

1R - 126

# REPORTS

DATE:

9/2001

# **ANNUAL MONITORING REPORTS**

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**ANNUAL MONITORING REPORT**

**EOTT PIPELINE COMPANY  
TNM 95-10, SAUNDERS  
LEA COUNTY, NEW MEXICO**

RB DMS

??

**RECEIVED**

**MAY 09 2001**

ENVIRONMENTAL BUREAU  
OIL CONSERVATION DIVISION

**PREPARED FOR:**

**EOTT PIPELINE COMPANY  
5805 EAST HIGHWAY 80  
MIDLAND, TEXAS 79701**

**PREPARED BY:**

**ENVIRONMENTAL TECHNOLOGY GROUP, INC.  
2540 WEST MARLAND  
HOBBS, NEW MEXICO 88240**

**APRIL 2001**

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## **INTRODUCTION**

Environmental Technology Group, Inc. (ETGI), on behalf of EOTT Energy Corp. (EOTT), prepared this annual report in compliance with the New Mexico Oil Conservation Division (OCD) letter of May 1998, requiring submittal of an annual report by April 1 of each year. The report presents the results of the quarterly ground water monitoring events only. For reference, the Site Location Map is provided as Figure 1.

Ground water monitoring was conducted during four quarterly events in calendar year 2000 to assess the levels and extent of dissolved phase constituents. The ground water monitoring events consisted of measuring static water levels in the monitoring wells and purging and sampling of each well exhibiting sufficient recharge.

## **FIELD ACTIVITIES**

The site monitoring wells were gauged and sampled on March 22, June 28, September 25, and December 8, 2000. During each sampling event, the monitoring wells, designated to be sampled, were purged of approximately 3 well volumes of water or until the wells were dry using a PVC bailer or electrical Grundfos Pump. Ground water was allowed to recharge and samples were obtained using disposable Teflon samplers. Water samples were stored in clean, glass containers provided by the laboratory and placed on ice in the field. Purge water was collected in a polystyrene tank and disposed of by Pate Trucking, Hobbs, New Mexico, utilizing a licensed disposal facility (OCD AO SWD-730).

## **GROUND WATER GRADIENT**

Locations of the monitoring wells and the inferred ground water gradient, as measured on December 8, 2000, are depicted on Figure 2, the Site Ground Water Gradient Map. The ground water elevation data are provided as Table 1. Ground water elevation contours, generated from the final quarterly event of calendar year 2000 water level measurements, indicated a general gradient of approximately 0.002 ft/ft to the southeast as measured between ground water monitoring wells MW-6 and MW-2. The depth to ground water, as measured from the top of the well casing, ranged between 43.60 to 47.65 feet for the shallow alluvial aquifer.

## **LABORATORY RESULTS**

Ground water samples obtained during the sampling events were hand delivered to Environmental Laboratory of Texas, Midland, Texas, for determination of benzene, toluene, ethyl benzene and total xylenes (BTEX) concentrations by EPA Method SW846-8021B. The ground water chemistry data are provided as Table 2 and the Laboratory Reports are provided as Appendix A.

Laboratory results for all of the site ground water samples, obtained during the calendar year 2000 monitoring period, indicated that Benzene and BTEX concentrations were below method detection limits for monitoring wells MW-2, MW-3, MW-5, MW-6, MW-7, and MW-8.

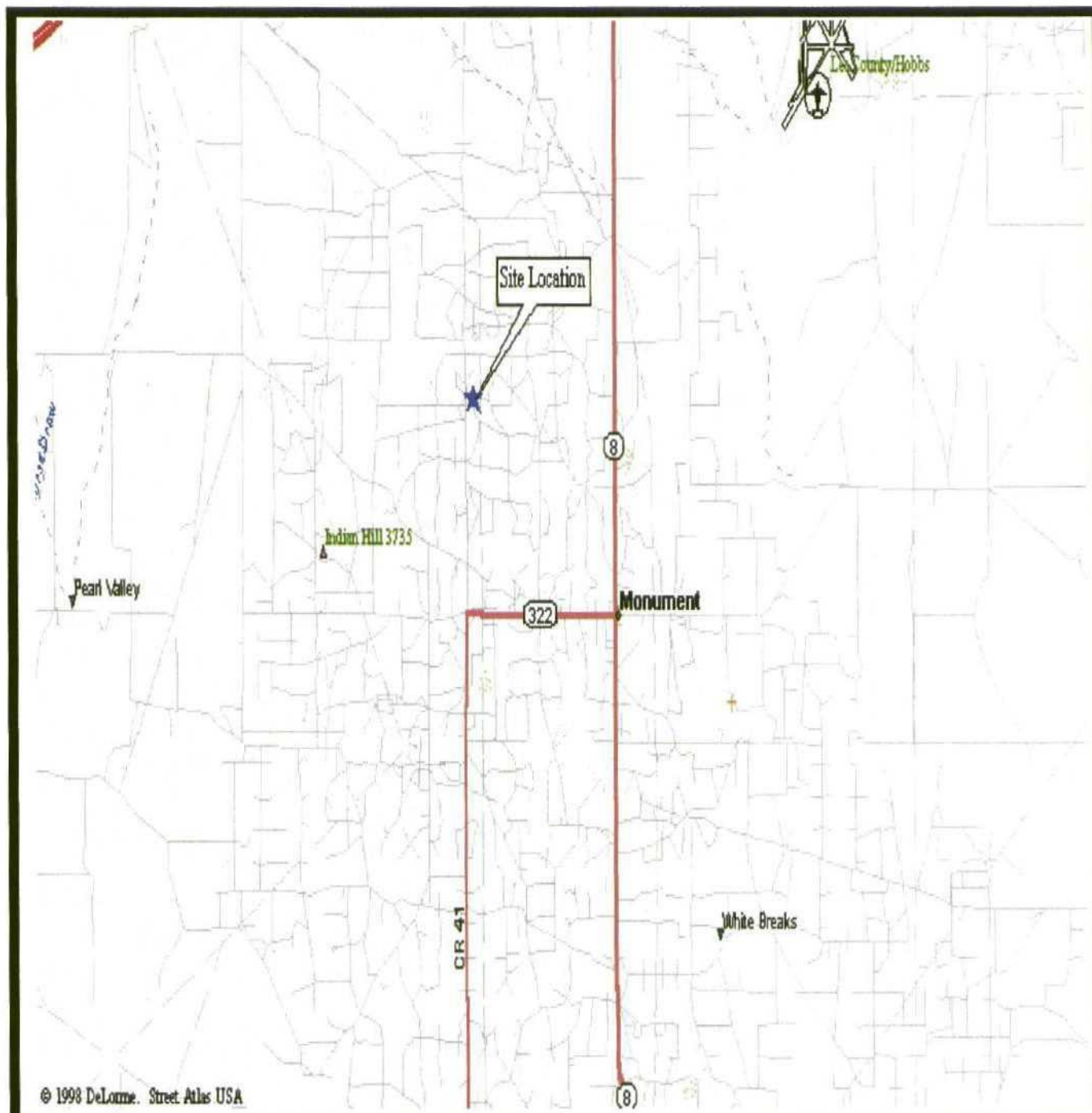
Benzene and BTEX concentrations contained in the remaining on-site monitoring wells were at or below regulatory standards.

## SUMMARY

This report presents the results of monitoring activities for the annual monitoring period of calendar year 2000. Ground water elevation contours, generated from the final quarterly event of calendar year 2000 water level measurements, indicated a general gradient of approximately 0.002 ft/ft to the southeast as measured between ground water monitoring wells MW-6 and MW-2.

Laboratory results for all of the site ground water samples, obtained during the calendar year 2000 monitoring period, indicated that Benzene and BTEX concentrations were below method detection limits for monitoring wells MW-2, MW-3, MW-5, MW-6, MW-7, and MW-8. Benzene and BTEX concentrations contained in the remaining on-site monitoring wells were at or below regulatory standards.

This site has been recommended for closure and is awaiting approval from OCD.



# FIGURE 1

Not To Scale

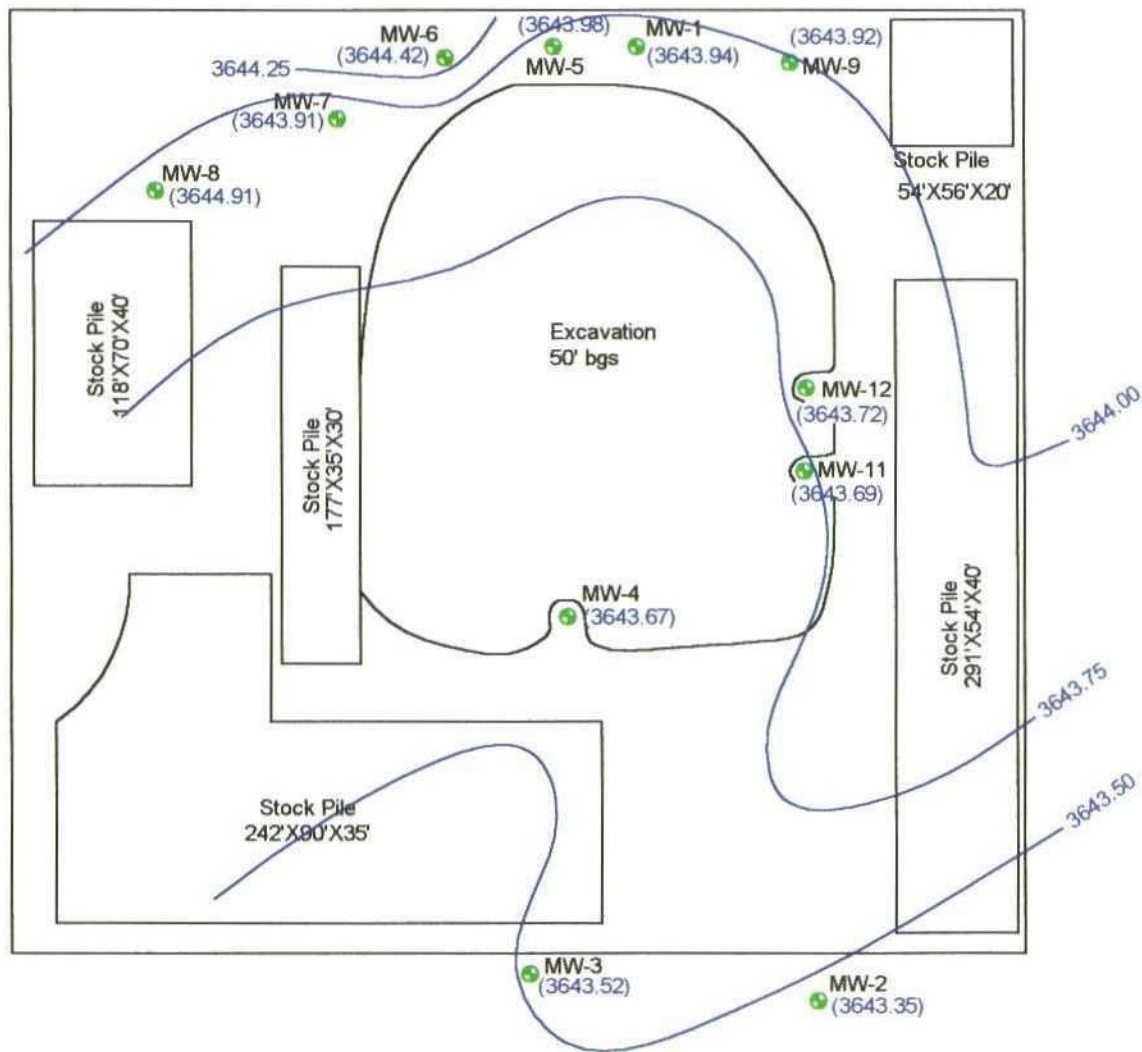
## Site Location Map

EOTT Energy Corp.  
TNM 95-10  
Monument, NM

Environmental  
Technology  
Group, Inc.

03 - 08 - 00 RS

ETGI Project # EOT2046C



**LEGEND:**

- Monitoring Well Locations (Installed by KEI)
- Groundwater Contour Lines
- Groundwater Elevation (in feet)

**Figure 2**  
**Site Groundwater**  
**Gradient Map (12/07/00)**  
**EOTT Energy Corp.**  
**TNM 95-10**  
**County in**



**Environmental Technology**  
**Group, Inc.**

Scale: 1" = 85'	Prep By: RS	Checked By: CR
December 7, 2000	ETGI Project # EOT2046C	

TABLE 1

GROUND WATER ELEVATION  
ANNUAL REPORTEOTT ENERGY CORPORATION  
TNM 95-10 (SAUNDERS)  
LEA COUNTY, NEW MEXICO  
ETGI PROJECT # EOT 2046C

WELL NUMBER	DATE MEASURED	CASING WELL ELEVATION	DEPTH TO PRODUCT	DEPTH TO WATER	PSH THICKNESS	CORRECTED GROUND WATER ELEVATION
MW - 1	03/22/00	3,689.93	-	45.61	0.00	3,644.32
	06/28/00	3,689.93	-	45.64	0.00	3,644.29
	09/25/00	3,689.93	-	45.58	0.00	3,644.35
	12/08/00	3,689.93	-	45.99	0.00	3,643.94
MW - 2	03/22/00	3,687.71	-	44.11	0.00	3,643.60
	06/28/00	3,687.71	-	44.25	0.00	3,643.46
	09/25/00	3,687.71	-	44.12	0.00	3,643.59
	12/08/00	3,687.71	-	44.36	0.00	3,643.35
MW - 3	03/22/00	3,687.50	-	43.63	0.00	3,643.87
	06/28/00	3,687.50	-	43.79	0.00	3,643.71
	09/25/00	3,687.50	-	43.72	0.00	3,643.78
	12/08/00	3,687.50	-	43.98	0.00	3,643.52
MW - 4	03/22/00	3,687.57	-	43.63	0.00	3,643.94
	06/28/00	3,687.57	-	43.75	0.00	3,643.82
	09/25/00	3,687.57	-	43.60	0.00	3,643.97
	12/08/00	3,687.57	-	43.90	0.00	3,643.67
MW - 5	03/22/00	3,690.79	-	46.41	0.00	3,644.38
	06/28/00	3,690.79	-	46.45	0.00	3,644.34
	09/25/00	3,690.79	-	46.40	0.00	3,644.39
	12/08/00	3,690.79	-	46.81	0.00	3,643.98
MW - 6	03/22/00	3,691.32	-	46.91	0.00	3,644.41
	06/28/00	3,691.32	-	47.02	0.00	3,644.30
	09/25/00	3,691.32	-	46.90	0.00	3,644.42
MW - 7	03/22/00	3,690.99	-	46.56	0.00	3,644.43
	06/28/00	3,690.99	-	46.73	0.00	3,644.26
	09/25/00	3,690.99	-	46.71	0.00	3,644.28
	12/08/00	3,690.99	-	47.08	0.00	3,643.91
MW - 8	03/22/00	3,691.56	-	47.05	0.00	3,644.51
	06/28/00	3,691.56	-	47.28	0.00	3,644.28
	09/25/00	3,691.56	-	47.31	0.00	3,644.25
	12/08/00	3,691.56	-	47.65	0.00	3,643.91

TABLE 1 (CON'T)

WELL NUMBER	DATE MEASURED	CASING WELL ELEVATION	DEPTH TO PRODUCT	DEPTH TO WATER	PSH THICKNESS	CORRECTED GROUND WATER ELEVATION
MW - 9	03/22/00	3,689.81	-	45.58	0.00	3,644.23
	06/28/00	3,689.81	-	45.61	0.00	3,644.20
	09/25/00	3,689.81	-	45.59	0.00	3,644.22
	12/08/00	3,689.81	-	45.89	0.00	3,643.92
MW - 11	03/22/00	3,688.62	-	44.70	0.00	3,643.92
	06/28/00	3,688.62	-	44.75	0.00	3,643.87
	09/25/00	3,688.62	-	44.62	0.00	3,644.00
	12/08/00	3,688.62	-	44.93	0.00	3,643.69
MW - 12	03/22/00	3,688.67	-	44.72	0.00	3,643.95
	06/28/00	3,688.67	-	44.75	0.00	3,643.92
	09/25/00	3,688.67	-	44.65	0.00	3,644.02
	12/08/00	3,688.67	-	44.95	0.00	3,643.72

**TABLE 2**  
**GROUND WATER CHEMISTRY**  
**ANNUAL REPORT**

**EOTT ENERGY CORPORATION**  
**TNM 95 - 10**  
**LEA COUNTY, NEW MEXICO**  
**ETGI PROJECT # EOT 2046C**

*All concentrations are in mg/L*

SAMPLE LOCATION	SAMPLE DATE	SW 846-8021B, 5030				
		BENZENE	TOLUENE	ETHYL-BENZENE	M,P-XYLENES	O-XYLENES
MW - 1	03/22/00	<0.001	<0.001	<0.001	<0.001	<0.001
	06/28/00	0.001	0.002	<0.001	<0.001	<0.001
	09/25/00	<0.001	<0.001	<0.001	<0.001	<0.001
	12/08/00	<0.001	<0.001	<0.001	<0.001	<0.001
MW - 2	03/22/00	<0.001	<0.001	<0.001	<0.001	<0.001
	06/28/00	<0.001	<0.001	<0.001	<0.001	<0.001
	09/25/00	<0.001	<0.001	<0.001	<0.001	<0.001
	12/08/00	<0.001	<0.001	<0.001	<0.001	<0.001
MW - 3	03/22/00	<0.001	<0.001	<0.001	<0.001	<0.001
	06/28/00	<0.001	<0.001	<0.001	<0.001	<0.001
	09/25/00	<0.001	<0.001	<0.001	<0.001	<0.001
	12/08/00	<0.001	<0.001	<0.001	<0.001	<0.001
MW - 4	03/22/00	0.010	<0.001	0.004	0.003	0.002
	06/28/00	0.008	0.003	0.005	0.002	0.002
	09/25/00	<0.001	<0.001	<0.001	<0.001	<0.001
	12/08/00	<0.001	<0.001	<0.001	<0.001	<0.001
MW - 5	03/22/00	<0.001	<0.001	<0.001	<0.001	<0.001
	06/28/00	<0.001	<0.001	<0.001	<0.001	<0.001
	09/25/00	<0.001	<0.001	<0.001	<0.001	<0.001
	12/08/00	<0.001	<0.001	<0.001	<0.001	<0.001
MW - 6	03/22/00	<0.001	<0.001	<0.001	<0.001	<0.001
	06/28/00	<0.001	<0.001	<0.001	0.002	<0.001
MW - 7	03/22/00	<0.001	<0.001	<0.001	<0.001	<0.001
	06/28/00	<0.001	<0.001	<0.001	<0.001	<0.001
	09/25/00	<0.001	<0.001	<0.001	<0.001	<0.001
	12/08/00	<0.001	<0.001	<0.001	<0.001	<0.001
MW - 8	03/22/00	<0.001	<0.001	<0.001	<0.001	<0.001
	06/28/00	<0.001	<0.001	<0.001	<0.001	<0.001
	09/25/00	<0.001	<0.001	<0.001	<0.001	<0.001
	12/08/00	<0.001	<0.001	<0.001	<0.001	<0.001
MW - 9	03/22/00	<0.001	<0.001	<0.001	<0.001	<0.001
	06/28/00	0.002	0.001	<0.001	0.001	<0.001
	09/25/00	<0.001	<0.001	<0.001	<0.001	<0.001
	12/08/00	<0.001	<0.001	<0.001	<0.001	<0.001

TABLE 2 (CON'T)

SAMPLE LOCATION	SAMPLE DATE	SW 846-8021B, 5030				
		BENZENE	TOLUENE	ETHYL-BENZENE	M,P-XYLENES	O-XYLENES
MW - 11	03/22/00	0.007	<0.001	0.008	<0.001	<0.001
	06/28/00	0.006	0.006	0.007	0.005	<0.001
	09/25/00	<0.001	<0.001	<0.001	<0.001	<0.001
	12/08/00	<0.001	<0.001	<0.001	<0.001	<0.001
MW - 12	03/22/00	0.002	<0.001	0.003	<0.001	<0.001
	06/28/00	0.004	0.003	0.002	0.003	0.002
	09/25/00	<0.001	<0.001	<0.001	<0.001	<0.001
	12/08/00	<0.001	<0.001	<0.001	<0.001	<0.001



# ENVIRONMENTAL LAB OF , INC.

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ENVIRONMENTAL TECHNOLOGY GROUP, INC.  
ATTN: MR. JESSE TAYLOR  
P.O. BOX 4845  
MIDLAND, TEXAS 79704  
FAX: 915-520-4310  
FAX: 505-392-3760

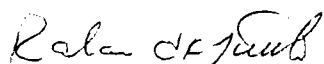
SampleType: Water  
Sample Condition: Intact/ Iced/HCl  
Project #: EOT 1015C  
Project Name: TNM 95-10  
Project Location: Lea County , N.M.

Sampling Date: 03/22/00  
Receiving Date: 03/25/00  
Analysis Date: 3/27 & 3/28/00

ELT#	FIELD CODE	BENZENE mg/L	TOLUENE mg/L	ETHYLBENZENE mg/L	m,p-XYLENE mg/L	o-XYLENE mg/L
24280	MW1	<0.001	<0.001	<0.001	<0.001	<0.001
24281	MW2	<0.001	<0.001	<0.001	<0.001	<0.001
24282	MW3	<0.001	<0.001	<0.001	<0.001	<0.001
24283	MW4	0.010	<0.001	0.004	0.003	0.002
24284	MW5	<0.001	<0.001	<0.001	<0.001	<0.001
24285	MW6	<0.001	<0.001	<0.001	<0.001	<0.001
24286	MW7	<0.001	<0.001	<0.001	<0.001	<0.001
24287	MW8	<0.001	<0.001	<0.001	<0.001	<0.001
24288	MW9	<0.001	<0.001	<0.001	<0.001	<0.001
24289	MW11	0.007	<0.001	0.008	<0.001	<0.001
24290	MW12	0.002	<0.001	0.003	<0.001	<0.001

% IA	99	91	90	98	86
% EA	98	90	89	98	85
BLANK	<0.001	<0.001	<0.001	<0.001	<0.001

METHODS: SW 846-8021B,5030

  
Raland K. Tuttle

3-29-00  
Date

# Environmental Lab of Texas, Inc. 12600 West I-20 East - Jessica, Texas 79763 (915) 563-1800 FAX (915) 563-1713

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

COC # 111

Project Manager: Jesse Taylor Phone #: (915) 664-9166  
FAX #: (915) 352-3760

Company Name & Address: ET&T  
P.O. Box 4845 MIDLAND TX 79704

Project #: EO10105C Project Name: TNM 95-10

Project Location: Lower Las Conchas NM Sampler Signature: [Signature]

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX				PRESERVATIVE METHOD				SAMPLING		BTX 8020/5100	TPH	TCLP Metals Ag As	Total Metals Ag As	TCLP Volatiles	TCLP Semi Volatiles	TDS	RCI	
				WATER	SOIL	AIR	SLUDGE	OTHER	HCL	HNO3	ICE	NONE	OTHER									DATE
	MW1	3	VS	X				X	X				3-22-09	0945	X	X						
	MW2													1100								
	MW3													1115								
	MW4													1030								
	MW5													0930								
	MW6													0901								
	MW7													0850								
	MW8													0845								
	MW9													0955								
	MW11													1100								
	MW12													1005								

Relinquished by: <u>[Signature]</u>	Date: <u>3/24/00</u>	Time: <u>1500</u>	Received by: <u>[Signature]</u>	Time: <u>1500</u>	REMARKS: <u>MAIL REQUESTS H. BUTTON</u>
Relinquished by: <u>[Signature]</u>	Date: <u>25 MAR 00</u>	Time: <u>1235</u>	Received by: <u>[Signature]</u>	Time: <u>1235</u>	
Relinquished by: <u>[Signature]</u>	Date: <u></u>	Time: <u></u>	Received by Laboratory: <u>[Signature]</u>	Time: <u></u>	<u>INVOICE COMING FROM 1015m</u>

ANALYSIS REQUEST

BTEX 8020/50 X  
TPH 8015 800 RAD X  
TCLP Metals Ag As Ba Cd Cr Pb Hg Se X  
Total Metals Ag As Ba Cd Cr Pb Hg Se  
TCLP Volatiles  
TCLP Semi Volatiles  
TDS  
RCI

# ENVIRONMENTAL LAB OF , INC.

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ENVIRONMENTAL TECHNOLOGY GROUP, INC.  
ATTN: MR. JESSE TAYLOR  
2540 W. MARLAND  
HOBBS, N.M. 88242  
FAX: 915-520-4310  
FAX: 505-397-4701

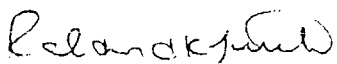
SampleType: Water  
Sample Condition: Intact/ Iced/HCl/ 28 deg. F  
Project #: EOT 2015C  
Project Name: TNM 95-10  
Project Location: Lea County, N.M.

Sampling Date: 06/28/00  
Receiving Date: 06/29/00  
Analysis Date: BTEX 07/02/00  
Analysis Date: TPH 07/10/00

ELT#	FIELD CODE	BENZENE mg/L	TOLUENE mg/L	ETHYLBENZENE mg/L	m,p-XYLENE mg/L	o-XYLENE mg/L	TPH mg/L
27564	MW 1	0.001	0.002	<0.001	<0.001	<0.001	<1
27565	MW 2	<0.001	<0.001	<0.001	<0.001	<0.001	<1
27566	MW 3	<0.001	<0.001	<0.001	<0.001	<0.001	<1
27567	MW 4	0.008	0.003	0.005	0.002	0.002	<1
27568	MW 5	<0.001	<0.001	<0.001	<0.001	<0.001	<1
27569	MW 6	<0.001	<0.001	<0.001	0.002	<0.001	<1
27570	MW 7	<0.001	<0.001	<0.001	<0.001	<0.001	<1
27571	MW 8	<0.001	<0.001	<0.001	<0.001	<0.001	<1
27572	MW 9	0.002	0.001	<0.001	0.001	<0.001	<1
27573	MW 11	0.006	0.006	0.007	0.005	<0.001	36
27574	MW 12	0.004	0.003	0.002	0.003	0.002	3

% IA	91	82	82	88	83	100
% EA	89	88	88	96	89	.
BLANK	<0.001	<0.001	<0.001	<0.001	<0.001	<1

METHODS: SW 846-8021B, 5030, EPA 418.1

  
Raland K. Tuttle

7-10-00  
Date

# Environmental Lab of Texas, Inc. 12600 West I-20 E. Odessa, Texas 79763 (915) 563-1800 FAX (915) 563-1713

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

COC 171

Project Manager: <b>JESSE TAYLOR</b>		Phone #: (505) 397-4882 FAX #: (505) 397-4701		ANALYSIS REQUEST	
Company Name & Address: <b>2540 W. MARLAND HOBBBS NM 88242</b>		Project Name: <b>TNM 95-10</b>		TPH 418.1	
Project #: <b>EOT 2015C</b>		Sampler Signature: <i>Amor Cases</i>		TCLP Metals Ag As Ba Cd Cr Pb Hg Se	
Project Location: <b>LEA COUNTY, NM</b>				TCLP Volatiles	
				TCLP Semi Volatiles	
				TDS	
				RCI	

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX				PRESERVATIVE METHOD				SAMPLING			
				WATER	SOIL	AIR	SLUDGE	OTHER	HCL	HNO3	ICE	NONE	OTHER	DATE	TIME
	MW 1	3	1.5 X					X				X		6-28-10	1005
	MW 2													1040	
	MW 3													1110	
	MW 4													1135	
	MW 5													1315	
	MW 6													1325	
	MW 7													1415	
	MW 8													1408	
	MW 9													1155	
	MW 11													1450	
	MW 12													1510	

Relinquished by: <i>Amor Cases</i>	Date: 29 June 08	Received by: <i>Amor Cases</i>	Time: 1400	REMARKS: F.R. HOBBS OFFICE
Relinquished by:	Date:	Received by:	Time:	INVOICE: EOTT 1015M
Relinquished by:	Date:	Received by Laboratory:	Time:	

# ENVIRONMENTAL LAB OF , INC.

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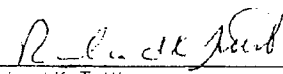
ENVIRONMENTAL TECHNOLOGY GROUP, INC.  
ATTN: BETH ALDRICH  
P.O. BOX 4845  
MIDLAND, TEXAS 79704  
FAX: 915-520-4310  
FAX: 505-397-4701

Sample Type: Water  
Sample Condition: Intact/ Iced/ HCl/ -4deg. C  
Project #: EOT 2046C  
Project Name: TNM 95-10  
Project Location: Lea Co., N.M.

Sampling Date: 09/25/00  
Receiving Date: 09/27/00  
Analysis Date: 10/03/00

ELT#	FIELD CODE	BENZENE mg/L	TOLUENE mg/L	ETHYLBENZENE mg/L	m,p XYLENE mg/L	o XYLENE mg/L
31338	MW-1	<0.001	<0.001	<0.001	<0.001	<0.001
31339	MW-2	<0.001	<0.001	<0.001	<0.001	<0.001
31340	MW-3	<0.001	<0.001	<0.001	<0.001	<0.001
31341	MW-4	<0.001	<0.001	<0.001	<0.001	<0.001
31342	MW-5	<0.001	<0.001	<0.001	<0.001	<0.001
31343	MW-7	<0.001	<0.001	<0.001	<0.001	<0.001
31344	MW-8	<0.001	<0.001	<0.001	<0.001	<0.001
31345	MW-9	<0.001	<0.001	<0.001	<0.001	<0.001
31346	MW-11	<0.001	<0.001	<0.001	<0.001	<0.001
31347	MW-12	<0.001	<0.001	<0.001	<0.001	<0.001
31348	EB-1	<0.001	<0.001	<0.001	<0.001	<0.001
%IA		95	101	96	102	101
%EA		104	110	109	114	114
BLANK		<0.001	<0.001	<0.001	<0.001	<0.001

METHODS: EPA SW 846-8021B, 5030

  
Roland K. Tuttle

10-0-00  
Date

col #237

FAX# (505) 397-4781

2546 W MARLAND HOBBS NM

LOT 2041C

Sampler Signature:

Let  $C_{n-1}$  and

REMARKS	Rec-40C
INVOICE; EOTT	
FAX RESULTS; HORAS OFFICE	
MAIL RESULTS; EOTT	

# ENVIRONMENTAL LAB OF , Inc.

"Don't Treat Your Soil Like Dirt!"

ENVIRONMENTAL TECHNOLOGY GROUP, INC.  
ATTN: BETH ALDRICH  
P.O. BOX 4845  
MIDLAND, TEXAS 79704  
FAX: 915-520-4310

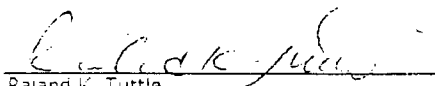
Sample Type: Water  
Sample Condition: Intact/ Iced/ HCl/ -2.0 deg. C  
Project #: EOT 2046C  
Project Name: TNM 95-10 (Sanders)  
Project Location: Monument, N.M.

Sampling Date: 12/08/00  
Receiving Date: 12/09/00  
Analysis Date: 12/10/00

ELT#	FIELD CODE	BENZENE mg/L	TOLUENE mg/L	ETHYLBENZENE mg/L	m,p-XYLENE mg/L	o-XYLENE mg/L
35173	MW 1	<0.001	<0.001	<0.001	<0.001	<0.001
35174	MW 2	<0.001	<0.001	<0.001	<0.001	<0.001
35175	MW 3	<0.001	<0.001	<0.001	<0.001	<0.001
35176	MW 4	<0.001	<0.001	<0.001	<0.001	<0.001

%IA	99	104	102	106	100
%EA	98	91	93	99	96
BLANK	<0.001	<0.001	<0.001	<0.001	<0.001

METHODS: EPA SW 846-8021B, 5030

  
Randall K. Tuttle

12-13-00  
Date

# ENVIRONMENTAL LAB OF , INC.

"Don't Treat Your Soil Like Dirt!"

ENVIRONMENTAL TECHNOLOGY GROUP, INC.  
ATTN: BETH ALDRICH  
P.O. BOX 4845  
MIDLAND, TEXAS 79704  
FAX: 915-520-4310

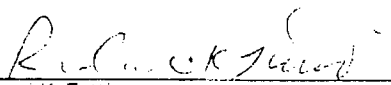
Sample Type: Water  
Sample Condition: Intact/ Iced/ HCl/ -2.0 deg. C  
Project #: ECT 2046C  
Project Name: TNM 95-10 (Sanders)  
Project Location: Monument, N.M.

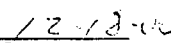
Sampling Date: 12/08/00  
Receiving Date: 12/09/00  
Analysis Date: 12/11/00

ELT#	FIELD CODE	BENZENE mg/L	TOLUENE mg/L	ETHYLBENZENE mg/L	m,p-XYLENE mg/L	o-XYLENE mg/L
35177	MW 5	<0.001	<0.001	<0.001	<0.001	<0.001
35178	MW 7	<0.001	<0.001	<0.001	<0.001	<0.001
35179	MW 8	<0.001	<0.001	<0.001	<0.001	<0.001
35180	MW 9	<0.001	<0.001	<0.001	<0.001	<0.001
35181	MW 11	<0.001	<0.001	<0.001	<0.001	<0.001
35182	MW 12	<0.001	<0.001	<0.001	<0.001	<0.001
35183	EB 1	<0.001	<0.001	<0.001	<0.001	<0.001

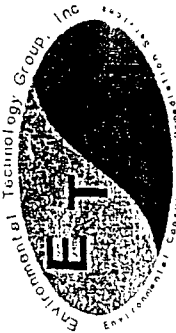
%IA	92	97	94	96	92
%EA	89	96	94	97	92
BLANK	<0.001	<0.001	<0.001	<0.001	<0.001

METHODS: EPA SW 846-8021B, 5030

  
Ralano K. Tuttle

  
Date





For Use On  
EOTT ENERGY CORP.  
4600 West Wall  
Midland, TX 79703  
Tel (915) 522-1139  
Fax (915) 520-4310

2540 West Marland  
Hobbs, NM 88242  
Tel (505) 397-4882  
Fax (505) 397-4701

EOTT ENERGY CORP.  
5805 East Business 20  
Midland, TX 79702  
Tel (915) 687-3400  
Fax (915) 582-2781

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

ANALYSIS REQUEST  
(Circle or Specify Method No.)

Project Manager: BETH NEARICH  
Project Name: TAM 95-10 (SAUNDERS)  
Project Location: MONUMENT NM  
Project Number: EOT 2046C  
Sampler Signature: [Signature]

LAB # (Lab Use Only)	FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX				PRESERVATION METHOD				SAMPLING	
				WATER	SOIL	AIR	SLUDGE	HCL	HNO <sub>3</sub>	NaHSO <sub>4</sub>	ICE	DATE	TIME
	MW 1	2	V5X					X				12-8	1125
	MW 2											1040	
	MW 3											1030	
	MW 4											1049	
	MW 5											1140	
	MW 7											1152	
	MW 8											1015	
	MW 9											1108	
	MW 11											1205	
	MW 12											1215	
	EB 1											1230	

Relinquished by: [Signature] Date: 12-3-00 Time: 1500  
Relinquished by: [Signature] Date: 12-9-00 Time: 1230

REMARKS: REC: -2-0°C  
FAX RESULTS: HOBBS  
MAIL RESULTS: EOTT  
INVOICE: EOTT

# SOIL CHEMISTRY

EOTT ENERGY, LLC

RR  
6/5/03

TODD ROAD LITIGATION  
LEA COUNTY, NEW MEXICO

ETGI PROJECT # EO 1241

SAMPLE LOCATION	SAMPLE DATE	Method: 8015M		
		GRO (mg/Kg)	DRO (mg/Kg)	TOTAL
SS-1	06/02/03	<10	548	548
SS-2	06/02/03	<10	384	384
SS-3	06/02/03	<10	1220	1220
SS-4	06/02/03	<10	700	700
SS-5	06/02/03	13.2	1850	1863
SS-6	06/02/03	12.4	1390	1402
SS-7	06/02/03	<10	202	202
SS-8	06/02/03	13.8	1280	1294
SS-9	06/02/03	<10	722	722
SS-10	06/02/03	14.7	1280	1295
SS-11	06/02/03	17.9	1760	1778
SS-12	06/02/03	17.5	1730	1748
SS-13	06/02/03	19.5	1900	1920
SS-14	06/02/03	18.7	1490	1509
SS-15	06/02/03	14.1	1450	1464
SS-16	06/02/03	18.7	918	937
SS-17	06/02/03	22.6	1950	1973
SS-18	06/02/03	11.3	533	544
SS-19	06/02/03	16.2	510	526
SS-20	06/02/03	19.5	2200	2220
SS-21	06/02/03	<10	234	234
SS-22	06/02/03	15.7	1430	1446
SS-23	06/02/03	<10	338	338

6/5/03

cc to Lady M SLD

SLB

"this level of TPH (w/ ND GRO) will not migrate w/o rainwater percolation. cap will prevent percolation. should be OK, will protect GW etc"

**ANNUAL MONITORING REPORT**

**EOTT PIPELINE COMPANY  
TNM 95-10  
LEA COUNTY, NEW MEXICO**

**PREPARED FOR:**

**EOTT PIPELINE COMPANY  
P. O. BOX  
MIDLAND, TEXAS 79704**

**Ms. Lennah Frost**

**PREPARED BY:**

**ENVIRONMENTAL TECHNOLOGY GROUP, INC.  
4600 WEST WALL STREET  
MIDLAND, TEXAS 79704**

**March 2000**

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## **INTRODUCTION**

Environmental Technology Group, Inc. (ETGI), on behalf of EOTT Energy Corp. (EOTT), prepared this annual report in compliance with the New Mexico Oil Conservation Division (OCD) letter of May 1998, requiring submittal of an annual report by April 1 of each year. The report presents the results of the quarterly ground water monitoring events only. For reference, a site location map is provided as Figure 1.

Ground water monitoring was conducted during four quarterly events in 1999 to assess the levels and extent of dissolved phase and free phase petroleum hydrocarbon constituents. The groundwater monitoring events consisted of measuring static water levels in the monitoring wells, checking for the presence of phase-separated hydrocarbons (PSH), and purging and sampling of each well exhibiting sufficient recharge. Monitoring wells containing measurable levels of PSH were not sampled.

## **FIELD ACTIVITIES**

The site monitoring wells were gauged and sampled on March 10, May 20, September 14, and December 13, 1999. During each sampling event, the monitoring wells, designated to be sampled, were purged of approximately 3 well volumes of water or until the wells were dry using a PVC bailer or electrical Grundfos Pump. Groundwater was allowed to recharge and samples were obtained using disposable Teflon samplers. Monitoring wells with a measurable presence of PSH were not sampled. Water samples were stored in clean, glass containers provided by the laboratory and placed on ice in the field. Purge water was collected in a polystyrene tank and disposed of by Pate Trucking, Hobbs, New Mexico, utilizing a licensed disposal facility (OCD AO SWD-730).

## **GROUNDWATER GRADIENT**

Locations of the monitoring wells and the inferred ground water gradient, as measured on December 13, 1999, are depicted on Figure 2. The ground water elevation data are provided as Table 1. Groundwater elevation contours, generated from the final quarterly event of 1999 water level measurements, indicated a general gradient of approximately 0.003 ft/ft to the southeast. The depth to groundwater, as measured from the top of the well casing, ranged between 43.04 to 47.08 feet for the shallow alluvial aquifer.

## **LABORATORY RESULTS**

Ground water samples obtained during the first and second sampling events were mailed to Xenco Laboratories in San Antonio, Texas. Ground water samples collected during the third and fourth event were hand delivered to Environmental Laboratory of Texas, Midland, Texas for determination of benzene, toluene, ethyl benzene and total xylenes (BTEX) concentrations by EPA Method SW846-8020 and 8021B. In addition, the ground water samples collected during the second event were submitted for the analysis of Total Petroleum Hydrocarbons (TPH) using EPA Method 8015

**DRO/GRO** The ground water chemistry data are provided as Table 2 and the Laboratory Reports are provided as Appendix A.

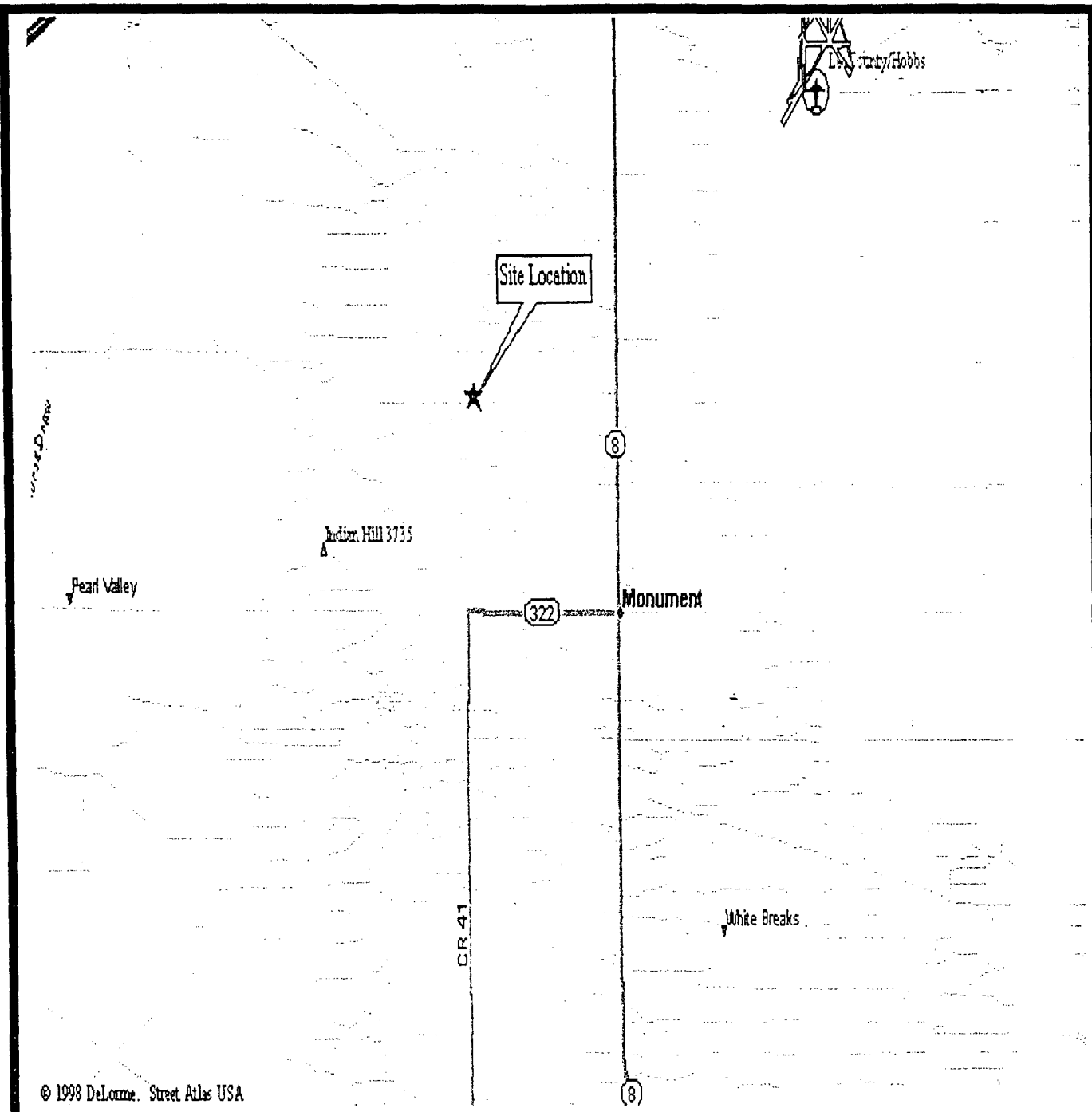
Laboratory results for all of the site ground water samples, obtained during the 1999 annual period, indicated that BTEX and TPH concentrations were below detection limits for samples collected from monitoring wells MW-1, MW-2, MW-3, MW-5, MW-6, MW-7, MW-8 and MW-9. Dissolved phase benzene concentrations were detected in samples collected from monitoring wells MW-4, MW-11, and MW-12. The benzene concentrations in these wells ranged from 2 to 43  $\mu\text{g/L}$  over the course of the year. TPH concentrations for MW-4, MW-11, and MW-12 ranged from 0.3 mg/L to 84.0 mg/L.

## **SUMMARY**

This report presents the results of monitoring activities for the annual monitoring period of calendar year 1999. No PSH was detected in the site wells during the four monitoring events.

Laboratory results for all of the site ground water samples, obtained during the 1999 annual period, indicated that BTEX and TPH concentrations were below detection limits for samples collected from monitoring wells MW-1, MW-2, MW-3, MW-5, MW-6, MW-7, MW-8 and MW-9. Dissolved phase benzene concentrations were detected in samples collected from monitoring wells MW-4, MW-11, and MW-12. The benzene concentrations in these wells ranged from 2 to 43  $\mu\text{g/L}$  over the course of the year. TPH concentrations for MW-4, MW-11, and MW-12 ranged from 0.3 mg/L to 84.0 mg/L.

## FIGURES



# FIGURE 1

Not To Scale

## Site Location Map

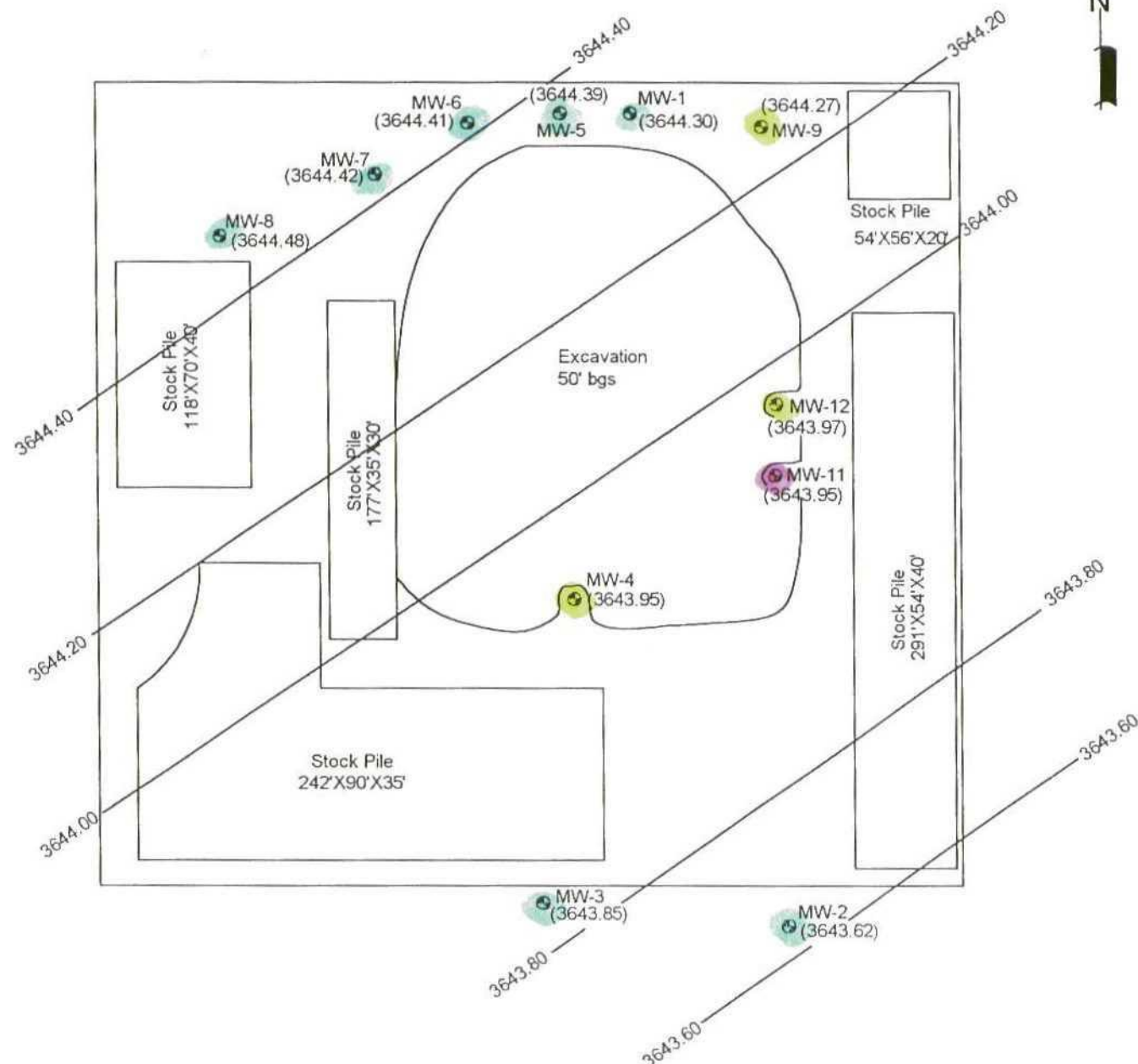
EOTT Energy Corp.  
TNM 95-10  
Monument, NM

Environmental  
Technology  
Group, Inc.

03 - 08 - 00 RS

ETGI Project # EOT 1046C





**LEGEND:**

- ⊙ Monitoring Well Locations  
(Installed by KEI)
- Ground Water Contour Lines
- (456) Ground Water Elevation

**Figure 2**  
**Inferred Ground Water**  
**Contour Map 12/13/99**  
**EOTT Energy Corp.**  
**TNM 95-10**  
**County in**



**Environmental Technology**  
**Group, INC.**

Scale: 1" = 85'	Prep By: RS	Checked By: JT
March 8, 2000	ETGI Project # EOT 1048C	

## TABLES

TABLE 1  
GROUNDWATER ELEVATION TABLE  
TNM 95-10  
LEA COUNTY, NM  
ETGI PROJECT# EOT1015C

WELL NUMBER	DATE MEASURED	CASING WELL ELEVATION	DEPTH TO PRODUCT	DEPTH TO WATER	PSH THICKNESS	CORRECTED GROUNDWATER ELEVATION
MW-1	03/10/99	3,689.93	-	45.20	0.00	3,644.73
MW-1	05/20/99	3,689.93	-	44.29	0.00	3,645.64
MW-1	09/14/99	3,689.93	-	45.45	0.00	3,644.48
MW-1	12/13/99	3,689.93	-	45.63	0.00	3,644.30
MW-2	03/10/99	3,687.71	-	43.78	0.00	3,643.93
MW-2	05/20/99	3,687.71	-	43.56	0.00	3,644.15
MW-2	09/14/99	3,687.71	-	43.91	0.00	3,643.80
MW-2	12/13/99	3,687.71	-	44.09	0.00	3,643.62
MW-3	03/10/99	3,687.50	-	43.31	0.00	3,644.19
MW-3	05/20/99	3,687.50	-	43.04	0.00	3,644.46
MW-3	09/14/99	3,687.50	-	43.51	0.00	3,643.99
MW-3	12/13/99	3,687.50	-	43.65	0.00	3,643.85
MW-4	03/10/99	3,687.57	-	43.26	0.00	3,644.31
MW-4	05/20/99	3,687.57	-	43.04	0.00	3,644.53
MW-4	09/14/99	3,687.57	-	43.48	0.00	3,644.09
MW-4	12/13/99	3,687.57	-	43.62	0.00	3,643.95
MW-5	03/10/99	3,690.79	-	46.02	0.00	3,644.77
MW-5	05/20/99	3,690.79	-	45.06	0.00	3,645.73
MW-5	09/14/99	3,690.79	-	46.27	0.00	3,644.52
MW-5	12/13/99	3,690.79	-	46.40	0.00	3,644.39
MW-6	03/10/99	3,691.32	-	46.47	0.00	3,644.85
MW-6	05/20/99	3,691.32	-	45.62	0.00	3,645.70
MW-6	09/14/99	3,691.32	-	46.81	0.00	3,644.51
MW-6	12/13/99	3,691.32	-	46.91	0.00	3,644.41
MW-7	03/10/99	3,690.99	-	46.12	0.00	3,644.87
MW-7	05/20/99	3,690.99	-	45.41	0.00	3,645.58
MW-7	09/14/99	3,690.99	-	46.52	0.00	3,644.47
MW-7	12/13/99	3,690.99	-	46.57	0.00	3,644.42
MW-8	03/10/99	3,691.56	-	46.60	0.00	3,644.96
MW-8	05/20/99	3,691.56	-	46.17	0.00	3,645.39
MW-8	09/14/99	3,691.56	-	47.08	0.00	3,644.48
MW-8	12/13/99	3,691.56	-	47.08	0.00	3,644.48
MW-9	03/10/99	3,689.81	-	45.39	0.00	3,644.42
MW-9	05/20/99	3,689.81	-	44.44	0.00	3,645.37
MW-9	09/14/99	3,689.81	-	45.39	0.00	3,644.42
MW-9	12/13/99	3,689.81	-	45.54	0.00	3,644.27
MW-11	03/10/99	3,688.62	-	44.29	0.00	3,644.33
MW-11	05/20/99	3,688.62	-	44.02	0.00	3,644.60
MW-11	09/14/99	3,688.62	-	44.53	0.00	3,644.09
MW-11	12/13/99	3,688.62	-	44.67	0.00	3,643.95
MW-12	03/10/99	3,688.67	-	44.29	0.00	3,644.38
MW-12	05/20/99	3,688.67	-	44.01	0.00	3,644.66
MW-12	09/14/99	3,688.67	-	44.55	0.00	3,644.12
MW-12	12/13/99	3,688.67	-	44.70	0.00	3,643.97

**TABLE 2**  
**GROUND WATER CHEMISTRY**  
**TNM 95-10, SAUNDERS**  
**LEA CO., NM**  
**ETGI PROJECT # EOT1015C**

SAMPLE	SAMPLE DATE	BENZENE (mg/L)	TOLUENE (mg/L)	ETHYLBENZENE (mg/L)	mp-XYLENE (mg/L)	o-XYLENE (mg/L)	GRO C6-C10 (mg/L)	DRO >C10-C28 (mg/L)
MW-1	03/10/99	<0.001	<0.001	<0.001	<0.002	<0.001		<0.2
MW-1	05/19/99	<0.001	<0.001	<0.001	<0.002	<0.001		0.9
MW-1	09/16/99	<0.001	<0.001	<0.001	<0.001	<0.001		<0.5
MW-1	12/13/99	<0.001	<0.001	<0.001	<0.001	<0.001	<0.5	<0.5
MW-2	03/10/99	<0.001	<0.001	<0.001	<0.002	<0.001		<0.2
MW-2	05/19/99	<0.001	<0.001	<0.001	<0.002	<0.001		<0.2
MW-2	09/16/99	<0.001	<0.001	<0.001	<0.001	<0.001		<0.5
MW-2	12/13/99	<0.001	<0.001	<0.001	<0.001	<0.001	<0.5	<0.5
MW-3	03/10/99	<0.001	<0.001	<0.001	<0.002	<0.001		<0.2
MW-3	05/19/99	<0.001	<0.001	<0.001	<0.002	<0.001		<0.2
MW-3	09/16/99	<0.001	<0.001	<0.001	<0.001	<0.001		<0.5
MW-3	12/13/99	<0.001	<0.001	<0.001	<0.001	<0.001	<0.5	<0.5
MW-4	03/10/99	0.006	<0.001	<0.001	<0.002	0.001		0.3
MW-4	05/19/99	0.043	0.003	0.005	0.007	0.016		0.5
MW-4	09/15/99	0.005	0.002	0.001	<0.001	0.001		<0.5
MW-4	12/13/99	0.008	0.002	0.003	0.002	0.001	<0.5	<0.5
MW-5	03/10/99	<0.001	<0.001	<0.001	<0.002	<0.001		0.2
MW-5	05/19/99	<0.001	<0.001	<0.001	<0.002	<0.001		0.6
MW-5	09/15/99	<0.001	<0.001	<0.001	<0.001	<0.001		<0.5
MW-5	12/13/99	<0.001	<0.001	<0.001	<0.001	<0.001	<0.5	<0.5
MW-6	03/10/99	<0.001	<0.001	<0.001	<0.002	<0.001		0.3
MW-6	05/20/99	<0.001	<0.001	<0.001	<0.002	<0.001		0.3
MW-6	09/15/99	<0.001	<0.001	<0.001	<0.001	<0.001		<0.5
MW-6	12/13/99	<0.001	<0.001	<0.001	<0.001	<0.001	<0.5	<0.5
MW-7	03/10/99	<0.001	<0.001	<0.001	<0.002	<0.001		<0.2
MW-7	05/20/99	<0.001	<0.001	<0.001	<0.002	<0.001		<0.2
MW-7	09/15/99	<0.001	<0.001	<0.001	<0.001	<0.001		<0.5
MW-7	12/13/99	<0.001	<0.001	<0.001	<0.001	<0.001	<0.5	<0.5
MW-8	03/10/99	<0.001	<0.001	<0.001	<0.002	<0.001		<0.2
MW-8	05/20/99	<0.001	<0.001	<0.001	<0.002	<0.001		<0.2
MW-8	09/15/99	<0.001	<0.001	<0.001	<0.001	<0.001		<0.5
MW-8	12/13/99	<0.001	<0.001	<0.001	<0.001	<0.001	<0.5	<0.5
MW-9	03/10/99	<0.001	<0.001	<0.001	<0.002	<0.001		<0.2
MW-9	05/19/99	<0.001	<0.001	<0.001	<0.002	<0.001		0.2
MW-9	09/15/99	<0.001	<0.001	<0.001	<0.001	<0.001		<0.5
MW-9	12/13/99	0.001	<0.001	<0.001	<0.001	<0.001	<0.5	<0.5
MW-11	03/10/99	<0.004	<0.004	<0.004	<0.008	<0.004		5.9
MW-11	05/19/99	0.007	<0.001	<0.001	<0.002	<0.001		7.4
MW-11	05/15/99	0.005	0.005	0.006	0.002	<0.001		0.8
MW-11	12/13/99	0.010	0.002	0.007	<0.001	0.003	0.5	20
MW-12	03/10/99	<0.004	<0.004	<0.004	<0.008	<0.004		84.0
MW-12	05/19/99	0.006	<0.001	0.001	<0.002	0.003		35.3
MW-12	09/15/99	0.002	0.004	0.005	<0.001	0.002		<0.5
MW-12	12/13/99	0.002	0.004	0.003	<0.001	0.002	<0.5	10

Methods: EPA SW 846-8021B, 5030 & TPH 8015DRO/GRO

**APPENDIX A**



11381 Meadowglen Suite L  
Houston, Texas 77082-2647  
(281) 589-0692 Fax: (281) 589-0695  
Houston - Dallas - San Antonio - Latin America

March 25, 1999

Project Manager: S. Grover/T. Nix  
KEI Consultants, Ltd.  
5309 Wurzbach Rd. Suite 100  
San Antonio, TX 78238

Reference: XENCO Report No.: -91028  
Project Name: Saunders  
Project ID: 610062-1-0  
Project Address: Lea County NM

Dear S. Grover/T. Nix:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with XENCO Chain of Custody Number -91028.r All results being reported to you apply only to the samples analyzed, properly identified with a Laboratory ID number. This letter documents the official transmission of the contents of the report and validates the information contained within.

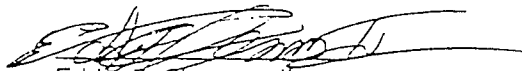
All the results for the quality control samples passed thorough examination. Also, all parameters for data reduction and validation checked satisfactorily. In view of this, we are able to release the analytical data for this report within acceptance criteria for accuracy, precision, completeness or properly flagged.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 3 years in our archives and after that time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in COC No. -91028r will be filed for 60 days, and after that time they will be properly disposed of without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

XENCO operates under the A2LA guidelines. Our Quality System meets ISO/IEC Guide 25 requirements which is strictly implemented and enforced through our standard QA/QC procedures.

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Sincerely,



Eddie L. Clemons, II  
QA/QC Manager

*Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.  
Certified and approved by numerous States and Agencies.  
A Small Business and Minority Status Company that delivers SERVICE and QUALITY!*



ANALYTICAL CHAIN : CUSTODY REPORT  
CHRONOLOGY OF SAMPLES

KEI Consultants, Ltd.

XENCO COC#: -91028

Project Name: Saunders

Project ID: 610062-1-0

Project Manager: S. Grover/T. Nix

Project Location: Lea County NM

Date Received in Lab: Mar 11, 1999 09:50 by LY

XENCO contact : Carlos Castro/Karen Olson

Date and Time

Field ID	Lab. ID	Method Name	Method ID	Units	Turn Around	Sample Collected	Addition Requested	Extraction	Analysis
1 MW-1	91028-001	BTEX	SW-846	ppm	7 days	Mar 10, 1999 10:45		Mar 12, 1999 by HL	Mar 12, 1999 12:23 by HL
2		TPH8015M-D	SW-846 8015 M	mg/L	7 days	Mar 10, 1999 10:45		Mar 23, 1999 by JLM	Mar 25, 1999 05:02 by CAG
3 MW-2	91028-002	BTEX	SW-846	ppm	7 days	Mar 10, 1999 09:10		Mar 12, 1999 by HL	Mar 12, 1999 13:16 by HL
4		TPH8015M-D	SW-846 8015 M	mg/L	7 days	Mar 10, 1999 09:10		Mar 23, 1999 by JLM	Mar 25, 1999 05:34 by CAG
5 MW-3	91028-003	BTEX	SW-846	ppm	7 days	Mar 10, 1999 09:55		Mar 12, 1999 by HL	Mar 12, 1999 13:34 by HL
6		TPH8015M-D	SW-846 8015 M	mg/L	7 days	Mar 10, 1999 09:55		Mar 23, 1999 by JLM	Mar 25, 1999 06:07 by CAG
7 MW-4	91028-004	BTEX	SW-846	ppm	7 days	Mar 10, 1999 14:30		Mar 12, 1999 by HL	Mar 12, 1999 13:52 by HL
8		TPH8015M-D	SW-846 8015 M	mg/L	7 days	Mar 10, 1999 14:30		Mar 23, 1999 by JLM	Mar 25, 1999 06:39 by CAG
9 MW-5	91028-005	BTEX	SW-846	ppm	7 days	Mar 10, 1999 14:45		Mar 12, 1999 by HL	Mar 12, 1999 14:10 by HL
10		TPH8015M-D	SW-846 8015 M	mg/L	7 days	Mar 10, 1999 14:45		Mar 23, 1999 by JLM	Mar 25, 1999 07:12 by CAG
11 MW-6	91028-006	BTEX	SW-846	ppm	7 days	Mar 10, 1999 14:50		Mar 12, 1999 by HL	Mar 12, 1999 14:28 by HL
12		TPH8015M-D	SW-846 8015 M	mg/L	7 days	Mar 10, 1999 14:50		Mar 23, 1999 by JLM	Mar 25, 1999 07:44 by CAG
13 MW-7	91028-007	BTEX	SW-846	ppm	7 days	Mar 10, 1999 15:00		Mar 12, 1999 by HL	Mar 12, 1999 14:45 by HL
14		TPH8015M-D	SW-846 8015 M	mg/L	7 days	Mar 10, 1999 15:00		Mar 23, 1999 by JLM	Mar 25, 1999 08:16 by CAG
15 MW-8	91028-008	BTEX	SW-846	ppm	7 days	Mar 10, 1999 15:10		Mar 12, 1999 by HL	Mar 12, 1999 15:03 by HL
16		TPH8015M-D	SW-846 8015 M	mg/L	7 days	Mar 10, 1999 15:10		Mar 23, 1999 by JLM	Mar 25, 1999 08:48 by CAG
17 MW-9	91028-009	BTEX	SW-846	ppm	7 days	Mar 10, 1999 13:45		Mar 12, 1999 by HL	Mar 12, 1999 15:21 by HL
18		TPH8015M-D	SW-846 8015 M	mg/L	7 days	Mar 10, 1999 13:45		Mar 23, 1999 by JLM	Mar 25, 1999 09:20 by CAG
19 MW-11	91028-010	BTEX	SW-846	ppm	7 days	Mar 10, 1999 14:15		Mar 12, 1999 by HL	Mar 12, 1999 15:38 by HL
20		TPH8015M-D	SW-846 8015 M	mg/L	7 days	Mar 10, 1999 14:15		Mar 23, 1999 by JLM	Mar 25, 1999 09:53 by CAG
21 MW-12	91028-011	BTEX	SW-846	ppm	7 days	Mar 10, 1999 14:00		Mar 12, 1999 by HL	Mar 12, 1999 16:14 by HL
22		TPH8015M-D	SW-846 8015 M	mg/L	7 days	Mar 10, 1999 14:00		Mar 23, 1999 by JLM	Mar 25, 1999 10:25 by CAG

KEI Consultants, Ltd.

Project ID: 610062-1-0  
Project Manager: S. Grover/T. Nix  
Project Location: Lea County NM

Project Name: Saunders

Date Received in Lab : Mar 11, 1999 09:50  
Date Report Faxed: Mar 26, 1999

XENCO contact : Carlos Castro/Karen Olson

Analysis Requested	Lab ID: Field ID: Depth: Matrix: Sampled:	91028 007 MW-7 Liquid 03/10/99 15:00	91028 008 MW-8 Liquid 03/10/99 15:10	91028 009 MW-9 Liquid 03/10/99 13:45	91028 010 MW-11 Liquid 03/10/99 14:15	91028 011 MW-12 Liquid 03/10/99 14:00
	Analyzed: Units:	03/25/99 mg/L	03/25/99 mg/L	03/25/99 mg/L	03/25/99 mg/L	03/25/99 mg/L
TPH-DRO (Diesel) EPA 8015 M		R.L. < 0.2 (0.2)	R.L. < 0.2 (0.2)	R.L. < 0.2 (0.2)	R.L. 5.9 (0.2)	R.L. 84.0 (2.0)
TPH - DRO (Diesel)						
BTEX						
EPA 8021B	Analyzed: Units:	03/12/99 ppm	03/12/99 ppm	03/12/99 ppm	03/12/99 ppm	03/12/99 ppm
Benzene		< 0.001 (0.001)	< 0.001 (0.001)	< 0.001 (0.001)	< 0.004 (0.004)	< 0.004 (0.004)
Toluene		< 0.001 (0.001)	< 0.001 (0.001)	< 0.001 (0.001)	< 0.004 (0.004)	< 0.004 (0.004)
Ethylbenzene		< 0.001 (0.001)	< 0.001 (0.001)	< 0.001 (0.001)	< 0.004 (0.004)	< 0.004 (0.004)
m,p-Xylene		< 0.002 (0.002)	< 0.002 (0.002)	< 0.002 (0.002)	< 0.008 (0.008)	< 0.008 (0.008)
o-Xylene		< 0.001 (0.001)	< 0.001 (0.001)	< 0.001 (0.001)	< 0.004 (0.004)	< 0.004 (0.004)
Total BTEX		N.D.	N.D.	N.D.	N.D.	N.D.

This report summary, and the entire report it represents, has been made for the exclusive and confidential use of KEI Consultants, Ltd.. The interpretations and results expressed through this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories, however, assumes no responsibility and makes no warranty to the end use of the data hereby presented.

  
Eddie L. Clemmons, II  
QA/QC Manager





CERTIFICATE OF ANALYSIS SUMMARY -91028

Project ID: 610062-1-0

Project Manager: S. Grover/T. Nix

Project Location: Lea County NM

KEI Consultants, Ltd.

Project Name: Saunders

Date Received in Lab : Mar 11, 1999 09:50

Date Report Faxed: Mar 26, 1999

XENCO contact : Carlos Castro/Karen Olson

Analysis Requested	Lab ID: Field ID: Depth: Matrix: Sampled:	91028 001	91028 002	91028 003	91028 004	91028 005	91028 006
		MW-1	MW-2	MW-3	MW-4	MW-5	MW-6
		Liquid	Liquid	Liquid	Liquid	Liquid	Liquid
		03/10/99 10:45	03/10/99 09:10	03/10/99 09:55	03/10/99 14:30	03/10/99 14:45	03/10/99 14:50
TPH-DRO (Diesel)	Analyzed:	R.L.	R.L.	R.L.	R.L.	R.L.	R.L.
EPA 8015 M	Units:	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
TPH - DRO (Diesel)		< 0.2 (0.2)	< 0.2 (0.2)	< 0.2 (0.2)	0.3 (0.2)	0.2 (0.2)	0.3 (0.2)
BTEX	Analyzed:	03/11/99	03/12/99	03/12/99	03/12/99	03/12/99	03/12/99
EPA 8021B	Units:	ppm	ppm	ppm	ppm	ppm	ppm
Benzene		< 0.001 (0.001)	< 0.001 (0.001)	< 0.001 (0.001)	0.006 (0.001)	< 0.001 (0.001)	< 0.001 (0.001)
Toluene		< 0.001 (0.001)	< 0.001 (0.001)	< 0.001 (0.001)	< 0.001 (0.001)	< 0.001 (0.001)	< 0.001 (0.001)
Ethylbenzene		< 0.001 (0.001)	< 0.001 (0.001)	< 0.001 (0.001)	< 0.001 (0.001)	< 0.001 (0.001)	< 0.001 (0.001)
m,p-Xylene		< 0.002 (0.002)	< 0.002 (0.002)	< 0.002 (0.002)	< 0.002 (0.002)	< 0.002 (0.002)	< 0.002 (0.002)
o-Xylene		< 0.001 (0.001)	< 0.001 (0.001)	< 0.001 (0.001)	0.001 (0.001)	< 0.001 (0.001)	< 0.001 (0.001)
Total BTEX		N.D.	N.D.	N.D.	0.007	N.D.	N.D.

This report summary, and the entire report it represents, has been made for the exclusive and confidential use of KEI Consultants, Ltd.. The interpretations and results expressed through this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories, however, assumes no responsibility and makes no warranty to the end use of the data hereby presented.

Eddie L. Clements, II  
QA/QC Manager



# Certificate Of Quality Control for Batch : 19A25B19

SW- 846 5030/3021B BTEX

Date Validated: Mar 15, 1999 12:30

Date Analyzed: Mar 12, 1999 11:30

Analyst: HL

Matrix: Liquid

## BLANK SPIKE / BLANK SPIKE DUPLICATE AND RECOVERY

Parameter	[A] Blank Result ppm	[B] Blank Spike Result ppm	[C] Blank Spike Duplicate Result ppm	[D] Blank Spike Amount ppm	[E] Detection Limit ppm	Blank Limit Relative Difference %	[F]		[G] QC	[H]		[I] Blank Spike Recovery Range %	[J] Qualifier
							Spike Relative Difference %	QC		QC	B.S.D. Recovery %		
Denzene	< 0.0010	0.1100	0.1040	0.1000	0.0010	20.0	5.6		109.9	103.9		65-135	
Toluene	< 0.0010	0.1040	0.0998	0.1000	0.0010	20.0	4.1		103.9	99.8		65-135	
Ethylbenzene	< 0.0010	0.1010	0.0979	0.1000	0.0010	20.0	3.1		100.9	97.9		65-135	
m,p-Xylene	< 0.0020	0.2110	0.2030	0.2000	0.0020	20.0	3.9		105.5	101.5		65-135	
o-Xylene	< 0.0010	0.1030	0.0993	0.1000	0.0010	20.0	3.7		102.9	99.3		65-135	

Spike Relative Difference [F] =  $200 \cdot (B-C)/(B+C)$

Blank Spike Recovery [G] =  $100 \cdot (B-A)/[D]$

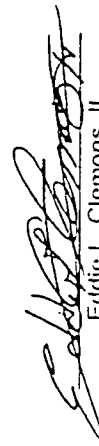
B.S.D. = Blank Spike Duplicate

B.S.D. Recovery [H] =  $100 \cdot (C-A)/[D]$

N.D. = Below detection limit or not detected

All results are based on MDL and validated for QC purposes

Houston Dallas San Antonio

  
Eddie L. Clemmons, II  
QA/QC Manager



Certificate of Quality Control for Batch : 19A25B19

SW- 846 5030/3021B BTX

Date Validated: Mar 15, 1999 12:30  
Date Analyzed: Mar 12, 1999 12:23

Analyst: HL  
Matrix: Liquid

MATRIX SPIKE / MATRIX SPIKE DUPLICATE AND RECOVERY

Q.C. Sample ID 91028- 001		[A] Sample Result  ppm	[B] Matrix Spike Result  ppm	[C] Matrix Spike Duplicate Result  ppm	[D] Matrix Spike Amount  ppm	[E]  Detection Limit  ppm	Matrix Limit  Relative Difference  %	[F]		[G]		[H]		[I]  Matrix Spike Recovery Range  %	[J]  Qualifier
								QC	Spike Relative Difference  %	QC	Matrix Spike Recovery  %	QC	M.S.D. Recovery  %		
Parameter		Benzene	< 0.0010	0.1370	0.1240	0.1000	0.0010	20.0	10.0	137.0	124.0	65-135	A		
		Toluene	< 0.0010	0.1290	0.1180	0.1000	0.0010	20.0	8.9	129.0	118.0	65-135			
		Ethylbenzene	< 0.0010	0.1270	0.1150	0.1000	0.0010	20.0	9.9	127.0	115.0	65-135			
		m,p-Xylene	< 0.0020	0.2630	0.2410	0.2000	0.0020	20.0	8.7	131.5	120.5	65-135			
		o-Xylene	< 0.0010	0.1290	0.1180	0.1000	0.0010	20.0	8.9	129.0	118.0	65-135			

(A) MS recovery exceeded lab control limits; MSD/LCS are within acceptance range  
Spike Relative Difference [F] =  $200 \cdot (B-C)/(B+C)$   
Matrix Spike Recovery [G] =  $100 \cdot (B-A)/[D]$   
M.S.D. = Matrix Spike Duplicate  
M.S.D. Recovery [H] =  $100 \cdot (C-A)/[D]$   
N.D. = Below detection limit or not detected  
All results are based on MDL and validated for QC purposes

Eddie L. Clemons, II  
QA/QC Manager

Certificate Of Quality Control for Batch : 19A42A22

**SW- 346 3015 M TPH- DRO (Diesel)**

Date Validated: Mar 26, 1999 17:00

Date Analyzed: Mar 25, 1999 03:25

Analyst: CAG

Matrix: Liquid

BLANK SPIKE / BLANK SPIKE DUPLICATE AND RECOVERY										
Parameter	[A] Blank Result mg/L	[B] Blank Spike Result mg/L	[C] Blank Spike Duplicate Result mg/L	[D] Blank Spike Amount mg/L	[E] Detection Limit mg/L	Blank Limit		[F] QC	[G]	
						Relative Difference %			Blank Spike Recovery %	[H] QC B.S.D. Recovery %
TPH - DRO (Diesel)	< 0.20	2.18	2.20	2.00	0.20	25.0		0.9	107.0	108.0
									Blank Spike Recovery Range %	70-125
										Qualifier

Spike Relative Difference [F] =  $200 \cdot (B-C)/(B+C)$

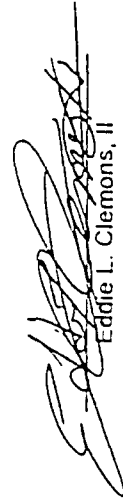
Blank Spike Recovery [G] =  $100 \cdot (B-A)/[D]$

B.S.D. = Blank Spike Duplicate

B.S.D. Recovery [H] =  $100 \cdot (C-A)/[D]$

N.D. = Below detection limit or not detected

All results are based on MDL and validated for QC purposes

  
Eddie L. Clemons, II  
QA/QC Manager



1130 Woodrow Wilson Suite 104, San Antonio, TX 78238 210-509-3334  
5309 Wurzbach Road, Suite 104, San Antonio, TX 78238 210-509-3334  
11078 Morrison Road, Suite D, Dallas, TX 75229 972-481-9999

ANALYSIS REQUEST  
ON-LINE Help & Technical Services at XENCO.com  
Company COC No: 273 Work Order No: 610062-1-0 Page 1 of 2

320

Company <b>KEI</b>		Phone <b>(210) 680-3767</b>		Lab Only: <b>91028-SA</b>		Lab Only Additions	
Project Name <b>SALLANDERS</b>		Previously done at XENCO		Project ID		Date	
Location <b>LEA COUNTY NM</b>		Project Director (PD) <b>M. HAWTHORNE</b>		Fax		Date	
Project Manager (PM) <b>S. G. ROVER / T. NIX</b>		Project Director (PD) <b>M. HAWTHORNE</b>		Fax		Date	
Fax Results to <b>PM and / or</b>		Project Director (PD) <b>M. HAWTHORNE</b>		Fax		Date	
Invoice to <b>Accounting</b>		Project Director (PD) <b>M. HAWTHORNE</b>		Fax		Date	
must have a P.O. Bill to:		Project Director (PD) <b>M. HAWTHORNE</b>		Fax		Date	
Quote No.		P.O. No.		Call for a P.O.		Date	
Special DIs (RR1 RR2 DW QAPP See Lab PM Call Proj. PM)		P.O. No.		Call for a P.O.		Date	
Specifications		P.O. No.		Call for a P.O.		Date	
Sampler Name <b>KEN DUTTON</b>		Signature <b>Ken Dutton</b>		Date		Date	
Sample ID	Sampling Date	Time	Depth	Matrix	Composite	Grob	# Containers
MW-1	10 MAR 99	1045	W	X	X	X	3
MW-2		0710					
MW-3		0955					
MW-4		1430					
MW-5		1445					
MW-6		1450					
MW-7		1500					
MW-8		1510					
MW-9		1345					
MW-11		1415					
Relinquished by (Initials and Signature)		Relinquished to (Initials and Signature)		Date & Time		Total Containers per COC: 33	
Relinquished by <b>KD Ken Dutton</b>		Relinquished to <b>bug WPS</b>		3/19/99/1545		Rush 14.5 Fax Due:	
Lab: <b>Laurie Gubler</b>		Lab: <b>Laurie Gubler</b>		3/11/99 9:50		Final Report Data Package Due Date:	
Preservatives - Various (V), HCl pH<2 (H), H2SO4 pH<2 (S), HNO3 pH<2 (N), NaOH+Abc Acid (NAA), ZnAc+NaOH (ZA), (Cool-4C) (CA), None (P)		Preservatives - Various (V), HCl pH<2 (H), H2SO4 pH<2 (S), HNO3 pH<2 (N), NaOH+Abc Acid (NAA), ZnAc+NaOH (ZA), (Cool-4C) (CA), None (P)		Rush Charges are Pre-App		Final Fax Due:	
SIZE: 4oz (4)		SIZE: 4oz (4)		TYPE: Class Amb (SA), Class Amb (GC), Plastic (P), Other (O)		A321 8590 42 3	

QUESTIONS?  
S. ROVER or T. NIX  
(210) 680-3767

[illegible]

Protonvalves - Various (V), HCl pH<2 (H), H<sub>2</sub>SO<sub>4</sub> pH<2 (S), HNO<sub>3</sub> pH<2 (N), NaOH+Asbc Acid (N<sup>AsA</sup>), ZnAc+NaOH (ZA), (Cool,<4C) (CA), Nono (N), Seo Label (SL), Other (O)

SIZE: 4oz (4', (8), 32oz (32), 40ml VOA (V), 1L (1), 500ml (.5), Tedlar Bag (B), Wipe (W), OI.

TYPE Glass Amb (G.A.), Glass Clear (GC), Plastic (P), Other (O)



- ☐ 11381 Meadowcreek, Suite L, Houston TX 77062 281-589-0692  
☒ 5809 Wurzbach Road, Suite 104, San Antonio, TX 78238 210-509-3334  
☐ 11078 Marlson Road, Suite D, Dallas TX 75229 972-481-9999

ANALYSIS REQUEST & CHAIN OF CUSTODY RECORD  
On-LINE Help & Technical Services at [XENCO.com](http://XENCO.com)

13020

Company COC No: 213 Work Order No: 61062-1-0 Page 1 of 2

Company <b>KEY</b>		Phone <b>(210) 688-3767</b>		Lab Only			
Project Name <b>PREVIOUSLY DONE AT XENCO</b>		Project ID <b>61062-1-0</b>		Lab Address			
Location <b>LIFE COUNTY NM</b>		Project Director (PD) <b>M. HILGARDME</b>		Date			
Project Manager (PM) <b>S. G. ROVER / T. NIX</b>		Fax <b>(210) 688-3767</b>		Rev by:			
Fax Results to <b>PM and / or</b>		Invoice to <b>Accounting</b> <input type="checkbox"/> Include Invoice with Final Report Attn PM <input type="checkbox"/> Invoice must have a P.O. Bill to:		From:			
Quote No. <b>61062-1-0</b>		P.O. No. <input type="checkbox"/> Call for a P.O.		Date			
Special Dis (RR) I RR II DW QAPP See Lab PM Call Proj. PM		Specifications		Rev by:			
Sampler Name <b>NIN DUTTON</b>		Signature <b>[Signature]</b>		From:			
Sample ID	Sampling Date	Time	Depth	Container	Container Size	Type	Preservatives
MW-1	10/28/99	14:15	1.5	X	3.5 L	EA	CH
MW-2		07:00					
MW-3		07:55					
MW-4		09:00					
MW-5		11:45					
MW-6		14:50					
MW-7		15:00					
MW-8		15:00					
MW-9		13:45					
MW-10		14:15					
Relinquished by (Initials and Signature)		Relinquished to (Initials and Signature)		Date & Time			Total Containers per COC: <b>13</b>
Rush Data Fax Due:		Rush Data Fax Due:		Rush Data Fax Due:			Final Fax Due:
Rush Report Data Package Due Date:		Rush Report Data Package Due Date:		Rush Report Data Package Due Date:			Final Report Data Package Due Date:
Rush Charges are Pre-Approved upon Requesting them. All Terms Apply		Rush Charges are Pre-Approved upon Requesting them. All Terms Apply		Rush Charges are Pre-Approved upon Requesting them. All Terms Apply			Final Report Data Package Due Date:

Preservative: Various (V), HCl pH=2 (S), HNO<sub>3</sub> pH=2 (N), NaOH/Acetic Acid (MAA), ZnAc/HNO<sub>3</sub> (ZA), (Cool-A/C) (C-4), None (N), See Label (SL), Other (O)  
SIZE: 4oz (4), 32oz (32), 40ml VOA (V), 1L (1), 500ml (5), Indicator Bag (IB), Whop (W), C  
TYPE: Glass Amb (GA), Glass Clear (GC), Plastic (P), Other (O)







11381 Meadowglen Suite L  
Houston, Texas 77082-2647  
(281) 589-0692 Fax: (281) 589-0695  
Houston - Dallas - San Antonio - Latin America

June 1, 1999

Project Manager: S.Grover/T.Nix  
KEI Consultants, Ltd.  
5309 Wurzbach Rd. Suite 100  
San Antonio, TX 78238

Reference: XENCO Report No.: -92059  
Project Name: EOTT  
Project ID: 910082-1-0  
Project Address: Lea County, NM

Dear S.Grover/T.Nix:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with XENCO Chain of Custody Number -92059./ All results being reported to you apply only to the samples analyzed, properly identified with a Laboratory ID number. This letter documents the official transmission of the contents of the report and validates the information contained within.

All the results for the quality control samples passed thorough examination. Also, all parameters for data reduction and validation checked satisfactorily. In view of this, we are able to release the analytical data for this report within acceptance criteria for accuracy, precision, completeness or properly flagged.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 3 years in our archives and after that time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in COC No. -92059/ will be filed for 60 days, and after that time they will be properly disposed of without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

XENCO operates under the A2LA guidelines. Our Quality System meets ISO/IEC Guide 25 requirements which is strictly implemented and enforced through our standard QA/QC procedures.

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Sincerely,

Eddie L. Clemons, II  
QA/QC Manager

*Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.*

*Certified and approved by numerous States and Agencies.*

*A Small Business and Minority Status Company that delivers SERVICE and QUALITY!*



# ANALYTICAL CHAIN OF CUSTODY REPORT CHRONOLOGY OF SAMPLES

KEI Consultants, Ltd.

XENCO COC#: -92059

Project Name: EOTT

Project ID: 910082-1-0

Project Manager: S.Grover/T.Nix

Project Location: Lea County, NM

Date Received in Lab: May 21, 1999 10:15 by SE

XENCO contact : Carlos Castro/Debbie Simmons

		Date and Time								
Field ID	Lab. ID	Method Name	Method ID	Units	Turn Around	Sample Collected	Addition Requested	Extraction	Analysis	
1 MW-6	92059-001	BTEX	SW-846	ppm	7 days	May 20, 1999 08:10		May 25, 1999 by HAL	May 26, 1999 00:41 by HIA	
2		TPH8015M-D	SW-846 8015 M	mg/L	7 days	May 20, 1999 08:10		May 24, 1999 by JO	May 24, 1999 20:40 by CG	
3 MW-7	92059-002	BTEX	SW-846	ppm	7 days	May 20, 1999 08:50		May 26, 1999 by HAL	May 28, 1999 00:58 by HA	
4		TPH8015M-D	SW-846 8015 M	mg/L	7 days	May 20, 1999 08:50		May 24, 1999 by JO	May 24, 1999 21:11 by CG	
5 MW-8	92059-003	BTEX	SW-846	ppm	7 days	May 20, 1999 09:30		May 25, 1999 by HAL	May 26, 1999 01:16 by HA	
6		TPH8015M-D	SW-846 8015 M	mg/L	7 days	May 20, 1999 09:30		May 24, 1999 by JO	May 24, 1999 21:41 by CG	

KEI Consultants, Ltd.

Project Name: EOTT

Date Received in Lab : May 20, 1999 10:00

Date Report Faxed: Jun 1, 1999

XENCO contact : Carlos Castro/Debbie Simmons

Project ID: 910082-1-0  
Project Manager: S.Grover/T.Nix  
Project Location: Lea County, NM

Analysis Requested

Lab ID: Field ID: Depth: Matrix: Sampled:	92037 001 MW-1 Liquid 05/19/99 11:20	92037 002 MW-2 Liquid 05/19/99 10:35	92037 003 MW-3 Liquid 05/19/99 09:50	92037 004 MW-4 Liquid 05/19/99 11:50	92037 005 MW-5 Liquid 05/19/99 15:15	92037 006 MW-11 Liquid 05/19/99 12:50
TPH-DRO (Diesel)	05/24/99 mg/L 0.9 (0.2)	05/24/99 mg/L < 0.2 (0.2)	05/24/99 mg/L < 0.2 (0.2)	05/24/99 mg/L 0.5 (0.2)	05/24/99 mg/L 0.6 (0.2)	05/24/99 mg/L 7.4 (0.2)
BTX	05/25/99 ppm R.L.	05/25/99 ppm R.L.	05/25/99 ppm R.L.	05/25/99 ppm R.L.	05/25/99 ppm R.L.	05/25/99 ppm R.L.
EPA 8021B	05/25/99 ppm < 0.001 (0.001)	05/25/99 ppm < 0.001 (0.001)	05/25/99 ppm < 0.001 (0.001)	05/25/99 ppm < 0.001 (0.001)	05/25/99 ppm < 0.001 (0.001)	05/25/99 ppm < 0.001 (0.001)
Benzene	05/25/99 ppm < 0.001 (0.001)	05/25/99 ppm < 0.001 (0.001)	05/25/99 ppm < 0.001 (0.001)	05/25/99 ppm < 0.001 (0.001)	05/25/99 ppm < 0.001 (0.001)	05/25/99 ppm < 0.001 (0.001)
Toluene	05/25/99 ppm < 0.001 (0.001)	05/25/99 ppm < 0.001 (0.001)	05/25/99 ppm < 0.001 (0.001)	05/25/99 ppm < 0.001 (0.001)	05/25/99 ppm < 0.001 (0.001)	05/25/99 ppm < 0.001 (0.001)
Ethylbenzene	05/25/99 ppm < 0.001 (0.001)	05/25/99 ppm < 0.001 (0.001)	05/25/99 ppm < 0.001 (0.001)	05/25/99 ppm < 0.001 (0.001)	05/25/99 ppm < 0.001 (0.001)	05/25/99 ppm < 0.001 (0.001)
m,p-Xylene	05/25/99 ppm < 0.002 (0.002)	05/25/99 ppm < 0.002 (0.002)	05/25/99 ppm < 0.002 (0.002)	05/25/99 ppm < 0.002 (0.002)	05/25/99 ppm < 0.002 (0.002)	05/25/99 ppm < 0.002 (0.002)
o-Xylene	05/25/99 ppm < 0.001 (0.001)	05/25/99 ppm < 0.001 (0.001)	05/25/99 ppm < 0.001 (0.001)	05/25/99 ppm < 0.001 (0.001)	05/25/99 ppm < 0.001 (0.001)	05/25/99 ppm < 0.001 (0.001)
Total BTX	N.D.	N.D.	N.D.	0.074	N.D.	0.007

This report summary, and the entire report it represents, has been made for the exclusive and confidential use of KEI Consultants, Ltd.. The interpretations and results expressed through this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories, however, assumes no responsibility and makes no warranty to the end use of the data hereby presented.

*Carlos Castro*  
Carlos Castro  
QA/QC Manager

Project ID: 910032-1-0

Project Manager: S.Grover/T.Nix

Project Location: Lea County, NM

KEI Consultants, Ltd.

Project Name: EOTT

Date Received in Lab : May 20, 1999 10:00

Date Report Faxed: Jun 1, 1999

XENCO contact : Carlos Castro/Debbie Simmons

*Analysis Requested*

Analysis Requested	Lab ID: Field ID: Depth: Matrix: Sampled:	92037 007 MW-12 Liquid 05/19/99 13:40	92037 008 MW-9 Liquid 05/19/99 14:30			
	Analyzed: Units:	R.L. mg/L	R.L. mg/L			
TPH-DRO (Diesel)						
EPA 8015 M						
TPH - DRO (Diesel)		35.3 (1.0)	0.2 (0.2)			
BTEX						
EPA 8021B						
Benzene	Analyzed: Units:	05/25/99 ppm	05/25/99 ppm			
Toluene		0.006 (0.001)	< 0.001 (0.001)			
Ethylbenzene		< 0.001 (0.001)	< 0.001 (0.001)			
m,p-Xylene		0.001 (0.001)	< 0.001 (0.001)			
o-Xylene		< 0.002 (0.002)	< 0.002 (0.002)			
Total BTEX		0.003 (0.001)	< 0.001 (0.001)			
		0.010	N.D.			

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Eddie L. Clements, II  
QA/QC Manager

KEI Consultants, Ltd.

Project Name: EOTT

Project ID: 910082-1-0

Project Manager: S.Grover/T.Nix

Project Location: Lea County, NM

Date Received in Lab : May 21, 1999 10:15


Date Report Faxed: Jun 1, 1999

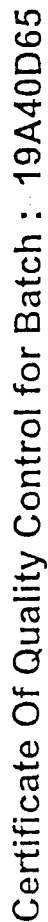
XENCO contact : Carlos Castro/Debbie Simmons

Analysis Requested	Lab ID:	92059 001	92059 002	92059 003
	Field ID:	MW-6	MW-7	MW-8
	Depth:			
	Matrix:	Liquid	Liquid	Liquid
	Sampled:	05/20/99 08:10	05/20/99 08:50	05/20/99 09:30
TPH-DRO (Diesel)	Analyzed:	05/24/99	05/24/99	05/24/99
EPA 8015 M	Units:	mg/L	mg/L	mg/L
TPH - DRO (Diesel)		0.3 (0.2)	< 0.2 (0.2)	< 0.2 (0.2)
BTEX	Analyzed:	05/26/99	05/26/99	05/26/99
EPA 8021B	Units:	ppm	ppm	ppm
Benzene		< 0.001 (0.001)	< 0.001 (0.001)	< 0.001 (0.001)
Toluene		< 0.001 (0.001)	< 0.001 (0.001)	< 0.001 (0.001)
Ethylbenzene		< 0.001 (0.001)	< 0.001 (0.001)	< 0.001 (0.001)
m,p-Xylene		< 0.002 (0.002)	< 0.002 (0.002)	< 0.002 (0.002)
o-Xylene		< 0.001 (0.001)	< 0.001 (0.001)	< 0.001 (0.001)
Total BTEX		N.D.	N.D.	N.D.

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The interpretations and results expressed through this analytical report represent the best judgment of XENCO Laboratories. Xenco Laboratories, however, assumes no responsibility and makes no warranty to the end use of the data hereby presented.

  
 Eddie L. Clemons, II  
 QA/QC Manager



**SW- 346 3015 NI T'PH- DR0 (Diesel)**

Date Validated: May 28, 1999 12:00

Analyst: CG

Date Analyzed: May 24, 1999 19:08

**Matrix:** Liquid

[illegible]

Spike Relative Difference  $[F] = 200 \cdot (B-C)/(B+C)$

Blank Spike Recovery  $[G] = 100 \cdot (B-A)/[D]$ 

B.S.D. = Blank Spike Duplicate

U.S.D. Recovery  $[I] = 100 \cdot (C-A)/[D]$  $N(f) = \text{below detection limit or not detected}$ 

All results are based on full and validated for QC purposes.

Thurston Baker, 1901-1902

Pago 1



# Certificate Of Quality Control for Batch : 19A25C27

SW- 346 5030/3021B BTX

Date Validated: May 26, 1999 13:00

Date Analyzed: May 25, 1999 18:48

Analyst: HA

Matrix: Liquid

## BLANK SPIKE / BLANK SPIKE DUPLICATE AND RECOVERY

Parameter	[A]	[B]	[C]	[D]	[E]	Blank Limit	[F]	[G]	[H]	[I]	[J]
	Blank Result  ppm	Blank Spike Result  ppm	Blank Spike Duplicate Result  ppm	Blank Spike Amount  ppm	Detection Limit  ppm	Relative Difference  %	QC	QC	QC	Blank Spike Recovery Range  %	Qualifier
							Spike Relative Difference  %	Blank Spike Recovery  %	B.S.D. Recovery  %		
Benzene	< 0.0010	0.0907	0.0945	0.1000	0.0010	20.0	4.1	90.7	94.5	65-135	
Toluene	< 0.0010	0.0946	0.0975	0.1000	0.0010	20.0	3.0	94.6	97.5	65-135	
Ethylbenzene	< 0.0010	0.0909	0.0918	0.1000	0.0010	20.0	1.0	90.9	91.8	65-135	
m,p-Xylene	< 0.0020	0.1842	0.1889	0.2000	0.0020	20.0	2.5	92.1	94.5	65-135	
o-Xylene	< 0.0010	0.0958	0.0994	0.1000	0.0010	20.0	3.7	95.8	99.4	65-135	

Spike Relative Difference [F] =  $200 \cdot (B-C) / (B+C)$

Blank Spike Recovery [G] =  $100 \cdot (B-A) / D$

B.S.D. = Blank Spike Duplicate

B.S.D. Recovery [I] =  $100 \cdot (C-A) / D$

HD = Below detection limit or not detected

All results are based on EBL and validated for QC purposes

Eddie L. Clemens, II

QA/QC Manager

Company		Lab Only		Lab Only Additions	
KFT		Q2059 -SA			
Project Name		TAT: 5h 12h 20h 24h 48h 3d 5d 7d 14d 21d Standard TAT is 10 Working Days unless otherwise agreed in writing. But often reported in 5-7 Working Days			
KFT					
Location		LEA COUNTY NM			
Project Manager (PM)		Project Director (PD)			
S. GROVER / T. NIX		M. HUMPHREY			
Fax Results to		Fax			
(210) 680-3763 / (512) 364-3556					
Invoice to		Accounting		Include Invoice with Final Report Attn PM	
must have a P.O. Bill to:					
Quote No.		P.O. No. 910082-1-0		for a P.O.	
Special Dis (RR1 RR2 DW QAPP See Lab PM Call Proj. PM)					
Specifications					
Sampler Name: Ken Dutton		Signature			
Sample ID	Sampling Date	Time	Depth	Matrix	Composite
MW-67	20 May 99 0810		24	GA	CH
MW-7	20 May 99 0850		24	GA	CH
MW-8	20 May 99 0930		24	GA	CH
Relinquished by (Initials and Signature)		Relinquished to (Initials and Signature)		Date & Time	
Ken Dutton KD		Ken Dutton KD		20 May 99 1600	
Lab: Stacy Engle		Lab: Stacy Engle		20 May 99 1615	
Protonallos - Venturis (V), HCT pH1-2 (H), H2SO4 pH1-2 (S), HNO3 pH1-2 (N), NaOH/Asbic Acid (NAA), Zn/NaOH (ZA), (Cool, <4C) (C4), Nono (N), See Label (SL), Other (O)		Size: 4oz (4), 8oz (8), 32oz (32), 40ml VOA (V), 1L (1), 500ml (-5), Tedlar Bag (B), Wipo (W), Other		TYPE Glass Amb (GA), Glass Clear (GC), Plastic (P), Other (O)	



# ENVIRONMENTAL LAB OF , INC.

"Don't Treat Your Soil Like Dirt!"

ENVIRONMENTAL TECHNOLOGY GROUP, INC.  
ATTN: MR. JESSE TAYLOR  
P.O. BOX 4845  
MIDLAND, TEXAS 79704  
FAX: 915-520-4310

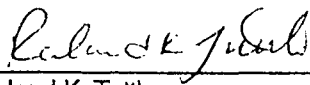
Sample Type: Water  
Sample Condition: Intact/Iced/HCl  
Project #: TNM 95-10  
Project Name: Saunders  
Project Location: Lea Co., N.M.

Sampling Date: See Below  
Receiving Date: 09/17/99  
Analysis Date: BTEX 9/17/99  
Analysis Date: DRO 9/27/99

ELT#	FIELD CODE/SAMPLE DATE	BENZENE (mg/L)	TOLUENE (mg/L)	ETHYLBENZENE (mg/L)	m,p-XYLENE (mg/L)	o-XYLENE (mg/L)	DRO >C10-C28 (mg/L)
20085	MW-1 9/16/99	<0.001	<0.001	<0.001	<0.001	<0.001	<0.5
20086	MW-2 9/16/99	<0.001	<0.001	<0.001	<0.001	<0.001	<0.5
20087	MW-3 9/16/99	<0.001	<0.001	<0.001	<0.001	<0.001	<0.5
20088	MW-4 9/15/99	0.005	0.002	0.001	<0.001	0.001	<0.5
20089	MW-5 9/15/99	<0.001	<0.001	<0.001	<0.001	<0.001	<0.5
20090	MW-6 9/15/99	<0.001	<0.001	<0.001	<0.001	<0.001	<0.5
20091	MW-7 9/15/99	<0.001	<0.001	<0.001	<0.001	<0.001	<0.5
20092	MW-8 9/15/99	<0.001	<0.001	<0.001	<0.001	<0.001	<0.5
20093	MW-9 9/15/99	<0.001	<0.001	<0.001	<0.001	<0.001	<0.5
20094	MW-11 9/15/99	0.005	0.005	0.006	0.002	<0.001	0.8
20095	MW-12 9/15/99	0.002	0.004	0.005	<0.001	0.002	<0.5

% IA	101	95	96	95	94	100
% EA	94	90	91	90	89	107
BLANK	<0.001	<0.001	<0.001	<0.001	<0.001	<0.5

METHODS: EPA SW 846-8020, 5030, 8015M DRO

  
Raland K. Tuttle

9-30-99  
Date

# GROUND WATER MONITORING AND SAMPLING DATA

JOB NO.: SANDERS - TNN 45-10

FIELD TECHNICIAN: KD

DATE: 14' Aug 79

WELL NO.	TIME WELL PURGED	TOTAL WELL DEPTH (feet)	DEPTH TO WATER (feet)	HEIGHT WATER COLUMN (feet)	WELL FACTOR 2"=16 4"=65 6"=1.5 4	CALC. WELL VOLUME (gal) (3x4)=5	TOTAL WATER PURGED (gal) 6	ESTIMATED NO. WELL VOLUMES PURGED 6/5	1979 TIME SAMPLE TAKEN DATE	DEPTH TO PSH (feet)	PSH THICKNESS (feet)	SAMPLE CHARACTERISTIC
1	1330	58.40	45.45	12.95	.65	8.41	25.25	3.0	1410 9-16		21.9	C 1549MS
CONDITION:		Cover:	Cap:	Casing:	Lock:	Manway/Pad:						
2	1420	58.20	43.91	14.29	.65	9.28	27.86	3.0	1500 9-16		6.77	O 133MV
CONDITION:		Cover:	Cap:	Casing:	Lock:	Manway/Pad:						
3	1510	58.05	43.51	14.54	.65	9.45	28.35	3.0	1605 9-16		20.2	C 622.7MS
CONDITION:		Cover:	Cap:	Casing:	Lock:	Manway/Pad:						
4	1345	55.10	43.48	11.62	.16	1.85	5.57	3.0	9-15 1355		7.01	O 131MV
CONDITION:		Cover:	Cap:	Casing:	Lock:	Manway/Pad:						
5	1545	56.78	46.27	10.51	.16	1.68	5.04	3.0	9-15 1600		6.94	O -24MV
CONDITION:		Cover:	Cap:	Casing:	Lock:	Manway/Pad:						
6	1615	60.65	46.81	13.84	.16	2.21	6.64	3.0	9-15 1630		21.2	C 1673MS
CONDITION:		Cover:	Cap:	Casing:	Lock:	Manway/Pad:						
7	1640	59.65	46.52	13.13	.16	2.10	6.30	3.0	9-15 1655		6.55	O 89MV
CONDITION:		Cover:	Cap:	Casing:	Lock:	Manway/Pad:						
8	1710	61.90	47.08	14.82	.16	2.37	7.11	3.0	9-15 1720		6.93	C 2354MS
CONDITION:		Cover:	Cap:	Casing:	Lock:	Manway/Pad:						
9	1515	57.95	45.39	12.56	.16	2.00	6.02	3.0	9-15 1530		19.7	O 556.4MS
CONDITION:		Cover:	Cap:	Casing:	Lock:	Manway/Pad:						
											21.1	C 1173MS
											6.76	O 92MV
Total Removed (118.14)								129.20 gnl.				

DRUMS ON SITE:

COMMENTS: COC: 019

CARBON DRUM TOWLER (yes/no)

DISCHARGE SAMPLE (time/date)

plf

1113gms/6x

BTLK - (8020)  
-DH - (BR08015)

August 2, 1996





# GROUND WATER MONITORING AND SAMPLING DATA

JOB NO.: JNM 95-10 (Sanderis)

FIELD TECHNICIAN: SC

DATE: 12-13-99

WELL NO.	TIME WELL PURGED	TOTAL WELL DEPTH (feet)	DEPTH TO WATER (feet)	HEIGHT WATER COLUMN (feet)	WELL FACTOR 2"=16 4"=65 6"=1.5 4	CALC. WELL VOLUME (gal) (3x4)=5	TOTAL WATER PURGED (gal) 6	ESTIMATED NO. WELL VOLUMES PURGED 6/5	1999 TIME SAMPLE TAKE/DATE	DEPTH TO PSI (feet)	PSH THICKNESS (feet)	SAMPLE CHARACTERISTIC
MW1	0905	58.39	45.63	12.76	.65	8.25	24.88	3.0	12-13 1354			
CONDITION:		Cover:	Cap:	Casing:	Lock:	Manway/Pad:						
MW2	0936	58.25	44.09	14.16	.66	9.20	27.61	3.0	12-13 1454			
CONDITION:		Cover:	Cap:	Casing:	Lock:	Manway/Pad:						
MW3	0955	58.06	43.65	14.41	.65	9.30	28.09	3.0	12-13 1503			
CONDITION:		Cover:	Cap:	Casing:	Lock:	Manway/Pad:						
MW4	1020	55.24	43.62	11.62	.16	1.85	5.57	3.0	12-13 1445			
CONDITION:		Cover:	Cap:	Casing:	Lock:	Manway/Pad:						
MW5	1130	56.84	46.40	10.44	.16	1.67	5.01	3.0	12-13 1339			
CONDITION:		Cover:	Cap:	Casing:	Lock:	Manway/Pad:						
MW6	1145	60.59	46.91	13.68	.16	2.18	6.56	3.0	12-13 1323			
CONDITION:		Cover:	Cap:	Casing:	Lock:	Manway/Pad:						
MW7	1208	59.68	46.57	13.11	.16	2.09	6.29	3.0	12-13 1311			
CONDITION:		Cover:	Cap:	Casing:	Lock:	Manway/Pad:						
MW8	1241	61.91	47.08	14.83	.16	2.37	7.11	3.0	12-13 1300			
CONDITION:		Cover:	Cap:	Casing:	Lock:	Manway/Pad:						
MW9	1110	57.65	45.54	12.11	.16	1.93	5.81	3.0	12-13 1406			
CONDITION:		Cover:	Cap:	Casing:	Lock:	Manway/Pad:						
Total Removed: _____ gal.												

DRUMS ON SITE: \_\_\_\_\_

COMMENTS: \_\_\_\_\_

CARBON DRUM TRAILER: (yes/no) \_\_\_\_\_

DISCHARGE SAMPLE (time/date): \_\_\_\_\_

pH: \_\_\_\_\_

JOB NO.: 770M 95-10

FIELD TECHNICIAN: SC

DATE: 12-13-99

WELL NO.	TIME WELL PURGED	TOTAL WELL DEPTH (feet)	DEPTH TO WATER (feet)	HEIGHT WATER COLUMN (feet)	WELL FACTOR 2"=16 4"=65 6"=1.5 4	CALC. WELL VOLUME (gal) (3x4)=5	TOTAL WATER PURGED (gal) G	ESTIMATED NO. WELL VOLUMES PURGED G/5	TIME SAMPLE TAKEN/DATE	DEPTH TO PSH (feet)	PSH THICKNESS (feet)	SAMPLE CHARACTERISTIC
MW10												
CONDITION:		Cover:	Cap:	Casing:	Lock:		Manway/Pad:					
MW11	1032	55.81	44.67	11.14	.16	1.78	5.34	3.0	12-13 1430			
CONDITION:		Cover:	Cap:	Casing:	Lock:		Manway/Pad:					
MW12	1052	56.47	44.70	11.77	.16	1.88	5.64	3.0	12-13 1414			
CONDITION:		Cover:	Cap:	Casing:	Lock:		Manway/Pad:					
CONDITION:		Cover:	Cap:	Casing:	Lock:		Manway/Pad:					
CONDITION:		Cover:	Cap:	Casing:	Lock:		Manway/Pad:					
CONDITION:		Cover:	Cap:	Casing:	Lock:		Manway/Pad:					
CONDITION:		Cover:	Cap:	Casing:	Lock:		Manway/Pad:					
CONDITION:		Cover:	Cap:	Casing:	Lock:		Manway/Pad:					
CONDITION:		Cover:	Cap:	Casing:	Lock:		Manway/Pad:					
CONDITION:		Cover:	Cap:	Casing:	Lock:		Manway/Pad:					
CONDITION:		Cover:	Cap:	Casing:	Lock:		Manway/Pad:					

Total Removed: \_\_\_\_\_ gal.

**DRUMS ON SITE:**

**COMMENTS:**

CARBON DRUM TRAILER: (yes/no)

DISCHARGE SAMPLE (time/date):

pl:

# ENVIRONMENTAL LAB OF , INC.

"Don't Treat Your Soil Like Dirt!"

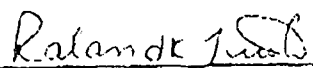
ENVIRONMENTAL TECHNOLOGY GROUP, INC.  
ATTN: MR. JESSE TAYLOR  
P.O. BOX 4845  
MIDLAND, TEXAS 79704  
FAX: 505-392-3760

Sample Type: Water  
Sample Condition: Intact/Iced/HCl  
Project #: EOT1015C  
Project Name: TNM 95-10  
Project Location: Monument, N.M.

Sampling Date: 12/13/99  
Receiving Date: 12/17/99  
Analysis Date: 12/18/99

ELTH	FIELD CODE	BENZENE mg/L	TOLUENE mg/L	ETHYLBENZENE mg/L	m,p-XYLENE mg/L	o-XYLENE mg/L
22405	MW-1	<0.001	<0.001	<0.001	<0.001	<0.001
22406	MW-2	<0.001	<0.001	<0.001	<0.001	<0.001
22407	MW-3	<0.001	<0.001	<0.001	<0.001	<0.001
22408	MW-4	0.008	0.002	0.003	0.002	0.001
22409	MW-5	<0.001	<0.001	<0.001	<0.001	<0.001
22410	MW-6	<0.001	<0.001	<0.001	<0.001	<0.001
22411	MW-7	<0.001	<0.001	<0.001	<0.001	<0.001
22412	MW-8	<0.001	<0.001	<0.001	<0.001	<0.001
22413	MW-9	0.001	<0.001	<0.001	<0.001	<0.001
22414	MW-11	0.010	0.002	0.007	<0.001	0.003
22415	MW-12	0.002	0.004	0.003	<0.001	0.002
% IA		104	100	101	102	101
% EA		91	89	89	90	89
BLANK		<0.001	<0.001	<0.001	<0.001	<0.001

METHODS: EPA SW 846-8021B.5030

  
Ralander K. Tuttle

12-21-99  
Date

# ENVIRONMENTAL LAB OF , INC.

"Don't Treat Your Soil Like Dirt!"

ENVIRONMENTAL TECHNOLOGY GROUP, INC.  
ATTN: MR. JESSE TAYLOR  
P.O. BOX 4845  
MIDLAND, TEXAS 79704  
FAX: 505-392-3760

Sample Type: Water  
Sample Condition: Intact/Fred/HCI  
Project #: EOT1015C  
Project Name: TNM 95-10  
Project Location: Monument, N.M.

Sampling Date: 12/13/99  
Receiving Date: 12/17/99  
Analysis Date: 12/18/99

ELT#	FIELD CODE	GRO C6-C10 mg/L	DRO >C10-C25 mg/L
22405	MW-1	<0.5	<0.5
22406	MW-2	<0.5	<0.5
22407	MW-3	<0.5	<0.5
22408	MW-4	<0.5	<0.5
22409	MW-5	<0.5	<0.5
22410	MW-6	<0.5	<0.5
22411	MW-7	<0.5	<0.5
22412	MW-8	<0.5	<0.5
22413	MW-9	<0.5	<0.5
22414	MW-11	0.5	20
22415	MW-12	<0.5	10
QUALITY CONTROL		502	508
TRUE VALUE		500	500
% PRECISION		100	102
BLANK		<0.5	<0.5

Methods: EPA SW 846-8015M GRO/DRO

*Raland K. Tuttle*  
Raland K. Tuttle

*12-21-99*  
Date



# ENVIRONMENTAL

## LAB OF , INC.

"Don't Treat Your Soil Like Dirt!"

ENVIRONMENTAL TECHNOLOGY GROUP, INC.  
ATTN: MR. JESSE TAYLOR  
P.O. BOX 4845  
MIDLAND, TEXAS 79704  
FAX: 505-392-3760

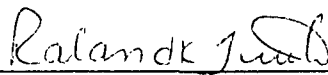
Sample Type: Water  
Sample Condition: Intact/Iced/HCl  
Project #: EOT1015C  
Project Name: TNM 95-10  
Project Location: Monument, N.M.

Sampling Date: 12/13/99  
Receiving Date: 12/17/99  
Analysis Date: 12/18/99

ELT#	FIELD CODE	BENZENE mg/L	TOLUENE mg/L	ETHYLBENZENE mg/L	m,p-XYLENE mg/L	o-XYLENE mg/L
22405	MW-1	<0.001	<0.001	<0.001	<0.001	<0.001
22406	MW-2	<0.001	<0.001	<0.001	<0.001	<0.001
22407	MW-3	<0.001	<0.001	<0.001	<0.001	<0.001
22408	MW-4	0.008	0.002	0.003	0.002	0.001
22409	MW-5	<0.001	<0.001	<0.001	<0.001	<0.001
22410	MW-6	<0.001	<0.001	<0.001	<0.001	<0.001
22411	MW-7	<0.001	<0.001	<0.001	<0.001	<0.001
22412	MW-8	<0.001	<0.001	<0.001	<0.001	<0.001
22413	MW-9	0.001	<0.001	<0.001	<0.001	<0.001
22414	MW-11	0.010	0.002	0.007	<0.001	0.003
22415	MW-12	0.002	0.004	0.003	<0.001	0.002

% IA	104	100	101	102	101
% EA	91	89	89	90	89
BLANK	<0.001	<0.001	<0.001	<0.001	<0.001

METHODS: EPA SW 846-8021B,5030

  
Ralander K. Tuttle

12-21-99  
Date

# ENVIRONMENTAL

## LAB OF , INC.

"Don't Treat Your Soil Like Dirt!"

ENVIRONMENTAL TECHNOLOGY GROUP, INC.  
ATTN: MR. JESSE TAYLOR  
P.O. BOX 4845  
MIDLAND, TEXAS 79704  
FAX: 505-392-3760

Sample Type: Water  
Sample Condition: Intact/Iced/HCl  
Project #: EOT1015C  
Project Name: TNM 95-10  
Project Location: Monument, N.M.

Sampling Date: 12/13/99  
Receiving Date: 12/17/99  
Analysis Date: 12/18/99

ELT#	FIELD CODE	GRO C6-C10	DRO >C10-C25
		mg/L	mg/L
22405	MW-1	<0.5	<0.5
22406	MW-2	<0.5	<0.5
22407	MW-3	<0.5	<0.5
22408	MW-4	<0.5	<0.5
22409	MW-5	<0.5	<0.5
22410	MW-6	<0.5	<0.5
22411	MW-7	<0.5	<0.5
22412	MW-8	<0.5	<0.5
22413	MW-9	<0.5	<0.5
22414	MW-11	0.5	20
22415	MW-12	<0.5	10
QUALITY CONTROL		502	508
TRUE VALUE		500	500
% PRECISION		100	102
BLANK		<0.5	<0.5

Methods: EPA SW 846-8015M GRO/DRO

Raland K. Tuttle  
Raland K. Tuttle

12-21-99  
Date



**SITE RESTORATION  
WORK PLAN**

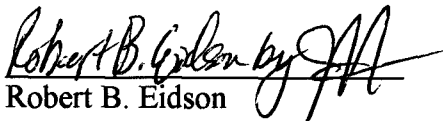
**FORMER C. J. SAUNDERS EXCAVATION SITE  
Lea County, New Mexico  
NW ¼ of the SE ¼ of Section 18, Township 19 South, Range 36 East**

Prepared For:  
**EOTT Energy, LLC**  
5805 East Highway 80  
Midland, Texas 79701

ETGI Project # EO 1241

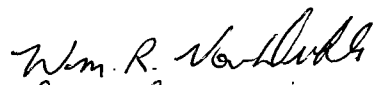
Prepared By:  
Environmental Technology Group, Inc.  
2540 W. Marland  
Hobbs, New Mexico 88240

**May 2003**

  
Robert B. Eidson  
Geologist / Senior Project Manager

  
Jerry D. Nickell  
Managing Principle

5-20-03

  
Director, Environmental  
EOTT Energy LLC

REC'D  
Bayer  
5/20/03

## **1.0 INTRODUCTION AND SITE BACKGROUND**

The site is located approximately 7.5 miles southwest of the town of Hobbs, New Mexico in the NW ¼ of the SE ¼ of Section 18, Township 19 South, Range 36 East. For reference, a site location map is provided as Figure 1. The contents of this Work Plan are intended to adhere to requirements promulgated in Rule 19 New Mexico Administrative Code (NMAC).

In February 1995 a crude oil release occurred from a pipeline owned and operated by the Texas-New Mexico Pipeline Company (TNMPL). Response actions included excavation of impacted soil to a depth of approximately six feet below ground surface (bgs). In June 1995, subcontractors conducting additional site excavation actions encountered a closed production pit associated with the C.J. Saunders Federal Tank Battery No. 1. The pit located immediately north of the TNMPL leak site was over excavated to a depth of approximately 55 feet.

Following the completion of soil remediation and ground water monitoring activities the site was closed. Closure was granted following submittal of the Final Closure Report, submitted by Larson and Associates, Inc., dated February 27, 2001. The New Mexico Oil Conservation Division (NMOCD) acknowledged final closure of the site on July 11, 2001. Final Closure Report dated February 27, 2001 included as Appendix A. NMOCD closure approval letter included as Appendix B.

On May 8, 2003, Environmental Technology Group, Inc. (ETGI), on behalf of EOTT Energy, LLC (EOTT), commenced excavation of the southeastern portion of the former excavation area in an effort to recover documents believed to be buried at the site prior to EOTT's involvement and/or ownership of the TNMLP pipeline system. Document Recovery Work Plan included as Appendix C.

## **2.0 SCOPE OF WORK**

Upon completion of excavation activities ETGI will restore the site in compliance with conditions as outlined in the above referenced closure report (Larson and Associates, Inc., February 27, 2001), and as described in the following paragraphs.

Following completion of excavation activities, ETGI will back fill the excavation area with the soil removed during the document recovery activities. The soil will be placed in 2 to 4 foot lifts and machine compacted to approximately 2 feet bgs. Following completion of backfilling and machine compacting a suitable clay cap will be placed over the backfilled excavation, thus replacing the original clay cap placed as a result of the 2001 closure. During placement, the clay cap will be contoured to provide for adequate storm water run off, suitable or indicative of the natural topography and drainage of the area. The clay will be acquired from a location nearest the site, and will be compacted to a uniform thickness of approximately 2 feet thick. The cap will be compacted and tested by American Society Testing Methods (ASTM) D-2922 and D-698 for field density, moisture content and standard proctor density to ensure compliance with compaction to a minimum of a 95 percent proctor density.

**APPENDIX A**

**FINAL CLOSURE REPORT  
C.J. SAUNDERS SITE  
LARSON AND ASSOCIATES, INC.  
FEBRUARY 27, 2001**

Following completion of laboratory testing of clay cap materials, approximately 12 to 18 inches of clean topsoil will be spread on top of the cap, in order to promote re-vegetation of native grasses and/or plants.

### **3.0 CLOSING**

Upon completion of above referenced activities, ETGI on behalf of EOTT will submit a final closure report to the NMOCD for review and approval. The final closure report will be submitted to NMOCD within 45 days of cessation of field activities.

### **4.0 REFERENCES**

Guidelines for Remediation of Leaks, Spills and Releases; August 1993 (NMOCD, 1993);

Title 19; New Mexico Administrative Code 15.A.19;

Final Closure Report, C.J. Saunders Excavation, Larson & Associates, February 27, 2001;  
and

Ground-Water Report 6, Geology and Ground-Water Conditions in Southern Lea County, New Mexico; Alexander Nicholson, Jr. and Alfred Clebsch Jr.; United States Geological Survey, New Mexico State Bureau of Mines and Mineral Resources, 1961.

# Larson & Associates, Inc.

Environmental Consultants

February 27, 2001

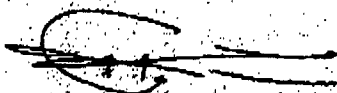
Mr. William C. Olson  
New Mexico Oil Conservation Division  
Environmental Bureau  
1220 South St. Francis Drive  
Santa Fe, New Mexico 87505

**Re: Final Closure Report, C. J. Saunders Excavation, Unit Letter J, Section 18,  
Township 19 South, Range 36 East, Lea County, New Mexico**

Dear Mr. Olson:

Please find the enclosed report detailing closure of an excavation at the C. J. Saunders Lease located in Unit Letter J, Section 18, Township 19 South, Range 36 East, Lea County, New Mexico. The report is submitted in accordance with the work plan ("Response to Work Plan for Saunders Excavation Site, Unit Letter "J", Section 18, Township 19 South, Range 37 East, Lea County, New Mexico, April 24, 2000" and "Laboratory Analysis of Soil Samples from Stockpiles and Excavation, C.J. Saunders Site, Unit Letter "J", Section 18, Township 19 South, Range 37 East, Lea County, New Mexico, May 8, 2000") approved by the NMOCD on May 10, 2000. Please call Mr. Rodney Bailey at (915) 688-2971 or myself at (915) 687-0901 if you have questions.

Sincerely,  
*Larson & Associates, Inc.*



Mark J. Larson, CPG, CGWP  
President

Encl.

cc: Mr. Rodney Bailey - Texaco  
Mr. Robert Patterson - Texaco  
Mr. Wayne Brunette - EOTT  
Mr. Chris Williams - District I



**FINAL CLOSURE REPORT  
C. J. SAUNDERS EXCAVATION  
LEA COUNTY, NEW MEXICO**

**Prepared for:**

**Texaco Exploration and Production Inc.  
500 North Loraine  
Midland, Texas**

**and**

**EOTT Energy Pipeline Limited Partnership  
5805 East Highway 80  
Midland, Texas**

**Prepared by:**

**Larson & Associates, Inc.  
2501 Learmont Drive  
Midland, Texas**

**February 26, 2001**

May 19 03 05:27p

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## Final Closure Report – C. J. Saunders Excavation Site Lea County, New Mexico

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### 1.0 INTRODUCTION

Larson and Associates, Inc. (LA) was retained to prepare a final report for closure of an excavation (Site) at the State of New Mexico C. J. Saunders Lease, located in unit letter "J", Section 18, Township 19 South, Range 36 East, Lea County, New Mexico. Figure 1 presents a Site location and topographic map.

### 2.0 BACKGROUND

In February 1995, a crude oil spill occurred from a pipeline owned by Texas-New Mexico Pipeline Company (TNMPL). Response actions were initiated by TNMPL, and included excavating soil from the spill area to about 6 feet below ground surface (BGS). The soil was stockpiled adjacent to the excavation.

In June 1995, the New Mexico Oil Conservation Division (NMOCD) inspected the Site, and required TNMPL to excavate additional soil from the spill area to reduce concentrations of total petroleum hydrocarbons (TPH). During the excavating process, Allstate Services, a contractor retained by TNMPL, encountered a closed emergency pit previously associated with the C. J. Saunders Federal Tank Battery #1, located north of the Site. Nine soil borings (SB-1 through SB-9) were drilled under Allstate's supervision, and soil samples were collected for laboratory analysis to delineate the boundaries of the spill and former pit. One monitoring well (MW-1) was drilled north (upgradient), and two wells (MW-2 and MW-3) were drilled south (downgradient) of the Site to assess groundwater conditions. The wells were drilled between 55 to 57 feet BGS, and constructed with 4-inch diameter schedule 40 PVC threaded screen and riser.

Texaco previously operated the C. J. Saunders Federal Tank Battery #1, and submitted a sundry notice (Form C-103) to the NMOCD on August 7, 1995, providing notification of its intent to perform remedial work at the Site. Texaco proposed to excavate the hydrocarbon-affected soil from the pit, and blend clean soil to achieve a total petroleum hydrocarbon (TPH) remediation level of 1,000 milligrams per kilogram (mg/kg). The estimated pit dimensions were about 60 x 150 feet. The impact was estimated to extend

**Final Closure Report – C. J. Saunders Excavation Site  
Lea County, New Mexico**

to approximately 36 feet BGS, based on laboratory analysis of soil samples collected from the borings.

Between August 14 and October 3, 1995, Environmental Spill Control, Inc. (ESCI) excavated the pit. Dense sandstone was encountered at approximately 28 feet BGS, which prevented further digging. The excavation measured approximately 110 x 140 feet. On October 3, 1995, ESCI prepared a work plan, and proposed to collect soil samples from 5 to 7 borings drilled to about 7 to 10 feet below the bottom of the excavation to delineate the vertical limit of hydrocarbons remaining in soil below the dense sandstone. ESCI proposed to convert one boring to a temporary monitoring well, and install one permanent monitoring well (MW-4) immediately south (downgradient) of the excavation. The work plan was approved by the NMOCD on October 6, 1995.

On October 4, 1995, monitoring well MW-4 was drilled to about 53 feet BGS. The well was completed with 2-inch diameter schedule 40 PVC threaded screen and riser. ESCI installed eight borings (BH-1 through BH-8) in the bottom of the excavation on December 7, 1995, and collected soil samples for laboratory analysis. ESCI submitted a letter to the NMOCD on December 8, 1995, and stated that hydrocarbon was observed in soil samples from seven of eight borings drilled in the bottom of the excavation, and water was encountered at approximately 9 feet below the excavation. ESCI also observed groundwater and PSH in a test hole it dug to about twelve feet near the north end of the excavation. In its letter, ESCI proposed to install 5 additional monitoring wells around the excavation to monitor groundwater quality.

Monitoring wells MW-5 through MW-12 were drilled between December 9, 1995 and January 25, 1996, to depths ranging from about 54 to 95 feet BGS. Monitoring well MW-10 was drilled to about 95 feet BGS. The boring was plugged from 55 to 95 feet BGS with bentonite prior to installing the well. The well was later plugged and abandoned. All wells were constructed with 2-inch diameter schedule 40 PVC threaded screen and riser. Figure 2 presents a Site drawing showing locations of the pipeline spill, emergency pit, monitoring wells and soil piles.

**Final Closure Report – C. J. Saunders Excavation Site  
Lea County, New Mexico**

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In December 1995, TNMPL deepened the excavation to about 36 feet BGS, and installed a recovery trench in the bottom of the excavation to recover PSH observed on the groundwater (January 1996). Approximately 15.72 barrels (bbls) of PSH, and 375.88 bbls of water were removed from the trench between January and May 1996.

In May 1996, TNMPL retained KEI consultants to collect groundwater samples from the monitoring wells (June and July 1996). KEI also installed eleven temporary monitoring wells (TMW-1 through TMW-11) in the bottom of the excavation (October 1996) to replace the recovery trench. KEI initiated quarterly groundwater monitoring and monthly PSH gauging of monitoring wells in October 1996, and compiled field and laboratory analyses of soil and groundwater samples collected from the previous investigations, including geologic logs and monitoring well completion diagrams, in a report titled, "Crude Oil Pipeline Release Response Summary Report, Saunders Excavation/TNM-10-95, Lea County, New Mexico, November 4, 1996", incorporated by reference. The report included data collected from borings and monitoring wells installed the Site between June 1995 and October 1996.

On August 26, 1998, the NMOCD requested TNMPL to submit a work plan to remediate hydrocarbon-affected below the bottom of the excavation (below approximately 36 feet BGS). KEI prepared a work plan (September 10, 1998), and proposed to excavate soil from the bottom the excavation to the top-of-groundwater (approximately 42 feet BGS). The work plan was approved by the NMOCD on January 26, 1999, and work began shortly thereafter. The excavated soil was replaced with clean soil to a depth about 36 feet BGS.

In early 1999 EOTT ENERGY Pipeline Limited Partnership (EOTT) acquired TNMPL, and submitted a letter to the NMOCD requesting closure of the Site based on results of soil and water samples collected from the bottom and sides of the excavation following removal of the additional soil (May 17, 1999). The NMOCD denied the closure request based on an inspection of the Site that noted hydrocarbon stained soil in the southwest



**Final Closure Report – C. J. Saunders Excavation Site  
Lea County, New Mexico**

corner of the excavation (June 17, 2000). On September 2, 1999, the NMOCD requested additional information from EOTT, including past and present groundwater quality monitoring and laboratory reports of all samples not previously submitted to the NMOCD, and a drawing showing locations of the spill, former pit, direction and magnitude of the hydraulic gradient for the Site.

On January 25, 2000, the NMOCD met with representatives of Texaco, EOTT, consultants, and personnel of the State of New Mexico Land Office to discuss options for closing the excavation. The meeting was held at the Site, and the NMOCD agreed that removing residual hydrocarbon stained soil near the southwest corner of the excavation was not practical. The NMOCD requested that the companies install two additional monitoring wells near the west and southwest edges of the excavation to determine how far the residual impact extended beyond the wall the excavation, and to assess PSH and groundwater quality. The NMOCD was receptive to filling the excavation with soil from the stockpiles as long as the soil was blended to achieve an acceptable TPH remediation level. The meeting concluded with Texaco and EOTT agreeing to jointly prepare and submit a work plan to the NMOCD agreed remedial options.

Texaco prepared a draft work plan that was reviewed and approved by EOTT. The work plan was submitted to the NMOCD on February 9, 2000. In a letter dated March 28, 2000, the NMOCD requested additional information, including justification for the proposed TPH remediation level for the blended soil, details for construction of the clay cap and monitoring wells, sampling and analysis procedures to verify attainment of the soil remediation level, protocols for monitoring well development, and groundwater sampling and analytical procedures. A response was prepared and submitted to the NMOCD on April 24, 2000 ("Response to Work Plan for Saunders Excavation Site, Unit Letter "J", Section 18, Township 19 South, Range 37 East, Lea County, New Mexico"). The response included procedures to justify blending of the soil piles to achieve a TPH remediation level of 3,000 to 5,000 mg/kg.

**Final Closure Report – C. J. Saunders Excavation Site  
Lea County, New Mexico**

On April 13, 2000, composite soil samples were collected from the soil piles and discrete samples were collected from the bottom of the excavation. The samples were delivered under chain-of-custody control to Trace Analysis, Inc. (Trace), and analyzed for TPH, including gasoline range organics (GRO) and diesel range organics (DRO), using EPA method SW-846-8015. Samples Comp. #2 and #11 from soil piles #2 and #11, respectively, were also analyzed for benzene, toluene, ethylbenzene and xylene (collectively referred to as BTEX) since headspace readings exceeded 100 parts per million (ppm), as allowed by the NMOCD. The sample recording the highest GRO and DRO measurements (Sample Comp. #4) was tested using the synthetic precipitation leaching procedure (SPLP) to determine if hydrocarbons in the soil sample were mobile. The SPLP procedure was performed by Trace using EPA test method SW-846-1312.

The laboratory did not report benzene above the test method detection limit of 0.05 mg/kg in samples Comp. # 2 and #11, and was well below the NMOCD Recommended Remediation Action Level (RRAL) of 10 mg/kg. Total BTEX was reported at 1.624 mg/kg (Comp. #2), and 0.742 mg/kg (Comp. #11), and was also below the RRAL of 50 mg/kg. Sample Comp. #4 reported the highest TPH concentration (2527 mg/kg), and was tested using the SPLP method, and analyzed for GRO and DRO using method 8015. The GRO or DRO concentrations were below the test method detection limits of 5 mg/kg. The results were submitted to the NMOCD in a letter dated May 8, 2000 ("Laboratory Analysis of Soil Samples from Stockpiles and Excavation, C.J. Saunders Site, Unit Letter "J", Section 18, Township 19 South, Range 37 East, Lea County, New Mexico"). The work plan was approved by the NMOCD on May 10, 2000. Appendix A presents correspondence from the NMOCD.

### **3.0 EXCAVATION CLOSURE ACTIVITIES**

#### **3.1 Buffer Soil Placement**

A layer (buffer) of clean soil, approximately 2 feet thick, was placed over clean soil in the bottom of the excavation that replaced soil previously excavated to groundwater. Environmental Plus, Inc. (EPI), located in Eunice, New Mexico, was retained to close the

**Final Closure Report – C. J. Saunders Excavation Site  
Lea County, New Mexico**

excavation. Closure activities commenced on May 30, 2000. EPI installed grade stakes in the bottom of the excavation to control placement of the clean soil.

The depth to the top of the buffer soil was recorded near well locations MW-4 and MW-12 after the clean soil was placed in the excavation and compacted. The top of the clean soil was recorded at 35 and 38 feet BGS at well locations MW-4 and MW-12, respectively. The measurements were used to construct cross-sections for the excavation following closure. Figure 3 presents a north to south cross-section of the excavation. Figure 4 presents a west to east cross-section of the excavation. Figure 2 presents a Site drawing and cross-section locations. Appendix B (pages 1-2) presents photographs showing placement of the clean soil in the bottom of the excavation.

### **3.2 Soil Blending**

Excavated soil had been piled adjacent to the west, south and east sides of the excavation, as shown on Figure 2. The soil was moved to an area near the south side of the Site in 2,500 to 3,000 cubic yard lifts for blending. The blending area measured approximately 100 x 350 feet, and had a calculated capacity of 2500 to 3000 cubic yards, assuming a lift thickness of approximately 24-inches. Grade stakes were placed around the perimeter of the blending area to ensure placement of soil to a uniform depth.

Soil from pile #8 (Comp. #8) was clean overburden removed during final excavation of the Site, and was spread across the blending area to provide a buffer between the hydrocarbon affected (blended) soil and native soil. The remaining piles of soil were moved to the blending area in 2,500 to 3,000 cubic yard lifts, and spread using two front-end loaders. Grab samples were collected from 0 to 12 inches at six (6) randomly selected locations following soil blended. The samples were composited in a sample jar, labeled, chilled in an ice chest, and hand-delivered under chain-of-custody control to Cardinal Laboratories, Inc., located in Hobbs, New Mexico. One composite sample was collected for each lift (cell) of blended soil. Forty composite samples were collected during the soil blending activities, and analyzed for GRO and DRO using method SW-846-8015. A portion of each composite sample was also retained in a plastic sample bag,

**Final Closure Report – C. J. Saunders Excavation Site  
Lea County, New Mexico**

and analyzed for headspace vapors using a PID in accordance with NMOCD guidelines. The PID was calibrated with a 100 parts per million (ppm) isobutylene standard, and measured the concentration of ionizable hydrocarbon in the headspace. No headspace readings exceeded 100 ppm, therefore, BTEX analysis was not required as allowed by the NMOCD. Table 1 presents a summary of the PID and TPH analysis of the blended soil, and calibration readings. Appendix C presents the laboratory reports.

Soil from the first lift (Cell #1), blended on June 6, 2000, recorded a PID reading of 6.5 ppm, and TPH concentration 553 mg/kg (sum of GRO and DRO). The soil was treated with an application of liquid fertilizer prior to placement in the excavation. During a telephone call on June 8, 2000, the NMOCD agreed that the blended soil would only require an application of fertilizer if the TPH concentrations were greater than 2000 mg/kg. The NMOCD also allowed the companies to apply Micro-Blaze, a commercially available bioremediation compound, to the blended soils instead of fertilizer. Micro-Blaze is a liquid nutrient additive, mixed with water at the manufacture's prescribed ratio, applied to the soil using a portable sprayer to promote degradation of the hydrocarbons by native soil microbes. The telephone call was documented in a letter to the NMOCD on June 12, 2000. Appendix D presents correspondence to the NMOCD. Appendix E presents information for the Micro-Blaze product.

Six (6) composite samples (#17, #20, #22, #35, #37 and #38) reported TPH concentrations above 2000 mg/kg that required treatment with Micro-Blaze. The TPH concentrations ranged from 2010 mg/kg (#17) to 3775 mg/kg (#35). The soil from lift #35 was placed near the top of the excavation. Sample #40 consisted of the clean buffer soil placed under the blending area, and recorded a TPH concentration of 174 mg/kg. EOTT also obtained approval from the NMOCD to place approximately 900 cubic yards of rock (caliche) into the excavation from a nearby location. No additional soil was needed to fill the excavation.

Piper Surveying Company (Piper) was contracted to survey the perimeter of the excavation, and monitoring well locations. The survey was performed on June 20, 2000,

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prior to filling the excavation, to document the location of the excavation, and provide controls for installing the additional monitoring wells that were required by the NMOCD. Appendix B (pages 3-11) presents photographs of the soil blending and nutrient application, excavation filling process.

**3.3 Clay Cap and Topsoil Placement**

A cap consisting of compacted red clay was placed over the blended soil after the excavation was filled. The clay was acquired from a borrow area located near the Site, and was compacted to a uniform thickness of approximately 2 feet. The cap was contoured to the surrounding topography to promote storm water runoff.

John West Engineering (West) was contracted to perform field density tests to ensure compaction to 95% proctor density. Field density tests were performed at ten locations in accordance with method ASTM D-2922 on September 28, 2000. The density tests were performed at a depth of approximately 12 inches, and ranged from 95.27% to 100.5% standard proctor density. West also collected a sample of the clay, which was analyzed for standard proctor density by Pettigrew and Associates using method ASTM D-698. Figure 2 presents the density test locations. Table 2 presents a summary of the field density tests results. Appendix F presents the field and laboratory density test data.

The cap was covered with approximately 18 inches of clean soil, and contoured to the natural drainage (south and southeast). The Site will be seeded to New Mexico State Land Office requirements. Appendix B (pages 12-13) presents photographs showing placement of the clay cap, topsoil and final grade.

**3.4 Monitoring Well Installations and Soil Samples**

Monitoring wells MW-13 and MW-14 were installed under LA supervision on December 4, 2000. The wells were installed at locations shown on Figure 2 and in accordance with the work plan. Scarborough Drilling, Inc., drilled the wells to depths of 60 feet BGS using a truck-mounted air rotary drilling rig, and collected soil samples at depths of 10, 20, 30, 35, 40, and 43 feet BGS using a 1-foot long core (jam tube) sampler. The

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samples were placed in clean sample containers, labeled, chilled in an ice chest and delivered under chain-of-custody control to Trace Analysis, Inc. The samples were analyzed for GRO and DRO using method SW-846-8015. The samples from 43 feet BGS were not analyzed since groundwater stabilized in wells MW-13 and MW-14 at 43.92 and 42.67 feet BGS, respectively. A portion of each sample was also retained in a plastic sample bag and analyzed using a PID. The TPH and PID analyses are summarized in Table 3. Appendix C presents the laboratory reports.

Referring to Table 3, TPH was below the test method detection limits of 5 mg/kg (GRO) and 50 mg/kg (DRO) in all samples analyzed. These results confirm that native soils at locations MW-13 and MW-14 are not impacted by petroleum hydrocarbon. Further, these results conclude that residual hydrocarbon staining observed near the southwest corner of the excavation has limited lateral extent. The PID readings ranged from 4.1 ppm (MW-14, 10 feet) to 7.7 ppm (MW-14, 35 feet). The soil samples were not analyzed for BTEX since PID readings were well below 100 ppm, as allowed by the NMOCD. Appendix G presents boring logs for wells MW-13 and MW-14.

Monitoring wells MW-13 and MW-14 were constructed with 2-inch diameter schedule 40 PVD threaded screen and riser. Depth-to-groundwater was measured in wells MW-3, MW-4, and MW-8 through MW-12 on December 4, 2000, to determine vertical placement of well screens in wells MW-13 and MW-14. The depth-to-groundwater ranged from 41.46 feet BGS (MW-3) to 45.16 feet BGS (MW-8), and groundwater was estimated at approximately 44 feet BGS at the proposed well locations. The well screens were positioned in the boreholes with approximately 15 feet of screen in groundwater. Approximately 5 feet of screen extends above groundwater to observe PSH, and compensate for seasonal groundwater fluctuation. The well screens were surrounded with 8-16 graded silica sand placed to a depth approximately 2 feet above the screen. A layer of bentonite chips, approximately 2 feet thick, was placed above the sand, and hydrated with potable water. The remainder of the borehole annulus was filled with cement and bentonite grout to approximately one (1) foot BGS. Each well was secured with a steel locking above-grade cover anchored in a concrete apron measuring

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approximately 3' x 3' x 6". Table 4 presents a summary of drilling and completion details for monitoring wells. Appendix G presents construction diagrams for wells MW-13 and MW-14.

An electric submersible pump was used to remove fine-grained sediment disturbed during drilling. The water was conveyed to a portable tank through dedicated polyethylene tubing that was discarded between wells. The purged water was later disposed in a permitted well operated by Chaparral Services. The submersible pump and electric lead were thoroughly washed between wells using a solution of potable water and laboratory-grade detergent, and rinsed with distilled water. Piper surveyed the wells for top-of-casing and ground elevation on December 15, 2000.

**3.5 Depth-to-Groundwater and Groundwater Samples**

Depth-to-groundwater was measured in all wells on June 20, 2000 prior to filling the excavation, and December 5, 2000, following installation of wells MW-13 and MW-14. Measurements were collected on June 20, 2000, to evaluate groundwater elevation fluctuations that may have occurred during closure of the excavation. Measurements were obtained on December 5, 2000, to prepare a final depth-to-groundwater and groundwater potentiometric surface drawings for the Site. Table 4 presents depth-to-groundwater measurements from the wells on June 20, 2000 and December 5, 2000. Figure 5 presents a depth-to-groundwater map for the Site on December 5, 2000. Figure 6 presents a groundwater potentiometric map for the Site on December 5, 2000. Depth-to-groundwater measurements for wells MW-13 and MW-14 are also displayed on boring logs and well completion diagrams presented in Appendix G.

Referring to Figure 5, depth-to-groundwater ranged from 44.72 feet BGS at well MW-8 (upgradient) to 41.23 feet BGS at well MW-3 (downgradient) on December 5, 2000. The groundwater level was well below the bottom of the blended soil, which was placed in the excavation at approximately 36 feet BGS. The depth-to-groundwater decreases from northwest to southeast across the Site, and is consistent with the topographic slope. Depth-to-groundwater measurements from June 20, 2000 and

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December 5, 2000, indicate that depth-to-groundwater increased slightly, likely due to natural fluctuation of the groundwater surface. No PSH was observed in the wells on June 20, 2000 or December 4, 2000.

Referring to Figure 6, the elevation of the groundwater (potentiometric) surface ranged from 3644.02 feet above mean sea level (AMSL) at location MW-6 (upgradient) to 3643.33 feet AMSL at location MW-2 (downgradient) on December 5, 2000. The direction of groundwater flow was from northwest to southeast at a gradient of approximately 0.0001 feet per foot. The Site groundwater flow direction is consistent with the regional groundwater flow direction.

Groundwater samples were collected from the monitoring well MW-9 on December 5, 2000, and from the remaining wells on December 6, 2000. The wells were purged prior to sampling using an electric submersible pump. Approximately 3 casing-volumes of groundwater was removed from each well, and conveyed to a portable tank through dedicated polyethylene tubing. The purged water was later disposed in a permitted well operated by Chaparral Services. The tubing was discarded between wells, and the submersible pump and electric lead were thoroughly washed between wells using a solution of potable water and laboratory-grade detergent, and rinsed with distilled water.

Groundwater samples were collected from the wells using dedicated disposable polyethylene bailers and nylon line. The groundwater was carefully transferred from the bailer to laboratory-prepared containers, labeled, chilled in an ice chest, and transferred under chain-of-custody control to Trace Analysis, Inc., located in Lubbock, Texas. The samples were analyzed for BTEX, anions, cations, and total dissolved solids (TDS). A duplicate sample and trip blank (BTEX only) were also analyzed for Quality Assurance/Quality Control (QA/QC). Field measurements of pH, specific conductivity, temperature and TDS were collected at each well using a calibrated field instrument, and values were recorded in a bound field notebook. The dedicated bailers and line were discarded after each use. Table 5 presents a summary of the BTEX analyses of



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groundwater samples. Table 6 presents a summary of the anion, cation and TDS analyses of the groundwater samples. Appendix C presents the laboratory reports.

Referring to Table 5, BTEX was not detected above the test method detection limit of 0.005 milligram per liter (mg/L) in the groundwater samples from wells MW-1 through MW-14, excluding well MW-10, or the QA/QC samples. The State of New Mexico Water Quality Control Commission (NMWQCC) has established groundwater standards for the following inorganic parameters: chloride (250 mg/L), fluoride (1.6 mg/L), nitrate (10 mg/L), sulfate (600 mg/L) and TDS (1000 mg/L). Chloride ranged from 25 mg/L in wells MW-13 and MW-14 to 810 mg/L (MW-6). The chloride value reported in the sample collected from well MW-6 (810 mg/L) may be due to sediment that had accumulated in the well as a result of damage to the well casing from impact heavy equipment. The casing stick-up at well MW-6 was observed to be broken at the time the well was sampled, and a significant amount of sediment was present in the bottom of the well. The well was thoroughly purged to remove as much of the accumulated sediment as possible, however, residual chloride may have been dissolved in the groundwater. The highest chloride value reported in the remaining samples was 160 mg/L (MW-5). Fluoride was found to be above the NMWQCC standard of 1.6 mg/L in groundwater sample from all wells except MW-1, MW-5, MW-6 and MW-7. The fluoride levels are likely attributed to natural background concentrations, and are below the EPA maximum contaminant level (MCL) of 4.0 mg/L. Nitrate was not observed above the test method detection limit concentration of 1.0 mg/L in samples from wells MW-1, MW-4, MW-11 and MW-12, and was highest in the sample from MW-5 (3.5mg/L). The nitrate levels were well below the NMWQCC groundwater standard of 10 mg/L. Sulfate ranged from 35 mg/L in groundwater from well MW-4 (downgradient) to 850 mg/L was reported in the groundwater sample from well MW-7. The reading from well MW-7 is anomalous compared to the samples from the remaining wells, and was only slightly above the NMWQCC groundwater standard of 600 mg/L. The highest sulfate concentration, other than MW-7, was 160 mg/L in the sample from well MW-9. The concentrations of TDS reported in the groundwater samples ranged from 260 mg/L from well MW-4

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(downgradient) to 1900 mg/L reported in samples from wells MW-6 and MW-7 (upgradient). The NMWQCC groundwater standard for TDS is 1000 mg/L.

Environmental Technology Group, Inc. (ETGI), on behalf of EOTT, collected groundwater samples from the monitoring wells on a quarterly schedule during 2000. Groundwater samples were collected on March 22, 2000, June 28, 2000, September 25, 2000, December 8, 2000, and submitted under chain-of-custody control to Environmental Labs of Texas, Inc. Samples were not collected from well MW-6 after June 28, 2000, indicating that the well casing was likely damaged between March and June 2000. The samples were analyzed for BTEX, and TPH by method 418.1. The samples from March 22, 2000, September 25, 2000 and December 8, 2000 were also analyzed for TPH (GRO and DRO) by method SW-846-8015. ETGI is currently preparing an annual groundwater monitoring report for submittal to the NMOCD. The laboratory reports, data tables, field measurements (i.e., depth-to-groundwater and groundwater surface elevation measurements) and chain-of-custody forms are presented in Appendix H.

Referring to Appendix H, the highest benzene concentration was reported in groundwater from well MW-4 (0.01 mg/L) on March 22, 2000. The benzene concentration decreased to 0.008 mg/L on June 28, 2000, and was below the test method detection limit of 0.001 mg/L on September 25, 2000 and December 8, 2000. The NMWQCC groundwater standard for benzene is 0.01 mg/L. Toluene, ethylbenzene or xylenes were also detected at concentrations well below the NMWQCC groundwater standards of 0.75 mg/L (toluene and ethylbenzene) and 0.62 mg/L (xylenes). No concentrations of BTEX were reported above the test method detection limits in the groundwater samples on September 25, 2000 and December 8, 2000. TPH was only reported in samples from wells MW-6 (0.6 mg/L, DRO) and MW-4 (1.1 mg/L, DRO) on March 22, 2000. The NMWQCC does not have a groundwater standard for TPH.

The results of quarterly groundwater monitoring for September and December 2000 are consistent with sample results from December 15, 2000. No impacts to groundwater are

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evident at the Site based on the quarterly analysis groundwater samples from the onsite monitoring wells during 2000.

#### **4.0 CONCLUSIONS**

The following conclusions are based on the results of laboratory analysis of soil and groundwater samples collected during Site closure activities.

1. Soil and water sample analyses submitted by EOTT, and collected from the bottom and sides of the excavation following removal of soil in the bottom of the excavation did not report BTEX concentrations above the test method detection limits. The maximum TPH concentration (DRO) in the soil samples was 24 mg/kg;
2. The maximum TPH concentration reported in composite samples from the soil piles and bottom of the excavation (April 13, 2000) was 2527 mg/kg in sample Comp. #4. The leachate from the SPLP analysis of this sample was analyzed for TPH (GRO and DRO), and did not report concentrations above the test method detection limit of 5 mg/kg;
3. The NMOCD requested a barrier of clean soil, approximately 2 feet thick, be placed in the bottom of the excavation to provide a barrier for groundwater protection from the blended soil. The clean soil was placed in the excavation between May 30, 2000, and June 20, 2000, and compacted. The barrier of clean soil was placed over a layer of clean soil placed in the bottom of the excavation by TNMPL following removal of hydrocarbon-affected soil to the top-of-groundwater (approximately 36 to 42 feet BGS). The combined thickness of clean soil in the bottom of the excavation is estimated to be between 8 and 10 feet thick. The initial lift of blended soil (2500 to 3000 cubic yards) was also treated with liquid fertilizer prior to placing into the excavation as another barrier of protection;

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4. TPH was only reported above 2000 mg/kg in samples from six (6) lifts of soil (#17, #20, #22, #35, #37 and #38). The highest TPH value was reported in sample #35, which reported a TPH value of 3775 mg/kg. This TPH value is within the remediation level of 3000 to 5000 mg/kg approved by the NMOCD on May 10, 2000. Soil from #35 was placed near the top of the excavation. The TPH concentrations of the remaining samples ranged from 174 mg/kg (#40) to 1940 mg/kg (#18);
5. A layer of red clay (cap) approximately 2 feet thick was placed over the top of the blended soil, and compacted to 95% proctor density. The cap was installed, compacted and contoured to reduce infiltration from precipitation. The density measurements, performed at a depth of approximately 12 inches, ranged from 95.27 to 100.5% of standard proctor density. A layer of clean top soil, approximately 18 inches thick, was placed over the cap, and graded to contour with the natural drainage (south and southeast);
6. Two additional monitoring wells (MW-13 and MW-14) were installed adjacent to the west and southwest edges of the excavation, and soil samples were collected from 10, 20, 30, 35, 40 and 43 feet BGS for PID and laboratory analyses. The PID analysis of the soil samples ranged from 4.1 ppm (MW-14, 10 feet) to 7.7 ppm (MW-14, 35 feet). The laboratory reported no TPH (GRO and DRO) concentrations in the soil samples above the test method detection limit concentrations of 5 mg/kg (GRO) or 50 mg/kg (DRO). These results conclude that soils in the unsaturated zone at locations MW-13 and MW-14 are free of hydrocarbon impacts. Hydrocarbon staining observed near the southwest corner of the excavation has limited lateral extent;
7. On December 5, 2000, depth-to-groundwater ranged from 41.23 feet BGS at well MW-3 (downgradient) to 44.72 feet BGS at well MW-8 (upgradient). The groundwater level was well below the bottom of the blended soil, which was placed in the excavation at approximately 36 feet BGS. The depth-to-

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- groundwater decreases from northwest to southeast across the Site, and is consistent with the topographic slope;
8. The elevation of the groundwater surface ranged from 3644.02 AMSL at well MW-6 (upgradient) to 3643.33 feet AMSL at location MW-2 (downgradient). Groundwater flow was from northwest to southeast at a gradient of 0.0001 feet per foot. The groundwater flow across the Site was consistent with the regional groundwater flow direction.
  9. Groundwater samples collected from well MW-1 through MW-14, excluding well MW-10, did not report BTEX concentrations above the test method detection limit of 0.005 milligram per liter (mg/L) on December 5-6, 2000. These results conclude that groundwater at the Site is free of impacts from aromatic hydrocarbons;
  10. Chloride ranged from 25 mg/L in wells MW-13 and MW-14 to 810 mg/L (MW-6). The chloride value reported in the sample collected from well MW-6 (810 mg/L) may be due to sediment that had accumulated in the well as a result of damage to the well casing from impact heavy equipment. The highest chloride value reported in the remaining samples was 160 mg/L (MW-5);
  11. Fluoride was found to above the NMWQCC standard of 1.6 mg/L in groundwater sample from all wells except MW-1, MW-5, MW-6 and MW-7. The fluoride levels are likely attributed to natural background concentrations, and are below the EPA maximum contaminant level (MCL) of 4.0 mg/L;
  12. Nitrate was not found above the NMWQCC groundwater standard of 10 mg/L;
  13. Sulfate ranged from 35 mg/L in groundwater from well MW-4 (downgradient) to 850 mg/L in the sample from well MW-7. The sulfate concentration reported in groundwater from well MW-7 is anomalous compared to the samples from the

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remaining wells, and was only slightly above the NMWQCC groundwater standard of 600 mg/L. The highest sulfate concentration, other than MW-7, was 160 mg/L in the sample from well MW-9;

14. The TDS concentrations ranged from 260 mg/L from well MW-4 (downgradient) to 1900 mg/L reported in samples from wells MW-6 and MW-7 (upgradient). The NMWQCC groundwater standard for TDS is 1000 mg/L.
15. Groundwater samples were collected from the monitoring wells on a quarterly schedule during 2000, and analyzed for BTEX and TPH. No BTEX concentrations exceeded the NMWQCC groundwater standards. Detectable levels of TPH were only reported in samples from wells MW-6 (0.6 mg/L, DRO) and MW-4 (1.1 mg/L, DRO) on March 22, 2000. No impacts to groundwater are evident at the Site based on the quarterly analysis

## **5.0 RECOMMENDATIONS**

The companies request that the NMOCD consider granting closure for the Site based on the results and conclusions presented herein. The companies also request approval from the NMOCD to discontinue groundwater monitoring since it has been satisfactorily demonstrated that groundwater at the Site is not impacted as a result of the crude oil spill or emergency pit. The monitoring wells will be plug and abandoned in accordance with State of New Mexico requirements, and a letter will be submitted to the NMOCD with documentation that the wells were properly plugged and abandoned.

## TABLES

**Table 1: Summary of Field and Laboratory Analyses of Soil Samples from Blending Area  
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Lift Number	Sample Number	Sample Date	PID (ppm)	GRO C6 - C10 (mg/kg)	DRO >C10 - C28 (mg/kg)	TPH C6 - C28 (mg/kg)	*PID Calibration (ppm)
1	S000606T201	06-Jun-00	6.5	<50	553	553	101
2	S000608T202	08-Jun-00	40.2	<50	916	916	115
3	S000613T203	13-Jun-00	13.4	<50	928	928	101
4	S000614T204	14-Jun-00	9.1	<50	844	844	101
5	S000616T205	16-Jun-00	16.9	<50	916	916	102
6	S000621T206	21-Jun-00	11.7	<50	462	462	103
7	S000623T207	23-Jun-00	19.5	<50	711	711	101
8	S000628T208	28-Jun-00	29.4	<50	1420	1420	102
9	S000711T209	11-Jul-00	9.8	<50	1480	1480	101
10	S000717T210	17-Jul-00	7.3	<50	964	964	103
11	S000719T211	19-Jul-00	12.8	<50	804	804	102
12	S000721T212	21-Jul-00	12.2	<50	684	684	103
13	S000724T213	24-Jul-00	7.5	<50	926	926	102
14	S000726T214	26-Jul-00	21.1	<50	1430	1430	101
15	S000728T215	28-Jul-00	34.8	<50	1490	1490	102
16	S000731T216	31-Jul-00	28.5	<50	1660	1660	101
17	S00082T217	02-Aug-00	70.7	<50	2010	2010	101
18	S00082T218	02-Aug-00	33.2	53.2	1940	1993.2	101
19	S00087T219	07-Aug-00	27.5	<50	1710	1710	101
20	S00087T220	07-Aug-00	75.5	78.1	2000	2078.1	101
21	S00089T221	09-Aug-00	28.9	<50	1660	1660	101
22	S000811T222	11-Aug-00	26.2	<50	2140	2140	100
23	S000814T223	14-Aug-00	17.4	<50	1360	1360	100

Notes: Laboratory analyses by Cardinal Laboratories, Inc., Hobbs, New Mexico  
PID analyses by Environmental Plus, Inc., Eunice, New Mexico

1. ppm: Concentration in parts per million
2. mg/kg: Concentration in milligrams per kilogram (equivalent to parts per million)
3. \*: Calibrated to isobutylene (100 parts per million)



**Table 1: Summary of Field and Laboratory Analyses of Soil Samples from Blending Area  
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Lift Number	Sample Number	Sample Date	PID (ppm)	GRO C6 - C10 (mg/kg)	DRO >C10 - C28 (mg/kg)	TPH C6 - C28 (mg/kg)	*PID Calibration (ppm)
24	S000816T224	16-Aug-00	25.0	<50	580	580	100
25	S000817T225	17-Aug-00	8.2	<50	268	268	100
26	S000821T226	21-Aug-00	7.3	<50	444	444	101
27	S000823T227	23-Aug-00	7.3	<50	534	534	101
28	S000824T228	24-Aug-00	27.8	<50	815	815	100
29	S000825T229	25-Aug-00	13.6	<50	605	605	101
30	S000828T230	28-Aug-00	7.9	<50	603	603	101
31	S000830T231	30-Aug-00	3.5	<50	660	660	101
32	S000831T232	31-Aug-00	10.5	<50	1060	1060	100
33	S000901T233	01-Sept-00	18.7	<50	1380	1380	100
34	S000905T234	05-Sept-00	11.9	<50	1240	1240	100
35	S000906T235	06-Sept-00	40.0	165	3610	3775	100
36	S000907T236	07-Sept-00	41.3	<50	1450	1450	100
37	S000911T237	11-Sept-00	23.5	<50	2030	2030	100
38	S000912T238	12-Sept-00	15.5	<50	2560	2560	100
39	S000915T239	15-Sept-00	13.0	<50	1410	1410	100
40	S000925T240	25-Sept-00	4.1	<50	174	174	101

Notes: Laboratory analyses by Cardinal Laboratories, Inc., Hobbs, New Mexico  
PID analyses by Environmental Plus, Inc., Eunice, New Mexico

1. ppm: Concentration in parts per million
2. mg/kg: Concentration in milligrams per kilogram (equivalent to parts per million)
3. \*: Calibrated to isobutylene (100 parts per million)

**Table 2: Summary of Field Density Tests of Compacted Clay Soils**  
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Test Number	Test Date	Test Depth (Inches)	Dry Density (%)	Moisture Content (%)
1	28-Sept-00	12	98.98	12.32
2	28-Sept-00	12	97.96	12.85
3	28-Sept-00	12	98.30	15.48
4	28-Sept-00	12	96.37	15.03
5	28-Sept-00	12	95.79	14.25
6	28-Sept-00	12	96.76	13.08
7	28-Sept-00	12	100.50	14.32
8	28-Sept-00	12	97.37	14.65
9	28-Sept-00	12	95.27	14.32
10	28-Sept-00	12	95.60	11.11

Notes: Field analyses by John West Engineering Company, Hobbs, New Mexico

1. ppm: Concentration in parts per million
2. mg/kg: Concentration in milligrams per kilogram (equivalent to parts per million)
3. \*: Calibrated to isobutylene (100 parts per million)

**Table 3: Summary of Field and Laboratory Analyses of Soil Samples from Borings**  
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Soil Boring	Sample Depth (Feet BGS)	Sample Date	PID (ppm)	GRO (mg/kg)	DRO (mg/kg)	TPH (mg/kg)
MW-13	10	04-Dec-00	6.3	<5	<50	<55
	20	04-Dec-00	4.5	<5	<50	<55
	30	04-Dec-00	4.3	<5	<50	<55
	35	04-Dec-00	4.8	<5	<50	<55
	40	04-Dec-00	4.5	<5	<50	<55
	43	04-Dec-00	4.4	--	--	--
MW-14	10	04-Dec-00	4.1	<5	<50	<55
	20	04-Dec-00	7.4	<5	<50	<55
	30	04-Dec-00	6.2	<5	<50	<55
	35	04-Dec-00	7.7	<5	<50	<55
	43	04-Dec-00	7.6	--	--	--

Notes: Laboratory analyses by Trace Analysis, Inc., Lubbock, Texas

1. BGS: Depth in feet below ground level
2. ppm: Concentration in parts per million
3. mg/kg: Concentration in milligrams per kilogram (equivalent to parts per million)
4. --: No data available

Table 4: Summary of Monitoring Well Drilling and Completion Details  
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Well Number	Installation Date	Drilled Depth Feet BGS	Well Diameter Inches	Well Depth Feet TOC	Top of Casing Elevation Feet AMSL	Ground Elevation Feet AMSL	Screen Interval Feet BGS	Depth-to-Groundwater Feet BGS 20-Jun-00	Depth-to-Groundwater Feet BGS 05-Dec-00	Groundwater Elevation Feet AMSL 05-Dec-00
MW-1	-	-	4	58.73	3698.93	3687.38	-	44.23	44.47	3642.91
MW-2	-	-	4	58.50	3687.70	3685.11	-	41.65	41.78	3643.33
MW-3	-	-	4	58.38	3687.49	3684.88	-	41.23	41.42	3643.46
*MW-4	04-Oct-95	57	2	55.48	3687.57	3685.43	34 - 53	41.65	41.76	3643.67
*MW-5	09-Dec-95	60	2	57.05	3690.79	3687.93	35 - 59	43.74	43.97	3643.96
*MW-6	11-Dec-95	61	2	60.25	3691.32	3688.37	36 - 60	44.19	44.35	3644.02
*MW-7	15-Dec-95	61	2	59.82	3691.00	3688.62	36 - 60	44.43	44.68	3643.94
*MW-8	16-Dec-95	65	2	62.10	3691.53	3688.94	32 - 61	44.72	45.09	3643.85
*MW-9	19-Dec-95	65	2	58.00	3689.81	3687.08	35 - 59	42.99	43.17	3643.97
*MW-10	24-Jan-96	P/A	P/A	P/A	P/A	P/A	P/A	P/A	P/A	P/A
*MW-11	24-Jan-96	55	2	55.85	3688.61	3686.01	34 - 53	42.22	42.30	3643.71
*MW-12	25-Jan-96	52	2	56.55	3688.67	3686.55	30 - 50	42.69	42.88	3643.67
MW-13	04-Dec-00	60	2	61.50	3689.43	3687.75	39.57 - 59.13	-	41.92	3643.83
MW-14	04-Dec-00	60	2	60.84	3688.00	3686.40	39.01 - 58.57	-	42.67	3643.73

Notes:

1. BGS: Depth in feet below ground surface
2. AMSL: Elevation in feet above mean sea level, based on surveys by Piper Surveying Company (June 20, 2000 and December 15, 2000)
3. TOC: Depth in feet below top-of-casing
4. \*: Data from previous consultant's report
5. -: No data available
6. P/A: Well plugged and abandoned

**Table 5: Summary of BTEX Analyses of Groundwater Samples from Monitoring Wells**  
**C.J. Saunders Excavation Site**  
**Unit Letter J, Section 18, Township 19 South, Range 36 East**  
**Lea County, New Mexico**

Page 1 of 1

Well Number	Sample Date	Benzene mg/L	Toluene mg/L	Ethylbenzene mg/L	Xylene mg/L	Total BTEX mg/L
MW-1	06-Dec-00	<0.005	<0.005	<0.005	<0.005	<0.02
MW-2	06-Dec-00	<0.005	<0.005	<0.005	<0.005	<0.02
MW-3	06-Dec-00	<0.005	<0.005	<0.005	<0.005	<0.02
MW-4	06-Dec-00	<0.005	<0.005	<0.005	<0.005	<0.02
MW-5	06-Dec-00	<0.005	<0.005	<0.005	<0.005	<0.02
MW-6	06-Dec-00	<0.005	<0.005	<0.005	<0.005	<0.02
MW-7	06-Dec-00	<0.005	<0.005	<0.005	<0.005	<0.02
MW-8	06-Dec-00	<0.005	<0.005	<0.005	<0.005	<0.02
MW-9	05-Dec-00	<0.005	<0.005	<0.005	<0.005	<0.02
MW-10	P/A	P/A	P/A	P/A	P/A	P/A
MW-11	06-Dec-00	<0.005	<0.005	<0.005	<0.005	<0.02
MW-12	06-Dec-00	<0.005	<0.005	<0.005	<0.005	<0.02
MW-13	06-Dec-00	<0.005	<0.005	<0.005	<0.005	<0.02
MW-14	06-Dec-00	<0.005	<0.005	<0.005	<0.005	<0.02
Duplicate (MW-12)	06-Dec-00	<0.005	<0.005	<0.005	<0.005	<0.02

Notes: Analyses by Trace Analysis, Inc., Lubbock, Texas

1. mg/L: Concentration in milligrams per liter (equivalent to parts per million)
2. <: Analyte not detected above test method detection limit
3. P/A: Well plugged and abandoned (no data available)

Table 6: Summary of Inorganic Analyses of Groundwater Samples from Monitoring Wells  
 C.J. Saunders Excavation Site  
 Unit Letter J, Section 18, Township 19 South, Range 36 East  
 Lea County, New Mexico

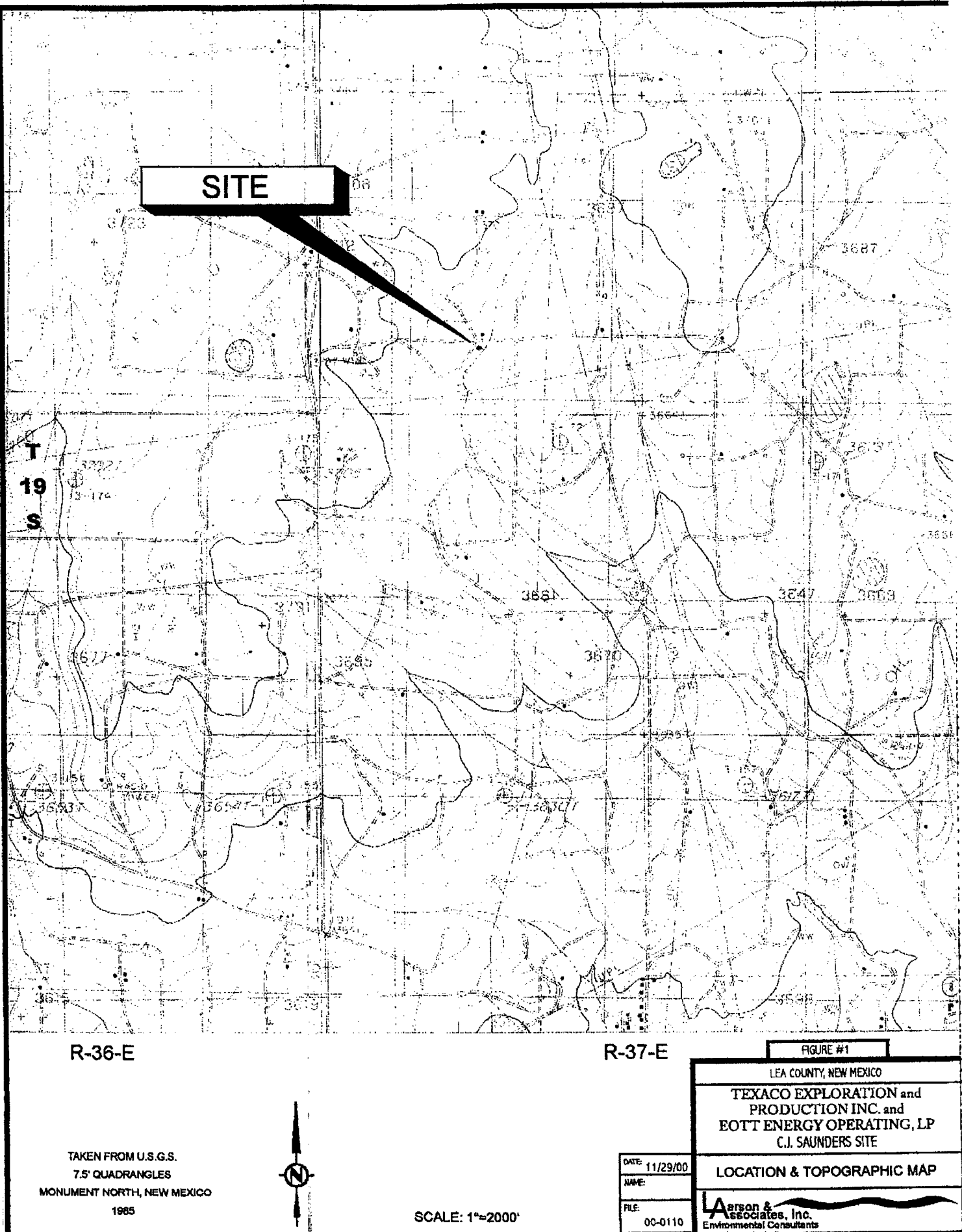
Page 1 of 1

Monitor Well	Sample Date	Hydroxide (mg/L)	Carbonate (mg/L)	Bicarbonate (mg/L)	Chloride (mg/L)	Fluoride (mg/L)	Nitrate (N) (mg/L)	Sulfate (mg/L)	Calcium (mg/L)	Magnesium (mg/L)	Potassium (mg/L)	Sodium (mg/L)	TDS (mg/L)
MW-1	06-Dec-00	<1.0	<1.0	486	65	1.3	<1.0	140	300	35	6.7	76	1400
MW-2	06-Dec-00	<1.0	<1.0	190	57	1.9	2.4	69	96	10	4.3	32	460
MW-3	06-Dec-00	<1.0	<1.0	204	26	2.0	2.6	64	87	8.0	4.1	29	410
MW-4	06-Dec-00	<1.0	<1.0	150	11	3.3	<1.0	35	59	5.6	3.1	13	260
MW-5	06-Dec-00	<1.0	<1.0	580	160	1.4	3.5	56	314	36	6.8	73	1400
MW-6	06-Dec-00	<1.0	<1.0	394	810	1.6	2.8	74	448	52	8.4	112	1900
MW-7	06-Dec-00	<1.0	<1.0	360	140	1.6	2.2	850	324	33	8.3	216	1900
MW-8	06-Dec-00	<1.0	<1.0	178	26	2.0	2.7	51	72	6.6	3.8	30	380
MW-9	05-Dec-00	<1.0	<1.0	488	29	1.2	1.6	160	226	24	4.7	20.4	870
MW-10	P/A	P/A	P/A	P/A	P/A	P/A	P/A	P/A	P/A	P/A	P/A	P/A	P/A
MW-11	06-Dec-00	<1.0	<1.0	326	120	3.2	<1.0	59	104	22	4.9	94	720
MW-12	06-Dec-00	<1.0	<1.0	288	36	2.9	<1.0	90	83	31	3.3	52	570
MW-13	06-Dec-00	<1.0	<1.0	172	25	2.2	2.7	48	72	6.8	3.9	25	350
MW-14	06-Dec-00	<1.0	<1.0	166	25	2.1	2.6	50	71	7.6	4.1	26	360
Duplicate (MW-12)	06-Dec-00	<1.0	<1.0	280	34	2.6	<1.0	91	85	31	3.3	57	560

Notes: Analyses by Trace Analysis, Inc., Lubbock, Texas

1. mg/L: Concentration in milligrams per liter (equivalent to parts per million)
2. <: Analyte not detected above test method detection limit
3. P/A: Well plugged and abandoned (no data available)

## FIGURES





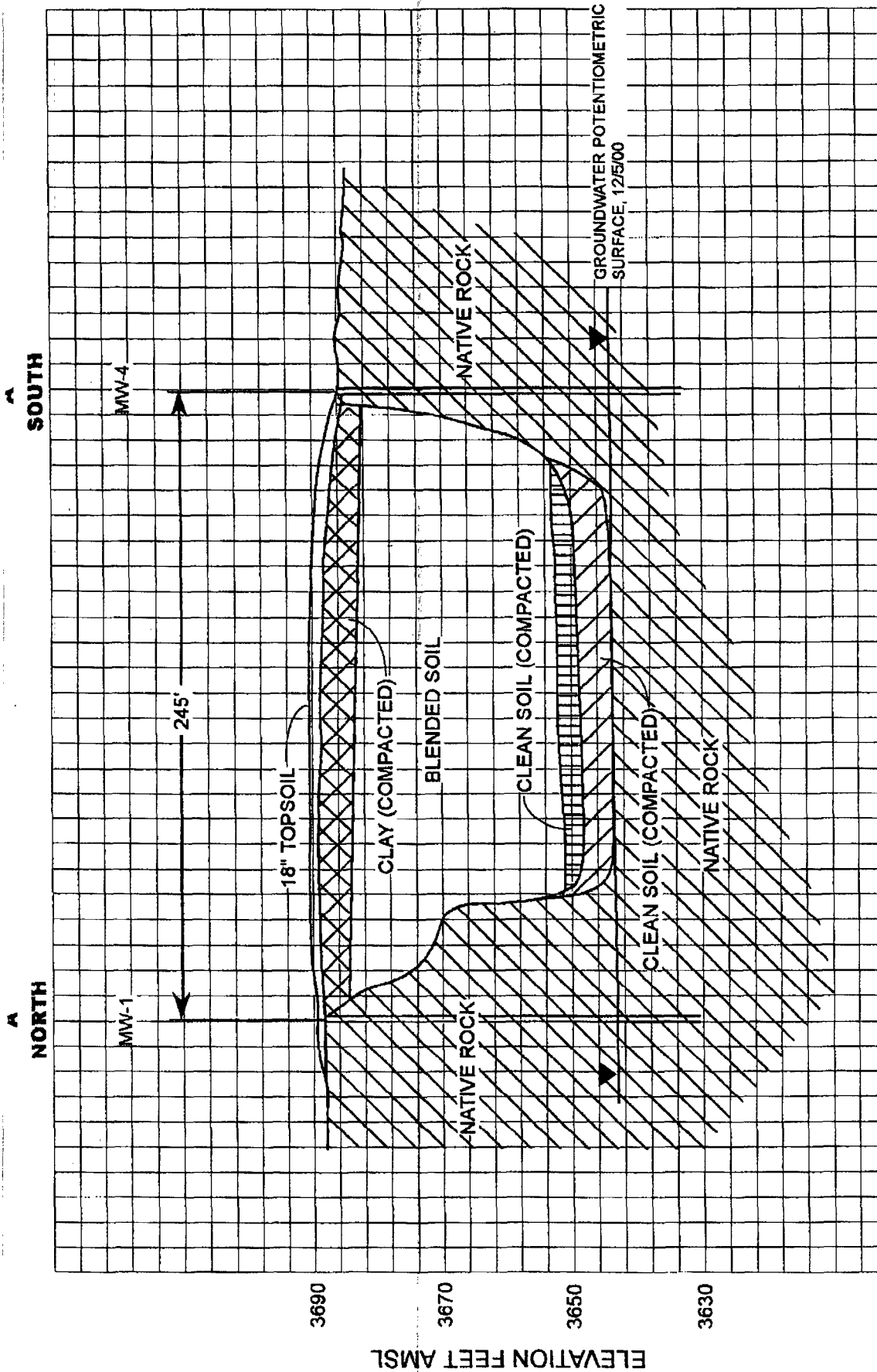


FIGURE #3

LEA COUNTY, NEW MEXICO

TEXACO EXPLORATION and  
PRODUCTION INC. &  
EOTT ENERGY PIPELINE, L.P.

C.J. SAUNDERS SITE

NORTH - SOUTH CROSS SECTION

A-A'

DATE: 1/12/01

MWE

FILE

La arson &  
associates, Inc.  
Environmental Consultants

HORIZONTAL SCALE: 1"=50'

VERTICAL SCALE: 1"=20'

VERTICAL EXAGGERATION: X 2.5

REFER TO FIGURE 2 for CROSS SECTION LOCATION

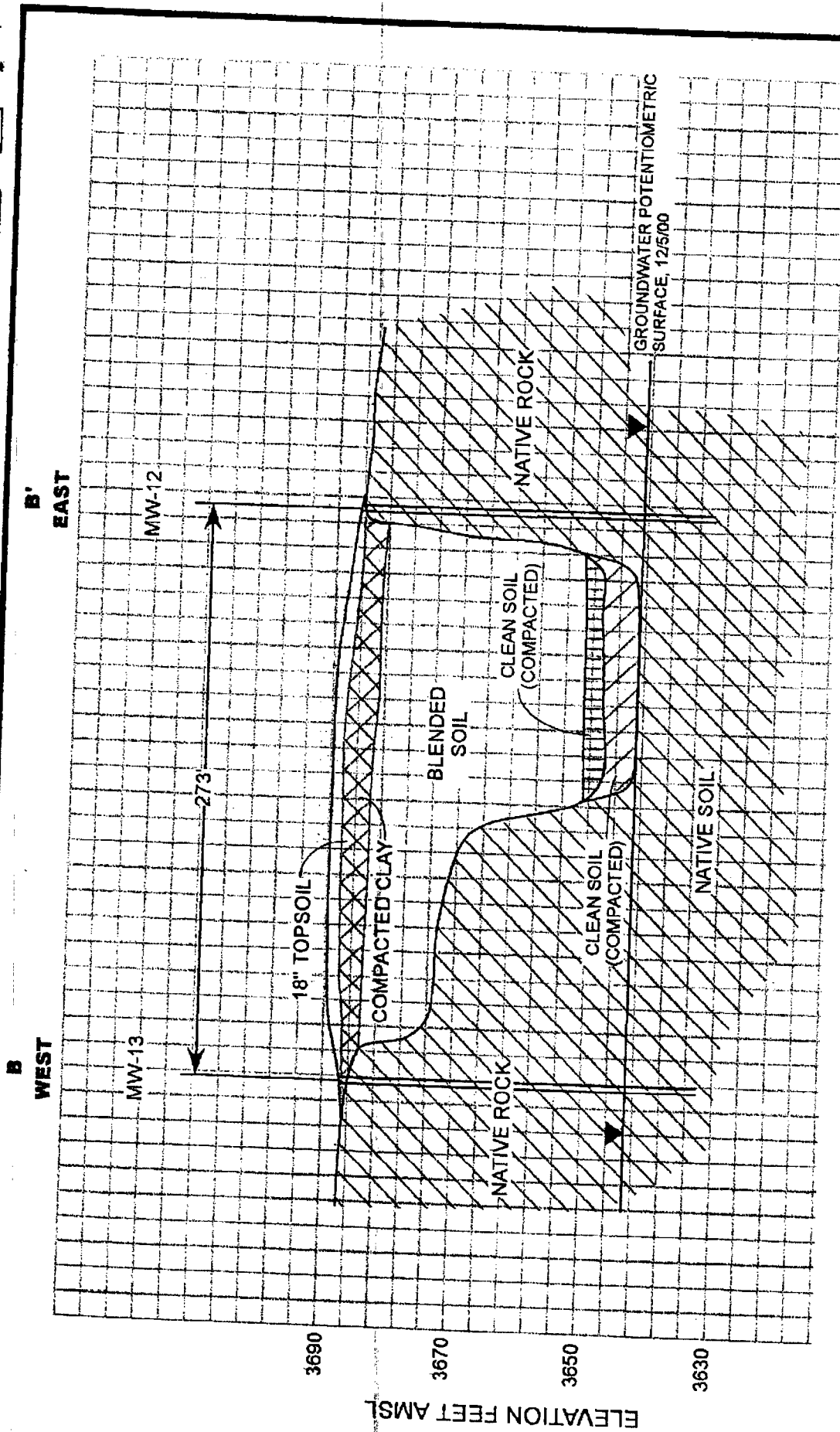


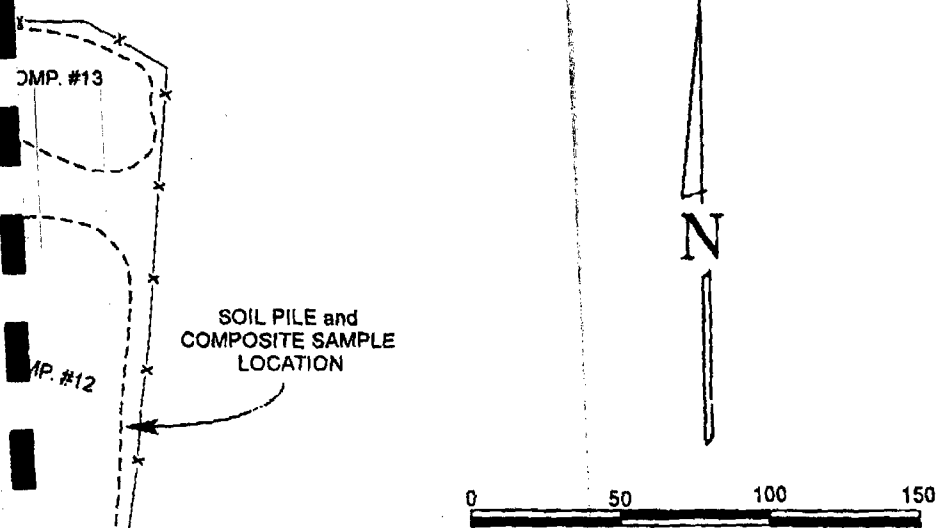
FIGURE #4	
LEA COUNTY, NEW MEXICO	
TEXACO EXPLORATION and PRODUCTION INC. & BOTT ENERGY PIPELINE, L.P. C.J. SAUNDERS SITE	
WEST - EAST CROSS SECTION B-B'	
DATE: 1/12/01	NAME:
	FILE:

HORIZONTAL SCALE: 1"=50'  
VERTICAL SCALE: 1"=20'  
VERTICAL EXAGGERATION: X 2.5

REFER TO FIGURE 2 FOR CROSS SECTION LOCATION

**Larson & Associates, Inc.**  
Environmental Consultants

May 19 03 05:40p



LEGEND	
MW-1 O	MONITORING WELL LOCATION
X	DENSITY TEST LOCATION
X <sup>1</sup>	LINE of CROSS SECTION
A — A'	PLUGGED & ABANDONED (P&A) WELL (APPROXIMATE LOCATION)

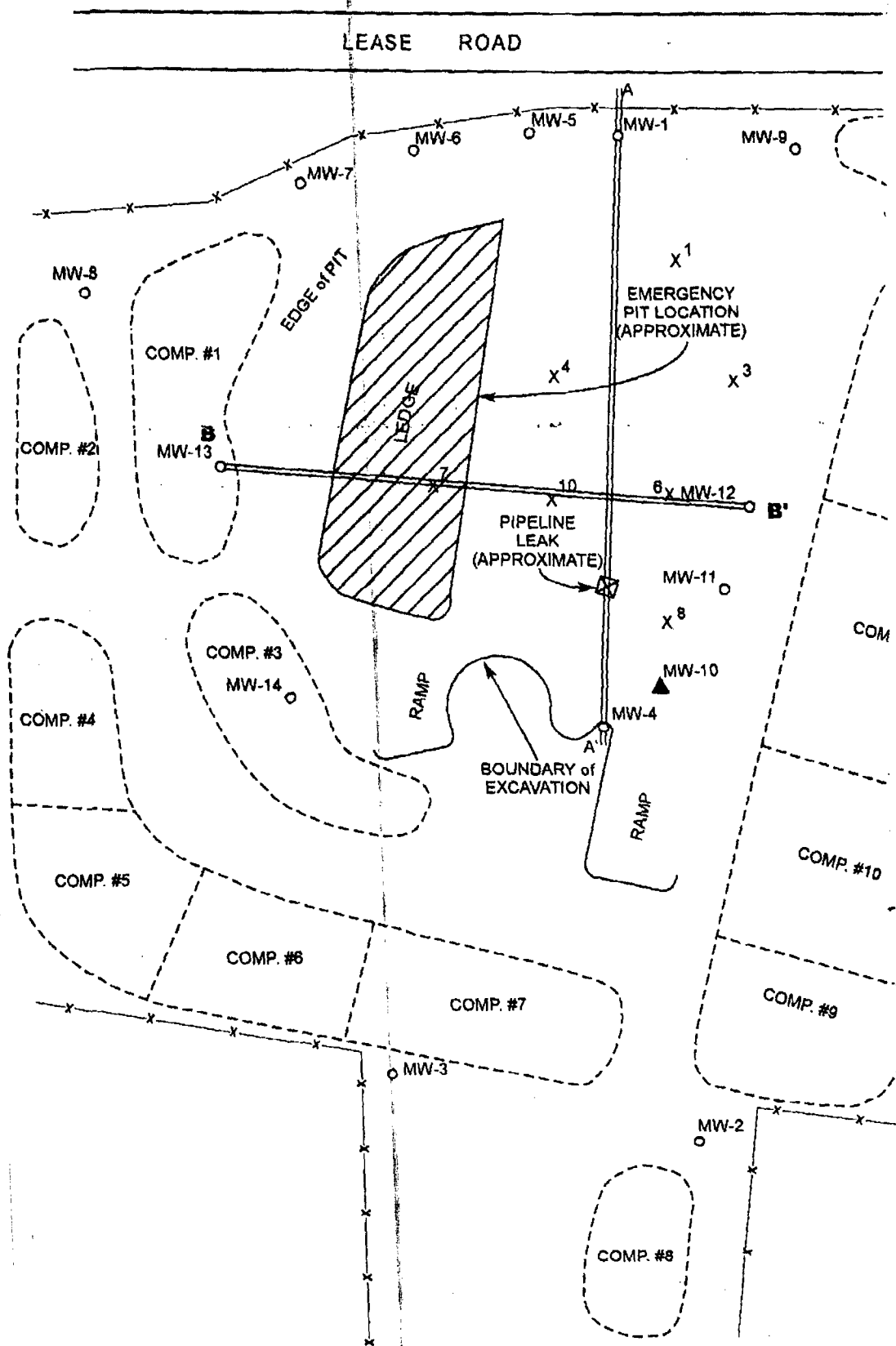
## MONITORING WELL DATA

WELL NUMBER	TOP of CASING ELEVATION FEET AMSL	GROUND ELEVATION FEET AMSL
MW-1	3689.93	3687.38
MW-2	3687.70	3685.11
MW-3	3687.49	3684.88
MW-4	3687.57	3685.43
MW-6	3690.79	3687.93
MW-5	3691.32	3688.37
MW-7	3691.00	3688.62
MW-8	3691.53	3688.94
MW-9	3689.81	3687.08
MW-10	P&A	P&A
MW-11	3688.81	3686.01
MW-12	3688.67	3686.55
MW-13	3689.43	3687.75
MW-14	3688.00	3686.40

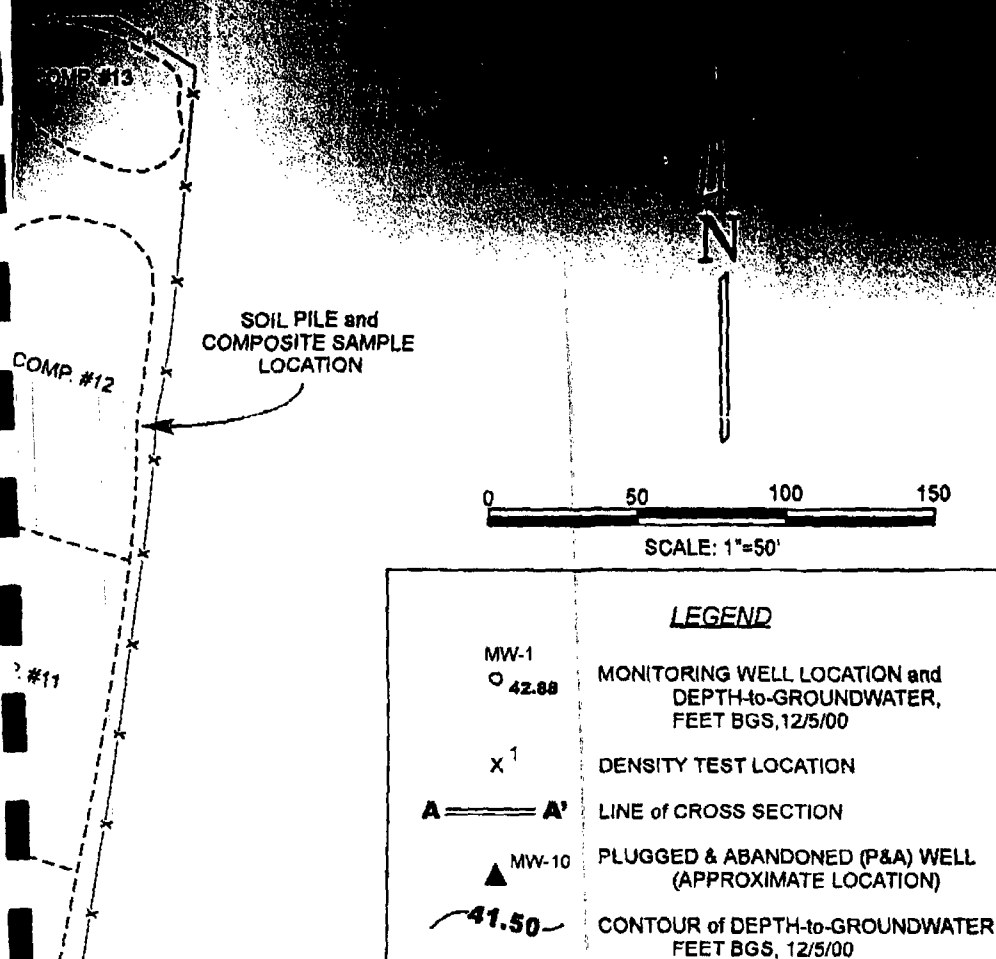
NOTE:  
Former Emergency Pit and Pipeline Leak Locations  
after Environmental Spill Control, Inc.,  
Base Drawing after Piper Surveying Company  
(June 20 and Dec. 18, 2000)

DATE: 1/12/01  
NAME:  
FILE:

FIGURE #2
LEA COUNTY, NEW MEXICO
TEXACO EXPLORATION and PRODUCTION INC. & EOTT ENERGY PIPELINE, L.P. C-1 SANDERS SITE
SITE DRAWING
SW 1/4 SE 1/4, SEC. 18, T-19-S, R-37-E



May 19 03 05:41p



## MONITORING WELL DATA

WELL NUMBER	TOP of CASING ELEVATION FEET AMSL	GROUND ELEVATION FEET AMSL
MW-1	3689.93	3667.38
MW-2	3687.70	3685.11
MW-3	3687.49	3684.88
MW-4	3687.57	3685.43
MW-5	3690.79	3687.93
MW-5	3691.32	3688.37
MW-7	3691.00	3688.62
MW-8	3691.53	3688.94
MW-9	3689.81	3687.08
MW-10	P&A	P&A
MW-11	3688.61	3686.01
MW-12	3688.87	3686.55
MW-13	3689.43	3687.75
MW-14	3688.00	3686.40

NOTE:  
Former Emergency Plt and Pipeline Leak Locations  
after Environmental Spill Control, Inc.  
Base Drawing after Piper Surveying Company  
(June 20 and Dec. 15, 2000)

DATE: 1/12/01  
NAME:  
FILE:

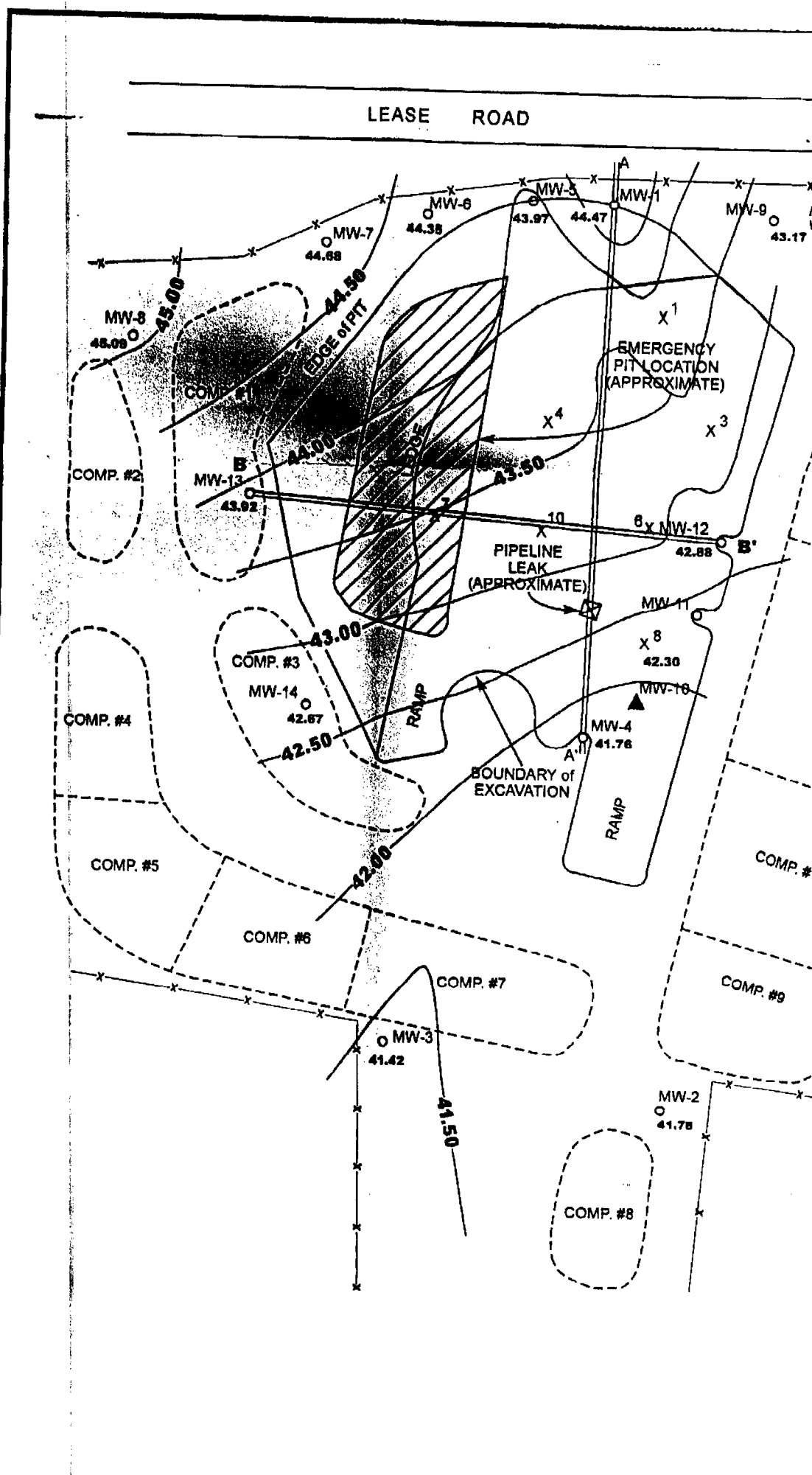
FIGURE #5

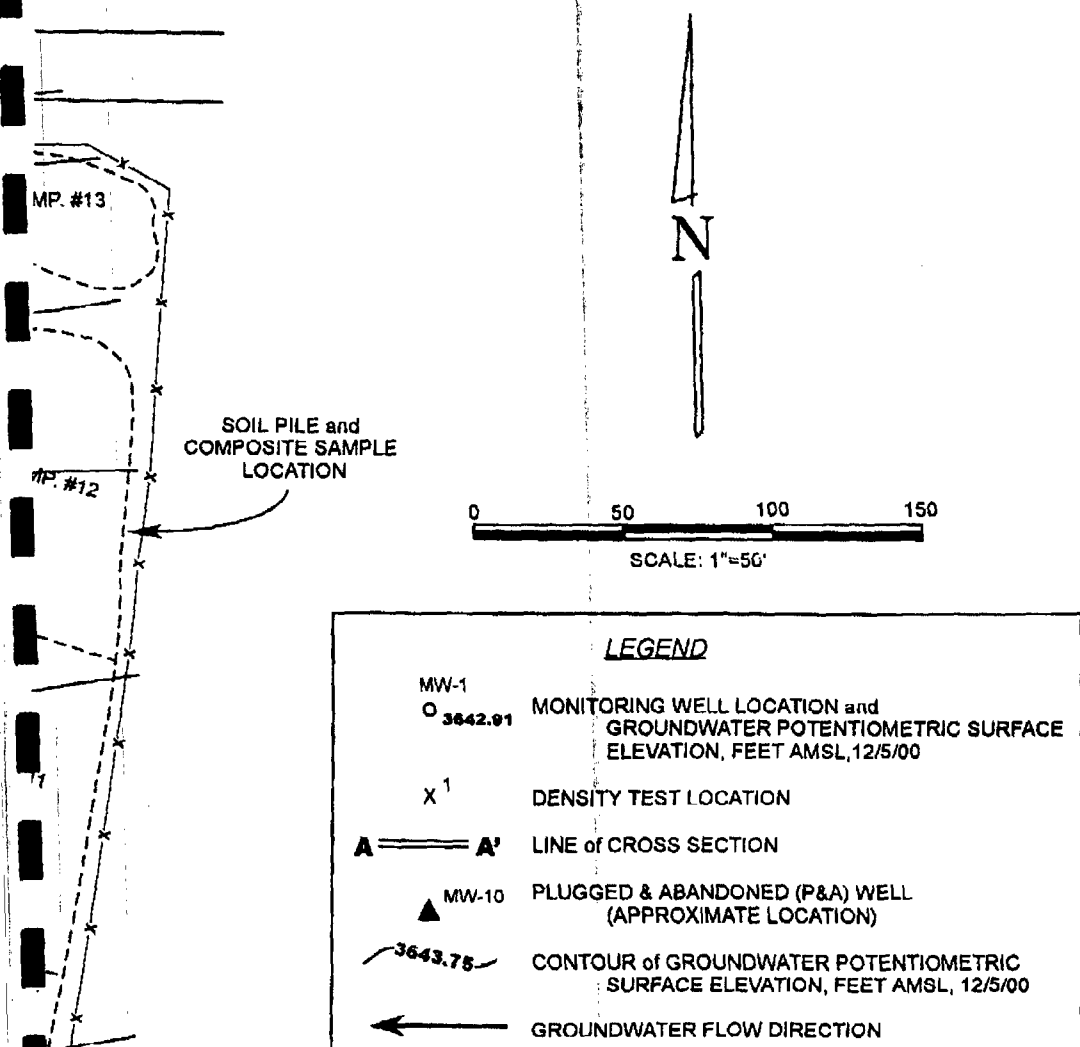
LEA COUNTY, NEW MEXICO

TEXACO EXPLORATION and  
PRODUCTION INC. &  
EOTT ENERGY PIPELINE, L.P.  
CJ JAWORS SITE

DEPTH to GROUNDWATER  
SW 1/4 SE 1/4, SEC. 18, T-19-S, R-37-E

Avon &  
Associates, Inc.  
Environmental Consultants





## MONITORING WELL DATA

WELL NUMBER	TOP of CASING ELEVATION FEET AMSL	GROUND ELEVATION FEET AMSL
MW-1	3689.93	3687.38
MW-2	3687.70	3685.11
MW-3	3687.49	3684.88
MW-4	3687.57	3685.43
MW-6	3690.79	3687.93
MW-5	3691.32	3688.62
MW-7	3691.00	3688.94
MW-8	3691.53	3687.08
MW-9	3689.81	3688.61
MW-10	P&A	P&A
MW-11	3688.61	3686.55
MW-12	3688.67	3687.75
MW-13	3689.43	3686.40
MW-14	3688.00	

NOTE:  
Former Emergency Plt and Pipeline Leak Locations  
after Environmental Spill Control, Inc.,  
Base Drawing after Piper Surveying Company  
(June 20 and Dec. 15, 2000)

DATE: 1/12/01  
NAME:  
FILE:

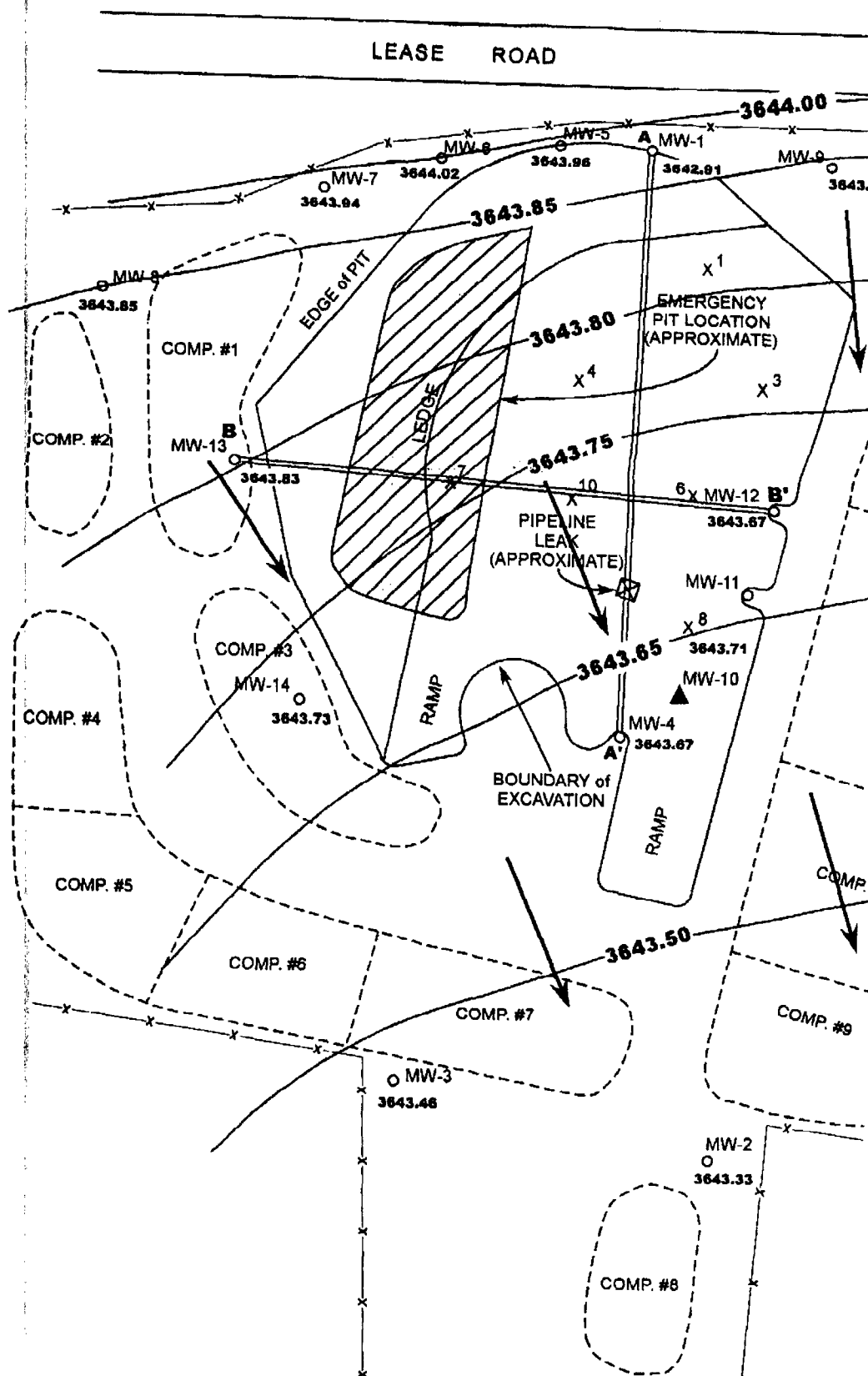
FIGURE #6

LEA COUNTY, NEW MEXICO

TEXACO EXPLORATION and  
PRODUCTION INC. &  
EOTT ENERGY PIPELINE, L.P.  
C. J. SANDERS SUE

GROUNDWATER POTENTIOMETRIC  
SURFACE MAP, 12/5/00  
SW 1/4 SE 1/4, SEC. 18, T-19-S, R-37-E

Arison &  
Associates, Inc.  
Environmental Consultants





APPENDIX A

Correspondence for NMOCD



STATE OF NEW MEXICO  
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION  
2040 S. PACHECO  
SANTA FE, NEW MEXICO 87505  
(505) 827-7131

May 10, 2000

**CERTIFIED MAIL**

**RETURN RECEIPT NO: 5051-3075**

Mr. Rodney Bailey  
Texaco Exploration & Production, Inc.  
205 E. Bender Blvd.  
Hobbs, NM 88240

**CERTIFIED MAIL**

**RETURN RECEIPT NO: 5051-3068**

Mr. Glen Waldrop  
EOTT Energy Pipeline Limited Partnership  
P.O. Box 1660  
Midland, Texas 79702

**RE: TNM-95-10/SAUNDERS SITE  
MONUMENT, NEW MEXICO**

Dear Sirs:

The New Mexico Oil Conservation Division (OCD) has reviewed the April 24, 2000 "RESPONSE TO WORK PLAN FOR SAUNDERS EXCAVATION SITE, UNIT LETTER "J", SECTION 18, TOWNSHIP 19 SOUTH, RANGE 37 EAST, LEA COUNTY, NEW MEXICO" and May 8, 2000 "LABORATORY ANALYSES OF SOIL SAMPLES FROM STOCKPILES AND EXCAVATION, C.J. SAUNDERS SITE, UNIT LETTER "J": SECTION 18, TOWNSHIP 19 SOUTH, RANGE 37 EAST, LEA COUNTY, NEW MEXICO:" which was jointly submitted by Texaco Exploration & Production, Inc. (Texaco) and EOTT Energy Pipeline Limited Partnership (EOTT). This document contains Texaco and EOTT's work plan for backfilling the open excavation and installation of additional monitoring wells at the Saunders/TNM-95-10 site.

The work plan as contained in the above referenced documents is approved with the following conditions:

1. Soil samples shall be obtained at five foot intervals during drilling of the new monitor wells to determine the extent of residual soil contamination in the former pit area. The samples shall be obtained and analyzed for concentrations of benzene, toluene, ethylbenzene, xylene (BTEX) and total petroleum hydrocarbons using EPA approved methods and quality assurance/quality control (QA/QC).

May 19 03 05:43p

2. The completion report shall be submitted to the OCD Santa Fe Office by July 10, 2000 with a copy provided to the OCD Hobbs District Office.

Please be advised that OCD approval does not limit EOTT and Texaco to the proposed work plan should the actions fail to adequately remediate or investigate contamination related to their activities, or if contamination exists which is outside the scope of the work plan. In addition, OCD approval does not relieve EOTT and Texaco of responsibility for compliance with any other federal, state or local laws and regulations.

If you have any questions or comments, please contact me at (505) 827-7154.

Sincerely,



William C. Olson  
Hydrologist  
Environmental Bureau

xc: Chris Williams, OCD Hobbs District Office

May 19 03 05:43p

## APPENDIX B

### Photographs

Texaco E & P, Inc.



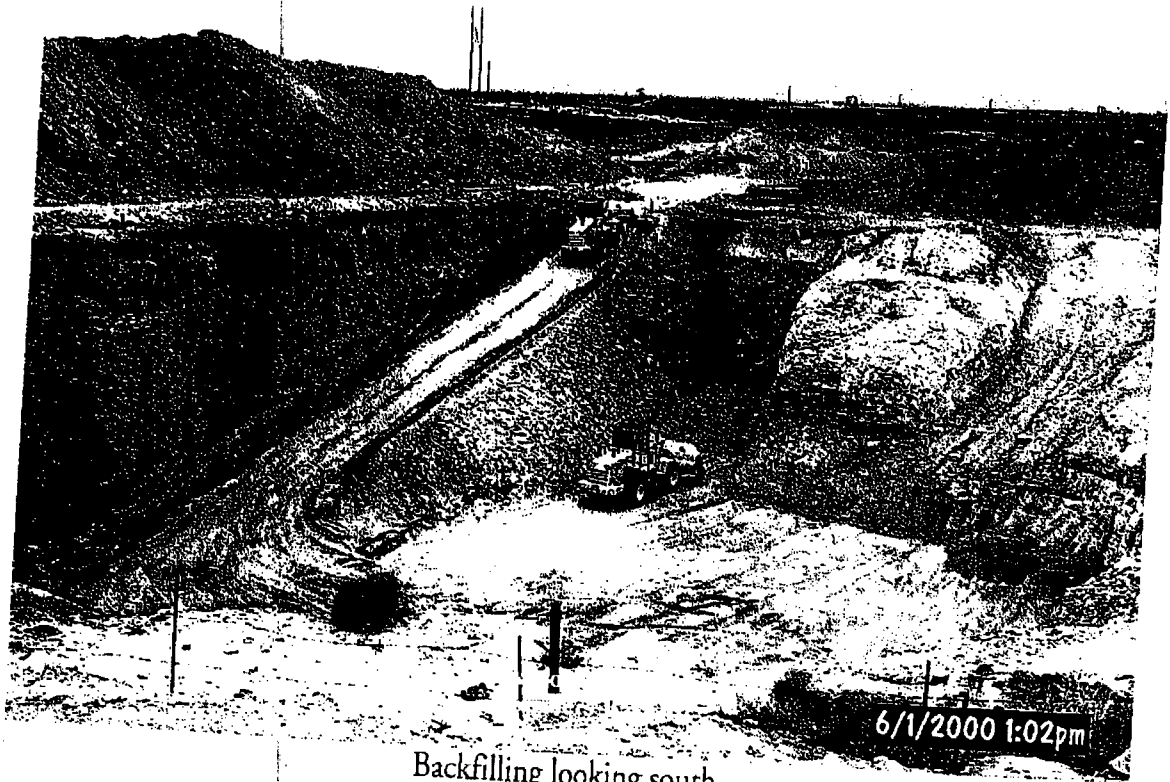
Backfilling initial 2' Lift



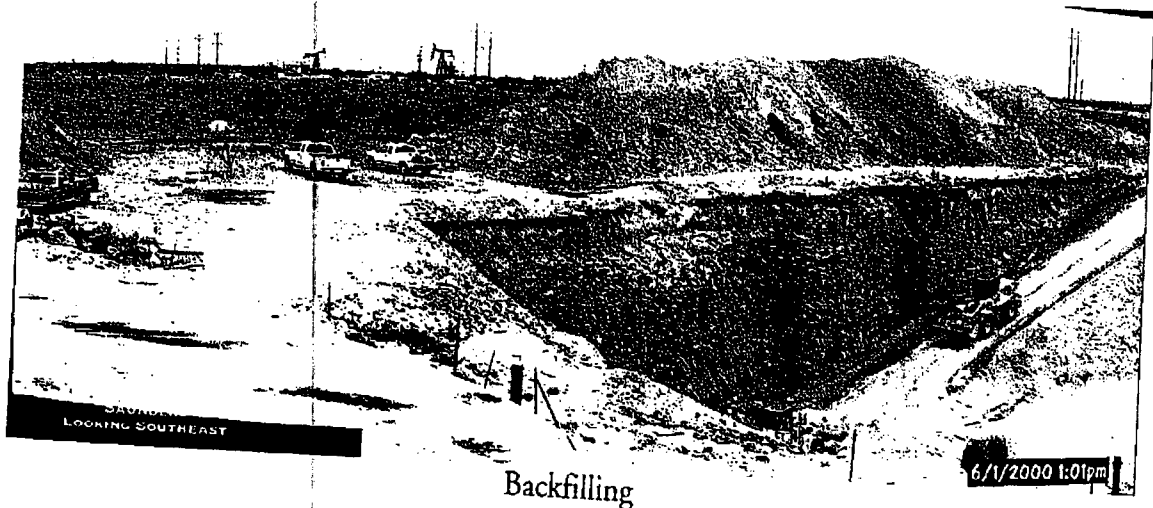
TEXACO E & P, INC.  
SAUNDERS EXCAVATION

Backfilling initial 2' Lift

Texaco F. & P, Inc.



Backfilling looking south



Backfilling

Texaco E & P, Inc.



Blending and Treating Area – Lift ready for sampling



Texaco E & P, Inc.  
Saunders

6/6/2000 2:40pm

Contaminated soil being moved into Blending and Treating area.  
Two soil lifts, i.e., East and West, compensated for lag time between sampling, receiving results, treating, and backfilling.

Texaco E & P, Inc.



Pushing soil to the loaders



Nutrients being applied to blended and tested lift



Texaco E & P, Inc.



Treated soil emplaced in excavation bottom



Treated soil being pushed for loading and emplacement

Texaco E & P, Inc.



Moving tested and treated soil from Blending and Treating Area to Excavation



Excavation looking north

Texaco E & P, Inc.



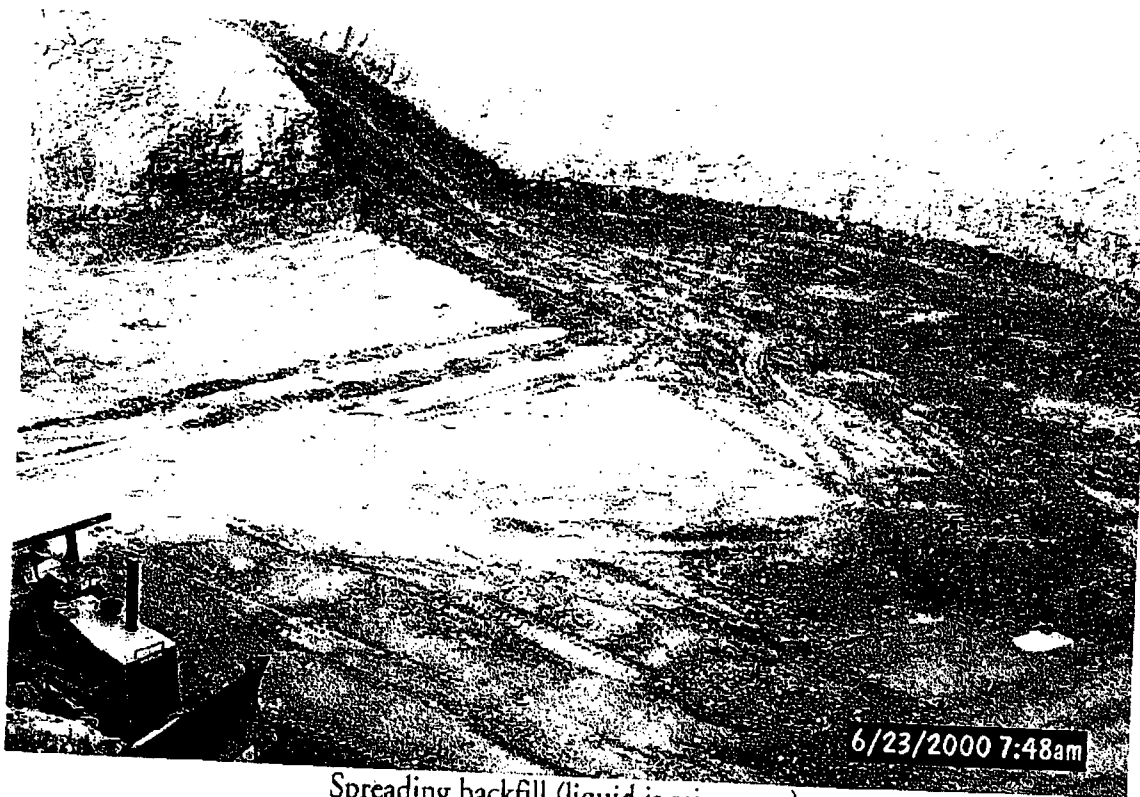
Emplacing tested soil from the Blending/Treating Area.



Texaco E & P, Inc.  
Saunders  
Blending and Treating Area

6/19/2000 2:55pm

Texaco E & P, Inc.

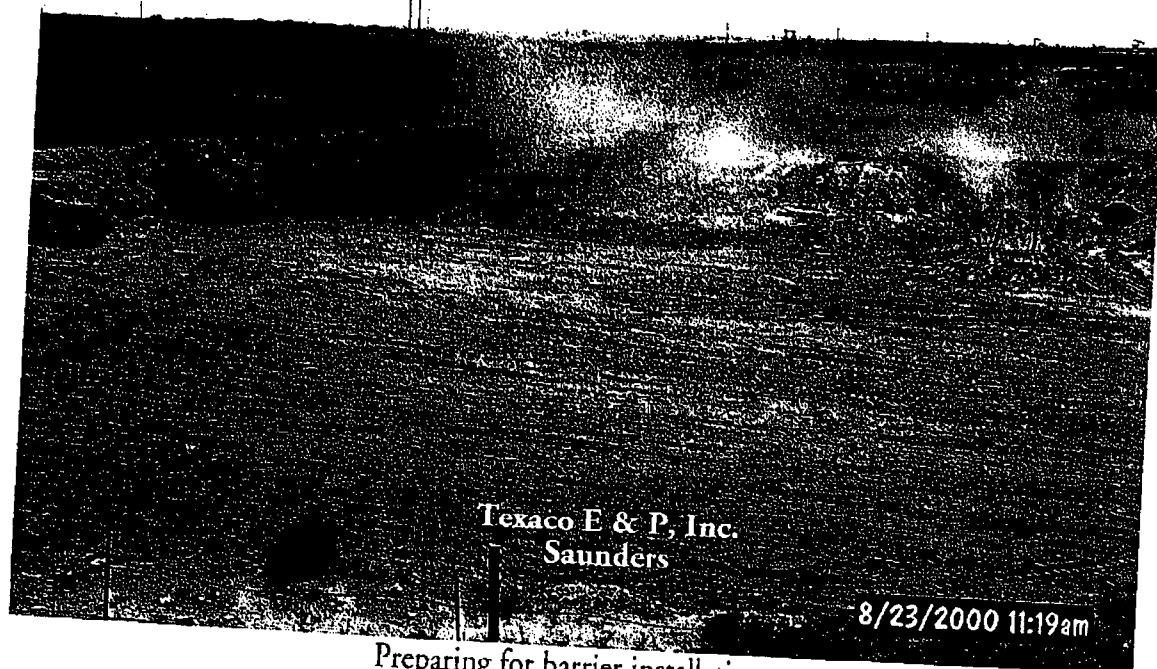


Spreading backfill (liquid is rain water)



Blending and Treating Area

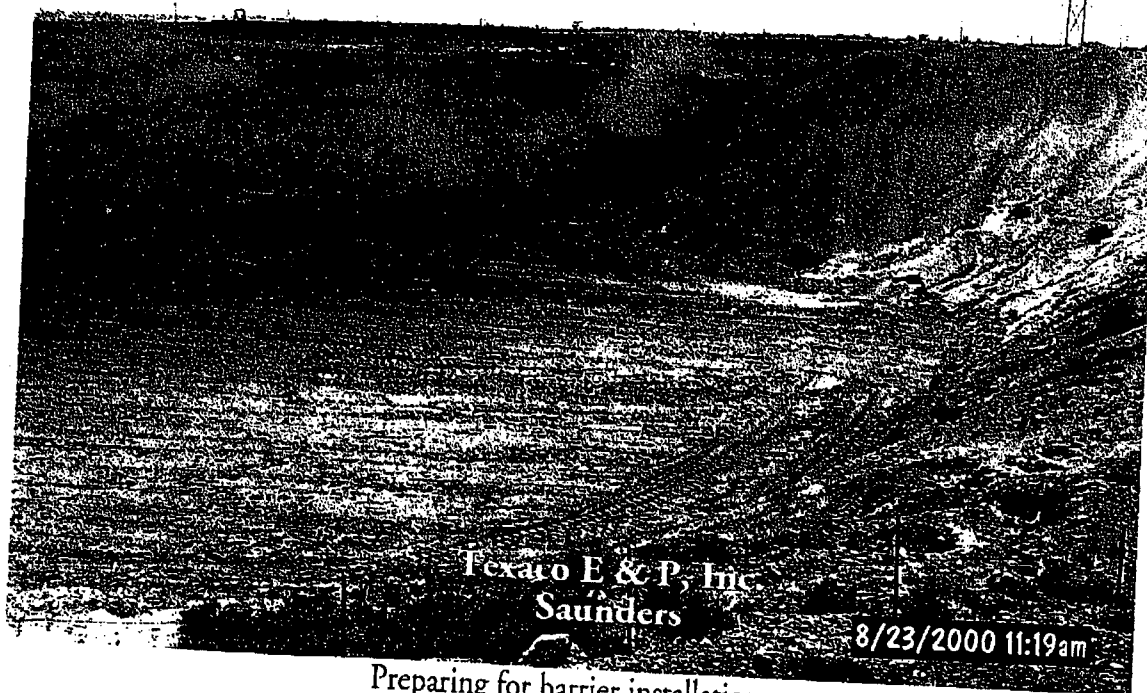
Texaco E & P, Inc.



Texaco E & P, Inc.  
Saunders

8/23/2000 11:19am

Preparing for barrier installation

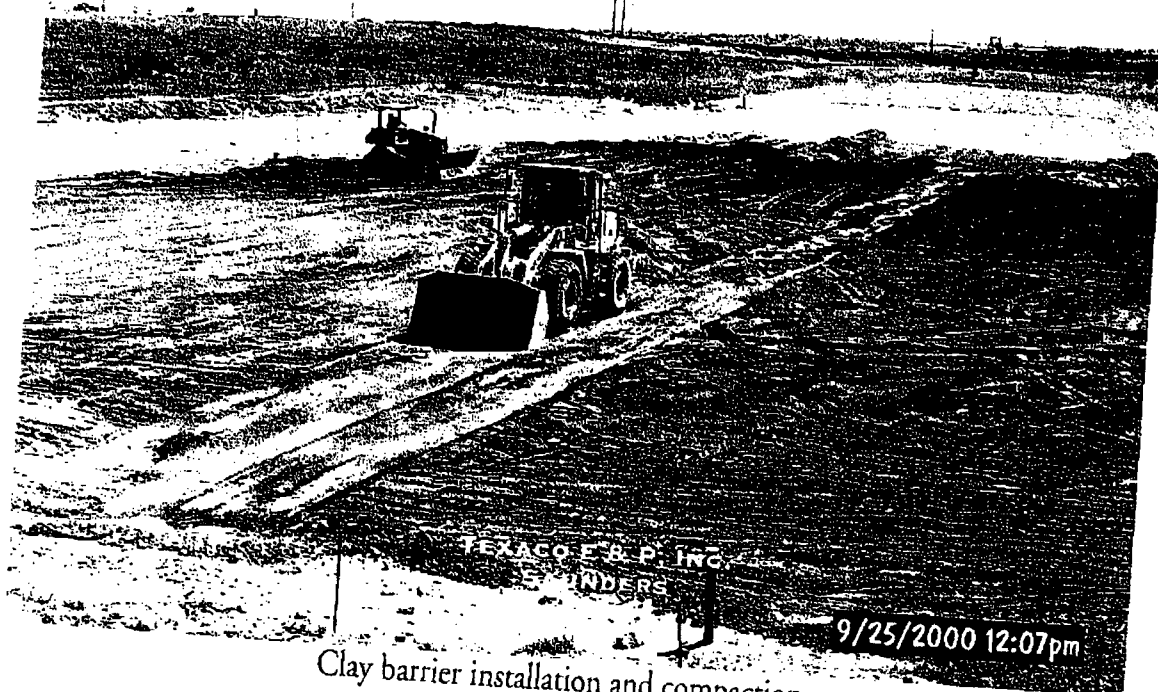


Texaco E & P, Inc.  
Saunders

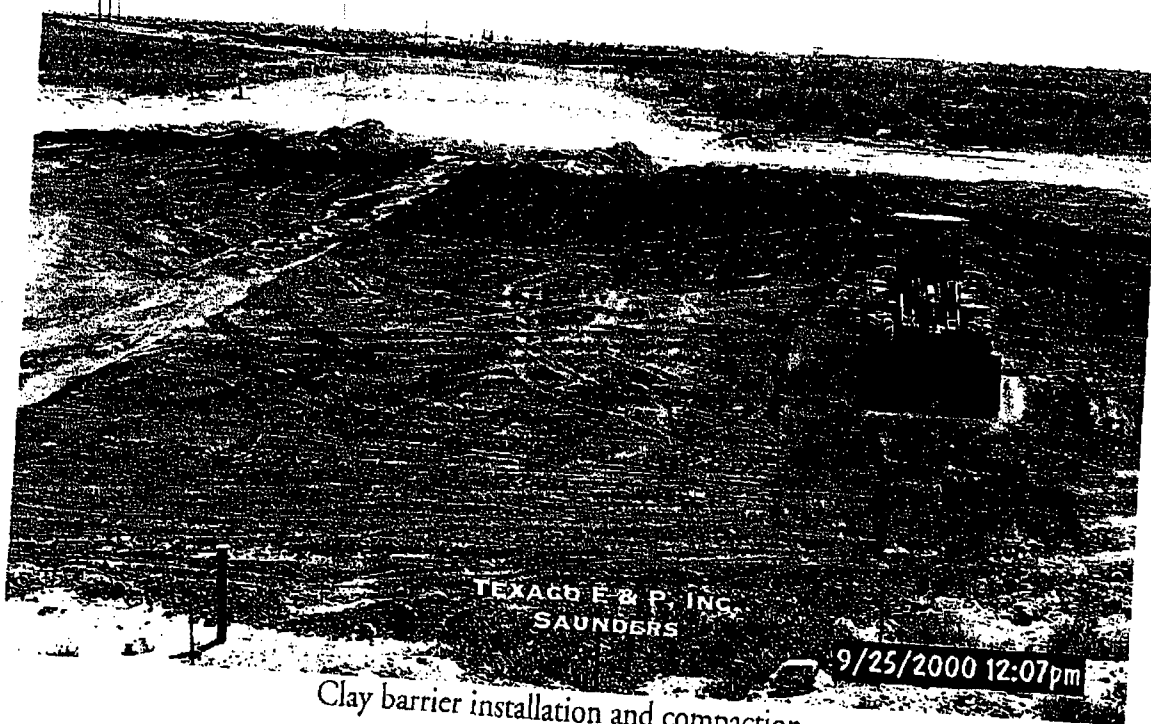
8/23/2000 11:19am

Preparing for barrier installation

Texaco E & P, Inc.



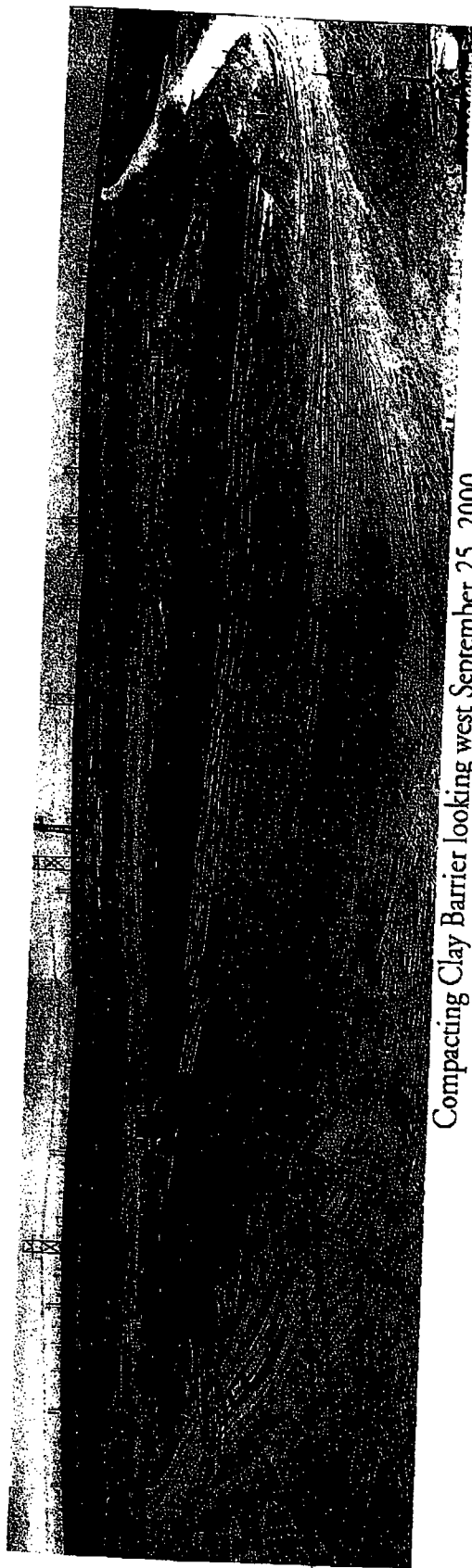
Clay barrier installation and compaction



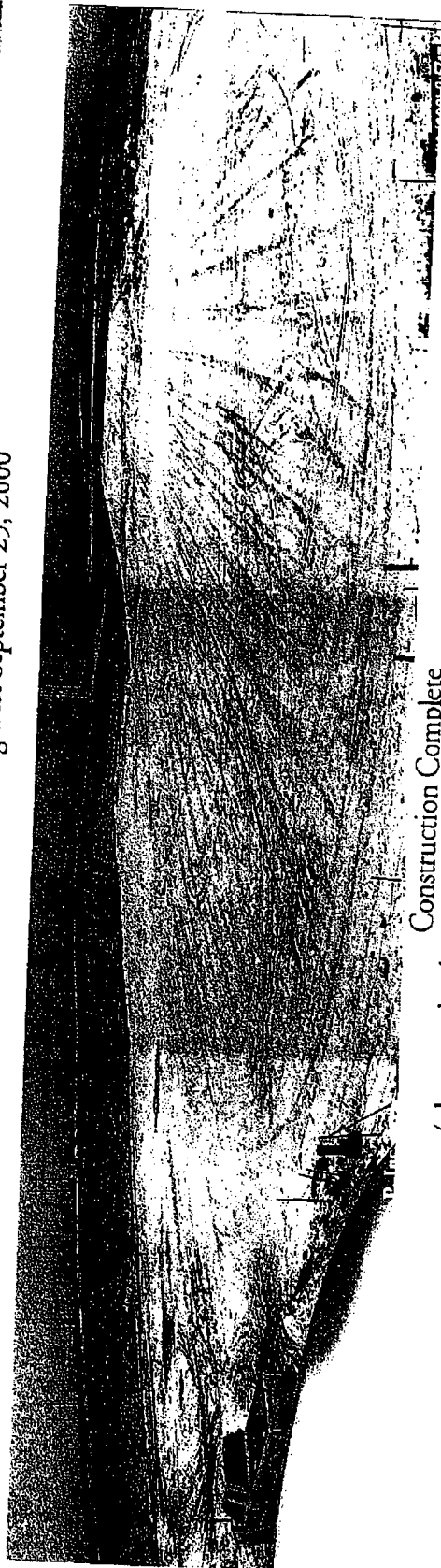
Clay barrier installation and compaction



Texaco E&P, Inc.



Compacting Clay Barrier looking west September 25, 2000



Construction Complete  
(photograph taken January 10, 2001 following a light snow)

Texaco E & P, Inc.



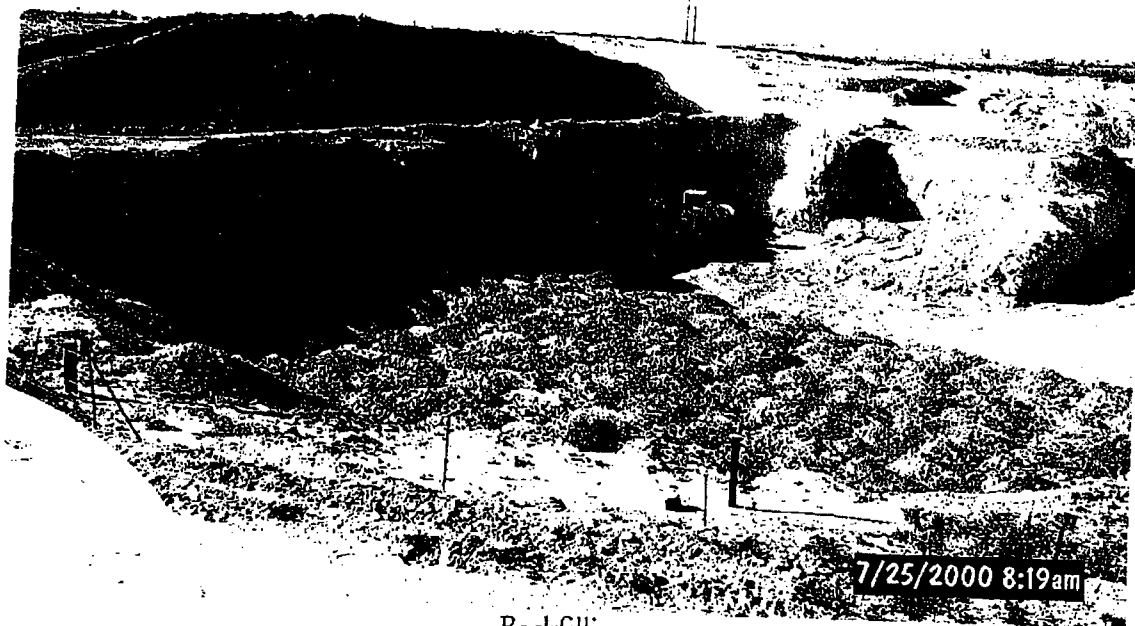
Backfilling



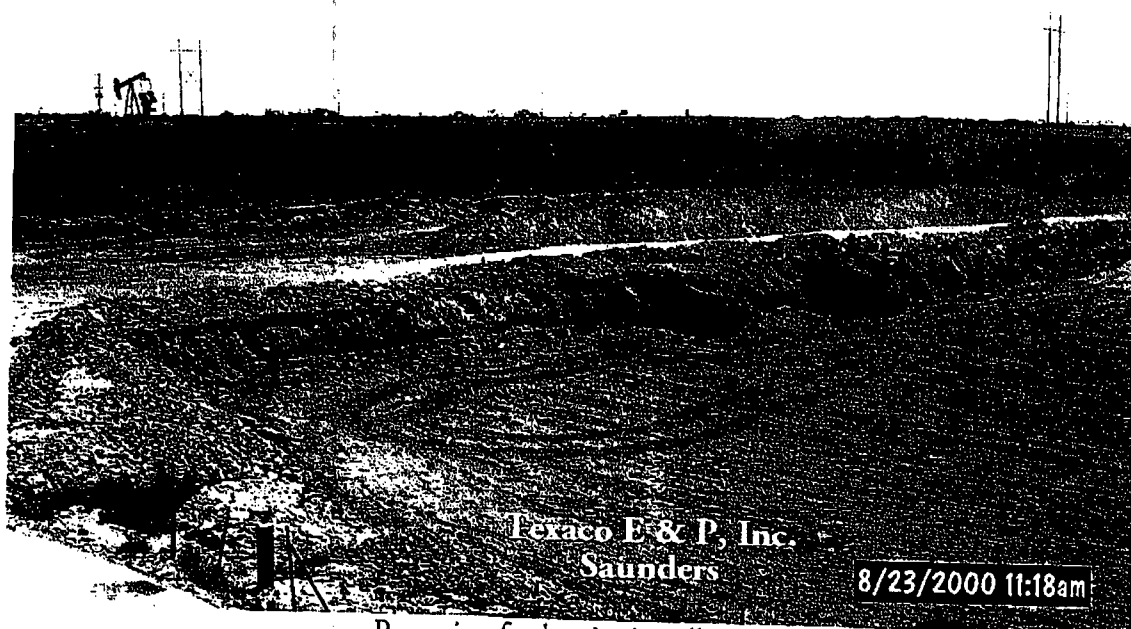
Blending and Treating Area



Texaco E & P, Inc.



Backfilling



Texaco E & P, Inc.  
Saunders

Preparing for barrier installation

**APPENDIX B**

**NMOCD CLOSURE LETTER  
JULY 11, 2003**

May 19 03 05:25p

p. 2

JAN-31-02 THU 02:38 PM

!NMSLO HOBBS FIELD

FAX NO. 5053920944

P. 01

FROM : TEXACO Hobbs OU

FAX NO. 14

JUL 26 2001 03:19PM P1



## NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

GARY E. JOHNSON

Governor

Jennifer A. Salisbury  
Cabinet Secretary

Lori Wrotenberg  
Director

Oil Conservation Division

July 11, 2001

**CERTIFIED MAIL**

**RETURN RECEIPT NO: 3771-7446**

Mr. Rodney Bailey  
Texaco Exploration & Production, Inc.  
500 N. Lorraine  
Midland, Texas 79702

Post-It Fax Note	7671	Date	7/11/01
To	MYRA MYERS	From	Rodney Bailey
Co./Dept.		Cell	631-9005
Phone #		Phone #	915-688-2971
Fax #		Fax #	

**CERTIFIED MAIL**

**RETURN RECEIPT NO: 3771-7453**

Mr. Wayne Brunette  
EOTT Energy Pipeline Limited Partnership  
P.O. Box 1660  
Midland, Texas 79702

**RE: TNM-95-10/SAUNDERS SITE  
MONUMENT, NEW MEXICO**

Dear Sirs:

The New Mexico Oil Conservation Division (OCD) has reviewed the February 27, 2001 "FINAL CLOSURE REPORT, C.J. SAUNDERS EXCAVATION, UNIT LETTER J, SECTION 18, TOWNSHIP 19 SOUTH, RANGE 36 EAST, LEA COUNTY, NEW MEXICO" which was jointly submitted by Texaco Exploration & Production, Inc. (Texaco) and EOTT Energy Pipeline Limited Partnership (EOTT). This document contains the results of Texaco's and EOTT's installation of additional ground water monitoring wells and closure of the open excavation related to a crude oil pipeline spill and a former unlined pit at the Saunders/TNM-95-10 site. The document also requests final closure approval of the site.

The closure request as contained in the above-referenced document is approved with the following conditions:

1. Texaco and EOTT shall plug all monitor wells by pulling the casing and grouting the wells from the bottom to the surface with a cement grout containing 3-5% bentonite.
2. Texaco and EOTT shall submit a plugging report for each well to the OCD Santa Fe Office by September 11, 2001 with a copy provided to the OCD Hobbs District Office.

Oil Conservation Division \* 1220 South St. Francis Drive \* Santa Fe, New Mexico 87505  
Phone: (505) 476-3440 \* Fax (505) 476-3462 \* <http://www.enmrd.state.nm.us>

May 19 03 05:25p

p.3

JAN-31-02 THU 02:39 PM 1NMSLO HOBBS FIELD

FAX NO. 5053920944

P.02

FROM : TEXACO Hobbs OU

FAX NO. : 4

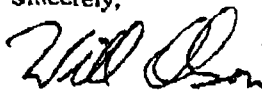
Jul. 26 2001 03:13PM P2

3. Texaco and EOTT shall notify the OCD at least 48 hours prior to the plugging activities such that the OCD has the opportunity to witness the events.

Please be advised that OCD approval does not relieve Texaco and EOTT of responsibility should remaining contaminants pose a future threat to fresh water, human health or the environment. In addition, OCD approval does not relieve Texaco and EOTT of responsibility for compliance with any other federal, state or local laws and regulations.

If you have any questions or comments, please contact me at (505) 476-3491.

Sincerely,



William C. Olson  
Hydrologist  
Environmental Bureau

cc: Chris Williams, OCD Hobbs District Office  
Mark J. Larson, Larson & Associates, Inc.

**APPENDIX C**

**DOCUMENT RECOVERY WORK PLAN  
ENVIRONMENTAL TECHNOLOGY GROUP, INC.  
MAY 8, 2003**

**DRAFT**

**EOTT Energy, LLC  
Litigation Support**

**Document Recovery Work Plan**

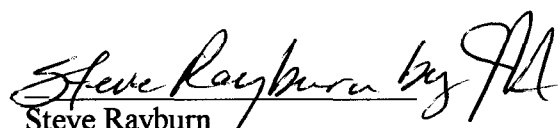
**Environmental Technology Group, Inc.  
Houston, Texas**

**ETGI Project Number EO1241**

**May 8, 2003**



Jerry Nickell  
President



Steve Rayburn  
Senior Project Manager

**DRAFT**

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## 1.0 INTRODUCTION

On behalf of EOTT Energy, LLC (EOTT), Environmental Technology Group, Inc. (ETGI) has prepared this Document Recovery Work Plan to address the recovery of two separate locations of documents believed to be of relevance in the legal proceedings involving Texas-New Mexico Pipeline. The undisclosed locations are believed to be located in Monument, New Mexico and Crane, Texas. The purpose of this work plan is to summarize the methods used to determine the whereabouts of the buried documents and methods which will be utilized to recover said documents.

## 2.0 BACKGROUND

It is believed that two separate locations exist which Texas-New Mexico Pipeline documents have been buried prior to the acquisition by EOTT. One location has been verified by a credible witness (Monument, New Mexico). The other general location has been verified through statements but the exact location has yet to be determined.

## 3.0 SCOPE OF WORK

The buried records will be unearthed using heavy equipment until the records are exposed. Excavation will commence and continue until all documents have been located and recovered. Any pauses in activity due to weather, or changes in working conditions will require the need for site security and document protection/preservation as directed by the on-site Project Manager and/or EOTT.

Once the records are exposed the excavation will be properly sloped and inspected by a competent safety/management professional prior to entry by personnel. ETGI personnel will uncover the records by hand digging in order to improve the chance for recovering all records intact. The records will then be photographed in-place as encountered before being logged and labeled on-site. Any records found boxed will remain boxed and if possible all records found loose will be bagged using zip-lock plastic bags, numbered, and placed into new document boxes. A document inventory for each box of loose documents will be prepared and affixed to the box lid. All boxes of documents will be photographed again prior to manifesting and loading of boxes. No cleaning, separating or extensive review of any documents will be attempted on-site in order to preserve the integrity of all documents. All collected documents will be transported to a site as designated by EOTT. This entire process will be logged in a standard field logbook and photographed as described above.



## 4.0 CHAIN OF CUSTODY PROCEDURES

A standard chain-of-custody form will be prepared for all boxes of the recovered/collected documents. This chain-of-custody form will accompany the recovered/collected documents during travel/transportation of said documents. Any change in custody by any individual employed by either ETGI or EOTT will be signed and dated by each individual documenting both the relinquishing and the accepting of custody for these document boxes. A copy of the chain-of-custody has been included as Attachment A.

## 5.0 SCHEDULE

Work will begin as soon as possible and cease when all documents have been delivered to a site designated by EOTT.

## 6.0 DISTRIBUTION

- Copy 1:       Mike Kelly  
              EOTT Energy, LLC  
              2000 W. Sam Houston Parkway S  
              Suite 400  
              Houston, Texas 77042
- Copy 2:       Bill Von Drehle  
              EOTT Energy, LLC  
              2000 W. Sam Houston Parkway S  
              Suite 400  
              Houston, Texas 77042
- Copy 3:       Environmental Technology Group, Inc.  
              4600 W. Wall  
              Midland, Texas 79703

## Chain of Custody

of

[illegible]

**Accepted by:**

**Signature** \_\_\_\_\_ **Date/Time** \_\_\_\_\_

Signature	Date/Time
-----------	-----------

44



5309 Wurzbach, Suite 100  
San Antonio, Texas 78238  
(210) 680-3767  
(210) 680-3763 FAX

## GROUND WATER MONITORING REPORT

TEXAS - NEW MEXICO PIPE LINE COMPANY  
SITE 16 (AKA SAUNDERS EXCAVATION, TNM-10-95)  
LEA COUNTY, NEW MEXICO

PREPARED FOR:

**TEXAS - NEW MEXICO PIPE LINE COMPANY**  
P. O. BOX 1030  
JAL, NEW MEXICO 88252

MR. TONY SAVOIE

PREPARED BY:

**KEI**

**RECEIVED**

**MAY 28 1998**

ENVIRONMENTAL BUREAU  
OIL CONSERVATION DIVISION

A handwritten signature in cursive script that reads 'Theresa Nix'.

Theresa Nix  
Project Manager

J. Michael Hawthorne, P.G., REM

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CHAIN-OF-CUSTODY DOCUMENTATION	

## **INTRODUCTION**

This binder presents results of ground water monitoring events conducted for Texas - New Mexico Pipe Line Company (TNMPL) Site 16 (AKA Saunders Excavation, TNM-10-95) located in Lea County, New Mexico from the first quarter of 1996 to present. Ground water monitoring is conducted to assess the concentrations and extent of petroleum hydrocarbon constituents in ground water. The monitoring events consist of some or all of the following:

- measuring static water levels in the monitoring wells
- checking for the presence of phase-separate hydrocarbons (PSH)
- purging and sampling each well exhibiting sufficient recharge

## **PURPOSE AND SCOPE**

This binder presents results of ground water events conducted for TNMPL Site 16 (AKA Saunders Excavation, TNM-10-95). The scope of this binder includes all sampling events conducted at this site since the first quarter of 1996, and historical ground water levels and PSH thicknesses. Site details are presented on FIG. 1.

## **FIELD AND REPORTING PROTOCOLS**

### **GROUND WATER MONITORING AND SAMPLING**

During sampling events, monitoring wells that do not contain PSH are purged of approximately three well volumes of water. Purging equipment is cleaned prior to each use with Liqui-Nox detergent and rinsed with water. After purging the wells, ground water sample containers are filled in the order of decreasing volatility (i.e., benzene, toluene, ethylbenzene, and xylenes (BTEX) containers are filled first and total petroleum hydrocarbons (TPH) containers second).

Ground water samples collected for BTEX analyses are placed in sterile, 40 ml glass VOA vials equipped with Teflon-lined caps. The containers are typically provided by the analytical laboratory. The vials are filled to a positive meniscus, sealed, and visually checked for the presence of air bubbles.

Ground water samples collected for TPH analysis are filled to capacity in sterile, 1 liter or 500 ml glass containers equipped with Teflon-lined caps. The containers are typically provided by the analytical laboratory.

The filled containers are labeled and placed on ice in an insulated cooler. The cooler is sealed for transportation to the analytical laboratory. Proper chain-of-custody documentation is maintained throughout the sampling process.

Purged water collected during each event is stored in drums on-site pending disposal.

## **LABORATORY RESULTS**

Laboratory results for ground water samples obtained during each event are delivered to a qualified environmental analytical laboratory for determination of TPH concentrations by EPA Method 418.1 or Modified 8015 Diesel Range Organics (DRO), and BTEX concentrations by EPA Method SW846-8020.

Laboratory results for each event are summarized in TABLE I and graphically presented on FIG. 1. Copies of certified laboratory reports and chain-of-custody documentation are also attached. TABLE I, the figures, and the certified laboratory reports and chain-of-custody documentation for each event are presented behind the corresponding dated tabs.

## **GROUND WATER GRADIENT**

Ground water elevation contours generated from the water level measurements collected from each event are presented on FIG. 1. Historical ground water measurements are summarized in TABLE II. These items are presented behind the corresponding dated tabs.

## **PSH MONITORING**

PSH thickness is gauged and removed regularly. The recovered PSH is placed back into the pipeline. PSH thickness across the site for each gauging event is graphically presented on FIG. 2. Monthly and cumulative PSH recovery is graphically presented on FIG. 3.

## GENERAL NOTES

- ND - Indicates constituent was not detected above the method detection or laboratory reporting limit.
- PSH - Phase-separate hydrocarbons.
- - Indicates PSH was not detected (TABLE II).
- SHEEN - Indicates a visible phase separation with a thickness less than 0.01 feet.

Depth to water is referenced from the top of PVC elevation.

Ground water elevations in monitoring wells containing PSH have been corrected for PSH density. (Correction Factor = 0.85 prior to February of 1998, Correction Factor = 0.921 as of February of 1998)

### Method detection limits:

- BTEX - 0.001 to 0.024 mg/l
- TPH - 0.7 to 10.5 mg/l

### Laboratory test methods:

- BTEX - EPA Method SW846-8020
- TPH - EPA Method 418.1
- TPH - EPA Method 8015M Diesel Range Organics (DRO)

TABLE I

SUMMARY OF GROUND WATER ANALYTICAL RESULTS - BTEX AND TPH  
 TEXAS - NEW MEXICO PIPE LINE COMPANY  
 SITE 16 (AKA SAUNDERS EXCAVATION, TNM-10-95)  
 LEA COUNTY, NEW MEXICO

MONITORING WELL	DATE	BENZENE (mg/l)	TOLUENE (mg/l)	ETHYLBENZENE (mg/l)	XYLENES (mg/l)	BTEX (mg/l)	TPH (mg/l)
MW-1	06/27/95	ND	ND	ND	ND	ND	---
MW-1	09/23/95	ND	ND	ND	ND	ND	---
MW-1	01/08/96	0.019*	ND	0.025*	ND	0.044*	---
MW-1	06/04/96	ND	ND	ND	ND	ND	ND
MW-1	07/10/96	ND	ND	ND	0.008	0.008	ND
MW-1	10/03/96	ND	ND	ND	ND	ND	ND
MW-1	02/11/97	ND	ND	ND	ND	ND	ND
MW-1	05/28/97	ND	ND	ND	ND	ND	ND
MW-1	08/26/97	ND	ND	ND	ND	ND	ND
MW-1	11/05/97	ND	ND	ND	ND	ND	ND
MW-1	02/20/98	ND	ND	ND	ND	ND	ND
MW-2	06/27/95	ND	ND	ND	ND	ND	---
MW-2	09/22/95	ND	ND	ND	ND	ND	---
MW-2	01/08/96	ND	ND	ND	0.006*	0.006*	---
MW-2	06/04/96	ND	ND	ND	ND	ND	ND
MW-2	07/10/96	ND	ND	ND	ND	ND	ND
MW-2	10/03/96	ND	ND	ND	ND	ND	ND
MW-2	02/11/97	ND	ND	ND	ND	ND	ND
MW-2	05/28/97	ND	ND	ND	ND	ND	ND
MW-2	08/26/97	ND	ND	ND	ND	ND	ND
MW-2	11/05/97	ND	ND	ND	ND	ND	ND
MW-2	02/20/98	ND	ND	ND	ND	ND	ND
MW-3	06/27/95	ND	ND	ND	ND	ND	---
MW-3	09/22/95	ND	ND	ND	ND	ND	---
MW-3	01/08/96	ND	0.027*	ND	ND	0.027*	---
MW-3	06/04/96	ND	ND	ND	ND	ND	ND
MW-3	07/10/96	ND	ND	ND	ND	ND	ND
MW-3	10/03/96	0.019	ND	0.003	ND	0.022	ND
MW-3	02/11/97	ND	ND	ND	ND	ND	ND
MW-3	05/28/97	ND	ND	ND	ND	ND	ND
MW-3	08/26/97	ND	ND	ND	ND	ND	ND
MW-3	11/05/97	ND	ND	ND	ND	ND	ND
MW-3	02/20/98	ND	ND	ND	ND	ND	ND



**TABLE I**  
(continued)

**SUMMARY OF GROUND WATER ANALYTICAL RESULTS - BTEX AND TPH**  
**TEXAS - NEW MEXICO PIPE LINE COMPANY**  
**SITE 16 (AKA SAUNDERS EXCAVATION, TNM-10-95)**  
**LEA COUNTY, NEW MEXICO**

MONITORING WELL	DATE	BENZENE (mg/l)	TOLUENE (mg/l)	ETHYLBENZENE (mg/l)	XYLENES (mg/l)	BTEX (mg/l)	TPH (mg/l)
MW-4	10/17/95	ND	ND	ND	ND	ND	---
MW-4	01/08/96	ND	ND	ND	ND	ND	---
MW-4	06/04/96	ND	ND	ND	ND	ND	ND
MW-4	07/10/96	ND	ND	ND	ND	ND	ND
MW-4	10/03/96	0.002	ND	0.003	ND	0.005	ND
MW-4	02/11/97	ND	ND	ND	ND	ND	ND
MW-4	05/28/97	ND	ND	ND	ND	ND	ND
MW-4	08/26/97	ND	ND	ND	ND	ND	ND
MW-4	11/05/97	ND	ND	ND	ND	ND	ND
MW-4	02/20/98	ND	ND	ND	ND	ND	ND
MW-5	01/10/96	0.005*	ND	ND	0.074*	0.079*	---
MW-5	06/04/96	ND	ND	ND	ND	ND	ND
MW-5	07/10/96	ND	ND	ND	ND	ND	ND
MW-5	10/03/96	ND	ND	ND	ND	ND	ND
MW-5	02/11/97	ND	ND	ND	ND	ND	ND
MW-5	05/28/97	ND	ND	ND	ND	ND	ND
MW-5	08/26/97	ND	ND	ND	ND	ND	ND
MW-5	11/05/97	ND	ND	ND	ND	ND	ND
MW-5	02/20/98	ND	ND	ND	ND	ND	ND
MW-6	01/10/96	0.003*	ND	ND	0.008*	0.011*	---
MW-6	06/04/96	ND	ND	ND	ND	ND	ND
MW-6	07/10/96	ND	ND	ND	ND	ND	ND
MW-6	10/03/96	ND	ND	ND	ND	ND	ND
MW-6	02/11/97	ND	0.039	0.016	0.08	0.135	ND
MW-6	05/28/97	ND	ND	ND	ND	ND	ND
MW-6	08/26/97	ND	ND	ND	ND	ND	ND
MW-6	11/05/97	ND	ND	ND	ND	ND	ND
MW-6	02/20/98	ND	ND	ND	ND	ND	ND

**TABLE I**  
(continued)

**SUMMARY OF GROUND WATER ANALYTICAL RESULTS - BTEX AND TPH**  
**TEXAS - NEW MEXICO PIPE LINE COMPANY**  
**SITE 16 (AKA SAUNDERS EXCAVATION, TNM-10-95)**  
**LEA COUNTY, NEW MEXICO**

MONITORING WELL	DATE	BENZENE (mg/l)	TOLUENE (mg/l)	ETHYLBENZENE (mg/l)	XYLENES (mg/l)	BTEX (mg/l)	TPH (mg/l)
MW-7	01/08/96	ND	ND	ND	ND	ND	---
MW-7	06/04/96	ND	ND	ND	ND	ND	ND
MW-7	07/10/96	ND	ND	ND	ND	ND	ND
MW-7	10/03/96	ND	ND	ND	ND	ND	ND
MW-7	02/11/97	ND	ND	ND	ND	ND	ND
MW-7	05/28/97	ND	ND	ND	ND	ND	ND
MW-7	08/26/97	ND	ND	ND	ND	ND	ND
MW-7	11/05/97	ND	ND	ND	ND	ND	ND
MW-7	02/20/98	ND	ND	ND	ND	ND	ND
MW-8	01/10/96	ND	ND	ND	0.011*	0.011*	---
MW-8	06/04/96	ND	ND	ND	ND	ND	ND
MW-8	07/10/96	ND	ND	ND	ND	ND	ND
MW-8	10/03/96	ND	ND	ND	0.001	0.001	ND
MW-8	02/11/97	ND	0.003	ND	0.005	0.008	ND
MW-8	05/28/97	ND	ND	ND	ND	ND	ND
MW-8	08/26/97	ND	ND	ND	ND	ND	ND
MW-8	11/05/97	ND	ND	ND	ND	ND	ND
MW-8	02/20/98	ND	ND	ND	ND	ND	ND
MW-9	01/10/96	ND	ND	0.016*	0.022*	0.038*	---
MW-9	06/04/96	ND	ND	ND	ND	ND	1
MW-9	07/10/96	ND	ND	ND	ND	ND	ND
MW-9	10/03/96	ND	ND	ND	ND	ND	ND
MW-9	02/11/97	ND	ND	ND	ND	ND	ND
MW-9	05/28/97	ND	ND	ND	ND	ND	ND
MW-9	08/26/97	ND	ND	ND	ND	ND	ND
MW-9	11/05/97	ND	ND	ND	ND	ND	ND
MW-9	02/20/98	ND	ND	ND	ND	ND	ND



**TABLE I**  
(continued)

**SUMMARY OF GROUND WATER ANALYTICAL RESULTS - BTEX AND TPH**  
**TEXAS - NEW MEXICO PIPE LINE COMPANY**  
**SITE 16 (AKA SAUNDERS EXCAVATION, TNM-10-95)**  
**LEA COUNTY, NEW MEXICO**

MONITORING WELL	DATE	BENZENE (mg/l)	TOLUENE (mg/l)	ETHYLBENZENE (mg/l)	XYLENES (mg/l)	BTEX (mg/l)	TPH (mg/l)
MW-10	02/06/96	0.290*	1.237*	2.529*	2.360*	6.416*	—
MW-10	06/04/96	ND	ND	ND	ND	ND	ND
MW-10	07/10/96	ND	ND	0.016	0.025	0.041	ND
MW-10	10/03/96	ND	ND	ND	ND	ND	ND
MW-10	02/11/97	0.001	ND	ND	ND	0.001	ND
MW-10	05/28/97	ND	ND	ND	ND	ND	ND
MW-10	08/26/97	ND	ND	ND	ND	ND	ND
MW-10	11/05/97	0.019	ND	ND	0.018	0.037	1.6
MW-10	02/20/98	0.014	ND	ND	ND	0.014	ND
MW-11	02/06/96	ND	ND	ND	ND	ND	—
MW-11	06/04/96	ND	ND	ND	ND	ND	1
MW-11	07/10/96	ND	ND	ND	ND	ND	ND
MW-11	10/03/96	0.009	0.003	0.001	0.003	0.016	1
MW-11	02/11/97	0.012	0.003	0.003	0.002	0.020	2
MW-11	05/28/97	ND	ND	ND	ND	ND	ND
MW-11	08/26/97	ND	ND	ND	ND	ND	ND
MW-11	11/05/97	0.006	0.008	0.006	0.013	0.033	14.7
MW-11	02/20/98	ND	ND	ND	ND	ND	ND
MW-12	02/06/96	ND	ND	ND	0.004*	0.004*	—
MW-12	06/04/96	0.002	0.002	0.003	0.004	0.011	2
MW-12	07/10/96	ND	ND	0.012	0.007	0.019	1
MW-12	10/03/96	ND	0.001	0.002	0.004	0.007	1
MW-12	02/11/97	ND	0.002	0.003	0.006	0.011	2
MW-12	05/28/97	ND	ND	ND	ND	ND	ND
MW-12	08/26/97	ND	ND	ND	ND	ND	ND
MW-12	11/05/97	ND	0.001	ND	0.005	0.006	18.8
MW-12	02/20/98	ND	ND	ND	ND	ND	2.4
JC-1	02/06/96	ND	ND	ND	ND	ND	---
TMW-2	10/03/96	0.003	0.002	0.005	0.019	0.029	-

\* Indicates samples were not collected using EPA protocol.

**TABLE II**

**MONITORING WELL MW-1  
SUMMARY OF GROUND WATER MONITORING  
TEXAS - NEW MEXICO PIPE LINE COMPANY  
SITE 16 (AKA SAUNDERS EXCAVATION, TNM-10-95)  
LEA COUNTY, NEW MEXICO**

DATE MEASURED	PVC ELEVATION (feet)	DEPTH TO WATER (feet)	GROUND WATER ELEVATION		PSH THICKNESS (feet)
			Actual	Corrected	
09/20/95	3690.44	39.86	3650.58	---	---
09/22/95	3690.44	39.62	3650.82	---	---
10/03/95	3690.44	40.78	3649.66	---	---
10/17/95	3690.44	41.27	3649.17	---	---
12/08/95	3690.44	42.61	3647.83	---	---
01/04/96	3690.44	42.50	3647.94	---	---
01/25/96	3690.44	42.90	3647.54	---	---
01/31/96	3690.44	42.98	3647.46	---	---
02/23/96	3690.44	43.03	3647.41	---	---
05/31/96	3690.44	42.78	3647.66	---	---
06/02/96	3690.44	42.64	3647.80	---	---
06/04/96	3690.44	42.54	3647.90	---	---
06/17/96	3690.44	42.96	3647.48	---	---
07/10/96	3690.44	43.51	3646.93	---	---
10/02/96	3690.44	44.14	3646.30	---	---
10/30/96	3690.44	44.29	3646.15	---	---
02/10/97	3690.44	44.56	3645.88	---	---
05/03/97	3690.44	44.61	3645.83	---	---
05/07/97	3690.44	44.72	3645.72	---	---
05/14/97	3690.44	44.70	3645.74	---	---
05/28/97	3690.44	44.74	3645.70	---	---
07/07/97	3690.44	44.89	3645.55	---	---
08/26/97	3690.44	45.04	3645.40	---	---
09/04/97	3690.44	45.11	3645.33	---	---
10/06/97	3690.44	45.21	3645.23	---	---
11/05/97	3690.44	45.10	3645.34	---	---
12/03/97	3690.44	45.22	3645.22	---	---
01/02/98	3690.44	45.29	3645.15	---	---
02/07/98	3690.44	45.29	3645.15	---	---
02/20/98	3690.44	45.27	3645.17	---	---
03/06/98	3690.44	45.20	3645.24	---	---
04/09/98	3690.44	45.14	3645.30	---	---

**TABLE II**  
(continued)

**MONITORING WELL MW-2  
SUMMARY OF GROUND WATER MONITORING  
TEXAS - NEW MEXICO PIPE LINE COMPANY  
SITE 16 (AKA SAUNDERS EXCAVATION, TNM-10-95)  
LEA COUNTY, NEW MEXICO**

DATE MEASURED	PVC ELEVATION (feet)	DEPTH TO WATER (feet)	GROUND WATER ELEVATION		PSH THICKNESS (feet)
			Actual	Corrected	
09/20/95	3688.23	39.87	3648.36	---	---
09/22/95	3688.23	39.71	3648.52	---	---
10/03/95	3688.23	39.52	3648.71	---	---
12/08/95	3688.23	40.15	3648.08	---	---
01/04/96	3688.23	40.88	3647.35	---	---
01/25/96	3688.23	40.95	3647.28	---	---
01/31/96	3688.23	41.28	3646.95	---	---
02/23/96	3688.23	41.49	3646.74	---	---
05/31/96	3688.23	41.90	3646.33	---	---
06/02/96	3688.23	41.89	3646.34	---	---
06/04/96	3688.23	41.71	3646.52	---	---
06/17/96	3688.23	41.93	3646.30	---	---
07/10/96	3688.23	42.20	3646.03	---	---
10/02/96	3688.23	42.99	3645.24	---	---
02/10/97	3688.23	42.99	3645.24	---	---
05/03/97	3688.23	43.18	3645.05	---	---
05/07/97	3688.23	43.19	3645.04	---	---
05/14/97	3688.23	43.20	3645.03	---	---
05/28/97	3688.23	43.23	3645.00	---	---
07/07/97	3688.23	43.34	3644.89	---	---
08/26/97	3688.23	43.48	3644.75	---	---
09/04/97	3688.23	43.56	3644.67	---	---
10/06/97	3688.23	43.69	3644.54	---	---
11/05/97	3688.23	43.70	3644.53	---	---
12/03/97	3688.23	43.67	3644.56	---	---
01/02/98	3688.23	43.71	3644.52	---	---
02/07/98	3688.23	43.74	3644.49	---	---
02/20/98	3688.23	43.73	3644.50	---	---
03/06/98	3688.23	43.70	3644.53	---	---
04/09/98	3688.23	43.66	3644.57	---	---

**TABLE II**  
(continued)

**MONITORING WELL MW-3  
SUMMARY OF GROUND WATER MONITORING  
TEXAS - NEW MEXICO PIPE LINE COMPANY  
SITE 16 (AKA SAUNDERS EXCAVATION, TNM-10-95)  
LEA COUNTY, NEW MEXICO**

DATE MEASURED	PVC ELEVATION (feet)	DEPTH TO WATER (feet)	GROUND WATER ELEVATION		PSH THICKNESS (feet)
			Actual	Corrected	
09/20/95	3688.03	40.42	3647.61	---	---
09/22/95	3688.03	40.26	3647.77	---	---
10/03/95	3688.03	40.01	3648.02	---	---
12/08/95	3688.03	40.67	3647.36	---	---
01/04/96	3688.03	41.29	3646.74	---	---
01/25/96	3688.03	41.41	3646.62	---	---
02/23/96	3688.03	41.57	3646.46	---	---
05/31/96	3688.03	41.54	3646.49	---	---
06/02/96	3688.03	41.52	3646.51	---	---
06/04/96	3688.03	41.85	3646.18	---	---
06/17/96	3688.03	41.58	3646.45	---	---
07/10/96	3688.03	42.03	3646.00	---	---
10/02/96	3688.03	42.20	3645.83	---	---
02/10/97	3688.03	42.67	3645.36	---	---
05/03/97	3688.03	42.83	3645.20	---	---
05/07/97	3688.03	42.84	3645.19	---	---
05/14/97	3688.03	42.86	3645.17	---	---
05/28/97	3688.03	42.90	3645.13	---	---
07/07/97	3688.03	43.06	3644.97	---	---
08/26/97	3688.03	43.17	3644.86	---	---
09/04/97	3688.03	43.31	3644.72	---	---
10/06/97	3688.03	43.34	3644.69	---	---
11/05/97	3688.03	43.31	3644.72	---	---
12/03/97	3688.03	43.34	3644.69	---	---
01/02/98	3688.03	43.37	3644.66	---	---
02/07/98	3688.03	43.37	3644.66	---	---
02/20/98	3688.03	43.35	3644.68	---	---
03/06/98	3688.03	43.29	3644.74	---	---
04/09/98	3688.03	43.23	3644.80	---	---

**TABLE II**  
**(continued)**

**MONITORING WELL MW-4**  
**SUMMARY OF GROUND WATER MONITORING**  
**TEXAS - NEW MEXICO PIPE LINE COMPANY**  
**SITE 16 (AKA SAUNDERS EXCAVATION, TNM-10-95)**  
**LEA COUNTY, NEW MEXICO**

DATE MEASURED	PVC ELEVATION (feet)	DEPTH TO WATER (feet)	GROUND WATER ELEVATION		PSH THICKNESS (feet)
			Actual	Corrected	
12/08/95	3688.07	40.60	3647.47	---	---
01/04/96	3688.07	40.83	3647.24	---	---
01/25/96	3688.07	40.89	3647.18	---	---
02/23/96	3688.07	41.17	3646.90	---	---
05/31/96	3688.07	41.23	3646.84	---	---
06/02/96	3688.07	41.21	3646.86	---	---
06/04/96	3688.07	41.16	3646.91	---	---
06/17/96	3688.07	41.33	3646.74	---	---
07/10/96	3688.07	41.58	3646.49	---	---
10/02/96	3688.07	42.10	3645.97	---	---
10/30/96	3688.07	42.24	3645.83	---	---
02/10/97	3688.07	42.57	3645.50	---	---
05/03/97	3688.07	42.73	3645.34	---	---
05/07/97	3688.07	42.73	3645.34	---	---
05/14/97	3688.07	42.74	3645.33	---	---
05/28/97	3688.07	42.78	3645.29	---	---
07/07/97	3688.07	43.91	3644.16	---	---
08/26/97	3688.07	43.06	3645.01	---	---
09/04/97	3688.07	43.09	3644.98	---	---
10/06/97	3688.07	43.13	3644.94	---	---
11/05/97	3688.07	43.15	3644.92	---	---
12/03/97	3688.07	43.24	3644.83	---	---
01/02/98	3688.07	43.29	3644.78	---	---
02/07/98	3688.07	43.30	3644.77	---	---
02/20/98	3688.07	43.29	3644.78	---	---
03/06/98	3688.07	43.24	3644.83	---	---
04/09/98	3688.07	43.18	3644.89	---	---

**TABLE II**  
(continued)

**MONITORING WELL MW-5  
SUMMARY OF GROUND WATER MONITORING  
TEXAS - NEW MEXICO PIPE LINE COMPANY  
SITE 16 (AKA SAUNDERS EXCAVATION, TNM-10-95)  
LEA COUNTY, NEW MEXICO**

DATE MEASURED	PVC ELEVATION (feet)	DEPTH TO WATER (feet)	GROUND WATER ELEVATION		PSH THICKNESS (feet)
			Actual	Corrected	
01/04/96	3691.28	43.60	3647.68	---	---
01/25/96	3691.28	43.74	3647.54	---	---
02/23/96	3691.28	44.12	3647.16	---	---
05/31/96	3691.28	43.52	3647.76	---	Sheen
06/02/96	3691.28	43.44	3647.84	---	Sheen
06/04/96	3691.28	43.35	3647.93	---	---
06/17/96	3691.28	43.78	3647.50	---	---
07/10/96	3691.28	44.35	3646.93	---	---
10/02/96	3691.28	44.98	3646.30	---	---
10/30/96	3691.28	45.12	3646.16	---	---
02/10/97	3691.28	45.39	3645.89	---	---
05/03/97	3691.28	45.50	3645.78	---	---
05/07/97	3691.28	45.48	3645.80	---	---
05/14/97	3691.28	45.50	3645.78	---	---
05/28/97	3691.28	45.55	3645.73	---	---
07/07/97	3691.28	45.71	3645.57	---	---
08/26/97	3691.28	45.88	3645.40	---	---
09/04/97	3691.28	45.93	3645.35	---	---
10/06/97	3691.28	45.94	3645.34	---	---
11/05/97	3691.28	45.63	3645.65	---	---
12/03/97	3691.28	46.05	3645.23	---	---
01/02/98	3691.28	46.13	3645.15	---	---
02/07/98	3691.28	46.11	3645.17	---	---
02/20/98	3691.28	46.18	3645.10	---	---
03/06/98	3691.28	45.96	3645.32	---	---
04/09/98	3691.28	45.94	3645.34	---	---



**TABLE II**  
**(continued)**

**MONITORING WELL MW-6**  
**SUMMARY OF GROUND WATER MONITORING**  
**TEXAS - NEW MEXICO PIPE LINE COMPANY**  
**SITE 16 (AKA SAUNDERS EXCAVATION, TNM-10-95)**  
**LEA COUNTY, NEW MEXICO**

DATE MEASURED	PVC ELEVATION (feet)	DEPTH TO WATER (feet)	GROUND WATER ELEVATION		PSH THICKNESS (feet)
			Actual	Corrected	
01/04/96	3691.81	44.18	3647.63	---	---
01/25/96	3691.81	44.30	3647.51	---	---
02/23/96	3691.81	44.58	3647.23	---	---
05/31/96	3691.81	44.14	3647.67	---	---
06/02/96	3691.81	44.07	3647.74	---	---
06/04/96	3691.81	44.02	3647.79	---	---
06/17/96	3691.81	44.44	3647.37	---	---
07/10/96	3691.81	44.94	3646.87	---	---
10/02/96	3691.81	45.56	3646.25	---	---
10/30/96	3691.81	45.70	3646.11	---	---
02/10/97	3691.81	45.94	3645.87	---	---
05/03/97	3691.81	46.04	3645.77	---	---
05/07/97	3691.81	46.04	3645.77	---	---
05/14/97	3691.81	46.06	3645.75	---	---
05/28/97	3691.81	46.10	3645.71	---	---
07/07/97	3691.81	46.28	3645.53	---	---
08/26/97	3691.81	46.47	3645.34	---	---
09/04/97	3691.81	46.50	3645.31	---	---
10/06/97	3691.81	46.50	3645.31	---	---
11/05/97	3691.81	46.52	3645.29	---	---
12/03/97	3691.81	46.61	3645.20	---	---
01/02/98	3691.81	46.68	3645.13	---	---
02/07/98	3691.81	46.65	3645.16	---	---
02/20/98	3691.81	46.61	3645.20	---	---
03/06/98	3691.81	46.54	3645.27	---	---
04/09/98	3691.81	46.45	3645.36	---	---

**TABLE II**  
(continued)

**MONITORING WELL MW-7  
SUMMARY OF GROUND WATER MONITORING  
TEXAS - NEW MEXICO PIPE LINE COMPANY  
SITE 16 (AKA SAUNDERS EXCAVATION, TNM-10-95)  
LEA COUNTY, NEW MEXICO**

DATE MEASURED	PVC ELEVATION (feet)	DEPTH TO WATER (feet)	GROUND WATER ELEVATION		PSH THICKNESS (feet)
			Actual	Corrected	
01/04/96	3691.48	43.86	3647.62	---	---
01/25/96	3691.48	43.97	3647.51	---	---
02/23/96	3691.48	44.20	3647.28	---	---
05/31/96	3691.48	44.03	3647.45	---	---
06/02/96	3691.48	43.98	3647.50	---	---
06/04/96	3691.48	43.92	3647.56	---	---
06/17/96	3691.48	44.26	3647.22	---	---
07/10/96	3691.48	44.68	3646.80	---	---
10/02/96	3691.48	45.28	3646.20	---	---
10/30/96	3691.48	45.42	3646.06	---	---
02/10/97	3691.48	45.64	3645.84	---	---
05/03/97	3691.48	45.74	3645.74	---	---
05/07/97	3691.48	45.73	3645.75	---	---
05/14/97	3691.48	45.76	3645.72	---	---
05/28/97	3691.48	45.82	3645.66	---	---
07/07/97	3691.48	46.00	3645.48	---	---
08/26/97	3691.48	46.19	3645.29	---	---
09/04/97	3691.48	46.23	3645.25	---	---
10/06/97	3691.48	46.20	3645.28	---	---
11/05/97	3691.48	46.23	3645.25	---	---
12/03/97	3691.48	46.34	3645.14	---	---
01/02/98	3691.48	46.40	3645.08	---	---
02/07/98	3691.48	46.33	3645.15	---	---
02/20/98	3691.48	46.30	3645.18	---	---
03/06/98	3691.48	46.22	3645.26	---	---
04/09/98	3691.48	46.14	3645.34	---	---

**TABLE II**  
(continued)

**MONITORING WELL MW-8  
SUMMARY OF GROUND WATER MONITORING  
TEXAS - NEW MEXICO PIPE LINE COMPANY  
SITE 16 (AKA SAUNDERS EXCAVATION, TNM-10-95)  
LEA COUNTY, NEW MEXICO**

DATE MEASURED	PVC ELEVATION (feet)	DEPTH TO WATER (feet)	GROUND WATER ELEVATION		PSH THICKNESS (feet)
			Actual	Corrected	
01/04/96	3692.03	44.47	3647.56	---	---
01/25/96	3692.03	44.58	3647.45	---	---
02/23/96	3692.03	44.70	3647.33	---	---
05/31/96	3692.03	44.93	3647.10	---	---
06/02/96	3692.03	44.96	3647.07	---	---
06/04/96	3692.03	44.90	3647.13	---	---
06/17/96	3692.03	45.13	3646.90	---	---
07/10/96	3692.03	45.38	3646.65	---	---
10/02/96	3692.03	45.96	3646.07	---	---
10/30/96	3692.03	46.07	3645.96	---	---
02/10/97	3692.03	46.26	3645.77	---	---
05/03/97	3692.03	46.35	3645.68	---	---
05/07/97	3692.03	46.35	3645.68	---	---
05/14/97	3692.03	46.38	3645.65	---	---
05/28/97	3692.03	46.44	3645.59	---	---
07/07/97	3692.03	45.71	3646.32	---	---
08/26/97	3692.03	46.83	3645.20	---	---
09/04/97	3692.03	46.87	3645.16	---	---
10/06/97	3692.03	46.81	3645.22	---	---
11/05/97	3692.03	46.85	3645.18	---	---
12/03/97	3692.03	46.96	3645.07	---	---
01/02/98	3692.03	46.98	3645.05	---	---
02/07/98	3692.03	46.90	3645.13	---	---
02/20/98	3692.03	46.86	3645.17	---	---
03/06/98	3692.03	46.76	3645.27	---	---
04/09/98	3692.03	46.67	3645.36	---	---

**TABLE II**  
(continued)

**MONITORING WELL MW-9  
SUMMARY OF GROUND WATER MONITORING  
TEXAS - NEW MEXICO PIPE LINE COMPANY  
SITE 16 (AKA SAUNDERS EXCAVATION, TNM-10-95)  
LEA COUNTY, NEW MEXICO**

DATE MEASURED	PVC ELEVATION (feet)	DEPTH TO WATER (feet)	GROUND WATER ELEVATION		PSH THICKNESS (feet)
			Actual	Corrected	
01/04/96	3690.30	42.59	3647.71	---	---
01/25/96	3690.30	42.76	3647.54	---	---
02/23/96	3690.30	43.81	3646.49	---	---
05/31/96	3690.30	43.03	3647.27	---	---
06/02/96	3690.30	42.96	3647.34	---	---
06/04/96	3690.30	42.82	3647.48	---	---
06/17/96	3690.30	43.08	3647.22	---	---
07/10/96	3690.30	43.45	3646.85	---	---
10/02/96	3690.30	44.01	3646.29	---	---
10/30/96	3690.30	44.15	3646.15	---	---
02/10/97	3690.30	44.46	3645.84	---	---
05/03/97	3690.30	44.61	3645.69	---	---
05/07/97	3690.30	44.55	3645.75	---	---
05/14/97	3690.30	44.60	3645.70	---	---
05/28/97	3690.30	44.64	3645.66	---	---
07/07/97	3690.30	44.78	3645.52	---	---
08/26/97	3690.30	44.93	3645.37	---	---
09/04/97	3690.30	44.95	3645.35	---	---
10/06/97	3690.30	44.99	3645.31	---	---
11/05/97	3690.30	45.00	3645.30	---	---
12/03/97	3690.30	45.12	3645.18	---	---
01/02/98	3690.30	45.19	3645.11	---	---
02/07/98	3690.30	45.20	3645.10	---	---
02/20/98	3690.30	45.19	3645.11	---	---
03/06/98	3690.30	45.11	3645.19	---	---
04/09/98	3690.30	45.06	3645.24	---	---

**TABLE II**  
**(continued)**

**MONITORING WELL MW-10**  
**SUMMARY OF GROUND WATER MONITORING**  
**TEXAS - NEW MEXICO PIPE LINE COMPANY**  
**SITE 16 (AKA SAUNDERS EXCAVATION, TNM-10-95)**  
**LEA COUNTY, NEW MEXICO**

DATE MEASURED	PVC ELEVATION (feet)	DEPTH TO WATER (feet)	GROUND WATER ELEVATION		PSH THICKNESS (feet)
			Actual	Corrected	
01/31/96	3688.33	41.62	3646.71	---	---
02/23/96	3688.33	41.66	3646.67	---	---
05/31/96	3688.33	41.46	3646.87	---	---
06/02/96	3688.33	41.44	3646.89	---	---
06/04/96	3688.33	41.38	3646.95	---	---
06/17/96	3688.33	41.59	3646.74	---	---
07/10/96	3688.33	41.84	3646.49	---	---
10/02/96	3688.33	42.36	3645.97	---	---
10/30/96	3688.33	42.51	3645.82	---	---
02/10/97	3688.33	42.84	3645.49	---	---
05/03/97	3688.33	43.01	3645.32	---	---
05/07/97	3688.33	43.00	3645.33	---	---
05/14/97	3688.33	43.00	3645.33	---	---
05/28/97	3688.33	43.04	3645.29	---	---
07/07/97	3688.33	43.17	3645.16	---	---
08/26/97	3688.33	43.33	3645.00	---	---
09/04/97	3688.33	43.35	3644.98	---	---
10/06/97	3688.33	43.39	3644.94	---	---
11/05/97	3688.33	43.42	3644.91	---	---
12/03/97	3688.33	43.51	3644.82	---	---
01/02/98	3688.33	43.56	3644.77	---	---
02/07/98	3688.33	43.58	3644.75	---	---
02/20/98	3688.33	43.57	3644.76	---	---
03/06/98	3688.33	43.50	3644.83	---	---
04/09/98	3688.33	43.47	3644.86	---	---

**TABLE II**  
(continued)

**MONITORING WELL MW-11  
SUMMARY OF GROUND WATER MONITORING  
TEXAS - NEW MEXICO PIPE LINE COMPANY  
SITE 16 (AKA SAUNDERS EXCAVATION, TNM-10-95)  
LEA COUNTY, NEW MEXICO**

DATE MEASURED	PVC ELEVATION (feet)	DEPTH TO WATER (feet)	GROUND WATER ELEVATION		PSH THICKNESS (feet)
			Actual	Corrected	
01/31/96	3689.11	42.71	3646.40	---	---
02/23/96	3689.11	42.74	3646.37	---	---
05/31/96	3689.11	42.11	3647.00	---	---
06/02/96	3689.11	42.09	3647.02	---	---
06/04/96	3689.11	42.04	3647.07	---	---
06/17/96	3689.11	42.27	3646.84	---	---
07/10/96	3689.11	42.58	3646.53	---	---
10/02/96	3689.11	43.12	3645.99	---	---
10/30/96	3689.11	43.26	3645.85	---	---
02/10/97	3689.11	43.58	3645.53	---	---
05/03/97	3689.11	43.75	3645.36	---	---
05/07/97	3689.11	43.74	3645.37	---	---
05/14/97	3689.11	43.76	3645.35	---	---
05/28/97	3689.11	43.80	3645.31	---	---
07/07/97	3689.11	43.92	3645.19	---	---
08/26/97	3689.11	44.07	3645.04	---	---
09/04/97	3689.11	44.10	3645.01	---	---
10/06/97	3689.11	44.14	3644.97	---	---
11/05/97	3689.11	44.17	3644.94	---	---
12/03/97	3689.11	44.26	3644.85	---	---
01/02/98	3689.11	44.32	3644.79	---	---
02/07/98	3689.11	44.34	3644.77	---	---
02/20/98	3689.11	44.32	3644.79	---	---
03/06/98	3689.11	44.26	3644.85	---	---
04/09/98	3689.11	44.21	3644.90	---	---

**TABLE II**  
(continued)

**MONITORING WELL MW-12  
SUMMARY OF GROUND WATER MONITORING  
TEXAS - NEW MEXICO PIPE LINE COMPANY  
SITE 16 (AKA SAUNDERS EXCAVATION, TNM-10-95)  
LEA COUNTY, NEW MEXICO**

DATE MEASURED	PVC ELEVATION (feet)	DEPTH TO WATER (feet)	GROUND WATER ELEVATION		PSH THICKNESS (feet)
			Actual	Corrected	
01/31/96	3689.16	42.17	3646.99	---	---
02/23/96	3689.16	42.25	3646.91	---	---
05/31/96	3689.16	42.01	3647.15	---	---
06/02/96	3689.16	41.97	3647.19	---	---
06/04/96	3689.16	41.91	3647.25	---	---
06/17/96	3689.16	42.27	3646.89	---	---
07/10/96	3689.16	42.58	3646.58	---	---
10/02/96	3689.16	43.13	3646.03	---	---
10/30/96	3689.16	43.28	3645.88	---	---
02/10/97	3689.16	43.58	3645.58	---	---
05/03/97	3689.16	43.74	3645.42	---	---
05/07/97	3689.16	43.72	3645.44	---	---
05/14/97	3689.16	43.74	3645.42	---	---
05/28/97	3689.16	43.92	3645.24	---	---
07/07/97	3689.16	43.91	3645.25	---	---
08/26/97	3689.16	44.06	3645.10	---	---
09/04/97	3689.16	44.09	3645.07	---	---
10/06/97	3689.16	44.13	3645.03	---	---
11/05/97	3689.16	44.15	3645.01	---	---
12/03/97	3689.16	44.24	3644.92	---	---
01/02/98	3689.16	44.31	3644.85	---	---
02/07/98	3689.16	44.33	3644.83	---	---
02/20/98	3689.16	44.30	3644.86	---	---
03/06/98	3689.16	44.25	3644.91	---	---
04/09/98	3689.16	44.19	3644.97	---	---

**TABLE II**  
**(continued)**

**MONITORING WELL JC-1**  
**SUMMARY OF GROUND WATER MONITORING**  
**TEXAS - NEW MEXICO PIPE LINE COMPANY**  
**SITE 16 (AKA SAUNDERS EXCAVATION, TNM-10-95)**  
**LEA COUNTY, NEW MEXICO**

DATE MEASURED	PVC ELEVATION (feet)	DEPTH TO WATER (feet)	GROUND WATER ELEVATION		PSH THICKNESS (feet)
			Actual	Corrected	
01/31/96	3680.11	32.43	3647.68	---	---
02/23/96	3680.11	32.58	3647.53	---	---
05/31/96	3680.11	36.47	3643.64	---	---
06/02/96	3680.11	36.47	3643.64	---	---



**TABLE II**  
**(continued)**

**BORING HOLE NO. B-1**  
**SUMMARY OF GROUND WATER MONITORING**  
**TEXAS - NEW MEXICO PIPE LINE COMPANY**  
**SITE 16 (AKA SAUNDERS EXCAVATION, TNM-10-95)**  
**LEA COUNTY, NEW MEXICO**

DATE MEASURED	PVC ELEVATION (feet)	DEPTH TO WATER (feet)	GROUND WATER ELEVATION		PSH THICKNESS (feet)
			Actual	Corrected	
01/19/96	Unknown	8.61	Unknown	Unknown	Sheen

**NOTES:**

1. Depth is referenced from bottom of excavation surface.

**TABLE II**  
**(continued)**

**BORING HOLE NO. B-2**  
**SUMMARY OF GROUND WATER MONITORING**  
**TEXAS - NEW MEXICO PIPE LINE COMPANY**  
**SITE 16 (AKA SAUNDERS EXCAVATION, TNM-10-95)**  
**LEA COUNTY, NEW MEXICO**

DATE MEASURED	PVC ELEVATION (feet)	DEPTH TO WATER (feet)	GROUND WATER ELEVATION		PSH THICKNESS (feet)
			Actual	Corrected	
01/19/96	Unknown	9.02	Unknown	Unknown	Sheen

**NOTES:**

1. Depth is referenced from bottom of excavation surface.

**TABLE II**  
**(continued)**

**BORING HOLE NO. B-3**  
**SUMMARY OF GROUND WATER MONITORING**  
**TEXAS - NEW MEXICO PIPE LINE COMPANY**  
**SITE 16 (AKA SAUNDERS EXCAVATION, TNM-10-95)**  
**LEA COUNTY, NEW MEXICO**

DATE MEASURED	PVC ELEVATION (feet)	DEPTH TO WATER (feet)	GROUND WATER ELEVATION		PSH THICKNESS (feet)
			Actual	Corrected	
01/19/96	Unknown	8.96	Unknown	Unknown	Sheen

**NOTES:**

1. Depth is referenced from bottom of excavation surface.

**TABLE II**  
**(continued)**

**BORING HOLE NO. B-4**  
**SUMMARY OF GROUND WATER MONITORING**  
**TEXAS - NEW MEXICO PIPE LINE COMPANY**  
**SITE 16 (AKA SAUNDERS EXCAVATION, TNM-10-95)**  
**LEA COUNTY, NEW MEXICO**

DATE MEASURED	PVC ELEVATION (feet)	DEPTH TO WATER (feet)	GROUND WATER ELEVATION		PSH THICKNESS (feet)
			Actual	Corrected	
01/19/96	Unknown	9.34	Unknown	Unknown	Sheen

**NOTES:**

1. Depth is referenced from bottom of excavation surface.

**TABLE II**  
**(continued)**

**BORING HOLE NO. B-8**  
**SUMMARY OF GROUND WATER MONITORING**  
**TEXAS - NEW MEXICO PIPE LINE COMPANY**  
**SITE 16 (AKA SAUNDERS EXCAVATION, TNM-10-95)**  
**LEA COUNTY, NEW MEXICO**

DATE MEASURED	PVC ELEVATION (feet)	DEPTH TO WATER (feet)	GROUND WATER ELEVATION		PSH THICKNESS (feet)
			Actual	Corrected	
01/19/96	3650.30		3650.30	3650.30	Unknown

**NOTES:**

1. Depth is referenced from bottom of excavation surface.
2. PSH was too thick on 01/19/96 to measure depth to water.

**TABLE II**  
**(continued)**

**BORING HOLE NO. B-9**  
**SUMMARY OF GROUND WATER MONITORING**  
**TEXAS - NEW MEXICO PIPE LINE COMPANY**  
**SITE 16 (AKA SAUNDERS EXCAVATION, TNM-10-95)**  
**LEA COUNTY, NEW MEXICO**

DATE MEASURED	PVC ELEVATION (feet)	DEPTH TO WATER (feet)	GROUND WATER ELEVATION		PSH THICKNESS (feet)
			Actual	Corrected	
01/19/96	3651.10	9.25	3641.85	3642.36	0.60

**NOTES:**

1. Depth is referenced from bottom of excavation surface.

**TABLE II**  
**(continued)**

**BORING HOLE NO. BH-14**  
**SUMMARY OF GROUND WATER MONITORING**  
**TEXAS - NEW MEXICO PIPE LINE COMPANY**  
**SITE 16 (AKA SAUNDERS EXCAVATION, TNM-10-95)**  
**LEA COUNTY, NEW MEXICO**

DATE MEASURED	PVC ELEVATION (feet)	DEPTH TO WATER (feet)	GROUND WATER ELEVATION		PSH THICKNESS (feet)
			Actual	Corrected	
12/08/95	3650.30	2.40	3647.90	---	---
01/19/96	3650.30		3650.30	3650.30	Unknown

**NOTES:**

1. Depth is referenced from bottom of excavation surface.
2. PSH was too thick on 01/19/96 to measure depth to water.

**TABLE II**  
**(continued)**

**BORING HOLE NO. BH-15**  
**SUMMARY OF GROUND WATER MONITORING**  
**TEXAS - NEW MEXICO PIPE LINE COMPANY**  
**SITE 16 (AKA SAUNDERS EXCAVATION, TNM-10-95)**  
**LEA COUNTY, NEW MEXICO**

DATE MEASURED	PVC ELEVATION (feet)	DEPTH TO WATER (feet)	GROUND WATER ELEVATION		PSH THICKNESS (feet)
			Actual	Corrected	
12/08/95	3653.70	6.00	3647.70	---	---
01/19/96	3653.70	6.31	3647.39	3647.39	Sheen

**NOTES:**

1. Depth is referenced from bottom of excavation surface.



**TABLE II**  
**(continued)**

**BORING HOLE NO. B-16**  
**SUMMARY OF GROUND WATER MONITORING**  
**TEXAS - NEW MEXICO PIPE LINE COMPANY**  
**SITE 16 (AKA SAUNDERS EXCAVATION, TNM-10-95)**  
**LEA COUNTY, NEW MEXICO**

DATE MEASURED	PVC ELEVATION (feet)	DEPTH TO WATER (feet)	GROUND WATER ELEVATION		PSH THICKNESS (feet)
			Actual	Corrected	
12/08/95	3651.50	3.00	3648.50	---	---
01/19/96	3651.50	3.63	3647.87	3647.87	Sheen

**NOTES:**

1. Depth is referenced from bottom of excavation surface.

**TABLE II**  
**(continued)**

**BORING HOLE NO. BH-18**  
**SUMMARY OF GROUND WATER MONITORING**  
**TEXAS - NEW MEXICO PIPE LINE COMPANY**  
**SITE 16 (AKA SAUNDERS EXCAVATION, TNM-10-95)**  
**LEA COUNTY, NEW MEXICO**

DATE MEASURED	PVC ELEVATION (feet)	DEPTH TO WATER (feet)	GROUND WATER ELEVATION		PSH THICKNESS (feet)
			Actual	Corrected	
12/08/95	3651.10	3.50	3647.60	---	---

**NOTES:**

1. Depth is referenced from bottom of excavation surface.

**TABLE II**  
**(continued)**

**BORING HOLE NO. BH-21**  
**SUMMARY OF GROUND WATER MONITORING**  
**TEXAS - NEW MEXICO PIPE LINE COMPANY**  
**SITE 16 (AKA SAUNDERS EXCAVATION, TNM-10-95)**  
**LEA COUNTY, NEW MEXICO**

DATE MEASURED	PVC ELEVATION (feet)	DEPTH TO WATER (feet)	GROUND WATER ELEVATION		PSH THICKNESS (feet)
			Actual	Corrected	
12/08/95	3655.00	7.50	3647.50	---	---

**NOTES:**

1. Depth is referenced from bottom of excavation surface.

**TABLE II**  
**(continued)**

**TEMPORARY MONITORING WELL TMW-1**  
**SUMMARY OF GROUND WATER MONITORING**  
**TEXAS - NEW MEXICO PIPE LINE COMPANY**  
**SITE 16 (AKA SAUNDERS EXCAVATION, TNM-10-95)**  
**LEA COUNTY, NEW MEXICO**

DATE MEASURED	PVC ELEVATION (feet)	DEPTH TO WATER (feet)	GROUND WATER ELEVATION		DEPTH TO PSH (FEET)	PSH ELEVATION (FEET)	PSH THICKNESS (feet)
			Actual	Corrected			
10/03/96	Unknown	8.92	Unknown	Unknown	8.92	Unknown	Sheen
10/30/96	Unknown	13.56	Unknown	Unknown	7.66	Unknown	5.90
11/04/96	Unknown	9.97	Unknown	Unknown	9.01	Unknown	0.96
12/06/96	Unknown	10.35	Unknown	Unknown	9.12	Unknown	1.23
12/12/96	Unknown	10.43	Unknown	Unknown	9.18	Unknown	1.25
12/21/96	Unknown	10.49	Unknown	Unknown	9.18	Unknown	1.31
12/27/96	Unknown	10.12	Unknown	Unknown	9.23	Unknown	0.89
01/24/97	Unknown	10.27	Unknown	Unknown	9.28	Unknown	0.99
02/18/97	Unknown	9.80	Unknown	Unknown	9.32	Unknown	0.48
03/12/97	Unknown	9.85	Unknown	Unknown	9.35	Unknown	0.50
04/08/97	Unknown	9.85	Unknown	Unknown	9.35	Unknown	0.50
05/03/97	Unknown	9.11	Unknown	Unknown	9.11	Unknown	Sheen
05/20/97	Unknown	11.36	Unknown	Unknown	9.22	Unknown	2.14
07/29/97	Unknown	13.26	Unknown	Unknown	9.39	Unknown	3.87
08/26/97	Unknown	14.83	Unknown	Unknown	9.29	Unknown	5.54
09/04/97	Unknown	12.43	Unknown	Unknown	9.62	Unknown	2.81
09/09/97	Unknown	11.93	Unknown	Unknown	9.66	Unknown	2.27
09/16/97	Unknown	11.56	Unknown	Unknown	9.42	Unknown	2.14
09/26/97	Unknown	11.59	Unknown	Unknown	9.62	Unknown	1.97
09/30/97	Unknown	11.74	Unknown	Unknown	9.63	Unknown	2.11
10/06/97	Unknown	11.47	Unknown	Unknown	9.68	Unknown	1.79
10/24/97	Unknown	11.70	Unknown	Unknown	9.43	Unknown	2.27
10/30/97	Unknown	11.45	Unknown	Unknown	9.57	Unknown	1.88
11/05/97	Unknown	11.25	Unknown	Unknown	9.70	Unknown	1.55
11/12/97	Unknown	11.21	Unknown	Unknown	9.76	Unknown	1.45
12/03/97	Unknown	11.71	Unknown	Unknown	9.82	Unknown	1.89
12/09/97	Unknown	11.45	Unknown	Unknown	9.86	Unknown	1.59
12/17/97	Unknown	11.38	Unknown	Unknown	9.91	Unknown	1.47

**TABLE II**  
(continued)

**TEMPORARY MONITORING WELL TMW-1  
SUMMARY OF GROUND WATER MONITORING  
TEXAS - NEW MEXICO PIPE LINE COMPANY  
SITE 16 (AKA SAUNDERS EXCAVATION, TNM-10-95)  
LEA COUNTY, NEW MEXICO**

DATE MEASURED	PVC ELEVATION (feet)	DEPTH TO WATER (feet)	GROUND WATER ELEVATION		DEPTH TO PSH (FEET)	PSH ELEVATION (FEET)	PSH THICKNESS (feet)
			Actual	Corrected			
01/02/98	Unknown	11.58	Unknown	Unknown	9.94	Unknown	1.64
01/09/98	Unknown	11.28	Unknown	Unknown	9.94	Unknown	1.34
01/15/98	Unknown	11.08	Unknown	Unknown	9.97	Unknown	1.11
01/20/98	Unknown	10.63	Unknown	Unknown	10.37	Unknown	0.26
01/30/98	Unknown	11.23	Unknown	Unknown	9.94	Unknown	1.29
02/07/98	Unknown	11.13	Unknown	Unknown	9.94	Unknown	1.19
02/13/98	Unknown	11.03	Unknown	Unknown	9.96	Unknown	1.07
02/21/98	Unknown	11.03	Unknown	Unknown	9.90	Unknown	1.13
02/25/98	Unknown	10.85	Unknown	Unknown	9.92	Unknown	0.93
03/04/98	Unknown	10.84	Unknown	Unknown	9.92	Unknown	0.92
03/13/98	Unknown	11.00	Unknown	Unknown	9.87	Unknown	1.13
03/17/98	Unknown	10.88	Unknown	Unknown	9.89	Unknown	0.99
03/24/98	Unknown	10.82	Unknown	Unknown	9.89	Unknown	0.93
03/31/98	Unknown	10.79	Unknown	Unknown	9.85	Unknown	0.94
04/09/98	Unknown	10.81	Unknown	Unknown	9.80	Unknown	1.01

**TABLE II**  
(continued)

**TEMPORARY MONITORING WELL TMW-2  
SUMMARY OF GROUND WATER MONITORING  
TEXAS - NEW MEXICO PIPE LINE COMPANY  
SITE 16 (AKA SAUNDERS EXCAVATION, TNM-10-95)  
LEA COUNTY, NEW MEXICO**

DATE MEASURED	PVC ELEVATION (feet)	DEPTH TO WATER (feet)	GROUND WATER ELEVATION		DEPTH TO PSH (FEET)	PSH ELEVATION (FEET)	PSH THICKNESS (feet)
			Actual	Corrected			
10/03/96	Unknown	8.65	Unknown	Unknown	8.65	Unknown	Sheen
10/30/96	Unknown	10.05	Unknown	Unknown	7.85	Unknown	2.20
11/04/96	Unknown	10.17	Unknown	Unknown	8.62	Unknown	1.55
12/06/96	Unknown	10.79	Unknown	Unknown	8.73	Unknown	2.06
12/12/96	Unknown	10.91	Unknown	Unknown	8.86	Unknown	2.05
12/21/96	Unknown	10.92	Unknown	Unknown	8.75	Unknown	2.17
12/27/96	Unknown	10.65	Unknown	Unknown	8.82	Unknown	1.83
01/24/97	Unknown	10.92	Unknown	Unknown	8.83	Unknown	2.09
02/18/97	Unknown	9.90	Unknown	Unknown	8.90	Unknown	1.00
03/12/97	Unknown	9.90	Unknown	Unknown	8.97	Unknown	0.93
04/08/97	Unknown	9.93	Unknown	Unknown	8.95	Unknown	0.98
05/03/97	Unknown	12.77	Unknown	Unknown	8.68	Unknown	4.09
05/20/97	Unknown	13.31	Unknown	Unknown	8.69	Unknown	4.62
07/29/97	Unknown	13.77	Unknown	Unknown	8.96	Unknown	4.81
08/26/97	Unknown	14.77	Unknown	Unknown	8.96	Unknown	5.81
09/04/97	Unknown	13.46	Unknown	Unknown	9.12	Unknown	4.34
09/09/97	Unknown	12.67	Unknown	Unknown	9.21	Unknown	3.46
09/16/97	Unknown	13.20	Unknown	Unknown	8.72	Unknown	4.48
09/26/97	Unknown	12.81	Unknown	Unknown	9.50	Unknown	3.31
09/30/97	Unknown	13.14	Unknown	Unknown	9.08	Unknown	4.06
10/06/97	Unknown	12.68	Unknown	Unknown	9.16	Unknown	3.52
10/24/97	Unknown	13.94	Unknown	Unknown	8.79	Unknown	5.15
10/30/97	Unknown	12.87	Unknown	Unknown	9.05	Unknown	3.82
11/05/97	Unknown	12.30	Unknown	Unknown	9.22	Unknown	3.08
11/12/97	Unknown	12.04	Unknown	Unknown	9.29	Unknown	2.75
12/03/97	Unknown	12.49	Unknown	Unknown	9.35	Unknown	3.14
12/09/97	Unknown	12.02	Unknown	Unknown	9.41	Unknown	2.61
12/17/97	Unknown	11.83	Unknown	Unknown	9.47	Unknown	2.36

**TABLE II**  
**(continued)**

**TEMPORARY MONITORING WELL TMW-2**  
**SUMMARY OF GROUND WATER MONITORING**  
**TEXAS - NEW MEXICO PIPE LINE COMPANY**  
**SITE 16 (AKA SAUNDERS EXCAVATION, TNM-10-95)**  
**LEA COUNTY, NEW MEXICO**

DATE MEASURED	PVC ELEVATION (feet)	DEPTH TO WATER (feet)	GROUND WATER ELEVATION		DEPTH TO PSH (FEET)	PSH ELEVATION (FEET)	PSH THICKNESS (feet)
			Actual	Corrected			
01/02/98	Unknown	12.04	Unknown	Unknown	9.48	Unknown	2.56
01/09/98	Unknown	11.71	Unknown	Unknown	9.49	Unknown	2.22
01/15/98	Unknown	11.43	Unknown	Unknown	9.51	Unknown	1.92
01/20/98	Unknown	11.87	Unknown	Unknown	10.69	Unknown	1.18
01/30/98	Unknown	11.48	Unknown	Unknown	9.48	Unknown	2.00
02/07/98	Unknown	11.43	Unknown	Unknown	9.49	Unknown	1.94
02/13/98	Unknown	11.30	Unknown	Unknown	9.50	Unknown	1.80
02/21/98	Unknown	11.39	Unknown	Unknown	9.50	Unknown	1.89
02/25/98	Unknown	11.07	Unknown	Unknown	9.48	Unknown	1.59
03/04/98	Unknown	11.09	Unknown	Unknown	9.46	Unknown	1.63
03/13/98	Unknown	11.19	Unknown	Unknown	9.46	Unknown	1.73
03/17/98	Unknown	10.92	Unknown	Unknown	9.45	Unknown	1.47
03/24/98	Unknown	10.88	Unknown	Unknown	9.44	Unknown	1.44
03/31/98	Unknown	10.90	Unknown	Unknown	9.42	Unknown	1.48
04/09/98	Unknown	11.02	Unknown	Unknown	9.37	Unknown	1.65

**TABLE II**  
**(continued)**

**TEMPORARY MONITORING WELL TMW-3**  
**SUMMARY OF GROUND WATER MONITORING**  
**TEXAS - NEW MEXICO PIPE LINE COMPANY**  
**SITE 16 (AKA SAUNDERS EXCAVATION, TNM-10-95)**  
**LEA COUNTY, NEW MEXICO**

DATE MEASURED	PVC ELEVATION (feet)	DEPTH TO WATER (feet)	GROUND WATER ELEVATION		DEPTH TO PSH (FEET)	PSH ELEVATION (FEET)	PSH THICKNESS (feet)
			Actual	Corrected			
10/03/96	Unknown	8.79	Unknown	Unknown	8.74	Unknown	0.05
10/30/96	Unknown	11.86	Unknown	Unknown	6.66	Unknown	5.20
11/04/96	Unknown	12.27	Unknown	Unknown	8.62	Unknown	3.65
12/06/96	Unknown	12.51	Unknown	Unknown	8.80	Unknown	3.71
12/12/96	Unknown	12.64	Unknown	Unknown	9.03	Unknown	3.61
12/21/96	Unknown	12.31	Unknown	Unknown	8.85	Unknown	3.46
12/27/96	Unknown	11.64	Unknown	Unknown	9.00	Unknown	2.64
01/24/97	Unknown	11.78	Unknown	Unknown	8.96	Unknown	2.82
02/18/97	Unknown	10.45	Unknown	Unknown	9.15	Unknown	1.30
03/12/97	Unknown	10.51	Unknown	Unknown	9.21	Unknown	1.30
04/08/97	Unknown	10.56	Unknown	Unknown	9.15	Unknown	1.41
05/03/97	Unknown	14.25	Unknown	Unknown	8.81	Unknown	5.44
05/20/97	Unknown	14.24	Unknown	Unknown	9.06	Unknown	5.18
07/29/97	Unknown	14.41	Unknown	Unknown	9.15	Unknown	5.26
08/26/97	Unknown	14.59	Unknown	Unknown	9.42	Unknown	5.17
09/04/97	Unknown	14.22	Unknown	Unknown	9.25	Unknown	4.97
09/09/97	Unknown	13.32	Unknown	Unknown	9.34	Unknown	3.98
09/16/97	Unknown	13.73	Unknown	Unknown	9.05	Unknown	4.68
09/26/97	Unknown	14.55	Unknown	Unknown	9.10	Unknown	5.45
09/30/97	Unknown	14.51	Unknown	Unknown	9.11	Unknown	5.40
10/06/97	Unknown	14.00	Unknown	Unknown	9.25	Unknown	4.75
10/24/97	Unknown	14.61	Unknown	Unknown	8.87	Unknown	5.74
10/30/97	Unknown	14.40	Unknown	Unknown	9.09	Unknown	5.31
11/05/97	Unknown	14.06	Unknown	Unknown	9.26	Unknown	4.80
11/12/97	Unknown	13.80	Unknown	Unknown	9.33	Unknown	4.47
12/03/97	Unknown	14.24	Unknown	Unknown	9.40	Unknown	4.84
12/09/97	Unknown	13.46	Unknown	Unknown	9.48	Unknown	3.98
12/17/97	Unknown	13.30	Unknown	Unknown	9.53	Unknown	3.77



**TABLE II**  
(continued)

**TEMPORARY MONITORING WELL TMW-3  
SUMMARY OF GROUND WATER MONITORING  
TEXAS - NEW MEXICO PIPE LINE COMPANY  
SITE 16 (AKA SAUNDERS EXCAVATION, TNM-10-95)  
LEA COUNTY, NEW MEXICO**

DATE MEASURED	PVC ELEVATION (feet)	DEPTH TO WATER (feet)	GROUND WATER ELEVATION		DEPTH TO PSH (FEET)	PSH ELEVATION (FEET)	PSH THICKNESS (feet)
			Actual	Corrected			
01/02/98	Unknown	13.77	Unknown	Unknown	9.52	Unknown	4.25
01/09/98	Unknown	13.28	Unknown	Unknown	9.57	Unknown	3.71
01/15/98	Unknown	12.83	Unknown	Unknown	9.64	Unknown	3.19
01/20/98	Unknown	12.45	Unknown	Unknown	9.64	Unknown	2.81
01/30/98	Unknown	13.23	Unknown	Unknown	9.73	Unknown	3.50
02/07/98	Unknown	12.98	Unknown	Unknown	9.63	Unknown	3.35
02/13/98	Unknown	12.82	Unknown	Unknown	9.61	Unknown	3.21
02/21/98	Unknown	12.89	Unknown	Unknown	9.61	Unknown	3.28
02/25/98	Unknown	12.37	Unknown	Unknown	9.65	Unknown	2.72
03/04/98	Unknown	12.67	Unknown	Unknown	9.62	Unknown	3.05
03/13/98	Unknown	12.88	Unknown	Unknown	9.59	Unknown	3.29
03/17/98	Unknown	12.39	Unknown	Unknown	9.62	Unknown	2.77
03/24/98	Unknown	12.50	Unknown	Unknown	9.57	Unknown	2.93
03/31/98	Unknown	12.25	Unknown	Unknown	9.50	Unknown	2.75
04/09/98	Unknown	12.74	Unknown	Unknown	9.50	Unknown	3.24

**TABLE II**  
**(continued)**

**TEMPORARY MONITORING WELL TMW-4**  
**SUMMARY OF GROUND WATER MONITORING**  
**TEXAS - NEW MEXICO PIPE LINE COMPANY**  
**SITE 16 (AKA SAUNDERS EXCAVATION, TNM-10-95)**  
**LEA COUNTY, NEW MEXICO**

DATE MEASURED	PVC ELEVATION (feet)	DEPTH TO WATER (feet)	GROUND WATER ELEVATION		DEPTH TO PSH (FEET)	PSH ELEVATION (FEET)	PSH THICKNESS (feet)
			Actual	Corrected			
10/03/96	Unknown	8.71	Unknown	Unknown	8.54	Unknown	0.17
10/30/96	Unknown	11.08	Unknown	Unknown	8.08	Unknown	3.00
11/04/96	Unknown	11.32	Unknown	Unknown	8.53	Unknown	2.79
12/06/96	Unknown	10.49	Unknown	Unknown	8.78	Unknown	1.71
12/12/96	Unknown	10.55	Unknown	Unknown	8.85	Unknown	1.70
12/21/96	Unknown	10.23	Unknown	Unknown	8.83	Unknown	1.40
12/27/96	Unknown	9.80	Unknown	Unknown	8.89	Unknown	0.91
01/24/97	Unknown	9.93	Unknown	Unknown	8.94	Unknown	0.99
02/18/97	Unknown	9.81	Unknown	Unknown	9.00	Unknown	0.81
03/12/97	Unknown	9.81	Unknown	Unknown	9.02	Unknown	0.79
04/08/97	Unknown	9.80	Unknown	Unknown	9.00	Unknown	0.80
05/03/97	Unknown	12.38	Unknown	Unknown	8.77	Unknown	3.61
05/20/97	Unknown	13.00	Unknown	Unknown	8.76	Unknown	4.24
07/29/97	Unknown	14.65	Unknown	Unknown	10.31	Unknown	4.34
08/26/97	Unknown	13.78	Unknown	Unknown	9.35	Unknown	4.43
09/04/97	Unknown	13.09	Unknown	Unknown	9.17	Unknown	3.92
09/09/97	Unknown	10.73	Unknown	Unknown	9.43	Unknown	1.30
09/16/97	Unknown	10.65	Unknown	Unknown	8.99	Unknown	1.66
09/26/97	Unknown	10.64	Unknown	Unknown	9.27	Unknown	1.37
09/30/97	Unknown	10.98	Unknown	Unknown	9.30	Unknown	1.68
10/06/97	Unknown	10.44	Unknown	Unknown	9.40	Unknown	1.04
10/24/97	Unknown	11.62	Unknown	Unknown	9.05	Unknown	2.57
10/30/97	Unknown	10.52	Unknown	Unknown	9.30	Unknown	1.22
11/05/97	Unknown	10.44	Unknown	Unknown	9.43	Unknown	1.01
11/12/97	Unknown	10.28	Unknown	Unknown	9.45	Unknown	0.83
12/03/97	Unknown	11.55	Unknown	Unknown	9.44	Unknown	2.11
12/09/97	Unknown	10.56	Unknown	Unknown	9.57	Unknown	0.99
12/17/97	Unknown	10.63	Unknown	Unknown	9.57	Unknown	1.06

**TABLE II**  
(continued)

**TEMPORARY MONITORING WELL TMW-4  
SUMMARY OF GROUND WATER MONITORING  
TEXAS - NEW MEXICO PIPE LINE COMPANY  
SITE 16 (AKA SAUNDERS EXCAVATION, TNM-10-95)  
LEA COUNTY, NEW MEXICO**

DATE MEASURED	PVC ELEVATION (feet)	DEPTH TO WATER (feet)	GROUND WATER ELEVATION		DEPTH TO PSH (FEET)	PSH ELEVATION (FEET)	PSH THICKNESS (feet)
			Actual	Corrected			
01/02/98	Unknown	11.26	Unknown	Unknown	9.55	Unknown	1.71
01/09/98	Unknown	10.69	Unknown	Unknown	9.61	Unknown	1.08
01/15/98	Unknown	10.52	Unknown	Unknown	9.60	Unknown	0.92
01/20/98	Unknown	10.38	Unknown	Unknown	9.81	Unknown	0.57
01/30/98	Unknown	10.90	Unknown	Unknown	9.58	Unknown	1.32
02/07/98	Unknown	10.68	Unknown	Unknown	9.59	Unknown	1.09
02/13/98	Unknown	10.63	Unknown	Unknown	9.55	Unknown	1.08
02/21/98	Unknown	10.61	Unknown	Unknown	9.58	Unknown	1.03
02/25/98	Unknown	10.42	Unknown	Unknown	9.54	Unknown	0.88
03/04/98	Unknown	10.49	Unknown	Unknown	9.53	Unknown	0.96
03/13/98	Unknown	10.70	Unknown	Unknown	9.51	Unknown	1.19
03/17/98	Unknown	10.14	Unknown	Unknown	9.53	Unknown	0.61
03/24/98	Unknown	10.27	Unknown	Unknown	9.50	Unknown	0.77
03/31/98	Unknown	10.35	Unknown	Unknown	9.47	Unknown	0.88
04/09/98	Unknown	10.46	Unknown	Unknown	9.44	Unknown	1.02

**TABLE II**  
**(continued)**

**TEMPORARY MONITORING WELL TMW-5**  
**SUMMARY OF GROUND WATER MONITORING**  
**TEXAS - NEW MEXICO PIPE LINE COMPANY**  
**SITE 16 (AKA SAUNDERS EXCAVATION, TNM-10-95)**  
**LEA COUNTY, NEW MEXICO**

DATE MEASURED	PVC ELEVATION (feet)	DEPTH TO WATER (feet)	GROUND WATER ELEVATION		DEPTH TO PSH (FEET)	PSH ELEVATION (FEET)	PSH THICKNESS (feet)
			Actual	Corrected			
10/03/96	Unknown	8.49	Unknown	Unknown	8.28	Unknown	0.21
10/30/96	Unknown	12.74	Unknown	Unknown	7.74	Unknown	5.00
11/04/96	Unknown	12.78	Unknown	Unknown	8.01	Unknown	4.77
12/06/96	Unknown	11.82	Unknown	Unknown	8.28	Unknown	3.54
12/12/96	Unknown	11.96	Unknown	Unknown	8.37	Unknown	3.59
12/21/96	Unknown	10.90	Unknown	Unknown	8.43	Unknown	2.47
12/27/96	Unknown	9.84	Unknown	Unknown	8.58	Unknown	1.26
01/24/97	Unknown	10.24	Unknown	Unknown	8.61	Unknown	1.63
02/18/97	Unknown	9.30	Unknown	Unknown	8.80	Unknown	0.50
03/12/97	Unknown	9.39	Unknown	Unknown	8.81	Unknown	0.58
04/08/97	Unknown	9.41	Unknown	Unknown	8.81	Unknown	0.60
05/03/97	Unknown	12.77	Unknown	Unknown	8.34	Unknown	4.43
05/20/97	Unknown	12.46	Unknown	Unknown	8.51	Unknown	3.95
07/29/97	Unknown	12.44	Unknown	Unknown	8.74	Unknown	3.70
08/26/97	Unknown	13.43	Unknown	Unknown	8.84	Unknown	4.59
09/04/97	Unknown	10.65	Unknown	Unknown	9.07	Unknown	1.58
09/09/97	Unknown	9.82	Unknown	Unknown	9.15	Unknown	0.67
09/16/97	Unknown	9.75	Unknown	Unknown	8.86	Unknown	0.89
09/26/97	Unknown	10.27	Unknown	Unknown	8.96	Unknown	1.31
09/30/97	Unknown	10.64	Unknown	Unknown	9.01	Unknown	1.63
10/06/97	Unknown	9.77	Unknown	Unknown	9.12	Unknown	0.65
10/24/97	Unknown	11.08	Unknown	Unknown	8.72	Unknown	2.36
10/30/97	Unknown	10.40	Unknown	Unknown	8.96	Unknown	1.44
11/05/97	Unknown	9.90	Unknown	Unknown	9.13	Unknown	0.77
11/12/97	Unknown	9.86	Unknown	Unknown	9.16	Unknown	0.70
12/03/97	Unknown	10.87	Unknown	Unknown	9.18	Unknown	1.69
12/09/97	Unknown	10.14	Unknown	Unknown	9.26	Unknown	0.88
12/17/97	Unknown	10.14	Unknown	Unknown	9.31	Unknown	0.83

**TABLE II**  
**(continued)**

**TEMPORARY MONITORING WELL TMW-5**  
**SUMMARY OF GROUND WATER MONITORING**  
**TEXAS - NEW MEXICO PIPE LINE COMPANY**  
**SITE 16 (AKA SAUNDERS EXCAVATION, TNM-10-95)**  
**LEA COUNTY, NEW MEXICO**

DATE MEASURED	PVC ELEVATION (feet)	DEPTH TO WATER (feet)	GROUND WATER ELEVATION		DEPTH TO PSH (FEET)	PSH ELEVATION (FEET)	PSH THICKNESS (feet)
			Actual	Corrected			
01/02/98	Unknown	10.59	Unknown	Unknown	9.28	Unknown	1.31
01/09/98	Unknown	10.03	Unknown	Unknown	9.35	Unknown	0.68
01/15/98	Unknown	10.00	Unknown	Unknown	9.33	Unknown	0.67
01/20/98	Unknown	9.95	Unknown	Unknown	9.44	Unknown	0.51
01/30/98	Unknown	10.19	Unknown	Unknown	9.32	Unknown	0.87
02/07/98	Unknown	10.12	Unknown	Unknown	9.32	Unknown	0.80
02/13/98	Unknown	10.09	Unknown	Unknown	9.30	Unknown	0.79
02/21/98	Unknown	10.20	Unknown	Unknown	9.72	Unknown	0.48
02/25/98	Unknown	9.91	Unknown	Unknown	9.31	Unknown	0.60
03/04/98	Unknown	9.95	Unknown	Unknown	9.31	Unknown	0.64
03/13/98	Unknown	10.06	Unknown	Unknown	9.27	Unknown	0.79
03/17/98	Unknown	9.81	Unknown	Unknown	9.27	Unknown	0.54
03/24/98	Unknown	9.86	Unknown	Unknown	9.26	Unknown	0.60
03/31/98	Unknown	9.93	Unknown	Unknown	9.23	Unknown	0.70
04/09/98	Unknown	9.98	Unknown	Unknown	9.22	Unknown	0.76

**TABLE II**  
**(continued)**

**TEMPORARY MONITORING WELL TMW-6**  
**SUMMARY OF GROUND WATER MONITORING**  
**TEXAS - NEW MEXICO PIPE LINE COMPANY**  
**SITE 16 (AKA SAUNDERS EXCAVATION, TNM-10-95)**  
**LEA COUNTY, NEW MEXICO**

DATE MEASURED	PVC ELEVATION (feet)	DEPTH TO WATER (feet)	GROUND WATER ELEVATION		DEPTH TO PSH (FEET)	PSH ELEVATION (FEET)	PSH THICKNESS (feet)
			Actual	Corrected			
10/03/96	Unknown	7.29	Unknown	Unknown	7.09	Unknown	0.20
10/30/96	Unknown	9.93	Unknown	Unknown	4.13	Unknown	5.80
11/04/96	Unknown	10.44	Unknown	Unknown	7.02	Unknown	3.42
12/06/96	Unknown	10.85	Unknown	Unknown	7.14	Unknown	3.71
12/12/96	Unknown	10.93	Unknown	Unknown	7.16	Unknown	3.77
12/21/96	Unknown	10.90	Unknown	Unknown	7.30	Unknown	3.60
12/27/96	Unknown	10.54	Unknown	Unknown	7.25	Unknown	3.29
01/24/97	Unknown	10.42	Unknown	Unknown	7.30	Unknown	3.12
02/18/97	Unknown	9.05	Unknown	Unknown	7.40	Unknown	1.65
03/12/97	Unknown	9.12	Unknown	Unknown	7.48	Unknown	1.64
04/08/97	Unknown	9.10	Unknown	Unknown	7.38	Unknown	1.72
05/03/97	Unknown	11.86	Unknown	Unknown	8.49	Unknown	3.37
05/20/97	Unknown	12.53	Unknown	Unknown	7.21	Unknown	5.32
07/29/97	Unknown	12.34	Unknown	Unknown	7.56	Unknown	4.78
08/26/97	Unknown	13.60	Unknown	Unknown	7.37	Unknown	6.23
09/04/97	Unknown	12.23	Unknown	Unknown	7.68	Unknown	4.55
09/09/97	Unknown	11.59	Unknown	Unknown	7.75	Unknown	3.84
09/16/97	Unknown	12.20	Unknown	Unknown	7.31	Unknown	4.89
09/26/97	Unknown	12.28	Unknown	Unknown	7.44	Unknown	4.84
09/30/97	Unknown	12.43	Unknown	Unknown	7.64	Unknown	4.79
10/06/97	Unknown	11.95	Unknown	Unknown	7.67	Unknown	4.28
10/24/97	Unknown	13.49	Unknown	Unknown	7.23	Unknown	6.26
10/30/97	Unknown	12.02	Unknown	Unknown	7.53	Unknown	4.49
11/05/97	Unknown	11.52	Unknown	Unknown	7.67	Unknown	3.85
11/12/97	Unknown	11.24	Unknown	Unknown	7.76	Unknown	3.48
12/03/97	Unknown	11.52	Unknown	Unknown	7.86	Unknown	3.66
12/09/97	Unknown	11.14	Unknown	Unknown	7.94	Unknown	3.20
12/17/97	Unknown	10.97	Unknown	Unknown	7.97	Unknown	3.00

**TABLE II**  
(continued)

**TEMPORARY MONITORING WELL TMW-6  
SUMMARY OF GROUND WATER MONITORING  
TEXAS - NEW MEXICO PIPE LINE COMPANY  
SITE 16 (AKA SAUNDERS EXCAVATION, TNM-10-95)  
LEA COUNTY, NEW MEXICO**

DATE MEASURED	PVC ELEVATION (feet)	DEPTH TO WATER (feet)	GROUND WATER ELEVATION		DEPTH TO PSH (FEET)	PSH ELEVATION (FEET)	PSH THICKNESS (feet)
			Actual	Corrected			
01/02/98	Unknown	11.14	Unknown	Unknown	7.99	Unknown	3.15
01/09/98	Unknown	10.90	Unknown	Unknown	7.99	Unknown	2.91
01/15/98	Unknown	10.63	Unknown	Unknown	8.01	Unknown	2.62
01/20/98	Unknown	10.48	Unknown	Unknown	8.05	Unknown	2.43
01/30/98	Unknown	10.57	Unknown	Unknown	8.02	Unknown	2.55
02/07/98	Unknown	10.46	Unknown	Unknown	8.05	Unknown	2.41
02/13/98	Unknown	10.32	Unknown	Unknown	8.16	Unknown	2.16
02/21/98	Unknown	10.26	Unknown	Unknown	8.07	Unknown	2.19
02/25/98	Unknown	10.07	Unknown	Unknown	8.12	Unknown	1.95
03/04/98	Unknown	10.09	Unknown	Unknown	8.05	Unknown	2.04
03/13/98	Unknown	10.30	Unknown	Unknown	8.04	Unknown	2.26
03/17/98	Unknown	9.95	Unknown	Unknown	8.03	Unknown	1.92
03/24/98	Unknown	9.93	Unknown	Unknown	8.01	Unknown	1.92
03/31/98	Unknown	9.96	Unknown	Unknown	8.01	Unknown	1.95
04/09/98	Unknown	10.12	Unknown	Unknown	7.97	Unknown	2.15

**TABLE II**  
**(continued)**

**TEMPORARY MONITORING WELL TMW-7**  
**SUMMARY OF GROUND WATER MONITORING**  
**TEXAS - NEW MEXICO PIPE LINE COMPANY**  
**SITE 16 (AKA SAUNDERS EXCAVATION, TNM-10-95)**  
**LEA COUNTY, NEW MEXICO**

DATE MEASURED	PVC ELEVATION (feet)	DEPTH TO WATER (feet)	GROUND WATER ELEVATION		DEPTH TO PSH (FEET)	PSH ELEVATION (FEET)	PSH THICKNESS (feet)
			Actual	Corrected			
10/03/96	Unknown	10.94	Unknown	Unknown	10.92	Unknown	0.02
10/30/96	Unknown	11.09	Unknown	Unknown	8.99	Unknown	2.10
11/04/96	Unknown	11.07	Unknown	Unknown	10.92	Unknown	0.15
12/06/96	Unknown	11.45	Unknown	Unknown	11.02	Unknown	0.43
12/12/96	Unknown	11.48	Unknown	Unknown	11.09	Unknown	0.39
12/21/96	Unknown	11.40	Unknown	Unknown	11.12	Unknown	0.28
12/27/96	Unknown	11.31	Unknown	Unknown	11.12	Unknown	0.19
01/24/97	Unknown	11.44	Unknown	Unknown	11.15	Unknown	0.29
02/18/97	Unknown	11.48	Unknown	Unknown	11.25	Unknown	0.23
03/12/97	Unknown	11.50	Unknown	Unknown	11.30	Unknown	0.20
04/08/97	Unknown	11.42	Unknown	Unknown	11.12	Unknown	0.30
05/03/97	Unknown	12.16	Unknown	Unknown	11.15	Unknown	1.01
05/20/97	Unknown	12.32	Unknown	Unknown	11.21	Unknown	1.11
07/29/97	Unknown	12.89	Unknown	Unknown	11.45	Unknown	1.44
08/26/97	Unknown	12.98	Unknown	Unknown	11.63	Unknown	1.35
09/04/97	Unknown	12.55	Unknown	Unknown	11.61	Unknown	0.94
09/09/97	Unknown	12.36	Unknown	Unknown	11.64	Unknown	0.72
09/16/97	Unknown	12.10	Unknown	Unknown	11.55	Unknown	0.55
09/26/97	Unknown	12.12	Unknown	Unknown	11.64	Unknown	0.48
09/30/97	Unknown	12.26	Unknown	Unknown	11.62	Unknown	0.64
10/06/97	Unknown	12.10	Unknown	Unknown	11.64	Unknown	0.46
10/24/97	Unknown	12.12	Unknown	Unknown	11.52	Unknown	0.60
10/30/97	Unknown	12.08	Unknown	Unknown	11.61	Unknown	0.47
11/05/97	Unknown	12.15	Unknown	Unknown	11.64	Unknown	0.51
11/12/97	Unknown	12.19	Unknown	Unknown	11.69	Unknown	0.50
12/03/97	Unknown	12.33	Unknown	Unknown	11.76	Unknown	0.57
12/09/97	Unknown	12.25	Unknown	Unknown	11.77	Unknown	0.48
12/17/97	Unknown	12.27	Unknown	Unknown	11.80	Unknown	0.47



**TABLE II**  
(continued)

**TEMPORARY MONITORING WELL TMW-7  
SUMMARY OF GROUND WATER MONITORING  
TEXAS - NEW MEXICO PIPE LINE COMPANY  
SITE 16 (AKA SAUNDERS EXCAVATION, TNM-10-95)  
LEA COUNTY, NEW MEXICO**

DATE MEASURED	PVC ELEVATION (feet)	DEPTH TO WATER (feet)	GROUND WATER ELEVATION		DEPTH TO PSH (FEET)	PSH ELEVATION (FEET)	PSH THICKNESS (feet)
			Actual	Corrected			
01/02/98	Unknown	12.39	Unknown	Unknown	11.82	Unknown	0.57
01/09/98	Unknown	12.24	Unknown	Unknown	11.82	Unknown	0.42
01/15/98	Unknown	12.24	Unknown	Unknown	11.80	Unknown	0.44
01/20/98	Unknown	12.36	Unknown	Unknown	11.82	Unknown	0.54
01/30/98	Unknown	12.30	Unknown	Unknown	11.80	Unknown	0.50
02/07/98	Unknown	12.18	Unknown	Unknown	11.78	Unknown	0.40
02/13/98	Unknown	12.33	Unknown	Unknown	11.79	Unknown	0.54
02/21/98	Unknown	12.25	Unknown	Unknown	11.76	Unknown	0.49
02/25/98	Unknown	12.22	Unknown	Unknown	11.74	Unknown	0.48
03/04/98	Unknown	12.20	Unknown	Unknown	11.72	Unknown	0.48
03/13/98	Unknown	12.19	Unknown	Unknown	11.72	Unknown	0.47
03/17/98	Unknown	12.12	Unknown	Unknown	11.71	Unknown	0.41
03/24/98	Unknown	12.23	Unknown	Unknown	11.69	Unknown	0.54
03/31/98	Unknown	12.24	Unknown	Unknown	11.68	Unknown	0.56
04/09/98	Unknown	12.14	Unknown	Unknown	11.65	Unknown	0.49

**TABLE II**  
(continued)

**TEMPORARY MONITORING WELL TMW-8  
SUMMARY OF GROUND WATER MONITORING  
TEXAS - NEW MEXICO PIPE LINE COMPANY  
SITE 16 (AKA SAUNDERS EXCAVATION, TNM-10-95)  
LEA COUNTY, NEW MEXICO**

DATE MEASURED	PVC ELEVATION (feet)	DEPTH TO WATER (feet)	GROUND WATER ELEVATION		DEPTH TO PSH (FEET)	PSH ELEVATION (FEET)	PSH THICKNESS (feet)
			Actual	Corrected			
10/03/96	Unknown	8.96	Unknown	Unknown	8.94	Unknown	0.02
10/30/96	Unknown	8.98	Unknown	Unknown	8.88	Unknown	0.10
11/04/96	Unknown	9.01	Unknown	Unknown	9.00	Unknown	0.01
12/06/96	Unknown	9.18	Unknown	Unknown	9.16	Unknown	0.02
12/12/96	Unknown	9.26	Unknown	Unknown	9.24	Unknown	0.02
12/21/96	Unknown	9.30	Unknown	Unknown	9.18	Unknown	0.12
12/27/96	Unknown	7.41	Unknown	Unknown	7.20	Unknown	0.21
01/24/97	Unknown	9.92	Unknown	Unknown	9.23	Unknown	0.69
02/18/97	Unknown	9.65	Unknown	Unknown	9.30	Unknown	0.35
03/12/97	Unknown	9.65	Unknown	Unknown	9.29	Unknown	0.36
04/08/97	Unknown	9.57	Unknown	Unknown	9.24	Unknown	0.33
05/03/97	Unknown	11.03	Unknown	Unknown	8.69	Unknown	2.34
05/20/97	Unknown	12.10	Unknown	Unknown	9.11	Unknown	2.99
07/29/97	Unknown	13.50	Unknown	Unknown	9.30	Unknown	4.20
08/26/97	Unknown	13.67	Unknown	Unknown	9.37	Unknown	4.30
09/04/97	Unknown	12.86	Unknown	Unknown	9.50	Unknown	3.36
09/09/97	Unknown	11.63	Unknown	Unknown	9.62	Unknown	2.01
09/16/97	Unknown	11.09	Unknown	Unknown	9.52	Unknown	1.57
09/26/97	Unknown	11.06	Unknown	Unknown	9.61	Unknown	1.45
09/30/97	Unknown	11.26	Unknown	Unknown	9.61	Unknown	1.65
10/06/97	Unknown	10.76	Unknown	Unknown	9.66	Unknown	1.10
10/24/97	Unknown	12.30	Unknown	Unknown	9.40	Unknown	2.90
10/30/97	Unknown	11.77	Unknown	Unknown	9.53	Unknown	2.24
11/05/97	Unknown	11.33	Unknown	Unknown	9.64	Unknown	1.69
11/12/97	Unknown	11.08	Unknown	Unknown	9.76	Unknown	1.32
12/03/97	Unknown	11.26	Unknown	Unknown	9.77	Unknown	1.49
12/09/97	Unknown	10.95	Unknown	Unknown	9.83	Unknown	1.12
12/17/97	Unknown	10.81	Unknown	Unknown	9.86	Unknown	0.95

**TABLE II**  
**(continued)**

**TEMPORARY MONITORING WELL TMW-8**  
**SUMMARY OF GROUND WATER MONITORING**  
**TEXAS - NEW MEXICO PIPE LINE COMPANY**  
**SITE 16 (AKA SAUNDERS EXCAVATION, TNM-10-95)**  
**LEA COUNTY, NEW MEXICO**

DATE MEASURED	PVC ELEVATION (feet)	DEPTH TO WATER (feet)	GROUND WATER ELEVATION		DEPTH TO PSH (FEET)	PSH ELEVATION (FEET)	PSH THICKNESS (feet)
			Actual	Corrected			
01/02/98	Unknown	11.16	Unknown	Unknown	9.86	Unknown	1.30
01/09/98	Unknown	10.87	Unknown	Unknown	9.88	Unknown	0.99
01/15/98	Unknown	10.65	Unknown	Unknown	9.90	Unknown	0.75
01/20/98	Unknown	10.58	Unknown	Unknown	9.90	Unknown	0.68
01/30/98	Unknown	10.73	Unknown	Unknown	9.89	Unknown	0.84
02/07/98	Unknown	10.62	Unknown	Unknown	9.89	Unknown	0.73
02/13/98	Unknown	10.46	Unknown	Unknown	9.88	Unknown	0.58
02/21/98	Unknown	10.51	Unknown	Unknown	9.91	Unknown	0.60
02/25/98	Unknown	10.45	Unknown	Unknown	9.85	Unknown	0.60
03/04/98	Unknown	10.56	Unknown	Unknown	9.84	Unknown	0.72
03/13/98	Unknown	10.62	Unknown	Unknown	9.84	Unknown	0.78
03/17/98	Unknown	10.31	Unknown	Unknown	9.84	Unknown	0.47
03/24/98	Unknown	10.57	Unknown	Unknown	9.80	Unknown	0.77
03/31/98	Unknown	10.65	Unknown	Unknown	9.79	Unknown	0.86
04/09/98	Unknown	10.63	Unknown	Unknown	9.76	Unknown	0.87

**TABLE II**  
(continued)

**TEMPORARY MONITORING WELL TMW-9  
SUMMARY OF GROUND WATER MONITORING  
TEXAS - NEW MEXICO PIPE LINE COMPANY  
SITE 16 (AKA SAUNDERS EXCAVATION, TNM-10-95)  
LEA COUNTY, NEW MEXICO**

DATE MEASURED	PVC ELEVATION (feet)	DEPTH TO WATER (feet)	GROUND WATER ELEVATION		DEPTH TO PSH (FEET)	PSH ELEVATION (FEET)	PSH THICKNESS (feet)
			Actual	Corrected			
10/03/96	Unknown	11.28	Unknown	Unknown	11.27	Unknown	0.01
10/30/96	Unknown	11.60	Unknown	Unknown	10.90	Unknown	0.70
11/04/96	Unknown	11.67	Unknown	Unknown	11.32	Unknown	0.35
12/06/96	Unknown	12.00	Unknown	Unknown	11.44	Unknown	0.56
12/12/96	Unknown	12.08	Unknown	Unknown	11.56	Unknown	0.52
12/21/96	Unknown	12.06	Unknown	Unknown	11.48	Unknown	0.58
12/27/96	Unknown	11.95	Unknown	Unknown	11.51	Unknown	0.44
01/24/97	Unknown	12.13	Unknown	Unknown	11.56	Unknown	0.57
02/18/97	Unknown	12.20	Unknown	Unknown	11.62	Unknown	0.58
03/12/97	Unknown	12.21	Unknown	Unknown	11.62	Unknown	0.59
04/08/97	Unknown	12.18	Unknown	Unknown	11.50	Unknown	0.68
05/03/97	Unknown	13.21	Unknown	Unknown	11.55	Unknown	1.66
05/20/97	Unknown	13.56	Unknown	Unknown	11.54	Unknown	2.02
07/29/97	Unknown	14.45	Unknown	Unknown	11.76	Unknown	2.69
08/26/97	Unknown	14.65	Unknown	Unknown	11.72	Unknown	2.93
09/04/97	Unknown	13.86	Unknown	Unknown	11.93	Unknown	1.93
09/09/97	Unknown	13.20	Unknown	Unknown	12.01	Unknown	1.19
09/16/97	Unknown	12.99	Unknown	Unknown	11.91	Unknown	1.08
09/23/97	Unknown	13.13	Unknown	Unknown	11.97	Unknown	1.16
09/30/97	Unknown	13.32	Unknown	Unknown	11.98	Unknown	1.34
10/06/97	Unknown	13.05	Unknown	Unknown	12.03	Unknown	1.02
10/24/97	Unknown	13.52	Unknown	Unknown	11.85	Unknown	1.67
10/30/97	Unknown	13.18	Unknown	Unknown	11.97	Unknown	1.21
11/05/97	Unknown	13.08	Unknown	Unknown	12.04	Unknown	1.04
11/12/97	Unknown	13.05	Unknown	Unknown	12.08	Unknown	0.97
12/03/97	Unknown	13.59	Unknown	Unknown	12.14	Unknown	1.45
12/09/97	Unknown	13.25	Unknown	Unknown	12.17	Unknown	1.08
12/17/97	Unknown	13.16	Unknown	Unknown	12.19	Unknown	0.97

**TABLE II**  
(continued)

**TEMPORARY MONITORING WELL TMW-9  
SUMMARY OF GROUND WATER MONITORING  
TEXAS - NEW MEXICO PIPE LINE COMPANY  
SITE 16 (AKA SAUNDERS EXCAVATION, TNM-10-95)  
LEA COUNTY, NEW MEXICO**

DATE MEASURED	PVC ELEVATION (feet)	DEPTH TO WATER (feet)	GROUND WATER ELEVATION		DEPTH TO PSH (FEET)	PSH ELEVATION (FEET)	PSH THICKNESS (feet)
			Actual	Corrected			
01/02/98	Unknown	13.45	Unknown	Unknown	12.21	Unknown	1.24
01/09/98	Unknown	13.20	Unknown	Unknown	12.25	Unknown	0.95
01/15/98	Unknown	13.00	Unknown	Unknown	12.23	Unknown	0.77
01/20/98	Unknown	12.93	Unknown	Unknown	12.26	Unknown	0.67
01/30/98	Unknown	13.17	Unknown	Unknown	12.21	Unknown	0.96
02/07/98	Unknown	13.08	Unknown	Unknown	12.25	Unknown	0.83
02/13/98	Unknown	13.03	Unknown	Unknown	12.24	Unknown	0.79
02/21/98	Unknown	13.07	Unknown	Unknown	12.22	Unknown	0.85
02/25/98	Unknown	12.96	Unknown	Unknown	12.20	Unknown	0.76
03/04/98	Unknown	13.02	Unknown	Unknown	12.19	Unknown	0.83
03/13/98	Unknown	13.18	Unknown	Unknown	12.18	Unknown	1.00
03/17/98	Unknown	13.04	Unknown	Unknown	12.17	Unknown	0.87
03/24/98	Unknown	12.95	Unknown	Unknown	12.16	Unknown	0.79
03/31/98	Unknown	12.98	Unknown	Unknown	12.16	Unknown	0.82
04/09/98	Unknown	13.06	Unknown	Unknown	12.13	Unknown	0.93

**TABLE II**  
(continued)

**TEMPORARY MONITORING WELL TMW-10  
SUMMARY OF GROUND WATER MONITORING  
TEXAS - NEW MEXICO PIPE LINE COMPANY  
SITE 16 (AKA SAUNDERS EXCAVATION, TNM-10-95)  
LEA COUNTY, NEW MEXICO**

DATE MEASURED	PVC ELEVATION (feet)	DEPTH TO WATER (feet)	GROUND WATER ELEVATION		DEPTH TO PSH (FEET)	PSH ELEVATION (FEET)	PSH THICKNESS (feet)
			Actual	Corrected			
10/03/96	Unknown	11.70	Unknown	Unknown	11.68	Unknown	0.02
10/30/96	Unknown	11.94	Unknown	Unknown	9.94	Unknown	2.00
11/04/96	Unknown	11.84	Unknown	Unknown	11.78	Unknown	0.06
12/06/96	Unknown	12.05	Unknown	Unknown	11.92	Unknown	0.13
12/12/96	Unknown	12.10	Unknown	Unknown	11.99	Unknown	0.11
12/21/96	Unknown	12.04	Unknown	Unknown	11.96	Unknown	0.08
12/27/96	Unknown	12.05	Unknown	Unknown	11.98	Unknown	0.07
01/24/97	Unknown	12.14	Unknown	Unknown	12.04	Unknown	0.10
02/18/97	Unknown	12.25	Unknown	Unknown	12.15	Unknown	0.10
03/12/97	Unknown	12.19	Unknown	Unknown	12.10	Unknown	0.09
04/08/97	Unknown	12.19	Unknown	Unknown	12.05	Unknown	0.14
05/03/97	Unknown	12.18	Unknown	Unknown	12.14	Unknown	0.04
05/20/97	Unknown	12.41	Unknown	Unknown	12.16	Unknown	0.25
07/29/97	Unknown	13.00	Unknown	Unknown	12.41	Unknown	0.59
08/26/97	Unknown	13.29	Unknown	Unknown	12.49	Unknown	0.80
09/04/97	Unknown	13.15	Unknown	Unknown	12.53	Unknown	0.62
09/09/97	Unknown	13.14	Unknown	Unknown	12.54	Unknown	0.60
09/16/97	Unknown	12.91	Unknown	Unknown	12.47	Unknown	0.44
09/26/97	Unknown	12.68	Unknown	Unknown	12.54	Unknown	0.14
09/30/97	Unknown	12.69	Unknown	Unknown	12.57	Unknown	0.12
10/06/97	Unknown	12.67	Unknown	Unknown	12.56	Unknown	0.11
10/24/97	Unknown	12.62	Unknown	Unknown	12.48	Unknown	0.14
10/30/97	Unknown	12.66	Unknown	Unknown	12.54	Unknown	0.12
11/05/97	Unknown	12.76	Unknown	Unknown	12.58	Unknown	0.18
11/12/97	Unknown	12.86	Unknown	Unknown	12.67	Unknown	0.19
12/03/97	Unknown	12.97	Unknown	Unknown	12.66	Unknown	0.31
12/09/97	Unknown	12.93	Unknown	Unknown	12.69	Unknown	0.24
12/17/97	Unknown	12.95	Unknown	Unknown	12.70	Unknown	0.25

**TABLE II**  
(continued)

**TEMPORARY MONITORING WELL TMW-10  
SUMMARY OF GROUND WATER MONITORING  
TEXAS - NEW MEXICO PIPE LINE COMPANY  
SITE 16 (AKA SAUNDERS EXCAVATION, TNM-10-95)  
LEA COUNTY, NEW MEXICO**

DATE MEASURED	PVC ELEVATION (feet)	DEPTH TO WATER (feet)	GROUND WATER ELEVATION		DEPTH TO PSH (FEET)	PSH ELEVATION (FEET)	PSH THICKNESS (feet)
			Actual	Corrected			
01/02/98	Unknown	13.00	Unknown	Unknown	12.75	Unknown	0.25
01/09/98	Unknown	12.95	Unknown	Unknown	12.76	Unknown	0.19
01/15/98	Unknown	12.90	Unknown	Unknown	12.71	Unknown	0.19
01/20/98	Unknown	12.97	Unknown	Unknown	12.74	Unknown	0.23
01/30/98	Unknown	12.89	Unknown	Unknown	12.71	Unknown	0.18
02/07/98	Unknown	12.86	Unknown	Unknown	12.72	Unknown	0.14
02/13/98	Unknown	12.86	Unknown	Unknown	12.71	Unknown	0.15
02/21/98	Unknown	12.88	Unknown	Unknown	12.72	Unknown	0.16
02/25/98	Unknown	12.84	Unknown	Unknown	12.70	Unknown	0.14
03/04/98	Unknown	12.87	Unknown	Unknown	12.67	Unknown	0.20
03/13/98	Unknown	12.89	Unknown	Unknown	12.67	Unknown	0.22
03/17/98	Unknown	12.84	Unknown	Unknown	12.64	Unknown	0.20
03/24/98	Unknown	12.78	Unknown	Unknown	12.64	Unknown	0.14
03/31/98	Unknown	12.80	Unknown	Unknown	12.63	Unknown	0.17
04/09/98	Unknown	12.76	Unknown	Unknown	12.60	Unknown	0.16

**TABLE II**  
(continued)

**TEMPORARY MONITORING WELL TMW-11  
SUMMARY OF GROUND WATER MONITORING  
TEXAS - NEW MEXICO PIPE LINE COMPANY  
SITE 16 (AKA SAUNDERS EXCAVATION, TNM-10-95)  
LEA COUNTY, NEW MEXICO**

DATE MEASURED	PVC ELEVATION (feet)	DEPTH TO WATER (feet)	GROUND WATER ELEVATION		DEPTH TO PSH (FEET)	PSH ELEVATION (FEET)	PSH THICKNESS (feet)
			Actual	Corrected			
10/03/96	Unknown	10.14	Unknown	Unknown	10.12	Unknown	0.02
10/30/96	Unknown	10.19	Unknown	Unknown	10.19	Unknown	Sheen
11/04/96	Unknown	10.22	Unknown	Unknown	10.21	Unknown	0.01
12/06/96	Unknown	10.35	Unknown	Unknown		Unknown	---
12/12/96	Unknown	10.44	Unknown	Unknown		Unknown	---
12/21/96	Unknown	10.39	Unknown	Unknown	10.39	Unknown	Sheen
12/27/96	Unknown	10.42	Unknown	Unknown	10.42	Unknown	Sheen
01/24/97	Unknown	9.49	Unknown	Unknown		Unknown	---
02/18/97	Unknown	10.55	Unknown	Unknown	10.55	Unknown	Sheen
03/12/97	Unknown	10.55	Unknown	Unknown	10.54	Unknown	0.01
04/08/97	Unknown	10.55	Unknown	Unknown	10.55	Unknown	Sheen
05/03/97	Unknown	10.59	Unknown	Unknown	10.59	Unknown	Sheen
05/20/97	Unknown	10.64	Unknown	Unknown	10.64	Unknown	Sheen
07/29/97	Unknown	10.86	Unknown	Unknown		Unknown	---
08/26/97	Unknown	10.95	Unknown	Unknown	10.95	Unknown	Sheen
09/04/97	Unknown	10.98	Unknown	Unknown		Unknown	---
09/09/97	Unknown	11.01	Unknown	Unknown	11.00	Unknown	0.01
09/16/97	Unknown	10.97	Unknown	Unknown	10.96	Unknown	0.01
09/26/97	Unknown	11.09	Unknown	Unknown	11.08	Unknown	0.01
09/30/97	Unknown	10.99	Unknown	Unknown	10.99	Unknown	Sheen
10/06/97	Unknown	11.00	Unknown	Unknown	11.00	Unknown	Sheen
10/24/97	Unknown	10.94	Unknown	Unknown			---
10/30/97	Unknown	10.99	Unknown	Unknown			---
11/05/97	Unknown	11.03	Unknown	Unknown			---
11/12/97	Unknown	11.05	Unknown	Unknown			---
12/03/97	Unknown	11.12	Unknown	Unknown			---
12/09/97	Unknown	11.13	Unknown	Unknown			---
12/17/97	Unknown	11.15	Unknown	Unknown			---



**TABLE II**  
(continued)

**TEMPORARY MONITORING WELL TMW-11  
SUMMARY OF GROUND WATER MONITORING  
TEXAS - NEW MEXICO PIPE LINE COMPANY  
SITE 16 (AKA SAUNDERS EXCAVATION, TNM-10-95)  
LEA COUNTY, NEW MEXICO**

DATE MEASURED	PVC ELEVATION (feet)	DEPTH TO WATER (feet)	GROUND WATER ELEVATION		DEPTH TO PSH (FEET)	PSH ELEVATION (FEET)	PSH THICKNESS (feet)
			Actual	Corrected			
01/02/98	Unknown	11.18	Unknown	Unknown			---
01/09/98	Unknown	11.17	Unknown	Unknown			---
01/15/98	Unknown	11.17	Unknown	unknown			---
01/20/98	Unknown	11.19	Unknown	unknown			---
01/30/98	Unknown	11.16	Unknown	unknown			---
02/07/98	Unknown	11.17	Unknown	unknown			---
02/13/98	Unknown	11.16	Unknown	unknown			---
02/21/98	Unknown	11.16	Unknown	unknown			---
02/25/98	Unknown	11.15	Unknown	unknown			---
03/04/98	Unknown	11.12	Unknown	unknown			---
03/13/98	Unknown	11.13	Unknown	unknown			---
03/17/98	Unknown	11.10	Unknown	unknown			---
03/24/98	Unknown	11.10	Unknown	unknown			---
03/31/98	Unknown	11.09	Unknown	unknown			---
04/09/98	Unknown	11.07	Unknown	unknown			---



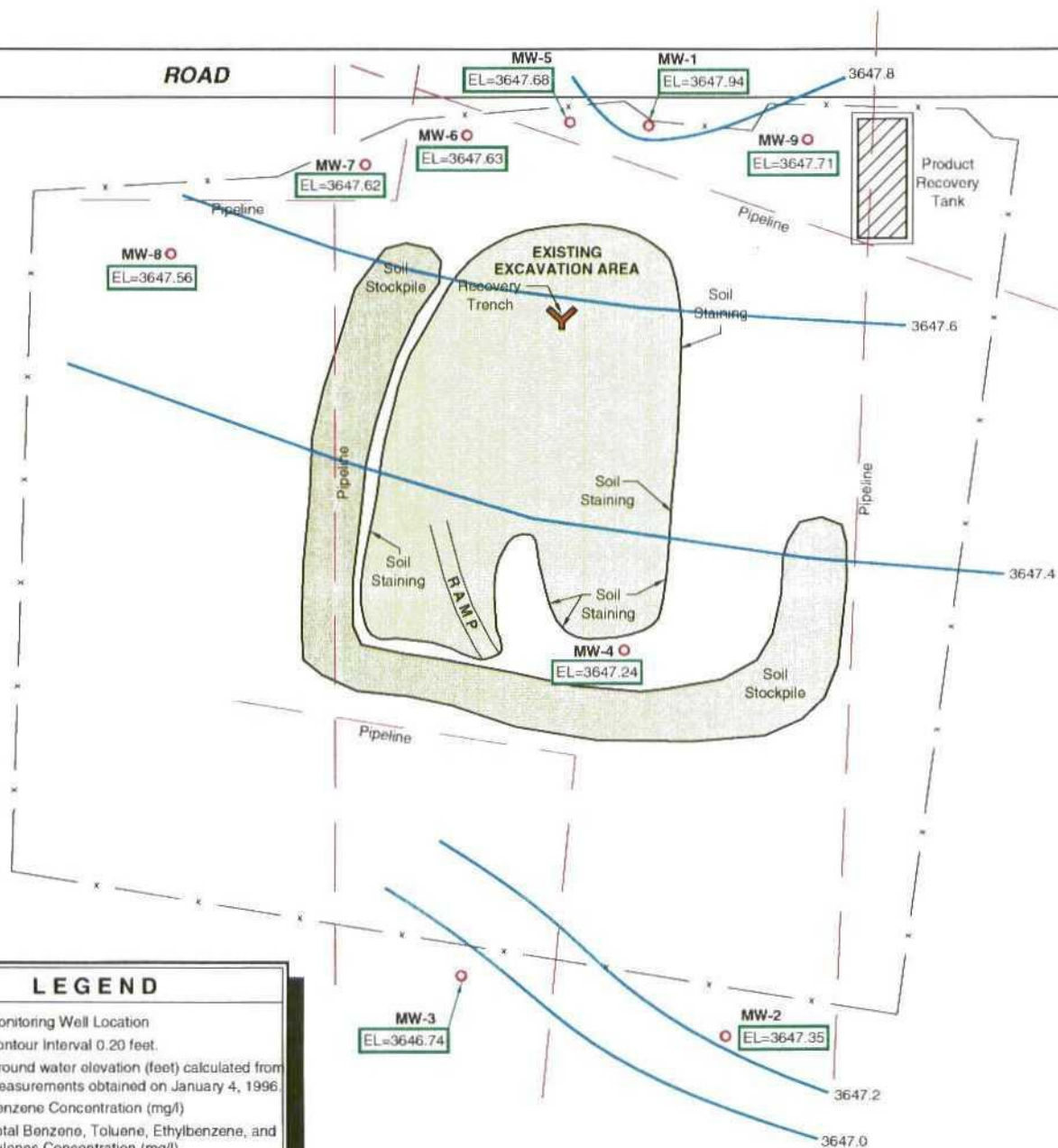
Approximate Scale: 1"=80'



Apparent direction of ground water flow.

### LAB RESULTS - (01/08 and 01/10/96)

MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9
B=0.019 BTEX=0.044	B=ND BTEX=0.006	B=ND BTEX=0.027	B=ND BTEX=ND	B=0.005 BTEX=0.079	B=0.003 BTEX=0.011	B=ND BTEX=ND	B=ND BTEX=0.011	B=ND BTEX=0.038



### LEGEND

- Monitoring Well Location
- Contour Interval 0.20 feet.
- EL = Ground water elevation (feet) calculated from measurements obtained on January 4, 1996.
- B = Benzene Concentration (mg/l)
- BTEX = Total Benzene, Toluene, Ethylbenzene, and Xylenes Concentration (mg/l)
- TPH = Total Petroleum Hydrocarbons Concentration (mg/l)
- ND = Below laboratory detection / reporting limits.
- NOTE: Samples were not collected using EPA protocol.

14.98-RW (61GWJA96)

kei

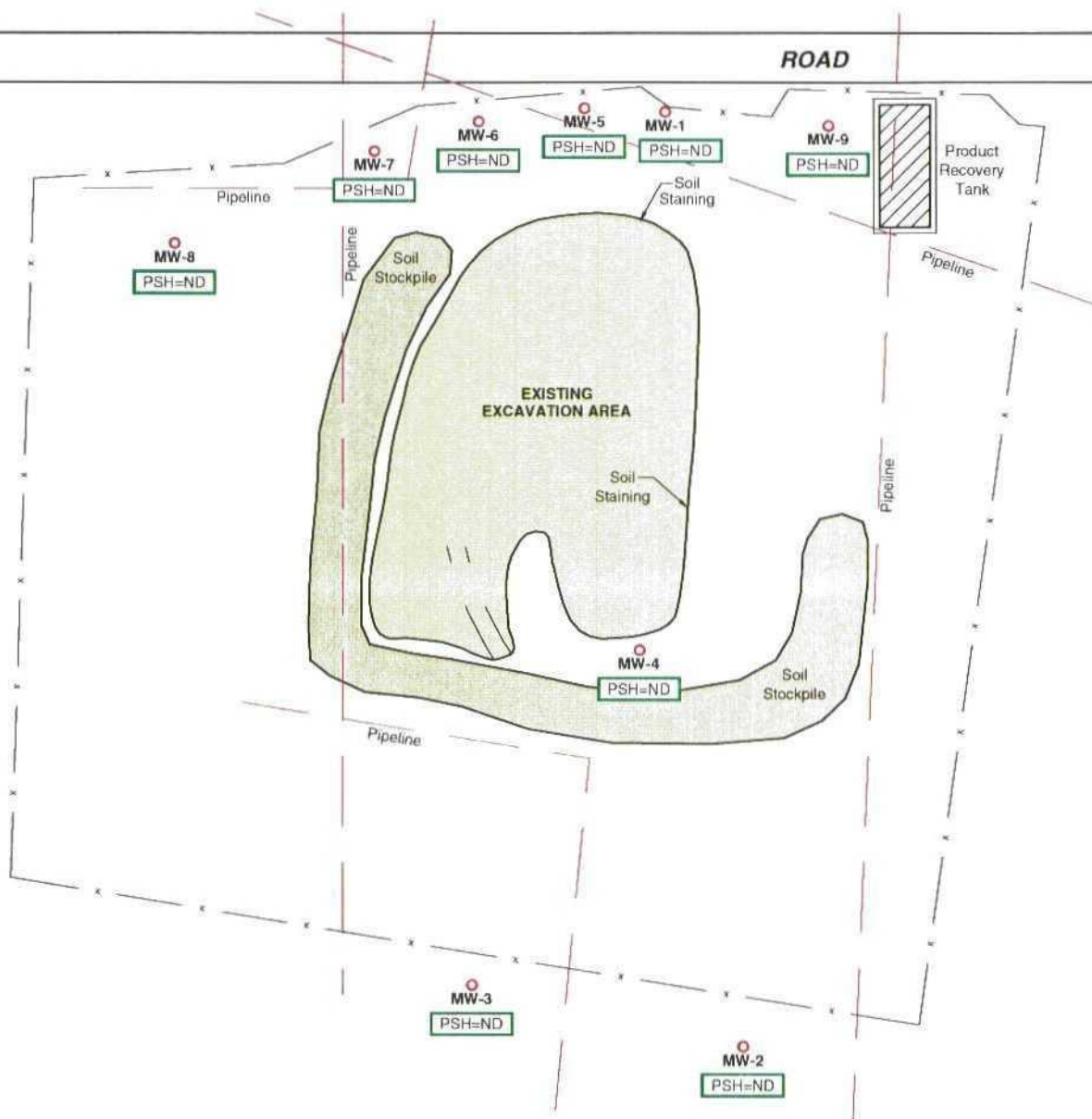
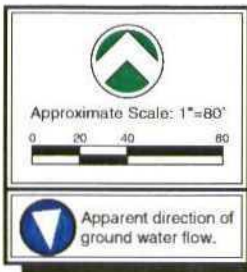
GROUND WATER CONTOURS / CONCENTRATION MAP - JANUARY 1996

SECTION 18, T19S, AND R37E

LEA COUNTY, NEW MEXICO

610062

FIG 1



# LEGEND

- Monitoring Well Location
- PSH = Phase Separate Hydrocarbon thickness (feet).
- ND = Indicates PSH was not detected.

## NOTE:

1. PSH thickness in monitoring wells was measured on January 4, 1996.

2008-RV-G-181 PH-060



## PSH THICKNESS MAP - JANUARY 1996

SECTION 18, T19S, AND R37E

LEA COUNTY, NEW MEXICO

610062

FIG 2



# ARDINAL LABORATORIES

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PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

PHONE (505) 326-4669 • 118 S. COMMERCIAL AVE. • FARMINGTON, NM 87401

## FINAL ANALYSIS REPORT

Company: Western Environmental Consulting      Date: 01/12/96  
Address: 1588 Cordoba      Lab #: H2361-1  
City, State: Hobbs, New Mexico 88240  
  
Project Name: Saunders Pit  
Location: Monument, New Mexico  
Sampled by: ST      Date: 01/08/96  
Sample Type: Water      Sample Condition: intact  
  
Sample ID: Monitor Well #1      Units: ppm

### POLYNUCLEAR AROMATIC HYDROCARBONS

<u>PARAMETER</u>	<u>RESULT</u>
Acenaphtene	<0.002
Acenaphthylene	<0.002
Anthracene	<0.002
Benzo(a)anthracene	<0.002
Benzo(a)pyrene	<0.002
Benzo(b)fluoranthene	<0.002
Benzo(k)fluoranthene	<0.002
Benzo(ghi)perylene	<0.002
Chrysene	<0.002
Dibenz(a,h)anthracene	<0.002
Fluoranthene	<0.002
Fluorene	<0.002
Indeno(1,2,3-cd)pyrene	<0.002
Naphthalene	<0.002
Phenanthrene	<0.002
Pyrene	<0.002

METHODS- EPA SW 846-8270/ EPA 625

Mitch Irvin  
Mitch Irvin

1/12/96  
Date

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## FINAL ANALYSIS REPORT

Company: Western Environmental Consulting  
Address: 1588 Cordoba  
City, State: Hobbs, New Mexico 88240

Date: 01/12/96  
Lab #: H2361-2

Project Name: Saunders Pit  
Location: Monument, New Mexico  
Sampled by: ST  
Sample Type: Water

Date: 01/08/96  
Sample Condition: intact


Sample ID: Monitor Well #2

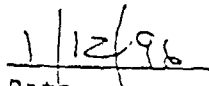
Units: ppm

## POLYNUCLEAR AROMATIC HYDROCARBONS

<u>PARAMETER</u>	<u>RESULT</u>
Acenaphthene	<0.002
Acenaphthylene	<0.002
Anthracene	<0.002
Benzo(a)anthracene	<0.002
Benzo(a)pyrene	<0.002
Benzo(b)fluoranthene	<0.002
Benzo(k)fluoranthene	<0.002
Benzo(ghi)perylene	<0.002
Chrysene	<0.002
Dibenz(a,h)anthracene	<0.002
Fluoranthene	<0.002
Fluorene	<0.002
Indeno(1,2,3-cd)pyrene	<0.002
Naphthalene	<0.002
Phenanthrene	<0.002
Pyrene	<0.002

METHODS- EPA SW 846-8270/ EPA 625

  
Mitch Irvin

  
Date



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## FINAL ANALYSIS REPORT

Company: Western Environmental Consulting  
Address: 1588 Cordoba  
City, State: Hobbs, New Mexico 88240

Date: 01/12/96  
Lab #: H2361-3

Project Name: Saunders Pit  
Location: Monument, New Mexico  
Sampled by: ST  
Sample Type: Water

Date: 01/08/96  
Sample Condition: intact


Sample ID: Monitor Well #3

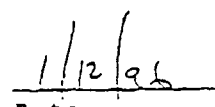
Units: ppm

## POLYNUCLEAR AROMATIC HYDROCARBONS

<u>PARAMETER</u>	<u>RESULT</u>
Acenaphthene	<0.002
Acenaphthylene	<0.002
Anthracene	<0.002
Benzo(a)anthracene	<0.002
Benzo(a)pyrene	<0.002
Benzo(b)fluoranthene	<0.002
Benzo(k)fluoranthene	<0.002
Benzo(ghi)perylene	<0.002
Chrysene	<0.002
Dibenz(a,h)anthracene	<0.002
Fluoranthene	<0.002
Indene	<0.002
Indeno(1,2,3-cd)pyrene	<0.002
Naphthalene	<0.002
Phenanthrene	<0.002
Pyrene	<0.002

METHODS- EPA SW 846-8270/ EPA 625

  
Mitch Irvin

  
Date



**ARDINAL**  
LABORATORIES

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PHONE (505) 326-4669 • 118 S. COMMERCIAL AVE. • FARMINGTON, NM 87401

**FINAL ANALYSIS REPORT**

Company: Western Environmental Consulting  
Address: 1588 Cordoba  
City, State: Hobbs, New Mexico 88240

Date: 01/12/96  
Lab #: H2361-4

Project Name: Saunders Pit  
Location: Monument, New Mexico  
Sampled by: ST  
Sample Type: Water

Date: 01/08/96  
Sample Condition: intact

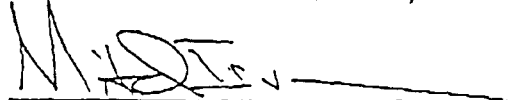
Sample ID: Monitor Well #4

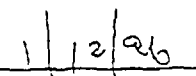
Units: ppm

**POLYNUCLEAR AROMATIC HYDROCARBONS**

<u>PARAMETER</u>	<u>RESULT</u>
Acenaphtene	<0.004
Acenaphthylene	<0.004
Anthracene	<0.004
Benzo(a)anthracene	<0.004
Benzo(a)pyrene	<0.004
Benzo(b)flouranthene	<0.004
Benzo(k)flouranthene	<0.004
Benzo(ghi)perylene	<0.004
Chrysene	<0.004
Dibenz(a,h)anthracene	<0.004
Flouranthene	<0.004
Fluorene	<0.004
Indeno(1,2,3-cd)pyrene	<0.004
Naphthalene	<0.016
Phenanthrene	<0.004
Pyrene	<0.004

METHODS- EPA SW 846-8270/ EPA 625

  
Mitch Irvin

  
Date



# ARDINAL LABORATORIES

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## FINAL ANALYSIS REPORT

Company: Western Environmental Consulting  
Address: 1588 Cordoba  
City, State: Hobbs, New Mexico 88240

Date: 01/12/96  
Lab #: H2361-5

Project Name: Saunders Pit  
Location: Monument, New Mexico  
Sampled by: ST  
Sample Type: Water

Date: 01/08/96  
Sample Condition: intact


Sample ID: Monitor Well #57

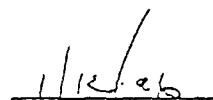
Units: ppm

## POLYNUCLEAR AROMATIC HYDROCARBONS

<u>PARAMETER</u>	<u>RESULT</u>
Acenaphtene	<0.002
Acenaphthylene	<0.002
Anthracene	<0.002
Benzo(a)anthracene	<0.002
Benzo(a)pyrene	<0.002
Benzo(b)fluoranthene	<0.002
Benzo(k)fluoranthene	<0.002
Benzo(ghi)perylene	<0.002
Chrysene	<0.002
Benzo(a,h)anthracene	<0.002
Fluoranthene	<0.002
Fluorene	<0.002
Indeno(1,2,3-cd)pyrene	<0.002
Naphthalene	<0.002
Phenanthrene	<0.002
Pyrene	<0.002

METHODS- EPA SW 846-8270/ EPA 625

  
Mitch Irvin

  
Date

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# Chain of Custody Record

Project I.D. Sanders Pyl

Project Location: Nonumment

Sampled By Thomasz, Stoney

Client Name Western Enviro. Consulting

Address:

Telephone 392-6167

118 S. Commercial Ave.

101 E. Marland

Farmington, NM 87401

Hobbs. NM 88240

505-326-4669

505-393-2326

FAX 505-326-4535

FAX 505-393-2476

[illegible]

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Released by: (Signature)

**[Date]**

011111

Resolved by signature

110105067: 20100501011

1990

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## BTEX ANALYSIS REPORT

Company: Western Environmental Consultants  
 Address: 1588 Cordoba  
 City, State: Hobbs, New Mexico 88240

Date: 01/15/96  
 Lab: H2365

Project Name: Saunders Pit  
 Location: Monument  
 Sampled by: ST  
 Analyzed by: MI  
 Sample Type: water

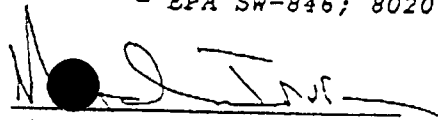
Date: 01/10/96  
 Date: 01/11/96  
 Sample Condition: intact  
 Units: ppm

\*\*\*\*\*

Samp #	Field Code	BENZENE	TOLUENE	ETHYL BENZENE	PARA-XYLENE	META-XYLENE	ORTHO-XYLENE
1	Monitor Well #9	<0.001	<0.001	0.016	0.004	<0.001	0.018
2	Monitor Well #5	0.005	<0.001	<0.001	<0.001	0.062	0.012
3	Monitor Well #6	0.003	<0.001	<0.001	<0.001	<0.001	0.008
4	Monitor Well #8	<0.001	<0.001	<0.001	0.004	0.007	<0.001

QC Recovery	0.567	0.575	0.601	0.585	0.567	0.523
QC Spike	0.534	0.525	0.528	0.525	0.523	0.519
Accuracy	106%	109%	113%	111%	108%	101%
Air Blank	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001

Methods - GAS CHROMATOGRAPHY  
 - EPA SW-846; 8020

  
 Mitch Irvin

1-17-96  
 Date

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CHEMICAL ANALYSIS OF WATER

Company : Western Environmental Consultants  
City : 1588 Cordoba  
State : Hobbs, New Mexico 88240  
Proj.Name : Saunders Pit  
Location : Monument NM

Lab #: H2365  
Date Received: 01/10/96  
Date Analyzed: 01/12/96

Sample 1 : Monitor Well #9  
Sample 2 : Monitor Well #5  
Sample 3 : Monitor Well #6  
Sample 4 : Monitor Well #8

Units: mg/L

<u>PARAMETER</u>	<u>SAMPLE 1</u>	<u>SAMPLE 2</u>	<u>SAMPLE 3</u>	<u>SAMPLE 4</u>
Chloride	46	60	102	210
pH	12.41	7.27	7.30	7.45

  
Mitch Irvin

1-17-96  
Date

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505-326-4669  
FAX 505-326-4535

Project I.D. Saunders P.f

Project Location Monument

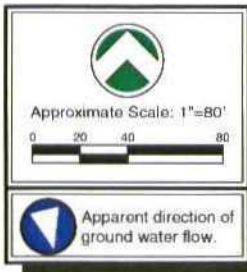
Sampled By Thomas, Honey

Client Name Lexaco

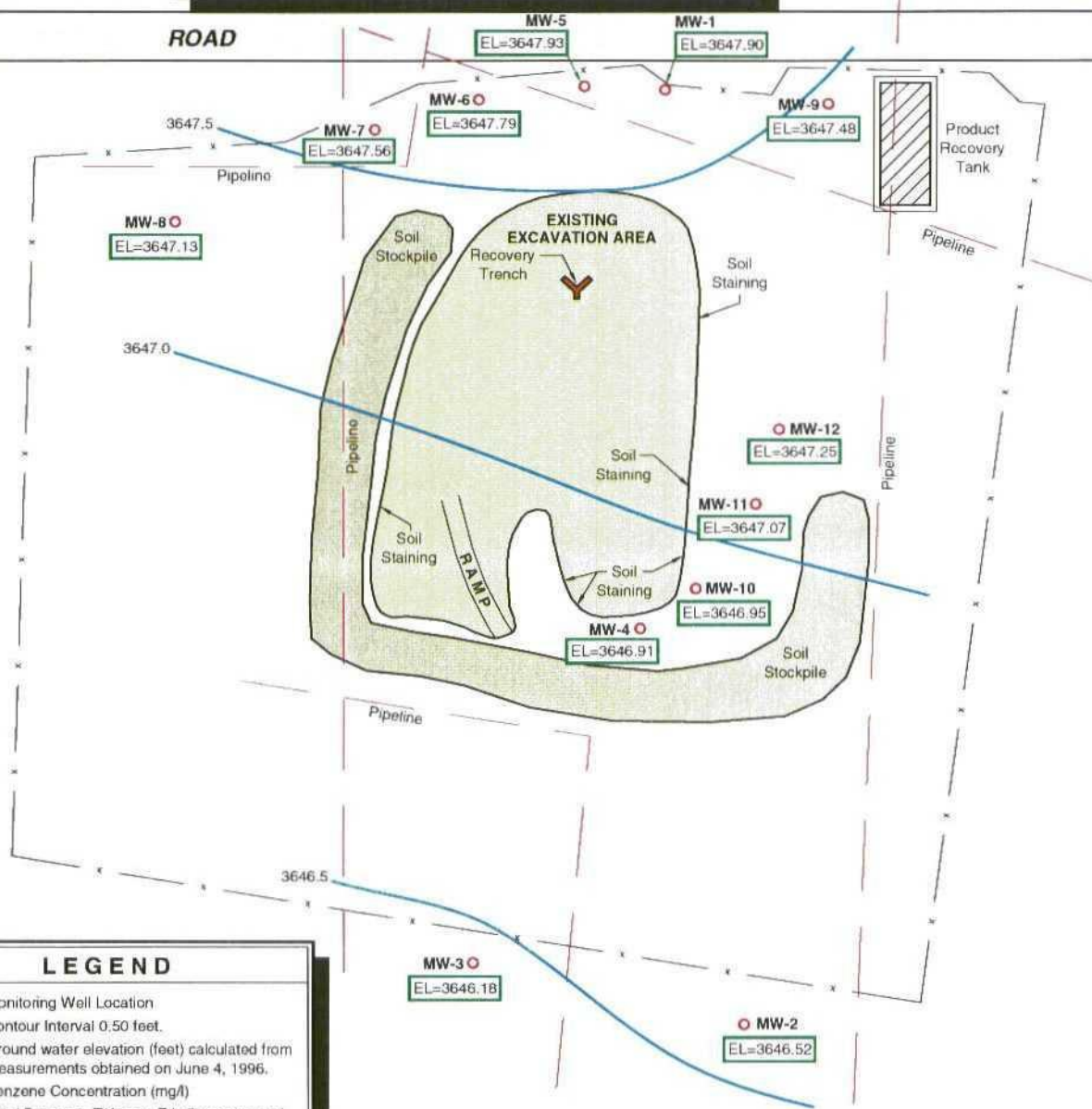
Address Western Enviro. Consulting

Telephone 392-6167

Sample Number	Date	Time	Composite	Grab	Sample Location	Number of Containers	Analysis Required	Remarks (Type sample, preservation, etc.)
1	1-8-78			✓	New River well #1	3	See Attached LISTING	
2	1-8-78		✓	"	" #7	3		
3	1-8-78		✓	"	" #4	3		
4	1-8-78		✓	"	" #2	3		
5	1-8-78		✓	"	" #3	3		
<div> <div>Released by: (Signature) <i>Stoney Electronics</i></div> <div> <div>Received by: (Signature) <i>[Signature]</i></div> <div> <div>Date 1-8-78</div> <div>Time 5:00pm</div> </div> </div> </div> <div> <div>PLEASE NOTE: Liability and Omega, Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for the analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use or loss of profits.</div> </div>								

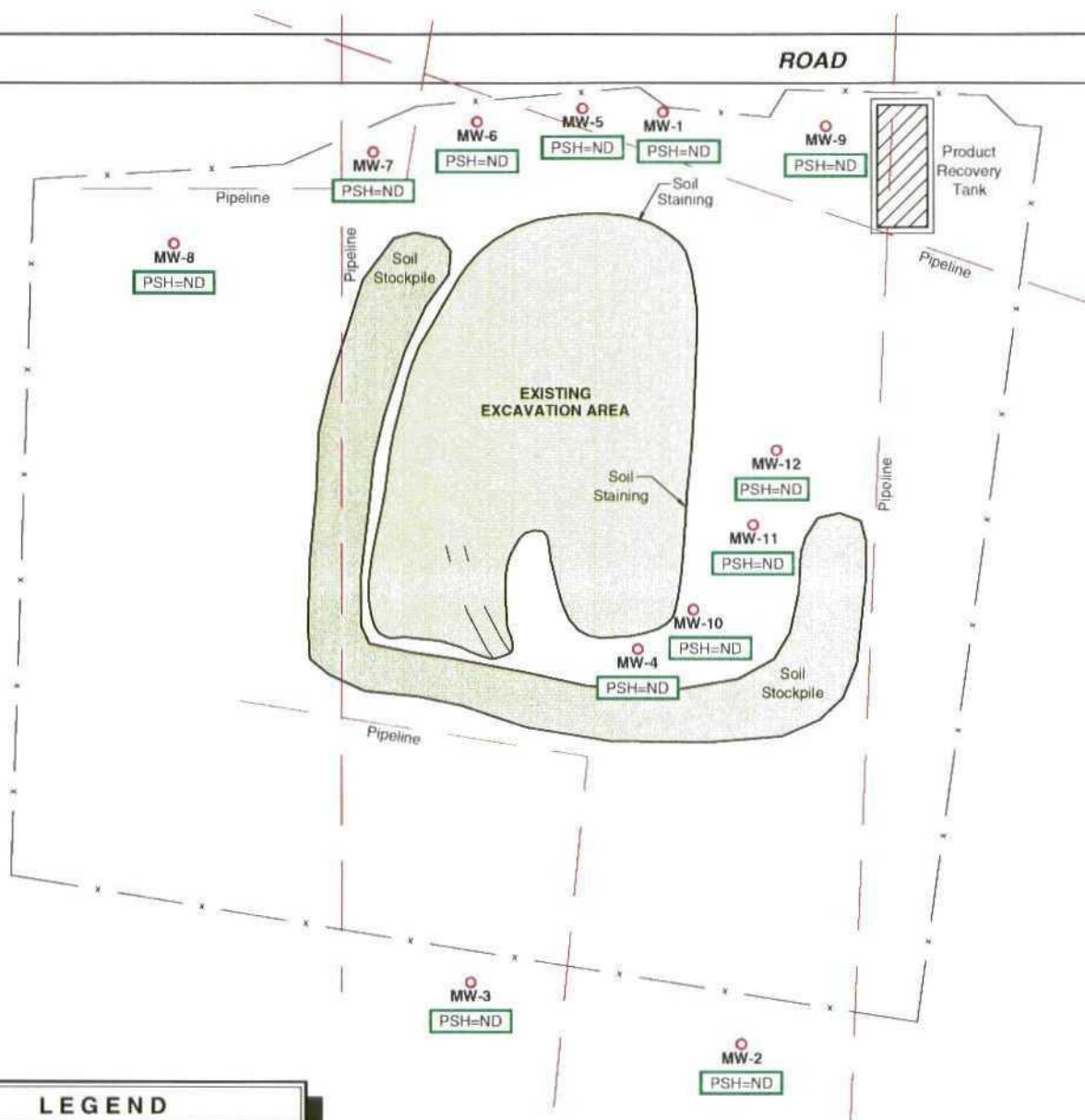
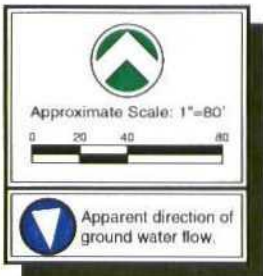


LAB RESULTS - (06/04/96)					
MW-1	MW-2	MW-3	MW-4	MW-5	MW-6
B=ND	B=ND	B=ND	B=ND	B=ND	B=ND
BTEX=ND	BTEX=ND	BTEX=ND	BTEX=ND	BTEX=ND	BTEX=ND
TPH=ND	TPH=ND	TPH=ND	TPH=ND	TPH=ND	TPH=ND
TDS=880	TDS=320	TDS=410	TDS=210	TDS=650	TDS=720
CL=320	CL=213	CL=107	CL=107	CL=107	CL=122
MW-7	MW-8	MW-9	MW-10	MW-11	MW-12
B=ND	B=ND	B=ND	B=ND	B=ND	B=0.002
BTEX=ND	BTEX=ND	BTEX=ND	BTEX=ND	BTEX=ND	BTEX=0.011
TPH=ND	TPH=ND	TPH=1	TPH=ND	TPH=1	TPH=2
TDS=850	TDS=310	TDS=420	TDS=660	TDS=620	TDS=1010
CL=373	CL=107	CL=107	CL=107	CL=213	CL=266



LEGEND	
○	Monitoring Well Location
—	Contour Interval 0.50 feet.
EL =	Ground water elevation (feet) calculated from measurements obtained on June 4, 1996.
B =	Benzene Concentration (mg/l)
BTEX =	Total Benzene, Toluene, Ethylbenzene, and Xylenes Concentration (mg/l)
TPH =	Total Petroleum Hydrocarbons Concentration (mg/l)
TDS =	Total Dissolved Solids Concentration (mg/l)
CL =	Chlorides Concentration (mg/l)
ND =	Below laboratory detection / reporting limits.





# LEGEND

- Monitoring Well Location
- PSH = Phase Separate Hydrocarbon thickness (feet).
- ND = Indicates PSH was not detected.

NOTE:  
PSH thickness in monitoring wells was measured on  
June 4, 1996.

54-996-RW-G (5/97 PHJ/98)

kei

PSH THICKNESS MAP - JUNE 1996

SECTION 18, T19S, AND R37E

LEA COUNTY, NEW MEXICO

610062

FIG 2

# ENVIRONMENTAL LAB OF , INC.

"Don't Treat Your Soil Like Dirt!"

KEI CONSULTANTS  
ATTN: MR. MIKE HAWTHORNE  
5309 WURZBACH, SUITE 100  
SAN ANTONIO, TEXAS 78238  
FAX: 210-680-3763

Receiving Date: 06/05/96  
Sample Type: WATER  
Project #: 610062  
Project Name: TNM PLOO TNM-10  
Project Location: MONUMENT, NEW MEXICO

Analysis Date: 06/05/96  
Sampling Date: 06/05/96  
Sample Condition: Intact /Iced

ELT#	FIELD CODE	BENZENE (mg/l)	TOLUENE (mg/l)	ETHYLBENZENE (mg/l)	m,p-XYLENE (mg/l)	o-XYLENE (mg/l)	TPH (mg/l)
7648	MW-1	<0.001	<0.001	<0.001	<0.001	<0.001	<1
7649	MW-2	<0.001	<0.001	<0.001	<0.001	<0.001	<1
7650	MW-3	<0.001	<0.001	<0.001	<0.001	<0.001	<1
7651	MW-4	<0.001	<0.001	<0.001	<0.001	<0.001	<1
7652	MW-5	<0.001	<0.001	<0.001	<0.001	<0.001	<1
7653	MW-6	<0.001	<0.001	<0.001	<0.001	<0.001	<1
7654	MW-7	<0.001	<0.001	<0.001	<0.001	<0.001	<1
7655	MW-8	<0.001	<0.001	<0.001	<0.001	<0.001	<1
7656	MW-9	<0.001	<0.001	<0.001	<0.001	<0.001	1
7657	MW-10	<0.001	<0.001	<0.001	<0.001	<0.001	<1
7658	MW-11	<0.001	<0.001	<0.001	<0.001	<0.001	1
7659	MW-12	0.002	0.002	0.003	0.004	<0.001	2
% IA		95	88	92	93	93	102
% EA		94	91	90	91	92	---
BLANK		<0.001	<0.001	<0.001	<0.001	<0.001	<1

METHODS: SW 846-8020,5030 . EPA 418.1

  
Michael R. Fowler

6-6-96  
Date





# ENVIRONMENTAL LAB OF TEXAS, INC.

"Don't Treat Your Soil Like Dirt!"

KEI CONSULTANTS  
ATTN: MR. MIKE HAWTHORNE  
5309 WURZBACH, SUITE 100  
SAN ANTONIO, TEXAS 78238  
FAX: 210-680-3763

Receiving Date: 06/05/96  
Sample Type: WATER  
Project #: 610062  
Project Name: TNM PLCO TNM-10  
Project Location: MONUMENT, NEW MEXICO

Analysis Date: 06/05/96  
Sampling Date: 06/05/96  
Sample Condition: Intact / Iced

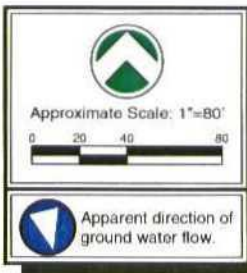
ELT#	FIELD CODE	Total Dissolved Solids (mg/l)	Chlorides (mg/l)
7648	MW-1	880	320
7649	MW-2	320	213
7650	MW-3	410	107
7651	MW-4	210	107
7652	MW-5	650	107
7653	MW-6	720	122
7654	MW-7	850	373
7655	MW-8	310	107
7656	MW-9	420	107
7657	MW-10	660	107
7658	MW-11	620	213
7659	MW-12	1,010	268
QUALITY CONTROL		1,380	2,343
TRUE VALUE		1,382	2,232
% PRECISION		100	105

METHODS: EPA 160.1, 325

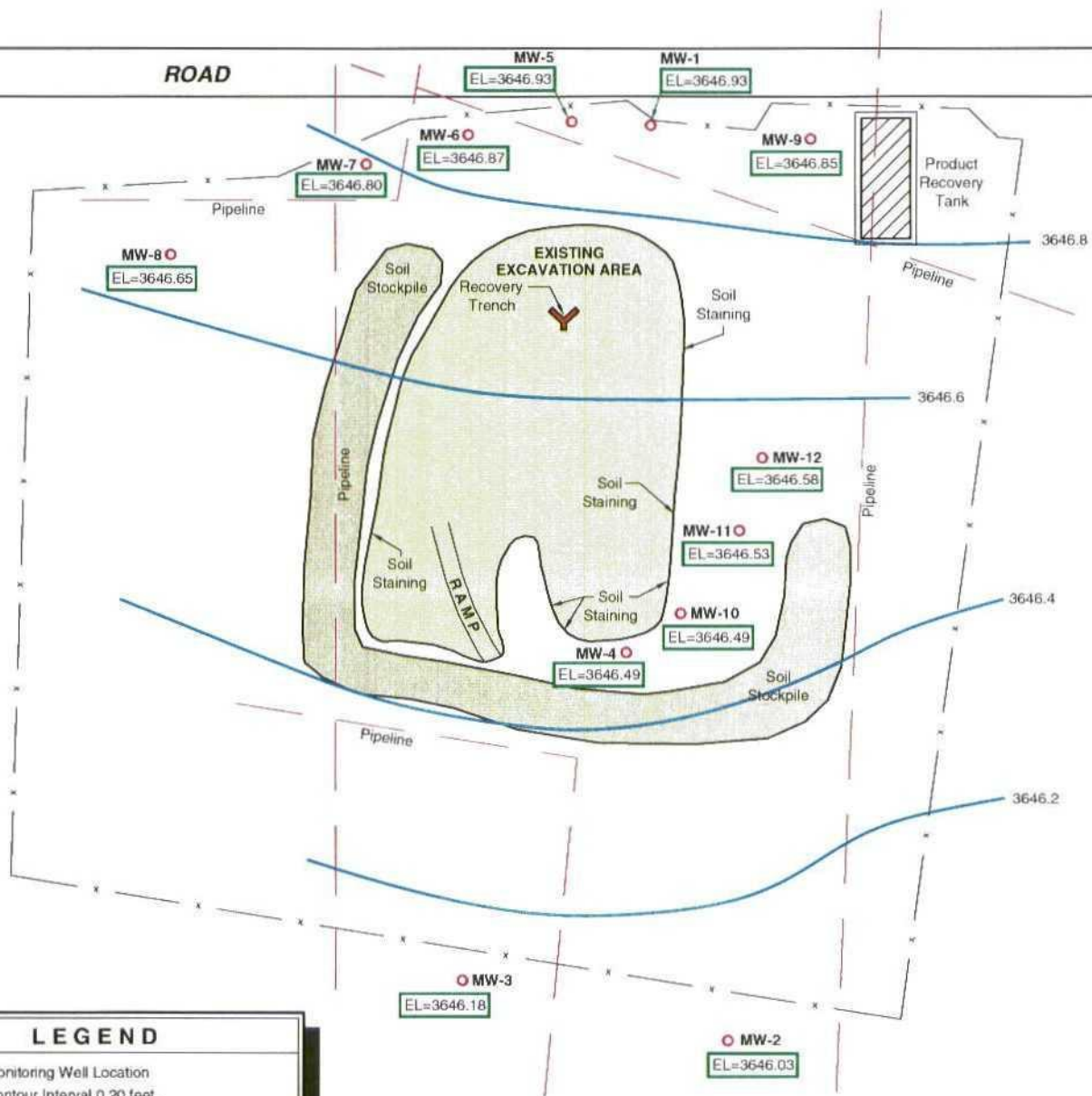
  
Michael R. Fowler

6-6-96  
Date





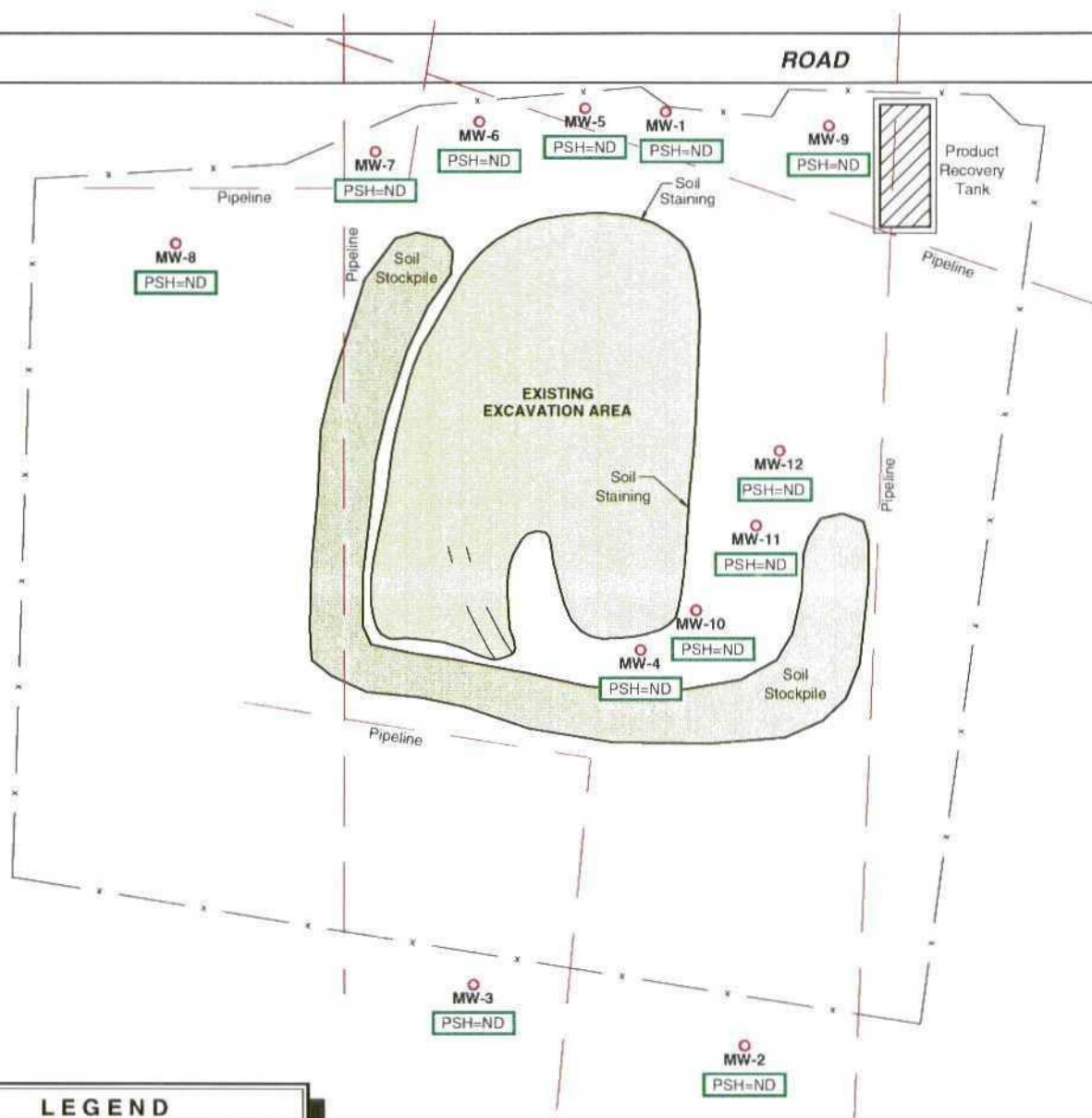
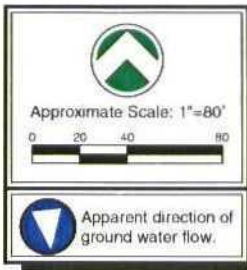
LAB RESULTS - (07/10/96)					
MW-1	MW-2	MW-3	MW-4	MW-5	MW-6
B=ND	B=ND	B=ND	B=ND	B=ND	B=ND
BTEX=0.008	BTEX=ND	BTEX=ND	BTEX=ND	BTEX=ND	BTEX=ND
TPH=ND	TPH=ND	TPH=ND	TPH=ND	TPH=ND	TPH=ND
MW-7	MW-8	MW-9	MW-10	MW-11	MW-12
B=ND	B=ND	B=ND	B=ND	B=ND	B=ND
BTEX=ND	BTEX=ND	BTEX=ND	BTEX=0.041	BTEX=ND	BTEX=0.019
TPH=ND	TPH=ND	TPH=ND	TPH=ND	TPH=1	TPH=1



LEGEND	
	Monitoring Well Location
	Contour Interval 0.20 feet.
EL =	Ground water elevation (feet) calculated from measurements obtained on July 10, 1996.
B =	Benzene Concentration (mg/l)
BTEX =	Total Benzene, Toluene, Ethylbenzene, and Xylenes Concentration (mg/l)
TPH =	Total Petroleum Hydrocarbons Concentration (mg/l)
ND =	Below laboratory detection / reporting limits.

1495-RV (6) (GW/J)96





**LEGEND**

○ Monitoring Well Location

PSH = Phase Separate Hydrocarbon thickness (feet).

ND = Indicates PSH was not detected.

NOTE:  
PSH thickness in monitoring wells was measured on July 10, 1996.

04.98-RW-G (81PHU096)



**PSH THICKNESS MAP - JULY 1996**

SECTION 18, T19S, AND R37E LEA COUNTY, NEW MEXICO

610062

FIG 2

# ENVIRONMENTAL LAB OF , INC.

"Don't Treat Your Soil Like Dirt!"

KEI CONSULTANTS  
ATTN: MR. MIKE HAWTHORNE  
5309 WURZBACH, SUITE 100  
SAN ANTONIO, TEXAS 78238  
FAX: 210-680-3763

Receiving Date: 07/11/96  
Sample Type: WATER  
Project #: 610062  
Project Name: TNM-10  
Project Location: MONUMENT, NEW MEXICO

Analysis Date: 07/11/96  
Sampling Date: 07/10/96  
Sample Condition: Intact / Iced

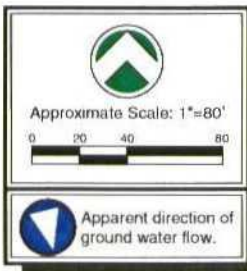
ELT#	FIELD CODE	BENZENE (mg/l)	TOLUENE (mg/l)	ETHYLBENZENE (mg/l)	m,p-XYLENE (mg/l)	o-XYLENE (mg/l)	TPH (mg/l)
7891	MW-1	<0.001	<0.001	<0.001	0.008	<0.001	<1
7892	MW-2	<0.001	<0.001	<0.001	<0.001	<0.001	<1
7893	MW-3	<0.001	<0.001	<0.001	<0.001	<0.001	<1
7894	MW-4	<0.001	<0.001	<0.001	<0.001	<0.001	<1
7895	MW-5	<0.001	<0.001	<0.001	<0.001	<0.001	<1
7896	MW-6	<0.001	<0.001	<0.001	<0.001	<0.001	<1
7897	MW-7	<0.001	<0.001	<0.001	<0.001	<0.001	<1
7898	MW-8	<0.001	<0.001	<0.001	<0.001	<0.001	<1
7899	MW-9	<0.001	<0.001	<0.001	<0.001	<0.001	<1
7900	MW-10	<0.001	<0.001	0.016	<0.001	0.025	<1
7901	MW-11	<0.001	<0.001	<0.001	<0.001	<0.001	<1
7902	MW-12	<0.001	<0.001	0.012	0.007	<0.001	1
% IA		104	108	105	108	107	102
% EA		101	99	98	100	102	101
BLANK		<0.001	<0.001	<0.001	<0.001	<0.001	<1

METHODS: SW 846-8020,5030 . EPA 418.1

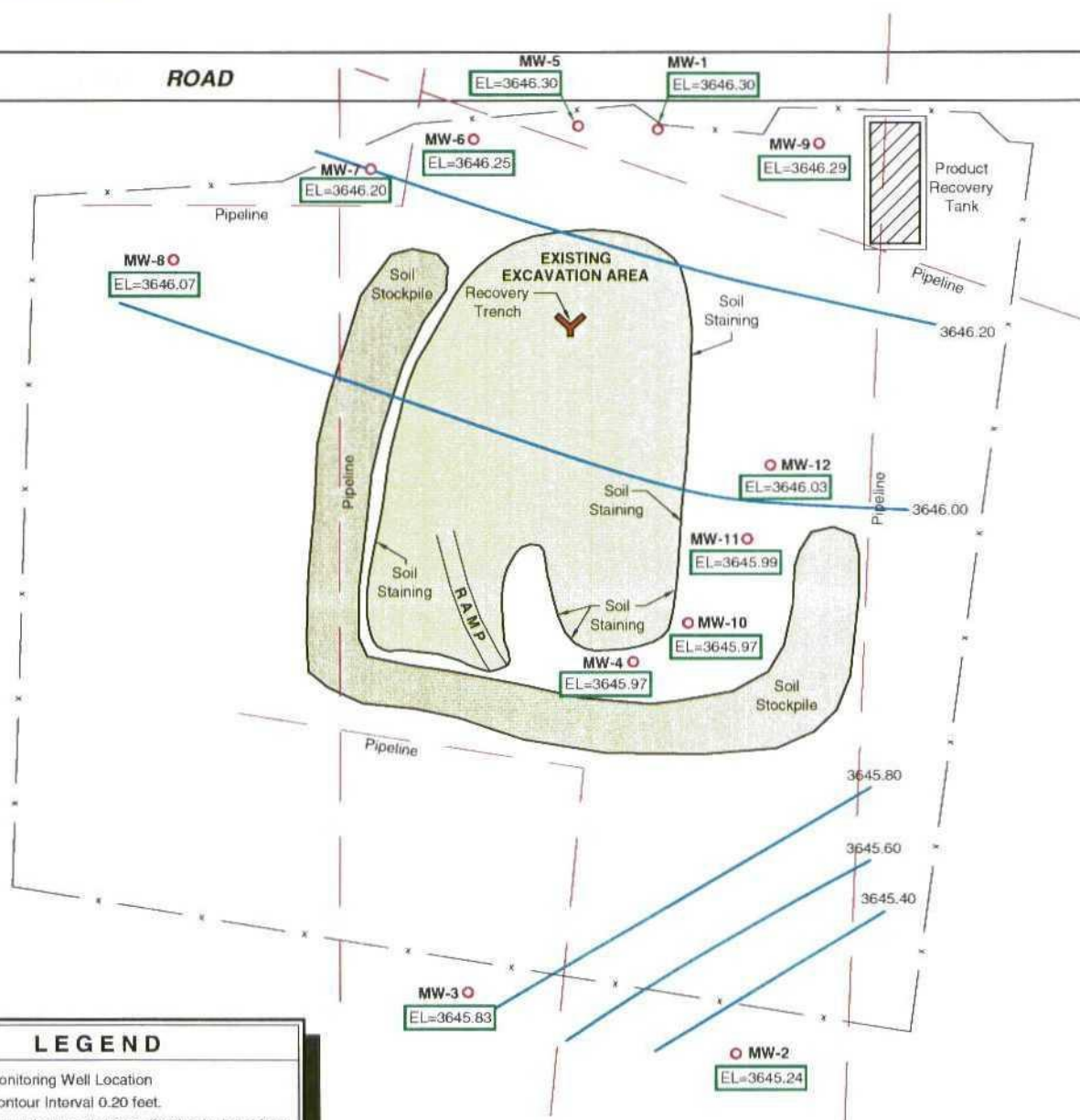
  
Michael R. Fowler

7-12-96  
Date





LAB RESULTS - (10/03/96)					
MW-1	MW-2	MW-3	MW-4	MW-5	MW-6
B=ND BTEX=ND TPH=ND	B=ND BTEX=ND TPH=ND	B=0.019 BTEX=0.022 TPH=ND	B=0.002 BTEX=0.005 TPH=ND	B=ND BTEX=ND TPH=ND	B=ND BTEX=ND TPH=ND
MW-7	MW-8	MW-9	MW-10	MW-11	MW-12
B=ND BTEX=ND TPH=ND	B=ND BTEX=0.001 TPH=ND	B=ND BTEX=ND TPH=ND	B=ND BTEX=ND TPH=ND	B=0.009 BTEX=0.016 TPH=1	B=ND BTEX=0.007 TPH=1



LEGEND	
○	Monitoring Well Location
—	Contour Interval 0.20 feet.
EL =	Ground water elevation (feet) calculated from measurements obtained on October 3, 1996.
B =	Benzene Concentration (mg/l)
BTEX =	Total Benzene, Toluene, Ethylbenzene, and Xylenes Concentration (mg/l)
TPH =	Total Petroleum Hydrocarbons Concentration (mg/l)
ND =	Below laboratory detection / reporting limits.

2758-RM (8-1-GW-099)

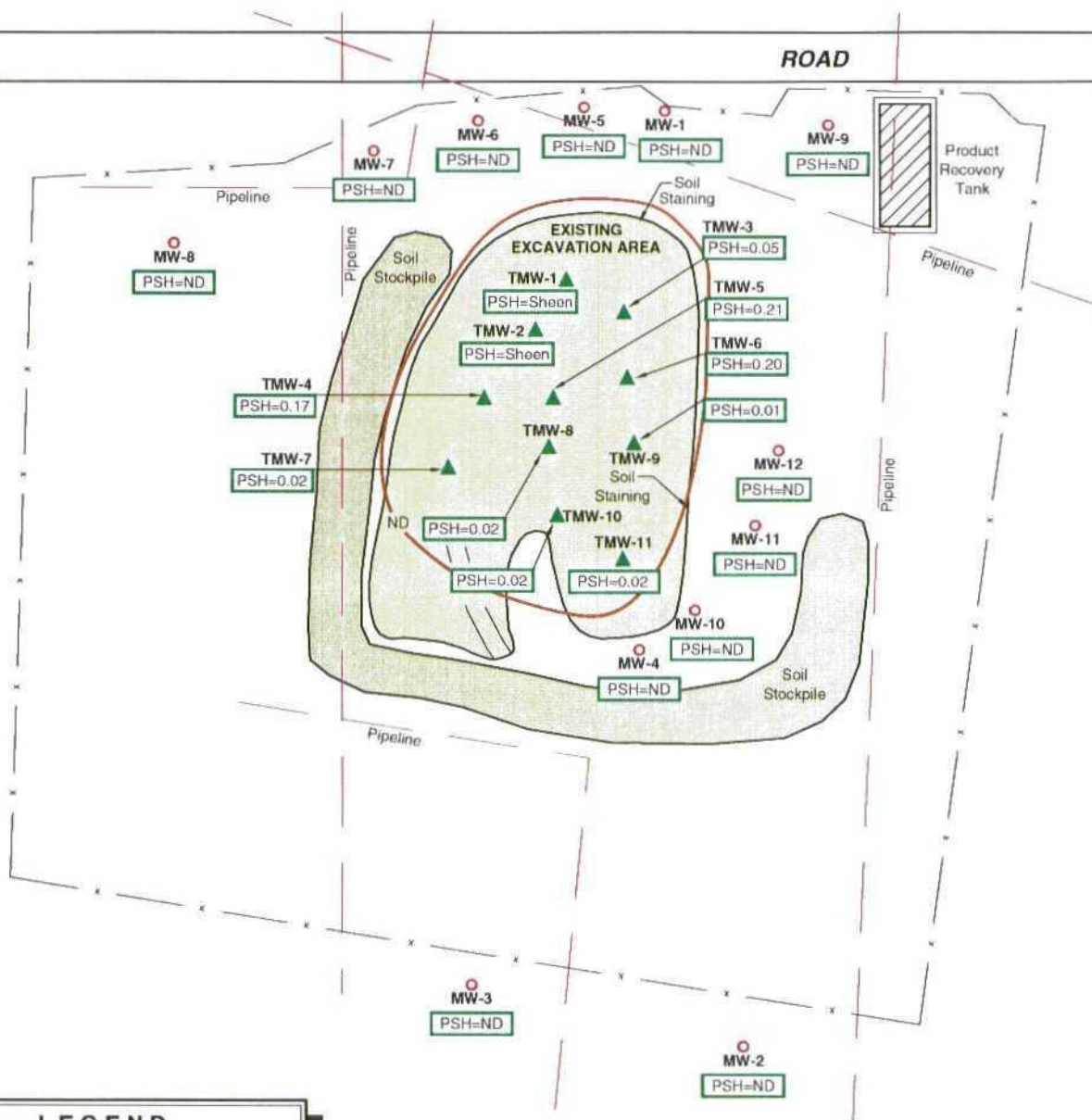
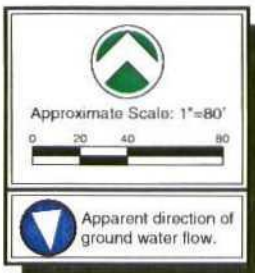


GROUND WATER CONTOURS / CONCENTRATION MAP - OCTOBER 1996

SECTION 18, T19S, AND R37E LEA COUNTY, NEW MEXICO

610062

FIG 1



### LEGEND

- ▲ Temporary monitoring well location installed by KEI on 10/01-02/96 and 10/17/96.
- Monitoring Well Location
- PSH = Phase Separate Hydrocarbon thickness (feet).
- ND = Indicates PSH was not detected.

### NOTES:

1. PSH thickness in monitoring wells was measured on October 3, 1996.
2. PSH thickness in temporary monitoring well was measured on October 3, 1996.
3. Due to the high viscosity of the hydrocarbon, gauged PSH thickness may exceed actual thickness.

kei

### PSH THICKNESS MAP - OCTOBER 1996

SECTION 18, T19S, AND R37E

LEA COUNTY, NEW MEXICO

610062

FIG 2

# ENVIRONMENTAL LAB OF , INC.

OCT 24 1996

"Don't Treat Your Soil Like Dirt!"

KEI CONSULTING  
ATTN: MR. MIKE HAWTHORNE  
5309 WURZBACH, SUITE 100  
SAN ANTONIO, TEXAS 78238  
FAX: 210-680-3763

Receiving Date: 10/03/96  
Reporting Date: 10/17/96  
Project Name: TNMPL # 610062  
Sample I.D.: TMW-1

Analysis Date: 10/10/96  
Sampling Date: 10/03/96  
Sample Type: WATER  
Sample Condition: C&I

Volatiles EPA SW 846-8240, (ppm) Compounds	ELT# 9140	PQL	% IA	Method Blank	% EA
Chloromethane	ND	0.005	95	ND	
Vinyl chloride	ND	0.002	94	ND	
Bromomethane	ND	0.005	105	ND	
Chloroethane	ND	0.002	111	ND	
Trichlorofluoromethane	ND	0.002	104	ND	
Acetone	0.036	0.01	102	ND	
1,1-Dichloroethane	ND	0.002	102	ND	117
Iodomethane	ND	0.05	106	ND	
Vinyl Acetate	ND	0.01	94	ND	
Carbon Disulfide	ND	0.002	104	ND	
Methylene Chloride	ND	0.002	95	5.2	
trans-1,2-Dichloroethene	ND	0.002	104	ND	
1,1-Dichloroethane	ND	0.002	104	ND	
2-Butanone	ND	0.01	121	ND	
Chloroform	ND	0.002	86	ND	
1,1,1-Trichloroethane	ND	0.002	98	ND	
Carbon Tetrachloride	ND	0.002	113	ND	
Benzene	ND	0.002	117	ND	109
1,2 Dichloroethane	ND	0.002	90	ND	
Trichloroethene	ND	0.002	97	ND	117
1,2-Dichloropropane	ND	0.002	94	ND	
Dibromomethane	ND	0.002	97	ND	
Bromochloromethane	ND	0.002	88	ND	
2-Chloroethyl Vinyl ether	ND	0.01	108	ND	
4-Methyl 2-Pentanone	ND	0.05	118	ND	
cis 1,3 Dichloropropene	ND	0.002	90	ND	
Toluene	ND	0.002	92	ND	111
trans 1,3-Dichloropropene	ND	0.002	95	ND	
1,1,2-Trichloroethane	ND	0.002	93	ND	
Dibromochloromethane	ND	0.002	100	ND	
Tetrachloroethene	ND	0.002	92	ND	
Chlorobenzene	ND	0.002	94	ND	110

KEI CONSULTING  
ATTN: MR. MIKE HAWTHORNE  
5309 WURZBACH, SUITE 100  
SAN ANTONIO, TEXAS 78238  
FAX: 210-680-3763

Receiving Date: 10/03/96  
Reporting Date: 10/17/96  
Project Name: TNMPL # 610062  
Sample I.D.: TMW-1

Analysis Date: 10/10/96  
Sampling Date: 10/03/96  
Sample Type: WATER  
Sample Condition: C&I

Volatiles EPA SW 846-8240. (ppm) Compounds	ELT# 9140	PQL	% IA	Method Blank	% EA
Ethylbenzene	ND	0.002	90	ND	
m&p Xylene	ND	0.002	91	ND	
o-Xylene	ND	0.002	90	ND	
Styrene	ND	0.002	92	ND	
Bromoform	ND	0.002	100	ND	
1,1,2,2-Tetrachloroethane	ND	0.002	100	ND	
1,2,3-Trichloropropane	ND	0.002	105	ND	

SYSTEM MONITORING COMPOUNDS

% RECOVERY

Dibromofluoromethane	104
Toluene-d8	103
4-Bromofluorobenzene	100

ND=<PQL



Michael R. Fowler

Date

# ENVIRONMENTAL LAB OF , INC.

"Don't Treat Your Soil Like Dirt!"

KEI CONSULTING  
ATTN: MR. MIKE HAWTHORNE  
5309 WURZBACH, SUITE 100  
SAN ANTONIO, TEXAS 78238  
FAX: 210-680-3763

Receiving Date: 10/03/96  
Reporting Date: 10/17/96  
Project Name: TNMPL # 610062  
Sample I.D.: TMW-2

Analysis Date: 10/10/96  
Sampling Date: 10/03/96  
Sample Type: WATER  
Sample Condition: C&I

Volatiles EPA SW 846-8240, (ppm) Compounds	ELT# 9141	PQL	% IA	Method Blank	% EA
Chloromethane	ND	0.005	95	ND	
Vinyl chloride	ND	0.002	94	ND	
Bromomethane	ND	0.005	105	ND	
Chloroethane	ND	0.002	111	ND	
Trichlorofluoromethane	ND	0.002	104	ND	
Acetone	0.084	0.01	102	ND	
1,1-Dichloroethane	ND	0.002	102	ND	117
Iodomethane	ND	0.05	106	ND	
Vinyl Acetate	ND	0.01	94	ND	
Carbon Disulfide	ND	0.002	104	ND	
Methylene Chloride	ND	0.002	95	5.2	
trans-1,2-Dichloroethene	ND	0.002	104	ND	
1,1-Dichloroethane	ND	0.002	104	ND	
2-Butanone	0.034	0.01	121	ND	
Chloroform	ND	0.002	86	ND	
1,1,1-Trichloroethane	ND	0.002	98	ND	
Carbon Tetrachloride	ND	0.002	113	ND	
Benzene	0.003	0.002	117	ND	109
1,2 Dichloroethane	ND	0.002	90	ND	
Trichloroethene	ND	0.002	97	ND	117
1,2-Dichloropropane	ND	0.002	94	ND	
Dibromomethane	ND	0.002	97	ND	
Bromochloromethane	ND	0.002	88	ND	
2-Chloroethyl Vinyl ether	ND	0.01	108	ND	
4-Methyl 2-Pentanone	0.030	0.05	118	ND	
cis 1,3 Dichloropropene	ND	0.002	90	ND	
Toluene	0.002	0.002	92	ND	111
trans 1,3-Dichloropropene	ND	0.002	95	ND	
1,1,2-Trichloroethane	ND	0.002	93	ND	
Dibromochloromethane	ND	0.002	100	ND	
Tetrachloroethene	ND	0.002	92	ND	
Chlorobenzene	ND	0.002	94	ND	110



KEI CONSULTING  
ATTN: MR. MIKE HAWTHORNE  
5309 WURZBACH, SUITE 100  
SAN ANTONIO, TEXAS 78238  
FAX: 210-680-3763

Receiving Date: 10/03/96  
Reporting Date: 10/17/96  
Project Name: TNMPL # 610062  
Sample I.D.: TMW-2

Analysis Date: 10/10/96  
Sampling Date: 10/03/96  
Sample Type: WATER  
Sample Condition: C&I

Volatiles EPA SW 846-8240, (ppm) Compounds	ELT# 9141	PQL	% IA	Method Blank	% EA
---	--------------	-----	------	-----------------	------

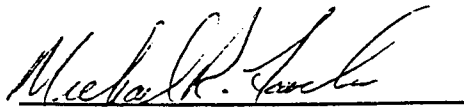
Ethylbenzene	0.005	0.002	90	ND	
m&p Xylene	0.017	0.002	91	ND	
o-Xylene	0.002	0.002	90	ND	
Styrene	ND	0.002	92	ND	
Bromoform	ND	0.002	100	ND	
1,1,2,2-Tetrachloroethane	ND	0.002	100	ND	
1,2,3-Trichloropropane	ND	0.002	105	ND	

SYSTEM MONITORING COMPOUNDS

% RECOVERY

Dibromofluoromethane	120
Toluene-d8	106
4-Bromofluorobenzene	106

ND=<PQL

  
Michael R. Fowler

10-17-96  
Date

# ENVIRONMENTAL LAB OF , INC.

"Don't Treat Your Soil Like Dirt!"

KEI CONSULTING  
ATTN: MR. MIKE HAWTHORNE  
5309 WURZBACH, SUITE 100  
SAN ANTONIO, TEXAS 78238  
FAX: 210-680-3763

Receiving Date: 10/03/96  
Sample Type: WATER  
Project : 610062, TNMPL  
Project Location: SAUNDERS EXCAVATION

Analysis Date: 10/10/96  
Sampling Date: 10/03/96  
Sample Condition: Intact/Iced

ELT# 9140

8270 COMPOUNDS	REPORTING LIMIT	TMW-1 Concentration (mg/Kg)	QC	RPD	% EA	% IA
N-Nitrosodimethylamine	0.01	ND				
2-Picoline	0.01	ND				
Methyl methanesulfonate	0.01	ND				
Ethyl methanesulfonate	0.01	ND				
Phenol	0.01	ND	76	21	20	95
Aniline	0.05	ND				
bis(2-Chloroethyl)ether	0.05	ND				
2-Chlorophenol	0.05	ND		23	40	
1,3-Dichlorobenzene	0.01	ND				
1,4-Dichlorobenzene	0.01	ND	79	19	35	99
Benzyl alcohol	0.05	ND				
1,2-Dichlorobenzene	0.01	ND				
2-Methylphenol	0.01	ND				
bis(2-Chloroisopropyl)ether	0.05	ND				
4-Methylphenol/3-Methylphenol	0.01	ND				
Acetophenone	0.05	ND				
n-Nitrosodi-n-propylamine	0.01	ND		17	46	
Hexachloroethane	0.01	ND				
Nitrobenzene	0.01	ND				
N-Nitrosopiperidine	0.05	ND				
Isophorone	0.05	ND				
2-Nitrophenol	0.05	ND	86			108
2,4-Dimethylphenol	0.05	ND				
bis(2-Chloroethoxy)methane	0.01	ND				
Benzoic acid	0.1	ND				
2,4-Dichlorophenol	0.05	ND	77			96
1,2,4-Trichlorobenzene	0.01	ND		21	44	
a,a Dimethylphenethylamine	0.1	ND				
Naphthalene	0.01	ND				
4-Chloroaniline	0.05	ND				
2,6-Dichlorophenol	0.05	ND				
Hexachlorobutadiene	0.01	ND	77			96
N-Nitroso-di-n-butylamine	0.05	ND				
4-Chloro-3-methylphenol	0.05	ND	76	21	44	95

ELT# 9140

TMW-1

8270 COMPOUNDS	Reporting Limits	Concentration (mg/kg)	QC	RPD	%EA	%IA
2-Methylnaphthalene	0.01	ND				
1,2,4,5-Tetrachlorobenzene	0.01	ND				
Hexachlorocyclopentadiene	0.01	ND				
2,4,6-Trichlorophenol	0.05	ND	75			94
2,4,5-Trichlorophenol	0.05	ND				
2-Chloronaphthalene	0.01	ND				
1-Chloronaphthalene	0.01	ND				
2-Nitroaniline	0.05	ND				
Dimethylphthalate	0.01	ND				
Acenaphthylene	0.01	ND				
2,6-Dinitrotoluene	0.01	ND				
3-Nitroaniline	0.05	ND				
Acenaphthene*	0.01	ND	80	19	45*	100
2,4-Dinitrophenol	0.05	ND				
Dibenzofuran	0.05	ND				
Pentachlorobenzene	0.01	ND				
4-Nitrophenol	0.05	ND		9	27	
1-Napthylamine	0.05	ND				
2,4-Dinitrotoluene	0.01	ND		3	57	
2-Napthylamine	0.05	ND				
2,3,4,6-Tetrachlorophenol	0.05	ND				
Fluorene	0.01	ND				
Diethylphthalate	0.01	ND				
4-Chlorophenyl-phenylether	0.01	ND				
4-Nitroaniline	0.05	ND				
4,6-Dinitro-2-methylphenol	0.01	ND				
n-Nitrosodiphenylamine & Diphenylam	0.01	ND	75			94
Diphenylhydrazine	0.05	ND				
4-Bromophenyl-phenylether	0.01	ND				
Phenacetin	0.05	ND				
Hexachlorobenzene	0.01	ND				
4-Aminobiphenyl	0.05	ND				
Pentachlorophenol	0.05	ND	89	13	57	111
Pentachloronitrobenzene	0.05	ND				
Pronamide	0.01	ND				
Phenanthrene	0.01	ND				
Anthracene	0.01	ND				
Di-n-butylphthalate	0.01	ND				
Fluoranthene	0.01	ND	80			100
Benzidine	0.1	ND				
Pyrene	0.01	ND		6	80	
p-Dimethylaminoazobenzene	0.01	ND				
Butylbenzylphthalate	0.01	ND				
Benzo [a]anthracene	0.01	ND				
3,3-Dichlorobenzidine	0.01	ND				
Chrysene	0.01	ND				
bis (2-Ethylhexyl)phthalate	0.05	ND				

ELT# 9140

TMW-1

8270 COMPOUNDS	Reporting Limits	Concentration (mg/kg)	QC	RPD	%EA	%IA
Di-n- octlphthalate	0.01	ND	92			115
Benzo[b]fluoranthene	0.01	ND				
7,12-Dimethylbenz(a)anthracene	0.01	ND				
Benzo[k]fluoranthene	0.01	ND				
Benzo [a] pyrene	0.01	ND	77			96
3-Methylcholanthrene	0.01	ND				
Dibenzo (a,j) acridine	0.01	ND				
Indeno [1,2,3-cd] pyrene	0.01	ND				
Dibenz [a,h] anthracene	0.01	ND				
Benzo [g,h,i] perylene	0.01	ND				

\* Estimated Concentration, Spike Recovery Out of Limits

METHOD: EPA SW 846-8270, 3551  
SURROGATES

% RECOVERY

2-Fluorophenol SURR	64
Phenol-d6 SURR	60
Nitrobenzene-d5 SURR	66
2-Fluorobiphenyl SURR	66
2,4,6-Tribromophenol SURR	72
Terphenyl-d14 SURR	72



Michael R. Fowler

10-18-96

Date

# ENVIRONMENTAL LAB OF , INC.

"Don't Treat Your Soil Like Dirt!"

KEI CONSULTING  
ATTN: MR. MIKE HAWTHORNE  
5309 WURZBACH, SUITE 100  
SAN ANTONIO, TEXAS 78238  
FAX: 210-680-3763

Receiving Date: 10/03/96  
Sample Type: WATER  
Project: 610062, TNMPL  
Project Location: SAUNDERS EXCAVATION

Analysis Date: 10/10/96  
Sampling Date: 10/03/96  
Sample Condition: Intact/Iced

ELT# 9141	REPORTING	TMW-2				
8270 COMPOUNDS	LIMIT	Concentration (mg/Kg)	QC	RPD	% EA	% IA
N-Nitrosodimethylamine	0.01	ND				
2-Picoline	0.01	ND				
Methyl methanesulfonate	0.01	ND				
Ethyl methanesulfonate	0.01	ND				
Phenol	0.01	ND	76	21	20	95
Aniline	0.05	ND				
bis(2-Chloroethyl)ether	0.05	ND				
2-Chlorophenol	0.05	ND		23	40	
1,3-Dichlorobenzene	0.01	ND				
1,4-Dichlorobenzene	0.01	ND	79	19	35	99
Benzyl alcohol	0.05	ND				
1,2-Dichlorobenzene	0.01	ND				
2-Methylphenol	0.01	ND				
bis(2-Chloroisopropyl)ether	0.05	ND				
4-Methylphenol/3-Methylphenol	0.01	ND				
Acetophenone	0.05	ND				
n-Nitrosodi-n-propylamine	0.01	ND		17	46	
Hexachloroethane	0.01	ND				
Nitrobenzene	0.01	ND				
N-Nitrosopiperidine	0.05	ND				
Isophorone	0.05	ND				
2-Nitrophenol	0.05	ND	86			108
2,4-Dimethylphenol	0.05	ND				
bis(2-Chloroethoxy)methane	0.01	ND				
Benzoic acid	0.1	ND				
2,4-Dichlorophenol	0.05	ND	77			96
1,2,4-Trichlorobenzene	0.01	ND		21	44	
a,a Dimethylphenethylamine	0.1	ND				
Naphthalene	0.01	ND				
4-Chloroaniline	0.05	ND				
2,6-Dichlorophenol	0.05	ND				
Hexachlorobutadiene	0.01	ND	77			96
N-Nitroso-di-n-butylamine	0.05	ND				
4-Chloro-3-methylphenol	0.05	ND	76	21	44	95

ELT# 9141

TMW-2

8270 COMPOUNDS	Reporting Limits	Concentration (mg/kg)	QC	RPD	%EA	%IA
2-Methylnaphthalene	0.01	ND				
1,2,4,5-Tetrachlorobenzene	0.01	ND				
Hexachlorocyclopentadiene	0.01	ND				
2,4,6-Trichlorophenol	0.05	ND	75			94
2,4,5-Trichlorophenol	0.05	ND				
2-Chloronaphthalene	0.01	ND				
1-Chloronaphthalene	0.01	ND				
2-Nitroaniline	0.05	ND				
Dimethylphthalate	0.01	ND				
Acenaphthylene	0.01	ND				
2,6-Dinitrotoluene	0.01	ND				
3-Nitroaniline	0.05	ND				
Acenaphthene*	0.01	ND	80	19	45*	100
2,4-Dinitrophenol	0.05	ND				
Dibenzofuran	0.05	ND				
Pentachlorobenzene	0.01	ND				
4-Nitrophenol	0.05	ND		9	27	
1-Naphthylamine	0.05	ND				
2,4-Dinitrotoluene	0.01	ND		3	57	
2-Naphthylamine	0.05	ND				
2,3,4,6-Tetrachlorophenol	0.05	ND				
Fluorene	0.01	ND				
Diethylphthalate	0.01	ND				
4-Chlorophenyl-phenylether	0.01	ND				
4-Nitroaniline	0.05	ND				
4,6-Dinitro-2-methylphenol	0.01	ND				
n-Nitrosodiphenylamine & Diphenylam	0.01	ND	75			94
Diphenylhydrazine	0.05	ND				
4-Bromophenyl-phenylether	0.01	ND				
Phenacetin	0.05	ND				
Hexachlorobenzene	0.01	ND				
4-Aminobiphenyl	0.05	ND				
Pentachlorophenol	0.05	ND	89	13	57	111
Pentachloronitrobenzene	0.05	ND				
Pronamide	0.01	ND				
Phenanthrene	0.01	ND				
Anthracene	0.01	ND				
Di-n-butylphthalate	0.01	ND				
Fluoranthene	0.01	ND	80			100
Benzidine	0.1	ND				
Pyrene	0.01	ND		6	80	
p-Dimethylaminoazobenzene	0.01	ND				
Butylbenzylphthalate	0.01	ND				
Benzo [a]anthracene	0.01	ND				
3,3-Dichlorobenzidine	0.01	ND				
Chrysene	0.01	ND				
bis (2-Ethylhexyl)phthalate	0.05	ND				

ELT# 9141

TMW-2

8270 COMPOUNDS	Reporting Limits	Concentration (mg/kg)	QC	RPD	%EA	%IA
Di-n- octlphthalate	0.01	ND	92			115
Benzo[b]fluoranthene	0.01	ND				
7,12-Dimethylbenz(a)anthracene	0.01	ND				
Benzo[k]fluoranthene	0.01	ND				
Benzo [a] pyrene	0.01	ND	77			96
3-Methylcholanthrene	0.01	ND				
Dibenzo (a,j) acridine	0.01	ND				
Indeno [1,2,3-cd] pyrene	0.01	ND				
Dibenz [a,h] anthracene	0.01	ND				
Benzo [g,h,i] perylene	0.01	ND				

\* Estimated Concentration, Spike Recovery Out of Limits

METHOD: EPA SW 846-8270, 3551  
SURROGATES

% RECOVERY

2-Fluorophenol SURR	56
Phenol-d6 SURR	52
Nitrobenzene-d5 SURR	58
2-Fluorobiphenyl SURR	56
2,4,6-Tribromophenol SURR	62
Terphenyl-d14 SURR	66

  
 Michael R. Fowler

10-18-96  
 Date

# ENVIRONMENTAL LAB OF , INC.

"Don't Treat Your Soil Like Dirt!"

KEI CONSULTANTS  
ATTN: MR. MIKE HAWTHORNE  
5309 WURZBACH STE 100  
SAN ANTONIO, TEXAS 78238  
FAX: 210-680-3763

Receiving Date: 10/03/96  
Sample Type: WATER  
Project: TNMPL  
Project #: 610062  
Project Location: Saunders Excavation

Analysis Date: 10/09/96  
Sampling Date: 10/03/96  
Sample Condition: Intact/Iced

## TOTAL METALS (ppm)

ELT#	Field Code	Ag	As	Ba	Cd	Cr	Hg	Pb	Se
9140	TMW-1	<0.01	<0.002	0.12	0.007	<0.03	0.001	<0.10	<0.002
9141	TMW-2	0.11	<0.002	<0.10	0.023	<0.03	0.003	0.10	<0.002
MDL		0.01	0.002	0.1	0.005	0.03	0.001	0.10	0.002
% IA		101	108	95	98	100	105	101	108
% EA		90	105	91	97	101	128	107	94

METHODS: EPA SW 846- 3010, 7760, 7062, 7080, 7130, 7190, 7470, 7420, 7742

  
Michael R. Fowler

10-18-96  
Date



# ENVIRONMENTAL LAB OF , INC.

"Don't Treat Your Soil Like Dirt!"

KEI CONSULTANTS, INC.  
ATTN: MR. MIKE HAWTHORNE  
5309 WURZBACH STE 100  
SAN ANTONIO, TEXAS 78238  
FAX: 210-680-3763

Receiving Date: 10/03/96  
Sample Type: WATER  
Project : TNMPL  
Project #: 610062  
Project Location: SAUNDERS EXCAVATION

Analysis Date: LISTED BELOW  
Sampling Date: 10/03/96  
Sample Condition: Intact/Iced

Analyte	Analysis Date	ELT#	9140	9141	RPD	QC	% IA
			TMW-1 (mg/l)	TMW-2 (mg/l)			
TDS	10/7/96		400	604	5	--	--
Chlorides	10/8/96		32	32	8	2446	110
Carbonates	10/8/96		270	280	0	--	--
Bicarbonates	10/8/96		<1	<1	0	--	--
Sulfate	10/8/96		37.5	55	5	5.0	100
Calcium	10/15/96		12.4	3.5	--	4.97	101
Magnesium	10/15/96		2.17	1.9	--	0.472	99
Sodium	10/15/96		54.0	88.3	--	25.13	103
Potassium	10/15/96		5.21	4.61	--	10.12	106

METHODS: EPA 160.1, 325, 310.2 ; SW 846-9038, 7140, 7460, 7770, 7610

  
Michael R. Fowler

10-18-96  
Date

# ENVIRONMENTAL LAB OF , INC.

"Don't Treat Your Soil Like Dirt!"

KEI CONSULTANTS, INC.  
ATTN: MR. MIKE HAWTHORNE  
5309 WURZBACH STE 100  
SAN ANTONIO, TEXAS 78238  
FAX: 210-680-3763

Receiving Date: 10/03/96  
Sample Type: WATER  
Project: TNMPL  
Project #: 610062  
Project Location: SANDERS EXCAVATION

Analysis Date: BTEX 10/04/96  
Analysis Date: TPH 10/07/96  
Sampling Date: 10/03/96  
Sample Condition: Intact/Iced

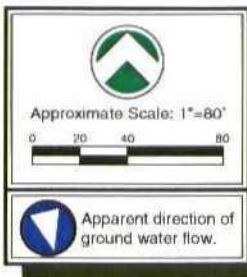
ELT#	FIELD CODE	BENZENE (mg/l)	TOLUENE (mg/l)	ETHYLBENZENE (mg/l)	m,p-XYLENE (mg/l)	o-XYLENE (mg/l)	TPH (mg/l)
9128	MW-1	<0.001	<0.001	<0.001	<0.001	<0.001	<1
9129	MW-2	<0.001	<0.001	<0.001	<0.001	<0.001	<1
9130	MW-3	0.019	<0.001	0.003	<0.001	<0.001	<1
9131	MW-4	0.002	<0.001	0.004	<0.001	<0.001	<1
9132	MW-5	<0.001	0.001	<0.001	0.001	<0.001	<1
9133	MW-6	<0.001	<0.001	<0.001	<0.001	<0.001	<1
9134	MW-7	<0.001	<0.001	<0.001	<0.001	<0.001	<1
9135	MW-8	<0.001	<0.001	<0.001	0.001	<0.001	<1
9136	MW-9	<0.001	<0.001	<0.001	<0.001	<0.001	<1
9137	MW-10	<0.001	<0.001	<0.001	<0.001	<0.001	<1
9138	MW-11	0.009	0.003	0.001	0.002	0.001	1
9139	MW-12	<0.001	0.001	0.002	0.004	<0.001	1

% IA	112	100	99	93	94	100
% EA	111	100	98	92	92	—
BLANK	<0.001	<0.001	<0.001	<0.001	<0.001	<1

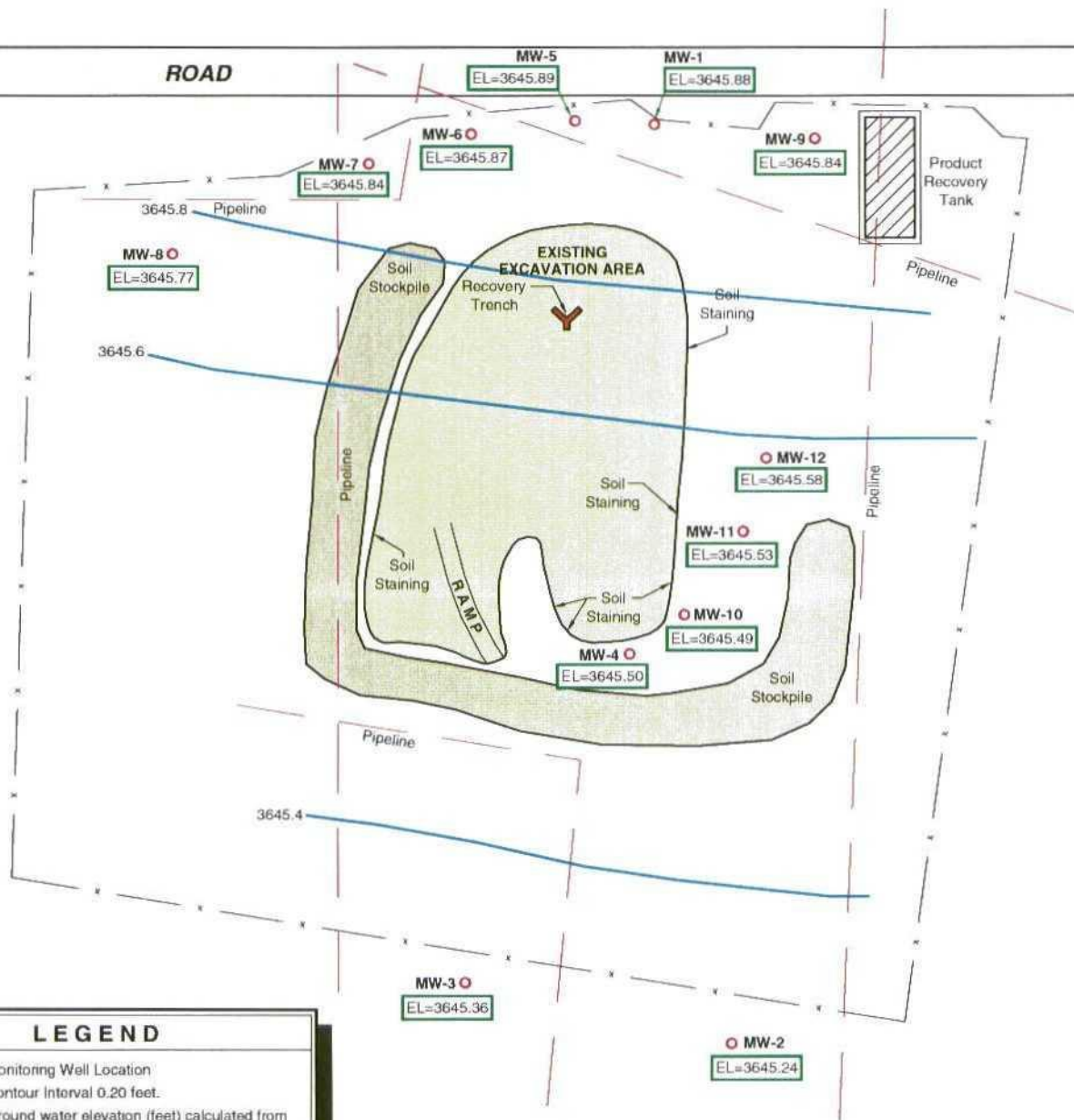
METHODS: SW 846-8020,5030; EPA 418.1

  
Michael R. Fowler

10-18-96  
Date



LAB RESULTS - (02/11/97)					
MW-1	MW-2	MW-3	MW-4	MW-5	MW-6
B=ND BTEX=ND TPH=ND	B=ND BTEX=ND TPH=ND	B=ND BTEX=ND TPH=ND	B=ND BTEX=ND TPH=ND	B=ND BTEX=ND TPH=ND	B=ND BTEX=0.135 TPH=ND
MW-7	MW-8	MW-9	MW-10	MW-11	MW-12
B=ND BTEX=ND TPH=ND	B=ND BTEX=0.008 TPH=ND	B=ND BTEX=ND TPH=ND	B=0.001 BTEX=0.001 TPH=ND	B=0.012 BTEX=0.020 TPH=2	B=ND BTEX=0.011 TPH=2



**LEGEND**

- Monitoring Well Location
- Contour Interval 0.20 feet
- EL = Ground water elevation (feet) calculated from measurements obtained on February 10, 1997.
- B = Benzene Concentration (mg/l)
- BTEX = Total Benzene, Toluene, Ethylbenzene, and Xylenes Concentration (mg/l)
- TPH = Total Petroleum Hydrocarbons Concentration (mg/l)
- ND = Below laboratory detection / reporting limits.

14-95-RM (61GW 1997)

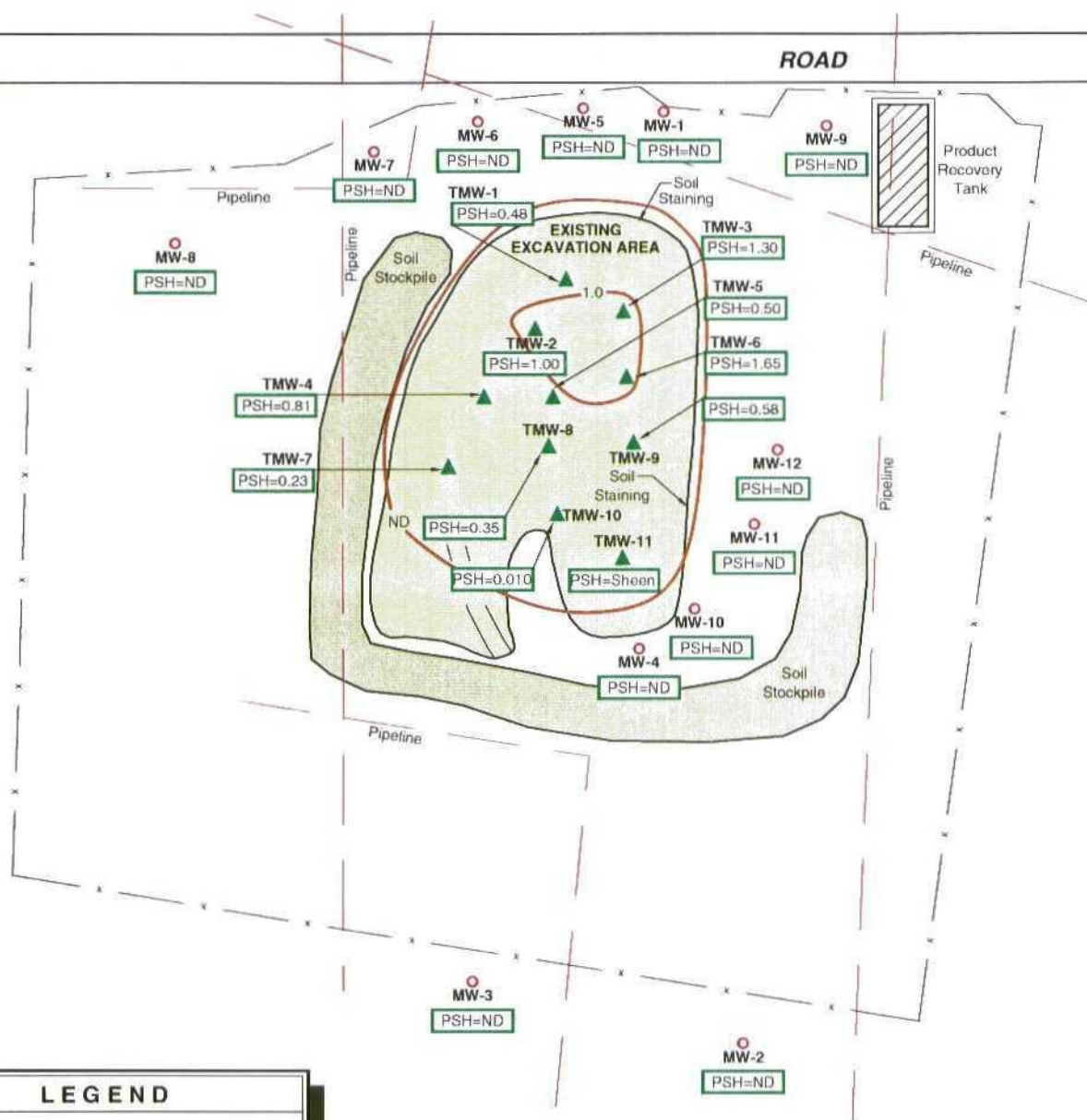




Approximate Scale: 1"=80'



Apparent direction of ground water flow.



### LEGEND

- ▲ Temporary monitoring well location installed by KEI on 10/01-02/96 and 10/17/96.
- Monitoring Well Location
- PSH = Phase Separate Hydrocarbon thickness (feet).
- ND = Indicates PSH was not detected.
- Contour Interval = 1.0 foot.

### NOTES:

1. PSH thickness in monitoring wells was measured on February 10, 1997.
2. PSH thickness in temporary monitoring well was measured on February 18, 1997.
3. Due to the high viscosity of the hydrocarbon, gauged PSH thickness may exceed actual thickness.

kei

PSH THICKNESS MAP - FEBRUARY 1997

SECTION 18, T19S, AND R37E

LEA COUNTY, NEW MEXICO

610062

FIG 2

# ENVIRONMENTAL LAB OF , INC.

"Don't Treat Your Soil Like Dirt!"

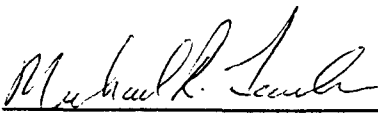
KEI CONSULTANTS  
ATTN: MR. PAUL HARTNETT  
5309 WURZBACH, SUITE 100  
SAN ANTONIO, TEXAS 78238  
FAX: 210-680-3763

Receiving Date: 02/12/97  
Sample Type: WATER  
Project : 610062/TNM 10-95  
Project Location: MONUMENT

Analysis Date: 02/12/97  
Sampling Date: 02/11/97  
Sample Condition: Intact/Iced

ELT#	FIELD CODE	BENZENE (mg/l)	TOLUENE (mg/l)	ETHYLBENZENE (mg/l)	m,p-XYLENE (mg/l)	o-XYLENE (mg/l)	TPH (mg/l)
10173	MW-1	<0.001	<0.001	<0.001	<0.001	<0.001	<1
10174	MW-2	<0.001	<0.001	<0.001	<0.001	<0.001	<1
10175	MW-3	<0.001	<0.001	<0.001	<0.001	<0.001	<1
10176	MW-4	<0.001	<0.001	<0.001	<0.001	<0.001	<1
10177	MW-5	<0.001	<0.001	<0.001	<0.001	<0.001	<1
10178	MW-6	<0.001	0.039	0.016	0.053	0.027	<1
10179	MW-7	<0.001	<0.001	<0.001	<0.001	<0.001	<1
10180	MW-8	<0.001	0.003	<0.001	0.003	0.002	<1
10181	MW-9	<0.001	<0.001	<0.001	<0.001	<0.001	<1
10182	MW-10	0.001	<0.001	<0.001	<0.001	<0.001	<1
10183	MW-11	0.012	0.003	0.003	0.002	<0.001	2
10184	MW-12	<0.001	0.002	0.003	0.004	0.002	2
10185	PURGE WATER	0.002	<0.001	<0.001	0.001	<0.001	2
% IA		110	109	108	109	110	103
% EA		102	102	101	107	102	--
BLANK		<0.001	<0.001	<0.001	<0.001	<0.001	<1

Sample Spike Spiked with 0.200 ppm  
METHODS: SW 846-8020,5030

  
Michael R. Fowler

2-13-97  
Date

# CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

cc-0

Phone #: 505-395-2705  
FAX #:

ANALYSIS REQUEST

10238

Company Name & Address:  
KEI / Temple

**Project Name :**

610062 / TMM-10-95

# Stunde 5

**Sampler Signature:**80

Date: / /

Time:

Times: 1545

Blackboard box

0.1018

WORKS FOR RESULTS

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1

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2019

— 1 —

$$T = \frac{1}{\omega} \ln \frac{1}{1 - \frac{1}{2} \frac{1}{\omega^2}}$$

Date \_\_\_\_\_

Time:

Times: (1800)

\_\_\_\_\_

1

5

## CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

COC #

FAX #:

**Company Name & Address:**

Project Name :

Project Location:

**Signature:**

[illegible]

REMARKS

1

87

1

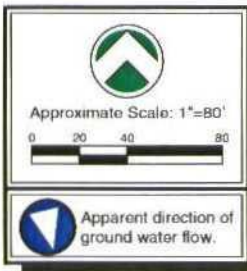
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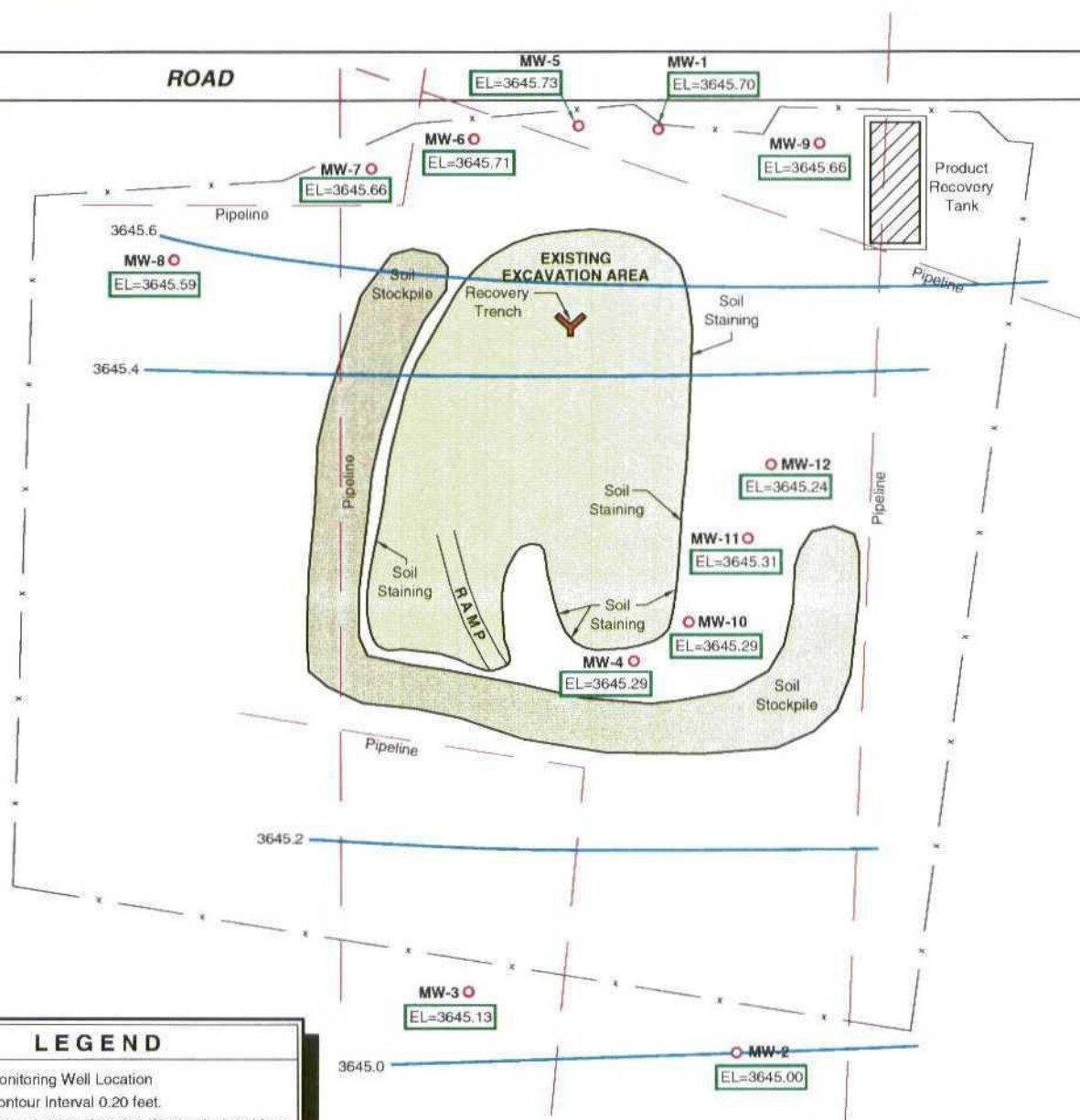
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LAB RESULTS - (05/28/97)					
MW-1	MW-2	MW-3	MW-4	MW-5	MW-6
B=ND	B=ND	B=ND	B=ND	B=ND	B=ND
BTEX=ND	BTEX=ND	BTEX=ND	BTEX=ND	BTEX=ND	BTEX=ND
TPH=ND	TPH=ND	TPH=ND	TPH=ND	TPH=ND	TPH=ND
MW-7	MW-8	MW-9	MW-10	MW-11	MW-12
B=ND	B=ND	B=ND	B=ND	B=ND	B=ND
BTEX=ND	BTEX=ND	BTEX=ND	BTEX=ND	BTEX=ND	BTEX=ND
TPH=ND	TPH=ND	TPH=ND	TPH=ND	TPH=ND	TPH=ND



LEGEND	
○	Monitoring Well Location
—	Contour Interval 0.20 feet.
EL =	Ground water elevation (feet) calculated from measurements obtained on May 28, 1997.
B =	Benzene Concentration (mg/l)
BTEX =	Total Benzene, Toluene, Ethylbenzene, and Xylenes Concentration (mg/l)
TPH =	Total Petroleum Hydrocarbons Concentration (mg/l)
ND =	Below laboratory detection / reporting limits.

7-4508-RV (8/1/97)



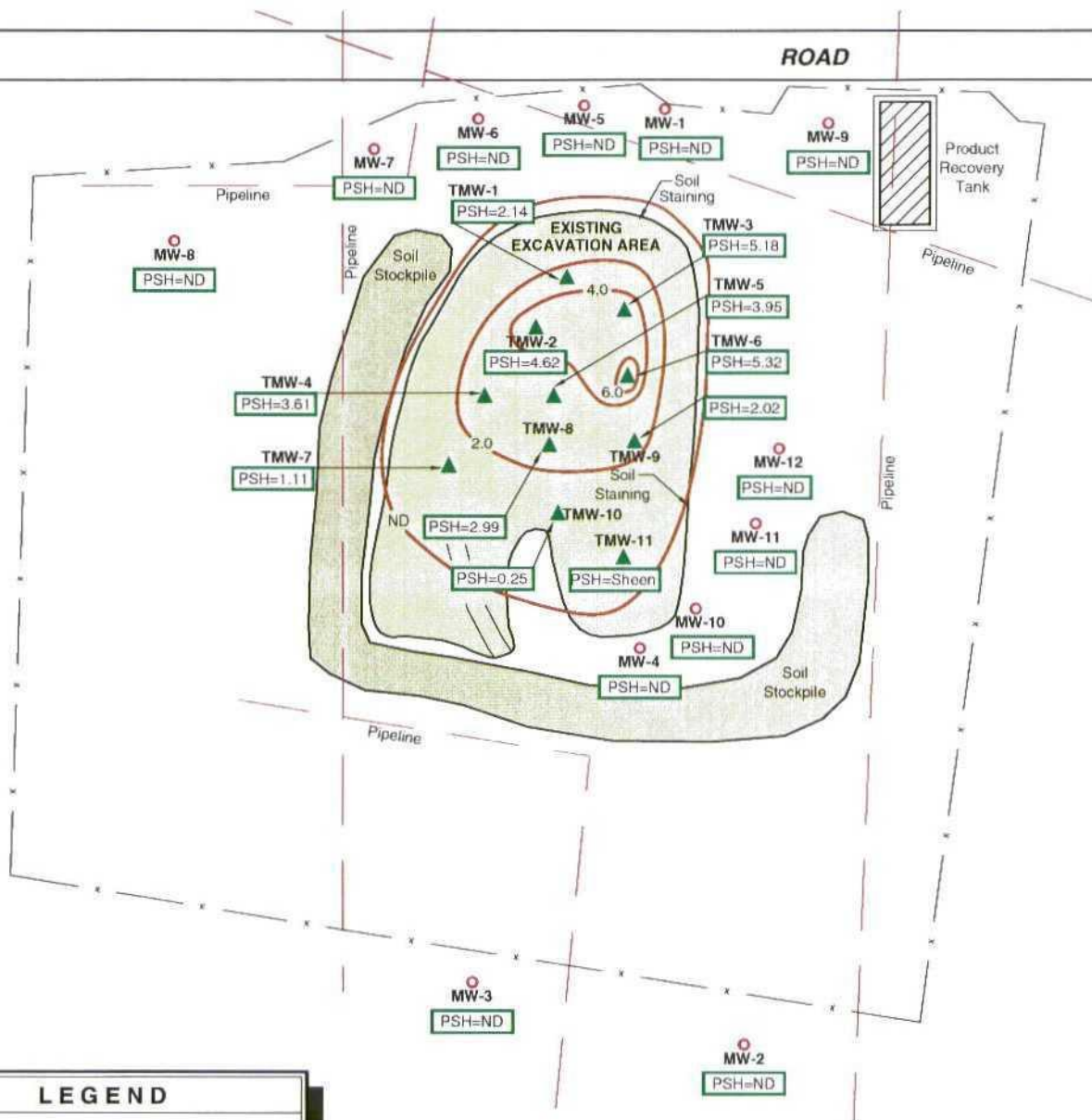
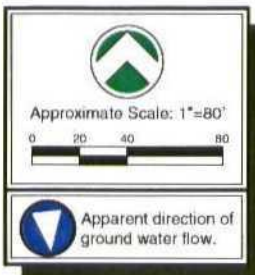
GROUND WATER CONTOURS / CONCENTRATION MAP - MAY 1997

SECTION 18, T19S, AND R37E LEA COUNTY, NEW MEXICO

610062

FIG 1





### LEGEND

- ▲ Temporary monitoring well location installed by KEI on 10/01-02/96 and 10/17/96.
- Monitoring Well Location
- PSH = Phase Separate Hydrocarbon thickness (feet).
- ND = Indicates PSH was not detected.
- Contour Interval = 2.0 feet.

### NOTES:

1. PSH thickness in monitoring wells was measured on May 25, 1997.
2. PSH thickness in temporary monitoring well was measured on May 20, 1997.
3. Due to the high viscosity of the hydrocarbon, gauged PSH thickness may exceed actual thickness.

03/96-RM G.161PH-V077

kei

### PSH THICKNESS MAP - MAY 1997

SECTION 18, T19S, AND R37E

LEA COUNTY, NEW MEXICO

610062

FIG 2



# CERTIFICATE OF ANALYSIS SUMMARY 1-71249

## K.E.I. Consultants, Inc.

Project ID: 610062

Project Manager: Theresa Nix

Project Location: Saunders

Project Name: *TNM-10-95-Saunders*

Date Received in Lab : May 31, 1997 10:00 by RT

Date Report Faxed: Jun 5, 1997

XENCO contact : Carlos Castro/Edward Yonemoto

Analysis Requested		Lab ID: Field ID: Depth:	171249-001 MW-1	171249-002 MW-2	171249-003 MW-3	171249-004 MW-4	171249-005 MW-5	171249-006 MW-6	171249-007 MW-7	171249-008 MW-8	171249-009 MW-9
			Date Analyzed - Analytical Results      ppm (mg/L - mg/Kg)								
BTEX by EPA 8020			Jun 3, 1997	Jun 3, 1997	Jun 3, 1997	Jun 3, 1997	Jun 3, 1997	Jun 3, 1997	Jun 3, 1997	Jun 3, 1997	Jun 3, 1997
Benzene			< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Toluene			< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Ethylbenzene			< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
m,p-Xylenes			< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
o-Xylene			< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Total BTEX			< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006
			Date Analyzed - Analytical Results      ppm (mg/L - mg/Kg)								
Total Petroleum Hydrocarbons by EPA 418.1			Jun 4, 1997	Jun 4, 1997	Jun 4, 1997	Jun 4, 1997	Jun 4, 1997	Jun 4, 1997	Jun 4, 1997	Jun 4, 1997	Jun 4, 1997
Total Petroleum Hydrocarbons			< 0.7	< 0.8	< 0.7	< 0.7	< 10.5	< 0.8	< 0.7	< 0.7	< 0.7

This report summary, and the entire report it represents, has been made for the exclusive and confidential use of K.E.I. Consultants, Inc.. The interpretations and results expressed through this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories, however, assumes no responsibility and makes no warranty to the end use of the data hereby presented.

Edward H. Yonemoto, Ph.D.  
QA/QC Manager



# CERTIFICATE OF ANALYSIS SUMMARY 1-71249

## K.E.I. Consultants, Inc.

Project ID: 610062  
Project Manager: Theresa Nix  
Project Location: Saunders

Project Name: *TNM-10-95-Saunders*

Date Received in Lab : May 31, 1997 10:00 by RT

Date Report Faxed: Jun 5, 1997

XENCO contact : Carlos Castro/Edward Yonemoto

Analysis Requested	Lab ID: Field ID: Depth:	Date Analyzed - Analytical Results			ppm (mg/L - mg/Kg)		
		171249-010 MW-10	171249-011 MW-11	171249-012 MW-12			
BTEX by EPA 8020		Jun 3, 1997	Jun 3, 1997	Jun 3, 1997			
Benzene		< 0.001	< 0.001	< 0.001			
Toluene		< 0.001	< 0.001	< 0.001			
Ethylbenzene		< 0.001	< 0.001	< 0.001			
m,p-Xylenes		< 0.002	< 0.002	< 0.002			
o-Xylene		< 0.001	< 0.001	< 0.001			
Total BTEX		< 0.006	< 0.006	< 0.006			
Total Petroleum Hydrocarbons by EPA 418.1		Date Analyzed - Analytical Results			ppm (mg/L - mg/Kg)		
Total Petroleum Hydrocarbons		Jun 4, 1997	Jun 4, 1997	Jun 4, 1997			
		< 0.7	< 0.7	< 0.7			

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Edward H. Yonemoto, Ph.D.  
QA/QC Manager



# ANALYTICAL CHAIN OF CUSTODY REPORT CHRONOLOGY OF SAMPLES

K.E.I. Consultants, Inc.

**XENCO** COC#: 1-71249

Project Name: TNM-10-95-Saunders Excavation

Project ID: 610062

Project Manager: Theresa Nix

Project Location: Saunders

Date Received in Lab: May 31, 1997 10:00 by RT

**XENCO** contact : Carlos Castro/Edward Yonemoto

Date and Time									
Field ID	Lab. ID	Method Name	Method ID	Units	Turn Around	Sample Collected	Addition Requested	Extraction	Analysis
1 MW-1	171249-001	BTEX	SW-846	ppm	Standard	May 28, 1997		Jun 3, 1997 by OR	Jun 3, 1997 18:34 by OR
2		TPH	EPA 418.1	ppm	Standard	May 28, 1997		Jun 4, 1997 by IF	Jun 4, 1997 14:35 by OG
3 MW-2	171249-002	BTEX	SW-846	ppm	Standard	May 28, 1997		Jun 3, 1997 by OR	Jun 3, 1997 19:29 by OR
4		TPH	EPA 418.1	ppm	Standard	May 28, 1997		Jun 4, 1997 by IF	Jun 4, 1997 14:40 by OG
5 MW-3	171249-003	BTEX	SW-846	ppm	Standard	May 28, 1997		Jun 3, 1997 by OR	Jun 3, 1997 19:48 by OR
6		TPH	EPA 418.1	ppm	Standard	May 28, 1997		Jun 4, 1997 by IF	Jun 4, 1997 14:45 by OG
7 MW-4	171249-004	BTEX	SW-846	ppm	Standard	May 28, 1997		Jun 3, 1997 by OR	Jun 3, 1997 20:24 by OR
8		TPH	EPA 418.1	ppm	Standard	May 28, 1997		Jun 4, 1997 by IF	Jun 4, 1997 14:50 by OG
9 MW-5	171249-005	BTEX	SW-846	ppm	Standard	May 28, 1997		Jun 3, 1997 by OR	Jun 3, 1997 20:43 by OR
10		TPH	EPA 418.1	ppm	Standard	May 28, 1997		Jun 4, 1997 by IF	Jun 4, 1997 14:55 by OG
11 MW-6	171249-006	BTEX	SW-846	ppm	Standard	May 28, 1997		Jun 3, 1997 by OR	Jun 3, 1997 21:01 by OR
12		TPH	EPA 418.1	ppm	Standard	May 28, 1997		Jun 4, 1997 by IF	Jun 4, 1997 15:00 by OG
13 MW-7	171249-007	BTEX	SW-846	ppm	Standard	May 28, 1997		Jun 3, 1997 by OR	Jun 3, 1997 21:19 by OR
14		TPH	EPA 418.1	ppm	Standard	May 28, 1997		Jun 4, 1997 by IF	Jun 4, 1997 15:05 by OG
15 MW-8	171249-008	BTEX	SW-846	ppm	Standard	May 28, 1997		Jun 3, 1997 by OR	Jun 3, 1997 21:38 by OR
16		TPH	EPA 418.1	ppm	Standard	May 28, 1997		Jun 4, 1997 by IF	Jun 4, 1997 15:10 by OG
17 MW-9	171249-009	BTEX	SW-846	ppm	Standard	May 28, 1997		Jun 3, 1997 by OR	Jun 3, 1997 21:56 by OR
18		TPH	EPA 418.1	ppm	Standard	May 28, 1997		Jun 4, 1997 by IF	Jun 4, 1997 15:15 by OG
19 MW-10	171249-010	BTEX	SW-846	ppm	Standard	May 28, 1997		Jun 3, 1997 by OR	Jun 3, 1997 22:14 by OR
20		TPH	EPA 418.1	ppm	Standard	May 28, 1997		Jun 4, 1997 by IF	Jun 4, 1997 15:45 by OG
21 MW-11	171249-011	BTEX	SW-846	ppm	Standard	May 28, 1997		Jun 3, 1997 by OR	Jun 3, 1997 22:32 by OR
22		TPH	EPA 418.1	ppm	Standard	May 28, 1997		Jun 4, 1997 by IF	Jun 4, 1997 15:50 by OG
23 MW-12	171249-012	BTEX	SW-846	ppm	Standard	May 28, 1997		Jun 3, 1997 by OR	Jun 3, 1997 22:50 by OR
24		TPH	EPA 418.1	ppm	Standard	May 28, 1997		Jun 4, 1997 by IF	Jun 4, 1997 15:55 by OG

**SW- 846 5030/8020 BTEX**
**Date Validated:** Jun 4, 1997 11:00

**Analyst:** OR

**Date Analyzed:** Jun 3, 1997 13:15

**Matrix:** Liquid

**QA/QC Manager:** Edward H. Yonemoto, Ph.D.

**BLANK SPIKE ANALYSIS**

Parameter	[A]	[B]	[C]	[D]	[E]	[F]	[G]
	Blank	Blank Spike	Blank	Method	QC	LIMITS	Qualifier
	Result	Result	Spike	Detection	Blank Spike	Recovery	
	ppm	ppm	Amount	Limit	Recovery	Range	
			ppm	ppm	%	%	
Benzene	< 0.0010	0.0892	0.1000	0.0010	89.2	65-135	
Toluene	< 0.0010	0.0940	0.1000	0.0010	94.0	65-135	
Ethylbenzene	< 0.0010	0.1010	0.1000	0.0010	101.0	65-135	
m,p-Xylenes	< 0.0020	0.2020	0.2000	0.0020	101.0	65-135	
o-Xylene	< 0.0010	0.0995	0.1000	0.0010	99.5	65-135	

 Blank Spike Recovery [E] =  $100 \times (B-A)/(C)$ 

N.C. Not calculated, data below detection limit

N.D. Below detection limit

All results are based on MDL and validated for QC purposes only

  
 Edward H. Yonemoto, Ph.D.  
 QA/QC Manager



# Certificate Of Quality Control for Batch : 17A04B94

SW- 846 5030/8020 BTEx

Date Validated: Jun 4, 1997 11:00

Date Analyzed: Jun 3, 1997 18:34

QA/QC Manager: Edward H. Yonemoto, Ph.D.

Analyst: OR

Matrix: Liquid

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE AND RECOVERY

Q.C. Sample ID 171249- 001		[A] Sample Result  ppm	[B] Matrix Spike Result  ppm	[C] Matrix Spike Duplicate Result  ppm	[D] Matrix Spike Amount  ppm	[E] Method Detection Limit  ppm	Matrix Limit  Relative Difference  %	[F]		[G]		[H] QC  M.S.D. Recovery  %	[I] Matrix Spike Recovery Range  %	[J] Qualifier
								QC	Spike Relative Difference  %	QC	Matrix Spike Recovery  %			
Parameter														
Benzene		< 0.0010	0.0805	0.0664	0.1000	0.0010	25.0	19.2	80.5	66.4	65-135			
Toluene		< 0.0010	0.0954	0.0928	0.1000	0.0010	25.0	2.8	95.4	92.8	65-135			
Ethylbenzene		< 0.0010	0.1040	0.1020	0.1000	0.0010	25.0	1.9	104.0	102.0	65-135			
m,p-Xylenes		< 0.0020	0.2070	0.2040	0.2000	0.0020	25.0	1.5	103.5	102.0	65-135			
o-Xylene		< 0.0010	0.1060	0.1040	0.1000	0.0010	25.0	1.9	106.0	104.0	65-135			

Spike Relative Difference [F] =  $200 \cdot (B-C)/(B+C)$

Matrix Spike Recovery [G] =  $100 \cdot (B-A)/[D]$

M.S.D. = Matrix Spike Duplicate

M.S.D. Recovery [H] =  $100 \cdot (C-A)/[D]$

N.D. = Below detection limit or not detected

All results are based on MDL and validated for QC purposes

Edward H. Yonemoto, Ph.D.  
QA/QC Manager



# Certificate Of Quality Control for Batch : 17A07D97

## EPA 418.1 Total Petroleum Hydrocarbons

Date Validated: Jun 4, 1997 18:10

Date Analyzed: Jun 4, 1997 15:35

QA/QC Manager: Edward H. Yonemoto, Ph.D.

Analyst: OG

Matrix: Liquid

BLANK SPIKE / BLANK SPIKE DUPLICATE AND RECOVERY											
Parameter	[A] Blank Result  ppm	[B] Blank Spike Result  ppm	[C] Blank Spike Duplicate Result  ppm	[D] Blank Spike Amount  ppm	[E] Method Detection Limit  ppm	Blank Limit Relative Difference  %	[F]		[H]		[J] Qualifier
							QC	Spike Relative Difference  %	QC	B.S.D. Recovery  %	
Total Petroleum Hydrocarbons	< 0.53	4.77	4.57	4.76	0.53	25.0	4.3	%	96.0	70-125	

Spike Relative Difference [F] =  $200 \cdot (B-C) / (B+C)$   
Blank Spike Recovery [G] =  $100 \cdot (B-A) / [D]$   
B.S.D. = Blank Spike Duplicate  
B.S.D. Recovery [H] =  $100 \cdot (C-A) / [D]$   
N.D. = Below detection limit or not detected  
All results are based on MDL and validated for QC purposes

Edward H. Yonemoto, Ph.D.  
QA/QC Manager



# Certificate Of Quality Control for Batch: 17A07D96

## EPA 418.1 Total Petroleum Hydrocarbons

Date Validated: Jun 4, 1997 18:05

Analyst: OG

Date Analyzed: Jun 4, 1997 14:26

Matrix: Liquid

QA/QC Manager: Edward H. Yonemoto, Ph.D.

BLANK SPIKE / BLANK SPIKE DUPLICATE AND RECOVERY												
Parameter	[A] Blank Result  ppm	[B] Blank Spike Result  ppm	[C] Blank Spike Duplicate Result  ppm	[D] Blank Spike Amount  ppm	[E] Method Detection Limit  ppm	Blank Limit  Relative Difference  %	[F]	[G]	[H]	[I]	[J]  Qualifier	
							Spike Relative Difference  %	Blank Spike Recovery  %	QC	Blank Spike Recovery Range  %		
Total Petroleum Hydrocarbons	< 0.60	5.28	5.19	4.76	0.60	25.0	1.7	110.9	109.0	70-125		

Spike Relative Difference [F] =  $200 \cdot (B-C) / (B+C)$

Blank Spike Recovery [G] =  $100 \cdot (B-A) / [D]$

B.S.D. = Blank Spike Duplicate

B.S.D. Recovery [H] =  $100 \cdot (C-A) / [D]$

N.D. = Below detection limit or not detected

All results are based on MDL and validated for QC purposes

  
Edward H. Yonemoto, Ph.D.  
QA/QC Manager





11381 Meadowglen Suite L Houston, Texas 77062  
(713) 589-0692 Fax (713) 589-0695

# CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST FORM

Page / of 2  
Lab. Batch # 171249-14

Contractor <i>KEI Consultants</i>		Phone (800) 253-0507		No. coolers this shipment: 1		Contractor COC #					
Address <i>5309 Wurzbach Drive Ste. 100 SA, TX 78238</i>				Carrier: UPS		Quote #:					
Project Name		Project Director <i>Paul Hartnett</i>		Airbill No.		P.O. No: 7375					
Project Location <i>Sanders</i>		Project Manager <i>Theresa Nix</i>									
Sampler Signature <i>[Signature]</i>		Project No. <i>610062</i>									
SAMPLE CHARACTERIZATION											
Field ID	Date	Time	DPTH	SOIL	WATER	COMPA	GRA	Container Size Type P.G.	Preservative		
									Unl	Dies	Ker Unknown
MW-1	5-28-97	PM									
MW-2											
MW-3											
MW-4											
MW-5											
MW-6											
MW-7											
MW-8											
MW-9											
MW-10											
Relinquished by: <i>[Signature]</i>										DATE	TIME
5-27-97										1745	
Received For Laboratory by: <i>[Signature]</i>										DATE	TIME
5-31-97										1000	
Remarks: TPH jars are unprepared please extract before 6/2/97. All VOCs are preserved w/HCL. <i>(MCS)</i>											

Print (Contractor), Yellow & White (Lab).

\* Pre-scheduling is recommended

Precision Analytical Services

# CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST FORM

[illegible]

Pink (Contractor), Yellow &amp; White (Lab).

**\* Pre-scheduling is recommended**

## Precision Analytical Services

## SAMPLE PROTOCOL NONCONFORMANCE WORKSHEET

Prepared by : <i>Randy Turnell</i>	Date / Time : <i>5-31-97</i>
Client : <i>KEI</i>	COC # : <i>171249</i>
Submitted to : <i>EY</i>	Samples Logged In ? <input type="checkbox"/> YES <input type="checkbox"/> NO

Matrix: ☐ SOIL ☒ WATER ☐ AIR ☐ OTHER \_\_\_\_\_

Samples Affected: ☐ ALL ☒ PARTIAL (see description)

Description of non-conformance :

*The TPH bottle for sample MW-5 was received broken*

Condition	Information	Container
<input type="checkbox"/> Temp > 4°C	<input type="checkbox"/> No collected date	<input checked="" type="checkbox"/> Damaged containers
<input type="checkbox"/> Expired Hold Time	<input type="checkbox"/> No COC	<input type="checkbox"/> Improper containers
<input type="checkbox"/> Headspace	<input type="checkbox"/> Samples not labeled	<input type="checkbox"/> Insufficient containers
<input type="checkbox"/> Unpreserved	<input type="checkbox"/> Sample v. COC ID disagreement	<input type="checkbox"/> Sample not on COC
<input type="checkbox"/> Improperly preserved	<input type="checkbox"/> Container v. COC disagreement	<input type="checkbox"/> Sample not received
<input type="checkbox"/> Insufficient Sample	<input type="checkbox"/> Method not specified or not listed	
<input type="checkbox"/> Other _____	<input type="checkbox"/> Other _____	<input type="checkbox"/> Other _____

Client Name Contacted: <i>Paul Harnett</i>	Date / Time: <i>6/2/97 12:00</i>
Phone: <i>210 - 680 - 3767</i>	Action: <input checked="" type="checkbox"/> Complete Login <input type="checkbox"/> HOLD

Client Instructions:

*Run TPH using sample left on VOA's (BTEX).  
Project Name is TNM 10-95 SANDERS EXCAVATION*

Comments:

*Adjust detection limit to 5 ppm.  
Not enough sample to get 5 ppm DL.*

*[Signature]*  
Project Manager Signature

*6/2/97 13:00*  
Date / Time

COPIES TO: ☐ File ☐ Project Manager ☐ Area Supervisor ☐ QA



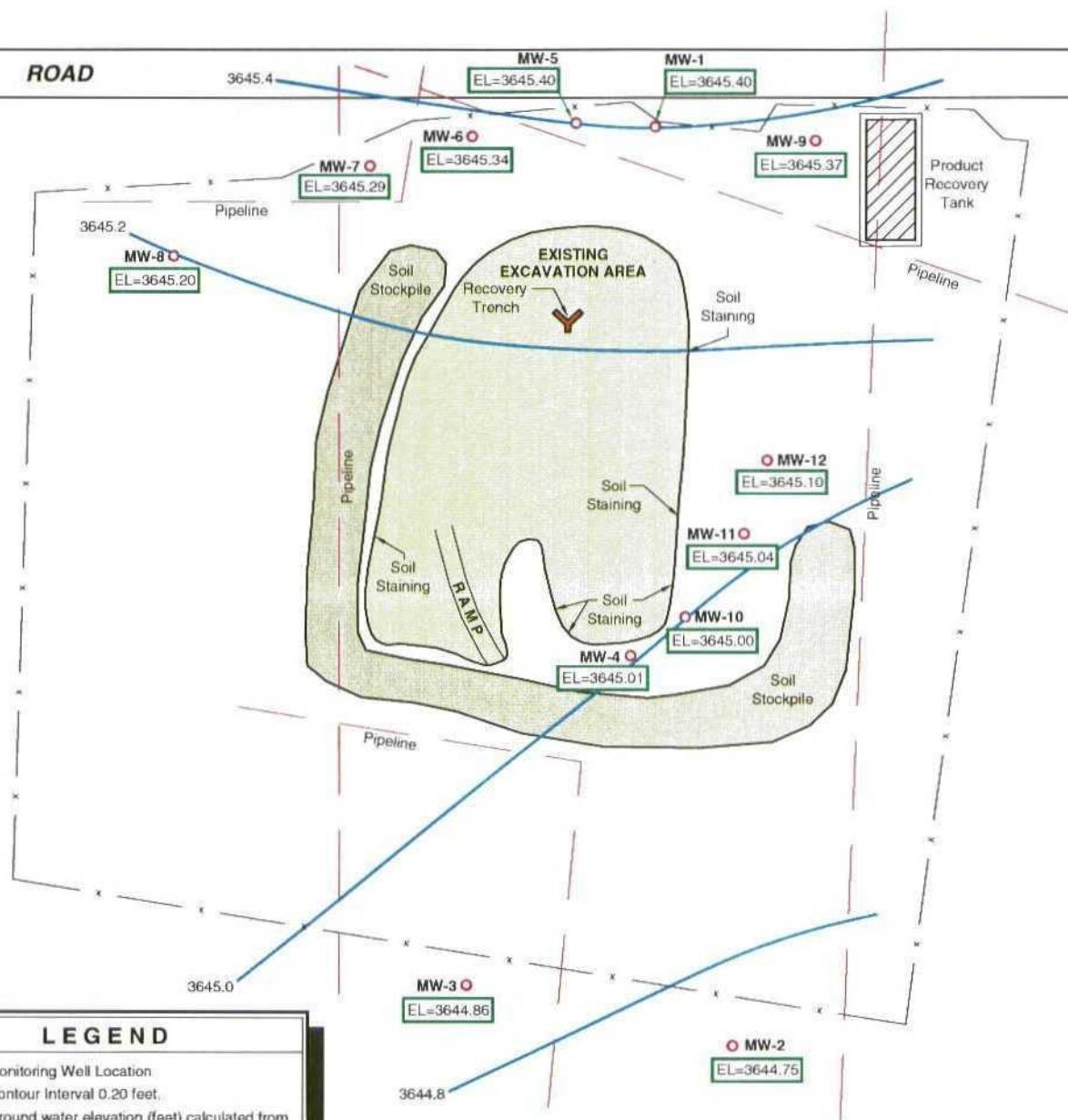
Approximate Scale: 1"=80'



Apparent direction of  
ground water flow.

### LAB RESULTS - (08/26/97)

MW-1	MW-2	MW-3	MW-4	MW-5	MW-6
B=ND BTEX=ND TPH=ND	B=ND BTEX=ND TPH=ND	B=ND BTEX=ND TPH=ND	B=ND BTEX=ND TPH=ND	B=ND BTEX=ND TPH=ND	B=ND BTEX=ND TPH=ND
MW-7	MW-8	MW-9	MW-10	MW-11	MW-12
B=ND BTEX=ND TPH=ND	B=ND BTEX=ND TPH=ND	B=ND BTEX=ND TPH=ND	B=ND BTEX=ND TPH=ND	B=ND BTEX=ND TPH=ND	B=ND BTEX=ND TPH=ND



### LEGEND

- Monitoring Well Location
- Contour Interval 0.20 feet.
- EL = Ground water elevation (feet) calculated from measurements obtained on August 26, 1997.
- B = Benzene Concentration (mg/l)
- BTEX = Total Benzene, Toluene, Ethylbenzene, and Xylenes Concentration (mg/l)
- TPH = Total Petroleum Hydrocarbons Concentration (mg/l)
- ND = Below laboratory detection / reporting limits.

k.e.i.

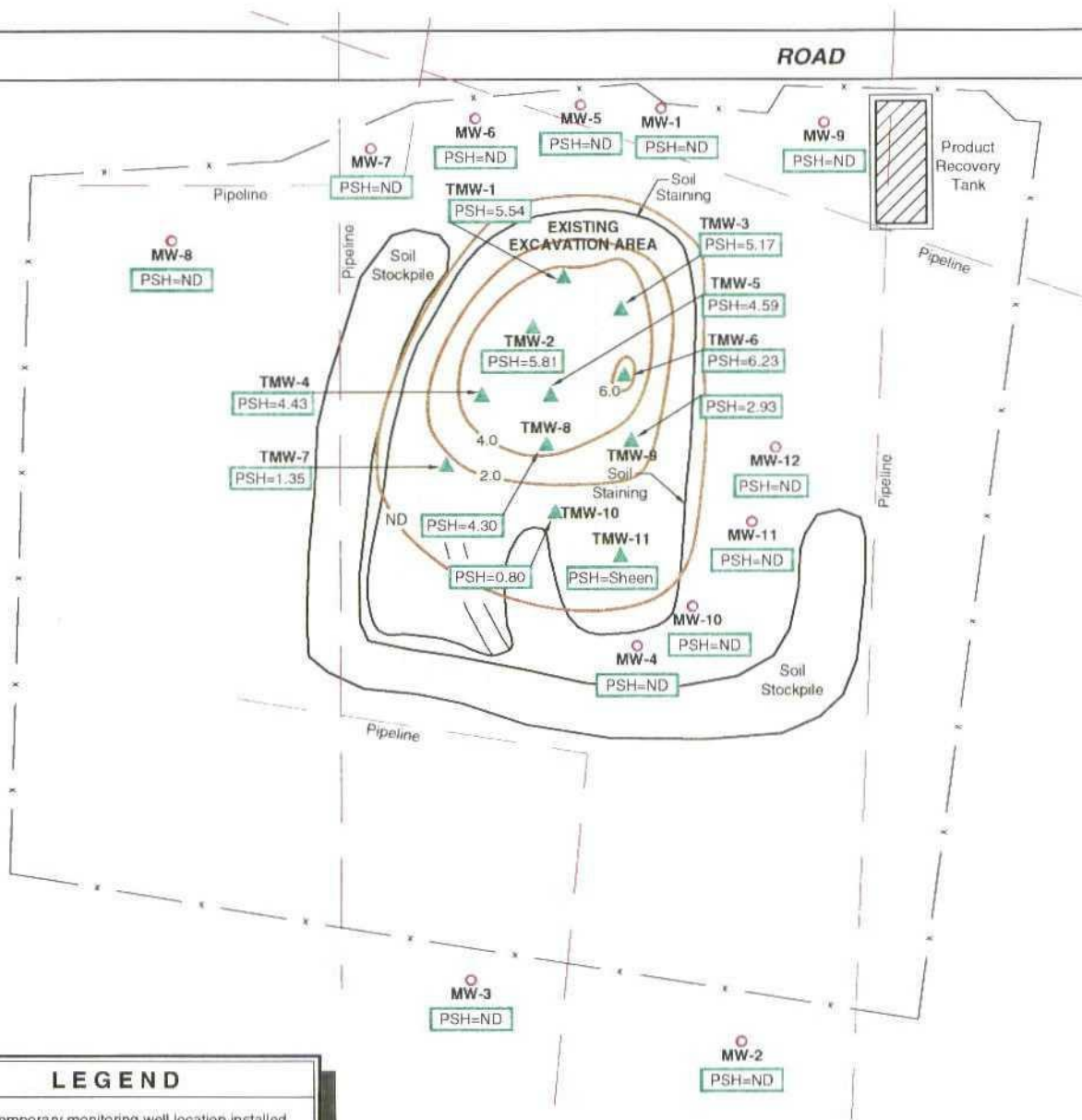
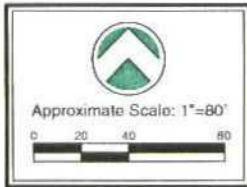
GROUND WATER CONTOURS / CONCENTRATION MAP - AUGUST 1997

SECTION 18, T19S, AND R37E

LEA COUNTY, NEW MEXICO

610062

FIG 1



### LEGEND

- ▲ Temporary monitoring well location installed by KEI on 10/01-02/96 and 10/17/96.
- Monitoring Well Location
- PSH = Phase Separated Hydrocarbon thickness (ft).
- ND = Indicates PSH was not detected.
- Contour Interval = 1.0 foot.

### NOTE:

1. PSH thickness in monitoring wells was measured on August 26, 1997.
2. PSH thickness in temporary monitoring well was measured on August 26, 1997.
3. Due to the high viscosity of the hydrocarbon, gauged PSH thickness may exceed actual thickness.

kei

PSH THICKNESS MAP - AUGUST 1997

SECTION 18, T19S, AND R37E

LEA COUNTY, NEW MEXICO

610062

FIG 2



# CERTIFICATE OF ANALYSIS SUMMARY 1-72031

## K.E.I. Consultants, Inc.

Project ID: 610062

Project Manager: Mike Chapa

Project Location: Saunders Site

Project Name: TNMPL

Date Received in Lab : Aug 30, 1997 10:30 by CC

Date Report Faxed: Sep 4, 1997

XENCO contact : Carlos Castro/Edward Yonemoto

Analysis Requested		Lab ID: Field ID: Depth:	172031-001 MW-1	172031-002 MW-2	172031-003 MW-3	172031-004 MW-4	172031-005 MW-5	172031-006 MW-6	172031-007 MW-7	172031-008 MW-8	172031-009 MW-9
BTEX by EPA 8020			Date Analyzed - Analytical Results ppm (mg/L - mg/Kg)								
Benzene			Sep 2, 1997 < 0.001	Sep 2, 1997 < 0.001	Sep 2, 1997 < 0.001	Sep 2, 1997 < 0.001	Sep 2, 1997 < 0.001	Sep 2, 1997 < 0.001	Sep 2, 1997 < 0.001	Sep 2, 1997 < 0.001	Sep 2, 1997 < 0.001
Toluene			< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Ethylbenzene			< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
m,p-Xylenes			< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
o-Xylene			< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Total BTEX			< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006
Total Petroleum Hydrocarbons by EPA 418.1			Date Analyzed - Analytical Results ppm (mg/L - mg/Kg)								
Total Petroleum Hydrocarbons			Sep 3, 1997 < 0.8	Sep 3, 1997 < 0.8	Sep 3, 1997 < 0.8	Sep 3, 1997 < 0.8	Sep 3, 1997 < 0.8	Sep 3, 1997 < 0.8	Sep 3, 1997 < 0.8	Sep 3, 1997 < 0.8	Sep 3, 1997 < 0.8

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Edward Yonemoto, Ph.D.  
QA/QC Manager



Project ID: 610062  
 Project Manager: Mike Chapa  
 Project Location: Saunders Site

**K.E.I. Consultants, Inc.**

Project Name: *TNMPL*

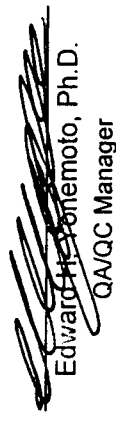
Date Received in Lab : Aug 30, 1997 10:30 by CC

Date Report Faxed: Sep 4, 1997

**XENCO** contact : Carlos Castro/Edward Yonemoto

Analysis Requested		Lab ID: Field ID: Depth:	172031-010 MW-10	172031-011 MW-11	172031-012 MW-12				
BTEX by EPA 8020			Date Analyzed - Analytical Results						ppm (mg/L - mg/Kg)
Benzene			Sep 2, 1997 < 0.004	Sep 2, 1997 < 0.004	Sep 2, 1997 < 0.004				
Toluene			< 0.004	< 0.004	< 0.004				
Ethylbenzene			< 0.004	< 0.004	< 0.004				
m,p-Xylenes			< 0.008	< 0.008	< 0.008				
o-Xylene			< 0.004	< 0.004	< 0.004				
Total BTEX			< 0.024	< 0.024	< 0.024				
Total Petroleum Hydrocarbons by EPA 418.1			Date Analyzed - Analytical Results						ppm (mg/L - mg/Kg)
Total Petroleum Hydrocarbons			Sep 3, 1997 < 0.8	Sep 3, 1997 < 0.8	Sep 3, 1997 < 0.8				

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 Edward Yonemoto, Ph.D.  
 QA/QC Manager



# Certificate Of Quality Control for Batch : 17A25C97

SW- 846 5030/3020 BTEx

Date Validated: Sep 2, 1997 20:30

Date Analyzed: Sep 2, 1997 10:09

QA/QC Manager: Edward H. Yonemoto, Ph.D.

Analyst: HL

Matrix: Liquid

## BLANK SPIKE / BLANK SPIKE DUPLICATE AND RECOVERY

Parameter	[A]	[B]	[C]	[D]	[E]	Blank	[F]	[G]	[H]	[I]	[J]
	Blank Result  ppm	Blank Spike Result  ppm	Blank Spike Duplicate Result  ppm	Blank Spike Amount  ppm	Method Detection Limit  ppm	Limit Relative Difference  %	QC	QC	QC	Blank Spike Recovery Range  %	Qualifier
							Spike Relative Difference  %	Blank Spike Recovery  %	B.S.D. Recovery  %		
Benzene	< 0.0010	0.1080	0.1030	0.1000	0.0010	25.0	4.7	107.9	102.9	65-135	
Toluene	< 0.0010	0.1050	0.1010	0.1000	0.0010	25.0	3.9	104.8	100.8	65-135	
Ethylbenzene	< 0.0010	0.1090	0.1050	0.1000	0.0010	25.0	3.7	108.9	104.9	65-135	
m,p-Xylenes	< 0.0020	0.2240	0.2130	0.2000	0.0020	25.0	5.0	111.9	106.4	65-135	
o-Xylene	< 0.0010	0.1100	0.1040	0.1000	0.0010	25.0	5.6	109.9	103.9	65-135	

Spike Relative Difference [F] =  $200 \cdot (B-C)/(B+C)$

Blank Spike Recovery [G] =  $100 \cdot (B-A)/[D]$

B.S.D. = Blank Spike Duplicate

B.S.D. Recovery [H] =  $100 \cdot (C-A)/[D]$

N.D. = Below detection limit or not detected

All results are based on MDL and validated for QC purposes

Edward H. Yonemoto, Ph.D.  
QA/QC Manager





# Certificate Of Quality Control for Batch : 17A30D48

## EPA 418.1 Total Petroleum Hydrocarbons

Date Validated: Sep 3, 1997 15:00

Date Analyzed: Sep 3, 1997 09:38

QA/QC Manager: Edward H. Yonemoto, Ph.D.

Analyst: OL

Matrix: Liquid

### BLANK SPIKE / BLANK SPIKE DUPLICATE AND RECOVERY

Parameter	[A] Blank Result ppm	[B] Blank Spike Result ppm	[C] Blank Spike Duplicate Result ppm	[D] Blank Spike Amount ppm	[E] Method Detection Limit ppm	Blank Limit Relative Difference %	[F]		[H] QC B.S.D. Recovery %	[I] Blank Spike Recovery Range %	[J] Qualifier
							Spike Relative Difference %	QC			
Total Petroleum Hydrocarbons	< 0.50	3.72	3.68	4.04	0.50	25.0	1.1	92.1	91.1	70-125	

Spike Relative Difference [F] =  $200 \cdot (B-C) / (B+C)$

Blank Spike Recovery [G] =  $100 \cdot (B-A) / [D]$

B.S.D. = Blank Spike Duplicate

B.S.D. Recovery [H] =  $100 \cdot (C-A) / [D]$

N.D. = Below detection limit or not detected

All results are based on MDL and validated for QC purposes

Edward H. Yonemoto, Ph.D.  
QA/QC Manager



# ANALYTICAL CHAIN OF CUSTODY REPORT CHRONOLOGY OF SAMPLES

K.E.I. Consultants, Inc.

Project ID: 610062

Project Manager: Mike Chapa

Project Location: Saunders Site

Project Name: TNMPL

XENCO COC#: 1-72031

Date Received in Lab: Aug 30, 1997 10:30 by CC

XENCO contact: Carlos Castro/Edward Yonemoto

Date and Time									
Field ID	Lab. ID	Method Name	Method ID	Units	Turn Around	Sample Collected	Addition Requested	Extraction	Analysis
1 MW-1	172031-001	BTEX	SW-846	ppm	Standard	Aug 26, 1997 15:00		Sep 2, 1997 by HL	Sep 2, 1997 12:24 by HL
2		TPH	EPA 418.1	ppm	Standard	Aug 26, 1997 15:00		Sep 3, 1997 by OL	Sep 3, 1997 09:47 by OL
3 MW-2	172031-002	BTEX	SW-846	ppm	Standard	Aug 26, 1997 18:10		Sep 2, 1997 by HL	Sep 2, 1997 12:43 by HL
4		TPH	EPA 418.1	ppm	Standard	Aug 26, 1997 18:10		Sep 3, 1997 by OL	Sep 3, 1997 09:50 by OL
5 MW-3	172031-003	BTEX	SW-846	ppm	Standard	Aug 26, 1997 17:40		Sep 2, 1997 by HL	Sep 2, 1997 13:03 by HL
6		TPH	EPA 418.1	ppm	Standard	Aug 26, 1997 17:40		Sep 3, 1997 by OL	Sep 3, 1997 09:53 by OL
7 MW-4	172031-004	BTEX	SW-846	ppm	Standard	Aug 26, 1997 12:50		Sep 2, 1997 by HL	Sep 2, 1997 13:22 by HL
8		TPH	EPA 418.1	ppm	Standard	Aug 26, 1997 12:50		Sep 3, 1997 by OL	Sep 3, 1997 09:56 by OL
9 MW-5	172031-005	BTEX	SW-846	ppm	Standard	Aug 26, 1997 15:35		Sep 2, 1997 by HL	Sep 2, 1997 13:47 by HL
10		TPH	EPA 418.1	ppm	Standard	Aug 26, 1997 15:35		Sep 3, 1997 by OL	Sep 3, 1997 09:59 by OL
11 MW-6	172031-006	BTEX	SW-846	ppm	Standard	Aug 26, 1997 16:25		Sep 2, 1997 by HL	Sep 2, 1997 14:06 by HL
12		TPH	EPA 418.1	ppm	Standard	Aug 26, 1997 16:25		Sep 3, 1997 by OL	Sep 3, 1997 10:02 by OL
13 MW-7	172031-007	BTEX	SW-846	ppm	Standard	Aug 26, 1997 17:00		Sep 2, 1997 by HL	Sep 2, 1997 15:23 by HL
14		TPH	EPA 418.1	ppm	Standard	Aug 26, 1997 17:00		Sep 3, 1997 by OL	Sep 3, 1997 10:05 by OL
15 MW-8	172031-008	BTEX	SW-846	ppm	Standard	Aug 26, 1997 17:10		Sep 2, 1997 by HL	Sep 2, 1997 15:42 by HL
16		TPH	EPA 418.1	ppm	Standard	Aug 26, 1997 17:10		Sep 3, 1997 by OL	Sep 3, 1997 10:08 by OL
17 MW-9	172031-009	BTEX	SW-846	ppm	Standard	Aug 26, 1997 14:30		Sep 2, 1997 by HL	Sep 2, 1997 16:01 by HL
18		TPH	EPA 418.1	ppm	Standard	Aug 26, 1997 14:30		Sep 3, 1997 by OL	Sep 3, 1997 10:11 by OL
19 MW-10	172031-010	BTEX	SW-846	ppm	Standard	Aug 26, 1997 13:15		Sep 2, 1997 by HL	Sep 2, 1997 16:20 by HL
20		TPH	EPA 418.1	ppm	Standard	Aug 26, 1997 13:15		Sep 3, 1997 by OL	Sep 3, 1997 10:14 by OL
21 MW-11	172031-011	BTEX	SW-846	ppm	Standard	Aug 26, 1997 13:40		Sep 2, 1997 by HL	Sep 2, 1997 16:40 by HL
22		TPH	EPA 418.1	ppm	Standard	Aug 26, 1997 13:40		Sep 3, 1997 by OL	Sep 3, 1997 10:17 by OL
23 MW-12	172031-012	BTEX	SW-846	ppm	Standard	Aug 26, 1997 14:05		Sep 2, 1997 by HL	Sep 2, 1997 16:59 by HL
24		TPH	EPA 418.1	ppm	Standard	Aug 26, 1997 14:05		Sep 3, 1997 by OL	Sep 3, 1997 10:20 by OL

[illegible][illegible]

Relinquished by	Signature	DATE	TIME	Received by	Signature	DATE	TIME
		8/29/97	2200				
				Received For Laboratory by		8/30/97	10:30

Remarks
(via UPS)

Contractor <b>KA CONSULTANTS</b>		Phone <b>(210) 680-3767</b>		Contractor COC # <b>?</b>	
Address <b>5309 WUEBACH STE 100</b>		Project Director <b>MIKE HAWTHORN</b>		Carrier <b>UPS</b>	
Project Name <b>TUMPL</b>		Project Manager <b>MIKE HAWTHORN</b>		Quote # <b>?</b>	
Project Location <b>SAMPLES SITE</b>		Project No. <b>610062</b>		P.O. No. <b>044111-111111</b>	
Sampler Signature <i>[Signature]</i>		Project No. <b>610062</b>		Airbill No. <b>N6043392949</b>	
SAMPLE CHARACTERIZATION					
Field ID	Date	Time	DEPTH	SOIL	WATER
MW-11	8/26/97	1340	X	X	X
MW-12	↓	1405	↓	↓	↓
Container			Size	Type	P, G
GRA B			500	VA	6
PRESERVATIVE			Ice	Other	
Unl. Dies			Ker	Unknown	
Waste Oil			PTT No.	Tank No.	
Sample Description					
Total					
No of CONTAINERS					
Remarks					
BTEX (5030/8020-602)					
TFH (48)					
Please Hold					
Turn-around					
* ASAP					
* 24 hrs					
48 hrs					
Standard					
Remarks					
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					

Pink (Contractor), Yellow &amp; White (Lab).

\* Pre-scheduling is recommended

## Precision Analytical Services



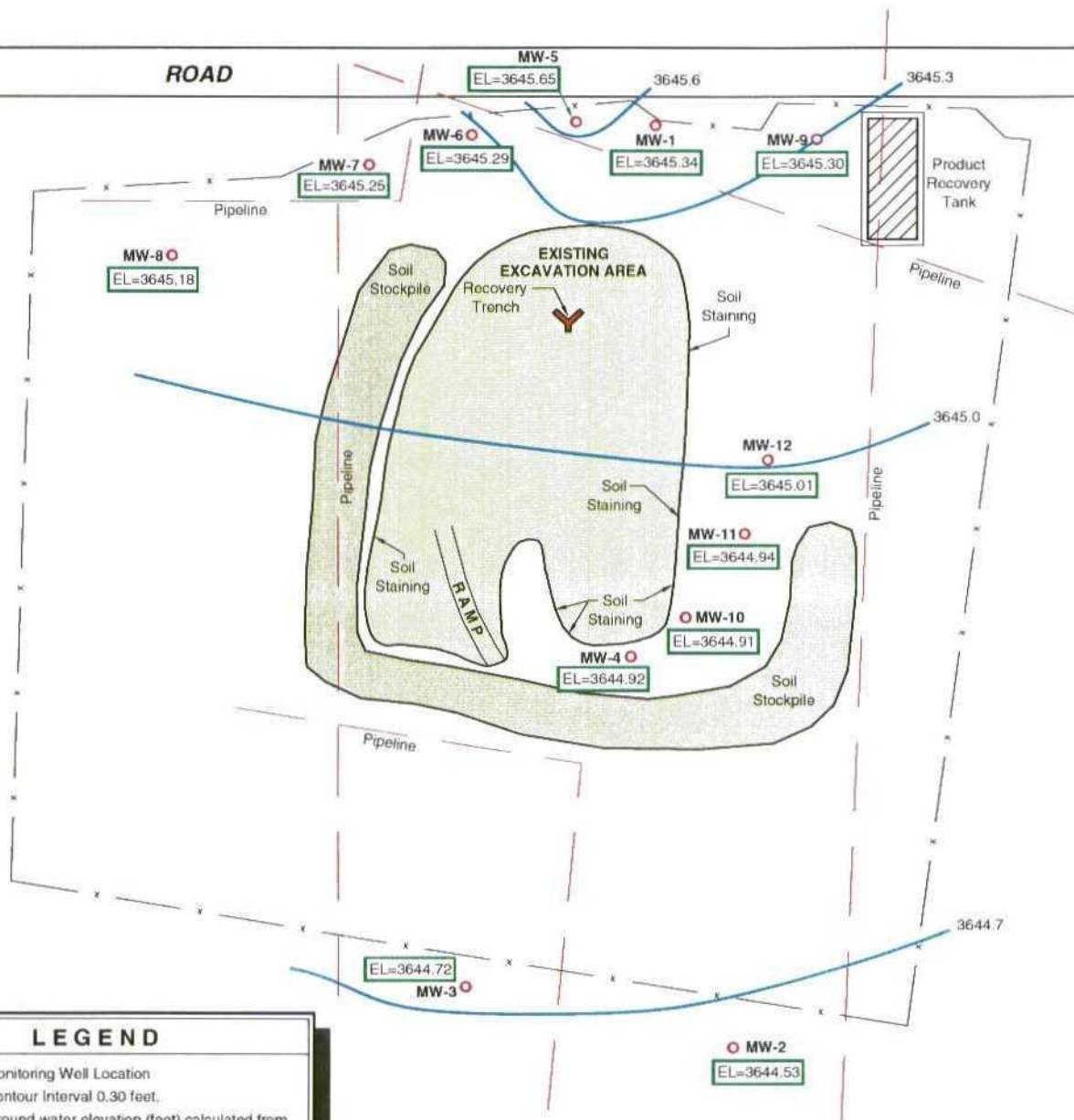
Approximate Scale: 1"=80'



Apparent direction of  
ground water flow.

### LAB RESULTS - (11/05/97)

MW-1	MW-2	MW-3	MW-4	MW-5	MW-6
B=ND BTEX=ND TPH=ND	B=ND BTEX=ND TPH=ND	B=ND BTEX=ND TPH=ND	B=ND BTEX=ND TPH=ND	B=ND BTEX=ND TPH=ND	B=ND BTEX=ND TPH=ND
MW-7	MW-8	MW-9	MW-10	MW-11	MW-12
B=ND BTEX=ND TPH=ND	B=ND BTEX=ND TPH=ND	B=ND BTEX=ND TPH=ND	B=0.019 BTEX=0.037 TPH=1.6	B=0.006 BTEX=0.033 TPH=14.7	B=ND BTEX=0.006 TPH=18.8



### LEGEND

- Monitoring Well Location
- Contour Interval 0.30 feet.
- EL = Ground water elevation (feet) calculated from measurements obtained on November 5, 1997.
- B = Benzene Concentration (mg/l)
- BTEX = Total Benzene, Toluene, Ethylbenzene, and Xylenes Concentration (mg/l)
- TPH = Total Petroleum Hydrocarbons Concentration (mg/l)
- ND = Below laboratory detection / reporting limits.

23.98-RW (B) (GW-N97)

kei

GROUND WATER CONTOURS / CONCENTRATION MAP - NOVEMBER 1997

SECTION 18, T19S, AND R37E

LEA COUNTY, NEW MEXICO

610062

FIG 1

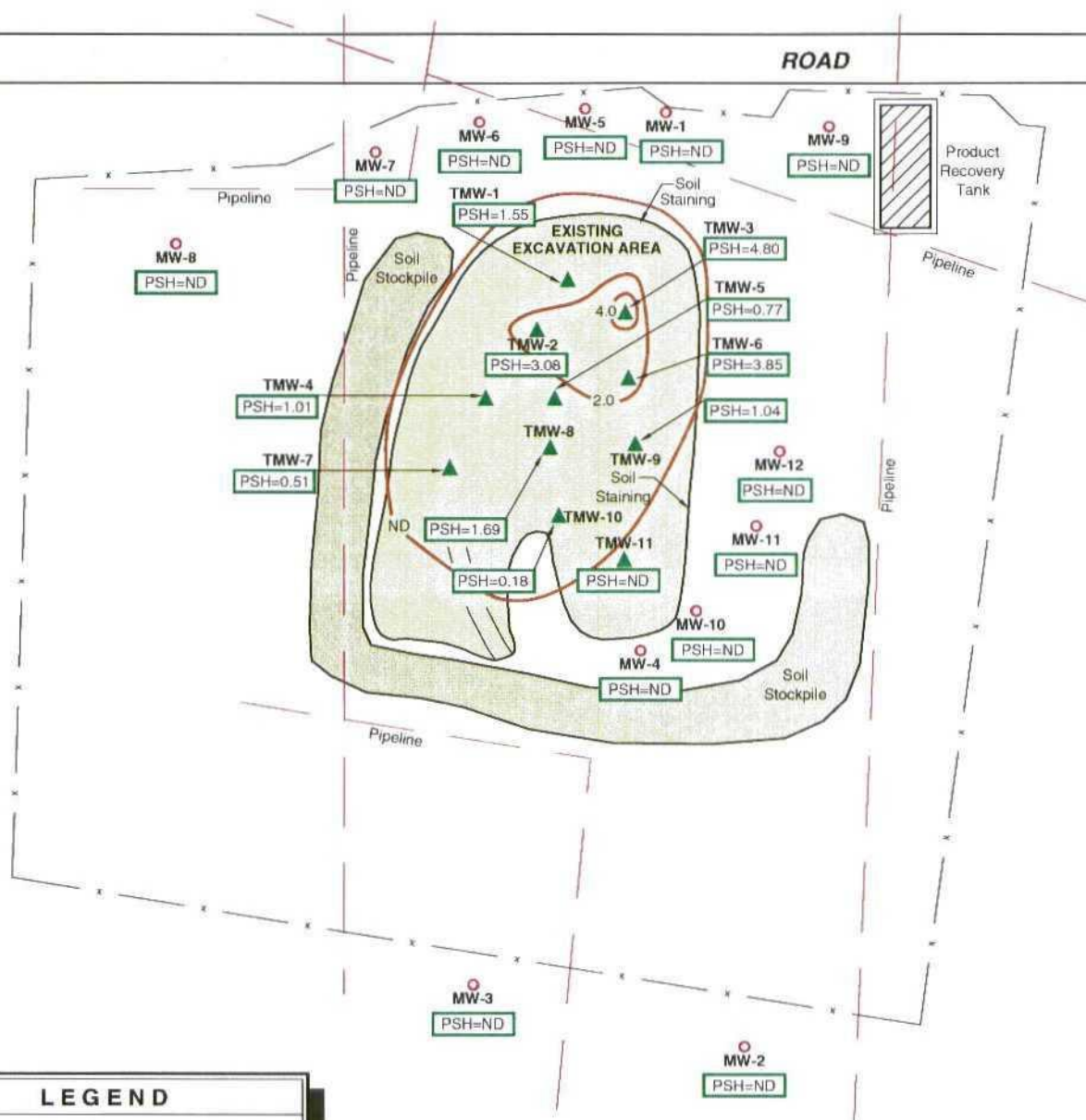




Approximate Scale: 1"=80'



Apparent direction of  
ground water flow.



### LEGEND

- ▲ Temporary monitoring well location installed by KEI on 10/01-02/96 and 10/17/96.
- Monitoring Well Location
- PSH = Phase Separate Hydrocarbon thickness (feet).
- ND = Indicates PSH was not detected.
- Contour Interval = 2.0 feet.

### NOTES:

1. PSH thickness in monitoring wells was measured on November 5, 1997.
2. PSH thickness in temporary monitoring well was measured on November 5, 1997.
3. Due to the high viscosity of the hydrocarbon, gauged PSH thickness may exceed actual thickness.

kei

### PSH THICKNESS MAP - NOVEMBER 1997

SECTION 18, T19S, AND R37E

LEA COUNTY, NEW MEXICO

610062

FIG 2

Project ID: 610062

Project Manager: Theresa Nix

Project Location: New Mexico

**K.E.I. Consultants, Inc.**

Project Name: *TNMPL - Saunder's*

Date Received in Lab : Nov 7, 1997 09:40

Date Report Faxed: Dec 8, 1997

**XENCO contact :** Carlos Castro/Edward Yonemoto

***Analysis Requested***

	Lab ID: Field ID: Depth: Matrix: Sampled:	172789-001 MW-1 Liquid 11/05/97-13:00	172789-002 MW-2 Liquid 11/05/97-14:54	172789-003 MW-3 Liquid 11/05/97-15:06	172789-004 MW-4 Liquid 11/05/97-14:46	172789-005 MW-5 Liquid 11/05/97-13:11	172789-006 MW-6 Liquid 11/05/97-13:23
		Analyzed: Units:	Analyzed: Units:	Analyzed: Units:	Analyzed: Units:	Analyzed: Units:	Analyzed: Units:
TPH-DRO (Diesel)		11/12/97 mg/L	11/12/97 mg/L	11/12/97 mg/L	11/12/97 mg/L	11/12/97 mg/L	11/12/97 mg/L
EPA 8015 M		< 1.0 (1.0)	< 1.0 (1.0)	< 1.3 (1.3)	< 1.0 (1.0)	< 1.0 (1.0)	< 1.0 (1.0)
Total Petroleum Hydrocarbons							
BTEX		11/07/97 ppm	11/07/97 ppm	11/08/97 ppm	11/08/97 ppm	11/08/97 ppm	11/08/97 ppm
EPA 8020		R.L.	R.L.	R.L.	R.L.	R.L.	R.L.
Benzene		< 0.001 (0.001)	< 0.001 (0.001)	< 0.001 (0.001)	< 0.001 (0.001)	< 0.001 (0.001)	< 0.001 (0.001)
Toluene		< 0.001 (0.001)	< 0.001 (0.001)	< 0.001 (0.001)	< 0.001 (0.001)	< 0.001 (0.001)	< 0.001 (0.001)
Ethylbenzene		< 0.001 (0.001)	< 0.001 (0.001)	< 0.001 (0.001)	< 0.001 (0.001)	< 0.001 (0.001)	< 0.001 (0.001)
m,p-Xylenes		< 0.002 (0.002)	< 0.002 (0.002)	< 0.002 (0.002)	< 0.002 (0.002)	< 0.002 (0.002)	< 0.002 (0.002)
o-Xylene		< 0.001 (0.001)	< 0.001 (0.001)	< 0.001 (0.001)	< 0.001 (0.001)	< 0.001 (0.001)	< 0.001 (0.001)
Total BTEX		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.

This report summary, and the entire report it represents, has been made for the exclusive and confidential use of K.E.I. Consultants, Inc.. The interpretations and results expressed through this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories, however, assumes no responsibility and makes no warranty to the end use of the data hereby presented.

  
Edward H. Yonemoto, Ph.D.  
Technical Director

<b>Project ID:</b> 610062 <b>Project Manager:</b> Theresa Nix <b>Project Location:</b> New Mexico		<b>K.E.I. Consultants, Inc.</b> <b>Project Name:</b> TMMPL - Saunder's		<b>Date Received in Lab :</b> Nov 7, 1997 09:40 <b>Date Report Faxed:</b> Dec 8, 1997 <b>XENCO contact :</b> Carlos Castro/Edward Yonemoto					
<b>Analysis Requested</b>		<b>Lab ID:</b> <b>Field ID:</b> <b>Depth:</b> <b>Matrix:</b> <b>Sampled:</b>	<b>172789-007</b> <b>MW-7</b> Liquid 11/05/97-13:36	<b>172789-008</b> <b>MW-8</b> Liquid 11/05/97-13:46	<b>172789-009</b> <b>MW-9</b> Liquid 11/05/97-14:03	<b>172789-010</b> <b>MW-10</b> Liquid 11/05/97-14:34	<b>172789-011</b> <b>MW-11</b> Liquid 11/05/97-14:23	<b>172789-012</b> <b>MW-12</b> Liquid 11/05/97-14:13	
TPH-DRO (Diesel)		Analyzed:	11/12/97	11/12/97	11/12/97	11/12/97	11/12/97	11/12/97	11/12/97
EPA 8015 M		Units:	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Total Petroleum Hydrocarbons			< 1.0 (1.0)	< 1.0 (1.0)	< 1.0 (1.0)	< 1.0 (1.0)	1.6 (1.0)	14.7 (1.0)	18.8 (1.0)
BTX		Analyzed:	11/08/97	11/08/97	11/08/97	11/08/97	11/08/97	11/08/97	11/08/97
EPA 8020		Units:	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Benzene			< 0.001 (0.001)	< 0.001 (0.001)	< 0.001 (0.001)	< 0.001 (0.001)	0.019 (0.004)	0.006 (0.004)	< 0.001 (0.001)
Toluene			< 0.001 (0.001)	< 0.001 (0.001)	< 0.001 (0.001)	< 0.001 (0.001)	< 0.004 (0.004)	0.008 (0.004)	0.001 (0.001)
Ethylbenzene			< 0.001 (0.001)	< 0.001 (0.001)	< 0.001 (0.001)	< 0.001 (0.001)	< 0.004 (0.004)	0.006 (0.004)	< 0.001 (0.001)
m,p-Xylenes			< 0.002 (0.002)	< 0.002 (0.002)	< 0.002 (0.002)	< 0.002 (0.002)	0.018 (0.008)	0.009 (0.008)	0.003 (0.002)
o-Xylene			< 0.001 (0.001)	< 0.001 (0.001)	< 0.001 (0.001)	< 0.001 (0.001)	< 0.004 (0.004)	0.004 (0.004)	0.002 (0.001)
Total BTX			N.D.	N.D.	N.D.	N.D.	0.037	0.033	0.006

This report summary, and the entire report it represents, has been made for the exclusive and confidential use of K.E.I. Consultants, Inc.. The interpretations and results expressed through this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories, however, assumes no responsibility and makes no warranty to the end use of the data hereby presented.

  
 Edward H. Yonemoto, Ph.D.  
 Technical Director



# Certificate Of Quality Control for Batch : 17A02C75

**SW- 346 3015 M TPH- DRO (Diesel)**

Date Validated: Dec 5, 1997 17:45

Date Analyzed: Nov 12, 1997 13:27

QA/QC Manager: Edward H. Yonemoto, Ph.D.

Analyst: MM

Matrix: Liquid

BLANK SPIKE / BLANK SPIKE DUPLICATE AND RECOVERY											
Parameter	[A]	[B]	[C]	[D]	[E]	Blank	[F]	[G]	[H]	[I]	[J]
	Blank Result  mg/L	Blank Spike Result  mg/L	Blank Spike Duplicate Result  mg/L	Blank Spike Amount  mg/L	Method Detection Limit  mg/L	Limit  Relative Difference  %	QC	QC	QC	Blank Spike Recovery Range  %	Qualifier
							Spike Relative Difference  %	Blank Spike Recovery  %	B.S.D. Recovery  %		
Total Petroleum Hydrocarbons	< 0.20	1.85	1.84	2.00	0.20	25.0	0.5	92.5	92.0	70-125	

Spike Relative Difference [F] =  $200 \cdot (B-C) / (B+C)$

Blank Spike Recovery [G] =  $100 \cdot (B-A) / [D]$

B.S.D. = Blank Spike Duplicate

B.S.D. Recovery [H] =  $100 \cdot (C-A) / [D]$

N.D. = Below detection limit or not detected

All results are based on MDL and validated for QC purposes



# Certificate Of Quality Control for Batch : 17A25D56

SW- 846 5030/8020 BTX

Date Validated: Nov 8, 1997 10:00

Date Analyzed: Nov 7, 1997 23:22

QA/QC Manager: Edward H. Yonemoto, Ph.D.

Analyst: HL

Matrix: Liquid

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE AND RECOVERY

Q.C. Sample ID 172789- 001	Parameter	[A]	[B]	[C]	[D]	[E]	Matrix	[F]	[G]	[H]	[I]	[J]
		Sample Result  ppm	Matrix Spike Result  ppm	Matrix Spike Duplicate Result  ppm	Matrix Spike Amount  ppm	Method Detection Limit  ppm	Limit Relative Difference  %	QC	QC	QC	Matrix Spike Recovery Range  %	Qualifier
								Spike Relative Difference  %	Matrix Spike Recovery  %	M.S.D. Recovery  %		
Benzene		< 0.0010	0.0878	0.0896	0.1000	0.0010	25.0	2.0	87.8	89.6	65-135	
Toluene		< 0.0010	0.0882	0.0898	0.1000	0.0010	25.0	1.8	88.2	89.8	65-135	
Ethylbenzene		< 0.0010	0.0901	0.0913	0.1000	0.0010	25.0	1.3	90.1	91.3	65-135	
m,p-Xylenes		< 0.0020	0.1790	0.1810	0.2000	0.0020	25.0	1.1	89.5	90.5	65-135	
o-Xylene		< 0.0010	0.0923	0.0931	0.1000	0.0010	25.0	0.9	92.3	93.1	65-135	

Spike Relative Difference [F] =  $200 \cdot (B-C)/(B+C)$

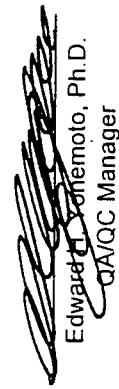
Matrix Spike Recovery [G] =  $100 \cdot (B-A)/[D]$

M.S.D. = Matrix Spike Duplicate

M.S.D. Recovery [H] =  $100 \cdot (C-A)/[D]$

N.D. = Below detection limit or not detected

All results are based on MDL and validated for QC purposes

  
Edward H. Yonemoto, Ph.D.  
QA/QC Manager

**SW- 846 5030/8020 BTEX**

**Date Validated:** Nov 8, 1997 10:00

**Analyst:** HL

**Date Analyzed:** Nov 7, 1997 22:05

**Matrix:** Liquid

**QA/QC Manager:** Edward H. Yonemoto, Ph.D.

BLANK SPIKE ANALYSIS							
Parameter	[A]	[B]	[C]	[D]	[E]	[F]	Qualifier
	Blank Result	Blank Spike Result	Blank Spike Amount	Method Detection Limit	QC	LIMITS	
	ppm	ppm	ppm	ppm	Blank Spike Recovery %	Recovery Range %	
Benzene	< 0.0010	0.0881	0.1000	0.0010	88.1	65-135	
Toluene	< 0.0010	0.0888	0.1000	0.0010	88.8	65-135	
Ethylbenzene	< 0.0010	0.0905	0.1000	0.0010	90.5	65-135	
m,p-Xylenes	< 0.0020	0.1790	0.2000	0.0020	89.5	65-135	
o-Xylene	< 0.0010	0.0926	0.1000	0.0010	92.6	65-135	

Blank Spike Recovery [E] =  $100 \cdot (B-A)/(C)$

N.D. = Not calculated, data below detection limit

N.D. = Below detection limit

All results are based on MDL and validated for QC purposes only

  
Edward H. Yonemoto, Ph.D.  
QA/QC Manager

# ANALYTICAL CHAIN OF CUSTODY REPORT

## CHRONOLOGY OF SAMPLES

K.E.I. Consultants, Inc.

Project ID: 610062

Project Manager: Theresa Nix

Project Location: New Mexico

Project Name: TNMPL - Saunder's

XENCO COC#: 1-72789

Date Received in Lab: Nov 7, 1997 09:40 by LY

XENCO contact : Carlos Castro/Edward Yonemoto

Date and Time									
Field ID	Lab. ID	Method Name	Method ID	Units	Turn Around	Sample Collected	Addition Requested	Extraction	Analysis
1 MW-1	172789-001	BTEX	SW-846	ppm	Standard	Nov 5, 1997 13:00		Nov 7, 1997 by HL	Nov 7, 1997 23:22 by HL
2		TPH8015M-D	SW-846 8015 M	mg/L	Standard	Nov 5, 1997 13:00		Nov 11, 1997 by MB	Nov 12, 1997 14:55 by MM
3 MW-2	172789-002	BTEX	SW-846	ppm	Standard	Nov 5, 1997 14:54		Nov 7, 1997 by HL	Nov 7, 1997 23:41 by HL
4		TPH8015M-D	SW-846 8015 M	mg/L	Standard	Nov 5, 1997 14:54		Nov 11, 1997 by MB	Nov 12, 1997 15:25 by MM
5 MW-3	172789-003	BTEX	SW-846	ppm	Standard	Nov 5, 1997 15:06		Nov 7, 1997 by HL	Nov 8, 1997 00:00 by HL
6		TPH8015M-D	SW-846 8015 M	mg/L	Standard	Nov 5, 1997 15:06		Nov 11, 1997 by MB	Nov 12, 1997 15:54 by MM
7 MW-4	172789-004	BTEX	SW-846	ppm	Standard	Nov 5, 1997 14:46		Nov 7, 1997 by HL	Nov 8, 1997 00:19 by HL
8		TPH8015M-D	SW-846 8015 M	mg/L	Standard	Nov 5, 1997 14:46		Nov 11, 1997 by MB	Nov 12, 1997 16:24 by MM
9 MW-5	172789-005	BTEX	SW-846	ppm	Standard	Nov 5, 1997 13:11		Nov 7, 1997 by HL	Nov 8, 1997 00:38 by HL
10		TPH8015M-D	SW-846 8015 M	mg/L	Standard	Nov 5, 1997 13:11		Nov 11, 1997 by MB	Nov 12, 1997 16:53 by MM
11 MW-6	172789-006	BTEX	SW-846	ppm	Standard	Nov 5, 1997 13:23		Nov 7, 1997 by HL	Nov 8, 1997 00:58 by HL
12		TPH8015M-D	SW-846 8015 M	mg/L	Standard	Nov 5, 1997 13:23		Nov 11, 1997 by MB	Nov 12, 1997 17:23 by MM
13 MW-7	172789-007	BTEX	SW-846	ppm	Standard	Nov 5, 1997 13:36		Nov 7, 1997 by HL	Nov 8, 1997 01:17 by HL
14		TPH8015M-D	SW-846 8015 M	mg/L	Standard	Nov 5, 1997 13:36		Nov 11, 1997 by MB	Nov 12, 1997 17:53 by MM
15 MW-8	172789-008	BTEX	SW-846	ppm	Standard	Nov 5, 1997 13:46		Nov 7, 1997 by HL	Nov 8, 1997 01:36 by HL
16		TPH8015M-D	SW-846 8015 M	mg/L	Standard	Nov 5, 1997 13:46		Nov 11, 1997 by MB	Nov 12, 1997 18:22 by MM
17 MW-9	172789-009	BTEX	SW-846	ppm	Standard	Nov 5, 1997 14:03		Nov 7, 1997 by HL	Nov 8, 1997 01:55 by HL
18		TPH8015M-D	SW-846 8015 M	mg/L	Standard	Nov 5, 1997 14:03		Nov 11, 1997 by MB	Nov 12, 1997 18:52 by MM
19 MW-10	172789-010	BTEX	SW-846	ppm	Standard	Nov 5, 1997 14:34		Nov 7, 1997 by HL	Nov 8, 1997 02:15 by HL
20		TPH8015M-D	SW-846 8015 M	mg/L	Standard	Nov 5, 1997 14:34		Nov 11, 1997 by MB	Nov 12, 1997 19:21 by MM
21 MW-11	172789-011	BTEX	SW-846	ppm	Standard	Nov 5, 1997 14:23		Nov 8, 1997 by HL	Nov 8, 1997 02:53 by HL
22		TPH8015M-D	SW-846 8015 M	mg/L	Standard	Nov 5, 1997 14:23		Nov 11, 1997 by MB	Nov 12, 1997 19:51 by MM
23 MW-12	172789-012	BTEX	SW-846	ppm	Standard	Nov 5, 1997 14:13		Nov 8, 1997 by HL	Nov 8, 1997 03:12 by HL
24		TPH8015M-D	SW-846 8015 M	mg/L	Standard	Nov 5, 1997 14:13		Nov 11, 1997 by MB	Nov 12, 1997 20:20 by MM



11381 Meadowgreen Suite L Houston, Texas 77082  
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# CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST FORM

Page 1 of 2

Lab. Batch # 12789-SA

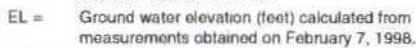
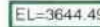
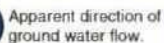
Contractor <b>Krei Consultants</b>		Phone (210) 680-3767		No coolers this shipment: Carrier: UPS Airtell No.		Contractor COC # Quote #: P.O. No: 8279							
Address <b>5309 Wurzbach Suite 100, San Antonio, TX 78238</b>		Project Director <b>Mike Hawthorn</b>		Project Manager <b>Theresa Wix</b>		Project No. <b>61006Z</b>							
Project Name <b>TJMP L Saunders</b>		Project Location <b>WM</b>		Sampler Signature <b>Stanley Hoover</b>		Sampler No. <b>61006Z</b>							
SAMPLE CHARACTERIZATION													
Field ID	Date	Time	DEPTH	DISSOLUBLE	COMPOUND	CONTAINER SIZE TYPE P.G.	Other	Preservative	Unl Dies Ker Unknown	Waste Oil	PIT No:	Tank No:	Sample Description
MW-1	11-5-97	1300											HCl
MW-2	11-5-97	1454											HCl
MW-3	11-5-97	1506											HCl
MW-4	11-5-97	1446											HCl
MW-5	11-5-97	1311											HCl
MW-6	11-5-97	1323											HCl
MW-7	11-5-97	1336											HCl
MW-8	11-5-97	1346											HCl
MW-9	11-5-97	1403											HCl
MW-10	11-5-97	1434											HCl
Relinquished by: <b>Stanley Hoover</b> DATE: <b>11-6-97</b> TIME: <b>1600</b>													
Received by: <b>Stanley Hoover</b> DATE: <b>11-6-97</b> TIME: <b>1600</b>													
Received For Laboratory by <b>UPS</b> <b>Samir Jorjeng</b>													
Received For Laboratory by <b>UPS</b> <b>Samir Jorjeng</b>													

Print (Contractor), Yellow & White (Lab).

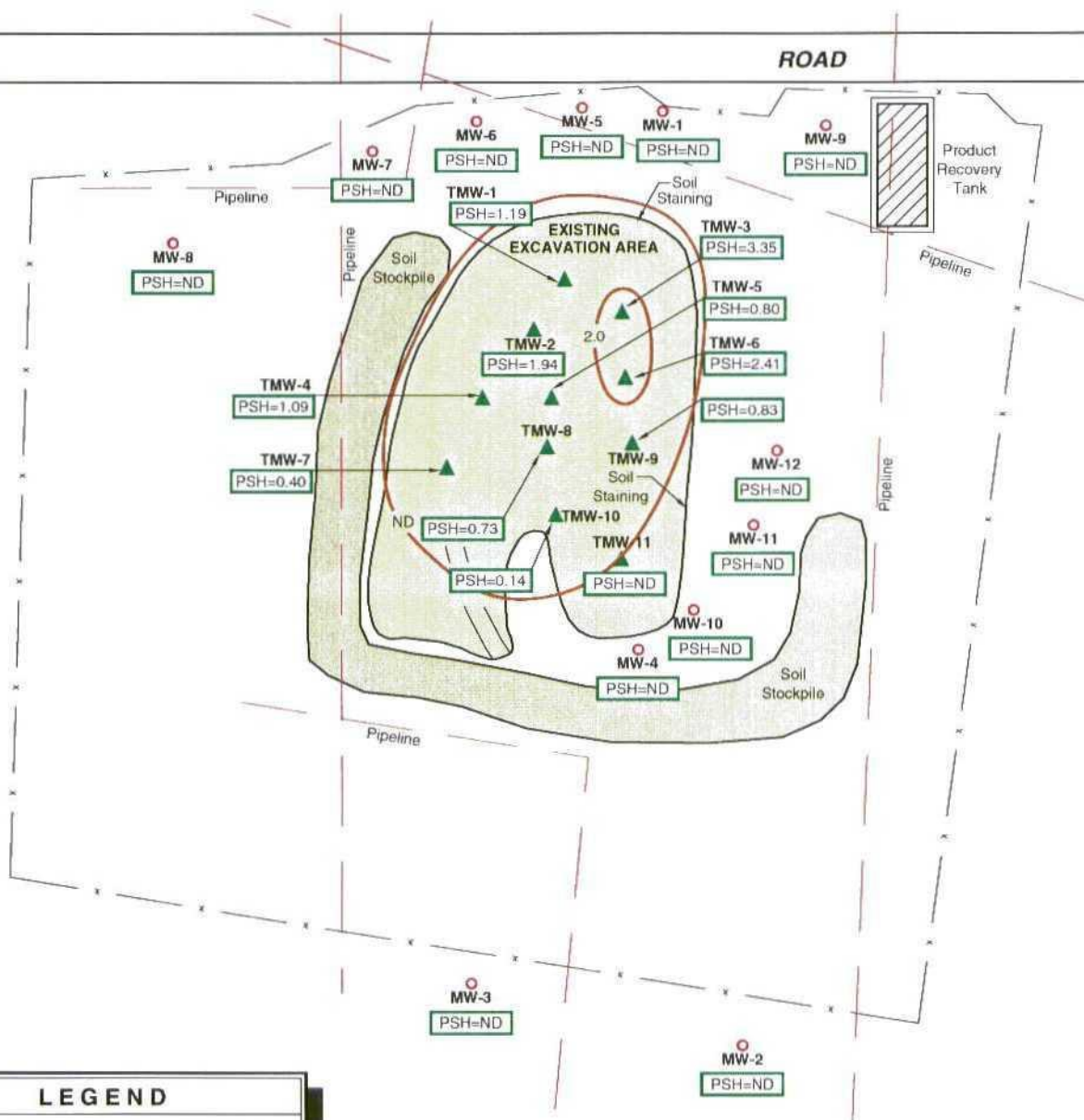
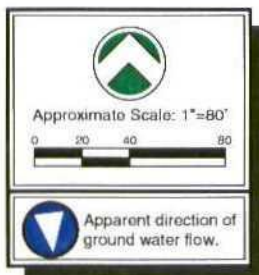
\* Pre-scheduling is recommended

Precision Analytical Services

[illegible]







### LEGEND

- ▲ Temporary monitoring well location installed by KEI on 10/01-02/96 and 10/17/96.
- Monitoring Well Location
- PSH = Phase Separate Hydrocarbon thickness (feet).
- ND = Indicates PSH was not detected.
- Contour Interval = 2.0 feet.

### NOTES:

1. PSH thickness in monitoring wells was measured on February 7, 1998.
2. PSH thickness in temporary monitoring well was measured on February 7, 1998.
3. Due to the high viscosity of the hydrocarbon, gauged PSH thickness may exceed actual thickness.

kei

### PSH THICKNESS MAP - FEBRUARY 1998

SECTION 18, T19S, AND R37E

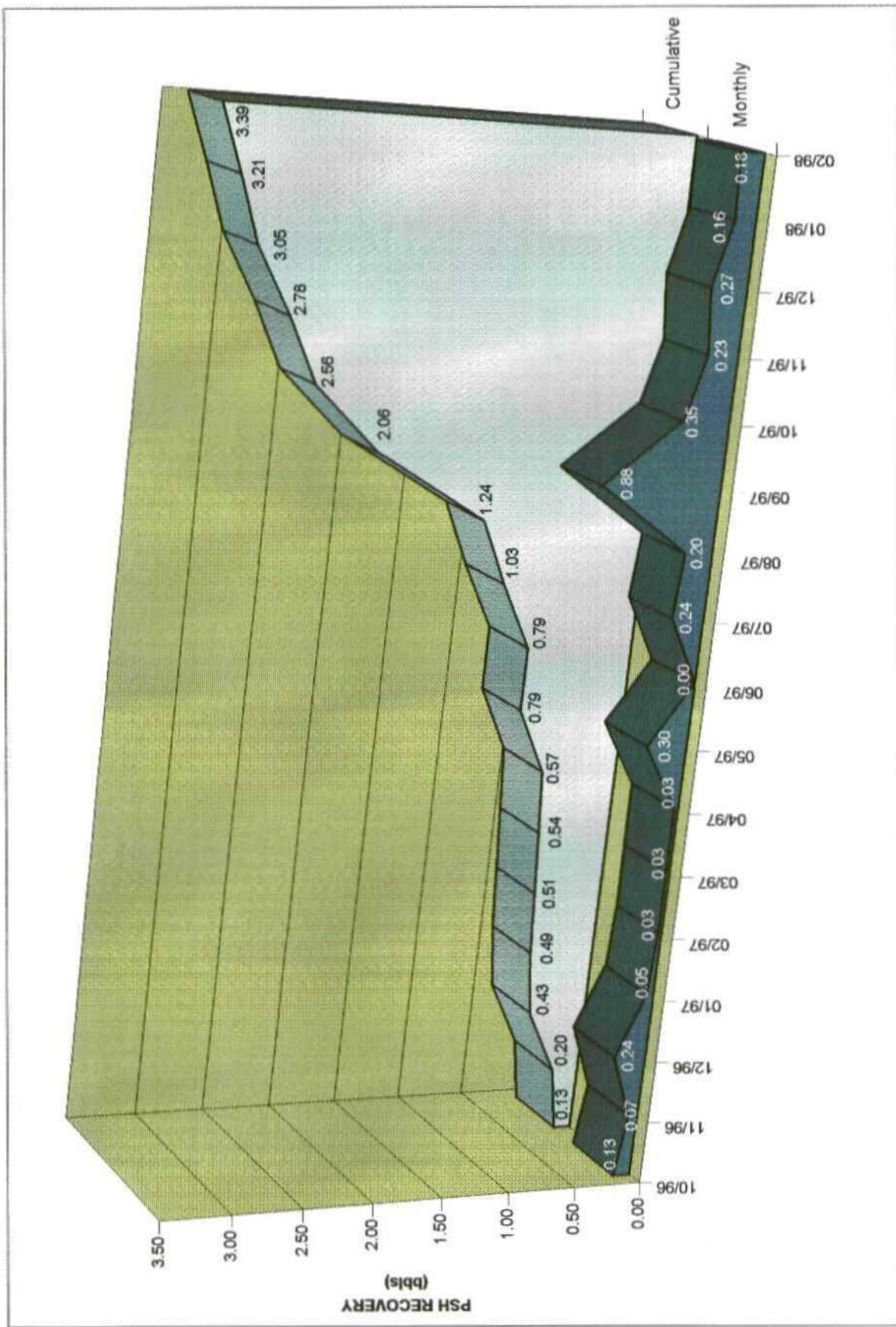
LEA COUNTY, NEW MEXICO

610062

FIG 2



**FIGURE 3**  
MONTHLY AND CUMULATIVE PSH RECOVERY



**K.E.I. Consultants, Inc.**

Project ID: 610062

Project Manager: Theresa Nix

Project Location: Monument, NM

Project Name: Saunders

Date Received in Lab : Feb 23, 1998 09:30

Date Report Faxed: Feb 25, 1998

XENCO contact : Carlos Castro/Edward Yonemoto

Analysis Requested	Lab ID:		180692 001		180692 002		180692 003		180692 004		180692 005		180692 006	
	Field ID:	Depth:	MW-1	Liquid	MW-2	Liquid	MW-3	Liquid	MW-4	Liquid	MW-5	Liquid	MW-6	Liquid
BTEX	02/23/98		02/20/98 12:00	R.L.	02/20/98 13:15	R.L.	02/23/98	R.L.	02/23/98	R.L.	02/23/98	R.L.	02/23/98	R.L.
EPA 8020	ppm		ppm		ppm		ppm		ppm		ppm		ppm	
Benzene			< 0.001 (0.001)		< 0.001 (0.001)		< 0.001 (0.001)		< 0.001 (0.001)		< 0.001 (0.001)		< 0.001 (0.001)	
Toluene			< 0.001 (0.001)		< 0.001 (0.001)		< 0.001 (0.001)		< 0.001 (0.001)		< 0.001 (0.001)		< 0.001 (0.001)	
Ethylbenzene			< 0.001 (0.001)		< 0.001 (0.001)		< 0.001 (0.001)		< 0.001 (0.001)		< 0.001 (0.001)		< 0.001 (0.001)	
m,p-Xylenes			< 0.002 (0.002)		< 0.002 (0.002)		< 0.002 (0.002)		< 0.002 (0.002)		< 0.002 (0.002)		< 0.002 (0.002)	
o-Xylene			< 0.001 (0.001)		< 0.001 (0.001)		< 0.001 (0.001)		< 0.001 (0.001)		< 0.001 (0.001)		< 0.001 (0.001)	
Total BTEX			N.D.		N.D.		N.D.		N.D.		N.D.		N.D.	
Total Petroleum Hydrocarbons	02/25/98		R.L.		02/25/98	R.L.	02/25/98	R.L.	02/25/98	R.L.	02/25/98	R.L.	02/25/98	R.L.
EPA 418.1	ppm		ppm		ppm		ppm		ppm		ppm		ppm	
Total Petroleum Hydrocarbons			< 0.8 (0.8)		< 0.8 (0.8)		1.2 (0.8)		< 0.8 (0.8)		< 0.8 (0.8)		< 0.8 (0.8)	

This report summary, and the entire report it represents, has been made for the exclusive and confidential use of K.E.I. Consultants, Inc.. The interpretations and results expressed through this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories, however, assumes no responsibility and makes no warranty to the end use of the data hereby presented.

  
Edward H. Yonemoto, Ph.D.  
Technical Director

<b>Project ID:</b> 610062 <b>Project Manager:</b> Theresa Nix <b>Project Location:</b> Monument, NM		<b>K.E.I. Consultants, Inc.</b> <b>Project Name:</b> Saunders <b>Date Received in Lab :</b> Feb 23, 1998 09:30 <b>Date Report Faxed:</b> Feb 25, 1998 <b>XENCO contact :</b> Carlos Castro/Edward Yonemoto						
<b>Analysis Requested</b>  BTEX EPA 8020  Benzene Toluene Ethylbenzene m,p-Xylenes o-Xylene Total BTEX  Total Petroleum Hydrocarbons EPA 418.1  Total Petroleum Hydrocarbons	Lab ID: Field ID: Depth: Matrix: Sampled:	180692 007 MW-7 Liquid 02/20/98 12:38 R.L. 02/23/98 ppm	180692 008 MW-8 Liquid 02/20/98 12:50 R.L. 02/23/98 ppm	180692 009 MW-9 Liquid 02/20/98 14:19 R.L. 02/23/98 ppm	180692 010 MW-10 Liquid 02/20/98 13:44 R.L. 02/23/98 ppm	180692 011 MW-11 Liquid 02/20/98 13:53 R.L. 02/23/98 ppm	180692 012 MW-12 Liquid 02/20/98 14:05 R.L. 02/23/98 ppm	
	Analyzed: Units:	< 0.001 (0.001)	< 0.001 (0.001)	< 0.001 (0.001)	0.014 (0.004)	< 0.004 (0.004)	< 0.004 (0.004)	< 0.004 (0.004)
		< 0.001 (0.001)	< 0.001 (0.001)	< 0.001 (0.001)	< 0.004 (0.004)	< 0.004 (0.004)	< 0.004 (0.004)	< 0.004 (0.004)
		< 0.001 (0.001)	< 0.001 (0.001)	< 0.001 (0.001)	< 0.004 (0.004)	< 0.004 (0.004)	< 0.004 (0.004)	< 0.004 (0.004)
		< 0.002 (0.002)	< 0.002 (0.002)	< 0.002 (0.002)	< 0.008 (0.008)	< 0.008 (0.008)	< 0.008 (0.008)	< 0.008 (0.008)
		< 0.001 (0.001)	< 0.001 (0.001)	< 0.001 (0.001)	< 0.004 (0.004)	< 0.004 (0.004)	< 0.004 (0.004)	< 0.004 (0.004)
	N.D.	N.D.	N.D.	0.014	N.D.	N.D.	N.D.	
Analyzed: Units:	02/25/98 ppm	02/25/98 ppm	02/25/98 ppm	02/25/98 ppm	02/25/98 ppm	02/25/98 ppm	02/25/98 ppm	
	< 0.8 (0.8)	< 0.8 (0.8)	< 0.8 (0.8)	< 0.8 (0.8)	< 0.8 (0.8)	< 0.8 (0.8)	2.4 (0.8)	

This report summary, and the entire report it represents, has been made for the exclusive and confidential use of K.E.I. Consultants, Inc.. The interpretations and results expressed through this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories, however, assumes no responsibility and makes no warranty to the end use of the data hereby presented.

  
 Edward H. Yonemoto, Ph.D.  
 Technical Director

**SW- 846 5030/8020 BTEX**
**Date Validated:** Feb 24, 1998 14:00

**Analyst:** HL

**Date Analyzed:** Feb 23, 1998 12:00

**Matrix:** Liquid

**QA/QC Manager:** Sunil Ajai, M.S.

**BLANK SPIKE ANALYSIS**


Parameter	[A]	[B]	[C]	[D]	[E]	[F]	[G] Qualifier
	Blank Result	Blank Spike Result	Blank Spike Amount	Method Detection Limit	QC	LIMITS	
	ppm	ppm	ppm	ppm	Blank Spike Recovery %	Recovery Range %	
Benzene	< 0.0010	0.1070	0.1000	0.0010	107.0	65-135	
Toluene	< 0.0010	0.0976	0.1000	0.0010	97.6	65-135	
Ethylbenzene	< 0.0010	0.1000	0.1000	0.0010	100.0	65-135	
m,p-Xylenes	< 0.0020	0.2040	0.2000	0.0020	102.0	65-135	
o-Xylene	< 0.0010	0.1030	0.1000	0.0010	103.0	65-135	

 Blank Spike Recovery [E] =  $100 \times (B-A)/(C)$ 

N.C. = Not calculated, data below detection limit

N.D. = Below detection limit

All results are based on MDL and validated for QC purposes only

  
 Edward H. Yonemoto, Ph.D.  
 Technical Director



# Certificate Of Quality Control for Batch : 18A25A62

SW- 346 5030/8020 BTEX

Date Validated: Feb 24, 1998 14:00  
Date Analyzed: Feb 23, 1998 18:01  
QA/QC Manager: Sunil Ajai, M.S.

Analyst: HL  
Matrix: Liquid

MATRIX SPIKE / MATRIX SPIKE DUPLICATE AND RECOVERY														
Q.C. Sample ID 180692- 001	Parameter	[A]	[B]	[C]	[D]	[E]	Matrix	[F]	[G]	[H]	[I]	[J]		
		Sample Result ppm	Matrix Spike Result ppm	Matrix Spike Duplicate Result ppm	Matrix Spike Amount ppm	Method Detection Limit ppm	Limit Relative Difference %	QC	QC	QC	Matrix Spike Recovery Range %	Qualifier		
	Benzene	< 0.0010	0.0912	0.0918	0.1000	0.0010	20.0	0.7	91.2	91.8	65-135			
	Toluene	< 0.0010	0.0950	0.0968	0.1000	0.0010	20.0	1.9	95.0	96.8	65-135			
	Ethylbenzene	< 0.0010	0.0977	0.1010	0.1000	0.0010	20.0	3.3	97.7	101.0	65-135			
	m,p-Xylenes	< 0.0020	0.2010	0.2070	0.2000	0.0020	20.0	2.9	100.5	103.5	65-135			
	o-Xylene	< 0.0010	0.0995	0.1030	0.1000	0.0010	20.0	3.5	99.5	103.0	65-135			

Spike Relative Difference [F] =  $200 \times (B-C)/(B+C)$   
Matrix Spike Recovery [G] =  $100 \times (B-A)/[D]$   
M.S.D. = Matrix Spike Duplicate  
M.S.D. Recovery [H] =  $100 \times (C-A)/[D]$   
N.D. = Below detection limit or not detected  
All results are based on MDL and validated for QC purposes

Edward P. Monemolo, Ph.D.  
Technical Director



# Certificate Of Quality Control for Batch : 18A30A39

## EPA 418.1 Total Petroleum Hydrocarbons

Date Validated: Feb 25, 1998 12:00  
Date Analyzed: Feb 25, 1998 09:48  
QA/QC Manager: Sunil Ajai, M.S.

Analyst: OL  
Matrix: Liquid

BLANK SPIKE / BLANK SPIKE DUPLICATE AND RECOVERY													
Parameter	[A] Blank Result  ppm	[B] Blank Spike Result  ppm	[C] Blank Spike Duplicate Result  ppm	[D] Blank Spike Amount  ppm	[E] Method Detection Limit  ppm	Blank Limit Relative Difference  %	[F]		[G]		[H]	[I]	[J]  Qualifier
							Spike Relative Difference  %	QC	Blank Spike Recovery  %	QC	B.S.D. Recovery  %	Blank Spike Recovery Range  %	
Total Petroleum Hydrocarbons	< 0.50	3.97	3.92	4.02	0.50	25.0	1.3	98.8	97.5	70-125			

Spike Relative Difference [F] =  $200 \cdot (B-C) / (B+C)$   
Blank Spike Recovery [G] =  $100 \cdot (B-A) / [D]$   
B.S.D. = Blank Spike Duplicate  
B.S.D. Recovery [H] =  $100 \cdot (C-A) / [D]$   
N.D. = Below detection limit or not detected  
All results are based on MDL and validated for QC purposes

Edward H. Yonemoto, Ph.D.  
Technical Director



# ANALYTICAL CHAIN OF CUSTODY REPORT CHRONOLOGY OF SAMPLES

K.E.I. Consultants, Inc.

XENCO COC#: 1-80692

Project Name: Saunders

Project ID: 610062

Project Manager: Theresa Nix

Date Received in Lab: Feb 23, 1998 09:30 by LY

Project Location: Monument, NM

XENCO contact : Carlos Castro/Edward Yonemoto

Date and Time									
Field ID	Lab. ID	Method Name	Method ID	Units	Turn Around	Sample Collected	Addition Requested	Extraction	Analysis
1 MW-1	180692-001	BTEX	SW-846	ppm	5 days	Feb 20, 1998 12:00		Feb 23, 1998 by HL	Feb 23, 1998 18:01 by HL
2		TPH	EPA 418.1	ppm	5 days	Feb 20, 1998 12:00		Feb 25, 1998 by OL	Feb 25, 1998 09:57 by OL
3 MW-2	180692-002	BTEX	SW-846	ppm	5 days	Feb 20, 1998 13:15		Feb 23, 1998 by HL	Feb 23, 1998 13:35 by HL
4		TPH	EPA 418.1	ppm	5 days	Feb 20, 1998 13:15		Feb 25, 1998 by OL	Feb 25, 1998 10:00 by OL
5 MW-3	180692-003	BTEX	SW-846	ppm	5 days	Feb 20, 1998 13:02		Feb 23, 1998 by HL	Feb 23, 1998 13:54 by HL
6		TPH	EPA 418.1	ppm	5 days	Feb 20, 1998 13:02		Feb 25, 1998 by OL	Feb 25, 1998 10:03 by OL
7 MW-4	180692-004	BTEX	SW-846	ppm	5 days	Feb 20, 1998 13:25		Feb 23, 1998 by HL	Feb 23, 1998 14:13 by HL
8		TPH	EPA 418.1	ppm	5 days	Feb 20, 1998 13:25		Feb 25, 1998 by OL	Feb 25, 1998 10:06 by OL
9 MW-5	180692-005	BTEX	SW-846	ppm	5 days	Feb 20, 1998 12:15		Feb 23, 1998 by HL	Feb 23, 1998 14:32 by HL
10		TPH	EPA 418.1	ppm	5 days	Feb 20, 1998 12:15		Feb 25, 1998 by OL	Feb 25, 1998 10:09 by OL
11 MW-6	180692-006	BTEX	SW-846	ppm	5 days	Feb 20, 1998 12:26		Feb 23, 1998 by HL	Feb 23, 1998 14:51 by HL
12		TPH	EPA 418.1	ppm	5 days	Feb 20, 1998 12:26		Feb 25, 1998 by OL	Feb 25, 1998 10:12 by OL
13 MW-7	180692-007	BTEX	SW-846	ppm	5 days	Feb 20, 1998 12:38		Feb 23, 1998 by HL	Feb 23, 1998 15:10 by HL
14		TPH	EPA 418.1	ppm	5 days	Feb 20, 1998 12:38		Feb 25, 1998 by OL	Feb 25, 1998 10:15 by OL
15 MW-8	180692-008	BTEX	SW-846	ppm	5 days	Feb 20, 1998 12:50		Feb 23, 1998 by HL	Feb 23, 1998 15:28 by HL
16		TPH	EPA 418.1	ppm	5 days	Feb 20, 1998 12:50		Feb 25, 1998 by OL	Feb 25, 1998 10:18 by OL
17 MW-9	180692-009	BTEX	SW-846	ppm	5 days	Feb 20, 1998 14:19		Feb 23, 1998 by HL	Feb 23, 1998 15:48 by HL
18		TPH	EPA 418.1	ppm	5 days	Feb 20, 1998 14:19		Feb 25, 1998 by OL	Feb 25, 1998 10:21 by OL
19 MW-10	180692-010	BTEX	SW-846	ppm	5 days	Feb 20, 1998 13:44		Feb 23, 1998 by HL	Feb 23, 1998 16:07 by HL
20		TPH	EPA 418.1	ppm	5 days	Feb 20, 1998 13:44		Feb 25, 1998 by OL	Feb 25, 1998 10:24 by OL
21 MW-11	180692-011	BTEX	SW-846	ppm	5 days	Feb 20, 1998 13:53		Feb 23, 1998 by HL	Feb 23, 1998 16:45 by HL
22		TPH	EPA 418.1	ppm	5 days	Feb 20, 1998 13:53		Feb 25, 1998 by OL	Feb 25, 1998 10:32 by OL
23 MW-12	180692-012	BTEX	SW-846	ppm	5 days	Feb 20, 1998 14:05		Feb 23, 1998 by HL	Feb 23, 1998 17:04 by HL
24		TPH	EPA 418.1	ppm	5 days	Feb 20, 1998 14:05		Feb 25, 1998 by OL	Feb 25, 1998 10:35 by OL



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# CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST FORM

Page 1 of 2  
Lab. Batch # 180692-SA

Contractor: K.E.I.		Phone: (510) 620-3767		No. coolers this shipment: 405		Contractor COC #: 8651				
Address: 5309 Wilshire, Suite 100				Carrier: UPS		Quote #:				
Project Name: Saunders		Project Director: Mike Hawthorn		Airfall No.		P.O. No: 8651				
Project Location: Monument, NM		Project Manager: Theresa Wil								
Sample Signature: [Signature]		Project No: 610062								
SAMPLE CHARACTERIZATION										
Field ID	Date	Time	DEPTH	SOIL	WATER	COMPA	GRA	Container Size Type P, G	Preservative	
MW-1	2-20-98	1200							HC1	
MW-2	2-20-98	1315								
MW-3		1302								
MW-4		1325								
MW-5		1215								
MW-6		1226								
MW-7		1238								
MW-8		1250								
MW-9		1419								
MW-10		1344								
Relinquished by: [Signature]			DATE: 2/23/98		TIME: 930		Signature: [Signature]		Remarks: Fax Analytical to Theresa at 210-620-3763 and STAN Graw at 505-372-2065	

Prk (Contractor), Yellow & White (Lab).

\* Pre-scheduling is recommended

Precision Analytical Services



Lab. Batch # 180692-5A

Contractor <u>Kel</u> Phone <u>210'680-3767</u> Contractor COC # Address <u>5309 WUTZBACH RD Suite 100</u> Carrier: <u>UPS</u> Quote #: Project Name <u>SWENDERS</u> Project Director <u>MIKE NAUTNARNE</u> P.O. No: <u>8651</u> Project Location <u>MONUMENT NH</u> Project Manager <u>THERESA NIX</u> Airbill No. Sampler Signature <u>[Signature]</u> Project No. <u>610067</u>												
SAMPLE CHARACTERIZATION												
Field ID	Date	Time	D E P T H	S O I L	W A T E R	C O M P	G R A B	Container Size Type P, G	Preservative	Unl Disc	Ker	Unknown
MW-11	20 FEB 1983								1 HCl			
MW-12	20 FEB 1985								1 HCl			
No. of CONTAINERS Total												
EPA METHOD 8030-8032 TPH (H&D) BTX (5030/8030-8032)												
L A B ONLY ID #												
Turn-around → ASAP → 24 hrs 48 hrs Standard												
Remarks												
Please Hold												
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
Remarks Please fax Analytical to Theresa Nix 1-210-680-3763 and to STAN GROWER at 1-505-392-8065												
Relinquished by: <u>[Signature]</u> Signature Received by: <u>[Signature]</u> Signature DATE TIME DATE TIME DATE TIME DATE TIME DATE TIME DATE TIME												
Received by Laboratory by <u>UPS</u> <u>[Signature]</u> <u>2/23/83</u> <u>9:30</u>												

**Pink (Contractor), Yellow & White (Lab).**

**\* Pre-scheduling is recommended**

## Precision Analytical Services



5309 Wurzbach, Suite 100  
San Antonio, Texas 78238  
(210) 680-3767  
(210) 680-3763 FAX

June 23, 1998

Mr. Tony Savoie  
TEXAS - NEW MEXICO PIPE LINE COMPANY  
P. O. Box 1030  
Jal, New Mexico 88252

Re: Ground Water Monitoring Event  
Texas - New Mexico Pipe Line Company  
Site 16 (AKA Saunders Excavation, TNM-10-95)  
Lea County, New Mexico  
KEI Job No. 610062-1

RECEIVED

SEP 11 1998

ENVIRONMENTAL BUREAU  
OIL CONSERVATION DIVISION

Dear Mr. Savoie:

Transmitted with this letter is the ground water binder update packet for the second quarter of 1998 ground water monitoring event conducted at Site 16, located in Lea County, New Mexico. One copy has been submitted to OCD Hobbs and OCD Santa Fe.

The packet contains the following:

- Updated gauging tables
- Updated ground water laboratory results tables
- Updated figures
- A copy of the laboratory ground water results and chain-of-custody documentation
- A dated "tab" for the new event

Please remove and replace the former tables. Add the new dated tab and place the updated figures, laboratory reports, and chain-of-custody documentation behind this tab.

Please call me at (210) 680-3767 if you have any questions or comments.

Respectfully,

*Theresa Nix*

Theresa Nix  
Project Manager

Enclosure

cc: Marc Oler, TTTI  
J. Michael Hawthorne, KEI  
OCD Hobbs, Wayne Price  
OCD Santa Fe, William Olson ✓

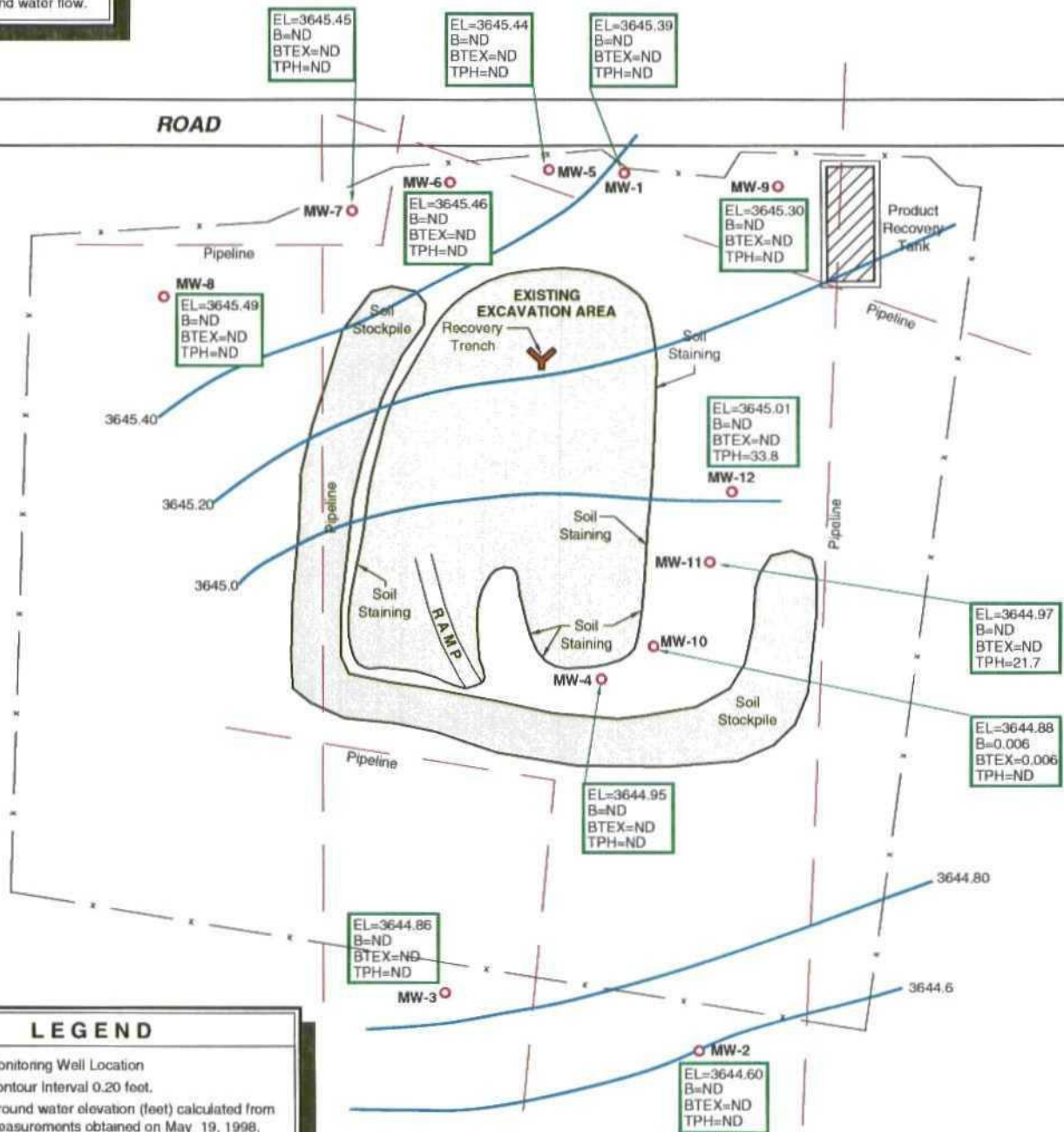
*Filed in  
GW Monitoring Report*



Approximate Scale: 1"=80'



Apparent direction of ground water flow.



### LEGEND

- Monitoring Well Location
- Contour Interval 0.20 feet.
- EL = Ground water elevation (feet) calculated from measurements obtained on May 19, 1998.
- B = Benzene concentration (mg/l)
- BTEX = Total benzene, toluene, ethylbenzene, xylenes (mg/l)
- TPH = Total petroleum hydrocarbons concentrations (mg/l)

© 1998 RW (GW May 98)

kei

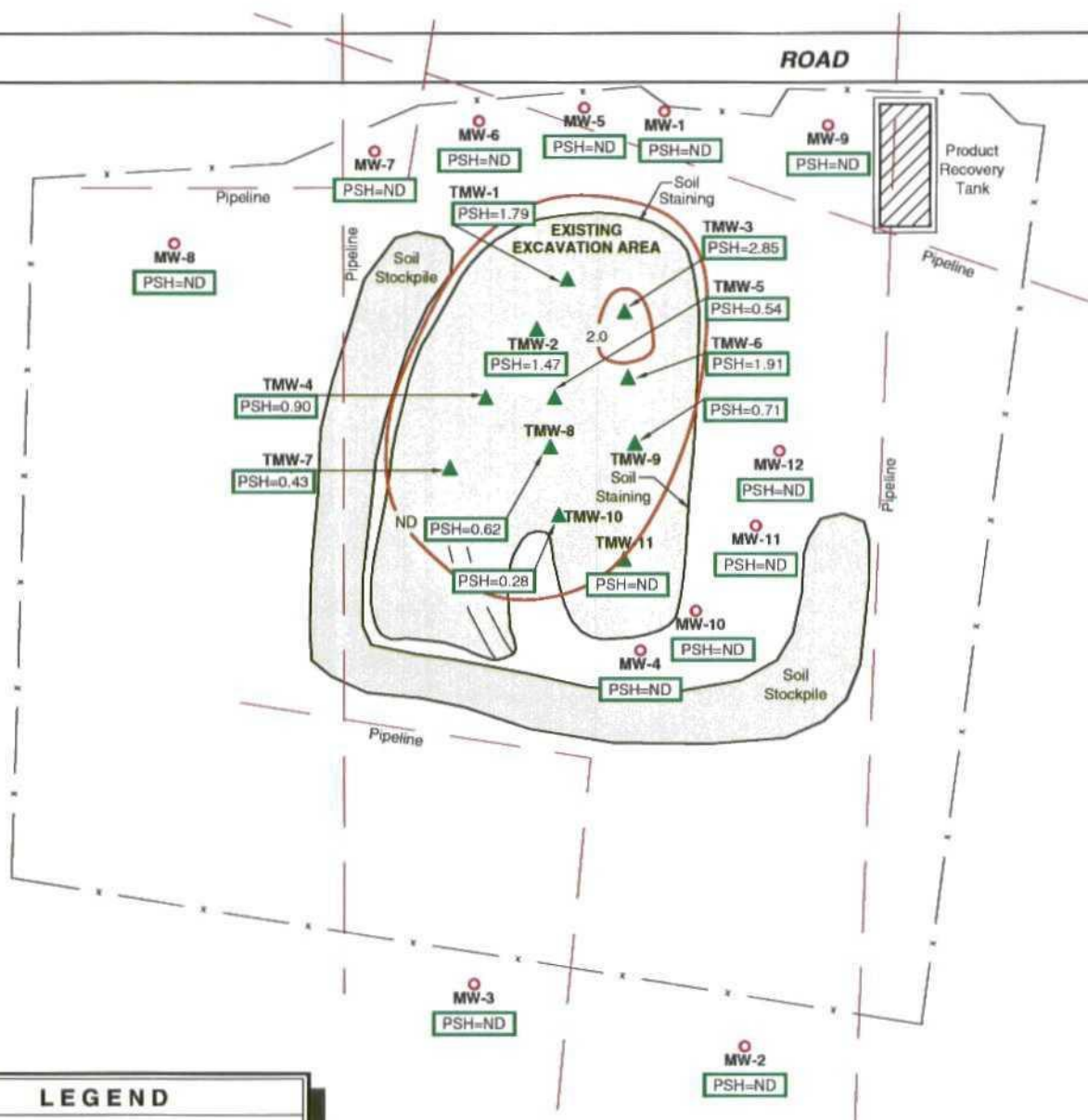
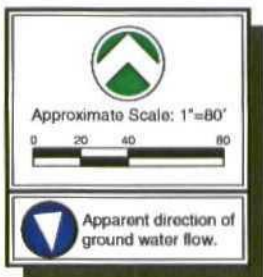
GROUND WATER CONTOURS / CONCENTRATIONS MAP - MAY 1998

SECTION 18, T19S, AND R37E

LEA COUNTY, NEW MEXICO

610062

FIG 1



# LEGEND

- ▲ Temporary monitoring well location installed by KEI on 10/01-02/96 and 10/17/96.
- Monitoring Well Location
- PSH = Phase Separate Hydrocarbon thickness (feet).
- ND = Indicates PSH was not detected.
- Contour Interval = 2.0 feet.

## NOTES:

1. PSH thickness in monitoring wells was measured on May 19, 1998.
2. PSH thickness in temporary monitoring well was measured on May 19, 1998.
3. Due to the high viscosity of the hydrocarbon, gauged PSH thickness may exceed actual thickness.

kei

PSH THICKNESS MAP - MAY 1998

SECTION 18, T19S, AND R37E

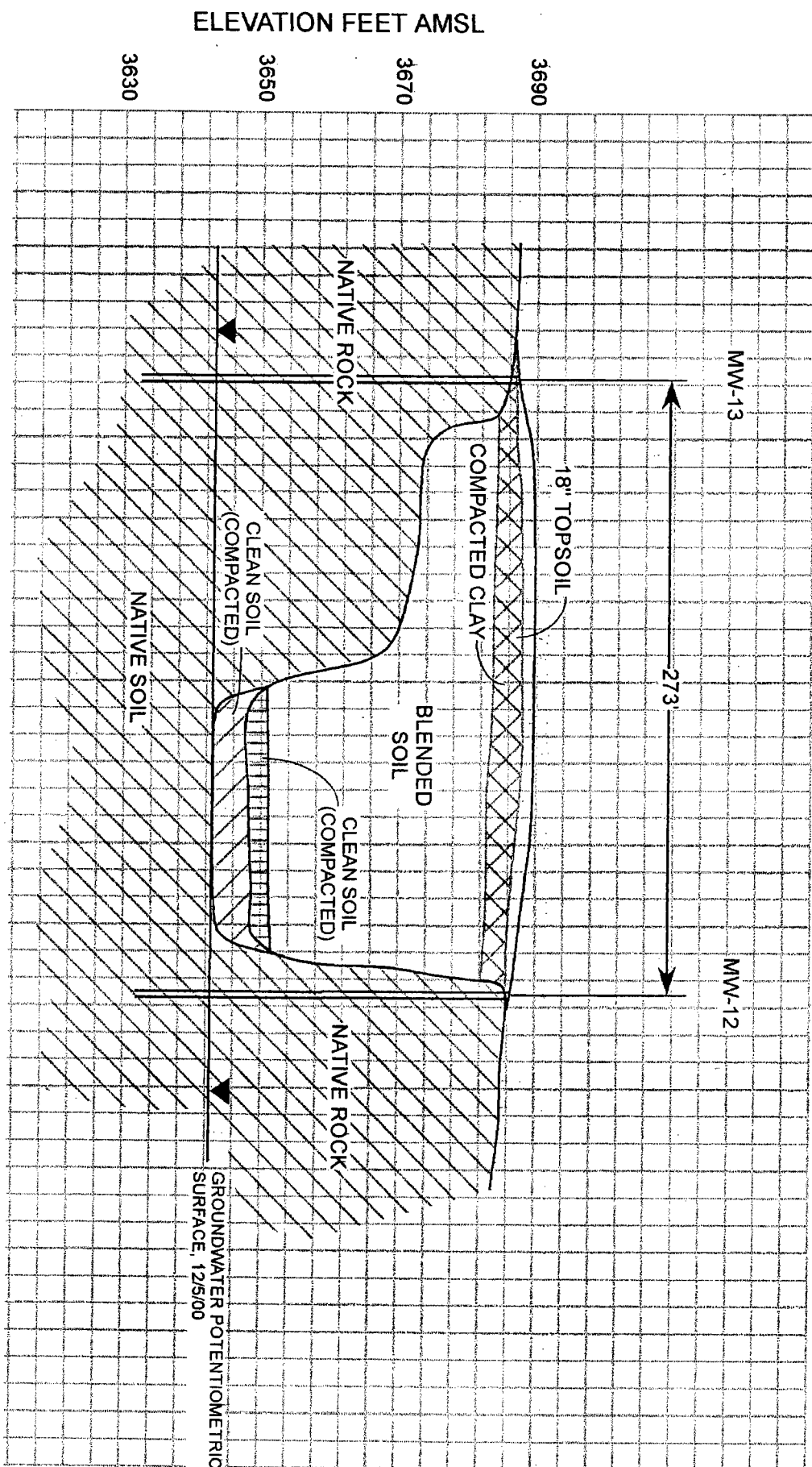
LEA COUNTY, NEW MEXICO

610062

FIG 2

B  
WEST

B'  
EAST



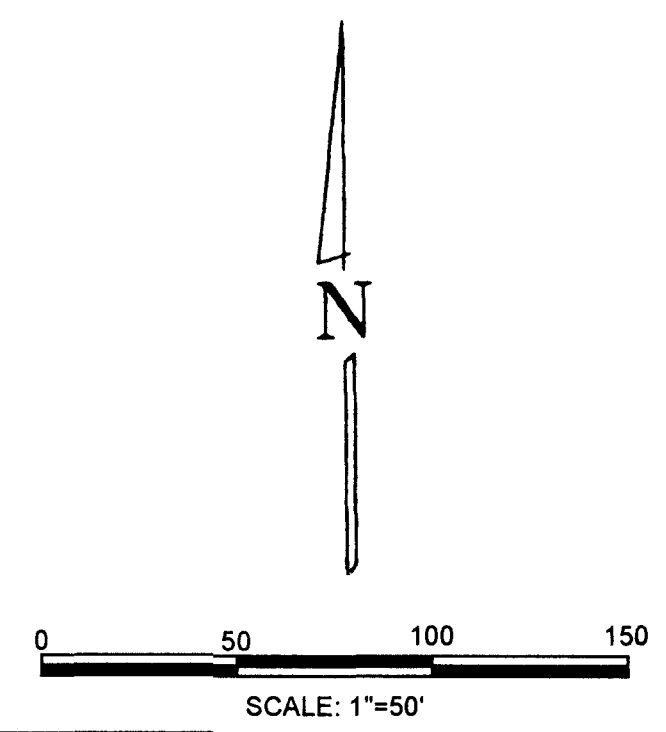
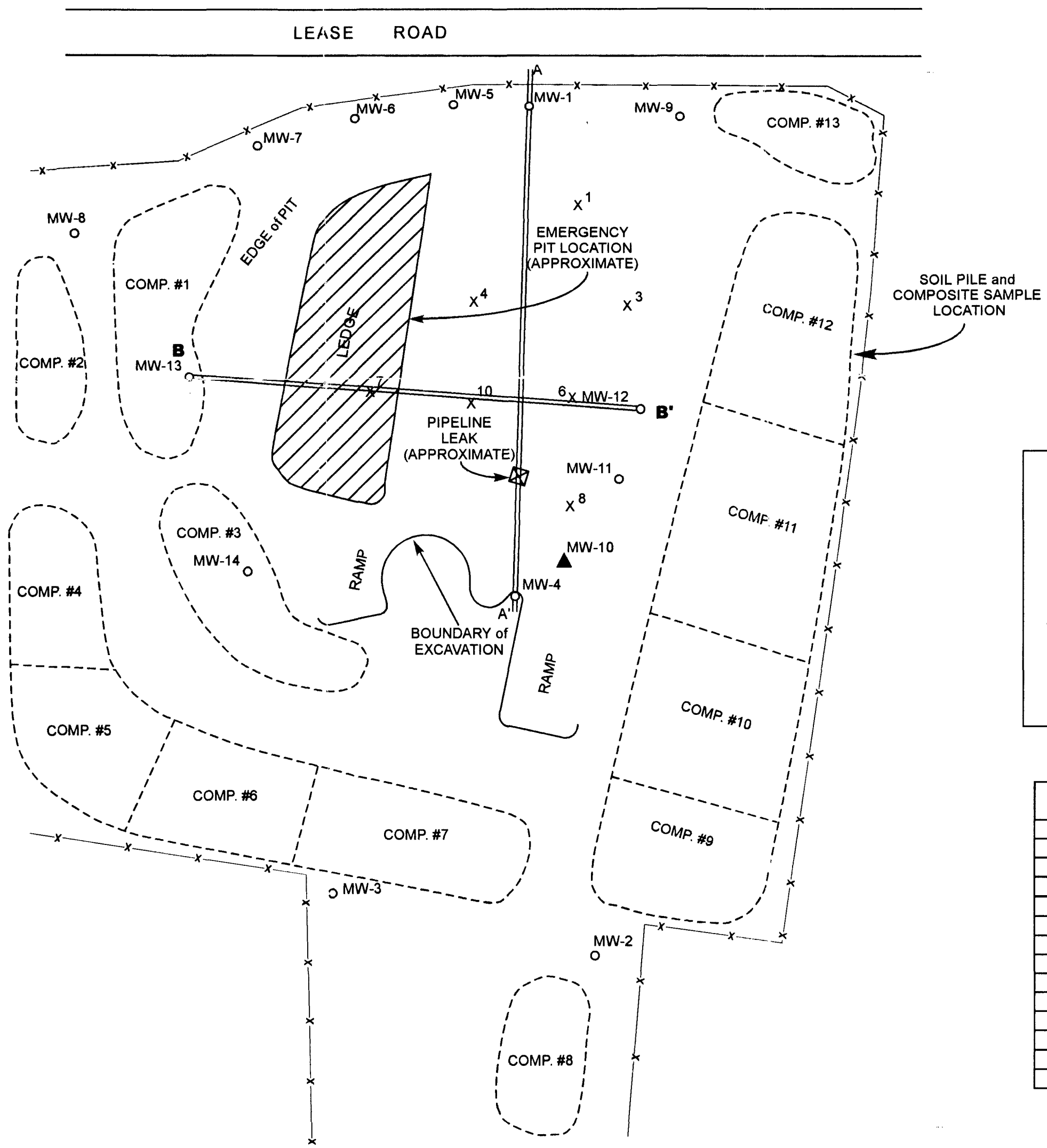
HORIZONTAL SCALE: 1"=50'  
 VERTICAL SCALE: 1"=20'  
 VERTICAL EXAGGERATION: X 2.5  
 REFER TO FIGURE 2 FOR CROSS SECTION LOCATION

FIGURE #4

LEA COUNTY, NEW MEXICO	
TEXACO EXPLORATION and PRODUCTION INC. & EOTT ENERGY PIPELINE, L.P. C.I. SANDERS SITE	
WEST - EAST CROSS SECTION B-B'	
DATE: 1/12/01	NAME:
FILE:	

**Laarson & Associates, Inc.**  
 Environmental Consultants





**LEGEND**

	MW-1	MONITORING WELL LOCATION
		DENSITY TEST LOCATION
	X <sup>1</sup>	LINE of CROSS SECTION
	A — A'	PLUGGED & ABANDONED (P&A) WELL (APPROXIMATE LOCATION)

**MONITORING WELL DATA**

WELL NUMBER	TOP of CASING ELEVATION FEET AMSL	GROUND ELEVATION FEET AMSL
MW-1	3689.93	3687.38
MW-2	3687.70	3685.11
MW-3	3687.49	3684.88
MW-4	3687.57	3685.43
MW-6	3690.79	3687.93
MW-5	3691.32	3688.37
MW-7	3691.00	3688.62
MW-8	3691.53	3688.94
MW-9	3689.81	3687.08
MW-10	P&A	P&A
MW-11	3688.61	3686.01
MW-12	3688.67	3686.55
MW-13	3689.43	3687.75
MW-14	3688.00	3686.40

NOTE:  
Former Emergency Pit and Pipeline Leak Locations  
after Environmental Spill Control, Inc.,  
Base Drawing after Piper Surveying Company  
(June 20 and Dec. 15, 2000)

DATE: 1/12/01  
NAME:  
FILE:

FIGURE #2

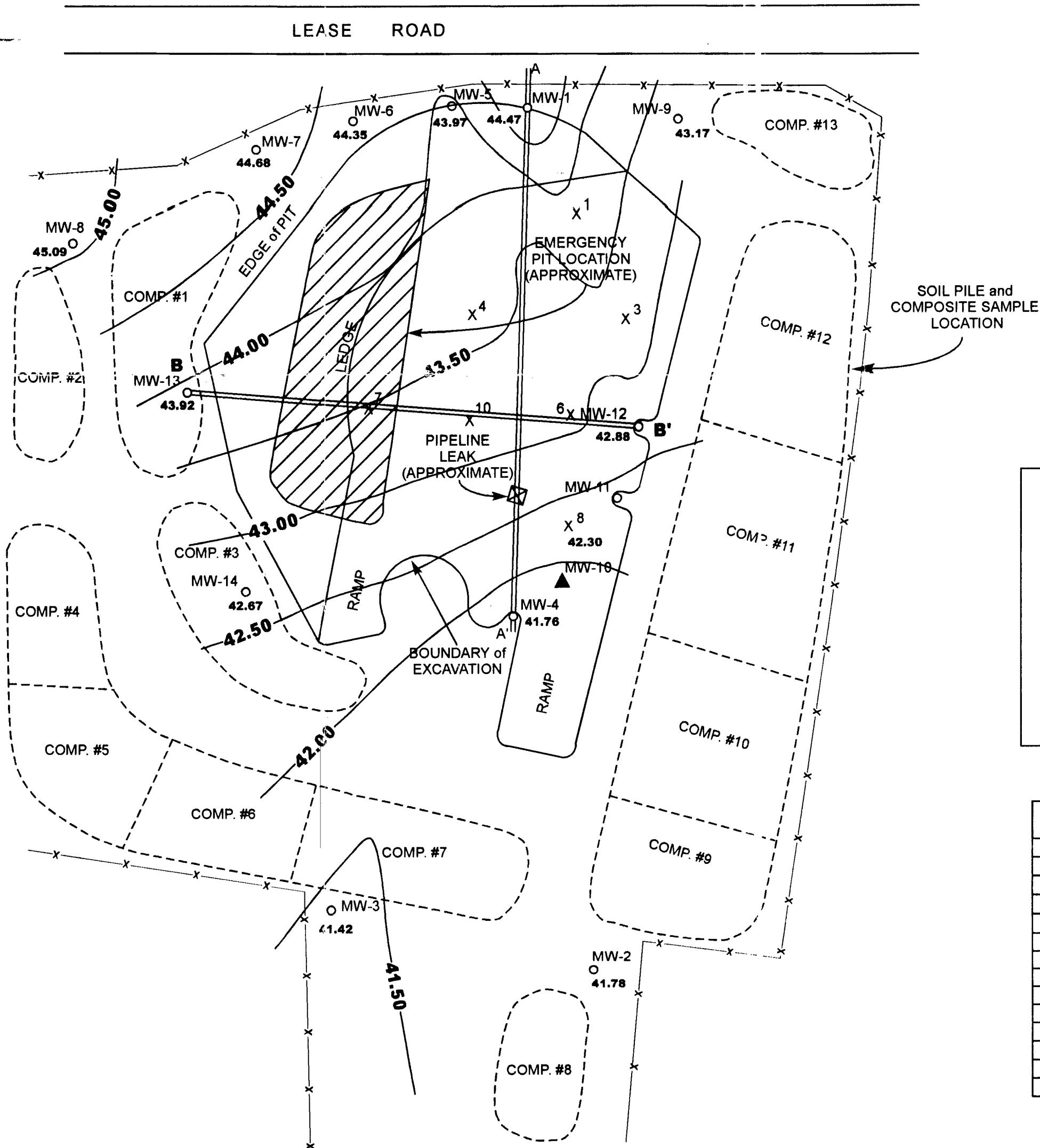
LEA COUNTY, NEW MEXICO

TEXACO EXPLORATION and  
PRODUCTION INC. &  
EOTT ENERGY PIPELINE, L.P.  
C.I. SAUNDERS SITE

**SITE DRAWING**

SW 1/4 SE 1/4, SEC. 18, T-19-S, R-37-E

**Larson & Associates, Inc.**  
Environmental Consultants



**LEGEND**

MW-1 42.88 MONITORING WELL LOCATION and DEPTH-to-GROUNDWATER, FEET BGS, 12/5/00

X<sup>1</sup> DENSITY TEST LOCATION

A—A' LINE of CROSS SECTION

MW-10 PLUGGED & ABANDONED (P&A) WELL (APPROXIMATE LOCATION)

41.50 CONTOUR of DEPTH-to-GROUNDWATER FEET BGS, 12/5/00

**MONITORING WELL DATA**

WELL NUMBER	TOP of CASING ELEVATION FEET AMSL	GROUND ELEVATION FEET AMSL
MW-1	3689.93	3687.38
MW-2	3687.70	3685.11
MW-3	3687.49	3684.88
MW-4	3687.57	3685.43
MW-6	3690.79	3687.93
MW-5	3691.32	3688.37
MW-7	3691.00	3688.62
MW-8	3691.53	3688.94
MW-9	3689.81	3687.08
MW-10	P&A	P&A
MW-11	3688.61	3686.01
MW-12	3688.67	3686.55
MW-13	3689.43	3687.75
MW-14	3688.00	3686.40

NOTE:  
Former Emergency Pit and Pipeline Leak Locations  
after Environmental Spill Control, Inc.,  
Base Drawing after Piper Surveying Company  
(June 20 and Dec. 15, 2000)

DATE 1/12/01  
NAME  
FILE

FIGURE #5

LEA COUNTY, NEW MEXICO

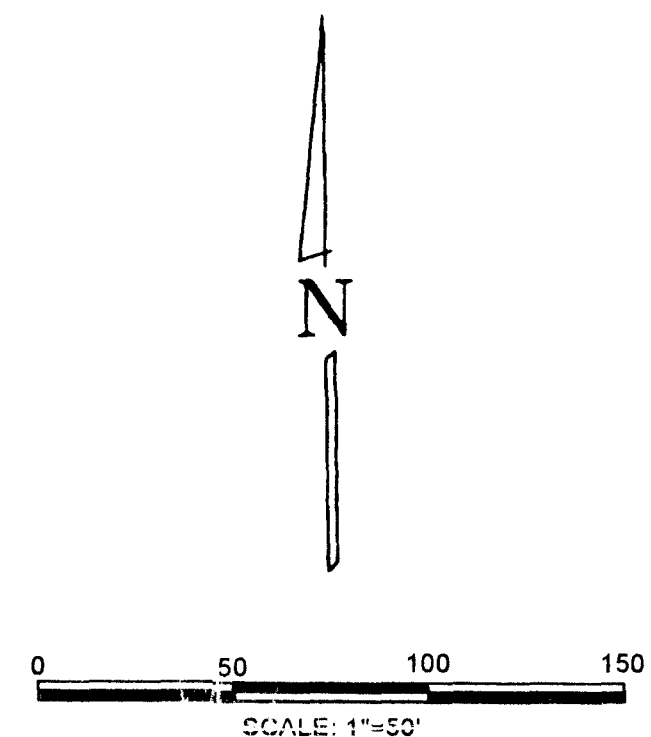
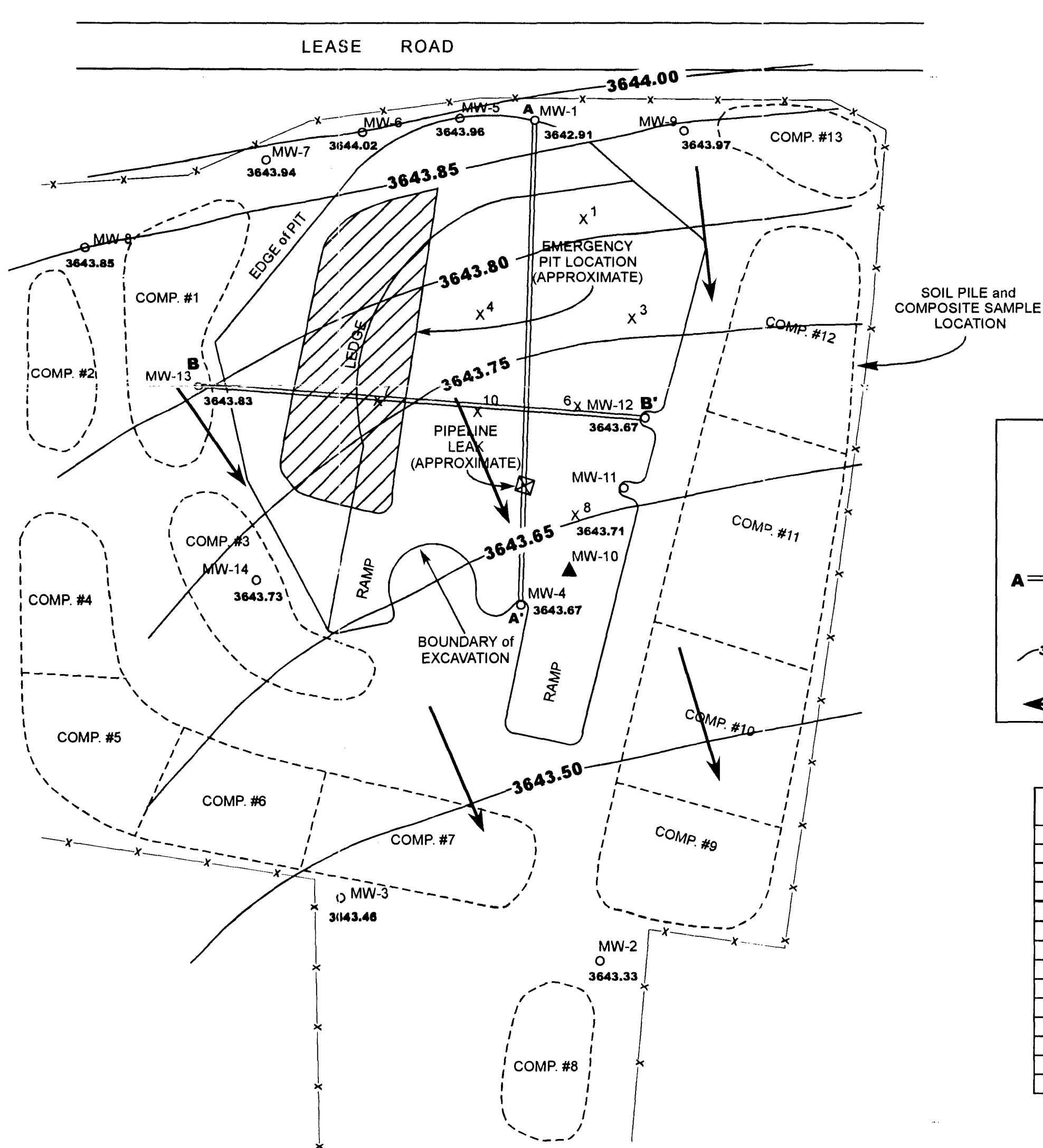
TEXACO EXPLORATION and PRODUCTION INC. & EOTT ENERGY PIPELINE, L.P.

CJ SANDERS SITE

DEPTH to GROUNDWATER

SW 1/4 SE 1/4, SEC. 18, T-19-S, R-37-E

Larson & Associates, Inc.  
Environmental Consultants



LEGEND	
MW-1 ○ 3642.91	MONITORING WELL LOCATION and GROUNDWATER POTENTIOMETRIC SURFACE ELEVATION, FEET AMSL, 12/5/00
X <sup>1</sup>	DENSITY TEST LOCATION
A — A'	LINE of CROSS SECTION
▲ MW-10	PLUGGED & ABANDONED (P&A) WELL (APPROXIMATE LOCATION)
3643.75	CONTOUR of GROUNDWATER POTENTIOMETRIC SURFACE ELEVATION, FEET AMSL, 12/5/00
←	GROUNDWATER FLOW DIRECTION

MONITORING WELL DATA

WELL NUMBER	TOP of CASING ELEVATION FEET AMSL	GROUND ELEVATION FEET AMSL
MW-1	3689.93	3687.38
MW-2	3687.70	3685.11
MW-3	3687.49	3684.88
MW-4	3687.57	3685.43
MW-6	3690.79	3687.93
MW-5	3691.32	3688.62
MW-7	3691.00	3688.94
MW-8	3691.53	3687.08
MW-9	3689.81	3688.61
MW-10	P&A	P&A
MW-11	3688.61	3686.55
MW-12	3688.67	3687.75
MW-13	3689.43	3686.40
MW-14	3688.00	

NOTE:  
Former Emergency Pit and Pipeline Leak Locations  
after Environmental Spill Control, Inc.,  
Base Drawing after Piper Surveying Company  
(June 20 and Dec. 15, 2000)

FIGURE #6	
LEA COUNTY, NEW MEXICO	
TEXACO EXPLORATION and PRODUCTION INC. & EOTT ENERGY PIPELINE, L.P. C.J. SAUNDERS SITE	
GROUNDWATER POTENTIOMETRIC SURFACE MAP, 12/5/00 SW 1/4 SE 1/4, SEC. 18, T-19-S, R-37-E	
DATE: 1/12/01	Larson & Associates, Inc. Environmental Consultants
NAME:	
FILE:	