

3R - 145

REPORTS

DATE:

2000

SAN JUAN BASIN PIT CLOSURES
San Juan Basin, New Mexico

El Paso Field Services
Pit Closure Reports

March 2001

Prepared For

El Paso Field Services
Farmington, New Mexico

Project 62800398



145

EPFS GROUNDWATER PITS 2000 CLOSURE REPORT

ANDERSON GC A #1 CH Meter/Line ID - 95210

SITE DETAILS

Legals - Twn: 29N Rng: 10W Sec: 28 Unit: C
NMOCD Hazard Ranking: 40 Land Type: FEE
Operator: AMOCO PRODUCTION COMPANY

PREVIOUS ACTIVITIES

Site Assessment: Apr-94 Excavation: Apr-94 (25 CY) Geoprobe: Oct-96
Re-Excavation: Oct-96 (192 CY) Soil Boring: Feb-97 Monitor Well: Feb-97
Submitted for Closure: Dec-98 Additional Monitor Well: Nov-99
Denied Closure: Jul-99

Following the initial site assessment in April of 1994 (previously submitted), the pit was excavated to 6 feet beneath ground surface (bgs) where groundwater was encountered. A composite soil sample was collected from the excavation bottom and four walls. Approximately 25 cubic yards were removed during excavation. The headspace soil reading from the excavation bottom was 428 ppm. Soil analytical was as follows: benzene - <0.5, total BTEX - 26.9, and TPH (418.1) 2,220 mg/kg (analytical data was submitted in the December 1998 Groundwater Closure Report).

The pit was re-excavated to 11 feet bgs and an additional 192 cubic yards of contaminated soil were removed in October of 1996 (previously submitted). Groundwater was encountered at 6 feet bgs. Excavation to the south was limited by trees and large berm used for flood control (levee) for the San Juan River. The headspace soil reading from the excavation bottom was 126 ppm. Soil analytical was as follows: benzene - non- detect, total BTEX - non- detect, and TPH - 25.0 mg/kg (analytical data was previously submitted). One half gallon of 30% hydrogen peroxide was added to the excavation to aid in the natural degradation of residual hydrocarbons.

In February of 1997 one soil boring was drilled in the center of the former pit. Groundwater was encountered at 6 feet bgs and a monitoring well was installed. No soil samples were collected. Quarterly groundwater monitoring was initiated on March 11, 1997 and continued through May 5, 1998.

Following the closure request for this site in the December 1998 annual report, two additional monitor wells were requested by the OCD in correspondence dated July 28, 1999. One monitor well, MW-2, was installed in November 1999. Groundwater analytical data from this monitor well establishes no detectable levels of hydrocarbon migration in MW-2.

For an additional monitor well to be installed downgradient of the former pit, the monitor well would have to be located south of the fence that is next to the former pit. This location, privately owned, maintains dense tree coverage and a 20-30 foot levee for the river, which prohibits drilling of the second downgradient monitor well.

Based on groundwater levels collected from Geoprobe and monitoring well data, the groundwater flow trends to the south on this site. One downgradient groundwater sample collected from PH-8 in 1996 was below standards for BTEX (Table 1 and Figure 2). Groundwater samples collected

EPFS GROUNDWATER PITS 2000 CLOSURE REPORT

from cross-gradient and upgradient probeholes, piezometers, and MW-2 were below regulatory standards for BTEX (analytical data previously submitted).

Historical analytical groundwater data is included in Table 1. Laboratory analytical data, well diagrams and boring logs were previously submitted in respective reports.

2000 ACTIVITIES

Groundwater Monitoring – Annual groundwater samples were collected from MW-1, MW-2 and former piezometer PZ-1 in 2000. Groundwater analytical data has been below standards since sampling was initiated at this site.

SUMMARY TABLES

Groundwater analytical data are presented in Table 1 and Figure 1. Copies of the laboratory data sheets and associated quality assurance/quality control data are presented as Attachment 1.

SITE MAP

A site map is presented as Figure 1. A figure previously included in the 1999 Annual Groundwater Report is offered as Figure 2 to show the groundwater gradient for this site (a current figure with groundwater elevation and gradient is not possible due to apparent damage to MW-2).

GEOLOGIC LOGS AND WELL COMPLETION DIAGRAMS

There were no drilling activities at this site during 2000.

DISPOSITION OF GENERATED WASTES

There were no wastes generated at this site in 2000.

CONCLUSIONS

EPFS has excavated 217 cubic yards of slightly contaminated soil from the former pit. Soil samples collected from the excavation were below regulatory standards. Laboratory analyses of groundwater from MW-1 and MW-2 have demonstrated no detectable levels of BTEX constituents since August of 1997 (Table 1).

Groundwater analytical data from a sample obtained from PZ-1, PH-2, PH-3 and PH-8 has indicated only trace levels of BTEX constituents, below the NMWQCC groundwater standards. Additional groundwater monitor wells are not feasible downgradient of the former pit. Negligible impact to groundwater has occurred at this site. Therefore, EPFS requests closure of this site.

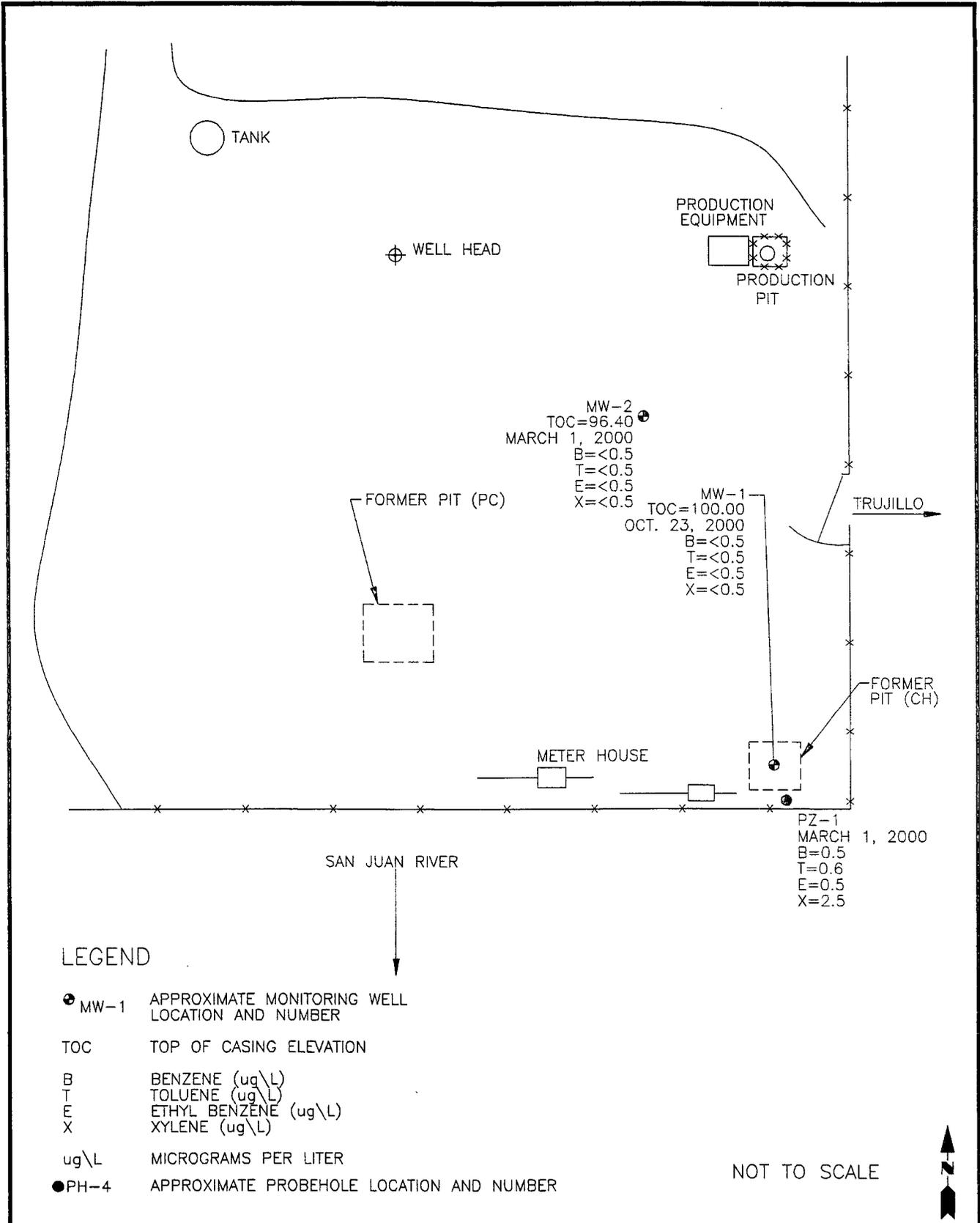
RECOMMENDATIONS

- EPFS requests closure of this site.
- Following OCD approval for closure, MW-1 and MW-2 will be abandoned in accordance with the Monitoring Well Abandonment Plan.

Table 1

| Sample # | Meter / Line # | Site Name | Sample Date | MW # | Project | Benzene (PPB) | Toluene (PPB) | Ethyl Benzene (PPB) | Total Xylenes (PPB) | Total BTEX (PPB) |
|---------------|-------------------|---------------------|----------------|---------|-----------------------------|------------------|------------------|---------------------------|---------------------------|------------------------|
| 970206 | 95210 | ANDERSON GC A #1 CH | 3/11/97 | 1 | Phase II Drilling - Initial | < 1 | < 1 | = 3.5 | = 25.6 | 29.1 |
| 970805 | 95210 | ANDERSON GC A #1 CH | 8/4/97 | 1 | Sample 2 - 1st Event | < 1 | < 1 | < 1 | < 3 | ND |
| 980144 | 95210 | ANDERSON GC A #1 CH | 2/5/98 | 1 | Sample 2 - 2nd Event | < 1 | < 1 | < 1 | < 3 | ND |
| 980347 | 95210 | ANDERSON GC A #1 CH | 5/5/98 | 1 | Sample 2 - 3rd Event | < 1 | < 1 | < 1 | < 3 | ND |
| AND-0010-MW1 | 95210 | ANDERSON GC A #1 CH | 10/23/00 | 1 | Sample 1 - 4th Event | < 0.5 | < 0.5 | < 0.5 | < 0.5 | ND |
| AND-0003-MW2 | 95210 | ANDERSON GC A #1 CH | 3/1/00 | 2 | Sample 1 - 2nd Annual | < 0.5 | < 0.5 | < 0.5 | < 0.5 | ND |
| AND-0003-PZ1A | 95210 | ANDERSON GC A #1 CH | 3/1/00 | PZ1 | Sample 1 - 2nd Annual | < 0.5 | = 0.6 | = 0.5 | = 2.5 | 3.6 |
| 947934 | 95210 | ANDERSON GC A #1 CH | 10/21/96 | PH2 | Sample 1 | = 1.28 | = 2.34 | = 16.5 | = 85.7 | 105.8 |
| 947936 | 95210 | ANDERSON GC A #1 CH | 10/23/96 | PH3 | Sample 1 | < 1 | = 1.77 | < 1 | = 2.32 | 4.09 |
| 947941 | 95210 | ANDERSON GC A #1 CH | 10/23/96 | PH8 | Sample 1 | < 1 | < 1 | < 1 | < 3 | ND |

ND - No detectable levels
Sample 1 - Annual Sampling
Sample 2 - Semi-annual Sampling



COL. 628\00219S-003



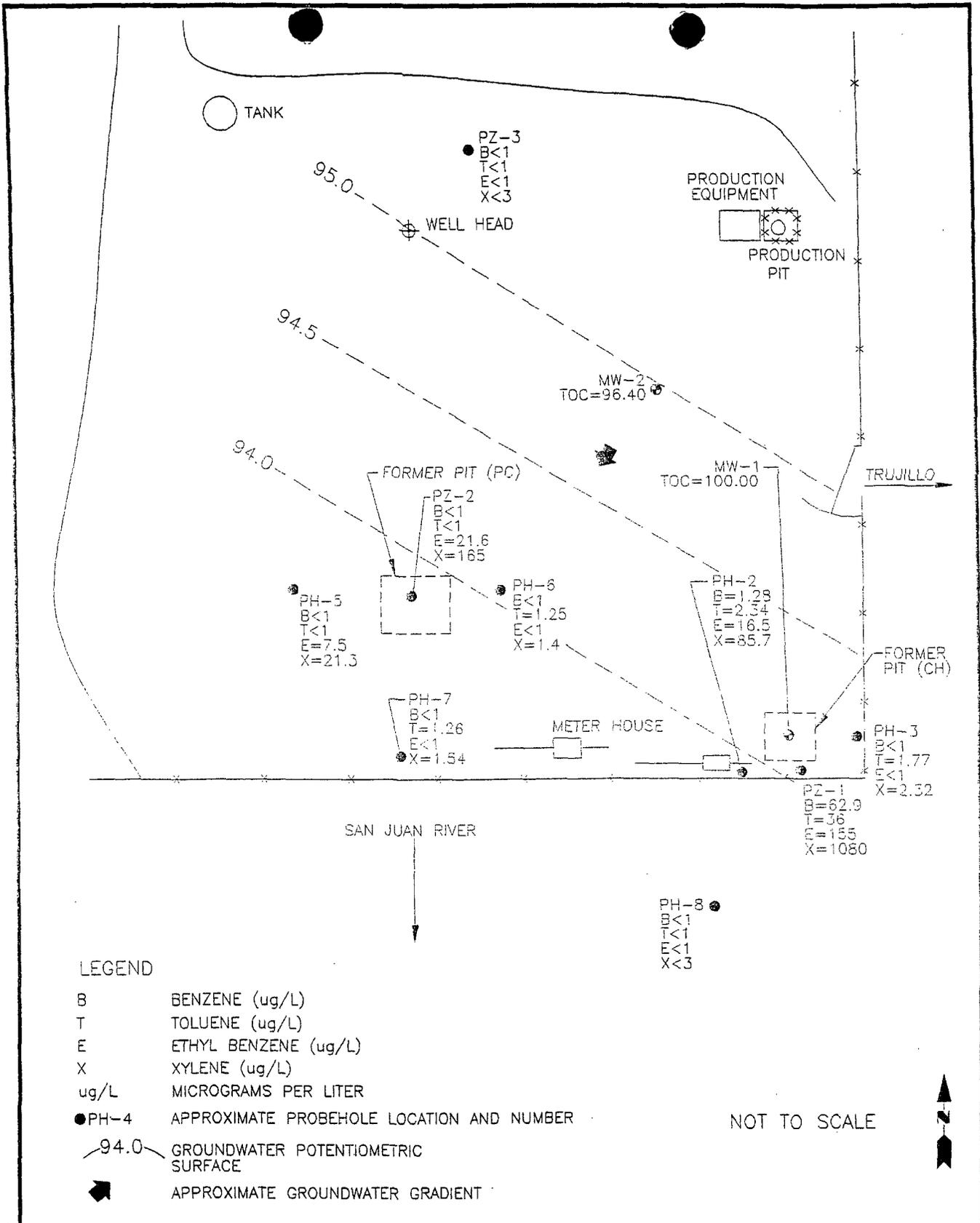
TITLE:
 ANDERSON GC A#1 CH
 METER 95210
 JANUARY 31, 2001

| | |
|------------------|-------------|
| DWN: TMM | DES.: LW |
| CHKD: LW | APPD: MN |
| DATE: 3/20/00 | REV.: 0 |

PROJECT NO.: 62800219
 EPFS GW PITS
 FIGURE 1

NOT TO SCALE





COL 828\002195-002



TITLE:
ANDERSON GC A#1 CH
 95210

| | |
|------------------|-------------|
| DWN: TMM | DES.: LW |
| CHKD: LW | APPD: MN |
| DATE: 1/21/98 | REV.: 0 |

PROJECT NO.: 62800219
 EPFS GW PITS

FIGURE 2

ATTACHMENT 1

2000 GROUNDWATER ANALYTICAL



Well Number MW 01

WELL DEVELOPMENT AND PURGING DATA

Serial No. WDPD

Page 1 of 1

Project Name EPFS quarterly Sampling

Project Manager R Thompson

Project No. 62800102

Client Company EPFS

Phase/Task No. 0301

Site Name Anderson GC A#1 (95210)

Site Address Rural Sen Jean CO

Development Criteria

- 3 to 5 Casing Volumes of Water Removal
- Stabilization of Indicator Parameters
- Other

Water Volume Calculation

Initial Depth of Well (feet) 16.34
 Initial Depth to Water (feet) 8.53
 Height of Water Column in Well (feet) 7.81
 Diameter (inches): Well 8" Gravel Pack

| Item | Water Volume in Well | | Gallons to be Removed |
|-----------------|----------------------|----------|-----------------------|
| | Cubic Feet | Gallons | |
| Well Casing | 7.81 | | |
| Gravel Pack | | 5.09 x 3 | 15.27 |
| Drilling Fluids | | | |
| Total | | | 15.27 |

Methods of Development

- Pump
- Centrifugal
- Submersible
- Peristaltic
- Other
- Bailor
- Bottom Valve
- Double Check Valve
- Stainless-steel Kemmerer

Instruments

- pH Meter
- DO Monitor
- Conductivity Meter
- Temperature Meter
- Other

Serial No. (if applicable)

Hyd-c
Hyd-c
Hyd-c

Water Disposal K-12 Separator Bloomfield NM

Water Removal Data

| Date | Time | Development Method | Pump | Removal Rate (gal/min) | Intake Depth (feet) | Ending Water Depth (feet) | Water Volume Removed (gallons) | | Temperature (°C) | pH | Conductivity (microsiemens) | Dissolved Oxygen (mg/l) | Comments |
|-----------------|------|--------------------|------|------------------------|---------------------|---------------------------|--------------------------------|--------------|------------------|-------------|-----------------------------|-------------------------|------------------------|
| | | | | | | | Increment | Cumulative | | | | | |
| <u>10/23/00</u> | | | | <u>1238</u> | | | <u>3.25</u> | <u>3.25</u> | <u>18.5</u> | <u>7.48</u> | <u>1790</u> | | <u>515-27 No. 260-</u> |
| | | | | <u>1242</u> | | | <u>3.25</u> | <u>6.50</u> | <u>17.8</u> | <u>7.23</u> | <u>1680</u> | | <u>" "</u> |
| | | | | <u>1247</u> | | | <u>3.25</u> | <u>9.75</u> | <u>17.6</u> | <u>7.20</u> | <u>1670</u> | | <u>" "</u> |
| | | | | <u>1251</u> | | | <u>3.25</u> | <u>13</u> | <u>17.6</u> | <u>7.16</u> | <u>1670</u> | | <u>" "</u> |
| | | | | <u>1254</u> | | | <u>3.25</u> | <u>16.25</u> | <u>17.5</u> | <u>7.17</u> | <u>1660</u> | | <u>No Change</u> |

Circle the date and time that the development criteria are met.

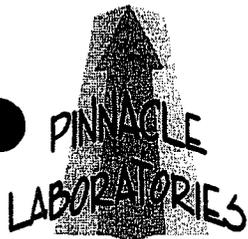
Comments Sampled for BTEX at 1301

Developer's Signature(s) Chris A. M

Date 10-23-00

Reviewer RT

Date 10/27/00



2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

NOV - 6 2000

Pinnacle Lab ID number **010102**
November 02, 2000

PHILIP ENVIRONMENTAL
4000 MONROE ROAD
FARMINGTON, NM 87401

EL PASO FIELD SERVICES
614 RIELLY STREET
FARMINGTON, NM 87401

Project Name EPFS QUARTERLY SAMPLING
Project Number 62800107

Attention: ROBERT THOMPSON/SCOTT POPE

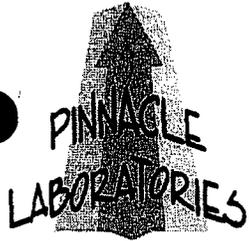
On 10/26/00 Pinnacle Laboratories, Inc., (ADHS License No. AZ0592 pending), received a request to analyze **aqueous** samples. The samples were analyzed with EPA methodology or equivalent methods. The results of these analyses and the quality control data, which follow each set of analyses, are enclosed.

If you have any questions or comments, please do not hesitate to contact us at (505)344-3777.

H. Mitchell Rubenstein, Ph. D.
General Manager

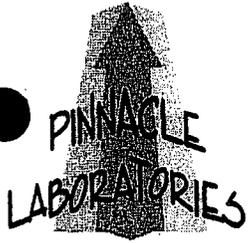
MR: jt

Enclosure



2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

| | | | |
|--------------|---------------------------|---------------|------------|
| CLIENT | : PHILIP ENVIRONMENTAL | PINNACLE ID | : 010102 |
| PROJECT # | : 62800107 | DATE RECEIVED | : 10/26/00 |
| PROJECT NAME | : EPFS QUARTERLY SAMPLING | REPORT DATE | : 11/02/00 |
| PIN | | | DATE |
| ID. # | CLIENT DESCRIPTION | MATRIX | COLLECTED |
| 01 | AND-0010-MW 01 | AQUEOUS | 10/23/00 |



2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

GAS CHROMATOGRAPHY RESULTS

TEST : EPA 8021 MODIFIED
CLIENT : PHILIP ENVIRONMENTAL
PROJECT # : 62800107
PROJECT NAME : EPFS QUARTERLY SAMPLING

PINNACLE I.D.: 010102

| SAMPLE ID. # | CLIENT I.D. | MATRIX | DATE SAMPLED | DATE EXTRACTED | DATE ANALYZED | DIL. FACTOR |
|--------------|----------------|---------|--------------|----------------|---------------|-------------|
| 01 | AND-0010-MW 01 | AQUEOUS | 10/23/00 | NA | 10/30/00 | 1 |

| PARAMETER | DET. LIMIT | UNITS | AND-0010-MW 01 |
|--------------|------------|-------|----------------|
| BENZENE | 0.5 | UG/L | < 0.5 |
| TOLUENE | 0.5 | UG/L | < 0.5 |
| ETHYLBENZENE | 0.5 | UG/L | < 0.5 |
| TO XYLENES | 0.5 | UG/L | < 0.5 |

SURROGATE:
BROMOFLUOROBENZENE (%) 111
SURROGATE LIMITS (80 - 120)

CHEMIST NOTES:
N/A



2709-D Pan American Freeway NE
 Albuquerque, New Mexico 87107
 Phone (505) 344-3777
 Fax (505) 344-4413

GAS CHROMATOGRAPHY QUALITY CONTROL
 MSMSD

TEST : EPA 8021 MODIFIED
 MSMSD # : 010100-01
 CLIENT : PHILIP ENVIRONMENTAL
 PROJECT # : 62800107
 PROJECT NAME : EPFS QUARTERLY SAMPLING

PINNACLE I.D. : 010102
 DATE EXTRACTED : NA
 DATE ANALYZED : 10/30/00
 SAMPLE MATRIX : AQUEOUS
 UNITS : UG/L

| PARAMETER | SAMPLE RESULT | CONC SPIKE | SPIKED SAMPLE | % REC | DUP SPIKE | DUP % REC | RPD | REC LIMITS | RPD LIMITS |
|---------------|---------------|------------|---------------|-------|-----------|-----------|-----|--------------|------------|
| BENZENE | <0.5 | 20.0 | 19.9 | 100 | 17.6 | 88 | 12 | (80 - 120) | 20 |
| TOLUENE | <0.5 | 20.0 | 19.9 | 100 | 19.9 | 100 | 0 | (80 - 120) | 20 |
| ETHYLBENZENE | <0.5 | 20.0 | 21.3 | 107 | 21.5 | 108 | 1 | (80 - 120) | 20 |
| TOTAL XYLENES | <0.5 | 60.0 | 62.4 | 104 | 62.6 | 104 | 0 | (80 - 120) | 20 |

CHEMIST NOTES:
 N/A

$$\% \text{ Recovery} = \frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{RPD (Relative Percent Difference)} = \frac{(\text{Sample Result} - \text{Duplicate Result})}{\text{Average Result}} \times 100$$



Chain of Custody Record

4000 Monroe Road
Farmington, NM 87401

(505) 326-2262 Phone
(505) 326-2388 FAX

010102

COC Serial No. C 2679

| Project Name <u>EPFS Quarterly Sampling</u> | | Type of Analysis and Bottle | | Comments |
|--|-----------------|-----------------------------|------------|----------------|
| Project Number <u>62800107 Phase Task 0301</u> | | Total Number of Bottles | | |
| Samplers <u>C. Moez</u> | | BTEX 80% Lab ID# | | ANDERSON GC #1 |
| Laboratory Name <u>PINNACLE</u> Location <u>AKBQ N.M.</u> | | | | |
| Sample Number (and depth) | Date | Time | Matrix | |
| <u>AND-0010-MW-01</u> | <u>10-23-00</u> | <u>1301</u> | <u>H2O</u> | <u>01</u> |
| | | | | |

Relinquished by:

Chris A. Moez Signature

Received By:

Stamene Janni Signature

10 25 00 Date

1600 Time

1640 Date

10/26/00 Time

Samples Iced: Yes No

Preservatives (ONLY for Water Samples)

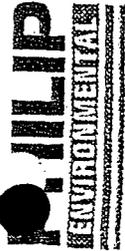
- Cyanide
- Volatile Organic Analysis
- Metals
- TPH (418.1)
- Other (Specify) H2SO4
- Other (Specify)
- Sodium hydroxide (NaOH)
- Hydrochloric acid (HCl)
- Nitric acid (HNO3)
- Sulfuric acid (H2SO4)

Carrier: Greyhound

Shipping and Lab Notes:

Rec'd @ 5:16

Airbill No. GLI1606918231



Well Number MW-2
Serial No. WDPD-

WELL DEVELOPMENT AND PURGING DATA
Page 1 of 1

Project Name EPFS GW PITS Project Manager STEVE STELLAVATO Project No. 62800018
Client Company EL PASO FIELD SERVICES Phase/Task No. _____
Site Name ANDERSON GAS COM A #1 Site Address BLOOMFIELD, NM

Development Criteria

- 3 to 5 Casing Volumes of Water Removal
- Stabilization of Indicator Parameters
- Other _____

Water Volume Calculation

Initial Depth of Well (feet) 15.33' TOR
Initial Depth to Water (feet) 4.91' TOR
Height of Water Column in Well (feet) 10.92'
Diameter (inches): Well 2" Gravel Pack _____

| Item | Water Volume in Well | | Gallons to be Removed |
|-----------------|----------------------|---------|-----------------------|
| | Cubic Feet | Gallons | |
| Well Casing | | | |
| Gravel Pack | | | <u>1.78 x 3</u> |
| Drilling Fluids | | | |
| Total | | | <u>5.30</u> |

Methods of Development

- Pump
- Centrifugal
- Bottom Valve
- Submersible
- Double Check Valve
- Peristaltic
- Stainless-steel Kemmerer
- Other _____

Instruments

- pH Meter
- DO Monitor
- Conductivity Meter
- Temperature Meter
- Other _____

Water Disposal

ON GROUND ON SITE

Water Removal Data

| Date | Time | Development Method | Removal Rate (gall/min) | Intake Depth (feet) | Ending Water Depth (feet) | Water Volume Removed (gallons) | | Product Volume Removed (gallons) | | Temperature (°C) | pH | Conductivity (mmhos/cm) | Dissolved Oxygen (mg/l) | Comments |
|--------|------|--------------------|-------------------------|---------------------|---------------------------|--------------------------------|------------|----------------------------------|------------|------------------|------|-------------------------|-------------------------|----------|
| | | | | | | Increment | Cumulative | Increment | Cumulative | | | | | |
| 3/1/00 | 1136 | X | | | | 1 | 1 | | | 12.2 | 8.00 | 1940 | | |
| | 1142 | X | | | | 1 | 2 | | | 10.5 | 7.4 | 1600 | | |
| | 1146 | X | | | | 1 | 3 | | | 10.5 | 7.4 | 1570 | | |
| | 1150 | X | | | | 1 | 4 | | | 10.2 | 7.3 | 1580 | | |
| | 1154 | X | | | | 1 | 5 | | | 10.3 | 7.4 | 1490 | | |
| | 1157 | X | | | | 1 | 6 | | | 10.4 | 7.2 | 1500 | | |
| | 1200 | X | | | | 1 | 7 | | | 10.5 | 7.3 | 1460 | | |

Circle the date and time that the development criteria are met.

Comments SAMPLED WELL FOR BTEX AT 1203.

Developer's Signature(s) Robert Chapman Date 3/1/00 Reviewer _____ Date _____

| | | | | |
|--|--------|-----------------------------|--------|----------|
| Project Name EPFS GWO INVEST. | | Type of Analysis and Bottle | | Comments |
| Project Number 62800018 Phase Task 35 | | LAB TRF | | |
| Samplers R. THOMPSON | | Total Number of Bottles | | 95210 |
| Laboratory ANNALE LABS | | BRX 8oz | | |
| Location ALBUQUERQUE, NM | | | | 95210 |
| Sample Number (and depth) | Date | Time | Matrix | |
| AND-0003-MW2 | 3/1/00 | 1203 | H2O | 01 |
| AND-0003-PZ1A | 3/1/00 | 1225 | H2O | 02 |
| RUSH! | | | | |

Relinquished by: Robert Thompson Signature Date 3/1/00 Time 1435

Received By: Guillermo Jimeno Signature Date 3/2/00 Time 1015

Samples Iced: Yes No

Preservatives (ONLY for Water Samples)

Cyanide Sodium hydroxide (NaOH)

Volatile Organic Analysis Hydrochloric acid (HCl)

Metals Nitric acid (HNO3)

TPH (410.1) Sulfuric acid (H2SO4)

Other (Specify) _____

Other (Specify) _____

Carrier: GREY HOUND Airbill No. _____

Shipping and Lab Notes: RUSH SAMPLES - INVOICE EL PASO NORMAL RATE. INVOICE PHILIP SERVICES FOR RUSH CHARGE.

Rudd@AC



Certified Mail: #Z 213 707 666 (Box 1 of 2)
#Z 213 707 664 (Box 2 of 2)

March 24, 2000

Mr. William C. Olson
New Mexico Oil Conservation Division
2040 S. Pacheco
Santa Fe, NM 87504

RECEIVED

MAR 20 2000

ENVIRONMENTAL BUREAU
OIL CONSERVATION DIVISION

RE: 1999 Pit Project Annual Groundwater Report

Dear Mr. Olson:

In accordance with reporting requirements, El Paso Field Services (EPFS) has enclosed annual updates for the 32 remaining groundwater impacted locations that were identified during our pit closure project of 1994 / 1995.

Of the 32 reports, EPFS hereby requests closure of 4 of these locations. The 4 sites EPFS is requesting closure on are presented in one separate binder entitled "San Juan Basin Pit Closures, El Paso Field Services, Pit Closure Reports".

The Jaquez Com. C #1 and Jaquez Com. E #1 site is included in a separate report which is entitled "Jaquez Com. C #1 and Jaquez Com. E #1 Annual Report for Soil and Groundwater Remediation".

EPFS has also included for your information five Navajo sites in a separate binder and a separate report for the Bisti Flare Pit #1.

If you have any questions concerning the enclosed reports or closure requests, please call me at (505) 599-2124.

Sincerely,

A handwritten signature in black ink that reads "Scott T. Pope".

Scott T. Pope P.G.
Senior Environmental Scientist

xc: Mr. Denny Foust, NMOCD, Aztec - w / enclosures; Certified Mail # Z 213 707 667
Mr. Bill Liesse, BLM - w / enclosures; Certified Mail # Z 213 707 668
Mr. John Jaquez, - w / Jaquez enclosures; Certified Mail # Z 213 707 669
Ms. Charmaine Tso, Navajo EPA - w / enclosures; Certified Mail # Z 213 707 670

bc: J. A. Lambdin w / enclosures

Philip Services Corp. – Cecil Irby, w / o enclosures

B. B. McDaniel / 24321 – NMOCD Regulatory w / o