3R - 197

REPORTS

DATE:

1997

EL PASO ENERGY

Certified Mail: #Z 295 387 297; #Z 295 387 296

February 27, 1998

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

Re: 1997 Groundwater Annual Report

Dear Mr. Olson:

In accordance with reporting requirements, El Paso Field Services (EPFS) has enclosed annual updates for 57 groundwater impacted locations that were identified during our pit closure project of 1994/1995.

Of the 57 reports, EPFS hereby requests your approval for closure of 11 of these locations. The 11 reports for which EPFS requests closure, are in 2 separate binders entitled "Request for Closure".

After you have had an opportunity to review these updates, EPFS would like to schedule a meeting with you to discuss issues related to closure criteria for some of the more complex locations that are currently being addressed.

If you have any questions regarding this information, please call me at 505/599-2141. I will contact you within the next quarter to schedule a meeting.

Sincerely,

Sandra D. Miller
Environmental Manager

xc: Mr. Bill Liesse, BLM w/o enclosures
Mr. Denny Foust, NMOCD - Aztec w/enclosures; **Certified Mail #Z 295 387 298; #Z 295 387 299**
Ms. Charmaine Tso, Navajo EPA w/enclosures; **Certified Mail #Z 295 387 292**

SAN JUAN BASIN PIT CLOSURES
San Juan Basin, New Mexico

El Paso Field Services Pit Project Groundwater Report
Annual Report

March 1998

Prepared For

El Paso Field Services
Farmington, New Mexico

Project 17520

PHILIP ENVIRONMENTAL

EPFS GROUNDWATER PITS
1997 ANNUAL GROUNDWATER REPORT

JENNAPAH #1
Meter/Line ID - 71816

SITE DETAILS

Legals - Twn: 28N **Rng:** 9W **Sec:** 36 **Unit:** H
NMOCD Hazard Ranking: 40 **Land Type:** NAVAJO
Operator: AMOCO PRODUCTION COMPANY

PREVIOUS ACTIVITIES

Site Assessment: May-94 **Excavation:** Jun-94 (70 cy) **Re-Excavation:** Nov-95 (234 cy)
Soil Boring: Feb-97 **Monitor Well:** Feb-97

1997 ACTIVITIES

Monitor Well Installation - One groundwater monitor well was installed in the center of the former pit.

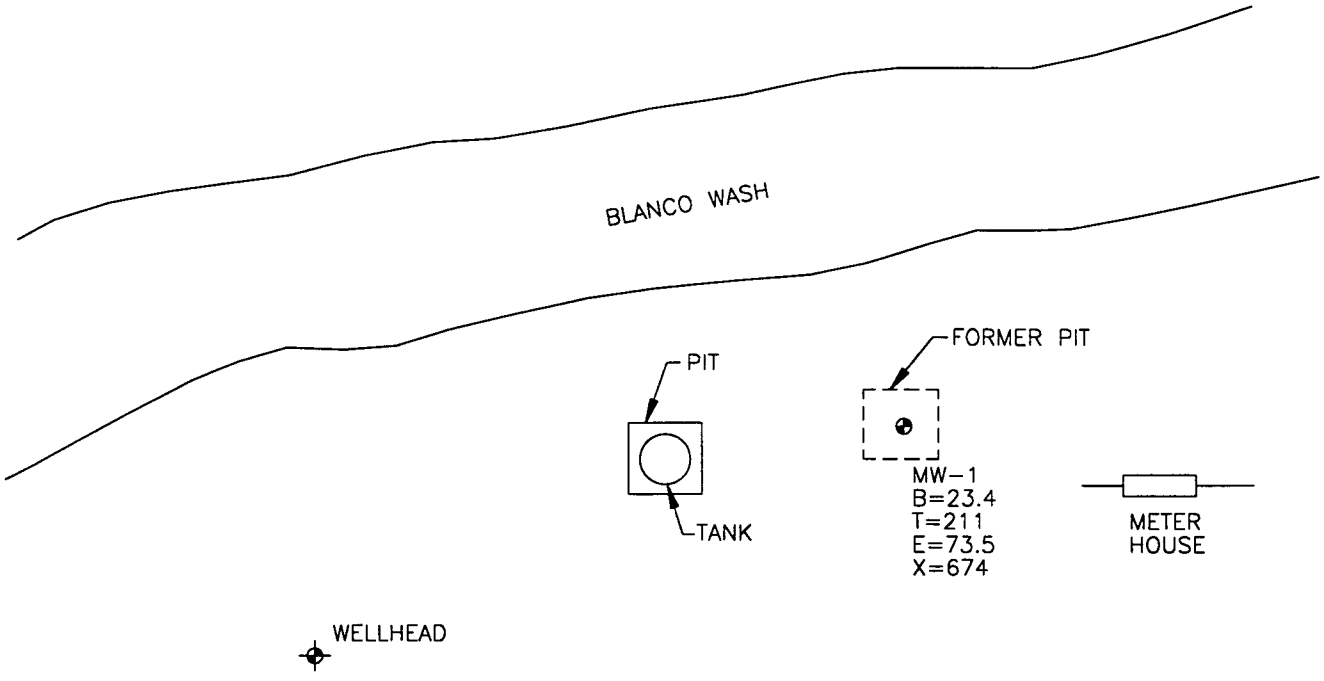
Quarterly Groundwater Monitoring - Quarterly groundwater monitoring was initiated on 6/10/97. Groundwater analytical data are presented in Table 1. A site map is presented in Figure 1.

CONCLUSIONS

Benzene concentrations have been slightly above standards since quarterly sampling was initiated.

RECOMMENDATIONS

- Quarterly sampling will continue at MW-1 until 4 consecutive clean quarters are achieved.
- If benzene concentrations do not decrease, site may be candidate for nutrient injection on the four corners of the pit.
- Following OCD approval for closure, MW-1 will be abandoned following OCD approved abandonment procedures.



LEGEND

MW-1	APPROXIMATE MONITORING WELL LOCATION AND NUMBER
B	BENZENE (ug\L)
T	TOLUENE (ug\L)
E	ETHYL BENZENE (ug\L)
X	XYLENE (ug\L)
ug\L	MICROGRAMS PER LITER

NOT TO SCALE

N

PHILIP SERVICES CORP

TITLE:
JENNAPAH #1
71816

DWN: TMM	DES.: CC	PROJECT NO.: 17520	
CHKD: CC	APPD:	EPFS GW PITS	
DATE: 1/19/98	REV.: 0	FIGURE 1	

COL 17520BN-001

TABLE 1

Sample #	Meter/ Line #	Site Name	Sample Date	MW #	Project	Benzene (PPB)	Toluene (PPB)	Ethyl Benzene (PPB)	Total Xylenes (PPB)	Total BTEX
970211	71816	Jennapah #1	3/13/97	1	Phase II Drilling - Initial	= 39.4	= 352	= 89.2	= 785	= 1270
970548	71816	Jennapah #1	6/10/97	1	Sample 4 - 1st Qtr	= 10.3	= 53.5	= 28.4	= 233	= 325
971054	71816	Jennapah #1	9/25/97	1	Sample 4 - 2nd Qtr	= 21	= 185	= 51.2	= 520	= 777
971275	71816	Jennapah #1	12/5/97	1	Sample 4 - 3rd Qtr	23.4	211	73.5	674	982

RECORD OF SUBSURFACE EXPLORATION

PHILIP ENVIRONMENTAL SERVICES INC.
4000 Monroe Road
Farmington, New Mexico 87401
(505) 326-2262 FAX (505) 326-2388

Borehole # BH-1
Well #
Page 1 of 1

Project Name EPFS GW PITS
Project Number 17520 Phase 6001.77
Project Location JENNY DAH #1 - 71816

Elevation
Borehole Location Ltr H - S36 T25 - R7
GWL Depth 22' BGS
Logged By D Cesark
Drilled By M Donohue
Date/Time Started 2/14/97 - 0830
Date/Time Completed " - 1130

Well Logged By D Cesark
Personnel On-Site D. CHARLEY
Contractors On-Site
Client Personnel On-Site

Drilling Method 4 1/4" ID HSA
Air Monitoring Method PID, CGI

Depth (Feet)	Sample Number	Sample Interval	Sample Type & Recovery (inches)	Sample Description Classification System: USCS	USCS Symbol	Depth Lithology Change (feet)	Air Monitoring Units: PPM BZ	BH	S / HS	Drilling Conditions & Blow Counts <TIME>
0–19				BACKFILL TO 19'						
20–22	1	20-22'	24" ▽	SILTY-SAND, SAND SILT MIXTURE. HC STAINING (OLIVE GRAY) + STRONG HC ODOR. GWC 22' BGS.					171/2000+	<0900> (OVERRANGE)
23–25	~~1~~	~~23-25~~								
25–32				OVER-DRILLED THROUGH HEAVY CONTAMINATED SOIL (BLACK) w/ STRONG HC ODOR TO 32' BGS. SET WELL						

Comments: TD = 32'. GW ENCOUNTERED @ 22' BGS. OBC 6 COLLECTED IMMED. ABOVE GW SUBMITTED TO LAB FOR TPH + BTEX ANALYSES. BORING COMPLETED AS A WELL — PLEASE REFER TO MW INSTALL. RECORD.

Geologist Signature

MONITORING WELL INSTALLATION RECORD

Borehole # 1
Well # 1
Page 1 of 1

Philip Environmental Services, Inc.
4000 Monroe Rd.
Farmington, NM 87401
(505) 326-2262 FAX (505) 326-2388

Project Name EPFS GW PITS
Project Number 17520 Phase 6005.77
Site Location JENNAPAH #1
T31C

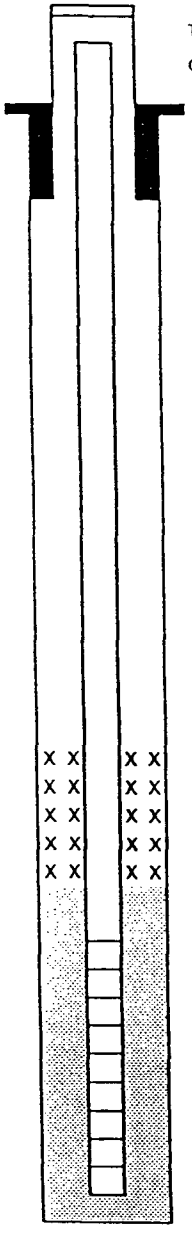
Elevation
Well Location H/S36/T28/R9
GWL Depth 22' BGS
Installed By M. McNAUE

On-Site Geologist D. CLARK
Personnel On-Site D. CHARLEY
Contractors On-Site
Client Personnel On-Site

Date/Time Started 2-14-17/0930
Date/Time Completed " /1130

Depths in Reference to Ground Surface

Item	Material	Depth (feet)
Top of Protective Casing		
Bottom of Protective Casing		
Top of Permanent Borehole Casing		N/A
Bottom of Permanent Borehole Casing		N/A
Top of Concrete		
Bottom of Concrete		
Top of Grout		0
Bottom of Grout		12'
Top of Well Riser	SCH 40 PVC	+3'
Bottom of Well Riser	"	17
Top of Well Screen	.010 SLOT	17'
Bottom of Well Screen	"	32'
Top of Peltonite Seal	ENVIROPLUG	12'
Bottom of Peltonite Seal	"	14'
Top of Gravel Pack	10-20 SAND	14'
Bottom of Gravel Pack	"	32'
Top of Natural Cave-In		32'
Bottom of Natural Cave-In		32'
Top of Groundwater		22'
Total Depth of Borehole		32'



Top of Protective Casing
Top of Riser +3'
Ground Surface 0'
Top of Seal 12'
Top of Gravel Pack 14'
Top of Screen 17'
Bottom of Screen 32'
Bottom of Borehole 32'

Comments:

Geologist Signature

1997 GROUNDWATER ANALYTICAL

PHILIP ENVIRONMENTAL

Chain of Custody Record

4000 Monroe Road
Farmington, NM 87401
(505) 326-2262 Phone
(505) 326-2388 FAX

COC Serial No. C 3059

Project Name EPFS GW PITS

Project Number 17520 Phase . Task 6003 . 77

Samplers J. LONG

Laboratory Name ENV

Location Farmington NM

EPFS LAB ID	Sample Number (and depth)	Date	Time	Matrix	Total Number of Bottles	Type of Analysis and Bottle: BTEX	Comments
970201	JAL TRIPBLANK	3-10-97	1115	WATER	1	X	
970202	JAL 14046.01	3-10-97	1245	WATER	2	X	ONE VOA TOO OLD Headspace present (Both Air)
970203	JAL-08506-01	3-10-97	1610	WATER	2	X	ONE VOA TOO OLD Headspace Present
970204	JAL TRIPBLANK	3-11-97	1000	WATER	1	X	
970205	JAL-60153-01	3-11-97	1045	WATER	2	X	
970206	JAL-95210.01	3-11-97	1325	WATER	2	X	
970207	JAL 75220.01	3-11-97	1530	WATER	2	X	
970208	JAL TRIPBLANK	3-12-97	1150	WATER	1	X	Air Bubble
970209	JAL 71676.01	3-12-97	1155	WATER	2	X	
970210	JAL TRIPBLANK	3-13-97	1000	WATER	1	X	
970211	JAL 74816.01	3-13-97	1010	WATER	2	X	

Relinquished by:

Signature	Date	Time
	3-13-97	1430

Received By:

Signature	Date	Time
John Holder	3/13/97	1435

Samples Iced: ☒ Yes ☐ No

Preservatives (ONLY for Water Samples)

- ☐ Cyanide ..... Sodium hyroxide (NaOH)
- ☒ Volatile Organic Analysis ..... Hydrochloric acid (HCl)
- ☐ Metals ..... Nitric acid (HNO_3)
- ☐ TPH (418.1) ..... Sulfuric acid (H_2SO_4)
- ☐ Other (Specify) _____
- ☐ Other (Specify) _____

Carrier: Hand Delivered

Airbill No.

Shipping and Lab Notes:

Rec'd - Cool and In-Tact JH

PE-176 4/95

EL PASO FIELD SERVICES

5-22-97

FIELD SERVICES LABORATORY
ANALYTICAL REPORT
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	JAL 71816-01	970211
MTR CODE | SITE NAME:	71816	Jennapah #1
SAMPLE DATE | TIME (Hrs):	3/13/97	1010
PROJECT:	Phase II Drilling - Initial	
DATE OF BTEX EXT. | ANAL.:	3/15/97	3/15/97
TYPE | DESCRIPTION:	Monitor Well	Water

AA 5/30/97

Field Remarks: _____

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS DF	Q		
BENZENE	39.4	PPB	2	D		
TOLUENE	352	PPB	2	D		
ETHYL BENZENE	89.2	PPB	2	D		
TOTAL XYLENES	785	PPB	2	D		
TOTAL BTEX	1270	PPB				

The Surrogate Recovery was at 99.0 for this sample All QA/QC was acceptable.
DF = Dilution Factor Used
The "D" qualifier indiciates that the analyte calculated is based on a secondary dilution factor.

Narrative:

Approved By: John Fowler Date: 4/5/97

970211,4/4/97

PHILIP ENVIRONMENTAL Well Development and Purging Data

☒ Development ☐ Purging Well Number MW101

Serial No. WDPD- Page ____ of ____

Project Name EPFS G.W. PITS Project Manager Cory Chance Project No. ~~[illegible]~~ 17520

Client Company El Paso Phase.Task No. 6003.77

Site Name JENNIRAN #1 (71816) Site Address ____

Development Criteria

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

Methods of Development

Pump
- ☐ Centrifugal
- ☐ Submersible
- ☐ Peristaltic

Bailer
- ☒ Bottom Valve
- ☐ Double Check Valve
- ☐ Stainless-steel Kemmerer

☐ Other ____

Water Volume Calculation

Initial Depth of Well (feet) 34.97

Initial Depth to Water (feet) 25.68

Height of Water Column in Well (feet) 9.29

Diameter (inches): Well 4 Gravel Pack ____

Item	Water Volume in Well: Cubic Feet	Water Volume in Well: Gallons	Gallons to be Removed
Well Casing		6	x5
Gravel Pack			
Drilling Fluids			
Total			30

Instruments

	Serial No. (If applicable)
☒ pH Meter	OYSTER
☐ DO Monitor	
☒ Conductivity Meter	
☒ Temperature Meter	
☐ Other	

Water Disposal

Drummed & dumbed AT KUTZ Separator IN Bloomfield

Water Removal Data

Date	Time	Development Method: Pump	Development Method: Bailer	Removal Rate (gal/min)	Intake Depth (feet)	Ending Water Depth (feet)	Water Volume Removed (gallons): Increment	Water Volume Removed (gallons): Cumulative	Product Volume Removed (gallons): Increment	Product Volume Removed (gallons): Cumulative	Temperature (°C)	pH	Conductivity (umhos/cm)	Dissolved Oxygen (mg/L)	Comments
3-13-97	0900		6				5	5			15.3	7.0	137		DK Gray SLTY
	0910						5	10			15.2	7.0	138		
	0920						5	15			15.2	7.04	138		
	0930						5	20			15.4	7.04	138		
	0943						5	25			15.2	7.20	137		BIN SLTY
3-14-97	0935		0				5	30			15.4	7.20	136		BIN SLTY

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

Comments ____

Developer's Signature(s) [signature] Date 3-13-97 Reviewer ____ Date ____

Form A0101 Rev. 03/21/94

PHILIP ENVIRONMENTAL Water Sampling Data

Location No. MW01

Serial No. WSD-

Group List Number

Sample Type: ☒ Groundwater ☐ Surface Water ☐ Other Date 3-13-97

Project Name EPFS GW PITS Project No. 17520

Project Manager Cory Chavez Phase.Task No. 6003.77

Site Name JENNAPAH 1 (71516)

Sampling Specifications

Requested Sampling Depth Interval (feet) TOP 3'

Requested Wait Following Development/Purging (hours)

Initial Measurements

Time Elapsed From Final Development/Purging ~~(hours)~~ (min) 15

Initial Water Depth (feet) 25.68

Nonaqueous Liquids Present (Describe)

Water Quality/Water Collection

DO = Dissolved Oxygen; Cond. = Conductivity

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

Container Type: G = Clear Glass; A = Amber Glass; P = Plastic; V = VOA Vial (Glass); O = Other (Specify)

Sample Containers

Preservatives: H = HCl; N = HNO_3; S = H_2SO_4; A = NaOH; O = Other (Specify); — = None

Analytical Parameter List	Container: Number	Type	Volume (mL)	Field Filtered: Yes	No	Preserved	Cooled During Collection: Yes	No	Comments
BTEX	2	G	40		X	H	X		JAL 71516 01 T:1010

Filter Type Chain-of-Custody Form Number

Comments

Signature Date 3-13-97 Reviewer Date

Form 40202 Rev. 02/24/94

El Paso Natural Gas Company

A 2005

CHAIN OF CUSTODY RECORD

Project No.:

Project Name: HOERFANO PIPELINE

Samplers: (Signature) Dennis Bird   Date: 6-10-97

MATRIX	Date	Time	Comp.	GRAB	Sample Number	Type and No. of Sample Containers	Preservation Technique	BTXE	GENERAL CHEMISTRY	ACROMETALS		Remarks
WATER	6-10-97	1530		X	970548	[illegible]	4°C	X	X	X		JENNAPAH-1 MW-1 MC 718K

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Dennis Bird	6-10-97 1718				
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)

Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)	Date/Time	Remarks:
		Marlon Hopper	6/11/97 0900	

Carrier Co:

Carrier Phone No.

Date Results Reported / by: (Signature)

Air Bill No.:

san juan repro Form 71-55 A

EL PASO FIELD SERVICES

6-23-97

FIELD SERVICES LABORATORY
ANALYTICAL REPORT
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	N/A	970548
MTR CODE | SITE NAME:	71816	Jennapah #1
SAMPLE DATE | TIME (Hrs):	6/10/97	1530
PROJECT:	Sample 4 - 1st Quarter	
DATE OF BTEX EXT. | ANAL.:	6/12/97	6/12/97
TYPE | DESCRIPTION:	Monitor Well	Water

Field Remarks: _____

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	10.3	PPB	5	D		
TOLUENE	53.5	PPB	5	D		
ETHYL BENZENE	28.4	PPB	5	D		
TOTAL XYLENES	233	PPB	5	D		
TOTAL BTEX	325	PPB				

The Surrogate Recovery was at 92.8 for this sample All QA/QC was acceptable.
DF = Dilution Factor Used

Narrative:

Approved By: _____ Date: 6/17/97

970548,6/16/97

EL PASO FIELD SERVICES

6-23-97

Field Services Laboratory
Analytical Report

SAMPLE IDENTIFICATION

EPFS LAB ID:	970548
DATE SAMPLED:	06/10/97
TIME SAMPLED (Hrs):	1530
SAMPLED BY:	N/A
MATRIX:	Water
METER CODE:	71816
SAMPLE SITE NAME:	Jennapah #1
SAMPLE POINT:	MW-1

FIELD REMARKS:

GENERAL CHEMISTRY WATER ANALYSIS RESULTS

PARAMETER	RESULT	UNITS	DATE ANALYZED
Laboratory pH	8.1	Units	06/11/97
Alkalinity as $C0_3$	0.0	PPM	06/11/97
Alkalinity as $HC0_3$	318	PPM	06/11/97
Calcium as Ca	79	PPM	06/11/97
Magnesium as Mg	8	PPM	06/11/97
Total Hardness as $CaC0_3$	231	PPM	06/11/97
Chloride as Cl	8	PPM	06/11/97
Sulfate as $S0_4$	546	PPM	06/11/97
Fluoride as F	1.1	PPM	06/11/97
Nitrate as $N0_3$-N	0.5	PPM	06/11/97
Nitrite as $N0_2$-N	<0.6	PPM	06/11/97
Ammonium as NH_4^+	<0.1	PPM	06/11/97
Phosphate as PO_4	<0.6	PPM	06/11/97
Potassium as K	2	PPM	06/11/97
Sodium as Na	290	PPM	06/11/97
Total Dissolved Solids	1,110	PPM	06/11/97
Conductivity	1,555	umhos/cm	06/11/97
Anion/Cation %	1.1%	%, <5.0 Accepted	06/16/97

Lab Remarks:

Reported By: MDC Approved By: Date: 6/17/97

EL PASO FIELD SERVICES

7-21-97

FIELD SERVICES LABORATORY
ANALYTICAL REPORT

SAMPLE IDENTIFICATION

SAMPLE NUMBER:	970548
SAMPLE DATE:	06/10/97
SAMPLE TIME (Hrs):	1530
SAMPLED BY:	N/A
MATRIX:	Water
METER CODE:	71816
SAMPLE SITE NAME:	Jennapah #1
SAMPLE POINT:	MW-1

REMARKS: _____

RESULTS

PARAMETER	TOTAL RESULT (mg/L)	N. M. WQCC LIMIT (mg/L)
ARSENIC	<.029	0.100
BARIUM	0.18	1.00
CADMIUM	<.0002	0.010
CHROMIUM	0.017	0.050
LEAD	0.007	0.050
MERCURY	<0.0002	0.002
SELENIUM	<0.005	0.050
SILVER	<.0005	0.050

NOTE: The sample results have been corrected for volume adjustment associated with Method 3015.

References:

Method 3015, Microwave Assisted Acid Digestion of Aqueous Samples and Extracts, Test Methods for Evaluating Solid Waste, SW-846, Sept., 1994.

Method 7061A, Arsenic (Atomic Absorption, Gaseous Hydride), Test Methods for Evaluating Solid Waste, SW-846, USEPA, July, 1992.

Method 7081, Barium (Atomic Absorption, Furnace Technique), Test Methods for Evaluating Solid Waste, SW-846, USEPA, July, 1992.

Method 7131, Cadmium (Atomic Absorption, Furnace Technique), Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept., 1986.

Method 7191, Chromium (Atomic Absorption, Furnace Technique), Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept., 1986.

Method 7421, Lead (Atomic Absorption, Furnace Technique), Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept., 1986.

Method 245.5, Mercury (Automated Cold Vapor Technique), Methods for the Determination of Metals in Environmental Samples, EPA 600/4-91/010, USEPA, June, 1991.

Method 7741A, Selenium (Atomic Absorption, Gaseous Hydride), Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept., 1994.

od 7761, Silver (Atomic Absorption, Furnace Technique), Test Methods for Evaluating Solid Waste, SW-846, USEPA, July, 1992.

Reported By: _____ Approved By: _____ Date: 7/17/97

EL PASO FIELD SERVICES

QUALITY CONTROL REPORT

Sample ID: 970548
Date Reported: 07/16/97

LABORATORY CONTROL SAMPLE

Analyte	Found Result (mg/L)	Known Value (mg/L)	% Recovery
Arsenic	0.031	0.032	96.6%
Barium	0.062	0.065	95.7%
Cadmium	0.0025	0.0024	104%
Chromium	0.0049	0.0048	103%
Lead	0.033	0.030	111%
Mercury	0.0043	0.0046	93.2%
Selenium	0.038	0.041	94.3%
Silver	0.0051	0.0043	118%

DUPLICATE ANALYSIS (mg/L)

Analyte	Original Sample Result	Duplicate Sample Result	% RPD
Arsenic	ND	ND	NA
Barium	0.181	0.183	1.1%
Cadmium	ND	ND	NA
Chromium	0.0166	0.0153	8.2%
Lead	0.0065	0.0069	6.2%
Mercury	ND	ND	NA
Selenium	ND	ND	NA
Silver	0.0003	0.0004	8.7%

SPIKE ANALYSIS (mg/L)

Analyte	Original Sample Result	Spike Sample Result	Spike Added	Recovery Percent
Arsenic	0.001	0.126	0.100	118%
Barium	0.183	1.253	1.00	107%
Cadmium	ND	0.0103	0.010	103%
Chromium	0.017	0.065	0.050	97.0%
Lead	0.007	0.054	0.050	94.4%
Mercury	ND	0.0018	0.0020	90.0%
Selenium	ND	0.053	0.050	101%
Silver	0.0003	0.0539	0.050	107%

METHOD BLANK

Analyte	Found Result (mg/L)	Detection Level (mg/L)
Arsenic	ND	0.027
Barium	ND	0.019
Cadmium	ND	0.0002
Chromium	ND	0.004
Lead	ND	0.002
Mercury	ND	0.0002
Selenium	ND	0.011
Silver	ND	0.0005

ND: Not Detected at stated detection level. NA: Not Applicable.

Reported By: mh Approved By: [signature] Date: 7/17/97

EPFS
EL PASO FIELD SERVICES

Well Development and Purging Data

☐ Development
☒ Purging

Well Number MW-1

Site Name JENNAPAH-1

Meter Code 71816

Development Criteria

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

Water Volume Calculation

Initial Depth of Well (feet) 34.50
Initial Depth to Water (feet) 25.55
Height of Water Column in Well (feet) 8.95
Diameter (inches): Well 4 Gravel Pack

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing		5.8	17.7
Gravel Pack			
Drilling Fluids			
Total			

Instruments

☒ pH Meter
☐ DO Monitor
☒ Conductivity Meter
☒ Temperature Meter
☒ Other D.O. CHEMETS KIT

Methods of Development

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

☐ Other

Water Disposal

KUTZ SEPARATOR

Water Removal Data

Date	Time	Development Method		Removal Rate	Intake Depth	Ending Water Depth	Water Volume Removed (gal)		Product Volume Removed (gallons)		Temperature °C	pH	Conductivity µmho/cm	Dissolved Oxygen mg/L	Comments
		Pump	Bailer	(gal/min)	(feet)	(feet)	Increment	Cumulativ	Increment	Cumulative					
6-10-97	1433										19.5	6.78	1422		
6-10-97	1440						5.0	5.0			17.5	6.98	1451		
6-10-97	1446						5.0	10.0			17.0	7.30	1524		
6-10-97	1454						5.0	15.0			17.2	7.36	1538		
6-10-97	1500						5.0	20.0			17.0	7.42	1538		
6-10-97	1507						5.0	25.0			17.6	7.47	1595	1.5	

Comments THE WATER HAD A LIGHT HYDROGEN SULFIDE SMELL.

Developer's Signature Dennis Bird Date 6-10-97 Reviewer Jon Dahl Date 6/17/97

SAMPLE 4 2 NORTH

El Paso Natural Gas Company

A 2098

CHAIN OF CUSTODY RECORD

Project No.	Project Name					Type and No. of Sample Containers	Preservation Technique	Requested Analysis				Remarks
	MC # 7816							BTXE				
Samplers: (Signature) Dennis Bird		Date: 9-25-97										
MATRIX	Date	Time	Comp.	GRAB	Sample Number							
WATER	9-25-97	1427		X	971054	G-1	4°C	X				JENNAPAH #1 MW-1

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Dennis Bird	9-25-97 1653				
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)	Date/Time	Remarks:	
		Marsha Hopper	9/26/97 0900		
Carrier Co:		Carrier Phone No.		Date Results Reported / by: (Signature)	
Air Bill No.:					

EL PASO FIELD SERVICES

FIELD SERVICES LABORATORY
ANALYTICAL REPORT
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	N/A	971054
MTR CODE | SITE NAME:	71816	Jennapah #1
SAMPLE DATE | TIME (Hrs):	9/25/97	1427
PROJECT:	Sample 4 2nd Quarter	
DATE OF BTEX EXT. | ANAL.:	9/30/97	9/30/97
TYPE | DESCRIPTION:	MW-1	Water

Field Remarks: _____

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	21.0	PPB				
TOLUENE	185	PPB				
ETHYL BENZENE	51.2	PPB				
TOTAL XYLENES	520	PPB				
TOTAL BTEX	777	PPB				

--BTEX is by EPA Method 8020 --

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

DF = Dilution Factor Used

Narrative:

Approved By: John Sanchez Date: 10-6-97

971054BTEXMW,10/3/97

EPFS
EL PASO FIELD SERVICES

Well Development and Purging Data

[ ] Development
[X] Purging

Well Number MW-1

Site Name JENNAPAH #1

Meter Code 71816

Development Criteria

- [X] 3 to 5 Casing Volumes of Water Removel
- [ ] Stabilization of Indicator Parameters
- [ ] Other

Methods of Development

Pump		Bailer	
[ ]	Centrifugal	[X]	Bottom Valve
[ ]	Submersible	[ ]	Double Check Valve
[ ]	Peristaltic	[ ]	Stainless-steel Kemmerer
[ ]	Other		

Water Volume Calculation

Initial Depth of Well (feet) 34.50
Initial Depth to Water (feet) 25.22
Height of Water Column in Well (feet) 9.28
Diameter (inches) Well 4 Gravel Pack

Item	Water Volume in Well: Cubic Feet	Water Volume in Well: Gallons	Gallons to be Removed
Well Casing		6.1	18.4
Gravel Pack			
Drilling Fluids			
Total			

Instruments

- [X] pH Meter
- [ ] DO Monitor
- [X] Conductivity Meter
- [X] Temperature Meter
- [X] Other O.O. CHEMETS KIT

Water Disposal

KUTZ SEPARATOR

Water Removal Data

Date	Time	Development Method: Pump	Development Method: Bailer	Removal Rate (gal/min)	Intake Depth (feet)	Ending Water Depth (feet)	Water Volume Removed (gal): Increment	Water Volume Removed (gal): Cumulative	Product Volume Removed (gallons): Increment	Product Volume Removed (gallons): Cumulative	Temperature °C	pH	Conductivity µmho/cm	Dissolved Oxygen mg/L	Comments
9-25-97	1332										20.1	6.78	1232		
9-25-97	1339						5.0	5.0			18.3	6.84	1304		
9-25-97	1346						5.0	10.0			17.8	7.13	1410		
9-25-97	1354						5.0	15.0			18.0	7.21	1450		
9-25-97	1401						5.0	20.0			18.1	7.23	1450		
9-25-97	1412						5.0	25.0			18.0	7.28	1947	1.0	

Comments THE WATER HAD A LIGHT HYDROGEN SULFIDE SMELL.

Developer's Signature Dennis Bird Date 9-25-97 Reviewer John Landa Date 10-6-97

SAMPLE 4 3RD QTR.

El Paso Natural Gas Company

A 2154

CHAIN OF CUSTODY RECORD

Project No.	Project Name	Samplers: (Signature)	Date
	MC # 71816	Dennis Bird	12-5-97

MATRIX	Date	Time	Comp.	GRAB	Sample Number	Type and No. of Sample Containers	Preservation Technique	Requested Analysis: BTXE				Remarks
WATER	12-5-97	1346		X	971275	G-1	4°C	X				JENNAPAH #1 MW-1

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Dennis Bird	12-5-97 1618				
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)	Date/Time	Remarks:	
		Marlon Hopper	12/18/97 0855		

Carrier Co:	Carrier Phone No.	Date Results Reported / by: (Signature)
Air Bill No.:		

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EL PASO FIELD SERVICES

FIELD SERVICES LABORATORY
ANALYTICAL REPORT
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	N/A	971275
MTR CODE | SITE NAME:	71816	Jennapah #1
SAMPLE DATE | TIME (Hrs):	12/5/97	1346
PROJECT:	Sample 4 3rd Quarter	
DATE OF BTEX EXT. | ANAL.:	12/9/97	12/9/97
TYPE | DESCRIPTION:	MW-1	Water

Field Remarks: _____

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	23.4	PPB				
TOLUENE	211	PPB				
ETHYL BENZENE	73.5	PPB				
TOTAL XYLENES	674	PPB		D1		
TOTAL BTEX	982	PPB				

--BTEX is by EPA Method 8020 --

The Surrogate Recovery was at 100.7 % for this sample All QA/QC was acceptable.

DF = Dilution Factor Used

The "D1" qualifier indicates that the analyte concentration exceeded the calibration curve limit.

Narrative:

Approved By: John Stubblefield Date: 12/18/97

971275BTEXMW,12/18/97

EL PASO FIELD SERVICES

Well Development and Purging Data

☐ Development
☒ Purging

Well Number MW-1

Site Name JENNAPAH #1

Meter Code 71816

Development Criteria

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

Water Volume Calculation

Initial Depth of Well (feet) 34.50
Initial Depth to Water (feet) 25.00
Height of Water Column in Well (feet) 9.50
Diameter (inches): Well 4 Gravel Pack

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing		6.3	18.8
Gravel Pack			
Drilling Fluids			
Total			

Instruments

☒ pH Meter
☐ DO Monitor
☒ Conductivity Meter
☒ Temperature Meter
☒ Other D.O. CHEMETS KIT

Methods of Development

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

☐ Other

Water Disposal

KUTZ SEPARATOR

Water Removal Data

Date	Time	Development Method		Removal Rate	Intake Depth	Ending Water Depth	Water Volume Removed (gal)		Product Volume Removed (gallons)		Temperature °C	pH	Conductivity µmho/cm	Dissolved Oxygen mg/L	Comments
		Pump	Bailer	(gal/min)	(feet)	(feet)	Increment	Cumulative	Increment	Cumulative					
12-5-97	1253										15.1	5.18	1436		
12-5-97	1300						5.0	5.0			14.5	5.41	1476		
12-5-97	1308						5.0	10.0			14.9	6.82	1575		
12-5-97	1316						5.0	15.0			15.2	7.15	1560		
12-5-97	1324						5.0	20.0			15.4	7.25	1553		
12-5-97	1333						5.0	25.0			14.4	7.29	1539	1.5	

Comments THE WATER HAD A LIGHT HYDROGEN SULFIDE SMELL.

Developer's Signature Dennis Bird Date 12-5-97 Reviewer John Fowler Date 12/18/97