

3R - 190

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 Liese, 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

HAMNER #9
Meter/Line ID - 97213

SITE DETAILS

Legals - Twn: 29N Rng: 9W Sec: 20 Unit: A
NMOCD Hazard Ranking: 30 Land Type: FEDERAL
Operator: AMOCO PRODUCTION COMPANY

PREVIOUS ACTIVITIES

Site Assessment: May-94 Excavation: May-94 (70 cy) Soil Boring: Aug-95
Monitor Well: Aug-95 Geoprobe: Oct-96

1997 ACTIVITIES

Quarterly Groundwater Monitoring - This site has one monitoring well located in the center of the former pit. The first quarterly sampling event took place on 11/8/96. Quarterly groundwater samples were collected in 1997, with the analytical data presented in Table 1.

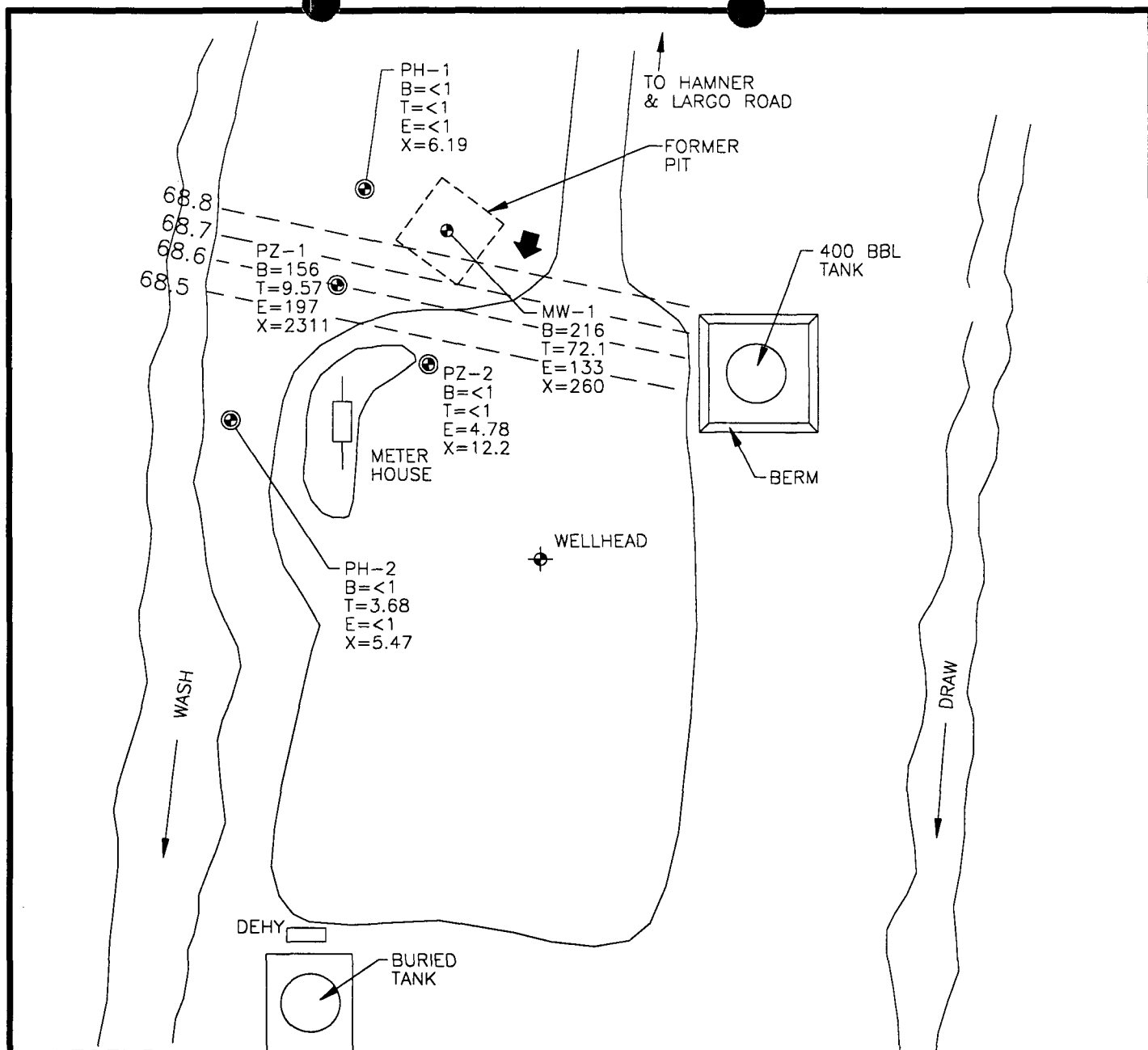
CONCLUSIONS

Based on groundwater levels collected from Geoprobe data, the groundwater flow trends to the south on this location, as presented in Figure 1. One Geoprobe groundwater sample collected downgradient of MW-1 shows BTEX analysis below standards. One Geoprobe groundwater sample collected from south west of MW-1 shows benzene and xylene above standards. Additional crossgradient and downgradient Geoprobe groundwater samples are below standards for BTEX.

MW-1 has been over standards for benzene since sampling was initiated. However, there does not appear to be a substantial migration of contaminants based on Geoprobe data. In addition, benzene concentrations in MW-1 have consistently decreased since initiation of sampling.

RECOMMENDATIONS

- This site is a potential candidate for air sparging or nutrient injection in the four corners of the pit.
- Quarterly sampling will continue at MW-1 until 4 consecutive clean quarters are achieved.
- Following OCD approval for closure, MW-1 will be abandoned following OCD approved abandonment procedures.



LEGEND

- ⊙ PZ-1 APPROXIMATE PIEZOMETER LOCATION AND NUMBER
- ⊕ 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

68.5 GROUNDWATER POTENTIOMETRIC SURFACE

➔ APPROXIMATE GROUNDWATER GRADIENT

NOT TO SCALE



COL. 17520BI-001



TITLE:
HAMNER #9
97213

DWN:
TMM
CHKD:
CC
DATE:
1/20/98

DES.:
CC
APPD:
REV.:
0

PROJECT NO.: 17520
EPFS GW PITS

FIGURE 1

TABLE 1

Sample #	Meter/ Line #	Site Name	Sample Date	MW #	Project	Benzene (PPB)	Toluene (PPB)	Ethyl Benzene (PPB)	Total Xylenes (PPB)	Total BTEX
960928	97213	Hammer #9	11/08/96	1	Sample 4 - 1st Qtr	= 559	= 499	= 395	= 933	= 2386
970078	97213	Hammer #9	2/10/97	1	Sample 4 - 2nd Qtr	= 350	= 101	= 233	= 476	= 1160
970414	97213	Hammer #9	5/8/97	1	Sample 4 - 3rd Qtr	= 266	= 9.75	= 230	= 308	= 814
970810	97213	Hammer #9	8/5/97	1	Sample 4 - 4th Quarter	= 272	= 228	= 172	= 370	= 1042
971185	97213	Hammer #9	11/4/97	1	Sample 4 - 5th Quarter	= 216	= 72.1	= 133	= 260	= 681

13-22 Blanco

RECORD OF SUBSURFACE EXPLORATION

PHILIP ENVIRONMENTAL

4000 Monroe Road

Farmington, New Mexico 87401

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

Borehole # BH-1

Well #

Page 1

of 1

Project Name EPNG PITS

Project Number 14509 Phase 6000 77

Project Location Hammer #9 97212

Elevation

Borehole Location QA-S20-T29-R9

GWL Depth

Logged By CM CHANCE

Drilled By K Padilla

Date/Time Started 8/22/95-0800

Date/Time Completed 8/22/95-1040

Well Logged By

CM Chance

Personnel On-Site

K Padilla, F. Rivera, P. Chadler

Contractors On-Site

Client Personnel On-Site

Drilling Method 4 1/4" ID HSA

1 8 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			Drilling Conditions & Blow Counts
							BZ	BH	HS	
0				Backfill to 12'						
5										
10										
15	1	15-17	4"	Gry clayey SAND, vF sand, loose, sl moist			0	40	640 1046	-0817 hr
20	2	20-22	16"	Gry silty SAND, vF sand, loose, sl moist			0	36	250 1033	-0822
25	3	25-27	8"	AA			8	24	301 879	-0830
30	4	30-32	6"	Gry SAND, F-med sand, + fine, Very loose, Saturated			0	18	0 NA	-0837
35				Ctngs-AA						-Cannot get a GW level. Will drill 5' more -GW 30' -Cobbles @ 32' -Refusal 32' w/ 4 1/4" -Refusal @ 37' w/ 8 1/4" I.D. auger.
40				TDB 37'						

Comments:

GW @ 30' CMC 88 (25-22) sent to lab (BTEX, TPH). Will
 drill w/ 8 1/4" I.D. auger to 40' & set well. Refusal @ 32' w/ 4 1/4" I.D. augers
 Refusal @ 37' w/ 8 1/4" I.D. auger. Will set well @ 37'.

Geologist Signature

Cory Chaney

MONITORING WELL INSTALLATION RECORD

Philip Environmental Services Corp.
4000 Monroe Road
Farmington, New Mexico 87401
(505) 326-2262 FAX (505) 326-2388

Borehole # BH-1
Well # MW1
Page 1 of 1

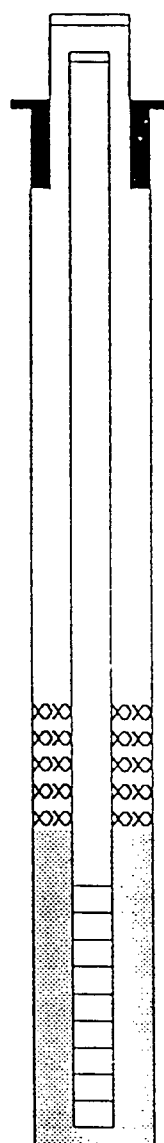
Project Name EPNG Pits

Project Number 14509 Phase 6001 77
Project Location Hammer #9 97213

Elevation _____
Well Location QA-S20-J29-R9
GWL Depth _____
Installed By K. Padilla

On-Site Geologist CM Chance
Personnel On-Site E. Rivera, D. Charlie
Contractors On-Site _____
Client Personnel On-Site _____

Date/Time Started 8/22/95-1050
Date/Time Completed 8/22/95-1630

Depths in Reference to Ground Surface				
Item	Material	Depth		
Top of Protective Casing		NA	Top of Protective Casing <u>NA</u>	
Bottom of Protective Casing		NA	Top of Riser <u>+3'</u>	
Top of Permanent Borehole Casing		NA	Ground Surface <u>0'</u>	
Bottom of Permanent Borehole Casing		NA		
Top of Concrete		NA		
Bottom of Concrete		NA		
Top of Grout	8 - 94# bags cement TYPE I-II	0'		
Bottom of Grout	5 - 50# bags powder bentonite	20'		
Top of Well Riser	28' Sch 40-4" dia PVC	+3'		
Bottom of Well Riser	Flush thread	25'		
Top of Well Screen	10' Sch 40-4" dia Flush thread	25'		
Bottom of Well Screen	PVC. 0.010 slot	37'		
Top of Peltonite Seal	4 - 50# bags Enviroseal	20'		
Bottom of Peltonite Seal	Bentonite	22'	Top of Seal <u>20'</u>	
Top of Gravel Pack	17 - 50# bags	22'	Top of Gravel Pack <u>22'</u>	
Bottom of Gravel Pack	10 - 20 silica sand	35'	Top of Screen <u>25'</u>	
Top of Natural Cave-In		35'	Bottom of Screen <u>35'</u> Bottom of Borehole <u>37'</u>	
Bottom of Natural Cave-In		37'		
Top of Groundwater		30'		
Total Depth of Borehole		37'		

Comments: Hydrated bentonite w/ 10 gal potable water. Note: Formation may have been "smeared" while pulling augers. Could not get auger level after drilling to 37'. Well was set based on 2' of head in augers at 30' (30-32') while drilling. Refusal was encountered at 37' w/ 2' of cave-in. Only 10' of screen was used due to refusal, which will allow for a 5' seasonal fluctuation.

Geologist Signature CM Chance

GEOPROBE

Site Activities

10-Mar-97

Meter/Line #: 97213

Location/Line #: Hamner #9

MW#:

Depth to GW:

Depth to Product:

Product Thickness:

Date: 10/30/96

Activity: Geoprobe

Sample Type: Geoprobe/Piezometer

Sample Depth: 29-31

Refusal Depth:

Comments: Installed 2 piezos and 2 probeholes. MW1 in center of pit.

PIEZOMETER INSTALLATION RECORD

Philip Environmental Services, Inc.

4000 Monroe Rd.

Farmington, NM 87401

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

Borehole # PZ - 1

Well # _____

Page 1 of 1

Project Name EPFS PITS

Project Number 16297 Phase 6004

Site Location Hammer # 9 97213

Elevation _____

Well Location SW of Mh1

GWL Depth 29.76 TOR (28.67 BGS)

Installed By K PADILLA

On-Site Geologist CM CHANCE

Personnel On-Site D CHARLEY

Contractors On-Site _____

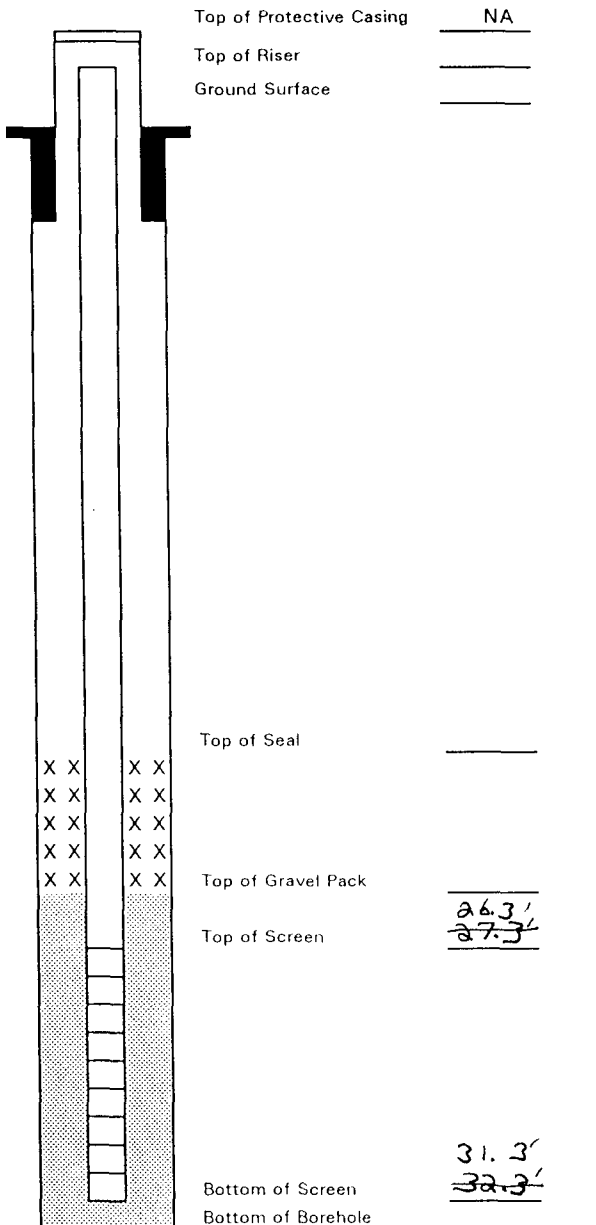
Client Personnel On-Site _____

Date/Time Started 10/30/96

Date/Time Completed 10/30/96

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		
Bottom of Well Riser		
Top of Well Screen		
Bottom of Well Screen		
Top of Peltonite Seal		
Bottom of Peltonite Seal		
Top of Gravel Pack		
Bottom of Gravel Pack		
Top of Natural Cave-In		
Bottom of Natural Cave-In		
Top of Groundwater		
Total Depth of Borehole		



Comments: _____

PIEZOMETER INSTALLATION RECORD

Philip Environmental Services, Inc.

4000 Monroe Rd.

Farmington, NM 87401

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

Borehole # PZ-2

Well # _____

Page 1 of 1

Project Name EPFS PITS

Project Number 16297 Phase 6004

Site Location Hammer #9 97213

Elevation _____

Well Location SE FMW1

GWL Depth 32.13 TOR (29.55 BGs)

Installed By K PADILLA

On-Site Geologist CM CHANCE

Personnel On-Site D CHARLEY

Contractors On-Site _____

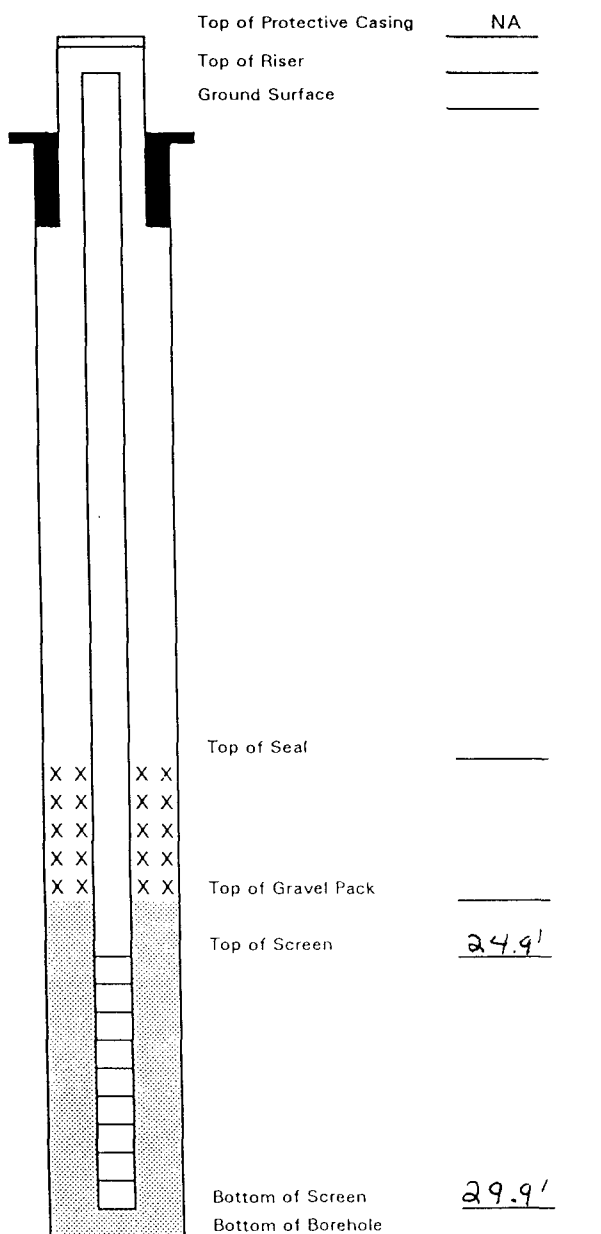
Client Personnel On-Site _____

Date/Time Started 10/30/96

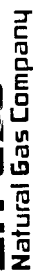
Date/Time Completed 10/30/96

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		
Bottom of Well Riser		
Top of Well Screen		
Bottom of Well Screen		
Top of Peltonite Seal		
Bottom of Peltonite Seal		
Top of Gravel Pack		
Bottom of Gravel Pack		
Top of Natural Cave-In		
Bottom of Natural Cave-In		
Top of Groundwater		
Total Depth of Borehole		



Comments: _____



CHAIN OF CUSTODY RECORD

A 2685

Project No.	Project Name	Date:		Type and No. of Sample Containers	Preservation Technique	Requested Analysis	Remarks
16297	EPFS PITS	10/30/96					
CM Chance							
1972	10/30/96	0930	✓	CMC241	PHI	Hammer #9	97213
1973	1125	✓	CMC242	CMC10/30/96	PZ1		
			CMC243		CMC10/30/96 PZ2		
			TRIP BLANK	1	TRIP BLANK		
Note: CMC242 appears to have high dissolved phase prod. (Odor & Foam on EHL)							
Relinquished by: (Signature)		Date/Time		Received by: (Signature)		Date/Time	
Cony Chance		10/30/96 1500		Kelley Stwall		10-31-96 11:25	
Relinquished by: (Signature)		Date/Time		Received by: (Signature)		Date/Time	
						10-31-96 0925	
Relinquished by: (Signature)		Date/Time		Received for Laboratory by: (Signature)		Remarks:	
Carrier Co:				Date Results Reported / by: (Signature)			



EL PASO FIELD SERVICES
FIELD SERVICES LABORATORY

ANALYTICAL REPORT
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	CMC241	947972
MTR CODE SITE NAME:	97213	Hamner #9
SAMPLE DATE TIME (Hrs):	10/30/96	930
PROJECT:	GEOPROBE	
DATE OF BTEX EXT. ANAL.:	10/31/96	10/31/96
TYPE DESCRIPTION:	PH1	Water

Field Remarks: _____

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	< 1	PPB				
TOLUENE	< 1	PPB				
ETHYL BENZENE	< 1	PPB				
TOTAL XYLENES	6.19	PPB				
TOTAL BTEX	6.19	PPB				

—BTEX is by EPA Method 8020 —

The Surrogate Recovery was at 90.4 % for this sample All QA/QC was acceptable.

Narrative:

DF = Dilution Factor Used

Approved By: John Landa

Date: 11/5/96



EL PASO FIELD SERVICES
FIELD SERVICES LABORATORY

ANALYTICAL REPORT
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	CMC242	947973
MTR CODE SITE NAME:	97213	Hamner #9
SAMPLE DATE TIME (Hrs):	10/30/96	1125
PROJECT:	GEOPROBE	
DATE OF BTEX EXT. ANAL.:	10/31/96	10/31/96
TYPE DESCRIPTION:	PZ1	Water

Field Remarks: _____

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	156	PPB	10	D		
TOLUENE	9.57	PPB	10	D		
ETHYL BENZENE	197	PPB	10	D		
TOTAL XYLENES	2311	PPB	10	D		
TOTAL BTEX	2674	PPB				

—BTEX is by EPA Method 8020 —

The Surrogate Recovery was at 87.3 % for this sample All QA/QC was acceptable.

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

Narrative:

DF = Dilution Factor Used

Approved By: John Larkin

Date: 11/5/96

EPFS

EL PASO FIELD SERVICES

QUALITY CONTROL REPORT EPA METHOD 8020 - BTEX

Samples: 947972 - 947973

QA/QC for 10/31/96 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	48.8	97.6	75 - 125 %	X
Toluene	Standard	50.0	47.6	95.2	75 - 125 %	X
Ethylbenzene	Standard	50.0	47.7	95.4	75 - 125 %	X
m & p - Xylene	Standard	100	89.8	89.8	75 - 125 %	X
o - Xylene	Standard	50.0	47.9	95.8	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	26.0	104	39 - 150	X
Toluene	Standard	25.0	25.0	100	46 - 148	X
Ethylbenzene	Standard	25.0	25.0	100	32 - 160	X
m & p - Xylene	Standard	50.0	45.9	91.8	Not Given	X
o - Xylene	Standard	25.0	25.4	102	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	46.4	92.8	75 - 125 %	X
Toluene	Standard	50.0	45.3	90.6	75 - 125 %	X
Ethylbenzene	Standard	50.0	45.0	90.0	75 - 125 %	X
m & p - Xylene	Standard	100	86.1	86.1	75 - 125 %	X
o - Xylene	Standard	50.0	45.4	90.8	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		0.00	75 - 125 %	
Toluene	Standard	50.0		0.00	75 - 125 %	
Ethylbenzene	Standard	50.0		0.00	75 - 125 %	
m & p - Xylene	Standard	100		0.00	75 - 125 %	
o - Xylene	Standard	50.0		0.00	75 - 125 %	

Narrative: Acceptable.

L PASO FIELD SERVICES LAB
QUALITY CONTROL REPORT
EPA METHOD 8020 - BTEX
Samples: 947972 - 947973

LABORATORY DUPLICATES:

SAMPLE ID	TYPE	SAMPLE RESULT PPB	DUPLICATE RESULT PPB	RPD	ACCEPTABLE	
					YES	NO
947972					RANGE	
Benzene	Matrix Duplicate	<1.0	<1.0	0.00	+/- 20 %	X
Toluene	Matrix Duplicate	<1.0	<1.0	0.00	+/- 20 %	X
Ethylbenzene	Matrix Duplicate	<1.0	<1.0	0.00	+/- 20 %	X
m & p - Xylene	Matrix Duplicate	5.09	4.95	2.79	+/- 20 %	X
o - Xylene	Matrix Duplicate	1.10	1.06	3.70	+/- 20 %	X

Narrative: Acceptable.

LABORATORY SPIKES:

SAMPLE ID	SPIKE ADDED PPB	SAMPLE RESULT PPB	SPIKE SAMPLE RESULT PPB	%R	ACCEPTABLE	
					YES	NO
2nd Analysis 947972					RANGE	
Benzene	50	<1.0	48.4	96.8	75 - 125 %	X
Toluene	50	<1.0	47.4	94.8	75 - 125 %	X
Ethylbenzene	50	<1.0	47.0	94.0	75 - 125 %	X
m & p - Xylene	100	5.09	9.03	87.2	75 - 125 %	X
o - Xylene	50	1.10	4.10	93.4	75 - 125 %	X

Narrative: Acceptable

ADDITIONAL ANALYTICAL BLANKS:

AUTO BLANK	SOURCE	PPB	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 (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.

CONTAMINATION CARRYOVER CHECK	SOURCE	PPB (One 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: mdw

Approved By: John Feller

Date: 11/5/90



EL PASO FIELD SERVICES
FIELD SERVICES LABORATORY

ANALYTICAL REPORT
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	CMC243	947974
MTR CODE SITE NAME:	97213	Hamner #9
SAMPLE DATE TIME (Hrs):	10/31/96	1125
PROJECT:	GEOPROBE	
DATE OF BTEX EXT. ANAL.:	11/1/96	11/1/96
TYPE DESCRIPTION:	PZ2	Water

Field Remarks: _____

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	< 1	PPB				
TOLUENE	< 1	PPB				
ETHYL BENZENE	4.78	PPB				
TOTAL XYLENES	12.2	PPB				
TOTAL BTEX	17.0	PPB				

—BTEX is by EPA Method 8020 —

The Surrogate Recovery was at 102 % for this sample All QA/QC was acceptable.

Narrative:

DF = Dilution Factor Used

Approved By: _____

Date: 11/5/96



EL PASO FIELD SERVICES
FIELD SERVICES LABORATORY

ANALYTICAL REPORT
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	CMC244	947975
MTR CODE SITE NAME:	97213	Hamner #9
SAMPLE DATE TIME (Hrs):	10/31/96	1144
PROJECT:	GEOPROBE	
DATE OF BTEX EXT. ANAL.:	11/1/96	11/1/96
TYPE DESCRIPTION:	PH2	Water

Field Remarks: _____

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	< 1	PPB				
TOLUENE	3.68	PPB				
ETHYL BENZENE	< 1	PPB				
TOTAL XYLENES	5.47	PPB				
TOTAL BTEX	9.15	PPB				

—BTEX is by EPA Method 8020 —

The Surrogate Recovery was at 103 % for this sample All QA/QC was acceptable.

Narrative:

DF = Dilution Factor Used

Approved By: John Lovelace

Date: 11/5/96

EPFS

EL PASO FIELD SERVICES

QUALITY CONTROL REPORT EPA METHOD 8020 - BTEX

Samples: 947974, 947975

QA/QC for 11/01/96 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	51.8	104	75 - 125 %	X
Toluene	Standard	50.0	51.1	102	75 - 125 %	X
Ethylbenzene	Standard	50.0	50.8	102	75 - 125 %	X
m & p - Xylene	Standard	100	101	101	75 - 125 %	X
o - Xylene	Standard	50.0	50.1	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	25.1	100	39 - 150	X
Toluene	Standard	25.0	25.2	101	46 - 148	X
Ethylbenzene	Standard	25.0	25.5	102	32 - 160	X
m & p - Xylene	Standard	50.0	51.4	103	Not Given	X
o - Xylene	Standard	25.0	25.6	102	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	50.6	101	75 - 125 %	X
Toluene	Standard	50.0	50.2	100	75 - 125 %	X
Ethylbenzene	Standard	50.0	50.2	100	75 - 125 %	X
m & p - Xylene	Standard	100	99.9	99.9	75 - 125 %	X
o - Xylene	Standard	50.0	49.9	99.8	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		0.00	75 - 125 %	
Toluene	Standard	50.0		0.00	75 - 125 %	
Ethylbenzene	Standard	50.0		0.00	75 - 125 %	
m & p - Xylene	Standard	100		0.00	75 - 125 %	
o - Xylene	Standard	50.0		0.00	75 - 125 %	

Narrative: Acceptable.

EL PASO FIELD SERVICES LAB

QUALITY CONTROL REPORT

EPA METHOD 8020 - BTEX

Samples: 947974, 947975

LABORATORY DUPLICATES:

SAMPLE ID	TYPE	SAMPLE RESULT PPB	DUPLICATE RESULT PPB	RPD	ACCEPTABLE	
					YES	NO
947974					RANGE	
Benzene	Matrix Duplicate	<1.0	<1.0	0.00	+/- 20 %	X
Toluene	Matrix Duplicate	<1.0	<1.0	0.00	+/- 20 %	X
Ethylbenzene	Matrix Duplicate	4.78	5.06	5.69	+/- 20 %	X
m & p - Xylene	Matrix Duplicate	12.2	12.4	1.63	+/- 20 %	X
o - Xylene	Matrix Duplicate	<1.0	<1.0	0.00	+/- 20 %	X

Narrative: Acceptable.

LABORATORY SPIKES:

SAMPLE ID	SPIKE ADDED PPB	SAMPLE RESULT PPB	SPIKE SAMPLE RESULT PPB	%R	ACCEPTABLE	
					YES	NO
2nd Analysis 947974					RANGE	
Benzene	50	<1.0	51.8	104	75 - 125 %	X
Toluene	50	<1.0	53.3	107	75 - 125 %	X
Ethylbenzene	50	4.78	55.9	102	75 - 125 %	X
m & p - Xylene	100	12.2	114	102	75 - 125 %	X
o - Xylene	50	<1.0	48.9	97.8	75 - 125 %	X

Narrative: Acceptable

ADDITIONAL ANALYTICAL BLANKS:

AUTO BLANK	SOURCE	PPB	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	PPB	STATUS
	Lot MB1461	(Analyzed with this set)	
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	STATUS
		(None analyzed with this set)	
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: MDL

Approved By: John Linder

Date: 11/5/96

**1997 GROUNDWATER
ANALYTICAL**



CHAIN OF CUSTODY RECORD

[illegible]



FIELD SERVICES LABORATORY
ANALYTICAL REPORT
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

SAMPLE NUMBER:	Field ID N/A	Lab ID 960928
MTR CODE SITE NAME:	97213	Hamner #9 MW-1
SAMPLE DATE TIME (Hrs):	11/8/96	1514
PROJECT:	Sample 4 - 1st Quarter	
DATE OF BTEX EXT. ANAL.:	11/11/96	11/11/96
TYPE DESCRIPTION:	Monitor Well	Water

Field Remarks:

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	559	PPB	5	D		
TOLUENE	499	PPB	5	D		
ETHYL BENZENE	395	PPB	5	D		
TOTAL XYLENES	933	PPB	5	D		
TOTAL BTEX	2390	PPB				

—BTEX is by EPA Method 8020 —

The Surrogate Recovery was at 94.8 % 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 Smith

Date:

11/14/96



Field Services Laboratory
Analytical Report

SAMPLE IDENTIFICATION

EPFS LAB ID:	960928
DATE SAMPLED:	11/08/96
TIME SAMPLED (Hrs):	1514
SAMPLED BY:	D. Bird
MATRIX:	Water
METER CODE:	97213
SAMPLE SITE NAME:	Bloomfield Pipeline
SAMPLE POINT:	Hamner #9 MW-1

FIELD REMARKS:

GENERAL CHEMISTRY WATER ANALYSIS RESULTS

PARAMETER	RESULT	UNITS	DATE ANALYZED
Laboratory pH	8.3	Units	11/06/96
Alkalinity as CO ₃	0.0	PPM	11/06/96
Alkalinity as HCO ₃	4170	PPM	11/06/96
Calcium as Ca	16	PPM	11/07/96
Magnesium as Mg	10	PPM	11/07/96
Total Hardness as CaCO ₃	79	PPM	11/07/96
Chloride as Cl	47	PPM	11/06/96
Sulfate as SO ₄	886	PPM	11/06/96
Fluoride as F	<.1	PPM	11/07/96
Nitrate as NO ₃ -N*	<0.6	PPM	11/06/96
Nitrite as NO ₂ -N	<0.6	PPM	11/06/96
Ammonium as NH ₄ ⁺	<0.6	PPM	11/07/96
Phosphate as PO ₄	7.5	PPM	11/06/96
Potassium as K	2.9	PPM	11/07/96
Sodium as Na	2010	PPM	11/07/96
Total Dissolved Solids	5,130	PPM	11/06/96
Conductivity	6,900	umhos/cm	11/06/96
Anion/Cation %	0.4%	%, < 5.0 Accepted	11/20/96

Lab Remarks:

Nitrate was analyzed outside of holding limits.

Reported By: mdc

Approved By: John L. Linder

Date: 11/20/96

**FIELD SERVICES LABORATORY
ANALYTICAL REPORT****SAMPLE IDENTIFICATION**

SAMPLE NUMBER:	960928
SAMPLE DATE:	11/08/96
SAMPLE TIME (Hrs):	1514
SAMPLED BY:	D. Bird
MATRIX:	Water
METER CODE:	97213
SAMPLE SITE NAME:	Bloomfield Pipeline
SAMPLE POINT:	Hamner #9 MW-1

REMARKS: _____

RESULTS

PARAMETER	TOTAL RESULT (mg/L)	N. M. WQCC LIMIT (mg/L)
ARSENIC	<.010	0.100
BARIUM	0.18	1.00
CADMIUM	<.0002	0.010
CHROMIUM	0.004	0.050
LEAD	<.004	0.050
MERCURY	<.00024	0.002
SELENIUM	<.003	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.
Method 7761, Silver (Atomic Absorption, Furnace Technique), Test Methods for Evaluating Solid Waste, SW-846, USEPA, July, 1992.

Reported By: mdaApproved By: John F. J. J.Date: 12/18/96

QUALITY CONTROL REPORT

Sample ID: 960928
Date Sampled: 11/08/96

Date Reported: 12/16/96

STANDARD REFERENCE MATERIAL

Analyte	Found Result ($\mu\text{g/L}$)	Known Value ($\mu\text{g/L}$)	% Recovery
Arsenic	30.6	32.4	94%
Barium	75.5	64.9	116%
Cadmium	2.75	2.38	116%
Chromium	5.07	4.76	107%
Lead	28.8	29.7	97%
Mercury	4.86	4.59	106%
Selenium	36.3	40.5	90%
Silver	4.81	4.32	111%

DUPLICATE ANALYSIS (mg/L)

Analyte	Original Sample Result	Duplicate Sample Result	% RPD
Arsenic	ND	ND	NA
Barium	0.58	0.55	5.3%
Cadmium	ND	ND	NA
Chromium	0.002	0.002	0.0%
Lead	ND	ND	NA
Mercury	ND	ND	NA
Selenium	ND	ND	NA
Silver	ND	ND	NA

SPIKE ANALYSIS ($\mu\text{g/L}$)

Analyte	Original Sample Result	Spike Sample Result	Spike Added	Recovery Percent
Arsenic	ND	115	100	105%
Barium	580	1520	1000	94%
Cadmium	ND	9.53	10.0	95%
Chromium	2.3	51.6	50.0	99%
Lead	ND	40.2	50.0	80%
Mercury	ND	1.82	2.00	91%
Selenium	ND	47.9	50.0	96%
Silver	ND	49.6	50.0	99%

METHOD BLANK

Analyte	Found Result ($\mu\text{g/L}$)	Detection Level ($\mu\text{g/L}$)
Arsenic	ND	10
Barium	ND	10
Cadmium	ND	0.2
Chromium	ND	2
Lead	ND	4
Mercury	ND	0.24
Selenium	ND	3
Silver	ND	0.5

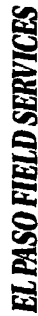
ND: Not Detected at stated detection level.

NA: Not Applicable.

Reported By: mh

Approved By: John Zuck

Date: 12/18/96



Well Development and Purging Data

Well Number MW-1
Meter Code 97213

☐	Development
☒	Purging

Site Name HAMMER #9

Development Criteria

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

Methods of Development

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

☐ Other _____

Water Volume Calculation

Initial Depth of Well (feet) 38.50'
Initial Depth to Water (feet) 30.30'
Height of Water Column in Well (feet) 8.20

Diameter (Inches): Well 4 Gravel Pack

Item	Water Volume In Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing		5.4	16.3
Gravel Pack			
Drilling Fluids			
Total			

Instruments

- ☒ pH Meter
☐ DO Monitor
☒ Conductivity Meter
☒ Temperature Meter
☒ Other 20.0

Water Disposal
KUTZ SEPARATOR

Water Removal Data

[illegible]

Comments	BALCED DRY P 6.0 GALLONS.
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Developer's Signature Lenny Bird Date 11-8-96 Reviewer John Lach Date 11/14/96



A 2222

CHAIN OF CUSTODY RECORD

THE UNIVERSITY OF CHICAGO



FIELD SERVICES LABORATORY
ANALYTICAL REPORT
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	N/A	970078
MTR CODE SITE NAME:	97213	Hamner #9 MW-1
SAMPLE DATE TIME (Hrs):	2/10/97	1507
PROJECT:	Sample 4 - 2nd Quarter	
DATE OF BTEX EXT. ANAL.:	2/13/97	2/13/97
TYPE DESCRIPTION:	Monitor Well	Water

Field Remarks: _____

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	350	PPB	10	D		
TOLUENE	101	PPB	10	D		
ETHYL BENZENE	233	PPB	10	D		
TOTAL XYLENES	476	PPB	10	D		
TOTAL BTEX	1160	PPB				

—BTEX is by EPA Method 8020—

The Surrogate Recovery was at 95.6 % 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 Jordan

Date: 2-19-97



EL PASO FIELD SERVICES

Well Development and Purging Data

Site Name HAMNER #9

☐ Development
☒ Purging

Well Number NW-1

Meter Code 97213

Development Criteria

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

Methods of Development

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

☐ Other

Water Volume Calculation

Initial Depth of Well (feet) 38.50
Initial Depth to Water (feet) 30.07
Height of Water Column in Well (feet) 8.43

Diameter (Inches): Well 4 Gravel Pack

Item	Water Volume in Well Cubic Feet	Gallons	Gallons to be Removed
Well Casing		<u>5.6</u>	<u>16.7</u>
Gravel Pack			
Drilling Fluids			
Total			

Instruments

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

Water Disposal

KUTZ SEPARATOR

Water Removal Data

Date	Time	Development Method		Removal Rate (gal/min)	Intake Depth (feet)	Ending Water Depth (feet)	Water Volume Removed (gal)		Product Volume Removed (gallons)		Temperature °C	pH	Conductivity µmho/cm	Dissolved Oxygen mg/L	Comments
		Pump	Bailer				Increment	Cumulative	Increment	Cumulative					
2-10-97	1153														
2-10-97	1159						3.0	3.0			15.5	5.56	8050		
2-10-97	1209						3.0	6.0			16.0	6.14	8030		
											16.5	5.84	7860	1.0	

Comments BAILED DRY P 6.0 GALLONS.

Developer's Signature Dennis Bird

Date 2-10-97

Reviewer John Fuda

Date 2-19-97



6-11-97

FIELD SERVICES LABORATORY
ANALYTICAL REPORT
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	N/A	970414
MTR CODE SITE NAME:	97213	Hamner #9 MW-1
SAMPLE DATE TIME (Hrs):	5/8/97	1356
PROJECT:	Sample 4 - 3rd Quarter	
DATE OF BTEX EXT. ANAL.:	5/14/97	5/14/97
TYPE DESCRIPTION:	Monitor Well	Water

Field Remarks:

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	266	PPB	5	D		
TOLUENE	9.75	PPB	5	D		
ETHYL BENZENE	230	PPB	5	D		
TOTAL XYLENES	308	PPB	5	D		
TOTAL BTEX	814	PPB				

The Surrogate Recovery was at 96.2 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. Lorch

Date:

6/3/97

970414,6/2/97



Well Development and Purging Data

Well Number 7W-1
Meter Code 97213

	Development	Purging
1. Identify the problem	☐	☒
2. Identify the cause	☐	☒
3. Identify the solution	☐	☒
4. Identify the resources	☐	☒
5. Identify the stakeholders	☐	☒
6. Identify the risks	☐	☒
7. Identify the benefits	☐	☒
8. Identify the constraints	☐	☒
9. Identify the opportunities	☐	☒
10. Identify the threats	☐	☒

Site Name HANOVER #9

Development Criteria

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

Methods of Development

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

Water Volume Calculation

Initial Depth of Well (feet) 38.50
Initial Depth to Water (feet) 22.99
Height of Water Column in Well (feet) 15.51

Diameter (inches): Well 4 Gravel Pack _____

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing		5.6	16.9
Gravel Pack			
Drilling Fluids			
Total			

Instruments

- ☒ pH Meter
☐ DO Monitor
☒ Conductivity Meter
☒ Temperature Meter
☒ Other 0.0.0

Water Disposal
KUTZ SEPARATOR

Water Removal Data

[illegible]

Comments	BAILED DRY P 50 GALLONS. THE WATER HAD A LIGHT HYDROGEN SULFIDE SMELL.
----------	--

Developer's Signature *Donnie Bird* Date 5-8-97 Reviewer *John Seida* Date 5/27/97

Sample 4- 4th Quarter



Elioso
Natural Gas Company

A 2042

CHAIN OF CUSTODY RECORD

Project No.		Project Name		Requested Analysis		Remarks									
Samplers: (Signature)		Date: 8-5-97		Type and No. of Sample Containers		Preservation Technique									
Date	Time	Comp.	GRAB	Sample Number											
WATER 8-5-97	1445		X	970810	GI	4°C	X								
BTX-E HAMMER #9 MW-1 MC 97213															
Relinquished by: (Signature)		Date/Time		Received by: (Signature)		Date/Time									
Dennis Bish		8-5-97 1742													
Relinquished by: (Signature)		Date/Time		Relinquished by: (Signature)		Date/Time									
Relinquished by: (Signature)		Date/Time		Received for Laboratory by: (Signature)		Remarks:									
				M. J. Hays		01/6/97 0730									
Carrier Co.				Carrier Phone No.											
Air Bill No.:				Date Results Reported / by: (Signature)											

EL PASO FIELD SERVICES

FIELD SERVICES LABORATORY ANALYTICAL REPORT PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	N/A	970810
MTR CODE SITE NAME:	97213	Hamner #9 MW-1
SAMPLE DATE TIME (Hrs):	8/5/97	1415
PROJECT:	Sample 4 - 4th Quarter	
DATE OF BTEX EXT. ANAL.:	8/7/97	8/7/97
TYPE DESCRIPTION:	Monitor Well	Water

Field Remarks:

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	272	PPB	2	D		
TOLUENE	228	PPB				
ETHYL BENZENE	172	PPB				
TOTAL XYLENES	370	PPB				
TOTAL BTEX	1042	PPB				

—BTEX is by EPA Method 8020—

The Surrogate Recovery was at 95.8 % 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 Satchi

Date:

8/25/97

970810-1,8/22/97



Well Development and Purging Data

Well Number MW-1
Meter Code 97213

☐ Development
☒ Purging

Site Name HANMER #9

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) 38.50
Initial Depth to Water (feet) 30.76
Height of Water Column in Well (feet) 8.34

Item	Water Volume in Well		Gallons to be Removed	
	Cubic Feet	Gallons	Increment	Cumulative
Well Casing		<u>5.5</u>		<u>16.5</u>
Gravel Pack				
Drilling Fluids				
Total				

Instruments

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

Water Disposal

KUTZ SEPARATOR

Water Removal Data

Date	Time	Development Method		Removal Rate (gal/min)	Intake Depth (feet)	Ending Water Depth (feet)	Water Volume Removed (gal)		Product Volume Removed (gallons)		pH	Temperature °C	Conductivity µmho/cm	Dissolved Oxygen mg/L	Comments
		Pump	Bailer				Increment	Cumulative	Increment	Cumulative					
8-5-97	1330										<u>6.33</u>	<u>20.5</u>	<u>11240</u>		
8-5-97	1335						<u>3.0</u>	<u>3.0</u>			<u>5.60</u>	<u>19.5</u>	<u>11450</u>		
8-5-97	1341						<u>2.0</u>	<u>5.0</u>			<u>5.67</u>	<u>19.4</u>	<u>12120</u>		
8-5-97	1358						<u>1.0</u>	<u>6.0</u>			<u>5.19</u>	<u>19.8</u>	<u>13440</u>	<u>0.5</u>	

Comments

BAILED DRV @ 5.0 GALLONS. THE WATER HAD A LIGHT HYDROGEN SMELL

Developer's Signature

Lennio Bied

Date 8-5-97

Reviewer

John Latchi

Date

8/22/97

SAMPLE 4 STHOTT



Natural Gas Company

A 2123

CHAIN OF CUSTODY RECORD

Project No.		Project Name		Requested Analysis		Remarks	
Samplers: (Signature)		Date		Type and No. of Sample Containers		Preservation Technique	
Date	Time	Comp.	GRAB	Sample Number			
11-4-97	1415		X	971185	HANNER #9 MW-1		
Diagonal line across the table							
Relinquished by: (Signature)		Date/Time		Received by: (Signature)		Date/Time	
Dennis Bied		11-4-97 1724					
Relinquished by: (Signature)		Date/Time		Received by: (Signature)		Date/Time	
Relinquished by: (Signature)		Date/Time		Received for Laboratory by: (Signature)		Remarks:	
				M. Martin		11/ Date/Time 5/47 0730	
Carrier Co:				Date Results Reported / by: (Signature)			
Air Bill No.:							



FIELD SERVICES LABORATORY
ANALYTICAL REPORT
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	N/A	971185
MTR CODE SITE NAME:	97213	Hamner #9
SAMPLE DATE TIME (Hrs):	11/4/97	1415
PROJECT:	Sample 4 5th 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	216	PPB	5	D		
TOLUENE	72.1	PPB	5	D		
ETHYL BENZENE	133	PPB	5	D		
TOTAL XYLENES	260	PPB	5	D		
TOTAL BTEX	681	PPB				

--BTEX is by EPA Method 8020 --

The Surrogate Recovery was at 90.0 % 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. Ladd

Date:

11/12/97

971185BTEXMW,11/10/97



Well Number MW-1
Meter Code 97213

☐	Development
☒	Purging

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

Initial Depth of Well (feet) 38.50
Initial Depth to Water (feet) 30.21
Height of Water Column in Well (feet) 8.29

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

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

KUTZ SEP 1955

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing		5.5	16.4
Gravel Pack			
Drilling Fluids			
Total			

[illegible]

Developer's Signature *Dennis Bird*

Date 11-4-97 Reviewer John Stiller Date 11/12/97