

# SITE INFORMATION

## Report Type: Work Plan

### General Site Information:

|                                    |                                                                                                                                       |        |      |              |  |  |
|------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|--------|------|--------------|--|--|
| <b>Site:</b>                       | GJ West Coop Unit #7                                                                                                                  |        |      |              |  |  |
| <b>Company:</b>                    | COG Operating LLC                                                                                                                     |        |      |              |  |  |
| <b>Section, Township and Range</b> | Unit H                                                                                                                                | Sec 28 | T17S | R29E         |  |  |
| <b>Lease Number:</b>               | API-30-015-03170                                                                                                                      |        |      |              |  |  |
| <b>County:</b>                     | Eddy County                                                                                                                           |        |      |              |  |  |
| <b>GPS:</b>                        | 32.80643° N                                                                                                                           |        |      | 104.07265° W |  |  |
| <b>Surface Owner:</b>              | State                                                                                                                                 |        |      |              |  |  |
| <b>Mineral Owner:</b>              |                                                                                                                                       |        |      |              |  |  |
| <b>Directions:</b>                 | From the intersection of Hwy 529 and CR 217, travel west on Hwy 529 for 5.1 miles. Turn left onto CR212 and travel 0.7 miles to site. |        |      |              |  |  |
|                                    |                                                                                                                                       |        |      |              |  |  |
|                                    |                                                                                                                                       |        |      |              |  |  |
|                                    |                                                                                                                                       |        |      |              |  |  |
|                                    |                                                                                                                                       |        |      |              |  |  |

### Release Data:

|                                 |                |
|---------------------------------|----------------|
| <b>Date Released:</b>           | 9/4/2010       |
| <b>Type Release:</b>            | Produced Fluid |
| <b>Source of Contamination:</b> | Steel Flowline |
| <b>Fluid Released:</b>          | 10 bbls        |
| <b>Fluids Recovered:</b>        | 8 bbls         |

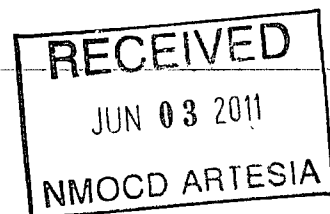
### Official Communication:

|                      |                             |  |                            |
|----------------------|-----------------------------|--|----------------------------|
| <b>Name:</b>         | Pat Ellis                   |  | Ike Tavaréz                |
| <b>Company:</b>      | COG Operating, LLC          |  | Tetra Tech                 |
| <b>Address:</b>      | 550 W. Texas Ave. Ste. 1300 |  | 1910 N. Big Spring         |
| <b>P.O. Box</b>      |                             |  |                            |
| <b>City:</b>         | Midland Texas, 79701        |  | Midland, Texas             |
| <b>Phone number:</b> | (432) 686-3023              |  | (432) 425-3878             |
| <b>Fax:</b>          | (432) 684-7137              |  |                            |
| <b>Email:</b>        | pellis@conchoresources.com  |  | ike.tavaréz@tetrattech.com |

### Ranking Criteria

| 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         |
|                                           |               |           |
| <b>Total Ranking Score:</b>               | <b>0</b>      |           |

| Acceptable Soil RRAL (mg/kg) |                   |            |
|------------------------------|-------------------|------------|
| <b>Benzene</b>               | <b>Total BTEX</b> | <b>TPH</b> |
| 10                           | 50                | 5,000      |





**TETRA TECH**

May 9, 2011

Mr. Mike Bratcher  
Environmental Engineer Specialist  
Oil Conservation Division, District 2  
1301 West Grand Avenue  
Artesia, New Mexico 88210

**Re: Work Plan for the COG Operating LLC., GJ West Coop Unit #7  
Flow Line, Unit H, Section 28, Township 17 South, Range 29 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 GJ West Coop Unit #7 Flow Line located in Unit H, Section 28, Township 17 South, Range 29 East, Eddy County, New Mexico (Site). The spill site coordinates are N 32.80643°, W 104.07265°. 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 September 4, 2010, and released approximately ten (10) barrels of produced fluid from a steel flow line. To alleviate the problem, COG personnel replaced the line with a poly line. Eight (8) barrels of standing fluids were recovered. The spill initiated southwest of the well pad and affected an area 15' x 70' in the pasture. The initial and final C-141 forms are enclosed in Appendix A.

### **Groundwater**

No water wells were listed within Section 28. The Geology and Groundwater Resources of Eddy County, New Mexico (Report 3) shows wells in Section 29 and Section 22, with a depth to groundwater of 210' and 80' below surface. According to the NMOCD groundwater map, the average

Tetra Tech

1910 North Big Spring, Midland, TX 79705

Tel 432.662.4559

Fax 432.682.9046

www.tetrattech.com



depth to groundwater in this area is greater than 100' below surface. The average depth to groundwater map 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 September 1, 2010, Tetra Tech personnel inspected and sampled the spill area. One (1) auger hole (AH-1) was installed using a stainless steel hand auger to assess the impacted soils. Select 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 location is shown on Figure 3.

Referring to Table 1, none of the samples for TPH and BTEX exceeded the RRAL. Elevated chloride concentrations were detected ranging from 1,740 mg/kg at 0-1' to 14,300 mg/kg at 3-3.5'. The chloride impact was not vertically defined. In order to delineate the chloride impact, a soil boring was installed utilizing an air rotary drilling rig.

On February 17, 2011, Tetra Tech personnel supervised the installation of one soil boring (SB-1). Soil samples were collected to a depth of 30.0' below surface. Referring to Table 1, the soil boring did show a shallow impact to soil, compared AH-1. Elevated chloride concentrations were detected from surface to 5.0' and significantly declined to 399 mg/kg at 7.0' below surface. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix C. The soil boring results are summarized in Table 1. The soil boring location is shown on Figure 3.



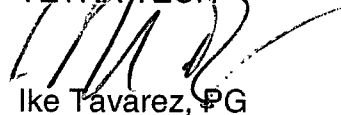
## **Work Plan**

In order to remediate the site, COG proposes to excavate the impacted soils. The goal of the remediation is to establish surface growth and to reduce the environmental liabilities for the protection of the groundwater. COG proposes to remove impacted material as highlighted (green) in Table 1. Based on the data, the excavation depths may range from 7.0' to 10.0' below surface. To properly remove the impacted soils, Tetra Tech will collect bottom hole samples and field screen for chlorides. Once excavated to the appropriate depths, the excavation will be backfilled with clean soil.

Based on the site formation, the proposed excavation depths may not be reached due to wall cave ins and 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 the depths are not reached, a 40 mil liner will be installed at depth of 4' to 5' below surface to cap the impacted area.

Upon completion, a final report will be submitted to the NMOCD. 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.

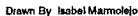
Respectfully submitted,  
TETRA TECH



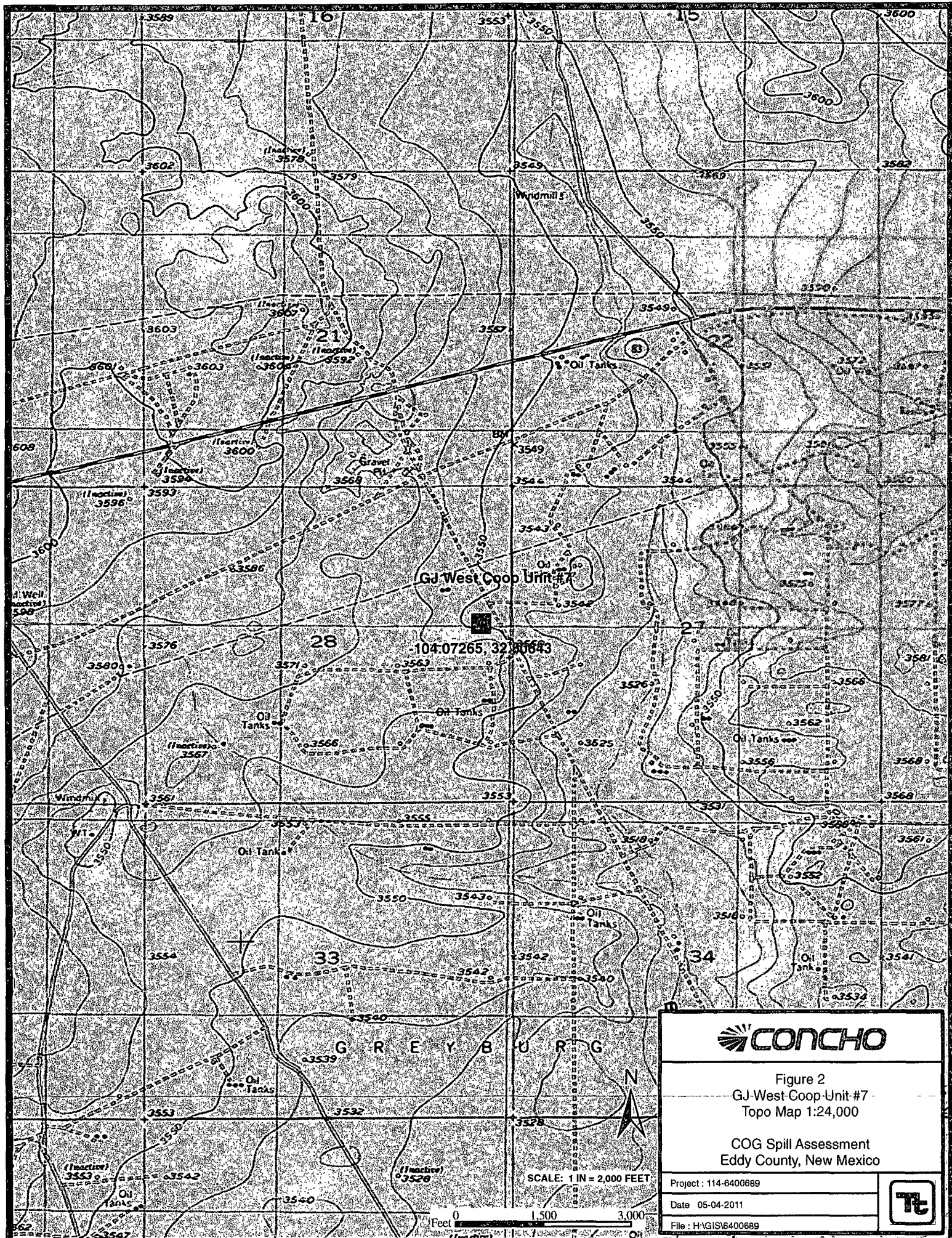
Ike Tavaréz, PG  
Senior Project Manager

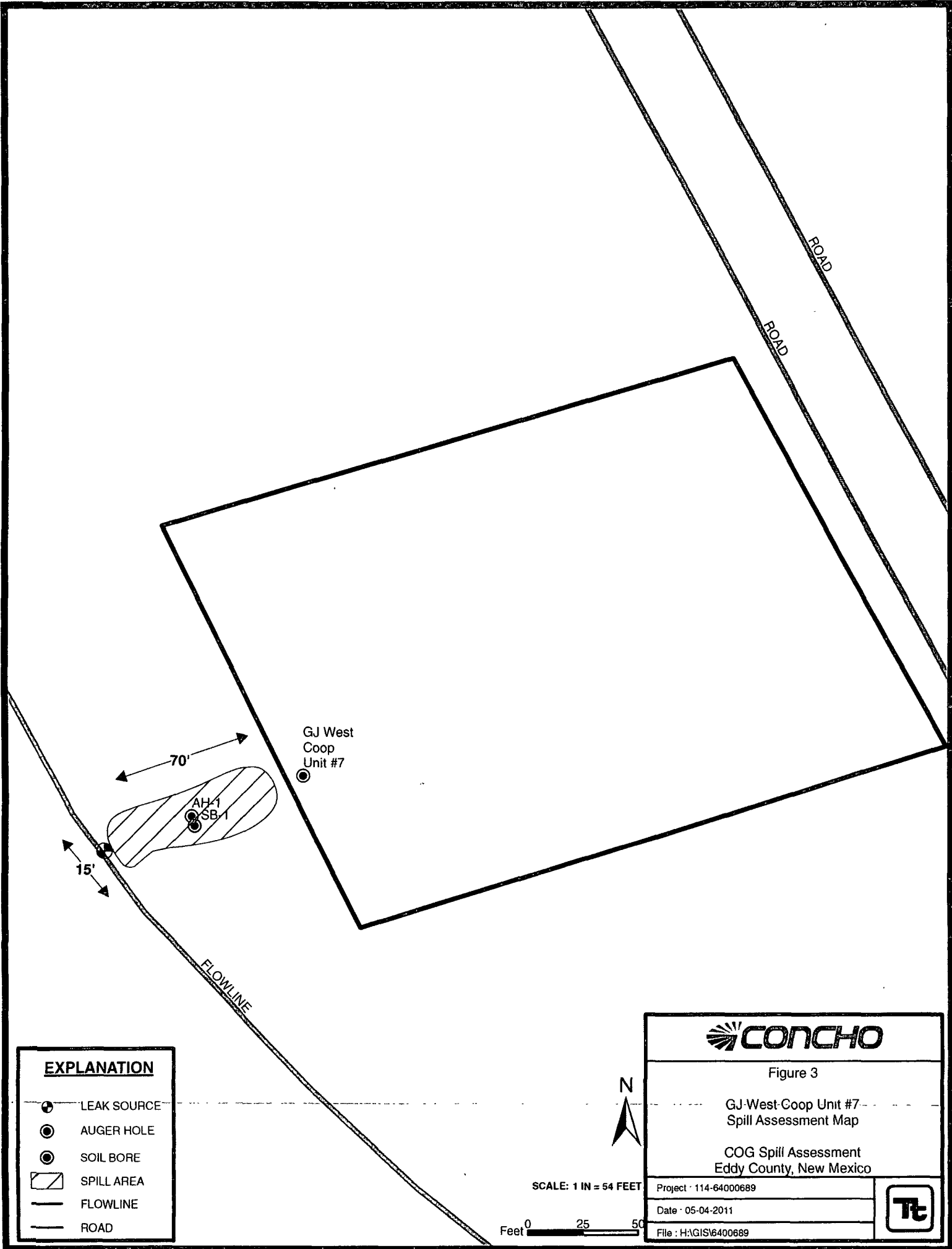
cc: Pat Ellis – COG

## Figures



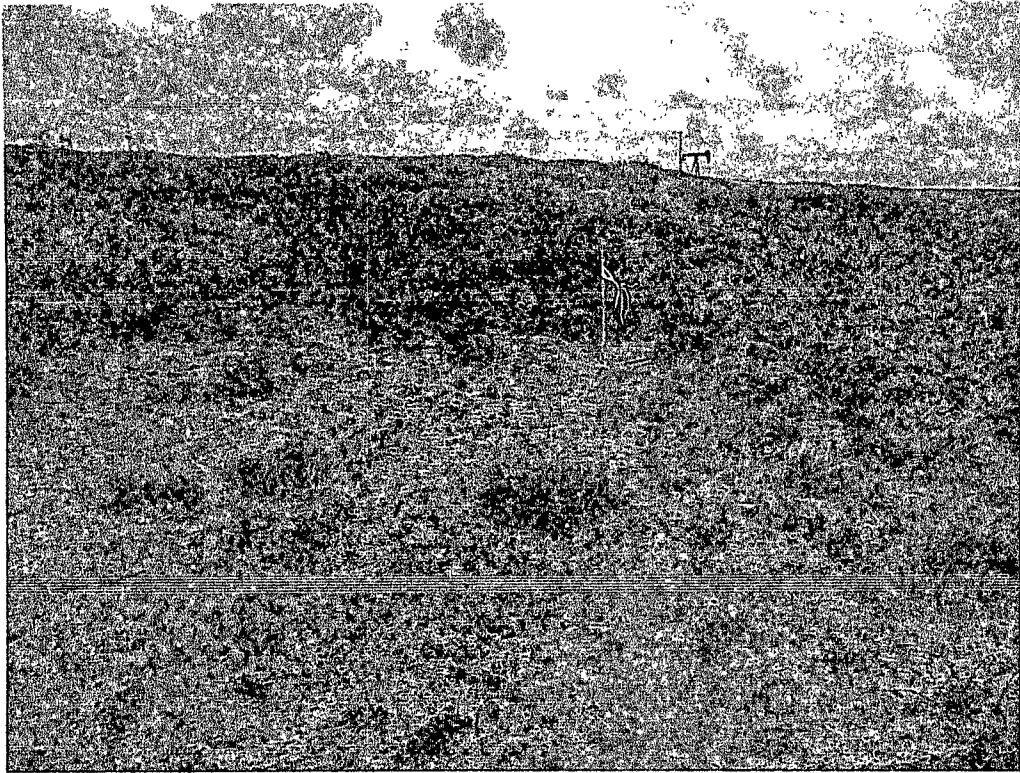




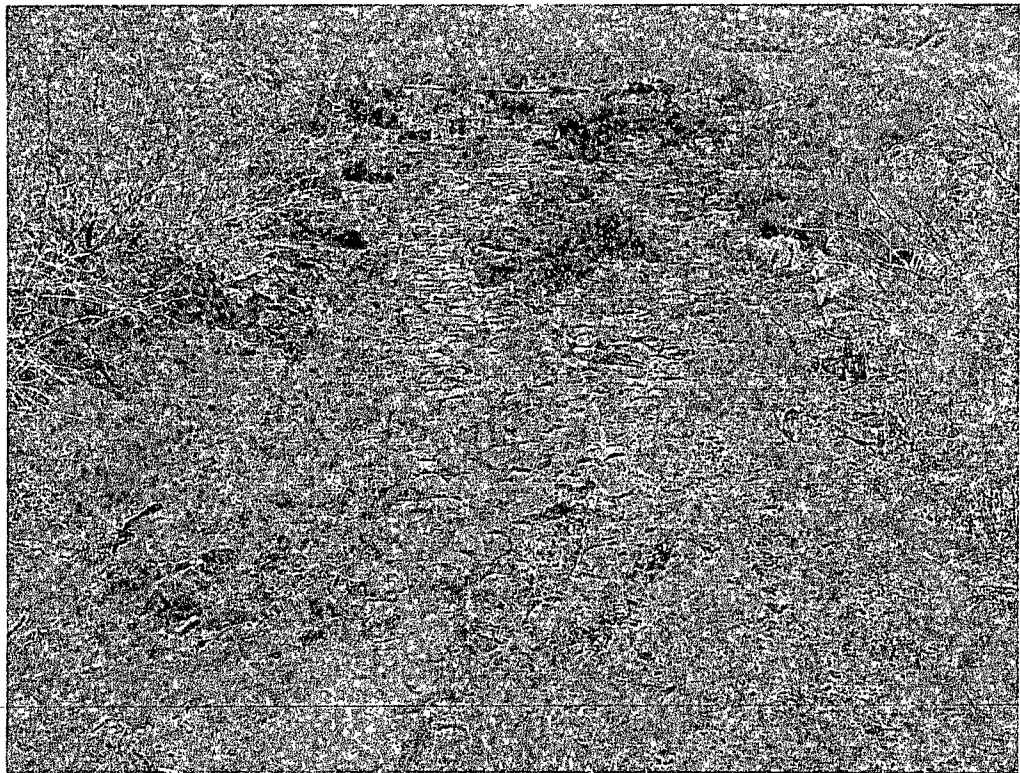




## Photos



View West – AH-1



View West – AH-1

COG Operating LLC  
GJ West Coop Unit #7  
Eddy County, New Mexico



TETRA TECH



View West – AH-1



View North East – AH-1

# Tables

**Table 1**  
**COG Operating LLC.**  
**GJ WEST CO-OP #7**  
**Eddy County, New Mexico**

| Sample ID | Sample Date | Sample Depth (ft) | Depth (BEB) | Soil Status |         | TPH (mg/kg) |       |       | Benzene (mg/kg) | Toluene (mg/kg) | Ethlybenzene (mg/kg) | Xylene (mg/kg) | Chloride (mg/kg) |
|-----------|-------------|-------------------|-------------|-------------|---------|-------------|-------|-------|-----------------|-----------------|----------------------|----------------|------------------|
|           |             |                   |             | In-Situ     | Removed | GRO         | DRO   | Total |                 |                 |                      |                |                  |
| AH-1      | 9/22/2010   | 0-1'              |             | X           |         | 940         | 3,270 | 4,210 | <0.500          | 6.58            | 10.5                 | 13.5           | 1,740            |
|           | "           | 1-1.5'            |             | X           |         | 2,360       | 2,380 | 4,740 | -               | -               | -                    | -              | 3,720            |
|           | "           | 2-2.5'            |             | X           |         | 330         | 289   | 619   | -               | -               | -                    | -              | 12,600           |
|           | "           | 3-3.5'            |             | X           |         | -           | -     | -     | -               | -               | -                    | -              | 14,300           |
|           | "           | 4-4.5'            |             | X           |         | -           | -     | -     | -               | -               | -                    | -              | 8,560            |
|           | "           | 5-5.5'            |             | X           |         | -           | -     | -     | -               | -               | -                    | -              | 6,390            |
|           | "           | 6-6.5'            |             | X           |         | -           | -     | -     | -               | -               | -                    | -              | 7,900            |
|           | "           | 7-7.5'            |             | X           |         | -           | -     | -     | -               | -               | -                    | -              | 2,790            |
|           | "           | 8-8.5'            |             | X           |         | -           | -     | -     | -               | -               | -                    | -              | 3,660            |
|           | "           | 9-9.5'            |             | X           |         | -           | -     | -     | -               | -               | -                    | -              | 3,230            |
|           |             |                   |             |             |         |             |       |       |                 |                 |                      |                |                  |
| SB-1      | 2/17/2011   | 0-1'              |             | X           |         | -           | -     | -     | -               | -               | -                    | -              | 1,040            |
|           | "           | 3'                |             | X           |         | -           | -     | -     | -               | -               | -                    | -              | 9,380            |
|           | "           | 5'                |             | X           |         | -           | -     | -     | -               | -               | -                    | -              | 4,180            |
|           | "           | 7'                |             | X           |         | -           | -     | -     | -               | -               | -                    | -              | 399              |
|           | "           | 10'               |             | X           |         | -           | -     | -     | -               | -               | -                    | -              | <200             |
|           | "           | 15'               |             | X           |         | -           | -     | -     | -               | -               | -                    | -              | <200             |
|           | "           | 20'               |             | X           |         | -           | -     | -     | -               | -               | -                    | -              | <200             |
|           | "           | 25'               |             | X           |         | -           | -     | -     | -               | -               | -                    | -              | <200             |
|           | "           | 30'               |             | X           |         | -           | -     | -     | -               | -               | -                    | -              | <200             |

BEB Below Excavation Bottom

(--) Not Analyzed

Proposed excavation depths



## Appendix A

District I  
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

State of New Mexico  
Energy Minerals and Natural Resources

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

0689  
Form C-141  
Revised October 10, 2003

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       | Pat Ellis                   |
| Address         | 550 W. Texas, Suite 100, Midland, TX 79701 | Telephone No. | 432-230-0077                |
| Facility Name   | GJ WEST COOP UNIT #7                       | Facility Type | Flowline                    |
| Surface Owner   | State                                      | Mineral Owner |                             |
|                 |                                            | Lease No.     | B-255<br>(API#)30-015-03170 |

**LOCATION OF RELEASE**

|             |         |          |       |               |                  |               |                |        |
|-------------|---------|----------|-------|---------------|------------------|---------------|----------------|--------|
| Unit Letter | Section | Township | Range | Feet from the | North/South Line | Feet from the | East/West Line | County |
| H           | 28      | 17S      | 29E   |               |                  |               |                | Eddy   |

Latitude 32 48.380 Longitude 104 04.374

**NATURE OF RELEASE**

|                             |                                                                                                                      |                                          |            |                            |                      |
|-----------------------------|----------------------------------------------------------------------------------------------------------------------|------------------------------------------|------------|----------------------------|----------------------|
| Type of Release             | Produced fluid                                                                                                       | Volume of Release                        | 10bbls     | Volume Recovered           | 8bbls                |
| Source of Release           | Steel flowline                                                                                                       | Date and Hour of Occurrence              | 09/04/2010 | Date and Hour of Discovery | 09/04/2010 4:00 p.m. |
| Was Immediate Notice Given? | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/> Not Required | If YES. To Whom?                         |            |                            |                      |
| By Whom?                    |                                                                                                                      | Date and Hour                            |            |                            |                      |
| Was a Watercourse Reached?  | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No                                                  | If YES. Volume Impacting the Watercourse |            |                            |                      |

If a Watercourse was Impacted. Describe Fully.\*

Describe Cause of Problem and Remedial Action Taken.\*

The steel flowline developed a weak spot and eventually ruptured causing this release. The steel flowline will be replaced with a new poly flowline.

Describe Area Affected and Cleanup Action Taken.\*

Initially 10bbls was released from the ruptured flowline and we were able to recover 8bbls with a vacuum truck. The dimensions of the release area measured 15' x 40' in the pasture. (The closest well location to the release is the GJ West COOP Unit #65, API# 30-015-25131, Unit H, Sec.28-T17S-R29E, 2260' FNL 330' FEL, Eddy County, NM). Tetra Tech will sample the spill site area to delineate any possible contamination from the release and we will present a remediation work plan to the NMOCD prior to any significant remediation work.

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

**OIL CONSERVATION DIVISION**

Signature:

Printed Name:

Josh Russo

Title:

HSE Coordinator

Approved by District Supervisor:

Approval Date:

Expiration Date:

E-mail Address:

jrusso@conchoresources.com

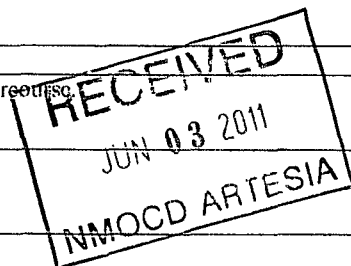
Conditions of Approval:

Attached ☐

Date: 09/14/2010

Phone: 432-212-2399

Attach Additional Sheets If Necessary



## Appendix B

**Water Well Data**  
**Average Depth to Groundwater (ft)**  
**COG - GJ West Coop Unit #7**  
**Eddy County, New Mexico**

| 16 South |    |    | 28 East |    |    |
|----------|----|----|---------|----|----|
| 6        | 5  | 4  | 3       | 2  | 1  |
| 7        | 8  | 9  | 10      | 11 | 12 |
| 18       | 17 | 16 | 15      | 14 | 13 |
| 19       | 20 | 21 | 22      | 23 | 24 |
| 30       | 29 | 28 | 27      | 26 | 25 |
| 31       | 32 | 33 | 34      | 35 | 36 |

| 16 South |    |    | 29 East |    |    |
|----------|----|----|---------|----|----|
| 6        | 5  | 4  | 3       | 2  | 1  |
| 7        | 8  | 9  | 10      | 11 | 12 |
| 18       | 17 | 16 | 15      | 14 | 13 |
| 19       | 20 | 21 | 22      | 23 | 24 |
| 30       | 29 | 28 | 27      | 26 | 25 |
| 31       | 32 | 33 | 34      | 35 | 36 |

| 16 South |    |    | 30 East |    |  |
|----------|----|----|---------|----|--|
| 6        | 5  | 4  | 3       | 2  |  |
| 7        | 8  | 9  | 10      | 11 |  |
| 18       | 17 | 16 | 15      | 14 |  |
| 19       | 20 | 21 | 22      | 23 |  |
| 30       | 29 | 28 | 27      | 26 |  |
| 31       | 32 | 33 | 34      | 35 |  |

| 17 South |    |    | 28 East |    |    |
|----------|----|----|---------|----|----|
| 6        | 5  | 4  | 3       | 2  | 1  |
| 7        | 8  | 9  | 10      | 11 | 12 |
| 18       | 17 | 16 | 15      | 14 | 13 |
| 19       | 20 | 21 | 22      | 23 | 24 |
| 30       | 29 | 28 | 27      | 26 | 25 |
| 31       | 32 | 33 | 34      | 35 | 36 |

| 17 South |    |    | 29 East |    |    |
|----------|----|----|---------|----|----|
| 6        | 5  | 4  | 3       | 2  | 1  |
| 7        | 8  | 9  | 10      | 11 | 12 |
| 18       | 17 | 16 | 15      | 14 | 13 |
| 19       | 20 | 21 | 22      | 23 | 24 |
| 30       | 29 | 28 | 27      | 26 | 25 |
| 31       | 32 | 33 | 34      | 35 | 36 |

| 17 South |    |    | 30 East |    |  |
|----------|----|----|---------|----|--|
| 6        | 5  | 4  | 3       | 2  |  |
| 7        | 8  | 9  | 10      | 11 |  |
| 18       | 17 | 16 | 15      | 14 |  |
| 19       | 20 | 21 | 22      | 23 |  |
| 30       | 29 | 28 | 27      | 26 |  |
| 31       | 32 | 33 | 34      | 35 |  |

| 18 South |    |    | 28 East |    |    |
|----------|----|----|---------|----|----|
| 6        | 5  | 4  | 3       | 2  | 1  |
| 7        | 8  | 9  | 10      | 11 | 12 |
| 18       | 17 | 16 | 15      | 14 | 13 |
| 19       | 20 | 21 | 22      | 23 | 24 |
| 30       | 29 | 28 | 27      | 26 | 25 |
| 31       | 32 | 33 | 34      | 35 | 36 |

| 18 South |    |    | 29 East |    |    |
|----------|----|----|---------|----|----|
| 6        | 5  | 4  | 3       | 2  | 1  |
| 7        | 8  | 9  | 10      | 11 | 12 |
| 18       | 17 | 16 | 15      | 14 | 13 |
| 19       | 20 | 21 | 22      | 23 | 24 |
| 30       | 29 | 28 | 27      | 26 | 25 |
| 31       | 32 | 33 | 34      | 35 | 36 |

| 18 South |    |    | 30 East |    |  |
|----------|----|----|---------|----|--|
| 6        | 5  | 4  | 3       | 2  |  |
| 7        | 8  | 9  | 10      | 11 |  |
| 18       | 17 | 16 | 15      | 14 |  |
| 19       | 20 | 21 | 22      | 23 |  |
| 30       | 29 | 28 | 27      | 26 |  |
| 31       | 32 | 33 | 34      | 35 |  |

-  New Mexico State Engineers Well Reports
-  USGS Well Reports
-  Geology and Groundwater Conditions in Southern Eddy, County, NM
-  NMOCD - Groundwater Data

## Appendix C

## Summary Report

Tom Franklin  
Tetra Tech  
1910 N. Big Spring Street  
Midland, TX 79705

Report Date: October 5, 2010

Work Order: 10092339



Project Location: Eddy County, NM  
Project Name: COG/GJ West Co-op #7  
Project Number: 114-6400689

| Sample | Description | Matrix | Date Taken | Time Taken | Date Received |
|--------|-------------|--------|------------|------------|---------------|
| 245657 | AH-1 0-1'   | soil   | 2010-09-22 | 00:00      | 2010-09-23    |
| 245658 | AH-1 1-1.5' | soil   | 2010-09-22 | 00:00      | 2010-09-23    |
| 245659 | AH-1 2-2.5' | soil   | 2010-09-22 | 00:00      | 2010-09-23    |
| 245660 | AH-1 3-3.5' | soil   | 2010-09-22 | 00:00      | 2010-09-23    |
| 245661 | AH-1 4-4.5' | soil   | 2010-09-22 | 00:00      | 2010-09-23    |
| 245662 | AH-1 5-5.5' | soil   | 2010-09-22 | 00:00      | 2010-09-23    |
| 245663 | AH-1 6-6.5' | soil   | 2010-09-22 | 00:00      | 2010-09-23    |
| 245664 | AH-1 7-7.5' | soil   | 2010-09-22 | 00:00      | 2010-09-23    |
| 245665 | AH-1 8-8.5' | soil   | 2010-09-22 | 00:00      | 2010-09-23    |
| 245666 | AH-1 9-9.5' | soil   | 2010-09-22 | 00:00      | 2010-09-23    |

| Sample - Field Code  | BTX                |                    |                         |                   | TPH DRO - NEW  | TPH GRO        |
|----------------------|--------------------|--------------------|-------------------------|-------------------|----------------|----------------|
|                      | Benzene<br>(mg/Kg) | Toluene<br>(mg/Kg) | Ethylbenzene<br>(mg/Kg) | Xylene<br>(mg/Kg) | DRO<br>(mg/Kg) | GRO<br>(mg/Kg) |
| 245657 - AH-1 0-1'   | <0.500             | 6.58               | 10.5                    | 13.5              | 3270           | 940            |
| 245658 - AH-1 1-1.5' |                    |                    |                         |                   | 2380           | 2360           |
| 245659 - AH-1 2-2.5' |                    |                    |                         |                   | 289            | 330            |

**Sample: 245657 - AH-1 0-1'**

| Param    | Flag | Result | Units | RL   |
|----------|------|--------|-------|------|
| Chloride |      | 1740   | mg/Kg | 4.00 |

**Sample: 245658 - AH-1 1-1.5'***continued...*



*sample 245658 continued ...*

| Param    | Flag | Result      | Units | RL   |
|----------|------|-------------|-------|------|
| Param    | Flag | Result      | Units | RL   |
| Chloride |      | <b>3720</b> | mg/Kg | 4.00 |

**Sample: 245659 - AH-1 2-2.5'**

|          |      |              |       |      |
|----------|------|--------------|-------|------|
| Param    | Flag | Result       | Units | RL   |
| Chloride |      | <b>12600</b> | mg/Kg | 4.00 |

**Sample: 245660 - AH-1 3-3.5'**

|          |      |              |       |      |
|----------|------|--------------|-------|------|
| Param    | Flag | Result       | Units | RL   |
| Chloride |      | <b>14300</b> | mg/Kg | 4.00 |

**Sample: 245661 - AH-1 4-4.5'**

|          |      |             |       |      |
|----------|------|-------------|-------|------|
| Param    | Flag | Result      | Units | RL   |
| Chloride |      | <b>8560</b> | mg/Kg | 4.00 |

**Sample: 245662 - AH-1 5-5.5'**

|          |      |             |       |      |
|----------|------|-------------|-------|------|
| Param    | Flag | Result      | Units | RL   |
| Chloride |      | <b>6390</b> | mg/Kg | 4.00 |

**Sample: 245663 - AH-1 6-6.5'**

|          |      |             |       |      |
|----------|------|-------------|-------|------|
| Param    | Flag | Result      | Units | RL   |
| Chloride |      | <b>7900</b> | mg/Kg | 4.00 |

**Sample: 245664 - AH-1 7-7.5'**

|          |      |             |       |      |
|----------|------|-------------|-------|------|
| Param    | Flag | Result      | Units | RL   |
| Chloride |      | <b>2790</b> | mg/Kg | 4.00 |

**Sample: 245665 - AH-1 8-8.5'**

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| Param    | Flag | Result      | Units | RL   |
|----------|------|-------------|-------|------|
| Chloride |      | <b>3660</b> | mg/Kg | 4.00 |

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**Sample: 245666 - AH-1 9-9.5'**

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| Param    | Flag | Result      | Units | RL   |
|----------|------|-------------|-------|------|
| Chloride |      | <b>3230</b> | mg/Kg | 4.00 |

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## Summary Report

Tom Franklin  
Tetra Tech  
1910 N. Big Spring Street  
Midland, TX 79705

Report Date: February 24, 2011

Work Order: 11022110



Project Location: Eddy County, NM  
Project Name: COG/GJ West Co-op #7  
Project Number: 114-6400689

| Sample | Description | Matrix | Date Taken | Time Taken | Date Received |
|--------|-------------|--------|------------|------------|---------------|
| 258143 | SB-1 0-1'   | soil   | 2011-02-17 | 00:00      | 2011-02-21    |
| 258144 | SB-1 3'     | soil   | 2011-02-17 | 00:00      | 2011-02-21    |
| 258145 | SB-1 5'     | soil   | 2011-02-17 | 00:00      | 2011-02-21    |
| 258146 | SB-1 7'     | soil   | 2011-02-17 | 00:00      | 2011-02-21    |
| 258147 | SB-1 10'    | soil   | 2011-02-17 | 00:00      | 2011-02-21    |
| 258148 | SB-1 15'    | soil   | 2011-02-17 | 00:00      | 2011-02-21    |
| 258149 | SB-1 20'    | soil   | 2011-02-17 | 00:00      | 2011-02-21    |
| 258150 | SB-1 25'    | soil   | 2011-02-17 | 00:00      | 2011-02-21    |
| 258151 | SB-1 30'    | soil   | 2011-02-17 | 00:00      | 2011-02-21    |

**Sample: 258143 - SB-1 0-1'**

| Param    | Flag | Result | Units | RL   |
|----------|------|--------|-------|------|
| Chloride |      | 1040   | mg/Kg | 4.00 |

**Sample: 258144 - SB-1 3'**

| Param    | Flag | Result | Units | RL   |
|----------|------|--------|-------|------|
| Chloride |      | 9380   | mg/Kg | 4.00 |

**Sample: 258145 - SB-1 5'***continued ...*

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*sample 258145 continued ...*

| Param    | Flag | Result | Units | RL   |
|----------|------|--------|-------|------|
| Param    | Flag | Result | Units | RL   |
| Chloride |      | 4180   | mg/Kg | 4.00 |

**Sample: 258146 - SB-1 7'**

| Param    | Flag | Result | Units | RL   |
|----------|------|--------|-------|------|
| Chloride |      | 399    | mg/Kg | 4.00 |

**Sample: 258147 - SB-1 10'**

| Param    | Flag | Result | Units | RL   |
|----------|------|--------|-------|------|
| Chloride |      | <200   | mg/Kg | 4.00 |

**Sample: 258148 - SB-1 15'**

| Param    | Flag | Result | Units | RL   |
|----------|------|--------|-------|------|
| Chloride |      | <200   | mg/Kg | 4.00 |

**Sample: 258149 - SB-1 20'**

| Param    | Flag | Result | Units | RL   |
|----------|------|--------|-------|------|
| Chloride |      | <200   | mg/Kg | 4.00 |

**Sample: 258150 - SB-1 25'**

| Param    | Flag | Result | Units | RL   |
|----------|------|--------|-------|------|
| Chloride |      | <200   | mg/Kg | 4.00 |

**Sample: 258151 - SB-1 30'**

| Param    | Flag | Result | Units | RL   |
|----------|------|--------|-------|------|
| Chloride |      | <200   | mg/Kg | 4.00 |