

# SITE INFORMATION

## Report Type: Closure Report

|                                    |  |        |      |              |  |
|------------------------------------|--|--------|------|--------------|--|
| <b>General Site Information:</b>   |  |        |      |              |  |
| <b>Site:</b>                       | White City 14 Federal Com 10   |        |      |              |  |
| <b>Company:</b>                    | Cimarex  |        |      |              |  |
| <b>Section, Township and Range</b> | <b>Unit</b>  | Sec 14 | T25S | R26E         |  |
| <b>Lease Number:</b>               | (API#) NM 19423  |        |      |              |  |
| <b>County:</b>                     | Eddy County  |        |      |              |  |
| <b>GPS:</b>                        | 32.13640° N  |        |      | 104.26983° W |  |
| <b>Surface Owner:</b>              | Federal  |        |      |              |  |
| <b>Mineral Owner:</b>              |  |        |      |              |  |
| <b>Directions:</b>                 | From the intersection of US 62/180 (National Parks Hwy) and Hwy 396 (Black River Road) travel east for approx. 7 miles. Turn south on CR 748 and travel south for approx. 3.8 miles. Turn west on the lease road and travel south for approx. 4 miles. Turn east for approx. 1 mile and the location will be on the right. |        |      |              |  |

|                                 |                 |
|---------------------------------|-----------------|
| <b>Release Data:</b>            |                 |
| <b>Date Released:</b>           | 8/6/2012        |
| <b>Type Release:</b>            | Produced Fluids |
| <b>Source of Contamination:</b> | Frac Tank       |
| <b>Fluid Released:</b>          | 10 bbls         |
| <b>Fluids Recovered:</b>        | 0 bbls          |

|                                |                        |  |                            |
|--------------------------------|------------------------|--|----------------------------|
| <b>Official Communication:</b> |                        |  |                            |
| <b>Name:</b>                   | Terry D. Ainsworth     |  | Tom Elliott                |
| <b>Company:</b>                | Cimarex                |  | Tetra Tech                 |
| <b>Address:</b>                | 600 N Marienfeld       |  | 1910 N. Big Spring         |
|                                | Suite 600              |  |                            |
| <b>City:</b>                   | Midland, Texas 79701   |  | Midland, Texas             |
| <b>Phone number:</b>           | 575-628-3447           |  | (432) 682-4559             |
| <b>Fax:</b>                    | 575-628-3566           |  |                            |
| <b>Email:</b>                  | tainsworth@cimarex.com |  | tom.elliott@tetrattech.com |

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

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

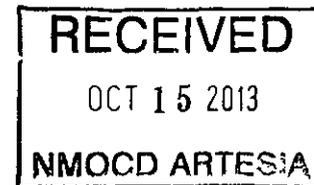
**RECEIVED**  
 OCT 15 2013  
 NMOCD ARTESIA



**TETRA TECH**

September 30, 2013

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



**Re: Closure Report for the Cimarex Energy, White City 14 Fed Com #10, Section 14, Township 25 South, Range 26 East, Eddy County, New Mexico.**

Mr. Bratcher:

Tetra Tech, Inc. (Tetra Tech) was contacted by Cimarex Energy (Cimarex) to assess a spill from the White City Federal Com #10, located in Section 14, Township 25 South, Range 26 East, Eddy County, New Mexico (Site). The spill site coordinates are N 32.13640°, W 104.26983°. 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 August 6, 2012, and released approximately ten (10) barrels of acid from a frac tank. None of the release was recovered. The spill affected an area of approximately 75' x 135' in the pasture. The initial C-141 form is enclosed in Appendix A.

### **Groundwater**

The New Mexico State Engineer's Office database and USGS database did not show any wells in Section 14, however, the USGS database showed a well in Section 13 with a reported depth to water of 12 feet below ground surface (bgs) and a surface elevation of 3,240 feet. A water level measurement was also collected from a windmill located in Section 25, Township 25 South, Range 26 East and showed a depth to water of 18 feet bgs. The windmill had a surface elevation of 3,197 feet. In addition, a temporary monitor well (TMW) was drilled in Section 19, Township 25 South, Range 27 East to a total depth of 80 feet bgs and did not encounter groundwater. The TMW site has a surface elevation of 3,240 feet. The temporary well was installed by Highlander for another client to establish depth to

Tetra Tech

1910 North Big Spring, Midland, TX 79705

Tel 432.682.4559 Fax 432.682.3946 www.tetrattech.com



groundwater on a reserve pit closure.

Based on the Site surface elevation of 3,350 feet, the projected water level at the Site should be greater than 100 feet bgs. In addition, it appears the majority of the shallow groundwater may be limited to the alluvial sand and gravel deposits in the vicinity of Cotton Wood Draw. A topographical map showing the surface elevations (Figure 5), The New Mexico State Engineer, and USGS water well reports are shown in Appendix B.

On May 22, 2013 Cimarex and Tetra Tech personnel met with the New Mexico Oil Conservation District (NMOCD) in Artesia, New Mexico to discuss the groundwater depth at the site. The groundwater data from the windmill, temporary well and USGS well were presented and based on the surface elevations of these wells and the Site, NMOCD personnel agreed that groundwater was greater than 100 feet bgs.

### **Regulatory**

A risk-based evaluation was performed for the Site in accordance with the 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 20, 2013, Safety and Environmental Solutions, Inc. out of Hobbs, New Mexico personnel inspected and sampled the spill area. Two (2) bore holes (BH-1 & BH-2) were installed using a hollow stem auger drilling rig to assess the impacted soils. Selected samples were analyzed for TPH analysis by EPA method 418.1 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 bore hole locations are shown on Figure 3.

Referring to Table 1, bore hole samples were below the RRAL for BTEX. A TPH trace of 147 mg/kg was detected in BH-1 at 15' and 172 mg/kg in BH-2 at 5' below surface. The remaining TPH samples were below the reporting limit.

A chloride impact was detected in bore holes BH-1 and BH-2, which showed a maximum chloride concentration at the surface (0-1') of 30,800 mg/kg and 22,000 mg/kg, respectively. The chloride concentrations in BH-1 declined with depth showing 17,400 mg/kg at 10' and 256 mg/kg at 20' below surface. The chloride concentrations in BH-2 showed 5,860 mg/kg at 10' and 144 at 25' below surface.



**TETRA TECH**

### **Site Remediation and Conclusion**

On August 12 through August 22, 2013, Tetra Tech personnel supervised the excavation of the impacted soils. In order to remove the chloride impacts, the excavation depths were initially proposed to be 5.0' and 10.0' below grade. Dense rock was encountered at various depths throughout the excavation and the excavation varied from 3.0' to 10.0' below grade. In addition, Tetra Tech collected confirmation samples from the bottom and sidewalls of the excavation. The confirmation sample results are shown in Table 1. The excavated areas and final depths are highlighted in Table 1 and shown on Figure 4.

Once excavated, clean backfill material was used to bring the excavation to approximately 3.0' below grade. A 40 mil liner was installed to cap the remaining impact and the site was then backfilled with clean material to surface grade, ripped and seeded. Approximately 640 cubic yards<sup>3</sup> of soil were removed and transported to R360 facility for proper disposal.

Based on the remediation activities performed at this location, Cimarex requests closure for this site. The C-141 (Final) is included in Appendix A. If you have any questions or comments concerning the assessment or the remediation activities performed at the site, please call me at (432) 682-4559.

Respectfully submitted,  
TETRA TECH

Tom Elliott  
Project Manager

cc: Terry Ainsworth - Cimarex  
Johnny Titsworth - Cimarex  
Christine Alderman - Cimarex  
Jim Amos - BLM

# FIGURES

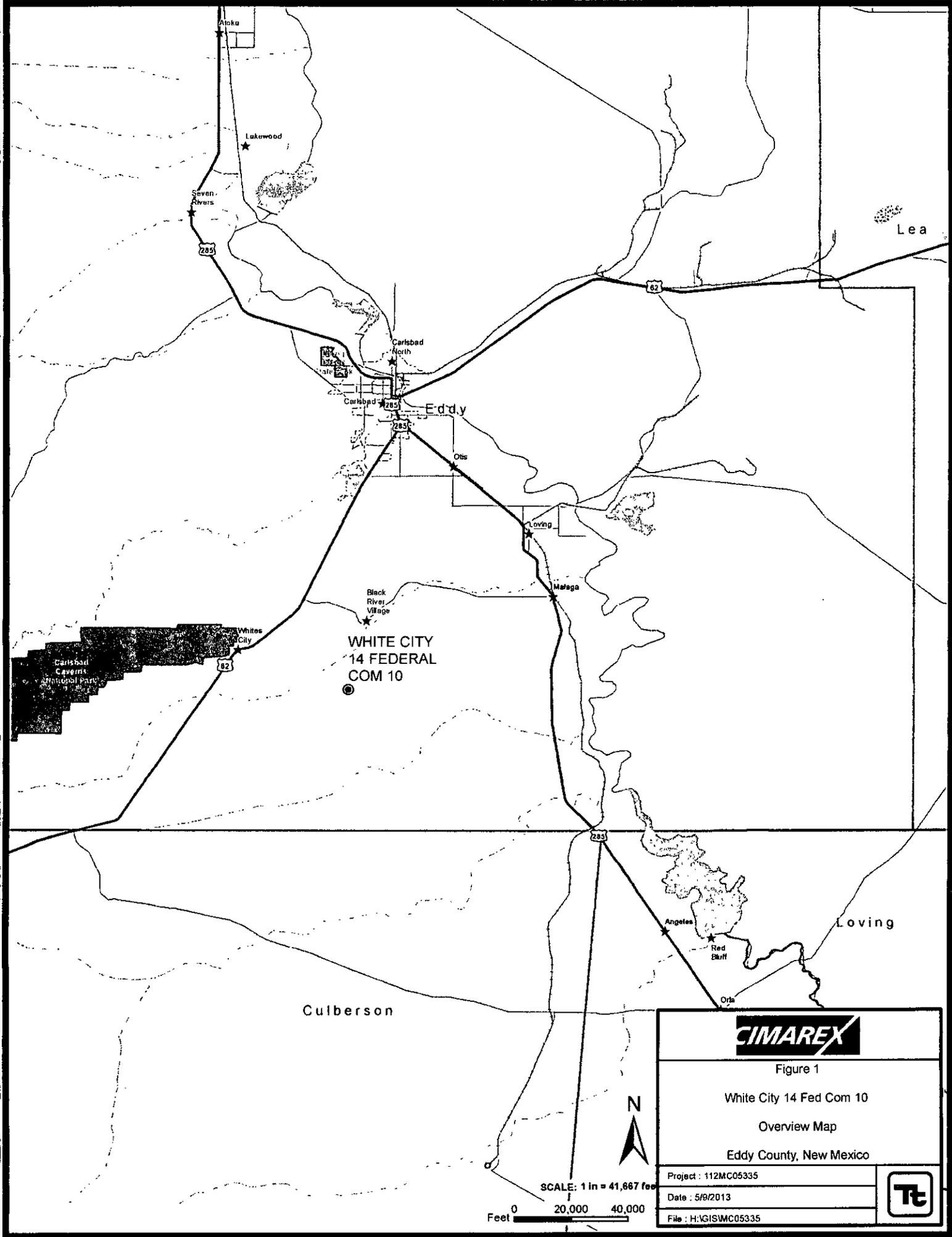


Figure 1

White City 14 Fed Com 10

Overview Map

Eddy County, New Mexico

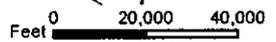
Project : 112MC05335

Date : 5/9/2013

File : H:\GISMC05335



SCALE: 1 in = 41,867 feet



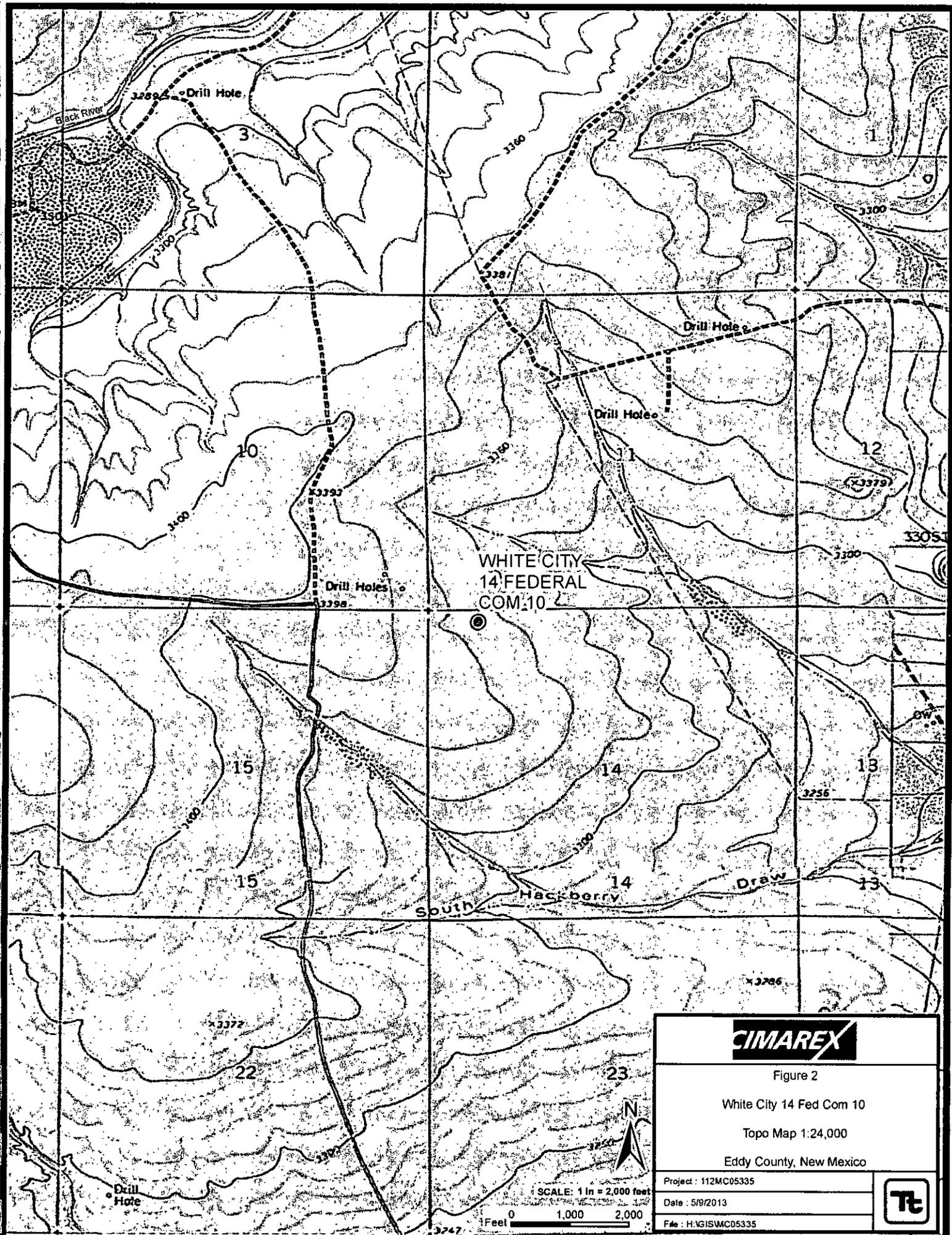


Figure 2

White City 14 Fed Com 10

Topo Map 1:24,000

Eddy County, New Mexico

Project: 112MC05335

Date: 5/9/2013

File: H:\GIS\MCD5335



PASTURE

BERM

PERM LEAK SOURCE

BH-1

BH-2

135'

105'

75'

22'

20'

68'

43'

PAD

LEASE ROAD

PASTURE

**EXPLANATION**

- BORE HOLE SAMPLE LOCATIONS
- ☆ LEAK SOURCE
- ▨ SPILL AREA

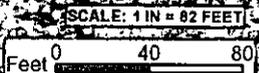


Figure 3

White City 14 Fed Com 10

Spill Assessment Map

Eddy County, New Mexico

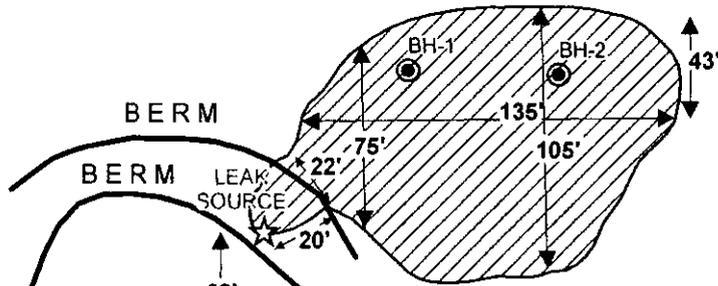
Project : 112MC05335

Date : 5/9/2013

File : HAGISMC05335



PASTURE



BERM  
BERM

LEAK SOURCE

PAD

LEASE ROAD

PASTURE

**EXPLANATION**

- BORE HOLE SAMPLE LOCATIONS
- ☆ LEAK SOURCE
- ▨ SPILL AREA



SCALE: 1 IN = 82 FEET

Feet 0 40 80



Figure 3

White City 14 Fed Com 10

Spill Assessment Map

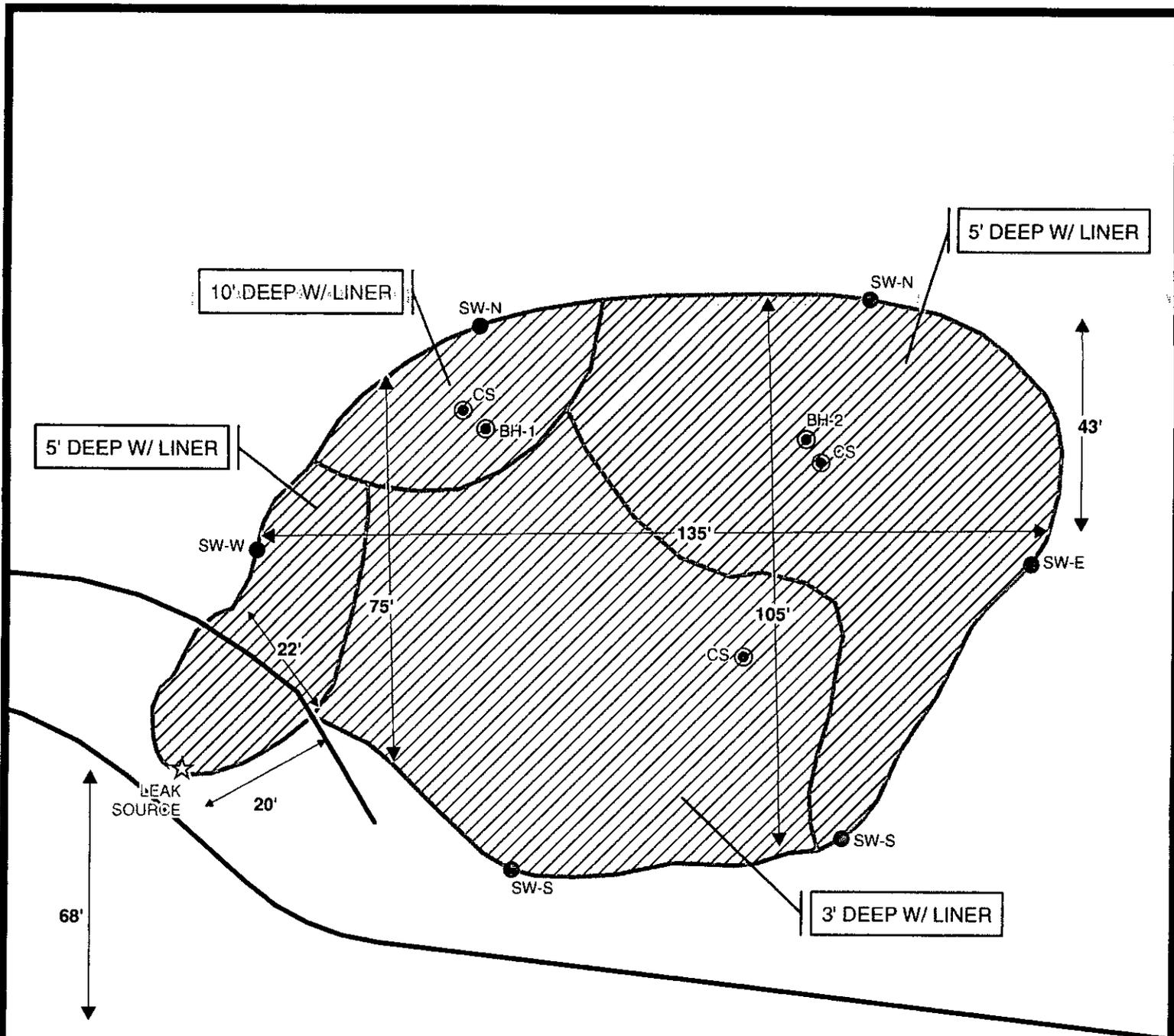
Eddy County, New Mexico

Project : 112MC05335

Date : 5/9/2013

File : H:\GIS\MC05335





**EXPLANATION**

- BORE HOLE SAMPLE LOCATIONS
- ⊙ CONFIRMATION SAMPLE LOCATIONS
- SIDE WALL SAMPLE LOCATIONS
- ☆ LEAK SOURCE
- LINER
- ▨ EXCAVATION AREA

**CIMAREX**

Figure 4

White City 14 Fed Com 10

Excavation Area & Depth Map

Eddy County, New Mexico

Project : 112MC05335

Date : 9/24/2013

File : H:\GIS\WC05335

**Tt**

SCALE: 1 IN = 30 FEET

0 15 30

Feet

N

# TABLES

Table 1  
Cimarex

White City 14 Federal Commingle 10  
Eddy County, New Mexico

| Sample ID         | Sample Date | Sample Depth (ft) | Soil Status |         | **TPH (mg/kg) | Benzene (mg/kg) | Toluene (mg/kg) | Ethylbenzene (mg/kg) | Xylene (mg/kg) | Total BTEX (mg/kg) | Chloride (mg/kg) |
|-------------------|-------------|-------------------|-------------|---------|---------------|-----------------|-----------------|----------------------|----------------|--------------------|------------------|
|                   |             |                   | In-Situ     | Removed |               |                 |                 |                      |                |                    |                  |
| *BH-1<br>3' liner | 9/20/2012   | Surface           |             | X       | <100          | <0.050          | <0.050          | <0.050               | <0.150         | <0.150             | 30,800           |
|                   | "           | 5'                |             | X       | <100          | <0.050          | <0.050          | <0.050               | <0.150         | <0.150             | 21,200           |
|                   | "           | 10'               |             | X       | <100          | <0.050          | <0.050          | <0.050               | <0.150         | <0.150             | 17,400           |
|                   | "           | 15'               | X           |         | 147           | <0.050          | <0.050          | <0.050               | <0.150         | <0.150             | 464              |
|                   | "           | 20'               | X           |         | <100          | <0.050          | <0.050          | <0.050               | <0.150         | <0.150             | 256              |
|                   | "           | 25'               | X           |         | <100          | <0.050          | <0.050          | <0.050               | <0.150         | <0.150             | 480              |
| "                 | 30'         | X                 |             | <100    | <0.050        | <0.050          | <0.050          | <0.150               | <0.150         | 128                |                  |
| Bottom Hole-5'    | 8/15/2013   | 5                 | X           |         | ---           | ---             | ---             | ---                  | ---            | ---                | 23,300           |
| Bottom Hole-10'   | 8/15/2013   | 10                | X           |         | ---           | ---             | ---             | ---                  | ---            | ---                | 22,800           |
| SW-N3             | 8/15/2013   | -                 | X           |         | ---           | ---             | ---             | ---                  | ---            | ---                | 561              |
| SW-W3             | 8/15/2013   | -                 | X           |         | ---           | ---             | ---             | ---                  | ---            | ---                | 43.1             |
| SW-S              | 8/15/2013   | -                 | X           |         | ---           | ---             | ---             | ---                  | ---            | ---                | 43.1             |
| *BH-2<br>3' liner | 9/20/2012   | Surface           | X           | X       | <100          | <0.050          | <0.050          | <0.050               | <0.150         | <0.150             | 22,000           |
|                   | "           | 5'                | X           | X       | 172           | <0.050          | <0.050          | <0.050               | <0.150         | <0.150             | 19,200           |
|                   | "           | 10'               | X           |         | <100          | <0.050          | <0.050          | <0.050               | <0.150         | <0.150             | 5,860            |
|                   | "           | 15'               | X           |         | <100          | <0.050          | <0.050          | <0.050               | <0.150         | <0.150             | 944              |
|                   | "           | 20'               | X           |         | <100          | <0.050          | <0.050          | <0.050               | <0.150         | <0.150             | 992              |
|                   | "           | 25'               | X           |         | <100          | <0.050          | <0.050          | <0.050               | <0.150         | <0.150             | 144              |
| "                 | 30'         | X                 |             | <100    | <0.050        | <0.050          | <0.050          | <0.150               | <0.150         | 192                |                  |
| Bottom Hole-3'    | 8/15/2013   | 3                 | X           |         | ---           | ---             | ---             | ---                  | ---            | ---                | 2,920            |
| Bottom Hole-5'    | 8/15/2013   | 5                 | X           |         | ---           | ---             | ---             | ---                  | ---            | ---                | 4,250            |
| SW-N3             | 8/15/2013   | -                 | X           |         | ---           | ---             | ---             | ---                  | ---            | ---                | 497              |
| SW-E              | 8/15/2013   | -                 | X           |         | ---           | ---             | ---             | ---                  | ---            | ---                | 392              |
| SW-S2             | 8/15/2013   | -                 | X           |         | ---           | ---             | ---             | ---                  | ---            | ---                | 83.4             |

(\*) Sampled by Safety & Environmental Solutions, Inc. for Cimarex

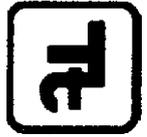
(\*\*) TPH Method 418.1

Excavation Depths

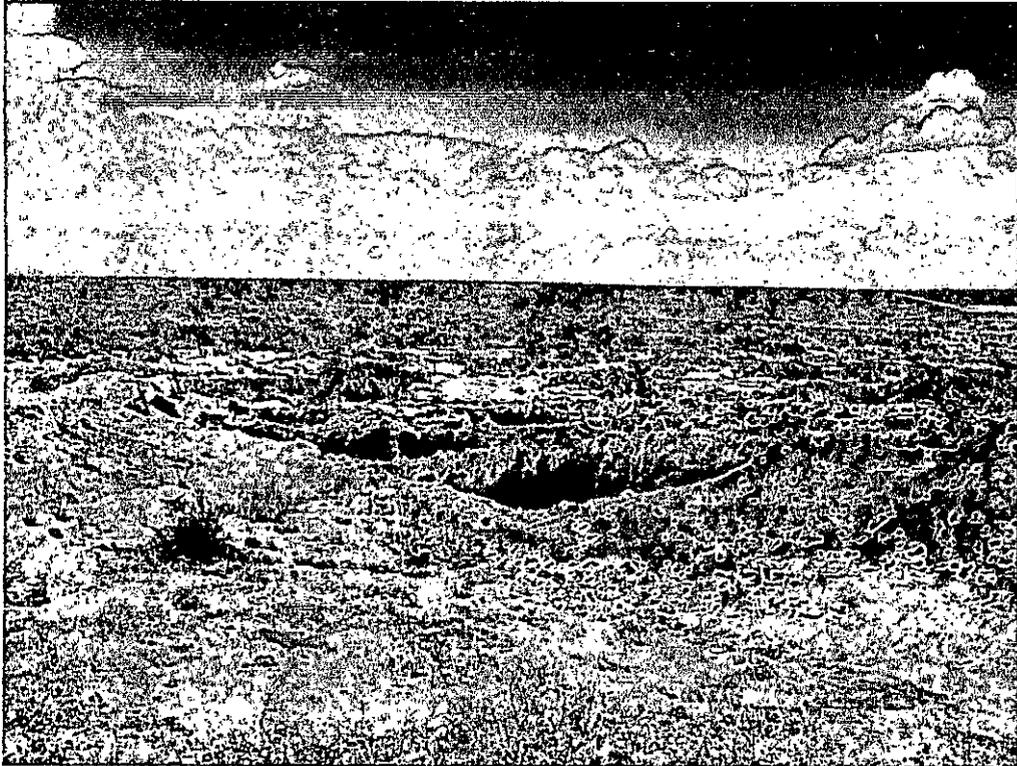
40 Mil Liner installed at 3' below surface.

**PHOTOGRAPHS**

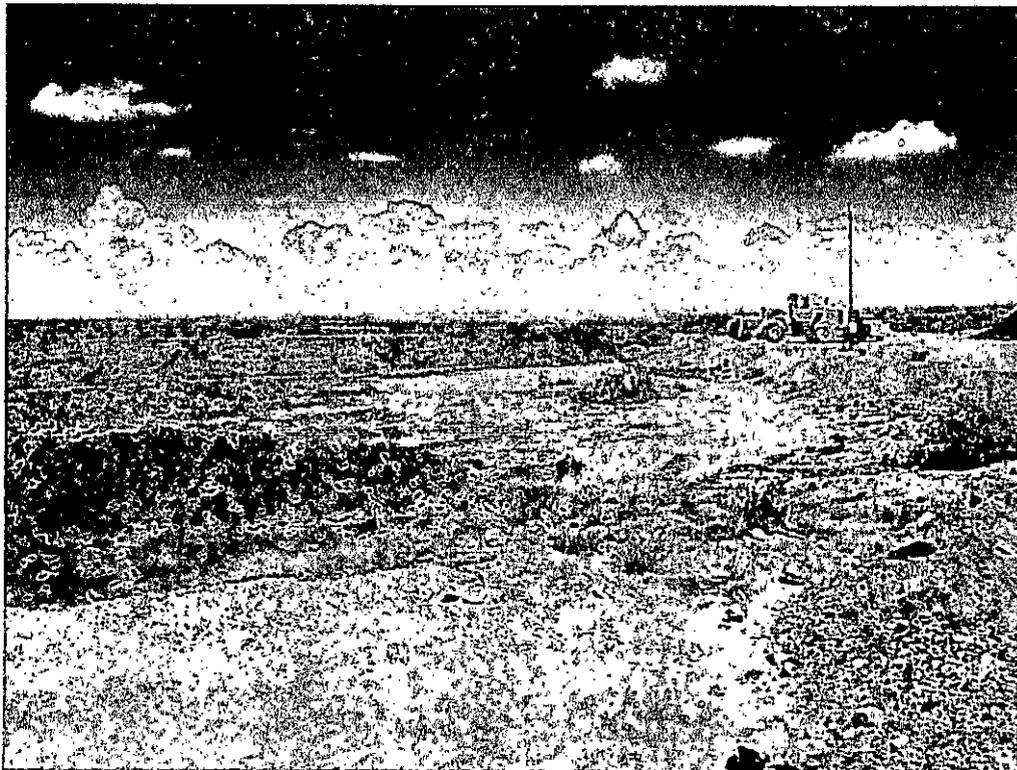
Cimarex Energy  
White City 14 Fed Com #10  
Eddy County, New Mexico



TETRA TECH



View North – Excavation of BH-1 in the pasture.



View East– Excavation of BH-2 in the pasture.

Cimarex Energy  
White City 14 Fed Com #10  
Eddy County, New Mexico



TETRA TECH



Rock encountered in the area of BH-2



View East- Excavation of BH-2 in the pasture.

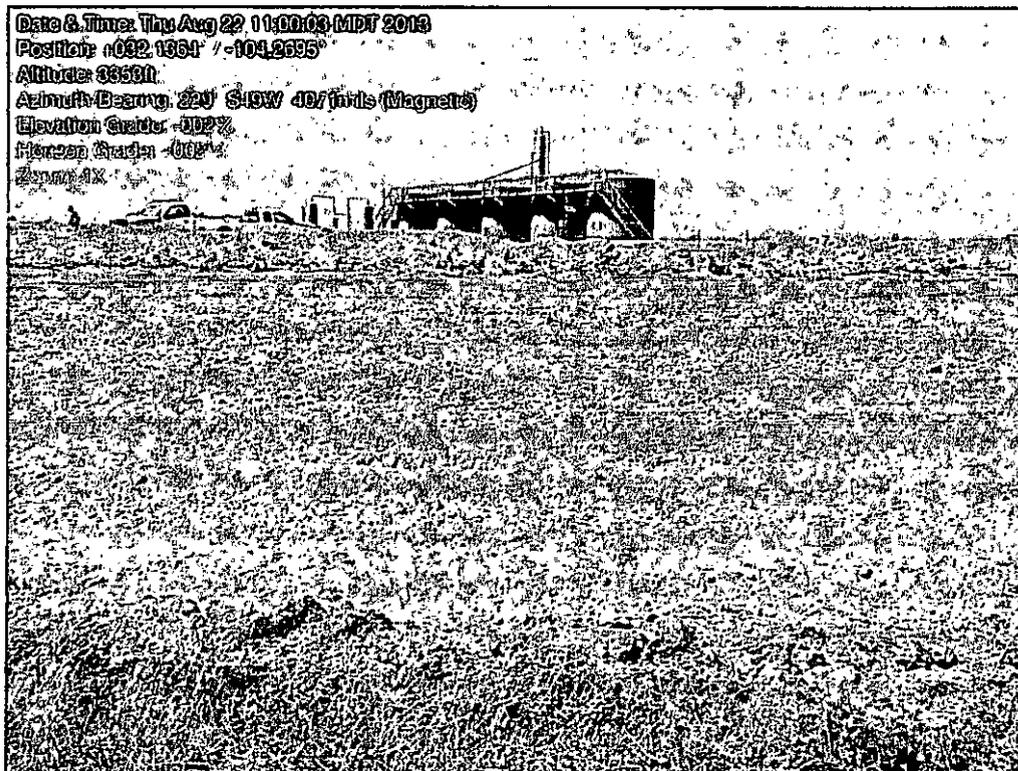
Cimarex Energy  
White City 14 Fed Com #10  
Eddy County, New Mexico



TETRA TECH



View North – Liner installation.



View South – Backfill.

**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

**RECEIVED**  
OCT 15 2013  
NMOCD ARTESIA DISTRICT

Form C-141  
Revised October 10, 2003  
Copies to appropriate  
Office in accordance  
with Rule 116 on back  
side of form

**Release Notification and Corrective Action**

**OPERATOR**  Initial Report  Final Report

|                 |                                  |               |                    |
|-----------------|----------------------------------|---------------|--------------------|
| Name of Company | Cimarex Energy                   | Contact       | Terry D. Ainsworth |
| Address         | 600 Marienfeld Midland, TX 79701 | Telephone No. | (575) 390-1388     |
| Facility Name   | White City 14 Fed Com 10         | Facility Type | Gas Well           |

|               |               |           |          |
|---------------|---------------|-----------|----------|
| Surface Owner | Mineral Owner | Lease No. | NM 19423 |
|---------------|---------------|-----------|----------|

**LOCATION OF RELEASE**

|             |         |          |       |               |                  |               |                |        |
|-------------|---------|----------|-------|---------------|------------------|---------------|----------------|--------|
| Unit Letter | Section | Township | Range | Feet from the | North/South Line | Feet from the | East/West Line | County |
|             | 14      | 25S      | 26E   | 500           | North            | 800           | West           | Eddy   |

Latitude \_\_\_\_\_ Longitude \_\_\_\_\_

**NATURE OF RELEASE**

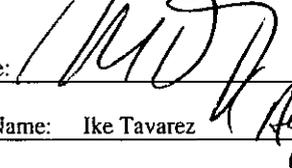
|                             |   |   |                  |                            |          |
|-----------------------------|---|---|------------------|----------------------------|----------|
| Type of Release             | some percentage of acid   | Volume of Release + or - 10 bbls          | Volume Recovered | 0                          |          |
| Source of Release           | acid tanks  | Date and Hour of Occurrence               | ?                | Date and Hour of Discovery | 8/6/2012 |
| Was Immediate Notice Given? | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input 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.\*  
SESI will be out with an auger to see how deep the spill went and to catch samples to see if we can tell for sure what was spilled

Describe Area Affected and Cleanup Action Taken.\*  
Tetra Tech personnel inspected the site and collected samples to define the spills extent. Soil that exceeded the RRAL was removed and hauled away for proper disposal. The site was then lined and brought up to surface grade with clean backfill material. Tetra Tech prepared a closure report and submitted it to NMOCD for review.

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

|  |                                  |                  |                                   |
|--|----------------------------------|------------------|-----------------------------------|
| Signature:  | <b>OIL CONSERVATION DIVISION</b> |                  |                                   |
| Printed Name: Ike Tavarez  | Approved by District Supervisor: |                  |                                   |
| Title: Senior Project Manager  | Approval Date:                   | Expiration Date: |                                   |
| E-mail Address: ike.tavarez@tetrattech.com   | Conditions of Approval:          |                  | Attached <input type="checkbox"/> |
| Date: <u>Sept 30, 2013</u>   | Phone: 432-682-4559              |                  |                                   |

\* Attach Additional Sheets If Necessary

**APPENDIX B**

**Water Well Data  
Average Depth to Groundwater (ft)  
White City 14 Fed Com #10  
Eddy County, New Mexico**

**24 South 25 East**

|    |     |    |     |     |     |     |   |
|----|-----|----|-----|-----|-----|-----|---|
| 6  | 5   | 14 | 4   | 440 | 3   | 2   | 1 |
|    | 209 | 44 |     |     |     |     |   |
| 7  | 8   | 9  | 10  | 11  | 12  |     |   |
|    |     |    |     |     | 27  |     |   |
| 18 | 17  | 16 | 15  | 14  | 13  | 7   |   |
|    |     |    |     |     | 163 |     |   |
| 19 | 20  | 21 | 22  | 23  | 24  |     |   |
|    |     |    |     |     |     |     |   |
| 30 | 29  | 28 | 27  | 26  | 25  | 640 |   |
|    |     |    |     |     | 67  |     |   |
| 31 | 32  | 33 | 34  | 35  | 36  |     |   |
|    |     |    | 160 | 600 |     |     |   |

**24 South 26 East**

|     |     |     |     |    |    |    |    |
|-----|-----|-----|-----|----|----|----|----|
| 6   | 63  | 5   | 4   | 3  | 2  | 1  |    |
| 7   | 260 | 8   | 460 | 9  | 10 | 11 | 12 |
| 18  | 17  | 16  | 15  | 14 | 30 | 13 |    |
| 660 |     |     |     |    |    |    |    |
| 19  | 20  | 21  | 22  | 23 | 38 | 24 | 28 |
|     |     |     |     |    | 37 | 30 |    |
| 30  | 29  | 46  | 28  | 27 | 30 | 26 | 25 |
| 70  |     |     |     |    |    |    |    |
| 31  | 32  | 111 | 33  | 34 | 35 | 36 |    |
|     | 109 |     |     |    |    |    |    |

**24 South 27 East**

|    |    |    |    |    |    |    |  |
|----|----|----|----|----|----|----|--|
| 6  | 5  | 4  | 3  | 2  | 1  |    |  |
| 7  | 8  | 28 | 9  | 10 | 11 | 12 |  |
|    |    | 43 |    |    |    | 27 |  |
| 18 | 17 | 16 | 15 | 14 | 13 |    |  |
| 34 |    |    |    |    |    | 31 |  |
| 19 | 20 | 21 | 22 | 23 | 24 |    |  |
|    |    |    | 70 |    |    |    |  |
| 30 | 29 | 28 | 27 | 26 | 25 |    |  |
|    |    |    |    |    |    |    |  |
| 31 | 32 | 33 | 34 | 35 | 36 |    |  |

**25 South 25 East**

|    |    |    |    |    |    |   |   |
|----|----|----|----|----|----|---|---|
| 6  | 5  | 30 | 4  | 46 | 3  | 2 | 1 |
|    |    |    |    | 20 |    |   |   |
| 7  | 8  | 9  | 10 | 11 | 12 |   |   |
|    |    |    | 43 | 39 |    |   |   |
| 18 | 17 | 16 | 15 | 14 | 13 |   |   |
| 19 | 20 | 21 | 22 | 23 | 24 |   |   |
|    |    |    |    |    | 70 |   |   |
| 30 | 29 | 28 | 27 | 26 | 25 |   |   |
|    |    |    |    |    |    |   |   |
| 31 | 32 | 33 | 34 | 35 | 36 |   |   |

**25 South 26 East**

|    |    |    |     |      |     |    |  |
|----|----|----|-----|------|-----|----|--|
| 6  | 5  | 4  | 3   | 2    | 1   |    |  |
| 7  | 8  | 9  | 46  | 10   | 11  | 12 |  |
| 60 |    |    |     |      |     |    |  |
| 18 | 17 | 16 | 15  | 14   | 13  |    |  |
|    |    |    |     | SITE | 12' |    |  |
| 19 | 20 | 21 | 22  | 23   | 24  |    |  |
|    |    |    | 118 |      |     |    |  |
| 30 | 29 | 28 | 27  | 26   | 25  |    |  |
|    |    |    |     |      | 18' |    |  |
| 31 | 32 | 33 | 34  | 35   | 36  |    |  |

**25 South 27 East**

|    |     |    |    |    |    |    |  |
|----|-----|----|----|----|----|----|--|
| 6  | 5   | 4  | 3  | 2  | 1  |    |  |
| 7  | 8   | 9  | 10 | 11 | 12 |    |  |
|    |     |    |    |    | 92 |    |  |
| 18 | 17  | 16 | 15 | 14 | 13 |    |  |
| 19 | Dry | 20 | 21 | 22 | 23 | 24 |  |
|    |     |    |    |    |    |    |  |
| 30 | 29  | 28 | 27 | 26 | 25 |    |  |
|    |     |    |    |    |    |    |  |
| 31 | 32  | 33 | 34 | 35 | 36 |    |  |
|    |     | 19 |    |    |    |    |  |

**26 South 25 East**

|    |    |    |    |    |     |  |  |
|----|----|----|----|----|-----|--|--|
| 6  | 5  | 4  | 3  | 2  | 1   |  |  |
| 7  | 8  | 9  | 10 | 11 | 12  |  |  |
|    |    |    |    |    | 160 |  |  |
| 18 | 17 | 16 | 15 | 14 | 13  |  |  |
| 10 | 28 | 6  |    |    |     |  |  |
| 19 | 20 | 21 | 22 | 23 | 24  |  |  |
|    |    |    |    |    |     |  |  |
| 30 | 29 | 28 | 27 | 26 | 25  |  |  |
|    |    |    |    |    |     |  |  |
| 31 | 32 | 33 | 34 | 35 | 36  |  |  |

**26 South 26 East**

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

**26 South 27 East**

|    |    |    |    |    |    |  |  |
|----|----|----|----|----|----|--|--|
| 6  | 5  | 4  | 3  | 2  | 1  |  |  |
|    | 12 |    |    |    |    |  |  |
| 7  | 8  | 9  | 10 | 11 | 12 |  |  |
| 18 | 17 | 16 | 15 | 14 | 13 |  |  |
|    |    |    |    |    | 35 |  |  |
| 19 | 20 | 21 | 22 | 23 | 24 |  |  |
|    |    |    | 60 |    |    |  |  |
| 30 | 29 | 28 | 27 | 26 | 25 |  |  |
|    |    |    |    |    |    |  |  |
| 31 | 32 | 33 | 34 | 35 | 36 |  |  |

-  New Mexico State Engineers Well Reports
-  USGS Well Reports
-  Geology and Groundwater Conditions in Southern Eddy, County, NM
-  NMOCD - Groundwater Data
-  Field water level
-  New Mexico Water and Infrastructure Data System
-  Measured Windmill 18'
-  TMW TD 80' DRY



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## National Water Information System: Web Interface

[USGS Water Resources](#)

Data Category:  
 Groundwater

Geographic Area:  
 United States

[News](#) - updated April 18,2013

# Groundwater levels for the Nation

## Search Results -- 1 sites found

Search Criteria

|   |
|---|
| <p><b>site_no list =</b></p> <ul style="list-style-type: none"> <li>• 320738104140601</li> </ul> <p><b>Minimum number of levels = 1</b></p> |
|---|

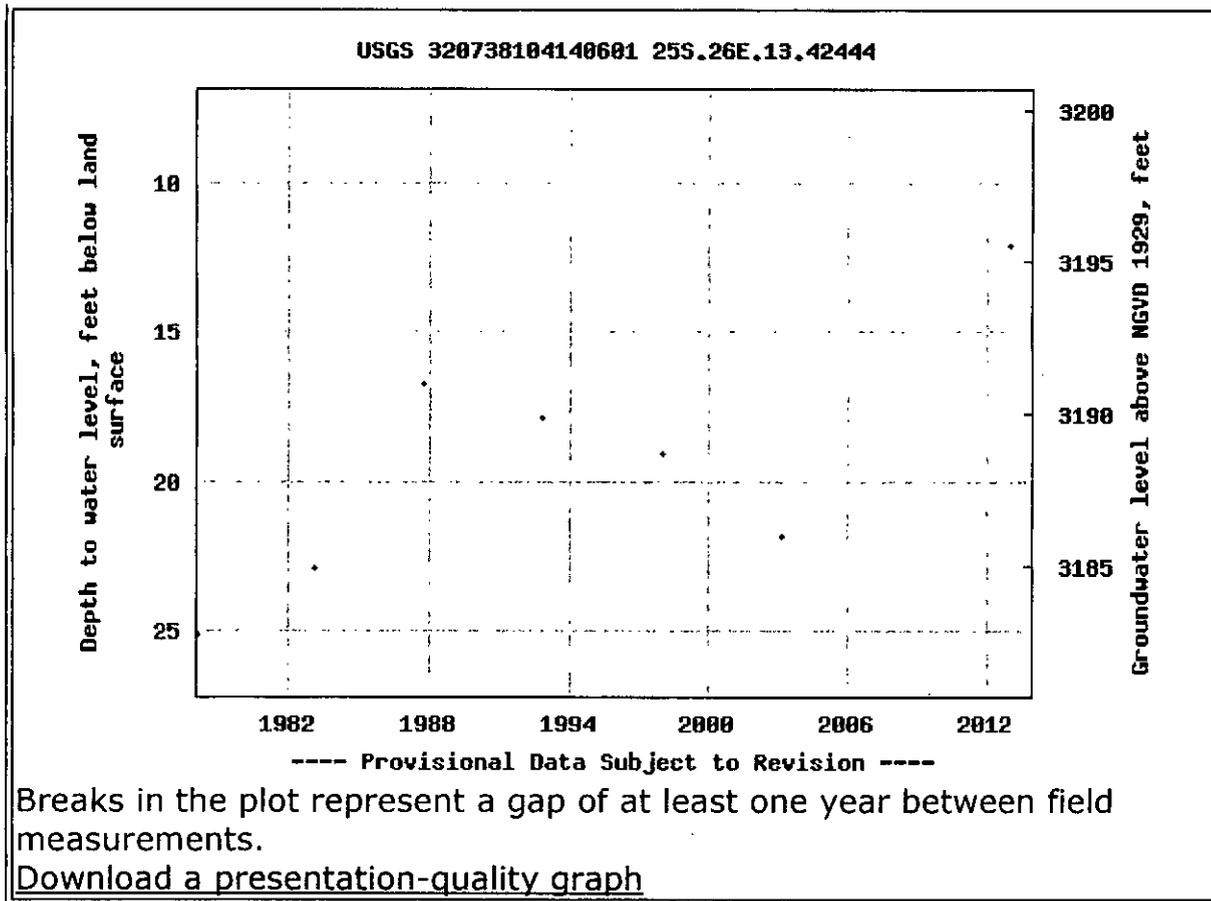
[Save file of selected sites](#) to local disk for future upload

## USGS 320738104140601 25S.26E.13.42444

Available data for this site

Groundwater:  Field measurements

|   |   |
|---|---|
| <p>Eddy County, New Mexico<br/>                 Hydrologic Unit Code --<br/>                 Latitude 32°07'33.5", Longitude 104°14'19.1" NAD83<br/>                 Land-surface elevation 3,207.70 feet above NGVD29<br/>                 The depth of the well is 26 feet below land surface.<br/>                 This well is completed in the Castile Gypsum (312CSTL) local aquifer.</p> | <p><b>Output formats</b></p> <p><a href="#">Table of data</a></p> <p><a href="#">Tab-separated data</a></p> <p><a href="#">Graph of data</a></p> <p><a href="#">Reselect period</a></p> |
|---|---|



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[U.S. Department of the Interior](#) | [U.S. Geological Survey](#)

**Title: Groundwater for USA: Water Levels**

**URL: <http://nwis.waterdata.usgs.gov/nwis/gwlevels?>**



Page Contact Information: [USGS Water Data Support Team](#)

Page Last Modified: 2013-05-02 17:08:49 EDT

0.34 0.32 nadww01

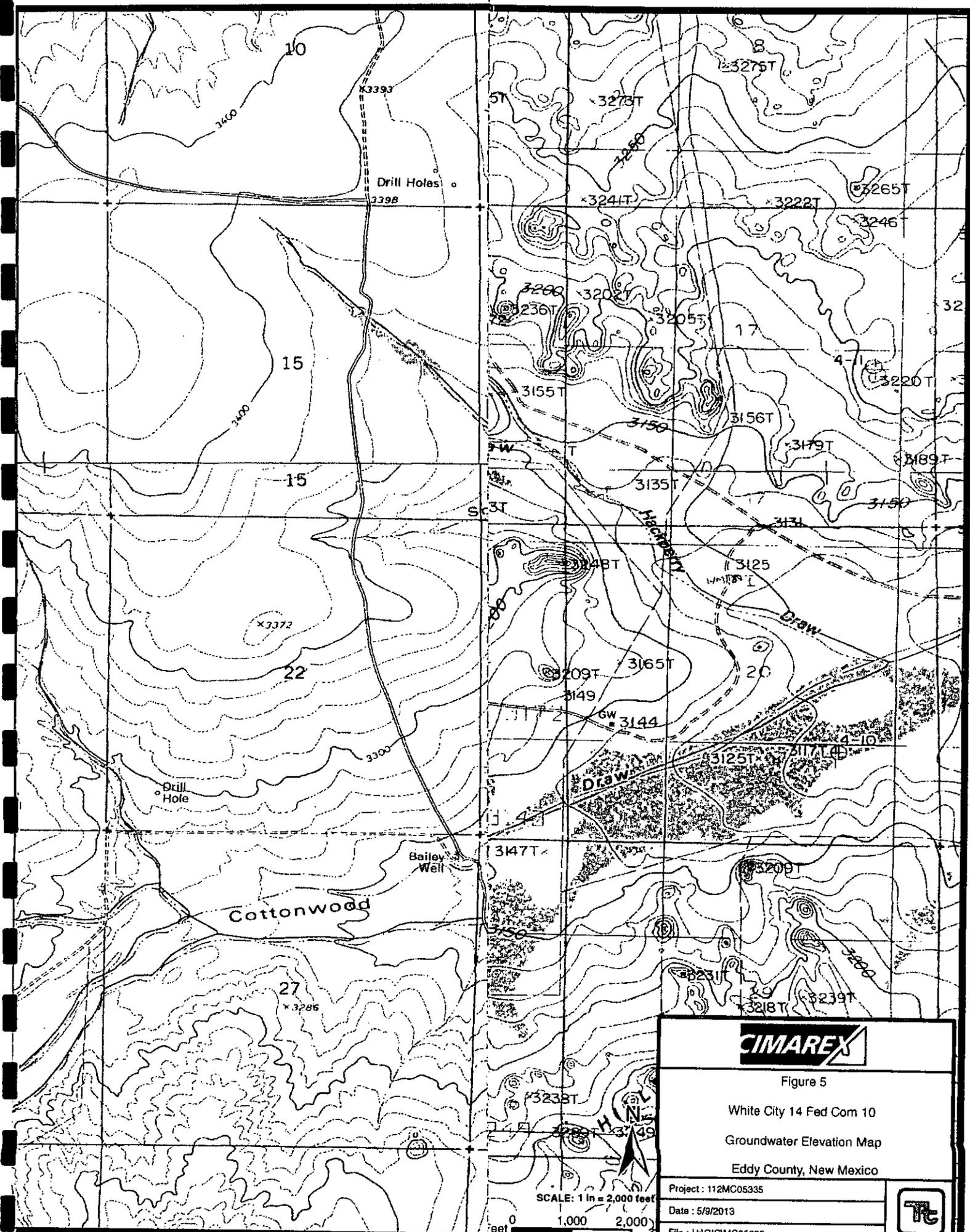


Figure 5

White City 14 Fed Com 10  
 Groundwater Elevation Map  
 Eddy County, New Mexico

Project: 112MC05335

Date: 5/9/2013

File: H:\GIS\MC05335





*New Mexico Office of the State Engineer*  
**Wells with Well Log Information**

SS Search:

Section(s): 14

Township: 25S

Range: 26E

No wells found.

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

3:27 AM

Page 1 of 1

WELLS WITH WELL LOG INFORMATION

**APPENDIX C**

September 28, 2012

Bob Allen  
Safety & Environmental Solutions  
703 East Clinton  
Hobbs, NM 88240

RE: CIM-12-017

Enclosed are the results of analyses for samples received by the laboratory on 09/21/12 7:55.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-11-3. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

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

|                  |                              |
|------------------|------------------------------|
| Method EPA 552.2 | Haloacetic Acids (HAA-5)     |
| Method EPA 524.2 | Total Trihalomethanes (TTHM) |
| Method EPA 524.4 | Regulated VOCs (V1, V2, V3)  |

Accreditation applies to public drinking water matrices.

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

Sincerely,



Celey D. Keene  
Lab Director/Quality Manager

**Analytical Results For:**

 Safety & Environmental Solutions  
 Bob Allen  
 703 East Clinton  
 Hobbs NM, 88240  
 Fax To: (575) 393-4388

|                   |                           |                     |               |
|-------------------|---------------------------|---------------------|---------------|
| Received:         | 09/21/2012                | Sampling Date:      | 09/20/2012    |
| Reported:         | 09/28/2012                | Sampling Type:      | Soil          |
| Project Name:     | CIM-12-017                | Sampling Condition: | Cool & Intact |
| Project Number:   | WHITE CITY 14 FED. COM 10 | Sample Received By: | Jodi Henson   |
| Project Location: | CARLSBAD, NEW MEXICO      |                     |               |

**Sample ID: BH #1 SURFACE (H202306-01)**

| BTEX 8021B     |        | mg/kg           |            | Analyzed By: AP |      |            |               |      |           |  |
|----------------|--------|-----------------|------------|-----------------|------|------------|---------------|------|-----------|--|
| Analyte        | Result | Reporting Limit | Analyzed   | Method Blank    | BS   | % Recovery | True Value QC | RPD  | Qualifier |  |
| Benzene*       | <0.050 | 0.050           | 09/25/2012 | ND              | 2.14 | 107        | 2.00          | 12.1 |           |  |
| Toluene*       | <0.050 | 0.050           | 09/25/2012 | ND              | 2.39 | 119        | 2.00          | 13.4 |           |  |
| Ethylbenzene*  | <0.050 | 0.050           | 09/25/2012 | ND              | 2.37 | 119        | 2.00          | 14.1 |           |  |
| Total Xylenes* | <0.150 | 0.150           | 09/25/2012 | ND              | 7.18 | 120        | 6.00          | 13.7 |           |  |

*Surrogate: 4-Bromofluorobenzene (PIE) 103 % 89.4-126*

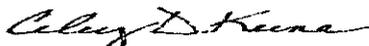
| Chloride, SM4500Cl-B |        | mg/kg           |            | Analyzed By: AP |     |            |               |      |           |  |
|----------------------|--------|-----------------|------------|-----------------|-----|------------|---------------|------|-----------|--|
| Analyte              | Result | Reporting Limit | Analyzed   | Method Blank    | BS  | % Recovery | True Value QC | RPD  | Qualifier |  |
| Chloride             | 30800  | 16.0            | 09/26/2012 | ND              | 416 | 104        | 400           | 0.00 |           |  |

| TPH 418.1 |        | mg/kg           |            | Analyzed By: AM |      |            |               |      |           |  |
|-----------|--------|-----------------|------------|-----------------|------|------------|---------------|------|-----------|--|
| Analyte   | Result | Reporting Limit | Analyzed   | Method Blank    | BS   | % Recovery | True Value QC | RPD  | Qualifier |  |
| TPH 418.1 | <100   | 100             | 09/27/2012 | ND              | 2930 | 117        | 2500          | 2.04 |           |  |

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 Safety & Environmental Solutions  
 Bob Allen  
 703 East Clinton  
 Hobbs NM, 88240  
 Fax To: (575) 393-4388

|                   |                           |                     |               |
|-------------------|---------------------------|---------------------|---------------|
| Received:         | 09/21/2012                | Sampling Date:      | 09/20/2012    |
| Reported:         | 09/28/2012                | Sampling Type:      | Soil          |
| Project Name:     | CIM-12-017                | Sampling Condition: | Cool & Intact |
| Project Number:   | WHITE CITY 14 FED. COM 10 | Sample Received By: | Jodi Henson   |
| Project Location: | CARLSBAD, NEW MEXICO      |                     |               |

**Sample ID: BH #1 5' (H202306-02)**

| BTEX 8021B     |        | mg/kg           |            | Analyzed By: AP |      |            |               |      |           |  |
|----------------|--------|-----------------|------------|-----------------|------|------------|---------------|------|-----------|--|
| Analyte        | Result | Reporting Limit | Analyzed   | Method Blank    | BS   | % Recovery | True Value QC | RPD  | Qualifier |  |
| Benzene*       | <0.050 | 0.050           | 09/25/2012 | ND              | 2.14 | 107        | 2.00          | 12.1 |           |  |
| Toluene*       | <0.050 | 0.050           | 09/25/2012 | ND              | 2.39 | 119        | 2.00          | 13.4 |           |  |
| Ethylbenzene*  | <0.050 | 0.050           | 09/25/2012 | ND              | 2.37 | 119        | 2.00          | 14.1 |           |  |
| Total Xylenes* | <0.150 | 0.150           | 09/25/2012 | ND              | 7.18 | 120        | 6.00          | 13.7 |           |  |

*Surrogate: 4-Bromofluorobenzene (PHE)* 103 % 89.4-126

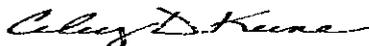
| Chloride, SM4500Cl-B |        | mg/kg           |            | Analyzed By: AP |     |            |               |      |           |  |
|----------------------|--------|-----------------|------------|-----------------|-----|------------|---------------|------|-----------|--|
| Analyte              | Result | Reporting Limit | Analyzed   | Method Blank    | BS  | % Recovery | True Value QC | RPD  | Qualifier |  |
| Chloride             | 21200  | 16.0            | 09/26/2012 | ND              | 416 | 104        | 400           | 0.00 |           |  |

| TPH 418.1 |        | mg/kg           |            | Analyzed By: AM |      |            |               |      |           |  |
|-----------|--------|-----------------|------------|-----------------|------|------------|---------------|------|-----------|--|
| Analyte   | Result | Reporting Limit | Analyzed   | Method Blank    | BS   | % Recovery | True Value QC | RPD  | Qualifier |  |
| TPH 418.1 | <100   | 100             | 09/27/2012 | ND              | 2930 | 117        | 2500          | 2.04 |           |  |

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\*=Accredited Analyte

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Caley D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 Safety & Environmental Solutions  
 Bob Allen  
 703 East Clinton  
 Hobbs NM, 88240  
 Fax To: (575) 393-4388

|                   |                           |                     |               |
|-------------------|---------------------------|---------------------|---------------|
| Received:         | 09/21/2012                | Sampling Date:      | 09/20/2012    |
| Reported:         | 09/28/2012                | Sampling Type:      | Soil          |
| Project Name:     | CIM-12-017                | Sampling Condition: | Cool & Intact |
| Project Number:   | WHITE CITY 14 FED. COM 10 | Sample Received By: | Jodi Henson   |
| Project Location: | CARLSBAD, NEW MEXICO      |                     |               |

**Sample ID: BH #1 10' (H202306-03)**

| BTEX 8021B     |        | mg/kg           |            | Analyzed By: AP |      |            |               |      |           |  |
|----------------|--------|-----------------|------------|-----------------|------|------------|---------------|------|-----------|--|
| Analyte        | Result | Reporting Limit | Analyzed   | Method Blank    | BS   | % Recovery | True Value QC | RPD  | Qualifier |  |
| Benzene*       | <0.050 | 0.050           | 09/25/2012 | ND              | 2.14 | 107        | 2.00          | 12.1 |           |  |
| Toluene*       | <0.050 | 0.050           | 09/25/2012 | ND              | 2.39 | 119        | 2.00          | 13.4 |           |  |
| Ethylbenzene*  | <0.050 | 0.050           | 09/25/2012 | ND              | 2.37 | 119        | 2.00          | 14.1 |           |  |
| Total Xylenes* | <0.150 | 0.150           | 09/25/2012 | ND              | 7.18 | 120        | 6.00          | 13.7 |           |  |

*Surrogate: 4-Bromofluorobenzene (PIL) 102 % 89.4-126*

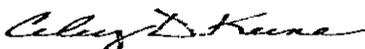
| Chloride, SM4500Cl-B |        | mg/kg           |            | Analyzed By: AP |     |            |               |      |           |  |
|----------------------|--------|-----------------|------------|-----------------|-----|------------|---------------|------|-----------|--|
| Analyte              | Result | Reporting Limit | Analyzed   | Method Blank    | BS  | % Recovery | True Value QC | RPD  | Qualifier |  |
| Chloride             | 17400  | 16.0            | 09/26/2012 | ND              | 416 | 104        | 400           | 0.00 |           |  |

| TPH 418.1 |        | mg/kg           |            | Analyzed By: AM |      |            |               |      |           |  |
|-----------|--------|-----------------|------------|-----------------|------|------------|---------------|------|-----------|--|
| Analyte   | Result | Reporting Limit | Analyzed   | Method Blank    | BS   | % Recovery | True Value QC | RPD  | Qualifier |  |
| TPH 418.1 | <100   | 100             | 09/27/2012 | ND              | 2930 | 117        | 2500          | 2.04 |           |  |

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\* = Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

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 Safety & Environmental Solutions  
 Bob Allen  
 703 East Clinton  
 Hobbs NM, 88240  
 Fax To: (575) 393-4388

|                   |                           |                     |               |
|-------------------|---------------------------|---------------------|---------------|
| Received:         | 09/21/2012                | Sampling Date:      | 09/20/2012    |
| Reported:         | 09/28/2012                | Sampling Type:      | Soil          |
| Project Name:     | CIM-12-017                | Sampling Condition: | Cool & Intact |
| Project Number:   | WHITE CITY 14 FED. COM 10 | Sample Received By: | Jodi Henson   |
| Project Location: | CARLSBAD, NEW MEXICO      |                     |               |

**Sample ID: BH #1 15' (H202306-04)**

| BTX 80218      |        | mg/kg           |            | Analyzed By: AP |      |            |               |      |           |  |
|----------------|--------|-----------------|------------|-----------------|------|------------|---------------|------|-----------|--|
| Analyte        | Result | Reporting Limit | Analyzed   | Method Blank    | BS   | % Recovery | True Value QC | RPD  | Qualifier |  |
| Benzene*       | <0.050 | 0.050           | 09/25/2012 | ND              | 2.14 | 107        | 2.00          | 12.1 |           |  |
| Toluene*       | <0.050 | 0.050           | 09/25/2012 | ND              | 2.39 | 119        | 2.00          | 13.4 |           |  |
| Ethylbenzene*  | <0.050 | 0.050           | 09/25/2012 | ND              | 2.37 | 119        | 2.00          | 14.1 |           |  |
| Total Xylenes* | <0.150 | 0.150           | 09/25/2012 | ND              | 7.18 | 120        | 6.00          | 13.7 |           |  |

*Surrogate: 4-Bromofluorobenzene (PIL) 99.5% 89.4-126*

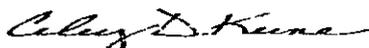
| Chloride, SM4500Cl-B |            | mg/kg           |            | Analyzed By: AP |     |            |               |      |           |  |
|----------------------|------------|-----------------|------------|-----------------|-----|------------|---------------|------|-----------|--|
| Analyte              | Result     | Reporting Limit | Analyzed   | Method Blank    | BS  | % Recovery | True Value QC | RPD  | Qualifier |  |
| Chloride             | <b>464</b> | 16.0            | 09/26/2012 | ND              | 416 | 104        | 400           | 0.00 |           |  |

| TPH 418.1 |            | mg/kg           |            | Analyzed By: AM |      |            |               |      |           |  |
|-----------|------------|-----------------|------------|-----------------|------|------------|---------------|------|-----------|--|
| Analyte   | Result     | Reporting Limit | Analyzed   | Method Blank    | BS   | % Recovery | True Value QC | RPD  | Qualifier |  |
| TPH 418.1 | <b>147</b> | 100             | 09/27/2012 | ND              | 2930 | 117        | 2500          | 2.04 |           |  |

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 Safety & Environmental Solutions  
 Bob Allen  
 703 East Clinton  
 Hobbs NM, 88240  
 Fax To: (575) 393-4388

 Received: 09/21/2012  
 Reported: 09/28/2012  
 Project Name: CIM-12-017  
 Project Number: WHITE CITY 14 FED. COM 10  
 Project Location: CARLSBAD, NEW MEXICO

 Sampling Date: 09/20/2012  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: BH #1 20' (H202306-05)**

| BTEX 8021B     |        | mg/kg           |            | Analyzed By: AP |      |            |               |      |           |  |
|----------------|--------|-----------------|------------|-----------------|------|------------|---------------|------|-----------|--|
| Analyte        | Result | Reporting Limit | Analyzed   | Method Blank    | BS   | % Recovery | True Value QC | RPD  | Qualifier |  |
| Benzene*       | <0.050 | 0.050           | 09/25/2012 | ND              | 2.14 | 107        | 2.00          | 12.1 |           |  |
| Toluene*       | <0.050 | 0.050           | 09/25/2012 | ND              | 2.39 | 119        | 2.00          | 13.4 |           |  |
| Ethylbenzene*  | <0.050 | 0.050           | 09/25/2012 | ND              | 2.37 | 119        | 2.00          | 14.1 |           |  |
| Total Xylenes* | <0.150 | 0.150           | 09/25/2012 | ND              | 7.18 | 120        | 6.00          | 13.7 |           |  |

*Surrogate: 4-Bromofluorobenzene (PH) 101 % 89.4-126*

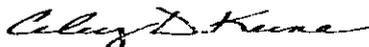
| Chloride, SM4500CI-B |            | mg/kg           |            | Analyzed By: AP |     |            |               |      |           |  |
|----------------------|------------|-----------------|------------|-----------------|-----|------------|---------------|------|-----------|--|
| Analyte              | Result     | Reporting Limit | Analyzed   | Method Blank    | BS  | % Recovery | True Value QC | RPD  | Qualifier |  |
| Chloride             | <b>256</b> | 16.0            | 09/26/2012 | ND              | 416 | 104        | 400           | 0.00 |           |  |

| TPH 418.1 |        | mg/kg           |            | Analyzed By: AM |      |            |               |      |           |  |
|-----------|--------|-----------------|------------|-----------------|------|------------|---------------|------|-----------|--|
| Analyte   | Result | Reporting Limit | Analyzed   | Method Blank    | BS   | % Recovery | True Value QC | RPD  | Qualifier |  |
| TPH 418.1 | <100   | 100             | 09/27/2012 | ND              | 2930 | 117        | 2500          | 2.04 |           |  |

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 Hobbs NM, 88240  
 Fax To: (575) 393-4388

|                   |                           |                     |               |
|-------------------|---------------------------|---------------------|---------------|
| Received:         | 09/21/2012                | Sampling Date:      | 09/20/2012    |
| Reported:         | 09/28/2012                | Sampling Type:      | Soil          |
| Project Name:     | CIM-12-017                | Sampling Condition: | Cool & Intact |
| Project Number:   | WHITE CITY 14 FED. COM 10 | Sample Received By: | Jodi Henson   |
| Project Location: | CARLSBAD, NEW MEXICO      |                     |               |

**Sample ID: BH #1 25' (H202306-06)**

| BTEX 8021B     |        | mg/kg           |            | Analyzed By: AP |      |            |               |      |           |  |
|----------------|--------|-----------------|------------|-----------------|------|------------|---------------|------|-----------|--|
| Analyte        | Result | Reporting Limit | Analyzed   | Method Blank    | BS   | % Recovery | True Value QC | RPD  | Qualifier |  |
| Benzene*       | <0.050 | 0.050           | 09/25/2012 | ND              | 2.14 | 107        | 2.00          | 12.1 |           |  |
| Toluene*       | <0.050 | 0.050           | 09/25/2012 | ND              | 2.39 | 119        | 2.00          | 13.4 |           |  |
| Ethylbenzene*  | <0.050 | 0.050           | 09/25/2012 | ND              | 2.37 | 119        | 2.00          | 14.1 |           |  |
| Total Xylenes* | <0.150 | 0.150           | 09/25/2012 | ND              | 7.18 | 120        | 6.00          | 13.7 |           |  |

*Surrogate: 4-Bromofluorobenzene (PIL) 99.2 % 89.4-126*

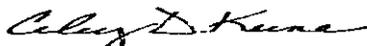
| Chloride, SM4500Cl-B |        | mg/kg           |            | Analyzed By: AP |     |            |               |      |           |  |
|----------------------|--------|-----------------|------------|-----------------|-----|------------|---------------|------|-----------|--|
| Analyte              | Result | Reporting Limit | Analyzed   | Method Blank    | BS  | % Recovery | True Value QC | RPD  | Qualifier |  |
| Chloride             | 480    | 16.0            | 09/26/2012 | ND              | 416 | 104        | 400           | 0.00 |           |  |

| TPH 418.1 |        | mg/kg           |            | Analyzed By: AM |      |            |               |      |           |  |
|-----------|--------|-----------------|------------|-----------------|------|------------|---------------|------|-----------|--|
| Analyte   | Result | Reporting Limit | Analyzed   | Method Blank    | BS   | % Recovery | True Value QC | RPD  | Qualifier |  |
| TPH 418.1 | <100   | 100             | 09/27/2012 | ND              | 2930 | 117        | 2500          | 2.04 |           |  |

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|                   |                           |                     |               |
|-------------------|---------------------------|---------------------|---------------|
| Received:         | 09/21/2012                | Sampling Date:      | 09/20/2012    |
| Reported:         | 09/28/2012                | Sampling Type:      | Soil          |
| Project Name:     | CIM-12-017                | Sampling Condition: | Cool & Intact |
| Project Number:   | WHITE CITY 14 FED. COM 10 | Sample Received By: | Jodi Henson   |
| Project Location: | CARLSBAD, NEW MEXICO      |                     |               |

**Sample ID: 8H #1 30' (H202306-07)**

| BTEX 8021B     |        | mg/kg           |            | Analyzed By: AP |      |            |               |      |           |  |
|----------------|--------|-----------------|------------|-----------------|------|------------|---------------|------|-----------|--|
| Analyte        | Result | Reporting Limit | Analyzed   | Method Blank    | BS   | % Recovery | True Value QC | RPD  | Qualifier |  |
| Benzene*       | <0.050 | 0.050           | 09/25/2012 | ND              | 2.14 | 107        | 2.00          | 12.1 |           |  |
| Toluene*       | <0.050 | 0.050           | 09/25/2012 | ND              | 2.39 | 119        | 2.00          | 13.4 |           |  |
| Ethylbenzene*  | <0.050 | 0.050           | 09/25/2012 | ND              | 2.37 | 119        | 2.00          | 14.1 |           |  |
| Total Xylenes* | <0.150 | 0.150           | 09/25/2012 | ND              | 7.18 | 120        | 6.00          | 13.7 |           |  |

*Surrogate: 4-Bromofluorobenzene (PII): 100 % 89.4-126*

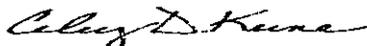
| Chloride, SM4500Cl-B |            | mg/kg           |            | Analyzed By: AP |     |            |               |      |           |  |
|----------------------|------------|-----------------|------------|-----------------|-----|------------|---------------|------|-----------|--|
| Analyte              | Result     | Reporting Limit | Analyzed   | Method Blank    | BS  | % Recovery | True Value QC | RPD  | Qualifier |  |
| Chloride             | <b>128</b> | 16.0            | 09/26/2012 | ND              | 416 | 104        | 400           | 0.00 |           |  |

| TPH 418.1 |        | mg/kg           |            | Analyzed By: AM |      |            |               |      |           |  |
|-----------|--------|-----------------|------------|-----------------|------|------------|---------------|------|-----------|--|
| Analyte   | Result | Reporting Limit | Analyzed   | Method Blank    | BS   | % Recovery | True Value QC | RPD  | Qualifier |  |
| TPH 418.1 | <100   | 100             | 09/27/2012 | ND              | 2930 | 117        | 2500          | 2.04 |           |  |

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|                   |                           |                     |               |
|-------------------|---------------------------|---------------------|---------------|
| Received:         | 09/21/2012                | Sampling Date:      | 09/20/2012    |
| Reported:         | 09/28/2012                | Sampling Type:      | Soil          |
| Project Name:     | CIM-12-017                | Sampling Condition: | Cool & Intact |
| Project Number:   | WHITE CITY 14 FED. COM 10 | Sample Received By: | Jodi Henson   |
| Project Location: | CARLSBAD, NEW MEXICO      |                     |               |

**Sample ID: BH #2 SURFACE (H202306-08)**

| BTEX 8021B     |        | mg/kg           |            | Analyzed By: AP |      |            |               |      |           |  |
|----------------|--------|-----------------|------------|-----------------|------|------------|---------------|------|-----------|--|
| Analyte        | Result | Reporting Limit | Analyzed   | Method Blank    | BS   | % Recovery | True Value QC | RPD  | Qualifier |  |
| Benzene*       | <0.050 | 0.050           | 09/25/2012 | ND              | 2.14 | 107        | 2.00          | 12.1 |           |  |
| Toluene*       | <0.050 | 0.050           | 09/25/2012 | ND              | 2.39 | 119        | 2.00          | 13.4 |           |  |
| Ethylbenzene*  | <0.050 | 0.050           | 09/25/2012 | ND              | 2.37 | 119        | 2.00          | 14.1 |           |  |
| Total Xylenes* | <0.150 | 0.150           | 09/25/2012 | ND              | 7.18 | 120        | 6.00          | 13.7 |           |  |

*Surrogate: 4-Bromofluorobenzene (PIL) 99.3 % 89.4-126*

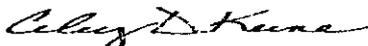
| Chloride, SM4500Cl-B |        | mg/kg           |            | Analyzed By: AP |     |            |               |      |           |  |
|----------------------|--------|-----------------|------------|-----------------|-----|------------|---------------|------|-----------|--|
| Analyte              | Result | Reporting Limit | Analyzed   | Method Blank    | BS  | % Recovery | True Value QC | RPD  | Qualifier |  |
| Chloride             | 22000  | 16.0            | 09/26/2012 | ND              | 416 | 104        | 400           | 0.00 |           |  |

| TPH 418.1 |        | mg/kg           |            | Analyzed By: AM |      |            |               |      |           |  |
|-----------|--------|-----------------|------------|-----------------|------|------------|---------------|------|-----------|--|
| Analyte   | Result | Reporting Limit | Analyzed   | Method Blank    | BS   | % Recovery | True Value QC | RPD  | Qualifier |  |
| TPH 418.1 | <100   | 100             | 09/27/2012 | ND              | 2930 | 117        | 2500          | 2.04 |           |  |

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|-------------------|---------------------------|---------------------|---------------|
| Received:         | 09/21/2012                | Sampling Date:      | 09/20/2012    |
| Reported:         | 09/28/2012                | Sampling Type:      | Soil          |
| Project Name:     | CIM-12-017                | Sampling Condition: | Cool & Intact |
| Project Number:   | WHITE CITY 14 FED. COM 10 | Sample Received By: | Jodi Henson   |
| Project Location: | CARLSBAD, NEW MEXICO      |                     |               |

**Sample ID: BH #2 5' (H202306-09)**

| BTEX 8021B     |        | mg/kg           |            | Analyzed By: AP |      |            |               |      |           |  |
|----------------|--------|-----------------|------------|-----------------|------|------------|---------------|------|-----------|--|
| Analyte        | Result | Reporting Limit | Analyzed   | Method Blank    | BS   | % Recovery | True Value QC | RPD  | Qualifier |  |
| Benzene*       | <0.050 | 0.050           | 09/25/2012 | ND              | 2.14 | 107        | 2.00          | 12.1 |           |  |
| Toluene*       | <0.050 | 0.050           | 09/25/2012 | ND              | 2.39 | 119        | 2.00          | 13.4 |           |  |
| Ethylbenzene*  | <0.050 | 0.050           | 09/25/2012 | ND              | 2.37 | 119        | 2.00          | 14.1 |           |  |
| Total Xylenes* | <0.150 | 0.150           | 09/25/2012 | ND              | 7.18 | 120        | 6.00          | 13.7 |           |  |

*Surrogate: 4-Bromofluorobenzene (PIE) 99.5 % 89.4-126*

| Chloride, SM4500Cl-B |        | mg/kg           |            | Analyzed By: AP |     |            |               |      |           |  |
|----------------------|--------|-----------------|------------|-----------------|-----|------------|---------------|------|-----------|--|
| Analyte              | Result | Reporting Limit | Analyzed   | Method Blank    | BS  | % Recovery | True Value QC | RPD  | Qualifier |  |
| Chloride             | 19200  | 16.0            | 09/26/2012 | ND              | 416 | 104        | 400           | 0.00 |           |  |

| TPH 418.1 |        | mg/kg           |            | Analyzed By: AM |      |            |               |      |           |  |
|-----------|--------|-----------------|------------|-----------------|------|------------|---------------|------|-----------|--|
| Analyte   | Result | Reporting Limit | Analyzed   | Method Blank    | BS   | % Recovery | True Value QC | RPD  | Qualifier |  |
| TPH 418.1 | 172    | 100             | 09/27/2012 | ND              | 2930 | 117        | 2500          | 2.04 |           |  |

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|-------------------|---------------------------|---------------------|---------------|
| Received:         | 09/21/2012                | Sampling Date:      | 09/20/2012    |
| Reported:         | 09/28/2012                | Sampling Type:      | Soil          |
| Project Name:     | CIM-12-017                | Sampling Condition: | Cool & Intact |
| Project Number:   | WHITE CITY 14 FED. COM 10 | Sample Received By: | Jodi Henson   |
| Project Location: | CARLSBAD, NEW MEXICO      |                     |               |

**Sample ID: BH #2 10' (H202306-10)**

| BTEX 8021B     |        | mg/kg           |            | Analyzed By: AP |      |            |               |      |           |  |
|----------------|--------|-----------------|------------|-----------------|------|------------|---------------|------|-----------|--|
| Analyte        | Result | Reporting Limit | Analyzed   | Method Blank    | BS   | % Recovery | True Value QC | RPD  | Qualifier |  |
| Benzene*       | <0.050 | 0.050           | 09/25/2012 | ND              | 2.14 | 107        | 2.00          | 12.1 |           |  |
| Toluene*       | <0.050 | 0.050           | 09/25/2012 | ND              | 2.39 | 119        | 2.00          | 13.4 |           |  |
| Ethylbenzene*  | <0.050 | 0.050           | 09/25/2012 | ND              | 2.37 | 119        | 2.00          | 14.1 |           |  |
| Total Xylenes* | <0.150 | 0.150           | 09/25/2012 | ND              | 7.18 | 120        | 6.00          | 13.7 |           |  |

Surrogate: 4-Bromofluorobenzene (P1); 99.9 % 89.4-126

| Chloride, SM4500Cl-B |        | mg/kg           |            | Analyzed By: AP |     |            |               |      |           |  |
|----------------------|--------|-----------------|------------|-----------------|-----|------------|---------------|------|-----------|--|
| Analyte              | Result | Reporting Limit | Analyzed   | Method Blank    | BS  | % Recovery | True Value QC | RPD  | Qualifier |  |
| Chloride             | 5860   | 16.0            | 09/26/2012 | ND              | 416 | 104        | 400           | 0.00 |           |  |

| TPH 418.1 |        | mg/kg           |            | Analyzed By: AM |      |            |               |      |           |  |
|-----------|--------|-----------------|------------|-----------------|------|------------|---------------|------|-----------|--|
| Analyte   | Result | Reporting Limit | Analyzed   | Method Blank    | BS   | % Recovery | True Value QC | RPD  | Qualifier |  |
| TPH 418.1 | <100   | 100             | 09/27/2012 | ND              | 2930 | 117        | 2500          | 2.04 |           |  |

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|-------------------|---------------------------|---------------------|---------------|
| Received:         | 09/21/2012                | Sampling Date:      | 09/20/2012    |
| Reported:         | 09/28/2012                | Sampling Type:      | Soil          |
| Project Name:     | CIM-12-017                | Sampling Condition: | Cool & Intact |
| Project Number:   | WHITE CITY 14 FED. COM 10 | Sample Received By: | Jodi Henson   |
| Project Location: | CARLSBAD, NEW MEXICO      |                     |               |

**Sample ID: BH #2 15' (H202306-11)**

| BTEX 8021B     |        | mg/kg           |            | Analyzed By: AP |      |            |               |      |           |  |
|----------------|--------|-----------------|------------|-----------------|------|------------|---------------|------|-----------|--|
| Analyte        | Result | Reporting Limit | Analyzed   | Method Blank    | BS   | % Recovery | True Value QC | RPD  | Qualifier |  |
| Benzene*       | <0.050 | 0.050           | 09/25/2012 | ND              | 2.14 | 107        | 2.00          | 12.1 |           |  |
| Toluene*       | <0.050 | 0.050           | 09/25/2012 | ND              | 2.39 | 119        | 2.00          | 13.4 |           |  |
| Ethylbenzene*  | <0.050 | 0.050           | 09/25/2012 | ND              | 2.37 | 119        | 2.00          | 14.1 |           |  |
| Total Xylenes* | <0.150 | 0.150           | 09/25/2012 | ND              | 7.18 | 120        | 6.00          | 13.7 |           |  |

*Surrogate: 4-Bromofluorobenzene (PIL) 100 % 89.4-126*

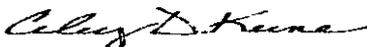
| Chloride, SM4500Cl-B |            | mg/kg           |            | Analyzed By: AP |     |            |               |      |           |  |
|----------------------|------------|-----------------|------------|-----------------|-----|------------|---------------|------|-----------|--|
| Analyte              | Result     | Reporting Limit | Analyzed   | Method Blank    | BS  | % Recovery | True Value QC | RPD  | Qualifier |  |
| Chloride             | <b>944</b> | 16.0            | 09/26/2012 | ND              | 416 | 104        | 400           | 0.00 |           |  |

| TPH 418.1 |        | mg/kg           |            | Analyzed By: AM |      |            |               |      |           |  |
|-----------|--------|-----------------|------------|-----------------|------|------------|---------------|------|-----------|--|
| Analyte   | Result | Reporting Limit | Analyzed   | Method Blank    | BS   | % Recovery | True Value QC | RPD  | Qualifier |  |
| TPH 418.1 | <100   | 100             | 09/27/2012 | ND              | 2930 | 117        | 2500          | 2.04 |           |  |

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|-------------------|---------------------------|---------------------|---------------|
| Received:         | 09/21/2012                | Sampling Date:      | 09/20/2012    |
| Reported:         | 09/28/2012                | Sampling Type:      | Soil          |
| Project Name:     | CIM-12-017                | Sampling Condition: | Cool & Intact |
| Project Number:   | WHITE CITY 14 FED. COM 10 | Sample Received By: | Jodi Henson   |
| Project Location: | CARLSBAD, NEW MEXICO      |                     |               |

**Sample ID: BH #2 20' (H202306-12)**

| BTEX 8021B     |        | mg/kg           |            | Analyzed By: AP |      |            |               |      |           |  |
|----------------|--------|-----------------|------------|-----------------|------|------------|---------------|------|-----------|--|
| Analyte        | Result | Reporting Limit | Analyzed   | Method Blank    | BS   | % Recovery | True Value QC | RPD  | Qualifier |  |
| Benzene*       | <0.050 | 0.050           | 09/25/2012 | ND              | 2.14 | 107        | 2.00          | 12.1 |           |  |
| Toluene*       | <0.050 | 0.050           | 09/25/2012 | ND              | 2.39 | 119        | 2.00          | 13.4 |           |  |
| Ethylbenzene*  | <0.050 | 0.050           | 09/25/2012 | ND              | 2.37 | 119        | 2.00          | 14.1 |           |  |
| Total Xylenes* | <0.150 | 0.150           | 09/25/2012 | ND              | 7.18 | 120        | 6.00          | 13.7 |           |  |

*Surrogate: 4-Bromofluorobenzene (PIL) 99.2 % 89.4-126*

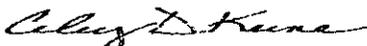
| Chloride, SM4500Cl-B |        | mg/kg           |            | Analyzed By: AP |     |            |               |      |           |  |
|----------------------|--------|-----------------|------------|-----------------|-----|------------|---------------|------|-----------|--|
| Analyte              | Result | Reporting Limit | Analyzed   | Method Blank    | BS  | % Recovery | True Value QC | RPD  | Qualifier |  |
| Chloride             | 992    | 16.0            | 09/26/2012 | ND              | 416 | 104        | 400           | 0.00 |           |  |

| TPH 418.1 |        | mg/kg           |            | Analyzed By: AM |      |            |               |      |           |  |
|-----------|--------|-----------------|------------|-----------------|------|------------|---------------|------|-----------|--|
| Analyte   | Result | Reporting Limit | Analyzed   | Method Blank    | BS   | % Recovery | True Value QC | RPD  | Qualifier |  |
| TPH 418.1 | <100   | 100             | 09/27/2012 | ND              | 2930 | 117        | 2500          | 2.04 |           |  |

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**Analytical Results For:**

 Safety & Environmental Solutions  
 Bob Allen  
 703 East Clinton  
 Hobbs NM, 88240  
 Fax To: (575) 393-4388

|                   |                           |                     |               |
|-------------------|---------------------------|---------------------|---------------|
| Received:         | 09/21/2012                | Sampling Date:      | 09/20/2012    |
| Reported:         | 09/28/2012                | Sampling Type:      | Soil          |
| Project Name:     | CIM-12-017                | Sampling Condition: | Cool & Intact |
| Project Number:   | WHITE CITY 14 FED. COM 10 | Sample Received By: | Jodi Henson   |
| Project Location: | CARLSBAD, NEW MEXICO      |                     |               |

**Sample ID: BH #2 25' (H202306-13)**

| BTEX 8021B     |        | mg/kg           |            | Analyzed By: AP |      |            |               |      |           |  |
|----------------|--------|-----------------|------------|-----------------|------|------------|---------------|------|-----------|--|
| Analyte        | Result | Reporting Limit | Analyzed   | Method Blank    | BS   | % Recovery | True Value QC | RPD  | Qualifier |  |
| Benzene*       | <0.050 | 0.050           | 09/25/2012 | ND              | 2.14 | 107        | 2.00          | 12.1 |           |  |
| Toluene*       | <0.050 | 0.050           | 09/25/2012 | ND              | 2.39 | 119        | 2.00          | 13.4 |           |  |
| Ethylbenzene*  | <0.050 | 0.050           | 09/25/2012 | ND              | 2.37 | 119        | 2.00          | 14.1 |           |  |
| Total Xylenes* | <0.150 | 0.150           | 09/25/2012 | ND              | 7.18 | 120        | 6.00          | 13.7 |           |  |

*Surrogate: 4-Bromofluorobenzene (PIL) 102 % 89.4-126*

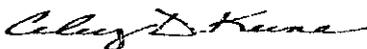
| Chloride, SM4500Cl-B |            | mg/kg           |            | Analyzed By: AP |     |            |               |      |           |  |
|----------------------|------------|-----------------|------------|-----------------|-----|------------|---------------|------|-----------|--|
| Analyte              | Result     | Reporting Limit | Analyzed   | Method Blank    | BS  | % Recovery | True Value QC | RPD  | Qualifier |  |
| Chloride             | <b>144</b> | 16.0            | 09/26/2012 | ND              | 416 | 104        | 400           | 0.00 |           |  |

| TPH 418.1 |        | mg/kg           |            | Analyzed By: AM |      |            |               |      |           |  |
|-----------|--------|-----------------|------------|-----------------|------|------------|---------------|------|-----------|--|
| Analyte   | Result | Reporting Limit | Analyzed   | Method Blank    | BS   | % Recovery | True Value QC | RPD  | Qualifier |  |
| TPH 418.1 | <100   | 100             | 09/27/2012 | ND              | 2930 | 117        | 2500          | 2.04 |           |  |

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 Safety & Environmental Solutions  
 Bob Allen  
 703 East Clinton  
 Hobbs NM, 88240  
 Fax To: (575) 393-4388

|                   |                           |                     |               |
|-------------------|---------------------------|---------------------|---------------|
| Received:         | 09/21/2012                | Sampling Date:      | 09/20/2012    |
| Reported:         | 09/28/2012                | Sampling Type:      | Soil          |
| Project Name:     | CIM-12-017                | Sampling Condition: | Cool & Intact |
| Project Number:   | WHITE CITY 14 FED. COM 10 | Sample Received By: | Jodi Henson   |
| Project Location: | CARLSBAD, NEW MEXICO      |                     |               |

**Sample ID: BH #2 30' (H202306-14)**

| BTEX 8021B     |        | mg/kg           |            | Analyzed By: AP |      |            |               |      |           |
|----------------|--------|-----------------|------------|-----------------|------|------------|---------------|------|-----------|
| Analyte        | Result | Reporting Limit | Analyzed   | Method Blank    | BS   | % Recovery | True Value QC | RPD  | Qualifier |
| Benzene*       | <0.050 | 0.050           | 09/25/2012 | ND              | 2.14 | 107        | 2.00          | 12.1 |           |
| Toluene*       | <0.050 | 0.050           | 09/25/2012 | ND              | 2.39 | 119        | 2.00          | 13.4 |           |
| Ethylbenzene*  | <0.050 | 0.050           | 09/25/2012 | ND              | 2.37 | 119        | 2.00          | 14.1 |           |
| Total Xylenes* | <0.150 | 0.150           | 09/25/2012 | ND              | 7.18 | 120        | 6.00          | 13.7 |           |

Surrogate: 4-Bromofluorobenzene (PHL) 98.8 % 89.4-126

| Chloride, SM4500Cl-B |        | mg/kg           |            | Analyzed By: AP |     |            |               |      |           |
|----------------------|--------|-----------------|------------|-----------------|-----|------------|---------------|------|-----------|
| Analyte              | Result | Reporting Limit | Analyzed   | Method Blank    | BS  | % Recovery | True Value QC | RPD  | Qualifier |
| Chloride             | 192    | 16.0            | 09/26/2012 | ND              | 416 | 104        | 400           | 0.00 |           |

| TPH 418.1 |        | mg/kg           |            | Analyzed By: AM |      |            |               |      |           |
|-----------|--------|-----------------|------------|-----------------|------|------------|---------------|------|-----------|
| Analyte   | Result | Reporting Limit | Analyzed   | Method Blank    | BS   | % Recovery | True Value QC | RPD  | Qualifier |
| TPH 418.1 | <100   | 100             | 09/27/2012 | ND              | 2930 | 117        | 2500          | 2.04 |           |

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

### Notes and Definitions

- ND Analyte NOT DETECTED at or above the reporting limit
- RPD Relative Percent Difference
- \*\* Samples not received at proper temperature of 6°C or below.
- \*\*\* Insufficient time to reach temperature.
- Chloride by SM4500Cl-B does not require samples be received at or below 6°C  
Samples reported on an as received basis (wet) unless otherwise noted on report

---

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager







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(BioAquatic) 2501 Mayes Rd., Suite 100      Carrollton, Texas 75006      972-242-7750  
E-Mail: [lab@traceanalysis.com](mailto:lab@traceanalysis.com)      WEB: [www.traceanalysis.com](http://www.traceanalysis.com)

## Certifications

WBE HUB NCTRCA DBE NELAP DoD LELAP Kansas Oklahoma ISO 17025

# Analytical and Quality Control Report

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

Report Date: September 12, 2013

Work Order: 13091225



Project Location: Eddy Co., NM  
Project Name: Cimarex/White City 14 Fed. #10  
Project Number: 112MC05335

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

| Sample | Description  | Matrix | Date Taken | Time Taken | Date Received |
|--------|--------------|--------|------------|------------|---------------|
| 341732 | BH-2 (SW-N3) | soil   | 2013-08-15 | 00:00      | 2013-09-12    |

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 9 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

# Report Contents

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## Case Narrative

Samples for project Cimarex/White City 14 Fed. #10 were received by TraceAnalysis, Inc. on 2013-09-12 and assigned to work order 13091225. Samples for work order 13091225 were received intact at a temperature of 22.8 C. Sample was not on ice when received. Sample received on last day of hold.

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

| Test                 | Method       | Prep<br>Batch | Prep<br>Date        | QC<br>Batch | Analysis<br>Date    |
|----------------------|--------------|---------------|---------------------|-------------|---------------------|
| Chloride (Titration) | SM 4500-Cl B | 88964         | 2013-09-12 at 12:52 | 105012      | 2013-09-12 at 15:28 |

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 13091225 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.

Report Date: September 12, 2013  
112MC05335

Work Order: 13091225  
Cimarex/White City 14 Fed. #10

Page Number: 4 of 9  
Eddy Co., NM

## Analytical Report

Sample: 341732 - BH-2 (SW-N3)

|             |                      |                     |              |              |     |
|-------------|----------------------|---------------------|--------------|--------------|-----|
| Laboratory: | Midland              | Analytical Method:  | SM 4500-Cl B | Prep Method: | N/A |
| Analysis:   | Chloride (Titration) | Date Analyzed:      | 2013-09-12   | Analyzed By: | AR  |
| QC Batch:   | 105012               | Sample Preparation: | 2013-09-12   | Prepared By: | AR  |
| Prep Batch: | 88964                |                     |              |              |     |

| Parameter | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|-----------|------|------|--------------|-------|----------|------|
| Chloride  |      |      | 497          | mg/Kg | 5        | 4.00 |

Report Date: September 12, 2013  
112MC05335

Work Order: 13091225  
Cimarex/White City 14 Fed. #10

Page Number: 5 of 9  
Eddy Co., NM

## Method Blanks

Method Blank (1)      QC Batch: 105012

QC Batch: 105012  
Prep Batch: 88964

Date Analyzed: 2013-09-12  
QC Preparation: 2013-09-12

Analyzed By: AR  
Prepared By: AR

| Parameter | Flag | Cert | MDL<br>Result | Units | RL |
|-----------|------|------|---------------|-------|----|
| Chloride  |      |      | <3.85         | mg/Kg | 4  |

Report Date: September 12, 2013  
 112MC05335

Work Order: 13091225  
 Cimarex/White City 14 Fed. #10

Page Number: 6 of 9  
 Eddy Co., NM

## Laboratory Control Spikes

### Laboratory Control Spike (LCS-1)

QC Batch: 105012  
 Prep Batch: 88964

Date Analyzed: 2013-09-12  
 QC Preparation: 2013-09-12

Analyzed By: AR  
 Prepared By: AR

| Param    | F | C | LCS<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit |
|----------|---|---|---------------|-------|------|-----------------|------------------|------|---------------|
| Chloride |   |   | 2370          | mg/Kg | 1    | 2500            | <3.85            | 95   | 89.7 - 115.9  |

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

| Param    | F | C | LCS<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit | RPD | RPD<br>Limit |
|----------|---|---|---------------|-------|------|-----------------|------------------|------|---------------|-----|--------------|
| Chloride |   |   | 2520          | mg/Kg | 1    | 2500            | <3.85            | 101  | 89.7 - 115.9  | 6   | 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: 341732

QC Batch: 105012  
 Prep Batch: 88964

Date Analyzed: 2013-09-12  
 QC Preparation: 2013-09-12

Analyzed By: AR  
 Prepared By: AR

| Param    | F | C | MS<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit |
|----------|---|---|--------------|-------|------|-----------------|------------------|------|---------------|
| Chloride |   |   | 2800         | mg/Kg | 5    | 2500            | 497              | 92   | 78.9 - 121    |

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

| Param    | F | C | MS<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit | RPD | RPD<br>Limit |
|----------|---|---|--------------|-------|------|-----------------|------------------|------|---------------|-----|--------------|
| Chloride |   |   | 2920         | mg/Kg | 5    | 2500            | 497              | 97   | 78.9 - 121    | 4   | 20           |

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

Report Date: September 12, 2013  
112MC05335

Work Order: 13091225  
Cimarex/White City 14 Fed. #10

Page Number: 7 of 9  
Eddy Co., NM

## Calibration Standards

### Standard (CCV-1)

QC Batch: 105012

Date Analyzed: 2013-09-12

Analyzed By: AR

| 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 |
|----------|------|------|-------|-----------------------|------------------------|-----------------------------|-------------------------------|------------------|
| Chloride |      |      | mg/Kg | 100                   | 103                    | 103                         | 85 - 115                      | 2013-09-12       |

### Standard (CCV-2)

QC Batch: 105012

Date Analyzed: 2013-09-12

Analyzed By: AR

| 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 |
|----------|------|------|-------|-----------------------|------------------------|-----------------------------|-------------------------------|------------------|
| Chloride |      |      | mg/Kg | 100                   | 97.2                   | 97                          | 85 - 115                      | 2013-09-12       |

## Appendix

### Report Definitions

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

### Laboratory Certifications

| C | Certifying Authority | Certification Number | Laboratory Location |
|---|----------------------|----------------------|---------------------|
| - | NCTRCA               | WFWB384444Y0909      | TraceAnalysis       |
| - | DBE                  | VN 20657             | TraceAnalysis       |
| - | HUB                  | 1752439743100-86536  | TraceAnalysis       |
| - | WBE                  | 237019               | TraceAnalysis       |

### 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 than 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.  |
| MI1 | Split peak or shoulder peak   |
| MI2 | Instrument software did not integrate   |
| MI3 | Instrument software misidentified the peak  |
| MI4 | Instrument software integrated improperly   |
| MI5 | Baseline correction   |
| 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   |

### Attachments

Report Date: September 12, 2013  
112MC05335

Work Order: 13091225  
Cimarex/White City 14 Fed. #10

Page Number: 9 of 9  
Eddy Co., NM

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The scanned attachments will follow this page.  
Please note, each attachment may consist of more than one page.

1309025

# Analysis Request of Chain of Custody Record



## TETRA TECH

1910 N. Big Spring St.  
Midland, Texas 79705  
(432) 682-4559 • Fax (432) 682-3946

CLIENT NAME: Cimarex PROJECT NAME: Tom Elliott

PROJECT NO.: 112 M65335 SAMPLE IDENTIFICATION: Cimarex-Whit City # Fed #10

DATE: 2013-8-15 GRAB: X  
TIME: - MATRIX: S  
LAB I.D. NUMBER: 34732

NUMBER OF CONTAINERS: 1  
FILTERED (Y/N): N

PRESERVATIVE METHOD: NONE  
HCL  
HNO3  
ICE  
NONE

|                                     |   |
|-------------------------------------|---|
| BTEX 8021B                          |   |
| TPH 8015 MOD. TX1005 (Ext. to C35)  |   |
| PAH 8270                            |   |
| RCRA Metals Ag As Ba Cd Cr Pb Hg Se |   |
| TCLP Metals Ag As Ba Cd Vr Pd Hg Se |   |
| TCLP Volatiles                      |   |
| TCLP Semi Volatiles                 |   |
| RCI                                 |   |
| GC/MS Vol. 8240/8260/624            |   |
| GC/MS Senti. Vol. 8270/825          |   |
| PCBs 8080/608                       |   |
| Pest. 808/608                       |   |
| Chloride                            | X |
| Gamma Spec.                         |   |
| Alpha Beta (Air)                    |   |
| PLM (Asbestos)                      |   |
| Major Anions/Cations, pH, TDS       |   |

SAMPLED BY: (Print & Initial) Tom Elliott Date: 8-15-2013  
 AIRBILL #: \_\_\_\_\_  
 OTHER: \_\_\_\_\_  
 Results by: \_\_\_\_\_  
 RUSH Charges Authorized: Yes No

RELINQUISHED BY: (Signature) \_\_\_\_\_ Date: 9-12-13 Time: 12:55  
 RECEIVED BY: (Signature) \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_  
 RELINQUISHED BY: (Signature) \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_  
 RECEIVED BY: (Signature) \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_  
 RELINQUISHED BY: (Signature) \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_  
 RECEIVED BY: (Signature) \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_  
 RECEIVING LABORATORY: \_\_\_\_\_ STATE: \_\_\_\_\_ ZIP: \_\_\_\_\_ PHONE: \_\_\_\_\_  
 ADDRESS: \_\_\_\_\_  
 CITY: \_\_\_\_\_

REMARKS: 2 days AT - 9/17 - Client wants this sample added to report  
2880  
 Please fill out all copies - Laboratory retains Yellow copy - Return Original copy to Tetra Tech - Project Manager retains Pink copy - Accounting receives Gold copy.  
WA 13082337 - last day of hold!



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 (BioAquatic) 2501 Mayes Rd., Suite 100 Carrollton, Texas 75006 972-242-7750  
 E-Mail: lab@traceanalysis.com WEB: www.traceanalysis.com

### Certifications

WBE HUB NCTRCA DBE NELAP DoD LELAP Kansas Oklahoma ISO 17025

## Analytical and Quality Control Report

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

Report Date: September 11, 2013

Work Order: 13082337



Project Location: Eddy Co., NM  
 Project Name: Cimarex/White City 14 Fed. #10  
 Project Number: 112MC05335

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

| Sample | Description   | Matrix | Date Taken | Time Taken | Date Received |
|--------|---------------|--------|------------|------------|---------------|
| 339888 | BH-1 (BH-10') | soil   | 2013-08-15 | 00:00      | 2013-08-23    |
| 339889 | BH-1 (BH-5')  | soil   | 2013-08-15 | 00:00      | 2013-08-23    |
| 339890 | BH-1 (SW-N3)  | soil   | 2013-08-15 | 00:00      | 2013-08-23    |
| 339891 | BH-1 (SW-W3)  | soil   | 2013-08-15 | 00:00      | 2013-08-23    |
| 339892 | BH-1 (SW-S)   | soil   | 2013-08-15 | 00:00      | 2013-08-23    |
| 339893 | BH-2 (BH-3')  | soil   | 2013-08-15 | 00:00      | 2013-08-23    |
| 339894 | BH-2 (BH-5')  | soil   | 2013-08-15 | 00:00      | 2013-08-23    |
| 339895 | BH-2 (SW-N2)  | soil   | 2013-08-15 | 00:00      | 2013-08-23    |
| 339896 | BH-2 (SW-E)   | soil   | 2013-08-15 | 00:00      | 2013-08-23    |
| 339897 | BH-2 (SW-S2)  | soil   | 2013-08-15 | 00:00      | 2013-08-23    |

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 13 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

*Michael Abel*

---

Dr. Blair Leftwich, Director  
Dr. Michael Abel, Project Manager

# Report Contents

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| Sample 339889 (BH-1 (BH-5'))       | 5         |
| Sample 339890 (BH-1 (SW-N3))       | 5         |
| Sample 339891 (BH-1 (SW-W3))       | 5         |
| Sample 339892 (BH-1 (SW-S))        | 6         |
| Sample 339893 (BH-2 (BH-3'))       | 6         |
| Sample 339894 (BH-2 (BH-5'))       | 6         |
| Sample 339895 (BH-2 (SW-N2))       | 7         |
| Sample 339896 (BH-2 (SW-E))        | 7         |
| Sample 339897 (BH-2 (SW-S2))       | 7         |
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| QC Batch 104558 - MS (1)           | 10        |
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## Case Narrative

Samples for project Cimarex/White City 14 Fed. #10 were received by TraceAnalysis, Inc. on 2013-08-23 and assigned to work order 13082337. Samples for work order 13082337 were received intact at a temperature of 23.5 C. Samples were not on ice.

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

| Test                 | Method       | Prep Batch | Prep Date           | QC Batch | Analysis Date       |
|----------------------|--------------|------------|---------------------|----------|---------------------|
| Chloride (Titration) | SM 4500-Cl B | 88563      | 2013-08-29 at 08:18 | 104555   | 2013-08-29 at 13:45 |
| Chloride (Titration) | SM 4500-Cl B | 88563      | 2013-08-29 at 08:18 | 104558   | 2013-08-29 at 13:54 |

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 13082337 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.

## Analytical Report

### Sample: 339888 - BH-1 (BH-10')

Laboratory: Midland  
Analysis: Chloride (Titration)      Analytical Method: SM 4500-Cl B      Prep Method: N/A  
QC Batch: 104555      Date Analyzed: 2013-08-29      Analyzed By: AR  
Prep Batch: 88563      Sample Preparation: 2013-08-29      Prepared By: AR

| Parameter | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|-----------|------|------|--------------|-------|----------|------|
| Chloride  |      |      | <b>22800</b> | mg/Kg | 10       | 4.00 |

### Sample: 339889 - BH-1 (BH-5')

Laboratory: Midland  
Analysis: Chloride (Titration)      Analytical Method: SM 4500-Cl B      Prep Method: N/A  
QC Batch: 104555      Date Analyzed: 2013-08-29      Analyzed By: AR  
Prep Batch: 88563      Sample Preparation: 2013-08-29      Prepared By: AR

| Parameter | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|-----------|------|------|--------------|-------|----------|------|
| Chloride  |      |      | <b>23300</b> | mg/Kg | 10       | 4.00 |

### Sample: 339890 - BH-1 (SW-N3)

Laboratory: Midland  
Analysis: Chloride (Titration)      Analytical Method: SM 4500-Cl B      Prep Method: N/A  
QC Batch: 104555      Date Analyzed: 2013-08-29      Analyzed By: AR  
Prep Batch: 88563      Sample Preparation: 2013-08-29      Prepared By: AR

| Parameter | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|-----------|------|------|--------------|-------|----------|------|
| Chloride  |      |      | <b>561</b>   | mg/Kg | 5        | 4.00 |

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**Sample: 339891 - BH-1 (SW-W3)**

Laboratory: Midland  
Analysis: Chloride (Titration)      Analytical Method: SM 4500-Cl B      Prep Method: N/A  
QC Batch: 104555      Date Analyzed: 2013-08-29      Analyzed By: AR  
Prep Batch: 88563      Sample Preparation: 2013-08-29      Prepared By: AR

| Parameter | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|-----------|------|------|--------------|-------|----------|------|
| Chloride  |      |      | 43.1         | mg/Kg | 5        | 4.00 |

**Sample: 339892 - BH-1 (SW-S)**

Laboratory: Midland  
Analysis: Chloride (Titration)      Analytical Method: SM 4500-Cl B      Prep Method: N/A  
QC Batch: 104555      Date Analyzed: 2013-08-29      Analyzed By: AR  
Prep Batch: 88563      Sample Preparation: 2013-08-29      Prepared By: AR

| Parameter | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|-----------|------|------|--------------|-------|----------|------|
| Chloride  |      |      | 43.1         | mg/Kg | 5        | 4.00 |

**Sample: 339893 - BH-2 (BH-3')**

Laboratory: Midland  
Analysis: Chloride (Titration)      Analytical Method: SM 4500-Cl B      Prep Method: N/A  
QC Batch: 104555      Date Analyzed: 2013-08-29      Analyzed By: AR  
Prep Batch: 88563      Sample Preparation: 2013-08-29      Prepared By: AR

| Parameter | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|-----------|------|------|--------------|-------|----------|------|
| Chloride  |      |      | 2920         | mg/Kg | 10       | 4.00 |

**Sample: 339894 - BH-2 (BH-5')**

Laboratory: Midland  
Analysis: Chloride (Titration)      Analytical Method: SM 4500-Cl B      Prep Method: N/A  
QC Batch: 104558      Date Analyzed: 2013-08-29      Analyzed By: AR  
Prep Batch: 88563      Sample Preparation: 2013-08-29      Prepared By: AR

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| Parameter | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|-----------|------|------|--------------|-------|----------|------|
| Chloride  |      |      | 4250         | mg/Kg | 10       | 4.00 |

**Sample: 339895 - BH-2 (SW-N2)**

Laboratory: Midland  
Analysis: Chloride (Titration)      Analytical Method: SM 4500-Cl B      Prep Method: N/A  
QC Batch: 104558      Date Analyzed: 2013-08-29      Analyzed By: AR  
Prep Batch: 88563      Sample Preparation: 2013-08-29      Prepared By: AR

| Parameter | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|-----------|------|------|--------------|-------|----------|------|
| Chloride  |      |      | 9880         | mg/Kg | 10       | 4.00 |

**Sample: 339896 - BH-2 (SW-E)**

Laboratory: Midland  
Analysis: Chloride (Titration)      Analytical Method: SM 4500-Cl B      Prep Method: N/A  
QC Batch: 104558      Date Analyzed: 2013-08-29      Analyzed By: AR  
Prep Batch: 88563      Sample Preparation: 2013-08-29      Prepared By: AR

| Parameter | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|-----------|------|------|--------------|-------|----------|------|
| Chloride  |      |      | 392          | mg/Kg | 5        | 4.00 |

**Sample: 339897 - BH-2 (SW-S2)**

Laboratory: Midland  
Analysis: Chloride (Titration)      Analytical Method: SM 4500-Cl B      Prep Method: N/A  
QC Batch: 104558      Date Analyzed: 2013-08-29      Analyzed By: AR  
Prep Batch: 88563      Sample Preparation: 2013-08-29      Prepared By: AR

| Parameter | Flag | Cert | RL<br>Result | Units | Dilution | RL   |
|-----------|------|------|--------------|-------|----------|------|
| Chloride  |      |      | 83.4         | mg/Kg | 5        | 4.00 |

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## Method Blanks

Method Blank (1)      QC Batch: 104555

QC Batch: 104555  
Prep Batch: 88563

Date Analyzed: 2013-08-29  
QC Preparation: 2013-08-29

Analyzed By: AR  
Prepared By: AR

| Parameter | Flag | Cert | MDL<br>Result | Units | RL |
|-----------|------|------|---------------|-------|----|
| Chloride  |      |      | <3.85         | mg/Kg | 4  |

Method Blank (1)      QC Batch: 104558

QC Batch: 104558  
Prep Batch: 88563

Date Analyzed: 2013-08-29  
QC Preparation: 2013-08-29

Analyzed By: AR  
Prepared By: AR

| Parameter | Flag | Cert | MDL<br>Result | Units | RL |
|-----------|------|------|---------------|-------|----|
| Chloride  |      |      | <3.85         | mg/Kg | 4  |

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## Laboratory Control Spikes

### Laboratory Control Spike (LCS-1)

QC Batch: 104555  
Prep Batch: 88563

Date Analyzed: 2013-08-29  
QC Preparation: 2013-08-29

Analyzed By: AR  
Prepared By: AR

| Param    | F | C | LCS<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit |
|----------|---|---|---------------|-------|------|-----------------|------------------|------|---------------|
| Chloride |   |   | 2600          | mg/Kg | 1    | 2500            | <3.85            | 104  | 89.7 - 115.9  |

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 |
|----------|---|---|----------------|-------|------|-----------------|------------------|------|---------------|-----|--------------|
| Chloride |   |   | 2560           | mg/Kg | 1    | 2500            | <3.85            | 102  | 89.7 - 115.9  | 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: 104558  
Prep Batch: 88563

Date Analyzed: 2013-08-29  
QC Preparation: 2013-08-29

Analyzed By: AR  
Prepared By: AR

| Param    | F | C | LCS<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit |
|----------|---|---|---------------|-------|------|-----------------|------------------|------|---------------|
| Chloride |   |   | 2570          | mg/Kg | 1    | 2500            | <3.85            | 103  | 89.7 - 115.9  |

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 |
|----------|---|---|----------------|-------|------|-----------------|------------------|------|---------------|-----|--------------|
| Chloride |   |   | 2600           | mg/Kg | 1    | 2500            | <3.85            | 108  | 89.7 - 115.9  | 5   | 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: 339893

QC Batch: 104555  
Prep Batch: 88563

Date Analyzed: 2013-08-29  
QC Preparation: 2013-08-29

Analyzed By: AR  
Prepared By: AR

Report Date: September 11, 2013  
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| Param    | F | C | MS<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit |
|----------|---|---|--------------|-------|------|-----------------|------------------|------|---------------|
| Chloride |   |   | 5170         | mg/Kg | 10   | 2500            | 2920             | 90   | 78.9 - 121    |

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

| Param    | F | C | MSD<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit | RPD | RPD<br>Limit |
|----------|---|---|---------------|-------|------|-----------------|------------------|------|---------------|-----|--------------|
| Chloride |   |   | 5560          | mg/Kg | 10   | 2500            | 2920             | 106  | 78.9 - 121    | 7   | 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: 339897

QC Batch: 104558  
Prep Batch: 88563

Date Analyzed: 2013-08-29  
QC Preparation: 2013-08-29

Analyzed By: AR  
Prepared By: AR

| Param    | F | C | MS<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit |
|----------|---|---|--------------|-------|------|-----------------|------------------|------|---------------|
| Chloride |   |   | 2630         | mg/Kg | 5    | 2500            | 83.4             | 102  | 78.9 - 121    |

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

| Param    | F | C | MSD<br>Result | Units | Dil. | Spike<br>Amount | Matrix<br>Result | Rec. | Rec.<br>Limit | RPD | RPD<br>Limit |
|----------|---|---|---------------|-------|------|-----------------|------------------|------|---------------|-----|--------------|
| Chloride |   |   | 2550          | mg/Kg | 5    | 2500            | 83.4             | 99   | 78.9 - 121    | 3   | 20           |

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



## Appendix

### Report Definitions

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

### Laboratory Certifications

| C | Certifying Authority | Certification Number | Laboratory Location |
|---|----------------------|----------------------|---------------------|
| - | NCTRCA               | WFWB384444Y0909      | TraceAnalysis       |
| - | DBE                  | VN 20657             | TraceAnalysis       |
| - | HUB                  | 1752439743100-86536  | TraceAnalysis       |
| - | WBE                  | 237019               | TraceAnalysis       |

### 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 than 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.  |
| MI1 | Split peak or shoulder peak   |
| MI2 | Instrument software did not integrate   |
| MI3 | Instrument software misidentified the peak  |
| MI4 | Instrument software integrated improperly   |
| MI5 | Baseline correction   |
| 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   |

### Attachments

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The scanned attachments will follow this page.  
Please note, each attachment may consist of more than one page.

13082337

# Analysis Request of Chain of Custody Record

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## TETRA TECH

1910 N. Big Spring St.  
Midland, Texas 79705  
(432) 682-4559 • Fax (432) 682-3946

CLIENT NAME: Cinarez SITE MANAGER: Tom Elliott

PROJECT NO.: 112MCO533S PROJECT NAME: Cinarez-White City 14 Fed # 10

GRAB COMP MATRIX TIME DATE

SAMPLE IDENTIFICATION

| LAB I.D. NUMBER | DATE | TIME | MATRIX | COMP | GRAB | NUMBER OF CONTAINERS | FILTERED (Y/N) | HCL | HNO3 | ICE | NONE |
|-----------------|------|------|--------|------|------|----------------------|----------------|-----|------|-----|------|
| 888             | 8-15 | -    | S      | X    | X    | 1                    |                |     |      |     | X    |
| 889             | 8-15 | -    | S      | X    | X    | 1                    |                |     |      |     | X    |
| 890             | 8-15 | -    | S      | X    | X    | 1                    |                |     |      |     | X    |
| 891             | 8-15 | -    | S      | X    | X    | 1                    |                |     |      |     | X    |
| 892             | 8-15 | -    | S      | X    | X    | 1                    |                |     |      |     | X    |
| 893             | 8-15 | -    | S      | X    | X    | 1                    |                |     |      |     | X    |
| 894             | 8-15 | -    | S      | X    | X    | 1                    |                |     |      |     | X    |
| 895             | 8-15 | -    | S      | X    | X    | 1                    |                |     |      |     | X    |
| 896             | 8-15 | -    | S      | X    | X    | 1                    |                |     |      |     | X    |
| 897             | 8-15 | -    | S      | X    | X    | 1                    |                |     |      |     | X    |

RELINQUISHED BY: (Signature) \_\_\_\_\_ Date: 8-15-11 Time: 14:53

RELINQUISHED BY: (Signature) \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

RELINQUISHED BY: (Signature) \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

RECEIVING LABORATORY: \_\_\_\_\_ ADDRESS: \_\_\_\_\_ CITY: \_\_\_\_\_ STATE: \_\_\_\_\_ ZIP: \_\_\_\_\_ PHONE: \_\_\_\_\_ DATE: \_\_\_\_\_ TIME: \_\_\_\_\_

SAMPLE CONDITION WHEN RECEIVED: 23.5 REMARKS: Midland cell

RECEIVED BY: (Signature) \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

### ANALYSIS REQUEST

(Circle or Specify Method No.)

|                                     |  |
|-------------------------------------|--|
| TPH 8015 MOD. TX1005 (Ext. to C95)  |  |
| PAH 8270                            |  |
| RCRA Metals Ag As Ba Cd Cr Pb Hg Se |  |
| TCLP Metals Ag As Ba Cd V Pd Hg Se  |  |
| TCLP Volatiles                      |  |
| TCLP Semi Volatiles                 |  |
| HCl                                 |  |
| GC/MS Vol. B240/8260/624            |  |
| GC/MS Semi. Vol. B270/625           |  |
| PCB's 8080/608                      |  |
| Post. 808/608                       |  |
| Gamma Spec.                         |  |
| Alpha Beta (Al)                     |  |
| PLM (Asbestos)                      |  |
| Major Anions/Cations, PH, TDS       |  |

SAMPLED BY: (Print & Initial) \_\_\_\_\_ Date: 8-15-11 Time: \_\_\_\_\_

RECEIVED BY: (Signature) \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

Please fill out all copies - Laboratory retains Yellow copy - Return Original copy to Tetra Tech - Project Manager retains Pink copy - Accounting receives Gold copy.