

3R - 231

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 dark ink, appearing to read '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

SAN JUAN BASIN PIT CLOSURES
San Juan Basin, New Mexico

El Paso Field Services Pit Project Groundwater Report
Annual Report

March 2000

RECEIVED

MAR 29 2000

ENVIRONMENTAL BUREAU
OIL CONSERVATION DIVISION

Prepared For

El Paso Field Services
Farmington, New Mexico

Project 62800158



EPFS GROUNDWATER PITS 1999 ANNUAL GROUNDWATER REPORT

**RAMENTA ET AL #1
Meter/Line ID - 75155**

SITE DETAILS

Legals - Twn: 27N Rng: 9W Sec: 13 Unit: J
NMOCD Hazard Ranking: 30 Land Type: NAVAJO
Operator: BURLINGTON RESOURCES

PREVIOUS ACTIVITIES

Site Assessment: Jun-96 Excavation: Oct-96 (432 cy) Geoprobe: Feb-97
Soil Boring: May-97 Monitor Well: May-97 Quarterly Sampling Initiated: June-97
Additional Monitor Wells: Jun-99

1999 ACTIVITIES

Quarterly Groundwater Monitoring - Quarterly groundwater monitoring continued through 1999.

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 and EPA correspondence dated October 26, 1998.

SUMMARY TABLES

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

SITE MAP

A site map with the groundwater gradient is presented as Figure 1.

GEOLOGIC LOGS AND WELL COMPLETION DIAGRAMS

The June 1, 1999, geologic logs and well completion diagrams are presented as Attachment 2.

DISPOSITION OF GENERATED WASTES

There were no wastes generated at this site in 1999.

ISOCONCENTRATION MAPS

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

CONCLUSIONS

Analytical results of groundwater samples collected from MW-1 show levels of benzene below NMWQCC Standards three out of the four quarters sampled and total xylenes concentrations decreasing by 70 percent during 1999. The most recent sampling event shows that all BTEX constituents are below NMGS. Recently installed monitor wells MW-2 and MW-3 are below detection limits for all BTEX constituents. Groundwater gradient is to the northeast at this site (Figure 1). Based on the decreasing hydrocarbon constituents at this site and with the downgradient monitor well below standards, natural attenuation is occurring at this site.

EPFS GROUNDWATER PITS

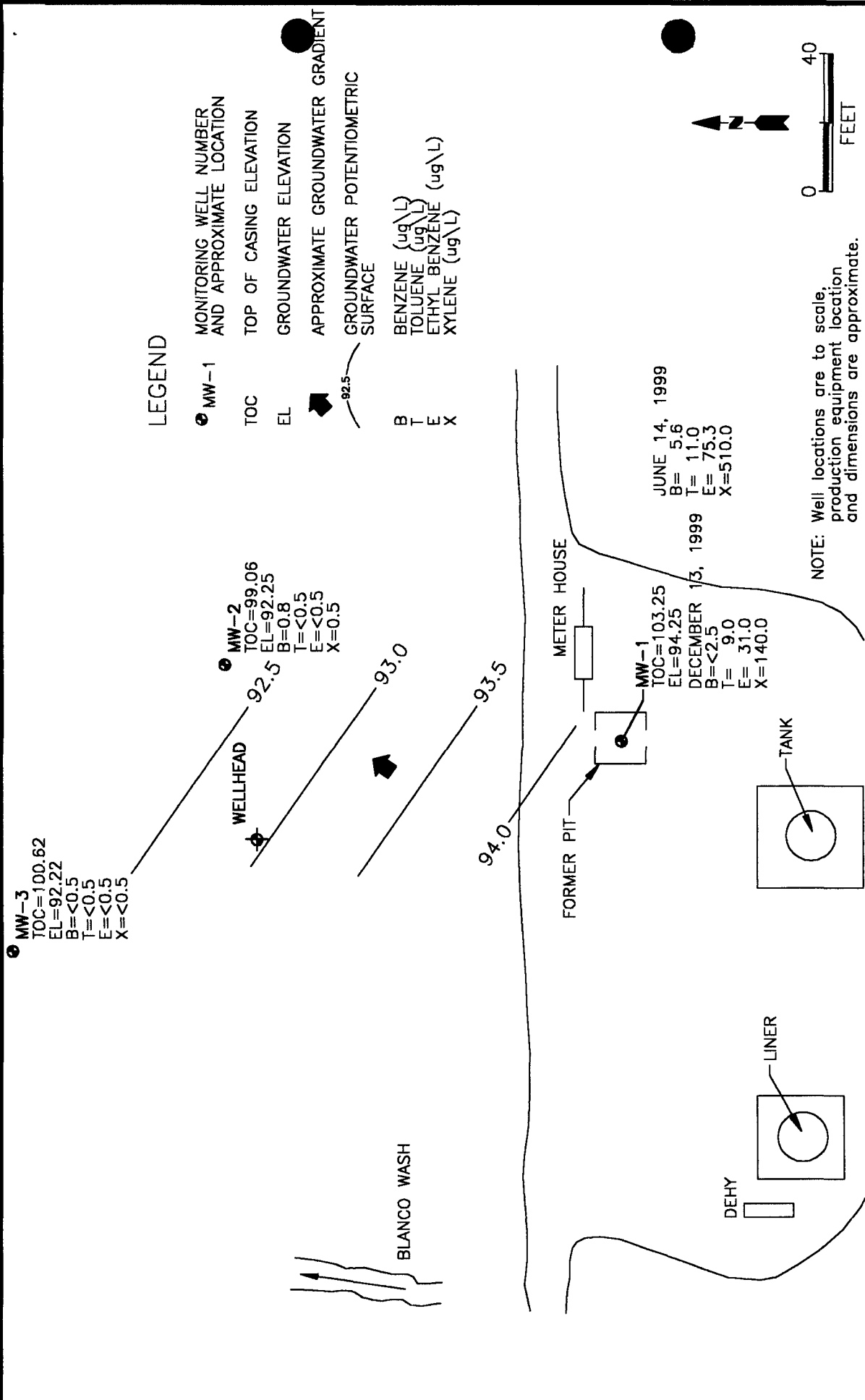
1999 ANNUAL GROUNDWATER REPORT

Pertinent data from past groundwater reports include the following: Based on groundwater levels collected from Geoprobe data, the groundwater flow trends to the northwest on this site. Benzene concentrations have dropped below standards since quarterly sampling was initiated.

Since this site is on Navajo land, EPFS assumes the Navajo Environmental Protection Agency has jurisdiction of this site and will either approve or deny closure.

RECOMMENDATIONS

- Quarterly sampling will continue at MW-1 until analytical results show hydrocarbon constituents are below NMWQCC Standards and Federal MCL's for four consecutive quarters.
- Monitor wells MW-2 and MW-3 will be sampled annually until the site is approved for closure.
- EPFS will continue to work with the operator of this site.
- Following OCD approval for closure, MW-1, MW-2, and MW-3 will be abandoned using OCD approved abandonment procedures.



	TITLE: REMENTA ET AL #1 METER 75155 DECEMBER 13, 1999			PROJECT NO.: 20990 EPFS GW PITS		FIGURE 1
	DWN: CJC	DES.: CI				
	CHKD: CI	APPD:				
	DATE: 03/01/00	REV.: 0				

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
990088	75155	Ramenta ET AL #1	03/16/99	1	Sample 4 - 8th Quarter	< 1.0	= 9.82	= 89.2	= 635	= 734
990282	75155	Ramenta ET AL #1	06/14/99	1	Sample 4 - 9th Quarter	= 5.6	= 11.00	= 75	= 510	= 602
990385	75155	Ramenta ET AL #1	09/20/99	1	Sample 4 - 10th Quarter	= 66.0	< 10.00	= 74	= 400	= 540
990474	75155	Ramenta ET AL #1	12/13/99	1	Sample 4 - 11th Quarter	< 2.5	= 9.00	= 31	= 190	= 233
990271	75155	Ramenta ET AL #1	06/08/99	2	Sample 4 - 1st Annual	< 0.5	< 0.5	< 0.5	< 0.5	< 2
990272	75155	Ramenta ET AL #1	06/08/99	3	Sample 4 - 1st Annual	= 0.8	< 0.50	< 0.5	= 0.5	= 1

ATTACHMENT 1
1999 GROUNDWATER ANALYTICAL



LABORATORY SERVICES
770 West Navajo
FARMINGTON, NEW MEXICO 87401

April 5, 1999

Ms. Charmaine Tso
NAVAJO EPA
P.O. Box 1979
Shiprock, NM 87420

Subject: 1st Quarter 1999 Analytical Reports

Dear Ms. Tso

Attached are the quarterly analytical results for the three El Paso Field Services monitor wells located on Navajo Lands. All samples were collected on March 16, 1999. These samples represent the 8th consecutive sampling event on Ramenta ET AL #1 and Jennapah #1 and the 3rd consecutive quarter for GCU #124E.

GCU #124E has developed free product and a passive skimmer will be installed during this next quarter. The skimmer will be monitored weekly for six months. During this time we will track product recovered and discontinue sampling/analysis for BTEX.

Should you have any questions or comments, please feel free to contact me at (505) 599-2144.

Sincerely

El Paso Field Services Company

A handwritten signature in cursive script that reads 'John Lambdin'.

John Lambdin
Principal Chemist

Attachments

cc: Sandra Miller, EH&S Manager - W/O Attachments
Cecil Irby, Philips Service Company - W Attachments



FIELD SERVICES LABORATORY
ANALYTICAL REPORT
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	N/A	990088
MTR CODE SITE NAME:	75155	Ramenta ET AL #1
SAMPLE DATE TIME (Hrs):	3/16/99	1105
PROJECT:	Sample 4 8th Quarter	
DATE OF BTEX EXT. ANAL:	NA	3/22/99
TYPE DESCRIPTION:	MW-1	Water

Field Remarks:

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	<1.0	PPB				
TOLUENE	9.82	PPB				
ETHYL BENZENE	89.2	PPB				
TOTAL XYLENES	635	PPB				
TOTAL BTEX	734	PPB				

—BTEX is by EPA Method 8020 —

The Surrogate Recovery was at 108.9 % for this sample All QA/QC was acceptable.
DF = Dilution Factor Used

Narrative:

Approved By:

John Ladden

Date:

4/5/99

CHAIN OF CUSTODY RECORD

[illegible]

Well Development and Purging Data

Site Name RAMENITA ET AL #1

Development Criteria

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

Methods of Development

- | | | | |
|--------------------------|-------------|-------------------------------------|--------------------------|
| ☐ | Pump | | Bailer |
| ☐ | Centrifugal | ☒ | Bottom Valve |
| ☐ | Submersible | ☐ | Double Check Valve |
| ☐ | Peristaltic | ☐ | Stainless-steel Kemmerer |

☐ Other _____

- | | |
|-------------------------------------|-------------|
| ☐ | Development |
| ☒ | Purging |

Well Number 11W-1
Meter Code 75155

Water Volume Calculation

Initial Depth of Well (feet) 20.00
Initial Depth to Water (feet) 8.11
Height of Water Column in Well (feet) 12.09
Diameter (inches): Well 4 Gravel Pack

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing		8.0	24.0
Gravel Pack			
Drilling Fluids			
Total			

Instruments

- | | |
|-------------------------------------|--------------------|
| ☒ | pH Meter |
| ☐ | DO Monitor |
| ☒ | Conductivity Meter |
| ☒ | Temperature Meter |
| ☒ | Other <u>D.O.C</u> |

Water Disposal

KUTZ SEPARATOR

Water Removal Data

[illegible]

Comments THE WATER HAD A LIGHT HYDROGEN SULFIDE SMELL.

Developer's Signature Emilio Bied

Date 3-16-99 Reviewer _____

John F. Kennedy

Date 4/5/99



FIELD SERVICES LABORATORY
ANALYTICAL REPORT
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	PC-006	990271
MTR CODE SITE NAME:	75155	Ramenta et al #1
SAMPLE DATE TIME (Hrs):	6/8/99	1202
PROJECT:	Monitor Well Inatallation	
DATE OF BTEX EXT. ANAL.:	NA	6/14/99
TYPE DESCRIPTION:	MW-2	Water

Field Remarks:

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	<0.5	PPB	1			
TOLUENE	<0.5	PPB	1			
ETHYL BENZENE	<0.5	PPB	1			
TOTAL XYLENES	<0.5	PPB	1			
TOTAL BTEX	<2.0	PPB				

—BTEX is by EPA Method 8021 Modified —

The Surrogate Recovery was at 88 % for this sample All QA/QC was acceptable.
DF = Dilution Factor Used

Narrative:

This sample was analyzed by Pinnacle Laboratories, Albuquerque, NM.

Approved By:

John Lardi

Date:

6/21/99



FIELD SERVICES LABORATORY
ANALYTICAL REPORT
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	PC-007	990272
MTR CODE SITE NAME:	75155	Ramenta et al #1
SAMPLE DATE TIME (Hrs):	6/8/99	1300
PROJECT:	Monitor Well Inatallation	
DATE OF BTEX EXT. ANAL.:	NA	6/14/99
TYPE DESCRIPTION:	MW-3	Water

Field Remarks: _____

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	0.8	PPB	1			
TOLUENE	<0.5	PPB	1			
ETHYL BENZENE	<0.5	PPB	1			
TOTAL XYLENES	0.5	PPB	1			
TOTAL BTEX	1.3	PPB				

—BTEX is by EPA Method 8021 Modified —

The Surrogate Recovery was at 97 % for this sample All QA/QC was acceptable.
DF = Dilution Factor Used

Narrative:

This sample was analyzed by Pinnacle Laboratories, Albuquerque, NM.

Approved By: _____

Date: _____

Chain of Custody Record

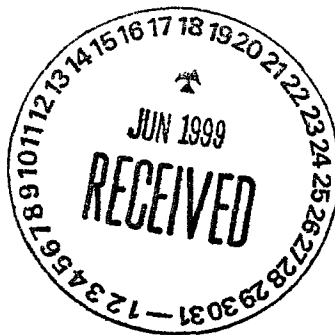
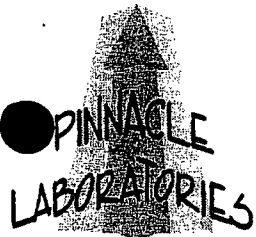
(505) 326-2262 Phone
(505) 326-2388 FAX

COC Serial No. C 2470

MC# 931
93174
75155
75155
70804
70804
70804

Received By:

Samples Iced: ☒ Yes ☐ No		Carrier:	Airbill No.
Preservatives (ONLY for Water Samples)		Shipping and Lab Notes:	
☐ Cyanide	Sodium hydroxide (NaOH)	TEMP 40°F In Tact	
☐ Volatile Organic Analysis	Hydrochloric acid (HCl)		
☐ Metals	Nitric acid (HNO ₃)		
☐ TPH (418.1)	Sulfuric acid (H ₂ SO ₄)		
☐ Other (Specify)			
☒ Other (Specify)			



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

Pinnacle Lab ID number .906049
June 16, 1999

EL PASO FIELD SERVICES
770 WEST NAVAJO
FARMINGTON, NM 87401

Project Name TEMPORARY WELLS
Project Number 24324

Attention: JOHN LAMBDIN

On 6/11/99 Pinnacle Laboratories, Inc. Inc., (ADHS License No. AZ0592), 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: mt

Enclosure

H. Mitchell Rubenstein, Ph. D.
General Manager

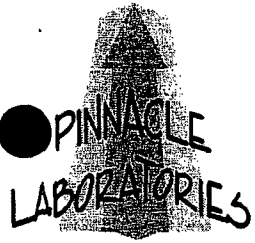
*Reviewed & Accepted
J. Sauri 6/21/99*



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	: 906049
PROJECT #	: 24324	DATE RECEIVED	: 6/11/99
PROJECT NAME	: TEMPORARY WELLS	REPORT DATE	: 6/16/99

IN			DATE
J. #	CLIENT DESCRIPTION	MATRIX	COLLECTED
1	990269 mc# 93126, John Charles #8 MW-2	AQUEOUS	6/8/99
2	990270 " " " " " MW-3	AQUEOUS	6/8/99
3	990271 mc# 75155, Remate et al #1, MW-2	AQUEOUS	6/8/99
4	990272 " " " " " MW-3	AQUEOUS	6/8/99
5	990273 mc# 70804, Charley DAN #2, MW-1	AQUEOUS	6/8/99
6	990274 " " " " " MW-2	AQUEOUS	6/8/99
7	990275 " " " " " MW-3	AQUEOUS	6/8/99
8	990276 TRIP BLANK	AQUEOUS	6/8/99
9	990277 TRIP BLANK	AQUEOUS	6/8/99



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 # : 24324
PROJECT NAME : TEMPORARY WELLS

PINNACLE I.D.: 906049

SAMPLE		MATRIX	DATE	DATE	DATE	DIL.
D. #	CLIENT I.D.		SAMPLED	EXTRACTED	ANALYZED	FACTOR
1	990269	AQUEOUS	6/8/99	NA	6/14/99	1
2	990270	AQUEOUS	6/8/99	NA	6/14/99	1
3	990271	AQUEOUS	6/8/99	NA	6/14/99	1
PARAMETER		DET. LIMIT	UNITS	990269	990270	990271
BENZENE		0.5	UG/L	< 0.5	< 0.5	< 0.5
TOLUENE		0.5	UG/L	0.9	< 0.5	< 0.5
ETHYL BENZENE		0.5	UG/L	< 0.5	< 0.5	< 0.5
OIL XYLENES		0.5	UG/L	2.0	< 0.5	< 0.5

SURROGATE:
BROMOFLUOROBENZENE (%) 105 89 88
SURROGATE LIMITS (80 - 120)

CHEMIST NOTES:
N/A



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Albuquerque, New Mexico 87107
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GAS CHROMATOGRAPHY RESULTS

TEST : EPA 8021 MODIFIED
CLIENT : EL PASO FIELD SERVICES
PROJECT # : 24324
PROJECT NAME : TEMPORARY WELLS

PINNACLE I.D.: 906049

SAMPLE			DATE	DATE	DATE	DIL.
ID. #	CLIENT I.D.	MATRIX	SAMPLED	EXTRACTED	ANALYZED	FACTOR
04	990272	AQUEOUS	6/8/99	NA	6/14/99	1
05	990273	AQUEOUS	6/8/99	NA	6/14/99	1
06	990274	AQUEOUS	6/8/99	NA	6/14/99	1
PARAMETER		DET. LIMIT	UNITS	990272	990273	990274
BENZENE		0.5	UG/L	0.8	0.6	< 0.5
TOLUENE		0.5	UG/L	< 0.5	9.6	< 0.5
ETHYLBENZENE		0.5	UG/L	< 0.5	< 0.5	< 0.5
TOTAL XYLENES		0.5	UG/L	0.5	23	< 0.5

SURROGATE:
BROMOFLUOROBENZENE (%) 97 83 93
SURROGATE LIMITS (80 - 120)

CHEMIST NOTES:
N/A



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Albuquerque, New Mexico 87107
Phone (505) 344-3777
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GAS CHROMATOGRAPHY RESULTS

TEST : EPA 8021 MODIFIED
CLIENT : EL PASO FIELD SERVICES
PROJECT # : 24324
PROJECT NAME : TEMPORARY WELLS

PINNACLE I.D.: 906049

SAMPLE			DATE	DATE	DATE	DIL.
D. #	CLIENT I.D.	MATRIX	SAMPLED	EXTRACTED	ANALYZED	FACTOR
7	990275	AQUEOUS	6/8/99	NA	6/14/99	1
8	990276 TRIP BLANK	AQUEOUS	6/8/99	NA	6/14/99	1
9	990277 TRIP BLANK	AQUEOUS	6/8/99	NA	6/14/99	1

PARAMETER	DET. LIMIT	UNITS	990275	990276 TRIP BLANK	990277 TRIP BLANK
BENZENE	0.5	UG/L	< 0.5	< 0.5	< 0.5
TOLUENE	0.5	UG/L	< 0.5	< 0.5	< 0.5
ETHYL BENZENE	0.5	UG/L	< 0.5	< 0.5	< 0.5
TOXIC XYLENES	0.5	UG/L	< 0.5	< 0.5	< 0.5

SURROGATE:
BROMOFLUOROBENZENE (%) 97 99 105
SURROGATE LIMITS (80 - 120)

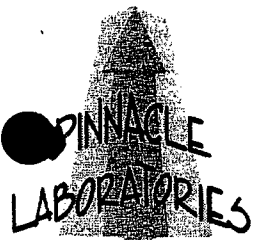
CHEMIST NOTES:
N/A



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.	: 906049
BLANK I. D.	: 061499	DATE EXTRACTED	: N/A
CLIENT	: EL PASO FIELD SERVICES	DATE ANALYZED	: 6/14/99
PROJECT #	: 24324	SAMPLE MATRIX	: AQUEOUS
PROJECT NAME	: TEMPORARY 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 (%)		89	
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 # : 906049-02
CLIENT : EL PASO FIELD SERVICES
PROJECT # : 24324
PROJECT NAME : TEMPORARY WELLS

PINNACLE I.D. : 906049
DATE EXTRACTED : N/A
DATE ANALYZED : 6/14/99
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	20.9	105	21.3	107	2	(80 - 120)	20
TOLUENE	<0.5	20.0	20.5	103	21.6	108	5	(80 - 120)	20
ETHYLBENZENE	<0.5	20.0	20.4	102	21.7	109	6	(80 - 120)	20
TOTAL XYLENES	<0.5	60.0	59.1	99	62.7	105	6	(80 - 120)	20

CHEMIST NOTES:
N/A

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

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

American Environmental Network (NM), Inc.

CHAIN OF CUSTODY

DATE: 6/10/99 PAGE: 1 OF 1

AEIN(NM) Accession #

9010049

SHADED AREAS ARE FOR LAB USE ONLY.

PLEASE FILL THIS FORM IN COMPLETELY.

PROJECT MANAGER: John Lambdin				COMPANY: EI Paso Field Services ADDRESS: 770 West N. 14th St Farmington NM 87401 PHONE: (505) 599-2144 FAX: (505) 599-2261 BILL TO: (Same as above) COMPANY: ADDRESS:														
SAMPLE ID	DATE	TIME	MATRIX	LAB ID	ANALYSIS REQUEST										NUMBER OF CONTAINERS			
990269	6/8/99	1630	Water	01	Petroleum Hydrocarbons (418.1) TRPH													2
990270		1105		02	(MOD.8015) Diesel/Direct Inject													2
990271		1202		03	(M8015) Gas/Purge & Trap													2
990272		1300		04	8021 (BTEX)/8015 (Gasoline)													2
990273		1335		05	8021 (BTEX) 20 MTBS/20 MTBS (TCLP)													2
990274		1416		06	8021 (TCL)													2
990275		1446		07	8021 (EDX)													2
990276 (Tr. Blk)		1441		08	8021 (HALO)													2
990277 (Tr. Blk)	6/8/99	1442	Water	09	8021 (CUST)													1
					504.1 EDB ☐ / DBCP ☐													1
					8260 (TCL) Volatile Organics													
					8260 (Full) Volatile Organics													
					8260 (CUST) Volatile Organics													
					8260 (Landfill) Volatile Organics													
					Pesticides /PCB (608/8081)													
					Herbicides (615/8151)													
					Base/Neutral/Acid Compounds GC/MS (625/8270)													
					Polynuclear Aromatics (610/8310)													
					General Chemistry:													
					Priority Pollutant Metals (13)													
					Target Analyte List Metals (23)													
					RCRA Metals (8)													
					RCRA Metals by TCLP (Method 1311)													
					Metals:													
PROJECT INFORMATION: PROJ NO: AT 24324 PROJ NAME: Temporary Wells PO NO: NA SHIPPED VIA: Fed-X SAMPLE RECEIPT: 16 NO. CONTAINERS: 16 CUSTODY SEALS: Y/N/NA RECEIVED INTACT: 16 BUILDING: 3C				PRIOR AUTHORIZATION IS REQUIRED FOR RUSH PROJECTS: (RUSH) ☐ 24hr ☐ 48hr ☐ 72hr ☐ 1 WEEK (NORMAL) ☒				RELINQUISHED BY: Signature: [Signature] Time: 1500 Printed Name: John Lambdin Date: 6/9/99 Company: EI Paso Field Services				RELINQUISHED BY: Signature: [Signature] Time: 2 Printed Name: [Signature] Date: 6/10/99 Company: American Environmental Network (NM), Inc.						



FIELD SERVICES LABORATORY
ANALYTICAL REPORT
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	NA	990282
MTR CODE SITE NAME:	75155	Ramenta et al #1
SAMPLE DATE TIME (Hrs):	6/14/99	1033
PROJECT:	Sample 4 - 9th Quarter	
DATE OF BTEX EXT. ANAL.:	NA	6/21/99
TYPE DESCRIPTION:	MW-1	Water

Field Remarks:

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	5.6	PPB	2	D		
TOLUENE	11	PPB	2	D		
ETHYL BENZENE	75	PPB	2	D		
TOTAL XYLENES	510	PPB	2	D		
TOTAL BTEX	602	PPB				

--BTEX is by EPA Method 8021 Modified --

The Surrogate Recovery was at 104 % for this sample All QA/QC was acceptable.

DF = Dilution Factor Used

The "D" qualifier indicates that the analyte calculated is based on a secondary dilution factor.

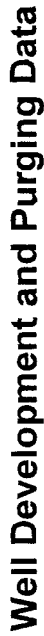
Narrative:

This sample was analyzed by Pinnacle Laboratories, Albuquerque, NM.

Approved By:

Date:

6/24/99



Development	☐
Purging	☒

Well Number MW-1

Meter Code 75155

Development Criteria

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

Methods of Development

- | | | | |
|--------------------------|-------------|-------------------------------------|--------------------------|
| ☐ | Pump | ☐ | Bailer |
| ☐ | Centrifugal | ☒ | Bottom Valve |
| ☐ | Submersible | ☐ | Double Check Valve |
| ☐ | Peristaltic | ☐ | Stainless-steel Kemmerer |

Water Volume Calculation

Initial Depth of Well (feet) 20.90
Initial Depth to Water (feet) 8.25
Height of Water Column in Well (feet) 12.95

Diameter (inches): Well 4 Gravel Pack _____

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing		7.9	23.7
Gravel Pack			
Drilling Fluids			
Total			

Instruments

- | | |
|-------------------------------------|-------------------------|
| ☒ | pH Meter |
| ☐ | DO Monitor |
| ☒ | Conductivity Meter |
| ☒ | Temperature Meter |
| ☒ | Other <i>D.O. Gauge</i> |

Water Disposal

Water Disposal
KUT2 SEP08A70P

Water Removal Data

[illegible]

Comments THE WATER HAD A LIGHT HYDROGEN SULFIDE SMELL.

Developer's Signature *Dennis Bred*

Date 6-14-99

✓

Date 6/24/99

PINNACLE
LABORATORIES



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

Pinnacle Lab ID number **906067**
June 22, 1999

EL PASO FIELD SERVICES
770 WEST NAVAJO
FARMINGTON, NM 87401

Project Name PIT MONITOR WELLS
Project Number (none)

Attention: JOHN LAMBDIN

On 6/18/99 Pinnacle Laboratories, Inc. Inc., (ADHS License No. AZ0592), 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.

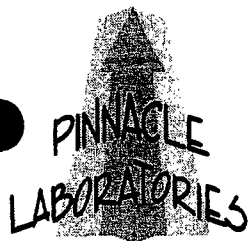
Kimberly D. McNeill
Project Manager

MR: mt

Enclosure

H. Mitchell Rubenstein, Ph. D.
General Manager

Reviewed & Accepted
J. Sander
6/24/99



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	: 906067
PROJECT #	: (none)	DATE RECEIVED	: 6/18/99
PROJECT NAME	: PIT MONITOR WELLS	REPORT DATE	: 6/22/99

PIN ID. #	CLIENT DESCRIPTION	MATRIX	DATE COLLECTED
01	990282 - MC# 75155, Ramente et al #1 -mw-1	AQUEOUS	6/14/99
02	990283 - MC# 71816, Jannopah #1, mw-1	AQUEOUS	6/14/99
03	990284 - MC# 4087, Lat K-31 Line Dip	AQUEOUS	6/14/99
04	990285 (TRIP BLANK) mw-1	AQUEOUS	6/14/99



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.: 906067

SAMPLE			DATE	DATE	DATE	DIL.
ID. #	CLIENT I.D.	MATRIX	SAMPLED	EXTRACTED	ANALYZED	FACTOR
01	990282	AQUEOUS	6/14/99	NA	6/21/99	2
02	990283	AQUEOUS	6/14/99	NA	6/21/99	5
03	990284	AQUEOUS	6/14/99	NA	6/21/99	1
PARAMETER	DET. LIMIT		UNITS	990282	990283	990284
BENZENE	0.5		UG/L	5.6	9.6	65
TOLUENE	0.5		UG/L	11	110	3.7
ETHYLBENZENE	0.5		UG/L	75	70	4.2
TOTAL XYLENES	0.5		UG/L	510	520	10

SURROGATE:
BROMOFLUOROBENZENE (%) 104 93 99
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.: 906067

SAMPLE	DATE	DATE	DATE	DIL.
ID. #	SAMPLED	EXTRACTED	ANALYZED	FACTOR
04	6/14/99	NA	6/21/99	1

PARAMETER	DET. LIMIT	UNITS	990285 (TRIP BLANK)
BENZENE	0.5	UG/L	< 0.5
TOLUENE	0.5	UG/L	< 0.5
ETHYLBENZENE	0.5	UG/L	< 0.5
TOTAL XYLENES	0.5	UG/L	< 0.5

SURROGATE:
BROMOFLUOROBENZENE (%) 92
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.	: 906067
BLANK I. D.	: 062199	DATE EXTRACTED	: N/A
CLIENT	: EL PASO FIELD SERVICES	DATE ANALYZED	: 6/21/99
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 (%) 93
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 # : 062199
CLIENT : EL PASO FIELD SERVICES
PROJECT # : (none)
PROJECT NAME : PIT MONITOR WELLS

PINNACLE I.D. : 906067
DATE EXTRACTED : N/A
DATE ANALYZED : 6/21/99
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	22.1	111	22.0	110	0	(80 - 120)	20
TOLUENE	<0.5	20.0	19.8	99	20.1	101	2	(80 - 120)	20
ETHYLBENZENE	<0.5	20.0	21.4	107	20.5	103	4	(80 - 120)	20
TOTAL XYLENES	<0.5	60.0	61.2	102	59.1	99	3	(80 - 120)	20

CHEMIST NOTES:
N/A

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

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

[illegible]

DISTRIBUTION: White - AEN, Canary - Originato



FIELD SERVICES LABORATORY
ANALYTICAL REPORT
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	N/A	990385
MTR CODE SITE NAME:	75155	Ramenta ET AL #1
SAMPLE DATE TIME (Hrs):	09/20/1999	1030
PROJECT:	Sample 4 - 10th Quarter	
DATE OF BTEX EXT. ANAL.:	N/A	09/24/1999
TYPE DESCRIPTION:	MW-1	Water

Field Remarks: _____

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	66	PPB	20	D		
TOLUENE	<10	PPB	20	D		
ETHYL BENZENE	74	PPB	20	D		
TOTAL XYLENES	400	PPB	20	D		
TOTAL BTEX	540	PPB				

--BTEX is by EPA Method 8021 --

The Surrogate Recovery was at 98.0 % for this sample All QA/QC was acceptable.

DF = Dilution Factor Used

The "D" qualifier indicates that the analyte calculated is based on a secondary dilution factor.

Narrative:

Sample Analyzed by Pinnacle Laboratories, Albuquerque, NM.

Approved By: _____

John L. Linder

Date: _____

11-12-99



Well Development and Purging Data

Site Name RAMENTA ET AL #1

Development Criteria

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

Methods of Development

- | | | | |
|--------------------------|-------------|-------------------------------------|--------------------------|
| ☐ | Pump | ☐ | Bailer |
| ☐ | Centrifugal | ☒ | Bottom Valve |
| ☐ | Submersible | ☐ | Double Check Valve |
| ☐ | Peristaltic | ☐ | Stainless-steel Kemmerer |

☐ Other

Water Volume Calculation

Initial Depth of Well (feet) 20.20
Initial Depth to Water (feet) 8.27
Height of Water Column in Well (feet) 11.99

Diameter (inches): Well 4 Gravel Pack

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing		7.9	23.8
Gravel Pack			
Drilling Fluids			
Total			

Instruments

- | | |
|-------------------------------------|---------------------|
| ☒ | pH Meter |
| ☐ | DO Monitor |
| ☒ | Conductivity Meter |
| ☒ | Temperature Meter |
| ☒ | Other <u>DO, CH</u> |

Water Disposal

K072 SEPARATE

Water Removal Data

[illegible]

THE WATER HAD A LIGHT HYDROGEN SULFIDE SMELL.

Developer's Signature Tommy Bird

Date 9-20-99 Reviewer

John Fawcett Date 10-11-99

PINNACLE
LABORATORIES

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

Pinnacle Lab ID number 909066
September 30, 1999

EL PASO FIELD SERVICES
770 WEST NAVAJO
FARMINGTON, NM 87401

Project Name PIT MONITOR WELLS
Project Number (none)

Attention: JOHN LAMBDIN

On 9/22/99 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.



H. Mitchell Rubenstein, Ph. D.
General Manager

MR: jt

Enclosure



Reviewed & Approved

10-11-99

J. Lambdin

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
PROJECT # : (none)
PROJECT NAME : PIT MONITOR WELLS

PINNACLE ID : 909066
DATE RECEIVED : 9/22/99
REPORT DATE : 9/30/99

PIN ID. #	CLIENT DESCRIPTION	MATRIX	DATE COLLECTED
01	990385 Ramenta ET AL #1 - mc# 75155	AQUEOUS	9/20/99
02	990386 Jannapa #1 - mc# 71816	AQUEOUS	9/20/99
03	990387 Hammond #41 A - mc# 89894	AQUEOUS	9/20/99
04	TRIP BLANK	AQUEOUS	9/20/99



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.: 909066

SAMPLE			DATE	DATE	DATE	DIL.
ID. #	CLIENT I.D.	MATRIX	SAMPLED	EXTRACTED	ANALYZED	FACTOR
01	990385	AQUEOUS	9/20/99	NA	9/24/99	20
02	990386	AQUEOUS	9/20/99	NA	9/24/99	5
03	990387	AQUEOUS	9/20/99	NA	9/24/99	5

PARAMETER	DET. LIMIT	UNITS	990385	990386	990387
BENZENE	0.5	UG/L	66	9.0	460
TOLUENE	0.5	UG/L	< 10	310	16
ETHYLBENZENE	0.5	UG/L	74	200	78
TOTAL XYLENES	0.5	UG/L	400	1900	440

SURROGATE:
TRIFLUOROTOLUENE (%) 98 81 92
SURROGATE LIMITS (69 - 117)

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.: 909066

SAMPLE ID. #	CLIENT I.D.	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
04	TRIP BLANK	AQUEOUS	9/20/99	NA	9/24/99	1
PARAMETER	DET. LIMIT	UNITS	TRIP BLANK			
BENZENE	0.5	UG/L	< 0.5			
TOLUENE	0.5	UG/L	< 0.5			
ETHYLBENZENE	0.5	UG/L	< 0.5			
TOTAL XYLENES	0.5	UG/L	< 0.5			

SURROGATE:

TRIFLUOROTOLUENE (%)

104

SURROGATE LIMITS (69 - 117)

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.	: 909066
BLANK I. D.	: 092499	DATE EXTRACTED	: NA
CLIENT	: EL PASO FIELD SERVICES	DATE ANALYZED	: 9/24/99
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:
TRIFLUOROTOLUENE (%) 103
SURROGATE LIMITS (69 - 117)

N/A

PINNACLE
LABORATORIES

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.	: 909066
BLANK I. D.	: 092999	DATE EXTRACTED	: NA
CLIENT	: EL PASO FIELD SERVICES	DATE ANALYZED	: 9/29/99
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:
TRIFLUOROTOLUENE (%) 116
SURROGATE LIMITS (69 - 117)

N/A

PINNACLE
LABORATORIES

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	PINNACLE I.D.	: 909066
MSMSD #	: 000909	DATE EXTRACTED	: NA
CLIENT	: EL PASO FIELD SERVICES	DATE ANALYZED	: 9/24/99
PROJECT #	: (none)	SAMPLE MATRIX	: AQUEOUS
PROJECT NAME	: PIT MONITOR WELLS	UNITS	: UG/L

PARAMETER	SAMPLE RESULT	CONC SPIKE	SPIKED SAMPLE	% REC	DUP SPIKE	DUP % REC	RPD	REC LIMITS	RPD LIMITS
BENZENE	<0.5	10.0	11.4	114	11.8	118	3	(80 - 120)	20
TOLUENE	<0.5	10.0	11.0	110	11.1	111	1	(80 - 120)	20
ETHYLBENZENE	<0.5	10.0	10.1	101	10.1	101	0	(80 - 120)	20
TOTAL XYLENES	<0.5	30.0	32.4	108	31.9	106	2	(80 - 120)	20

CHEMIST NOTES:
N/A

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

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

PROJECT MANAGER: JOHN LAMBORN
 COMPANY: EL PASO FIELD SERVICES
 ADDRESS: 720 WEST NAVARRO
 FARMINGTON, NM 87401
 PHONE: (505) 599-2144
 FAX: (505) 599-2261
 BILL TO: SAME AS ABOVE
 COMPANY:
 ADDRESS:

SAMPLE ID	DATE	TIME	MATRIX	LAB ID
990385	9-20-99	1230	WATER	01
990386	9-20-99	1215	WATER	02
990387	9-20-99	1445	WATER	03
TRIP BURNK	9-20-99		WATER	04

ANALYSIS REQUEST														
Petroleum Hydrocarbons (418.1) TRPH														
(MOD.8015) Diesel/Direct Inject														
(M8015) Gas/Purge & Trap														
8021 (BTX)/8015 (Gasoline)														
8021 (BTX) ☐ 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)														
Herbicides (615/8151)														
Base/Neutral/Acid Compounds GC/MS (625/8270)														
Polynuclear Aromatics (610/8310)														
General Chemistry:														
Priority Pollutant Metals (13)														
Target Analyte List Metals (23)														
RCRA Metals (8)														
RCRA Metals by TCLP (Method 1311)														
Metals:														
NUMBER OF CONTAINERS	2	2	2	1										

PROJECT INFORMATION		PRIOR AUTHORIZATION IS REQUIRED FOR RUSH PROJECTS		RELINQUISHED BY	
PROJ. NO.:		(RUSH) ☐ 24hr ☐ 48hr ☐ 72hr ☐ 1 WEEK	(NORMAL) ☒	Signature:	Time: 1457
PROJ. NAME:	PIT MONITOR WELLS	CERTIFICATION REQUIRED: ☐ NM ☐ SOWA ☐ OTHER		Printed Name:	Date: 9-22-99
P.O. NO.:		METHANOL PRESERVATION ☐		Signature:	Time:
SHIPPED VIA:	FED-X	COMMENTS: FIXED FEE ☐		Printed Name:	Date:
SAMPLE RECEIPT				Company:	
NO. CONTAINERS	7			Company:	EL PASO FIELD SERVICES
CUSTODY SEALS	Y/N NA			Signature:	Time: 1215
RECEIVED/INTACT	YES			Printed Name:	Date: 9-22-99
BLUE ICE	YES			Company:	AMERICAN ENVIRONMENTAL NETWORK (NM), INC.

MC# 75155, RAMENTA ET AL
#1, MW-1 : Sample 4 - 11th
Quarter

Well Development and Purging Data

Site Name RAMENITA ET AL #1

Development ☐ Purging ☒

Well Number MW-1
Meter Code 75155

Development Criteria

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

Methods of Development

- | | | | |
|--------------------------|-------------|-------------------------------------|--------------------------|
| ☐ | Pump | ☐ | Bailer |
| ☐ | Centrifugal | ☒ | Bottom Valve |
| ☐ | Submersible | ☐ | Double Check Valve |
| ☐ | Peristaltic | ☐ | Stainless-steel Kemmerer |
| ☐ | Other _____ | | |

Water Volume Calculation

Initial Depth of Well (feet) 20.20
Initial Depth to Water (feet) 22.59
Height of Water Column in Well (feet) 11.68
Diameter (inches): Well 4 Gravel Pack

Diameter (inches): Well 4 Gravel Pack 4

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing		7.7	23.2
Gravel Pack			
Drilling Fluids			
Total			

Instruments

- | | |
|-------------------------------------|---------------------|
| ☒ | pH Meter |
| ☐ | DO Monitor |
| ☒ | Conductivity Meter |
| ☒ | Temperature Meter |
| ☒ | Other <u>DO, CT</u> |

Water Disposal
KUTZ SEPARATOR

Water Removal Data

[illegible]

Comments THE WATER HAD A LIGHT HYDROGEN SULFIDE SMELL.

Developer's Signature Dennis Bird

Date 12-13-99 Reviewer _____

John F. Kennedy

Date 12/29/99



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

Pinnacle Lab ID number 912042
December 21, 1999

EL PASO FIELD SERVICES
770 WEST NAVAJO
FARMINGTON, NM 87401

Project Name PIT MONITOR WELLS
Project Number (none)

Attention: JOHN LAMBDIN

On 12/14/99 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



MC# 75155 - Ramona ET AL #1
MC# 71816 - Jennaph #1

Reviewed & Approved
J. Jander
12/29/99



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	: 912042
PROJECT #	: (none)	DATE RECEIVED	: 12/14/99
PROJECT NAME	: PIT MONITOR WELLS	REPORT DATE	: 12/21/99

PIN			DATE
ID. #	CLIENT DESCRIPTION	MATRIX	COLLECTED
01	990474 - mcd 75155, Remanta ET AL #1 - MW1	AQUEOUS	12/13/99
02	990475 - mcd 71816, Jannapah #1 - MW1	AQUEOUS	12/13/99
03	TRIP BLANK	AQUEOUS	12/13/99

GAS CHROMATOGRAPHY RESULTS

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

PINNACLE I.D.: 912042

SAMPLE ID. #	CLIENT I.D.	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
01	990474	AQUEOUS	12/13/99	NA	12/17/99	5
02	990475	AQUEOUS	12/13/99	NA	12/17/99	5
03	TRIP BLANK	AQUEOUS	12/13/99	NA	12/17/99	1
PARAMETER	DET. LIMIT	UNITS	990474	990475	TRIP BLANK	
BENZENE	0.5	UG/L	< 2.5	< 2.5	< 0.5	
TOLUENE	0.5	UG/L	9.0	17	< 0.5	
ETHYLBENZENE	0.5	UG/L	31	73	< 0.5	
TOTAL XYLENES	0.5	UG/L	190	550	< 0.5	

SURROGATE:

BROMOFLUOROBENZENE (%)

97

96

98

SURROGATE LIMITS (80 - 120)

mc# 75155
Ramenta ET AL #1
MW-1

mc# 71816
Jennings #1
MW-1

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.	: 912042
BLANK I. D.	: 121799	DATE EXTRACTED	: N/A
CLIENT	: EL PASO FIELD SERVICES	DATE ANALYZED	: 12/17/99
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 (%) 105
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	PINNACLE I.D.	: 912042
MSMSD #	: 121799	DATE EXTRACTED	: N/A
CLIENT	: EL PASO FIELD SERVICES	DATE ANALYZED	: 12/17/99
PROJECT #	: (none)	SAMPLE MATRIX	: AQUEOUS
PROJECT NAME	: PIT MONITOR WELLS	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	22.2	111	22.1	111	0	(80 - 120)	20
TOLUENE	<0.5	20.0	20.9	105	20.9	104	0	(80 - 120)	20
ETHYLBENZENE	<0.5	20.0	21.8	109	21.7	108	1	(80 - 120)	20
TOTAL XYLENES	<0.5	60.0	65.8	110	64.7	108	2	(80 - 120)	20

CHEMIST NOTES:
N/A

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

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

Acceptable
12/29/99
J. Lawler

SHADED AREAS ARE FOR LAB USE ONLY.

PLEASE FILL THIS FORM IN COMPLETELY.

PROJECT MANAGER: JOHN CAMERON COMPANY: EL PASO FIELD SERVICES ADDRESS: 770 WEST WILLOW PHONE: (505) 599-2144 FAX: (505) 599-2141 BILL TO: SAMS AS ABOVE COMPANY: ADDRESS:		ANALYSIS REQUEST Petroleum Hydrocarbons (418.1) TRPH (MOD.8015) Diesel/Direct Inject (M8015) Gas/Purge & Trap 8021 (BTX)/8015 (Gasoline) MTBE 8021 (BTX) ☒ 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		
SAMPLE ID 990474 990475 TRIP BLANK	DATE 12-13-99 12-13-99 12-13-99	TIME 1121 1305 WATER	MATRIX WATER WATER WATER	LAB ID 01 02 03
PROJECT INFORMATION PROJ. NO.: (RUSH) ☐ 24hr ☐ 48hr ☐ 72hr ☐ 1 WEEK (NORMAL) ☒ PROJ. NAME: PTT MONTANA WELLS CERTIFICATION REQUIRED: ☐ NM ☐ SDWA ☐ OTHER P.O. NO.: METHANOL PRESERVATION ☐ SHIPPED VIA: FED-EX SAMPLE RECEIPT NO. CONTAINERS: 5 CUSTODY SEALS: Y/N (NA) RECEIVED INTACT: YES BLUE IC: YES				
PRIOR AUTHORIZATION IS REQUIRED FOR RUSH PROJECTS RECEIVED BY: Signature: [Signature] Time: 1603 Printed Name: Dennis Bird Date: 12-13-99 Company: EL PASO FIELD SERVICES RECEIVED BY: Signature: [Signature] Time: 1405 Printed Name: [Signature] Date: 12-14-99 Company: Pinnacle Laboratories Inc.				

ATTACHMENT 2
MONITOR WELL INSTALLATION

RECORD OF SUBSURFACE EXPLORATION

Philip Environmental Services Corp.

4000 Monroe Road

Albuquerque, New Mexico 87401

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

Borehole # 2

Well # mw-2

Page 1 of 1

Project Name EPFS GW Inv.

Project Number 20996 Phase 1000

Project Location Remedia #1

Elevation _____

Borehole Location _____

GWL Depth _____

Logged By P. Cheney

Drilled By K. Padilla

Date/Time Started 06/01/99 1224

Date/Time Completed 06/01/99 1305

Well Logged By P. Cheney

Personnel On-Site Cheney, K. Padilla, D. Padilla

Contractors On-Site _____

Client Personnel On-Site _____

Drilling Method 4 1/4" HSA

Air Monitoring Method PID

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	5-7	18"	Reddish brown medium to coarse grained sand. wet at approx 7'		0.0			0.0	BC=7 S/HS=0
10	10-12		brown, coarse grained sand, well sorted, saturated		0.0			0.0	BC=10 S/HS=0
15			TD=15' set 10' of 2" screen from 15'-5', 5' of Riser. 5 sacks of silica sand						
20									
25									
30									
35									
40									

Comments:

Temporary completion, NO PID hits or staining

Geologist Signature _____

MONITORING WELL INSTALLATION RECORD

Tulip Environmental Services Corp.
 700 [redacted] Road
 [redacted] New Mexico 87401
 (506) 326-2262 FAX (506) 326-2388

Borehole # 2
 Well # MW-2
 Page 1 of 1

Project Name EPFS GW Inv

Project Number 20990 Phase 1000

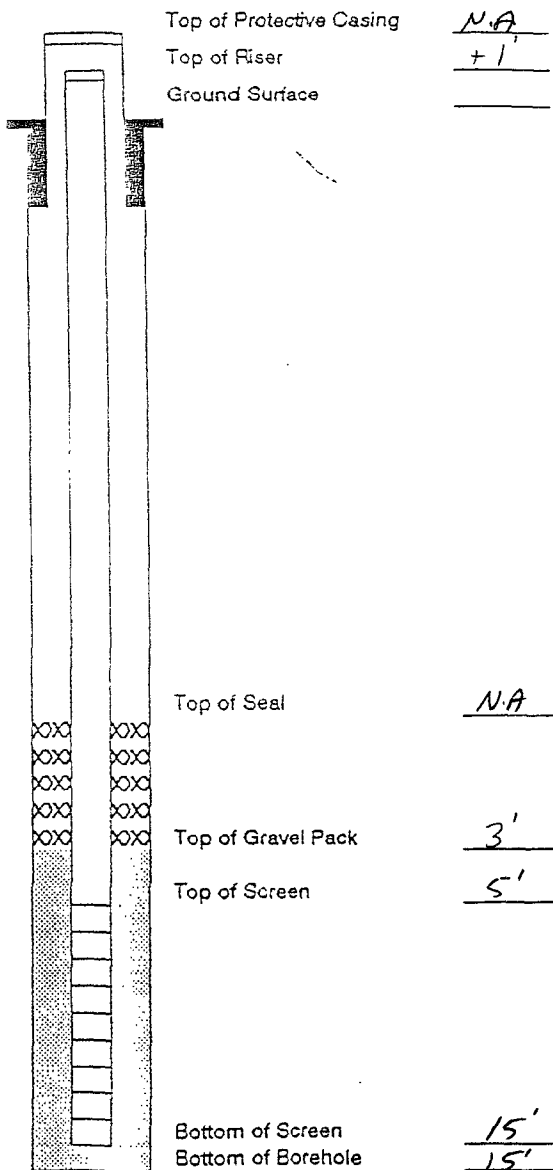
Project Location Bemeta #1

On-Site Geologist P. Cheney
 Personnel On-Site Cheney, K. Padilla, A. Padilla
 Contractors On-Site _____
 Client Personnel On-Site _____

Elevation _____
 Well Location _____
 SWL Depth _____
 Installed By K. Padilla
 Date/Time Started 06/01/99 1224
 Date/Time Completed 06/01/99 1305

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		N.A.
Bottom of Concrete		N.A.
Top of Grout		N.A.
Bottom of Grout		N.A.
Top of Well Riser		+1
Bottom of Well Riser		5'
Top of Well Screen		5'
Bottom of Well Screen		15'
Top of Peltonite Seal		N.A.
Bottom of Peltonite Seal		N.A.
Top of Gravel Pack		3'
Bottom of Gravel Pack		15'
Top of Natural Cave-In		N.A.
Bottom of Natural Cave-In		N.A.
Top of Groundwater		7'
Total Depth of Borehole		15'



Comments: Temporary well installation

Geologist Signature _____

RECORD OF SUBSURFACE EXPLORATION

Philip Environmental Services Corp.

1300 Monroe Road

Albuquerque, New Mexico 87401

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

Borehole # 3

Well # NW-3

Page 1 of 1

Project Name EPFS GW INV.

Project Number 20990 Phase 1000

Project Location Rementa #1

Elevation _____

Borehole Location Rementa #1

GWL Depth _____

Logged By P. Cheney

Drilled By K. Padilla

Date/Time Started 06/01/99 1310

Date/Time Completed 06/01/99 1500

Well Logged By P. Cheney

Personnel On-Site Cheney, K. Padilla, P. Padilla

Contractors On-Site N.A.

Client Personnel On-Site N.A.

Drilling Method 4 1/4" HSA

Air Monitoring Method PIN

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	5-7	24"	reddish brown medium grnd. sand, well sorted, unconsolidated, dry			0.0		0.0	BC=10 S/H5=0.5
10	10-12	10"	brown coarse grained sand, well sorted, wet at approx 10'			0.0		0.0	BC=6 S/H5=0.7
15	15-17	24"	brown coarse grained sand, well sorted, saturated			0.0		0.0	BC=6 S/H5=7
20			TD=20'. Set 15' of 2" screen from 20'-5'; sand pack to 3'						
25									
30									
35									
40									

Comments: No PTD hits, staining or odor

Geologist Signature

Paul Cheney

MONITORING WELL INSTALLATION RECORD

Mullip Environmental Services Corp.
 00000000 Road
 New Mexico 87401
 5061 326-2262 FAX (506) 326-2388

Temporary well

Borehole # 3
 Well # MW-3
 Page 1 of 1

Project Name EPFS GW INV

Project Number 20990 Phase 1000

Project Location Remenka #1

On-Site Geologist P. Cheney
 Personnel On-Site Cheney, K. Padilla, D. Padilla
 Contractors On-Site _____
 Client Personnel On-Site _____

Elevation _____
 Well Location Remenka #1
 GWL Depth _____
 Installed By K. Padilla

Date/Time Started 06/01/99 1310
 Date/Time Completed 06/01/99 1500

Depths in Reference to Ground Surface			
Item	Material	Depth	
Top of Protective Casing		N.A.	Top of Protective Casing <u>N.A.</u>
Bottom of Protective Casing		N.A.	Top of Riser <u>1'</u>
Top of Permanent Borehole Casing		N.A.	Ground Surface _____
Bottom of Permanent Borehole Casing		N.A.	
Top of Concrete		N.A.	
Bottom of Concrete		N.A.	
Top of Grout		N.A.	
Bottom of Grout		N.A.	
Top of Well Riser		+1'	
Bottom of Well Riser		5'	
Top of Well Screen		5'	Top of Seal <u>N.A.</u>
Bottom of Well Screen		20'	
Top of Peltonite Seal		N.A.	Top of Gravel Pack <u>3'</u>
Bottom of Peltonite Seal		N.A.	Top of Screen <u>5'</u>
Top of Gravel Pack		3'	
Bottom of Gravel Pack		20'	
Top of Natural Cave-In		N.A.	
Bottom of Natural Cave-In		N.A.	
Top of Groundwater		10'	Bottom of Screen <u>20'</u>
Total Depth of Borehole		20'	Bottom of Borehole <u>20'</u>

Comments: _____

 Geologist Signature _____