



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 23 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' with a stylized flourish at the end.

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**

SAN JUAN BASIN PIT CLOSURES
San Juan Basin, New Mexico

El Paso Field Services
Pit Closure Reports

March 2000

RECEIVED

MAR 20 2000

ENVIRONMENTAL BUREAU
OIL CONSERVATION DIVISION

Prepared For

El Paso Field Services
Farmington, New Mexico

Project 62800158



EPFS GROUNDWATER PITS 1999 CLOSURE REPORT

SHEETS #2
Meter/Line ID - 70286

SITE DETAILS

Legals - Twn: 31N Rng: 9W Sec: 28 Unit: H
NMOCD Hazard Ranking: 40 Land Type: FEE
Operator: AMOCO PRODUCTION COMPANY

PREVIOUS ACTIVITIES

Site Assessment: Aug-94 Excavation: Sep-94 (120 cy) Soil Boring: Aug-95
Monitor Well: Aug-95 Additional MW: Dec-95 Quarterly Sampling Initiated: Apr-96
Additional MW: Oct-99

All supporting documentation for activities prior to 1999 can be found in the Annual Report for the year the activity occurred.

1999 ACTIVITIES

Groundwater Monitoring - Quarterly groundwater monitoring was discontinued in 1997 because monitor wells MW-1 through MW-4 all had at least four quarters below New Mexico Groundwater Standards. Monitoring well MW-5 was installed and sampled in October 1999.

Submission Of Groundwater Closure Report In 1998 - This site was submitted for closure in March of 1998 and was rejected by the OCD. Groundwater sampling did not take place, as closure was pending. The OCD requested an additional downgradient well to completely define the extent of groundwater contamination.

Monitor Well Installation - The groundwater gradient was known from historical data and one additional well was drilled as requested in OCD correspondence dated July 28, 1999. A groundwater gradient map that includes this recent well is included as Figure 5.

SUMMARY TABLES

Historical groundwater analytical data and groundwater analytical data from MW-5 are presented in Table 1. Copies of the 1999 laboratory data sheets and associated quality assurance/quality control data are presented in Attachment 1.

SITE MAP

Site maps with four quarters of analytical data from 1997 and groundwater gradients are included as Figure 1 through Figure 4. The most recent groundwater gradient map is presented as Figure 5.

GEOLOGIC LOGS AND WELL COMPLETION DIAGRAMS

The October 4, 1999, geologic logs and well completion diagrams are included as Attachment 2.

DISPOSITION OF GENERATED WASTES

There were no generated wastes at this site during 1999.

ISOCONCENTRATION MAPS

BTEX parameters were below regulatory standards and isoconcentration maps were not generated.

EPFS GROUNDWATER PITS 1999 CLOSURE REPORT

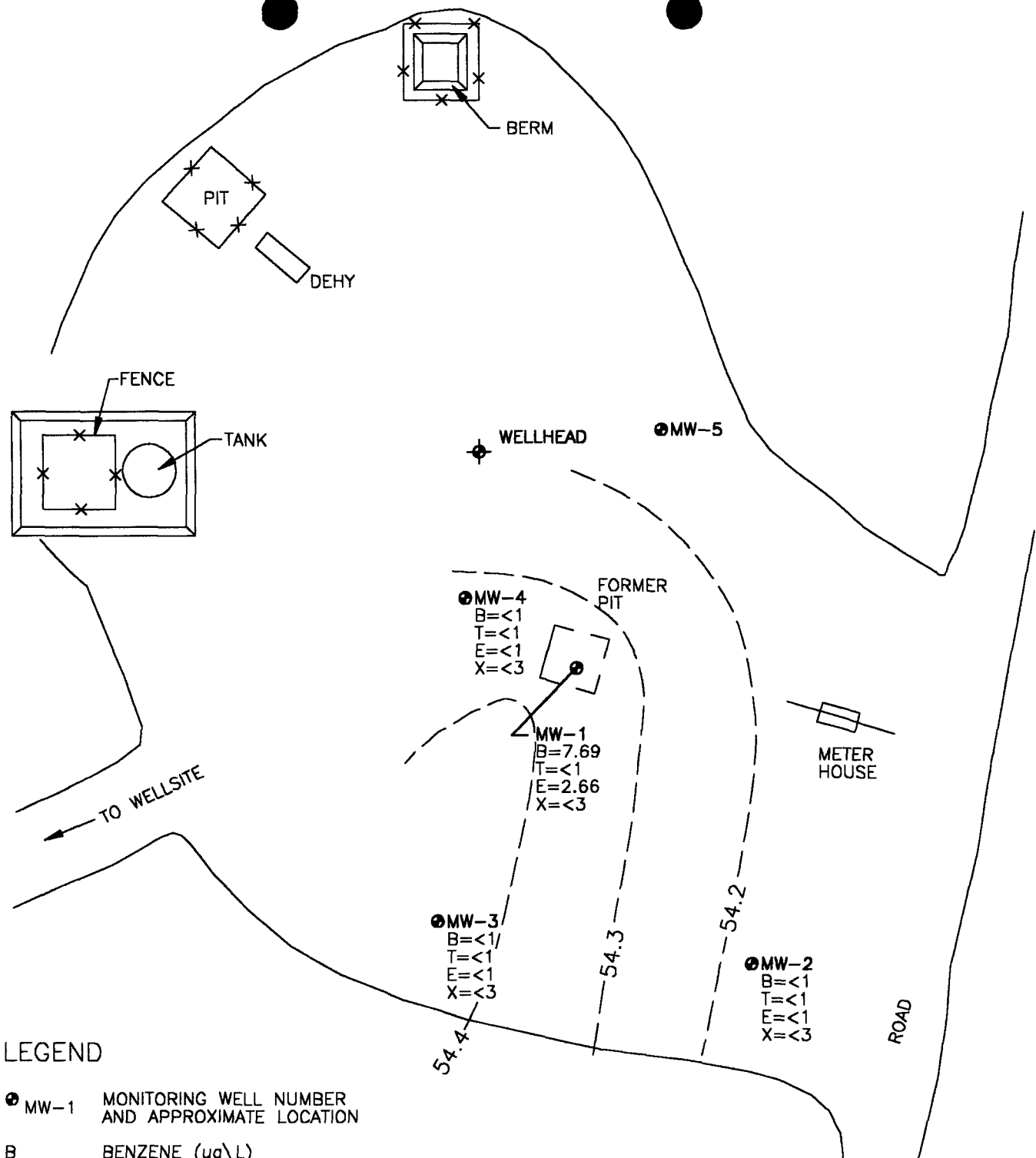
CONCLUSIONS

Recently installed monitor well MW-5 is below detection limits for all BTEX constituents. Groundwater gradient is to the northeast at this site. EPFS installed one additional groundwater monitoring well as required by the OCD to show that no downgradient migration has occurred at this site.

Based on groundwater levels collected from all four monitor wells, the groundwater flow trends to the northeast and MW-3 is upgradient, MW-4 is crossgradient, MW-5 is downgradient, and MW-2 is slightly downgradient of MW-1. Based on the sampling results from MW-1 through MW-4 and on the OCD requested additional downgradient monitoring well MW-5, EPFS has demonstrated that groundwater is below NMWQCC Standards at the five monitoring wells at this site. Therefore, EPFS requests closure of this site.

RECOMMENDATIONS

- EPFS requests closure of this site.
- Following OCD approval for closure, MW-1 through MW-5 will be abandoned in accordance with the Monitoring Well Abandonment Plan.



LEGEND

● MW-1 MONITORING WELL NUMBER AND APPROXIMATE LOCATION

B BENZENE (ug\L)
T TOLUENE (ug\L)
E ETHYL BENZENE (ug\L)
X XYLENE (ug\L)

ug\L MICROGRAMS PER LITER

—54.4— GROUNDWATER CONTOUR ELEVATION

NOT TO SCALE



COL 17520A2-001



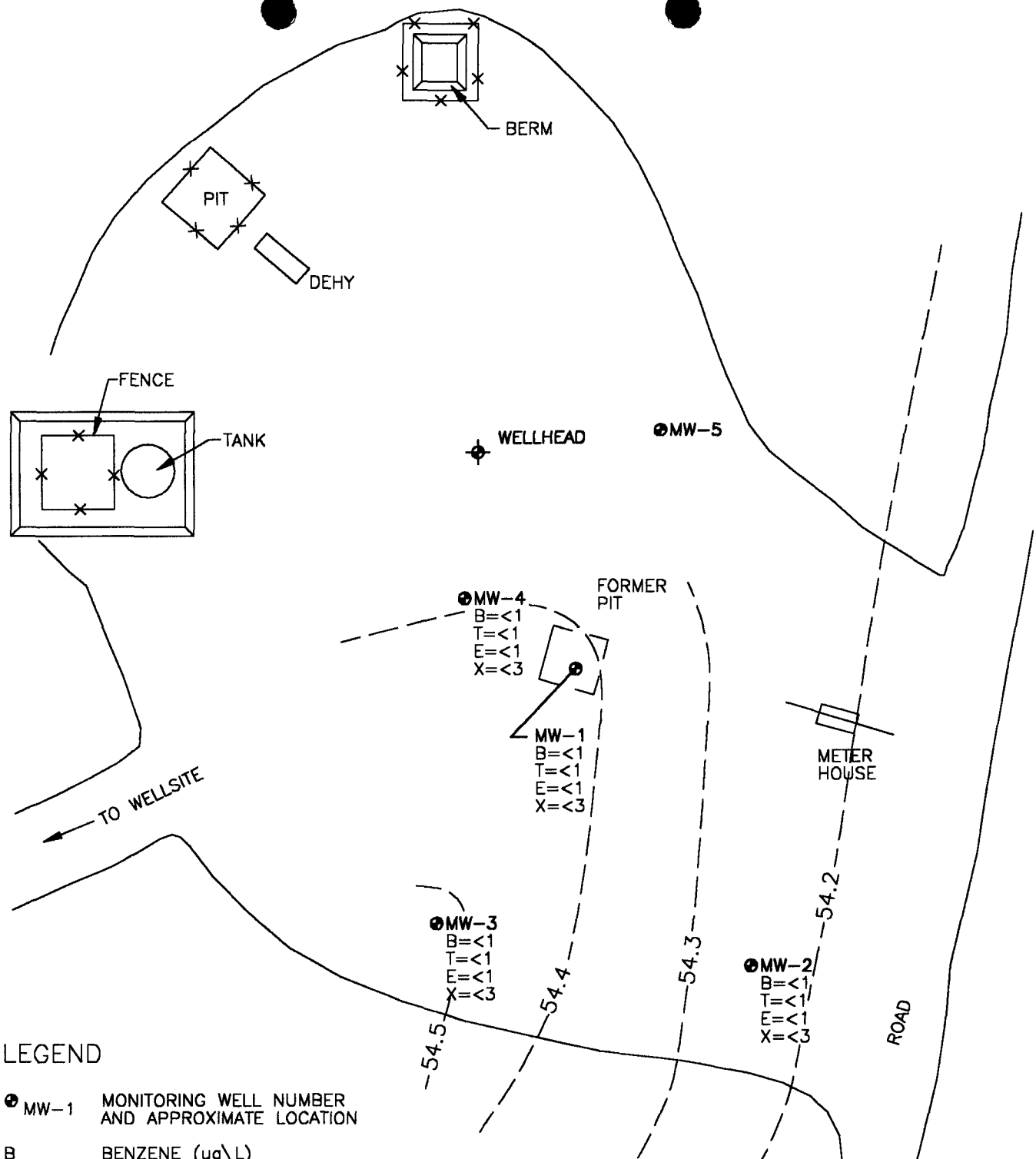
TITLE:
SHEETS #2
METER 70286
JANUARY 29, 1999

DWN:
CJG
CHKD:
CC
DATE:
03/20/00

DES.:
CC
APPD:
REV.:
1

PROJECT NO.: 17520
EPFS GW PITS

FIGURE 1



LEGEND

● MW-1 MONITORING WELL NUMBER AND APPROXIMATE LOCATION

B BENZENE (ug\L)
T TOLUENE (ug\L)
E ETHYL BENZENE (ug\L)
X XYLENE (ug\L)

ug\L MICROGRAMS PER LITER

-54.4- GROUNDWATER CONTOUR ELEVATION

NOT TO SCALE



COL 17520AZ-002



TITLE:

SHEETS #2
METER 70286
APRIL 28, 1999

DWN:
CJG

DES.:
CC

CHKD:
CC

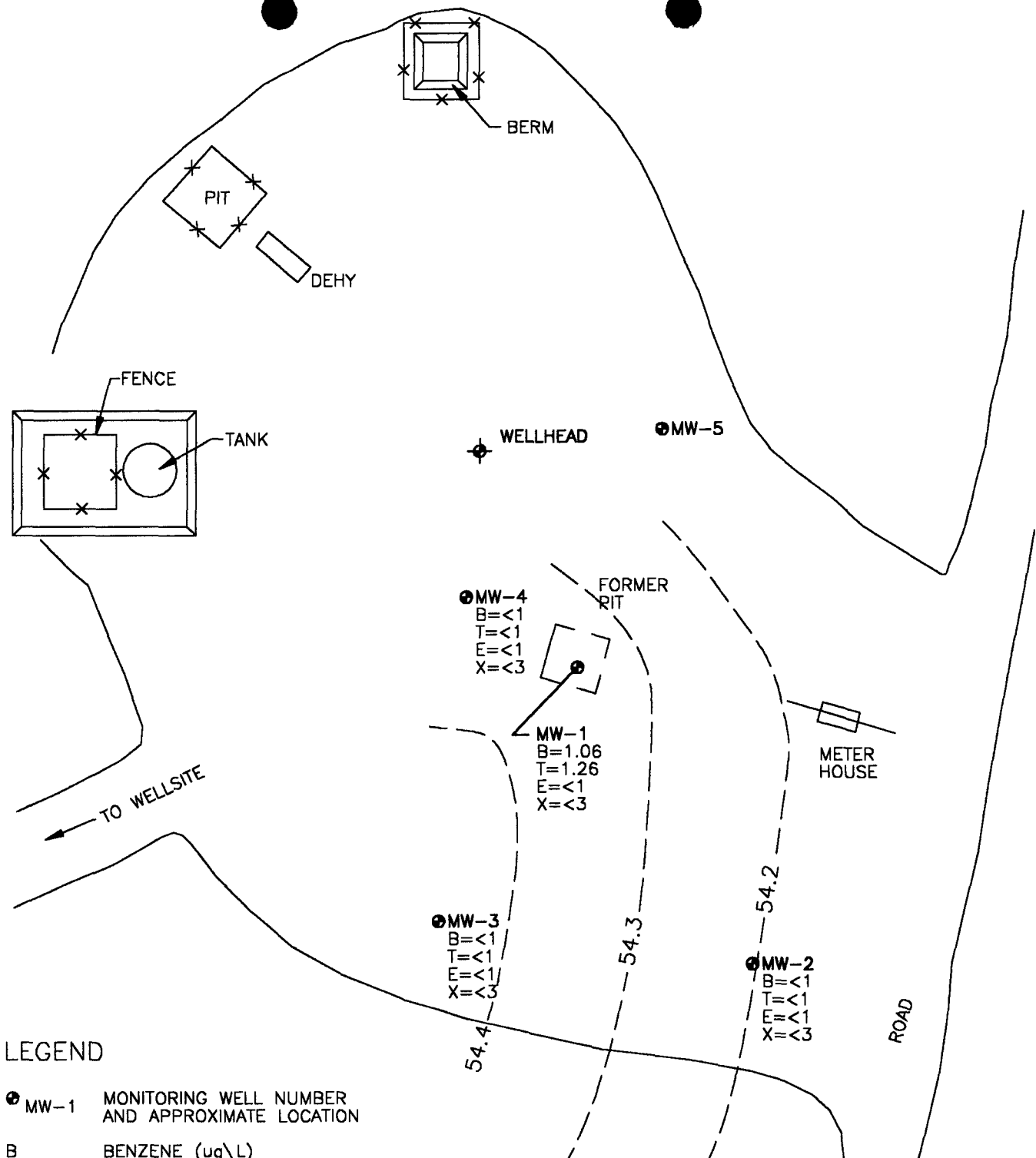
APPD:

DATE:
03/20/00

REV.:
1

PROJECT NO.: 17520
EPFS GW PITS

FIGURE 2



LEGEND

● MW-1 MONITORING WELL NUMBER AND APPROXIMATE LOCATION

B BENZENE (ug\L)
T TOLUENE (ug\L)
E ETHYL BENZENE (ug\L)
X XYLENE (ug\L)

ug\L MICROGRAMS PER LITER

-54.4- GROUNDWATER CONTOUR ELEVATION

NOT TO SCALE



COL 17520A2-003



TITLE:

SHEETS #2
METER 70286
JULY 10, 1999

OWN:

CJG

DES.:

CC

PROJECT NO.:

17520

CHKD:

CC

APPD:

DATE:

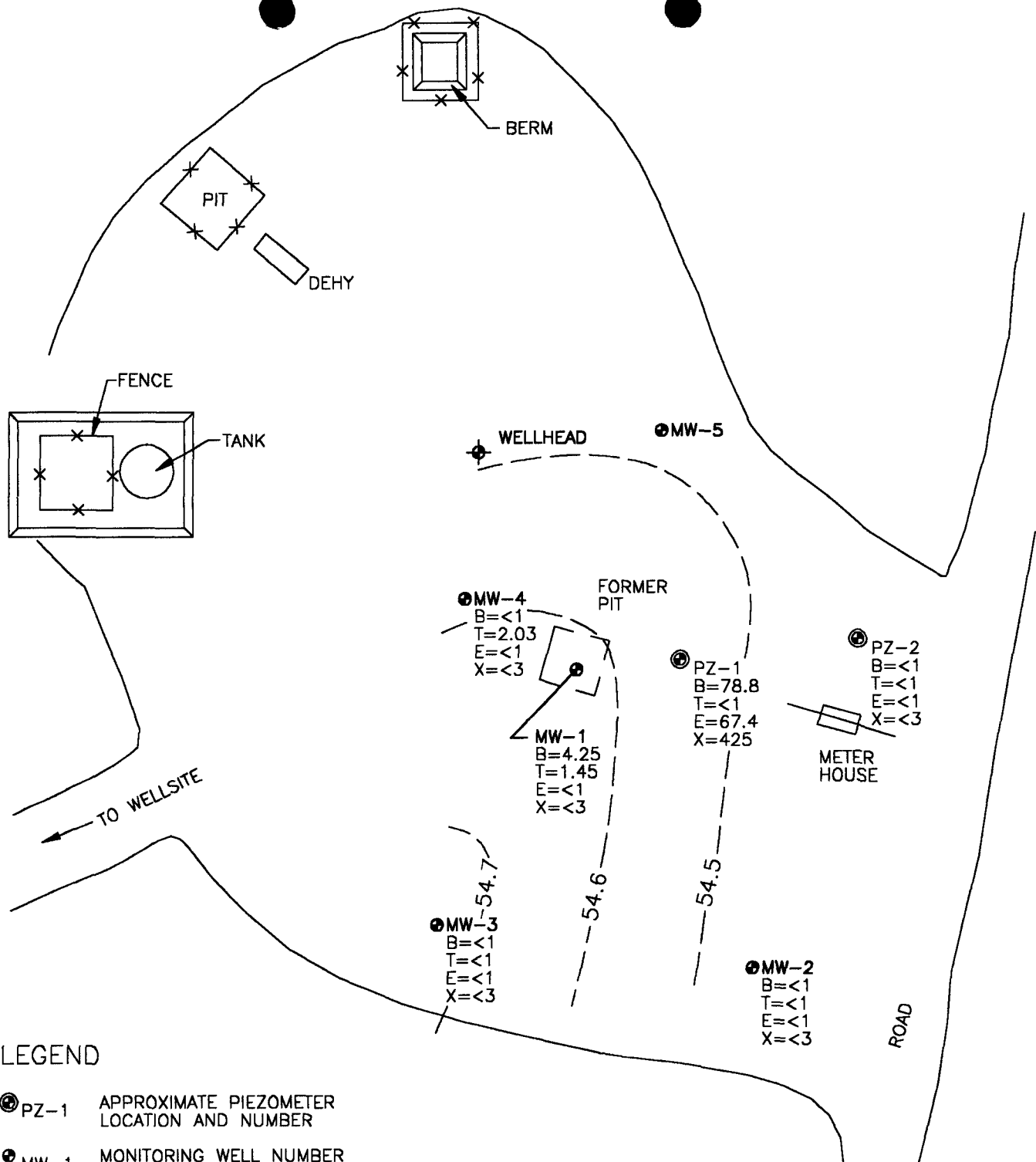
03/20/00

REV.:

1

EPFS GW PITS

FIGURE 3



LEGEND

- ⊙ PZ-1 APPROXIMATE PIEZOMETER LOCATION AND NUMBER
- MW-1 MONITORING WELL NUMBER AND APPROXIMATE LOCATION

B BENZENE (ug\L)
T TOLUENE (ug\L)
E ETHYL BENZENE (ug\L)
X XYLENE (ug\L)

ug\L MICROGRAMS PER LITER

-54.4- GROUNDWATER CONTOUR ELEVATION



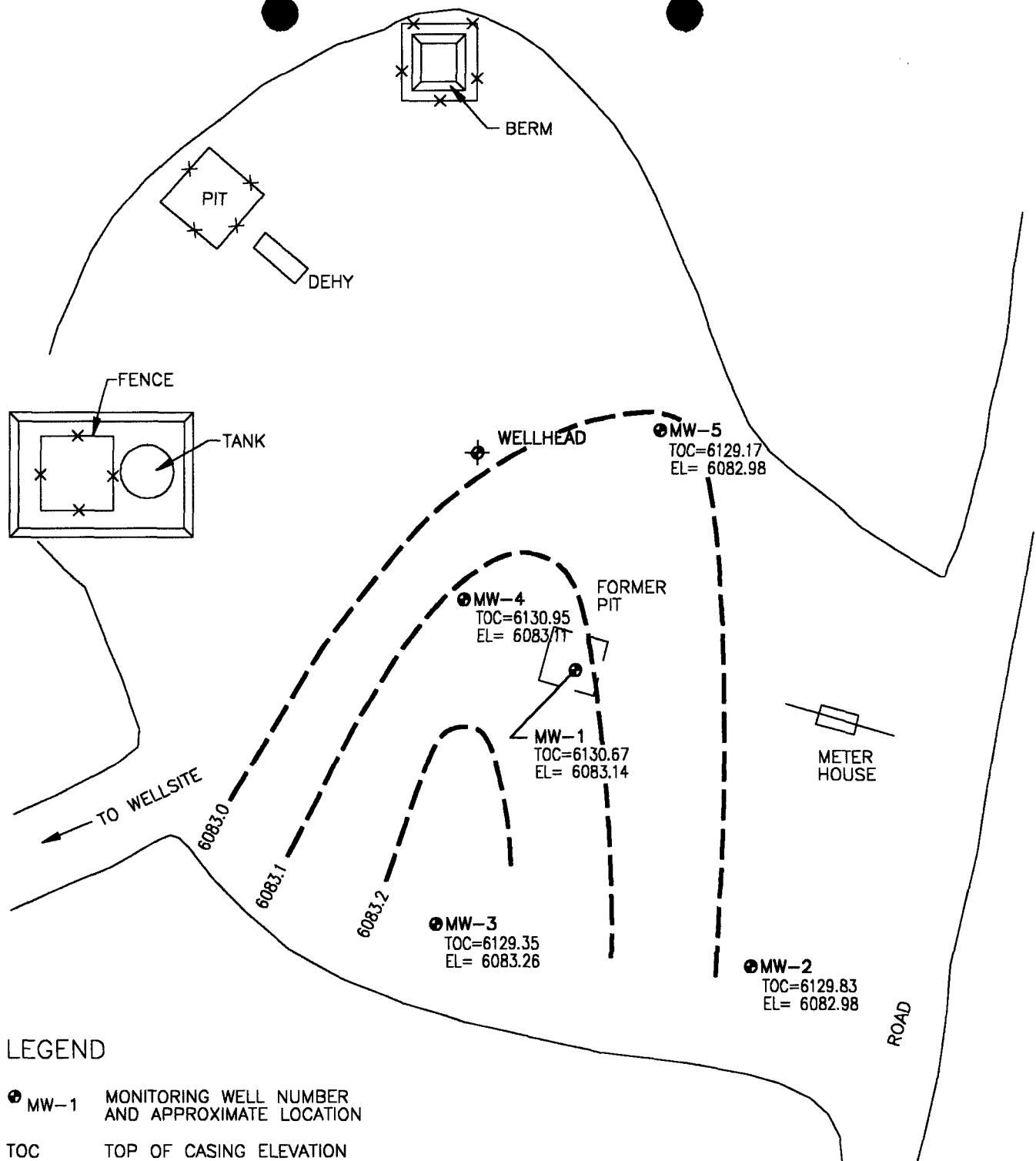
TITLE:
SHEETS #2
METER 70286
OCTOBER 23, 1999

OWN:
CJG
CHKD:
CC
DATE:
03/20/00

DES.:
CC
APPD:
REV.:
1

PROJECT NO.: 17520
EPFS GW PITS

FIGURE 4



LEGEND

- MW-1 MONITORING WELL NUMBER AND APPROXIMATE LOCATION
- TOC TOP OF CASING ELEVATION
- EL GROUNDWATER ELEVATION
- ➔ GROUNDWATER GRADIENT
- 25.0 GROUNDWATER POTENTIOMETRIC SURFACE

NOT TO SCALE



COL 17520A2-008



TITLE:
SHEETS #2
METER 70286
DECEMBER 8, 1999

DWN:
CJG
CHKD:
CC
DATE:
02/10/00

DES.:
CC
APPD:
REV.:
1

PROJECT NO.: 17520
EPFS GW PITS
FIGURE 5

TABLE 1

Sample #	Meter/ Line #	Site Name	Sample Date	MW #	Project	Benzene (PPB)	Toluene (PPB)	Ethyl Benzene (PPB)	Total Xylenes (PPB)	Total BTEX
960350	70286	Sheets Well #2	04/16/96	1	Sample 4 - 1st Qtr	= 65.9	< 5	= 22	= 52.6	146
960638	70286	Sheets Well #2	07/22/96	1	Sample 4 - 2nd Qtr	= 68.6	< 1	= 11.3	= 21.6	103
960865	70286	Sheets Well #2	10/17/96	1	Sample 4 - 3rd Qtr	= 17.5	< 1	= 9.65	= 1.96	30
970029	70286	Sheets Well #2	01/29/97	1	Sample 4 - 4th Qtr	= 7.69	< 1	= 2.66	< 3	14
970350	70286	Sheets Well #2	04/28/97	1	Sample 4 - 5th Qtr	< 1	< 1	< 1	< 3	6
970632	70286	Sheets Well #2	07/10/97	1	Sample 4 - 6th Qtr	= 1.06	= 1.26	< 1	< 3	6
971146	70286	Sheets Well #2	10/23/97	1	Sample 4 - 7th Qtr	= 4.25	= 1.45	< 1	< 3	6
960351	70286	Sheets Well #2	04/17/96	2	Sample 4 - 1st Qtr	< 1	< 1	< 1	< 3	6
960639	70286	Sheets Well #2	07/22/96	2	Sample 4 - 2nd Qtr	< 1	< 1	< 1	< 3	6
960866	70286	Sheets Well #2	10/17/96	2	Sample 4 - 3rd Qtr	< 1	< 1	< 1	< 3	6
970030	70286	Sheets Well #2	01/29/97	2	Sample 4 - 4th Qtr	< 1	< 1	< 1	< 3	6
970351	70286	Sheets Well #2	04/28/97	2	Sample 4 - 5th Qtr	< 1	< 1	< 1	< 3	6
970633	70286	Sheets Well #2	07/10/97	2	Sample 4 - 6th Qtr	< 1	< 1	< 1	< 3	6
971147	70286	Sheets Well #2	10/23/97	2	Sample 4 - 7th Qtr	< 1	< 1	< 1	< 3	6
960352	70286	Sheets Well #2	04/17/96	3	Sample 4 - 1st Qtr	< 1	< 1	< 1	< 3	6
960641	70286	Sheets Well #2	07/22/96	3	Sample 4 - 2nd Qtr	< 1	< 1	< 1	< 3	6
960867	70286	Sheets Well #2	10/17/96	3	Sample 4 - 3rd Qtr	< 1	< 1	< 1	< 3	6
970031	70286	Sheets Well #2	01/29/97	3	Sample 4 - 4th Qtr	< 1	< 1	< 1	< 3	6
970352	70286	Sheets Well #2	04/28/97	3	Sample 4 - 5th Qtr	< 1	< 1	< 1	< 3	6
970634	70286	Sheets Well #2	07/10/97	3	Sample 4 - 6th Qtr	< 1	< 1	< 1	< 3	6
971148	70286	Sheets Well #2	10/23/97	3	Sample 4 - 7th Qtr	< 1	< 1	< 1	< 3	6
960353	70286	Sheets Well #2	04/17/96	4	Sample 4 - 1st Qtr	< 1	< 1	< 1	< 3	6
960642	70286	Sheets Well #2	07/22/96	4	Sample 4 - 2nd Qtr	< 1	< 1	< 1	< 3	6
960868	70286	Sheets Well #2	10/17/96	4	Sample 4 - 3rd Qtr	< 1	< 1	< 1	< 3	6
970032	70286	Sheets Well #2	01/29/97	4	Sample 4 - 4th Qtr	< 1	< 1	< 1	< 3	6

EPFS Groundwater Pits
1999 Annual Groundwater Report

TABLE 1

Sample #	Meter/ Line #	Site Name	Sample Date	MW #	Project	Benzene (PPB)	Toluene (PPB)	Ethyl Benzene (PPB)	Total Xylenes (PPB)	Total BTEX
970353	70286	Sheets Well #2	04/28/97	4	Sample 4 - 5th Qtr	< 1	< 1	< 1	< 3	< 6
970635	70286	Sheets Well #2	07/10/97	4	Sample 4 - 6th Qtr	< 1	< 1	< 1	< 3	< 6
971149	70286	Sheets Well #2	10/23/97	4	Sample 4 - 7th Qtr	< 1	= 2.03B	< 1	< 3	< 6
990426	70286	Sheets Well #2	10/20/99	5	Sample 4 - 1st Qtr	< 0.5	< 0.5	< 0.5	< 0.5	< 2

ATTACHMENT 1
1999 GROUNDWATER ANALYTICAL



FIELD SERVICES LABORATORY
ANALYTICAL REPORT
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	N/A	990426
MTR CODE SITE NAME:	70286	Sheets #2
SAMPLE DATE TIME (Hrs):	10/20/1999	1439
PROJECT:	Sample 4 - 1st Quarter	
DATE OF BTEX EXT. ANAL.:	N/A	10/28/1999
TYPE DESCRIPTION:	MW-5	Water

Field Remarks:

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	<0.5	PPB				
TOLUENE	<0.5	PPB				
ETHYL BENZENE	<0.5	PPB				
TOTAL XYLENES	<0.5	PPB				
TOTAL BTEX	<2.0	PPB				

—BTEX is by EPA Method 8021—

The Surrogate Recovery was at 89 % for this sample All QA/QC was acceptable.
DF = Dilution Factor Used

Narrative:

Sample Analyzed by Pinnacle Laboratories, Albuquerque, NM.

Approved By:

John J. Lardi

Date:

11/5/99

Chain of Custody Record

4000 Monroe Road
Farmington, NM 87401

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

COC Serial No. C 2399

[illegible]

Relinquished by:

Received By:

Signature	Date	Time	Signature	Date	Time
<i>Melco Rader</i>	10-20-99	17:00	<i>Ref-mg-cg-tor</i>	10-20-99	17:00
<i>Ref-mg-cg-tor</i>	10-22-99	9:30	<i>Denno Bond</i>	10-22-99	0932

Samples Iced: ☐ Yes ☐ No	Carrier:	Airbill No.
Preservatives (ONLY for Water Samples) ☐ Cyanide Sodium hydroxide (NaOH) ☐ Volatile Organic Analysis Hydrochloric acid (HCl) ☐ Metals Nitric acid (HNO ₃) ☐ TPH (418.1) Sulfuric acid (H ₂ SO ₄) ☐ Other (Specify) _____ ☐ Other (Specify) _____		
Shipping and Lab Notes:		

PINNACLE
LABORATORIES



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

Pinnacle Lab ID number **910090**
November 02, 1999

EL PASO FIELD SERVICES
770 WEST NAVAJO
FARMINGTON, NM 87401

Project Name PIT MONITOR WELLS
Project Number (none)

Attention: JOHN LAMBDIN

On 10/27/99 Pinnacle Laboratories, Inc. 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.

Kimberly D. McNeill
Project Manager

MR: jt

Enclosure

H. Mitchell Rubenstein, Ph. D.
General Manager

*Reviewed & Accepted
J. Hall 11/5/99*

PINNACLE
LABORATORIES

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

CLIENT	: EL PASO FIELD SERVICES	PINNACLE ID	: 910090
PROJECT #	: (none)	DATE RECEIVED	: 10/27/99
PROJECT NAME	: PIT MONITOR WELLS	REPORT DATE	: 11/2/99
PIN			DATE
ID. #	CLIENT DESCRIPTION	MATRIX	COLLECTED
01	990426	AQUEOUS	10/20/99
02	990427	AQUEOUS	10/20/99
03	990428	AQUEOUS	10/20/99



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 : EL PASO FIELD SERVICES
PROJECT # : (none)
PROJECT NAME : PIT MONITOR WELLS

PINNACLE I.D.: 910090

SAMPLE		MATRIX	DATE	DATE	DATE	DIL.
ID. #	CLIENT I.D.		SAMPLED	EXTRACTED	ANALYZED	FACTOR
01	990426	AQUEOUS	10/20/99	NA	10/28/99	1
02	990427	AQUEOUS	10/20/99	NA	10/28/99	1
03	990428	AQUEOUS	10/20/99	NA	10/28/99	1
PARAMETER		DET. LIMIT	UNITS	990426	990427	990428
BENZENE		0.5	UG/L	< 0.5	< 0.5	< 0.5
TOLUENE		0.5	UG/L	< 0.5	< 0.5	< 0.5
ETHYLBENZENE		0.5	UG/L	< 0.5	< 0.5	< 0.5
TOTAL XYLENES		0.5	UG/L	< 0.5	< 0.5	0.8

SURROGATE:
BROMOFLUOROBENZENE (%) 89 91 100
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 RESULTS
REAGENT BLANK

TEST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 910090
BLANK I. D.	: 102899	DATE EXTRACTED	: NA
CLIENT	: EL PASO FIELD SERVICES	DATE ANALYZED	: 10/28/99
PROJECT #	: (none)	SAMPLE MATRIX	: AQUEOUS
PROJECT NAME	: PIT MONITOR WELLS		

PARAMETER	UNITS	
BENZENE	UG/L	<0.5
TOLUENE	UG/L	<0.5
ETHYLBENZENE	UG/L	<0.5
TOTAL XYLENES	UG/L	<0.5

SURROGATE:
BROMOFLUOROBENZENE (%) 101
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 # : 102899
CLIENT : EL PASO FIELD SERVICES
PROJECT # : (none)
PROJECT NAME : PIT MONITOR WELLS

PINNACLE I.D. : 910090
DATE EXTRACTED : NA
DATE ANALYZED : 10/28/99
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	17.1	86	18.3	92	7	(80 - 120)	20
TOLUENE	<0.5	20.0	17.8	89	18.9	95	6	(80 - 120)	20
ETHYLBENZENE	<0.5	20.0	17.9	90	19.1	96	6	(80 - 120)	20
TOTAL XYLENES	<0.5	60.0	55.0	92	58.7	98	7	(80 - 120)	20

CHEMIST NOTES:
N/A

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

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



Pinnacle Laboratories Inc.

CHAIN OF CUSTODY

DATE: 10-26-99 PAGE: 1 OF 1

PL Accession #:

910090

PROJECT MANAGER: JOHN LAMBERTON

COMPANY: EL PASO FIELD SERVICES

ADDRESS: 770 WEST ALVARADO

ARMINGTON NM 87401

PHONE: (505) 599-3144

FAX: (505) 599-4261

BILL TO: SAME AS ABOVE

COMPANY:

ADDRESS:

SAMPLE ID DATE TIME MATRIX LAB ID

990426 10-26-99 1439 WATER 01

990427 10-26-99 1605 WATER 02

990428 10-26-99 1615 WATER 03

Petroleum Hydrocarbons (418.1) TRPH
(MOD.8015) Diesel/Direct Inject

(M8015) Gas/Purge & Trap

8021 (BTEX)/8015 (Gasoline) MTBE

8021 (BTEX) ☐ MTBE ☐ TMB ☐ PCE

8021 (TCL)

8021 (EDX)

8021 (HALO)

8021 (CUST)

504.1 EDB ☐ / DBCP ☐

8260 (TCL) Volatile Organics

8260 (Full) Volatile Organics

8260 (CUST) Volatile Organics

8260 (Landfill) Volatile Organics

Pesticides /PCB (608/8081/8082)

Herbicides (615/8151)

Base/Neutral/Acid Compounds GC/MS (625/8270)

Polynuclear Aromatics (610/8310/8270-SIMS)

General Chemistry:

Priority Pollutant Metals (13)

Target Analyte List Metals (23)

RCRA Metals (8)

RCRA Metals by TCLP (Method 1311)

Metals:

NUMBER OF CONTAINERS

PLEASE FILL THIS FORM IN COMPLETELY.

SHADED AREAS ARE FOR LAB USE ONLY.

PROJECT INFORMATION

PROJ. NO.:

(RUSH) ☐ 24hr ☐ 48hr ☐ 72hr ☐ 1 WEEK

(NORMAL) ☒

PROJ. NAME: PTT NEUTRAL WELLS

CERTIFICATION REQUIRED: ☐ NM ☐ SDWA ☐ OTHER

P.O. NO.:

METHANOL PRESERVATION ☐

SHIPPED VIA: FED-X

COMMENTS: FIXED FEE ☐

SAMPLE RECEIPT

NO. CONTAINERS

6

CUSTODY SEALS

Y/N (NA)

RECEIVED INTACT

YES

BLUFENCE

6c

RELINQUISHED BY:

RELINQUISHED BY:

Signature: Dennis Bird

Signature: [Signature]

Printed Name: DENNIS BIRD

Printed Name: [Name]

Date: 10-26-99

Date: [Date]

Company: EL PASO FIELD SERVICES

Company: [Company]

RECEIVED BY:

1

Signature:

Time:

Date:

Company:

RECEIVED BY: (LAB)

2

Signature:

Time:

Date:

Company:

Printed Name:

Date:

Company:

Signature:

Time:

Date:

Company:

Signature:

Time:

Date:

Company:

ATTACHMENT 2
MONITOR WELL INSTALLATION

RECORD OF SUBSURFACE EXPLORATION

Philip Environmental Services Corp.

4000 Monroe Road

Farallon, New Mexico 87401

(505) 226-2262 FAX (505) 326-2388

Borehole #

Well #

Page

1

MW 5

1 of 3

Project Name

Project Number

Project Location

EPFS GROUNDWATER

62800018 Phase 35

SHRETS #2

Well Logged By

Personnel On-Site

Contractors On-Site

Client Personnel On-Site

C. CULLICOTT

K. PADILLA & D. PADILLA

Drilling Method

Air Monitoring Method

AUGER

PIN

Elevation

Borehole Location

GWL Depth

Logged By

Drilled By

Date/Time Started

Date/Time Completed

T31N R9W S28 H

46.28'

C. CULLICOTT

K. PADILLA & D. PADILLA

10/4/99 9:45am

10/4/99 12:20pm

Notes 70286

Depth (Feet)	Sample Interval	Sample Type & Recovery (inches)	Sample Description Classification System: USCS	USCS Symbol	Depth Lithology Change (feet)	Air Monitoring Units: NDU			Drilling Conditions & Blow Counts
						BZ	BH	S	
0									
5			CUTTINGS @ 5': CLEAN BROWN SANDY SILT						
10	① 10-12'		① 6" RECOVERY SILTY BROWN VERY FINE SAND. CLEAN. SOME CONSOLIDATION IN PLACES.						① 17 BLOWS SS 0.0 ppm
15			CUTTINGS @ 15': SEEMS TO BE AN INCREASE IN CLAY CONTENT.						
20	② 20-22'		② 10" RECOVERY LOOSE SILTY/POORLY SORTED SAND. UPPER HALF ORANGISH BROWN, LOWER BROWN SCATTERED SMALL GRAVEL.						② 14 BLOWS SS 0.0 ppm
25									
30	③ 30-32'		CUTTINGS @ 25' BROWN SILTY/POORLY SORTED SAND/SMALL GRAVEL.						③ 22 BLOWS SS 0.0 ppm
35			③ 12" RECOVERY BROWN CLAYEY SILT/ FINE SAND, STIFF, w/ SCATTERED ORANGE STAIN & PERIODS PATCHES OF WHITE SAND						
40									

Comments:

SUNNY, WARM

DTW IN MW1 47.63'

Geologist Signature

Cathy Cullcott

RECORD OF SUBSURFACE EXPLORATION

Philip Environmental Services Corp.

4000 Monroe Road

Farmington, New Mexico 87401

(505) 326-2282 FAX (505) 326-2388

Borehole #

Well #

Page

1
MWS
2 of 3

Project Name

Project Number

Project Location

EPPS GROUNDWATER

62800018 Phase 35

SHEETS #2

Well Logged By

Personnel On-Site

Contractors On-Site

Client Personnel On-Site

C. CULLICOTT

K. PADILLA D. PADILLA

Drilling Method

Air Monitoring Method

AUGER

PIN

Elevation

Borehole Location

GWL Depth

Logged By

Drilled By

Date/Time Started

Date/Time Completed

T31 N 29 W S28 H

46.78'

C. CULLICOTT

K. PADILLA D. PADILLA

10/4/99 9:45 AM

10/4/99 12:20 PM

meter 70286

Depth (Feet)	Sample Interval	Sample Type & Recovery (inches)	Sample Description Classification System: USCS	USCS Symbol	Depth Lithology Change (feet)	Air Monitoring Units: NDU			Drilling Conditions & Blow Counts
						BZ	BH	S	
40	40-42'		④ FULL RECOVERY, UPPER 18" - STIFF PLASTIC BROWN CLAY, MOTTLED GREY-ORANGE W/ BLACK "MARBLING" THROUGHOUT (RECOVER). PLUS SCATTERED GYPSUM CRYSTALS. REST AS ABOVE BUT SANDIER						④ 14 BLOWS SS 0.0 ppm H.S. 0.0 ppm
45	43-46'		⑤ 10" RECOVERY - DAMP UPPER 3" PLASTIC BROWN CLAY, INCREASING SILT & MINOR SAND W/ DEPTH. ALL IS MOTTLED ORANGE BROWN, MAY BE AT TOP OF WATER TABLE IN BOTTOM OF SPLIT SPOON						⑤ 4 BLOWS SS 0.0 ppm
50	50-52'		⑥ FULL RECOVERY, ALL BELOW WATER TABLE UPPER 6" - SATURATED BROWNISH ORANGE POORLY SORTED SAND. NEXT 3" GREY CLAY. NEXT 3" COARSE BROWNISH ORANGE SAND. NEXT 6" COARSE GREY CLAYEY SAND W/ INCREASING SCATTERED GRAVEL. LAST 6" COARSE CLAYEY SAND W/ INCREASING NO CLAY & SCATTERED OXIDIZED PATCHES						⑥ 5 BLOWS

ments:

CLAYEY SAND W/

INCREASING NO CLAY &

SCATTERED OXIDIZED

PATCHES

Geologist Signature

Cathy Cullicott

MONITORING WELL INSTALLATION RECORD

Utility Environmental Services Corp.
3300 S. Road
Birmingham, New Mexico 87401
505 326-2262 FAX (505) 326-2388

Borehole # 1
Well # MWS
Page 3 of 3

Project Name EPES GROUNDWATER

Project Number 62800018 Phase 35
Project Location SHEETS #2

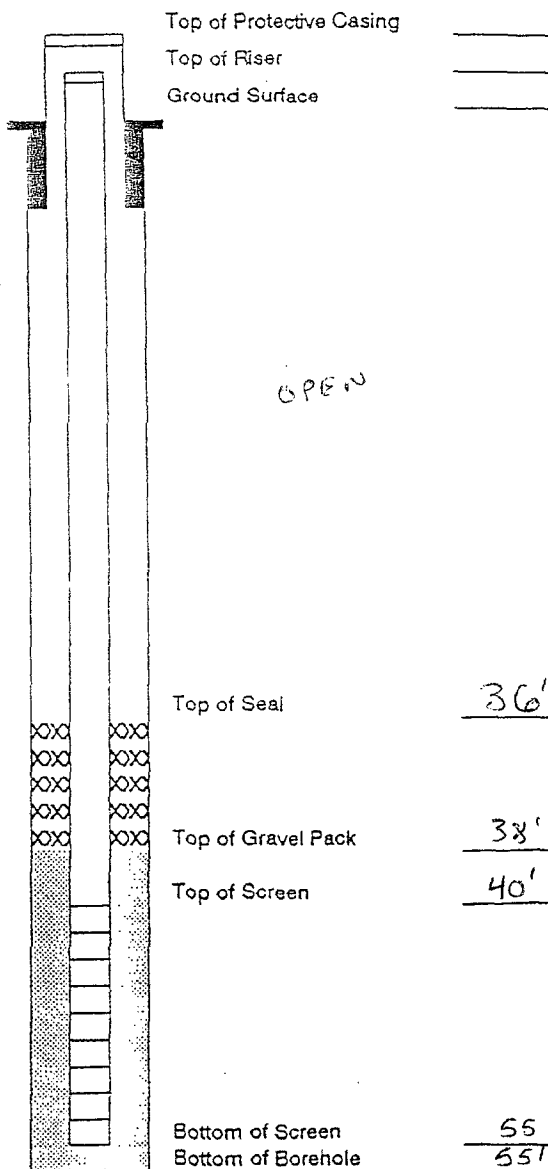
Elevation _____
Well Location T31N R9W S28H
BWL Depth 46.28'
Installed By K. PADILLA & O. PADILLA
Date/Time Started 10/4/99 9:45am
Date/Time Completed 10/4/99 12:20pm

On-Site Geologist A. CULLICOTT
Personnel On-Site K. PADILLA & O. PADILLA
Contractors On-Site Ø
Client Personnel On-Site Ø

METER 70286

Depths in Reference to Ground Surface

Item	Material	Depth
Top of Protective Casing		
Bottom of Protective Casing		
Top of Permanent Borehole Casing		
Bottom of Permanent Borehole Casing		
Top of Concrete		
Bottom of Concrete		
Top of Grout		
Bottom of Grout		
Top of Well Riser	2"	+0
Bottom of Well Riser	2"	40'
Top of Well Screen	2"	40'
Bottom of Well Screen	2"	55'
Top of Peltonite Seal	BENT.	36'
Bottom of Peltonite Seal	CHIPS	38'
Top of Gravel Pack	Co.	38'
Bottom of Gravel Pack	SAND	55'
Top of Natural Cave-In		
Bottom of Natural Cave-In		
Top of Groundwater		44.28'
Total Depth of Borehole		55'



Comments: 12:20 - 1:00, well developed w/ 6 gallons removed. DTW after Bailing 47.56'

Geologist Signature

Cathy Cullicott