------|----------|----------|-------|----------|-----------|----------|---|----------|----------|
|            | 5        | 4           | 3            | 2            | 1                                       | 6        | 5   | 4     | 3        | 65 2 26  | 1 265 | 8        | 5 180     | 4 15     | 03 130  | 1        | 1 1      |
|            | 8        | 9           | 10           | 11           | 112                                     | 7        | 8   | 9     | 10       | 11       | 12    | 7        | 8         | 9        | 10  | 148      | 12       |
|            | 1        | 1           | 1            | 1            | 288                                     | 1        | . 1   | 1     | 1        | 1        | 215   | - 1      | 200       | i        | 182   | \        | 142      |
| 18         | 17       | 16          | 15           | 14           | 13                                      | 18       | 17  | 16    | 15       | 14       | 13    | 18       | 17        | 16       | 15  | 14       | 13       |
|            |          |             |              | 1            | 113                                     |          | 1   | 221   | 1        |          | 215   | L        | 182       | 180      | 175   | 143      | 110      |
| 19         | 20       | 21          | 22           | 23           | 24                                      | 19       | 20  | 21    | 22       | 23       | 24    | 19       | 20        | 21       | 22  | 23       | 24       |
|            |          |             |              |              |   | 220      | ↓   | 210   | 1        | 210      |       |          | <u> L</u> | <u> </u> |   | 120      |          |
| 30         | 29       | 28          | 27           | 28           | 25                                      | 30       | 29  | 58    | 27       | 26       | 25    | 30       | 29        | 28       | 27  | 26       | 25       |
|            |          |             | <del> </del> | 1            |   | <b>.</b> | 1   |       | 1        | 243      | 1     | 191      | <u> </u>  | 190      | 130   | 143      | 120      |
| 31         | 32       | 33          | 34           | 35           | 36                                      | 31       | 32  | 33    | 34       | 35       | 36    | 31       | 32        | 33       | 34  | 35       | 36       |
| 290        |          |             | i            | <u> </u>     | الـــــــــــــــــــــــــــــــــــــ | <u> </u> |   |       | ┸—       |          | 260   | 190      | 16B       |          | 160   | <u> </u> | <u> </u> |
|            | 17 :     | South       | 3            | 1 East       |   | j        | 17  | South | 3        | 2 East   |       |          | 17 S      | outh     | 33  | East     |          |
| 5          | 5        | 4           | 3            | 5            | 1                                       | 6        | 5   | 4     | 3        | 2        | 1 225 | 8        | 5         | 4        | 3 155   | 2 158    | 1 1!     |
|            |          |             | 1            | <u> </u>     |   | L        | į   | 82    | 175      | 60       |       | 30       | <u> </u>  | I        | 1   | i        |          |
| 7          | В        | 9           | 10           | 111          | 12                                      | 7        | 8   | 9     | 10       | 11       | 12    | 7 167    | 8 173     | 9        | 10  | 11       | 12       |
|            |          |             |              | <u> </u>     |   | ļ        | $oldsymbol{ol}}}}}}}}}}}}}}}}}$ |       |          | 70 88    | 120   |          |           | 161      |   |          | <u>L</u> |
| 18         | 17       | 16          | 15           | 14           | 13                                      | 18       | 17  | 16    | 15       | 14       | 13    | 18       | 17        | 16       | 15  | 14       | 13       |
|            |          |             | ़            | <del> </del> | <b>↓</b>                                | <u> </u> | ļ.,   |       | <u> </u> |          |       | 188      | 180       |          | 1   |          | 165      |
| 18         | 20       | 21          | 22           | 23           | 24                                      | 19       | 20  | 21    | 55       | 23       | 24    | 19       | 50        | 21       | 22  | 23       | 24       |
| 20         | -        | <del></del> | <del></del>  | 100          | <u></u>                                 | SITE     | 29  | 28    | 27       | 26       | 25    | -        | 190       |          |   | 115      | Ļ.       |
| 30         | 20       | 28          | 27           | 26           | 25                                      | 30 ⊗     | 1   | 20    | 21       | 20       | 25    | 30       | 20        | 28       | 27  | 26       | 25       |
| 31         | 32       | 33          | 34           | 35           | 36                                      | 300° D   | ) <sub>32</sub>   | 33    | 34       | 15 63    | 36    | 31       | 32        | 33       | 34  | 35       | -        |
| <b>3</b> 1 | اعدا     | 33          | 271          | 133          | 30                                      | ľ        | <b> </b> ~  | ~     | <b> </b> | 1        | 1     | P'       | 32        | 133      | 1 1   | ľ        | 36       |
|            |          |             | 1271         |              |   | <b>—</b> |   |       | Ь.       | 130, DIA |       | <u> </u> |           |          | 1   | 155      |          |
|            | 18 5     | South       | 3            | 1 East       |   |          | 18  | South | 3        | 2 East   |       |          | 18 Sc     | uth      | 33  | East     |          |
| ;          | 5        | 4           | 3            | 2            | 1                                       | 6        | 5   | 4 65  | 3        | 5        | 1     | 8        | 5         | 4        | 3   | 2        | 1        |
| 7          | 8        | 9           | 10           | 11           | 12                                      | 7 450    | 8   | 9     | 10       | 11 🐼     | 12    | 7        | 8 100     | 9        | 10  | 11       | 12 14    |
|            |          | ľ           |              |              | 400                                     | 82       | 1   |       | ĺ        | 130 Drý  | '     | · ·      |           | [        | 62  |          | 140      |
| 18         | 17       | 16          | 15           | 14           | 13                                      | 18       | 17  | 16    | 15       |          | 13    | 18       | 17        | 16       |   | 14       | 13       |
|            | 1        | 1           | 1            | 317          | I                                       |          | 1   | 84    |          | 1 .      |       |          | 85        |          | 1 1   | 38       |          |
| 9          | 20       | 21          | 22           | 23           | 24                                      | 19       | 20  | 21    | 22       | 23       | 24    | 19       | 20        | 21       |   |          | 24       |
|            | 1        |             | J            | <u></u> _    |   |          | 164   | 1     | 429      |          |       | >140     | L         |          | <u>                                      </u> |          | 195      |
| <b>10</b>  | 29       | 28          | 27           | 26           | 25                                      | 30       | 29  | 28    | 27       | 26       | 25    | 30<br>35 | 29        | 28       | 27  | 26       | 25       |
| <br>i1     | 32       | 33          | 34           | 35           | 36                                      | 31       | 32  | 33    | 34       | 35       | 36    |          | 32        | 33       | 34  | 35       | 36       |
| ••         | <b>-</b> | 1           | 1            | 261          | {-~ }                                   | •        | 1   |       | 117      | 1        |       | Γ' :     |           |          | 177   | ~        |          |

|  |  | New | Mexico | State | Engineers | Well | Reports |
|--|--|-----|--------|-------|-----------|------|---------|
|--|--|-----|--------|-------|-----------|------|---------|

USGS Well Reports

Geology and Groundwater Conditions in Southern Eddy, County, NM

MOCD - Groundwater Data

Field water level

New Mexico Water and Infrastructure Data System

Site - GC Federal #1

★ Tetra Tech Temporary well

Work Order: 12080318

Page Number: 1 of 3

# **Summary Report**

Ike Tavarez Tetra Tech 1910 N. Big Spring Street Midland, TX 79705

Report Date: August 14, 2012

Work Order: 12080318

Project Location: Lea Co., NM

Project Name: COG/BC Federal #10

Project Number: 114-6401453

|        |             |        | Date       | Time  | Date       |
|--------|-------------|--------|------------|-------|------------|
| Sample | Description | Matrix | Taken      | Taken | Received   |
| 305783 | AH-1 0-1'   | soil   | 2012-08-01 | 00:00 | 2012-08-02 |
| 305784 | AH-1 1-1.5' | soil   | 2012-08-01 | 00:00 | 2012-08-02 |
| 305785 | AH-1 2-2.5' | soil   | 2012-08-01 | 00:00 | 2012-08-02 |
| 305786 | AH-1 3-3.5' | soil   | 2012-08-01 | 00:00 | 2012-08-02 |
| 305787 | AH-1 4-4.5' | soil   | 2012-08-01 | 00:00 | 2012-08-02 |
| 305788 | AH-2 0-1'   | soil   | 2012-08-01 | 00:00 | 2012-08-02 |
| 305789 | AH-2 1-1.5' | soil   | 2012-08-01 | 00:00 | 2012-08-02 |
| 305790 | AH-2 2-2.5' | soil   | 2012-08-01 | 00:00 | 2012-08-02 |
| 305791 | AH-2 3-3.5' | soil   | 2012-08-01 | 00:00 | 2012-08-02 |
| 305792 | AH-2 4-4.5' | soil   | 2012-08-01 | 00:00 | 2012-08-02 |
| 305793 | AH-3 0-1'   | soil   | 2012-08-01 | 00:00 | 2012-08-02 |
| 305794 | AH-3 1-1.5' | soil   | 2012-08-01 | 00:00 | 2012-08-02 |
| 305795 | AH-3 2-2.5' | soil   | 2012-08-01 | 00:00 | 2012-08-02 |
| 305796 | AH-3 3-3.5' | soil   | 2012-08-01 | 00:00 | 2012-08-02 |
| 305797 | AH-3 4-4.5' | soil   | 2012-08-01 | 00:00 | 2012-08-02 |

|                     |                     | F        | BTEX         |          | TPH DRO - NEW | TPH GRO  |
|---------------------|---------------------|----------|--------------|----------|---------------|----------|
|                     | Benzene             | Toluene  | Ethylbenzene | Xylene   | DRO           | GRO      |
| Sample - Field Code | (mg/Kg)             | (mg/Kg)  | (mg/Kg)      | (mg/Kg)  | (mg/Kg)       | (mg/Kg)  |
| 305783 - AH-1 0-1'  | < 0.100 1           | < 0.100  | < 0.100      | 0.112    | 457 Q.        | 102 Q#   |
| 305788 - AH-2 0-1'  | <0.100 <sup>2</sup> | < 0.100  | < 0.100      | < 0.100  | 1590 Qs       | 44.0 Q   |
| 305793 - AH-3 0-1'  | < 0.0200            | < 0.0200 | < 0.0200     | < 0.0200 | <50.0 Qs      | <4.00 Qa |

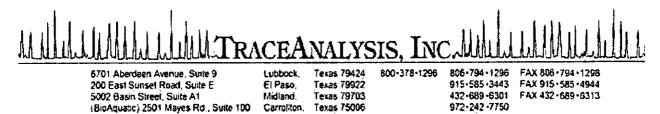
Sample: 305783 - AH-1 0-1'

<sup>&</sup>lt;sup>1</sup>Dilution due to excessive hydrocarbons.

<sup>&</sup>lt;sup>2</sup>Dilution due to excessive hydrocarbons.

| Report Date: Augu | ust 14, 2012  | Work Order: 12080318 | Page 1 | Number: 2 of 3 |
|-------------------|---------------|----------------------|--------|----------------|
| Param             | Flag          | Result               | Units  | RL             |
| Chloride          |               | 139                  | mg/Kg  | 4              |
| Sample: 305784    | - AH-1 1-1.5' |                      |        |                |
| Param             | Flag          | Result               | Units  | RL             |
| Chloride          |               | 91.8                 | mg/Kg  | 4              |
| Sample: 305785    | - AH-1 2-2.5' |                      |        |                |
| Param             | Flag          | Result               | Units  | RL             |
| Chloride          |               | 266                  | mg/Kg  | 4              |
| Sample: 305786    | - AH-1 3-3.5' |                      |        |                |
| Param             | Flag          | Result               | Units  | RL             |
| Chloride          |               | 207                  | mg/Kg  | 4              |
| Sample: 305787    | - AH-1 4-4.5' |                      |        |                |
| Param             | Flag          | Result               | Units  | RL             |
| Chloride          |               | 41.3                 | mg/Kg  | 4              |
| Sample: 305788    | - AH-2 0-1'   |                      |        |                |
| Param             | Flag          | Result               | Units  | RL             |
| Chloride          |               | 872                  | mg/Kg  | 4              |
| Sample: 305789    | - AH-2 1-1.5' |                      |        |                |
| Param             | Flag          | Result               | Units  | RL             |
| Chloride          |               | 335                  | mg/Kg  | 4              |
| Sample: 305790    | - AH-2 2-2.5' |                      |        |                |
| Param             | Flag          | Result               | Units  | RL             |
| Chloride          |               | 253                  | mg/Kg  | 4              |

| Report Date: Augu              | ust 14, 2012  | Work Order: 12080318 | Page 1         | Number: 3 of 3 |
|--------------------------------|---------------|----------------------|----------------|----------------|
| Sample: 305791                 | - AH-2 3-3.5' |                      |                |                |
| Param                          | Flag          | Result               | Units          | RL             |
| Chloride                       |               | 395                  | mg/Kg          | 4              |
| Sample: 305792                 | - AH-2 4-4.5' |                      |                |                |
| Param                          | Flag          | Result               | Units          | RL             |
| Chloride                       |               | 422                  | mg/Kg          | 4              |
| Sample: 305793                 | - AH-3 0-1'   |                      |                |                |
| Param                          | Flag          | Result               | Units          | RL             |
| Chloride                       |               | 2890                 | mg/Kg          | 4              |
| Chloride                       | riag          | 1320                 | mg/Kg          | 4              |
| Sample: 305794  Param Chloride | - AH-3 1-1.5  | Result               | Units<br>mg/Kg | RL<br>4        |
| Sample: 305795                 | - AH-3.2-2.5' |                      |                |                |
| Param                          | Flag          | Result               | Units          | RL             |
| Chloride                       |               | 905                  | mg/Kg          | 4              |
|                                | ATT 0 0 0     |                      |                |                |
| Sample: 305796                 |               |                      |                |                |
| Param                          | Flag          | Result               | Units          | RL<br>4        |
| Chloride                       |               | 653                  | mg/Kg          | 4              |
|                                |               |                      |                |                |
| Sample: 305797                 | - AH-3 4-4.5' |                      |                |                |
| Sample: 305797 Param Chloride  | - AH-3 4-4.5' | Result<br>690        | Units<br>mg/Kg | RL             |



E-Mail tab@traceanalysis.com WEB www.traceanalysis.com

## Certifications

WBE HUB NCTRCA DBE NELAP DoD LELAP Kansas Oklahoma ISO 17025

# **Analytical and Quality Control Report**

Ike Tavarez
Tetra Tech
1910 N. Big Spring Street
Midland, TX, 79705

Report Date: August 14, 2012

Work Order: 12080318

Project Location: Lea Co., NM

Project Name: COG/BC Federal #10

Project Number: 114-6401453

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

|        |             |        | Date       | Time  | Date       |
|--------|-------------|--------|------------|-------|------------|
| Sample | Description | Matrix | Taken      | Taken | Received   |
| 305783 | AH-1 0-1'   | soil   | 2012-08-01 | 00:00 | 2012-08-02 |
| 305784 | AH-1 1-1.5' | soil   | 2012-08-01 | 00:00 | 2012-08-02 |
| 305785 | AH-1 2-2.5' | soil   | 2012-08-01 | 00:00 | 2012-08-02 |
| 305786 | AH-1 3-3.5' | soil   | 2012-08-01 | 00:00 | 2012-08-02 |
| 305787 | AH-1 4-4.5' | soil   | 2012-08-01 | 00:00 | 2012-08-02 |
| 305788 | AH-2 0-1'   | soil   | 2012-08-01 | 00:00 | 2012-08-02 |
| 305789 | AH-2 1-1.5' | soil   | 2012-08-01 | 00:00 | 2012-08-02 |
| 305790 | AH-2 2-2.5' | soil   | 2012-08-01 | 00:00 | 2012-08-02 |
| 305791 | AH-2 3-3.5' | soil   | 2012-08-01 | 00:00 | 2012-08-02 |
| 305792 | AH-2 4-4.5' | soil   | 2012-08-01 | 00:00 | 2012-08-02 |
| 305793 | AH-3 0-1'   | soil   | 2012-08-01 | 00:00 | 2012-08-02 |
| 305794 | AH-3 1-1.5' | soil   | 2012-08-01 | 00:00 | 2012-08-02 |
| 305795 | AH-3 2-2.5' | soil   | 2012-08-01 | 00:00 | 2012-08-02 |
| 305796 | AH-3 3-3.5' | soil   | 2012-08-01 | 00:00 | 2012-08-02 |
| 305797 | AH-3 4-4.5' | soil   | 2012-08-01 | 00:00 | 2012-08-02 |

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

This report consists of a total of 27 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

Dr. Blair Leftwich, Director

Dr. Michael Abel, Project Manager

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| Sample 305786 (AH-1 3-3.5')       | 8   |
| Sample 305787 (AH-1 4-4.5')       | 5   |
| Sample 305788 (AH-2 0-1')         | 8   |
| Sample 305789 (AH-2 1-1.5')       | 10  |
| Sample 305790 (AH-2 2-2.5')       | 10  |
| Sample 305791 (AH-2 3-3.5')       | 10  |
| Sample 305792 (AH-2 4-4.5')       | 11  |
| Sample 305792 (AH-2 4-4.5)        | 11  |
|                                   |     |
| Sample 305794 (AH-3 1-1.5')       | 12  |
| Sample 305795 (AH-3 2-2.5')       | 13  |
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| QC Batch 93714 - CCV (1)  |                                       |
| QC Batch 93714 - CCV (2)  |                                       |
| QC Batch 93714 - CCV (3)  |                                       |
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| Result Comments           |                                       |
| Attachments               |                                       |

### Case Narrative

Samples for project COG/BC Federal #10 were received by TraceAnalysis, Inc. on 2012-08-02 and assigned to work order 12080318. Samples for work order 12080318 were received intact at a temperature of 4.7 C.

Samples were analyzed for the following tests using their respective methods.

|                      |              | Prep  | Prep                | $\mathbf{QC}$ | Analysis            |
|----------------------|--------------|-------|---------------------|---------------|---------------------|
| Test                 | Method       | Batch | Date                | Batch         | Date                |
| BTEX                 | S 8021B      | 79441 | 2012-08-07 at 15:57 | 93714         | 2012-08-07 at 15:57 |
| Chloride (Titration) | SM 4500-Cl B | 79384 | 2012-08-05 at 10:03 | 93641         | 2012-08-05 at 20:28 |
| Chloride (Titration) | SM 4500-Cl B | 79384 | 2012-08-05 at 10:03 | 93642         | 2012-08-05 at 20:37 |
| Chloride (Titration) | SM 4500-Cl B | 79384 | 2012-08-05 at 10:03 | 93643         | 2012-08-05 at 20:42 |
| TPH DRO - NEW        | S 8015 D     | 79515 | 2012-08-10 at 08:00 | 93797         | 2012-08-10 at 13:40 |
| TPH GRO              | S 8015 D     | 79441 | 2012-08-07 at 15:57 | 93715         | 2012-08-07 at 15:57 |

Results for these samples are reported on a wet weight basis unless data package indicates otherwise.

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 12080318 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

All other exceptions associated with this report have been footnoted on the appropriate analytical page to assist in general data comprehension. Please contact the laboratory directly if there are any questions regarding this project.

114-6401453

Work Order: 12080318 COG/BC Federal #10

Page Number: 6 of 27 Lea Co., NM

## Analytical Report

Sample: 305783 - AH-1 0-1'

Laboratory: Lubbock

Analysis: BTEX QC Batch: 93714 Prep Batch: 79441

Analytical Method:

Date Analyzed: 2012-08-07 Sample Preparation: 2012-08-07

S 8021B

S 5035 Prep Method: ZLM Analyzed By: Prepared By: ZLM

| Parameter    | Flag | Cert | Result  | Units | Dilution | RL     |
|--------------|------|------|---------|-------|----------|--------|
| Benzene 1    | U    | 1    | < 0.100 | mg/Kg | 5        | 0.0200 |
| Toluene      | ប    | 1    | < 0.100 | mg/Kg | 5        | 0.0200 |
| Ethylbenzene | U    | 1    | < 0.100 | mg/Kg | 5        | 0.0200 |
| Xylene       |      | 1    | 0.112   | mg/Kg | 5        | 0.0200 |

|                              |      |      |        |       |          | Spike  | Percent  | Recovery |
|------------------------------|------|------|--------|-------|----------|--------|----------|----------|
| Surrogate                    | Flag | Cert | Result | Units | Dilution | Amount | Recovery | Limits   |
| Trifluorotoluene (TFT)       |      |      | 1.84   | mg/Kg | 5        | 2.00   | 92       | 70 - 130 |
| 4-Bromofluorobenzene (4-BFB) |      |      | 2.46   | mg/Kg | 5        | 2.00   | 123      | 70 - 130 |

Sample: 305783 - AH-1 0-1'

Laboratory:

Midland

Analysis: Chloride (Titration) QC Batch: 93641 Prep Batch: 79384

Analytical Method: Date Analyzed:

Sample Preparation:

SM 4500-Cl B 2012-08-05 2012-08-05

Prep Method: N/A Analyzed By: AR Prepared By:

RLDilution Units RLParameter Cert Result Flag Chloride 139 mg/Kg 4.00

Sample: 305783 - AH-1 0-1'

Laboratory:

Lubbock

Analysis: TPH DRO - NEW QC Batch: 93797 Prep Batch: 79515

Analytical Method: Date Analyzed:

S 8015 D 2012-08-10 Sample Preparation: 2012-08-10 Prep Method: N/A Analyzed By: CM Prepared By: CM

|           |      |      | $\mathbf{RL}$ |       |          |      |
|-----------|------|------|---------------|-------|----------|------|
| Parameter | Flag | Cert | Result        | Units | Dilution | RL   |
| DRO       | Q.   | 1    | 457           | mg/Kg | 1        | 50.0 |

114-6401453

Work Order: 12080318 COG/BC Federal #10 Page Number: 7 of 27

Lea Co., NM

| g ,         | <b>T</b> | <b>~</b> . | D 1    | TT 1  | 75.1     | Spike  | Percent  | Recovery   |
|-------------|----------|------------|--------|-------|----------|--------|----------|------------|
| Surrogate   | Flag     | Cert       | Result | Units | Dilution | Amount | Recovery | Limits     |
| n-Tricosane |          |            | 139    | mg/Kg | 1        | 100    | 139      | 59.9 - 168 |

Sample: 305783 - AH-1 0-1'

Laboratory:

Lubbock

TPH GRO Analysis: QC Batch: 93715 Prep Batch: 79441

Analytical Method: Date Analyzed:

Sample Preparation:

S 8015 D 2012-08-07 2012-08-07 Prep Method: S 5035

Analyzed By: ZLM Prepared By: ZLM

|           |      |      | RL     |       |          |      |
|-----------|------|------|--------|-------|----------|------|
| Parameter | Flag | Cert | Result | Units | Dilution | RL   |
| GRO       | Q.   | 1    | 102    | mg/Kg | 5        | 4.00 |

|                              |     |      |      |        |       |          | Spike  | Percent  | Recovery |
|------------------------------|-----|------|------|--------|-------|----------|--------|----------|----------|
| Surrogate                    |     | Flag | Cert | Result | Units | Dilution | Amount | Recovery | Limits   |
| Trifluorotoluene (TFT)       |     |      |      | 1.68   | mg/Kg | 5        | 2.00   | 84       | 70 - 130 |
| 4-Bromofluorobenzene (4-BFB) | Qar | Qar  |      | 2.81   | mg/Kg | 5        | 2.00   | 140      | 70 - 130 |

Sample: 305784 - AH-1 1-1.5'

Laboratory:

Midland

Chloride (Titration) Analysis: QC Batch: 93642 Prep Batch: 79384

Analytical Method: Date Analyzed:

Sample Preparation:

SM 4500-Cl B 2012-08-05 2012-08-05

Prep Method: N/A Analyzed By: AR Prepared By: AR

|           |      |      | m RL   |       |          |      |
|-----------|------|------|--------|-------|----------|------|
| Parameter | Flag | Cert | Result | Units | Dilution | RL   |
| Chloride  |      |      | 91.8   | mg/Kg | 5        | 4.00 |

Sample: 305785 - AH-1 2-2.5'

Laboratory:

Prep Batch:

Midland

79384

Analysis: QC Batch: 93642

Chloride (Titration)

Analytical Method: Date Analyzed: Sample Preparation: SM 4500-Cl B 2012-08-05

2012-08-05

Analyzed By: Prepared By:

Prep Method: N/A AR AR

continued ...

114-6401453

Work Order: 12080318 COG/BC Federal #10

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Lea Co., NM

sample 305785 continued ...

|           |      |      | ${ m RL}$     |       |          |            |
|-----------|------|------|---------------|-------|----------|------------|
| Parameter | Flag | Cert | Result        | Units | Dilution | RL         |
|           |      |      | Dī            |       |          |            |
|           | _    |      | $\mathtt{RL}$ |       |          |            |
| Parameter | Flag | Cert | Result        | Units | Dilution | $_{ m RL}$ |
| Chloride  |      |      | 266           | mg/Kg | 5        | 4.00       |

Sample: 305786 - AH-1 3-3.5'

Laboratory:

Midland

Analysis:

Chloride (Titration)

QC Batch: 93642 Prep Batch: 79384 Analytical Method:

SM 4500-Cl B Date Analyzed: 2012-08-05 Sample Preparation:

2012-08-05

Prep Method: N/A Analyzed By: AR Prepared By: AR

RLResult Dilution Parameter Cert Units RLFlag Chloride 207 4.00 mg/Kg 5

Sample: 305787 - AH-1 4-4.5'

Laboratory:

Midland

Analysis: Chloride (Titration) QC Batch:

93642 Prep Batch: 79384

Analytical Method: Date Analyzed:

SM 4500-Cl B 2012-08-05 2012-08-05

Prep Method: N/A Analyzed By: AR Prepared By: AR

RLDilution RLCert Result Units Parameter Flag 41.3 4.00 Chloride mg/Kg 5

Sample Preparation:

Sample: 305788 - AH-2 0-1'

Laboratory: Lubbock

Analysis: QC Batch:

**BTEX** 93714 Prep Batch: 79441

Analytical Method: Date Analyzed:

Sample Preparation:

S 8021B 2012-08-07 2012-08-07

Prep Method: S 5035 Analyzed By: ZLM Prepared By: ZLM

114-6401453

Work Order: 12080318 COG/BC Federal #10 Page Number: 9 of 27

Lea Co., NM

|              |   |      |      | RL      |       |          |        |
|--------------|---|------|------|---------|-------|----------|--------|
| Parameter    |   | Flag | Cert | Result  | Units | Dilution | RL     |
| Benzene      | 2 | U    | 1    | < 0.100 | mg/Kg | 5        | 0.0200 |
| Toluene      |   | ប    | 1    | < 0.100 | mg/Kg | 5        | 0.0200 |
| Ethylbenzene |   | U    | 1    | < 0.100 | mg/Kg | 5        | 0.0200 |
| ·Xylene      |   |      | 1    | < 0.100 | mg/Kg | 5        | 0.0200 |

|                              |      |      |        |               |          | Spike  | Percent  | Recovery |
|------------------------------|------|------|--------|---------------|----------|--------|----------|----------|
| Surrogate                    | Flag | Cert | Result | Units         | Dilution | Amount | Recovery | Limits   |
| Trifluorotoluene (TFT)       |      |      | 1.91   | mg/Kg         | 5        | 2.00   | 96       | 70 - 130 |
| 4-Bromofluorobenzene (4-BFB) |      |      | 2.00   | $_{ m mg/Kg}$ | 5        | 2.00   | 100      | 70 - 130 |

Sample: 305788 - AH-2 0-1'

Laboratory:

Midland

Analysis: Chloride (Titration)

QC Batch: 93642 Prep Batch: 79384

Analytical Method: Date Analyzed:

SM 4500-Cl B 2012-08-05 Sample Preparation: 2012-08-05

Prep Method: N/A

Analyzed By: AR Prepared By:

|           |      |      | RL     |       |          |      |
|-----------|------|------|--------|-------|----------|------|
| Parameter | Flag | Cert | Result | Units | Dilution | RL   |
| Chloride  |      |      | 872    | mg/Kg | 5        | 4.00 |

Sample: 305788 - AH-2 0-1'

Laboratory: Lubbock

Analysis: TPH DRO - NEW QC Batch: 93797 Prep Batch: 79515

Analytical Method: Date Analyzed:

S 8015 D 2012-08-10 Sample Preparation: 2012-08-10 Prep Method: N/A Analyzed By: CM Prepared By: CM

|           |      |      | RL     |       |          |      |
|-----------|------|------|--------|-------|----------|------|
| Parameter | Flag | Cert | Result | Units | Dilution | RL   |
| DRO       | Q.   | 1    | 1590   | mg/Kg | 5        | 50.0 |

|             |     |      |      |        |       |          | Spike  | Percent  | Recovery   |
|-------------|-----|------|------|--------|-------|----------|--------|----------|------------|
| Surrogate   |     | Flag | Cert | Result | Units | Dilution | Amount | Recovery | Limits     |
| n-Tricosane | Qur | Qsr  |      | 225    | mg/Kg | 5        | 100    | 225      | 59.9 - 168 |

Sample: 305788 - AH-2 0-1'

Laboratory: Lubbock

TPH GRO Analysis: QC Batch: 93715 Prep Batch: 79441

Analytical Method: Date Analyzed: Sample Preparation:

S 8015 D 2012-08-07 2012-08-07 Prep Method: S 5035 Analyzed By: ZLM Prepared By: ZLM

114-6401453

Work Order: 12080318 COG/BC Federal #10 Page Number: 10 of 27

Lea Co., NM

|                              |      |      |      |                | $\mathbf{RL}$ |                |        |          |          |
|------------------------------|------|------|------|----------------|---------------|----------------|--------|----------|----------|
| Parameter                    | Flag |      | Cert | Result<br>44.0 |               | Units<br>mg/Kg |        | Dilution | RL       |
| GRO                          |      |      | ı    |                |               |                |        | 5        | 4.00     |
|                              |      |      |      |                |               |                | Spike  | Percent  | Recovery |
| Surrogate                    |      | Flag | Cert | Result         | Units         | Dilution       | Amount | Recovery | Limits   |
| Trifluorotoluene (TFT)       |      |      |      | 1.67           | mg/Kg         | 5              | 2.00   | 84       | 70 - 130 |
| 4-Bromofluorobenzene (4-BFB) |      |      |      | 1.79           | mg/Kg         | 5              | 2.00   | 90       | 70 - 130 |

Sample: 305789 - AH-2 1-1.5'

Laboratory:

Midland

Chloride (Titration) Analysis:

QC Batch:

Chloride

93642

Analytical Method: Date Analyzed:

SM 4500-Cl B 2012-08-05

Prep Method: N/A Analyzed By: AR.

Prep Batch: 79384

Sample Preparation:

2012-08-05

Prepared By: AR

Parameter Flag Cert

RLResult 335

Units Dilution mg/Kg

RL5 4.00

Sample: 305790 - AH-2 2-2.5'

Laboratory:

Midland

Analysis:

Chloride (Titration)

QC Batch: 93642 79384 Prep Batch:

Analytical Method: Date Analyzed:

SM 4500-Cl B 2012-08-05

Prep Method: N/A Analyzed By: AR

Sample Preparation: 2012-08-05 Prepared By: AR.

RLParameter Flag Cert Result Units Dilution RL253 4.00 Chloride mg/Kg 5

Sample: 305791 - AH-2 3-3.5'

Laboratory:

Midland

Analysis: QC Batch:

Chloride (Titration)

93642 Prep Batch: 79384

Analytical Method: Date Analyzed:

SM 4500-Cl B 2012-08-05 Sample Preparation: 2012-08-05

Prep Method: N/A AR Analyzed By: Prepared By: AR

114-6401453

Work Order: 12080318 COG/BC Federal #10 Page Number: 11 of 27

Lea Co., NM

|           |      |      | $\mathbf{RL}$ |       |          |      |
|-----------|------|------|---------------|-------|----------|------|
| Parameter | Flag | Cert | Result        | Units | Dilution | RL   |
| Chloride  |      |      | 395           | mg/Kg | 5        | 4.00 |

Sample: 305792 - AH-2 4-4.5'

Laboratory:

Midland

Analysis: Chloride (Titration)

QC Batch: 93642

Analytical Method:

SM 4500-Cl B

2012-08-05

Prep Method: N/A Analyzed By: AR

Prep Batch: 79384 Date Analyzed: Sample Preparation:

2012-08-05

Prepared By: AR

| Parameter | Flag | Cert |
|-----------|------|------|
| Chloride  |      |      |

RLResult 422

Units mg/Kg Dilution RL5 4.00

Sample: 305793 - AH-3 0-1'

Laboratory: Lubbock

Analysis: BTEX QC Batch: 93714 Prep Batch: 79441

Analytical Method: Date Analyzed:

Sample Preparation:

S 8021B 2012-08-07 2012-08-07 Prep Method: S 5035 Analyzed By:

ZLM Prepared By: ZLM

|              |      | RL   |          |       |          |        |  |  |  |
|--------------|------|------|----------|-------|----------|--------|--|--|--|
| Parameter    | Flag | Cert | Result   | Units | Dilution | RL     |  |  |  |
| Benzene      | U    | 1    | < 0.0200 | mg/Kg | 1        | 0.0200 |  |  |  |
| Toluene      | υ    | 1    | < 0.0200 | mg/Kg | 1        | 0.0200 |  |  |  |
| Ethylbenzene | υ    | 1    | < 0.0200 | mg/Kg | 1        | 0.0200 |  |  |  |
| Xylene       | U    | 1    | < 0.0200 | mg/Kg | 1        | 0.0200 |  |  |  |

|                              |      |      |        |       |          | Spike  | Percent  | Recovery |
|------------------------------|------|------|--------|-------|----------|--------|----------|----------|
| Surrogate                    | Flag | Cert | Result | Units | Dilution | Amount | Recovery | Limits   |
| Trifluorotoluene (TFT)       |      |      | 1.77   | mg/Kg | 1        | 2.00   | 88       | 70 - 130 |
| 4-Bromofluorobenzene (4-BFB) |      |      | 2.01   | mg/Kg | 1        | 2.00   | 100      | 70 - 130 |

Sample: 305793 - AH-3 0-1'

Laboratory:

Midland

Analysis: Chloride (Titration)

QC Batch: 93642 Prep Batch: 79384

Analytical Method: Date Analyzed:

Sample Preparation:

SM 4500-Cl B 2012-08-05 2012-08-05

Prep Method: N/A Analyzed By: ARPrepared By: AR

114-6401453

Work Order: 12080318 COG/BC Federal #10 Page Number: 12 of 27

Lea Co., NM

|           |      |      | $\mathbf{RL}$ |       |          |      |
|-----------|------|------|---------------|-------|----------|------|
| Parameter | Flag | Cert | Result        | Units | Dilution | RL   |
| Chloride  |      |      | 2890          | mg/Kg | 10       | 4.00 |

Sample: 305793 - AH-3 0-1'

Laboratory:

Lubbock

Analysis:

TPH DRO - NEW

QC Batch: 93797 Prep Batch: 79515 Analytical Method: Date Analyzed: S 8015 D 2012-08-10 2012-08-10 Prep Method: N/A Analyzed By: CM

Analyzed By: CM Prepared By: CM

| Currents  | Flor | Cart | Dogult | IImita | Dilution    | Spike | Percent  | Recovery |
|-----------|------|------|--------|--------|-------------|-------|----------|----------|
| DRO       |      | Qs   | 1      | <      | (50.0       | mg/Kg | 1        | 50.0     |
| Parameter |      | Flag | Cert   | R      | RL<br>esult | Units | Dilution | RL       |

Sample Preparation:

| Surrogate   | Flag | Cert | Result | Units | Dilution | Spike<br>Amount | Percent<br>Recovery | Limits     |
|-------------|------|------|--------|-------|----------|-----------------|---------------------|------------|
| n-Tricosane |      |      | 107    | mg/Kg | 1        | 100             | 107                 | 59.9 - 168 |

Sample: 305793 - AH-3 0-1'

Laboratory:

Lubbock TPH GRO

Analysis: TPH ( QC Batch: 93715 Prep Batch: 79441 Analytical Method: Date Analyzed:

Sample Preparation:

S 8015 D 2012-08-07 2012-08-07 Prep Method: S 5035 Analyzed By: ZLM

Prepared By: ZLM

|           |      |      | RL     |       |          |      |
|-----------|------|------|--------|-------|----------|------|
| Parameter | Flag | Cert | Result | Units | Dilution | RL   |
| GRO       | Qu   | 1    | <4.00  | mg/Kg | 1        | 4.00 |

|                              |      |      |        |       |          | Spike  | Percent  | Recovery |
|------------------------------|------|------|--------|-------|----------|--------|----------|----------|
| Surrogate                    | Flag | Cert | Result | Units | Dilution | Amount | Recovery | Limits   |
| Trifluorotoluene (TFT)       |      |      | 1.71   | mg/Kg | 1        | 2.00   | 86       | 70 - 130 |
| 4-Bromofluorobenzene (4-BFB) |      |      | 1.97   | mg/Kg | 1        | 2.00   | 98       | 70 - 130 |

Sample: 305794 - AH-3 1-1.5'

Laboratory: Midland

Analysis: Chloride (Titration)

QC Batch: 93643 Prep Batch: 79384 Analytical Method: SM 4500-Cl B Date Analyzed: 2012-08-05 Sample Preparation: 2012-08-05

Prep Method: N/A
Analyzed By: AR
Prepared By: AR

114-6401453

Work Order: 12080318 COG/BC Federal #10

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Lea Co., NM

|           |      |      | $\mathtt{RL}$ |       |          |      |
|-----------|------|------|---------------|-------|----------|------|
| Parameter | Flag | Cert | Result        | Units | Dilution | RL   |
| Chloride  |      |      | 1320          | mg/Kg | 10       | 4.00 |

Sample: 305795 - AH-3 2-2.5'

Laboratory: Analysis:

Midland

QC Batch:

Chloride (Titration)

93643

Analytical Method: Date Analyzed:

SM 4500-Cl B 2012-08-05

Prep Method: Analyzed By:

N/A AR

Prep Batch:

79384

Sample Preparation:

2012-08-05

Prepared By:

AR

|           |      |      | KL     |       |          |      |
|-----------|------|------|--------|-------|----------|------|
| Parameter | Flag | Cert | Result | Units | Dilution | RL   |
| Chloride  |      |      | 905    | mg/Kg | . 10     | 4.00 |

Sample: 305796 - AH-3 3-3.5'

Laboratory:

Midland

Analysis: Chloride (Titration) 93643

QC Batch: Prep Batch: 79384 Analytical Method: Date Analyzed:

SM 4500-Cl B 2012-08-05

Prep Method: N/A

Analyzed By: AR

RL

Sample Preparation: 2012-08-05 Prepared By: AR

Flag Cert Result Units Dilution RLParameter Chloride 653 mg/Kg 10 4.00

Sample: 305797 - AH-3 4-4.5'

Laboratory:

Midland

Chloride (Titration) Analysis:

QC Batch: 93643 Prep Batch: 79384

Analytical Method: Date Analyzed: Sample Preparation: SM 4500-Cl B 2012-08-05 2012-08-05

Prep Method: N/A Analyzed By: AR Prepared By: AR

RL

Cert Result Units Dilution RLParameter Flag 690 mg/Kg 5 4.00 Chloride

114-6401453

Work Order: 12080318 COG/BC Federal #10 Page Number: 14 of 27 Lea Co., NM

Method Blanks

Method Blank (1)

QC Batch: 93641

QC Batch: Prep Batch:

93641 79384 Date Analyzed:

QC Preparation:

2012-08-05

2012-08-05

Analyzed By: AR

Prepared By:

MDL

Parameter Flag Chloride

Cert

Result < 3.85

Units mg/Kg RL

AR

4

Method Blank (1)

QC Batch: 93642

QC Batch: Prep Batch:

93642 79384

93643

79384

Date Analyzed: QC Preparation: 2012-08-05 2012-08-05 Analyzed By: AR

Prepared By:

MDL

Flag Parameter

RLCert Result Units <3.85 mg/Kg 4 Chloride

Method Blank (1)

QC Batch: 93643

QC Batch: Prep Batch: Date Analyzed:

2012-08-05 QC Preparation: 2012-08-05 Analyzed By: AR

Prepared By: AR

MDL

Flag RLParameter Cert Result Units <3.85 mg/Kg Chloride

Method Blank (1)

QC Batch: 93714

QC Batch: 93714 Prep Batch: 79441 Date Analyzed:

QC Preparation:

2012-08-07 2012-08-07

Analyzed By: ZLM Prepared By:

ZLM

114-6401453

Work Order: 12080318 COG/BC Federal #10 Page Number: 15 of 27

Lea Co., NM

| Parameter    | Flag | Cert | MDL<br>Result | Units | RL   |
|--------------|------|------|---------------|-------|------|
| Benzene      |      | 1    | < 0.00365     | mg/Kg | 0.02 |
| Toluene      |      | 1    | < 0.00816     | mg/Kg | 0.02 |
| Ethylbenzene |      | 1    | < 0.00560     | mg/Kg | 0.02 |
| Xylene       |      | 1    | < 0.00460     | mg/Kg | 0.02 |

|                              |      |      |        |       |          | Spike  | Percent  | Recovery |
|------------------------------|------|------|--------|-------|----------|--------|----------|----------|
| Surrogate                    | Flag | Cert | Result | Units | Dilution | Amount | Recovery | Limits   |
| Trifluorotoluene (TFT)       |      |      | 1.74   | mg/Kg | 1        | 2.00   | 87       | 70 - 130 |
| 4-Bromofluorobenzene (4-BFB) |      |      | 1.79   | mg/Kg | 1        | 2.00   | 90       | 70 - 130 |

Method Blank (1)

QC Batch: 93715

QC Batch: 93715 Prep Batch: 79441 Date Analyzed: 2012-08-07 QC Preparation: 2012-08-07 Analyzed By: ZLM Prepared By: ZLM

MDL

| Parameter | Flag | Cert | Result  | Units | RL |
|-----------|------|------|---------|-------|----|
| GRO       |      | 1    | < 0.359 | mg/Kg | 4  |
|           |      |      |         |       |    |

|                              |      |      |        |       |          | Spike  | Percent  | Recovery |
|------------------------------|------|------|--------|-------|----------|--------|----------|----------|
| Surrogate                    | Flag | Cert | Result | Units | Dilution | Amount | Recovery | Limits   |
| Trifluorotoluene (TFT)       |      |      | 1.77   | mg/Kg | 1        | 2.00   | 88       | 70 - 130 |
| 4-Bromofluorobenzene (4-BFB) |      |      | 1.77   | mg/Kg | 1        | 2.00   | 88       | 70 - 130 |

Method Blank (1) Q

QC Batch: 93797

QC Batch: 93797 Prep Batch: 79515 Date Analyzed: 2012-08-10 QC Preparation: 2012-08-10

Analyzed By: CM Prepared By: CM

|           |      |      | MDL    |       |    |
|-----------|------|------|--------|-------|----|
| Parameter | Flag | Cert | Result | Units | RL |
| DRO       |      | 1    | < 6.50 | mg/Kg | 50 |

|             |                 |                       |        |       |          | Spike  | Percent  | Recovery   |
|-------------|-----------------|-----------------------|--------|-------|----------|--------|----------|------------|
| Surrogate   | $\mathbf{Flag}$ | $\operatorname{Cert}$ | Result | Units | Dilution | Amount | Recovery | Limits     |
| n-Tricosane |                 |                       | 108    | mg/Kg | 1        | 100    | 108      | 59.9 - 168 |

114-6401453

Work Order: 12080318 COG/BC Federal #10

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Lea Co., NM

# **Laboratory Control Spikes**

Laboratory Control Spike (LCS-1)

QC Batch:

93641

Date Analyzed:

2012-08-05

Analyzed By: AR

Prep Batch: 79384

QC Preparation: 2012-08-05

Prepared By: AR

|          |              |   | LCS    |       |      | Spike  | Matrix |      | Rec.     |
|----------|--------------|---|--------|-------|------|--------|--------|------|----------|
| Param    | $\mathbf{F}$ | C | Result | Units | Dil. | Amount | Result | Rec. | Limit    |
| Chloride |              |   | 2480   | mg/Kg | 1    | 2500   | <3.85  | 99   | 85 - 115 |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

|          |              |              | LCSD   |       |      | Spike  | Matrix |      | Rec.     |     | RPD   |
|----------|--------------|--------------|--------|-------|------|--------|--------|------|----------|-----|-------|
| Param    | $\mathbf{F}$ | $\mathbf{C}$ | Result | Units | Dil. | Amount | Result | Rec. | Limit    | RPD | Limit |
| Chloride |              |              | 2530   | mg/Kg | 1    | 2500   | < 3.85 | 101  | 85 - 115 | 2   | 20    |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch: Prep Batch: 79384

93642

Date Analyzed: QC Preparation: 2012-08-05

2012-08-05

Analyzed By: AR

Prepared By: AR

|          |              |              | LCS    |       |      | Spike  | Matrix |      | Rec.          |
|----------|--------------|--------------|--------|-------|------|--------|--------|------|---------------|
| Param    | $\mathbf{F}$ | $\mathbf{C}$ | Result | Units | Dil. | Amount | Result | Rec. | $_{ m Limit}$ |
| Chloride |              |              | 2400   | mg/Kg | 1    | 2500   | <3.85  | 96   | 85 - 115      |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

|          |   |   | LCSD   |       |      | Spike  | Matrix |      | Rec.     |     | RPD   |
|----------|---|---|--------|-------|------|--------|--------|------|----------|-----|-------|
| Param    | F | C | Result | Units | Dil. | Amount | Result | Rec. | Limit    | RPD | Limit |
| Chloride |   |   | 2490   | mg/Kg | 1    | 2500   | <3.85  | 100  | 85 - 115 | 4   | 20    |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch:

93643 Prep Batch: 79384 Date Analyzed:

2012-08-05

QC Preparation: 2012-08-05 Analyzed By: AR Prepared By: AR

114-6401453

Work Order: 12080318

Page Number: 17 of 27

COG/BC Federal #10

Lea Co., NM

|          |   |   | LCS    |       |      | Spike  | Matrix |      | Rec.     |
|----------|---|---|--------|-------|------|--------|--------|------|----------|
| Param    | F | C | Result | Units | Dil. | Amount | Result | Rec. | Limit    |
| Chloride |   |   | 2500   | mg/Kg | 1    | 2500   | <3.85  | 100  | 85 - 115 |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

|          |   |   | LCSD   |       |      | Spike  | Matrix |      | Rec.     |     | RPD   |
|----------|---|---|--------|-------|------|--------|--------|------|----------|-----|-------|
| Param    | F | C | Result | Units | Dil. | Amount | Result | Rec. | Limit    | RPD | Limit |
| Chloride |   |   | 2600   | mg/Kg | 1    | 2500   | <3.85  | 104  | 85 - 115 | 4   | 20    |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

#### Laboratory Control Spike (LCS-1)

QC Batch:

93714

Date Analyzed:

2012-08-07

Analyzed By: ZLM Prepared By: ZLM

Prep Batch:

79441

QC Preparation: 2012-08-07

LCS Spike Matrix Rec.  $\mathbf{F}$ Param C Units Dil. Amount Result Rec. Limit Result Benzene 1.86 mg/Kg 1 2.00 < 0.00365 93 75.4 - 120 Toluene 1.82 mg/Kg 1 2.00 < 0.00816 91 74.9 - 120Ethylbenzene 2.00 78.1 - 120 1.82 mg/Kg 1 < 0.00560 91 77.3 - 120 Xylene 5.50 1 6.00 < 0.00460 92 mg/Kg

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

| Param        | F | C | LCSD<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit | RPD      | RPD<br>Limit |
|--------------|---|---|----------------|-------|------|-----------------|------------------|------|---------------|----------|--------------|
| Benzene      |   | 1 | 1.78           | mg/Kg | 1    | 2.00            | < 0.00365        | 89   | 75.4 - 120    | 4        | 20           |
| Toluene      |   | 1 | 1.78           | mg/Kg | 1    | 2.00            | < 0.00816        | 89   | 74.9 - 120    | <b>2</b> | 20           |
| Ethylbenzene |   | 1 | 1.80           | mg/Kg | 1    | 2.00            | < 0.00560        | 90   | 78.1 - 120    | 1        | 20           |
| Xylene       |   | 1 | 5.44           | mg/Kg | 1    | 6.00            | < 0.00460        | 91   | 77.3 - 120    | 1        | 20           |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

| Surrogate                    | LCS<br>Result | LCSD<br>Result | Units | Dil. | Spike<br>Amount | LCS<br>Rec. | LCSD<br>Rec. | Rec.<br>Limit |
|------------------------------|---------------|----------------|-------|------|-----------------|-------------|--------------|---------------|
| Trifluorotoluene (TFT)       | 1.78          | 1.70           | mg/Kg | 1    | 2.00            | 89          | 85           | 70 - 130      |
| 4-Bromofluorobenzene (4-BFB) | 1.84          | 1.87           | mg/Kg | 1    | 2.00            | 92          | 94           | 70 - 130      |

#### Laboratory Control Spike (LCS-1)

QC Batch:

93715

Prep Batch: 79441 Date Analyzed:

2012-08-07

Analyzed By: ZLM

QC Preparation:

2012-08-07

Prepared By:

ZLM

114-6401453

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Lea Co., NM

|       |   |              | LCS    |       |      | Spike  | Matrix  |      | Rec.       |
|-------|---|--------------|--------|-------|------|--------|---------|------|------------|
| Param | F | $\mathbf{C}$ | Result | Units | Dil. | Amount | Result  | Rec. | Limit      |
| GRO   |   | 1            | 16.9   | mg/Kg | 1    | 20.0   | < 0.359 | 84   | 68.9 - 120 |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

|       |   |   | LCSD   |       |      | $\mathbf{S}_{\mathbf{P}ike}$ | Matrix  |      | Rec.       |     | RPD   |
|-------|---|---|--------|-------|------|------------------------------|---------|------|------------|-----|-------|
| Param | F | C | Result | Units | Dil. | Amount                       | Result  | Rec. | Limit      | RPD | Limit |
| GRO   |   | 1 | 17.1   | mg/Kg | 1    | 20.0                         | < 0.359 | 86   | 68.9 - 120 | 1   | 20    |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

|                              | LCS    | LCSD   |       |      | Spike  | LCS  | LCSD | Rec.     |
|------------------------------|--------|--------|-------|------|--------|------|------|----------|
| Surrogate                    | Result | Result | Units | Dil. | Amount | Rec. | Rec. | Limit    |
| Trifluorotoluene (TFT)       | 1.89   | 1.90   | mg/Kg | 1    | 2.00   | 94   | 95   | 70 - 130 |
| 4-Bromofluorobenzene (4-BFB) | 1.85   | 1.87   | mg/Kg | 1    | 2.00   | 92   | 94   | 70 - 130 |

#### Laboratory Control Spike (LCS-1)

QC Batch:

93797

Date Analyzed:

2012-08-10

Analyzed By: CM Prepared By: CM

Prep Batch: 79515

QC Preparation: 2012-08-10

|       |   |   | LCS    |       |      | Spike  | Matrix |      | Rec.       |
|-------|---|---|--------|-------|------|--------|--------|------|------------|
| Param | F | C | Result | Units | Dil. | Amount | Result | Rec. | Limit      |
| DRO   |   | 1 | 230    | mg/Kg | 1    | 250    | < 6.50 | 92   | 72.7 - 120 |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

|       |   |   | LCSD   |       |      | Spike  | Matrix |      | Rec.       |     | RPD   |  |
|-------|---|---|--------|-------|------|--------|--------|------|------------|-----|-------|--|
| Param | F | C | Result | Units | Dil. | Amount | Result | Rec. | Limit      | RPD | Limit |  |
| DRO   |   | 1 | 204    | mg/Kg | 1    | 250    | < 6.50 | 82   | 72.7 - 120 | 12  | 20    |  |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

|             | LCS    | LCSD   |       |      | Spike  | LCS  | LCSD | Rec.       |
|-------------|--------|--------|-------|------|--------|------|------|------------|
| Surrogate   | Result | Result | Units | Dil. | Amount | Rec. | Rec. | Limit      |
| n-Tricosane | 103    | 94.3   | mg/Kg | 1    | 100    | 103  | 94   | 59.9 - 168 |

Matrix Spike (MS-1) Spiked Sample: 305783

QC Batch:

93641

Date Analyzed:

2012-08-05

Analyzed By: AR

Prep Batch: 79384

QC Preparation: 2012-08-05

Prepared By: AR

continued ...

114-6401453

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Lea Co., NM

matrix spikes continued ...

| Param    | F | С           | MS<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit |
|----------|---|-------------|--------------|-------|------|-----------------|------------------|------|---------------|
| Param    | F | C           | MS<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit |
| Chloride |   | <del></del> | 2380         | mg/Kg | 5    | 2500            | 139              | 90   | 79.4 - 120.6  |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

|          |              |   | MSD    |       |      | Spike  | Matrix |      | Rec.         |     | RPD   |
|----------|--------------|---|--------|-------|------|--------|--------|------|--------------|-----|-------|
| Param    | $\mathbf{F}$ | C | Result | Units | Dil. | Amount | Result | Rec. | Limit        | RPD | Limit |
| Chloride |              |   | 2390   | mg/Kg | 5    | 2500   | 139    | 90   | 79.4 - 120.6 | 0   | 20    |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1)

Spiked Sample: 305793

QC Batch:

93642

Date Analyzed:

2012-08-05

Analyzed By: AR

Prep Batch: 79384

QC Preparation:

2012-08-05

Prepared By: AR

|          |   |   | MS     |       |      | Spike  | Matrix |      | Rec.         |
|----------|---|---|--------|-------|------|--------|--------|------|--------------|
| Param    | F | C | Result | Units | Dil. | Amount | Result | Rec. | Limit        |
| Chloride |   |   | 5030   | mg/Kg | 10   | 2500   | 2890   | 86   | 79.4 - 120.6 |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

|          |   |   | MSD    |       |      | Spike  | Matrix |      | Rec.         |     | RPD   |
|----------|---|---|--------|-------|------|--------|--------|------|--------------|-----|-------|
| Param    | F | C | Result | Units | Dil. | Amount | Result | Rec. | Limit        | RPD | Limit |
| Chloride |   |   | 5210   | mg/Kg | 10   | 2500   | 2890   | 93   | 79.4 - 120.6 | 4   | 20    |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1)

Spiked Sample: 305797

QC Batch:

93643

Date Analyzed:

2012-08-05

Analyzed By: AR

Prep Batch: 79384

QC Preparation: 2012-08-05

Prepared By: AR

Rec.

Limit

79.4 - 120.6

Rec.

98

Matrix

Result

690

MS Spike F  $\mathbf{C}$ Result Units Dil. Amount Param 2500 3140 Chloride mg/Kg 5

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

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Lea Co., NM

|          |              |   | MSD    |       |      | Spike  | Matrix |      | Rec.         |     | RPD   |
|----------|--------------|---|--------|-------|------|--------|--------|------|--------------|-----|-------|
| Param    | $\mathbf{F}$ | C | Result | Units | Dil. | Amount | Result | Rec. | Limit        | RPD | Limit |
| Chloride |              |   | 3170   | mg/Kg | 5    | 2500   | 690    | 99   | 79.4 - 120.6 | 1   | 20    |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 305772

QC Batch: 93714 Prep Batch: 79441 Date Analyzed: 2012-08-07 QC Preparation: 2012-08-07

Analyzed By: ZLM Prepared By: ZLM

|              |             |              | MS     |       |      | Spike   | Matrix    |      | Rec.       |
|--------------|-------------|--------------|--------|-------|------|---------|-----------|------|------------|
| Param        | F           | $\mathbf{C}$ | Result | Units | Dil. | Amount' | Result    | Rec. | Limit      |
| Benzene      | <del></del> | 1            | 1.70   | mg/Kg | 1    | 2.00    | < 0.00365 | 85   | 37.6 - 142 |
| Toluene      |             | 1            | 1.83   | mg/Kg | 1    | 2.00    | < 0.00816 | 92   | 38.6 - 153 |
| Ethylbenzene |             | 1            | 1.92   | mg/Kg | 1    | 2.00    | < 0.00560 | 96   | 36.7 - 172 |
| Xylene       |             | 1            | 5.80   | mg/Kg | 1    | 6.00    | < 0.00460 | 97   | 36.7 - 173 |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

|              |              |   | MSD    |       |      | Spike  | Matrix    |      | Rec.       |     | RPD   |
|--------------|--------------|---|--------|-------|------|--------|-----------|------|------------|-----|-------|
| Param        | $\mathbf{F}$ | C | Result | Units | Dil. | Amount | Result    | Rec. | Limit      | RPD | Limit |
| Benzene      |              | 1 | 1.73   | mg/Kg | 1    | 2.00   | < 0.00365 | 86   | 37.6 - 142 | 2   | 20    |
| Toluene      |              | 1 | 1.86   | mg/Kg | 1    | 2.00   | < 0.00816 | 93   | 38.6 - 153 | 2   | 20    |
| Ethylbenzene |              | 1 | 1.95   | mg/Kg | 1    | 2.00   | < 0.00560 | 98   | 36.7 - 172 | 2   | 20    |
| Xylene       |              | 1 | 5.89   | mg/Kg | 1    | 6.00   | < 0.00460 | 98   | 36.7 - 173 | 2   | 20    |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

|                              | MS     | MSD    |       |      | Spike  | MS   | MSD  | Rec.     |
|------------------------------|--------|--------|-------|------|--------|------|------|----------|
| Surrogate                    | Result | Result | Units | Dil. | Amount | Rec. | Rec. | Limit    |
| Trifluorotoluene (TFT)       | 1.89   | 1.88   | mg/Kg | 1    | 2      | 94   | 94   | 70 - 130 |
| 4-Bromofluorobenzene (4-BFB) | 1.90   | 1.90   | mg/Kg | 1    | 2      | 95   | 95   | 70 - 130 |

Matrix Spike (MS-1) Spiked Sample: 305772

QC Batch: 93715 Prep Batch: 79441 Date Analyzed: 2012-08-07 QC Preparation: 2012-08-07 Analyzed By: ZLM Prepared By: ZLM

|       |   |   | MS     |       |      | Spike  | Matrix |      | Rec.       |
|-------|---|---|--------|-------|------|--------|--------|------|------------|
| Param | F | C | Result | Units | Dil. | Amount | Result | Rec. | Limit      |
| GRO   |   | 1 | 15.5   | mg/Kg | 1    | 20.0   | 1.14   | 72   | 68.9 - 120 |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

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|       |    |              |   | MSD    |       |      | Spike  | Matrix |      | Rec.       |     | RPD   |
|-------|----|--------------|---|--------|-------|------|--------|--------|------|------------|-----|-------|
| Param |    | $\mathbf{F}$ | C | Result | Units | Dil. | Amount | Result | Rec. | Limit      | RPD | Limit |
| GRO   | Q» | Q.           | 1 | 14.3   | mg/Kg | 1    | 20.0   | 1.14   | 66   | 68.9 - 120 | 8   | 20    |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

|                              | MS     | MSD    |       |      | Spike  | MS   | MSD  | Rec.     |
|------------------------------|--------|--------|-------|------|--------|------|------|----------|
| Surrogate                    | Result | Result | Units | Dil. | Amount | Rec. | Rec. | Limit    |
| Trifluorotoluene (TFT)       | 1.72   | 1.64   | mg/Kg | 1    | 2      | 86   | 82   | 70 - 130 |
| 4-Bromofluorobenzene (4-BFB) | 2.06   | 2.00   | mg/Kg | 1    | 2      | 103  | 100  | 70 - 130 |

Spiked Sample: 305783 Matrix Spike (MS-1)

QC Batch:

93797

Date Analyzed:

2012-08-10

Analyzed By: CM

Prepared By: CM

Prep Batch: 79515 QC Preparation: 2012-08-10

|       |    |    |              | MS     |       |      | Spike  | Matrix |      | Rec.       |
|-------|----|----|--------------|--------|-------|------|--------|--------|------|------------|
| Param |    | F  | $\mathbf{C}$ | Result | Units | Dil. | Amount | Result | Rec. | Limit      |
| DRO   | Qe | Q# | 1            | 1470   | mg/Kg | 1    | 250    | 457    | 405  | 45.3 - 139 |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

|       |    |    |   | MSD    |       |      | Spike  | Matrix |      | Rec.       |     | RPD   |
|-------|----|----|---|--------|-------|------|--------|--------|------|------------|-----|-------|
| Param |    | F  | C | Result | Units | Dil. | Amount | Result | Rec. | Limit      | RPD | Limit |
| DRO   | Q= | Qa | 1 | 1310   | mg/Kg | 1    | 250    | 457    | 341  | 45.3 - 139 | 12  | 20    |

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

|             |     |     | MS     | MSD    |       |      | Spike  | MS   | MSD  | Rec.       |
|-------------|-----|-----|--------|--------|-------|------|--------|------|------|------------|
| Surrogate   |     |     | Result | Result | Units | Dil. | Amount | Rec. | Rec. | Limit      |
| n-Tricosane | Qsr | Qar | 194    | 190    | mg/Kg | 1    | 100    | 194  | 190  | 59.9 - 168 |

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# Calibration Standards

Standard (CCV-1)

QC Batch: 93641

Date Analyzed: 2012-08-05

Analyzed By: AR

|          |      |      |       | CCVs  | CCVs  | CCVs     | Percent  |            |
|----------|------|------|-------|-------|-------|----------|----------|------------|
|          |      |      |       | True  | Found | Percent  | Recovery | Date       |
| Param    | Flag | Cert | Units | Conc. | Conc. | Recovery | Limits   | Analyzed   |
| Chloride |      |      | mg/Kg | 100   | 100   | 100      | 85 - 115 | 2012-08-05 |

Standard (CCV-2)

QC Batch: 93641

Date Analyzed: 2012-08-05

Analyzed By: AR

|          |      |      |       | CCVs  | CCVs  | CCVs     | Percent  |            |
|----------|------|------|-------|-------|-------|----------|----------|------------|
|          |      |      |       | True  | Found | Percent  | Recovery | Date       |
| Param    | Flag | Cert | Units | Conc. | Conc. | Recovery | Limits   | Analyzed   |
| Chloride |      |      | mg/Kg | 100   | 99.6  | 100      | 85 - 115 | 2012-08-05 |

Standard (CCV-1)

QC Batch: 93642

Date Analyzed: 2012-08-05

Analyzed By: AR

|          |      |      |       | CCVs  | CCVs  | CCVs     | Percent  |            |
|----------|------|------|-------|-------|-------|----------|----------|------------|
|          |      |      |       | True  | Found | Percent  | Recovery | Date       |
| Param    | Flag | Cert | Units | Conc. | Conc. | Recovery | Limits   | Analyzed   |
| Chloride |      |      | mg/Kg | 100   | 99.0  | 99       | 85 - 115 | 2012-08-05 |

Standard (CCV-2)

QC Batch: 93642

Date Analyzed: 2012-08-05

Analyzed By: AR

|          |      |      |       | CCVs  | CCVs  | CCVs     | Percent  |            |
|----------|------|------|-------|-------|-------|----------|----------|------------|
|          |      |      |       | True  | Found | Percent  | Recovery | Date       |
| Param    | Flag | Cert | Units | Conc. | Conc. | Recovery | Limits   | Analyzed   |
| Chloride |      |      | mg/Kg | 100   | 101   | 101      | 85 - 115 | 2012-08-05 |

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Work Order: 12080318 COG/BC Federal #10 Page Number: 23 of 27

Lea Co., NM

Standard (CCV-1)

QC Batch: 93643

Date Analyzed: 2012-08-05

Analyzed By: AR

|          |      |      |       | CCVs  | CCVs  | CCVs     | Percent  |            |
|----------|------|------|-------|-------|-------|----------|----------|------------|
|          |      |      |       | True  | Found | Percent  | Recovery | Date       |
| Param    | Flag | Cert | Units | Conc. | Conc. | Recovery | Limits   | Analyzed   |
| Chloride |      |      | mg/Kg | 100   | 102   | 102      | 85 - 115 | 2012-08-05 |

Standard (CCV-2)

QC Batch: 93643

Date Analyzed: 2012-08-05

Analyzed By: AR

|          |      |      |       | CCVs  | CCVs  | CCVs     | Percent  |            |
|----------|------|------|-------|-------|-------|----------|----------|------------|
|          |      |      |       | True  | Found | Percent  | Recovery | Date       |
| Param    | Flag | Cert | Units | Conc. | Conc. | Recovery | Limits   | Analyzed   |
| Chloride |      | •    | mg/Kg | 100   | 98.5  | 98       | 85 - 115 | 2012-08-05 |

Standard (CCV-1)

QC Batch: 93714

Date Analyzed: 2012-08-07

Analyzed By: ZLM

|              |      |      |       | CCVs  | CCVs   | CCVs     | Percent  |            |
|--------------|------|------|-------|-------|--------|----------|----------|------------|
|              |      |      |       | True  | Found  | Percent  | Recovery | Date       |
| Param        | Flag | Cert | Units | Conc. | Conc.  | Recovery | Limits   | Analyzed   |
| Benzene      |      | 1    | mg/kg | 0.100 | 0.0890 | 89       | 80 - 120 | 2012-08-07 |
| Toluene      |      | 1    | mg/kg | 0.100 | 0.0882 | 88       | 80 - 120 | 2012-08-07 |
| Ethylbenzene |      | 1    | mg/kg | 0.100 | 0.0893 | 89       | 80 - 120 | 2012-08-07 |
| Xylene       |      | 1    | mg/kg | 0.300 | 0.269  | 90       | 80 - 120 | 2012-08-07 |

Standard (CCV-2)

QC Batch: 93714

Date Analyzed: 2012-08-07

Analyzed By: ZLM

|              |      |      | •     | CCVs  | CCVs   | CCVs     | Percent  |            |
|--------------|------|------|-------|-------|--------|----------|----------|------------|
|              |      |      |       | True  | Found  | Percent  | Recovery | Date       |
| Param        | Flag | Cert | Units | Conc. | Conc.  | Recovery | Limits   | Analyzed   |
| Benzene      |      | 1    | mg/kg | 0.100 | 0.0900 | 90       | 80 - 120 | 2012-08-07 |
| Toluene      |      | 1    | mg/kg | 0.100 | 0.0895 | 90       | 80 - 120 | 2012-08-07 |
| Ethylbenzene |      | 1    | mg/kg | 0.100 | 0.0880 | 88       | 80 - 120 | 2012-08-07 |
| Xylene       |      | 1    | mg/kg | 0.300 | 0.264  | 88       | 80 - 120 | 2012-08-07 |

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Lea Co., NM

Standard (CCV-3)

QC Batch: 93714

Date Analyzed: 2012-08-07

Analyzed By: ZLM

| Param        | Flag | Cert | Units | CCVs<br>True<br>Conc. | CCVs<br>Found<br>Conc. | CCVs<br>Percent<br>Recovery | Percent<br>Recovery<br>Limits | Date<br>Analyzed |
|--------------|------|------|-------|-----------------------|------------------------|-----------------------------|-------------------------------|------------------|
| Benzene      |      | 1    | mg/kg | 0.100                 | 0.0849                 | 85                          | 80 - 120                      | 2012-08-07       |
| Toluene      |      | 1    | mg/kg | 0.100                 | 0.0835                 | 84                          | 80 - 120                      | 2012-08-07       |
| Ethylbenzene |      | 1    | mg/kg | 0.100                 | 0.0822                 | 82                          | 80 - 120                      | 2012-08-07       |
| Xylene       |      | 1    | mg/kg | 0.300                 | 0.246                  | 82                          | 80 - 120                      | 2012-08-07       |

Standard (CCV-1)

QC Batch: 93715

Date Analyzed: 2012-08-07

Analyzed By: ZLM

| Param | ${f Flag}$ | Cert | Units | CCVs<br>True<br>Conc. | CCVs<br>Found<br>Conc. | CCVs<br>Percent<br>Recovery | Percent<br>Recovery<br>Limits | Date<br>Analyzed |
|-------|------------|------|-------|-----------------------|------------------------|-----------------------------|-------------------------------|------------------|
| GRO   |            | 1    | mg/Kg | 1.00                  | 0.842                  | 84                          | 80 - 120                      | 2012-08-07       |

Standard (CCV-2)

QC Batch: 93715

Date Analyzed: 2012-08-07

Analyzed By: ZLM

|       |      |      |       | CCVs  | CCVs  | CCVs     | Percent  |            |
|-------|------|------|-------|-------|-------|----------|----------|------------|
|       |      |      |       | True  | Found | Percent  | Recovery | Date       |
| Param | Flag | Cert | Units | Conc. | Conc. | Recovery | Limits   | Analyzed   |
| GRO   | ,    | 1    | mg/Kg | 1.00  | 0.847 | 85       | 80 - 120 | 2012-08-07 |

Standard (CCV-3)

QC Batch: 93715

Date Analyzed: 2012-08-07

Analyzed By: ZLM

|       |      |      |       | CCVs  | CCVs  | CCVs     | Percent  |            |
|-------|------|------|-------|-------|-------|----------|----------|------------|
|       |      |      |       | True  | Found | Percent  | Recovery | Date       |
| Param | Flag | Cert | Units | Conc. | Conc. | Recovery | Limits   | Analyzed   |
| GRO   |      | 1    | mg/Kg | 1.00  | 0.801 | 80       | 80 - 120 | 2012-08-07 |

Report Date: August 14, 2012 114-6401453

Work Order: 12080318 COG/BC Federal #10 Page Number: 25 of 27 Lea Co., NM

#### Standard (CCV-1)

QC Batch: 93797

Date Analyzed: 2012-08-10

Analyzed By: CM

|       |                 |      |       | CCVs  | CCVs  | CCVs     | Percent  |            |
|-------|-----------------|------|-------|-------|-------|----------|----------|------------|
|       |                 |      |       | True  | Found | Percent  | Recovery | Date       |
| Param | $\mathbf{Flag}$ | Cert | Units | Conc. | Conc. | Recovery | Limits   | Analyzed   |
| DRO   |                 | 1    | mg/Kg | 250   | 225   | 90       | 80 - 120 | 2012-08-10 |

#### Standard (CCV-2)

QC Batch: 93797

Date Analyzed: 2012-08-10

Analyzed By: CM

|       |      |      |       | CCVs  | CCVs  | CCVs     | Percent  |            |
|-------|------|------|-------|-------|-------|----------|----------|------------|
|       |      |      |       | True  | Found | Percent  | Recovery | Date       |
| Param | Flag | Cert | Units | Conc. | Conc. | Recovery | Limits   | Analyzed   |
| DRO   |      | 1    | mg/Kg | 250   | 228   | 91       | 80 - 120 | 2012-08-10 |

#### Standard (CCV-3)

QC Batch: 93797

Date Analyzed: 2012-08-10

Analyzed By: CM

|       |      |      |       | CCVs  | CCVs  | CCVs     | Percent  |            |
|-------|------|------|-------|-------|-------|----------|----------|------------|
|       |      |      |       | True  | Found | Percent  | Recovery | Date       |
| Param | Flag | Cert | Units | Conc. | Conc. | Recovery | Limits   | Analyzed   |
| DRO   |      | 1    | mg/Kg | 250   | 217   | 87       | 80 - 120 | 2012-08-10 |

Report Date: August 14, 2012 Work Order: 12080318 Page Number: 26 of 27 114-6401453 COG/BC Federal #10 Lea Co., NM

## **Appendix**

### Report Definitions

| Name | Definition                 |
|------|----------------------------|
| MDL  | Method Detection Limit     |
| MQL  | Minimum Quantitation Limit |
| SDL  | Sample Detection Limit     |

### **Laboratory Certifications**

|   | Certifying | Certification       | Laboratory    |
|---|------------|---------------------|---------------|
| C | Authority  | Number              | Location      |
| - | NCTRCA     | WFWB384444Y0909     | TraceAnalysis |
| - | DBE        | VN 20657            | TraceAnalysis |
| - | HUB        | 1752439743100-86536 | TraceAnalysis |
| - | WBE        | 237019              | TraceAnalysis |
| 1 | NELAP      | T104704219-12-8     | Lubbock       |

### Standard Flags

- F Description
- B Analyte detected in the corresponding method blank above the method detection limit
- H Analyzed out of hold time
- J Estimated concentration
- Jb The analyte is positively identified and the value is approximated between the SDL and MQL. Sample contains less then ten times the concentration found in the method blank. The result should be considered non-detect to the SDL.
- Je Estimated concentration exceeding calibration range.
- Qc Calibration check outside of laboratory limits.
- Qr RPD outside of laboratory limits
- Qs Spike recovery outside of laboratory limits.
- Qsr Surrogate recovery outside of laboratory limits.
  - U The analyte is not detected above the SDL

#### Result Comments

- Dilution due to excessive hydrocarbons.
- 2 Dilution due to excessive hydrocarbons.

#### Attachments

114-6401453

Work Order: 12080318 COG/BC Federal #10 Page Number: 27 of 27 Lea Co., NM

The scanned attachments will follow this page.

Please note, each attachment may consist of more than one page.

| PAGE: / OF: 2                               | ANALYSIS REQUEST | (Circle or Specify Method No.) | (Ext. to C35)   | ,624<br>,624<br>,624<br>,624<br>,83 Cq A | Ag As E Ag |         | 3                        | 5                                     |               | 9               | 5           | 9             | 5            | <b>3</b> | <b>3</b>    | >    | 10 Date: 8/1/12 | Y: (Cirčie)<br>BUS | HAND DELIVERED UPS OTHER: TETRA TECH CONTACT PERSON: Results by: | 1   | 1/K (ander Authorized: No | あるとはつからなったろうなるるのし                                    | Jet retains Pink copy - Accounting receives Gold Copy, - (RC) CON   |
|---|------------------|--------------------------------|---|--|--|---------|--------------------------|---------------------------------------|---------------|-----------------|-------------|---------------|--------------|----------|-------------|------|-----------------|--------------------|--|---|---------------------------|--|---|
| Analysis Request of Chain of Custody Becord |                  |                                | 1910 N. Big Spring St.<br>Midland, Texas 79705<br>(432) 682-4559 • Fax (432) 682-3946 | SITE MANAGER:                            | HIATHO:  | TE TIME | 20571838/1/2 5 X AH! O-1 | 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | 785 1 1 7.2.5 | 786 1 3-3.5 1 x | 787 1 1 1 X | 788   AH2 O-1 | 789 11 2.1.5 | 750 11 X | 731 1 3-3.5 | 5h-h | Times: 47/1/    | Date: 013112 a     | RÉCEIVEU BY: (Signature)   | LABORATORY: HECHANGE BY SERVING THE LABORATORY BY SERVING THE | PHONE:                    | 1638/37   Mandager septes if 1911 ouceds 5000 milks. | copies - Leboratory retains Yellow copy - Return Orginal copy to Te |

19t80318

| PAGE: 2 OF: 2 ANALYSIS REQUEST (Circle or Specify Method No.) | d Vr Pd Hg Se | DD. TX100<br>3 As Ba C.<br>10 BS C.<br>10 BS C.<br>11 B270/625 |  | y.                       | <b>&gt;</b>                  | 9         | <b>&gt;</b>     | 5-                                      |  |  | SAMPLED BY: (Print & Initial) A Date: 8/1/12 | SAMPLE SHIPPED BY: (Grole)  FEDEX BUS HAND FILINGEER LIDS OTHER | CT PERSON: | ME (W. M. C. HUSH Charges<br>Authorized: No       | - Heturn Orginal cody to Tetra Tech - Project Manager retains Pink copy - Accounting receives Gold copy.               |
|---|---------------|--|--|--------------------------|------------------------------|-----------|-----------------|---|--|--|--|---|------------|---|--|
| Analysis Request of Chain of Custody Record                   | <b>4</b>      | STE MANAGER: ES APROJECT NAME:                                 | 114-6400671 COC BC FOLLAL #10  LAB 1.D. DATE TIME EX COMPLEIDENTIFICATION  NUMBER 2012  AUGS  AUGS  AUGS  OUT  THE FILE FILE  AUGS  OUT  AUGS  AUGS  OUT  AUGS  OUT  AUGS  OUT  AUGS  OUT  AUGS  OUT  AUGS  AUGS  OUT  AUGS  AUGS  OUT  AUGS  OUT  AUGS  OUT  AUGS  OUT  AUGS  AUGS  OUT  AUGS  AUGS  AUGS  OUT  AUGS  OUT  AUGS  AUGS  AUGS  OUT  AUGS  AUGS | 743 811 S X AH3 O-1 11 X | X     1   ST-1   1   1   hbl | 795 1 1 x | 796 1 3-3.5 1 X | 1 X 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 |  |  | Time: At the Action of Separation            | 1,20  | Time:      | ADDRESS: STATE PHONE: ZIP: DATE: 6 4 T TIME: 9.50 | 3.03.5. Please fill out all copies - Laboratory retains Yillow copy - Return Orginal copy to Tetra Tech - Project Mana |

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