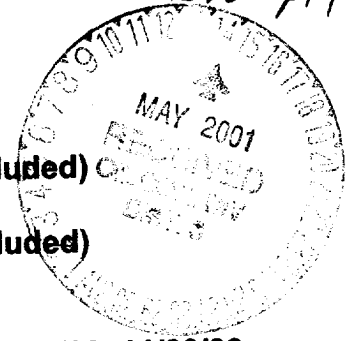


**Cross Timbers Operating Company (CTOC)  
McCoy GC C # 1 - Blow Pit  
Ne/4 Ne/4 Sec. 28, T30N, R12W**

A

13.11 0/504  
Approved pit  
closure 12/26/99  
Blow pit



**Site Assessment Date:**

**April 28, 1992**

**(Documentation Included)**

**Pit closure Date:**

**Mar. - Apr. 1994**

**(Documentation Included)**

**Monitor Well Installation Date:**

**November 12, 1999**

**Monitor Well Sampling Dates:**

**11/29/99, 2/21/00, 3/15/00, 6/19/00, 11/30/00,  
3/19/01**

## **Groundwater Monitor Well Sampling Procedures:**

Groundwater samples were collected from site monitor wells (MW's) following US EPA: SW-846 protocol. The samples were collected using new disposable bailers and placed in new laboratory supplied 40 ml glass vials with teflon septa caps. Samples were analyzed for benzene, toluene, ethylbenzene, and total xylenes (BTEX) per US EPA Method 8021. Additional groundwater was collected and placed in laboratory supplied 500 ml plastic containers and analyzed for general water quality per US EPA Method 600/4-79-020. The samples were preserved cool (BTEX samples also preserved with mercuric chloride) and hand delivered to a qualified laboratory for testing. Waste generated during monitor well sampling and development was disposed of utilizing the separator tank pit located at the nearby McCoy GC D #1 well site.

## **Water Quality Information:**

BTEX and general chemistry results for the five (5) quarterly sampling events are summarized in the following tables. All MW BTEX constituents satisfactorily meet the New Mexico Water Quality Control Commission's (NMWQCC) allowable concentrations for groundwater. The general water quality results also met NMWQCC standards for groundwater or was less than/statistically equal to the apparent background levels derived from MW #1.

## **Summary:**

Based on the determined groundwater gradient (figures 2 through 6), MW #3 appears to be positioned down gradient, but slightly lateral of the source area. Blagg Engineering, Inc. (BEI) believes that MW #3's location sufficiently substantiates and delineates the source area.

In accordance with the attached correspondence (refer to letter dated May 11, 2001 - RE: CTOC, 2000 Annual Groundwater Reports, San Juan County, NM, Permanent Closure Requested) and the NMOCD previously approved groundwater management plan (GMP), specifically Section 2.0, CTOC respectfully request permanent closure for the site separator pit.

It should be recognized that CTOC, in this specific case, went beyond the recommendation made by NMOCD in the above noted correspondence by establishing four (4) consecutive quarterly sampling events below the NMWQCC's standards for BTEX in order to add more credibility to the suggestions made by NMOCD.

This document contains all pertinent information detailed in section 5.0 (Reporting) of the GMP. Upon receiving permanent closure notification from NMOCD, CTOC will conduct plug and abandonment of all sampling points as addressed in Section 6.0 of the GMP.

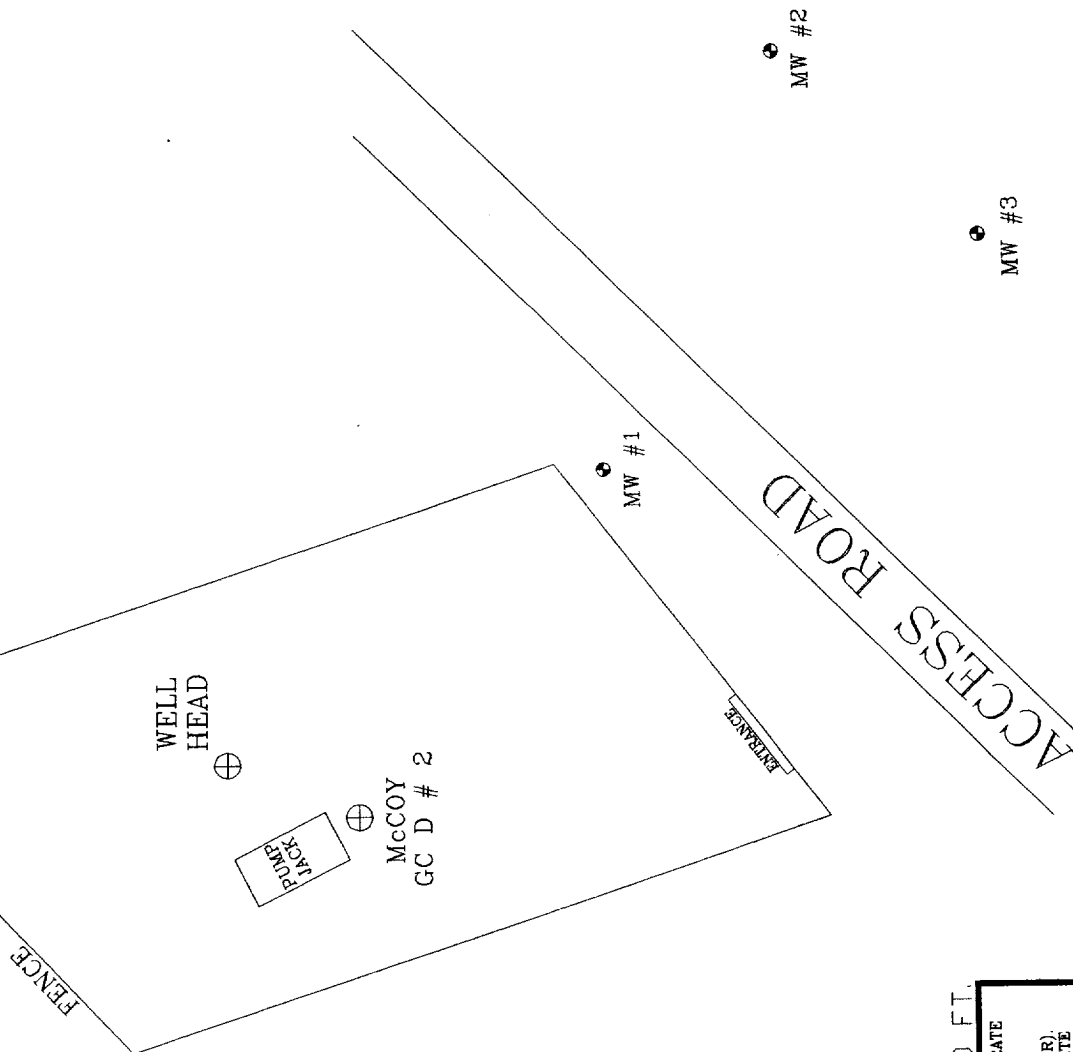
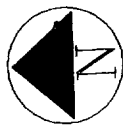
**GENERAL WATER QUALITY**  
**CROSS TIMBERS OPERATING COMPANY**

**McCOY GC C # 1**

**SAMPLE DATE : November 29 , 1999**

| PARAMETERS                            | MW # 1 | MW # 2 | MW # 3 | Units      |
|---------------------------------------|--------|--------|--------|------------|
| LAB pH                                | 6.95   | 6.97   | 6.98   | s. u.      |
| LAB CONDUCTIVITY @ 25 C               | 2,735  | 2,430  | 2,850  | umhos / cm |
| TOTAL DISSOLVED SOLIDS @ 180 C        | 1,360  | 1,200  | 1,420  | mg / L     |
| TOTAL DISSOLVED SOLIDS (Calc)         | 1,340  | 1,090  | 1,380  | mg / L     |
| SODIUM ABSORPTION RATIO               | 0.4    | 0.1    | 1.2    | ratio      |
| TOTAL ALKALINITY AS CaCO <sub>3</sub> | 248    | 268    | 296    | mg / L     |
| TOTAL HARDNESS AS CaCO <sub>3</sub>   | 964    | 860    | 872    | mg / L     |
| BICARBONATE as HCO <sub>3</sub>       | 248    | 268    | 296    | mg / L     |
| CARBONATE AS CO <sub>3</sub>          | < 0.01 | < 0.01 | < 0.01 | mg / L     |
| HYDROXIDE AS OH                       | < 0.1  | < 0.1  | < 0.1  | mg / L     |
| NITRATE NITROGEN                      | 0.1    | 0.1    | 0.1    | mg / L     |
| NITRITE NITROGEN                      | 0.001  | 0.002  | 0.001  | mg / L     |
| CHLORIDE                              | 49.2   | 54.0   | 52.4   | mg / L     |
| FLUORIDE                              | 0.98   | 0.90   | 0.92   | mg / L     |
| PHOSPHATE                             | 0.5    | 1.0    | 2.0    | mg / L     |
| SULFATE                               | 730    | 555    | 730    | mg / L     |
| IRON                                  | 0.852  | 0.643  | 0.524  | mg / L     |
| CALCIUM                               | 347    | 254    | 253    | mg / L     |
| MAGNESIUM                             | 23.4   | 54.7   | 58.6   | mg / L     |
| POTASSIUM                             | 3.6    | 2.8    | 23.5   | mg / L     |
| SODIUM                                | 32.0   | 7.0    | 82.0   | mg / L     |
| CATION / ANION DIFFERENCE             | 0.02   | 0.00   | 0.12   | %          |

# FIGURE 1



1 INCH = 50 FT.



MONITOR WELL LOCATIONS ARE ONLY AS ACCURATE AS THE INSTRUMENTS USED IN OBTAINING THE FOOTAGE AND BEARING FROM THE WELL HEAD (BRUNTON COMPASS AND LASER RANGE FINDER). ALL OTHER STRUCTURES DISPLAYED ON THE SITE MAP ARE SOLELY FOR REFERENCE AND MAY NOT BE TO SCALE.

CROSS TIMBERS OPERATING CO.

McCOY GC C #1

NE/4 NE/4 SEC. 28, T30N, R12W

SAN JUAN COUNTY, NEW MEXICO

BLAGG ENGINEERING, INC.

CONSULTING PETROLEUM / RECLAMATION SERVICES

P.O. BOX 87

BLOOMFIELD, NEW MEXICO 87413

PHONE: (505) 632-1199

PROJECT: MW INSTALL.

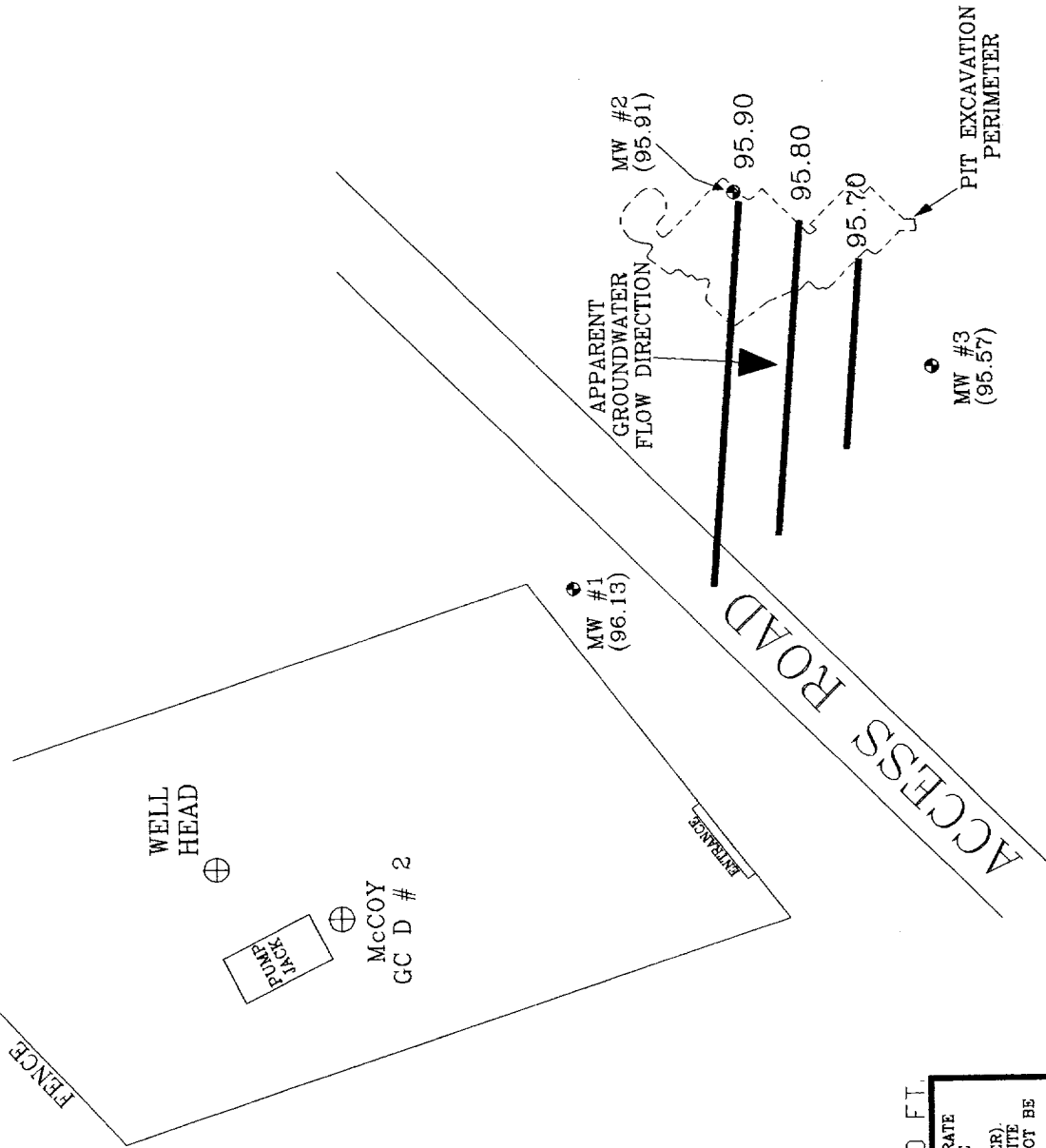
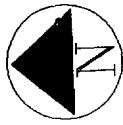
DRAWN BY: NJV

FILENAME: MC-C1-SM.SKD

SITE  
MAP

11/99

FIGURE 2  
(4th 1/4, 1999)



| Top of Well Elevation                         |          |
|-----------------------------------------------|----------|
| MW #1                                         | (101.98) |
| MW #2                                         | (101.35) |
| MW #3                                         | (101.64) |
| ● MW #1 Groundwater Elevation as of 11/29/99. |          |

1 INCH = 50 FT.

0 50 100 FT.

MONITOR WELL LOCATIONS ARE ONLY AS ACCURATE AS THE INSTRUMENTS USED IN OBTAINING THE FOOTAGE AND BEARING FROM THE WELL HEAD (BRUNTON COMPASS AND LASER RANGE FINDER). ALL OTHER STRUCTURES DISPLAYED ON THE SITE MAP ARE SOLELY FOR REFERENCE AND MAY NOT BE TO SCALE.

CROSS TIMBERS OPERATING CO.

McCOY GC C #1

NE/4 NE/4 SEC. 28, T30N, R12W

SAN JUAN COUNTY, NEW MEXICO

BLAGG ENGINEERING, INC.

CONSULTING PETROLEUM / RECLAMATION SERVICES

P.O. BOX 87

BLOOMFIELD, NEW MEXICO 87413

PHONE: (505) 632-1199

PROJECT: MW SAMPLING

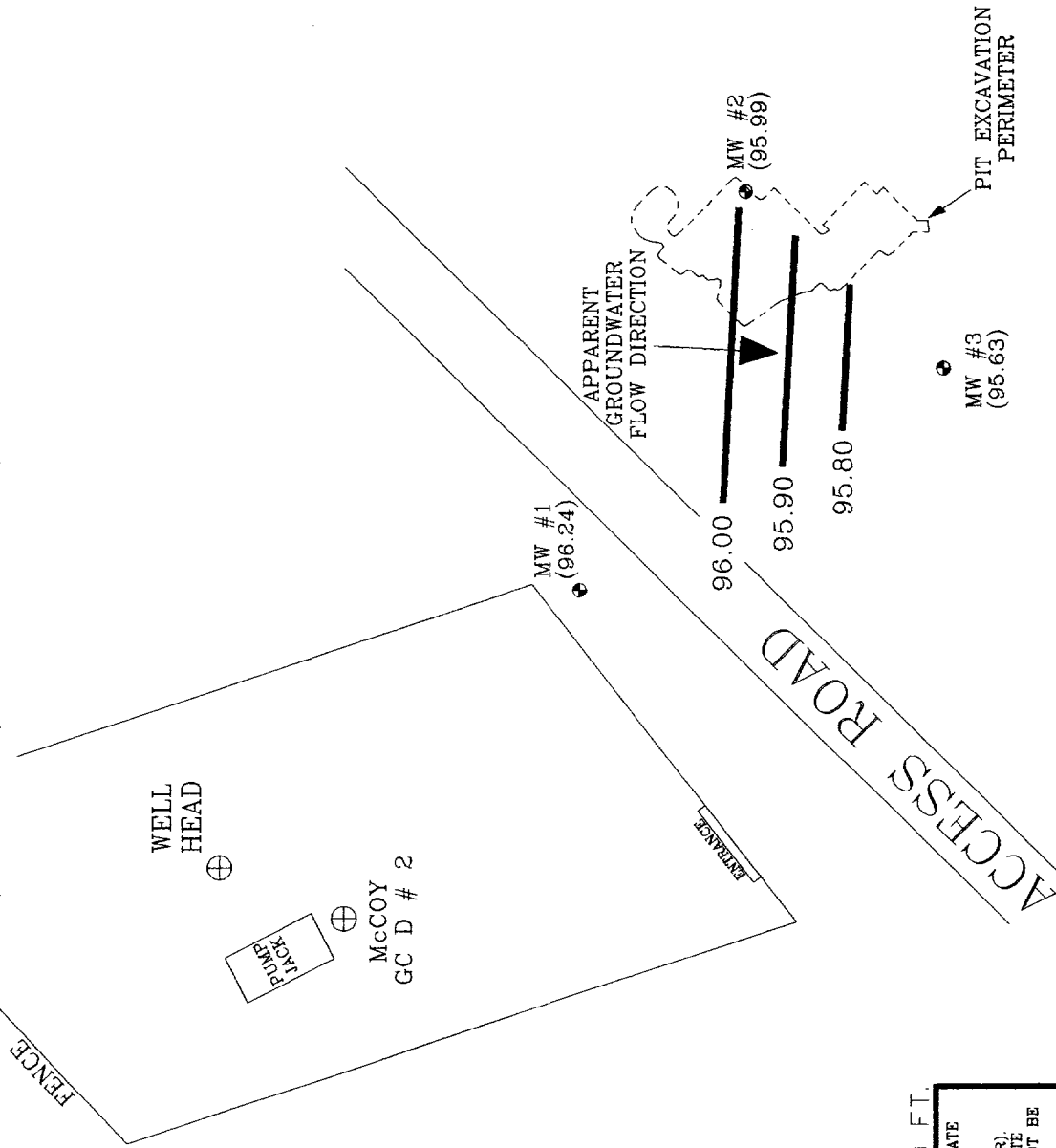
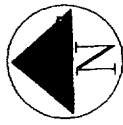
DRAWN BY: NJV

FILENAME: 11-29-GW.SKD

GROUNDWATER  
GRADIENT  
MAP

11/99

FIGURE 3  
(1st 1/4, 2000)



| Top of Well Elevation                      |          |
|--------------------------------------------|----------|
| MW #1                                      | (101.98) |
| MW #2                                      | (101.35) |
| MW #3                                      | (101.64) |
| MW #1 Groundwater Elevation as of 2/21/00. |          |
| ●                                          | (96.24)  |

1 INCH = 50 FT.



MONITOR WELL LOCATIONS ARE ONLY AS ACCURATE AS THE INSTRUMENTS USED IN OBTAINING THE FOOTAGE AND BEARING FROM THE WELL HEAD (BRUNTON COMPASS AND LASER RANGE FINDER). ALL OTHER STRUCTURES DISPLAYED ON THE SITE MAP ARE SOLELY FOR REFERENCE AND MAY NOT BE TO SCALE.

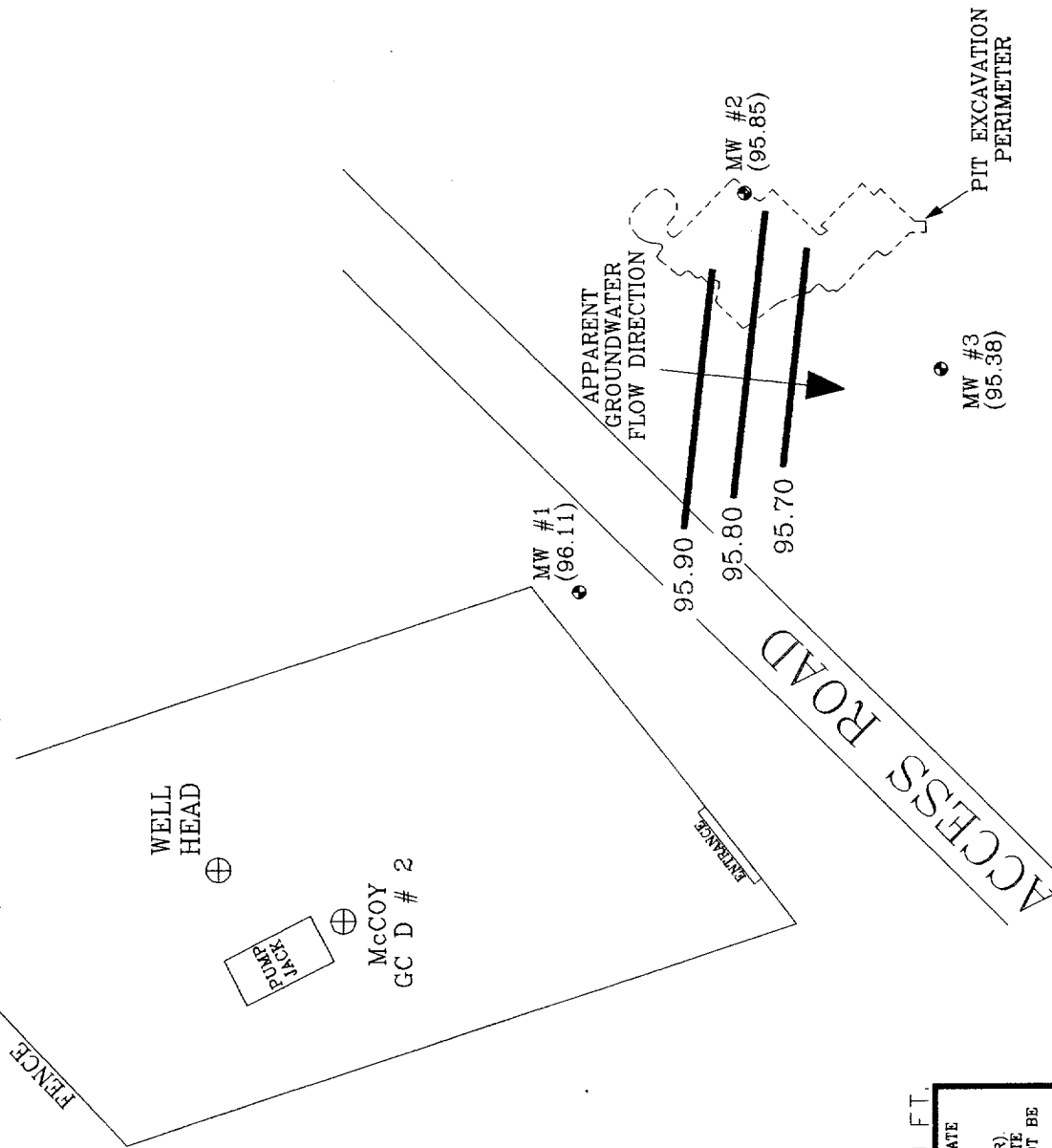
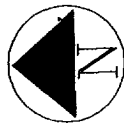
CROSS TIMBERS OPERATING CO.  
McCOY GC C #1  
NE/4 NE/4 SEC. 28, T30N, R12W  
SAN JUAN COUNTY, NEW MEXICO

BLAGG ENGINEERING, INC.  
CONSULTING PETROLEUM / RECLAMATION SERVICES  
P.O. BOX 87  
BLOOMFIELD, NEW MEXICO 87413  
PHONE: (505) 632-1199

PROJECT: MW SAMPLING  
DRAWN BY: NJV  
FILENAME: 02-21-GW.SKD

GROUNDWATER  
GRADIENT  
MAP  
02/00

FIGURE 4  
(2nd 1/4, 2000)



| Top of Well Elevation                      |          |
|--------------------------------------------|----------|
| MW #1                                      | (101.98) |
| MW #2                                      | (101.35) |
| MW #3                                      | (101.64) |
| MW #1 Groundwater Elevation as of 6/19/00. |          |
| ●                                          | (96.11)  |

1 INCH = 50 FT.



MONITOR WELL LOCATIONS ARE ONLY AS ACCURATE AS THE INSTRUMENTS USED IN OBTAINING THE FOOTAGE AND BEARING FROM THE WELL HEAD (BRUNTON COMPASS AND LASER RANGE FINDER). ALL OTHER STRUCTURES DISPLAYED ON THE SITE MAP ARE SOLELY FOR REFERENCE AND MAY NOT BE TO SCALE.

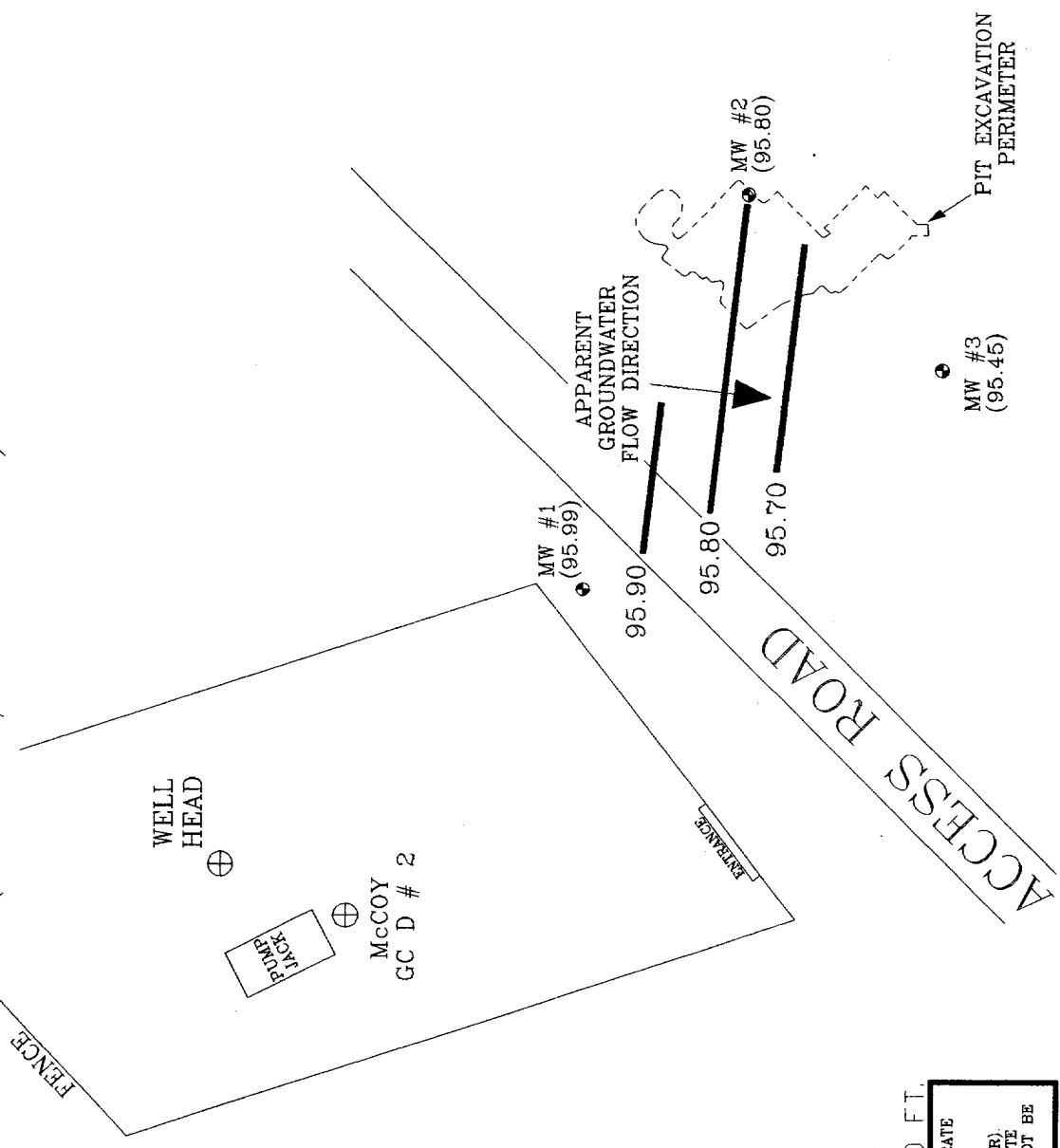
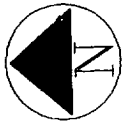
CROSS TIMBERS OPERATING CO.  
McCOY GC C #1  
NE/4 NE/4 SEC. 28, T30N, R12W  
SAN JUAN COUNTY, NEW MEXICO

BLAGG ENGINEERING, INC.  
CONSULTING PETROLEUM / RECLAMATION SERVICES  
P.O. BOX 87  
BLOOMFIELD, NEW MEXICO 87413  
PHONE: (505) 632-1199

PROJECT: MW SAMPLING  
DRAWN BY: NJV  
FILENAME: 06-19-GW.SKD

GROUNDWATER  
GRADIENT  
MAP  
06/00

FIGURE 5  
(4th 1/4, 2000)



| Top of Well Elevation                         |          |
|-----------------------------------------------|----------|
| MW #1                                         | (101.98) |
| MW #2                                         | (101.35) |
| MW #3                                         | (101.64) |
| ● MW #1 Groundwater Elevation as of 11/30/00. |          |

1 INCH = 50 FT.



MONITOR WELL LOCATIONS ARE ONLY AS ACCURATE AS THE INSTRUMENTS USED IN OBTAINING THE FOOTAGE AND BEARING FROM THE WELL HEAD (BRUNTON COMPASS AND LASER RANGE FINDER). ALL OTHER STRUCTURES DISPLAYED ON THE SITE MAP ARE SOLELY FOR REFERENCE AND MAY NOT BE TO SCALE.

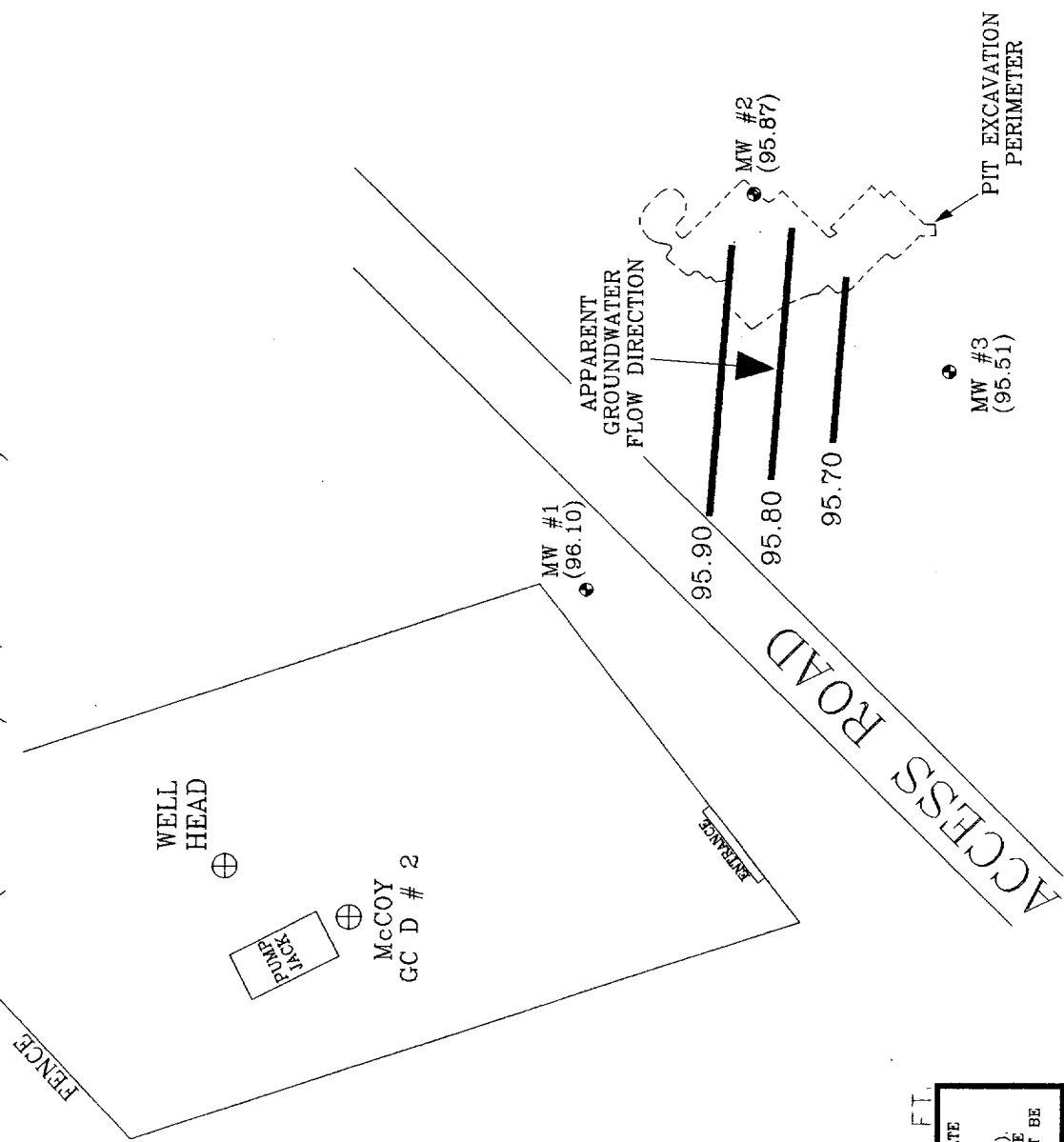
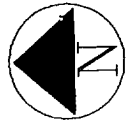
CROSS TIMBERS OPERATING CO.  
McCOY GC C #1  
NE/4 NE/4 SEC. 28, T30N, R12W  
SAN JUAN COUNTY, NEW MEXICO

BLAGG ENGINEERING, INC.  
CONSULTING PETROLEUM / RECLAMATION SERVICES  
P.O. BOX 87  
BLOOMFIELD, NEW MEXICO 87413  
PHONE: (505) 632-1199

PROJECT: MW SAMPLING  
DRAWN BY: NJV  
FILENAME: 11-30-GW.SKD

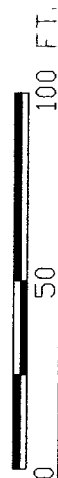
GROUNDWATER GRADIENT MAP  
11/00

FIGURE 6  
(1st 1/4, 2001)



| Top of Well Elevation                      |          |
|--------------------------------------------|----------|
| MW #1                                      | (101.98) |
| MW #2                                      | (101.35) |
| MW #3                                      | (101.64) |
| MW #1 Groundwater Elevation as of 3/19/01. |          |
| ●                                          | (96.10)  |

1 INCH = 50 FT.



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CROSS TIMBERS OPERATING CO.  
McCoy GC C #1  
NE/4 NE/4 SEC. 28, T30N, R12W  
SAN JUAN COUNTY, NEW MEXICO

BLAGG ENGINEERING, INC.  
CONSULTING PETROLEUM / RECLAMATION SERVICES  
P.O. BOX 87  
BLOOMFIELD, NEW MEXICO 87413  
PHONE: (505) 632-1199

PROJECT: MW SAMPLING  
DRAWN BY: NJV  
FILENAME: 03-19-GW.SKD

GROUNDWATER  
GRADIENT  
MAP  
03/01



**CROSS TIMBERS GROUNDWATER MONITOR WELL LAB RESULTS**  
**SUBMITTED BY BLAGG ENGINEERING, INC.**

**MCCOY GC C #1 - BLOW PIT**  
**UNIT A, SEC. 28, T30N, R12W**

REVISED: MARCH 28, 2001

FILENAME: (C1-1Q-01.WK4) NJV

| SAMPLE<br>DATE | MONITOR<br>WELL No: | D.T.W.<br>(ft) | T.D.<br>(ft) | TDS<br>mg/L | COND.<br>umhos | pH  | PRODUCT<br>(in) | BTEX EPA METHOD 8021 (PPB) |         |                  |                 |
|----------------|---------------------|----------------|--------------|-------------|----------------|-----|-----------------|----------------------------|---------|------------------|-----------------|
|                |                     |                |              |             |                |     |                 | Benzene                    | Toluene | Ethyl<br>Benzene | Total<br>Xylene |
| 29-Nov-99      | MW #1               | 5.85           | 15.00        | 1,360       | 2,735          | 7.0 |                 | 8.5                        | 3.4     | 35.0             | 68.7            |
| 21-Feb-00      |                     | 5.74           |              |             | 2,000          | 7.2 |                 | ND                         | ND      | ND               | ND              |
| 19-Jun-00      |                     | 5.87           |              |             | 2,000          | 7.2 |                 | ND                         | ND      | ND               | ND              |
| 19-Mar-01      |                     | 5.88           |              |             | 1,800          | 7.3 |                 | ND                         | ND      | ND               | ND              |
| 29-Nov-99      | MW #2               | 5.44           | 15.00        | 1,200       | 2,430          | 7.0 |                 | 3.9                        | 8.2     | ND               | 73.5            |
| 21-Feb-00      |                     | 5.36           |              |             | 1,700          | 7.2 |                 | ND                         | ND      | ND               | ND              |
| 19-Jun-00      |                     | 5.50           |              |             | 1,800          | 7.2 |                 | ND                         | ND      | ND               | ND              |
| 19-Mar-01      |                     | 5.48           |              |             | 1,800          | 7.2 |                 | ND                         | ND      | ND               | ND              |
| 29-Nov-99      | MW #3               | 6.07           | 15.00        | 1,420       | 2,850          | 7.0 |                 | 79.2                       | 117.0   | 16.8             | 456.2           |
| 15-Mar-00      |                     | 6.01           |              |             | 2,000          | 7.3 |                 | ND                         | ND      | 83               | 348             |
| 19-Jun-00      |                     | 6.26           |              |             | 2,000          | 7.2 |                 | ND                         | ND      | 16               | 15              |
| 30-Nov-00      |                     | 6.19           |              |             | 2,000          | 7.7 |                 | ND                         | ND      | 7.5              | 16.6            |
| 19-Mar-01      |                     | 6.13           |              |             | 2,200          | 7.4 |                 | ND                         | ND      | 29               | 67              |

**BLAGG ENGINEERING, INC.**  
**MONITOR WELL SAMPLING DATA**

CLIENT : CROSS TIMBERS OPER. CO.

CHAIN-OF-CUSTODY # : 11041

LOCATION : McCOY GC C # 1

LABORATORY (S) USED : ON - SITE TECH.

Date : March 19, 2001

SAMPLER : N J V

Filename : 03-19-01.WK4

PROJECT MANAGER : N J V

| WELL<br># | WELL<br>ELEV.<br>(ft) | WATER<br>ELEV.<br>(ft) | DEPTH TO<br>WATER<br>(ft) | TOTAL<br>DEPTH<br>(ft) | SAMPLING<br>TIME | pH   | CONDUCT<br>(umhos) | VOLUME<br>PURGED<br>(gal.) | FREE<br>PRODUCT<br>(ft) |
|-----------|-----------------------|------------------------|---------------------------|------------------------|------------------|------|--------------------|----------------------------|-------------------------|
| 1         | 101.98                | 96.10                  | 5.88                      | 15.00                  | 1255             | 7.33 | 1,800              | 4.50                       | -                       |
| 2         | 101.35                | 95.87                  | 5.48                      | 15.00                  | 1315             | 7.23 | 1,800              | 4.75                       | -                       |
| 3         | 101.64                | 95.51                  | 6.13                      | 15.00                  | 1335             | 7.35 | 2,200              | 4.50                       | -                       |

NOTES : Volume of water purged from well prior to sampling:  $V = \pi \times r^2 \times h \times 7.48 \text{ gal./ft}^3 \times 3 \text{ (wellbores)}$   
(i.e. 2" MW  $r = (1/12) \text{ ft}$ .  $h = 1 \text{ ft}$ .) (i.e. 4" MW  $r = (2/12) \text{ ft}$ .  $h = 1 \text{ ft}$ .)

Ideally a minimum of three (3) wellbore volumes:

1.25 " well diameter = 0.19 gallons per foot of water ( or 24 oz. ).

2 bails per foot - small teflon bailer.

3 bails per foot - 3 / 4 " teflon bailer.

2.00 " well diameter = 0.49 gallons per foot of water.

4.00 " well diameter = 1.95 gallons per foot of water.

Comments or note well diameter if not standard 2 "

Excellent recovery in all MW's . Collected BTEX sample from all MW's listed above .

OFF: (505) 325-5667  
FAX: (505) 327-1496



LAB: (505) 325-1556  
FAX: (505) 327-1496

## ANALYTICAL REPORT

Date: 23-Mar-01

|                    |                                |                            |                       |
|--------------------|--------------------------------|----------------------------|-----------------------|
| <b>Client:</b>     | Blagg Engineering              | <b>Client Sample Info:</b> | McCoy GC C #1         |
| <b>Work Order:</b> | 0103022                        | <b>Client Sample ID:</b>   | MW #1                 |
| <b>Lab ID:</b>     | 0103022-01A                    | <b>Matrix:</b>             | AQUEOUS               |
| <b>Project:</b>    | Cross Timbeers - McCoy GC C #1 | <b>Collection Date:</b>    | 3/19/2001 12:55:00 PM |
|                    |                                | <b>COC Record:</b>         | 11041                 |

| Parameter                           | Result | PQL            | Qual | Units       | DF | Date Analyzed |
|-------------------------------------|--------|----------------|------|-------------|----|---------------|
| <b>AROMATIC VOLATILES BY GC/PID</b> |        | <b>SW8021B</b> |      | Analyst: DM |    |               |
| Benzene                             | ND     | 0.5            |      | µg/L        | 1  | 3/21/2001     |
| Toluene                             | ND     | 0.5            |      | µg/L        | 1  | 3/21/2001     |
| Ethylbenzene                        | ND     | 0.5            |      | µg/L        | 1  | 3/21/2001     |
| m,p-Xylene                          | ND     | 1              |      | µg/L        | 1  | 3/21/2001     |
| o-Xylene                            | ND     | 0.5            |      | µg/L        | 1  | 3/21/2001     |

|                    |                                                         |                                                     |
|--------------------|---------------------------------------------------------|-----------------------------------------------------|
| <b>Qualifiers:</b> | PQL - Practical Quantitation Limit                      | S - Spike Recovery outside accepted recovery limits |
|                    | ND - Not Detected at Practical Quantitation Limit       | R - RPD outside accepted recovery limits            |
|                    | J - Analyte detected below Practical Quantitation Limit | E - Value above quantitation range                  |
|                    | B - Analyte detected in the associated Method Blank     | Surr: - Surrogate                                   |

1 of 1

OFF: (505) 325-5667  
FAX: (505) 327-1496



LAB: (505) 325-1556  
FAX: (505) 327-1496

## ANALYTICAL REPORT

Date: 23-Mar-01

|                    |                                |                            |                      |
|--------------------|--------------------------------|----------------------------|----------------------|
| <b>Client:</b>     | Blagg Engineering              | <b>Client Sample Info:</b> | McCoy GC C #1        |
| <b>Work Order:</b> | 0103022                        | <b>Client Sample ID:</b>   | MW #2                |
| <b>Lab ID:</b>     | 0103022-02A                    | <b>Matrix:</b>             | AQUEOUS              |
| <b>Project:</b>    | Cross Timbeers - McCoy GC C #1 | <b>Collection Date:</b>    | 3/19/2001 1:15:00 PM |
|                    |                                | <b>COC Record:</b>         | 11041                |

| Parameter                    | Result | PQL     | Qual | Units       | DF | Date Analyzed |
|------------------------------|--------|---------|------|-------------|----|---------------|
| AROMATIC VOLATILES BY GC/PID |        | SW8021B |      | Analyst: DM |    |               |
| Benzene                      | ND     | 0.5     |      | µg/L        | 1  | 3/21/2001     |
| Toluene                      | ND     | 0.5     |      | µg/L        | 1  | 3/21/2001     |
| Ethylbenzene                 | ND     | 0.5     |      | µg/L        | 1  | 3/21/2001     |
| m,p-Xylene                   | ND     | 1       |      | µg/L        | 1  | 3/21/2001     |
| o-Xylene                     | ND     | 0.5     |      | µg/L        | 1  | 3/21/2001     |

|                    |                                                         |                                                     |
|--------------------|---------------------------------------------------------|-----------------------------------------------------|
| <b>Qualifiers:</b> | PQL - Practical Quantitation Limit                      | S - Spike Recovery outside accepted recovery limits |
|                    | ND - Not Detected at Practical Quantitation Limit       | R - RPD outside accepted recovery limits            |
|                    | J - Analyte detected below Practical Quantitation Limit | E - Value above quantitation range                  |
|                    | B - Analyte detected in the associated Method Blank     | Surr: - Surrogate                                   |

1 of 1

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

OFF: (505) 325-5667  
FAX: (505) 327-1496



LAB: (505) 325-1556  
FAX: (505) 327-1496

## ANALYTICAL REPORT

Date: 23-Mar-01

|                    |                                |                            |                      |
|--------------------|--------------------------------|----------------------------|----------------------|
| <b>Client:</b>     | Blagg Engineering              | <b>Client Sample Info:</b> | McCoy GC C #1        |
| <b>Work Order:</b> | 0103022                        | <b>Client Sample ID:</b>   | MW #3                |
| <b>Lab ID:</b>     | 0103022-03A                    | <b>Matrix:</b>             | AQUEOUS              |
| <b>Project:</b>    | Cross Timbeers - McCoy GC C #1 | <b>Collection Date:</b>    | 3/19/2001 1:35:00 PM |
|                    |                                | <b>COC Record:</b>         | 11041                |

| Parameter                           | Result | PQL            | Qual | Units       | DF | Date Analyzed |
|-------------------------------------|--------|----------------|------|-------------|----|---------------|
| <b>AROMATIC VOLATILES BY GC/PID</b> |        | <b>SW8021B</b> |      | Analyst: DM |    |               |
| Benzene                             | ND     | 0.5            |      | µg/L        | 1  | 3/21/2001     |
| Toluene                             | ND     | 0.5            |      | µg/L        | 1  | 3/21/2001     |
| Ethylbenzene                        | 29     | 0.5            |      | µg/L        | 1  | 3/21/2001     |
| m,p-Xylene                          | 48     | 1              |      | µg/L        | 1  | 3/21/2001     |
| o-Xylene                            | 19     | 0.5            |      | µg/L        | 1  | 3/21/2001     |

|                    |                                                         |                                                     |
|--------------------|---------------------------------------------------------|-----------------------------------------------------|
| <b>Qualifiers:</b> | PQL - Practical Quantitation Limit                      | S - Spike Recovery outside accepted recovery limits |
|                    | ND - Not Detected at Practical Quantitation Limit       | R - RPD outside accepted recovery limits            |
|                    | J - Analyte detected below Practical Quantitation Limit | E - Value above quantitation range                  |
|                    | B - Analyte detected in the associated Method Blank     | Surr: - Surrogate                                   |

1 of 1



**ON SITE**  
**TECHNOLOGIES, LTD.**

Date: 3/9/01

Page: 1 of 1

[illegible]

Distribution: White - On Site    Yellow - LAB    Pink - Sampler    Goldenrod - Client

To Re-order Call 305.860.0000 Fax 305.874.4140 [www.mca.com](http://www.mca.com)

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District II  
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District III  
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State of New Mexico  
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION  
P.O. Box 2088  
Santa Fe, New Mexico 87504-2088

SUBMIT 1 COPY TO  
APPROPRIATE  
DISTRICT OFFICE  
AND 1 COPY TO  
SANTA FE OFFICE

## PIT REMEDIATION AND CLOSURE REPORT

C4023

Operator: AMOCO PRODUCTION Co. Telephone: 326-9200  
Address: 200 AMOCO CT., FARMINGTON, NM  
Facility Or: MCCOY GC C No. 1  
Well Name \_\_\_\_\_  
Location: Unit or Qtr/Qtr Sec A Sec 28 T 30N R 12W County SJ  
Pit Type: Separator ☒ Dehydrator \_\_\_\_\_ Other BLOW  
Land Type: BLM \_\_\_\_\_, State \_\_\_\_\_, Fee ☒, Other \_\_\_\_\_

Pit Location: Pit dimensions: length Refer to Site Sketch ~ 80', width ~ 30', depth 7'  
(Attach diagram) Reference: wellhead ☒, other \_\_\_\_\_  
Footage from reference: 230'  
Direction from reference: 50 Degrees ☒ East North \_\_\_\_\_  
of \_\_\_\_\_ West South ☒

Depth To Ground Water: Less than 50 feet (20 points)  
(Vertical distance from 50 feet to 99 feet (10 points)  
contaminants to seasonal Greater than 100 feet (0 Points) 20  
high water elevation of  
ground water)

Wellhead Protection Area: Yes (20 points)  
(Less than 200 feet from a private No (0 points) 20  
domestic water source, or; less than  
1000 feet from all other water sources)

Distance To Surface Water: Less than 200 feet (20 points)  
(Horizontal distance to perennial 200 feet to 1000 feet (10 points)  
lakes, ponds, rivers, streams, creeks, Greater than 1000 feet (0 points) 10  
irrigation canals and ditches)

RANKING SCORE (TOTAL POINTS): 50

Date Remediation Started: 3/15/94

Dated Completed: 4/22/94

Remediation Method: Excavation ☒  
(Check all appropriate sections)

Approx. cubic yards 7139

Landfarmed ☒

In situ Bioremediation ☐

Other LANDFARM REMEDIATION OF EXCAVATED MATERIALS AT  
AMOCO'S CROUCH MESA LANDFARM

Remediation Location:

Onsite ☐ Offsite AMOCO CROUCH MESA LANDFARM

(ie. landfarmed onsite,  
name and location of  
offsite facility)

General Description Of Remedial Action: Pit EXCAVATED

Ground Water Encountered:

No ☐

Yes ☒

Depth 2.5'-7'

Final Pit:

Sample location Refer to Attached Site Sketch

Closure Sampling:

(if multiple samples,  
attach sample results  
and diagram of sample  
locations and depths)

Sample depth                     

Sample date                     

Sample time                     

Sample Results

Benzene (ppm)                     

Total BTEX (ppm)                     

Field headspace (ppm)                     

TPH                     

Ground Water Sample:

Yes ☒

No ☐

(If yes, attach sample results)

I HEREBY CERTIFY THAT THE INFORMATION ABOVE IS TRUE AND COMPLETE TO THE BEST  
OF MY KNOWLEDGE AND BELIEF

DATE 5/16/94

SIGNATURE

Robert M. Young

PRINTED NAME

ROBERT M. YOUNG

AND TITLE

ENVIRONMENTAL BIOLOGIST



JJ

94023

# ENVIROTECH Inc.

5798 US HWY. 84, FARMINGTON, NM 87401  
(505) 832-0815

## FIELD REPORT: SITE ASSESSMENT

JOB No: 92140  
PAGE No: 1 of 1

PROJECT: PIT ASSESSMENTS & CLOSURE  
CLIENT: AMOCO PRODUCTION COMPANY  
CONTRACTOR: ENVIROTECH, INC.  
EQUIPMENT USED: EXTEND-A-HOE

DATE STARTED: 4-28-92  
DATE FINISHED: 4-28-92  
ENVIRO. SPCLT: HKL  
OPERATOR: MS  
ASSISTANT: PI

LOCATION: LSE: McCoy GC WELL: "C" No. 1 OD: NE 1/4 NE 1/4 (A)  
SEC: 28 TWP: 30N RNG: 12W PM: NM CNTY: SJ ST: NM PIT: SEP PIT

LAND USE: RECREATIONAL AREA (PARKING BASEBALL FIELD)

SURFACE CONDITIONS: WELL TAIL No SURFACE EVIDENCE OF PIT

FIELD NOTES & REMARKS: LOCATED APPROX. 120' SOUTH & 100' EAST OF WELL HEAD.  
SOIL CONDITIONS: MEDIUM YELLOW BROWN GRAVELLY CLAY TO SILT, PLASTIC, MOIST, STIFF.  
FINE TO MEDIUM SAND LENSING. VARIABLE AMOUNTS OF ORGANIC MATTER (ROOTS & GRASS & SOUTH  
OF TRENCH #6). DUE TO UNKNOWN LOCATION OF ORIGINAL PIT TRENCHED SITE TO LOCATE  
PIT. CONTAMINATION APPROPRIATE TO 135' EXTENSIVE FROM 12" TO 3' W (± 3' EAS). DUE TO  
CLAYEY SOIL MATRIX & RELATIVELY SHALLOW DEPTH  
INSITU TREATMENT BY PUMP & TREAT FEASIBLY NOT  
BE POSSIBLE AS EXCAVATION & REMOVAL FOR  
TREATMENT.

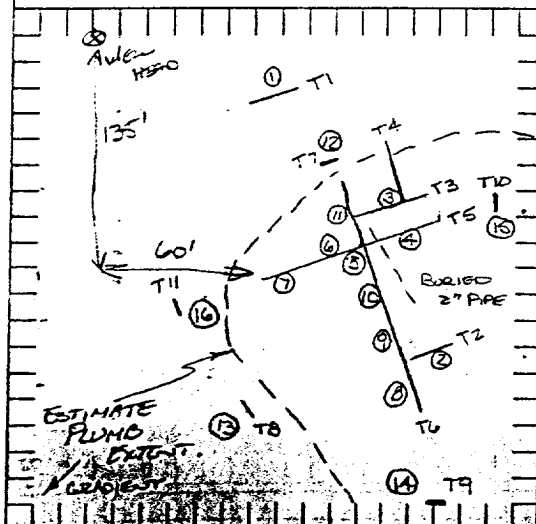
### SAMPLE INVENTORY:

| SMPL ID: | SMPL TYPE: | LABORATORY ANALYSIS: |
|----------|------------|----------------------|
| #5025    | Soil       | 8020/TPH             |
| #5025    | Soil       | HEAD                 |
| #12      | Soil       | 8020/TPH             |
| #12      | Soil       | 8020/TPH             |
| #12      | WTR        | HEAD                 |
| #5025    | 1          | 4/16/1               |
| #5025    | 0          | 8020 (X2)            |

### SCALE

0 20 40 FEET

### SITE DIAGRAM



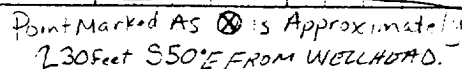
### TEST HOLE LOGS:

| TH#: | SOIL TYPE: | SMPL TYPE: | QVM TYPE: | TPH |
|------|------------|------------|-----------|-----|
| 1    | W/HL       |            |           |     |
| 2    |            |            |           |     |
| 3    |            |            |           |     |
| 4    |            |            |           |     |
| 5    |            |            |           |     |
| 6    | MAX TD     | 2          | 5'        |     |
| 7    | GW         | 2          | 3 1/2'    |     |
| 8    |            |            |           |     |
| 9    |            |            |           |     |
| 10   |            |            |           |     |
| 11   |            |            |           |     |
| 12   | Soil       |            |           | ND  |
| 12W  | GW         |            |           | ND  |
| 13   | Soil       |            |           | ND  |
| 13W  | GW         |            |           | ND  |
| 14   | Soil       |            |           | 214 |
| 15   | Soil       |            |           | 337 |
| 16   | Soil       |            |           | ND  |
| 16W  | GW         |            |           | ND  |
| 17   | Soil       |            |           | 237 |
| 17W  | GW         |            |           | 357 |

SOIL TYPE: C - Clay, M - Silty, S - Sand, G - Gravel, Plasticity: L - None, H - Plastic, Gradation: P - Poor, V - Well

ENVIRONMENT IN  
R. YOUNG

EACH SQUARE  
IS 10'x10'



# Sample location / Field Sample Results (ovm)

UNIVERSITY OF CALIFORNIA  
R. Young  
5/16/94  
C4023

| 3/15/94 |                        |
|---------|------------------------|
| so      | ppm-ovm                |
|         | ND                     |
| B       | 269                    |
| C       | 140 LAA                |
| D       | 1.9                    |
| E       | 4.3                    |
| F       | 569 LAA                |
| G       | 989 LAA                |
| H       | 20.1                   |
| I       | 17.3 LAA               |
| J       | 997 LAA                |
| K       | 561 (UNKNOWN LOCATION) |
| L       | 14.9                   |
| M       | 599 LAA                |

| 4/4/94 |     |
|--------|-----|
|        | ppm |
| 102.5' | 3.4 |
| 202.5' | 672 |
| 302.5' | 0.8 |
| 402.5' | 730 |
| 502.5' | 654 |

| 4/6/94 |          |
|--------|----------|
|        | ppm      |
| AK     | 1012 LAA |
| AL     | 646      |
| AM     | 10       |
| AN     | 7        |
| AO     | 6        |
| AP     | 2.4      |
| AQ     | 6.7      |

| 1/16/94 |      |
|---------|------|
|         | ppm  |
| N       | 1004 |
| O       | 17.4 |
| P       | 596  |
| Q       | 56.4 |

| 4/7/94 |                         |
|--------|-------------------------|
|        | ppm-ovm                 |
| AR     | ND                      |
| AS     | 725                     |
| AT     | 815                     |
| AU     | 210                     |
| AV     | 409                     |
| AW     | 2.8                     |
| AY     | 18.0 (UNKNOWN LOCATION) |
| AZ     | 3.2                     |
| BA     | 3.9                     |

| 1/17/94 |        |
|---------|--------|
|         | ppm    |
| 2       | 523    |
| S       | ND LAA |
| T       | ND     |

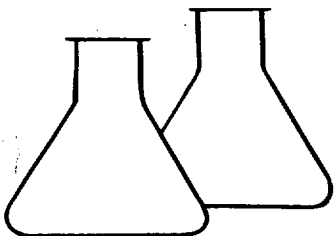
| 1/18/94 |      |
|---------|------|
|         | ppm  |
| U       | 50.5 |
| V       | 15.3 |
| W       | 20.4 |
| X       | 1.0  |
| Y       | 4.84 |
| Z       | 909  |
| AA      | 591  |

| 4/19/94 |        |
|---------|--------|
|         | ppm    |
| 105'    | 329    |
| 205'    | 512    |
| 307'    | 48/182 |
| 405'    | 334    |

| 4/21/94 |         |
|---------|---------|
|         | ppm     |
| 104'    | 6.1 LAA |
| 204'    | 5.3     |
| 304'    | 3.1     |
| 404'    | 901     |
| 504'    | 776     |
| 604'    | 6.2 LAA |
| 704'    | 704     |
| 804'    | 371     |
| 904'    | 488     |

| 4/22/94 |           |
|---------|-----------|
|         | ppm       |
| 1004'   | 23.1      |
| 1104'   | 2.7       |
| 1204'   | 3.1       |
| 1304'   | 100.4 LAA |
| 1404'   | 150       |
| 1504'   | 22.0      |
| 1604'   | 6.4       |

| 1/31/94 |          |
|---------|----------|
|         | ppm      |
| 12.5'   | 5.1      |
| 22.5'   | 10.1 LAA |
| 5'      | 304      |
| 5'      | 654      |



# ENVIROTECH LABS

5796 US HIGHWAY 64-3014 • FARMINGTON, NEW MEXICO 87401  
PHONE: (505) 632-0615 • FAX: (505) 632-1865

## EPA METHOD 8020 AROMATIC VOLATILE ORGANICS

|                    |                 |                     |          |
|--------------------|-----------------|---------------------|----------|
| Client:            | Amoco           | Project #:          | 92140    |
| Sample ID:         | #5 @ GW         | Date Reported:      | 04-20-94 |
| Laboratory Number: | 7242            | Date Sampled:       | 04-19-94 |
| Sample Matrix:     | Water           | Date Received:      | 04-19-94 |
| Preservative:      | HgCl and Cool   | Date Analyzed:      | 04-20-94 |
| Condition:         | Cool and Intact | Analysis Requested: | BTEX     |

| Parameter    | Concentration<br>(ug/L) | Det.<br>Limit<br>(ug/L) |
|--------------|-------------------------|-------------------------|
| Benzene      | 25.5                    | 0.2                     |
| Toluene      | 22.6                    | 0.5                     |
| Ethylbenzene | ND                      | 0.2                     |
| p,m-Xylene   | 319                     | 0.3                     |
| o-Xylene     | 211                     | 0.2                     |

| SURROGATE RECOVERIES: | Parameter          | Percent Recovery |
|-----------------------|--------------------|------------------|
|                       | Trifluorotoluene   | 98 %             |
|                       | Bromofluorobenzene | 97 %             |

Method: Method 5030A, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, July 1992

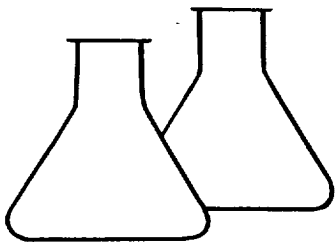
Method 8020, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

ND - Parameter not detected at the stated detection limit.

Comments: McCoy GC C-1 Separator Pit C4023-S

*Dennis L. Cullen*  
Analyst

*M. J. Young*  
Review



# ENVIROTECH LABS

5796 US HIGHWAY 64-3014 • FARMINGTON, NEW MEXICO 87401  
PHONE: (505) 632-0615 • FAX: (505) 632-1865

## EPA METHOD 8020 AROMATIC VOLATILE ORGANICS

|                    |                 |                     |          |
|--------------------|-----------------|---------------------|----------|
| Client:            | Amoco           | Project #:          | 92140    |
| Sample ID:         | Open Excavation | Date Reported:      | 03-18-94 |
| Laboratory Number: | 7070            | Date Sampled:       | 03-17-94 |
| Sample Matrix:     | Water           | Date Received:      | 03-18-94 |
| Preservative:      | HgCl and Cool   | Date Analyzed:      | 03-18-94 |
| Condition:         | Cool and Intact | Analysis Requested: | BTEX     |

| Parameter    | Concentration<br>(ug/L) | Det.<br>Limit<br>(ug/L) |
|--------------|-------------------------|-------------------------|
| Benzene      | ND                      | 0.2                     |
| Toluene      | 3.1                     | 0.5                     |
| Ethylbenzene | 6.4                     | 0.2                     |
| p,m-Xylene   | 29.6                    | 0.3                     |
| o-Xylene     | 5.1                     | 0.2                     |

| SURROGATE RECOVERIES: | Parameter          | Percent Recovery |
|-----------------------|--------------------|------------------|
|                       | Trifluorotoluene   | 99 %             |
|                       | Bromofluorobenzene | 98 %             |

Method: Method 5030A, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, July 1992

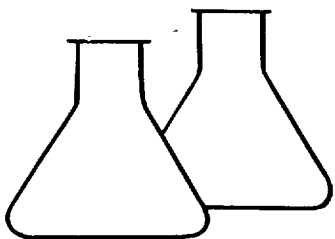
Method 8020, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

ND - Parameter not detected at the stated detection limit.

Comments: McCoy C1 Pit Closure C4023

*Dennis L. Givner*  
Analyst

*Morris D. Young*  
Review



# ENVIROTECH LABS

5796 US HIGHWAY 64-3014 • FARMINGTON, NEW MEXICO 87401  
PHONE: (505) 632-0615 • FAX: (505) 632-1865

## EPA METHOD 418.1 TOTAL PETROLEUM HYDROCARBONS

|                    |               |                  |          |
|--------------------|---------------|------------------|----------|
| Client:            | Amoco         | Project #:       | 92140    |
| Sample ID:         | #6 @ 4' bgs   | Date Sampled:    | 04-21-94 |
| Laboratory Number: | 7261          | Date Received:   | 04-21-94 |
| Sample Matrix:     | Soil          | Date Analyzed:   | 04-22-94 |
| Preservative:      | Cool          | Date Reported:   | 04-22-94 |
| Condition:         | Cool & Intact | Analysis Needed: | TPH      |

| Parameter                       | Concentration<br>(mg/kg) | Det.<br>Limit<br>(mg/kg) |
|---------------------------------|--------------------------|--------------------------|
| -----                           | -----                    | -----                    |
| Total Petroleum<br>Hydrocarbons | ND                       | 20.0                     |

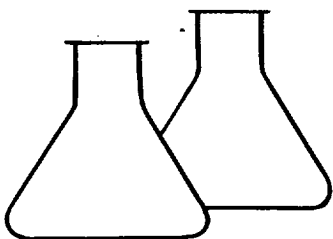
ND = Parameter not detected at the stated detection limit.  
N/A = Not applicable

Method: Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA Storet No.4551, 1978

Comments: McCoy GC C-1 Sep Pit C4023-5

Tony Tristano  
Analyst

Morris D. Young  
Review



# ENVIROTECH LABS

5796 US HIGHWAY 64-3014 • FARMINGTON, NEW MEXICO 87401  
PHONE: (505) 632-0615 • FAX: (505) 632-1865

## EPA METHOD 8020 AROMATIC VOLATILE ORGANICS

|                    |               |                     |          |
|--------------------|---------------|---------------------|----------|
| Client:            | Amoco         | Project #:          | 92140    |
| Sample ID:         | #13 @ 4' bgs  | Date Reported:      | 04-26-94 |
| Laboratory Number: | 7262          | Date Sampled:       | 04-22-94 |
| Sample Matrix:     | Soil          | Date Received:      | 04-22-94 |
| Preservative:      | Cool          | Date Extracted:     | 04-26-94 |
| Condition:         | Cool & Intact | Date Analyzed:      | 04-26-94 |
|                    |               | Analysis Requested: | BTEX     |

| Parameter    | Concentration<br>(ug/Kg) | Det.<br>Limit<br>(ug/Kg) |
|--------------|--------------------------|--------------------------|
| Benzene      | 62                       | 13.0                     |
| Toluene      | 182                      | 32.6                     |
| Ethylbenzene | ND                       | 13.0                     |
| p,m-Xylene   | 116                      | 19.6                     |
| o-Xylene     | 65                       | 13.0                     |

| SURROGATE RECOVERIES: | Parameter          | Percent Recovery |
|-----------------------|--------------------|------------------|
|                       | Trifluorotoluene   | 99 %             |
|                       | Bromofluorobenzene | 99 %             |

Method: Method 5030, Purge-and-Trap, Test Methods for  
Evaluating Solid Waste, SW-846, USEPA, July 1992

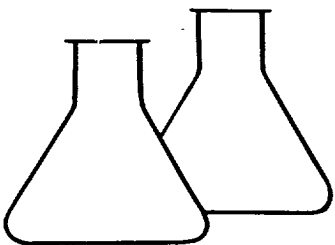
Method 8020, Aromatic Volatile Organics, Test Methods  
for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986.

ND - Parameter not detected at the stated detection limit.

Comments: McCoy GC C-1 Separator Pit C4023-5

*Dennis L. Jensen*  
Analyst

*Maris D. Young*  
Review



# ENVIROTECH LABS

5796 US HIGHWAY 64-3014 • FARMINGTON, NEW MEXICO 87401  
PHONE: (505) 632-0615 • FAX: (505) 632-1865

## EPA METHOD 418.1 TOTAL PETROLEUM HYDROCARBONS

|                    |               |                  |          |
|--------------------|---------------|------------------|----------|
| Client:            | Amoco         | Project #:       | 92140    |
| Sample ID:         | #13 @ 4' bgs  | Date Sampled:    | 04-22-94 |
| Laboratory Number: | 7262          | Date Received:   | 04-22-94 |
| Sample Matrix:     | Soil          | Date Analyzed:   | 05-02-94 |
| Preservative:      | Cool          | Date Reported:   | 05-02-94 |
| Condition:         | Cool & Intact | Analysis Needed: | TPH      |

| Parameter<br>-----              | Concentration<br>(mg/kg)<br>----- | Det.<br>Limit<br>(mg/kg)<br>----- |
|---------------------------------|-----------------------------------|-----------------------------------|
| Total Petroleum<br>Hydrocarbons | ND                                | 15.0                              |

ND = Parameter not detected at the stated detection limit.  
N/A = Not applicable

Method: Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA Storet No.4551, 1978

Comments: McCoy GC C-1 Sep Pit C4023-5

Tony Tristano  
Analyst

Margaret D. Young  
Review