

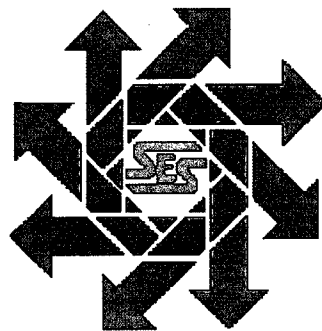
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NOV 05 2010  
HOBBSUCD

**Cimarex Energy Company  
Ticonderoga 16 State Com #4  
Section 16, Township 15S, Range 31E  
Chaves County, New Mexico**

**Delineation Report/Work Plan**

**October 7, 2010**



**Prepared for:**

**Cimarex Energy Company  
600 North Marienfeld, Suite 600  
Midland, Texas 79701**

**By:**

**Safety & Environmental Solutions, Inc.  
703 East Clinton Street  
Hobbs, New Mexico 88240  
(575) 397-0510**

continue to delineate  
vertically for TPH to  
clean + 1 @ AH#1 AND  
AH#4.

*Jeffrey Leim*  
Environmental Engineer  
NMCD-Hobbs  
11/05/10  
30-005-3000

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## I. Company Contacts

| Company Representative | Company            | Telephone    | E-mail             |
|------------------------|--------------------|--------------|--------------------|
| Marty Davis            | Cimarex Energy Co. | 575-605-5509 | mdavis@cimarex.com |
| Bob Allen              | SESI               | 575-397-0510 | ballen@sesi-nm.com |

## II. Background

Safety and Environmental Solutions, Inc. (SESI) was engaged by Cimarex Energy Company to perform a site assessment at the Ticonderoga 16 State Com #4, located in Section 16, Township 15 South, and Range 31 East. The blowout preventer on the pulling unit went out causing the casing to leak and releasing approximately 15 barrels of hydrocarbon fluid and recovered approximately 5 barrels. There was also an area affected with overspray.

## III. Surface and Ground Water

According the database provided by the New Mexico Office of State Engineer's online database, the average depth of water in this area is 280 feet since March 1955 and is located 1.6 miles north of the Ticonderoga 16 State Com #4. (See Figure 1)

## IV. Characterization

The target cleanup levels are reached by the application of the "Unlined Surface Impoundment Closure Guidelines New Mexico Oil Conservation Division (NMOCD) – February, 1993 to this site is 5,000 parts per million (ppm) Total Petroleum Hydrocarbons (TPH). Application of the New Mexico Oil Conservation Division's ranking criteria for contaminated soils at this site is presented below:

| Depth to Ground Water:   |                       |           |   |
|--|-----------------------|-----------|---|
| (Vertical distance from contaminants to seasonal high water elevation of groundwater)                          | Less than 50 feet     | 20 points |   |
|  | 50 feet to 99 feet    | 10 points |   |
|  | >100 feet             | 0 points  | X |
| Wellhead Protection Area:  |                       |           |   |
| (Less than 200 feet from a private domestic water source; or less than 1000 feet from all other water sources) | Yes                   | 20 points |   |
|  | No                    | 0 points  | X |
| Distance to Surface Water:   |                       |           |   |
| (Horizontal distance to perennial lakes, ponds, rivers, streams, creeks, irrigation canals and ditches)        | Less than 200 feet    | 20 points |   |
|  | 200 feet to 1000 feet | 10 points |   |
|  | >1000 feet            | 0 points  | X |
| RANKING SCORE (TOTAL POINTS)   |                       |           | 0 |

## V. Soils

The surface soils in the area are predominantly sand and sandy loam.

## **VI. Work Performed**

On October 1, 2010 SESI was onsite to install auger holes to delineate release area. Auger Hole (AH) #1 and AH #4 are located on location pad and a surface sample was obtained but had auger refusal at a depth of six (6) inches below grade surface (bgs). AH #2 and AH #3 were located in pasture area and northeast of location and samples were obtained at surface and one (1) foot below grade surface.

Samples were properly preserved and transported under chain of custody to Cardinal Labs of Hobbs, New Mexico. The samples were analyzed for Chlorides (EPA Method 4500-ClB), Benzene, Toluene, Ethyl Benzene, Total Xylenes (BTEX EPA Method 8021) and Total Petroleum Hydrocarbons (TPH EPA Method 418.1).

The results of the analysis are as follows:

| Lab ID            | Sample ID     | Benzene<br>(mg/kg) | Toluene<br>(mg/kg) | Ethyl<br>Benzene<br>(mg/kg) | Xylenes<br>(mg/kg) | TPH<br>(mg/kg) | Chlorides<br>(mg/kg) |
|-------------------|---------------|--------------------|--------------------|-----------------------------|--------------------|----------------|----------------------|
| Analysis<br>Date: |               | 10/01/10           | 10/01/10           | 10/01/10                    | 10/01/10           | 10/01/10       | 10/01/10             |
| H020969-01        | AH #1 Surface | <0.025             | 0.036              | 0.048                       | 0.181              | 5,920          | 896                  |
| H020969-02        | AH #2 Surface | <0.025             | 0.355              | 0.500                       | 2.94               | 4,790          | 80.0                 |
| H020969-03        | AH #2 1'bgs   | <0.025             | 0.065              | 0.047                       | 0.158              | <100           | 112                  |
| H020969-04        | AH #3 Surface | <0.025             | 0.032              | 0.029                       | 0.103              | <100           | 80.0                 |
| H020969-05        | AH #3 1'bgs   | <0.025             | 0.026              | <0.025                      | <0.075             | <100           | 128                  |
| H020969-06        | AH #4 1'bgs   | <0.025             | 0.051              | 0.370                       | 0.863              | 6,550          | 160                  |

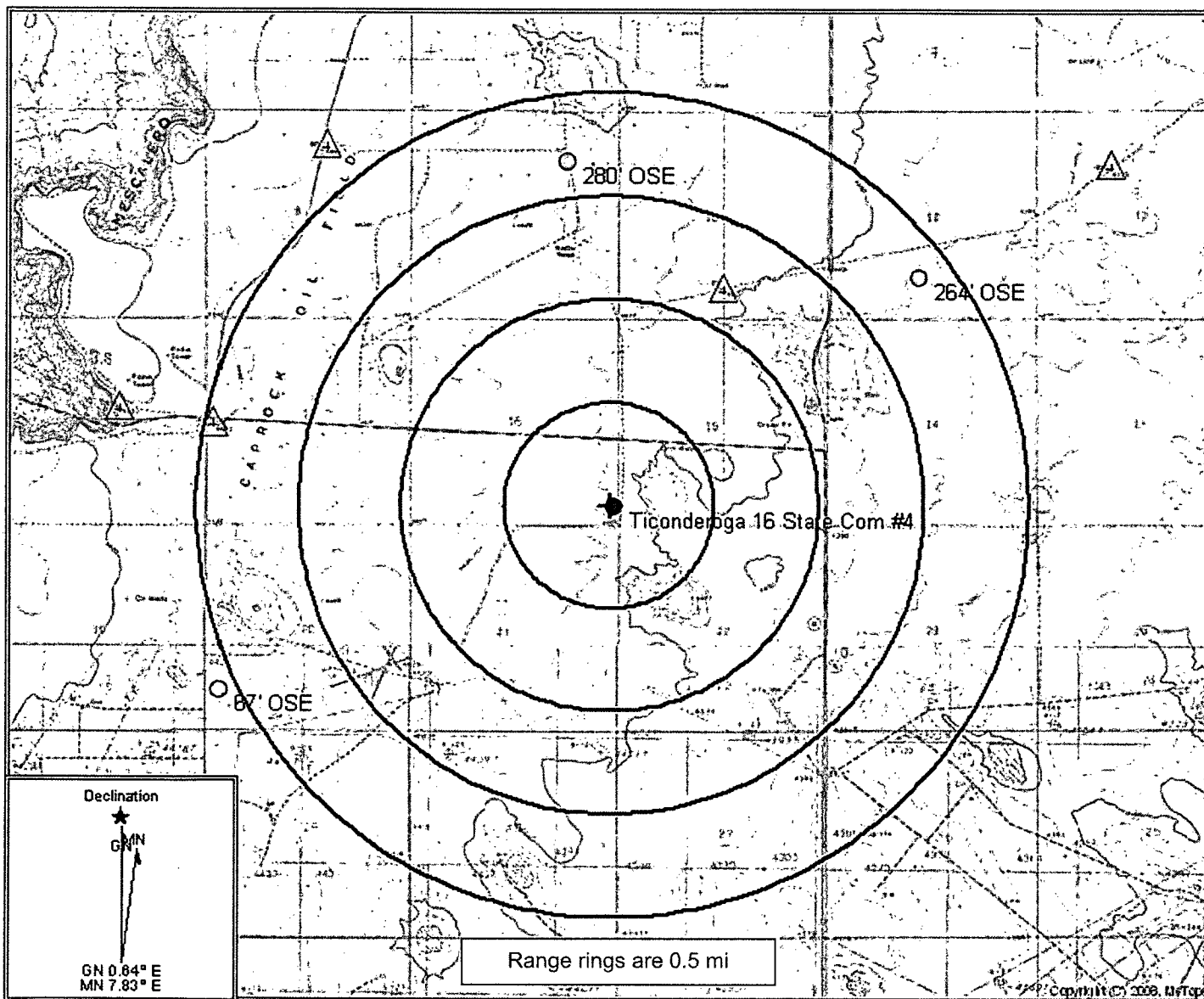
## **VII. Action Plan**

Cimarex proposes that the affected area on location pad be excavated to a depth of 2" bgs and the affected area in the pasture be mowed and ripped to let area aerate out. The area near auger hole #4 will be excavated and the most highly contaminated soils removed and taken to an approved NMOCD facility. The excavated areas will then be backfilled with clean soils and contoured to original grade.

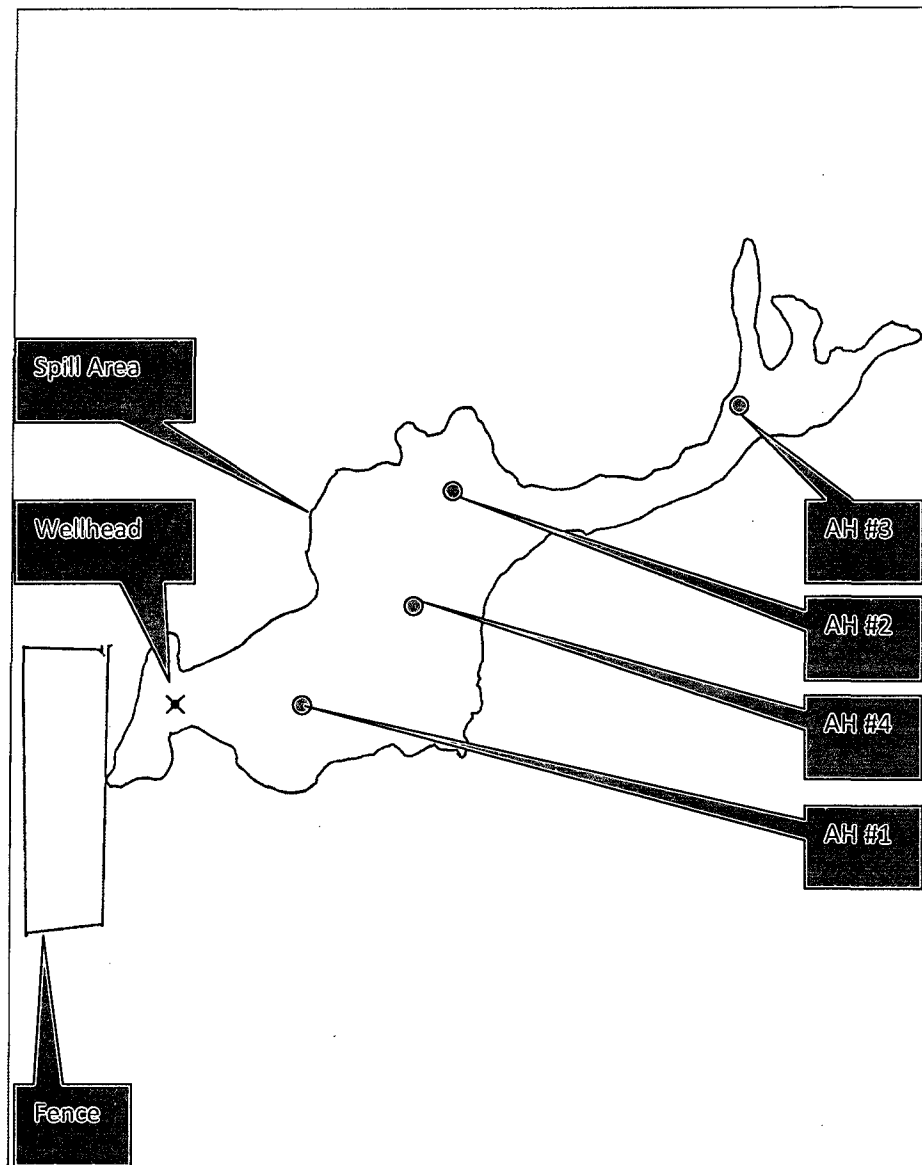
## **VIII. Figures and Appendices**

Figure 1 – Vicinity Map  
Figure 2 – Site Map  
Appendix A – Analytical Results  
Appendix B – Site Photographs  
Appendix C – C-141

**Figure 1**  
**Vicinity Map**



## **Figure 2 Site Map**



## CIM-10-015 Ticonderoga 16 State Com #4

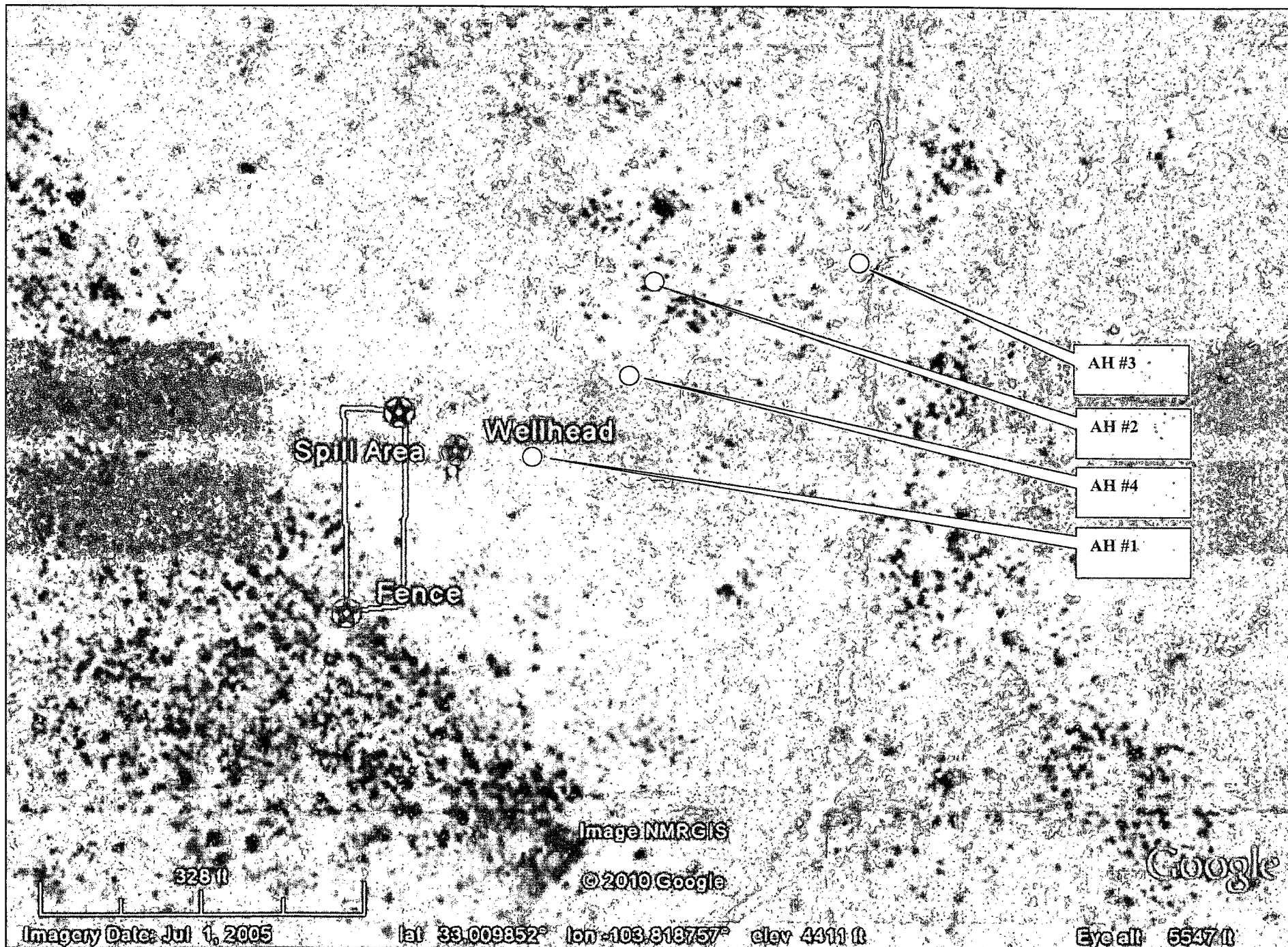
Lat/Long  
WGS 1984



Scale 1 in : 125 ft  
0 175.0  
Feet

sitemap.cor  
9/21/2010  
GPS Pathfinder<sup>®</sup> Office  
 Trimble





# **Appendix A**

## **Analytical Results**

October 06, 2010

Bob Allen

Safety & Environmental Solutions

703 East Clinton

Hobbs, NM 88240

RE: CIM-10-015

Enclosed are the results of analyses for samples received by the laboratory on 10/01/10 14:23.

Cardinal Laboratories is accredited through Texas NELAP for:

|                    |  |
|--------------------|--|
| Method SW-846 8021 | Benzene, Toluene, Ethyl Benzene, and Total Xylenes |
| Method SW-846 8260 | Benzene, Toluene, Ethyl Benzene, and Total Xylenes |
| Method TX 1005     | Total Petroleum Hydrocarbons                       |

Certificate number T104704398-08-TX. Accreditation applies to solid and chemical materials and non-potable water matrices.

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 (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: 10/01/2010  
 Reported: 10/06/2010  
 Project Name: CIM-10-015  
 Project Number: TICONDEROGA 16 ST. COM #4  
 Project Location: LEA, NM

 Sampling Date: 10/01/2010  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: AH #1 SURFACE (H020969-01)**

| BTX 8021B      |        | mg/kg           |            | Analyzed By: cms |      |            |               |     |           |
|----------------|--------|-----------------|------------|------------------|------|------------|---------------|-----|-----------|
| Analyte        | Result | Reporting Limit | Analyzed   | Method Blank     | BS   | % Recovery | True Value QC | RPD | Qualifier |
| Benzene*       | <0.025 | 0.025           | 10/04/2010 | ND               | 2.08 | 104        | 2.00          |     |           |
| Toluene*       | 0.036  | 0.025           | 10/04/2010 | ND               | 2.08 | 104        | 2.00          |     |           |
| Ethylbenzene*  | 0.048  | 0.025           | 10/04/2010 | ND               | 2.15 | 108        | 2.00          |     |           |
| Total Xylenes* | 0.181  | 0.075           | 10/04/2010 | ND               | 6.26 | 104        | 6.00          |     |           |

Surrogate: 4-Bromofluorobenzene (PIL) 110 % 80-120

| Chloride, SM4500Cl-B |        | mg/kg           |            | Analyzed By: HM |     |            |               |      |           |
|----------------------|--------|-----------------|------------|-----------------|-----|------------|---------------|------|-----------|
| Analyte              | Result | Reporting Limit | Analyzed   | Method Blank    | BS  | % Recovery | True Value QC | RPD  | Qualifier |
| Chloride             | 896    | 16.0            | 10/04/2010 | ND              | 416 | 104        | 400           | 3.77 |           |

| TPH 418.1 |        | mg/kg           |            | Analyzed By: AB |     |            |               |      |           |
|-----------|--------|-----------------|------------|-----------------|-----|------------|---------------|------|-----------|
| Analyte   | Result | Reporting Limit | Analyzed   | Method Blank    | BS  | % Recovery | True Value QC | RPD  | Qualifier |
| TPH 418.1 | 5920   | 100             | 10/05/2010 | ND              | 970 | 95.1       | 1020          | 9.51 |           |

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: 10/01/2010  
 Reported: 10/06/2010  
 Project Name: CIM-10-015  
 Project Number: TICONDEROGA 16 ST. COM #4  
 Project Location: LEA, NM

Sampling Date: 10/01/2010  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: AH #2 SURFACE (H020969-02)**

| BTX 8021B      |        | mg/kg           | Analyzed By: cms |              |      |            |               |     |           |
|----------------|--------|-----------------|------------------|--------------|------|------------|---------------|-----|-----------|
| Analyte        | Result | Reporting Limit | Analyzed         | Method Blank | BS   | % Recovery | True Value QC | RPD | Qualifier |
| Benzene*       | <0.025 | 0.025           | 10/04/2010       | ND           | 2.08 | 104        | 2.00          |     |           |
| Toluene*       | 0.344  | 0.025           | 10/04/2010       | ND           | 2.08 | 104        | 2.00          |     |           |
| Ethylbenzene*  | 0.500  | 0.025           | 10/04/2010       | ND           | 2.15 | 108        | 2.00          |     |           |
| Total Xylenes* | 2.94   | 0.075           | 10/04/2010       | ND           | 6.26 | 104        | 6.00          |     |           |

Surrogate: 4-Bromofluorobenzene (PIL) 97.6 % 80-120

| Chloride, SM4500Cl-B |        | mg/kg           | Analyzed By: HM |              |     |            |               |      |           |
|----------------------|--------|-----------------|-----------------|--------------|-----|------------|---------------|------|-----------|
| Analyte              | Result | Reporting Limit | Analyzed        | Method Blank | BS  | % Recovery | True Value QC | RPD  | Qualifier |
| Chloride             | 80.0   | 16.0            | 10/04/2010      | ND           | 416 | 104        | 400           | 3.77 |           |

| TPH 418.1 |        | mg/kg           | Analyzed By: AB |              |     |            |               |      |           |
|-----------|--------|-----------------|-----------------|--------------|-----|------------|---------------|------|-----------|
| Analyte   | Result | Reporting Limit | Analyzed        | Method Blank | BS  | % Recovery | True Value QC | RPD  | Qualifier |
| TPH 418.1 | 4790   | 100             | 10/05/2010      | ND           | 970 | 95.1       | 1020          | 9.51 |           |

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\*=Accredited Analyte

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Received: 10/01/2010  
 Reported: 10/06/2010  
 Project Name: CIM-10-015  
 Project Number: TICONDEROGA 16 ST. COM #4  
 Project Location: LEA, NM

Sampling Date: 10/01/2010  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: AH #2 1' BGS (H020969-03)**

| BTX 8021B      |        | mg/kg           | Analyzed By: cms |              |      |            |               |     |           |
|----------------|--------|-----------------|------------------|--------------|------|------------|---------------|-----|-----------|
| Analyte        | Result | Reporting Limit | Analyzed         | Method Blank | BS   | % Recovery | True Value QC | RPD | Qualifier |
| Benzene*       | <0.025 | 0.025           | 10/04/2010       | ND           | 2.08 | 104        | 2.00          |     |           |
| Toluene*       | 0.065  | 0.025           | 10/04/2010       | ND           | 2.08 | 104        | 2.00          |     |           |
| Ethylbenzene*  | 0.047  | 0.025           | 10/04/2010       | ND           | 2.15 | 108        | 2.00          |     |           |
| Total Xylenes* | 0.158  | 0.075           | 10/04/2010       | ND           | 6.26 | 104        | 6.00          |     |           |

Surrogate: 4-Bromofluorobenzene (PIL) 98.1 % 80-120

| Chloride, SM4500Cl-B |        | mg/kg           | Analyzed By: HM |              |     |            |               |      |           |
|----------------------|--------|-----------------|-----------------|--------------|-----|------------|---------------|------|-----------|
| Analyte              | Result | Reporting Limit | Analyzed        | Method Blank | BS  | % Recovery | True Value QC | RPD  | Qualifier |
| Chloride             | 112    | 16.0            | 10/04/2010      | ND           | 416 | 104        | 400           | 3.77 |           |

| TPH 418.1 |        | mg/kg           | Analyzed By: AB |              |     |            |               |      |           |
|-----------|--------|-----------------|-----------------|--------------|-----|------------|---------------|------|-----------|
| Analyte   | Result | Reporting Limit | Analyzed        | Method Blank | BS  | % Recovery | True Value QC | RPD  | Qualifier |
| TPH 418.1 | <100   | 100             | 10/05/2010      | ND           | 970 | 95.1       | 1020          | 9.51 |           |

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\*=Accredited Analyte

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

Received: 10/01/2010  
Reported: 10/06/2010  
Project Name: CIM-10-015  
Project Number: TICONDEROGA 16 ST. COM #4  
Project Location: LEA, NM

Sampling Date: 10/01/2010  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Jodi Henson

**Sample ID: AH #3 SURFACE (H020969-04)**

| BTX 8021B      |        | mg/kg           |            | Analyzed By: cms |      |            |               |     |           |
|----------------|--------|-----------------|------------|------------------|------|------------|---------------|-----|-----------|
| Analyte        | Result | Reporting Limit | Analyzed   | Method Blank     | BS   | % Recovery | True Value QC | RPD | Qualifier |
| Benzene*       | <0.025 | 0.025           | 10/04/2010 | ND               | 2.08 | 104        | 2.00          |     |           |
| Toluene*       | 0.032  | 0.025           | 10/04/2010 | ND               | 2.08 | 104        | 2.00          |     |           |
| Ethylbenzene*  | 0.029  | 0.025           | 10/04/2010 | ND               | 2.15 | 108        | 2.00          |     |           |
| Total Xylenes* | 0.103  | 0.075           | 10/04/2010 | ND               | 6.26 | 104        | 6.00          |     |           |

Surrogate: 4-Bromofluorobenzene (PIL) 106 % 80-120

| Chloride, SM4500Cl-B |        | mg/kg           |            | Analyzed By: HM |     |            |               |      |           |
|----------------------|--------|-----------------|------------|-----------------|-----|------------|---------------|------|-----------|
| Analyte              | Result | Reporting Limit | Analyzed   | Method Blank    | BS  | % Recovery | True Value QC | RPD  | Qualifier |
| Chloride             | 80.0   | 16.0            | 10/04/2010 | ND              | 416 | 104        | 400           | 3.77 |           |

| TPH 418.1 |        | mg/kg           |            | Analyzed By: AB |     |            |               |      |           |
|-----------|--------|-----------------|------------|-----------------|-----|------------|---------------|------|-----------|
| Analyte   | Result | Reporting Limit | Analyzed   | Method Blank    | BS  | % Recovery | True Value QC | RPD  | Qualifier |
| TPH 418.1 | <100   | 100             | 10/05/2010 | ND              | 970 | 95.1       | 1020          | 9.51 |           |

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\*=Accredited Analyte

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

Received: 10/01/2010  
 Reported: 10/06/2010  
 Project Name: CIM-10-015  
 Project Number: TICONDEROGA 16 ST. COM #4  
 Project Location: LEA, NM

Sampling Date: 10/01/2010  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: AH #3 1' BGS (H020969-05)**

| BTX 8021B       |              | mg/kg           |            | Analyzed By: cms |      |            |               |     |           |
|-----------------|--------------|-----------------|------------|------------------|------|------------|---------------|-----|-----------|
| Analyte         | Result       | Reporting Limit | Analyzed   | Method Blank     | BS   | % Recovery | True Value QC | RPD | Qualifier |
| Benzene*        | <0.025       | 0.025           | 10/04/2010 | ND               | 2.08 | 104        | 2.00          |     |           |
| <b>Toluene*</b> | <b>0.026</b> | 0.025           | 10/04/2010 | ND               | 2.08 | 104        | 2.00          |     |           |
| Ethylbenzene*   | <0.025       | 0.025           | 10/04/2010 | ND               | 2.15 | 108        | 2.00          |     |           |
| Total Xylenes*  | <0.075       | 0.075           | 10/04/2010 | ND               | 6.26 | 104        | 6.00          |     |           |

Surrogate: 4-Bromofluorobenzene (PIL) 97.9 % 80-120

| Chloride, SM4500Cl-B |            | mg/kg           |            | Analyzed By: HM |     |            |               |      |           |
|----------------------|------------|-----------------|------------|-----------------|-----|------------|---------------|------|-----------|
| Analyte              | Result     | Reporting Limit | Analyzed   | Method Blank    | BS  | % Recovery | True Value QC | RPD  | Qualifier |
| <b>Chloride</b>      | <b>128</b> | 16.0            | 10/04/2010 | ND              | 416 | 104        | 400           | 3.77 |           |

| TPH 418.1 |        | mg/kg           |            | Analyzed By: AB |     |            |               |      |           |
|-----------|--------|-----------------|------------|-----------------|-----|------------|---------------|------|-----------|
| Analyte   | Result | Reporting Limit | Analyzed   | Method Blank    | BS  | % Recovery | True Value QC | RPD  | Qualifier |
| TPH 418.1 | <100   | 100             | 10/05/2010 | ND              | 970 | 95.1       | 1020          | 9.51 |           |

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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: 10/01/2010  
 Reported: 10/06/2010  
 Project Name: CIM-10-015  
 Project Number: TICONDEROGA 16 ST. COM #4  
 Project Location: LEA, NM

Sampling Date: 10/01/2010  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: AH #4 SURFACE (H020969-06)**

| BTX 8021B      |        | mg/kg           |            | Analyzed By: cms |      |            |               |     |           |
|----------------|--------|-----------------|------------|------------------|------|------------|---------------|-----|-----------|
| Analyte        | Result | Reporting Limit | Analyzed   | Method Blank     | BS   | % Recovery | True Value QC | RPD | Qualifier |
| Benzene*       | <0.025 | 0.025           | 10/04/2010 | ND               | 2.08 | 104        | 2.00          |     |           |
| Toluene*       | 0.051  | 0.025           | 10/04/2010 | ND               | 2.08 | 104        | 2.00          |     |           |
| Ethylbenzene*  | 0.370  | 0.025           | 10/04/2010 | ND               | 2.15 | 108        | 2.00          |     |           |
| Total Xylenes* | 0.863  | 0.075           | 10/04/2010 | ND               | 6.26 | 104        | 6.00          |     |           |

Surrogate: 4-Bromofluorobenzene (PIL) 103 % 80-120

| Chloride, SM4500Cl-B |        | mg/kg           |            | Analyzed By: HM |     |            |               |      |           |
|----------------------|--------|-----------------|------------|-----------------|-----|------------|---------------|------|-----------|
| Analyte              | Result | Reporting Limit | Analyzed   | Method Blank    | BS  | % Recovery | True Value QC | RPD  | Qualifier |
| Chloride             | 160    | 16.0            | 10/04/2010 | ND              | 416 | 104        | 400           | 3.77 |           |

| TPH 418.1 |        | mg/kg           |            | Analyzed By: AB |     |            |               |      |           |
|-----------|--------|-----------------|------------|-----------------|-----|------------|---------------|------|-----------|
| Analyte   | Result | Reporting Limit | Analyzed   | Method Blank    | BS  | % Recovery | True Value QC | RPD  | Qualifier |
| TPH 418.1 | 6550   | 100             | 10/05/2010 | ND              | 970 | 95.1       | 1020          | 9.51 |           |

Cardinal Laboratories

\*=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<br>Samples reported on an as received basis (wet) unless otherwise noted on report |

---

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Caley D. Keene, Lab Director/Quality Manager



# **CARDINAL LABORATORIES**

101 East Marland, Hobbs, NM 88240  
(505) 393-2326 Fax (505) 393-2476

## **CHAIN-OF-CUSTODY AND ANALYSIS REQUEST**

Page \_\_\_\_ of \_\_\_\_

|   |                        |                    |               |                      |            |      |     |                         |        |            |          |        |         |      |           |     |  |  |  |
|---|------------------------|--------------------|---------------|----------------------|------------|------|-----|-------------------------|--------|------------|----------|--------|---------|------|-----------|-----|--|--|--|
| Company Name: <b>Safety &amp; Environmental Solutions, Inc.</b> |                        |                    |               | <b>BILL TO</b>       |            |      |     | <b>ANALYSIS REQUEST</b> |        |            |          |        |         |      |           |     |  |  |  |
| Project Manager: <b>Bob Allen</b>                               |                        |                    |               | P.O. #:              |            |      |     |                         |        |            |          |        |         |      |           |     |  |  |  |
| Address: <b>703 East Clinton</b>                                |                        |                    |               | Company: <b>Same</b> |            |      |     |                         |        |            |          |        |         |      |           |     |  |  |  |
| City: <b>Hobbs</b> State: <b>NM</b> Zip: <b>88240</b>           |                        |                    |               | Attn:                |            |      |     |                         |        |            |          |        |         |      |           |     |  |  |  |
| Phone #: <b>575-397-0510</b> Fax #: <b>575-393-4388</b>         |                        |                    |               | Address:             |            |      |     |                         |        |            |          |        |         |      |           |     |  |  |  |
| Project #: <b>Cim-10-015</b> Project Owner: <b>Cimarex</b>      |                        |                    |               | City:                |            |      |     |                         |        |            |          |        |         |      |           |     |  |  |  |
| Project Name: <b>Ticonderoga 16 St. Com #4</b>                  |                        |                    |               | State: Zip:          |            |      |     |                         |        |            |          |        |         |      |           |     |  |  |  |
| Project Location: <b>Levy, NM</b>                               |                        |                    |               | Phone #:             |            |      |     |                         |        |            |          |        |         |      |           |     |  |  |  |
| Sampler Name: <b>Isaac Kincaid</b>                              |                        |                    |               | Fax #:               |            |      |     |                         |        |            |          |        |         |      |           |     |  |  |  |
| FOR LAB USE ONLY  |                        |                    |               |                      |            |      |     |                         |        |            |          |        |         |      |           |     |  |  |  |
| Lab I.D.  | Sample I.D.            | (GRAB OR COMPOUND) | # CONTAINERS: | GROUNDWATER          | WASTEWATER | SOIL | OIL | SLUDGE                  | OTHER: | ACID/BASE: | ICE/COOL | OTHER: | DATE    | TIME |           |     |  |  |  |
| A20969-1  | TK<br>SP AH #1 SURFACE | ✓                  | 1             |                      |            | ✓    |     |                         |        |            |          |        | 10/1/10 | 0935 | TPH 418.1 | BTX |  |  |  |
|   | 2 AH #2 SURFACE        | ✓                  | 1             |                      |            | ✓    |     |                         |        |            |          |        |         | 0950 |           |     |  |  |  |
|   | 3 AH #2 1'bg S         | ✓                  | 1             |                      |            | ✓    |     |                         |        |            |          |        |         | 0955 |           |     |  |  |  |
|   | 4 AH #3 SURFACE        | ✓                  | 1             |                      |            | ✓    |     |                         |        |            |          |        |         | 1010 |           |     |  |  |  |
|   | 5 AH #3 1'bg S         | ✓                  | 1             |                      |            | ✓    |     |                         |        |            |          |        |         | 1015 |           |     |  |  |  |
|   | 6 AH #4 SURFACE        | ✓                  | 1             |                      |            | ✓    |     |                         |        |            |          |        |         | 1025 |           |     |  |  |  |

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Terms and Conditions: Interest will be charged on all accounts more than 30 days past due at the rate of 24% per annum from the original date of invoice, and all costs of collection, including attorney's fees.

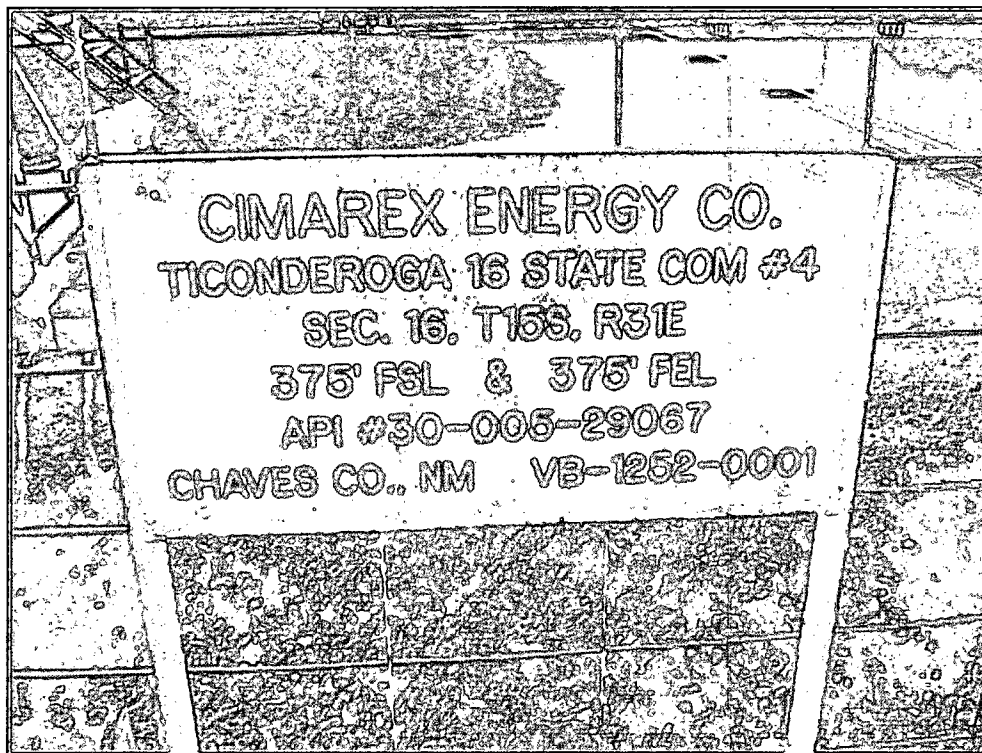
|                              |  |                      |   |  |  |                |
|------------------------------|--|----------------------|---|--|--|----------------|
| Sampler Relinquished:        |  | Date: <b>10/1/10</b> | Received By:  |  | Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No | Add'l Phone #: |
|                              |  | Time: <b>1423</b>    |   |  | Fax Result: <input type="checkbox"/> Yes <input type="checkbox"/> No   | Add'l Fax #:   |
| Relinquished By:             |  | Date: <b>10/1/10</b> | Received By:  |  | REMARKS:   |                |
|                              |  | Time: <b>1523</b>    |   |  |  |                |
| Delivered By: (Circle One)   |  | Temp. <b>0.5°C</b>   | Sample Condition  |  |  |                |
| Sampler - UPS - Bus - Other: |  |                      | Cool/Intact   |  | CHECKED BY: (Initials)   |                |
|                              |  |                      | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |  |  |                |

† Cardinal cannot accept verbal changes. Please fax written changes to 575-393-2476.

#26

## **Appendix B**

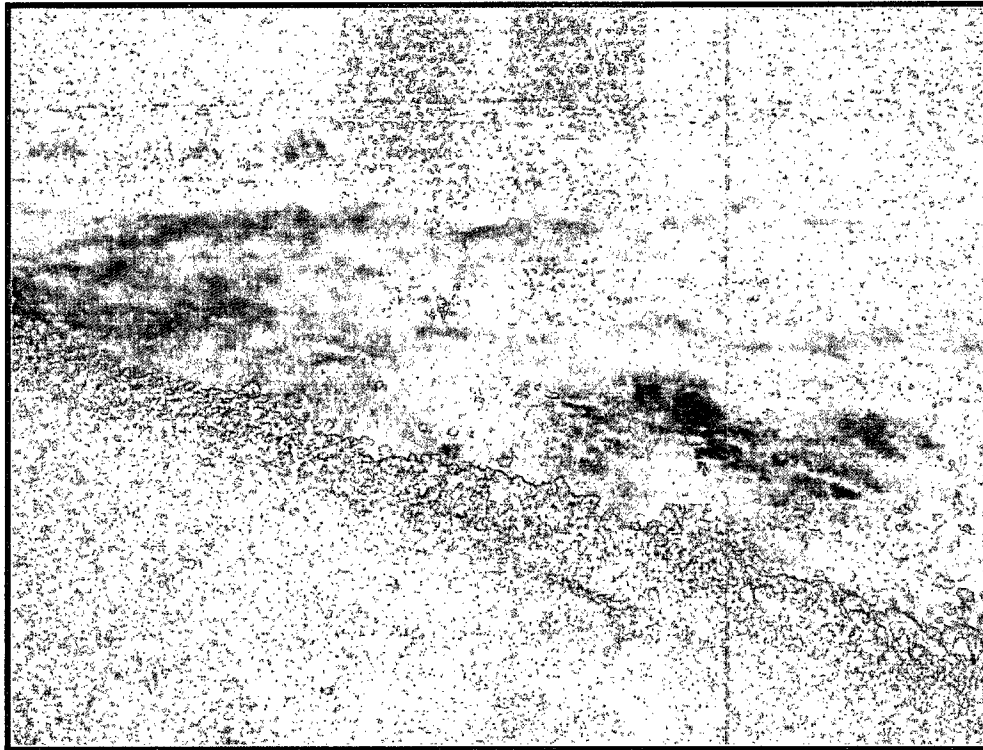
### **Site Photographs**



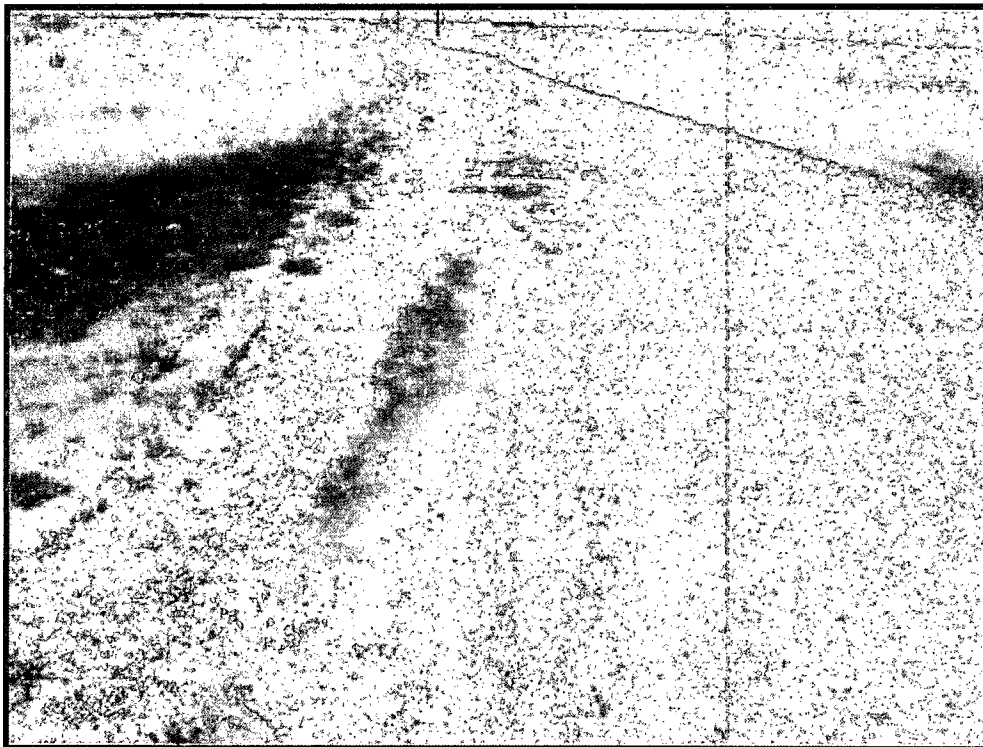
Lease sign



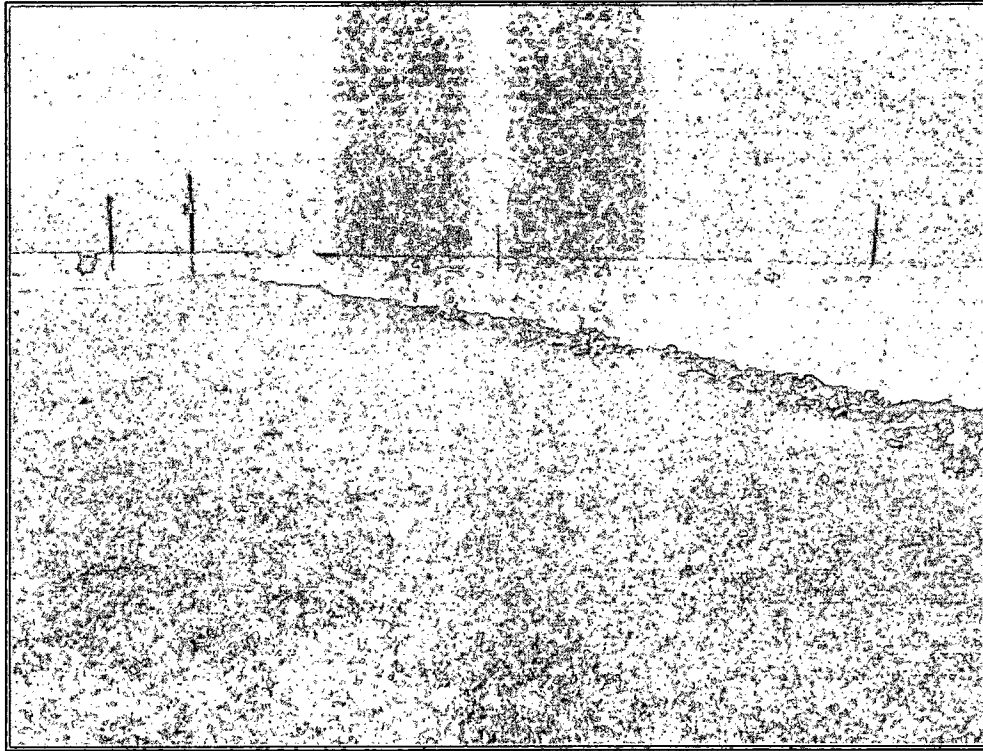
East of lease road



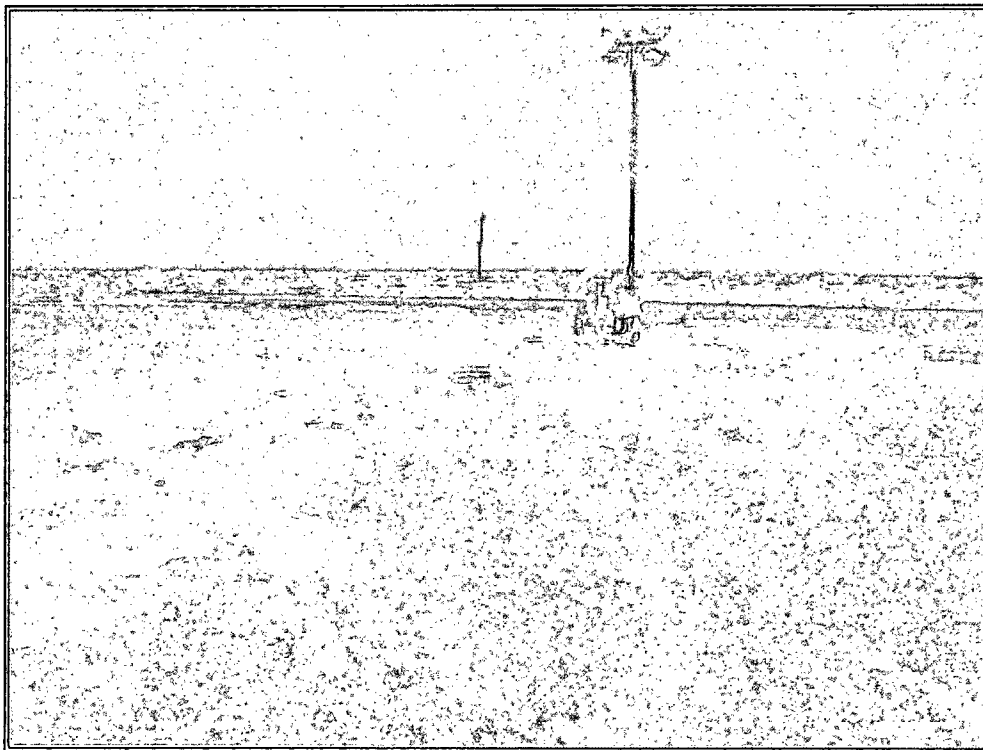
East of lease road facing NE



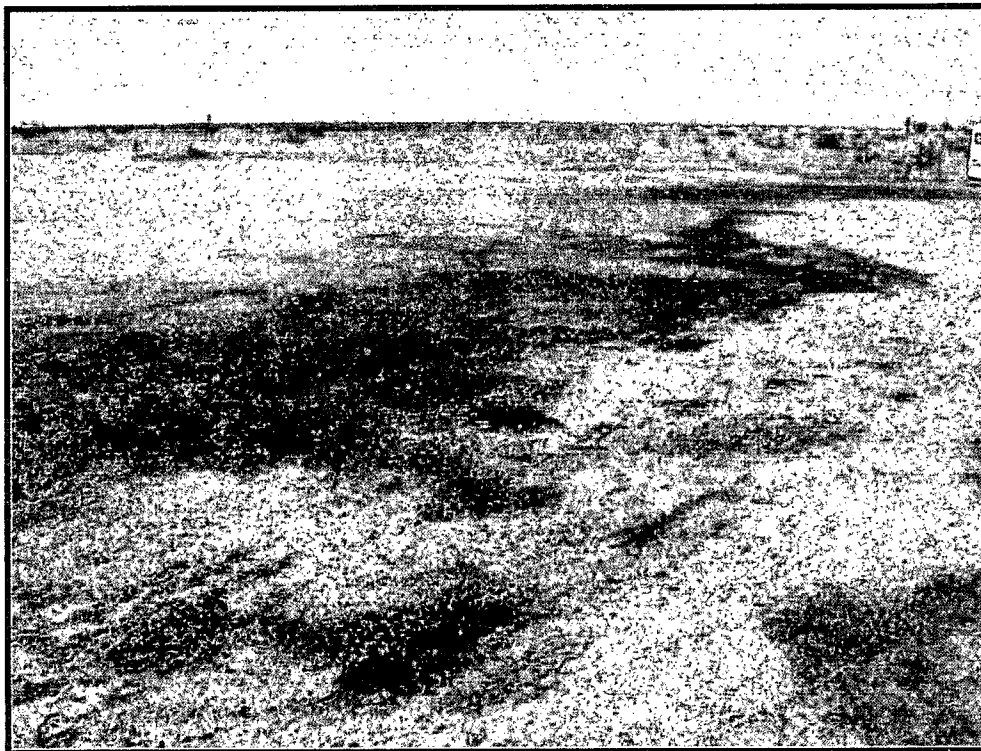
Lease road facing north



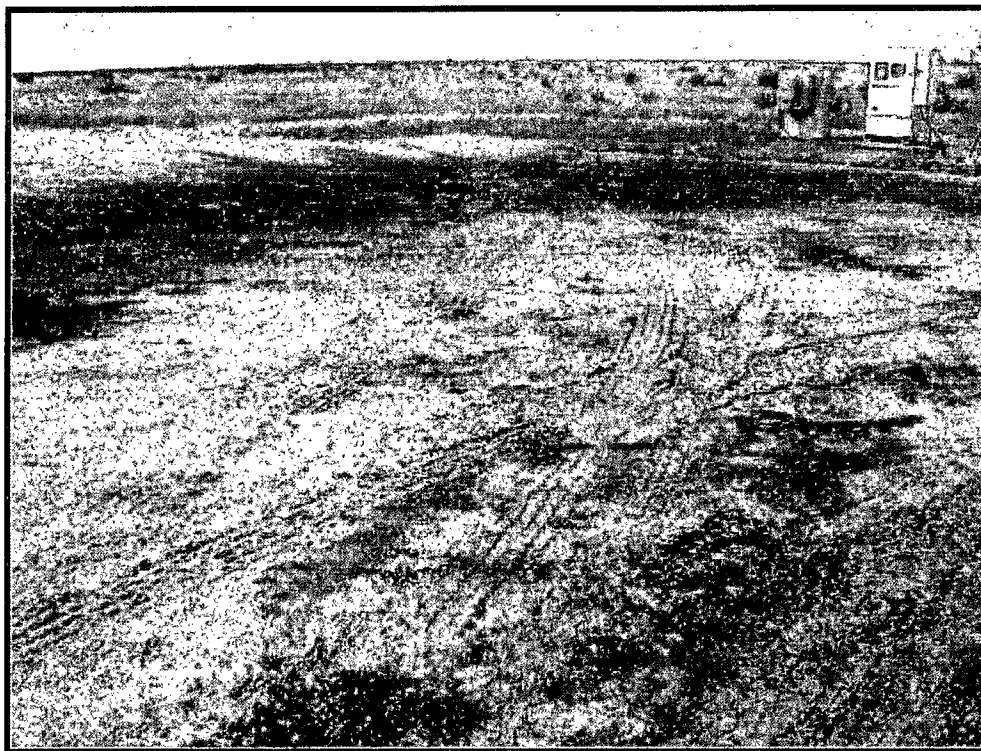
East end of location facing north



Location facing northeast

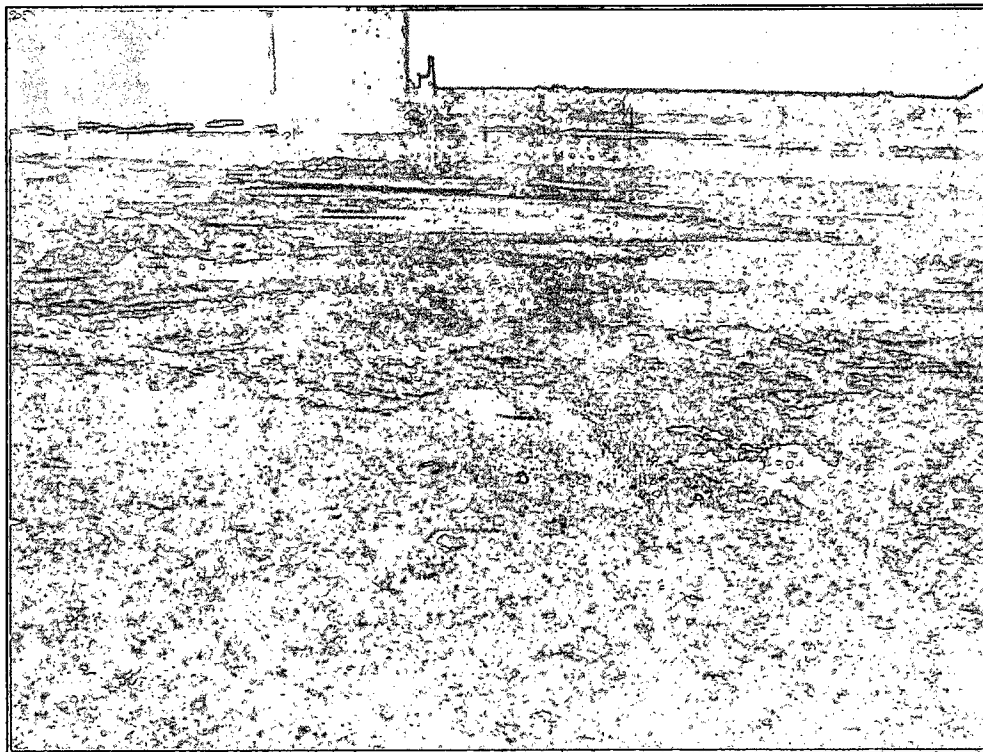


Location facing north

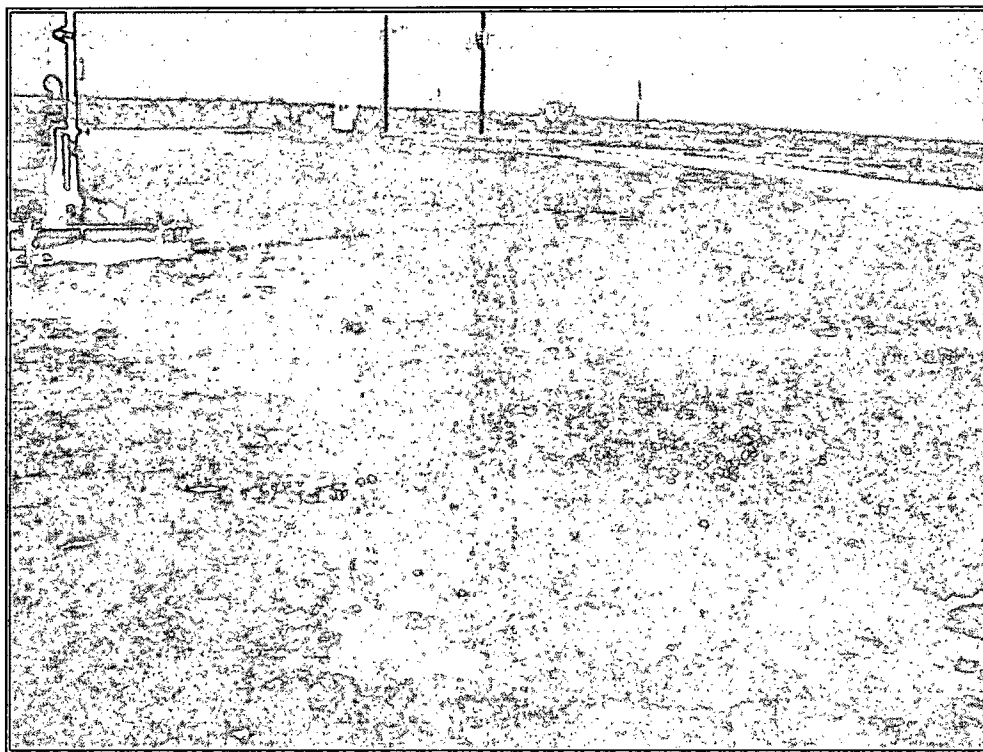


Location facing northwest





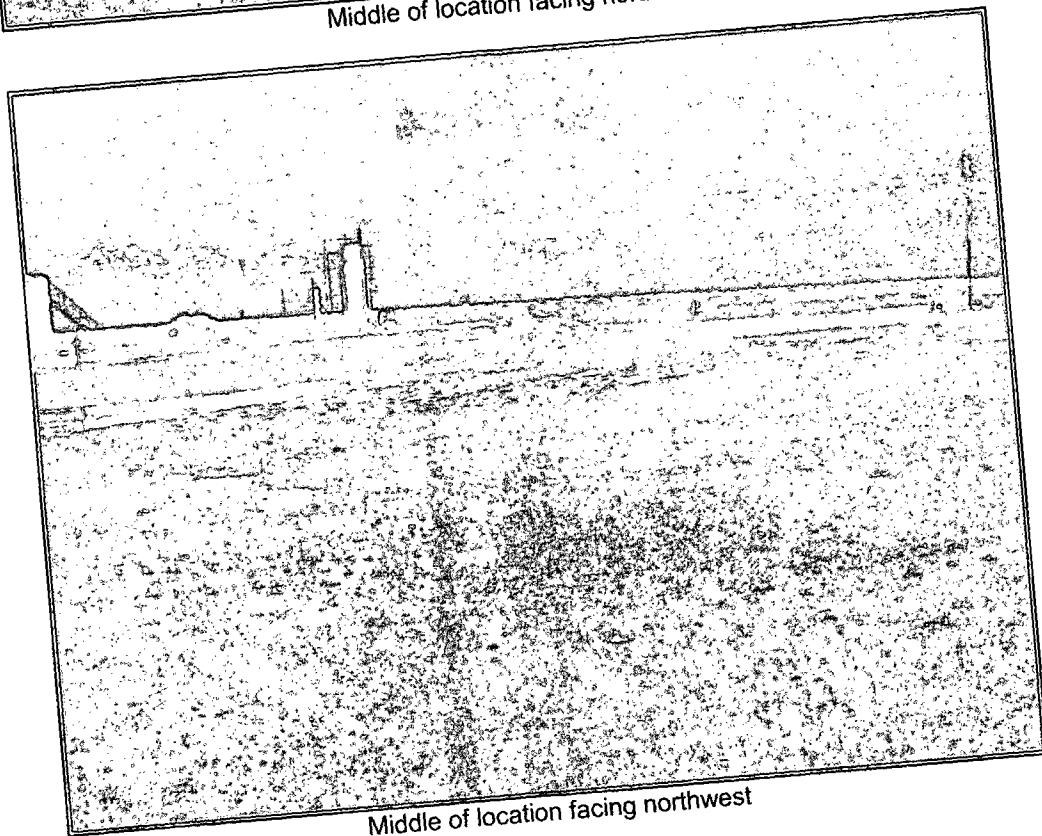
Location facing southwest



Center of location facing northeast



Middle of location facing north



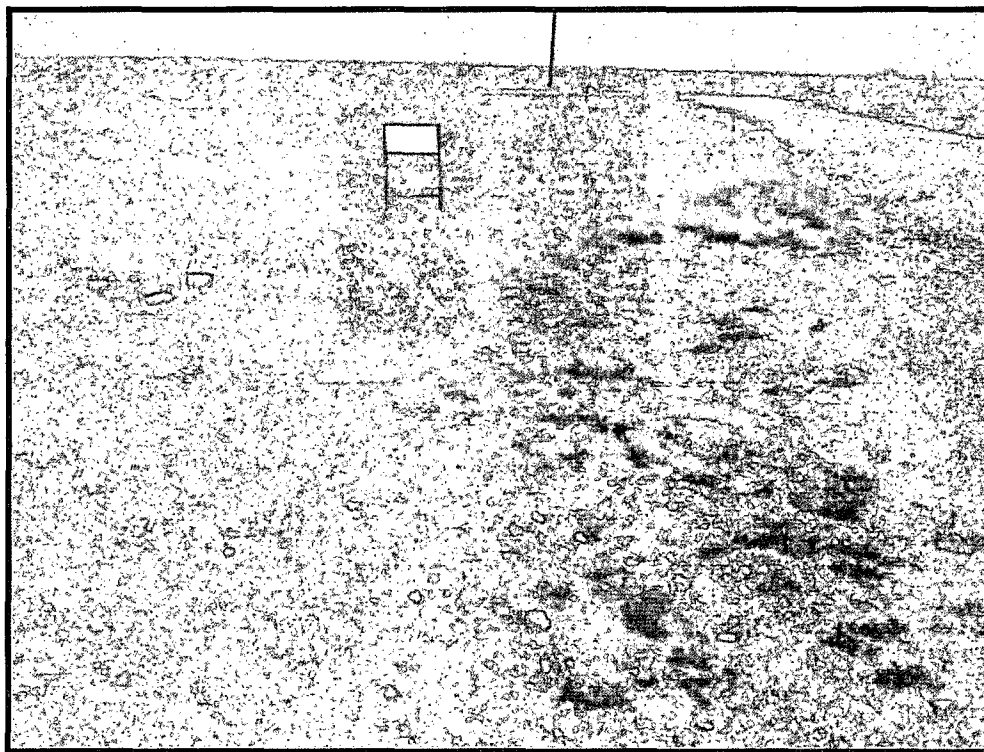
Middle of location facing northwest



North of lease road



North of lease road facing east



North of location facing east



North of location facing west



*Puddle north of location*

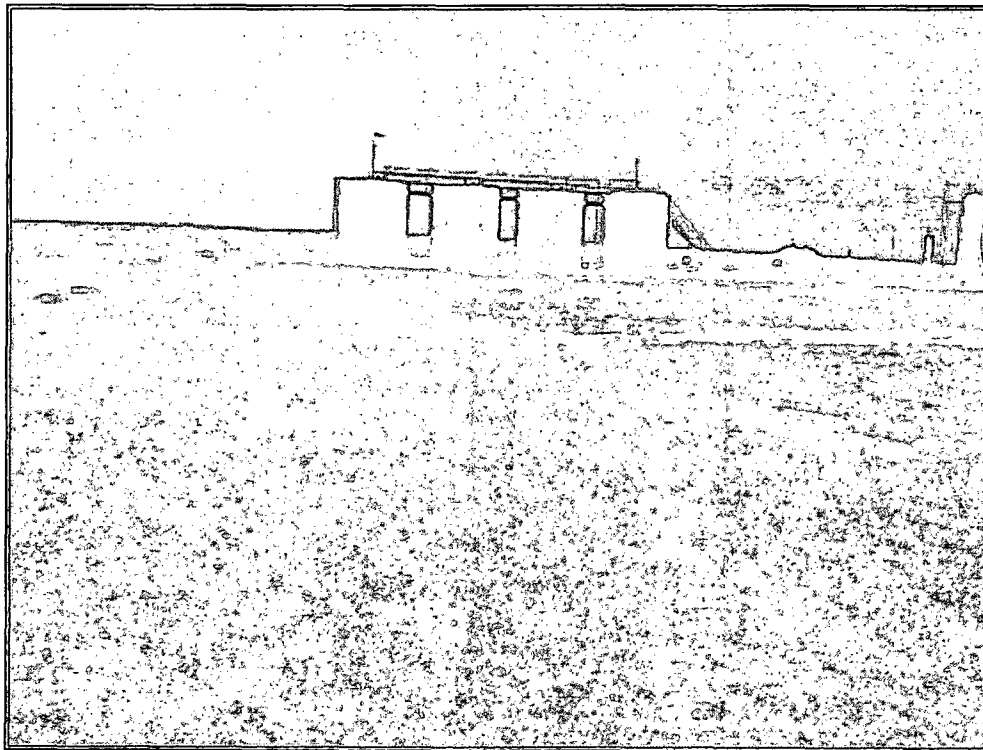


Lease road on south side of location





South of lease rd facing east



South of location facing west

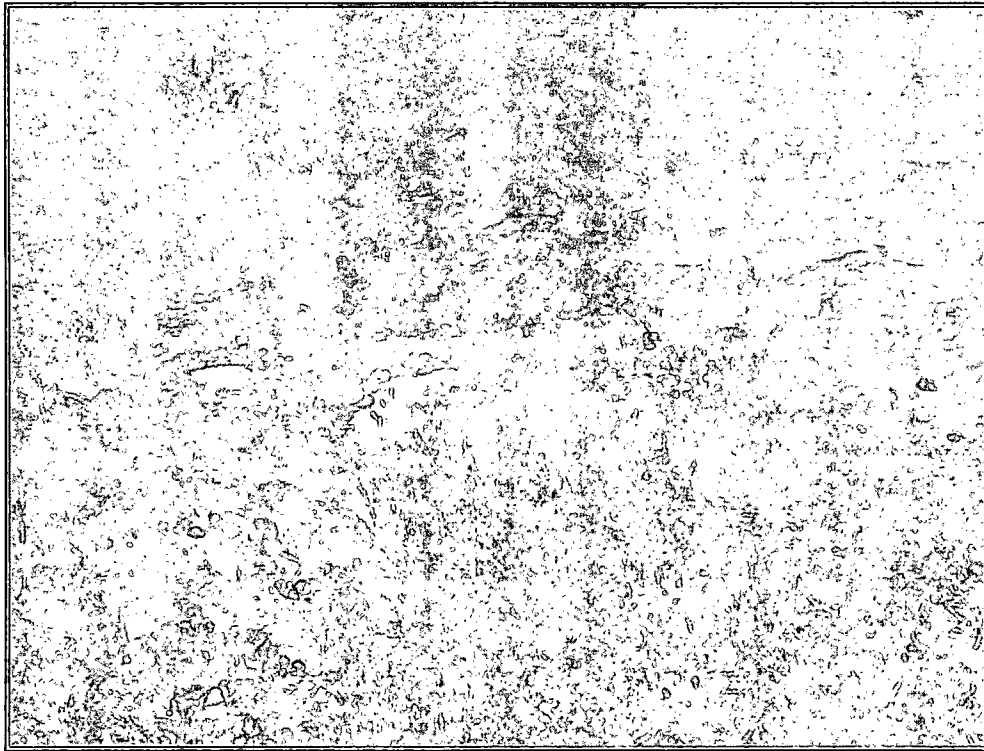


Stained vegetation northeast of location

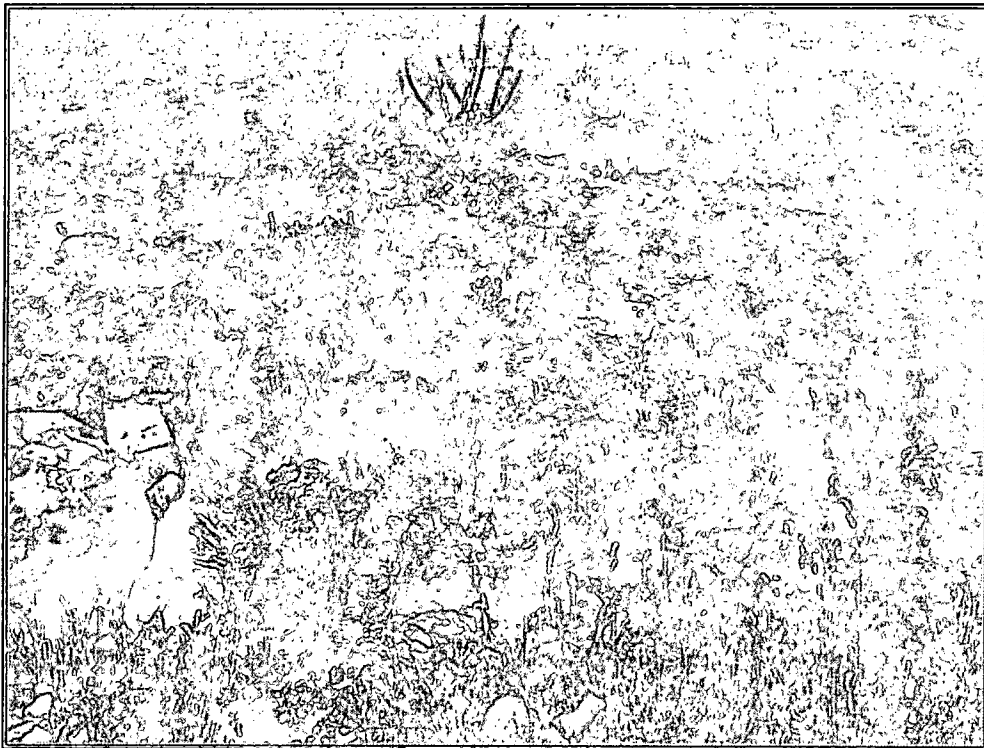


Staining on vegetation





Staining on vegetation east of lease road



West of lease road running north and south

## **Appendix C**

### **C-141**

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**

SEP 23 2010  
HOBBSSQCD

Form C-141  
Revised October 10, 2003  
Submit 2 Copies to appropriate  
District Office in accordance  
with Rule 116 on back  
side of form

### Release Notification and Corrective Action

#### OPERATOR

☒ Initial Report ☐ Final Report


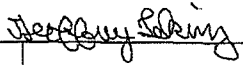
|   |                              |
|---|------------------------------|
| Name of Company: Cimarex Energy                       | Contact: Marty Davis         |
| Address: 600 N Marienfeld Suite 600, Midland TX 79701 | Telephone No. (575) 605-5509 |
| Facility Name: Ticonderoga 16 Sate Com #4             | Facility Type: Battery       |
| Surface Owner:  | Mineral Owner:               |
| Lease No.   |                              |

#### LOCATION OF RELEASE

| Unit Letter | Section | Township | Range | Feet from the | North/South Line | Feet from the | East/West Line | County |
|-------------|---------|----------|-------|---------------|------------------|---------------|----------------|--------|
|             | 16      | 15S      | 31E   |               |                  |               |                | Chaves |

Latitude: 32.009640 Longitude: 103.819428

#### NATURE OF RELEASE

|  |  |  |
|--|--|--|
| Type of Release: Crude Oil   | Volume of Release 15 bbls  | Volume Recovered 5 bbls                            |
| Source of Release: Casing leaked   | Date and Hour of Occurrence<br>Unknown   | Date and Hour of Discovery<br>9/17/10 8:00 am      |
| Was Immediate Notice Given?<br><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required   | If YES, To Whom? Geoff Leking, NMOCD   |  |
| By Whom? Sergio Contreras, SESI  | Date and Hour 9/20/10, 8:00 am   |  |
| Was a Watercourse Reached?<br><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.*  |  |  |
| Casing leak; Vacuum truck removed free standing product.   |  |  |
| Describe Area Affected and Cleanup Action Taken.*  |  |  |
| SESI was contacted for assessment. Area will be delineated and an appropriate work plan will be submitted to NMOCD.  |  |  |
| 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:    | OIL CONSERVATION DIVISION  |  |
| Printed Name: Marty Davis  | Approved by District Supervisor:  |  |
| Title: Field Foreman   | Approval Date: 9/23/10   | Expiration Date: 11/23/10                          |
| E-mail Address: mdavis@cimarex.com   | Conditions of Approval: SUBMIT FINAL   |  |
| Date: 9-20-10 Phone: (575) 605-5509  | C-141 BY 11/23/10.   | Attached <input type="checkbox"/><br>IRP-10-9-2615 |

\* Attach Additional Sheets If Necessary

RECEIVED

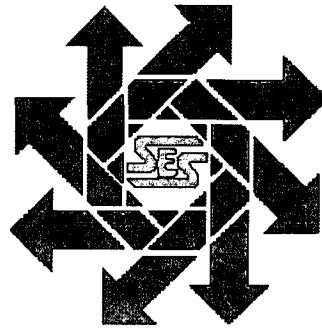
OCT 28 2010

HOBBSOCD

**Cimarex Energy Company  
Ticonderoga 16 State Com #4  
Section 16, Township 15S, Range 31E  
Chaves County, New Mexico**

**Delineation Report/Work Plan**

**October 7, 2010**



**Prepared for:**

**Cimarex Energy Company  
600 North Marienfeld, Suite 600  
Midland, Texas 79701**

**By:**

**Safety & Environmental Solutions, Inc.  
703 East Clinton Street  
Hobbs, New Mexico 88240  
(575) 397-0510**

- sect loc diff from  
lat/long  
- depth to gw correct?  
- Delineate further  
AH#1 & AH#2  
- especially taking  
environmental Egr  
NMOC-Hobbs  
11/05/10

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## **I. Company Contacts**

| <b>Company Representative</b> | <b>Company</b>     | <b>Telephone</b> | <b>E-mail</b>      |
|-------------------------------|--------------------|------------------|--------------------|
| Marty Davis                   | Cimarex Energy Co. | 575-605-5509     | mdavis@cimarex.com |
| Bob Allen                     | SESI               | 575-397-0510     | ballen@sesi-nm.com |

## **II. Background**

Safety and Environmental Solutions, Inc. (SESI) was engaged by Cimarex Energy Company to perform a site assessment at the Ticonderoga 16 State Com #4, located in Section 16, Township 15 South, and Range 31 East. The blowout preventer on the pulling unit went out causing the casing to leak and releasing approximately 15 barrels of hydrocarbon fluid and recovered approximately 5 barrels. There was also an area affected with overspray.

## **III. Surface and Ground Water**

According the database provided by the New Mexico Office of State Engineer's online database, the average depth of water in this area is 67 feet since February 2007.

## **IV. Soils**

The surface soils in the area are predominantly sand and sandy loam.

## **V. Work Performed**

On October 1, 2010 SESI was onsite to install auger holes to delineate release area. Auger Hole (AH) #1 and AH #4 was located on location pad and a surface sample was obtained but had auger refusal at a depth of six (6) inches below grade surface (bgs). AH #2 and AH #3 were located in pasture area and northeast of location and samples were obtained at surface and one (1) foot below grade surface.

Samples were properly preserved and transported under chain of custody to Cardinal Labs of Hobbs, New Mexico. The samples were analyzed for Chlorides (EPA Method 4500-Cl<sup>-</sup>B), Benzene, Toluene, Ethyl Benzene, Total Xylenes (BTEX EPA Method 8021) and Total Petroleum Hydrocarbons (TPH EPA Method 418.1).

The results of the analysis are as follows:

| <b>Lab ID</b>             | <b>Sample ID</b> | <b>Benzene<br/>(mg/kg)</b> | <b>Toluene<br/>(mg/kg)</b> | <b>Ethyl<br/>Benzene<br/>(mg/kg)</b> | <b>Xylenes<br/>(mg/kg)</b> | <b>TPH<br/>(mg/kg)</b> | <b>Chlorides<br/>(mg/kg)</b> |
|---------------------------|------------------|----------------------------|----------------------------|--------------------------------------|----------------------------|------------------------|------------------------------|
| <b>Analysis<br/>Date:</b> |                  | <b>10/01/10</b>            | <b>10/01/10</b>            | <b>10/01/10</b>                      | <b>10/01/10</b>            | <b>10/01/10</b>        | <b>10/01/10</b>              |
| H020969-01                | AH #1 Surface    | <0.025                     | 0.036                      | 0.048                                | 0.181                      | 5920                   | 896                          |
| H020969-02                | AH #2 Surface    | <0.025                     | 0.355                      | 0.500                                | 2.94                       | 4790                   | 80.0                         |
| H020969-03                | AH #2 1'bgs      | <0.025                     | 0.065                      | 0.047                                | 0.158                      | <100                   | 112                          |
| H020969-04                | AH #3 Surface    | <0.025                     | 0.032                      | 0.029                                | 0.103                      | <100                   | 80.0                         |
| H020969-05                | AH #3 1'bgs      | <0.025                     | 0.026                      | <0.025                               | <0.075                     | <100                   | 128                          |
| H020969-06                | AH #4 1'bgs      | <0.025                     | 0.051                      | 0.370                                | 0.863                      | 6550                   | 160                          |

**VI. Action Plan**

Cimarex proposes that the affected area on location pad be excavated to a depth of 2" bgs and the affected area in the pasture be mowed and ripped to let area aerate out. The area near auger hole #4 will be excavated and the most highly contaminated soils removed and taken to an approved NMOCD facility. The excavated areas will then be backfilled with clean soils and contoured to original grade.

**VIII. Figures and Appendices**

Figure 1 – Vicinity Map

Figure 2 – Site Map

Appendix A – Analytical Results

Appendix B – Site Photographs

Appendix C – C-141

