

3R - 222

REPORTS

DATE:

1999



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

RECEIVED

MAR 20 2000

March 2000

ENVIRONMENTAL BUREAU
OIL CONSERVATION DIVISION

Prepared For

El Paso Field Services
Farmington, New Mexico

Project 62800158



EPFS GROUNDWATER PITS 1999 CLOSURE REPORT

MESA CPD
Meter/Line ID - 02643

SITE DETAILS

Legals - Twn: 29N Rng: 14W Sec: 4 Unit: C
NMOCD Hazard Ranking: 40 Land Type: FEE
Operator: DUGAN PRODUCTION CORP.

PREVIOUS ACTIVITIES

Site Assessment: Nov-93 Excavation: Nov-93 (103 cy) Soil Boring: Mar-97
Monitor Well: Mar-97 Additional Monitor Wells: Sep-99

1999 ACTIVITIES

Groundwater Monitoring - Quarterly groundwater monitoring of monitor well MW-1 was stopped in April of 1998. Groundwater samples were collected from monitor wells MW-2 and MW-3 on October 15, 1999. Groundwater analytical data are presented in Table 1.

Monitor Well Installation - The groundwater gradient was estimated based on topography and additional wells were drilled as requested in OCD correspondence dated July 28, 1999. On September 9, 1999, after several attempts, MW-2 and MW-3 were installed and water accumulated in the well casings. A groundwater gradient map is presented as Figure 1.

SUMMARY TABLES

A summary of analytical results 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

A site map is included as Figure 1.

GEOLOGIC LOGS AND WELL COMPLETION DIAGRAMS

The September 9, 1999, geologic logs and well completion diagrams are included as Attachment 2. Geologic logs were also generated at two locations where the drill rig encountered refusal.

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.

CONCLUSIONS

Monitor well MW-1 has shown four quarters of groundwater samples below New Mexico Groundwater Standards for BTEX components. Recently installed monitor wells MW-2 and MW-3

EPFS GROUNDWATER PITS 1999 CLOSURE REPORT

are below detection limits for all BTEX constituents. Groundwater gradient is to the south at this site as shown in Figure 1.

Groundwater analytical data has been below standards since quarterly sampling was initiated at MW-1. Based on quarterly sampling data from MW-1, and downgradient monitoring well sampling data from MW-2 and MW-3, BTEX parameters are below NMWQCC Standards. Therefore, EPFS requests closure of this site.

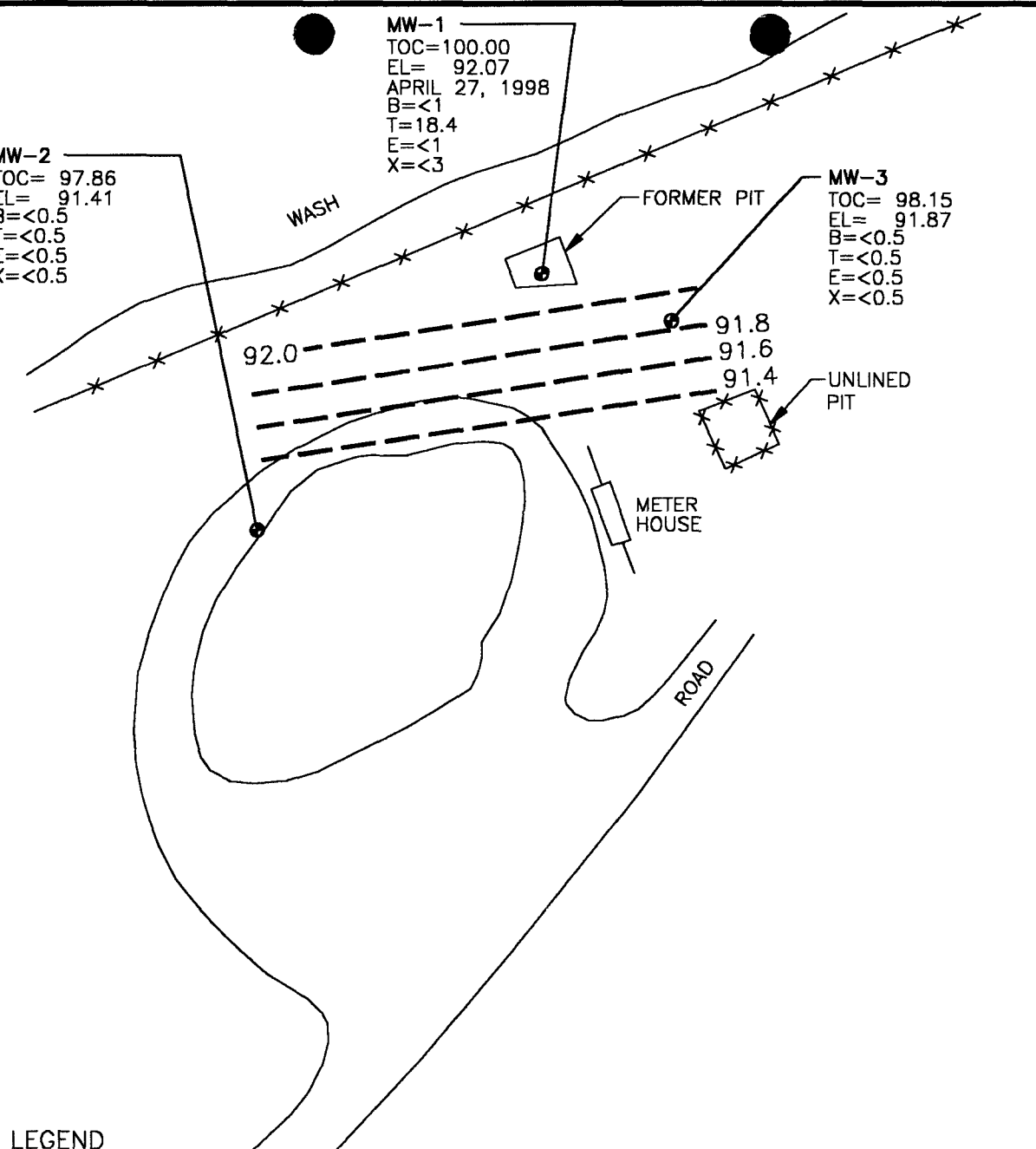
RECOMMENDATIONS

- EPFS requests closure of this site.
- Following OCD approval for closure, MW-1, MW-2 and MW-3 will be abandoned in accordance with the Monitoring Well Abandonment Plan.

MW-2
 TOC= 97.86
 EL= 91.41
 B=<0.5
 T=<0.5
 E=<0.5
 X=<0.5

MW-1
 TOC=100.00
 EL= 92.07
 APRIL 27, 1998
 B=<1
 T=18.4
 E=<1
 X=<3

MW-3
 TOC= 98.15
 EL= 91.87
 B=<0.5
 T=<0.5
 E=<0.5
 X=<0.5



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

—91.2— GROUNDWATER POTENTIOMETRIC SURFACE

➔ APPROXIMATE GROUNDWATER GRADIENT

0 30
 FEET



COL 17520AD-002



TITLE:
 MESA CPD
 02643
 OCTOBER 14, 1999

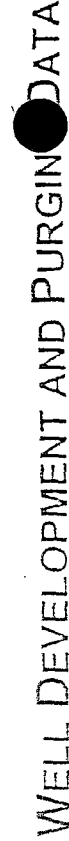
DWN: CJG	DES.: CC
CHKD: CC	APPD:
DATE: 02/24/00	REV.: 0

PROJECT NO.: 17520 EPFS GW PITS
FIGURE 1

TABLE 1

Sample #	Meter/ Line #	Site Name	Sample Date	MW #	Project	Benzene (PPB)	Toluene (PPB)	Ethyl Benzene (PPB)	Total Xylenes (PPB)	Total BTEX
970261	02643	Mesa CPD	04/09/97	1	Phase II Drilling - Initial	<	1	<	1	<
970685	02643	Mesa CPD	07/17/97	1	Sample 4 - 1st Qtr	<	16.5	<	1	16
971151	02643	Mesa CPD	10/24/97	1	Sample 4 - 2nd Qtr	<	1	<	1	6
980013	02643	Mesa CPD	01/07/98	1	Sample 4 - 3rd Qtr	<	1	<	1	6
980320	02643	Mesa CPD	04/27/98	1	Sample 4 - 4th Qtr	<	18.4	<	1	18
990422	02643	Mesa CPD	10/15/99	2	Sample - Initial	<	0.5	<	0.5	2
990423	02643	Mesa CPD	10/15/99	3	Sample - Initial	<	0.5	<	0.5	2

ATTACHMENT 2
MONITOR WELL INSTALLATION



- ☐ Developing
- ☐ Purging

Serial No. WDPD-

Project Name EPFS G-Downpour 28 Project Manager C. J. RBY Project No. 62800018

Client Company EPFS Phase/Task No. _____

Site Name MESACPO Site Address 02643

Water Volume Calculation

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

Pump

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

Water Removal Data

[illegible]

Circle the date and time that the development criteria are met

Comments	NO	Sample

Developer's Signature(s) Cathy Culbertson

Reviewer _____ Date _____

Form A0101 Rev. 10/6/94

F:\NEWFORM\PE A0101.DOT 1/31/96



Water Sampling Data

MW2

P2 of 2

Location No. _____

Serial No. WSD- _____

Group List Number _____

Sample Type: ☒ Groundwater ☐ Surface Water ☐ Other _____ Date 10/15/99

Project Name EPFS GROUNDWATER Project No. 02800018

Project Manager C. IRBY Phase/Task No. _____

Site Name MESA CPD

Sampling Specifications

Requested Sampling
Depth Interval (feet) _____
Requested Wait Following
Development/Purging (hours) _____

Initial Measurements

Time Elapsed From Final Development/Purging (hours) _____
Initial Water Depth (feet) 6.48'
Nonaqueous Liquids Present (Describe) _____

Water Quality/Water Collection

DO = Dissolved Oxygen; Cond. = Conductivity

Date	Time	Sampler Initials	Water Quality Readings				Water Collection Data					Notes (Explain in Comments Below)
			Temp. (°C)	pH	DO (mg/L)	Cond. (µmhos/ cm)	Volume Removed (gallons)	Removal Rate (gal/min)	Pump Intake Depth (feet)	Bail	Final Water Depth (feet)	

Container Type: G = Clear Glass; A = Amber Glass; P = Plastic; V = VOA Vial (Glass); O = Other (Specify)
Preservatives: H = HCl; N = HNO₃; S = H₂SO₄; A = NaOH; O = Other (Specify); - = None

Sample Containers

Analytical Parameter List	Container			Field Filtered		Preserved	Cooled During Collection		Comments
	Number	Type	Volume (mL)	Yes	No		Yes	No	
BTEX	2	VOA			X	HCl	X		14:50 sampled

Filter Type _____ Chain-of-Custody Form Number C2393

Comments _____

Signature Cathy Cullivott Date 10/15/99 Reviewer _____ Date _____



Well Number MW-2

Serial No. WDPD-

Project Name EPFS Groundwater
Client Company EPFS

Client Company File

Site Name MESA CDD

Development Criteria

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

Water Volume Calculation

Initial Depth of Well (feet) 10

Initial Depth to Water (feet) 6.48

Height of Water Column in Well (feet) 3.52
Diameter (inches): Well Gravel Pack

Methods of Development

Pump

☐ Centrifugal

☐ Submersible

☐ Peristaltic

☐ Other

Bailer

☒ Bottom Valve

☐ Double Check Valve

☐ Stainless-steel Kemmerer

Item	Water Volume In Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing		7.3	2.1
Gravel Pack			
Drilling Fluids			
Total			

Water Removal Data

[illegible]

Circle the date and time that the development criteria are met

Comments	Sample ID - Messg C.P.U. Mw-2

Developer's Signature(s) Cathy Culbert

Date 10/15/99

Reviewer _____ Date: _____

Reviewer _____ Date: _____



Water Sampling Data

Location No. _____

Group List Number _____

Sample Type: ☒ Groundwater ☐ Surface Water ☐ Other _____Date 10/15/99Project Name EPFS GROUNDWATERProject No. 62800018Project Manager C. IRBY

Phase/Task No. _____

Site Name MESA CPD #02643

Sampling Specifications

Requested Sampling
Depth Interval (feet) _____
Requested Wait Following
Development/Purging (hours) _____

Initial Measurements

Time Elapsed From Final Development/Purging (hours) 0
Initial Water Depth (feet) 6.28'
Nonaqueous Liquids Present (Describe) N/A

Water Quality/Water Collection

DO = Dissolved Oxygen; Cond. = Conductivity

Date	Time	Sampler Initials	Water Quality Readings				Water Collection Data				Notes (Explain in Comments Below)
			Temp. (°C)	pH	DO (mg/L)	Cond. (µmhos/ cm)	Volume Removed (gallons)	Removal Rate (gal/min)	Pump Intake Depth (feet)	Final Water Depth (feet)	

Sample Containers

Container Type: G = Clear Glass; A = Amber Glass; P = Plastic; V = VOA Vial (Glass); O = Other (Specify)
Preservatives: H = HCl; N = HNO₃; S = H₂SO₄; A = NaOH; O = Other (Specify); - = None

Analytical Parameter List	Container			Field Filtered		Preserved	Cooled During Collection		Comments
	Number	Type	Volume (mL)	Yes	No		Yes	No	
BTEX	2	VOA			X	HCl	X		1505 sampled

Filter Type _____

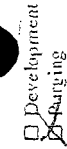
Chain-of-Custody Form Number C2393

Comments _____

Signature Cathy Culbert

Date _____

Reviewer _____ Date _____



WELL DEVELOPMENT AND PURGING DATA

Page 1 of 2

C-IRBY

52

mesa

Water Volume Calculation

10

28

cell 3

Water Volume in Well	Gallons

Bailer

☒ Bottom Valve

☐ Double Check Valve☐ Stainless-steel Kemmerer[illegible]

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

sample ID - mass spec MW-3

Date 10/15/99

Date:



FIELD SERVICES LABORATORY
ANALYTICAL REPORT
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	N/A	990422
MTR CODE SITE NAME:	2643	Mesa CPD
SAMPLE DATE TIME (Hrs):	10/15/1999	1450
PROJECT:	Sample 4 - 1st Quarter	
DATE OF BTEX EXT. ANAL.:	N/A	10/25/1999
TYPE DESCRIPTION:	MW-2	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 102 % for this sample All QA/QC was acceptable.
DF = Dilution Factor Used

Narrative:

Sample Analyzed by Pinnacle Laboratories, Albuquerque, NM.

Approved By:

John Sullivan

Date:

11/2/99



FIELD SERVICES LABORATORY
ANALYTICAL REPORT
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	N/A	990423
MTR CODE SITE NAME:	2643	Mesa CPD
SAMPLE DATE TIME (Hrs):	10/15/1999	1505
PROJECT:	Sample 4 - 1st Quarter	
DATE OF BTEX EXT. ANAL.:	N/A	10/25/1999
TYPE DESCRIPTION:	MW-3	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 100 % for this sample All QA/QC was acceptable.
DF = Dilution Factor Used

Narrative:

Sample Analyzed by Pinnacle Laboratories, Albuquerque, NM.

Approved By:

John Lueders

Date:

11/2/99

PHILIP

Chain of Custody Record

4000 Monroe Road
Farmington, NM 87401

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

COC Serial No. C 2393

Project Name		Type of Analysis and Bottle		Total Number of Bottles		Comments	
Sample Number (and depth)	Date	Time	Matrix				
MILES FEDERAL MW2	10/15/99	0955	AD	2	X		
MILES FEDERAL MW3		1025					
TRIP BLANK		1045					
HAMMOND MW2		1125					
HAMMOND MW3		1150					
HAMNER MW2		1250					
HAMNER MW3		1335					
MESACPO MW2		1450					
MESACPO MW3		1505					

Relinquished by:

Signature

Date

Time

Received By:

Signature

Date

Time

Samples Iced: ☒ Yes ☐ No

Preservatives (ONLY for Water Samples)

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

Carrier:

Shipping and Lab Notes:

Airbill No.

PINNACLE
LABORATORIES



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

Pinnacle Lab ID number **910073**
October 28, 1999

EL PASO FIELD SERVICES
770 WEST NAVAJO
FARMINGTON, NM 87401

Project Name PIT MONITOR WELLS
Project Number (none)

Attention: JOHN LAMBDIN

On 10/21/99 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-Lambdin 11/2/99*

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	: 910073
PROJECT #	: (none)	DATE RECEIVED	: 10/21/99
PROJECT NAME	: PIT MONITOR WELLS	REPORT DATE	: 10/28/99

PIN ID. #	CLIENT DESCRIPTION	MATRIX	DATE COLLECTED
01	990416	AQUEOUS	10/15/99
02	990417	AQUEOUS	10/15/99
03	990418	AQUEOUS	10/15/99
04	990419	AQUEOUS	10/15/99
05	990420	AQUEOUS	10/15/99
06	990421	AQUEOUS	10/15/99
07	990422	AQUEOUS	10/15/99
08	990423	AQUEOUS	10/15/99
09	TRIP BLANK	AQUEOUS	10/15/99
10	990424	AQUEOUS	10/19/99
11	990425	AQUEOUS	10/19/99



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.: 910073

SAMPLE		MATRIX	DATE	DATE	DATE	DIL.
ID. #	CLIENT I.D.		SAMPLED	EXTRACTED	ANALYZED	FACTOR
01	990416	AQUEOUS	10/15/99	NA	10/25/99	1
02	990417	AQUEOUS	10/15/99	NA	10/25/99	1
03	990418	AQUEOUS	10/15/99	NA	10/25/99	1
PARAMETER		DET. LIMIT	UNITS	990416	990417	990418
BENZENE		0.5	UG/L	< 0.5	< 0.5	< 0.5
TOLUENE		0.5	UG/L	2.1	0.9	< 0.5
ETHYLBENZENE		0.5	UG/L	5.5	< 0.5	< 0.5
TOTAL XYLENES		0.5	UG/L	2.8	3.1	< 0.5

SURROGATE:
BROMOFLUOROBENZENE (%)

102

96

94

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

TEST : EPA 8021 MODIFIED
CLIENT : EL PASO FIELD SERVICES
PROJECT # : (none)
PROJECT NAME : PIT MONITOR WELLS

PINNACLE I.D.: 910073

SAMPLE		MATRIX	DATE	DATE	DATE	DIL.
ID. #	CLIENT I.D.		SAMPLED	EXTRACTED	ANALYZED	FACTOR
04	990419	AQUEOUS	10/15/99	NA	10/25/99	1
05	990420	AQUEOUS	10/15/99	NA	10/25/99	1
06	990421	AQUEOUS	10/15/99	NA	10/25/99	1
PARAMETER		DET. LIMIT	UNITS	990419	990420	990421
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	< 0.5

SURROGATE:

BROMOFLUOROBENZENE (%)

103

104

101

SURROGATE LIMITS (80 - 120)

CHEMIST NOTES:

N/A

GAS CHROMATOGRAPHY RESULTS

TEST : EPA 8021 MODIFIED
CLIENT : EL PASO FIELD SERVICES
PROJECT # : (none)
PROJECT NAME : PIT MONITOR WELLS

PINNACLE I.D.: 910073

SAMPLE			DATE	DATE	DATE	DIL.
ID. #	CLIENT I.D.	MATRIX	SAMPLED	EXTRACTED	ANALYZED	FACTOR
07	990422	AQUEOUS	10/15/99	NA	10/25/99	1
08	990423	AQUEOUS	10/15/99	NA	10/25/99	1
09	TRIP BLANK	AQUEOUS	10/15/99	NA	10/25/99	1

PARAMETER	DET. LIMIT	UNITS	990422	990423	TRIP BLANK
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	< 0.5

SURROGATE:
BROMOFLUOROBENZENE (%) 102 100 97
SURROGATE LIMITS (80 - 120)

CHEMIST NOTES:
I/A



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.: 910073

SAMPLE		MATRIX	DATE	DATE	DATE	DIL.
ID. #	CLIENT I.D.		SAMPLED	EXTRACTED	ANALYZED	FACTOR
10	990424	AQUEOUS	10/19/99	NA	10/25/99	1
11	990425	AQUEOUS	10/19/99	NA	10/25/99	1

PARAMETER	DET. LIMIT	UNITS	990424	990425
BENZENE	0.5	UG/L	< 0.5	< 0.5
TOLUENE	0.5	UG/L	< 0.5	< 0.5
ETHYLBENZENE	0.5	UG/L	< 0.5	< 0.5
TOTAL XYLENES	0.5	UG/L	< 0.5	< 0.5

SURROGATE:
BROMOFLUOROBENZENE (%) 103 101
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 RESULTS
REAGENT BLANK

TEST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 910073
BLANK I. D.	: 102599	DATE EXTRACTED	: NA
CLIENT	: EL PASO FIELD SERVICES	DATE ANALYZED	: 10/25/99
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:
3R-FLUOROBENZENE (%) 102
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 # : 910073-03
CLIENT : EL PASO FIELD SERVICES
PROJECT # : (none)
PROJECT NAME : PIT MONITOR WELLS

PINNACLE I.D. : 910073
DATE EXTRACTED : NA
DATE ANALYZED : 10/25/99
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	19.7	99	19.8	99	1	(80 - 120)	20
TOLUENE	<0.5	20.0	20.7	104	20.3	102	2	(80 - 120)	20
ETHYLBENZENE	<0.5	20.0	21.0	105	20.8	104	1	(80 - 120)	20
TOTAL XYLENES	<0.5	60.0	64.7	108	64.0	107	1	(80 - 120)	20

CHEMIST NOTES:
N/A

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

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

CHAIN OF CUSTODY

AEN LAB I.D.

DATE 10-20-99 PAGE 1 OF 1

91673

REPORT: Attn. to: JOHN GAMBINO

COMPANY: EL PASO FIELD SERVICES
 ADDRESS: 770 WEST NAUARD
FARMINGTON NM 87401
 PHONE: (505) 599-2144
 FAX: (505) 599-2267
 BILL TO: SAMERAS ABOVE
 COMPANY: _____
 ADDRESS: _____

ANALYSIS REQUEST

	NUMBER OF CONTAINERS
RCRA Metals by TCLP (1311)	<u>2</u>
RCRA Metals by Total Digestion	<u>2</u>
Polynuclear Aromatics (610/8310)	
Volatile Organics GC/MS (624/8240/8260)	
Semi-Volatiles GC/MS (Tics/No Tics)	
Herbicides (615/8150/515)	
Pesticides/PCB (608/8080/505/508)	
Volatiles 502.2 (SDWA/UST)	
Aromatic Hydrocarbons (602/8020)	
Chlorinated Hydrocarbons (601/8010)	
<u>BTX/MTBE (8020/602)</u>	<u>X</u>
(BLS-191) Diesel	<u>X</u>
(M8015) Gas	
(MOD.8015) Fuel Fingerprint	
Petroleum Hydrocarbons (418.1)	

COMPOSITE OR GRAB

SAMPLE ID	DATE	TIME	MATRIX	LAB ID
<u>990424</u>	<u>10-19-99</u>	<u>1552</u>	<u>WATER</u>	<u>-10</u>
<u>990425</u>	<u>10-19-99</u>	<u>1600</u>	<u>WATER</u>	<u>-11</u>

PROJECT INFORMATION

PROJ. NO.: _____
 PROJ. NAME: PIT MONITOR WELLS
 P.O. NO.: _____
 SHIPPED VIA: FED-EX

SAMPLE RECEIPT

☐ UST (72 hr. est.)
☐ NPDES
☐ SDWA
☐ RCRA
☐ OTHER

NO. CONTAINERS 4
 CUSTODY SEALS YN/NA
 RECEIVED INTACT Y/NA
 RECEIVED ICE Y/NA

PRIOR AUTHORIZATION IS REQUIRED FOR RUSH PROJECTS

(RUSH) ☐ 24hr ☐ 48hr ☐ 72hr ☐ 1 WEEK ☒ 2 WEEKS (NORMAL)

Comments:

3.6

SAMPLED & RELINQUISHED BY:

1.	2.	3.
Signature: <u>DENNIS BIRD</u>	Signature: _____	Signature: _____
Printed Name: <u>DENNIS BIRD</u>	Printed Name: _____	Printed Name: _____
Date: <u>10-20-99</u>	Date: _____	Date: _____
Phone: <u>505 599-2144</u>	Company: _____	Company: _____

RECEIVED BY:

1.	2.	3.
Signature: _____	Signature: _____	Signature: _____
Printed Name: _____	Printed Name: _____	Printed Name: _____
Date: _____	Date: _____	Date: <u>10/21/99</u>
Company: _____	Company: _____	Company: <u>American Environmental Network</u>

ATTACHMENT 2
MONITOR WELL INSTALLATION

RECORD OF SUBSURFACE EXPLORATION

Philip Environmental Services Corp.

4000 Monroe Road

Fortington, New Mexico 87401

Phone (505) 328-2282 FAX (505) 328-2388

Borehole #

Well #

Page

1 of 1

Project Name

Project Number

Project Location

EPFS GW

62800018 Phase

MBCACAD

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

P10

Elevation

Borehole Location

GWL Depth

Logged By

Drilled By

Date/Time Started

Date/Time Completed

NOT ENCOUNTERED

C. CULLICOTT

K. PADILLA & D. PADILLA

9/9/99 3pm

9/9/99 3:45

METER 02643

Depth (Feet)	Sample Interval	Sample Type & Recovery (Inches)	Sample Description Classification System: USCS	USCS Symbol	Depth Lithology Change (feet)	Air Monitoring Units: NDU BZ BH S			Drilling Conditions & Blow Counts
0			SURFACE: SAND GRAVEL @ 1'						
5	① 5-6'		BELOW - BROWN/SILTY SAND W/ GRAVEL ① POORLY SORTED SAND WITH GRAVEL UP TO A FEW INCHES DIAMETER. NO STAIN OR ODOR MORE GRAVELS, DAMP, & SLIGHT ODOR 5-10' ② 7' START GETTING SILTSTONE CUTTINGS ③ 10' SPLIT SPOON REFUSAL. WELL SEEMS TO BE DRY. NOT GETTING A WELL-MOVING CLOSER TO METER HOUSE. HOLE BACKFILLED W/ CUTTINGS						① 43 BLOWS
10									
15									
20									
25									
30									
35									
40									

Comments:

PARTLY CLOUDY, HOT

GW IN MW 7 ~ 5'

Geologist Signature

Cathy Cullcott

RECORD OF SUBSURFACE EXPLORATION

Philip Environmental Services Corp.

4000 Monroe Road

Farmington, New Mexico 87401

Phone (505) 328-2262 FAX (505) 328-2388

Borehole #

Well #

Page

2

mur2

1 of 1

Project Name

Project Number

Project Location

EPRSGW

62800018

Phase

MESA CDD

Well Logged By

Personnel On-Site

Contractors On-Site

Client Personnel On-Site

C. CULLICOTT

R. PADILLA D. PADILLA

Drilling Method

Air Monitoring Method

AUGER

Elevation

Borehole Location

GWL Depth

Logged By

Drilled By

Date/Time Started

Date/Time Completed

C. CULLICOTT

R. PADILLA D. PADILLA

9/9/99 3:50pm

9/9/99 4:20pm

meter 02843

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			SURFACE SAND. ESS GRAVEL @ ~1'-2' Then sandier to 3' Gravel to 5'						① 40 BLOWS
5	① 5-1/2		① POORLY SORTED SAND w/ GRAVEL UP TO 2". PERVASIVE BLACK STAIN FOR ~2". ~6" RECOVERY						② 40 BLOWS
10	② 10-1/2		② ~6" RECOVERY. WELL CONSOLIDATED SAND / silt clay / small GRAVEL. ^{EXTREME} BOTTOM OF SPLIT SPOON IS BLuish GRAY SILTSTONE.						
15									
20									
25			AGAIN, NO SIGN OF WATER. WILL DRILL ONE MORE HOLE.						
30									
35									
40									

Comments:

HOLE ~~LEFT OPEN~~ BACKFILLED w/ CUTTINGS

Geologist Signature

Cathy Cullicott

RECORD OF SUBSURFACE EXPLORATION

Philip Environmental Services Corp.

4000 Monroe Road

Farmington, New Mexico 87401

Phone (505) 228-2282 FAX (505) 328-2388

Borehole #

15

Well #

Page

21 of 22

Project Name

EPPS GW

Project Number

02900018

Phase

Project Location

MESA CPO

Elevation

Borehole Location

GWL Depth

Logged By

C. CULLICOTT

Drilled By

R. PADILLA & D. PADILLA

Date/Time Started

9/9/99 4:20 PM

Date/Time Completed

9/9/99

Well Logged By

C. CULLICOTT

Personnel On-Site

R. PADILLA & D. PADILLA

Contractors On-Site

Client Personnel On-Site

Drilling Method

AUGER

Air Monitoring Method

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			NOT AS MUCH GRAVEL IN UPPER PART OF HOLE						
5	① 5-6 1/2		① SPLIT SPOON REFUSAL @ 6' ON TAN SILTSTONE w/ ORGANIC MATERIAL ON SHALY PARTINGS.						① 50T BLOWS
10	② 10-11 1/2		② 3 1/4" RECOVERY BLUE GRAY SILTSTONE						② 50T BLOWS
15			BETWEEN 5 & 10' PASSED THROUGH A ~ 3' SATURATED ZONE.						
20									
25									
30									
35									
40									

Comments:

WELL DRY AFTER INSTALLATION

Geologist Signature

Cathy Cullicott

MONITORING WELL INSTALLATION RECORD

Philip Environmental Services Corp.

4000 ... Road

... New Mexico 87401

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

Borehole # 3
Well # MW 2
Page 2 of 2

Project Name EPFS GW

Project Number 02800044 Phase 1

Project Location MESACPD

On-Site Geologist C. CULLICOTT

Personnel On-Site K. PADILLA, P. PADILLA

Contractors On-Site B

Client Personnel On-Site B

Elevation _____

Well Location _____

GWL Depth _____

Installed By K. PADILLA

D. PADILLA

Date/Time Started 9/9/99 4:20pm

Date/Time Completed 9/9/99

METER 02643

Depths in Reference to Ground Surface				
Item	Material	Depth		
Top of Protective Casing			Top of Protective Casing _____	
Bottom of Protective Casing			Top of Riser _____	
Top of Permanent Borehole Casing			Ground Surface _____	
Bottom of Permanent Borehole Casing				
Top of Concrete				
Bottom of Concrete				
Top of Grout				
Bottom of Grout				
Top of Well Riser	2'	+2		
Bottom of Well Riser	2'	5'		
Top of Well Screen	2'	5'		
Bottom of Well Screen	2'	10'		
Top of Peltonite Seal	BENT	2'	Top of Seal <u>2'</u>	
Bottom of Peltonite Seal	CHIPS	3'		
Top of Gravel Pack	CO	3'	Top of Gravel Pack <u>3'</u>	
Bottom of Gravel Pack	SAND	10'	Top of Screen <u>5'</u>	
Top of Natural Cave-In				
Bottom of Natural Cave-In				
Top of Groundwater				
Total Depth of Borehole		10'	Bottom of Screen <u>10'</u> Bottom of Borehole <u>10'</u>	

Comments: WELL DRY AFTER INSTALLATION

Geologist Signature _____

RECORD OF SUBSURFACE EXPLORATION

Philip Environmental Services Corp.

4000 Monroe Road

Elmington, New Mexico 87401

26-2282 FAX (505) 326-2388

Borehole #

Well #

Page

1

MW3

1 of 2

Project Name

Project Number

Project Location

EPFS GROUNDWATER

628000

Phase

MESACPO

Well Logged By

Personnel On-Site

Contractors On-Site

Client Personnel On-Site

C. CULLICOTT

F. PAQUILLANO. PAQUILLANO

0

0

Drilling Method

Air Monitoring Method

AUGER

PID

Elevation

Borehole Location

GWL Depth

Logged By

Drilled By

Date/Time Started

Date/Time Completed

C. CULLICOTT

F. PAQUILLANO. PAQUILLANO

9/25/99 11:45am

9/25/99 1:15pm

METER 02643

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			0-2 1/2' : LOOSE, DRY FINE SAND W/ SOME COARSE SAND. ORANGE-ISH TAN.						
5	① 5-6'		2 1/2' HIT GRAVEL LAYER THROUGH 3 1/2'						① 30 BLOWS SS 0.0 ppm
10	② 10-11 1/2'		① 10" RECOVERY WET GRAVELLY SAND WITH SOME CLAY/SILT. GRAVEL UP TO 7" DIAMETER. CLEAN.						② 40+ BLOWS SS 0.0 ppm
15			SANDY GRAVEL TO 7 1/2' THEN SORTER DRILLING						
20			② 6" RECOVERY - SPLIT SPOON REFUSAL BROWN SILTSTONE, 6" BOTTOM OF SPLIT SPOON BLUEISH GRAY SILTSTONE. BROWN IS FRIABLE, WEATHERED BLUE, STIFF, FRESH						
25									
30			TO 11' REFUSAL ON						
35									
40									

Comments:

SUNNY, BREEZY, WARM

HIT WATER ~ 5' WHEN DRILLING, BUT NO WATER WHEN MEASURED

Geologist Signature

Cathy Cullcott

MONITORING WELL INSTALLATION RECORD

Slip Environmental Services Corp.
 00 _____ Road
 rming _____ New Mexico 87401
 361 326-2262 FAX (506) 326-2388

Borehole # 1
 Well # MW3
 Page 2 of 2

Project Name EPFS WELL INSTALLATION

Project Number 028000 Phase _____
 Project Location MESACPD

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

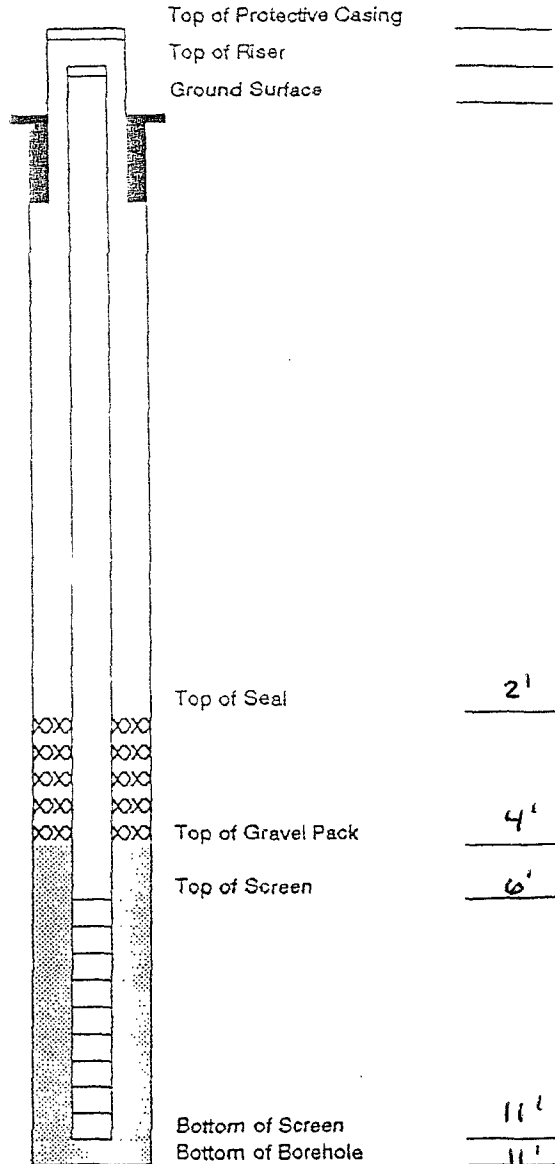
levation _____
 Well Location _____
 Well Depth _____
 Installed By EPADILLA & O. PADILLA

Date/Time Started 9/25/99 11:45am
 Date/Time Completed 9/25/99 1:15pm

meter 02643

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"	+2
Bottom of Well Riser	2"	6'
Top of Well Screen	2"	6'
Bottom of Well Screen	2"	11'
Top of Peltonite Seal	BENT	2'
Bottom of Peltonite Seal	CHIPS	4'
Top of Gravel Pack	CO	4'
Bottom of Gravel Pack	SAND	11'
Top of Natural Cave-In		
Bottom of Natural Cave-In		
Top of Groundwater		
Total Depth of Borehole		11'



Comments: 5' SCREEN. NO WATER WHEN MEASURED @ 1:20
HIT WATER @ 5' WHEN DRILLING

MW1 - MW3 39'
 MW2 - MW3 10'

Geologist Signature

Catherine Cullcott