

3R - 159

REPORTS

DATE:

1998



Certified Mail: #Z 211 324 121

March 31, 1999

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

RECEIVED

APR 05 1999

ENVIRONMENTAL BUREAU
OIL CONSERVATION DIVISION

RE: 1998 Pit Project Annual Groundwater Report

Dear Mr. Olson:

In accordance with reporting requirements, El Paso Field Services (EPFS) has enclosed annual updates for the 49 remaining groundwater impacted locations that were identified during our pit closure project of 1994 / 1995.

Of the 49 reports, EPFS hereby requests closure of 18 of these locations. The 18 sites EPFS is requesting closure on are presented in 4 separate binders entitled "Final Closure Report for Groundwater Sites with Four Consecutive Quarters Below Standards".

The Jaquez Com. C #1 and Jaquez Com. E #1 site is included in a separate report which is entitled "Jaquez Com. C #1 and Jaquez Com. E #1 Annual Report for Soil and Groundwater Remediation".

If you have any questions concerning the enclosed reports or closure requests, please call me at (505) 599-2124.

Sincerely,

A handwritten signature in dark ink, appearing to read 'Scott T. Pope'.

Scott T. Pope P.G.
Senior Environmental Scientist

xc: Mr. Denny Foust, NMOCD, Aztec - w / enclosures; **Certified Mail # Z 211 324 122**
Mr. Bill Liesse, BLM - w / enclosures; **Certified Mail # Z 211 324 123**
Ms. Charmaine Tso, Navajo EPA - w / enclosures; **Certified Mail # Z 211 324 120**

SAN JUAN BASIN PIT CLOSURES
San Juan Basin, New Mexico

El Paso Field Services
Final Closure Report For Groundwater Sites With Four
Consecutive Quarters Below Standards

December 1998

RECEIVED

APR 05 1999

**ENVIRONMENTAL BUREAU
OIL CONSERVATION DIVISION**

Prepared For

El Paso Field Services
Farmington, New Mexico

Project 17520
Book 1



EPFS GROUNDWATER PITS 1998 CLOSURE REPORT

CANYON LARGO UNIT #304

Meter/Line ID - 93788

RECEIVED

APR 05 1999

SITE DETAILS

Legals - Twn: 24N Rng: 6W Sec: 11 Unit: C
NMOCD Hazard Ranking: 60 Land Type: FEDERAL
Operator: MERRION OIL AND GAS CORP.

ENVIRONMENTAL BUREAU
OIL CONSERVATION DIVISION

PREVIOUS ACTIVITIES

Site Assessment: Jul-94 Excavation: Aug-94 (160 cy) Re-Excavation: Oct-95 (856 cy)
Soil Boring: Aug-95 Monitor Well: Apr-97

The pit was excavated to 12 feet beneath ground surface (bgs) and a composite soil sample was collected from the excavation bottom and four walls. Approximately 160 cubic yards of impacted soil was removed during excavation. The headspace soil reading from the excavation bottom was 187 ppm. Soil analytical was as follows; benzene - <0.5 mg/kg, total BTEX - 79 mg/kg, TPH (418.1) 13,400 mg/kg.

One soil boring was drilled in the center of the former pit to 22 feet bgs. Groundwater was encountered at approximately 17.5 bgs and a soil sample was collected at 15-17 feet bgs. Soil analytical was as follows; benzene - 5 mg/kg, total BTEX - 35.1 mg/kg, TPH (418.1) - 377 mg/kg.

The pit was re-excavated to 20 feet bgs and another composite soil sample was collected from the excavation bottom and four walls. Approximately 856 additional cubic yards of impacted soil were removed during excavation. The headspace soil reading from the excavation bottom was 360 ppm. Prior to closing the excavation, 50 pounds nitrogen enriched fertilizer was added to the excavation to aid in natural bio-degradation of residual hydrocarbons. Soil analytical was as follows; benzene - <0.5 mg/kg, total BTEX - <3 mg/kg, TPH (418.1) 643 mg/kg.

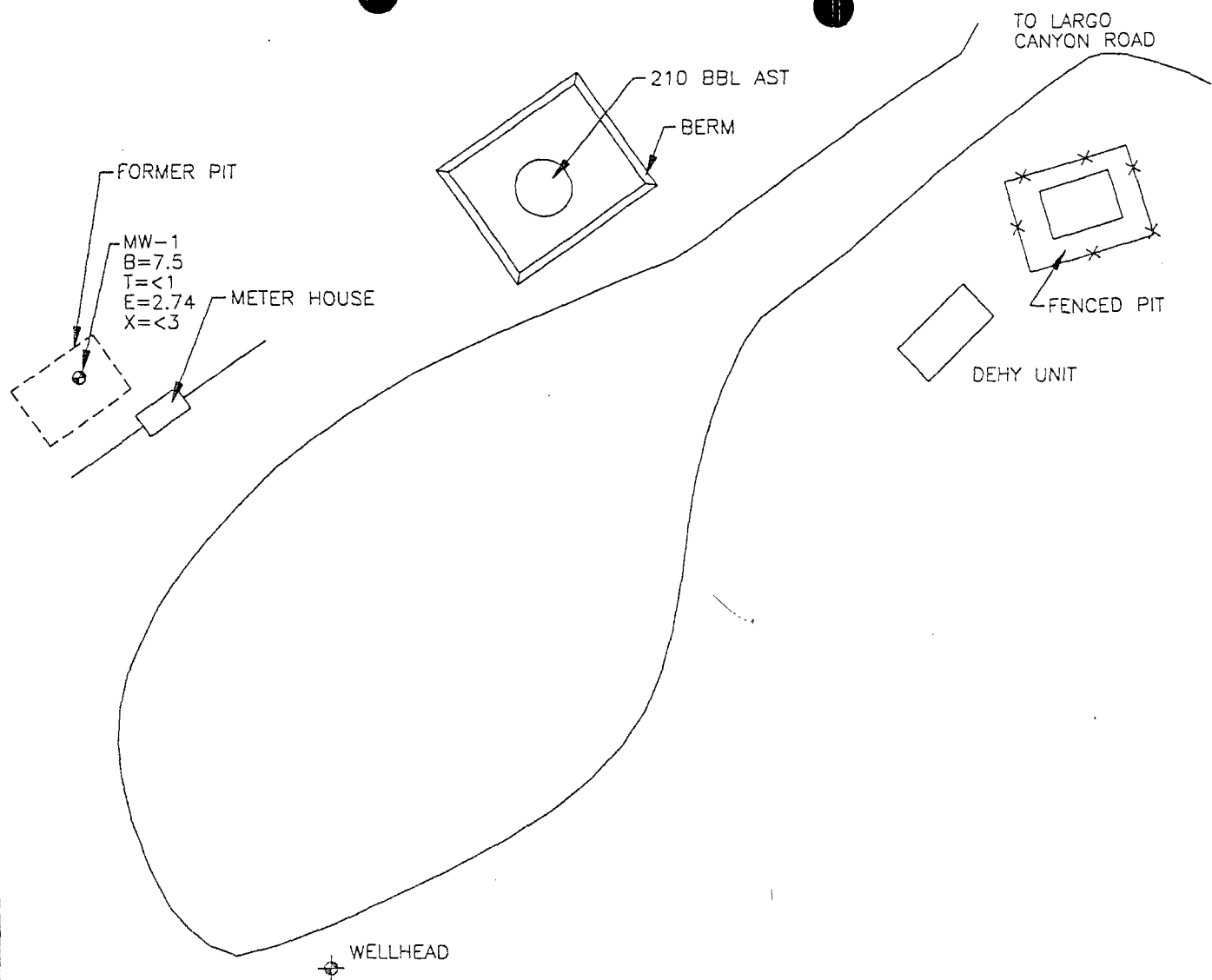
After re-excavation, a monitoring well was installed in the center of the former pit. Quarterly groundwater monitoring was initiated on 6/03/97 and continued through 3/17/98. Groundwater analytical data are presented in Table 1. Groundwater analytical data prior to 1998 has been previously submitted in the 1997 Annual Report.

CONCLUSIONS

Initial groundwater sampling after monitoring well installation indicated benzene to be slightly above standards at 21 ppb. Subsequent quarterly sampling events have shown all BTEX compounds to be below standards, indicating minimal impact to groundwater.

RECOMMENDATIONS

- EPFS request closure at this site.
- Following OCD approval for closure, MW-1 will be abandoned following OCD approved abandonment procedures.



LEGEND

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

NOT TO SCALE



COL 17520AB-001



TITLE:

CANYON LARGO UNIT #304
93788

DWN:	DES.:
TMM	CC
CHKD:	APPD:
CC	
DATE:	REV.:
1/14/98	0

PROJECT NO.: 17520
EPFS GW PITS

FIGURE 1

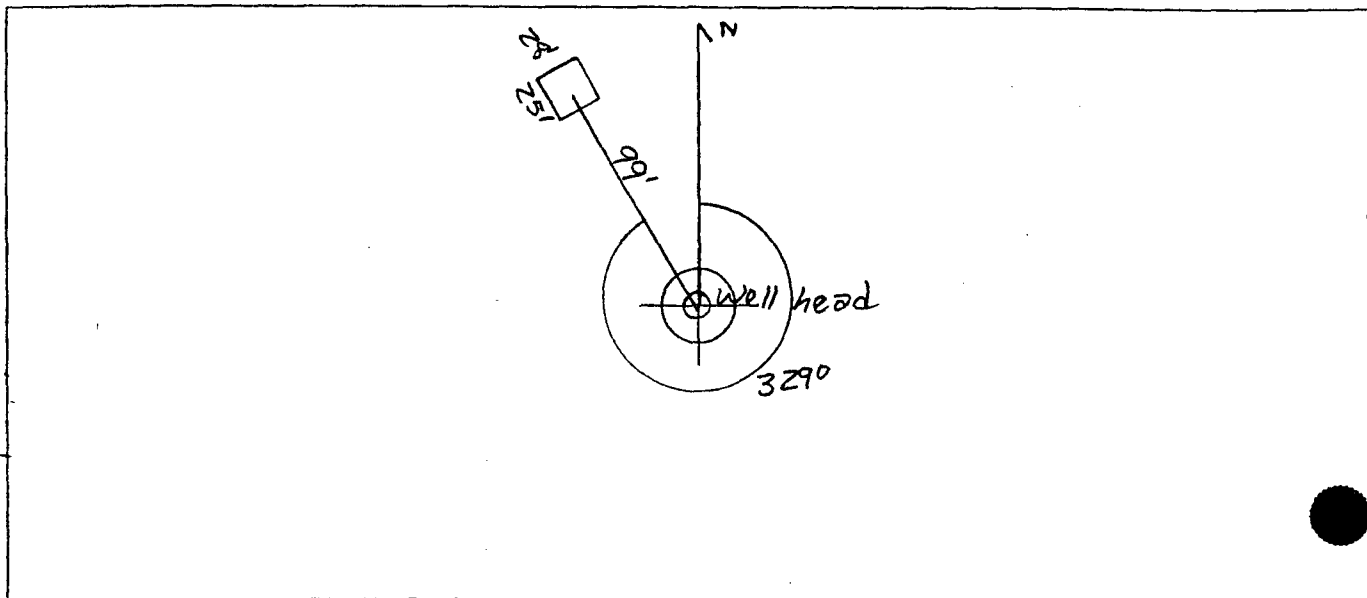
FIELD PIT SITE ASSESSMENT FORM

GENERAL	Meter: <u>93-788</u> Location: <u>Canyon Largo unit 304</u> Operator #: <u>5997</u> Operator Name: <u>Metagon</u> P/L District: <u>Ballard</u> Coordinates: Letter: <u>C</u> Section <u>11</u> Township: <u>24</u> Range: <u>6</u> Or Latitude _____ Longitude _____ Pit Type: Dehydrator _____ Location Drip: <u>X</u> Line Drip: _____ Other: _____ Site Assessment Date: <u>07/07/94</u> Area: <u>07</u> Run: <u>72</u>
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 <u>Largo Wash</u> (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: <u>60</u> POINTS
REMARKS	Remarks : <u>Redline Book - Outside</u> <u>Vulnerable Zone Type - Inside</u> <u>Two pits on site, ^{location} pit has liquid in it, will close one pit.</u> <u>DIG & HAUL</u>

ORIGINAL PIT LOCATION

Original Pit : a) Degrees from North 329° Footage from Wellhead 99'
 b) Length : 28' Width : 25' Depth : 4'

ORIGINAL PIT LOCATION



REMARKS :

Pictures @ 13:16 (22-25) (Roll 2)

Dump Truck

Notified Ballard Dist. of liquid in pit on 7/8/94.

REMARKS

Completed By:

Smash Kelly
 Signature

7/7/94
 Date

PHASE I EXCAVATION

FIELD PIT REMEDIATION/CLOSURE FORM

GENERAL

Meter: 93788 Location: Canyon Largo unit 304
 Coordinates: Letter: C Section 11 Township: 24 Range: 6
 Or Latitude _____ Longitude _____
 Date Started : 8/30/94 Run: 07 72

FIELD OBSERVATIONS

Sample Number(s): MK 299
 Sample Depth: 12 Feet
 Final PID Reading 187 PID Reading Depth 12 Feet
 Yes No
 Groundwater Encountered ☐ ☐ Approximate Depth _____ Feet

CLOSURE

Remediation Method :
 Excavation ☒ Approx. Cubic Yards 160
 Onsite Bioremediation ☐
 Backfill Pit Without Excavation ☐
 Soil Disposition:
 Envirotech ☒ Tierra ☐
 Other Facility ☐ Name: _____
 Pit Closure Date: 8-31-94 Pit Closed By: BEI

REMARKS

Remarks : EPNG lines marked soil black strong HYDROCARBON
odor

Signature of Specialist: Morgan Killian



FIELD SERVICES LABORATORY
ANALYTICAL REPORT

PIT CLOSURE PROJECT - Soil Samples Inside the GWV Zone

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	mk 299	946041
MTR CODE SITE NAME:	93788	N/A
SAMPLE DATE TIME (Hrs):	8-31-94	1318
SAMPLED BY:	N/A	
DATE OF TPH EXT. ANAL.:	9-1-94	9/1/94
DATE OF BTEX EXT. ANAL.:	9/1/94	9/1/94
TYPE DESCRIPTION:	VL	Brown Sand & Clay

REMARKS:

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q	M(g)	V(ml)
BENZENE	20.5	MG/KG	20			
TOLUENE	8.8	MG/KG	20			
ETHYL BENZENE	6.8	MG/KG	20			
TOTAL XYLENES	63	MG/KG	20			
TOTAL BTEX	79	MG/KG				
TPH (418.1)	13,400	MG/KG			.57	28
HEADSPACE PID	187	PPM				
PERCENT SOLIDS	89.0	%				

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

The Surrogate Recovery was at 72 % for this sample All QA/QC was acceptable.

Notes:

ATI results attached.

DF = Dilution Factor Used

Approved By:

John Sarchi

Date:

9/30/94



Analytical**Technologies**, Inc.

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

ATI I.D. 409308

September 15, 1994

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

Project Name/Number: PIT CLOSURE 24324

Attention: John Lambdin

On 09/01/94, 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.

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:jt

Enclosure





Analytical Technologies, Inc.

GAS CHROMATOGRAPHY RESULTS

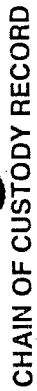
TEST : BTEX (EPA 8020)
CLIENT : EL PASO NATURAL GAS CO. ATI I.D.: 409308
PROJECT # : 24324
PROJECT NAME : PIT CLOSURE

SAMPLE ID. #	CLIENT I.D.	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
04	946036	NON-AQ	08/30/94	09/11/94	09/11/94	1
05	946040	NON-AQ	08/31/94	09/11/94	09/11/94	20
06	946041	NON-AQ	08/31/94	09/11/94	09/11/94	20

PARAMETER	UNITS	04	05	06
BENZENE	MG/KG	<0.025	<0.5	<0.5
TOLUENE	MG/KG	<0.025	14	8.8
ETHYLBENZENE	MG/KG	<0.025	5.6	6.8
TOTAL XYLENES	MG/KG	0.093	130	63

SURROGATE:

BROMOFLUOROBENZENE (%)	104	77	72
------------------------	-----	----	----



CHAIN OF CUSTODY RECORD

[illegible]

PHASE II SOIL BORING

RECORD OF SUBSURFACE EXPLORATION

PHILIP ENVIRONMENTAL

300 Monroe Road

Albuquerque, New Mexico 87401

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

Borehole # BH-1

Well #

Page

of

Project Name EPNG PITS

Project Number

14509

Phase

6000 77

Project Location

Canyon Largo Unit 304 93788

Well Logged By

CM Chance

Personnel On-Site

K Padilla, F. Rivera, D. Charlie

Contractors On-Site

Client Personnel On-Site

Elevation

Borehole Location DC-S11-T24-R6

GWL Depth

17.5' BGS

Logged By

CM CHANCE

Drilled By

K Padilla, F. Rivera

Date/Time Started 8/12/95 - 1100

Date/Time Completed 8/18/95 - 1200

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			Drilling Conditions & Blow Counts
							BZ	BH	HS	
0				Backfill to 12'						
5										
10										
15	1	15-17	8"	Gry CLAY, soft, sl moist, high plastic,			0	10	75 126	-1110
				Gry SAND, vf-f sand, tr med, loose, saturated						-GW @ 17.5'
20	2	20-22	24"	lt Br SAND, vf-f sand, tr med, loose, saturated			0	16	0 NA	-1115
				TDB 22'						
25										
30										
35										
40										

Comments:

Defining line between contaminated soil & clean @ ~19'. CM (77(15-17)) sent to lab (BTEX & TPH). Groundwater @ 17.5'. BH grouted to surface

Geologist Signature

Log Chance

PROJECT NUMBER # 24324		PROJECT NAME Pit Closure Project				CONTRACT LABORATORY P. O. NUMBER					
SAMPLES: (Signature)		DATE: 8/17/95				SEQUENCE #					
LAB ID	DATE	TIME	MATRIX	FIELD ID	TOTAL NUMBER OF CONTAINERS	SAMPLE TYPE	TPH EPA 418.1	BTEX EPA 8020	LAB PID	REQUESTED ANALYSIS	REMARKS
	8/17/95	0940	SOIL	CNK 76	1	V6	✓	✓			Background 25-37
		1110		CNK 77	1		✓	✓			Background 18-17
		1357		CNK 78	1		✓	✓			Background 15-17
		1451		CNK 79	1		✓	✓			Background 14-23
<i>See 8/12/95</i>											
RELINQUISHED BY: (Signature)		DATE/TIME		RECEIVED BY: (Signature)		DATE/TIME		RELINQUISHED BY: (Signature)		DATE/TIME	
RELINQUISHED BY: (Signature)		DATE/TIME		RECEIVED BY: (Signature)		DATE/TIME		RELINQUISHED BY: (Signature)		DATE/TIME	
REQUESTED TURNAROUND TIME:		ROUTINE ☐ RUSH ☐		SAMPLE RECEIPT REMARKS		RESULTS & INVOICES TO:		FIELD SERVICES LABORATORY		EL PASO NATURAL GAS COMPANY	
CARRIER CO.								P. O. BOX 4990		FARMINGTON, NEW MEXICO 87499	
BILL NO.:				CHARGE CODE		505-599-2144		505-599-2261		FAX: 505-599-2261	



FIELD SERVICES LABORATORY

ANALYTICAL REPORT

PIT CLOSURE PROJECT - Soil Samples Inside the GWV Zone

SAMPLE IDENTIFICATION

SAMPLE NUMBER:	Field ID CMC77	Lab ID 947263
MTR CODE SITE NAME:	93788	Canyon Largo Unit #304
SAMPLE DATE TIME (Hrs):	08/17/95	1110
PROJECT:	Phase II Drilling	
DATE OF TPH EXT. ANAL.:	08/21/95	08/21/95
DATE OF BTEX EXT. ANAL.:	08/23/95	08/23/95
TYPE DESCRIPTION:	VG	Gray clay

Field Remarks: _____

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q	M(g)	V(ml)
BENZENE	5.0	MG/KG		D		
TOLUENE	<2	MG/KG		D		
ETHYL BENZENE	3.9	MG/KG		D		
TOTAL XYLENES	26.2	MG/KG		D		
TOTAL BTEX	35.1	MG/KG		D		
TPH (418.1)	377	MG/KG			2.03	28
HEADSPACE PID	126	PPM				
PERCENT SOLIDS	78.0	%				

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

The Surrogate Recovery was at 109 % for this sample All QA/QC was acceptable.
Narrative: _____

DF = Dilution Factor Used

Approved By: John JacobDate: 7/15/96

PHASE III RE-EXCAVATION

FIELD PIT REMEDIATION/CLOSURE FORM/PHASE ~~II~~ III

GENERAL

Meter: 93788 Location: Canyon Largo Unit # 304
 Coordinates: Letter: C Section 11 Township: 24 Range: 06
 Or Latitude _____ Longitude _____
 Date Started : 10-26-95 Area: 07 Run: 72

FIELD OBSERVATIONS

Sample Number(s): 4P72 4P73
 Sample Depth: 20 Feet
 Final PID Reading 360 PID Reading Depth 20 Feet
 Yes No
 Groundwater Encountered ☒ (1) ☐ (2) Approximate Depth 18 Feet
 Final Dimensions: Length 47 Width 30 Depth 20

CLOSURE

Remediation Method :
 Excavation ☒ (1) Approx. Cubic Yards 856 ^{RLB 11/5/95}
 Onsite Bioremediation ☐ (2)
 Backfill Pit Without Excavation ☐ (3)
 Overburden Cubic Yards _____
 Soil Disposition:
 Envirotech ☒ (1) ☐ (3) Tierra
 Other Facility ☐ (2) Name: _____
 Pit Closure Date: Phase III Pit Closed By: Philip Env.

REMARKS

Remarks : Used 25 Lbs Fertilizer
Dug to 18' Ft + encountered water, went to 20 Ft
and pulled bottom sample PID was 90 ppm, N-wall 3 ppm,
E-wall 5 ppm W wall 15 ppm S wall 668 could not dig
South wall any more due to Loc Drip position.

Signature of Specialist: James F. Puro



FIELD SERVICES LABORATORY
ANALYTICAL REPORT
PIT CLOSURE PROJECT - Water

SAMPLE IDENTIFICATION

SAMPLE NUMBER:	947699
FIELD ID:	JP72
MTR CODE:	93788
SAMPLE DATE:	10/26/95
SAMPLE TYPE:	VG
SITE NAME:	Cyn Largo Unit #304
PROJECT:	Phase III Excavation
DATE OF BTEX ANALYSIS:	10/31/95

FIELD COMMENTS:

EPA Method 8020 (BTEX) RESULTS

PARAMETER	RESULT	QUALIFIER	WQCC LIMIT PPB
TDS - TOTAL DISSOLVED SOLIDS (PPM)	Not Required		None
BENZENE (PPB)	25.4	D (x5)	10
TOLUENE (PPB)	9.8	D (x5)	740
ETHYL BENZENE (PPB)	33.5	D (x5)	750
TOTAL XYLENES (PPB)	416	D,D1 (x5)	620
SURROGATE % RECOVERY	98	Allowed Range 80 to 120 %	

TES:

for m/p xylenes was outside calibration range.

Approved By:

John L. Linder

7/18/96



FIELD SERVICES LABORATORY

ANALYTICAL REPORT

PIT CLOSURE PROJECT - Soil Samples Inside the GWV Zone

SAMPLE IDENTIFICATION

SAMPLE NUMBER:	Field ID JP73	Lab ID 947701
MTR CODE SITE NAME:	93788	Canyon Largo Unit #304
SAMPLE DATE TIME (Hrs):	10/26/95	1630
PROJECT:	Phase III Excavation	
DATE OF TPH EXT. ANAL.:	10/31/95	10/27/95
DATE OF BTEX EXT. ANAL.:	10/27/95	10/27/95
TYPE DESCRIPTION:	VC	Brown sand & clay

Field Remarks: _____

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q	M(g)	V(ml)
BENZENE	<0.5	MG/KG				
TOLUENE	<0.5	MG/KG				
ETHYL BENZENE	<0.5	MG/KG				
TOTAL XYLENES	2.2	MG/KG				
TOTAL BTEX	<3	MG/KG				
TPH (418.1)	643	MG/KG			2.26	28
HEADSPACE PID	360	PPM				
PERCENT SOLIDS	89.5	%				

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

The Surrogate Recovery was at 95 % for this sample All QA/QC was acceptable.
Narrative: _____

DF = Dilution Factor Used

Approved By: John LarchDate: 7/18/96

Wade III
Executive



CHAIN OF CUSTODY RECORD

Page _____ of _____

PROJECT NUMBER		PROJECT NAME		TOTAL NUMBERS OF CONTAINERS		SAMPLE TYPE		REQUESTED ANALYSIS		CONTINUED LABORATORY P. O. NUMBER	
SAMPLERS: (Signature)		DATE		SAMPLE NUMBER		TPH EPA 418.1		BTEX EPA 8020			
LAB ID	DATE	TIME	MATRIX							REMARKS	
94 7701	10/26/95	1630	Soil	4P	73	1	VC	X	X	65 Canyon Largo Unit #304	
<i>[Large diagonal line across the table]</i>											
RELINQUISHED BY: (Signature)		DATE/TIME		RECEIVED BY: (Signature)		DATE/TIME		RELINQUISHED BY: (Signature)		DATE/TIME	
<i>James F. [Signature]</i>		10/26/95 3:30 PM		<i>John D. [Signature]</i>		10/27/95 8:45		<i>John D. [Signature]</i>		10/27/95 8:45	
RELINQUISHED BY: (Signature)		DATE/TIME		RECEIVED BY: (Signature)		DATE/TIME		RELINQUISHED BY: (Signature)		DATE/TIME	
<i>James F. [Signature]</i>				<i>John D. [Signature]</i>				<i>John D. [Signature]</i>			
REQUESTED TURNAROUND TIME: ☐ ROUTINE ☐ RUSH				SAMPLE RECEIPT REMARKS				RESULTS & INVOICES TO:			
CARRIER CO.								FIELD SERVICES LABORATORY EL PASO NATURAL GAS COMPANY P. O. BOX 4990 FARMINGTON, NEW MEXICO 87499			
BILL NO.:				CHARGE CODE				505-599-2144 FAX: 505-599-2261			



FIELD SERVICES LABORATORY
ANALYTICAL REPORT
PIT CLOSURE PROJECT - Water

SAMPLE IDENTIFICATION

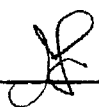
SAMPLE NUMBER: 947699
FIELD ID: JP72
MTR CODE: 93788
SAMPLE DATE: 10-26-95
SAMPLE TYPE: [Excavation] VG
SITE NAME: Canyon Largo Unit #304
PROJECT: Phase III Excavation
DATE OF BTEX ANALYSIS: 10/31/95

FIELD COMMENTS:

EPA Method 8020 (BTEX) RESULTS

PARAMETER	RESULT	QUALIFIER	WQCC LIMIT PPB
TDS - TOTAL DISSOLVED SOLIDS (PPM)	N/A		None
BENZENE (PPB)	25.4	D (x5)	10
TOLUENE (PPB)	9.8	D (x5)	740
ETHYL BENZENE (PPB)	33.5	D (x5)	750
TOTAL XYLENES (PPB)	416	D, D1 (x5)	620
SURROGATE % RECOVERY	98%	Allowed Range 80 to 120 %	

NOTES: Result for m/p xylenes was outside calibration range.

Approved By: 

11/3/95
Date

CHAIN OF CUSTODY RECORD

[illegible]

White • Testing Laboratory Canary • EPNG Lab Pink • Field Sampler

PHASE IV MONITORING WELL INSTALLATION

RECORD OF SUBSURFACE EXPLORATION

PHILIP ENVIRONMENTAL SERVICES INC.

100 Monroe Road

Albuquerque, New Mexico 87401

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

Borehole # BH- 2

Well # 1

Page 1 of 1

Project Name EPFS GW PITS

Project Number 17520 Phase 600277

Project Location CLU H304 - 93788

Well Logged By

Personnel On-Site

Contractors On-Site

Client Personnel On-Site

D CESARK

~~RECHARTER~~, C MAIZ

Drilling Method 4 1/4" ID HSA

Air Monitoring Method PID, CGI

Elevation

Borehole Location T24-R6-S11-Ltr C

GWL Depth 18' BGS

Logged By D CESARK

Drilled By K PADILLA

Date/Time Started 4/1/97 - 0900

Date/Time Completed 11 - 0930

Depth (feet)	Sample Number	Sample Interval	Sample Type & Recovery (inches)	Sample Description Classification System: USCS	USCS Symbol	Depth Lithology Change (feet)	Air Monitoring Units: PPM			Drilling Conditions & Blow Counts
							BZ	BH	S	
0				(BACKFILL						
5										
10				TO						
15				20')						
20				GWC 18'						
25				(HIGHLY CONTAM. SOIL)						
30				↓						
35				TO=30'						
40										

Comments:

GW ENCOUNTERED @ 18' BGS. OVER-DRILLED BH-2 TO 30' BGS + COMPLETED MW-1. NO SAMPLES COLLECTED, PLEASE REFER TO MW INSTALLATION RECORD.

Geologist Signature

[Signature]

MONITORING WELL INSTALLATION RECORD

Philip Environmental Services, Inc.
 1000 Monroe Rd.
 Farmington, NM 87401
 (505) 326-2262 FAX (505) 326-2388

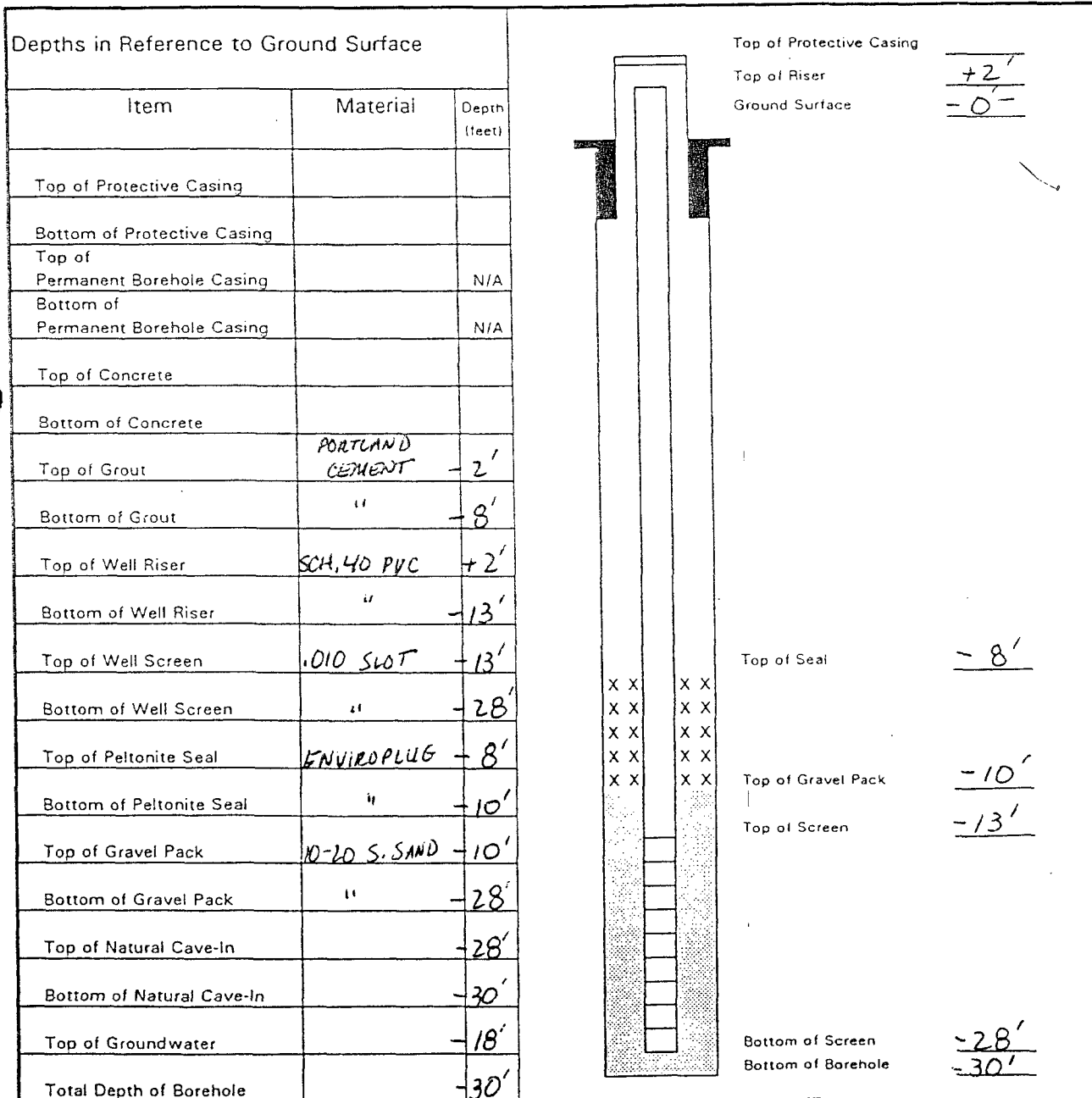
Borehole # 2
 Well # 1
 Page 1 of 1

Project Name EPFS GW PITS
 Project Number 17520 Phase 6005.77
 Site Location CANYON LARGO UNIT #304-
93788

Elevation _____
 Well Location T24N-R11W-S6-L C
 GWL Depth 18' BGS
 Installed By R PADILLA

On-Site Geologist D CESARK
 Personnel On-Site ~~DEWARRE~~ C MAIZ
 Contractors On-Site _____
 Client Personnel On-Site _____

Date/Time Started 4/1/97-0930
 Date/Time Completed " - 1130



Comments: _____

Geologist Signature _____

Well Development and Purging Data

~~Development~~
~~Purging~~

Well Number MW-1

Serial No. WDPD-

Project Name GW PITS

Project Manager C CHANCE

Project No.

Page 1 of 1

Client Company

EPES

Phase.Task No. 6003.77

Site Name CANYON CARGO UNIT #304 - 93788

Site Name CANYON CARGO UNIT #304 - 93788

Development Criteria

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

Stabilization of Indicator Parameters

☐ Other

Water Volume Calculation

Initial Depth of Well (feet)

Mr. J. C. [unclear]

Initial Depth to Water (feet) 17.66

Methods of Development

Pump

☐ Centrifugal ☒ Bottom Valve

☐ Submersible ☐ Double Check Valve

☐ Peristaltic ☐ Stainless-steel Kemmere

☐ Other

Instruments

2

☒ pH Meter

☐ DO Monitor

☒ Conductivity Meter

姓名

duel 1 2

Serial No. (If applicable)

Water Disposal

Water Removal Data

[illegible]

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

Comments 1ST BAILER WAS CLEAR, THE REST WERE MUDDY, REMOVED ALOT OF SILT/SAND. DID NOT BAIL WELL DRY. SLIGHT HC₂OOR / SHEEN.

Developer's Signature(s)

Date 4/10/97

Reviewer _____ Date: _____



Water Sampling Data

Location No. MW-1Serial No. WSD-Group List Number Sample Type: ☒ Groundwater ☐ Surface Water ☐ Other Date 4/10/97Project Name EPFS GW PITS Project No. 17520Project Manager C CHANCE Phase Task No. 6003.77Site Name CANYON LARGO UNIT #304- 93788

Sampling Specifications

Requested Sampling

Depth Interval (feet)

Requested Wait Following

Development/Purging (hours)

Initial Measurements

Time Elapsed From Final Development/Purging (hours) Initial Water Depth (feet) Nonaqueous Liquids Present (Describe)

Water Quality/Water Collection

DO = Dissolved Oxygen; Cond. = Conductivity

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

Sample Containers

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

Preservatives: H = HCl; N = HNO₃; S = H₂SO₄; A = NaOH; O = Other (Specify); - = None

Analytical Parameter List	Container			Field Filtered		Preserved	Cooled During Collection		Comments
	Number	Type	Volume (mL)	Yes	No		Yes	No	
EPA 8020 BTEX	3	G/VV	40		X	Y	X		DRC 34 - MW-1
"	1	"	"				X		DRC 33 - TRIP BLANK

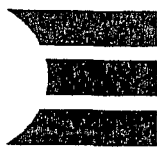
Filter Type Chain-of-Custody Form Number Comments * PLEASE REFER TO WELL DEVELOPMENT + PURGING DATA FORM.Signature [Signature] Date 4/10/97 Reviewer Date



PHASE II DRILLING - INITIAL WATER SAMPLING

CHAIN OF CUSTODY RECORD

[illegible]



EL PASO FIELD SERVICES



4-24-97

FIELD SERVICES LABORATORY ANALYTICAL REPORT PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

SAMPLE NUMBER:	Field ID DRC34	Lab ID 970267
MTR CODE SITE NAME:	93788	CLU #304
SAMPLE DATE TIME (Hrs):	4/10/97	1103
PROJECT:	Phase II Drilling - Initial	
DATE OF BTEX EXT. ANAL.:	4/11/97	4/11/97
TYPE DESCRIPTION:	Monitor Well	Water

Field Remarks: _____

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	21.0	PPB				
TOLUENE	<1	PPB				
ETHYL BENZENE	11.5	PPB				
TOTAL XYLENES	116	PPB				
TOTAL BTEX	149	PPB				

The Surrogate Recovery was at 100 for this sample All QA/QC was acceptable.
DF = Dilution Factor Used

Narrative: _____

Approved By: _____

John Zabel

Date: _____

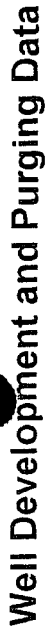
4/16/97

970267,4/16/97

QUARTERLY MONITORING RESULTS

Sample #	Meter/ Line #	Site Name	Sample Date	Project	S1	Benzene (PPB)	S2	Toluene (PPB)	S3	Ethyl Benzene (PPB)	S4	Total Xylenes (PPB)	S7	Total BTEX PPB
970267 *	93788	CLU #304	4/10/97	Phase II Drilling - Initial	=	21	<	1	=	11.5	=	116	=	150
970521 *	93788	CLU #304	6/3/97	Sample 4 - 1st Qtr	=	6.08	<	1	<	1	=	1.41	=	7
970999 *	93788	CLU #304	9/18/97	Sample 4 - 2nd Qtr	=	3.91	<	1	=	1.62	<	3	<	6
971295 *	93788	CLU #304	12/11/97	Sample 4 - 3rd Qtr	=	7.5	<	1	=	2.74	<	3	<	10
980234	93788	CLU #304	3/17/98	Sample 4 - 4th Qtr	=	7.2	<	1	=	2.65	<	3	<	10

* Analytical reports provided to NMOCD in prior annual report.



☐	Development
☒	Purging

Well Number MW-1
Meter Code 93788

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

Initial Depth of Well (feet) 29.60
Initial Depth to Water (feet) 17.70
Height of Water Column in Well (feet) 11.90

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

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

Water Disposal
KUTZ SEPARATOR

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing		7.9	23.6
Gravel Pack			
Drilling Fluids			
Total			

[illegible]

Developer's Signature *Dennis Bird*

Date 3-17-98

Reviewer Shu Han

Date 3/25/98



FIELD SERVICES LABORATORY

ANALYTICAL REPORT

PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	N/A	980234
MTR CODE SITE NAME:	93788	Canyon Largo Unit #304
SAMPLE DATE TIME (Hrs):	3/17/98	1208
PROJECT:	Sample 4 4th Quarter	
DATE OF BTEX EXT. ANAL.:	3/23/98	3/23/98
TYPE DESCRIPTION:	MW-1	Water

Field Remarks: _____

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	7.02	PPB				
TOLUENE	<1	PPB				
ETHYL BENZENE	2.65	PPB				
TOTAL XYLENES	<3	PPB				
TOTAL BTEX	10	PPB				

--BTEX is by EPA Method 8020 --

The Surrogate Recovery was at 101.7 % for this sample All QA/QC was acceptable.
DF = Dilution Factor Used

Narrative: _____

Approved By: John Fawcett

Date: 3/25/98

980234BTEXMW,3/25/98



Ebasco
Natural Gas Company

CHAIN OF CUSTODY RECORD

Project No.	Project Name	MC # 93788		Date: 3-17-98	Requested Analysis		Remarks	
Samplers: (Signature)	Date	Time	Comp.	GRAB	Sample Number	Type and No. of Sample Containers	Preservation Technique	Requested Analysis
MATRIX	3-17-98	1208		X	980234	G-1 4°C	X	CANYON CARGO UNIT #304 MW-1
WATER	3-17-98	---		X	---	G-1 4°C	X	TRIP BLANK
Relinquished by: (Signature)					Date/Time	Received by: (Signature)		Date/Time
Dennis Bied					3-17-98/1645			
Relinquished by: (Signature)					Date/Time	Relinquished by: (Signature)		Date/Time
Relinquished by: (Signature)					Date/Time	Relinquished by: (Signature)		Date/Time
Carrier Co:					Date Results Reported / by: (Signature)			
Dennis Bied					3/19/98 1315			



EL PASO FIELD SERVICES

QUALITY CONTROL REPORT EPA METHOD 8020 - BTEX

Samples: 980232, 980234, 980235, 980240 to 980246

QA/QC for 3/23/98 Sample Set

LABORATORY CALIBRATION CHECKS / LABORATORY CONTROL SAMPLES:

SAMPLE NUMBER	TYPE	EXPECTED RESULT PPB	ANALYTICAL RESULT PPB	%R	ACCEPTABLE	
					YES	NO
ICV LA-52589 50 PPB					RANGE	
Benzene	Standard	50.0	52.3	104.6	75 - 125 %	X
Toluene	Standard	50.0	53.3	107	75 - 125 %	X
Ethylbenzene	Standard	50.0	54.1	108	75 - 125 %	X
m & p - Xylene	Standard	100	108.9	108.9	75 - 125 %	X
o - Xylene	Standard	50.0	53.5	107	75 - 125 %	X
LCS LA-45476 25 PPB					RANGE	
Benzene	Standard	25.0	26.6	106.6	39 - 150	X
Toluene	Standard	25.0	27.2	109	46 - 148	X
Ethylbenzene	Standard	25.0	27.5	110	32 - 160	X
m & p - Xylene	Standard	50.0	55.9	112	Not Given	X
o - Xylene	Standard	25.0	27.2	109	Not Given	X
CCV LA-52589 50 PPB					RANGE	
Benzene	Standard	50.0	52.3	104.7	75 - 125 %	X
Toluene	Standard	50.0	53.1	106.2	75 - 125 %	X
Ethylbenzene	Standard	50.0	54.4	108.8	75 - 125 %	X
m & p - Xylene	Standard	100	109.6	109.6	75 - 125 %	X
o - Xylene	Standard	50.0	53.3	107	75 - 125 %	X
CCV LA-52589 50 PPB					RANGE	
Benzene	Standard	50.0	52.2	104.4	75 - 125 %	X
Toluene	Standard	50.0	52.7	105.4	75 - 125 %	X
Ethylbenzene	Standard	50.0	53.8	107.6	75 - 125 %	X
m & p - Xylene	Standard	100	108.4	108.4	75 - 125 %	X
o - Xylene	Standard	50.0	52.8	105.7	75 - 125 %	X

Narrative: Acceptable.

SAMPLE NUMBER CCV LA-52589 50 PPB	TYPE	EXPECTED RESULT PPB	ANALYTICAL RESULT PPB	%R	ACCEPTABLE	
					YES	NO
					RANGE	
Benzene	Standard	50.0	51.9	103.9	75 - 125 %	X
Toluene	Standard	50.0	51.9	103.9	75 - 125 %	X
Ethylbenzene	Standard	50.0	52.1	104.1	75 - 125 %	X
m & p - Xylene	Standard	100	105.0	105.0	75 - 125 %	X
o - Xylene	Standard	50.0	51.9	103.8	75 - 125 %	X

Narrative: Acceptable.

LABORATORY DUPLICATES:

SAMPLE ID 980232	TYPE	SAMPLE RESULT PPB	DUPLICATE RESULT PPB	RPD	ACCEPTABLE	
					YES	NO
					RANGE	
Benzene	Matrix Duplicate	<1	<1	0.00	+/- 20 %	X
Toluene	Matrix Duplicate	<1	<1	0.00	+/- 20 %	X
Ethylbenzene	Matrix Duplicate	<1	<1	0.00	+/- 20 %	X
m & p - Xylene	Matrix Duplicate	<2	<2	0.00	+/- 20 %	X
o - Xylene	Matrix Duplicate	<1	<1	0.00	+/- 20 %	X

Narrative: Acceptable.

LABORATORY SPIKES:

SAMPLE ID 2nd Analysis 980232	SPIKE ADDED PPB	SAMPLE RESULT PPB	SPIKE SAMPLE RESULT PPB	%R	ACCEPTABLE	
					YES	NO
					RANGE	
Benzene	50	<1	52.7	105.4	75 - 125 %	X
Toluene	50	<1	53.3	107	75 - 125 %	X
Ethylbenzene	50	<1	54.6	109	75 - 125 %	X
m & p - Xylene	100	<2	110.0	110.0	75 - 125 %	X
o - Xylene	50	<1	53.4	107	75 - 125 %	X

Narrative: Acceptable

AUTO BLANK	SOURCE	PPB (4 analyzed with set)	STATUS
Benzene	Boiled Water	<1.0	ACCEPTABLE
Toluene	Boiled Water	<1.0	ACCEPTABLE
Ethylbenzene	Boiled Water	<1.0	ACCEPTABLE
Total Xylenes	Boiled Water	<3.0	ACCEPTABLE

Narrative: Acceptable.

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

Narrative: Acceptable.

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

Narrative: Acceptable.

TRIP BLANK	SOURCE	PPB (4 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: CFV

Approved By: John L. Linder

Date: 3/25/98