

3R - 179

REPORTS

DATE:
1997



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

RECEIVED

MAR 02 1998

Environmental Bureau
Oil Conservation Division

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,

A handwritten signature in cursive script that reads 'Sandra D. Miller'.

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

GALLEGOS CANYON UNIT COM A #142E
Meter/Line ID - 03906

SITE DETAILS

Legals - Twn: 29N Rng: 12W Sec: 25 Unit: G
NMOCD Hazard Ranking: 10 Land Type: FEE
Operator: AMOCO PRODUCTION COMPANY

PREVIOUS ACTIVITIES

Site Assessment: Apr-94 Excavation: Apr-94 (20 cy) Soil Boring: Oct-95
Re-Excavation: Oct-96 (882 cy) 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 8/6/97. Groundwater analytical data are presented in Table 1.

Well Point Installation - Groundwater samples were collected from temporary monitoring wells. In addition, groundwater gradient was determined using the temporary monitoring wells.

CONCLUSIONS

Based on groundwater levels collected from Well Point data, the groundwater flow trends to the southeast on this site, as presented in Figure 1. Groundwater samples collected from MW-1 have been above standards for benzene, toluene, and total xylenes since quarterly sampling was initiated.

Groundwater samples collected from temporary monitoring wells were above standards up and down gradient of MW-1. Contaminants appear to have migrated off-site, based on field data. Due to off-site migration, plume size has not yet been defined.

Groundwater samples collected from PZ-2 and PZ-6, which are both upgradient of MW-1, were above standards, indicating potential upgradient sources.

RECOMMENDATIONS

- EPFS proposes to conduct no further actions at this site, until the operator commences with remediation of their production pits.
- Discontinue quarterly sampling at MW-1.

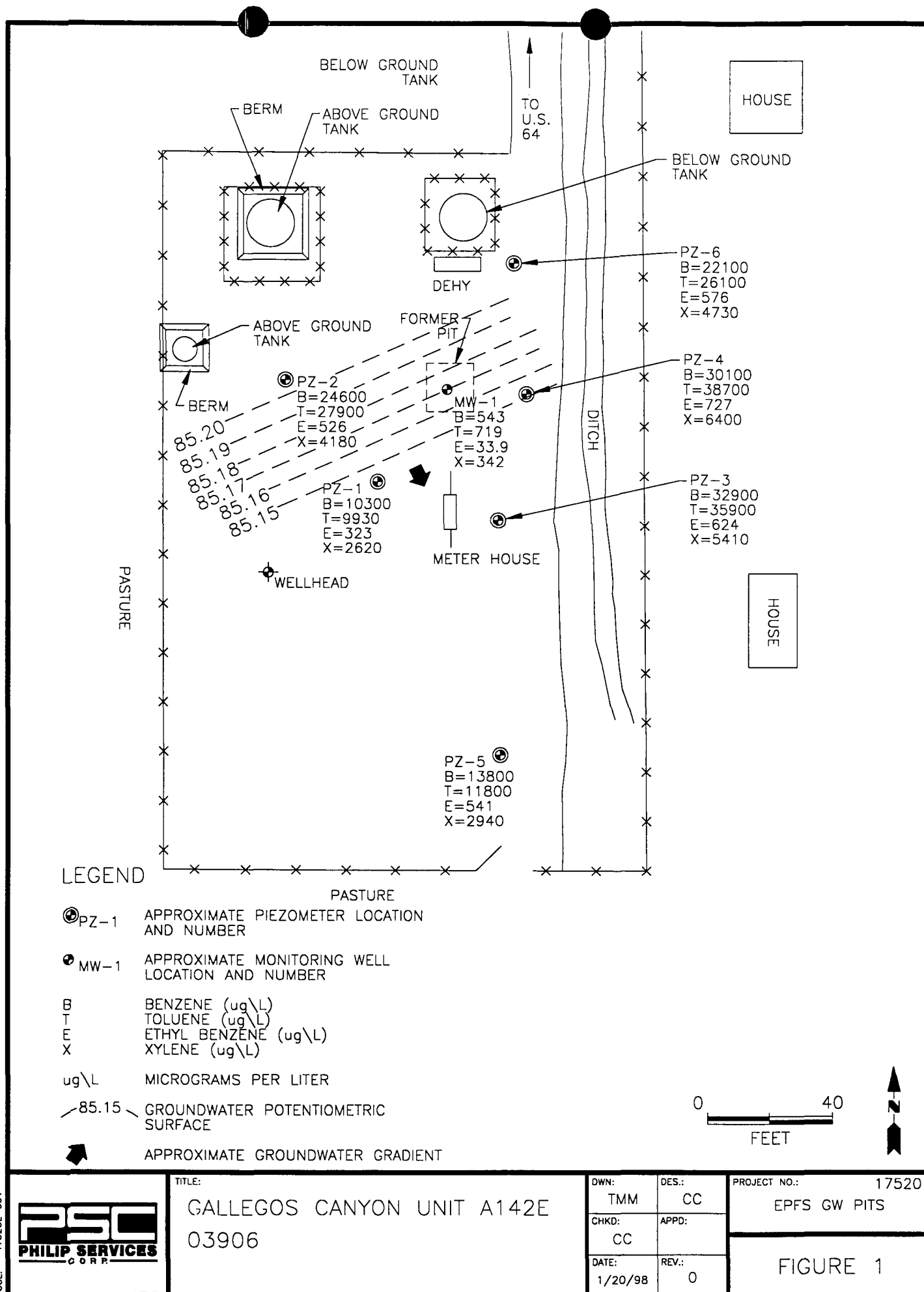


TABLE 1

Sample #	Meter/ Line #	Site Name	Sample Date	MW #	Project	Benzene (PPB)	Toluene (PPB)	Ethyl Benzene (PPB)	Total Xylenes (PPB)	Total BTEX
970203	03906	GCU Com A #142E	3/10/97	1	Phase II Drilling - Initial	4010	7960	213	2050	14233
970815	03906	GCU Com A #142E	8/6/97	1	Sample 4 - 1st Qtr	1040	1310	49.4	647	3046
971189	03906	GCU Com A #142E	11/5/97	1	Sample 4 - 2nd Qtr	543	719	33.9	342	1638

RECORD OF SUBSURFACE EXPLORATION

PHILIP ENVIRONMENTAL SERVICES INC.

4000 Monroe Road

Farmington, New Mexico 87401

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

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

Project Name EPFS GW PITS
Project Number 17520 Phase 6001.77
Project Location GCU COMA #142E-03906

Elevation _____
Borehole Location T29 R12 S25 Ltr G
GWL Depth 17.5' → 12'
Logged By D CESARK
Drilled By M MANOHUE
Date/Time Started 2/26/97 - 0900
Date/Time Completed 4 - 1000

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			Drilling Conditions & Blow Counts
0				BACKFILL						71 MED
5				TO 9' 12'						
10	1	9'-10' (18")		VERY STIFF SILTY CLAY, CLAYS PEBBLE, DK. BROWN, NO SIL STAIN/COOR	CL				1/2	209207
15	2	13'-15' 24"		(SAME AS ABOVE) BUT HIGHLY CONTAMINATED (STAIN COOR)	CL				110/407	209307
20				COBBLES/GRAVELS (NO SAMPLE) TD = 20'						
25										
30										
35										
40										

Comments:

TD = 20' GRAVEL/COBBLE ZONE ENC. C 15.5' BGS. LAST RETREIVABLE SAMPLE
WAS HIGHLY CONTAM. SO NOT SUBMITTED TO LAB. GW ENCOUNTERED @ 17.5' BGS.
SET WELL - PLEASE REFER TO WELL COMPLETION DIAGRAM.

Geologist Signature

[Signature]

MONITORING WELL INSTALLATION RECORD

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

Borehole # 2
Well # 1
Page 1 of 1

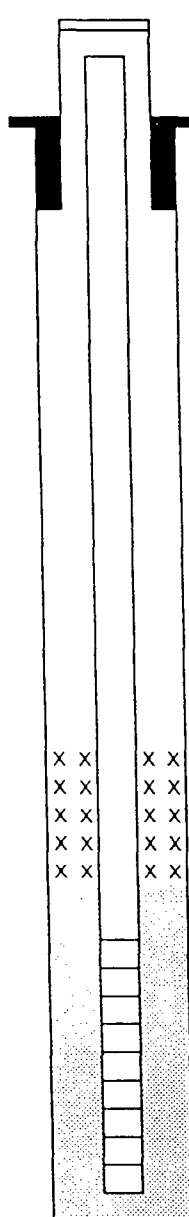
Project Name EPFS GW PITS
Project Number 17520 Phase 6002.77
Site Location GCU COM A #142E-DB906

Elevation _____
Well Location T29N-R12W-S2S-L'G'
GWL Depth 12'
Installed By M DONOHUE

On-Site Geologist D CESARK
Personnel On-Site D CHARLEY
Contractors On-Site _____
Client Personnel On-Site _____

Date/Time Started 2/26/97-1000
Date/Time Completed " -1200

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		
Bottom of Grout		
Top of Well Riser	SCREENED 40 PVC	+3'
Bottom of Well Riser	"	-3.5'
Top of Well Screen	10" SCREEN	-3.5'
Bottom of Well Screen	"	-18.5'
Top of Peltonite Seal	ENVIROPLUG	-0'
Bottom of Peltonite Seal	"	-2'
Top of Gravel Pack	10-20 SAND	-2'
Bottom of Gravel Pack	"	-18.5'
Top of Natural Cave-In		-18.5'
Bottom of Natural Cave-In		-20'
Top of Groundwater		12'
Total Depth of Borehole		20'



Top of Protective Casing N/A

Top of Riser +3'

Ground Surface -0'-

Top of Seal -0'-

Top of Gravel Pack -2'

Top of Screen -3.5'

Bottom of Screen -18.5'

Bottom of Borehole -20'

Comments: _____

Geologist Signature _____

WELLPOINTS

TEMPORARY PIEZOMETER INSTALLATION

Philip Services Corp.

4000 Monroe Rd.

Farmington, NM 87401

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

Borehole #

Well # PZ-1

Page 1 of 1

Project Name EPFS GW PITS

Project Number 17520 Phase 6006

Site Location Gallegos Canyon Unit A142E
03986

On-Site Geologist C CHANCE

Personnel On-Site C. Gomez

Contractors On-Site

Client Personnel On-Site

Elevation

Well Location Ltr G-S25-T29-R12

GWL Depth 14.93' TDR

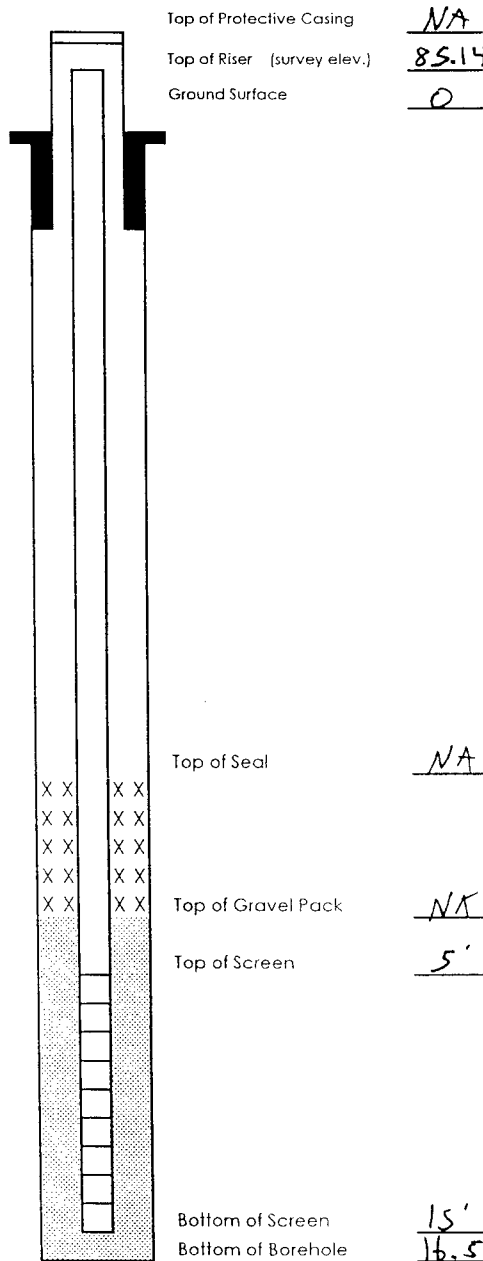
Installed By M. Denehy

Date/Time Started 9/25/97

Date/Time Complete 9/25/97

COMMENTS

- PZ1 is 218° & 37' from MW1
- Collect soil sample from 8-10'
- BGS: Br sandy CLAY, w/ sand, soft, med-hi plastic, moist, odor
- Install piezometer & collect GW sample (CMC 354) & send to lab. Cobbles @ 16.5'
- PID = 1014 ppm



MW1 Survey 85.17

AWINSTAT.WKT

Geologist Signature

Cory Chance

TEMPORARY PIEZOMETER INSTALLATION

Philip Services Corp.

4000 Monroe Rd.

Farmington, NM 87401

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

Borehole #
Well # PZ-2
Pag 1 of 1

Project Name EPFS GW PITS
Project Number 17520 Phase 6006
Site Location Gallegos Canyon Unit A142E
03906

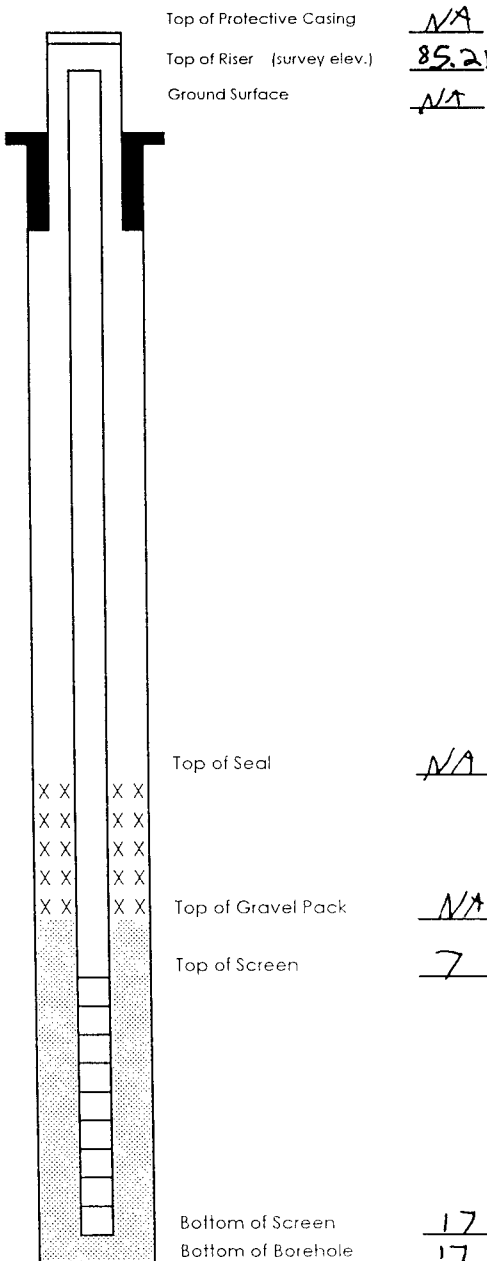
Elevation
Well Location Ltr G -S25-T29-R12
GWL Depth 15.34 TOR
Installed By M. Denehy

On-Site Geologist C CHANCE
Personnel On-Site C Gomez
Contractors On-Site
Client Personnel On-Site

Date/Time Started 9/26/97
Date/Time Complete 9/26/97

COMMENTS

- PZ2 is 275° + 52' from MW1
- Collect soil sample 8-10' BGS:
Br sandy CLAY, w/ sand, soft
high plastic, dry.
PID = 44 ppm
- Install temp. piezo &
collect GW sample
(CMC 355)



MW1 survey 85.17

TEMPORARY PIEZOMETER INSTALLATION

Philip Services Corp.

4000 Monroe Rd.

Farmington, NM 87401

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

Borehole #

Well # PZ-3

Page 1 of 1

Project Name EPFS GW PITS

Project Number 17520

Phase 6006

Site Location Gallegos Canyon Unit A142E
D3906

On-Site Geologist C CHANCE

Personnel On-Site C Gomez

Contractors On-Site

Client Personnel On-Site

Elevation

Well Location Ltr G -S25-T29-R12

GWL Depth

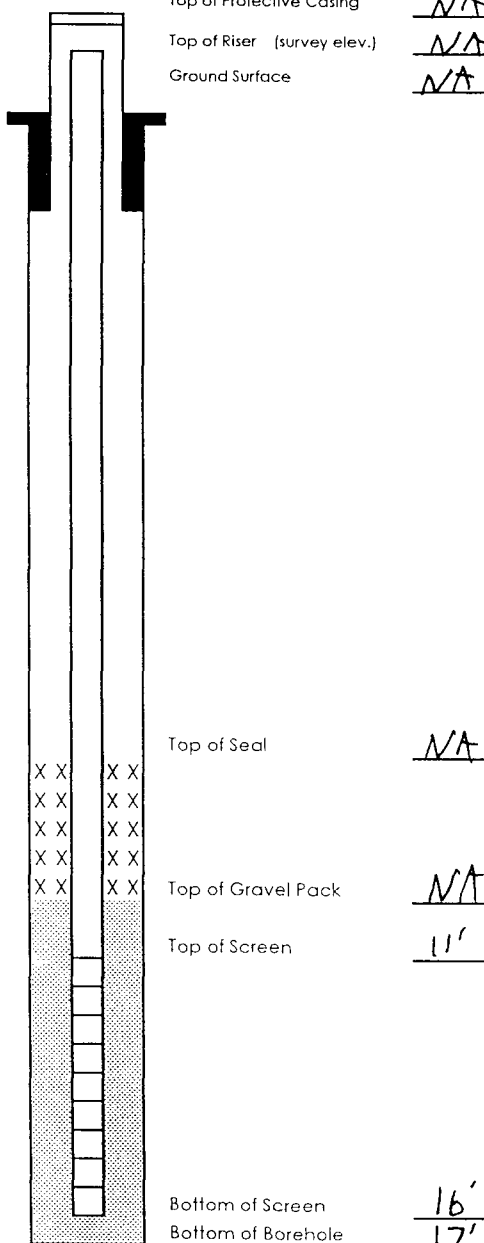
Installed By M. Donohue

Date/Time Started 9/26/97

Date/Time Complete 9/26/97

COMMENTS

- PZ3 is 165° & 45' from MW1
- Soil sample 8-10' BGS:
Br sandy CLAY, vF sand, soft,
high plastic, dry
PID = 1357 ppm
- Install well pt & collect
GW sample (CMC356).
- Pull well pt & grout BH



TEMPORARY PIEZOMETER INSTALLATION

Philip Services Corp.

4000 Monroe Rd.

Farmington, NM 87401

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

Borehole #

Well # PZ- 4

Page 1 of 1

Project Name EPFS GW PITS

Project Number 17520 Phase 6006

Site Location Gallegas Canyon Unit A142E
D3906

On-Site Geologist C CHANCE

Personnel On-Site C. Gomez

Contractors On-Site

Client Personnel On-Site

Elevation

Well Location Ltr G -S25-29-R12

GWL Depth

Installed By M. Denchve

Date/Time Started 9/26/97

Date/Time Complete 9/26/97

COMMENTS

- P24 is 95° & 25' from
MW1

- No soil sample collected.

Drilling in backfill

- Install well pt &
collect GW sample
(CMC357)

- Pull well pt & grout
BH

Top of Protective Casing

NA

Top of Riser (survey elev.)

NA

Ground Surface

NA

Top of Seal

NA

Top of Gravel Pack.

NA

Top of Screen

11'

Bottom of Screen

16'

Bottom of Borehole

17'

TEMPORARY PIEZOMETER INSTALLATION

Philip Services Corp.

4000 Monroe Rd.

Farmington, NM 87401

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

Borehole #

Well # PZ-5

Page 1 of 1

Project Name EPFS GW PITS

Project Number 17520 Phase 6006

Site Location Gallegos Canyon Unit A142E
D3906

On-Site Geologist C CHANCE

Personnel On-Site C Gomez, D Charley

Contractors On-Site

Client Personnel On-Site

Elevation

Well Location Ltr G -S25-T29-R12

GWL Depth

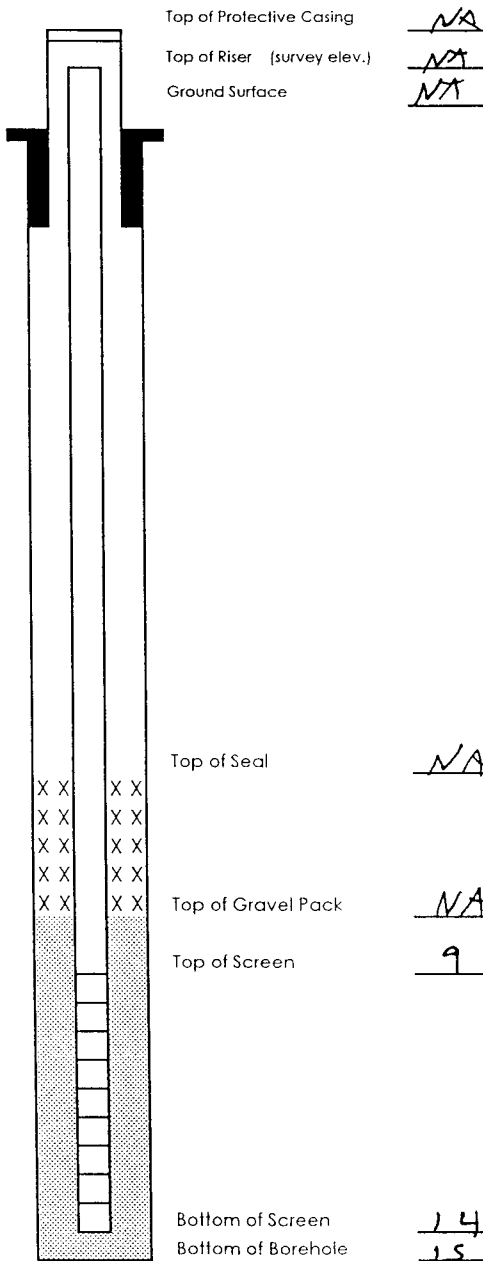
Installed By M Donohue R Padilla

Date/Time Started 9/29/97

Date/Time Complete

COMMENTS

- PZ5 is 175' ± 119' From MBL
- Collect soil sample 8-10' BGS:
Br silty CLAY, soft, hi plastic
abt 1/8 sand, dry
PID = 1150 ppm
- Install temp. well pt +
collect GW sample
(CMC 358)
- Pull well pt + grout
BH



TEMPORARY PIEZOMETER INSTALLATION

Philip Services Corp.

4000 Monroe Rd.

Farmington, NM 87401

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

Borehole #

Well # PZ- 6

Page 1 of 1

Project Name EPFS GW PITS

Project Number 17520

Phase 6006

Site Location Gallegos Canyon Unit A142E
03906

On-Site Geologist C CHANCE

Personnel On-Site C Gomez D Charles

Contractors On-Site

Client Personnel On-Site

Elevation

Well Location Ltr G -S 25-T 29-R 12

GWL Depth

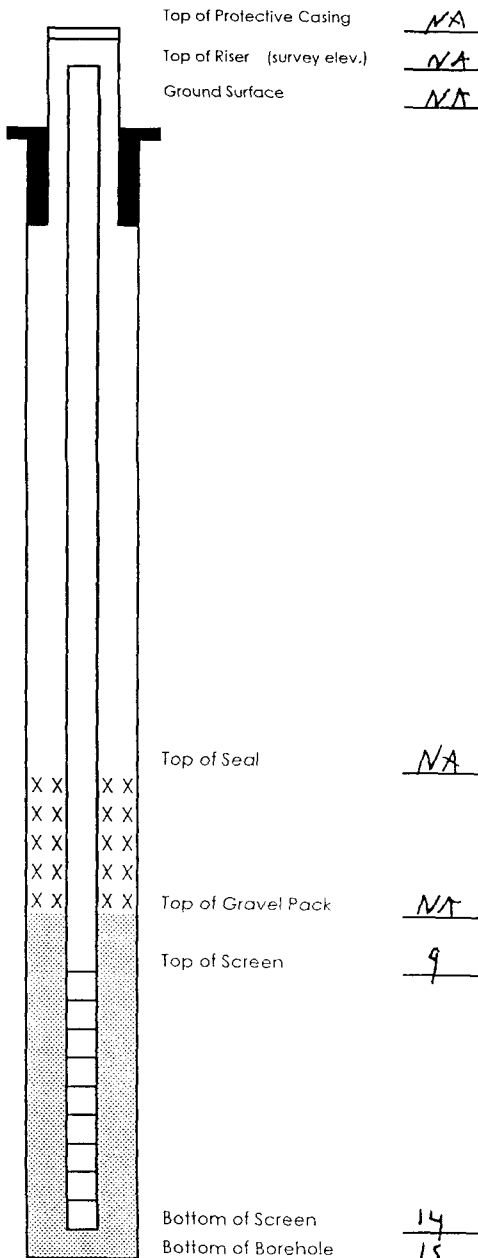
Installed By R. Padilla

Date/Time Started 9/29/97

Date/Time Complete 9/29/97

COMMENTS

- PZ 6 is 30' + 44' from MU
- Collect soil sample 8-10'
- BGS: Br silty CLAY, med stiff, high plastic, med v F sand, dry $P_{10} = 1059 \text{ psi}$
- Install well pt + collect GW sample (CMC 359)
- Pull well pt + grant BH



PROJECT NUMBER # 24324		PROJECT NAME Pit Closure Project		DATE 9/25/97		CONTRACT LABORATORY P. O. NUMBER	
SAMPLES: (Signature)		DATE		TOTAL NUMBER OF CONTAINERS		SAMPLE TYPE	
LABID	DATE	TIME	MATRIX	FIELD ID	TPH EPA 418.1	BTEX EPA 8020	LAB PID
971055	9/25/97	-	Water	Trip Blank	✓	✓	✓
971056	1015	11	CMC352	2	V6	✓	✓
971057	1155	11	CMC353	2	V6	✓	✓
971058	1600	11	CMC354	2	V6	✓	✓
37°F							
RELINQUISHED BY: (Signature)		DATE/TIME		RECEIVED BY: (Signature)		DATE/TIME	
Carli Nobis		9/25/97 1700		Carli Nobis		9/26/97 9:20	
RELINQUISHED BY: (Signature)		DATE/TIME		RECEIVED BY: (Signature)		DATE/TIME	
REQUESTED TURNAROUND TIME:				SAMPLE RECEIPT REMARKS			
☐ ROUTINE ☐ RUSH				RESULTS & INVOICES TO: FIELD SERVICES LABORATORY EL PASO NATURAL GAS COMPANY P.O. BOX 4990 FARMINGTON, NEW MEXICO 87499			
CARRIER CO.				CHARGE CODE			
BILL NO.:				505-599-2144			



FIELD SERVICES LABORATORY

ANALYTICAL REPORT PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	CMC354	971058
MTR CODE SITE NAME:	03906	GCU A #142E
SAMPLE DATE TIME (Hrs):	9/25/97	1155
PROJECT:	Well Points	
DATE OF BTEX EXT. ANAL.:	10/1/97	10/1/97
TYPE DESCRIPTION:	PZ-1	Water

Field Remarks: _____

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	10300	PPB	100	D		
TOLUENE	9930	PPB	100	D		
ETHYL BENZENE	323	PPB	100	D		
TOTAL XYLENES	2620	PPB	100	D		
TOTAL BTEX	23173	PPB				

--BTEX is by EPA Method 8020 --

The Surrogate Recovery was at 93.2 % 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: _____

Approved By: _____

Date: 10-3-97

971058BTEXWP,10/2/97

CHAIN OF CUSTODY RECORD

Page _____ of _____

Well PTS

PROJECT NUMBER # 24324		PROJECT NAME Pit Closure Project		CONTRACT LABORATORY P. O. NUMBER	
SAMPLERS: (Signature) <i>Cory Chene</i>		DATE 9/26/97		FIELD ID	
LAB ID	DATE	TIME	MATRIX	TOTAL NUMBERS OF CONTAINERS	SAMPLE TYPE
971068	9/26/97	-	Water	1	TB
971069	↓	0930	↓	2	V6
971070	↓	1055	↓	2	V6
971071	↓	1315	↓	2	V6
Cover 9/26/97					
RECEIVED OCT 23 1997					
REMARKS: Trip Blank GCU A142E 03906 P22 " " P23 " " P24					
Note: Samples reacted w/HCL Very difficult to remove all bubbles					
RELINQUISHED BY: (Signature) <i>Cory Chene</i>		DATE/TIME 9/26/97 1700		RECEIVED BY: (Signature) <i>Cari Nobis</i>	
RELINQUISHED BY: (Signature) <i>Cory Chene</i>		DATE/TIME 9/26/97 1010		RECEIVED BY: (Signature) <i>John Taylor</i>	
REQUESTED TURNAROUND TIME: ☐ ROUTINE ☐ RUSH					
SAMPLE RECEIPT REMARKS Temp 34°C Cool & Extract					
RESULTS & INVOICES TO: FIELD SERVICES LABORATORY EL PASO NATURAL GAS COMPANY P. O. BOX 4990 FARMINGTON, NEW MEXICO 87499					
BILL NO.: CHARGE CODE: 505-599-2144 505-599-2261					



FIELD SERVICES LABORATORY
ANALYTICAL REPORT
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

SAMPLE NUMBER:	Field ID Trip Blank	Lab ID 971068
MTR CODE SITE NAME:	03906	GCU A #142E
SAMPLE DATE TIME (Hrs):	9/26/97	0930
PROJECT:	Well Points	
DATE OF BTEX EXT. ANAL:	10/1/97	10/1/97
TYPE DESCRIPTION:	Trip Blank	Water

Field Remarks:

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	2.85	PPB		TB		
TOLUENE	<1	PPB				
ETHYL BENZENE	<1	PPB				
TOTAL XYLENES	<3	PPB				
TOTAL BTEX	3	PPB				

--BTEX is by EPA Method 8020 --

The Surrogate Recovery was at 95.1 % for this sample All QA/QC was acceptable.

DF = Dilution Factor Used

TB = Analyte detected at this concentration in yhr trip blank.

Narrative:

Approved By: John L. Ladd

Date: 10-3-97



FIELD SERVICES LABORATORY

ANALYTICAL REPORT PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	CMC355	971069
MTR CODE SITE NAME:	03906	GCU A #142E
SAMPLE DATE TIME (Hrs):	9/26/97	0930
PROJECT:	Well Points	
DATE OF BTEX EXT. ANAL.:	10/1/97	10/1/97
TYPE DESCRIPTION:	PZ-2	Water

Field Remarks:

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	24600	PPB	100	D		
TOLUENE	27900	PPB	100	D		
ETHYL BENZENE	526	PPB	100	D		
TOTAL XYLENES	4180	PPB	100	D		
TOTAL BTEX	57206	PPB				

--BTEX is by EPA Method 8020 --

The Surrogate Recovery was at 93.5 % 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:

Approved By:

John L. Landa

Date:

10-3-97

EL PASO FIELD SERVICES

FIELD SERVICES LABORATORY

ANALYTICAL REPORT

PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	CMC356	971070
MTR CODE SITE NAME:	03906	GCU A #142E
SAMPLE DATE TIME (Hrs):	9/26/97	1055
PROJECT:	Well Points	
DATE OF BTEX EXT. ANAL.:	10/1/97	10/1/97
TYPE DESCRIPTION:	PZ-3	Water

Field Remarks: _____

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	32900	PPB	100	D		
TOLUENE	35900	PPB	100	D		
ETHYL BENZENE	624	PPB	100	D		
TOTAL XYLENES	5410	PPB	100	D		
TOTAL BTEX	74834	PPB				

--BTEX is by EPA Method 8020 --

The Surrogate Recovery was at 93.8 % 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: _____

Approved By: John T. [Signature]

Date: 10-3-97



FIELD SERVICES LABORATORY
ANALYTICAL REPORT
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

SAMPLE NUMBER:	Field ID CMC357	Lab ID 971071
MTR CODE SITE NAME:	03906	GCU A #142E
SAMPLE DATE TIME (Hrs):	9/26/97	1315
PROJECT:	Well Points	
DATE OF BTEX EXT. ANAL.:	10/1/97	10/1/97
TYPE DESCRIPTION:	PZ-4	Water

Field Remarks:

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	30100	PPB	100	D		
TOLUENE	38700	PPB	100	D		
ETHYL BENZENE	727	PPB	100	D		
TOTAL XYLENES	6400	PPB	100	D		
TOTAL BTEX	75927	PPB				

--BTEX is by EPA Method 8020 --

The Surrogate Recovery was at 92.0 % 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:

Approved By:

John L. Latta

Date:

10-3-97

971071BTEXWP,10/21/97



EL PASO FIELD SERVICES

QUALITY CONTROL REPORT EPA METHOD 8020 - BTEX

Samples: 971052 to 971055, 971058, 971068, 971069, 971070, 971071 to 971074

QA/QC for 9/30/97 Sample Set

LABORATORY CALIBRATION CHECKS / LABORATORY CONTROL SAMPLES:

SAMPLE NUMBER ICV LA-52589 50 PPB	TYPE	EXPECTED RESULT PPB	ANALYTICAL RESULT PPB	%R	ACCEPTABLE	
					YES	NO
					RANGE	
Benzene	Standard	50.0	49.7	99.4	75 - 125 %	X
Toluene	Standard	50.0	49.9	100	75 - 125 %	X
Ethylbenzene	Standard	50.0	50.0	100	75 - 125 %	X
m & p - Xylene	Standard	100	100.3	100.3	75 - 125 %	X
o - Xylene	Standard	50.0	50.0	100	75 - 125 %	X
SAMPLE NUMBER LCS LA-45476 25 PPB	TYPE	EXPECTED RESULT PPB	ANALYTICAL RESULT PPB	%R	ACCEPTABLE	
					YES	NO
					RANGE	
Benzene	Standard	25.0	25.0	100.0	39 - 150	X
Toluene	Standard	25.0	25.2	101	46 - 148	X
Ethylbenzene	Standard	25.0	25.0	100	32 - 160	X
m & p - Xylene	Standard	50.0	50.1	100	Not Given	X
o - Xylene	Standard	25.0	25.1	100	Not Given	X
SAMPLE NUMBER CCV LA-52589 50 PPB	TYPE	EXPECTED RESULT PPB	ANALYTICAL RESULT PPB	%R	ACCEPTABLE	
					YES	NO
					RANGE	
Benzene	Standard	50.0	49.5	99.0	75 - 125 %	X
Toluene	Standard	50.0	49.1	98.1	75 - 125 %	X
Ethylbenzene	Standard	50.0	49.1	98.2	75 - 125 %	X
m & p - Xylene	Standard	100	97.9	97.9	75 - 125 %	X
o - Xylene	Standard	50.0	49.2	98	75 - 125 %	X
SAMPLE NUMBER CCV LA-52589 50 PPB	TYPE	EXPECTED RESULT PPB	ANALYTICAL RESULT PPB	%R	ACCEPTABLE	
					YES	NO
					RANGE	
Benzene	Standard	50.0	49.2	98.3	75 - 125 %	X
Toluene	Standard	50.0	48.7	97.3	75 - 125 %	X
Ethylbenzene	Standard	50.0	48.4	96.8	75 - 125 %	X
m & p - Xylene	Standard	100	96.5	96.5	75 - 125 %	X
o - Xylene	Standard	50.0	48.6	97.2	75 - 125 %	X

Narrative: Acceptable.

SAMPLE NUMBER CCV LA-52589 50 PPB	TYPE	EXPECTED RESULT PPB	ANALYTICAL RESULT PPB	%R	ACCEPTABLE	
					YES	NO
					RANGE	
Benzene	Standard	50.0	48.5	97.0	75 - 125 %	X
Toluene	Standard	50.0	47.4	94.8	75 - 125 %	X
Ethylbenzene	Standard	50.0	47.3	94.6	75 - 125 %	X
m & p - Xylene	Standard	100	93.9	93.9	75 - 125 %	X
o - Xylene	Standard	50.0	47.6	95.1	75 - 125 %	X

LABORATORY DUPLICATES:

SAMPLE ID 971053	TYPE	SAMPLE RESULT PPB	DUPLICATE RESULT PPB	RPD	ACCEPTABLE	
					YES	NO
					RANGE	
Benzene	Matrix Duplicate	<1	<1	0.00	+/- 20 %	X
Toluene	Matrix Duplicate	<1	<1	0.00	+/- 20 %	X
Ethylbenzene	Matrix Duplicate	<1	<1	0.00	+/- 20 %	X
m & p - Xylene	Matrix Duplicate	<2	<1	0.00	+/- 20 %	X
o - Xylene	Matrix Duplicate	<1	<1	0.00	+/- 20 %	X

Narrative: Acceptable.

LABORATORY SPIKES:

SAMPLE ID 2nd Analysis 971053	SPIKE ADDED PPB	SAMPLE RESULT PPB	SPIKE SAMPLE RESULT PPB	%R	ACCEPTABLE	
					YES	NO
					RANGE	
Benzene	50	<1	50.3	100.7	75 - 125 %	X
Toluene	50	<1	49.7	99	75 - 125 %	X
Ethylbenzene	50	<1	49.3	99	75 - 125 %	X
m & p - Xylene	100	<2	98.1	98.1	75 - 125 %	X
o - Xylene	50	<1	49.3	99	75 - 125 %	X

Narrative: Acceptable

AUTO BLANK	SOURCE	PPB (2 analyzed with set)	STATUS
Benzene	Boiled Water	< 1.0	ACCEPTABLE
Toluene	Boiled Water	< 1.0	ACCEPTABLE
Ethylbenzene	Boiled Water	< 1.0	ACCEPTABLE
Total Xylenes	Boiled Water	< 3.0	ACCEPTABLE

Narrative: Acceptable.

SOIL VIAL BLANK	SOURCE Lot MB1461	PPB (none analyzed with set)	STATUS
Benzene	Vial + Boiled Water	< 1.0	ACCEPTABLE
Toluene	Vial + Boiled Water	< 1.0	ACCEPTABLE
Ethylbenzene	Vial + Boiled Water	< 1.0	ACCEPTABLE
Total Xylenes	Vial + Boiled Water	< 3.0	ACCEPTABLE

Narrative: Acceptable.

CONTAMINATION CARRYOVER CHECK	SOURCE	PPB (none analyzed with this set)	STATUS
Benzene	Vial + Boiled Water	<1.0	ACCEPTABLE
Toluene	Vial + Boiled Water	<1.0	ACCEPTABLE
Ethylbenzene	Vial + Boiled Water	<1.0	ACCEPTABLE
Total Xylenes	Vial + Boiled Water	<3.0	ACCEPTABLE

Narrative: Acceptable.

9/30/97 TRIP BLANK	SOURCE	PPB	STATUS
Benzene	Vial + Boiled Water	<1.0	ACCEPTABLE
Toluene	Vial + Boiled Water	<1.0	ACCEPTABLE
Ethylbenzene	Vial + Boiled Water	<1.0	ACCEPTABLE
Total Xylenes	Vial + Boiled Water	<3.0	ACCEPTABLE

Narrative: Acceptable.

Reported By: CR

Approved By: John Lard

Date: 10-6-97



CHAIN OF CUSTODY RECORD

Well PTs

Page _____ of _____

PROJECT NAME # 24324 Pit Closure Project				CONTRACT LABORATORY P. O. NUMBER				
IMPLEMENTS (Signature)				DATE: 9/29/97				
LAB ID	DATE	TIME	MATRIX	FIELD ID	REQUESTED ANALYSIS			REMARKS
					TPH EPA 418.1	BTEX EPA 8020	LAB PID	SEQUENCE #
971072	9/29/97	—	Water	Trip Blank		✓		Trip Blank
971073	1115			CMC 358		✓		GCU A142E 03906 P25
971074	1215			CMC 359		✓		" P26
971075	1410			CMC 360		✓		GCU D16D 14046 P21
971076	1530	✓		CMC 361		✓		" P22
Signature: [Signature] DATE: 9/29/97								
ELINQUISHED BY: (Signature)				DATE/TIME	RECEIVED BY: (Signature)		DATE/TIME	RECEIVED BY: (Signature)
[Signature]				9/29/97 10:05	[Signature]		9-30-97 10:05	[Signature]
ELINQUISHED BY: (Signature)				DATE/TIME	RECEIVED BY: (Signature)		DATE/TIME	RECEIVED BY: (Signature)
[Signature]					[Signature]		9-30-97 10:05	[Signature]
REQUESTED TURNAROUND TIME:				SAMPLE RECEIPT REMARKS				
ROUTINE ☐ RUSH ☐				bp. 34°C				
ARRIER CO.				Intact & Cool				
LL NO.:				CHARGE CODE				
RESULTS & INVOICES TO:				505-599-2144				
FIELD SERVICES LABORATORY				505-599-2261				
EL PASO NATURAL GAS COMPANY				FARMINGTON, NEW MEXICO 87499				
P.O. BOX 4990								



FIELD SERVICES LABORATORY
ANALYTICAL REPORT
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	Trip Blank	971072
MTR CODE SITE NAME:	03906	GCU A #142E
SAMPLE DATE TIME (Hrs):	9/29/97	1115
PROJECT:	Well Points	
DATE OF BTEX EXT. ANAL.:	10/1/97	10/1/97
TYPE DESCRIPTION:	Trip Blank	Water

Field Remarks:

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	1.29	PPB		TB		
TOLUENE	< 1	PPB				
ETHYL BENZENE	< 1	PPB				
TOTAL XYLENES	< 3	PPB				
TOTAL BTEX	1	PPB				

--BTEX is by EPA Method 8020 --

The Surrogate Recovery was at 93.4 % for this sample All QA/QC was acceptable.
DF = Dilution Factor Used

TB = The associated analyte concentration was found in the trip blank.

Narrative:

Approved By:

John L. Loefer

Date:

10-3-97

971072BTEXWPTB,10/2/97



FIELD SERVICES LABORATORY
ANALYTICAL REPORT
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	CMC358	971073
MTR CODE SITE NAME:	03906	GCU A #142E
SAMPLE DATE TIME (Hrs):	9/29/97	1115
PROJECT:	Well Points	
DATE OF BTEX EXT. ANAL.:	10/1/97	10/1/97
TYPE DESCRIPTION:	PZ-5	Water

Field Remarks: _____

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	13800	PPB	100	D		
TOLUENE	11800	PPB	100	D		
ETHYL BENZENE	541	PPB	100	D		
TOTAL XYLENES	2940	PPB	100	D		
TOTAL BTEX	29081	PPB				

--BTEX is by EPA Method 8020 --

The Surrogate Recovery was at 93.0 % 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:

Approved By: John J. J. J.

Date: 10-3-97



FIELD SERVICES LABORATORY
ANALYTICAL REPORT
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	CMC359	971074
MTR CODE SITE NAME:	03906	GCU A #142E
SAMPLE DATE TIME (Hrs):	9/29/97	1215
PROJECT:	Well Points	
DATE OF BTEX EXT. ANAL.:	10/1/97	10/1/97
TYPE DESCRIPTION:	PZ-6	Water

Field Remarks:

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	22100	PPB	100	D		
TOLUENE	26100	PPB	100	D		
ETHYL BENZENE	576	PPB	100	D		
TOTAL XYLENES	4730	PPB	100	D		
TOTAL BTEX	53506	PPB				

--BTEX is by EPA Method 8020 --

The Surrogate Recovery was at 91.4 % 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:

Approved By:

John Latch

Date: 10-3-97

971074BTEXWP,10/2/97



EL PASO FIELD SERVICES

QUALITY CONTROL REPORT EPA METHOD 8020 - BTEX

Samples: 971056 to 971057, 971075 to 971076

QA/QC for 10/1/97 Sample Set

LABORATORY CALIBRATION CHECKS / LABORATORY CONTROL SAMPLES:

SAMPLE NUMBER	TYPE	EXPECTED RESULT PPB	ANALYTICAL RESULT PPB	%R	ACCEPTABLE	
					YES	NO
					RANGE	
ICV LA-52589 50 PPB						
Benzene	Standard	50.0	50.4	100.7	75 - 125 %	X
Toluene	Standard	50.0	50.0	100	75 - 125 %	X
Ethylbenzene	Standard	50.0	49.7	99	75 - 125 %	X
m & p - Xylene	Standard	100	99.3	99.3	75 - 125 %	X
o - Xylene	Standard	50.0	49.4	99	75 - 125 %	X
LCS LA-45476 25 PPB						
Benzene	Standard	25.0	24.4	97.5	39 - 150	X
Toluene	Standard	25.0	23.8	95	46 - 148	X
Ethylbenzene	Standard	25.0	24.4	98	32 - 160	X
m & p - Xylene	Standard	50.0	49.1	98	Not Given	X
o - Xylene	Standard	25.0	24.5	98	Not Given	X
CCV LA-52589 50 PPB						
Benzene	Standard	50.0	49.4	98.7	75 - 125 %	X
Toluene	Standard	50.0	48.1	96.1	75 - 125 %	X
Ethylbenzene	Standard	50.0	48.7	97.4	75 - 125 %	X
m & p - Xylene	Standard	100	97.5	97.5	75 - 125 %	X
o - Xylene	Standard	50.0	48.6	97	75 - 125 %	X

LABORATORY DUPLICATES:

SAMPLE ID	TYPE	SAMPLE RESULT PPB	DUPLICATE RESULT PPB	RPD	ACCEPTABLE	
					YES	NO
					RANGE	
971075						
Benzene	Matrix Duplicate	<1	<1	0.00	+/- 20 %	X
Toluene	Matrix Duplicate	1.2	1.1	4.56	+/- 20 %	X
Ethylbenzene	Matrix Duplicate	<1	<1	0.00	+/- 20 %	X
m & p - Xylene	Matrix Duplicate	<2	<2	0.00	+/- 20 %	X
o - Xylene	Matrix Duplicate	<1	<1	0.00	+/- 20 %	X

Narrative: Acceptable.

LABORATORY SPIKES:

SAMPLE ID	SPIKE ADDED PPB	SAMPLE RESULT PPB	SPIKE SAMPLE RESULT PPB	%R	ACCEPTABLE	
					YES	NO
					RANGE	
2nd Analysis 971075						
Benzene	50	<1	51.9	103.7	75 - 125 %	X
Toluene	50	1.2	51.0	100	75 - 125 %	X
Ethylbenzene	50	<1	50.1	100	75 - 125 %	X
m & p - Xylene	100	<2	100.9	100.9	75 - 125 %	X
o - Xylene	50	<1	49.9	100	75 - 125 %	X

Narrative: Acceptable

AUTO BLANK	SOURCE	PPB (analyzed at X5)	STATUS
Benzene	Boiled Water	<1.0	ACCEPTABLE
Toluene	Boiled Water	<1.0	ACCEPTABLE
Ethylbenzene	Boiled Water	<1.0	ACCEPTABLE
Total Xylenes	Boiled Water	<3.0	ACCEPTABLE

Narrative: Acceptable.

SOIL VIAL BLANK	SOURCE Lot MB1461	PPB (none analyzed with set)	STATUS
Benzene	Vial + Boiled Water	<1.0	ACCEPTABLE
Toluene	Vial + Boiled Water	<1.0	ACCEPTABLE
Ethylbenzene	Vial + Boiled Water	<1.0	ACCEPTABLE
Total Xylenes	Vial + Boiled Water	<3.0	ACCEPTABLE

Narrative: Acceptable.

CONTAMINATION CARRYOVER CHECK	SOURCE	PPB (none analyzed with this set)	STATUS
Benzene	Vial + Boiled Water	<1.0	ACCEPTABLE
Toluene	Vial + Boiled Water	<1.0	ACCEPTABLE
Ethylbenzene	Vial + Boiled Water	<1.0	ACCEPTABLE
Total Xylenes	Vial + Boiled Water	<3.0	ACCEPTABLE

Narrative: Acceptable.

TRIP BLANK	SOURCE	PPB (none analyzed with this set)	STATUS
Benzene	Vial + Boiled Water	<1.0	ACCEPTABLE
Toluene	Vial + Boiled Water	<1.0	ACCEPTABLE
Ethylbenzene	Vial + Boiled Water	<1.0	ACCEPTABLE
Total Xylenes	Vial + Boiled Water	<3.0	ACCEPTABLE

Narrative: Acceptable.

Reported By: CPKApproved By: John TellerDate: 10-6-07



EL PASO FIELD SERVICES

QUALITY CONTROL REPORT EPA METHOD 8020 - BTEX

Samples: 971052 to 971055, 971058, 971068, 971069, 971070, 971071 to 971074

QA/QC for 9/30/97 Sample Set

LABORATORY CALIBRATION CHECKS / LABORATORY CONTROL SAMPLES:

SAMPLE NUMBER	TYPE	EXPECTED RESULT PPB	ANALYTICAL RESULT PPB	%R	ACCEPTABLE	
					YES	NO
					RANGE	
ICV LA-52589 50 PPB						
Benzene	Standard	50.0	49.7	99.4	75 - 125 %	X
Toluene	Standard	50.0	49.9	100	75 - 125 %	X
Ethylbenzene	Standard	50.0	50.0	100	75 - 125 %	X
m & p - Xylene	Standard	100	100.3	100.3	75 - 125 %	X
o - Xylene	Standard	50.0	50.0	100	75 - 125 %	X
LCS LA-45476 25 PPB						
Benzene	Standard	25.0	25.0	100.0	39 - 150	X
Toluene	Standard	25.0	25.2	101	46 - 148	X
Ethylbenzene	Standard	25.0	25.0	100	32 - 160	X
m & p - Xylene	Standard	50.0	50.1	100	Not Given	X
o - Xylene	Standard	25.0	25.1	100	Not Given	X
CCV LA-52589 50 PPB						
Benzene	Standard	50.0	49.5	99.0	75 - 125 %	X
Toluene	Standard	50.0	49.1	98.1	75 - 125 %	X
Ethylbenzene	Standard	50.0	49.1	98.2	75 - 125 %	X
m & p - Xylene	Standard	100	97.9	97.9	75 - 125 %	X
o - Xylene	Standard	50.0	49.2	98	75 - 125 %	X
CCV LA-52589 50 PPB						
Benzene	Standard	50.0	49.2	98.3	75 - 125 %	X
Toluene	Standard	50.0	48.7	97.3	75 - 125 %	X
Ethylbenzene	Standard	50.0	48.4	96.8	75 - 125 %	X
m & p - Xylene	Standard	100	96.5	96.5	75 - 125 %	X
o - Xylene	Standard	50.0	48.6	97.2	75 - 125 %	X

Narrative: Acceptable.

SAMPLE NUMBER CCV LA-52589 50 PPB	TYPE	EXPECTED	ANALYTICAL	%R	ACCEPTABLE	
		RESULT	RESULT		YES	NO
		PPB	PPB		RANGE	
Benzene	Standard	50.0	48.5	97.0	75 - 125 %	X
Toluene	Standard	50.0	47.4	94.8	75 - 125 %	X
Ethylbenzene	Standard	50.0	47.3	94.6	75 - 125 %	X
m & p - Xylene	Standard	100	93.9	93.9	75 - 125 %	X
o - Xylene	Standard	50.0	47.6	95.1	75 - 125 %	X

LABORATORY DUPLICATES:

SAMPLE ID 971053	TYPE	SAMPLE RESULT PPB	DUPLICATE RESULT PPB	RPD	ACCEPTABLE	
					YES	NO
					RANGE	
Benzene	Matrix Duplicate	<1	<1	0.00	+/- 20 %	X
Toluene	Matrix Duplicate	<1	<1	0.00	+/- 20 %	X
Ethylbenzene	Matrix Duplicate	<1	<1	0.00	+/- 20 %	X
m & p - Xylene	Matrix Duplicate	<2	<1	0.00	+/- 20 %	X
o - Xylene	Matrix Duplicate	<1	<1	0.00	+/- 20 %	X

Narrative: Acceptable.

LABORATORY SPIKES:

SAMPLE ID 2nd Analysis 971053	SPIKE ADDED PPB	SAMPLE RESULT PPB	SPIKE SAMPLE RESULT PPB	%R	ACCEPTABLE	
					YES	NO
					RANGE	
Benzene	50	<1	50.3	100.7	75 - 125 %	X
Toluene	50	<1	49.7	99	75 - 125 %	X
Ethylbenzene	50	<1	49.3	99	75 - 125 %	X
m & p - Xylene	100	<2	98.1	98.1	75 - 125 %	X
o - Xylene	50	<1	49.3	99	75 - 125 %	X

Narrative: Acceptable

AUTO BLANK	SOURCE	PPB (2 analyzed with set)	STATUS
Benzene	Boiled Water	<1.0	ACCEPTABLE
Toluene	Boiled Water	<1.0	ACCEPTABLE
Ethylbenzene	Boiled Water	<1.0	ACCEPTABLE
Total Xylenes	Boiled Water	<3.0	ACCEPTABLE

Narrative: Acceptable.

SOIL VIAL BLANK	SOURCE Lot MB1461	PPB (none analyzed with set)	STATUS
Benzene	Vial + Boiled Water	<1.0	ACCEPTABLE
Toluene	Vial + Boiled Water	<1.0	ACCEPTABLE
Ethylbenzene	Vial + Boiled Water	<1.0	ACCEPTABLE
Total Xylenes	Vial + Boiled Water	<3.0	ACCEPTABLE

Narrative: Acceptable.

CONTAMINATION ARRYOVER CHECK	SOURCE	PPB (none analyzed with this set)	STATUS
Benzene	Vial + Boiled Water	<1.0	ACCEPTABLE
Toluene	Vial + Boiled Water	<1.0	ACCEPTABLE
Ethylbenzene	Vial + Boiled Water	<1.0	ACCEPTABLE
Total Xylenes	Vial + Boiled Water	<3.0	ACCEPTABLE

Narrative: Acceptable.

9/30/97 TRIP BLANK	SOURCE	PPB	STATUS
Benzene	Vial + Boiled Water	<1.0	ACCEPTABLE
Toluene	Vial + Boiled Water	<1.0	ACCEPTABLE
Ethylbenzene	Vial + Boiled Water	<1.0	ACCEPTABLE
Total Xylenes	Vial + Boiled Water	<3.0	ACCEPTABLE

Narrative: Acceptable.

Reported By: CA

Approved By: John Fardis

Date: 10-6-97

**1997 GROUNDWATER
ANALYTICAL**

PHILIP

ENVIRONMENTAL
PROTECTION
INTEGRITY

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 <i>EPF3 GWPTS</i>		Project Number <i>17520</i>		Phase Task <i>6003</i>		Task <i>77</i>	
Samplers <i>J. Long</i>		Laboratory		Name <i>EPH</i>		Location <i>Farmington NM</i>	
Sample Number (and depth)	Date	Time	Matrix	Total Number of Bottles	Type of Analysis and Bottle	Comments	
<i>JAL T-RPBLANK</i>	<i>3-10-97</i>	<i>1115</i>	<i>WATER</i>	<i>2</i>	<i>X</i>		
<i>JAL 14046.01</i>	<i>3-10-97</i>	<i>1245</i>	<i>WATER</i>	<i>2</i>	<i>X</i>		
<i>J2L 08906.01</i>	<i>3-10-97</i>	<i>1610</i>	<i>WATER</i>	<i>2</i>	<i>X</i>		
<i>J2L T-RPBLANK</i>	<i>3-11-97</i>	<i>1000</i>	<i>WATER</i>	<i>1</i>	<i>W</i>		
<i>J2L 60153.01</i>	<i>3-11-97</i>	<i>1045</i>	<i>WATER</i>	<i>2</i>	<i>X</i>		
<i>J2L 95210.01</i>	<i>3-11-97</i>	<i>1325</i>	<i>WATER</i>	<i>2</i>	<i>W</i>		
<i>JAL 75220.01</i>	<i>3-11-97</i>	<i>1530</i>	<i>WATER</i>	<i>2</i>	<i>W</i>		
<i>J2L T-RPBLANK</i>	<i>3-12-97</i>	<i>1150</i>	<i>WATER</i>	<i>1</i>	<i>W</i>		
<i>JAL 71676.01</i>	<i>3-12-97</i>	<i>1155</i>	<i>WATER</i>	<i>2</i>	<i>W</i>		
<i>J2L T-RPBLANK</i>	<i>3-13-97</i>	<i>1000</i>	<i>WATER</i>	<i>1</i>	<i>W</i>		
<i>JAL 74916.01</i>	<i>3-13-97</i>	<i>1010</i>	<i>WATER</i>	<i>2</i>	<i>W</i>		

Relinquished by:

Received By:

Signature	Date	Time	Signature	Date	Time
<i>[Signature]</i>	<i>3-13-97</i>	<i>1430</i>	<i>[Signature]</i>	<i>3/13/97</i>	<i>1435</i>

Samples Iced: ☒ Yes ☐ No

Preservatives (ONLY for Water Samples)

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

Carrier:

Shipping and Lab Notes:

Hard Delivered
Rec'd - Cool and IN-TACT

Airbill No.



5-22-97

FIELD SERVICES LABORATORY
ANALYTICAL REPORT
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	JAL 08906-01	970203
MTR CODE SITE NAME:	08906 03906	GCU Com A #142E
SAMPLE DATE TIME (Hrs):	3/10/97	1610
PROJECT:	Phase II Drilling - Initial	
DATE OF BTEX EXT. ANAL.:	3/15/97	3/15/97
TYPE DESCRIPTION:	Monitor Well	Water

Field Remarks:

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	4010	PPB	25	D		
TOLUENE	7960	PPB	100	D		
ETHYL BENZENE	213	PPB	25	D		
TOTAL XYLENES	2050	PPB	25	D		
TOTAL BTEX	14200	PPB				

--BTEX is by EPA Method 8020 --

The Surrogate Recovery was at 98.2 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:

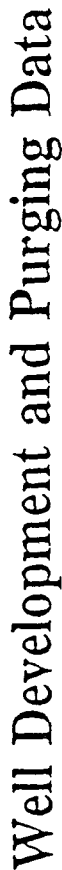
Approved By:

John L. Linder

Date:

4/5/97

970203, 4/4/97



☒ Development
☐ Purging

Well Number 99001

Page _____ of _____

Project Name EPFS G.W. P.I.T.Project Manager Corey Chazelle

Project No.

Client Company *ELP220*

Client Company *ELP220*

Site Name
SLU com A 1426 (0556)
05/10/21/9

Site Address

Water Volume Calculation

~~23~~ 3 to 5 Casing Volumes of Water Removal

Initial Depth of Well (feet) 22.1

Initial Depth of Well (feet) 22.1

Stabilization of Indicator Parameters

Initial Depth to Water (feet) 16.78

Journal Pre-proof

Height of Water Column in Well (feet) 5.32

Diameter (inches): Well Gravel Pack

Pump

	Water V
--	---------

☐ Centrifugal ☒ Bottom Valve

11944 III 010109 A 103011	
---------------------------	--

☐ Submersible ☒ Double Check Valve

Item	Cubic Feet	Gallons
------	------------	---------

☐ Peristaltic ☐ Stainless-steel Kemmerer

Well Casing .	2.47
---------------	------

☐ Other

Gravel Pack		
-------------	--	--

Water Removal Data

[illegible]

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

Comments of British die after 8.52 AM, 24 Dec 35/16.12 2.1 = 1.1 35/16.12

#4 Balled bit samples

Developer's Signature(s)

Date 3-10-97

Reviewer _____ Date _____



Water Sampling Data

Location No. MW01Serial No. WSD-

Group List Number _____

Sample Type: ☒ Groundwater ☐ Surface Water ☐ Other _____ Date 3-10-97Project Name EPFS GWPITS Project No. 17520Project Manager Cory Chance Phase Task No. 6003.77Site Name GCU Com A #142E MC 03506

Sampling Specifications

Requested Sampling
Depth Interval (feet) TOP 3'
Requested Wait Following
Development/Purging (hours) _____

Initial Measurements

Time Elapsed From Final Development/Purging (hours) 10
Initial Water Depth (feet) 16.78
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)	
See	Well Development and Purging Data Sheet											

See well Development and Purging Data Sheet

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	G	40			HCL			JAL 0890601 T1610

Filter Type _____ Chain-of-Custody Form Number C3055

Comments _____

Signature [Signature] Date 3-10-97 Reviewer _____ Date _____

A 2044

Project No.	Project Name		Date		Sample Number		Type and No. of Sample Containers	Preservation Technique	Requested Analysis	Remarks
	ARTEC PIPELINE		Date: 8-6-97							
Samplers: (Signature) <i>Dennis Dine</i>										
	Date	Time	Comp.	GRAB						
	8-6-97	1134		X	970815		52	400	X	SCU COM A TYPE M/L/M C 058X
	8-6-97	—		X	—		51	400	X	TRIP BLANK
Relinquished by: (Signature) <i>Dennis Dine</i> Received by: (Signature) 										
Relinquished by: (Signature) Received by: (Signature) 										
Relinquished by: (Signature) Received for Laboratory by: (Signature) <i>Wanda Roper</i>										
Carrier Co.: Date Results Reported / by: (Signature)										



FIELD SERVICES LABORATORY
ANALYTICAL REPORT
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	N/A <i>10/11/97</i>	970815
MTR CODE SITE NAME:	08906 03906	GCU Com A #142E MW-1
SAMPLE DATE TIME (Hrs):	8/6/97	1134
PROJECT:	Sample 4 - 1st Quarter	
DATE OF BTEX EXT. ANAL.:	8/11/97	8/11/97
TYPE DESCRIPTION:	Monitor Well	Water

Field Remarks: _____

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	1040	PPB	25	D		
TOLUENE	1310	PPB	25	D		
ETHYL BENZENE	49.4	PPB	25	D		
TOTAL XYLENES	647	PPB	25	D		
TOTAL BTEX	3046	PPB				

--BTEX is by EPA Method 8020 --

The Surrogate Recovery was at 94.3 % 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: _____

Approved By: *John Telli*

Date: 8/25/97

970815BTEX, 8/22/97

EL PASO FIELD SERVICES

Field Services Laboratory Analytical Report

SAMPLE IDENTIFICATION

EPFS LAB ID:	970815
DATE SAMPLED:	08/06/97
TIME SAMPLED (Hrs):	1134
SAMPLED BY:	DB
MATRIX:	Water
METER CODE:	08906 03906 JP 10-21-97
SAMPLE SITE NAME:	GCU Com. A #142E
SAMPLE POINT:	MW-1

FIELD REMARKS:

GENERAL CHEMISTRY WATER ANALYSIS RESULTS

PARAMETER	RESULT	UNITS	DATE ANALYZED
Laboratory pH	7.25	Units	08/11/97
Alkalinity as CO ₃	0	PPM	08/11/97
Alkalinity as HCO ₃	551	PPM	08/11/97
Calcium as Ca	198	PPM	08/11/97
Magnesium as Mg	41.0	PPM	08/11/97
Total Hardness as CaCO ₃	663	PPM	08/11/97
Chloride as Cl	12.5	PPM	08/08/97
Sulfate as SO ₄	343	PPM	08/08/97
Fluoride as F	0.66	PPM	08/11/97
Nitrate as NO ₃ -N	34.2	PPM	08/08/97
Nitrite as NO ₂ -N	<0.2	PPM	08/08/97
Ammonium as NH ₄ ⁺	<0.1	PPM	08/11/97
Phosphate as PO ₄	<0.2	PPM	08/08/97
Potassium as K	2.1	PPM	08/11/97
Sodium as Na	98.0	PPM	08/11/97
Total Dissolved Solids	1,260	PPM	08/11/97
Conductivity	1,420	umhos/cm	08/11/97
Anion/Cation %	3.9%	%, < 5.0 Accepted	08/21/97

Lab Remarks:

Reported By: CV

Approved By:

John L. Linder

Date: 8/22/97



EL PASO FIELD SERVICES

FIELD SERVICES LABORATORY ANALYTICAL REPORT

SAMPLE IDENTIFICATION

SAMPLE NUMBER:	970815
SAMPLE DATE:	08/06/97
SAMPLE TIME (Hrs):	1134
SAMPLED BY:	D. Bird
MATRIX:	Water
METER CODE:	08906 63906 Brian-97
SAMPLE SITE NAME:	GCU Com. A #142E
SAMPLE POINT:	MW-1

REMARKS:

RESULTS

PARAMETER	TOTAL RESULT (mg/L)	N. M. WQCC LIMIT (mg/L)
ARSENIC (As)	0.006	0.100
BARIUM (Ba)	0.39	1.00
CADMIUM (Cd)	<0.0002	0.010
CHROMIUM (Cr)	<0.004	0.050
LEAD (Pb)	<0.003	0.050
MERCURY (Hg)	<0.0002	0.002
SELENIUM (Se)	<0.011	0.050
SILVER (Ag)	<0.0004	0.050

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

Reported By: CV

Approved By: *John L. Ladd*

Date: 9-11-97

QUALITY CONTROL REPORT

Sample ID: 970815
Date Reported: 09/05/97

STANDARD REFERENCE MATERIAL

Analyte	Found Result (mg/L)	Known Value (mg/L)	% Recovery
Arsenic	0.031	0.032	94.4%
Barium	0.059	0.065	90.6%
Cadmium	0.0013	0.0012	110%
Chromium	0.008	0.007	103%
Lead	0.044	0.042	105%
Mercury	0.0041	0.0046	89.3%
Selenium	0.040	0.041	98.8%
Silver	0.0062	0.0068	91.2%

DUPLICATE ANALYSIS (mg/L)

Analyte	Original Sample Result	Duplicate Sample Result	% RPD
Arsenic	0.008	0.008	0.8%
Barium	0.106	0.114	7.3%
Cadmium	ND	ND	NA
Chromium	0.004	0.005	4.7%
Lead	ND	ND	NA
Mercury	ND	ND	NA
Selenium	ND	ND	NA
Silver	ND	ND	NA

SPIKE ANALYSIS (mg/L)

Analyte	Original Sample Result	Spike Sample Result	Spike Added	Recovery Percent
Arsenic	0.008	0.118	0.100	107%
Barium	0.106	0.997	1.00	89.1%
Cadmium	ND	0.0105	0.010	99.7%
Chromium	0.004	0.052	0.050	94.9%
Lead	ND	0.054	0.050	102%
Mercury	ND	0.0017	0.0020	89.0%
Selenium	ND	0.054	0.050	105%
Silver	ND	0.0393	0.005	78.4%

METHOD BLANK

Analyte	Found Result (mg/L)	Detection Level (mg/L)
Arsenic	ND	0.004
Barium	ND	0.019
Cadmium	ND	0.0002
Chromium	ND	0.004
Lead	ND	0.003
Mercury	ND	0.00019
Selenium	ND	0.011
Silver	ND	0.0004

ND: Not Detected at stated detection level.

NA: Not Applicable.

Reported By: mh

Approved By: John Lardi

Date: 9-8-97

CHAIN OF CUSTODY RECORD

Project No.		Project Name		MC# 03906		Date: 11-5-97		Remarks	
Samplers: (Signature)		Dennis Bird		Date: 11-5-97		Date: 11-5-97		Remarks	
Date	Time	Comp.	GRAB	Sample Number	Type and No. of Sample Containers	Preservation Technique	Requested Analysis	Remarks	
11-5-97	1321		X	971189	5-1	4°C X		GCU COM A#142E MW-1	
Relinquished by: (Signature)		Dennis Bird		Date/Time		Received by: (Signature)		Date/Time	
Relinquished by: (Signature)				11-5-97 1618		Received by: (Signature)			
Relinquished by: (Signature)						Received by: (Signature)			
Relinquished by: (Signature)						Received for Laboratory by: (Signature)		Date/Time	
Relinquished by: (Signature)						11/16/97 0715		Remarks:	
Carrier Co:		Morgan		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	971189
MTR CODE SITE NAME:	03906	GCU Com. A #142E
SAMPLE DATE TIME (Hrs):	11/5/97	1321
PROJECT:	Sample 4 2nd Quarter	
DATE OF BTEX EXT. ANAL.:	11/6/97	11/6/97
TYPE DESCRIPTION:	MW-1	Water

Field Remarks: _____

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	543	PPB	10	D		
TOLUENE	719	PPB	10	D		
ETHYL BENZENE	33.9	PPB	10	D		
TOTAL XYLENES	342	PPB	10	D		
TOTAL BTEX	1638	PPB				

--BTEX is by EPA Method 8020 --

The Surrogate Recovery was at 89.0 % 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.

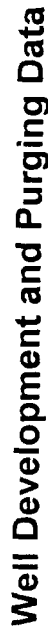
Narrative: _____

Approved By: _____

Date: _____

11/12/97

971189BTEXMW, 11/10/97



☐	Development
☒	Purging

Well Number MW-1
Meter Code 03906

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

Water Volume Calculation

Initial Depth of Well (feet) 21.72
Initial Depth to Water (feet) 15.02
Height of Water Column in Well (feet) 6.70

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

Instruments

☒	pH Meter
☐	DO Monitor
☒	Conductivity Meter
☒	Temperature Meter
☒	Other <u>DO</u>

Water Disposal

KUTZ SEPARATOR

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing		4.4	13.3
Gravel Pack			
Drilling Fluids			
Total			

[illegible]

Comments

THE WATER HAD A LIGHT HYDROGEN SULFIDE SMELL.

Developer's Signature Jennie Bird

Date 11-5-97 Reviewer _____

John F. Bell

Date 11/13/97