| ,                                   |                     | SI               | TE INFO         | RMATION            |   |
|-------------------------------------|---------------------|------------------|-----------------|--------------------|---|
|                                     | 1                   | Report           | Type: C         | losure Re          | port  |
| General Site Inf                    | ormation:           |                  |                 |                    |   |
| Site:                               |                     | Poptart 12 F     | ederal #4H      |                    |   |
| Company:                            |                     | COG Operat       | ing LLC         |                    |   |
| Section, Towns                      | hip and Range       | Sec 12           | T 19S           | R 31E              |   |
| Lease Number:                       |                     | API-30-015-3     |                 | -                  |   |
| County:                             |                     | Eddy Count       |                 |                    |   |
| GPS:                                |                     |                  | 32.68048°       | <u>N</u>           | 103.82900° W  |
| Surface Owner:                      |                     | Federal          |                 |                    |   |
| Mineral Owner: Directions:          |                     | From the inter-  |                 | 200 1 1141 / 200 1 | avel NORTH on CR 222f or apprx. 11.2 miles to   |
|                                     |                     | miles to unlock  | ked gate, conti | nue for additiona  | SOUTHEAST onto two track and continue for 2.2 all 0.5 miles, turn North 100 ft to location. |
| Release Data:                       |                     |                  |                 |                    |   |
| Date Released:                      |                     | 12/2/2013        |                 |                    |   |
| Type Release:                       |                     | Oil              |                 |                    |   |
| Source of Contar<br>Fluid Released: | nination:           | FWKO gaske       | t failure       |                    |   |
| Fluids Recovered                    | 4.                  | 9 bbls<br>0 bbls |                 |                    |   |
| Official Commu                      |                     | TO DDIS          |                 |                    |   |
| Name:                               | Robert McNeil       |                  |                 |                    | III. T  |
|                                     |                     | 0                |                 |                    | Ike Tavarez   |
| Company:<br>Address:                | COG Operating, LL   |                  |                 |                    | Tetra Tech  |
| Address:                            | One Concho Cente    |                  |                 |                    | 4000 N. Big Spring  |
| 0.0                                 | 600 W. Illinois Ave |                  | !               |                    | Ste 401   |
| City:                               | Midland Texas, 797  | 701              | -               |                    | Midland, Texas  |
| Phone number:                       | (432) 686-3023      | Attengent        |                 |                    | (432) 687-8110  |
| Fax:                                | (432) 684-7137      |                  |                 |                    |   |
| Email:                              | rmcneil@concho      | resources.com    |                 |                    | Ike.Tavarez@tetratech.com   |

| Depth to Groundwater:                     | Ranking Score       | Site Data |
|---|---------------------|-----------|
| <50 ft                                    | 20                  |           |
| 50-99 ft                                  | -10                 |           |
| >100 ft.                                  | 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       | 0.4- 0-4- |
| <200 ft.                                  |                     | Site Data |
| 200 ft - 1,000 ft.                        | 20                  |           |
| >1,000 ft.                                | 10                  |           |
| -1,000 II.                                |                     | 0         |
| Total Ranking Score:                      | 0                   |           |
|   |                     |           |
|   | ptable Soil RRAL (r | ng/kg)    |
| Benzene                                   | Total BTEX          | TPH       |
| 10  | 50                  | 5,000     |



July 16, 2014

Mr. Mike Bratcher Environmental Engineer Specialist Oil Conservation Division, District 2 811 S. First Street Artesia, New Mexico 88210

Closure Report for the COG Operating LLC., Poptart 12 Federal #4H Re: Tank Battery, Unit D, Section 12, Township 19 South, Range 31 East, **Eddy County, New Mexico.** 

Mr. Bratcher:

Tetra Tech, Inc. (Tetra Tech) was contacted by COG Operating LLC. (COG) to assess a spill from the Poptart 12 Federal #4H Tank Battery, Unit D, Section 12, Township 19 South, Range 31 East, Eddy County, New Mexico (Site). The spill site coordinates are N 32.68048°, W 103.82900°. 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 December 2, 2013, and released approximately nine (9) barrels of oil from a gasket on a free water knockout. To alleviate the problem, COG personnel replaced the gasket. Zero (0) barrels of standing fluids were recovered. The spill initiated on the pad measuring approximately 90'x5'. The initial C-141 form is enclosed in Appendix A.

#### Groundwater

No water wells were listed within Section 12. According to the NMOCD groundwater map, the average depth to groundwater in this area is greater than 300' 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 January 6, 2014, 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. 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 results of the sampling are summarized in Table 1. The auger hole locations are shown on Figure 3.

Referring to Table 1, none of the samples exceeded the RRAL for TPH and BTEX. Elevated chloride concentrations were detected in all of the auger holes. Auger hole (AH-2) was vertically defined and declined to 48.4 mg/kg at 2-2.5' below surface. The areas of AH-1 and AH-3 were not vertically defined, with bottom auger hole samples of 3,290 mg/kg at 4-4.5' and 1,160 mg/kg at 0-1', respectively.

#### **Remediation Activities**

On April 28, 2014, Tetra Tech supervised the removal impacted material as highlighted (green) in Table 1 and shown on Figure 4.

Prior to excavation of the soils, Tetra Tech installed backhoe trenches (T-1 and T-2) in the areas of AH-1 and AH-3 to define extents and confirm the detected chloride concentrations in the soils. The areas of T-1 (AH-1) and T-2 (AH-3) showed elevated chloride bottom samples of 2,120 mg/kg and 1,170 mg/kg at 10' below surface and were not vertically defined.



Auger hole (AH-2) was excavated to approximately 2.0' below surface. Based on the field data, the areas of auger holes (AH-1 and AH-3) were excavated 4.5' below surface and placed a clay material to cap area and prevent further migration of contaminates left in place. Confirmation samples were taken in the areas of each auger hole. The area of auger hole (AH-1) showed chloride concentrations of 608 mg/kg, 400 mg/kg, and 112 mg/kg at the North Sidewall, West Sidewall, and South Sidewall; respectively. The area of auger hole (AH-2) showed chloride concentrations of 1,790 mg/kg, 48.0 mg/kg, and 32.0 mg/kg at the North Sidewall, South Sidewall, and Bottom hole; respectively. The North Sidewall could not be excavated any further due to the equipment in the area. The area of auger hole (AH-3) showed chloride concentrations of 528 mg/kg, 16.0 mg/kg and 592 mg/kg at the North Sidewall, South Sidewall, and East Sidewall; respectively. Once the areas were excavated to the appropriate depths, the excavations were backfilled with clean soil to grade, and approximately 98 cubic yards of excavated material was hauled to proper disposal.

On May 14, 2014, Tetra Tech installed two (2) boreholes (BH-1 and BH-2) in order to vertically define the chloride impact in the areas of AH-1 and AH-3. The area of BH-2 (AH-3) showed a chloride high of 1,620 mg/kg at 6'-7' below surface, which significantly declined with depth to 147 mg/kg at 29'-30' below surface.

The chloride impact in the area of BH-1 (AH-1) was not vertically defined. The area showed a chloride spike at 39'-40' below surface of 3,720 mg/kg, which began to decline to 2,260 mg/kg at 49'-50' below surface. Deeper samples were not collected due to the sandy formation which collapsed the borehole. Based on the reported depth to groundwater (greater than 300'), limited impacted area and clay cap, the area does not appear to be an environmental concern.

#### Conclusion

Based on the assessment and remediation work performed at this site, COG requests closure of this spill issue. A final C-141 is enclosed in Appendix A. If you have any questions or comments concerning the assessment or the remediation activities for this site, please call me at (432) 682-4559.

Respectfully submitted,

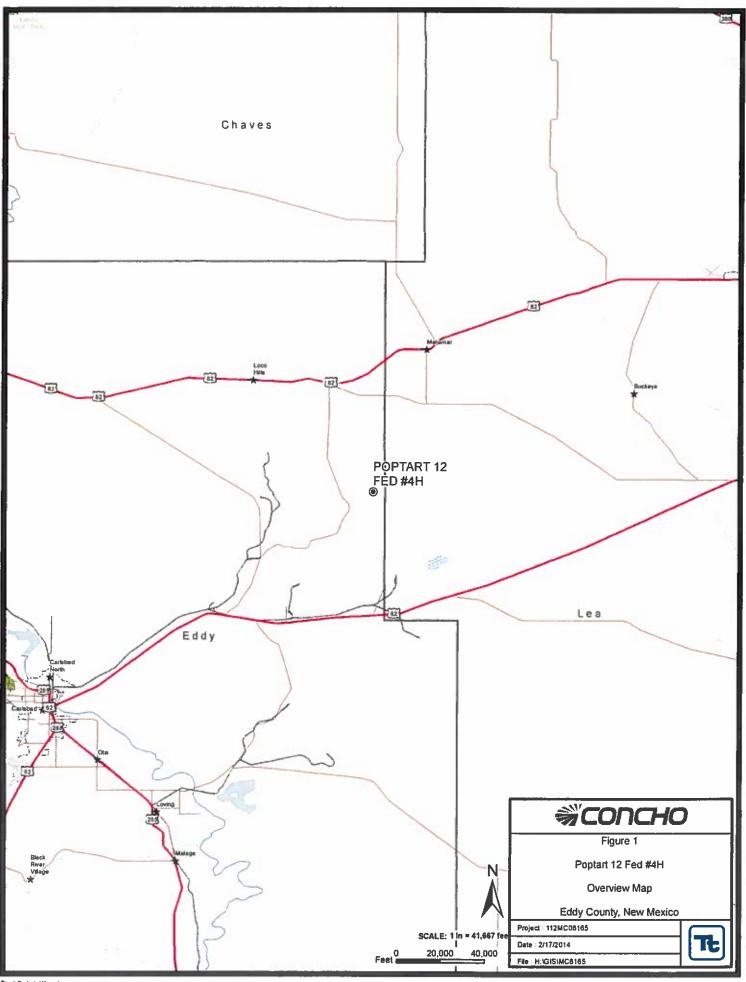
TETRA TECH

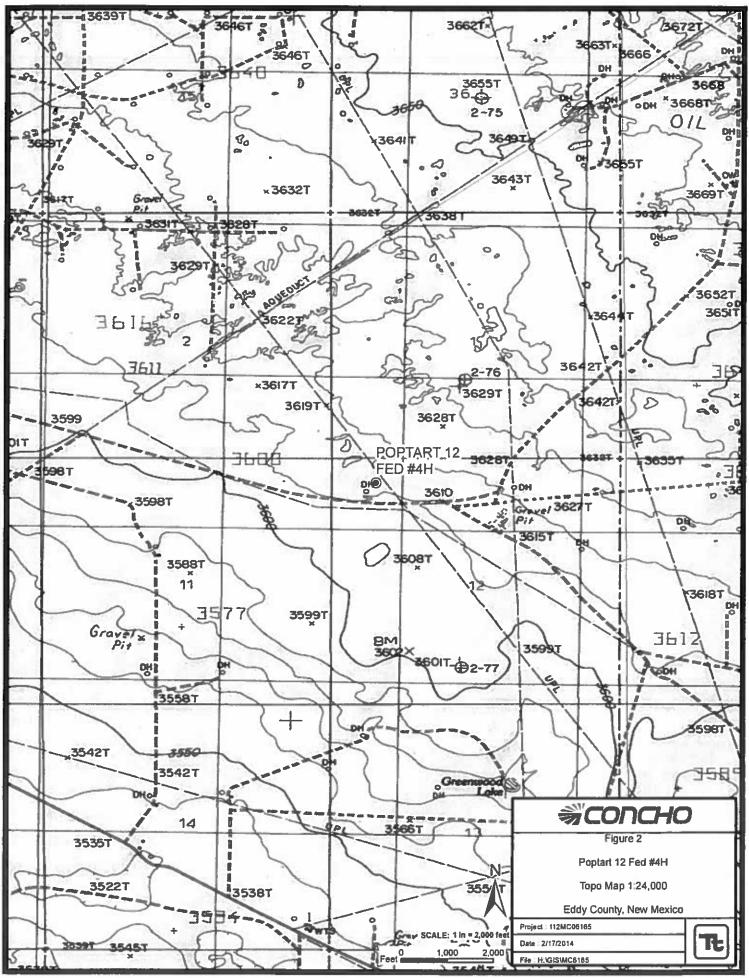
Clair Gonzales,

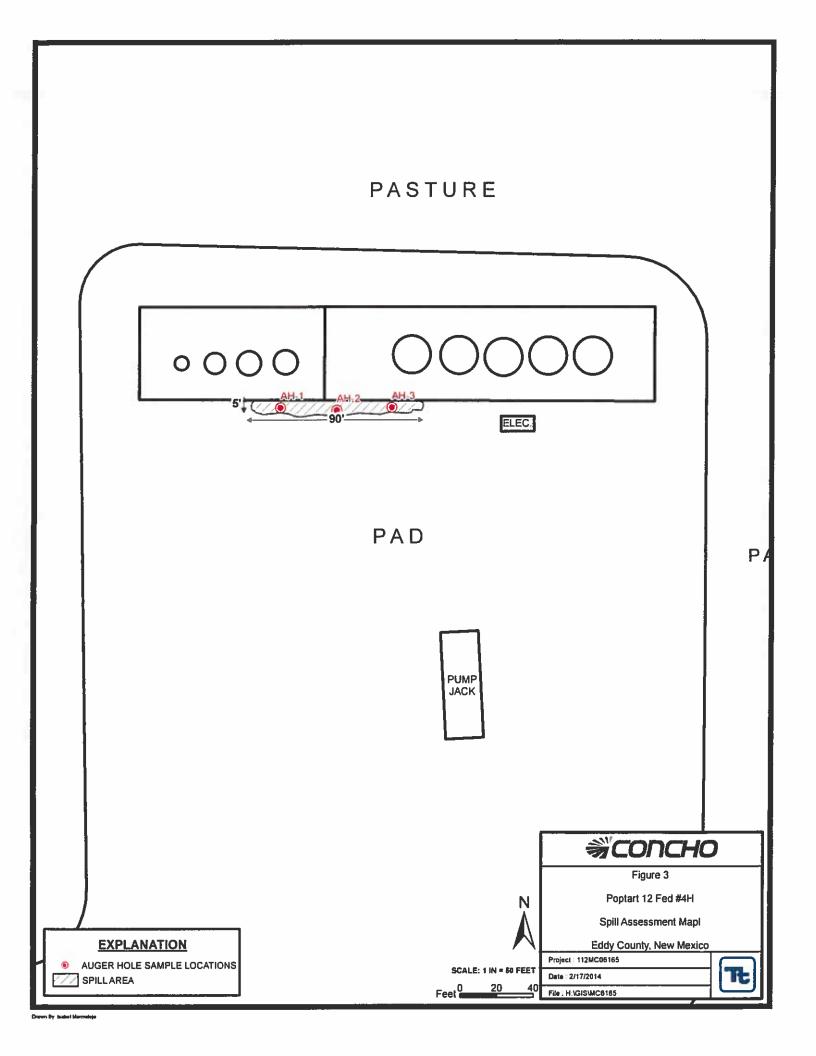
Geologist

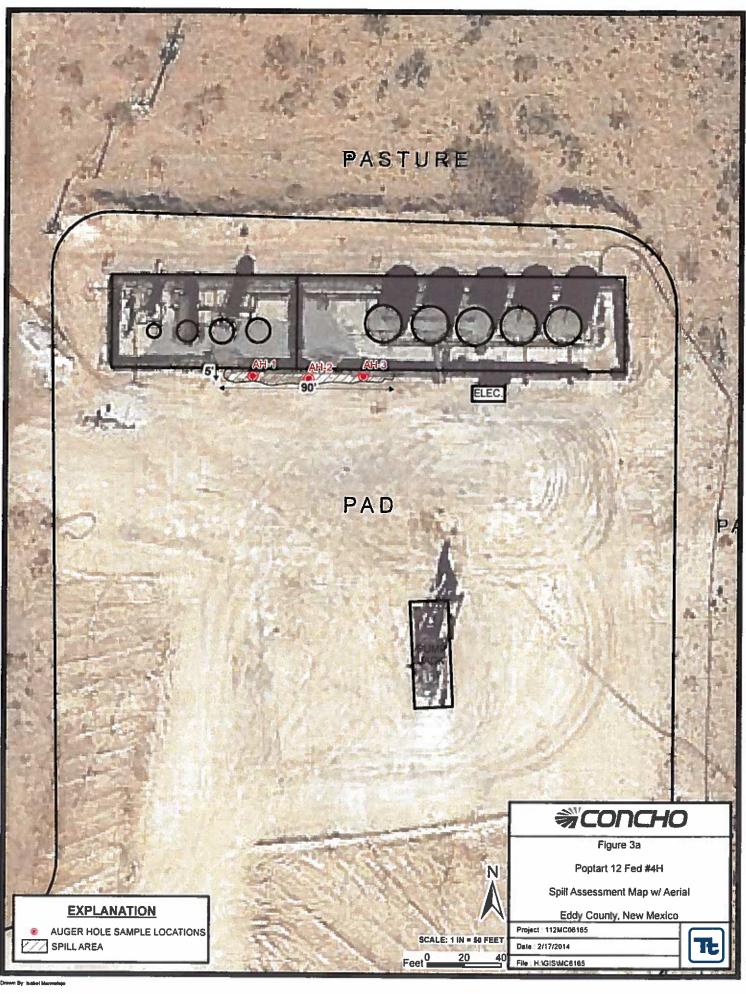
cc: Robert McNeil – COG cc: Mike Burton – BLM

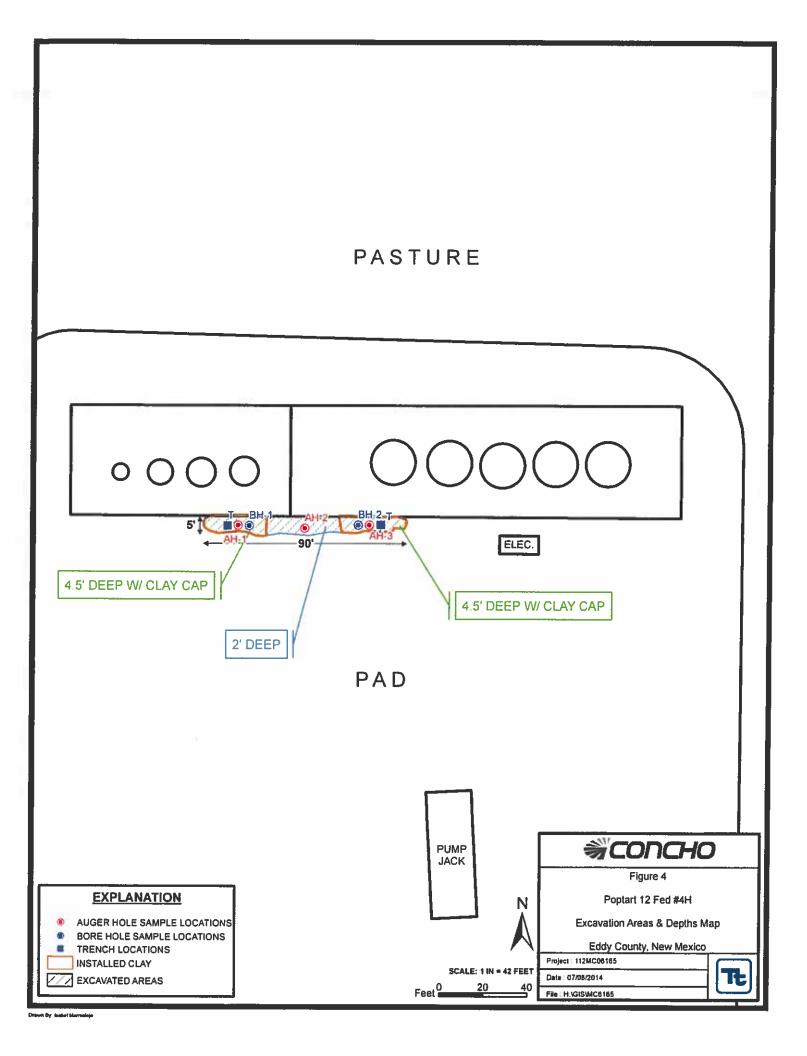
# Figures











## **Tables**

|                     |           | 920        |            |         |                 |       |             |       |         |         |              |         |         |          |
|---------------------|-----------|------------|------------|---------|-----------------|-------|-------------|-------|---------|---------|--------------|---------|---------|----------|
| Sample ID           | Sample    | Sample     | Rottom     | Soil    | Soil Status     |       | TPH (mg/kg) | 9)    | Benzene | Toluene | Ethlybenzene | Xylene  | - A     | Chloride |
|                     | Date      | Depth (ft) | Depth (ft) | In-Situ | In-Situ Removed | GRO   | DHO         | Total | (mg/kg) | (mg/kg) | (mg/kg)      | (mg/kg) | (mg/kg) | (mg/kg)  |
| AH-1                | 1/6/2014  | 0-1        | -          | ×       |                 | <4.00 | <50.0       | <50.0 | <0.0200 | <0.0200 | <0.0200      | <0.0200 | <0.0200 | 67.8     |
|                     |           | 2-2.5      | •          | X       | 4               | ŀ     |             | •     | •       | •       | ,            |         |         | <20.0    |
|                     | •         | 3-3.5      | ,          | ×       |                 | ,     | -           | - 1   | -       |         |              |         |         | 1,340    |
|                     | -         | 4-4.5      | ı          | ×       |                 | -     | -           |       | •       | ٠       | 1            | '       |         | 3,290    |
| AH-1 North Sidewall | 4/29/2014 | . 1        | •          | ×       |                 |       |             |       |         |         | -            | ,       | ,       | 608      |
| AH-1 West Sidewall  | 4/29/2014 | ,          | •          | ×       |                 | -     | •           | ,     | ,       |         | ,            | ٠       | '       | 400      |
| AH-1 South Sidewall | 4/29/2014 | ,          |            | ×       |                 | •     | ١           |       | ,       | ı       | •            | •       | -       | 112      |
| F                   | 4/29/2014 | 0          |            | ×       |                 | ŀ     | •           |       | ,       |         | •            | •       |         | 704      |
|                     | *         | 2          |            | ×       |                 |       | ,           | ,     |         | •       |              | ٠       |         | 240      |
|                     | м         | 4          | -          | ×       |                 | ,     | ,           |       | ,       |         | ,            |         | ,       | 1,220    |
|                     |           | 9          | -          | ×       |                 |       | -           |       |         |         |              |         | ,       | 3,080    |
|                     |           | 8          | -          | ×       |                 |       | -           |       |         |         |              | ,       | ,       | 2,240    |
|                     |           | 10         | ,          | ×       |                 |       | -           | -     |         | ,       |              | ,       |         | 2,120    |
| BH-1                | 5/14/2014 | 4-5        | ,          | ×       |                 | •     |             |       |         |         |              |         | ,       | 700      |
|                     | 86        | 2-9        | •          | ×       |                 |       |             | ,     |         | ,       |              |         |         | 850      |
|                     |           | 9-10       | •          | ×       |                 |       | ,           | ,     |         | ,       | 1            | ٠       |         | 1,000    |
|                     | •         | 14-15      | -          | ×       |                 | -     |             | ٠     |         |         |              |         |         | 1,100    |
|                     | =         | 19-20      |            | ×       |                 |       | -           | ٠     |         |         | ٠            | ,       | ,       | 950      |
|                     | 2         | 29-30      | •          | ×       |                 | ٠     | -           | -     | •       |         | ٠            |         | •       | 2,200    |
|                     | -         | 39-40      |            | ×       |                 | •     | -           | -     | ,       | -       | ,            |         | ,       | 3,720    |
|                     | 2         | 49-50      |            | ×       |                 | •     | -           | ٠     | ,       | ٠       | -            | -       | -       | 2,260    |
| AH-2                | 1/6/2014  | 0-1        | -          | ×       |                 | <20.0 | 320         | 320   | <0.100  | <0.100  | <0.100       | <0.100  | <0.100  | 53.2     |
| 2 21                | -         | 1-1.5      | -          | ×       |                 | <20.0 | 141         | 141   |         |         | 9            | ,       |         | 1,390    |
|                     |           | 2-2.5      | 1          | ×       |                 | <4.00 | <50.0       | <50.0 | •       | -       |              | -       | -       | 48.4     |
| AH-2 North Sidewall | 4/29/2014 | ,          |            | ×       |                 | ,     | 1           | •     | -       | •       |              | -       |         | 1,790    |
| AH-2 South Sidewall | 4/29/2014 | ٠          | ,          | ×       |                 | ı     | •           | •     | -       | •       | ٠            |         | -       | 48.0     |
| AH-2 Bottom Hole    | 4/29/2014 | 2          | -          | ×       |                 |       |             |       |         |         |              | ,       | '       | 32.0     |
|                     |           |            |            |         |                 |       |             |       |         |         |              |         |         |          |

Table 1
COG Operating LLC.
Poptart 12 Federal #4H
Eddy County, New Mexico

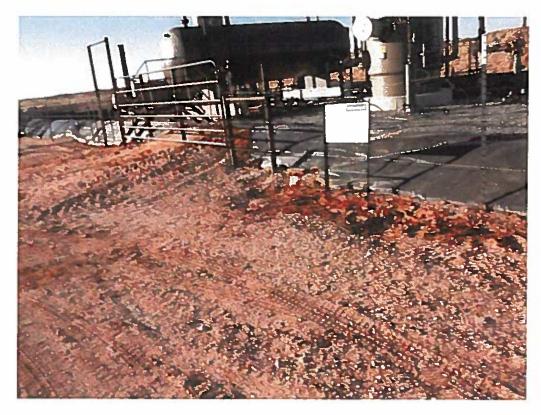
| Comple ID           | Sample    |            | Excavation |         | Soil Status     | T     | TPH (mg/kg)            | 6)    | Benzene | Toluene | Ethlybenzene | Xvlene  | Total           | Chlorida |
|---------------------|-----------|------------|------------|---------|-----------------|-------|------------------------|-------|---------|---------|--------------|---------|-----------------|----------|
| 2                   | Date      | Depth (ft) | Depth (ft) | In-Situ | In-Situ Removed | GRO   | DRO                    | Total | (mg/kg) | (mg/kg) | (mg/kg)      | (mg/kg) | BTEX<br>(mg/kg) | (mg/kg)  |
| AH-3                | 1/6/2014  | 0-1        |            | ×       |                 | <4.00 | 92.1                   | 92.1  | <0.0200 | <0.0200 | <0.0200      | <0.0200 |                 | 1.160    |
| AH-3 North Sidewall | 4/29/2014 | ď          |            | ×       |                 |       |                        |       | ,       |         |              |         |                 | 528      |
| AH-3 South Sidewall | 4/29/2014 | ,          | ,          | ×       |                 | ,     |                        | ,     |         | ,       |              | ,       |                 | 16.0     |
| AH-3 East Sidewall  | 4/29/2014 |            | ,          | ×       |                 |       |                        |       | •       |         |              |         |                 | 592      |
| T-2                 | 4/29/2014 | 0          |            | ×       |                 |       |                        | 1     | H       |         |              | -       | ,               | 5,920    |
|                     | •         | 2          |            | ×       |                 | •     |                        |       |         | 1       | ,            |         |                 | <16.0    |
|                     | 2         | 4          |            | ×       |                 |       |                        |       |         |         | ,            | ,       |                 | 448      |
|                     | •         | 9          | ,          | ×       |                 |       | '                      |       |         | ,       |              | ,       | ,               | 2,040    |
|                     | =         | 8          | •          | ×       |                 |       |                        |       |         |         | ,            | ,       |                 | 1,330    |
|                     | •         | 10         | •          | ×       |                 | ١,    | $\left[ \cdot \right]$ |       | ŧ       |         |              |         |                 | 1,170    |
| BH-2                | 5/14/2014 | 4-5        | -          | ×       |                 | ļ .   |                        | [·    | -       |         |              |         |                 | 7        |
|                     | *         | 6.7        |            | >       |                 |       |                        |       |         |         | ,            |         | •               | Ocn'     |
|                     |           | ;          |            |         |                 |       | •                      |       | •       | '       | •            |         | •               | 1,620    |
|                     | •         | 9-10       |            | ×       |                 |       | ٠                      | '     | •       | •       |              | ,       | ,               | 1,570    |
|                     | •         | 14-15      | •          | ×       |                 | -     |                        | ,     |         |         |              | '       |                 | 735      |
|                     | •         | 19-20      | •          | ×       |                 | ,     | ,                      | ,     |         |         | •            |         |                 | 539      |
|                     | =         | 24-25      | •          | ×       |                 | ,     |                        | ,     |         | ,       | ,            |         |                 | <20.0    |
|                     | 3         | 29-30      |            | ×       |                 |       |                        | ٠     |         |         |              |         |                 | 147      |

(-) Not Analyzed

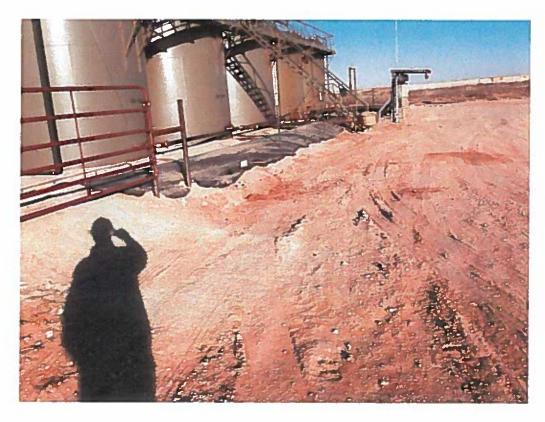
(BEB) Below Excavation Bollom

# Photos



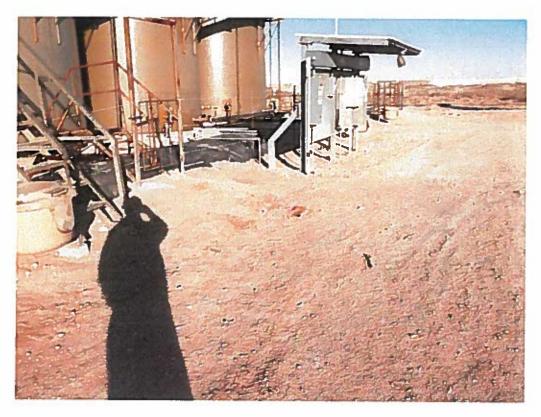


View North - Area of AH-1



View East - Area of AH-3



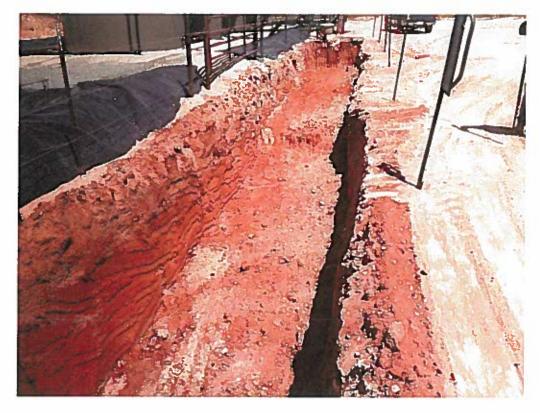


View East - Area of AH-.3



**Typical Trench** 





View East - Excavated area of AH-1



View East – Excavated area of AH-2 and AH-3

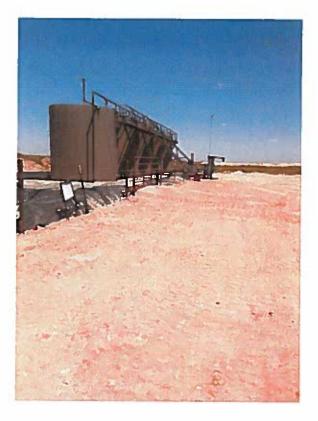
# TETRA TECH



View West - Clay lined area of AH-3



View West - Clay lined area of AH-1



View East – Backfilled areas of AH-1, AH-2, and AH-3



View East - Areas of BH-1 and BH-2

# Appendix A

District 1 1625 N. French Dr., Hubbs, NM 88240 District II 1301 W. Grand Avenue, Anesia, NM 88210 District III 1000 Rio Brazos Road, Aztec, NM 87410 District IV 1220 S. St. Francis Dr., Santa Fe, NM 87505

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

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505 Form C-141 Revised October 10, 2003 Johnit 2 Copies to appropriate

Submit 2 Copies to appropriate District Office in accordance with Rule 116 on back side of form

#### Release Notification and Corrective Action

|  | OPERATOR                                  | 🛛 Initial Report 📗 Final Report                  |
|--|---|--|
| Name of Company COG OPERATING LLC  | Contact Robe                              | ert McNeill                                      |
| Address 600 West Illinois Avenue, Midland, TX 79701  | Telephone No. 432                         | -230-0077  |
| Facility Name Poptart 12 Federal #004H   | Facility Type Tar                         | ık Battery                                       |
| Surface Owner Federal Mineral Owner  | r   | Lease No. (API#) 30-015-39712                    |
| LOCATIO  | ON OF RELEASE                             |  |
|  | ON OF RELEASE                             |  |
| Unit Letter Section Township Range Feet from the Nor D 12 19S 31E  | th South Line   Feet from the   E         | ast/West Line   County   Eddy                    |
| Latitude 32.68048  | <b>Longitude</b> 103.82900                |  |
|  | E OF RELEASE                              |  |
| Type of Release Oil  | Volume of Release 9bbls                   | Volume Recovered Obbls                           |
| Source of Release Gasket on FWKO   | Date and Hour of Occurrence<br>12-02-2013 | Date and Hour of Discovery<br>12-02-2013 12:30pm |
| Was Immediate Notice Given?  | If YES, To Whom?                          | ( 12-02-2013   12:30pm                           |
| ☐ Yes ☒ No ☐ Not Require   |   |  |
| By Whom?   | Date and Hour                             |  |
| Was a Watercourse Reached?   | If YES, Volume Impacting the              | Watercourse.                                     |
| ☐ Yes ☒ No   |   |  |
| If a Watercourse was Impacted, Describe Fully.*  |   |  |
| Describe Cause of Problem and Remedial Action Taken.*  |   |  |
| A gasket failed on a FWKO. Replaced the gasket on the FWKO.  |   |  |
| Describe Area Affected and Cleanup Action Taken.*  |   |  |
| I to this Military Service and the service of the s |   |  |
| Initially 9bbls of oil were released from a gasket that failed on a FWKO Concho will have the spill site sampled to delineate any possible contan  | . We were unable to recover any flui      | ds. All free fluids have been recovered.         |
| NMOCD/BLM for approval prior to any significant remediation work.  | manon nom the tricase and see will        | present a remediation work plan to the           |
| I hereby certify that the information given above is true and complete to  | the best of my beautales and under        | erional that automate to NIMOCD and a seed       |
| regulations all operators are required to report and/or file certain release   | notifications and perform corrective      | estions for releases which may endanger          |
| public health or the environment. The acceptance of a C-141 report by  | the NMOCD marked as "Final Repor          | rt" does not relieve the operator of liability   |
| should their operations have failed to adequately investigate and remedi   | ate contamination that pose a threat t    | o ground water, surface water, human health      |
| or the environment. In addition, NMOCD acceptance of a C-141 report federal, state, or local laws and/or regulations.  | does not relieve the operator of resp     | onsibility for compliance with any other         |
| reserved states of treat farts afficient (CESSIARIONS.   | OII CONSE                                 | RVATION DIVISION                                 |
|  | <u> </u>                                  | KANTON DIAIDIN                                   |
| Signature: Kel # Men   | - 6                                       |  |
| Printed Name: Robert Grubbs Jr.  | Approved by District Supervisor:          |  |
| Title: Senior Environmental Coordinator  | Approval Daie:                            | Expiration Date:                                 |
| E-mail Address: rgrubbs@concho.com   | Conditions of Approval:                   | Attached   |
| Date: 12-11-2013 Phone: 432-661-6601   |   | 2 standards []                                   |
| Attach Additional Sheets If Necessary  |   |  |

District 1
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV

1220 S. St. Francis Dr., Santa Fe, NM 87505

\* Attach Additional Sheets If Necessary

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

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505 Revised October 10, 2003 Submit 2 Copies to appropriate

Form C-141

Submit 2 Copies to appropriate District Office in accordance with Rule 116 on back side of form

☐ Initial Report

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

**OPERATOR** 

| Name of Co   |   |   |   |   |                              | Contact Ro                                | bert McNeil  |   |  |
|--|---|---|---|---|------------------------------|---|--|---|--|
| Address 60   | 0 West III  | inois Avenu   | e, Midla                                | ind, Texas 7970   | 1   '                        | Telephone N                               | Vo. (432) 230-0  | 077   |  |
| Facility Nan   | ne Poptari  | 12 Federal  | #4H                                     |   |                              |   | e Tank Batter  |   | 120  |
|  |   | -02   |   | 1400000 00  |                              |   |  |   |  |
| Surface Ow   | ner: Feder  | al  |   | Mineral Ov  | vner                         |   |  | Lease   | No. (API#) 30-015-39712  |
|  |   |   |   | LOCA'   | TION                         | OF REI                                    | LEASE  |   |  |
| Unit Letter<br>D                                       | Section<br>121  | Township<br>19S   | Range<br>31E                            |   |                              | South Line                                | Feet from the  | East/West Line  | County<br>Eddy   |
|  | 1000 1000   |   | L                                       | atitude N 32.68   |                              | Longitud                                  |  | ) "   |  |
| Type of Relea  | se: Oil   |   |   |   |                              | Volume of                                 | Release 9 bbls   | Volume  | Recovered 0 bbls   |
| Source of Rel  | ease  |   |   |   |                              | Date and H                                | our of Occurrence  | e Date and  | Hour of Discovery  |
| Gasket on FV   |   |   |   |   |                              | 12-02-2013                                |  | 12-02-2   | 013 12:30 pm   |
| Was Immedia  | te Notice C   |   |   |   |                              | If YES, To                                | Whom?  |   |  |
|  |   |   | Yes 🖂                                   | No 🖾 Not Req  | uired                        |   |  |   |  |
| By Whom?   |   |   |   |   |                              | Date and H                                | our  |   |  |
| Was a Watero   | ourse Reac  | hed?  |   |   |                              | If YES, Vo                                | lume Impacting th  | ne Watercourse.   |  |
|  |   |   | Yes 🛛                                   | No  |                              | N/A                                       |  |   |  |
| If a Watercou  | rse was Imp   | acted, Descri   | be Fully.*                              |   |                              | ,   |  |   |  |
|  |   |   |   |   |                              |   |  |   |  |
| D 11 C   | C D 11  | 1.0   | 1. 1. A                                 | <b>77.1</b> **  |                              |   |  |   |  |
| Describe Caus  | se of Proble  | m and Remed   | lial Actior                             | Taken.*   |                              |   |  |   |  |
| A gasket faile   | d on a FWI  | CO. Replaced  | the gaske                               | t   |                              |   |  |   |  |
| Describe Area Affected and Cleanup Action Taken.*      |   |   |   |   |                              |   |  |   |  |
| samples to de<br>clean backfill                        | Initially 9 bbls of oil were released from a gasket that failed on a FWKO. None of the fluids were recovered. Tetra Tech inspected site and collected samples to define spills extent. Soil that exceeded RRAL was removed and hauled away for proper disposal. Site was then brought up to surface grade with clean backfill material. Tetra Tech prepared closure report and submitted to NMOCD for review. |   |   |   |                              |   |  |   |  |
| regulations all<br>public health of<br>should their of | operators a<br>or the envir<br>perations ha<br>ment. In ac  | are required to<br>onment. The<br>ave failed to a<br>ddition, NMO | report an acceptanc dequately CD accept | d/or file certain rel<br>e of a C-141 report<br>investigate and rer | ease no<br>by the<br>nediate | otifications and NMOCD made contamination | d perform correct<br>arked as "Final Re<br>on that pose a thre<br>the operator of re | ive actions for re<br>port" does not re<br>at to ground wate<br>esponsibility for | suant to NMOCD rules and<br>leases which may endanger<br>lieve the operator of liability<br>er, surface water, human health<br>compliance with any other |
| Signature:   |   |   | 2                                       | A   |                              |   |  | SERVATION   | DIVISION   |
| Printed Name   | Ike Tavare  | z A   | garet                                   | to coc  | ) /                          | Approved by                               | District Superviso   | r:  |  |
| Title: Senior F  | roject Man  |   |   |   |                              | Approval Date                             | 3*   | Expiration  | Date:  |
| E-mail Addres  | s: ike.tavar  | ez@tetratech.   | com                                     |   | _  0                         | Conditions of                             | Approval:  |   | Attached   |
| Date:  | 7-16  | . jef   | Phone:                                  | (432) 687-8110  |                              |   |  |   |  |

# Appendix B

# Water Well Data Average Depth to Groundwater (ft) COG -Poptart 12 Federal #4H Eddy County, New Mexico

|    | 18 S                       | outh      |    | 30 East       |               | _    |          | 18 9      | South | 3     | 1 Eas     | t          |                 | 18        | South    | :         | 32 Eas | t         |
|----|----------------------------|-----------|----|---------------|---------------|------|----------|-----------|-------|-------|-----------|------------|-----------------|-----------|----------|-----------|--------|-----------|
| 5  | 5                          | 4         | 3  | 2             | 1             | Carl | 6<br>bad | 5         | 4     | 3     | 2         | 1          | 6               | 5         | 4        | 55 3      | 2      | 1         |
| 7  | 6                          | 9         | 10 | 11            | 12            | 1    | 7        | 8         | 9     | 10    | 11        | 12         | 7 460           | 8         | 9        | 10        | 11     | 12        |
| 18 | 17                         | 16        | 15 | 14            | 13            | 1    | 18       | 17        | 16    | 15 98 | 14        | 13         | <b>62</b><br>18 | 17        | 16       | 15        | 14     | 13        |
| 19 | 20                         | 21        | 22 | 23 44         | 24            | ┨    | 19       | 20        | 21    | 22    | 23        | 24         | 19              | 20        | 84<br>21 | 22        | 23     | 24        |
| 30 | 29                         | 28        | 27 | 26            | 25            | -    | 30       | 29        | 28    | 27    | 26        | 25         | 30              | 164       | 28       | 429<br>27 | 26     | 25        |
|    |                            |           |    |               |               | ]    |          |           |       |       | L.        |            |                 |           |          |           |        | 23        |
| 31 | 32                         | 33        | 34 | 35            | 36            | ]    | 31       | 32        | 33    | 34    | 35<br>261 | 36         | 31              | 32        | 33       | 34<br>117 | 35     | 36        |
|    | 19 Sc                      | outh      |    | 30 East       |               | _    |          | 19 9      | outh  | 31    | l East    | 1          |                 | 19 9      | South    | 2000      | 2 Eas  | t         |
| i  | 5                          | 4         | 3  | 2             | 1             | ]    | 6        | 5<br>SITE | 4     | 3     | 2         | 1          | 6               | 5         | 4        | 3         | 2      | 1         |
| ,  | 8                          | 9         | 10 | 11            | 12            |      | 7        | 8         | 9     | 10    | 11        | 12<br>SITE | 7               | 8         | 9        | 10        | 11     | 12        |
| 8  | 17                         | 16        | 15 | 14            | 13            | 1    | 18       | 17        | 16    | 15    | 14        | 13         | 18              | 17        | 16       | 15        | 14     | 13 13     |
| 9  | 20                         | 21        | 22 | 23            | 24            | 1 1  | 19       | 20        | 21    | 22    | 23        | 24         | 19              | 20        | 21       | 22        | 23     | dry<br>24 |
| 10 | 29                         | 28        | 27 | 26            | 25            |      | 30       | 29        | 28    | 27    | 26        | 25         | 102<br>30       | 345<br>29 | 28       | 27        | 26     | 25        |
| 1  | 32                         | 33        | 34 | 35            | 36            | 1    | 31       | 32        | 33    | 34    | 35        | 36         | 31              | 32        | 33       | 34        | 35     | 36        |
| 15 |                            |           |    |               |               | J i  |          |           | 101   |       |           | 130        |                 |           |          | 250       |        |           |
|    | 20 Sc                      |           |    | 0 East        |               |      |          | 20 S      | outh  | 31    | East      | <u> </u>   |                 | 20 5      | outh     | 3         | 2 Easi | t         |
|    | 5 3.5                      | 4         | 6  | 2             | 1             |      | 6        | 5         | 4     | 3     | 2         | 1          | 6               | 5         | 4        | 3         | 2      | 1 21.8    |
|    | 8                          | 9         | 10 | 11            | 12            |      | 7        | 8         | 9     | 10    | 11        | 12         | 7               | 6         | 9        | 10        | 11     | 12        |
| 8  | 17                         | 16        | 15 | 14            | 13            |      | 18       | 17        | 16    | 15    | 14        | 13         | 18              | 17        | 16       | 15        | 14     | 13        |
| 9  | 20                         | 29<br>21  | 22 | 23            | 24            |      | 19       | 20        | 21    | 22    | 23        | 24         | 19              | 20        | 21       | 22        | 23     | 24        |
| 0  | 29<br>29                   | 150<br>28 | 27 | 26            | 25            |      | 30       | 29        | 28    | 27    | 26        | 25         | 30              | 29        | 28       | 27        | 26     | 25        |
|    |                            |           |    |               |               |      |          |           |       |       |           |            | 9.9             | 23        |          | 12.3      | 20     | 25        |
| 1  | US 5/2-                    | A 100     | 34 | 35            | 36            |      | 31       | 32        | 33    | 34    | 35        | 36 80      | 31              | 32        | 33       | 34        | 35     | 36<br>46  |
| 31 | 32<br>170<br>New M<br>USGS |           |    | 35<br>Enginee | 36<br>rs Well |      | 31       | 32        | 33    | 34    | 35        | 36 80      | 9.9             | 32        | 33       |           | 35     |           |

Field water level

New Mexico Water and Infrastructure Data System

# Appendix C

#### **Summary Report**

Work Order: 14011003

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

Report Date: January 17, 2014

Work Order: 14011003

Project Location: Eddy Co, NM

Project Name: COG/Poptart 12 Federal #4H

Project Number: 112MC06165

|        |              |        | Date       | Time  | Date       |
|--------|--------------|--------|------------|-------|------------|
| Sample | Description  | Matrix | Taken      | Taken | Received   |
| 351111 | AH-1 0-1'    | soil   | 2014-01-06 | 00:00 | 2014-01-09 |
| 351112 | AH-1 2-2.5'  | soil   | 2014-01-06 | 00:00 | 2014-01-09 |
| 351113 | AII-1 3-3.5' | soil   | 2014-01-06 | 00:00 | 2014-01-09 |
| 351114 | AH-1 4-4.5'  | soil   | 2014-01-06 | 00:00 | 2014-01-09 |
| 351115 | AH-2 0-1'    | soil   | 2014-01-06 | 00:00 | 2014-01-09 |
| 351116 | AH-2 1-1.51  | soil   | 2014-01-06 | 00:00 | 2014-01-09 |
| 351117 | AH-2 2-2.5'  | soil   | 2014-01-06 | 00:00 | 2014-01-09 |
| 351118 | AH-3 0-1'    | soil   | 2014-01-06 | 00:00 | 2014-01-09 |

| [                    |          |          | 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) |
| 351111 - AH-1 0-1'   | < 0.0200 | < 0.0200 | < 0.0200     | < 0.0200 | <50.0                | <4.00   |
| 351115 - AH-2 0-1'   | < 0.100  | < 0.100  | < 0.100      | < 0.100  | 320 Q.               | <20.0   |
| 351116 - AH-2 1-1.5' |          |          |              | -        | 141 q.               | <20.0   |
| 351117 - AH-2 2-2.5' |          |          |              |          | <50.0 Q <sub>0</sub> | <4.00   |
| 351118 - AH-3 0-1'   | < 0.0200 | < 0.0200 | < 0.0200     | < 0.0200 | 92.1 q.              | <4.00   |

Sample: 351111 - AH-1 0-1'

| Param    | Flag | Result | Units | RL |
|----------|------|--------|-------|----|
| Chloride |      | 67.8   | mg/Kg | 4  |

Sample: 351112 - AH-1 2-2.5'

continued ...

| Report Date: Januar               | y 17, 2014        | Work Order: 14011003 | Pag            | ge Number: 2 of 2 |
|-----------------------------------|-------------------|----------------------|----------------|-------------------|
| sample 351112 contin              | nucd              |                      |                |                   |
| Param                             | Flag              | Result               | Units          | RL                |
| Param                             | Flag              | Result               | Units          | RL                |
| Chloride                          |                   | <20.0                | mg/Kg          | 4                 |
| Sample: 351113                    | AH-1 3-3.5'       |                      |                |                   |
| Param                             | Flag              | Result               | Units          | RL                |
| Chloride                          |                   | 1340                 | mg/Kg          | 4                 |
| Sample: 351114                    | AH-1 4-4.5'       |                      |                |                   |
| Param                             | Flag              | Result               | Units          | RL                |
| Chloride                          |                   | 3290                 | mg/Kg          | 4                 |
| Sample: 351115 - A Param Chloride | AH-2 0-1'<br>Flag | Result<br>53.2       | Units<br>mg/Kg | RL<br>4           |
| Sample: 351116 - A                | AH-2 1-1.5'       |                      |                |                   |
| Param                             | Flag              | Result               | Units          | RL                |
| Chloride                          | 10000             | 1390                 | mg/Kg          | 4                 |
| Sample: 351117 - A                | AH-2 2-2.5'       |                      |                |                   |
| Param                             | Flag              | Result               | Units          | RL                |
| Chloride                          |                   | 48.4                 | mg/Kg          | 4                 |
| Sample: 351118 - 2                | AH-3 0-1'         |                      |                |                   |
| Param                             | Flag              | Result               | Units          | RL                |
| Chloride                          |                   | 1160                 | mg/Kg          | 4                 |

Report Date: May 21, 2014 Work Order: 14051610 Page Number: 1 of 3

#### **Summary Report**

Ike Tavarez Tetra Tech 1901 N. Big Spring St. Midland, TX 79705

Report Date: May 21, 2014

Work Order: 14051610

Project Location: Eddy Co, NM

Project Name: COG/Poptart 12 Federal #4II

Project Number: 112MC06165

|        |             |        | Date       | Time  | Date       |
|--------|-------------|--------|------------|-------|------------|
| Sample | Description | Matrix | Taken      | Taken | Received   |
| 363210 | BH-1 4-5'   | soil   | 2014-05-14 | 00:00 | 2014-05-16 |
| 363211 | BH-1 6-7'   | soil   | 2014-05-14 | 00:00 | 2014-05-16 |
| 363212 | BH-1 9-10'  | soil   | 2014-05-14 | 00:00 | 2014-05-16 |
| 363213 | BH-1 14-15  | soil   | 2014-05-14 | 00:00 | 2014-05-16 |
| 363214 | BH-1 19-20* | soil   | 2014-05-14 | 00:00 | 2014-05-16 |
| 363215 | BH-1 29-30' | soil   | 2014-05-14 | 00:00 | 2014-05-16 |
| 363216 | BH-1 39-40° | soil   | 2014-05-14 | 00:00 | 2014-05-16 |
| 363217 | BH-1 49-50' | soil   | 2014-05-14 | 00:00 | 2014-05-16 |
| 363218 | BH-2 4-5    | soil   | 2014-05-14 | 00.00 | 2014-05-16 |
| 363219 | BH-2 6-7    | soil   | 2014-05-14 | 00:00 | 2014-05-16 |
| 363220 | BH-2 9-10°  | soil   | 2014-05-14 | 00:00 | 2014-05-16 |
| 363221 | BH-2 14-15' | soil   | 2014-05-14 | 00:00 | 2014-05-16 |
| 363222 | BH-2 19-20' | soil   | 2014-05-14 | 00:00 | 2014-05-16 |
| 363223 | BH-2 24-25' | soil   | 2014-05-14 | 00:00 | 2014-05-16 |
| 363224 | BH-2 29-30' | soil   | 2014-05-14 | 00:00 | 2014-05-16 |

Sample: 363210 - BH-1 4-5'

| Param    | Flag | Result | Units | RL |
|----------|------|--------|-------|----|
| Chloride |      | 700    | mg/Kg | 4  |

Sample: 363211 - BH-1 6-7'

continued ...

| Report Date: May 21, 2014                |                       | Work Order: 14051610 | Pa             | Page Number: 2 of 3 |  |
|--|-----------------------|----------------------|----------------|---------------------|--|
| sample 363211 con                        | tinued                |                      |                |                     |  |
| Param                                    | Flag                  | Result               | Units          | RL                  |  |
| Param                                    | Flag                  | Result               | Units          | RL                  |  |
| Chloride                                 |                       | 850                  | mg/Kg          | 4                   |  |
| Sample: 363212                           | - BH-1 9-10'          |                      |                |                     |  |
| Param                                    | Flag                  | Result               | Units          | RL                  |  |
| Chloride                                 |                       | 1000                 | mg/Kg          | 4                   |  |
| Sample: 363213                           | - BH-1 14-15'         |                      |                |                     |  |
| Param                                    | Flag                  | Result               | Units          | RL                  |  |
| Chloride                                 |                       | 1100                 | mg/Kg          | 4                   |  |
| Sample: 363214                           | - BH-1 19-20'         |                      |                |                     |  |
| Param                                    | Flag                  | Result               | Units          | RL                  |  |
| Chloride                                 |                       | 950                  | mg/Kg          | 4                   |  |
| Sample: 363215                           | - BH-1 29-30'         |                      |                |                     |  |
|  |                       |                      |                |                     |  |
| Param                                    | Flag                  | Result               | Units          | RL                  |  |
| Param<br>Chloride                        | Flag                  | Result 2200          | Units<br>mg/Kg | RL<br>4             |  |
|  |                       |                      |                |                     |  |
| Chloride Sample: 363216                  | - BH-1 39-40'         | 2200                 | mg/Kg          | 4                   |  |
| Chloride                                 |                       |                      |                |                     |  |
| Chloride  Sample: 363216                 | - BH-1 39-40'<br>Flag | 2200<br>Result       | mg/Kg<br>Units | 4<br>RL             |  |
| Chloride  Sample: 363216  Param Chloride | - BH-1 39-40'<br>Flag | 2200<br>Result       | mg/Kg<br>Units | 4<br>RL             |  |

Sample: 363218 - BH-2 4-5'

| Report Date: May 21, 2014 |                | Work Order: 14051610 | Page Number: 3 of 3 |    |
|---------------------------|----------------|----------------------|---------------------|----|
| Param                     | Flag           | Result               | Units               | RL |
| Chloride                  | Q <sub>F</sub> | 1030                 | mg/Kg               | 4  |
| Sample: 363219            | - BH-2 6-7'    |                      |                     |    |
| Param                     | Flag           | Result               | Units               | RL |
| Chloride                  | Ų=             | 1620                 | mg/Kg               | 4  |
| Sample: 363220 ·          | - BH-2 9-10'   |                      |                     |    |
| Param                     | Flag           | Result               | Units               | RL |
| Chloride                  | Qs             | 1570                 | mg/Kg               | 4  |
| Sample: 363221 -          | - BH-2 14-15'  |                      |                     |    |
| Param                     | Flag           | Result               | Units               | RL |
| Chloride                  | Qs             | 735                  | mg/Kg               | 4  |
| Sample: 363222 -          | - BH-2 19-20'  |                      |                     |    |
| Param                     | Flag           | Result               | Units               | RL |
| Chloride                  | Q+             | 539                  | mg/Kg               | 4  |
| Sample: 363223 -          | · BH-2 24-25'  |                      |                     |    |
| Param                     | Flag           | Result               | Units               | RL |
| Chloride                  | Q#             | <20.0                | mg/Kg               | 4  |
| Sample: 363224 -          | BH-2 29-30'    |                      |                     |    |
| Param                     | Flag           | Result               | Units               | RL |
| Chloride                  | Q#             | 147                  | mg/Kg               | 4  |