

AP - 013

**ANNUAL
MONITORING REPORT**

**YEAR(S):
2001**

12/13/01



ANNUAL GROUNDWATER MONITORING REPORT

EOTT ENERGY PIPELINE, LP
TNM 97-18
MONUMENT, NEW MEXICO

Prepared for:
EOTT Energy Pipeline, LP
5805 East Highway 80
Midland, Texas 79701

RECEIVED

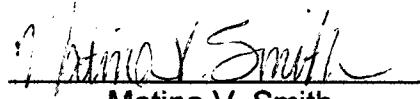
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ENVIRONMENTAL BUREAU
OIL CONSERVATION DIVISION

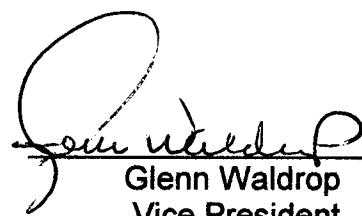
ETGI Project #EOT2025C

Prepared by:
Environmental Technology Group, Inc.
4600 West Wall Street
Midland, Texas 79703

November 2001



Matina V. Smith
Geologist/Sr. Project Manager



Glenn Waldrop
Vice President

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1.0 INTRODUCTION

On behalf of EOTT Energy Pipeline, LP (EOTT), Environmental Technology Group, Inc. (ETGI) is pleased to submit this Annual Groundwater Monitoring Report in compliance with the New Mexico Oil Conservation Division (NMOCD) letter dating May 1998, requiring submittal of an annual report by April 1st of each year. This report presents the results of the quarterly groundwater monitoring events only. For reference, a site location and site map are provide as Figure 1 and Figure 2 respectively.

2.0 FIELD ACTIVITIES

Groundwater monitoring was conducted quarterly to assess the levels and distribution of dissolved phase and free phase petroleum hydrocarbon constituents. Each monitoring event consisted of measuring static water levels in the monitor wells, checking for the presence of phase separated hydrocarbons (PSH), and purging and sampling of each well exhibiting sufficient recharge. Monitor wells containing measurable levels of PSH were not sampled.

Wells at this site were gauged and sampled on the following dates: March 5, 2001; April 17, 2001; August 27, 2001; and October 24, 2001. During these sampling events, the monitor wells were first gauged then purged of approximately three well volumes of water or until the wells were dry using a disposable bailer or electrical Grundfos pump. Groundwater was allowed to recharge and samples were obtained using disposable polyethylene samplers. Monitor wells with a measurable presence of PSH were not sampled. Water samples were stored in clean glass VOA's with preservative 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 of Hobbs, New Mexico, utilizing a licensed disposal facility (OCD AO SWD-730).

3.0 LABORATORY RESULTS

Groundwater samples collected during each sampling event were shipped to either Environmental Lab of Texas, Inc. in Odessa, Texas, TraceAnalysis, Inc. in Lubbock, Texas, or AnalySys, Inc. in Austin, Texas for analyses of benzene, toluene, ethylbenzene, and total xylenes (BTEX) concentrations using the methods described below.

- BTEX concentrations in accordance with EPA Method SW846-8260B (AnalySys, Inc.)
- BTEX concentrations in accordance with EPA Method SW846-8021B (Environmental Lab of Texas, Inc. and TraceAnalysis, Inc.)

All concentrations of BTEX in groundwater are provided in Table 1 and the Laboratory Reports are provided as Appendix A.

3.1 March 2001 Sampling Event

Laboratory analysis indicates that BTEX concentrations on March 5, 2001 were below the detection limit of <0.001 mg/L for monitor well MW-1. Monitor well MW-3 BTEX concentrations were over the New Mexico Water Quality Control Commission (WQCC) groundwater standards for benzene with a concentration of 0.56 mg/L. Toluene (0.002 mg/L), ethylbenzene (0.29 mg/L), and total xylenes (0.046 mg/L) were also detected in monitor well MW-3. Monitor wells MW-2, MW-4, and MW-5 were not sampled due to the presence of PSH.

The groundwater elevations, in relation to mean sea level, measured on this date ranged between 3468.44 feet at monitor well MW-4 to 3471.23 feet at monitor well MW-1.

3.2 May 2001 Sampling Event

BTEX concentrations sampled on May 17, 2001 were below detection limits (<0.005 mg/L) for monitor well MW-1. BTEX concentrations for monitor well MW-3 was above WQCC groundwater standards for benzene and total xylenes with a concentration of 0.557 mg/L for benzene and 0.9482 mg/L for total xylenes. Monitor well MW-3 showed a hit of ethylbenzene (0.283 mg/L) and no detection of toluene. Monitor wells MW-2, MW-4, and MW-5 were not sampled due to the presence of PSH.

The groundwater elevations, in relation to mean sea level, measured on this date ranged between 3468.68 feet at monitor well MW-4 to 3471.45 feet at monitor well MW-1.

3.3 August 2001 Sampling Event

During the August 27, 2001 sampling event, BTEX concentrations for monitor wells MW-1 was below the detection limit of <0.001 mg/L. Monitor well MW-3 BTEX concentrations were over WQCC groundwater standards for benzene with a concentration of 0.18 mg/L. Monitor well MW-3 also had a detection of ethylbenzene (0.02 mg/L), total xylenes (0.2 mg/L), and no detection of toluene. Monitor wells MW-2, MW-4, and MW-5 were not sampled due to the presence of PSH.

The groundwater elevations, in relation to mean sea level, measured on this date ranged between 3467.66 feet at monitor well MW-4 to 3470.22 feet at monitor well MW-1.

3.4 October 2001 Sampling Event

Laboratory results for the October 24, 2001 sampling event indicate that BTEX concentrations for monitor well MW-1 was below detection limits (<0.001 mg/L). BTEX concentrations were above WQCC groundwater standards for benzene (0.162 mg/L) in monitor well MW-3. Monitor well MW-3 also showed detection of ethylbenzene (0.131 mg/L) and total xylenes (0.0323 mg/L) but no detection of toluene. Monitor wells MW-2, MW-4, and MW-5 were not sampled due to the presence of PSH.

The groundwater elevations, in relation to mean sea level, measured on this date ranged between 3468.26 feet in monitor well MW-4 to 3471.52 feet in monitor well MW-1. During the fourth quarter sampling, monitor well MW-2 showed a two foot drop in elevation when compared to all other monitor well elevations. This drop is possibly due to measurement error.

4.0 GROUNDWATER GRADIENT

Groundwater elevation contours, generated from the third quarterly sampling event of calendar year 2001 water level measurements, indicated a general gradient of approximately 0.006 ft/ft to the southeast. Groundwater elevation data is provided in Table 2 and a groundwater gradient map from the August 27, 2001 sampling event is provided as Figure 3. A chart showing fluctuations in elevation throughout the year is provided in Appendix B.

5.0 SUMMARY

This report presents the results of monitoring activities that took place during the calendar year 2001. PSH remains a recurrent problem in monitor wells MW-2, MW-4, and MW-5. ETGI will pursue the installation of a more active recovery system in the source area to prevent further migration of the oil plume.

6.0 LIMITATIONS

ETGI will continue to submit an Annual Groundwater Monitoring Report to the NMOCD and EOTT summarizing the progression of remediation and sampling of groundwater. ETGI has prepared this report to the best of its ability. No other warranty, expressed or implied, is made or intended.

ETGI has examined and relied upon documents referenced in the report and has relied on oral statements made by certain individuals. ETGI has not conducted an independent examination of the facts contained in referenced material and statements. We have presumed the genuineness of the documents and that the

information provided in documents or statements is true and accurate. ETGI has prepared this report in a professional manner, using the degree of skill and care exercised by similar environmental consultants. ETGI also notes that the facts and conditions referenced in this report may change over time and the conclusions and recommendations set forth herein are applicable only to the facts and conditions described at the time of this report.

This report has been prepared for the benefit of EOTT. The information contained in this report, including all exhibits and attachments, may not be used by any other party without the expressed written consent of ETGI and/or EOTT.

7.0 DISTRIBUTION

- Copy 1 & 2: Mr. William C. Olson/Randy Bayliss
New Mexico Oil Conservation Division
Environmental Bureau
1220 South St. Francis Drive
Santa Fe, New Mexico 87505
- Copy 3: Chris Williams
New Mexico Oil Conservation Division (District 1)
1625 French Drive
Hobbs, New Mexico 88240
- Copy 4: Cutty Cunningham
Enron Transportation and Services Company
P.O. Box 1188 (3AC3143)
Houston, Texas 77251-1188
- Copy 5: Wayne Brunette
EOTT Energy Corp.
P.O. Box 1660
Midland, Texas 79701-1660
- Copy 6: Mike Kelly
EOTT Energy Corp.
P.O. Box 4666
Houston, Texas 77210-4666
- Copy 7: Environmental Technology Group, Inc.
4600 West Wall Street
Midland, Texas 79703
- Copy 8: Environmental Technology Group, Inc.
2540 West Marland
Hobbs, New Mexico 88240

TABLES

Table 1
CONCENTRATIONS OF BTEX IN GROUNDWATER

EOTT Energy Pipeline, LP
TNM 97-18
Monument, New Mexico
ETGI Project #EOT2025C

All concentrations are in mg/L

SAMPLE DATE	SAMPLE LOCATION	SW 846-8021B, SW 846-8260B					
		BENZENE	TOLUENE	ETHYL-BENZENE	M,P-XYLENES	O-XYLENES	BTEX
2/3/99	MW - 1	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001
5/13/99		<0.001	<0.001	<0.001	<0.001	<0.002	<0.001
08/24/99		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
11/30/99		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
02/03/00		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
03/03/00		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
05/16/00		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
09/01/00		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
11/21/00		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
03/05/01		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
05/17/01		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
08/27/01		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
10/24/01		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
02/03/99	MW - 2	0.017	0.004	0.029	0.01	0.006	0.066
05/13/99		0.475	0.102	0.279	0.146	0.015	1.017
08/24/99		0.980	0.592	0.676	0.423	0.083	2.754
11/30/99		0.721	0.364	0.394	2.83	0.084	4.393
03/03/00		0.694	0.260	0.407	0.197	0.038	1.596
05/16/00		Not sampled due to presence of PSH					
02/03/99	MW - 3	0.512	<0.004	<0.264	0.071	<0.004	0.583
05/13/99		0.276	<0.001	0.173	0.043	<0.001	0.492
08/24/99		0.536	0.008	0.267	0.059	0.005	0.875
11/30/99		0.582	0.009	0.321	0.067	<0.001	0.979
03/03/00		0.309	0.003	0.201	0.035	<0.001	0.548
05/16/00		0.410	0.006	0.238	0.041	<0.001	0.695
09/01/00		0.402	0.003	0.248	0.040	<0.001	0.693
11/21/00		0.574	0.002	0.352	0.069	<0.001	0.997
03/05/01		0.560	0.002	0.29	0.046	<0.001	0.898
05/17/01		0.557	<0.02	0.283	0.0542		0.894
08/27/01		0.180	<0.001	0.0995	0.0107	<0.001	0.290
10/24/01		0.162	<0.001	0.131	0.0323	<0.001	0.325
11/30/99	MW-4	Not sampled due to presence of PSH					
11/30/99	MW-5	Not sampled due to presence of PSH					
03/05/01	EB - 1	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
05/17/01		<0.001	<0.001	<0.001	<0.001		<0.001
08/27/01		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
10/24/01		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001

CONCENTRATIONS IN BOLD EXCEED DETECTION LIMITS

Table 2
GROUNDWATER ELEVATION & PSH THICKNESS DATA

EOTT Energy Pipeline, LP
 TNM 97-18
 Monument, New Mexico
 ETGI Project # EOT2025C

All measurements are in feet

WELL LOCATION	DATE MEASURED	CASING WELL ELEVATION	DEPTH TO PRODUCT	DEPTH TO WATER	PSH THICKNESS	CORRECTED GROUNDWATER ELEVATION
MW - 1	02/03/99	3500.17		28.96		3471.21
	05/13/99			28.48		3471.69
	08/24/99			28.94		3471.23
	11/30/99			28.39		3471.78
	03/03/00			28.60		3471.57
	05/16/00			28.68		3471.49
	09/01/00			29.06		3471.11
	11/21/00			29.23		3470.94
	03/05/01	SHEEN	28.94			3471.23
	05/17/01			28.72		3471.45
	08/27/01			29.95		3470.22
	10/24/01			28.65		3471.52
MW - 2	02/03/99	3499.19		28.72		3470.47
	05/13/99			28.34		3470.85
	08/24/99			28.83		3470.36
	11/30/99			28.26		3470.93
	03/03/00			28.38		3470.81
	05/16/00	SHEEN	28.43			3470.76
	09/01/00	SHEEN	29.00			3470.19
	11/21/00	SHEEN	28.94			3470.25
	03/05/01		28.75	28.88	0.13	3470.42
	05/17/01		28.52	28.66	0.14	3470.65
	08/27/01		29.58	29.72	0.14	3469.59
	10/24/01		30.73	30.88	0.15	3468.44
MW - 3	02/03/99	3500.05		30.36		3469.69
	05/13/99			29.99		3470.06
	08/24/99			30.40		3469.65
	11/30/99			29.87		3470.18
	03/03/00			29.95		3470.10
	05/16/00			30.03		3470.02
	09/01/00			30.56		3469.49
	11/21/00			30.21		3469.84
	03/05/01			30.25		3469.80
	05/17/01			30.05		3470.00
	08/27/01			31.00		3469.05
	10/24/01			30.40		3469.65

GROUNDWATER ELEVATION & PSH THICKNESS DATA

EOTT Energy Pipeline, LP

TNM 97-18

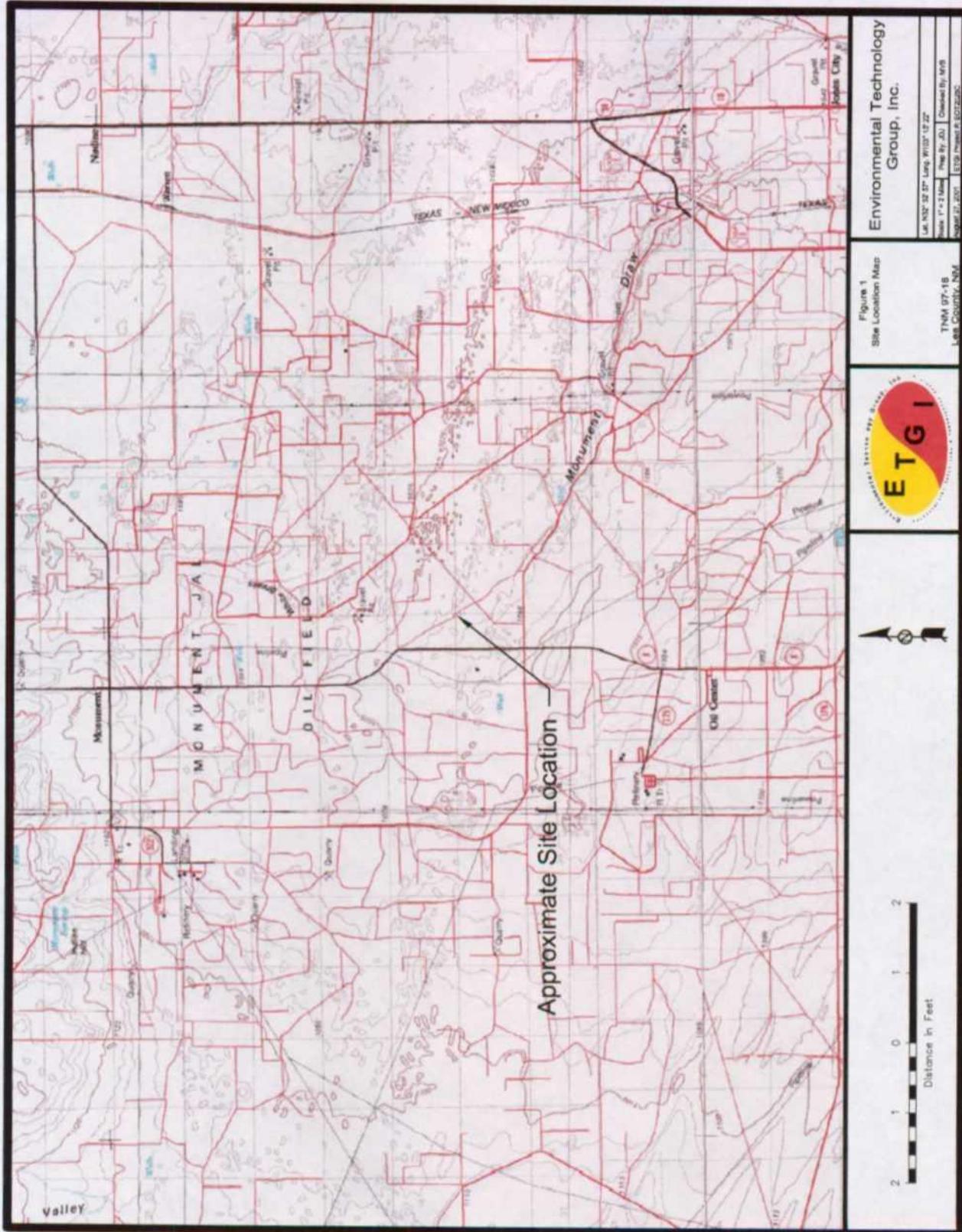
Monument, New Mexico

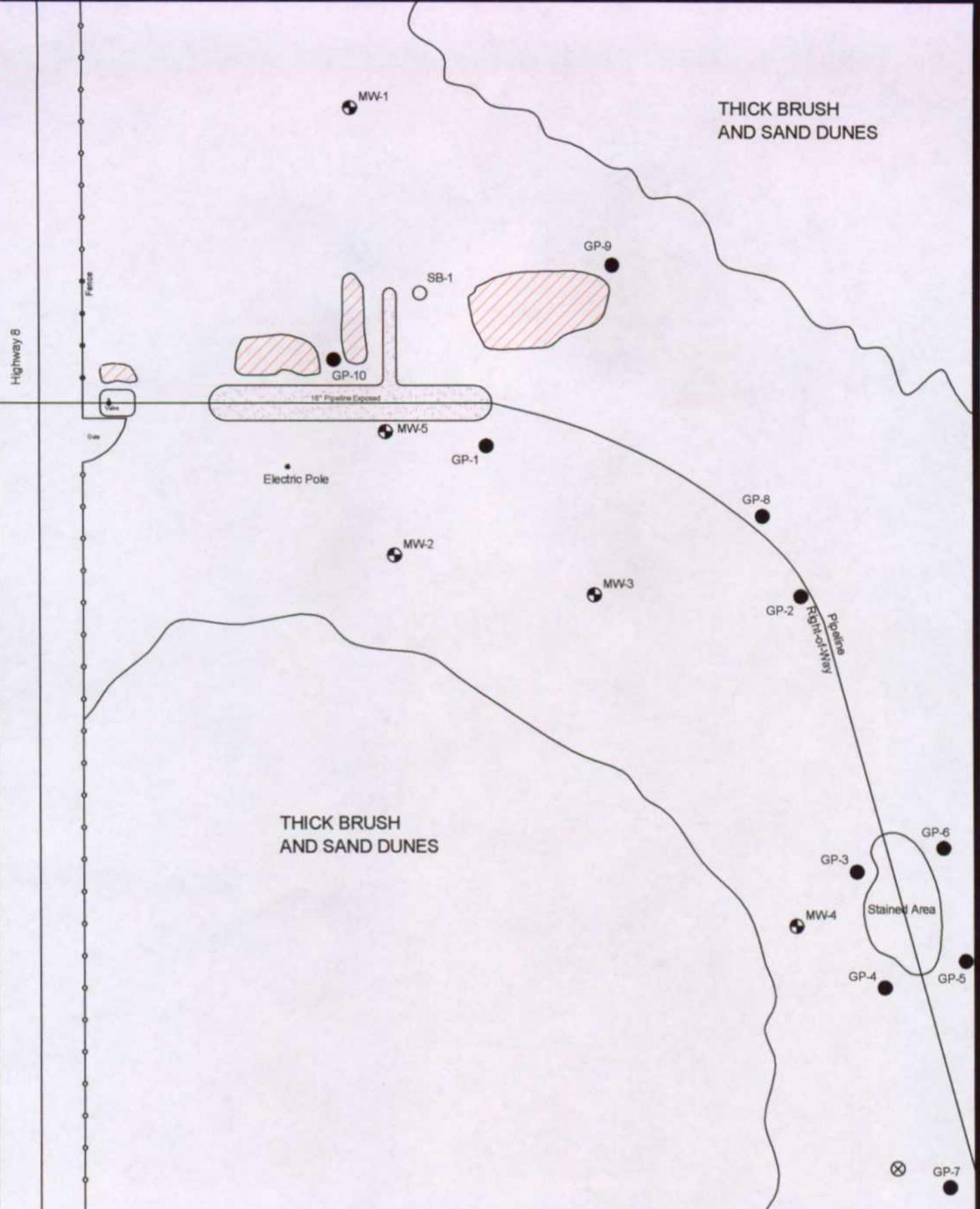
ETGI Project # EOT2025C

All measurements are in feet

WELL LOCATION	DATE MEASURED	CASING WELL ELEVATION	DEPTH TO PRODUCT	DEPTH TO WATER	PSH THICKNESS	CORRECTED GROUNDWATER ELEVATION
MW - 4	11/30/99	3498.38	29.16	31.36	2.20	3468.89
	03/03/00		29.55	30.28	0.73	3468.72
	05/16/00		29.56	30.33	0.77	3468.70
	09/01/00		30.11	31.24	1.13	3468.10
	10/06/00		30.48	31.71	1.23	3467.72
	11/21/00		30.21	31.56	1.35	3467.97
	03/05/01		29.66	31.52	1.86	3468.44
	05/17/01		29.42	31.31	1.89	3468.68
	08/27/01		30.46	32.21	1.75	3467.66
	10/24/01		29.91	31.28	1.37	3468.26
MW - 5						
	11/30/99	3500.12	28.44	32.05	3.61	3471.14
	03/03/00		28.90	30.26	1.36	3471.02
	05/16/00		28.94	30.31	1.37	3470.97
	09/01/00		29.47	30.36	0.89	3470.52
	10/06/00		30.03	30.47	0.44	3470.02
	11/21/00		29.46	32.06	2.60	3470.27
	03/05/01		29.17	31.64	2.47	3470.58
	05/17/01		28.73	32.68	3.95	3470.80
	08/27/01		30.15	31.48	1.33	3469.77
	10/24/01		28.50	35.60	7.10	3470.56

FIGURES





LEGEND:

● Monitor Well

Stockpile Soil

● Geoprobe Location

○ Soil Boring

Excavated Area

⊗ Proposed Monitor Well Location

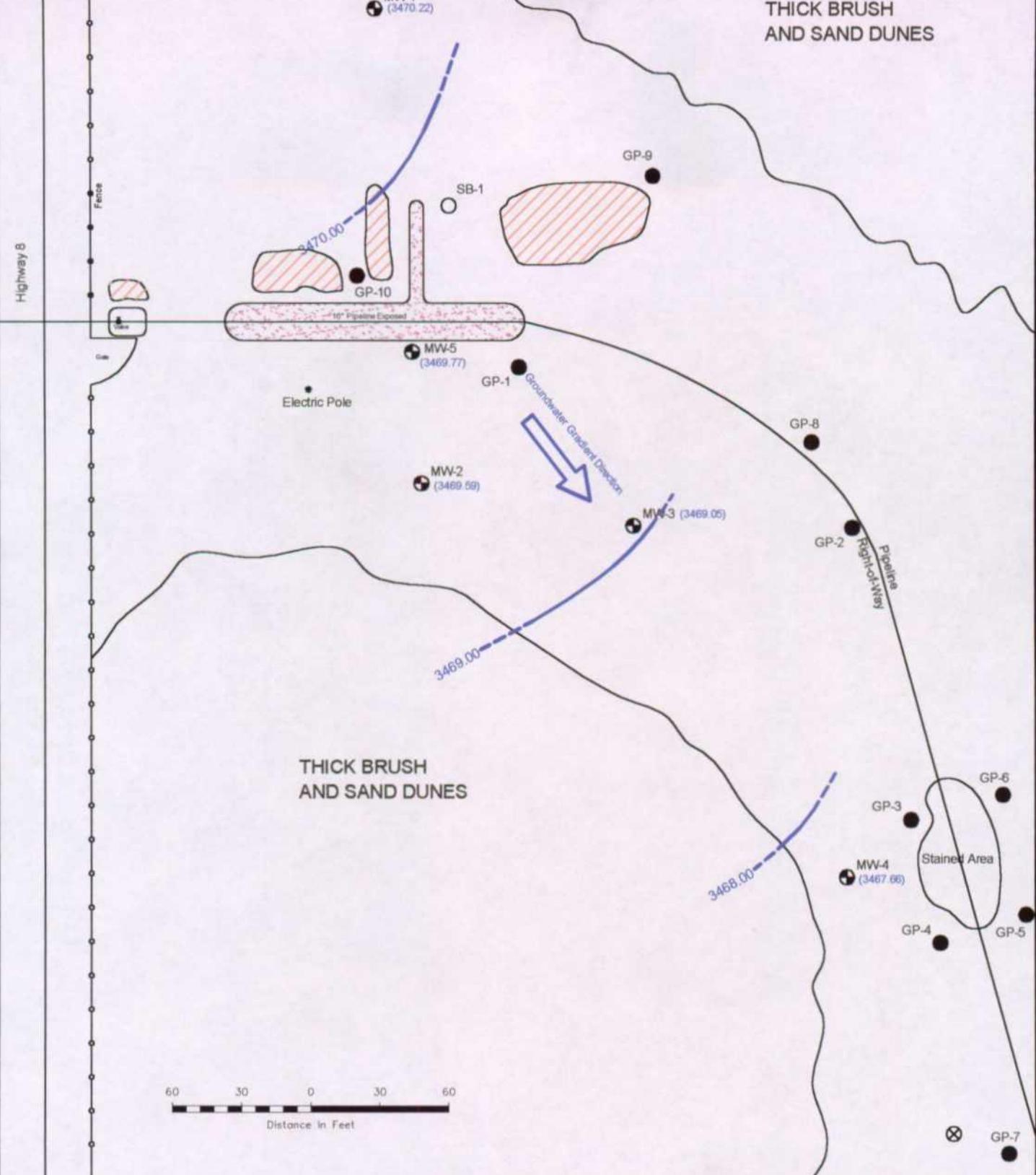
Figure 2
Site Map



TNM 97-18
Lea County, NM

Environmental Technology
Group, Inc.

Scale: 1" = 65' Prep By: JCL Checked By: MVS
November 21, 2000 ETD Project # EOT3029C



LEGEND:

- Monitor Well
- Soil Boring
- ⊗ Proposed Monitor Well Location
- Stockpile Soil
- Excavated Area
- (3467.97) Groundwater Elevation (in feet)
- Geoprobe Locations
- Groundwater Gradient Contour

Environmental Technology Group, Inc.
A Division of Black & Veatch Corporation



Figure 3
Site Groundwater
Gradient Map (8/27/01)

TNM 97-18
Lee County, NM

Environmental Technology Group, Inc.

Scale: 1" = 80' Prep By: JCU Checked By: MJS
August 27, 2001 ETG Project # EOT2025C

APPENDICES

APPENDIX A

Laboratory Reports

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: 520-4310
 FAX: 505-397-4701

Sample Type: Water

Sample Condition: Intact/ Iced/ HCl/ -1.0 deg C

Project #: EOT 2025C

Project Name: TNM 97-18

Project Location: Lea County, N.M.

Sampling Date: 03/05/01

Receiving Date: 03/14/01

Analysis Date: 03/14/01

ELT#	FIELD CODE	BENZENE mg/L	TOLUENE mg/L	ETHYLBENZENE mg/L	m,p-XYLENE mg/L	o-XYLENE mg/L
38141	MW 1	<0.001	<0.001	<0.001	<0.001	<0.001
38142	MW 3	0.560	0.002	0.290	0.046	<0.001
38143	E8 1	<0.001	<0.001	<0.001	<0.001	<0.001

%IA	91	93	96	102	96
%EA	95	97	101	106	101
BLANK	<0.001	<0.001	<0.001	<0.001	<0.001

METHODS: EPA SW 846-8021B, 5030

Roland K. Tuttle
 Roland K. Tuttle

3-15-01
 Date

COC # 031

Page of

For Use On EOTT ENERGY CORP. Projects Only		CHAIN-OF-CUSTODY AND ANALYSIS REQUEST	
EOTT ENERGY CORP 2540 West Marland Hobbs, NM 88242 Tel (505) 597-1139 Fax (915) 520-4310		5005 Midland, Te Fax (915) 687-3400 (915) 582-2711	
ANALYSIS REQUEST (Circle or Specify Method No.)			
Callidns/Anilins 375 43253 TDS 1601 SEMI-Volatile 0270C Volatiles 6260B TCLP Semi-Volatiles TCLP Volatiles Total Materials Ag As Ba Cd Cr Pb Se Hg PAH B270C (8100 New Mexico only) TPB BD15M GRD/DRD TPB 419 ITX 1005 BTEX 8021B/8021C PAH B270C (8100 New Mexico only) TCLP Materials Ag As Ba Cd Cr Pb Se Hg Total Materials Ag As Ba Cd Cr Pb Se Hg Volatiles 6260B TCLP Volatiles SEMI-Volatile 0270C TDS 1601 Callidns/Anilins 375 43253			
Project Manager: <u>J E SSE / AYLOK</u>	EOTT Leak Number:		
Project Name: <u>MONUMENT 18</u>	ETG Project Number: <u>EOT 2863C</u>		
Project Location: <u>MONUMENT EAST, NM</u>	Sampler Signature: <u>John Casas</u>		
LAB # (Lab Use Only)	FIELD CODE	SAMPLING	
		MATRIX	PRESERVATION METHOD
38144	MW 1	X	3-7 1021
145	MW 4	X	1000
146	MW 5	X	1045
147	MW 6	X	1123
148	MW 7	X	1107
149	E B-1	X	1135
# CONTAINERS	VOLUME/AMOUNT	SLUDGE	AIR
		SOL	HCl
		AIR	HNO ₃
		SOL	NaHSO ₄
		AIR	ICE
		SOL	None
		AIR	DATE
		SOL	2001

Reinquished by: <u>John Casas</u>	Date: <u>3-19-01</u>	Time: <u>0800</u>	Received by: <u>John Casas</u>	Date: <u>3/19/01</u>	Time: <u>0800</u>
Reinquished by: <u>John Casas</u>	Date: <u>3/19/01</u>	Time: <u>1200</u>	Received at Lab by: <u>John Casas</u>	Date: <u>3/19/01</u>	Time: <u>1200</u>

REMARKS:
 Far Lesur: Hobbs Office
 Plan Report: EOT -1.0 C
 Invoice: EOT -1.0 C



TraceAnalysis, Inc.

6701 Aberdeen Ave., Suite 9

Lubbock, TX 79424-1515

(806) 794-1296

Report Date: May 31, 2001 Order Number: A01052223
EOT 2025C TNM 97-18

Page Number: 1 of 1
Lea County NM

Summary Report

Ken Dutton
ETGI
2540 W. Marland
Hobbs, NM

Report Date: May 31, 2001
Order ID Number: A01052223

Project Number: EOT 2025C
Project Name: TNM 97-18
Project Location: Lea County NM

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
171703	MW-1	Water	5/17/01	14:00	5/22/01
171704	MW-3	Water	5/17/01	14:20	5/22/01
171705	EB-1	Water	5/17/01	14:25	5/22/01

This report consists of a total of 1 page(s) and is intended only as a summary of results for the sample(s) listed above.

Sample - Field Code	BTEX				
	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	M,P,O-Xylene (mg/L)	Total BTEX (mg/L)
171703 - MW-1	<0.005	<0.005	<0.005	<0.005	<0.005
171704 - MW-3	0.557	<0.02	0.283	0.0542	0.894
171705 - EB-1	<0.001	<0.001	<0.001	<0.001	<0.001

TRACEANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800•378•1296 806•794•1296 FAX 806•794•1298
155 McCutcheon, Suite H El Paso, Texas 79932 888•588•3443 915•585•3443 FAX 915•585•4944
E-Mail: lab@traceanalysis.com

Analytical and Quality Control Report

Ken Dutton
ETGI
2540 W. Marland
Hobbs, NM

Report Date: May 31, 2001

Order ID Number: A01052223

Project Number: EOT 2025C
Project Name: TNM 97-18
Project Location: Lea County NM

Enclosed are the Analytical Results and Quality Control Data Reports for the following samples submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
171703	MW-1	Water	5/17/01	14:00	5/22/01
171704	MW-3	Water	5/17/01	14:20	5/22/01
171705	EB-1	Water	5/17/01	14:25	5/22/01

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

This report consists of a total of 5 pages and shall not be reproduced except in its entirety including the chain of custody (COC), without written approval of TraceAnalysis, Inc.

Dr. Blair Leftwich, Director

Analytical Report

Sample: 171703 - MW-1

Analysis: BTEX Analytical Method: S 8021B QC Batch: QC11548 Date Analyzed: 5/24/01
Analyst: JW Preparation Method: E 5030B Prep Batch: PB09888 Date Prepared: 5/24/01

Param	Flag	Result	Units	Dilution	RDL
Benzene		<0.005	mg/L	5	0.001
Toluene		<0.005	mg/L	5	0.001
Ethylbenzene		<0.005	mg/L	5	0.001
M,P,O-Xylene		<0.005	mg/L	5	0.001
Total BTEX		<0.005	mg/L	5	0.001

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
TFT		0.485	mg/L	5	0.10	97	72 - 128
4-BFB		0.363	mg/L	5	0.10	72	72 - 128

Sample: 171704 - MW-3

Analysis: BTEX Analytical Method: S 8021B QC Batch: QC11548 Date Analyzed: 5/24/01
Analyst: JW Preparation Method: E 5030B Prep Batch: PB09888 Date Prepared: 5/24/01

Param	Flag	Result	Units	Dilution	RDL
Benzene		0.557	mg/L	20	0.001
Toluene		<0.02	mg/L	20	0.001
Ethylbenzene		0.283	mg/L	20	0.001
M,P,O-Xylene		0.0542	mg/L	20	0.001
Total BTEX		0.894	mg/L	20	0.001

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
TFT		2	mg/L	20	0.10	100	72 - 128
4-BFB		1.66	mg/L	20	0.10	83	72 - 128

Sample: 171705 - EB-1

Analysis: BTEX Analytical Method: S 8021B QC Batch: QC11548 Date Analyzed: 5/24/01
Analyst: JW Preparation Method: E 5030B Prep Batch: PB09888 Date Prepared: 5/24/01

Param	Flag	Result	Units	Dilution	RDL
Benzene		<0.001	mg/L	1	0.001
Toluene		<0.001	mg/L	1	0.001
Ethylbenzene		<0.001	mg/L	1	0.001
M,P,O-Xylene		<0.001	mg/L	1	0.001
Total BTEX		<0.001	mg/L	1	0.001

Continued ...

Report Date: May 31, 2001
EOT 2025C

Order Number: A01052223
TNM 97-18

Page Number: 3 of 5
Lea County NM

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
TFT		0.1	mg/L	1	0.10	100	72 - 128
4-BFB		0.0761	mg/L	1	0.10	76	72 - 128

Quality Control Report

Method Blank

Method Blank

QCBatch: QC11548

Param	Flag	Results	Units	Reporting Limit
Benzene		<0.001	mg/L	0.001
Toluene		<0.001	mg/L	0.001
Ethylbenzene		<0.001	mg/L	0.001
M,P,O-Xylene		<0.001	mg/L	0.001
Total BTEX		<0.001	mg/L	0.001

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
TFT		0.0966	mg/L	1	0.10	96	72 - 128
4-BFB		0.0729	mg/L	1	0.10	72	72 - 128

Quality Control Report

Lab Control Spikes and Duplicate Spikes

Laboratory Control Spikes

QCBatch: QC11548

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
MTBE	0.101	0.0992	mg/L	1	0.10	<0.001	101	1	80 - 120	20
Benzene	0.107	0.106	mg/L	1	0.10	<0.001	107	0	80 - 120	20
Toluene	0.107	0.106	mg/L	1	0.10	<0.001	107	0	80 - 120	20
Ethylbenzene	0.106	0.105	mg/L	1	0.10	<0.001	106	0	80 - 120	20
M,P,O-Xylene	0.31	0.307	mg/L	1	0.30	<0.001	103	0	80 - 120	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dilution	Spike Amount	LCS % Rec	LCSD % Rec	Recovery Limits
TFT	0.104	0.0984	mg/L	1	0.10	104	98	72 - 128
4-BFB	0.109	0.103	mg/L	1	0.10	109	103	72 - 128

Quality Control Report

Continuing Calibration Verification Standards

CCV (1)

QCBatch: QC11548

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
MTBE		mg/L	0.10	0.104	104	85 - 115	5/24/01
Benzene		mg/L	0.10	0.107	107	85 - 115	5/24/01

Continued ...

... Continued

Param	Flag	Units	CCVs	CCVs	CCVs	Percent	Date Analyzed
			True Conc.	Found Conc.	Percent Recovery	Recovery Limits	
Toluene		mg/L	0.10	0.106	106	85 - 115	5/24/01
Ethylbenzene		mg/L	0.10	0.106	106	85 - 115	5/24/01
M,P,O-Xylene		mg/L	0.30	0.307	102	85 - 115	5/24/01

CCV (2) QCBatch: QC11548

Param	Flag	Units	CCVs	CCVs	CCVs	Percent	Date Analyzed
			True Conc.	Found Conc.	Percent Recovery	Recovery Limits	
MTBE		mg/L	0.10	0.102	102	85 - 115	5/24/01
Benzene		mg/L	0.10	0.11	110	85 - 115	5/24/01
Toluene		mg/L	0.10	0.108	108	85 - 115	5/24/01
Ethylbenzene		mg/L	0.10	0.108	108	85 - 115	5/24/01
M,P,O-Xylene		mg/L	0.30	0.312	104	85 - 115	5/24/01

ICV (1) QCBatch: QC11548

Param	Flag	Units	CCVs	CCVs	CCVs	Percent	Date Analyzed
			True Conc.	Found Conc.	Percent Recovery	Recovery Limits	
MTBE		mg/L	0.10	0.102	102	85 - 115	5/24/01
Benzene		mg/L	0.10	0.107	107	85 - 115	5/24/01
Toluene		mg/L	0.10	0.108	108	85 - 115	5/24/01
Ethylbenzene		mg/L	0.10	0.107	107	85 - 115	5/24/01
M,P,O-Xylene		mg/L	0.30	0.314	104	85 - 115	5/24/01

Client: Environmental Tech Group
Attn: Ken Dutton
Address: 2540 W. Marland Hobbs
Phone: 505 397-4882 **FAX:** 505 397-4701

REPORT OF ANALYSIS

Parameter	Result	Units	RQL ⁵	Blank	Date	Method ⁶	Data Qual ⁷	Prec. ²	Recov. ³	CCV ⁴	LCS ⁴
Volatile organics-8260b/BTEX	---	---	---	---	09/06/01	8260b	---	---	---	---	---
Benzene	<1	µg/L	1	<1	09/06/01	8260b	---	1.7	100.1	96.7	96.8
Ethylbenzene	<1	µg/L	1	<1	09/06/01	8260b	---	1.8	97.7	102.5	100.6
m,p-Xylenes	<1	µg/L	1	<1	09/06/01	8260b	---	1.7	100.5	104.4	103.7
o-Xylene	<1	µg/L	1	<1	09/06/01	8260b	---	1.4	103.7	107.8	107
Toluene	<1	µg/L	1	<1	09/06/01	8260b	---	0.1	102.6	100.4	98.1

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Respectfully Submitted,

Richard Laster
Richard Laster

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CHALPS INC.

4 [REDACTED] reid [REDACTED] Lane [REDACTED] 190 [REDACTED] tin, [REDACTED] 7874
2209 N. Padre Island Dr., Corpus Christi, TX 7840408
(512) 444-5896 • FAX (512) 447-4766

Client:	Environmental Tech Group	Project ID: TNM 97-18 EOT 2025C
Attn:	Ken Dutton	Sample Name: MW 1

REPORT OF SURROGATE RECOVERY

Surrogate Compound	Method	Recovery	Recovery Limit	Data Qualifiers
1,2-Dichloroethane-d4	8260b	80.8	80-120	---
Toluene-d8	8260b	101	88-110	---

Data Qualifiers: D= Surrogates diluted and X= Surrogates outside advisory recovery limits.

Report#Lab ID#: 118894
Sample Matrix: water

4221 Friedrich Lane, Suite 190, Austin, TX 78744 &

2209 N. Padre Island Dr., Corpus Christi, TX 78408

(512) 444-5896 • FAX (512) 447-4766

Client: Environmental Tech Group
Attn: Ken Dutton
Address: 2540 W. Marland Hobbs
Phone: 505 397-4882 **FAX:** 505 397-4701

REPORT OF ANALYSIS

Parameter	Result	Units	RQL ⁵	Blank	Date	Method 6	Data Qual 7	Prec. 2	Recov. ³	CCV ⁴	LCS ⁴
Volatile organics-8260b/BTEX	---		---		09/06/01	8260b	---	---	---	---	---
Benzene	180	µg/L	1	<1	09/06/01	8260b	---	1.7	100.1	96.7	96.8
Ethylbenzene	99.5	µg/L	1	<1	09/06/01	8260b	---	1.8	97.7	102.5	100.6
m,p-Xylenes	10.7	µg/L	1	<1	09/06/01	8260b	---	1.7	100.5	104.4	103.7
o-Xylene	<1	µg/L	1	<1	09/06/01	8260b	---	1.4	103.7	107.8	107
Toluene					09/06/01	8260b	---	0.1	102.6	100.4	98.1

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Report#Lab ID#: 118895	Report Date: 09/10/01
Project ID: TNM 97-18 EOT 2025C	
Sample Name: MW 3	
Sample Matrix: water	
Date Received: 08/31/2001	Time: 10:55
Date Sampled: 08/27/2001	Time: 15:52

CDTYS INC.

Client: [REDACTED] 400 [REDACTED] stin, [REDACTED] 787 [REDACTED]
Attn: Environmental Tech Group
Ken Dutton

Project ID: TNM 97-18 EOT 2025C
Sample Name: MW 3

Client: Environmental Tech Group
Attn: Ken Dutton
Address: 2540 W. Marland Hobbs
Phone: 505 397-4882 **FAX:** 505 397-4701

REPORT OF ANALYSIS

Parameter	Result	Units	RQL ⁵	Blank	Date	Method ⁶	Data Qual ⁷	Prec. ²	Recov. ³	CCV ⁴	LCS ⁴
Volatile organics-8260b/BTEX	---	---	---	09/06/01	8260b	---	---	---	---	---	---
Benzene	<1	µg/L	1	<1	09/06/01	8260b	---	1.7	100.1	96.7	96.8
Ethylbenzene	<1	µg/L	1	<1	09/06/01	8260b	---	1.8	97.7	102.5	100.6
m,p-Xylenes	<1	µg/L	1	<1	09/06/01	8260b	---	1.7	100.5	104.4	103.7
o-Xylene	<1	µg/L	1	<1	09/06/01	8260b	---	1.4	103.7	107.8	107
Toluene	<1	µg/L	1	<1	09/06/01	8260b	---	0.1	102.6	100.4	98.1

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CHIPS INC.

Client: Environmental Tech Group
Attn: Ken Dutton

Project ID: TNM 97-18 EOT 2025C
Sample Name: EB-1

Report#Lab ID#: 118896
Sample Matrix: water

REPORT OF SURROGATE RECOVERY

Surrogate Compound	Method	Recovery	Recovery Limit	Data Qualifiers
1,2-Dichloroethane-d4	8260b	84.5	80-120	--
Toluene-d8	8260b	99	88-110	---

Data Qualifiers: D= Surrogates diluted and X= Surrogates outside advisory recovery limits.

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TABLE 2

GROUND WATER CHEMISTRY
3RD QUARTER 2001

EOTT ENERGY CORPORATION
TNM 97 - 18
LEA COUNTY, NEW MEXICO
ETGI PROJECT # EOT 2025C

All concentrations are in mg/L

SAMPLE LOCATION	SAMPLE DATE	SW 846-8021B, 5030				
		BENZENE	TOLUENE	ETHYL-BENZENE	M,P,O-XYLENES	TOTAL BTEX
MW - 1	08/27/01	<0.001	<0.001	<0.001	<0.001	<0.001
MW - 3	08/27/01	0.180	<0.100	0.020	<0.001	0.200
EB - 1	08/27/01	<0.001	<0.001	<0.001	<0.001	<0.001

AnalySys
Inc.

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 2209 N. Padre Island Dr., Corpus Christi, TX 78408
 (512) 444-5896 • FAX (512) 447-4766

REPORT OF ANALYSIS

Client:	Environmental Tech Group
Attn:	Matina Smith
Address:	4600 W. Wall Midland, TX 79703
Phone:	(915) 522-1139 FAX: (915) 520-4310

COPY

Report#/Lab ID#: 121350 **Report Date:** 11/02/01
Project ID: TNM 97-18 EOT 2025C
Sample Name: MW 1
Sample Matrix: water
Date Received: 10/26/2001 **Time:** 10:01
Date Sampled: 10/24/2001 **Time:** 08:30

REPORT OF ANALYSIS

Parameter	Result	Units	RQL ⁵	Blank	Date	Method ⁶	Data Qual ⁷	Prec. ²	Recov. ³	CCV ⁴	LCS ⁴
Volatile organics/8260b/BTEX	---	µg/L	---	<1	11/01/01	8260b	---	---	---	---	---
Benzene	<1	µg/L	1	<1	11/01/01	8260b	---	0.2	81.4	89.5	79.6
Ethylbenzene	<1	µg/L	1	<1	11/01/01	8260b	---	0.3	101.2	99.9	95.5
m,p-Xylenes	<1	µg/L	1	<1	11/01/01	8260b	J	0.4	95	92.8	89.6
o-Xylene	<1	µg/L	1	<1	11/01/01	8260b	---	0	102.7	101.4	97.9
Toluene	<1	µg/L	1	<1	11/01/01	8260b	---	0.1	87.8	92.9	84.1

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**QnalyS^{ys}
Inc.**

4221 Freidrich Lane, Suite 190, Austin, TX 78744 &
2209 N. Padre Island Dr., Corpus Christi, TX 78404-08
(512) 444-5896 • FAX (512) 447-4766

Client: Environmental Tech Group
Attn: Matina Smith

Project ID: TNM 97-18 EOT 2025C
Sample Name: MW 1

REPORT OF SURROGATE RECOVERY

Surrogate Compound	Method	Recovery	Recovery Limit	Data Qualifiers
1,2-Dichloroethane-d4	8266b	96.3	80-120	---
Toluene-d8	8266b	109	88-110	---

Data Qualifiers: D= Surrogates diluted and X= Surrogates outside advisory recovery limits.

Report#Lab ID#: 12/1350
Sample Matrix: water

Exceptions Report:

Report #/Lab ID#: 121350 Matrix: water
Client: Environmental Tech Group Attn: Matina Smith
Project ID: TNM 97-18 EOT 2025C
Sample Name: MW 1

Sample Temperature/Condition <=6°C

The typical sample temperature criteria (except for metals by ICP, GFAA and AA and a very few other tests) is <= 6°C. Possible exceptions include samples submitted to laboratory within such a short time after sampling that cooling measures used in the field and during transport had insufficient time to achieve desired temperatures in the samples (see sample collection and sample receipt times) and samples where the temperature could not be measured due to sample submission in a manner precluding temperature measurement without impacting sample integrity (ex. in a bottle with no cooler).

Sample Bottles & Preservation

- Sample received in appropriate container(s) and appear to be appropriately preserved.
- Sample received in appropriate container(s). State of sample preservation unknown.
- Sample received in inappropriate container(s) and/or with unknown state of preservation.

J flag Discussion

A J flag data qualifier indicates (as required under TNRC-TRRP reporting requirements) that the raw calculated analyte concentration in the sample (uncorrected for background levels/blanks and other potential sources of sampling and analytical contamination), though less than the Reported Quantitation Limit (RQL) is greater than the Detection Limit. Because the reported result is below the quantitation limit for this project/sample (or test procedure), GC/MS organics results may or MAY NOT have been verified as to the presence and relative ratio of target ions (eg. the material causing the J flag "hit" in such situations may be nothing more than background ion/fragment noise.)

Comments pertaining to Data Qualifiers and QC data:

Parameter	Qualif	Comment
m,p-Xylenes	J	See J-flag discussion above.

Notes:

AnalySys Inc.

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Attn: Matina Smith
Address: 4600 W. Wall
Midland, TX 79703
Phone: (915) 522-1139 FAX: (915) 520-4310

REPORT OF ANALYSIS

Parameter	Result	Units	RQL ⁵	Blank	Date	Method ⁶	Data Qual ⁷	Prec. ²	Recov. ³	CCV ⁴	LCS ⁴
Volatile organics-8260b/BTEX	---	µg/L	---	<1	11/02/01	8260b	---	---	---	---	---
Benzene	162	µg/L	1	<1	11/02/01	8260b	---	6.1	80.1	83.7	77.3
Ethylbenzene	131	µg/L	1	<1	11/02/01	8260b	---	2.8	100.4	102.1	100.9
m,p-Xylenes	32.3	µg/L	1	<1	11/02/01	8260b	---	2.2	93.3	95.7	94.4
o-Xylene	<1	µg/L	1	<1	11/02/01	8260b	---	3.1	102.9	103.4	103.9
Toluene	<1	µg/L	1	<1	11/02/01	8260b	---	10.8	86.2	88.5	82.4

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Environmental Sciences Inc.

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(512) 444-5896 • FAX (512) 447-4766

Client: Environmental Tech Group
Attn: Matina Smith

Project ID: TNM 97-18 EOT 2025C
Sample Name: MW 3

Report# / Lab ID#: 121351
Sample Matrix: water

REPORT OF SURROGATE RECOVERY

Surrogate Compound	Method	Recovery	Recovery Limit	Data Qualifiers
1,2-Dichloroethane-d4	8266b	94	80-120	---
Toluene-d8	8266b	107	88-110	---

Data Qualifiers: D= Surrogates diluted and X= Surrogates outside advisory recovery limits.

AnalySys^{inc.}

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REPORT OF ANALYSIS

Parameter	Result	Units	RQL ⁵	Blank	Date	Method ⁶	Data Qual ⁷	Prec. ²	Recov. ³	CCV ⁴	LCS ⁴
Volatile organics-8260b/BTEX	---	---	---	---	11/01/01	8260b	---	---	---	---	---
Benzene	<1	µg/L	1	<1	11/01/01	8260b	---	0.2	81.4	89.5	79.6
Ethylbenzene	<1	µg/L	1	<1	11/01/01	8260b	---	0.3	101.2	99.9	95.5
m,p-Xylenes	<1	µg/L	1	<1	11/01/01	8260b	---	0.4	95	92.8	89.6
o-Xylene	<1	µg/L	1	<1	11/01/01	8260b	---	0	102.7	101.4	97.9
Toluene	<1	µg/L	1	<1	11/01/01	8260b	---	0.1	87.8	92.9	84.1

This analytical report is respectfully submitted by AnalySys, Inc. The enclosed results have been carefully reviewed and, to the best of my knowledge, the analytical results are consistent with AnalySys, Inc.'s Quality Assurance/Quality Control Program. © Copyright 2000, AnalySys, Inc., Austin, TX. All rights reserved. No part of this publication may be reproduced or transmitted in any form or by any means without the express written consent of AnalySys, Inc.

Respectfully Submitted,

Richard Laster
Richard Laster

1. Quality assurance data is for the sample batch which included this sample. 2. Precision (PREC) is the absolute value of the relative percent (%) difference between duplicate measurements. 3. Recovery (Recov.) is the percent (%) of analyte recovered from a spiked sample. 4. Calibration Verification (CCV) and Laboratory Control Sample (LCS) results are expressed as the percent (%) recovery of analyte from a known standard or matrix. 5. Reporting Quantitation Limits (RQL), typically at or above the Practical Quantitation Limit (PQL) of the analytical method. 6. Method numbers typically denote USEPA procedures. Less than ("<") values reflect nominal quantitation limits adjusted for any required dilutions. 7. Data Qualifiers are J = analyte potentially present between the PQL and the MDL. B = Analyte detected in associated method blank(s). S1 =MS and/or MSD recovery exceed advisory limits. S2 =Post digestion spike (PDS) recovery exceeds advisory limit. S3 =MS and/or MSD and PDS recoveries exceed advisory limits. P =Precision higher than advisory limit. M =Matrix interference.

Control Sys
inc.

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2209 N. Padre Island Dr., Corpus Christi, TX 7840408
(512) 444-5896 • FAX (512) 447-4766

Report#/Lab ID#: 121352
Sample Matrix: water

Client: Environmental Tech Group
Attn: Matina Smith

Project ID: TNM 97-18 EOT 2025C
Sample Name: EB 1

REPORT OF SURROGATE RECOVERY

Surrogate Compound	Method	Recovery	Recovery Limit	Data Qualifiers
1,2-Dichloroethane-d4	8260b	94.7	80-120	---
Toluene-d8	8260b	104	88-110	---

Data Qualifiers: D= Surrogates diluted and X= Surrogates outside advisory recovery limits.

COC: 165

CHAIN-OF-CUSTODY

Send Reports To:

Send Reports To:
Company Name E. T.G. I.
Address 46 00 111st WALL
City MILDE AND State TX Zip 79703
ATTN: JOHN THOMAS SMITH
Phone (915) 522-1139 Fax (915) 520-4333

Bill to (if different):
Company Name ECHO / /
Address _____
City _____ State _____
ATTN: _____
Phone _____ Fax _____

Rush Status (must be confirmed with lab mgr.): _____
Project Name/PO#: Zinnia 7-18 Sampler: GT 2025C

Chart Summary Notes

Client Sample No. Description/Identification	Date Sampled	Time Sampled	No. of Containers	Soil	Water Waste	Lab I.D. # (Lab only)	Comments
MW 3	10-24-04	0820	7	X	-	121350 X	
EB 1		0850	7	-	-	121351	
		0900	7	-	✓	121352 ✓	

ASCE 16-16 lists at § 10.2.1.3. Unless specifically requested otherwise on this Chain-of-custody and/or attached documentation, all analyses will be conducted using ASCE's method of choice and all data will be reported to ASCE's normal reporting formats (MDL/PQL). For GCMS volatiles and extractables, unless specified analytical parameter lists are specified on this chain-of-custody or attached to this chain-of-custody. ASCE 16-16 will default to Priority Pollutants or Specified Compounds.

1 Sept. 1910. S. - D. - N.

Sample Relinquished By				Sample Received By			
Name	Affiliation	Date	Time	Name	Affiliation	Date	Time
John Lewis	CIA	10-25-01	1500	Helen Langford ASY	10/26/01	1001	

IT tendering of above described samples to AnalySys Inc. for analytical testing constitutes agreement by buyer/supplier to AnalySys, Inc.'s standard terms.

APPENDIX B

2001 Groundwater Elevations

APPENDIX B
2001 Groundwater Elevations
TNM 97-18

