

**AP - 009**

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**ANNUAL  
MONITORING REPORT**

**YEAR(S):  
2000**

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**ANNUAL MONITORING REPORT**

**EOTT ENERGY CORP.  
HDO 90-23  
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 (ODC) 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. Additional site activities and remedial work is summarized in reports previously submitted to the OCD. 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 January 22, May 16, September 14 and November 3, 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 introduced into the existing ground water treatment system.

## **GROUNDWATER GRADIENT**

Locations of the monitoring wells and the inferred ground water gradient, as measured on November 3, 1999, are depicted on Figure 2. The ground water elevation data are provided as Table 1. Groundwater elevation contours, generated from the final semi-annual event of 1999 water level measurements, indicated a general gradient of approximately 0.001 ft/ft to the southeast. The depth to groundwater, as measured from the top of the well casing, ranged between 45.50 to 48.47 feet.

A measurable thickness of PSH has been detected in monitoring wells MW-2 and MW-6. A maximum thickness of 2.76 feet of PSH was measured in monitoring well MW-2 as shown on Table 1. Recovery of PSH from the well was implemented in early December 1999, utilizing a down-hole skimmer pump as described in the recently approved Abatement Plan.

## **LABORATORY RESULTS**

Ground water samples obtained during the first two sampling events were mailed to Xenco Laboratories in San Antonio, Texas. Ground water samples collected during the latter two events were hand delivered to Environmental Laboratory of Texas, Midland, Texas for determination of benzene, toluene, ethylbenzene and total xylenes (BTEX) concentrations by EPA Method SW846-8020 and 8021B. The ground water chemistry data are provided as Table 2 and the Labatory Reports are provided as Appendix A.

Laboratory results for ground water samples collected from monitoring well MW-3 indicate that benzene concentrations are consistently above MCLs. Dissolved phase benzene concentrations in samples from monitoring well MW-6 were above MCLs as measured in September and PSH was detected in the well in November.

## **SUMMARY**

This report presents the results of monitoring activities for the annual monitoring period of calendar year 1999. A measurable thickness of PSH has been detected in monitoring wells MW-2 and MW-6. A maximum thickness of 2.76 feet of PSH was measured in monitoring well MW-2 as shown on Table 1. Recovery of PSH from the well was implemented in early December 1999, utilizing a down-hole skimmer pump as described in the recently approved Abatement Plan.

Laboratory results for ground water samples collected from monitoring well MW-3 indicate that benzene concentrations are consistently above MCLs. Dissolved phase benzene concentrations in samples from monitoring well MW-6 were above MCLs as measured in September and PSH was detected in the well in November.

## **FIGURES**

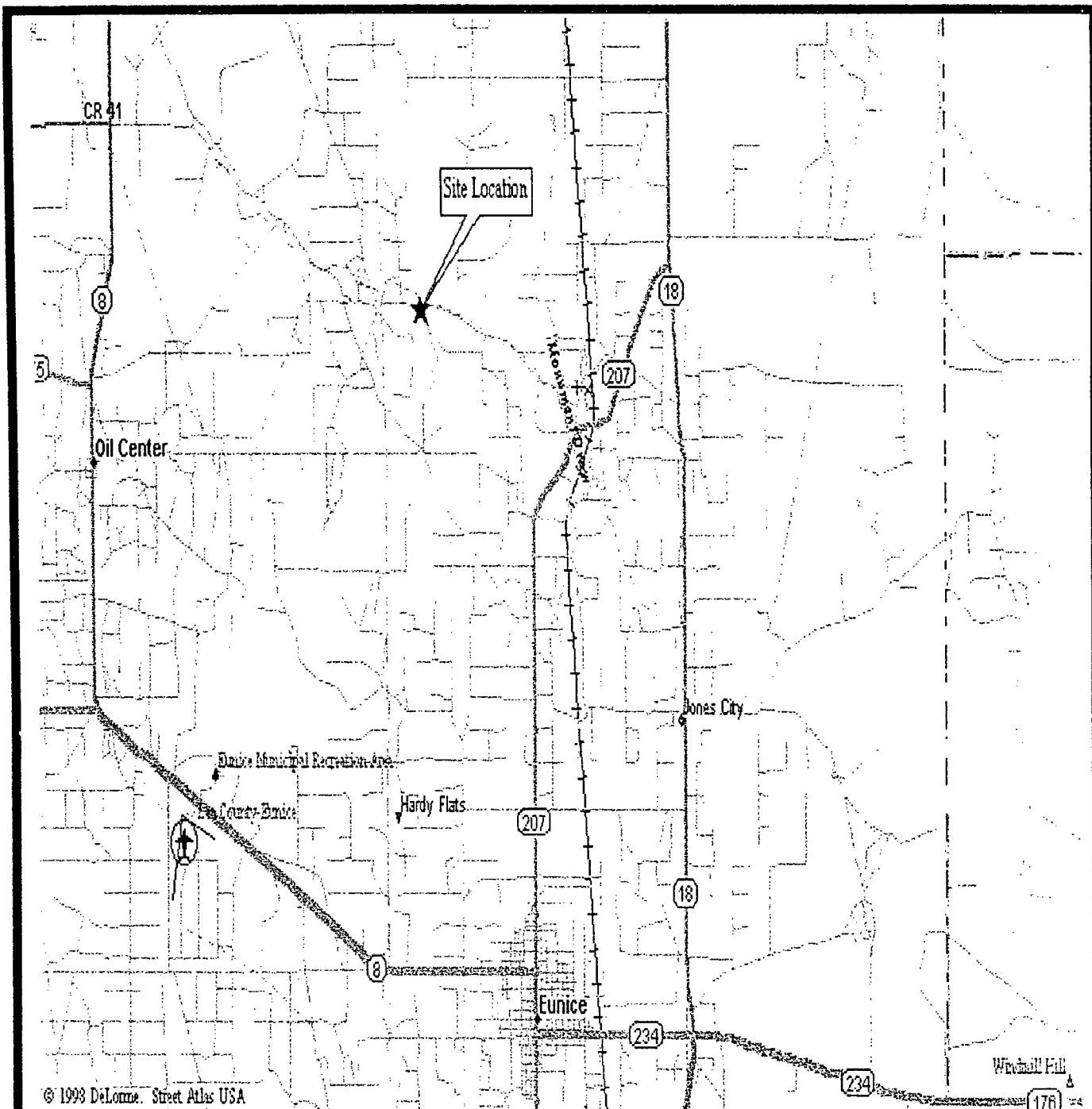


FIGURE  
1

Not To Scale

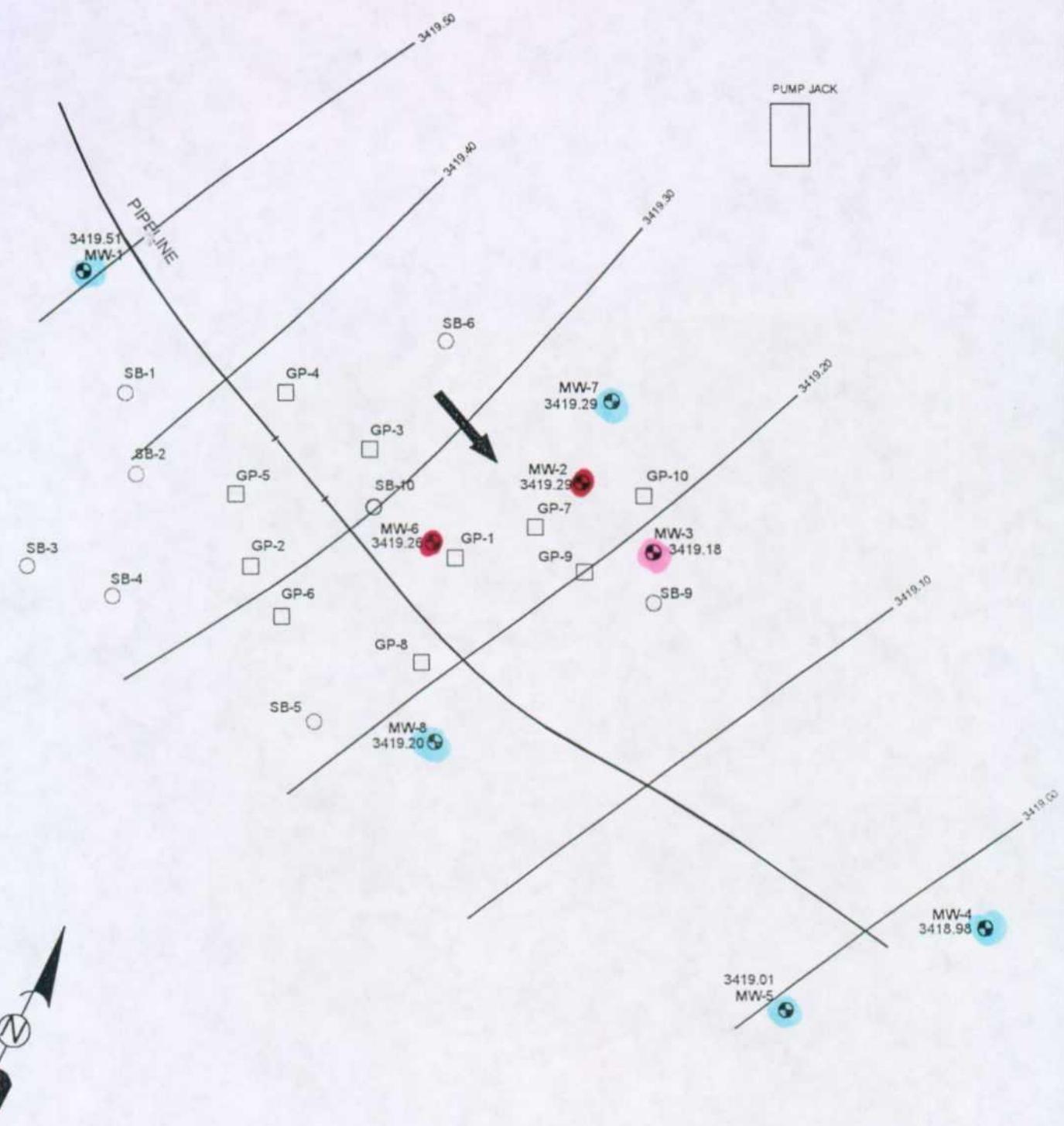
Site Location Map

EOTT Energy Corp.  
HDO 90-23  
Eunice, NM

Environmental  
Technology  
Group, Inc.

03 - 07 -009 RS

ETGI Project # EOT 1019C



#### LEGEND:

- ETGI GP (9-1-1999)
  - ETGI MW (9-1-1999)
  - ETGI SB (9-1-1999)
  - KEI MW (late 97 early 98)
  - KEI SB (late 97 early 98)
  - Pipeline
  - ~~ Estimated Area of Leak
- GW Gradient Elevation

**Figure 2**  
Ground Water Gradient Map  
HDO - 90 - 23  
Lea County N.M.

Environmental Technology  
Group, INC.

Scale: 1" = 70' Prep By: RS Checked By: JT

September 20, 1999 ETGI Project # EOT 1019C

## **TABLES**

**TABLE 1**  
**GROUNDWATER ELEVATION TABLE**  
**HDO 90-23**  
**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	01/22/99	3,465.61	-	46.12	0.00	3,419.49
MW-1	04/16/99	3,465.61	-	46.12	0.00	3,419.49
MW-1	09/13/99	3,465.61	-	46.10	0.00	3,419.51
MW-1	11/03/99	3,465.61	-	46.13	0.00	3,419.48
MW-2	01/22/99	3,465.44	-	47.40	0.00	3,418.04
MW-2	04/16/99	3,465.44	-	47.45	0.00	3,417.99
MW-2	09/13/99	3,465.44	45.74	48.50	2.76	3,419.29
MW-2	11/03/99	3,465.44	46.10	46.55	0.45	3,419.27
MW-3	01/22/99	3,464.68	-	45.59	0.00	3,419.09
MW-3	04/16/99	3,464.68	-	45.56	0.00	3,419.12
MW-3	09/13/99	3,464.68	-	45.50	0.00	3,419.18
MW-3	11/03/99	3,464.68	-	45.52	0.00	3,419.16
MW-4	01/22/99	3,465.76	-	46.81	0.00	3,418.95
MW-4	04/16/99	3,465.76	-	46.79	0.00	3,418.97
MW-4	09/13/99	3,465.76	-	46.70	0.00	3,419.06
MW-4	11/03/99	3,465.76	-	46.74	0.00	3,419.02
MW-5	01/22/99	3,467.40	-	48.47	0.00	3,418.93
MW-5	04/16/99	3,467.40	-	48.45	0.00	3,418.95
MW-5	09/13/99	3,467.40	-	48.39	0.00	3,419.01
MW-5	11/03/99	3,467.40	-	48.42	0.00	3,418.98
MW-6	09/13/99	3,465.42	-	46.05	0.00	3,419.37
MW-6	11/03/99	3,465.42	45.98	46.80	0.82	3,419.32
MW-7	09/13/99	3,466.22	-	46.78	0.00	3,419.44
MW-7	11/03/99	3,466.22	-	46.80	0.00	3,419.42
MW-8	09/13/99	3,467.61	-	48.39	0.00	3,419.22
MW-8	11/03/99	3,467.61	-	48.42	0.00	3,419.19

**TABLE 2**  
**GROUND WATER CHEMISTRY**  
**HDO 90-23**  
**LEA COUNTY, NEW MEXICO**  
**ETGI PROJECT # EOT1015C**

SAMPLE	SAMPLE DATE	BENZENE (mg/L)	TOLUENE (mg/L)	ETHYLBENZENE (mg/L)	mp-XYLENE (mg/L)	o-XYLENE (mg/L)
MW-1	01/22/99	<0.001	<0.001	<0.001	<0.002	<0.001
MW-1	04/16/99	<0.001	<0.001	<0.001	<0.002	<0.001
MW-1	09/14/99	<0.001	<0.001	<0.001	<0.001	<0.001
MW-1	11/03/99	<0.001	<0.001	<0.001	<0.001	<0.001
MW-3	01/22/99	2.80	0.03	2.32	0.11	0.07
MW-3	04/16/99	2.12	<0.02	2.67	<0.04	<0.02
MW-3	09/14/99	1.85	0.079	1.82	0.116	<0.050
MW-3	11/03/99	1.90	<0.100	2.06	0.160	<0.100
MW-4	01/22/99	<0.001	<0.001	<0.001	<0.002	<0.001
MW-4	04/16/99	<0.001	<0.001	<0.001	<0.002	<0.001
MW-4	09/14/99	<0.001	<0.001	<0.001	<0.001	<0.001
MW-4	11/03/99	<0.001	<0.001	<0.001	<0.001	<0.001
MW-5	01/22/99	<0.001	<0.001	<0.001	<0.002	<0.001
MW-5	04/16/99	<0.001	<0.001	<0.001	<0.002	<0.001
MW-5	09/14/99	<0.001	<0.001	<0.001	<0.001	<0.001
MW-5	11/03/99	<0.001	<0.001	<0.001	<0.001	<0.001
MW-6	09/14/99	0.072	0.063	0.020	0.022	0.010
MW-7	09/14/99	<0.001	<0.001	<0.001	<0.001	<0.001
MW-7	11/03/99	<0.001	<0.001	<0.001	<0.001	<0.001
MW-8	09/14/99	<0.001	<0.001	<0.001	<0.001	<0.001
MW-8	11/03/99	<0.001	<0.001	<0.001	<0.001	<0.001

NOTE: Monitor Wells 6, 7, & 8 were installed during 3Q99. Monitor Well 6 contained PSH and was not sampled for 4Q99.

Methods: EPA SW 846-8020, 5030

**APPENDIX A**



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

January 28, 1999

Project Manager: Theresa Nix  
KEI Consultants, Inc.  
5309 Wurzbach Rd. Suite 100  
San Antonio, TX 78238

Reference: XENCO Report No.: -90283  
Project Name: TNMPL HDO-90-23  
Project ID: 810005-1  
Project Address: Evnice, NM

Dear Theresa 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 -90283.N 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. -90283N 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

A handwritten signature in black ink, appearing to read "Eddie L. Clemons, II". Below the signature, the name is typed in a smaller font.

*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, Inc.

Project ID: 810005-1  
Project Manager: Theresa Nix  
Project Location: Evinice, NM

Project Name: TNMPL HDO-90-23

**XENCO** COC# : -90283

Date Received in Lab: Jan 26, 1999 10:10 by DH

**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	90283-001	BTEX	SW-846	ppm	10 days	Jan 22, 1999 13:40		Jan 27, 1999 by HL	Jan 27, 1999 15:07 by HL
2 MW-3	90283-002	BTEX	SW-846	ppm	10 days	Jan 22, 1999 14:05		Jan 27, 1999 by HL	Jan 27, 1999 16:01 by HL
3 MW-4	90283-003	BTEX	SW-846	ppm	10 days	Jan 22, 1999 14:30		Jan 27, 1999 by HL	Jan 27, 1999 15:25 by HL
4 MW-5	90283-004	BTEX	SW-846	ppm	10 days	Jan 22, 1999 14:55		Jan 27, 1999 by HL	Jan 27, 1999 16:58 by HL

**KEI Consultants, Inc.**  
*Project Name: TNMPL HDO-90-23*

Project ID: 810005-1  
Project Manager: Theresa Nix  
Project Location: Evnice, NM

Date Received in Lab : Jan 26, 1999 10:10

Date Report Faxed: Jan 28, 1999

**XENCO** contact : Carlos Castro/Karen Olson

<b>Analysis Requested</b>	<i>Lab ID:</i>	90283 001	90283 002	90283 003	90283 004
	<i>Field ID:</i>	MW-1	MW-3	<i>MW-4</i>	<i>MW-5</i>
<i>Depth:</i>	Liquid	Liquid	Liquid	Liquid	Liquid
<i>Matrix:</i>	01/22/99 13:40	01/22/99 14:05	01/22/99 14:30	01/22/99 14:55	
<i>Sampled:</i>					
BTEX	Analyzed:	01/27/99	R.L.	01/27/99	R.L.
EPA 8021B	Units:	ppm		ppm	ppm
Benzene		< 0.001 (0.001)	2.80 (0.02)	< 0.001 (0.001)	< 0.001 (0.001)
Toluene		< 0.001 (0.001)	0.03 (0.02)	< 0.001 (0.001)	< 0.001 (0.001)
Ethylbenzene		< 0.001 (0.001)	2.32 (0.02)	< 0.001 (0.001)	< 0.001 (0.001)
m,p-Xylene		< 0.002 (0.002)	0.11 (0.04)	< 0.002 (0.002)	< 0.002 (0.002)
o-Xylene		< 0.001 (0.001)	0.07 (0.02)	< 0.001 (0.001)	< 0.001 (0.001)
Total BTEX		N.D.	5.330	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, 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.

Eddie L. Clemons, II

QA/QC Manager



## Certificate Of Quality Control for Batch : 19A25A37

### SW- 346 5030/3021B BTEx

Date Validated: Jan 28, 1999 11:45  
Date Analyzed: Jan 27, 1999 13:01

Analyst: HL  
Matrix: Liquid

#### MATRIX SPIKE / MATRIX SPIKE DUPLICATE AND RECOVERY

Q.C. Sample ID 90281-003		[A] Sample Result	[B] Matrix Spike Result	[C] Matrix Spike Duplicate Result	[D] Matrix Spike Amount	[E] Detection Limit	[F] Matrix Limit	[G] QC	[H] QC	[I] Matrix Spike Recovery	[J] Matrix Spike Recovery Range
Parameter		ppm	ppm	ppm	ppm	ppm	ppm	QC	QC	%	%
Benzene	< 0.0010	0.0861	0.0939	0.1000	0.0010	20.0	8.7	86.1	93.9	65-135	
Toluene	< 0.0010	0.0842	0.0936	0.1000	0.0010	20.0	10.6	84.2	93.6	65-135	
Ethylbenzene	< 0.0010	0.0834	0.0924	0.1000	0.0010	20.0	10.2	83.4	92.4	65-135	
m,p-Xylene	< 0.0020	0.1700	0.1890	0.2000	0.0020	20.0	10.6	85.0	94.5	65-135	
o-Xylene	< 0.0010	0.0864	0.0952	0.1000	0.0010	20.0	9.7	86.4	95.2	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

Eddie L. Clemons, II

QA/QC Manager

Horizon Hallway, "an Internet

**Certificate Of Quality Control for Batch : 19A25A37**

**SW- 846 5030/8021B BTEX**

Date Validated: Jan 28, 1999 11:45

Analyst: HL

Date Analyzed: Jan 27, 1999 12:25

Matrix: Liquid

**BLANK SPIKE ANALYSIS**

Parameter	[A] Blank Result	[B] Blank Spike Result	[C] Blank Spike Amount	[D] Detection Limit	[E]	[F]	[G] Qualifier
	ppm	ppm	ppm	ppm	QC Blank Spike Recovery	LIMITS Recovery Range	
					%	%	
Benzene	< 0.0010	0.0939	0.1000	0.0010	93.9	65-135	
Toluene	< 0.0010	0.0932	0.1000	0.0010	93.2	65-135	
Ethylbenzene	< 0.0010	0.0909	0.1000	0.0010	90.9	65-135	
m,p-Xylene	< 0.0020	0.1910	0.2000	0.0020	95.5	65-135	
o-Xylene	< 0.0010	0.0989	0.1000	0.0010	98.9	65-135	

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

= Not calculated, data below detection limit

N.D. = Below detection limit

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



Eddie L. Clemons, II  
QA/QC Manager

Company	Phone	Lab Only:	9083 - 88	Lab Only Additions																																												
Project Name	Project ID	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																																													
Location	810005 - /	Remarks																																														
Project Manager (PM)	Project Director (PD)																																															
Fax Results to	(210) 620-3767																																															
Invoice to	Previously done at XENCO																																															
must have a P.O. Bill to:	810005 - /																																															
Quote No.	<input checked="" type="checkbox"/> Accounting <input type="checkbox"/> Include Invoice with Final Report Attn PM																																															
Special DLs (100% R.R.!! DW QAPP See Lab PM Call Proj. PM)	<input type="checkbox"/> P.O. No. <input checked="" type="checkbox"/> Call for a P.O.																																															
Specifications																																																
Sampler Name	Signature																																															
<table border="1"> <thead> <tr> <th rowspan="2">Sample ID</th> <th rowspan="2">Sampling Date</th> <th rowspan="2">Time</th> <th rowspan="2">Depth</th> <th rowspan="2">Matrix A P/S/W</th> <th>Type</th> <th>Preservatives</th> </tr> <tr> <th># Containers</th> <th>Container Size</th> </tr> </thead> <tbody> <tr> <td>MW-1</td> <td>1/22/99</td> <td>1340</td> <td>1405</td> <td>1432</td> <td>X 2</td> <td>V GA 1L</td> </tr> <tr> <td>MW-2</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>MW-3</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>MW-4</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>MW-5</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>					Sample ID	Sampling Date	Time	Depth	Matrix A P/S/W	Type	Preservatives	# Containers	Container Size	MW-1	1/22/99	1340	1405	1432	X 2	V GA 1L	MW-2							MW-3							MW-4							MW-5						
Sample ID	Sampling Date	Time	Depth	Matrix A P/S/W						Type	Preservatives																																					
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7																																																
8																																																
9																																																
10																																																
Relinquished to (Initials and Signature )					Date & Time	Total Containers per COC:																																										
Lab: J. Thomas					1/22/99 1340	Rush TAT's Fax Due:																																										
Relinquished by (Initials and Signature )					Final Report Data Package Due Date:																																											

Preservatives - Various (V), HCl pH<2 (H), H<sub>2</sub>SO<sub>4</sub> pH<2 (S), HNO<sub>4</sub> pH<2 (N), NaOH+AsBr Acid (NAA); ZnAc+NaOH (ZA), (Cool,<4C) (C4), None (N), See Label (SL), Other (O) \_\_\_\_\_

SIZE: 4oz (4), 8oz (8), 32oz (32), 40ml VOA (V), 1L (1), 500ml (.5), Tiodiar Bag (B), Wipo (W), Other \_\_\_\_\_

TYPE Glass Amb (GA), Glass Clear (GC), Plastic (P), Other (O) \_\_\_\_\_

Rush Charges are Pre-Approved upon Requesting them. All Terms Apply



**ANALYTICAL CHAIN CUSTODY REPORT**  
**CHRONOLOGY OF SAMPLES**

KEI Consultants, Ltd.

Project ID: 8100005-1-0

Project Manager: S. Grover

Project Location:

Project Name: Eunice Historical

**XENCO COC#:** -91597  
**Date Received in Lab:** Apr 20, 1999 11:35 by DA  
**XENCO contact :** Carlos Castro/Karen Olson

Field ID	Lab. ID	Method Name	Method ID	Units	Turn Around	Sample Collected	Date add'd Time		
							Requested	Extraction	Analysis
1 MW-1	01507-001	BTEX	SW-846	ppm	7 days	Apr 16, 1999 08:00			Apr 22, 1999 17:20 by HA
2 MW-3	01507-002	BTEX	SW-846	ppm	7 days	Apr 16, 1999 08:30			Apr 22, 1999 14:22 by IIA
3 MW-4	01507-003	BTEX	SW-846	ppm	7 days	Apr 16, 1999 08:00			Apr 22, 1999 14:58 by HA
4 MW-5	01507-004	BTEX	SW-846	ppm	7 days	Apr 16, 1999 08:30			Apr 22, 1999 15:15 by HA

**KEI Consultants, Ltd.**  
*Project Name: Eunice Historical*

Project ID: 810005-1-0

Project Manager: S. Grover

Project Location:

Date Received in Lab : Apr 20, 1999 11:35

Date Report Faxed: Apr 26, 1999

XENCO contact : Carlos Castro/Karen Olson

<b>Analysis Requested</b>	<i>Lab ID:</i>	91597 001	91597 002	91597 003	91597 004
	<i>Field ID:</i>	MW-1	MW-3	MW-4	MW-5
<i>Depth:</i>	Liquid	Liquid	Liquid	Liquid	Liquid
<i>Matrix:</i>	04/16/99 08:00	04/16/99 09:30	04/16/99 09:00	04/16/99 08:30	
<b>BTEX</b>	Analyzed: <i>Units:</i>	04/22/99 ppm	R.L. ppm	04/22/99 ppm	R.L. ppm
Benzene		< 0.001 (0.001)	2.12 (0.02)	< 0.001 (0.001)	< 0.001 (0.001)
Toluene		< 0.001 (0.001)	< 0.02 (0.02)	< 0.001 (0.001)	< 0.001 (0.001)
Ethylbenzene		< 0.001 (0.001)	2.67 (0.02)	< 0.001 (0.001)	< 0.001 (0.001)
m,p-Xylene		< 0.002 (0.002)	< 0.04 (0.04)	< 0.002 (0.002)	< 0.002 (0.002)
o-Xylene		< 0.001 (0.001)	< 0.02 (0.02)	< 0.001 (0.001)	< 0.001 (0.001)
Total BTEX		N.D.	4.790	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. Ciemons, II  
 QA/QC Manager

## Certificate Of Quality Control for Batch : 19A25B75

SW- 346 5030/3021B IFTIX

Date Validated: Apr 23, 1999 08:00

Date Analyzed: Apr 22, 1999 10:49

Analyst: HA

Matrix: Liquid

## BLANK SPIKE / BLANK SPIKE DUPLICATE AND RECOVERY

Parameter	Blank Result	Blank Spike Result	Blank Spike Duplicate Result	[C]	[D]	[E]	[F]	[G]	[H]	[I]	[J]	
							Blank Limit	QC	QC	QC	QC	
				Spike Amount	Spike	Detection Limit	Spike Relative Difference	Blank Spike Recovery	B.S.D.	Recovery	Recovery	
	ppm	ppm	ppm	ppm	ppm	ppm	%	%	%	%	%	%
Benzene	< 0.0010	0.0973	0.1024	0.1000	0.0010	20.0	5.1	97.3	102.4	65-135		
Toluene	< 0.0010	0.1027	0.1115	0.1000	0.0010	20.0	8.2	102.7	111.5	65-135		
Ethylbenzene	< 0.0010	0.1006	0.1004	0.1000	0.0010	20.0	0.2	100.6	100.4	65-135		
m,p-Xylene	< 0.0020	0.2036	0.2032	0.2000	0.0020	20.0	0.2	101.0	101.6	65-135		
o-Xylene	< 0.0010	0.1061	0.1038	0.1000	0.0010	20.0	2.2	106.1	103.8	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 Daily, Sun (Antonio)  
Eddie L. Clements, II  
QA/QC Manager

Company	Phone	Lab Only:	Lab Only Additions										
K E T	210-680-3767	TAT: Sh 12h 20h 24h 48h 3d 5d 7d 14d 21d Standard AT is 10 Working Days unless otherwise agreed. In writing. But often reported in 5-7 Working Days											
Project Name	Previously done at XENCO	Project ID											
Location	Commercial Industrial	810001S-1-0											
Project Manager (PM)	S. Goyal	Project Director (PD)											
Fax Results to BLM and / or	210-680-3763	Fax											
Invoice to must have a P.O. Bill to:		<input type="checkbox"/> Accounting <input type="checkbox"/> Include Invoice with Final Report Attn PM <input type="checkbox"/> Invoice											
Quoto No.		P.O. No.	<input type="checkbox"/> Call for a P.O.										
Special DLs (RR1 RR2 DW QAPP See Lab PM)													
Specifications													
Sampler Name	Rushy Suresh	Signature											
Sample ID		Sampling Date	Time	Depth	# Matrix A PS M	Composite	Grab	# Containers	Container Size	Type	Preservatived	Invoice	
1	M.W. 1	4/16/97	0900	(A) 3	X	X	X	2	V	C			
2	M.W. 3	4/16/97	0900	(A) 3	X	X	X	2	V	C			
3	M.W. 4	4/16/97	0900	(B) 3	X	X	X	3	V	C			
4	M.W. 5	4/16/97	0900	(C) 3	X	X	X	4	V	C			
5													
6													
7													
8													
9													
10													
Relinquished by (Initials and Signature)			Date & Time	Total Containers per COC:	Rush TATs Fax Due:								Final Report Date Package Due Date:
D. J. Hausey			4-19-97	8	4-19-97								8
3 Rush Charges are Pre-Approved upon Requesting them. All Items Apply													
Preservatives - 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 (NAAB), ZnAc+NaOH (ZAB), (Cool,<4C) (C4), None (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: Gloss Amb (GA), Glass Clear (GC), Plastic (P), Other (O) _____													

## GROUNDWATER MONITORING AND SAMPLING DATA

JOB NO.: HDO-900-23

FIELD TECHNICIAN: \_\_\_\_\_

DATE: 13 Sep 99

WELL NO.	TIME WELL PURGED	TOTAL WELL DEPTH (feet)	DEPTH TO WATER (feet)	HEI. W. CO. (ft)
MW-1	1515	52.10	46.10	6.
CONDITION:	Cover:	Cop:	Cop:	Cop:
MW-2			48.50	
CONDITION:	Cover:	Cop:	Cop:	Cop:
MW-3	1635	59.90	45.50	9.
CONDITION:	Cover:	Cop:	Cop:	Cop:
MW-4	1620	53.60	46.70	6.
CONDITION:	Cover:	Cop:	Cop:	Cop:
MW-5	1645	55.80	48.39	7.
CONDITION:	Cover:	Cop:	Cop:	Cop:
MW-6	1550	58.26	46.85	12.
CONDITION:	Cover:	Cop:	Cop:	Cop:
MW-7	1535	59.50	46.78	12
CONDITION:	Cover:	Cop:	Cop:	Cop:
MW-8	1610	63.25	48.39	14.
CONDITION:	Cover:	Cop:	Cop:	Cop:

**URMS ON SITE:** \_\_\_\_\_ **IRON DRUM TRAILER: (yes/no)** \_\_\_\_\_ **SCURGE SAMPLE (time/date):** \_\_\_\_\_

COMMENTS: Hwy-6 - APPARENTS DROPLETS OF PHT IN BAILEY & SAMPLE CONTAINERS VERY STRONG (Y) ACARIAON 0/0  
FROM NEW & SAMPLES

# 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  
FAX: 970-461-1058

Sample Type: Water

Sampling Date: 09/14/99

Sample Condition: Intact/ Iced/HCl

Receiving Date: 09/15/99

Project #: HDO 90-23

Analysis Date: 09/15/99

Project Name: None Given

Project Location: Monument Draw, N.M.

ELT#	FIELD CODE	BENZENE (mg/L)	TOLUENE (mg/L)	ETHYLBENZENE (mg/L)	m,p-XYLENE (mg/L)	o-XYLENE (mg/L)
20005	MW-1	<0.001	<0.001	<0.001	<0.001	<0.001
20006	MW-3	1.85	0.079	1.82	0.116	<0.050
20007	MW-4	<0.001	<0.001	<0.001	<0.001	<0.001
20008	MW-5	<0.001	<0.001	<0.001	<0.001	<0.001
20009	MW-6	0.072	0.063	0.020	0.022	0.010
20010	MW-7	<0.001	<0.001	<0.001	<0.001	<0.001
20011	MW-8	<0.001	<0.001	<0.001	<0.001	<0.001
% IA		96	92	92	90	91
% EA		99	93	94	94	94
BLANK		<0.001	<0.001	<0.001	<0.001	<0.001

METHODS: EPA SW 846-8020,5030

Raland K. Tuttle  
Raland K. Tuttle

9-21-99  
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: 915-520-4310

Sample Type: Water  
Sample Condition: Intact/Iced  
Project #: HDO 90-23  
Project Name: None Given  
Project Location: Monument Draw N.M.

Sampling Date: 09/14/99  
Receiving Date: 09/15/99  
Analysis Date: See Below

ELT#	FIELD CODE	Sulfate mg/L	Chloride mg/L	Carbonate mg/L	Bicarbonate mg/L	TDS mg/L
20009	MW-6	139	124	0	250	642
20010	MW-7	160	71	0	200	543
20011	MW-8	146	62	0	200	503

QUALITY CONTROL                    55.1                5052                \*                \*                \*  
TRUE VALUE                        50.0                5000                \*                \*                \*  
% PRECISION                      110                101                \*                \*                \*

ANALYSIS DATE                    9/21/99            9/17/99            9/21/99            9/21/99            9/20/99

METHODS: EPA 375.4, 325.3, 310, 160.1

Raland K. Tuttle

Raland K. Tuttle

9-27-99

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: 915-520-4310

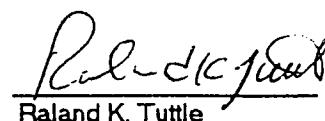
Sample Type: Water  
 Sample Condition: Intact/Iced/HCl  
 Project #: HDO 90-23  
 Project Name: None Given  
 Project Location: Monument Draw N.M.

Sample Date: 09/14/99  
 Receiving Date: 09/15/99  
 Analysis Date: 09/21/99  
 Analysis Date: Hg 9/17/99  
 Analysis Date: Mo,Sn,B,Sr 9/29/99

Analyte (mg/L)	MW-6 20009	MW-7 20010	MW-8 20011	Reporting Limit	%IA	%EA	BLANK	RPD
Aluminum	18.41	9.300	22.60	0.0500	94	99	<0.0500	17.10
Arsenic	0.0160	0.0160	0.0140	0.0050	98	102	<0.0050	0.00
Barium	0.4580	0.5970	2.100	0.0100	85	93	<0.0100	0.52
Beryllium	ND	ND	ND	0.0040	90	100	<0.0040	0.00
Cadmium	ND	ND	ND	0.0010	90	98	<0.0010	0.00
Calcium	622.0	208.0	403.0	1.000	*	*	<1.000	0.42
Chromium	0.0500	0.0180	0.0460	0.0050	92	101	<0.0050	0.49
Cobalt	ND	ND	ND	0.0200	88	95	<0.0200	0.21
Copper	0.0210	ND	0.0260	0.0100	86	92	<0.0100	0.00
Iron	12.80	6.390	16.20	0.0500	90	105	<0.0500	53.38
Lead	0.0120	0.0050	0.0110	0.0030	94	108	<0.0030	3.64
Magnesium	41.90	30.00	45.70	1.000	*	*	<1.000	0.90
Manganese	0.5740	0.1130	0.4370	0.0150	91	100	<0.0150	8.44
Mercury	ND	ND	ND	0.00020	102	108	<0.00020	5.71
Molybdenum	ND	ND	ND	0.050	101	*	<0.050	N/A
Nickel	0.0410	0.0130	0.0810	0.0100	91	98	<0.0100	0.41
Potassium	12.70	9.110	15.10	1.000	*	*	<1.000	N/A
Selenium	0.0180	0.0210	0.0140	0.0050	104	104	<0.0050	3.92
Silver	ND	ND	ND	0.0050	80	82	<0.0050	2.41
Sodium	116.0	94.90	92.00	1.000	*	*	<1.000	0.32
Tin	ND	ND	0.0650	0.0500	90	*	<0.0500	N/A
Vanadium	0.1050	0.0970	0.0980	0.0200	85	93	<0.0200	0.21
Zinc	0.0700	ND	0.1750	0.0200	91	96	<0.0200	3.15
Boron	0.350	0.332	0.354	0.050	97	*	<0.050	N/A
Strontium	3.33	2.45	4.63	0.050	89	*	<0.050	N/A

ND = Below Reporting Limit

METHOD: EPA SW846-6010B, 7470



Raland K. Tuttle

9-30-99  
 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: 915-520-4310

Sample Type: Water  
Sample Condition: Intact/ Iced  
Project #: HDO 90-23  
Project Name: None Given  
Project Location: Monument Draw N.M.  
Field Code: MW-6

Sampling Date: 09/14/99  
Receiving Date: 09/15/99  
Extraction Date: 09/20/99  
Analysis Date: 09/23/99

EPA SW846 8270 (mg/l)	REPORT LIMIT	ELT# 20009	RPD	%EA	%IA
Naphthalene	0.005	0.005			86
Acenaphthylene	0.005	ND			88
Acenaphthene	0.005	ND	5.41	36	86
Fluorene	0.005	ND			86
Phenanthrene	0.005	ND			88
Anthracene	0.005	ND			86
Fluoranthene	0.005	ND			90
Pyrene	0.005	ND	3.08	32	82
Benzo[a]anthracene	0.005	ND			86
Chrysene	0.005	ND			90
Benzo[b]fluoranthene	0.005	ND			80
Benzo[k]fluoranthene	0.005	ND			88
Benzo [a]pyrene	0.005	ND			86
Indeno[1,2,3-cd]pyrene	0.005	ND			96
Dibenz[a,h]anthracene	0.005	ND			108
Benzo[g,h,i]perylene	0.005	ND			96
% RECOVERY					
Nitrobenzene-d5 SURR		44			
2-Fluorobiphenyl SURR		46			
Terphenyl-d14 SURR		38			

ND= NOT DETECTED

Method: EPA SW 846 8270C , 3510

Raland K. Tuttle

Raland K. Tuttle

9-27-99

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: 915-520-4310

Sample Type: Water  
Sample Condition: Intact/ Iced  
Project #: HDO 90-23  
Project Name: None Given  
Project Location: Monument Draw N.M.  
Field Code: MW-7

Sampling Date: 09/14/99  
Receiving Date: 09/15/99  
Extraction Date: 09/20/99  
Analysis Date: 09/23/99

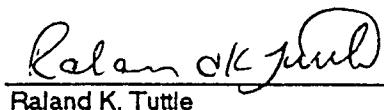
EPA SW846 8270 (mg/l)	REPORT LIMIT	ELT# 20010	RPD	%EA	%IA
Naphthalene	0.005	ND			86
Acenaphthylene	0.005	ND			88
Acenaphthene	0.005	ND	5.41	36	86
Fluorene	0.005	ND			86
Phenanthrene	0.005	ND			88
Anthracene	0.005	ND			86
Fluoranthene	0.005	ND			90
Pyrene	0.005	ND	3.08	32	82
Benzo[a]anthracene	0.005	ND			86
Chrysene	0.005	ND			90
Benzo[b]fluoranthene	0.005	ND			80
Benzo[k]fluoranthene	0.005	ND			88
Benzo [a]pyrene	0.005	ND			86
Indeno[1,2,3-cd]pyrene	0.005	ND			96
Dibenz[a,h]anthracene	0.005	ND			108
Benzo[g,h,i]perylene	0.005	ND			96

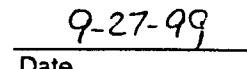
#### % RECOVERY

Nitrobenzene-d5 SURR 54  
2-Fluorobiphenyl SURR 56  
Terphenyl-d14 SURR 40

ND= NOT DETECTED

Method: EPA SW 846 8270C , 3510

  
\_\_\_\_\_  
Raland K. Tuttle

  
\_\_\_\_\_  
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: 915-520-4310

Sample Type: Water  
Sample Condition: Intact/ Iced  
Project #: HDO 90-23  
Project Name: None Given  
Project Location: Monument Draw N.M.  
Field Code: MW-8

Sampling Date: 09/14/99  
Receiving Date: 09/15/99  
Extraction Date: 09/20/99  
Analysis Date: 09/23/99

EPA SW846 8270 (mg/l)	REPORT LIMIT	ELT#	RPD	%EA	%IA
Naphthalene	0.005	ND			86
Acenaphthylene	0.005	ND			88
Acenaphthene	0.005	ND	5.41	36	86
Fluorene	0.005	ND			86
Phenanthrene	0.005	ND			88
Anthracene	0.005	ND			86
Fluoranthene	0.005	ND			90
Pyrene	0.005	ND	3.08	32	82
Benzo[a]anthracene	0.005	ND			86
Chrysene	0.005	ND			90
Benzo[b]fluoranthene	0.005	ND			80
Benzo[k]fluoranthene	0.005	ND			88
Benzo [a]pyrene	0.005	ND			86
Indeno[1,2,3-cd]pyrene	0.005	ND			96
Dibenz[a,h]anthracene	0.005	ND			108
Benzo[g,h,i]perylene	0.005	ND			96

#### % RECOVERY

Nitrobenzene-d5 SURR 61  
2-Fluorobiphenyl SURR 61  
Terphenyl-d14 SURR 47

ND= NOT DETECTED

Method: EPA SW 846 8270C , 3510

Raland K. Tuttle  
Raland K. Tuttle

9/27/99  
Date

**Environmental Lab of Texas, Inc.** 12600 West 120 East Odessa, Texas 79763  
 (915) 563-1800 FAX (915) 563-1713

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

Case #: 017

Project Manager:

JESSE TAYLOR

Company Name & Address:

ETG-I  
P. O. Box 4845  
Midland TX 79704

Phone #: (915) 664-9166

FAX #: \_\_\_\_\_

Project #: \_\_\_\_\_

Project Name :

Project Location:

HDO 90-23

Sampler Signature:

*Jan Dohle*

MONUMENT Bluff NW

FIELD CODE

# CONTAINERS

VOLUME/AMOUNT

MATRIX

PRESERVATIVE

METHOD

TIME

DATE

OTHER

ICP

HNO3

HCL

SLUDGE

AIR

SOIL

WATER

OTHER

TPH 418.1

TCLP Metals Ag As Ba Cd Cr Pb Hg Se

Total Metals Ag As Ba Cd Cr Pb Hg Se

TCLP Semivolatile

TCLP Volatiles

RCI

TDS

CATIENS (6/16/1)

TDS (16/01/1)

DIAH (8/10/01 DE P270)

ANTENUS (6/16/1)

HERVY HERBALS (ICP SCAY) (6/16/01)

ANTRIUS (3/26/01)

CATIENS (6/16/1)

TDS (16/01/1)

DIAH (8/10/01 DE P270)

RCI

TDS

TCLP Semivolatile

TCLP Volatiles

RCI

TDS

CATIENS (6/16/1)

TDS (16/01/1)

DIAH (8/10/01 DE P270)

RCI

TDS

CATIENS (6/16/1)

TDS (16/01/1)

DIAH (8/10/01 DE P270)

RCI

TDS

CATIENS (6/16/1)

TDS (16/01/1)

DIAH (8/10/01 DE P270)

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CATIENS (6/16/1)

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RCI

TDS

CATIENS (6/16/1)

TDS (16/01/1)

DIAH (8/10/01 DE P270)

RCI

TDS

CATIENS (6/16/1)

TDS (16/01/1)

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TDS

## GROUND WATER MONITORING AND SAMPLING DATA

JOB NO.: HDO 90-23

DATE: 1/1-3-99  
FIELD TECHNICIAN: KDA/se

WELL NO.	TIME WELL PURGED	TOTAL WELL DEPTH (feet)	DEPTH TO WATER (feet)	HEIGHT WATER COLUMN (feet) (1-2)=3	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 65	1999		SAMPLE CHARACTERISTIC
									TIME SAMPLE TAKEN/DATE	DEPTH TO PSH (feet)	
Hw-1	1530	51.90	46.13	5.77	.16	0.92	2.76	3.0	11-3	T 18.1	C 604.9 ms
Hw-2									1630	DH 7.49	O O mV
Hw-3	1315	54.90	45.52	9.38	.16	1.50	4.50	3.0			
Hw-4	1410	53.40	46.74	6.66	.16	1.06	3.19	3.0	1455	DH 7.49	O -12.5 mV
Hw-5	1340	55.60	48.42	7.18	.16	1.14	3.44	3.0	1420	DH 2.2	O 13.5 mV
Hw-6									1430	DH 7.31	C 1098 us
Hw-7	1515	58.70	46.80	11.9	.16	1.90	5.71	3.0	11-3	T 19.2	C 799.1 us
Hw-8	1545	61.95	48.42	13.53	.16	2.16	6.49	3.0	1615	T 18.8	C 870.6 us
										DH 7.42	O -47 mV
									Total Removed:	gal.	

COMMENTS:

DRUMS ON SITE:

CARBON DRUM TRAILER: (yes/no)

DISCHARGE SAMPLE (time/date):

# ENVIRONMENTAL LAB OF , INC.

"Don't Treat Your Soil Like Dirt!"

ETGI  
 ATTN: MR. JESSE TAYLOR  
 P.O. BOX 4845  
 MIDLAND, TEXAS 79704  
 FAX: 505-392-3760(Ken Dutton)

Sample Type: Water  
 Sample Condition: Intact/Iced/HCl  
 Project #: EOT 1015C  
 Project Name: HDO 90-23  
 Project Location: Monument Draw Lea County, N.M.

Sampling Date: 11/03/99  
 Receiving Date: 11/06/99  
 Analysis Date: 11/06/99

ELT#	FIELD CODE	BENZENE mg/L	TOLUENE mg/L	ETHYLBENZENE mg/L	m,p-XYLENE mg/L	<i>o</i> -XYLENE mg/L
21398	MW-1	<0.001	<0.001	<0.001	<0.001	<0.001
21398	MW-3	1.90	<0.100*	2.08	0.180	<0.100*
21400	MW-4	<0.001	<0.001	<0.001	<0.001	<0.001
21401	MW-5	<0.001	<0.001	<0.001	<0.001	<0.001
21402	MW-7	<0.001	<0.001	<0.001	<0.001	<0.001
21403	MW-8	<0.001	<0.001	<0.001	<0.001	<0.001

% IA	105	101	102	103	102
% EA	103	98	98	99	98
BLANK	<0.001	<0.001	<0.001	<0.001	<0.001

\*NOTE: Higher detection level due to elevated hydrocarbon levels.

METHODS: SW 846-8021,5030

Coley D. Keene  
 Coley D. Keene

11/08/99  
 Date



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21398	MW-1	<0.001	<0.001	<0.001	<0.001	<0.001
21399	MW-3	1.90	<0.100*	2.06	0.160	<0.100*
21400	MW-4	<0.001	<0.001	<0.001	<0.001	<0.001
21401	MW-5	<0.001	<0.001	<0.001	<0.001	<0.001
21402	MW-7	<0.001	<0.001	<0.001	<0.001	<0.001
21403	MW-8	<0.001	<0.001	<0.001	<0.001	<0.001
% IA		105	101	102	103	102
% EA		103	98	98	99	98
BLANK		<0.001	<0.001	<0.001	<0.001	<0.001

\*NOTE: Higher detection level due to elevated hydrocarbon levels.

METHODS: SW 846-8021,5030

  
Celey D. Keene

  
Date