3R - 164

REPORTS

DATE:

Oct. 2004

3RO 164

elpaso

El Paso Field Services

San Juan Basin Pit Program
Coldiron Com A #1

Closure Report

October 2004

MWH
1475 Pine Grove Road
P.O. Box 774018
Steamboat Springs, Colorado 80477

3R0164

TABLE OF CONTENTS

EPFS GROUNDWATER SITES
2004 CLOSURE REPORT

Coldiron Com A #1
Meter Code: 73551

SITE DETAILS

Legal Description:	**Town:**	30N	**Range:**	11W	**Sec:**	2	**Unit:** K
NMOCD Haz Ranking:	40	**Land Type:**	Fee	**Operator:**	Amoco Production Company		

PREVIOUS ACTIVITIES

Site Assessment:	3/94	**Excavation:**	4/94 (50 cy)	**Soil Boring:**	10/95
Monitor Well:	10/95	**Well Points:**	8/97 – 9/97	**Additional MWs:**	NA
Downgradient MWs:	NA	**Replace MW:**	NA	**Quarterly Initiated:**	4/96
ORC Nutrient Injection:	NA	**Re-Excavation:**	NA	**PSH Removal Initiated:**	NA
Annual Initiated:	NA	**Quarterly Resumed:**	NA		

Following the initial site assessment in March 1994 (see Appendix A), the existing pit was excavated to a depth of 12 feet below ground surface (bgs), which was considered to be the maximum extent of the excavation equipment. Approximately 50 cubic yards (cy) of source material were removed and disposed of at the Tierra facility. The head space soil reading from the bottom of the excavation was 480 ppm and no groundwater was encountered. Soil analytical for the sample was as follows: benzene, <0.12 mg/kg; toluene, 69 mg/kg; ethylbenzene, 1.7 mg/kg; total xylenes, 40 mg/kg; total BTEX, 111 mg/kg; and total petroleum hydrocarbons (TPH), 656 mg/kg (see Appendix B).

In October 1995, a soil boring was drilled in the center of the pit to a depth of 45 feet bgs to evaluate the vertical extent of potential soil impact. A soil sample was collected from the interval from 35 to 37 feet bgs. The headspace soil reading from the sample was 451 ppm, and the analytical data for the soil sample were as follows: benzene, < 2.5 mg/kg; toluene, < 2.5 mg/kg; ethylbenzene, 22.8 mg/kg; total xylenes, 278 mg/kg; total BTEX, 301 mg/kg; and TPH, 2540 mg/kg (see Appendix C). Groundwater was encountered in the borehole at 35 feet bgs, and monitoring well MW-1 was constructed and screened from 27.5 to 42.5 feet bgs (see Appendix D).

In August/September 1997, five temporary monitoring wells were located upgradient and downgradient of MW-1 for groundwater sampling. Based on water level measurements in these temporary wells, groundwater flow is approximately to the northwest. Two temporary wells located cross-gradient of MW-1 produced groundwater samples below (PH-3) to slightly above BTEX standards (PZ-2 benzene at 13.8 mg/L). Groundwater from downgradient well PZ-1 exceeded standards for total xylenes (2,030 mg/L), only.

Further downgradient, well PH-1 contained groundwater above the BTEX standards. One groundwater sample collected from PH-2, located upgradient of the former EPFS pit (MW-1) and downgradient of the production pit, contained BTEX concentrations in excess of the standards (i.e., benzene concentration of 579 mg/L) (Appendix E).

Groundwater sampling was initiated at MW-1 in April 1996, and has continued through closure sampling in 2004. Free-product thickness of 0.09 to 0.24 feet was detected in this well in 1996/1997, but has not been detected since that time. Because analytical data reports from prior years has been submitted in previous annual reports, only the analytical data reports for 2003/2004 are included with this report as Appendix F. Similarly, field documentation for 2003/2004 activities are included in Appendix G.

SUMMARY OF 2003/2004 ACTIVITIES

Quarterly groundwater sampling and water level monitoring was performed at MW-1 in 2003 and the first and second quarters of 2004. The first and second quarter 2003 analytical results for benzene were slightly above NMWQCC standards. However, BTEX analytical results from the third and fourth quarters of 2003 and the first and second quarters of 2004 were all below standards, representing four consecutive quarters of data below closure standards.

SITE MAPS

A site map is attached in Figure 1, which presents 2003/2004 analytical data and the location of the former pit and monitoring well.

SUMMARY TABLES AND GRAPHS

Historic analytical data (1997 through present) are summarized in Table 1 and presented graphically in Figures 5 through 7 for well MW-1.

GEOLOGIC LOGS AND WELL COMPLETION DIAGRAMS

No subsurface activities were performed at this site during 2003/2004.

DISPOSITION OF GENERATED WASTES

No wastes were generated at this site during 2003/2004.

ISOCONCENTRATION MAPS

No isoconcentration maps were prepared for this site, however, the attached site map presents analytical data collected during 2003 and 2004.

EPFS GROUNDWATER SITES
2004 CLOSURE REPORT

Coldiron Com A #1
Meter Code: 73551

CONCLUSIONS

EPFS excavated a total of 50 cy of source material from the former pit in April 1994. A confirmation soil sample from the pit following the final excavation indicated a benzene concentration below the detection limit (< 0.12 mg/kg). A monitoring well, MW-1, was installed in the former pit in 1995, and analytical data indicated benzene and total xylenes concentrations (27.2 and 667 µg/L, respectively) slightly above standards. Free-product was detected in this well in 1996/1997, but has not recurred since that time. Groundwater concentrations at MW-1 fluctuated during 1995 and early 2003, until July 2003 when concentrations of BTEX compounds consistently fell below closure standards. BTEX concentrations were below closure standards in MW-1 for four consecutive quarters in July 2003 through April 2004.

It has been demonstrated that the majority of source material was removed from the former EPFS pit over ten years ago. Minimal impact to groundwater exists resulting from the EPFS pit at this site. Therefore, EPFS requests closure of the former EPFS pit at this site.

RECOMMENDATIONS

- New Mexico Oil Conservation Division (NMOCD) criteria have been met at the former EPFS pit location. EPFS requests closure of the Coldiron Com A#1 site from NMOCD.

- Following NMOCD approval for closure, MW-1 will be abandoned in accordance with the approved Monitoring Well Abandonment Plan.

Tables

MWH

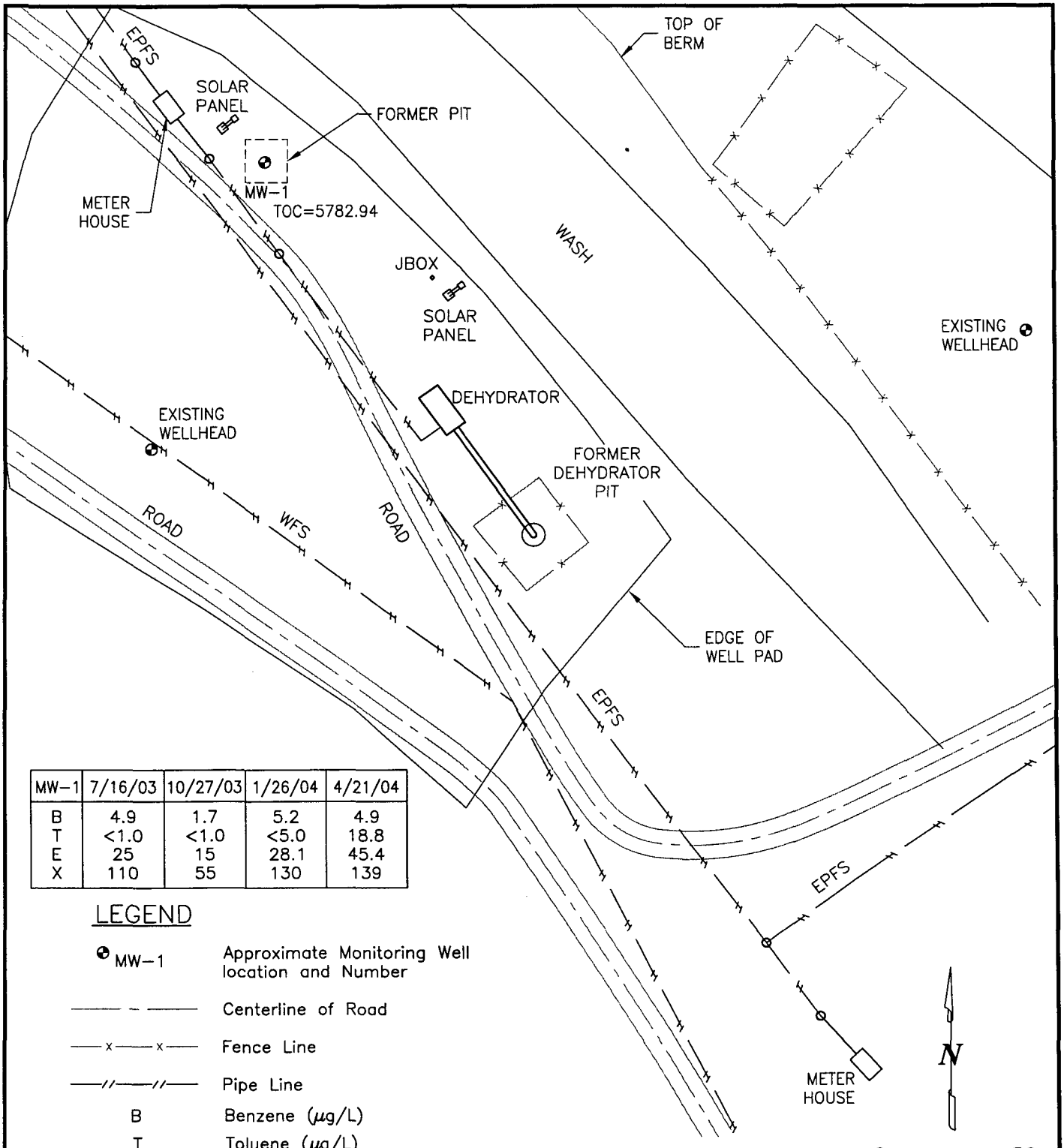
TABLE 1

SUMMARY OF HISTORIC BTEX COMPOUNDS IN GROUNDWATER SAMPLES
COLDIRON COM A#1 (METER #73551)

Site Name	Monitoring Well	Sample Date	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Total Xylenes (ug/L)	Depth to Water (ft btoc)	Groundwater Elevation (ft MSL)
Coldiron A #1	MW-1	11/6/1995	27.2	87.7	75	667	37.24	5745.70
Coldiron A #1	MW-1	4/17/1996	79.5	464.0	281	3050	37.78	5745.16
Coldiron A #1	MW-1	7/25/1996	14.6	139.0	54	581	38.17	5744.77
Coldiron A #1	MW-1	10/22/1996	22.6	34.8	76	608	37.83	5745.11
Coldiron A #1	MW-1	1/21/1997	33.9	143.0	90	882	37.71	5745.23
Coldiron A #1	MW-1	4/17/1997	18.7	48.4	43	659	38.28	5744.66
Coldiron A #1	MW-1	7/21/1998	79.6	74.0	172	4250	37.34	5745.60
Coldiron A #1	MW-1	10/8/1998	68.4	39.6	91	1780	37.14	5745.80
Coldiron A #1	MW-1	1/14/1999	74.6	164	63	2180	35.84	5747.10
Coldiron A #1	MW-1	4/15/1999	73.4	80	108	1870	36.32	5746.62
Coldiron A #1	MW-1	7/20/1999	79.2	34	118	1760	36.84	5746.10
Coldiron A #1	MW-1	10/14/1999	< 1.0	200	470	8800	31.68	5751.26
Coldiron A #1	MW-1	1/21/2000	<1.0	13.0	79	1300	33.01	5749.93
Coldiron A #1	MW-1	4/13/2000	3.0	3.5	18	190	35.16	5747.78
Coldiron A #1	MW-1	7/24/2000	2.3	0.5	3	42	35.51	5747.43
Coldiron A #1	MW-1	10/10/2000	38.0	9.2	33	420	35.06	5747.88
Coldiron A #1	MW-1	1/3/2001	40.0	13.0	30	340	35.01	5747.93
Coldiron A #1	MW-1	4/3/2001	32.0	6.7	32	220	35.44	5747.50
Coldiron A #1	MW-1	7/5/2001	14.0	2.4	13	100	35.84	5747.10
Coldiron A #1	MW-1	10/1/2001	19.0	2.5	11	87	35.77	5747.17
Coldiron A #1	MW-1	1/3/2002	40.0	< 1.0	13	97	35.87	5747.07
Coldiron A #1	MW-1	4/2/2002	26.0	3.0	17	110	36.30	5746.64
Coldiron A #1	MW-1	7/16/2002	119.0	9.1	121	582	38.86	5744.08
Coldiron A #1	MW-1	10/1/2002	22.4	2.7	32	182	36.35	5746.59
Coldiron A #1	MW-1	1/27/2003	27.8	1.4	35	177	36.51	5746.43
Coldiron A #1	MW-1	4/27/2003	31.7	< 1.0	97	527	36.87	5746.07
Coldiron A #1	MW-1	7/16/2003	4.9	< 1.0	25	110	37.30	5745.65
Coldiron A #1	MW-1	10/27/2003	1.7	< 1.0	15	55	37.11	5745.83
Coldiron A #1	MW-1	1/26/2004	5.2	< 1.0	28	130	37.47	5745.47
Coldiron A #1	MW-1	4/21/2004	4.9	18.8	45	139	37.73	5745.21

ug/L	micrograms per liter
ft btoc	feet below top of casing
ft MSL	feet above mean sea level
<	value was not detected at the method detection limit shown.

Figures



MW-1	7/16/03	10/27/03	1/26/04	4/21/04
B	4.9	1.7	5.2	4.9
T	<1.0	<1.0	<5.0	18.8
E	25	15	28.1	45.4
X	110	55	130	139

LEGEND

MW-1	Approximate Monitoring Well location and Number
——— – ———	Centerline of Road
——x——x——	Fence Line
——//——//	Pipe Line
B	Benzene (μg/L)
T	Toluene (μg/L)
E	Ethylbenzene (μg/L)
X	Total Xylenes (μg/L)
<	Analyte not Detected at Method Detection Limit Shown
GWEL	Groundwater Elevation (FT Above Mean Sea Level Unless Noted Otherwise)
TOC	Top of Casing

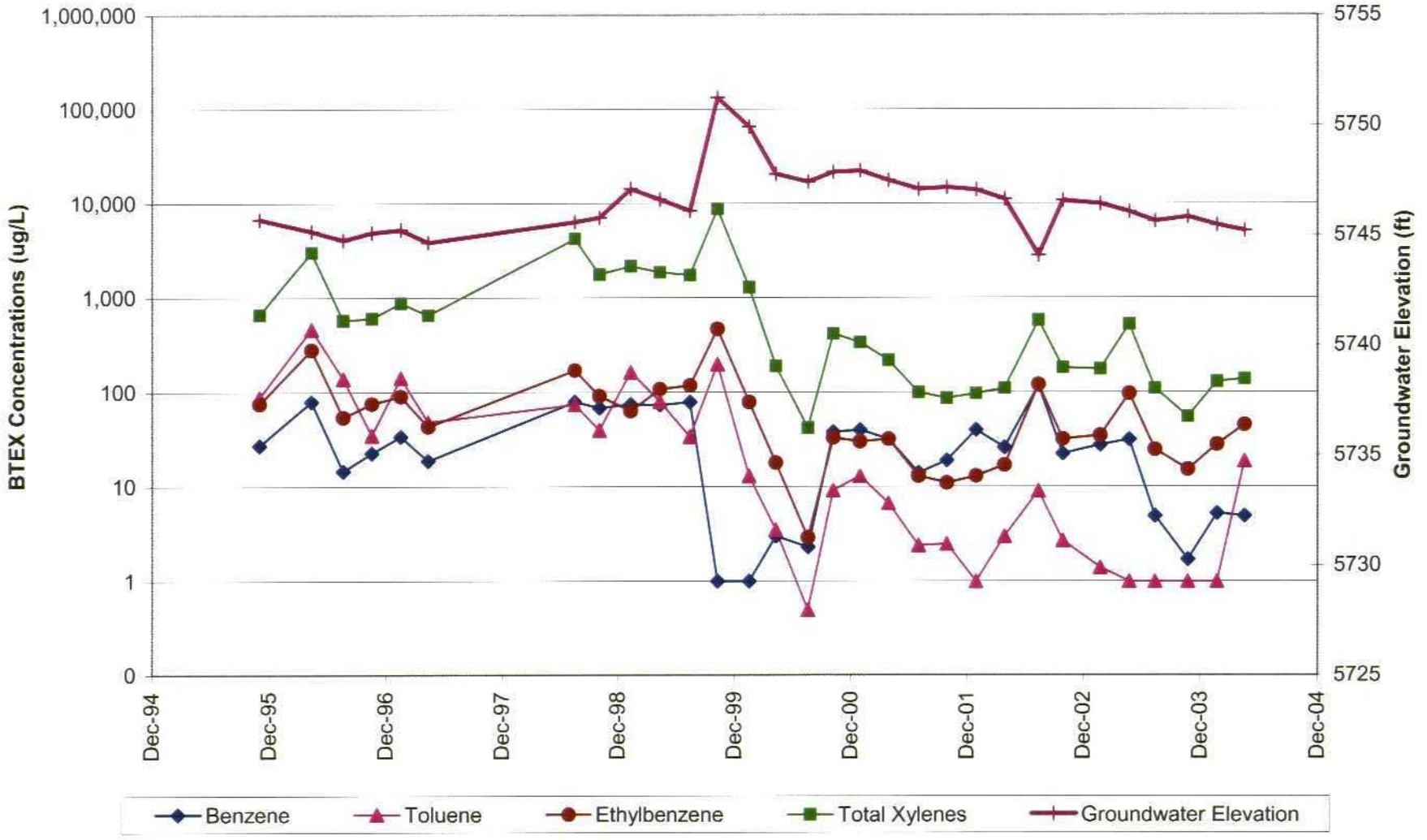
hammond41a_7_04.dwg

COLDIRON COM A#1, METER 73551

GROUNDWATER SITES
EL PASO FIELD SERVICES

FIGURE 1

FIGURE 2
HISTORIC BTEX CONCENTRATIONS AND GROUNDWATER ELEVATIONS
COLDIRON A#1
MW-1



Fnl Coldiron Clsr Tables.xls,Figure

Appendices

APPENDIX A

PHASE I PIT SITE ASSESSMENT
(1994)

FIELD PIT SITE ASSESSMENT FORM

GENERAL

Meter: 73551 Location: Coldiron Com A #1

Operator #: 0203 Operator Name: Amoco P/L District: Kutz

Coordinates: Letter: K Section 2 Township: 30 Range: 11

Or Latitude _____ Longitude _____

Pit Type: Dehydrator X Location Drip: ___ Line Drip: ___ Other: _____

Site Visit Date: 3·30·94 Run: 02 22

SITE ASSESSMENT

NMOCD Zone: (From NMOCD Maps)
- Inside Vulnerable Zone ☒
- Outside ☐

Land Type:
- BLM ☐
- State ☐
- Fee ☒
- Indian _____

Depth to Groundwater
- Less Than 50 Feet (20 points) ☐
- 50 Ft to 99 Ft (10 points) ☒
- Greater Than 100 Ft (0 points) ☐

Wellhead Protection Area :
Is it less than 1000 ft from wells, springs, or other sources of fresh water extraction? , or ; Is it less than 200 ft from a private domestic water source? ☐ YES (20 points) ☒ NO (0 points)

Horizontal Distance to Surface Water Body
- Less Than 200 Ft (20 points) ☐
- 200 Ft to 1000 Ft (10 points) ☐
- Greater Than 1000 Ft (0 points) ☒

Name of Surface Water Body _____

(Surface Water Body : Perennial Rivers, Major Wash, Streams, Creeks, Irrigation Canals, Ditches, Lakes, Ponds)

TOTAL HAZARD RANKING SCORE: 10 **POINTS**

REMARKS

Remarks : TWO PITS ON LOCATION. WILL CLOSE ONLY ONE. PIT IS DRY.

ORIGINAL PIT LOCATION

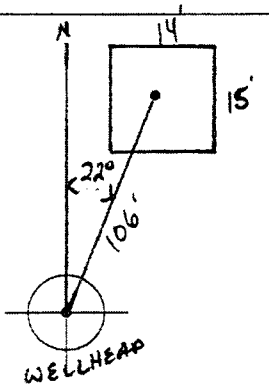
ORIGINAL PIT LOCATION

Original Pit : a) Degrees from North 22° Footage to Wellhead 106'

b) Degrees from North _____ Footage to Dogleg _____

Dogleg Name _____

c) Length : 15' Width : 14' Depth : 1'



REMARKS

Remarks :

STARTED TAKING PICTURES AT 12:30 P.M.

END DUMP

Completed By:

Robert Thompson
Signature

3-30-94
Date

4.22.94
RT

FIELD PIT SITE ASSESSMENT FORM

GENERAL

Meter: 73551 Location: COLDIRON COM A #1
Operator #: _____ Operator Name: _____ P/L District: _____
Coordinates: Letter: ___ Section ___ Township: ___ Range: ___
Or Latitude _____ Longitude _____
Pit Type: Dehydrator ___ Location Drip: ___ Line Drip: ___ Other: _____
Site Assessment Date: _____ Area: 02 Run: 72

SITE ASSESSMENT

NMOCD Zone: (From NMOCD Maps)
Inside ☐ (1)
Outside ☐ (2)

Land Type:
BLM ☐ (1)
State ☐ (2)
Fee ☐ (3)
Indian _____

Depth to Groundwater
Less Than 50 Feet (20 points) ☒ (1)
50 Ft to 99 Ft (10 points) ☐ (2)
Greater Than 100 Ft (0 points) ☐ (3)

Wellhead Protection Area :
Is it less than 1000 ft from wells, springs, or other sources of fresh water extraction? , or ; Is it less than 200 ft from a private domestic water source? ☐ (1) YES (20 points) ☐ (2) NO (0 points)

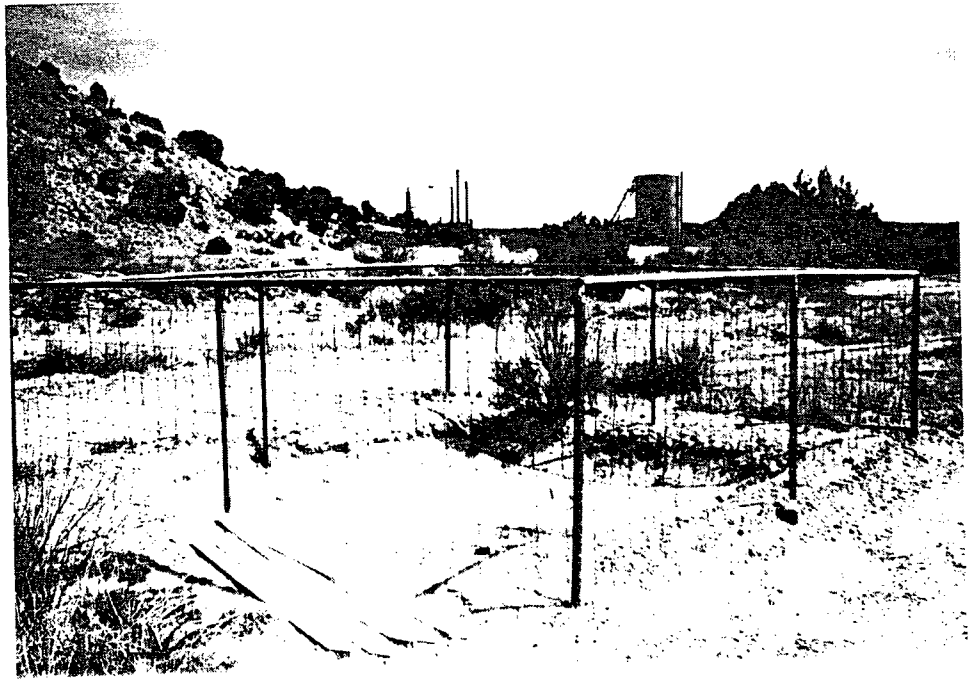
Horizontal Distance to Surface Water Body
Less Than 200 Ft (20 points) ☒ (1)
200 Ft to 1000 Ft (10 points) ☐ (2)
Greater Than 1000 Ft (0 points) ☐ (3)
Name of Surface Water Body ANIMAS RIVER
(Surface Water Body : Perennial Rivers, Major Wash, Streams, Creeks, Irrigation Canals, Ditches, Lakes, Ponds)
Distance to Nearest Ephemeral Stream ☐ (1) < 100' (Navajo Pits Only)
☐ (2) > 100'

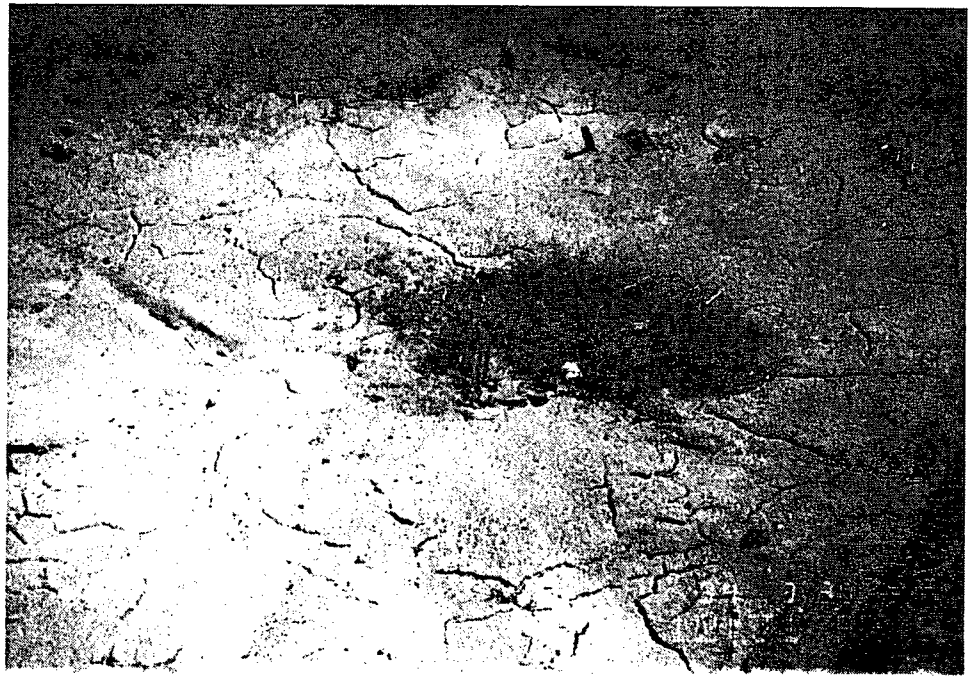
TOTAL HAZARD RANKING SCORE: 40 POINTS

REMARKS

Remarks : _____


Amoco Production
Company
AMOCO
COLDIRON DAKOTA GAS UNIT A 320 AC.
NE/4 SW/4
T30N - R11W. N. M. P. M.
1 PETROLEUM CRUDE OIL
WARNING FLAMMABLE
4 HYDROGEN SULFIDE
DANGER FLAMMABLE





APPENDIX B

PIT EXCAVATION AND SOIL SAMPLE RESULTS (1994)

FIELD PIT REMEDIATION/CLOSURE FORM

GENERAL

Meter: 73551 Location: Coldiron Com A #1

Coordinates: Letter: K Section 2 Township: 30 Range: 11

Or Latitude _____ Longitude _____

Date Started : 4-27-94 Area: 02 Run: 72

OBSERVATIONS

Sample Number(s): 945027 KD37 _____ _____ _____

Sample Depth: 12' Feet

Final PID Reading 480 ppm PID Reading Depth 12' Feet

Yes No

Groundwater Encountered ☐ (1) ☒ (2) Approximate Depth _____ Feet

CLOSURE

Remediation Method :

Excavation ☒ (1) Approx. Cubic Yards 50

Onsite Bioremediation ☐ (2)

Backfill Pit Without Excavation ☐ (3)

Soil Disposition:

Envirotech ☐ (1) ☒ (3) Tierra

Other Facility ☐ (2) Name: _____

Pit Closure Date: 4-27-94 Pit Closed By: BEI

REMARKS

Remarks : Dug test Hole to Approximately 12' Feet; Took Headspace Reading was 489 ppm, Excavated pit to 12' Took PID Reading; Closed Pit.

Signature of Specialist: Kenny Denman

El Paso Natural Gas Company

CHAIN OF CUSTODY RECORD

Page 1 of 1

PROJECT NUMBER	PROJECT NAME	SAMPLERS: (Signature)	DATE
	Pit Closure Project # 24324	Kenny Dean	4-27-94

LAB ID	DATE	TIME	MATRIX	SAMPLE NUMBER	TOTAL NUMBER OF CONTAINERS	SAMPLE TYPE	REQUESTED ANALYSIS: TPH EPA 418.1	BTEX EPA 8020				# Jar	REMARKS
5026	4-27-94	1035	Soil	KD 36	1	VC	X	X				32	
5027	4-27-94	1410	Soil	KD 37	1	VC	X	X				33	

CONTRACT LABORATORY P. O. NUMBER

RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
Kenny Dean	4-27-94 1700	Jason T. Pope 34° F	Jason T. Pope 32° F	4/28/94 0948	
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED OF LABORATORY BY: (Signature)

REQUESTED TURNAROUND TIME:
☐ ROUTINE ☐ RUSH

CARRIER CO.

BILL NO.:

SAMPLE RECEIPT REMARKS

CHARGE CODE

RESULTS & INVOICES TO:

FIELD SERVICES LABORATORY
EL PASO NATURAL GAS COMPANY
P. O. BOX 4990
FARMINGTON, NEW MEXICO 87499
505-599-2144 FAX 505-599-2261

White - Testing Laboratory Canary - EPNG Lab Pink - Field Service

FM 08-565A (Rev. 03-94)

El Paso Natural Gas Company

FIELD SERVICES LABORATORY
ANALYTICAL REPORT
PIT CLOSURE PROJECT - Soil

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	KD37	9450277
MTR CODE | SITE NAME:	73551	N/A
SAMPLE DATE | TIME (Hrs):	4/27/94	1410
SAMPLED BY:	N/A	
DATE OF TPH EXT. | ANAL.:	4-28-94	4/28/94
DATE OF BTEX EXT. | ANAL.:	5/9/94	5/10/94
TYPE | DESCRIPTION:	VC	Brown Coarse Sand

REMARKS: _____

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q	M(g)	V(ml)
BENZENE	<0.12	MG/KG				
TOLUENE	69	MG/KG				
ETHYL BENZENE	1.7	MG/KG				
TOTAL XYLENES	40	MG/KG				
TOTAL BTEX	111	MG/KG				
TPH (418.1)	656	MG/KG			2.02	28
HEADSPACE PID	480	PPM				
PERCENT SOLIDS	94	%				

-- TPH is by EPA Method 418.1 and BTEX is by EPA Method 8020 --

The Surrogate Recovery was at 105 % for this sample All QA/QC was acceptable.

Narrative: ATI results attached.

DF = Dilution Factor Used

Approved By: John Lambdin Date: 5/21/94

Test Method for
Oil and Grease and Petroleum Hydrocarbons
in Water and Soil

Perkin-Elmer Model 1600 FT-IR
Analysis Report

'94 '05 15:39

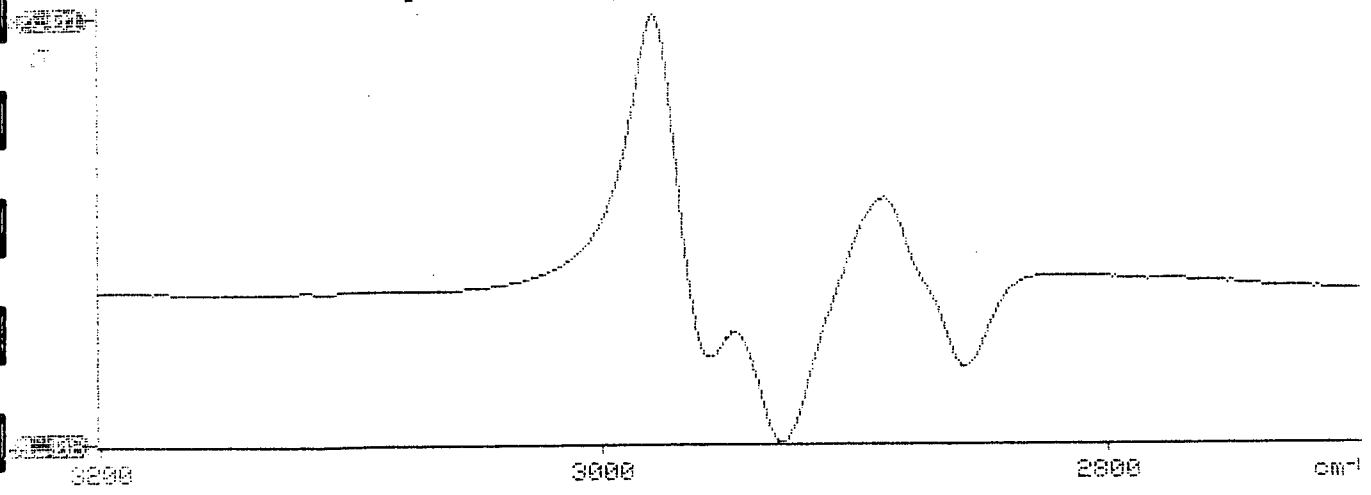
Sample identification
[illegible]

Initial mass of sample, g
[illegible]

Volume of sample after extraction, ml
[illegible]

Petroleum hydrocarbons, ppm
[illegible]
Net absorbance of hydrocarbons (2930 cm-1)
[illegible]

Y: Petroleum hydrocarbons spectrum 15:39



Analytical Technologies, Inc.

GAS CHROMATOGRAPHY RESULTS

TEST : BTEX, MTBE (EPA 8020)

CLIENT : EL PASO NATURAL GAS CO. ATI I.D.: 405313

PROJECT # : 24324

PROJECT NAME : PIT CLOSURE

SAMPLE ID. #	CLIENT I.D.	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
19	945026	NON-AQ	04/27/94	05/09/94	05/10/94	100
20	945027	NON-AQ	04/27/94	05/09/94	05/10/94	5
21	945032	NON-AQ	04/28/94	05/05/94	05/05/94	1

PARAMETER	UNITS	19	20	21
BENZENE	MG/KG	<2.5	<0.12	<0.025
TOLUENE	MG/KG	150	69	<0.025
ETHYLBENZENE	MG/KG	23	1.7	<0.025
TOTAL XYLENES	MG/KG	250	40	<0.025
METHYL-t-BUTYL ETHER	MG/KG	<12	<0.60	<0.12
SURROGATE:				
BROMOFLUOROBENZENE (%)		50*	105	95

*OUTSIDE ATI QUALITY CONTROL LIMITS DUE TO MATRIX INTERFERENCE

Analytical Technologies, Inc.

2709-D Pan American Freeway, NE Albuquerque NM 87107
Phone (505) 344-3777 FAX (505) 344-4413

ATI I.D. **405313**

May 13, 1994

El Paso Natural Gas Company
P.O. Box 4990
Farmington, NM 87499

Project Name/Number: PIT CLOSURE 24324

Attention: John Lambdin

On **05/03/94**, Analytical Technologies, Inc., (ADHS License No. AZ0015), received a request to analyze **non-aqueous** samples. The samples were analyzed with EPA methodology or equivalent methods. The results of these analyses and the quality control data, which follow each set of analyses, are enclosed.

EPA Method 8015 analysis was added on 05/05/94 for sample 945008 per Stacy Sendler.

The matrix spike/spike duplicate data from the samples extracted on 05/05/94 is reported twice reflecting quantification using both the internal standard and external standard protocols. Both protocols were employed to quantify the samples submitted for this project.

If you have any questions or comments, please do not hesitate to contact us at (505) 344-3777.

Letitia Krakowski, Ph.D.
Project Manager

H. Mitchell Rubenstein, Ph.D.
Laboratory Manager

MR:jd

Enclosure

Analytical Technologies, Inc.

COPY

INVOICE

AL 72053

Albuquerque Office: 2709-D Pan American Fwy., N E
Albuquerque, NM 87107
(505) 344-3777

Remit To:
Analytical Technologies, Inc.
P. O. Box 840436
Dallas, Texas 75284-0436

Billed to: EL PASO NATURAL GAS COMPANY
P.O. BOX 4990
FARMINGTON, NM 87499

Accession No.: 9405-313
Date: 05/13/94
Client No.: 850-020
810

Attention: ACCOUNTS PAYABLE

Telephone: 505-325-2841

Authorized by: JOHN LAMBDIN

P.O. Number: 38822

Samples: 39 NON-AQ

Project: PIT CLOSURE
Project No.: 24324

EPNG SAMPLE # 945008 to 945027
945032, 945033, 945035 to 945039, 945041 to 945050, 945034 and 945040 received 05/03/94

TEST DESCRIPTION	QUANTITY		PRICE	TOTAL
EPA METHOD 8015M/8020	-10 %	1	125.00	112.50
BTEX/MTBE (8020)	-10 %	38	80.00	2736.00
NM GROSS RECEIPTS TAX		1	165.57	165.57

****
Amount due: 3014.07
****

MAY 1994 RECEIVED

5/17/94
APPROVED FOR PAYMENT

DATE _____
CHARGE 50% 105-52452-24-0001-0012-51-2010
50% 108-51570-24-0001-0012-51-2010

SIGNATURE _____
David Hall
541-3531

TERMS: Net 30 Days - 1½% Finance Charge on Balance Due over 30 days.

ATI-003

DISTRIBUTION: White-Customer, Yellow-File, Pink-Accounting

APPENDIX C

SOIL BORING SAMPLE RESULTS
(1995)

El Paso Natural Gas Company

FIELD SERVICES LABORATORY
ANALYTICAL REPORT
PIT CLOSURE PROJECT - Soil Samples Inside the GWV Zone

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	CMC159	947684
MTR CODE | SITE NAME:	73551	Coldiron Com A #1
SAMPLE DATE | TIME (Hrs):	10-20-95	1021
PROJECT:	Phase II Drilling	
DATE OF TPH EXT. | ANAL.:	10/24-25/95	
DATE OF BTEX EXT. | ANAL.:	10/24/95	10/25/94
TYPE | DESCRIPTION:	VG	Gas Truck Co.

Field Remarks: _____

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q	M(g)	V(ml)
BENZENE	< 2.5	MG/KG	5	D		
TOLUENE	mh + < 2.5	MG/KG	5	D		
ETHYL BENZENE	22.8	MG/KG	5	D		
TOTAL XYLENES	278	MG/KG	5	D, DI		
TOTAL BTEX	301	MG/KG				
TPH (418.1)	2540 RLS 10/27/95	MG/KG			2.0	28
HEADSPACE PID	451	PPM				
PERCENT SOLIDS	83.3	%				

-- TPH is by EPA Method 418.1 and BTEX is by EPA Method 8020 --

The Surrogate Recovery was at 101% for this sample All QA/QC was acceptable.

Narrative: Result for m&p xylenes exceeded calibration range
ATI Results for mod 8015 attached (3300).

DF = Dilution Factor Used

Approved By: _____ Date: 10-26-95

****
Test Method for
Oil and Grease and Petroleum Hydrocarbons
in Water and Soil

Perkin-Elmer Model 1600 FT-IR
Analysis Report
****

[illegible]

Sample identification
[illegible]

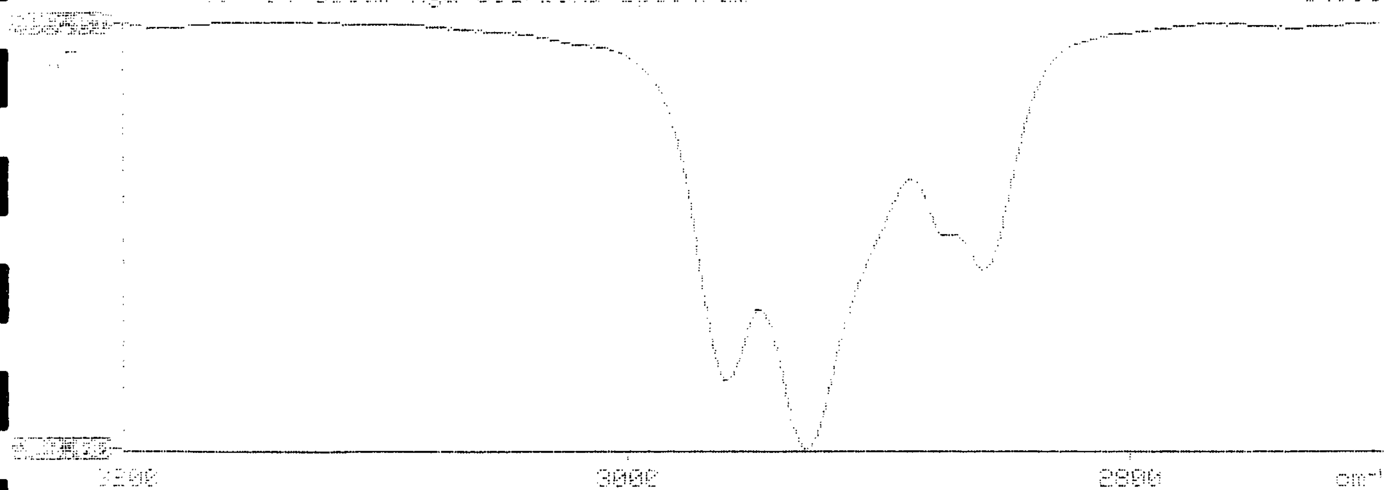
Initial mass of sample, g
[illegible]

Volume of sample after extraction, ml
[illegible]

Petroleum hydrocarbons, ppm
[illegible]

Net absorbance of hydrocarbons (2930 cm-1)
[illegible]

1: Petroleum hydrocarbons spectrum 14:08



BTEX SOIL SAMPLE WORKSHEET

File :	947684	Date Printed :	10/26/95
Soil Mass (g) :	5.03	Multiplier (L/g) :	0.00099
Extraction vol. (mL) :	10	CAL FACTOR (Analytical):	1000
Shot Volume (uL) :	10	CAL FACTOR (Report):	0.99404

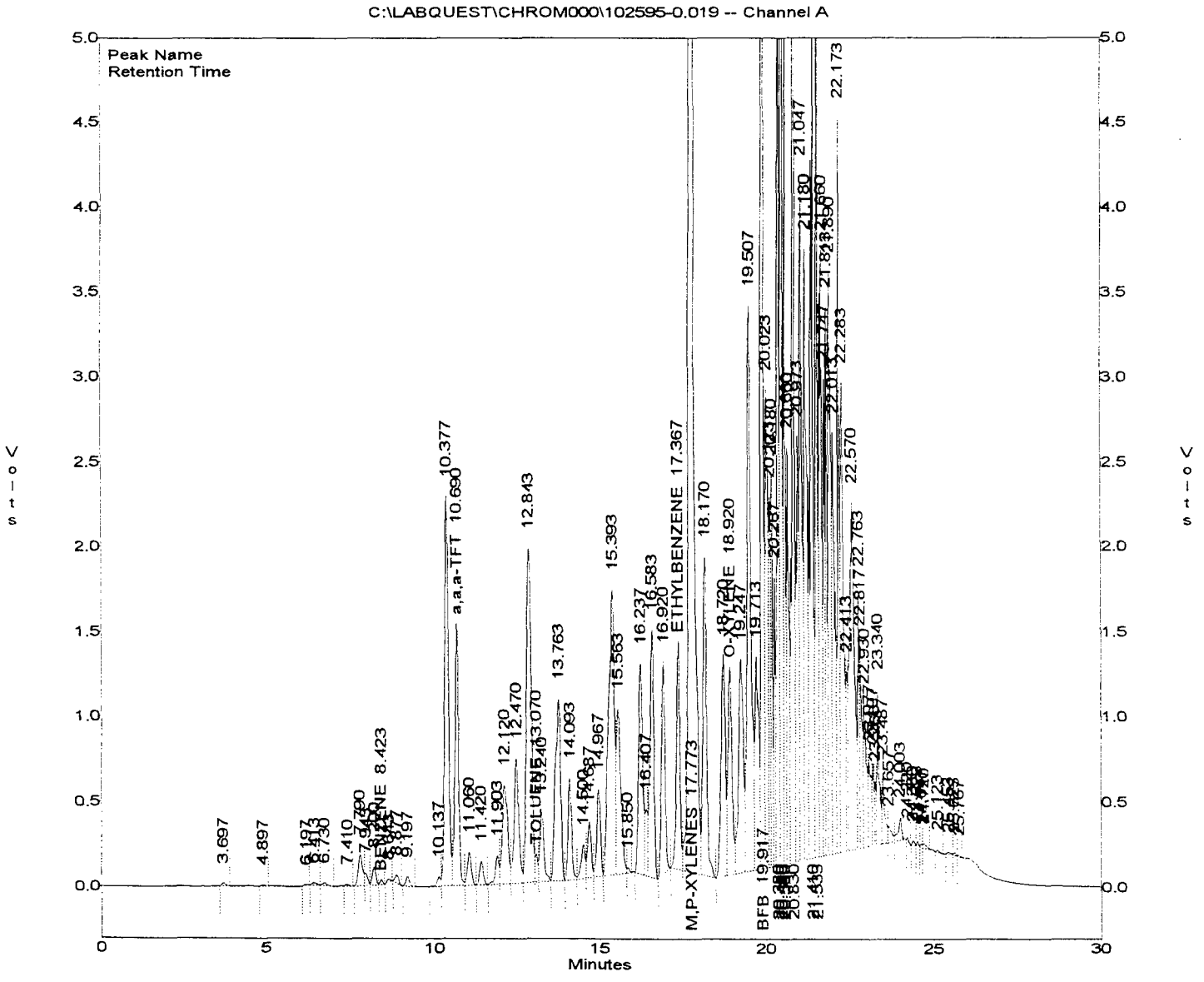
		DILUTION FACTOR:	**5**	**Det. Limit**
Benzene (ug/L) :	0.31	**Benzene (mg/Kg):**	**0.308**	2.485
Toluene (ug/L) :	1.72	**Toluene (mg/Kg):**	**1.710**	2.485
Ethylbenzene (ug/L) :	22.94	**Ethylbenzene (mg/Kg):**	**22.803**	2.485
p & m-xylene (ug/L) :	253.68	p & m-xylene (mg/Kg):	252.167	4.970
o-xylene (ug/L) :	25.74	o-xylene (mg/Kg):	25.586	2.485
		Total xylenes (mg/Kg):	**277.753**	7.455
		Total BTEX (mg/Kg):	**302.575**	

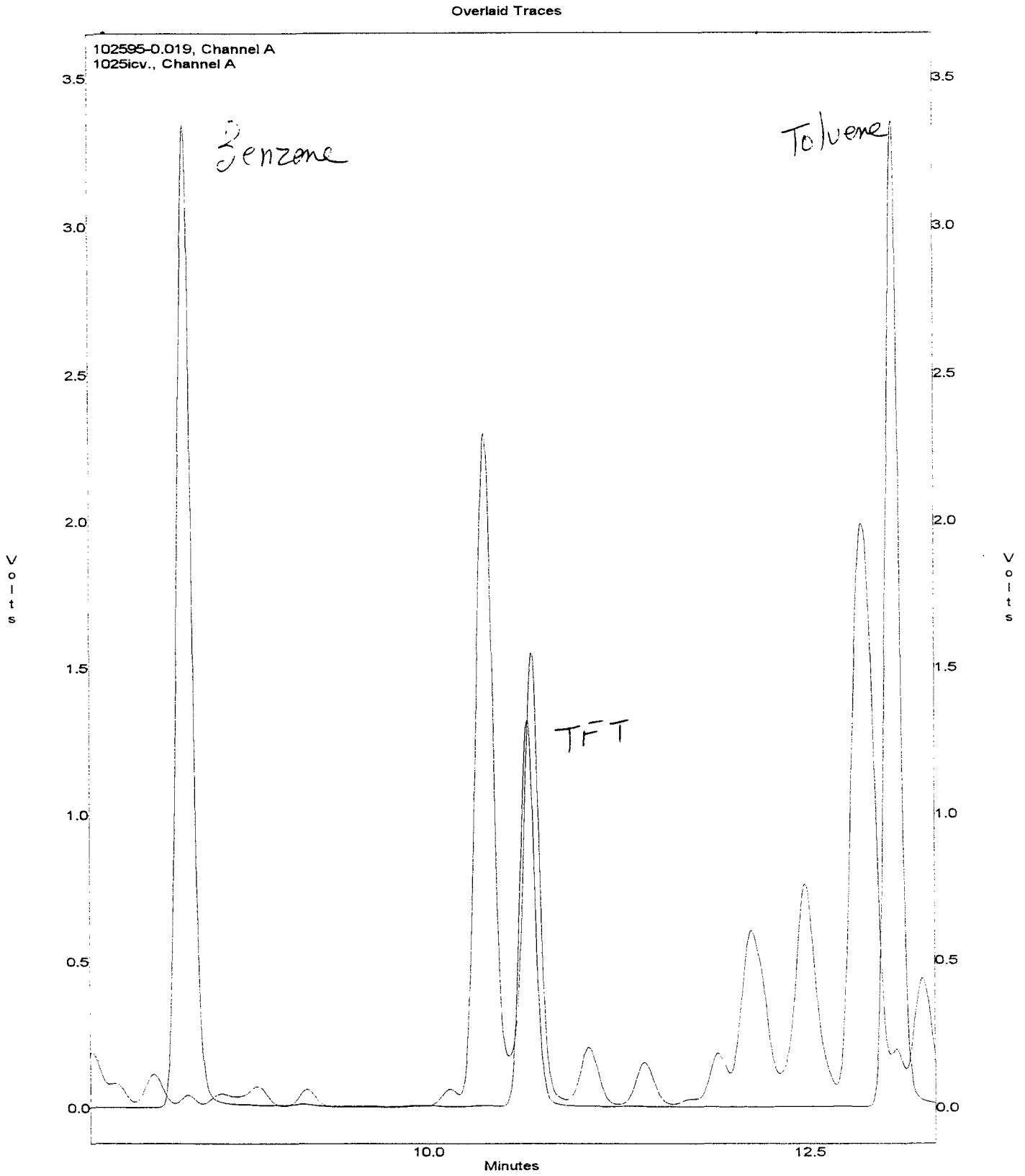
EL PASO NATURAL GAS
EPA METHOD 8020 - BTEX SOILS

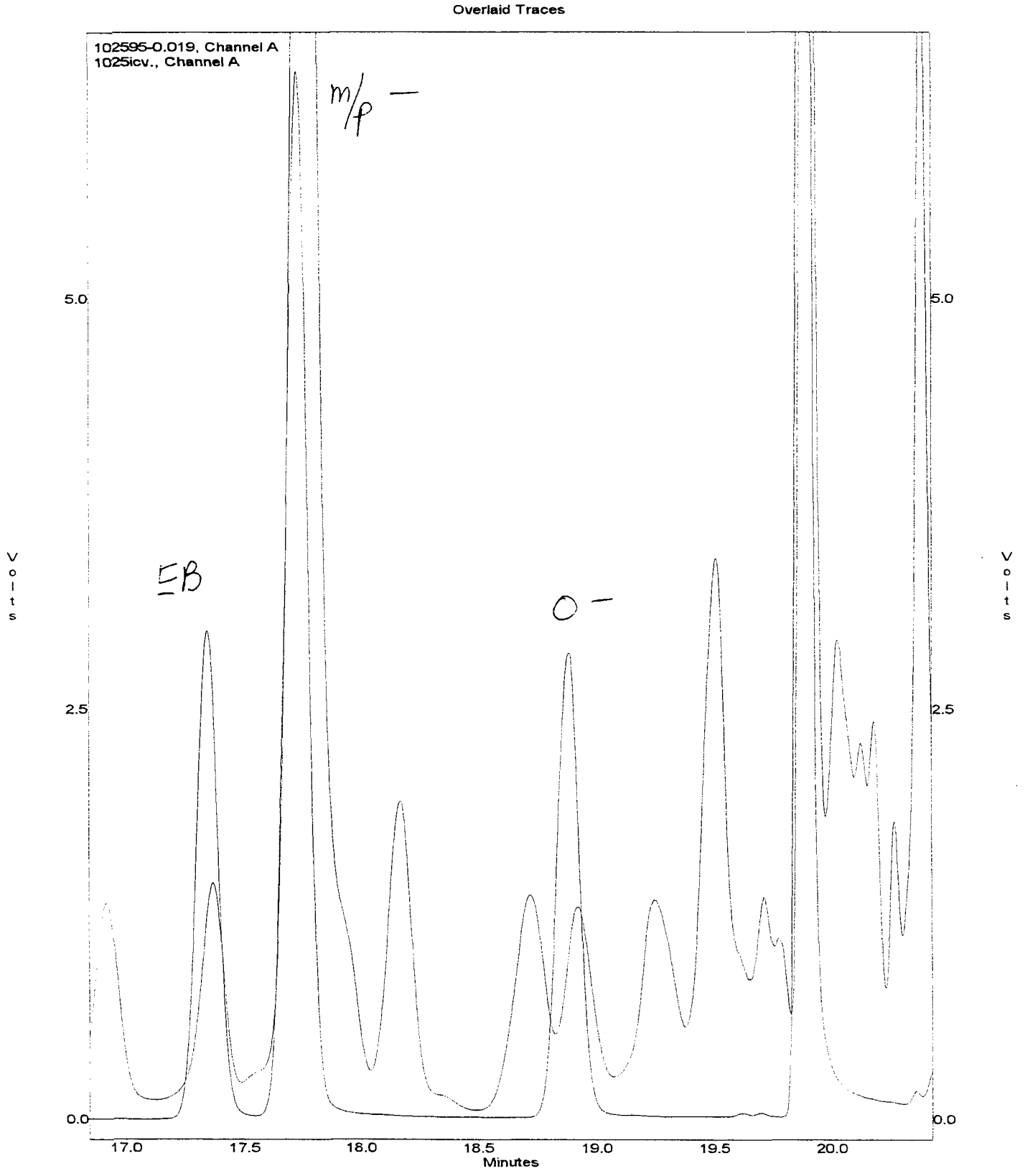
File : C:\LABQUEST\CHROM000\102595-0.019
Method : C:\LABQUEST\METHODS\0-101895.MET
Sample ID : 947684,5.03G,10U
Acquired : Oct 25, 1995 23:48:42
Printed : Oct 26, 1995 00:19:11
User : MARLON

Channel A Results

COMPONENT	RET TIME	AREA	CONC (ug/L)
BENZENE	8.423	163957	0.3128
a,a,a-TFT	10.690	11804773	120.6664
TOLUENE	13.070	871815	1.7222
ETHYLBENZENE	17.367	9521640	22.9369
M,P-XYLENES	17.773	101352400	253.6810
O-XYLENE	18.920	10450712	25.7362
BFB	19.917	54710388	100.8604




Overlaid Traces
102595-0.019, Channel A
1025icv., Channel A
Benzene
Toluene
TFT
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
Volts
10.0
12.5
Minutes

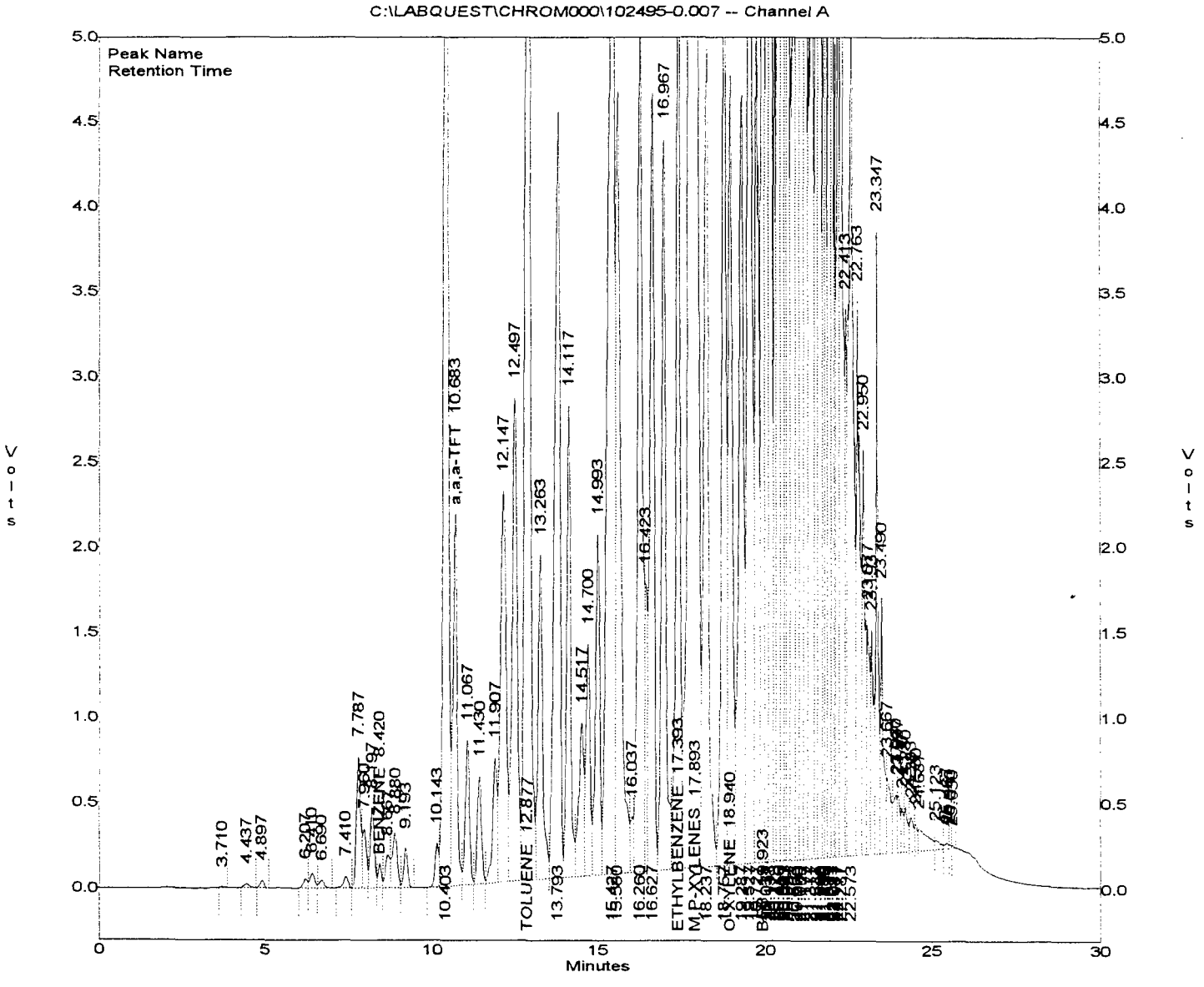

Overlaid Traces
102595-0.019, Channel A
1025icv., Channel A
m/p
EB
O
Volts
5.0
2.5
0.0
17.0
17.5
18.0
18.5
19.0
19.5
20.0
Minutes

EL PASO NATURAL GAS
EPA METHOD 8020 - BTEX SOILS

File : C:\LABQUEST\CHROM000\102495-0.007
Method : C:\LABQUEST\METHODS\0-101895.MET
Sample ID : 947684,5.03G,50U
Acquired : Oct 24, 1995 18:10:37
Printed : Oct 26, 1995 10:59:16
User : MARLON

Channel A Results

COMPONENT	RET TIME	AREA	CONC (ug/L)
BENZENE	8.420	985206	1.8796
a,a,a-TFT	10.683	19278762	197.0643
TOLUENE	12.877	89124024	229.6161
ETHYLBENZENE	17.393	47812840	122.0290
M,P-XYLENES	17.893	205700080	543.1349
O-XYLENE	18.940	39755836	102.5041
BFB	19.923	65421316	120.6063



Analytical**Technologies,**Inc.

GAS CHROMATOGRAPHY RESULTS

TEST : EPA 8015 MODIFIED

CLIENT : EL PASO NATURAL GAS ATI I.D.: 510429

PROJECT # : 24324

PROJECT NAME : PIT CLOSURE/PHASE II

SAMPLE ID. #	CLIENT I.D.	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
01	947684	NON-AQ	10/20/95	10/31/95	11/01/95	10
02	947694	NON-AQ	10/24/95	10/31/95	11/01/95	1

PARAMETER	UNITS	01	02
FUEL HYDROCARBONS	MG/KG	3300	<5
HYDROCARBON RANGE		C7-C20	-
HYDROCARBONS QUANTITATED USING		DIESEL	-
SURROGATE:			
O-TERPHENYL (%)		84	88

Analytical**Technologies,**Inc.

2709-D Pan American Freeway, NE Albuquerque, NM 87107
Phone (505) 344-3777 FAX (505) 344-4413

ATI I.D. **510429**

November 3, 1995

El Paso Natural Gas
P.O. Box 4990
Farmington, NM 87499

Project Name/Number: PIT CLOSURE/PHASE II 24324

Attention: John Lambdin

On **10/31/95**, Analytical Technologies, Inc., (ADHS License No. AZ0015), received a request to analyze **non-aqueous** samples. The samples were analyzed with EPA methodology or equivalent methods. The results of these analyses and the quality control data, which follow each set of analyses, are enclosed.

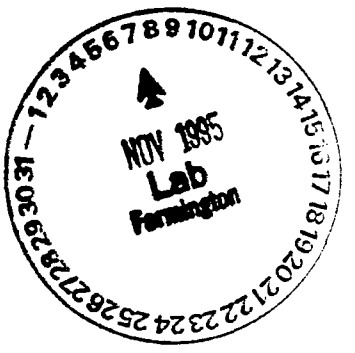
If you have any questions or comments, please do not hesitate to contact us at (505) 344-3777.

Kimberly D. McNeill
Project Manager

H. Mitchell Rubenstein, Ph.D.
Laboratory Manager

MR:jt

Enclosure



APPENDIX D

MONITORING WELL BORELOG AND WELL CONSTRUCTION FORM (1995)

RECORD OF SUBSURFACE EXPLORATION

Borehole # BH-1
Well #
Page 1 of 2

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

Project Name EPNG PITS
Project Number 14509 Phase 6000 77
Project Location Coldiron Com A#1 73551

Elevation
Borehole Location QK - S2 - T30 - R11
GWL Depth GW 35.4'
Logged By CM CHANCE
Drilled By ~~K Padilla~~ F. Rivera
Date/Time Started 10/20/95 - 0935
Date/Time Completed 10/20/95 - 1204

Well Logged By CM Chance
Personnel On-Site K Padilla, F. Rivera, D. Charlie
Contractors On-Site
Client Personnel On-Site

Drilling Method 4 1/4" ID HSA / 6 1/4 I.D. 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
0				Backfill to 12'						
5										
10										
15	1	15-17	10	Br SAND, f-med sand, tr gravel, v. loose, moist, odor	SW		0	8	66/61	0946hrs
20	2	20-22	10	AA			0	0	68/167	0953
25	3	25-27	9	Lt Br SAND, f-med sand, v. loose, moist, odor			0	0	605/819	1000
30	4	30-32	4	Blk SAND, f-med sand, v. loose, moist, tr gravel, odor			0	2	701/926	1009
35	5	35-37	3	DK gry clayey SAND, vf-f sand, loose, moist, odor			4	50	721/451	1021
40	6	40-42	8	lt ~~DK~~ gry SAND, vf-F sand, tr clay, loose, wet			0	38	2/NA	1030
				lt gry sandy CLAY, tr f sand, med stiff, low plasticity, moist	CL	41				

Comments: Water @ 35.4' after setting 15 min. ~~Clay below sand had headspace~~ CMC159 (35-37') sent to lab (BTEX, TPH). Pull 4 1/4 augers & go back down w/ 6 1/4 I.D. augers

Geologist Signature Cory Chance

RECORD OF SUBSURFACE EXPLORATION

Borehole # BH-1
Well #
Page 2 of 2

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

Project Name EPNG PITS
Project Number 14509 Phase 6000 77
Project Location Coldiron Com A #1 7355'

Elevation
Borehole Location QK - S2 - T30 - R11
GWL Depth
Logged By CM CHANCE
Drilled By ~~K Padilla~~ F. Rivera
Date/Time Started 10/20/95 - 0925
Date/Time Completed 10/20/95 - 1209

Well Logged By CM Chance
Personnel On-Site K Padilla, D. Chavez
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
40	6	40-42		CTNGS - DK Gry Sand, WET						
45	7			TD 845'						
50										
55										
60										
65										
70										
75										
80										

Comments:

Geologist Signature

MONITORING WELL INSTALLATION RECORD

Philip Environmental Services Corp.
4000 Monroe Road
Farmington, New Mexico 87401
(606) 326-2262 FAX (606) 326-2388

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

Project Name EPNG PITS

Project Number 14509 Phase 6001.77
Project Location Coldiron Com A#1 73551

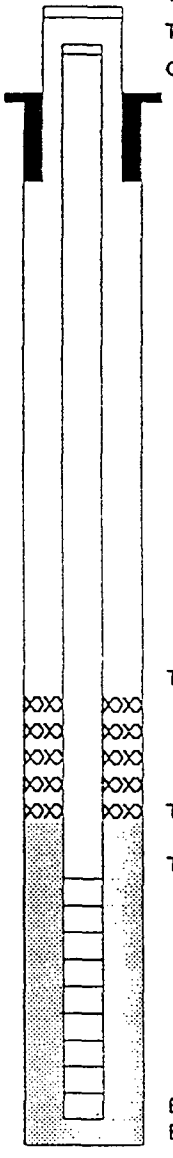
Elevation
Well Location QK-S2-T30-R11
GWL Depth 34.91'
Installed By F. Rivera

Date/Time Started 10/20/95 - 1230
Date/Time Completed 10/20/95 - 1430

On-Site Geologist CM Chance
Personnel On-Site K. Padilla, D. Charlie
Contractors On-Site
Client Personnel On-Site

Depths in Reference to Ground Surface

Item	Material	Depth
Top of Protective Casing		NA
Bottom of Protective Casing		NA
Top of Permanent Borehole Casing		NA
Bottom of Permanent Borehole Casing		NA
Top of Concrete		NA
Bottom of Concrete		NA
Top of Grout	-94# Type I-II Portland	0'
Bottom of Grout	-50# powdered Bentonite	22.5
Top of Well Riser	4" dia SCH40	+3
Bottom of Well Riser	Flush Thread PVC	27.5
Top of Well Screen	4" dia SCH40 Flush Thread	27.5
Bottom of Well Screen	0.01 slot PVC	42.5
Top of Peltonite Seal	-50# Enviro plug	22.5
Bottom of Peltonite Seal	Bentonite	24.5
Top of Gravel Pack	-50# 10-20	24.5
Bottom of Gravel Pack	Silica Sand	44'
Top of Natural Cave-In		42.5'
Bottom of Natural Cave-In		45'
Top of Groundwater		
Total Depth of Borehole		45'



Top of Protective Casing NA
Top of Riser +3'
Ground Surface 0'
Top of Seal 22.5
Top of Gravel Pack 24.5
Top of Screen 27.5'
Bottom of Screen 42.5'
Bottom of Borehole 45'

Comments: Bentonite hydrated w/ 5 gal potable water. GW @ 34.9' after well installed. GW has no odor or visible contamination.

Geologist Signature Cory Chance

El Paso Natural Gas Company

Phase II Drilling

CHAIN OF CUSTODY RECORD

Page 1 of 1

PROJECT NUMBER	PROJECT NAME
# 24324	Pit Closure Project

SAMPLERS: (Signature) Cory Clarke

DATE: 10/20/95

LAB ID	DATE	TIME	MATRIX	FIELD ID	TOTAL NUMBER OF CONTAINERS	SAMPLE TYPE	TPH EPA 418.1	BTEX EPA 8020	LAB PID		PID Hs ppm	SEQUENCE #	REMARKS
CMC 10/20/95	10/20/95		Soil	CMC159	1	V6	✓	✓				141	70714 Canepla Gas Com #1
947684	10/20/95	1021	Soil	CMC159	1	V6	✓	✓			451	141	35-37' 73551 Coldiron Com A #1

CMC 8/20/95

RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
Cory Clarke	10/20/95 1530	Julie Dietz	Julie Dietz	10/23/95 9:25	
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED OF LABORATORY BY: (Signature)

REQUESTED TURNAROUND TIME:
☐ ROUTINE ☐ RUSH

CARRIER CO.

BILL NO.:

SAMPLE RECEIPT REMARKS

CHARGE CODE

RESULTS & INVOICES TO:

FIELD SERVICES LABORATORY
EL PASO NATURAL GAS COMPANY
P. O. BOX 4990
FARMINGTON, NEW MEXICO 87499

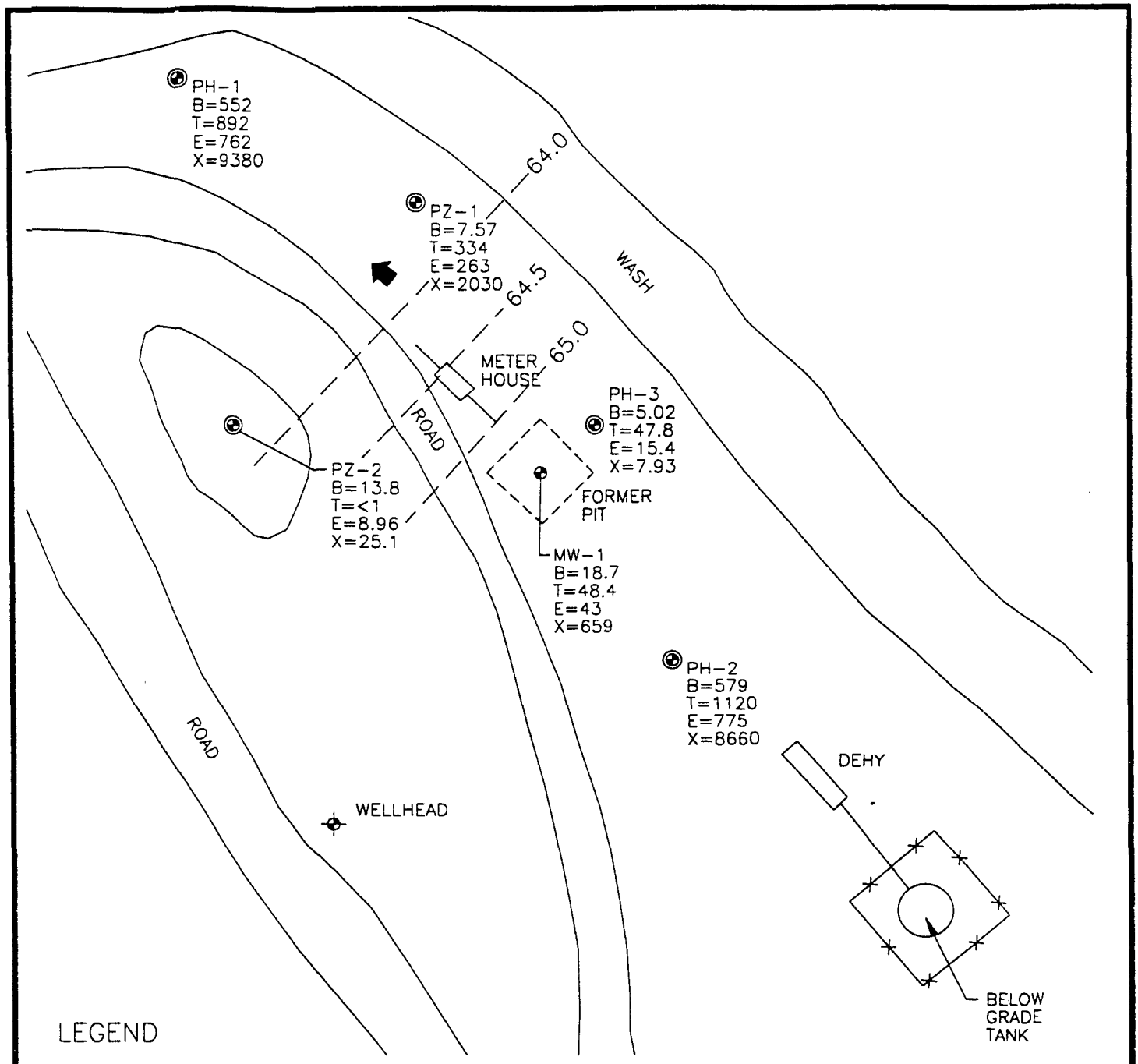
505-599-2144 FAX: 505-599-2261

White - *Testing Laboratory* Canary - *EPNG Lab* Pink - *Field Sampler*

FM-08-0565 A (Rev. 05-94)

APPENDIX E

TEMPORARY MONITORING WELL POINT BORELOGS AND ANALYTICAL DATA (1997)



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
84.0	GROUNDWATER POTENTIOMETRIC SURFACE
	APPROXIMATE GROUNDWATER GRADIENT

NOT TO SCALE

N

PHILIP SERVICES CORP.

TITLE:
COLDIRON COM A#1
73551

DWN: TMM	DES.: CC	PROJECT NO.: 17520	
CHKD: CC	APPD:	EPFS GW PITS	
DATE: 1/20/98	REV.: 0	FIGURE 1	

COL. 17520AY-001

TEMPORARY PIEZOMETER INSTALLATION

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

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

Project Name EPFS GW PITS
Project Number 17520 Phase 6006
Site Location COLDIRON COM A #1 - 73551

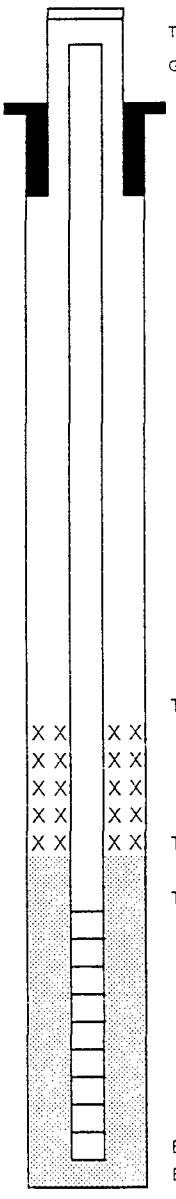
Elevation 104.47'
Well Location Ltr K -S 2 -T30-R 11
GWL Depth ~~100.57'~~ 63.53' ELEV
Installed By M DONOHUE

On-Site Geologist D CESARK
Personnel On-Site M DONOHUE, C GOMEZ
Contractors On-Site
Client Personnel On-Site

Date/Time Started 8/28/97 - 0955
Date/Time Completed " - 1145

Depths in Reference to Ground Surface

Item	Material	Depth (feet)
Top of Protective Casing		
Bottom of Protective Casing		
Top of Permanent Borehole Casing		
Bottom of Permanent Borehole Casing		
Top of Concrete		
Bottom of Concrete		
Top of Grout		
Bottom of Grout		
Top of Well Riser		
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		~37.90
Total Depth of Borehole		42'



Top of Protective Casing
Top of Riser (survey elev.)
Ground Surface
Top of Seal N/A
Top of Gravel Pack N/A
Top of Screen -32'
Bottom of Screen -42'
Bottom of Borehole -42'

Comments MW-1 (TOR) HC = 36.63', WTR = 36.71' (0930)
30'-32' HH = 258 ppm, 35'-37' HH = 5,000 ppm +

Geologist Signature

MWINSTAL.wk1

TEMPORARY PIEZOMETER INSTALLATION

Borehole # 4
Well # ~~PZ~~ PH-1
Page 1 of 1

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

Project Name EPFS GW PITS
Project Number 17520 Phase 6006
Site Location COLDIRON COM A #1 - 73551

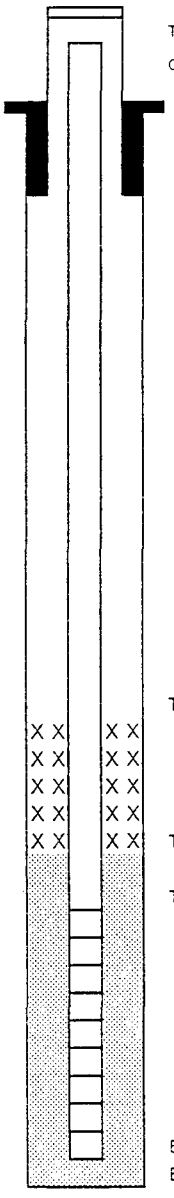
Elevation
Well Location Ltr K -S 2 -T 30-R 11
GWL Depth ~35' BGS
Installed By M DONOHUE

On-Site Geologist D CESARK
Personnel On-Site M DONOHUE, C GOMEZ
Contractors On-Site
Client Personnel On-Site

Date/Time Started 8-29-97 / 1100
Date/Time Completed " / 1330

Depths in Reference to Ground Surface

Item	Material	Depth (feet)
Top of Protective Casing		
Bottom of Protective Casing		
Top of Permanent Borehole Casing		
Bottom of Permanent Borehole Casing		
Top of Concrete		
Bottom of Concrete		
Top of Grout		
Bottom of Grout		
Top of Well Riser		
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	~35'	
Total Depth of Borehole		37'



Top of Protective Casing
Top of Riser (survey elev.)
Ground Surface
Top of Seal N/A
Top of Gravel Pack N/A
Top of Screen 32'
Bottom of Screen 37'
Bottom of Borehole 37'

Comments PZ-1 = 37.89' - HC, 37.90' WTR
35-37' HH = 1,000+ ppm

Geologist Signature

TEMPORARY PIEZOMETER INSTALLATION

Borehole # 3
Well # PZ-2
Page 1 of 1

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

Project Name EPFS GW PITS
Project Number 17520 Phase 6006
Site Location COLDIRON COM A #1 - 7355'

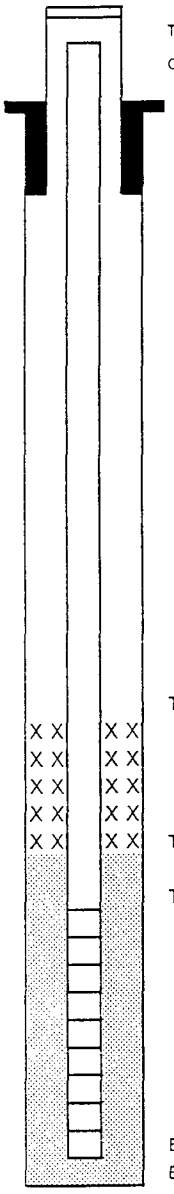
Elevation (100.20')
Well Location Ltr K -S 2-T30-R 11
GWL Depth 58.30'
Installed By M DONOHUE

On-Site Geologist D CESARK
Personnel On-Site M DONOHUE, C GOMEZ
Contractors On-Site
Client Personnel On-Site

Date/Time Started 8/28/97 - 1240
Date/Time Completed / / - 1420

Depths in Reference to Ground Surface

Item	Material	Depth (feet)
Top of Protective Casing		
Bottom of Protective Casing		
Top of Permanent Borehole Casing		
Bottom of Permanent Borehole Casing		
Top of Concrete		
Bottom of Concrete		
Top of Grout		
Bottom of Grout		
Top of Well Riser		
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	-	41.90
Total Depth of Borehole	-	47'



Top of Protective Casing
Top of Riser (survey elev.) 100.20
Ground Surface
Top of Seal N/A
Top of Gravel Pack N/A
Top of Screen -37' BGS
Bottom of Screen -47' BGS
Bottom of Borehole -47' BGS

Comments MW-1 (TOR) HC = 36.63', WTR = 36.71' (0930)
35'-37' HH = 1.7 ppm, 40'-42' HH = 24.1 ppm

Geologist Signature

MWINSTAL.wk1

TEMPORARY PIEZOMETER INSTALLATION

Borehole # 5
Well # ~~PZ~~ PH-2
Page 1 of 1

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

Project Name EPFS GW PITS
Project Number 17520 Phase 6006
Site Location COLDIRON COM A #1 - 7355'

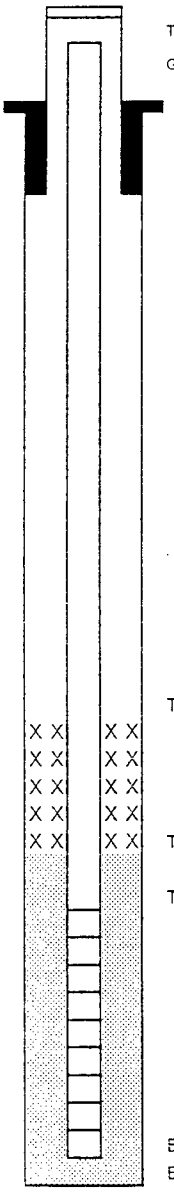
Elevation
Well Location Ltr K -S 2 -T 30-R 11
GWL Depth ~ 33' BGS
Installed By M DONOHUE

On-Site Geologist D CESARK
Personnel On-Site M DONOHUE, C GOMEZ
Contractors On-Site
Client Personnel On-Site

Date/Time Started 8-29-97 1330
Date/Time Completed 11 /

Depths in Reference to Ground Surface

Item	Material	Depth (feet)
Top of Protective Casing		
Bottom of Protective Casing		
Top of Permanent Borehole Casing		
Bottom of Permanent Borehole Casing		
Top of Concrete		
Bottom of Concrete		
Top of Grout		
Bottom of Grout		
Top of Well Riser		
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	~	33'
Total Depth of Borehole		35'



Top of Protective Casing
Top of Riser (survey elev.)
Ground Surface
Top of Seal N/A
Top of Gravel Pack N/A
Top of Screen 30'
Bottom of Screen 35'
Bottom of Borehole 35'

Comments MW-1 → HC = 36.62', WTR = 36.70'
35'-35' HH = 1,397 ppm +

Geologist Signature

MWINSTAL.wk1

TEMPORARY PIEZOMETER INSTALLATION

Borehole # _____
Well # ~~PZ~~ PH3
Page 1 of 1

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

Project Name EPFS GW PITS
Project Number 17520 Phase 6006
Site Location Coldiron Com A #1 7355'

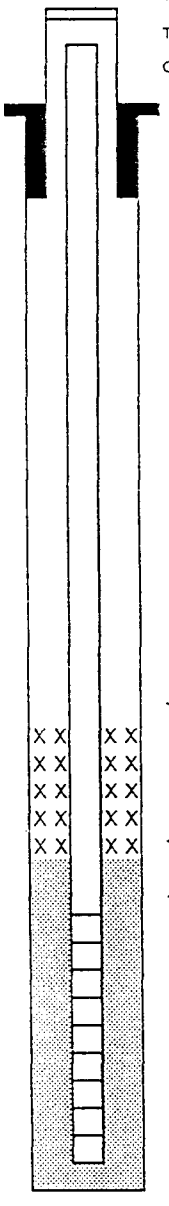
Elevation _____
Well Location Ltr K -S2-T30-R1
GWL Depth _____
Installed By M. Pendley

Date/Time Started 9/1/97
Date/Time Completed 9/2/97

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

Depths in Reference to Ground Surface

Item	Material	Depth (feet)
Top of Protective Casing		
Bottom of Protective Casing		
Top of Permanent Borehole Casing		
Bottom of Permanent Borehole Casing		
Top of Concrete		
Bottom of Concrete		
Top of Grout		
Bottom of Grout		
Top of Well Riser		
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		



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 33
Bottom of Screen 38
Bottom of Borehole 35

Comments PH3 is 45° ± 20' from MW1. Installed stainless steel well pt & sampled (CMC341). Pushed well pt 3' past bottom of boring. Pulled well pt after sampling

Geologist Signature Cory Chance

MWINSTAL.wk1

EL PASO FIELD SERVICES

FIELD SERVICES LABORATORY
ANALYTICAL REPORT
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	DRC41	970938
MTR CODE | SITE NAME:	73551	Coldiron Com. A #1
SAMPLE DATE | TIME (Hrs):	8/28/97	1052
PROJECT:	Well Points	
DATE OF BTEX EXT. | ANAL.:	8/29/97	8/29/97
TYPE | DESCRIPTION:	Trip Blank	Water

Field Remarks: _____

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	< 1	PPB				
TOLUENE	< 1	PPB				
ETHYL BENZENE	< 1	PPB				
TOTAL XYLENES	< 3	PPB				
TOTAL BTEX	< 6	PPB				

--BTEX is by EPA Method 8020 --

The Surrogate Recovery was at 102.6 % for this sample All QA/QC was acceptable.

DF = Dilution Factor Used

Narrative:

Approved By: _____ Date: 9-F-97

970938TripBlankBTEX,9/3/97

EL PASO FIELD SERVICES

FIELD SERVICES LABORATORY
ANALYTICAL REPORT
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	DRC42	970939
MTR CODE | SITE NAME:	73551	Coldiron Com. A #1
SAMPLE DATE | TIME (Hrs):	8/28/97	1105
PROJECT:	Well Points	
DATE OF BTEX EXT. | ANAL.:	8/29/97	8/29/97
TYPE | DESCRIPTION:	PZ-1	Water

Field Remarks: _____

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	7.57	PPB	2	D		
TOLUENE	334	PPB	2	D		
ETHYL BENZENE	263	PPB	2	D		
TOTAL XYLENES	2030	PPB	5	D		
TOTAL BTEX	2634	PPB				

--BTEX is by EPA Method 8020 --

The Surrogate Recovery was at 101.4 % 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: _____ Date: 9-8-97

970939BTEX,9/3/97

EL PASO FIELD SERVICES

FIELD SERVICES LABORATORY
ANALYTICAL REPORT
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	DRC43	970940
MTR CODE | SITE NAME:	73551	Coldiron Com. A #1
SAMPLE DATE | TIME (Hrs):	8/28/97	1348
PROJECT:	Well Points	
DATE OF BTEX EXT. | ANAL.:	8/29/97	8/29/97
TYPE | DESCRIPTION:	PZ-2	Water

Field Remarks: _____

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	13.8	PPB				
TOLUENE	< 1	PPB				
ETHYL BENZENE	8.96	PPB				
TOTAL XYLENES	25.1	PPB				
TOTAL BTEX	48	PPB				

--BTEX is by EPA Method 8020 --

The Surrogate Recovery was at 99.4 % for this sample All QA/QC was acceptable.

DF = Dilution Factor Used

Narrative:

Approved By: _____ Date: 9-8-97

970940BTEX,9/3/97

"WELL POINTS"

El Paso Natural Gas Company

CHAIN OF CUSTODY RECORD

PROJECT NUMBER: # 24324

PROJECT NAME: Pit Closure Project

CONTRACT LABORATORY P. O. NUMBER:

SAMPLERS: (Signature) [signature]

DATE: 8-28-97

LAB ID	DATE	TIME	MATRIX	FIELD ID	TOTAL NUMBER OF CONTAINERS	SAMPLE TYPE	TPH EPA 418.1	BTEX EPA 8020	LAB PID			SEQUENCE #	REMARKS
970938	8/28	1052	B	DRC 41	1	B		X				30	TRIP BLANK
970939	8/28	1105	W	DRC 42	2	VG		X				30	COLDIRON COM A #1-73551 (PZ-1)
970940	8/28	1348	W	DRC 43	2	VG		X				31	" (PZ-2)
	~~[illegible]~~		~~[illegible]~~	~~[illegible]~~	~~[illegible]~~	~~[illegible]~~		~~[illegible]~~				~~[illegible]~~	DC 8/28/97

42°F

RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
[signature]	8/28/97 1515		Cari Williams	8/29/97 10:15	

RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED OF LABORATORY BY: (Signature)
				8/29/97 1015	[signature]

REQUESTED TURNAROUND TIME: ☐ ROUTINE ☐ RUSH

CARRIER CO.

BILL NO.:

SAMPLE RECEIPT REMARKS

CHARGE CODE

RESULTS & INVOICES TO:

FIELD SERVICES LABORATORY
EL PASO NATURAL GAS COMPANY
P. O. BOX 4990
FARMINGTON, NEW MEXICO 87499

505-599-2144 FAX: 505-599-2261

White - *Testing Laboratory* Canary - *EPNG Lab* Pink - *Field Sampler*

FM-08-0565 A (Rev. 05-94)

EL PASO FIELD SERVICES

FIELD SERVICES LABORATORY
ANALYTICAL REPORT
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	DRC44	970948
MTR CODE | SITE NAME:	73551	Coldiron Com. A #1
SAMPLE DATE | TIME (Hrs):	8/29/97	1121
PROJECT:	Well Points	
DATE OF BTEX EXT. | ANAL.:	9/3/97	9/3/97
TYPE | DESCRIPTION:	Trip Blank	Water

Field Remarks: _____

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	<1	PPB				
TOLUENE	<1	PPB				
ETHYL BENZENE	<1	PPB				
TOTAL XYLENES	<3	PPB				
TOTAL BTEX	<6	PPB				

--BTEX is by EPA Method 8020 --

The Surrogate Recovery was at 97.6 % for this sample All QA/QC was acceptable.

DF = Dilution Factor Used

Narrative:

Approved By: _____ Date: 9-8-97

970948WellSiteTripBlank,9/8/97

EL PASO FIELD SERVICES

FIELD SERVICES LABORATORY
ANALYTICAL REPORT
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	DRC45	970949
MTR CODE | SITE NAME:	73551	Coldiron Com. A #1
SAMPLE DATE | TIME (Hrs):	8/29/97	1230
PROJECT:	Well Points	
DATE OF BTEX EXT. | ANAL.:	9/3/97	9/3/97
TYPE | DESCRIPTION:	PH-1	Water

Field Remarks: _____

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	552	PPB	25	D		
TOLUENE	892	PPB	25	D		
ETHYL BENZENE	762	PPB	25	D		
TOTAL XYLENES	9380	PPB	25	D		
TOTAL BTEX	11586	PPB				

--BTEX is by EPA Method 8020 --

The Surrogate Recovery was at 97.1 % 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: _____ Date: 9-8-97

970949WellPoint,9/8/97

EL PASO FIELD SERVICES

FIELD SERVICES LABORATORY
ANALYTICAL REPORT
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	DRC46	970950
MTR CODE | SITE NAME:	73551	Coldiron Com. A #1
SAMPLE DATE | TIME (Hrs):	8/29/97	1420
PROJECT:	Well Points	
DATE OF BTEX EXT. | ANAL.:	9/3/97	9/3/97
TYPE | DESCRIPTION:	PH-2	Water

Field Remarks: _____

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	579	PPB	25	D		
TOLUENE	1120	PPB	25	D		
ETHYL BENZENE	775	PPB	25	D		
TOTAL XYLENES	8660	PPB	25	D		
TOTAL BTEX	11134	PPB				

--BTEX is by EPA Method 8020 --

The Surrogate Recovery was at 95.9 % 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: _____ Date: 9-8-97

970950BtexWellPoint,9/8/97

"WELL POINTS"

El Paso Natural Gas Company

CHAIN OF CUSTODY RECORD

PROJECT NUMBER: # 24324
PROJECT NAME: Pit Closure Project
SAMPLERS: (Signature) [signature]
DATE: 8-29-97

CONTRACT LABORATORY P. O. NUMBER:

LAB ID	DATE	TIME	MATRIX	FIELD ID	TOTAL NUMBER OF CONTAINERS	SAMPLE TYPE	TPH EPA 418.1	BTEX EPA 8020	LAB PID			SEQUENCE #	REMARKS
970948	8/29	1121	B	DRC 44	1	B		X				32	TRIP BLANK
970949	8/29	1230	W	DRC 45	2	VG		X				32	COLDIRON COM A #1-73551 (PH-1)
970950	8/29	1420	W	DRC 46	2	VG		X				33	" " (PH-2)

RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
[signature]	8/29/97 1553		[signature]	9/2/97 1130	
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED OF LABORATORY BY: (Signature)
				9/2/97 1130	[signature]

REQUESTED TURNAROUND TIME: ☐ ROUTINE ☐ RUSH

CARRIER CO.

BILL NO.:

SAMPLE RECEIPT REMARKS

CHARGE CODE

RESULTS & INVOICES TO:
FIELD SERVICES LABORATORY
EL PASO NATURAL GAS COMPANY
P. O. BOX 4990
FARMINGTON, NEW MEXICO 87499
505-599-2144 FAX: 505-599-2261

EL PASO FIELD SERVICES

FIELD SERVICES LABORATORY
ANALYTICAL REPORT
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	CMC341	970953
MTR CODE | SITE NAME:	73551	Coldiron Com. #1
SAMPLE DATE | TIME (Hrs):	9/3/97	1100
PROJECT:	Well Points	
DATE OF BTEX EXT. | ANAL.:	9/9/97	9/9/97
TYPE | DESCRIPTION:	PH-3	Water

Field Remarks: _____

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	5.02	PPB				
TOLUENE	47.8	PPB				
ETHYL BENZENE	15.4	PPB				
TOTAL XYLENES	7.93	PPB				
TOTAL BTEX	76	PPB				

--BTEX is by EPA Method 8020 --

The Surrogate Recovery was at 118.7 % 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 Loden Date: 9-17-97

EL PASO FIELD SERVICES

FIELD SERVICES LABORATORY
ANALYTICAL REPORT
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	Trip Blank	970952
MTR CODE | SITE NAME:	73551	Coldiron Com. A #1
SAMPLE DATE | TIME (Hrs):	9/3/97	1100
PROJECT:	Well Points	
DATE OF BTEX EXT. | ANAL.:	9/9/97	9/9/97
TYPE | DESCRIPTION:	Trip Blank	Water

Field Remarks: _____

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	<1	PPB				
TOLUENE	<1	PPB				
ETHYL BENZENE	<1	PPB				
TOTAL XYLENES	<3	PPB				
TOTAL BTEX	<6	PPB				

--BTEX is by EPA Method 8020 --

The Surrogate Recovery was at 113.7 % for this sample All QA/QC was acceptable.

DF = Dilution Factor Used

Narrative:

Approved By: John Faldi Date: 9-17-97

970952BTEXWPTB,9/16/97

EL PASO Natural Gas Company

Well Points

CHAIN OF CUSTODY RECORD

Page _____ of _____

PROJECT NUMBER	PROJECT NAME
# 24324	Pit Closure Project

SAMPLERS: (Signature) Cory Deane DATE: 9/3/97

LAB ID	DATE	TIME	MATRIX	FIELD ID	TOTAL NUMBER OF CONTAINERS	SAMPLE TYPE	TPH EPA 418.1	BTEX EPA 8020	LAB PID			SEQUENCE #	REMARKS
970952	9/3/97	—	Water	Trip Blank	1	TB		✓					Trip Blank
970953		1100		CMC 341	2	VG		✓					Colliron Com A #1 73551 PH3
	cmc 9/3/97			CMC 342	2	VG		✓					" PH4
970954		1440		CMC 342	2	VG		✓					Johnston Fed #4 70194 PH1

Note: Septums are coming off of the bottles. They have a clay consistency

Cmc 9/3/97

38° F

RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
Cory Deane	9/3/97 1700		Cari Williams	9-4-97 1000	
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED OF LABORATORY BY: (Signature)
				9/4/97 1000	Walter Hoffman

REQUESTED TURNAROUND TIME:
☐ ROUTINE ☐ RUSH _____

CARRIER CO.

BILL NO.:

SAMPLE RECEIPT REMARKS

CHARGE CODE

RESULTS & INVOICES TO:

FIELD SERVICES LABORATORY
EL PASO NATURAL GAS COMPANY
P. O. BOX 4990
FARMINGTON, NEW MEXICO 87499
505-599-2144 FAX: 505-599-2261

CONTRACT LABORATORY P. O. NUMBER

White - *Testing Laboratory* Canary - *EPNG Lab* Pink - *Field Sampler*

FM-08-0565 A (Rev. 05-94)

EL PASO NATURAL GAS
EPA METHOD 8020 - BTEX SOILS

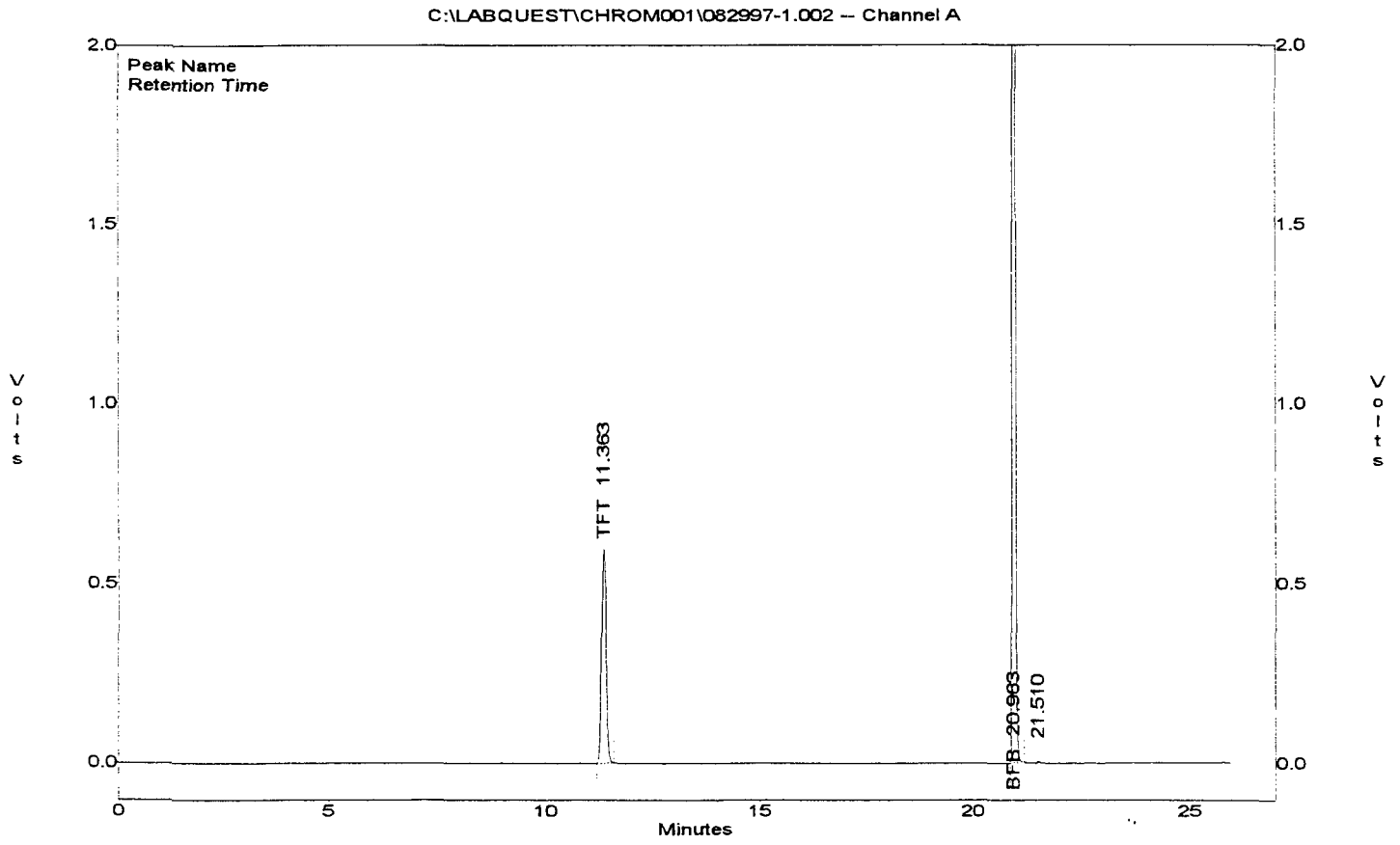
File : C:\LABQUEST\CHROM001\082997-1.002
Method : C:\LABQUEST\METHODS\1-082597.MET
Sample ID : 970938 X1
Acquired : Aug 29, 1997 15:30:48
Printed : Aug 29, 1997 15:57:12
User : MARLON

Channel A Results

COMPONENT	RET TIME	AREA	CONC (ug/L)
BENZENE	9.163	0	0.0000
TFT	11.363	4379097	102.8906
TOLUENE	13.810	0	0.0000
ETHYLBENZENE	18.163	0	0.0000
M & P XYLENE	18.540	0	0.0000
O XYLENE	19.730	0	0.0000
BFB	20.963	23159060	102.5813

Channel A Group Results

COMPONENT	RET TIME	AREA	CONC (ug/L)
TOTAL XYLENES		0	0.0000



EL PASO NATURAL GAS
EPA METHOD 8020 - BTEX SOILS

File : C:\LABQUEST\CHROM001\082997-1.013
Method : C:\LABQUEST\METHODS\1-082597.MET
Sample ID : 970939 X2
Acquired : Aug 29, 1997 22:40:48
Printed : Aug 29, 1997 23:07:20
User : MARLON

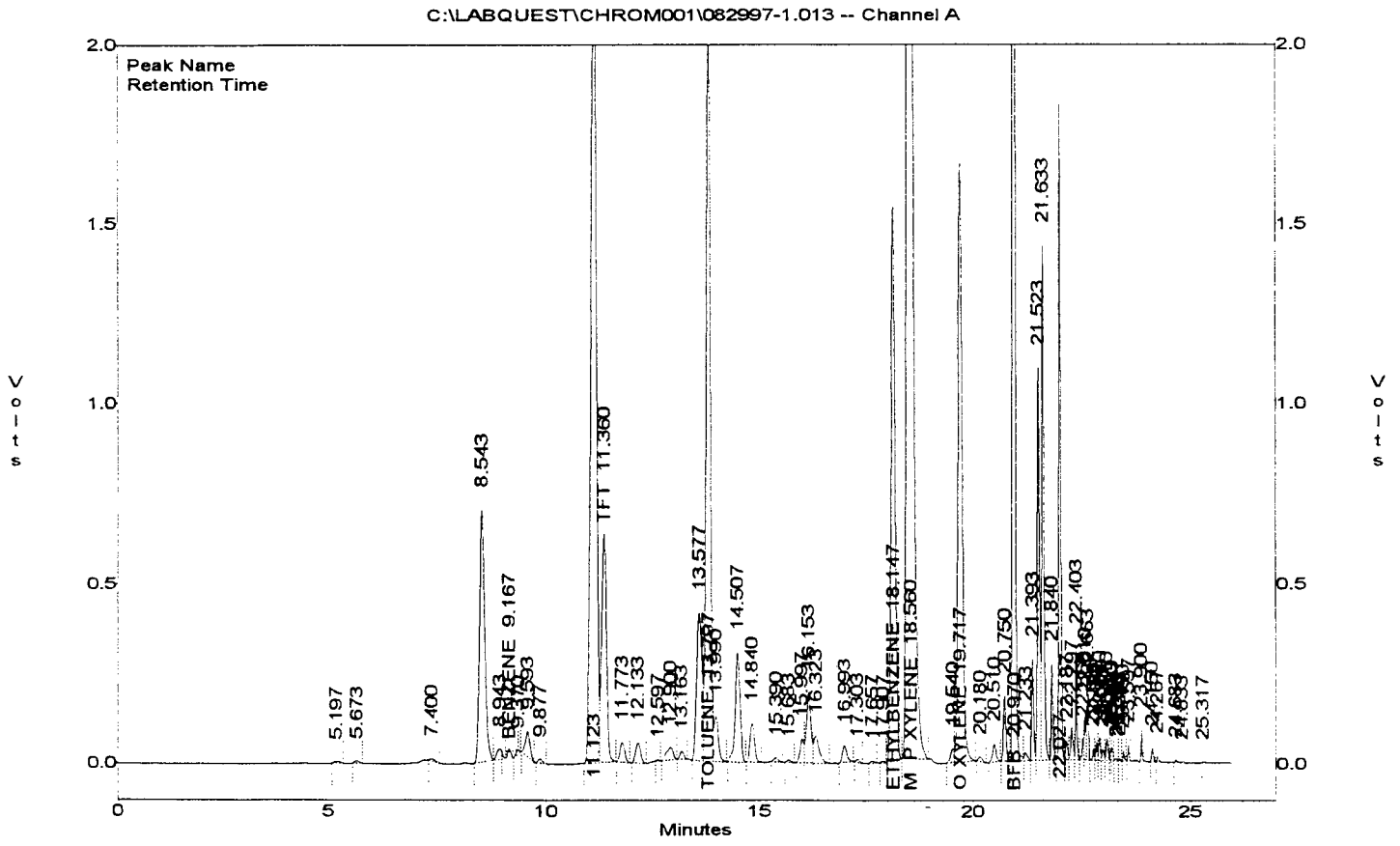
Channel A Results

COMPONENT	RET TIME	AREA	CONC (ug/L)
BENZENE	9.167	225001	7.5656
TFT	11.360	4816732	226.3465
TOLUENE	13.797	14246663	333.5967
ETHYLBENZENE	18.147	10081021	263.1032
M & P XYLENE	18.560	64231960	1541.6541
O XYLENE	19.717	11337452	307.4629
BFB	20.970	22884256	202.7281

- over (use XS)

Channel A Group Results

COMPONENT	RET TIME	AREA	CONC (ug/L)
TOTAL XYLENES		75569408	1849.1169



EL PASO NATURAL GAS
EPA METHOD 8020 - BTEX SOILS

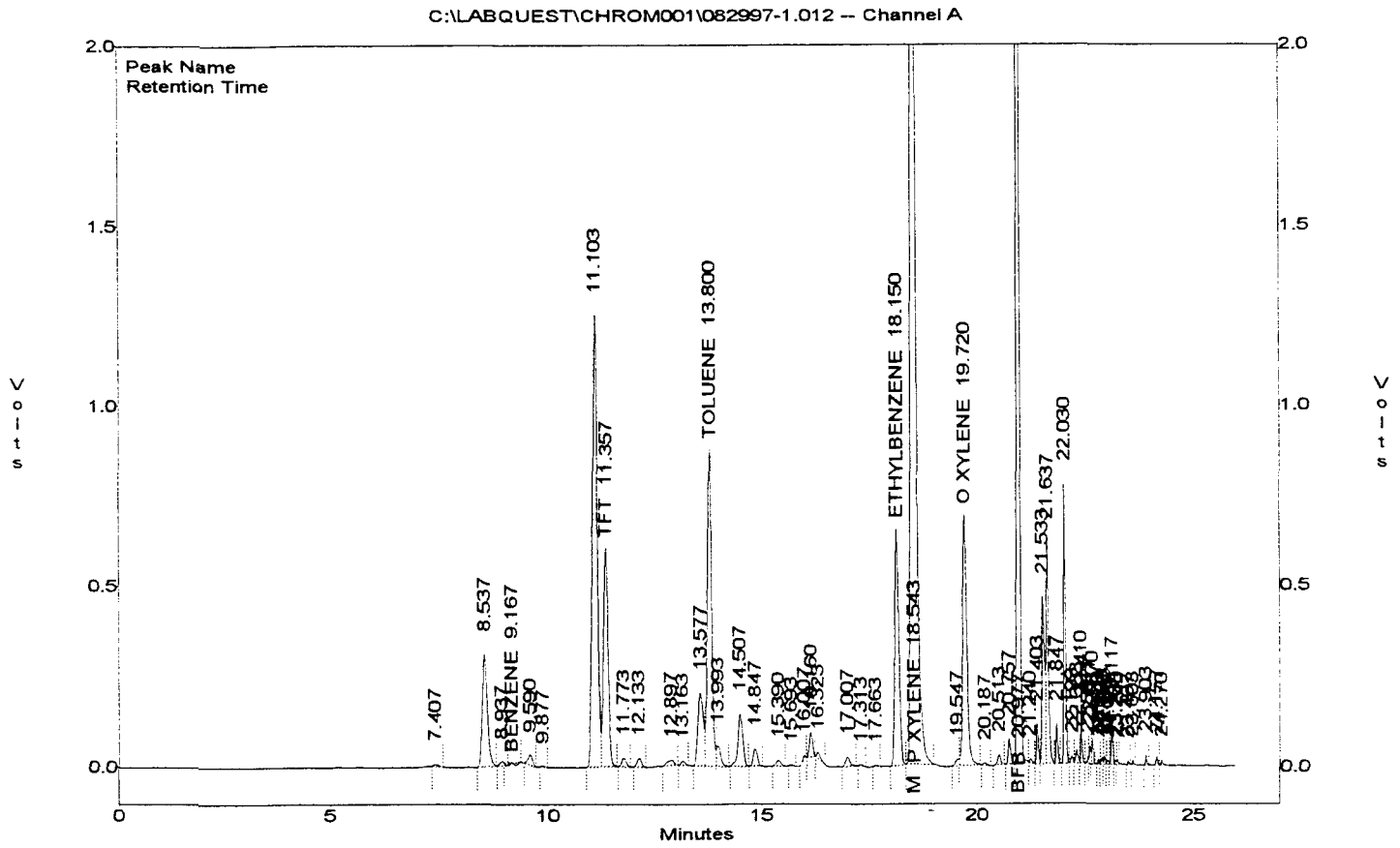
File : C:\LABQUEST\CHROM001\082997-1.012
Method : C:\LABQUEST\METHODS\1-082597.MET
Sample ID : 970939 X5
Acquired : Aug 29, 1997 22:01:54
Printed : Aug 29, 1997 22:28:23
User : MARLON

Channel A Results

COMPONENT	RET TIME	AREA	CONC (ug/L)
BENZENE	9.167	89789	8.6769
TFT	11.357	4467189	524.8021
TOLUENE	13.800	5988793	354.7257
ETHYLBENZENE	18.150	4190187	279.9390
M & P XYLENE	18.543	29369222	1705.8745
O XYLENE	19.720	4701240	325.0429
BFB	20.977	22323746	494.4067

Channel A Group Results

COMPONENT	RET TIME	AREA	CONC (ug/L)
TOTAL XYLENES		34070464	2030.9175



EL PASO NATURAL GAS
EPA METHOD 8020 - BTEX SOILS

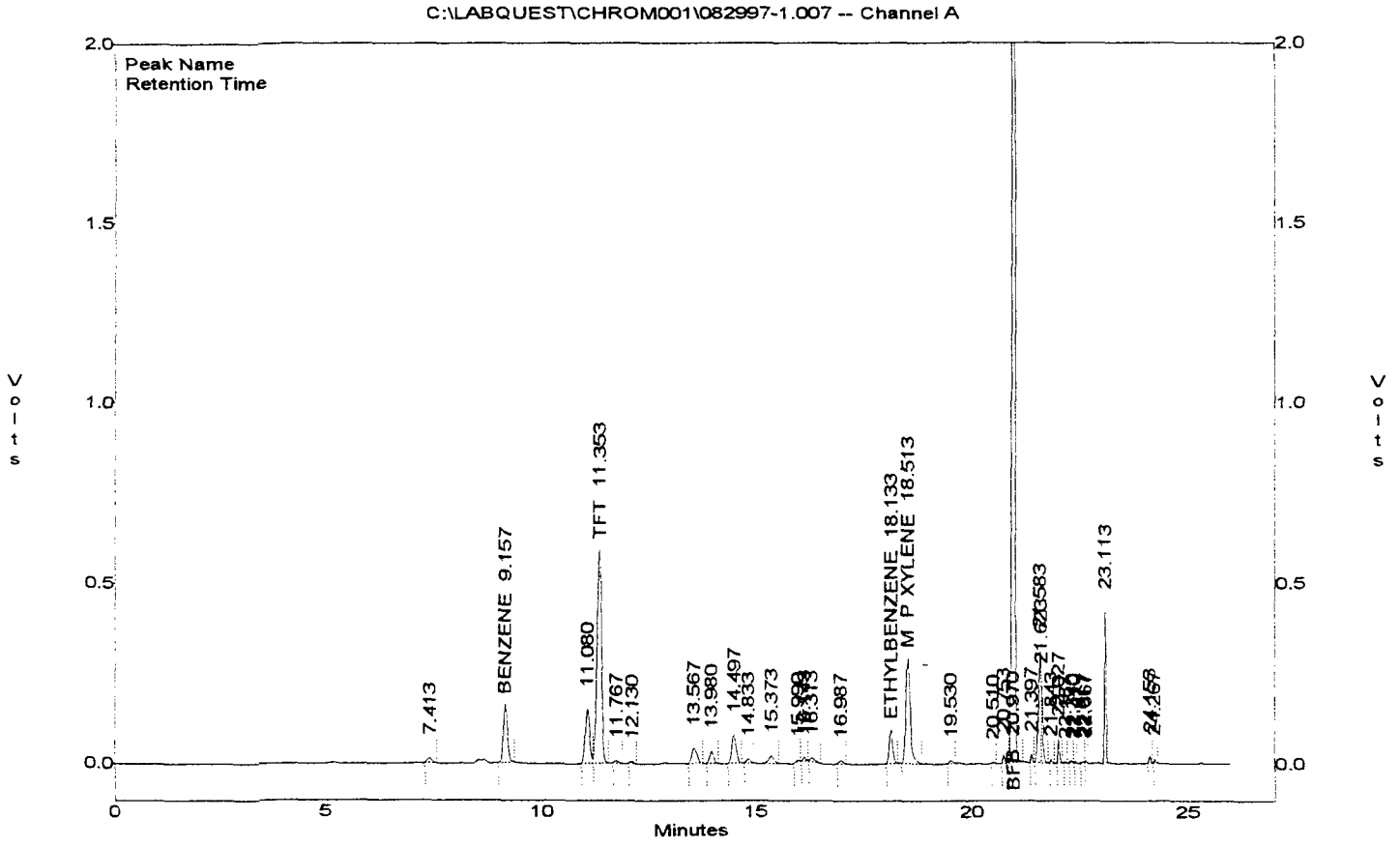
File : C:\LABQUEST\CHROM001\082997-1.007
Method : C:\LABQUEST\METHODS\1-082597.MET
Sample ID : 970940 X1
Acquired : Aug 29, 1997 18:46:28
Printed : Aug 29, 1997 19:12:55
User : MARLON

Channel A Results

COMPONENT	RET TIME	AREA	CONC (ug/L)
BENZENE	9.157	1097701	13.7570
TFT	11.353	4320363	101.5106
TOLUENE	13.810	0	0.0000
ETHYLBENZENE	18.133	534698	8.9553
M & P XYLENE	18.513	2030577	25.0710
O XYLENE	19.730	0	0.0000
BFB	20.970	22449192	99.4370

Channel A Group Results

COMPONENT	RET TIME	AREA	CONC (ug/L)
TOTAL XYLENES		2030577	25.0710



EL PASO FIELD SERVICES

QUALITY CONTROL REPORT
EPA METHOD 8020 - BTEX

Samples: 970931 to 970933, 970938 to 970943

QA/QC for 8/29/97 Sample Set

LABORATORY CALIBRATION CHECKS / LABORATORY CONTROL SAMPLES:

SAMPLE NUMBER ICV LA-52589 50 PPB	TYPE	EXPECTED RESULT PPB	ANALYTICAL RESULT PPB	%R	ACCEPTABLE RANGE	YES	NO
Benzene	Standard	50.0	49.9	99.9	75 - 125 %	X	
Toluene	Standard	50.0	49.6	99	75 - 125 %	X	
Ethylbenzene	Standard	50.0	49.5	99	75 - 125 %	X	
m & p - Xylene	Standard	100	99.1	99.1	75 - 125 %	X	
o - Xylene	Standard	50.0	49.2	98	75 - 125 %	X	
SAMPLE NUMBER LCS LA-45476 25 PPB	**TYPE**	**EXPECTED RESULT PPB**	**ANALYTICAL RESULT PPB**	**%R**	**ACCEPTABLE RANGE**	**YES**	**NO**
Benzene	Standard	25.0	25.6	102.2	39 - 150	X	
Toluene	Standard	25.0	25.6	102	46 - 148	X	
Ethylbenzene	Standard	25.0	25.3	101	32 - 160	X	
m & p - Xylene	Standard	50.0	50.8	102	Not Given	X	
o - Xylene	Standard	25.0	25.5	102	Not Given	X	
SAMPLE NUMBER CCV LA-52589 50 PPB	**TYPE**	**EXPECTED RESULT PPB**	**ANALYTICAL RESULT PPB**	**%R**	**ACCEPTABLE RANGE**	**YES**	**NO**
Benzene	Standard	50.0	50.5	101.0	75 - 125 %	X	
Toluene	Standard	50.0	49.8	99.6	75 - 125 %	X	
Ethylenzene	Standard	50.0	49.7	99.4	75 - 125 %	X	
m & p - Xylene	Standard	100	99.5	99.5	75 - 125 %	X	
o - Xylene	Standard	50.0	49.7	99	75 - 125 %	X	
SAMPLE NUMBER CCV LA-52589 50 PPB	**TYPE**	**EXPECTED RESULT PPB**	**ANALYTICAL RESULT PPB**	**%R**	**ACCEPTABLE RANGE**	**YES**	**NO**
Benzene	Standard	50.0	50.3	100.6	75 - 125 %	X	
Toluene	Standard	50.0	49.3	98.7	75 - 125 %	X	
Ethylbenzene	Standard	50.0	48.8	97.5	75 - 125 %	X	
m & p - Xylene	Standard	100	97.4	97.4	75 - 125 %	X	
o - Xylene	Standard	50.0	48.9	97.8	75 - 125 %	X	

Narrative: Acceptable.

LABORATORY DUPLICATES:

SAMPLE ID 970943	TYPE	SAMPLE RESULT PPB	DUPLICATE RESULT PPB	RPD	ACCEPTABLE RANGE	YES	NO
Benzene	Matrix Duplicate	3.8	3.9	2.25	+/- 20 %	X	
Toluene	Matrix Duplicate	<1	1.0	200.00	+/- 20 %		X
Ethylbenzene	Matrix Duplicate	<1	<1	0.00	+/- 20 %	X	
m & p - Xylene	Matrix Duplicate	3.59	3.7	3.64	+/- 20 %	X	
o - Xylene	Matrix Duplicate	<1	<1	0.00	+/- 20 %	X	

Narrative: Acceptable.

LABORATORY SPIKES:

SAMPLE ID 2nd Analysis 970943	SPIKE ADDED PPB	SAMPLE RESULT PPB	SPIKE SAMPLE RESULT PPB	%R	ACCEPTABLE RANGE	YES	NO
Benzene	50	3.8	54.4	101.2	75 - 125 %	X	
Toluene	50	<1	51.6	103	75 - 125 %	X	
Ethylbenzene	50	<1	50.5	101	75 - 125 %	X	
m & p - Xylene	100	3.59	103.7	100.1	75 - 125 %	X	
o - Xylene	50	<1	50.1	100	75 - 125 %	X	

Narrative: Acceptable

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	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: _____ Approved By: John Fadler Date: 9-8-97

EL PASO NATURAL GAS
EPA METHOD 8020 - BTEX SOILS

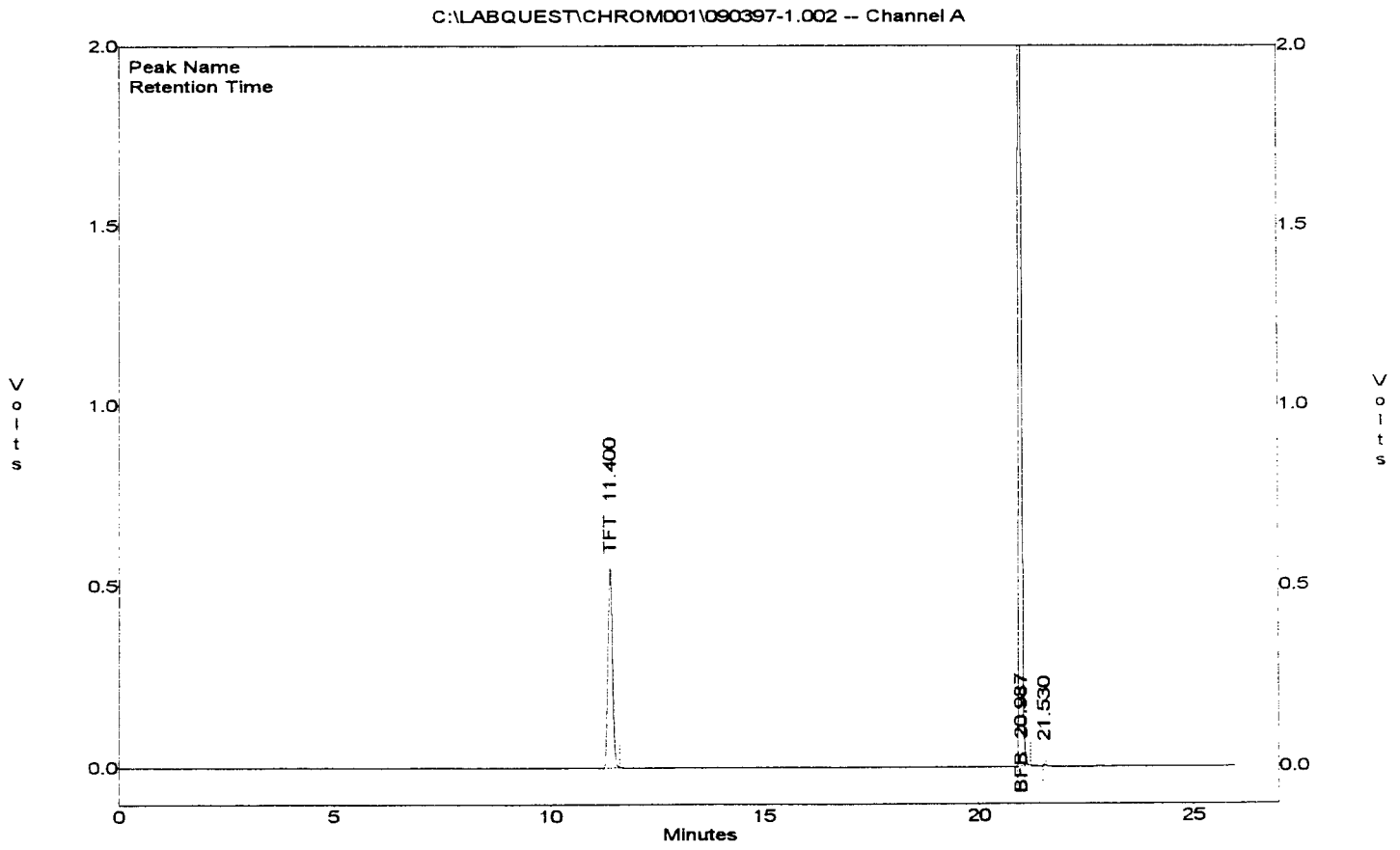
File : C:\LABQUEST\CHROM001\090397-1.002
Method : C:\LABQUEST\METHODS\1-082597.MET
Sample ID : 970948 X1
Acquired : Sep 03, 1997 14:54:34
Printed : Sep 03, 1997 15:20:57
User : MARLON

Channel A Results

COMPONENT	RET TIME	AREA	CONC (ug/L)
BENZENE	9.163	0	0.0000
TFT	11.400	4073200	95.7033
TOLUENE	13.810	0	0.0000
ETHYLBENZENE	18.163	0	0.0000
M & P XYLENE	18.540	0	0.0000
O XYLENE	19.730	0	0.0000
BFB	20.987	22044206	97.6431

Channel A Group Results

COMPONENT	RET TIME	AREA	CONC (ug/L)
TOTAL XYLENES		0	0.0000



EL PASO NATURAL GAS
EPA METHOD 8020 - BTEX SOILS

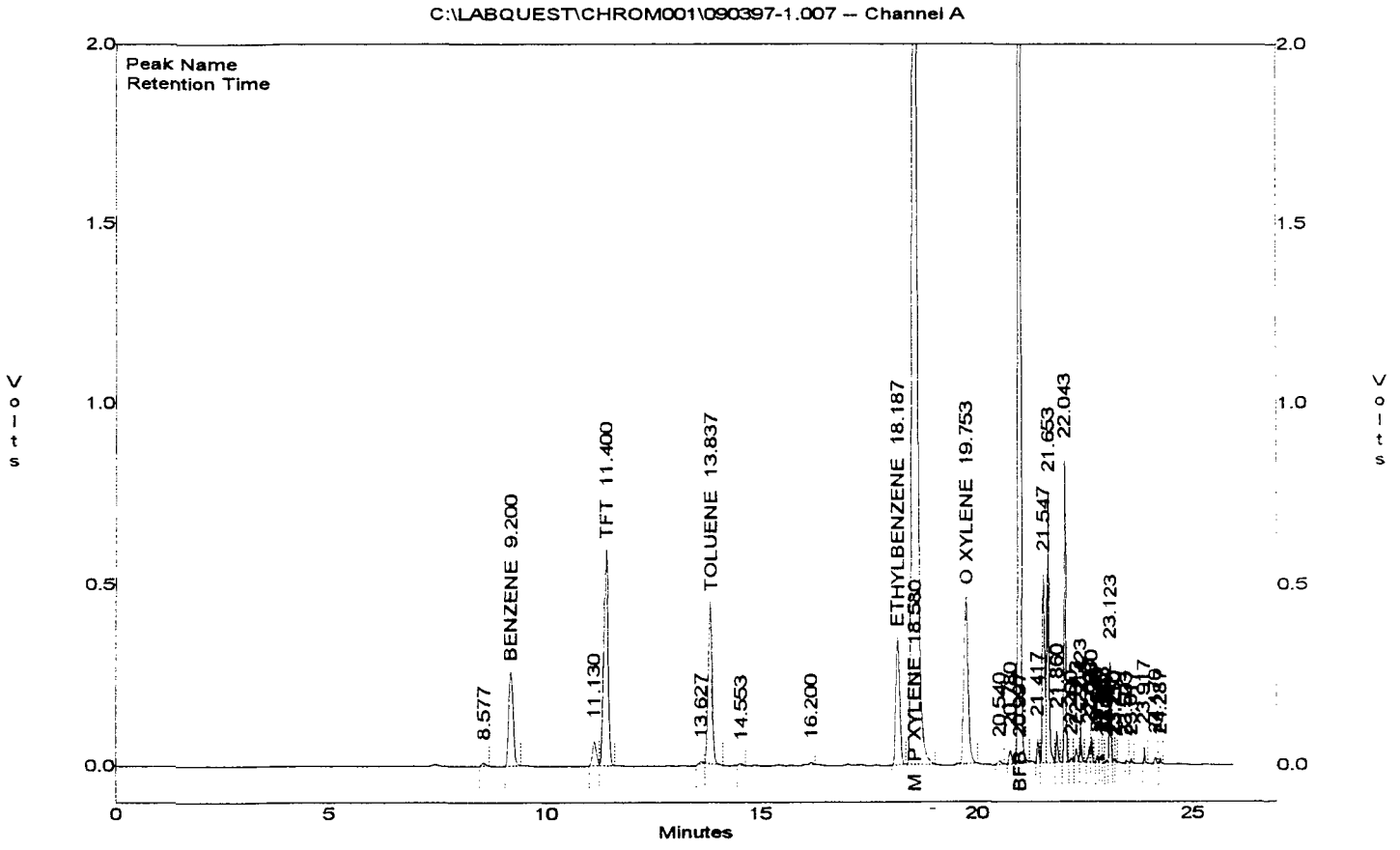
File : C:\LABQUEST\CHROM001\090397-1.007
Method : C:\LABQUEST\METHODS\1-082597.MET
Sample ID : 970949 X25
Acquired : Sep 03, 1997 18:12:41
Printed : Sep 03, 1997 18:39:08
User : MARLON

Channel A Results

COMPONENT	RET TIME	AREA	CONC (ug/L)
BENZENE	9.200	1841697	552.2233
TFT	11.400	4284014	2516.4146
TOLUENE	13.837	2876620	892.1185
ETHYLBENZENE	18.187	2170335	761.5856
M & P XYLENE	18.580	28500534	8261.7275
O XYLENE	19.753	3130841	1114.3920
BFB	20.997	21924064	2427.7742

Channel A Group Results

COMPONENT	RET TIME	AREA	CONC (ug/L)
TOTAL XYLENES		31631376	9376.1191



EL PASO NATURAL GAS
EPA METHOD 8020 - BTEX SOILS

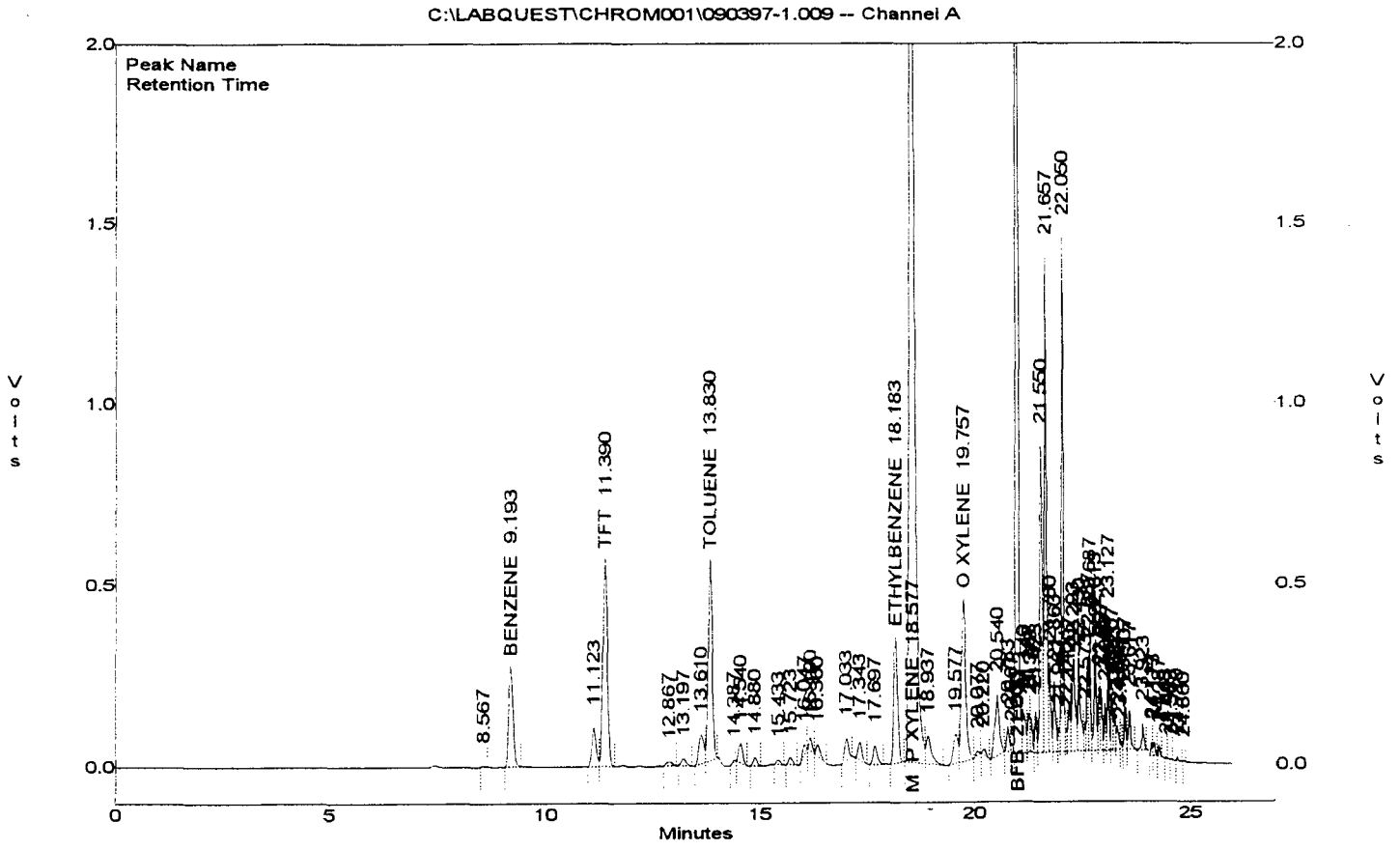
File : C:\LABQUEST\CHROM001\090397-1.009
Method : C:\LABQUEST\METHODS\1-082597.MET
Sample ID : 970950 X25
Acquired : Sep 03, 1997 19:30:55
Printed : Sep 03, 1997 19:57:25
User : MARLON

Channel A Results

COMPONENT	RET TIME	AREA	CONC (ug/L)
BENZENE	9.193	1937736	579.1118
TFT	11.390	4196404	2464.9529
TOLUENE	13.830	3670916	1117.5470
ETHYLBENZENE	18.183	2211229	774.5094
M & P XYLENE	18.577	26184258	7548.0767
O XYLENE	19.757	3123023	1111.8907
BFB	21.000	21651404	2397.5811

Channel A Group Results

COMPONENT	RET TIME	AREA	CONC (ug/L)
TOTAL XYLENES		29307282	8659.9678



EL PASO FIELD SERVICES LABORATORY
EPA METHOD 8020 - BTEX

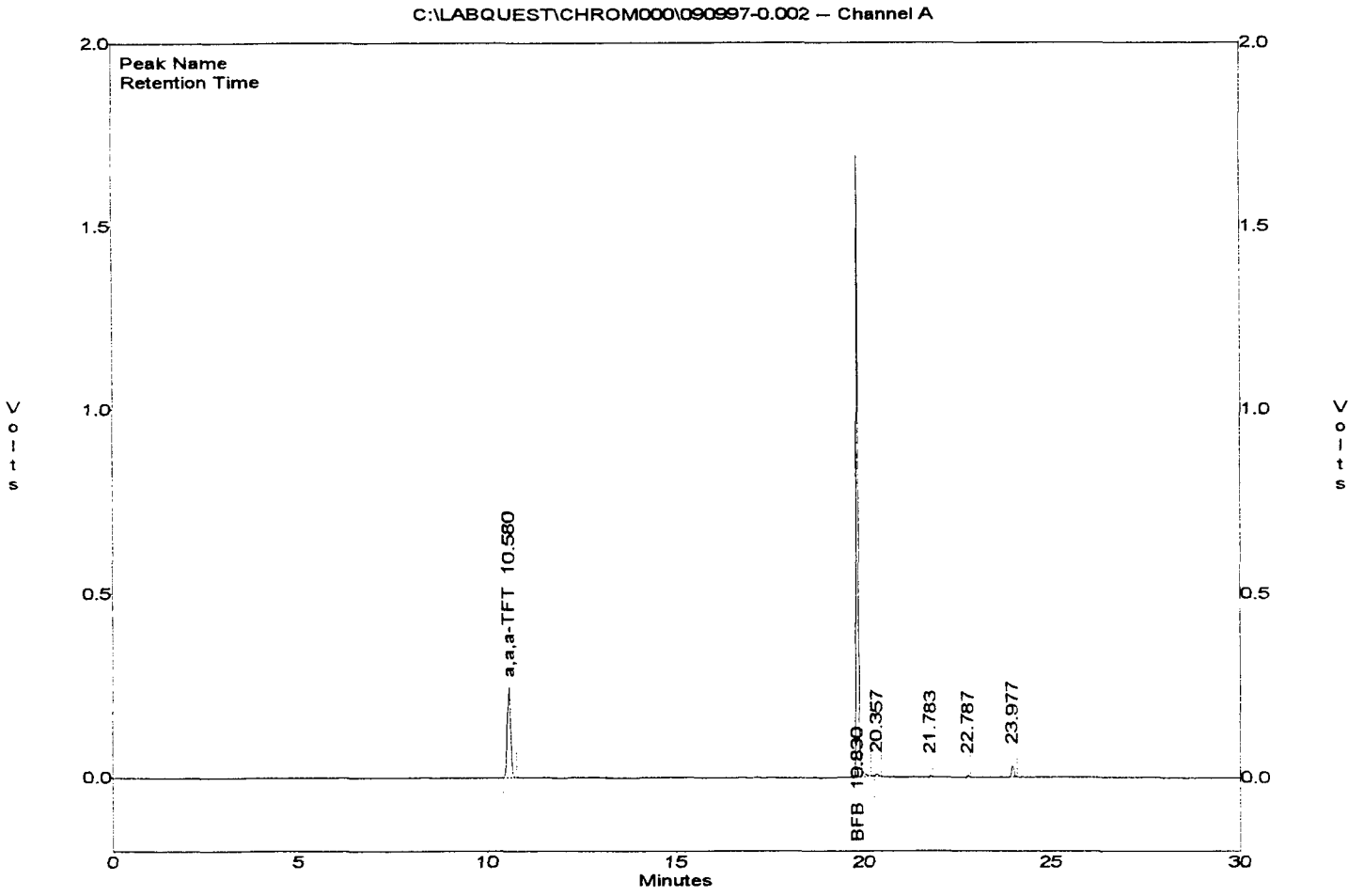
File : C:\LABQUEST\CHROM000\090997-0.002
Method : C:\LABQUEST\METHODS\0-081497.MET
Sample ID : 970952 X1
Acquired : Sep 09, 1997 15:46:57
Printed : Sep 09, 1997 16:17:22
User : MARLON

Channel A Results

COMPONENT	RET TIME	AREA	CONC (ug/L)
BENZENE	8.407	0	0.0000
a,a,a-TFT	10.580	1583174	111.6374
TOLUENE	12.950	0	0.0000
ETHYLBENZENE	17.183	0	0.0000
M,P-XYLENES	17.563	0	0.0000
O-XYLENE	18.717	0	0.0000
BFB	19.830	6049067	113.6611

Channel A Group Results

COMPONENT	RET TIME	AREA	CONC (ug/L)
TOTAL XYLENES		0	0.0000



EL PASO FIELD SERVICES LABORATORY
EPA METHOD 8020 - BTEX

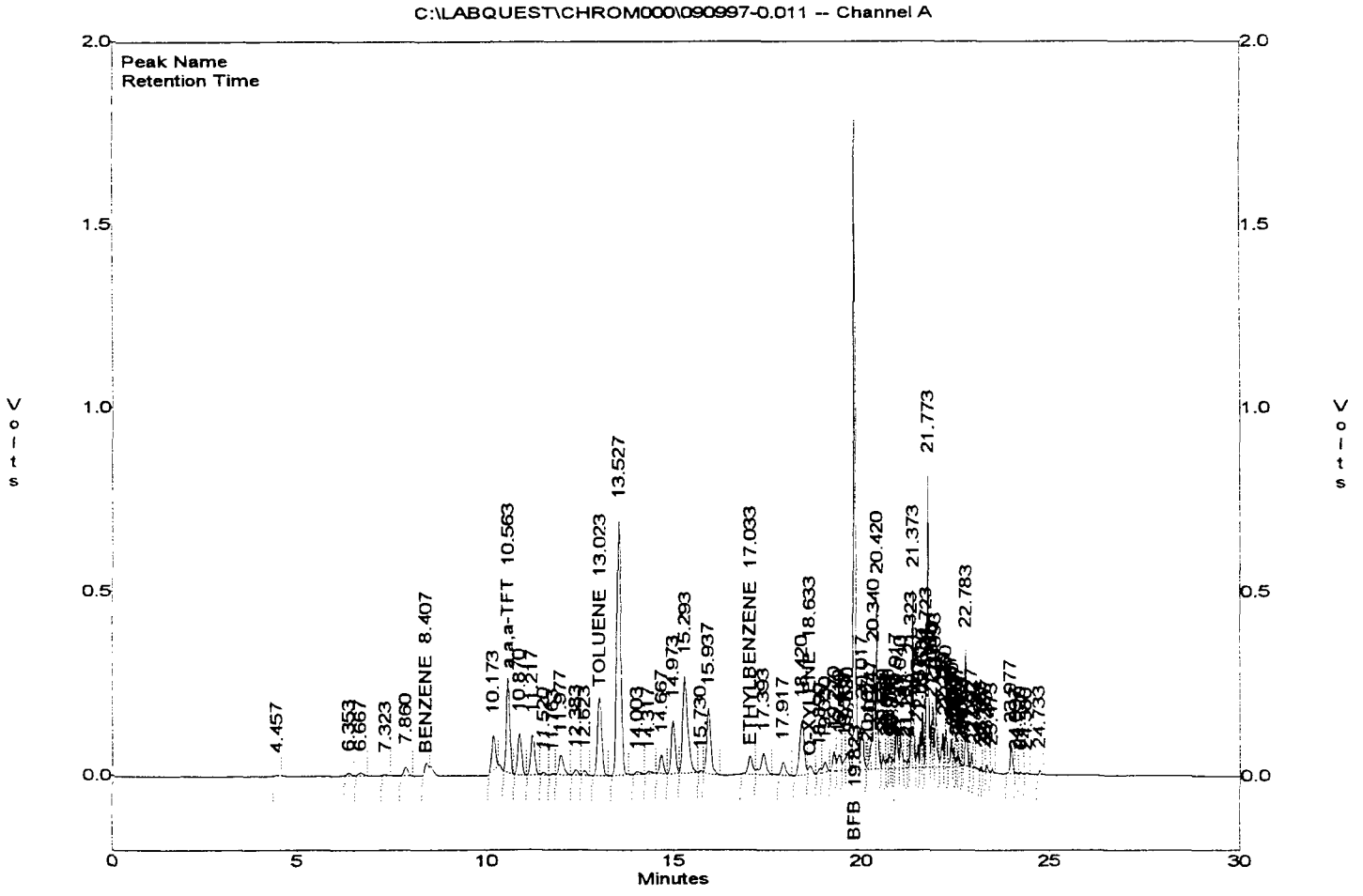
File : C:\LABQUEST\CHROM000\090997-0.011
Method : C:\LABQUEST\METHODS\0-081497.MET
Sample ID : 970953 X1
Acquired : Sep 09, 1997 21:52:52
Printed : Sep 09, 1997 22:23:22
User : MARLON

Channel A Results

COMPONENT	RET TIME	AREA	CONC (ug/L)
BENZENE	8.407	112188	5.0181
a,a,a-TFT	10.563	1642585	115.8267
TOLUENE	13.023	1659465	47.7939
ETHYLBENZENE	17.033	418344	15.4046
M,P-XYLENES	17.563	0	0.0000
O-XYLENE	18.633	175814	7.9324
BFB	19.823	6318189	118.7179

Channel A Group Results

COMPONENT	RET TIME	AREA	CONC (ug/L)
TOTAL XYLENES		175814	7.9324



EL PASO FIELD SERVICES LABORATORY
EPA METHOD 8020 - BTEX

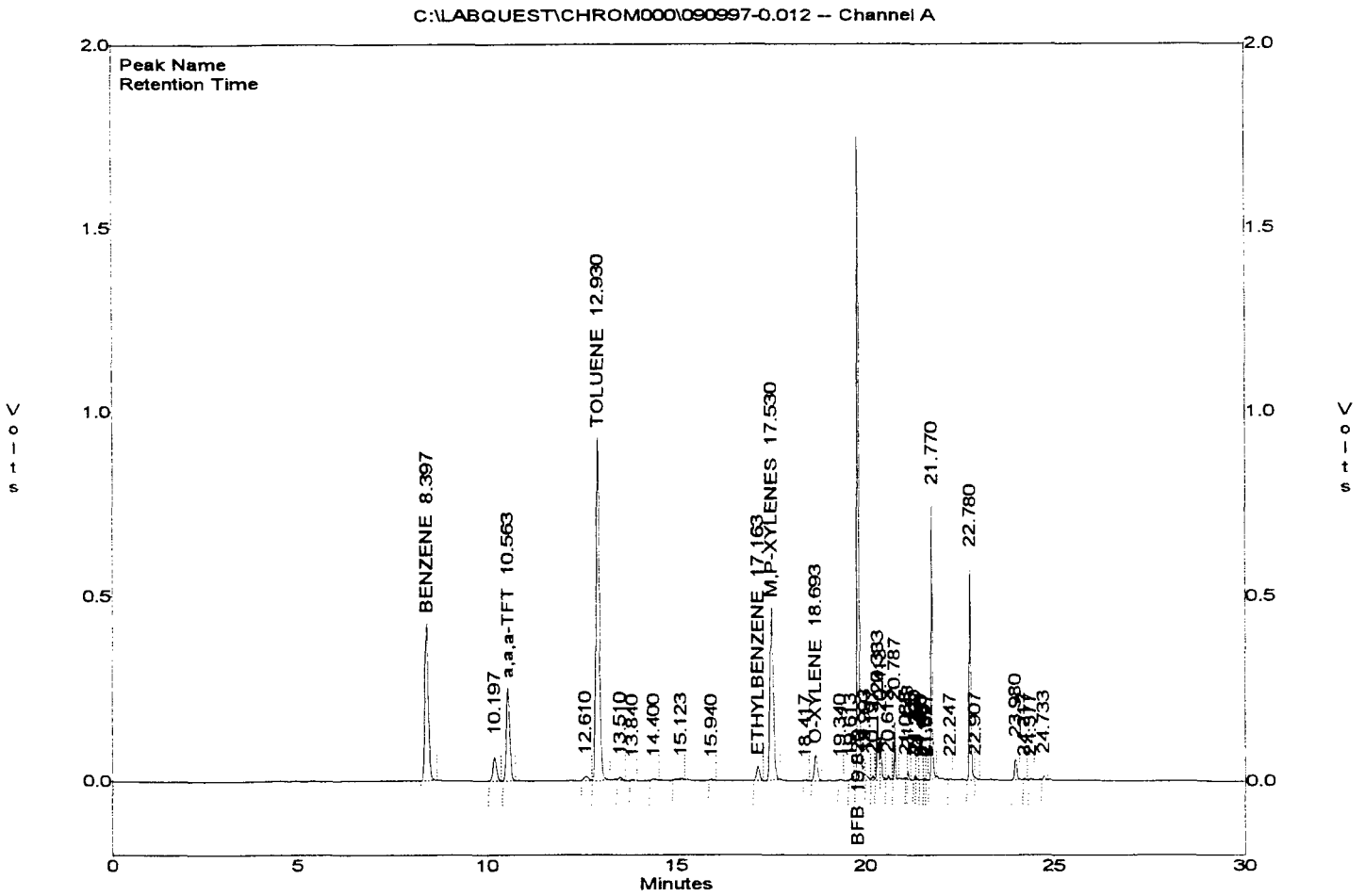
File : C:\LABQUEST\CHROM000\090997-0.012
Method : C:\LABQUEST\METHODS\0-081497.MET
Sample ID : 970954 X50
Acquired : Sep 09, 1997 22:33:15
Printed : Sep 09, 1997 23:03:42
User : MARLON

Channel A Results

COMPONENT	RET TIME	AREA	CONC (ug/L)
BENZENE	8.397	2711256	3487.5142
a,a,a-TFT	10.563	1621820	5718.1260
TOLUENE	12.930	5744428	7847.7212
ETHYLBENZENE	17.163	224926	461.7955
M,P-XYLENES	17.530	2951646	3979.9954
O-XYLENE	18.693	415920	797.5902
BFB	19.820	6100757	5731.6182

Channel A Group Results

COMPONENT	RET TIME	AREA	CONC (ug/L)
TOTAL XYLENES		3367567	4777.5854



EL PASO FIELD SERVICES

QUALITY CONTROL REPORT
EPA METHOD 8020 - BTEX

Samples: 970952 to 970960

QA/QC for 9/9/97 Sample Set

LABORATORY CALIBRATION CHECKS / LABORATORY CONTROL SAMPLES:

SAMPLE NUMBER ICV LA-52589 50 PPB	TYPE	EXPECTED RESULT PPB	ANALYTICAL RESULT PPB	%R	ACCEPTABLE RANGE	YES	NO
Benzene	Standard	50.0	53.0	105.9	75 - 125 %	X	
Toluene	Standard	50.0	52.5	105	75 - 125 %	X	
Ethylbenzene	Standard	50.0	52.1	104	75 - 125 %	X	
m & p - Xylene	Standard	100	104.7	104.7	75 - 125 %	X	
o - Xylene	Standard	50.0	52.0	104	75 - 125 %	X	
SAMPLE NUMBER LCS LA-45476 25 PPB	**TYPE**	**EXPECTED RESULT PPB**	**ANALYTICAL RESULT PPB**	**%R**	**ACCEPTABLE RANGE**	**YES**	**NO**
Benzene	Standard	25.0	26.9	107.7	39 - 150	X	
Toluene	Standard	25.0	26.5	106	46 - 148	X	
Ethylbenzene	Standard	25.0	26.3	105	32 - 160	X	
m & p - Xylene	Standard	50.0	52.4	105	Not Given	X	
o - Xylene	Standard	25.0	26.2	105	Not Given	X	
SAMPLE NUMBER CCV LA-52589 50 PPB	**TYPE**	**EXPECTED RESULT PPB**	**ANALYTICAL RESULT PPB**	**%R**	**ACCEPTABLE RANGE**	**YES**	**NO**
Benzene	Standard	50.0	53.6	107.2	75 - 125 %	X	
Toluene	Standard	50.0	52.9	105.9	75 - 125 %	X	
Ethylenzene	Standard	50.0	52.5	104.9	75 - 125 %	X	
m & p - Xylene	Standard	100	104.8	104.8	75 - 125 %	X	
o - Xylene	Standard	50.0	52.4	105	75 - 125 %	X	
SAMPLE NUMBER CCV LA-52589 50 PPB	**TYPE**	**EXPECTED RESULT PPB**	**ANALYTICAL RESULT PPB**	**%R**	**ACCEPTABLE RANGE**	**YES**	**NO**
Benzene	Standard	50.0	54.4	108.9	75 - 125 %	X	
Toluene	Standard	50.0	53.6	107.1	75 - 125 %	X	
Ethylbenzene	Standard	50.0	52.8	105.6	75 - 125 %	X	
m & p - Xylene	Standard	100	105.4	105.4	75 - 125 %	X	
o - Xylene	Standard	50.0	52.8	105.6	75 - 125 %	X	

Narrative: Acceptable.

LABORATORY DUPLICATES:

SAMPLE ID 970959	TYPE	SAMPLE RESULT PPB	DUPLICATE RESULT PPB	RPD	ACCEPTABLE RANGE	YES	NO
Benzene	Matrix Duplicate	<1	<1	0.00	+/- 20 %	X	
Toluene	Matrix Duplicate	5.4	5.3	3.28	+/- 20 %	X	
Ethylbenzene	Matrix Duplicate	1.92	1.78	7.28	+/- 20 %	X	
m & p - Xylene	Matrix Duplicate	<1	<1	0.00	+/- 20 %	X	
o - Xylene	Matrix Duplicate	<1	<1	0.00	+/- 20 %	X	

Narrative: Acceptable.

LABORATORY SPIKES:

SAMPLE ID 2nd Analysis 970959	SPIKE ADDED PPB	SAMPLE RESULT PPB	SPIKE SAMPLE RESULT PPB	%R	ACCEPTABLE RANGE	YES	NO
Benzene	50	<1	54.9	109.7	75 - 125 %	X	
Toluene	50	5.4	57.9	105	75 - 125 %	X	
Ethylbenzene	50	1.9	52.4	101	75 - 125 %	X	
m & p - Xylene	100	<1	107.6	107.6	75 - 125 %	X	
o - Xylene	50	<1	54.0	108	75 - 125 %	X	

Narrative: Acceptable

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 (1 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.

9/8/97 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: CAL Approved By: John Fatale Date: 9-16-97

QCWater091597

APPENDIX F

LABORATORY REPORTS
(2003/2004)

DATA VERIFICATION WORKSHEET

Analytical Method/Analytes: SW-846 8021B (BTEX) **Sample Collection Date(s):** 04/21/04

Laboratory: Accutest **MWH Job Number:** EPC-SJRB (Groundwater)

Batch Identification: T7335 **Matrix:** Water

MS/MSD Parent(s)[(a)]: T7335-02 **Field Replicate Parent(s):** None

Verification Complete: Brian Buttars 5-6-04 (Date/Signature)

Foot Notes	Site ID	Sample ID	Lab. ID	Hits (Y/N)	Quals.	Comments
None	Trip Blank	210404TB02	T7335-01	N		
1	Coldiron	MW-1	T7335-02	Y	J	Benzene @ 4.9 µg/l
					J	Toluene @ 18.8 µg/l
					J	Ethylbenzene @ 45.4 µg/l
					J	Xylenes (total) @ 139 µg/l
					J	o-Xylenes @ 41.7 µg/l
					J	m/p-Xylenes @ 97.4 µg/l

DATA VERIFICATION WORKSHEET
(Page 2 of 2)

Analytical Method: SW-846 8021B (BTEX) **MWH Job Number:** EPC-SJRB (Groundwater)

Laboratory: Accutest **Batch Identification:** T7335

Verification Criteria								
Sample ID	**210404TB 02**	**Coldiron MW-1**						
Lab ID	**T7335-01**	**T7335-02**						
Holding Time	A	A						
Analyte List	A	A						
Reporting Limits	A	A						
Surrogate Spike Recovery	A	A[1]						
Trip Blank	A	A						
Equipment Rinseate Blanks	N/A	N/A						
Field Duplicate/Replicate	N/A	N/A						
Initial Calibration	N	N						
Initial Calibration Verification (ICV)	N	N						
Continuing Calibration Verification (CCV)	N	N						
Method Blank	A	A						
Laboratory Control Sample (LCS)	A	A						
Laboratory Control Sample Duplicate (LCSD)	N	N						
Matrix Spike/Matrix Spike Dup. (MS/MSD)	N/A	A						
Retention Time Window	N	N						
Injection Time(s)	N	N						
Hardcopy vs. Chain-of-Custody	A	A						
EDD vs. Hardcopy	N	N						
EDD vs. Chain of Custody	N	N						

(a) List QC batch identification if different than Batch ID
A indicates verification criteria were met
A/L indicates verification criteria met based upon Laboratory's QC Summary Form
X indicates verification criteria were not met
N indicates data review were not a project specific requirement
N/A indicates criteria are not applicable for the specified analytical method or sample
N/R indicates data not available for review

NOTES:

1) Percent recovery outside acceptance criteria for the following surrogate compounds:
   a) 4-Bromofluorobenzene @ 158% (71-127), indicating a possible high bias. Qualify associated sample hits with "J" flags indicating the data are estimated and possibly biased high.
   b) aaa-Trifluorotoluene @ 226% (66-136), indicating a possible high bias. Qualify associated sample hits with "J" flags indicating the data are estimated and possibly biased high.

   NOTE: Sample reanalyzed with a dilution factor of 10 to eliminate sample matrix effects. Reanalysis confirmed the suspected high bias, but benzene was diluted out, therefore, the results from the initial, undiluted run were reported.

Gulf Coast
ACCUTEST.
Laboratories

05/04/04

Technical Report for

Montgomery Watson

EPFS San Juan Basin Groundwater Site

D-MWH-04-01-03-MSG-01

Accutest Job Number: T7335

Sampling Date: 04/21/04

Report to:

Montgomery Watson

brian.buttars@us.mwhglobal.com

ATTN: Brian Buttars

Total number of pages in report: **12**

ACCREDITED IN ACCORDANCE WITH nelac

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

Ron Martino
Laboratory Manager

Sections: 1 2 3 4

Table of Contents

Sample Summary

Montgomery Watson

Job No: T7335

EPFS San Juan Basin Groundwater Site
Project No: D-MWH-04-01-03-MSG-01

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
T7335-1	04/21/04	06:00	MJN	04/22/04	AQ	Trip Blank Water	210404TB02
T7335-2	04/21/04	10:00	MJN	04/22/04	AQ	Ground Water	COLDIRON MW-1

Accutest Laboratories

Report of Analysis

Client Sample ID:	210404TB02		
Lab Sample ID:	T7335-1	Date Sampled:	04/21/04
Matrix:	AQ - Trip Blank Water	Date Received:	04/22/04
Method:	SW846 8021B	Percent Solids:	n/a
Project:	EPFS San Juan Basin Groundwater Site		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	KK007016.D	1	05/01/04	BC	n/a	n/a	GKK369
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.50	ug/l	
108-88-3	Toluene	ND	1.0	0.50	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.50	ug/l	
1330-20-7	Xylenes (total)	ND	3.0	1.0	ug/l	
95-47-6	o-Xylene	ND	1.0	0.50	ug/l	
	m,p-Xylene	ND	2.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	104%		71-127%
98-08-8	aaa-Trifluorotoluene	107%		66-136%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	COLDIRON MW-1		
Lab Sample ID:	T7335-2	Date Sampled:	04/21/04
Matrix:	AQ - Ground Water	Date Received:	04/22/04
Method:	SW846 8021B	Percent Solids:	n/a
Project:	EPFS San Juan Basin Groundwater Site		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	KK007018.D	1	05/01/04	BC	n/a	n/a	GKK369
Run #2	KK007019.D	10	05/01/04	BC	n/a	n/a	GKK369

	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
						Run #2
71-43-2	Benzene	4.9	1.0	0.50	ug/l	<10 - or <5
108-88-3	Toluene	18.8	1.0	0.50	ug/l	16 -
100-41-4	Ethylbenzene	45.4	1.0	0.50	ug/l	39 -
1330-20-7	Xylenes (total)	139	3.0	1.0	ug/l	106 -
95-47-6	o-Xylene	41.7	1.0	0.50	ug/l	36 -
	m,p-Xylene	97.4	2.0	1.0	ug/l	70 -

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	158% [a]	111%	71-127%
98-08-8	aaa-Trifluorotoluene	226% [a]	114%	66-136%

(a) Outside control limits due to matrix interference.

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

CHAIN OF CUSTODY 210404MN02

ACCUTEST. Laboratories

10165 Harwin Drive, Ste. 150, Houston, TX 77036
TEL. 713-271-4700 FAX: 713-271-4770
www.accutest.com

FED-EX Tracking # 842152796840 | Bottle Order Control #
Accutest Quote # | Accutest Job # T7335

Client / Reporting Information

Company Name: El Paso
Address: 614 Reilly
City: Farmington State: NM Zip: 87401
Project Contact: Scott Pope E-mail:
Phone #: 505 599 2124
Sampler's Name: MJ Nee

Project Information

Project Name: Ground Water
Street:
City: State:
Project #:
Fax #: 5055992119
Client Purchase Order #:

Requested Analysis

BTEX

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL - Sludge
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid
WP - Wipe

Accutest Sample #	Field ID / Point of Collection	SUMMA # / MEOH Vial #	Collection Date	Collection Time	Sampled By	Matrix	# of bottles	Number of preserved Bottles: HCl	MeOH	DI H2O	NaOH	HNO3	H2SO4	NONE	MeOH	ENCORE	BTEX	LAB USE ONLY
	210404TB042		4/21/04	0600	MN	WG	2	2									X	
	Coldiron MW-1		4/21/04	1000	MN	WG	2	2									X	

Turnaround Time (Business Days)

- [x] 10 Day STANDARD — Approved By: / Date:
- [ ] 5 Day RUSH
- [ ] 3 Day EMERGENCY
- [ ] 2 Day EMERGENCY
- [ ] 1 Day EMERGENCY
- [ ] Other

Emergency & Rush T/A data available VIA LabLink

Data Deliverable Information

- [ ] Commercial "A"
- [ ] Commercial "B"
- [ ] Reduced Tier 1
- [ ] Full Tier 1
- [ ] TRRP13
- [ ] EDD Format

Commercial "A" = Results Only

Comments / Remarks

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by: Sampler	Date Time:	Received by:	Relinquished by	Date Time:	Received by:
1 MJ Nee	4/21/04 1200	1	2		2
Relinquished by:	Date Time:	Received by:	Relinquished by	Date Time:	Received by:
3		3	4		4
Relinquished by:	Date Time:	Received by:	Custody Seal #	Preserved where applicable: ☐	On Ice: X Cooler Temp: 2°C
5	4/22/04	5 1200			

3.1 3

T7335: Chain of Custody
Page 1 of 2

ACCUTEST. Laboratories

ACCUTEST.

SAMPLE RECEIPT LOG

JOB #: T7335

DATE/TIME RECEIVED: 4/22/04

CLIENT: El Paso

INITIALS: [illegible]

Condition/Variance (Circle "Y" for yes and "N" for no. If "N" is circled, see variance for explanation):

1. (Y) N Sample received in undamaged condition.
2. (Y) N Samples received within temp. range.
3. Y (NA) Sample received with proper pH.
4. (Y) N Sample received in proper containers.
5. (Y) N Sample volume sufficient for analysis.
6. (Y) N Sample received with chain of custody.
7. (Y) N Chain of Custody matches sample IDs on containers.
8. Y (NA) Custody seal received intact and tamper evident on cooler.
9. Y (NA) Custody seal received intact and tamper evident on bottles.

SAMPLE or FIELD ID	BOTTLE #	DATE SAMPLED	MATRIX	VOLUME	LOCATION	PRESERV.	PH
1	1-2	NA	WTB	40ml	VRoF	(1)2,3,4,5,6	U, <2, >12, (NA)
2	↓	4/21/04	GW	↓	↓	1,(2),3,4,5,6	U, <2, >12, (NA)
						1,2,3,4,5,6	U, <2, >12, NA
						1,2,3,4,5,6	U, <2, >12, NA
						1,2,3,4,5,6	U, <2, >12, NA
						1,2,3,4,5,6	U, <2, >12, NA
						1,2,3,4,5,6	U, <2, >12, NA
						1,2,3,4,5,6	U, <2, >12, NA
						1,2,3,4,5,6	U, <2, >12, NA
						1,2,3,4,5,6	U, <2, >12, NA
						1,2,3,4,5,6	U, <2, >12, NA
						1,2,3,4,5,6	U, <2, >12, NA
						1,2,3,4,5,6	U, <2, >12, NA
						1,2,3,4,5,6	U, <2, >12, NA
						1,2,3,4,5,6	U, <2, >12, NA
						1,2,3,4,5,6	U, <2, >12, NA

[illegible] 4/22/04

LOCATION: WI: Walk-In VR: Volatile Refrig. SUB: Subcontract EF: Encore Freezer

PRESERVATIVES: 1: None 2: HCL 3: HNO3 4: H2SO4 5: NAOH 6: Other

(pH of waters checked excluding volatiles)

pH of soils N/A

Comments:

Delivery method: Courier:

Tracking#:

COOLER TEMP: 2°C

COOLER TEMP:

COOLER TEMP:

COOLER TEMP:

Method of sample disposal: (circle one) Accutest disposal Hold Return to Client

Form: SM012

T7335: Chain of Custody

Page 2 of 2

GC Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: T7335
Account: MWHSLCUT Montgomery Watson
Project: EPFS San Juan Basin Groundwater Site

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GKK369-MB	KK007015.D	1	05/01/04	BC	n/a	n/a	GKK369

The QC reported here applies to the following samples: Method: SW846 8021B

T7335-1, T7335-2

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.50	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.50	ug/l	
108-88-3	Toluene	ND	1.0	0.50	ug/l	
1330-20-7	Xylenes (total)	ND	3.0	1.0	ug/l	
95-47-6	o-Xylene	ND	1.0	0.50	ug/l	
	m,p-Xylene	ND	2.0	1.0	ug/l	

CAS No.	Surrogate Recoveries		Limits
460-00-4	4-Bromofluorobenzene	106%	71-127%
98-08-8	aaa-Trifluorotoluene	111%	66-136%

Blank Spike Summary

Job Number: T7335
Account: MWHSLCUT Montgomery Watson
Project: EPFS San Juan Basin Groundwater Site

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GKK369-BS	KK007013.D	1	05/01/04	BC	n/a	n/a	GKK369

The QC reported here applies to the following samples: Method: SW846 8021B

T7335-1, T7335-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	20	20.7	104	76-128
100-41-4	Ethylbenzene	20	21.1	106	79-129
108-88-3	Toluene	20	21.2	106	77-126
1330-20-7	Xylenes (total)	60	62.6	104	79-126
95-47-6	o-Xylene	20	21.5	108	78-125
	m,p-Xylene	40	41.1	103	79-127

CAS No.	Surrogate Recoveries	BSP	Limits
460-00-4	4-Bromofluorobenzene	112%	71-127%
98-08-8	aaa-Trifluorotoluene	108%	66-136%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: T7335
Account: MWHSLCUT Montgomery Watson
Project: EPFS San Juan Basin Groundwater Site

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
T7335-2MS [a]	KK007021.D	100	05/01/04	BC	n/a	n/a	GKK369
T7335-2MSD [a]	KK007022.D	100	05/01/04	BC	n/a	n/a	GKK369
T7335-2	KK007018.D	1	05/01/04	BC	n/a	n/a	GKK369
T7335-2	KK007019.D	10	05/01/04	BC	n/a	n/a	GKK369

The QC reported here applies to the following samples: Method: SW846 8021B

T7335-1, T7335-2

CAS No.	Compound	T7335-2 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	4.9		2000	2160	108	2070	103	4	70-134/21
100-41-4	Ethylbenzene	45.4		2000	2240	110	2160	106	4	73-132/15
108-88-3	Toluene	18.8		2000	2210	110	2140	106	3	66-137/22
1330-20-7	Xylenes (total)	139		6000	6620	108	6400	104	3	69-130/19
95-47-6	o-Xylene	41.7		2000	2260	111	2190	107	3	66-131/20
	m,p-Xylene	97.4		4000	4350	106	4210	103	3	68-132/19

CAS No.	Surrogate Recoveries	MS	MSD	T7335-2	T7335-2	Limits
460-00-4	4-Bromofluorobenzene	103%	101%	158%* [b]	111%	71-127%
98-08-8	aaa-Trifluorotoluene	107%	102%	226%* [b]	114%	66-136%

(a) Sample was over diluted.
(b) Outside control limits due to matrix interference.

DATA VERIFICATION WORKSHEET

Analytical Method/Analytes: SW-846 8021B (BTEX) **Sample Collection Date(s):** 01/26/04

Laboratory: Accutest **MWH Job Number:** EPC-SJRB (Groundwater)

Batch Identification: T6695 **Matrix:** Water

MS/MSD Parent(s)[a]: None **Field Replicate Parent(s):** None

Verification Complete: Brian Buttars 2-26-04
(Date/Signature)

Foot Notes	Site ID	Sample ID	Lab. ID	Hits (Y/N)	Quals.	Comments
None	Trip Blank	260104TB02	T6695-01	N		
1	Coldiron	MW-1	T6695-02	Y		

DATA VERIFICATION WORKSHEET

Analytical Method: SW-846 8021B (BTEX) **MWH Job Number:** EPC-SJRB (Groundwater)

Laboratory: Accutest **Batch Identification:** T6695

Verification Criteria								
Sample ID	**260104TB 02**	**Coldiron MW-1**						
Lab ID	**T6695-01**	**T6695-02**						
Holding Time	A	A						
Analyte List	A	A						
Reporting Limits	A	A						
Surrogate Spike Recovery	A	A[1]						
Trip Blank	A	A						
Equipment Rinseate Blanks	N/A	N/A						
Field Duplicate/Replicate	N/A	N/A						
Initial Calibration	N	N						
Initial Calibration Verification (ICV)	N	N						
Continuing Calibration Verification (CCV)	N	N						
Method Blank	A	A						
Laboratory Control Sample (LCS)	A	A						
Laboratory Control Sample Duplicate (LCSD)	N	N						
Matrix Spike/Matrix Spike Dup. (MS/MSD)	N/A	N/A						
Retention Time Window	N	N						
Injection Time(s)	N	N						
Hardcopy vs. Chain-of-Custody	A	A						
EDD vs. Hardcopy	N	N						
EDD vs. Chain of Custody	N	N						

(a) List QC batch identification if different than Batch ID
A indicates verification criteria were met
A/L indicates verification criteria met based upon Laboratory's QC Summary Form
X indicates verification criteria were not met
N indicates data review were not a project specific requirement
N/A indicates criteria are not applicable for the specified analytical method or sample
N/R indicates data not available for review

NOTES:

1) All results from Run #1.

Gulf Coast
ACCUTEST.
Laboratories

02/26/04

Technical Report for

Montgomery Watson

EPFS San Juan Basin Groundwater Site

D-MWH-04-01-03-MSG-01

Accutest Job Number: T6695

Report to:

Montgomery Watson

brian.buttars@us.mwhglobal.com

ATTN: Brian Buttars

Total number of pages in report: **12**

ACCREDITED IN ACCORDANCE WITH nelac

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

Ron Martino
Laboratory Manager

Table of Contents

Sections: 1 2 3 4

-1-

Sample Summary

Montgomery Watson

Job No: T6695

EPFS San Juan Basin Groundwater Site
Project No: D-MWH-04-01-03-MSG-01

Sample Number	Collected Date	Time	By	Received	Matrix Code	Matrix Type	Client Sample ID
T6695-1	01/26/04	07:00		01/28/04	AQ	Trip Blank Water	260104TB02
T6695-2	01/26/04	13:45		01/28/04	AQ	Ground Water	COLDIRON MW-1

Accutest Laboratories

Report of Analysis

Client Sample ID:	260104TB02		
Lab Sample ID:	T6695-1	Date Sampled:	01/26/04
Matrix:	AQ - Trip Blank Water	Date Received:	01/28/04
Method:	SW846 8021B	Percent Solids:	n/a
Project:	EPFS San Juan Basin Groundwater Site		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	KK006482.D	1	02/04/04	BC	n/a	n/a	GKK348
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.50	ug/l	
108-88-3	Toluene	ND	1.0	0.50	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.50	ug/l	
1330-20-7	Xylenes (total)	ND	3.0	1.0	ug/l	
95-47-6	o-Xylene	ND	1.0	0.50	ug/l	
	m,p-Xylene	ND	2.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	113%		64-121%
98-08-8	aaa-Trifluorotoluene	112%		71-121%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	COLDIRON MW-1		
Lab Sample ID:	T6695-2	Date Sampled:	01/26/04
Matrix:	AQ - Ground Water	Date Received:	01/28/04
Method:	SW846 8021B	Percent Solids:	n/a
Project:	EPFS San Juan Basin Groundwater Site		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	KK006487.D	5	02/04/04	BC	n/a	n/a	GKK348
Run #2	KK006488.D	50	02/04/04	BC	n/a	n/a	GKK348

	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	5.2	5.0	2.5	ug/l	
108-88-3	Toluene	ND	5.0	2.5	ug/l	
100-41-4	Ethylbenzene	28.1	5.0	2.5	ug/l	
1330-20-7	Xylenes (total)	130	15	5.0	ug/l	
95-47-6	o-Xylene	34.6	5.0	2.5	ug/l	
	m,p-Xylene	95.1	10	5.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	128% [a]	99%	64-121%
98-08-8	aaa-Trifluorotoluene	126% [a]	101%	71-121%

(a) Outside control limits due to matrix interference.

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

ACCUTEST Laboratories

CHAIN OF CUSTODY # 260104MN02

10165 Harwin Drive, Ste. 150, Houston, TX 77036
TEL. 713-271-4700 FAX: 713-271-4770
www.accutest.com

FED-EX Tracking #: 842252987908
Bottle Order Control #:
Accutest Quote #:
Accutest Job #: T6695

Client / Reporting Information

Company Name: EL Paso / MWH
Address: 614 Reilly Ave
City: Farmington State: NM Zip: 87401
Project Contact: Scott Pope E-mail:
Phone #: 505 599 2124
Sampler's Name:

Project Information

Project Name: Groundwater
Street:
City: State:
Project #:
Fax #: 505 599 2119
Client Purchase Order #:

Requested Analysis: BTEX

Accutest Sample #	Field ID / Point of Collection	SUMMA # / MEOH Vial #	Date	Time	Sampled By	Matrix	# of bottles	HCl	NaOH	HNO3	H2SO4	NONE	NaHSO4	MEOH	ENCORE	BTEX	LAB USE ONLY
1	260104TB02		12604	0700	MN	WQ	1	1								X	
2	Coldiron MW-1		12604	1345	MN	WQ	2	2								X	

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL - Sludge; OI - Oil; LIQ - Other Liquid; AIR - Air; SOL - Other Solid; WP - Wipe

Turnaround Time (Business Days) — Approved By: / Date:

- ☒ 10 Day STANDARD
- ☐ 5 Day RUSH
- ☐ 3 Day EMERGENCY
- ☐ 2 Day EMERGENCY
- ☐ 1 Day EMERGENCY
- ☐ Other

Emergency & Rush T/A data available VIA LabLink

Data Deliverable Information

- ☐ Commercial "A"
- ☐ Commercial "B"
- ☐ Reduced Tier 1
- ☐ Full Tier 1
- ☐ TRRP13
- ☐ EDD Format ______

Commercial "A" = Results Only

Comments / Remarks

Sample Custody must be documented below each time samples change possession, including courier delivery

Relinquished by	Date Time	Received by	Relinquished by	Date Time	Received by
1 Relinquished by Sampler: [signature]	12704 1400	1	2		2
3		3	4		4
5		5 [signature] 1-28-04 11:00	Custody Seal #	Preserved where applicable ☐	On Ice ☒ Cooler Temp 3C

T6695: Chain of Custody
Page 1 of 2

ACCUTEST. SAMPLE RECEIPT LOG

JOB #: T6695 DATE/TIME RECEIVED: 1-28-04 11:00

CLIENT: El Paso INITIALS: [initials]

Condition/Variance (Circle "Y" for yes and "N" for no. If "N" is circled, see variance for explanation):

1. (Y) N Sample received in undamaged condition.
2. (Y) N Samples received within temp. range.
3. Y (N/P) Sample received with proper pH.
4. (Y) N Sample received in proper containers.
5. (Y) N Sample volume sufficient for analysis.
6. (Y) N Sample received with chain of custody.
7. (Y) N Chain of Custody matches sample IDs on containers.
8. Y (N/P) Custody seal received intact and tamper evident on cooler.
9. Y (N/P) Custody seal received intact and tamper evident on bottles.

SAMPLE or FIELD ID	BOTTLE #	DATE SAMPLED	MATRIX	VOLUME	LOCATION	PRESERV.	PH
1	1	1-26-04	W	40ml	VRef	1(2)3,4,5,6	U, <2, >12, (NA)
2	1-2	✓	✓	✓	✓	1(2)3,4,5,6	U, <2, >12, (NA)
						1,2,3,4,5,6	U, <2, >12, NA
						1,2,3,4,5,6	U, <2, >12, NA
						1,2,3,4,5,6	U, <2, >12, NA
						1,2,3,4,5,6	U, <2, >12, NA
						1,2,3,4,5,6	U, <2, >12, NA
						1,2,3,4,5,6	U, <2, >12, NA
						1,2,3,4,5,6	U, <2, >12, NA
						1,2,3,4,5,6	U, <2, >12, NA
						1,2,3,4,5,6	U, <2, >12, NA
						1,2,3,4,5,6	U, <2, >12, NA
						1,2,3,4,5,6	U, <2, >12, NA
						1,2,3,4,5,6	U, <2, >12, NA
						1,2,3,4,5,6	U, <2, >12, NA
						1,2,3,4,5,6	U, <2, >12, NA

[signature] 1-28-04

LOCATION: WI: Walk-In VR: Volatile Refrig. SUB: Subcontract EF: Encore Freezer

PRESERVATIVES: 1: None 2: HCL 3: HNO3 4: H2SO4 5: NAOH 6: Other

Comments:

pH of waters checked excluding volatiles

pH of soils N/A

Delivery method: Courier:

Tracking#:

COOLER TEMP: 3 COOLER TEMP:

COOLER TEMP: COOLER TEMP:

Method of sample disposal: (circle one) Accutest disposal Hold Return to Client

Form: SM012

3.1 3

T6695: Chain of Custody

Page 2 of 2

GC Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: T6695
Account: MWHSLCUT Montgomery Watson
Project: EPFS San Juan Basin Groundwater Site

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GKK348-MB	KK006480.D	1	02/04/04	BC	n/a	n/a	GKK348

The QC reported here applies to the following samples: Method: SW846 8021B

T6695-1, T6695-2

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.50	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.50	ug/l	
108-88-3	Toluene	ND	1.0	0.50	ug/l	
1330-20-7	Xylenes (total)	ND	3.0	1.0	ug/l	
95-47-6	o-Xylene	ND	1.0	0.50	ug/l	
	m,p-Xylene	ND	2.0	1.0	ug/l	

CAS No.	Surrogate Recoveries		Limits
460-00-4	4-Bromofluorobenzene	117%	64-121%
98-08-8	aaa-Trifluorotoluene	111%	71-121%

Blank Spike Summary

Job Number: T6695
Account: MWHSLCUT Montgomery Watson
Project: EPFS San Juan Basin Groundwater Site

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GKK348-BS	KK006479.D	1	02/04/04	BC	n/a	n/a	GKK348

The QC reported here applies to the following samples: Method: SW846 8021B

T6695-1, T6695-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	20	16.1	81	74-119
100-41-4	Ethylbenzene	20	17.1	86	82-115
108-88-3	Toluene	20	16.8	84	77-116
1330-20-7	Xylenes (total)	60	52.7	88	79-115
95-47-6	o-Xylene	20	16.8	84	78-114
	m,p-Xylene	40	35.9	90	79-116

CAS No.	Surrogate Recoveries	BSP	Limits
460-00-4	4-Bromofluorobenzene	111%	64-121%
98-08-8	aaa-Trifluorotoluene	104%	71-121%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: T6695
Account: MWHSLCUT Montgomery Watson
Project: EPFS San Juan Basin Groundwater Site

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
T6694-1MS	KK006485.D	10	02/04/04	BC	n/a	n/a	GKK348
T6694-1MSD	KK006486.D	10	02/04/04	BC	n/a	n/a	GKK348
T6694-1	KK006483.D	1	02/04/04	BC	n/a	n/a	GKK348
T6694-1	KK006484.D	10	02/04/04	BC	n/a	n/a	GKK348

The QC reported here applies to the following samples: Method: SW846 8021B

T6695-1, T6695-2

CAS No.	Compound	T6694-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	121 [a]		200	289	84	281	80	3	64-124/16
100-41-4	Ethylbenzene	15.8		200	203	94	191	88	6	64-123/14
108-88-3	Toluene	54.0		200	242	94	267	107	10	64-120/13
1330-20-7	Xylenes (total)	216		600	849	106	825	102	3	66-118/18
95-47-6	o-Xylene	51.0		200	239	94	233	91	3	65-119/20
	m,p-Xylene	166		400	609	111	592	107	3	66-120/14

CAS No.	Surrogate Recoveries	MS	MSD	T6694-1	T6694-1	Limits
460-00-4	4-Bromofluorobenzene	110%	113%	128%* [b]	119%	64-121%
98-08-8	aaa-Trifluorotoluene	121%	123%* [c]	233%* [b]	124%* [c]	71-121%

(a) Result is from Run #2.
(b) Outside control limits due to matrix interference.
(c) Outside control limits due to matrix interference. Confirmed by reanalysis.

APPENDIX G

FIELD DOCUMENTATION
(2003/2004)

WELL DEVELOPMENT AND SAMPLING LOG

Project No.:30001.0 Project Name:_SJB Groundwater Client:_MWH/EL Paso
Location:_coldiron Well No:_MW-1 Development **Sampling**
Project Manager _MJN Date_4/21/04 Start Time_0920 Weather_Sunny 50s
Depth to Water _37.73 Depth to Product _na Product Thickness_na Measuring Point _TOC
Water Column Height _7.46 Well Dia. _4"

Sampling Method: Submersible Pump ☐ Centrifugal Pump ☐ Peristaltic Pump ☐ Other ☐

Bottom Valve Bailer **x** Double Check Valve Bailer ☐ Stainless-Steel Kemmerer ☐

Criteria: 3 to 5 Casing Volumes of Water Removal **X** stabilization of Indicator Parameters **X** Other_or bail dry_

	Water Volume in Well		
Gal/ft x ft of water	Gallons	Ounces	**Ga**l/oz to be removed
7.46 x .65	4.85 x 3		14.55

Time (military)	pH (su)	SC (umhos/cm)	Temp (°F)	ORP (millivolts)	D.O. (mg/L)	Turbidity (NTU)	Vol Evac. (gallons)	Comments/ Flow rate
0927	**7.16**	**4120**	**56.1**				**1**	Clear, gray, sheen
	7.02	**3970**	**57.8**				**2**	Clear, black, sheen
	7.04	**4030**	**57.9**				**3**	Clear, black, sheen
	7.04	**4110**	**57.9**				**5**	Clear, black, sheen
	7.07	**4350**	**57.5**				10	Clear, black, sheen
	7.07	**4420**	**57.7**				14	Clear, black, sheen
0950	**7.11**	**4380**	**57.9**				15	Clear, black, sheen

Final: Time	pH	SC	Temp	Eh-ORP	D.O.	Turbidity	Ferrous Iron	Vol Evac.	Comments/Flow Rate
0950	**7.11**	**4380**	**57.9**					15	Clear, black, sheen

COMMENTS:

INSTRUMENTATION: pH Meter **X** _____ Temperature Meter **x**
DO Monitor _____ Other _____
Conductivity Meter **X** _____

Water Disposal_Kutz_ Sample ID_Coldiron MW-1 Sample Time_1000

BTEX VOCs Alkalinity TDS Cations Anions Nitrate Nitrite Ammonia TKN NMWQCC Metals Total Phosphorus

MS/MSD_____ BD_____ BD Name/Time_____ TB_210404TB02

WELL DEVELOPMENT AND SAMPLING LOG

Project No.:30001.0 Project Name: SJB Groundwater Client: MWH/EL Paso
Location: coldiron Well No: MW-1 Development **Sampling**
Project Manager MJN Date 1/26/04 Start Time 1305 Weather Sunny 20s
Depth to Water 37.47 Depth to Product na Product Thickness na Measuring Point TOC
Water Column Height 7.67 Well Dia. 4"

Sampling Method: Submersible Pump ☐ Centrifugal Pump ☐ Peristaltic Pump ☐ Other ☐

Bottom Valve Bailer **x** Double Check Valve Bailer ☐ Stainless-Steel Kemmerer ☐

Criteria: 3 to 5 Casing Volumes of Water Removal **X** stabilization of Indicator Parameters **X** Other or bail dry

Water Volume in Well			
Gal/ft x ft of water	Gallons	Ounces	**Gal**/oz to be removed
7.67 x .65	4.98 x 3		14.95

Time (military)	pH (su)	SC (umhos/cm)	Temp (°F)	ORP (millivolts)	D.O. (mg/L)	Turbidity (NTU)	Vol Evac. (gallons)	Comments/ Flow rate
1315	**6.73**	**3230**	**58.3**				**1**	**Gray, sheen**
	6.74	**3340**	**56.1**				**2**	**Black, sheen**
	6.80	**3400**	**55.3**				**3**	**Black, sheen**
	6.93	**3410**	**51.4**				**7**	**Black, sheen**
	7.16	**3610**	**50.8**				**11**	**Gray, translucent, sheen**
1338	**6.94**	**3510**	**50.5**				**15**	**Gray, translucent, sheen**

Final: Time	pH	SC	Temp	Eh-ORP	D.O.	Turbidity	Ferrous Iron	Vol Evac.	Comments/Flow Rate
1338	**6.94**	**3510**	**50.5**					**15**	**Gray, translucent, sheen**

COMMENTS:

INSTRUMENTATION: pH Meter **X** _____ Temperature Meter **x**
DO Monitor _____ Other _____
Conductivity Meter **X** _____

Water Disposal Kutz Sample ID Coldiron MW-1 Sample Time 1345

BTEX VOCs Alkalinity TDS Cations Anions Nitrate Nitrite Ammonia TKN NMWQCC Metals Total Phosphorus

MS/MSD _____ BD _____ BD Name/Time _____ TB 260104TB02