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REPORTS

DATE:

11-9-1998

SUBSURFACE INVESTIGATION REPORT
MONITORING WELLS MW17-6, MW17-7 AND MW17-8

TEXAS - NEW MEXICO PIPE LINE COMPANY
MONUMENT SITE NO. 17
UNIT F, SECTION 29, TOWNSHIP 19 SOUTH
RANGE 37 EAST
LEA COUNTY, NEW MEXICO

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San Antonio, Texas 78238
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SUBSURFACE INVESTIGATION REPORT
MONITORING WELLS MW17-6, MW17-7 AND MW17-8

TEXAS - NEW MEXICO PIPE LINE COMPANY
MONUMENT SITE NO. 17
UNIT F, SECTION 29, TOWNSHIP 19 SOUTH, RANGE 37 EAST
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

Daryl Stacey
Project Manager

Theresa Nix
Project Manager

Pat Bullinger, P.E.

KEI Job No. 610057-2-17

October 29, 1998

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PURPOSE AND SCOPE

The purpose of the subsurface investigation was to delineate the vertical and horizontal extent of hydrocarbon impact at the site by installing 3 monitoring wells. Previous activities consisted of advancing soil borings B17-1 through B17-5 and installing monitoring wells MW17-1 through MW17-3. The report for that investigation was dated September 9, 1997. Monitoring wells MW17-4 and MW17-5 were installed on January 22, 1998. The report for MW17-4 and MW17-5 was dated April 7, 1998. Locations of the monitoring wells and soil borings are shown on FIG. 1.

SOIL INVESTIGATION

The subsurface investigation consisted of drilling 3 monitoring wells designated MW17-6, MW17-7 and MW17-8. The wells were drilled to an approximate depth of 29 to 32 feet below the ground surface (bgs). Soil samples were collected at selected intervals from the ground surface to the bottom of the boring. The soils were classified in the field, soil samples were field screened, and selected samples were prepared and shipped to the laboratory for analysis.

Upon advancement to total depth and collection of soil samples, a monitoring well consisting of 2-inch perforated PVC and blank riser was placed in the open hole of monitoring wells MW17-6, MW17-7 and MW17-8.

SOIL DESCRIPTION

The subsurface soil profile was classified in general accordance with the Unified Soil Classification System by visually observing the soil samples obtained during the assessment. In general, 3 soil types were encountered. A general description, approximate thickness, and head-space sample results for each soil type are as follows:

Soil Type I
This soil type consisted of a brown to black clay encountered at the surface of each well. The clay was gravelly with calcareous nodules and dry. The observed thickness of this soil type was 1 foot at all locations. Head-space readings from samples of this soil type varied from below instrument detection limits (ND) to 5 ppm.

Soil Type II
This soil type consisted of light tan to light gray limestone and was encountered below Soil Type I at all well locations. The limestone was well cemented, interbedded with sandy caliche layers, and dry. The observed thickness of this soil type ranged from approximately 13 to 15 feet. Head-space readings from samples of this soil type ranged from ND to 60 ppm.

Soil Type III
This soil type consisted of a tan to reddish tan sand and was encountered below Soil Type II at all well locations. The sand was clayey, contained lime nodules and moist to wet. The observed thickness of this soil type ranged from approximately 13 to 15 feet. Head-space readings from samples of this soil type ranged from ND to 48 ppm.

A 3 feet deep dissolution cavity was found between Soil Type II and Soil Type III in monitoring well MW17-7. There was no resistance and no recovery during drilling. Logs indicating the subsurface soil profile, depths at which soil samples were obtained, head-space results, and laboratory results are presented on FIGs. 2, 3 and 4.

ANALYTICAL RESULTS

Three soil samples were selected from each monitoring well based on the following criteria:

- the sample collected at the ground surface
- the sample with the highest PID reading
- the sample directly above the ground water

Nine samples were selected for the following analytical testing:

- Nine samples from the soil borings were tested for benzene, toluene, ethylbenzene, and xylenes (BTEX) and total petroleum hydrocarbons (TPH).
- One soil sample from monitoring well MW17-7 (exhibiting the highest concentration of TPH by EPA Method 8015 DRO) was also tested for SPLP TPH, SPLP Volatile Organic Compounds (VOC) and SPLP Semi-Volatile Organic Compounds (SVOC).
- Analytical results for the selected samples indicated the following concentration ranges:

CONSTITUENT	CONCENTRATION RANGE (mg/kg)
BENZENE	ND
BTEX	ND
TPH	ND to 86.5
SPLP TPH	ND
SPLP VOC	ND to 0.020
SPLP SVOC	ND to 0.010

Soil analytical results are summarized in TABLES I and II. Soil analytical reports and chain-of-custody documentation are presented in APPENDIX A. Quality Assurance/Quality Control Procedures are presented in APPENDIX B.

GROUND WATER SAMPLING AND ANALYTICAL RESULTS

Upon completion of drilling, each well was gauged to determine the depth to ground water and checked for the presence of phase-separate hydrocarbons (PSH). The depth to ground water measured in the monitoring wells on September 1, 1998, ranged from 15.12 to 17.97 feet bgs. Ground water measurements are summarized in TABLE III. Ground water elevations indicate a gradient of 0.001 ft/ft towards the southeast. A ground water contours map is presented as FIG. 5.

Monitoring wells MW17-1 through MW17-8 and a nearby windmill were sampled on August 25, 1998. Each monitoring well was purged of 3 well volumes of water and ground water samples were collected from the monitoring well. Purged water collected during the event was stored in steel drums pending disposal.

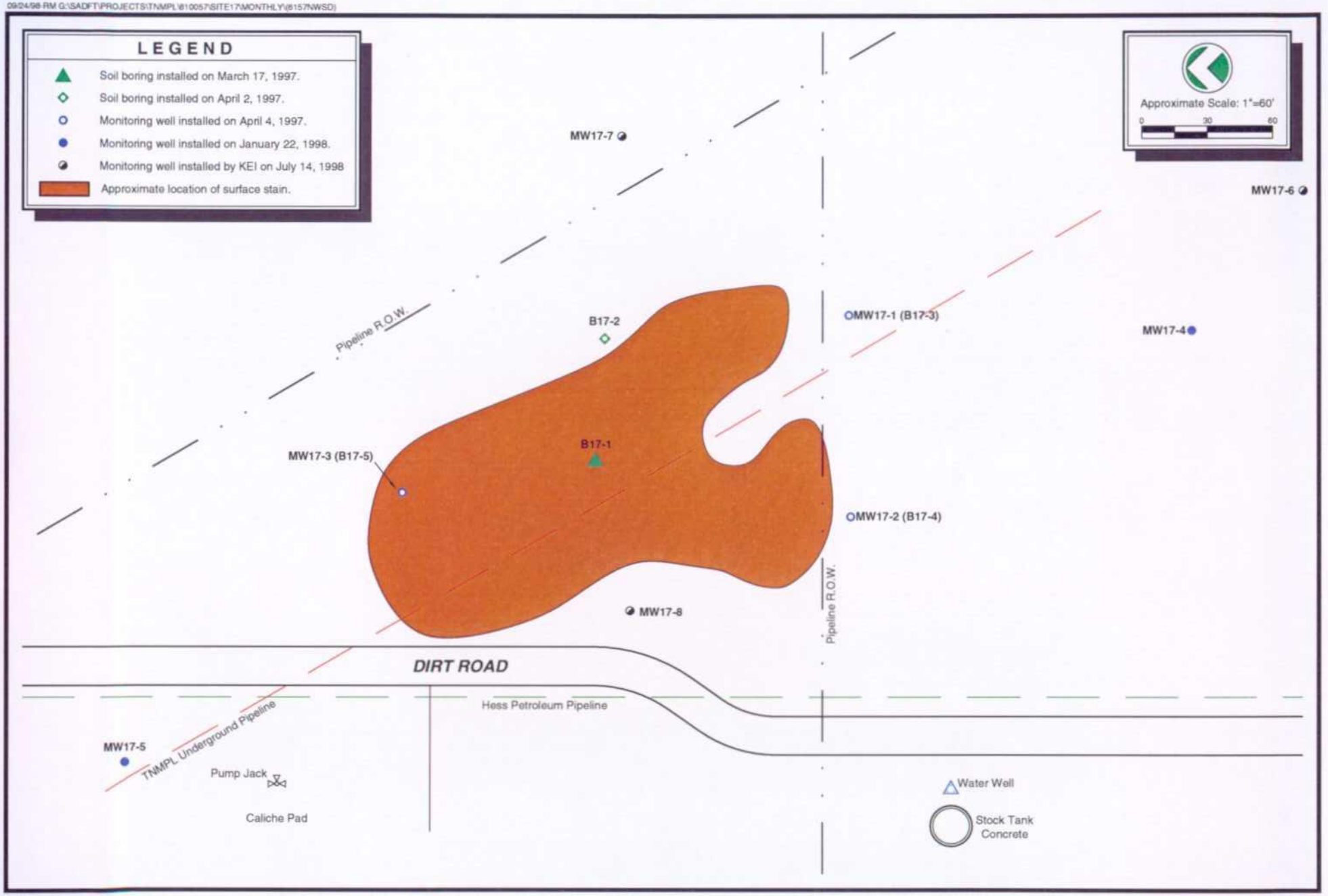
Water samples selected for analytical testing consisted of the following:

- Ground water samples collected from MW17-1 through MW17-8 and the windmill were tested for benzene, toluene, ethylbenzene, and xylenes (BTEX).
- Ground water samples collected from MW17-6, MW17-7, and MW17-8 were tested for polycyclic aromatic hydrocarbons (PAH), metals, cations and anions, and TDS.
- Analytical results for the selected samples indicated the following concentration ranges:

CONSTITUENT	CONCENTRATION RANGE (mg/L)
BENZENE	ND to 0.260
BTEX	ND to 0.352
PAH (Naphthalene)	ND to 0.003
Aluminum	ND to 0.69
Barium	0.18 to 0.50
Boron	ND to 0.21
Calcium	155 to 760
Iron	ND to 0.45
Magnesium	21.2 to 28.0
Manganese	ND to 0.26
Potassium	3.96 to 4.69
Silicon	19.8 to 22.8
Sodium	69.0 to 96.7
Strontium	1.26 to 1.93
Zinc	ND to 0.28
Mercury	ND
TDS	719 to 772

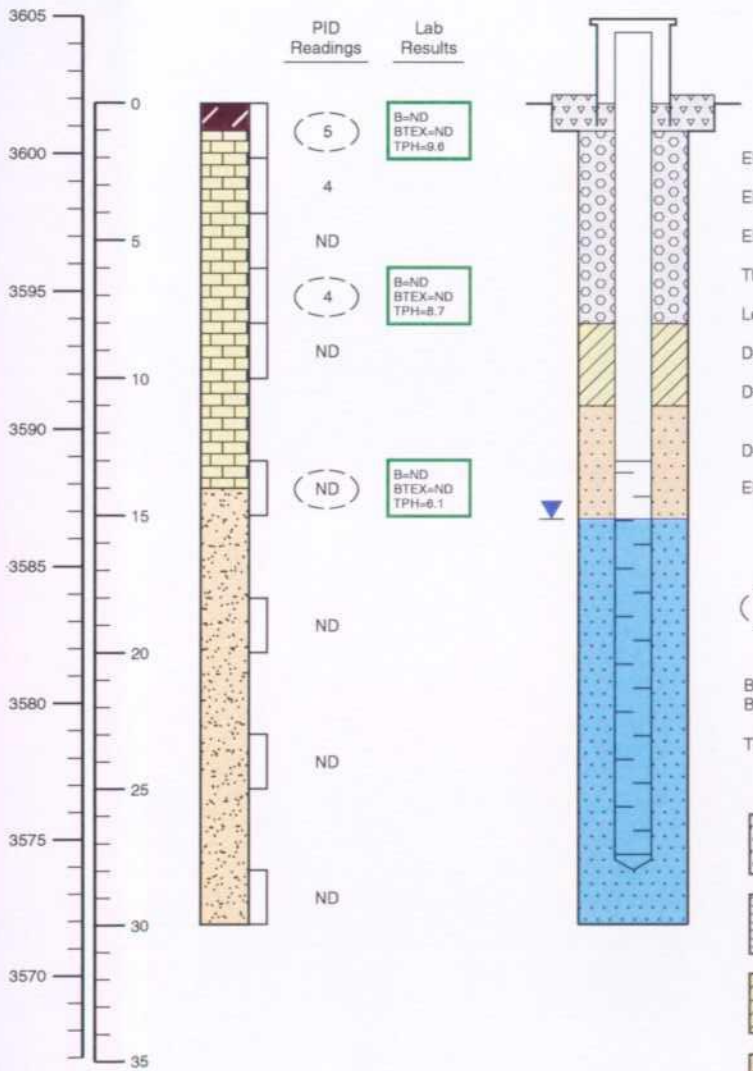
Those constituents not listed were ND. Ground water analytical results are summarized in TABLES IV through VI. Water analytical laboratory reports and chain-of-custody documentation are presented in APPENDIX B. Quality Assurance/Quality Control Procedures are presented in APPENDIX C.

09/24/98 RM G:\SADFT\PROJECTS\TNMPL\610057\SITE17\MONTHLY\[6157NWSD]



k·e·i	*SITE DETAILS*	610057
	TEXAS - NEW MEXICO PIPE LINE CO. MONUMENT SITE NO. 17 LEA COUNTY, NEW MEXICO	FIG 1

MONITORING WELL MW17-6



Monitoring Well Details (MW17-6)

Elev of Concrete Pad	3602.18 ft
Elev of Ground Surface	3601.85 ft
Elev Top of PVC Well	3604.44 ft
Thickness of Bentonite Seal	3.0 ft
Length of PVC Well Screen	15.0 ft
Depth of PVC Well	28.0 ft
Depth of Exploratory Hole	30.0 ft
Depth to Ground Water	15.12 ft
Elev of Ground Water	3586.73 ft

Indicates sample selected for laboratory analysis.

B= Benzene Concentration (mg/kg)
BTEX= Total Benzene, Toluene, Ethylbenzene, and Xylenes Concentration (mg/kg)
TPH= Total Petroleum Hydrocarbon Concentration (mg/kg)

2' x 2' Concrete Pad

Cement / Bentonite Grout

Bentonite Pellet Seal

Sand Pack

LEGEND

Clay (GC), gravelly, with calcareous nodules, brown to black, dry.

Limestone, well cemented, interbedded with sandy caliche layers, light tan to light grey, dry.

Sand (SC), clayey, calcareous nodules throughout, tan to reddish tan, moist to wet.

Indicates the depth of interval from which a soil sample was selected and prepared for field head-space and/or laboratory analysis.

Indicates the ground water level measured on September 1, 1998.

PID Head-space readings in ppm obtained with a photo-ionization detector.

ND Indicates the constituent was not detected.

NOTES

1. Monitoring well MW17-6 was installed utilizing an air rotary rig on July 14, 1998.
2. The well was constructed with 2-inch ID, 0.010-inch factory slotted, threaded joint, Schedule 40 PVC pipe.
5. The well is protected with a stick up steel cover and a locked compression cap.
4. The lines between material types shown on the profile log represent approximate boundaries. Actual transitions may be gradual.
5. The depths indicated are referenced from the ground surface unless otherwise noted.

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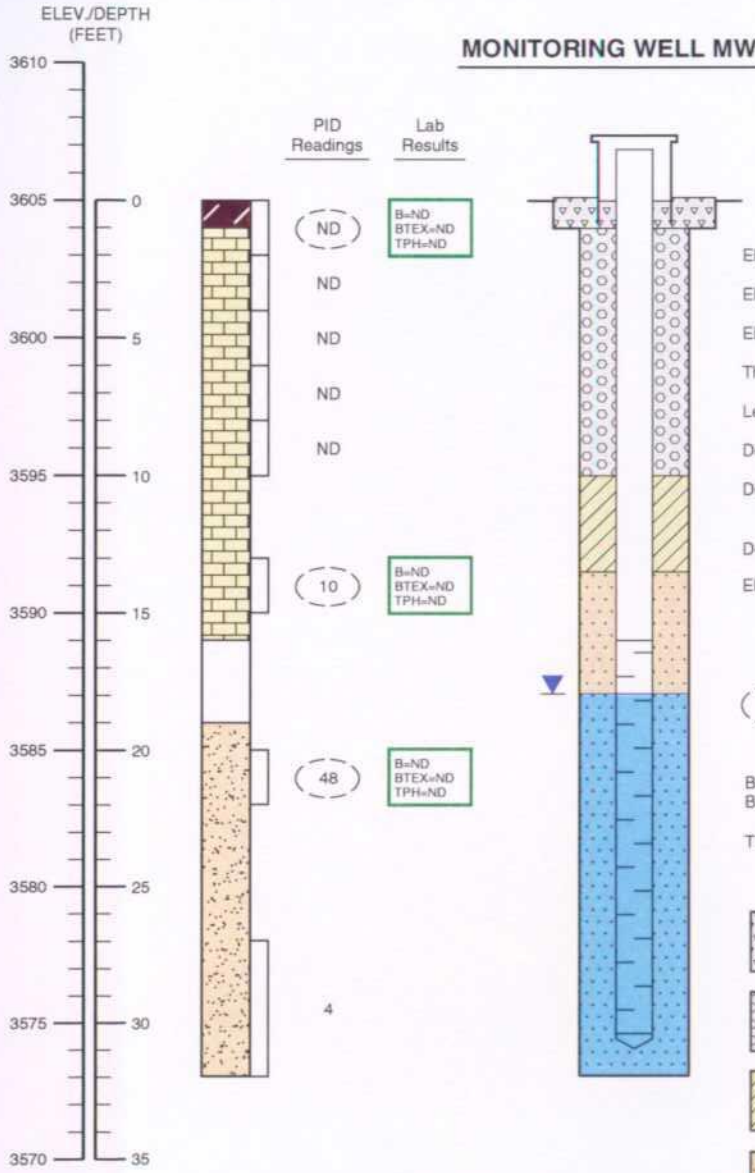
LOG AND DETAILS OF MONITORING WELL MW17-6	610057
TEXAS - NEW MEXICO PIPE LINE CO. MONUMENT SITE NO. 17 LEA COUNTY, NEW MEXICO	FIG 2

MONITORING WELL MW17-7



Monitoring Well Details (MW17-7)

Elev of Concrete Pad	3605.11 ft
Elev of Ground Surface	3605.00 ft
Elev Top of PVC Well	3607.38 ft
Thickness of Bentonite Seal	3.5 ft
Length of PVC Well Screen	15.0 ft
Depth of PVC Well	31.0 ft
Depth of Exploratory Hole	32.0 ft
Depth to Ground Water	17.97 ft
Elev of Ground Water	3587.03 ft

Indicates sample selected for laboratory analysis.

B= Benzene Concentration (mg/kg)
BTEX= Total Benzene, Toluene, Ethylbenzene, and Xylenes Concentration (mg/kg)
TPH= Total Petroleum Hydrocarbon Concentration (mg/kg)

2' x 2' Concrete Pad

Cement / Bentonite Grout

Bentonite Pellet Seal

Sand Pack

LEGEND

Clay (GC), gravelly, with calcareous nodules, brown to black, dry.

Limestone, well cemented, interbedded with sandy caliche layers, light tan to light grey, dry.

Sand (SC), clayey, calcareous nodules throughout, tan to reddish tan, moist to wet.

Dissolution cavity, no resistance and no recovery during drilling.

Indicates the depth of interval from which a soil sample was selected and prepared for field head-space and/or laboratory analysis.

Indicates the ground water level measured on September 1, 1998.

PID Head-space readings in ppm obtained with a photo-ionization detector.

ND Indicates the constituent was not detected.

NOTES

1. Monitoring well MW17-7 was installed utilizing an air rotary rig on July 14, 1998.
2. The well was constructed with 2-inch ID, 0.010-inch factory slotted, threaded joint, Schedule 40 PVC pipe.
5. The well is protected with a stick up steel cover and a locked compression cap.
4. The lines between material types shown on the profile log represent approximate boundaries. Actual transitions may be gradual.
5. The depths indicated are referenced from the ground surface unless otherwise noted.

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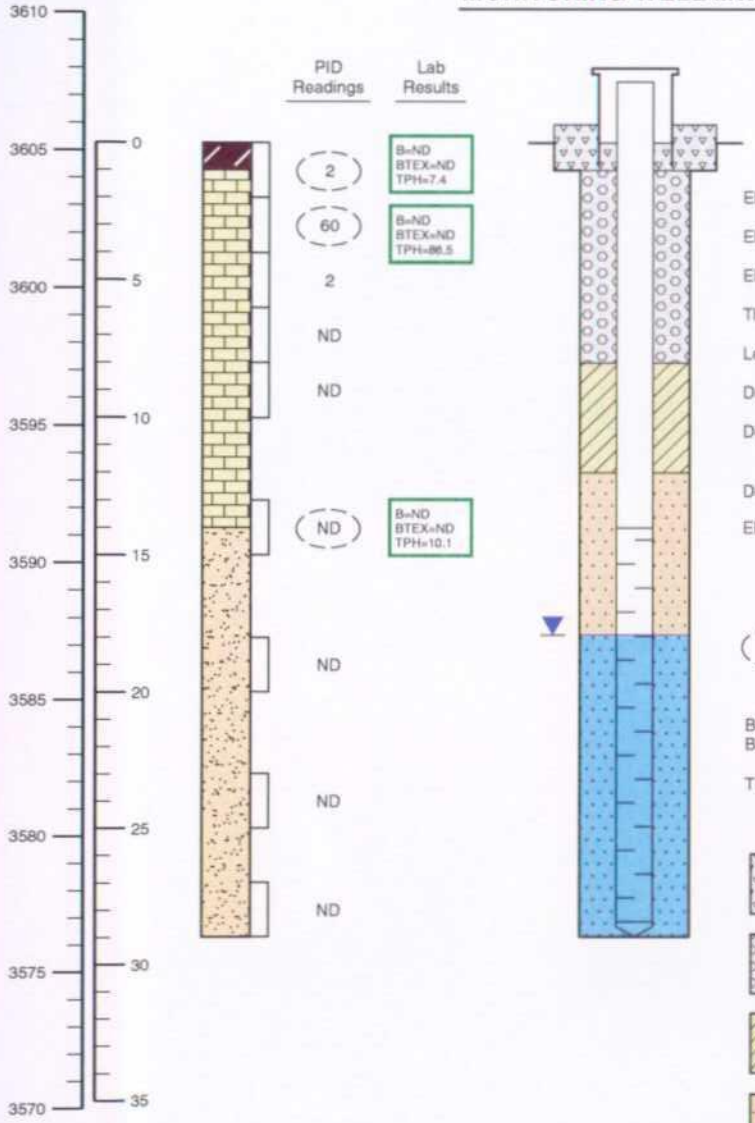
LOG AND DETAILS OF MONITORING WELL MW17-7

TEXAS - NEW MEXICO PIPE LINE CO. MONUMENT SITE NO. 17 LEA COUNTY, NEW MEXICO

610057

FIG 3

MONITORING WELL MW17-8



Monitoring Well Details (MW17-8)

Elev of Concrete Pad	3605.93 ft
Elev of Ground Surface	3605.29 ft
Elev Top of PVC Well	3607.99 ft
Thickness of Bentonite Seal	4.0 ft
Length of PVC Well Screen	15.0 ft
Depth of PVC Well	29.0 ft
Depth of Exploratory Hole	29.0 ft
Depth to Ground Water	17.96 ft
Elev of Ground Water	3587.33 ft

Indicates sample selected for laboratory analysis.

B= Benzene Concentration (mg/kg)
BTEX= Total Benzene, Toluene, Ethylbenzene, and Xylenes Concentration (mg/kg)
TPH= Total Petroleum Hydrocarbon Concentration (mg/kg)

2' x 2' Concrete Pad

Cement / Bentonite Grout

Bentonite Pellet Seal

Sand Pack

LEGEND

Clay (GC), gravelly, with calcareous nodules, brown to black, dry.

Limestone, well cemented, interbedded with sandy caliche layers, light tan to light grey, dry.

Sand (SC), clayey, calcareous nodules throughout, tan to reddish tan, moist to wet.

Indicates the depth of interval from which a soil sample was selected and prepared for field head-space and/or laboratory analysis.

Indicates the ground water level measured on September 1, 1998.

PID Head-space readings in ppm obtained with a photo-ionization detector.

ND Indicates the constituent was not detected.

NOTES

1. Monitoring well MW17-8 was installed utilizing an air rotary rig on July 14, 1998.
2. The well was constructed with 2-inch ID, 0.010-inch factory slotted, threaded joint, Schedule 40 PVC pipe.
5. The well is protected with a stick up steel cover and a locked compression cap.
4. The lines between material types shown on the profile log represent approximate boundaries. Actual transitions may be gradual.
5. The depths indicated are referenced from the ground surface unless otherwise noted.

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LOG AND DETAILS OF MONITORING WELL MW17-8

TEXAS - NEW MEXICO PIPE LINE CO. MONUMENT SITE NO. 17 LEA COUNTY, NEW MEXICO

610057

FIG 4

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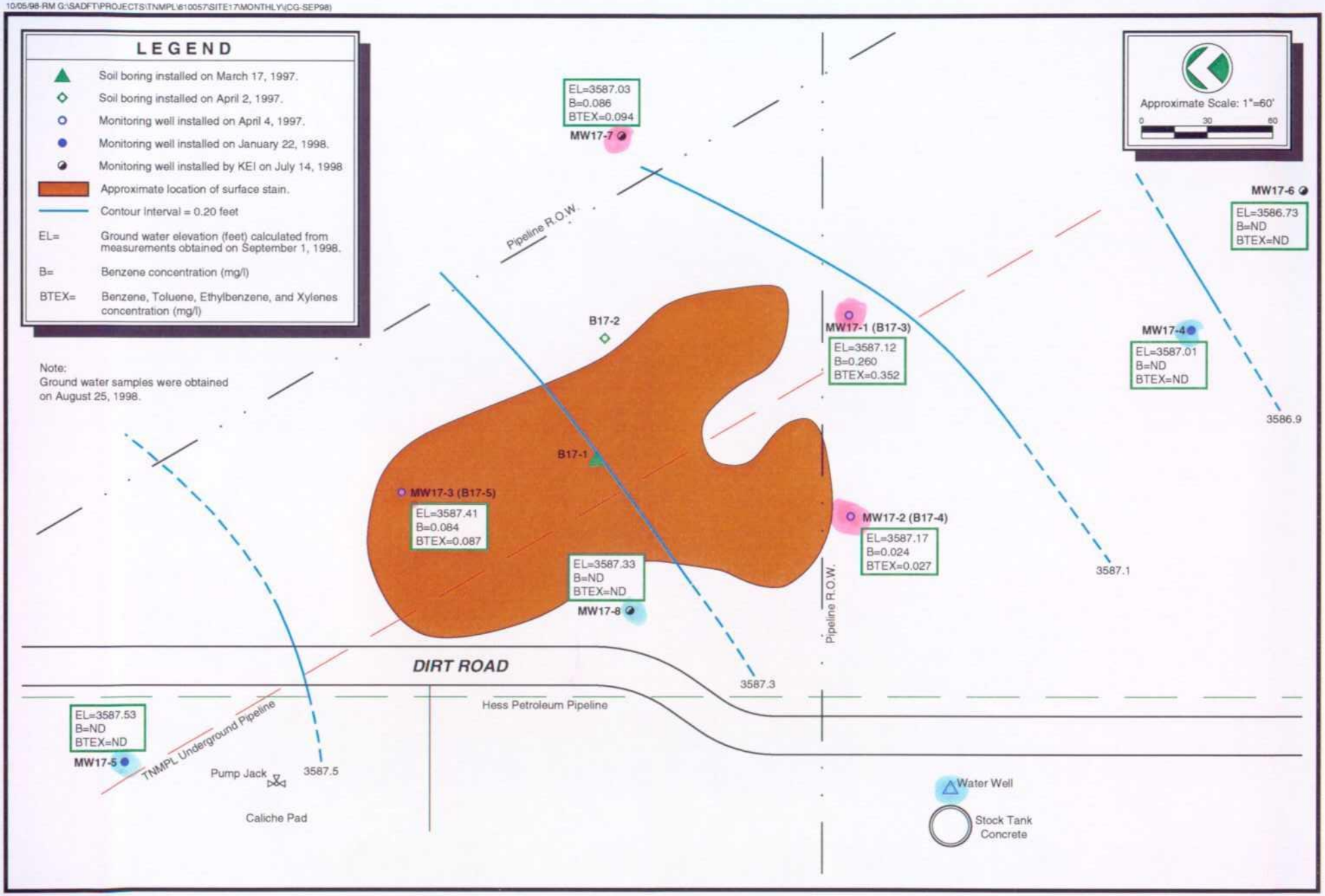

k·e·i	*GROUND WATER CONTOURS / CONCENTRATIONS MAP - SEPTEMBER 1998*	610057
	TEXAS - NEW MEXICO PIPE LINE CO. MONUMENT SITE NO. 17 LEA COUNTY, NEW MEXICO	FIG 5

GENERAL NOTES

ND - Indicates constituent was not detected above the method detection limit.

Method detection or reporting limits:

Soils:

BTEX	-	0.020 to 0.040 mg/kg
TPH	-	5.0 mg/kg
SPLP TPH	-	0.7 mg/kg
SPLP VOC	-	0.005 to 0.020 mg/kg
SPLP SVOC	-	0.005 to 0.013 mg/kg

Water:

BTEX	-	0.001 to 0.008 mg/L
Metals	-	0.05 to 0.5 mg/L
PAH	-	0.002 mg/L
Bicarbonate	-	4.0 mg/L
Carbonate	-	4.0 mg/L
TDS	-	5.0 mg/L
Anions	-	2 mg/L
Total Mercury	-	0.0011 mg/L

Laboratory test methods:

Soil:

BTEX	-	EPA Method SW846-8021B
TPH	-	EPA Modified Method 8015 Diesel Range Organics
SPLP TPH	-	EPA Method 1312/418.1
SPLP VOC	-	EPA Method 1312/8260
SPLP SVOC	-	EPA Method 1312/8270

Water

BTEX	-	EPA Method SW846-8021B
Metals	-	EPA ICP Method 6010
PAH	-	EPA Method 8270
Bicarbonate	-	SM4500CO2D
Carbonate	-	SM4500CO2D
TDS	-	EPA Method 160.1
Anions	-	EPA Method 300.0
Total Mercury	-	EPA Method 7470

TABLE I

SUMMARY OF SOIL RESULTS - BTEX AND TPH
TEXAS - NEW MEXICO PIPE LINE COMPANY
MONUMENT SITE NO. 17
LEA COUNTY, NEW MEXICO

SAMPLE LOCATION	SAMPLE DATE	DEPTH (feet)	BENZENE (mg/kg)	TOLUENE (mg/kg)	ETHYL-BENZENE (mg/kg)	XYLENES (mg/kg)	TOTAL BTEX (mg/kg)	TPH (mg/kg)
MW17-6	07/14/98	0 - 2	ND	ND	ND	ND	ND	9.6
MW17-6	07/14/98	6 - 8	ND	ND	ND	ND	ND	8.7
MW17-6	07/14/98	13 - 15	ND	ND	ND	ND	ND	6.1
MW17-7	07/14/98	0 - 2	ND	ND	ND	ND	ND	ND
MW17-7	07/14/98	13 - 15	ND	ND	ND	ND	ND	ND
MW17-7	07/14/98	20 - 22	ND	ND	ND	ND	ND	ND
MW17-8	07/14/98	0 - 2	ND	ND	ND	ND	ND	7.4
MW17-8	07/14/98	2 - 4	ND	ND	ND	ND	ND	86.5
MW17-8	07/14/98	13 - 15	ND	ND	ND	ND	ND	10.1

TABLE II

SUMMARY OF SOIL RESULTS - SPLP
TEXAS - NEW MEXICO PIPE LINE COMPANY
MONUMENT SITE NO. 17
LEA COUNTY, NEW MEXICO

CONSTITUENT	CONCENTRATION (mg/l)
VOC	
1,2-Dichloroethane	0.020
1,2,4-Trimethylbenzene	0.008
SVOC	
2-Methylnaphthalene	0.007
bis(2-Ethylhexyl) phthalate	0.010
TPH	ND

NOTES:

1. Sample MW17-8 (2 to 4 feet) was sampled on 07/14/98 and analyzed for SPLP volatiles, semi-volatiles and TPH concentrations.
2. Those constituents not listed were ND.

TABLE III

SUMMARY OF GROUND WATER MONITORING
TEXAS - NEW MEXICO PIPE LINE COMPANY
MONUMENT SITE NO. 17
LEA COUNTY, NEW MEXICO

MONITORING WELL NO.	DATE MEASURED	GROUND ELEVATION (feet)	DEPTH TO WATER (feet bgs)	GROUND WATER ELEVATION (feet)
MW17-1	08/25/98	3,604.45	17.33	3587.12
	09/01/98	3,604.45	17.33	3587.12
MW17-2	08/25/98	3,604.38	17.21	3587.17
	09/01/98	3,604.38	17.21	3587.17
MW17-3	08/25/98	3,605.99	18.60	3587.39
	09/01/98	3,605.99	18.58	3587.41
MW17-4	08/25/98	3,603.20	16.19	3587.01
	09/01/98	3,603.20	16.19	3587.01
MW17-5	08/25/98	3,607.29	19.76	3587.53
	09/01/98	3,607.29	19.76	3587.53
MW17-6	08/25/98	3,601.85	15.11	3586.74
	09/01/98	3,601.85	15.12	3586.73
MW17-7	08/25/98	3,605.00	17.96	3587.04
	09/01/98	3,605.00	17.97	3587.03
MW17-8	08/25/98	3,605.29	17.95	3587.34
	09/01/98	3,605.29	17.96	3587.33

TABLE IV

SUMMARY OF GROUND WATER GROUND WATER RESULTS - BTEX
TEXAS - NEW MEXICO PIPE LINE COMPANY
MONUMENT SITE NO. 17
LEA COUNTY, NEW MEXICO

MONITORING WELL NO.	DATE SAMPLED	BENZENE (mg/l)	TOLUENE (mg/l)	ETHYL-BENZENE (mg/l)	XYLENES (mg/l)	BTEX (mg/l)
MW17-1	08/25/98	0.260	0.007	0.036	0.049	0.352
MW17-2	08/25/98	0.024	0.003	ND	ND	0.027
MW17-3	08/25/98	0.084	0.002	0.001	ND	0.087
MW17-4	08/25/98	ND	ND	ND	ND	ND
MW17-5	08/25/98	ND	ND	ND	ND	ND
MW17-6	08/25/98	ND	ND	ND	ND	ND
MW17-7	08/25/98	0.086	ND	0.008	ND	0.094
MW17-8	08/25/98	ND	ND	ND	ND	ND
Windmill	08/25/98	ND	ND	ND	ND	ND

TABLE V

SUMMARY OF GROUND WATER RESULTS - METALS AND PAH
TEXAS - NEW MEXICO PIPE LINE COMPANY
MONUMENT SITE NO. 17
LEA COUNTY, NEW MEXICO

SAMPLE LOCATION	MW17-6	MW17-7	MW17-8
DATE SAMPLED	08/25/98	08/25/98	08/25/98
PARAMETER	CONCENTRATION (mg/L)		
Aluminum	ND	ND	0.69
Barium	0.22	0.18	0.50
Boron	ND	0.21	0.20
Calcium	760	170	155
Iron	0.27	ND	0.45
Magnesium	24.1	21.2	28.0
Manganese	ND	ND	0.26
Potassium	4.69	4.22	3.96
Silicon	22.8	19.8	20.5
Sodium	69.0	71.7	96.7
Strontium	1.93	1.26	1.36
Zinc	ND	0.28	ND
PAH			
Naphthalene	ND	0.003	ND

NOTE:
Those constituents not listed were ND.

TABLE VI

SUMMARY OF GROUND WATER RESULTS - MISCELLANEOUS
TEXAS - NEW MEXICO PIPE LINE COMPANY
MONUMENT SITE NO. 17
LEA COUNTY, NEW MEXICO

MONITORING WELL NO.	DATE SAMPLED	BICARBONATE (mg/l)	CARBONATE (mg/l)	TDS (mg/l)	SULFATE (mg/l)	CHLORIDE (mg/l)
MW17-6	08/25/98	235	ND	772	67	164
MW17-7	08/25/98	325	ND	719	48	177
MW17-8	08/25/98	273	ND	743	1550	86

ANALYTICAL REPORT 1-82682

for

K.E.I. Consultants, Inc.

Project Manager: Theresa Nix

Project Name: Monument Site #17

Project Id: 610057-2-17

August 17, 1998

XENCO Laboratories

HOUSTON - DALLAS - SAN ANTONIO

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Houston - Dallas - San Antonio - Latin America

August 17, 1998

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

Reference: **XENCO Report No.: 1-82682**
Project Name: Monument Site #17
Project ID: 610057-2-17
Project Address: Monument, Lea Co., 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 1-82682. 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. 1-82682 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

XENCO Laboratories

ANALYTICAL CHAIN OF CUSTODY REPORT
CHRONOLOGY OF SAMPLES

K.E.I. Consultants, Inc.

Project ID: 610057-2-17
Project Manager: Theresa Nix
Project Location: Monument, Lea Co., NM

Project Name: Monument Site #17

XENCO COC#: 1-82682
Date Received in Lab: Jul 16, 1998 09:15 by CC
XENCO contact : Carlos Castro/Eddie Clemons

	Field ID	Lab. ID	Method Name	Method ID	Units	Turn Around	Date and Time			
							Sample Collected	Addition Requested	Extraction	Analysis
1	MW17-7 (0-2')	182682-001	TPH8015M-D	SW-846 8015 M	mg/kg	10 days	Jul 14, 1998 09:05		Jul 27, 1998 by OG	Jul 28, 1998 00:34 by AM
2			BTEX	SW-846	ppm	10 days	Jul 14, 1998 09:05		Jul 17, 1998 by HL	Jul 17, 1998 10:04 by HL
3	MW17-7(13-15')	182682-002	TPH8015M-D	SW-846 8015 M	mg/kg	10 days	Jul 14, 1998 10:50		Jul 27, 1998 by OG	Jul 28, 1998 13:07 by AM
4			BTEX	SW-846	ppm	10 days	Jul 14, 1998 10:50		Jul 17, 1998 by HL	Jul 17, 1998 10:20 by HL
5	MW17-7 (20-22')	182682-003	TPH8015M-D	SW-846 8015 M	mg/kg	10 days	Jul 14, 1998 11:00		Jul 27, 1998 by OG	Jul 28, 1998 01:40 by AM
6			BTEX	SW-846	ppm	10 days	Jul 14, 1998 11:00		Jul 17, 1998 by HL	Jul 17, 1998 10:36 by HL
7	MW17-6 (0-2')	182682-004	TPH8015M-D	SW-846 8015 M	mg/kg	10 days	Jul 14, 1998 12:35		Jul 27, 1998 by OG	Jul 28, 1998 02:13 by AM
8			BTEX	SW-846	ppm	10 days	Jul 14, 1998 12:35		Jul 17, 1998 by HL	Jul 17, 1998 10:52 by HL
9	MW17-6 (6-8')	182682-005	TPH8015M-D	SW-846 8015 M	mg/kg	10 days	Jul 14, 1998 13:15		Jul 27, 1998 by OG	Jul 28, 1998 02:45 by AM
10			BTEX	SW-846	ppm	10 days	Jul 14, 1998 13:15		Jul 17, 1998 by HL	Jul 17, 1998 11:08 by HL
11	MW17 6 (13-15')	182682-006	TPH8015M-D	SW-846 8015 M	mg/kg	10 days	Jul 14, 1998 14:00		Jul 27, 1998 by OG	Jul 28, 1998 03:18 by AM
12			BTEX	SW-846	ppm	10 days	Jul 14, 1998 14:00		Jul 17, 1998 by HL	Jul 17, 1998 11:24 by HL
13	MW17-8 (0-2')	182682-007	TPH8015M-D	SW-846 8015 M	mg/kg	10 days	Jul 14, 1998 15:35		Jul 27, 1998 by OG	Jul 28, 1998 03:51 by AM
14			BTEX	SW-846	ppm	10 days	Jul 14, 1998 15:35		Jul 17, 1998 by HL	Jul 17, 1998 11:40 by HL
15	MW17-8 (2-4')	182682-008	TPH8015M-D	SW-846 8015 M	mg/kg	10 days	Jul 14, 1998 15:45		Jul 27, 1998 by OG	Jul 28, 1998 04:23 by AM
16			BTEX	SW-846	ppm	10 days	Jul 14, 1998 15:45		Jul 17, 1998 by HL	Jul 17, 1998 11:56 by HL
17			SPLP TPH	EPA	ppm	10 days	Jul 14, 1998 15:45	Jul29,1998 15:45	Jul 31, 1998 by EZ	Jul 31, 1998 15:35 by EZ
18			VOA (8260)	EPA1312/8260	mg/kg	10 days	Jul 14, 1998 15:45	Jul29,1998 15:45	Aug 4, 1998 by CE	Aug 4, 1998 19:30 by CE
19			SPLP-SV(TCL)	SW846-1312/82	ug/L	10 days	Jul 14, 1998 15:45	Jul29,1998 15:45	Jul 31, 1998 by SS	Jul 31, 1998 19:59 by LC
20	MW17-8 (13-15')	182682-009	TPH8015M-D	SW-846 8015 M	mg/kg	10 days	Jul 14, 1998 17:00		Jul 27, 1998 by OG	Jul 28, 1998 04:56 by AM
21			BTEX	SW-846	ppm	10 days	Jul 14, 1998 17:00		Jul 17, 1998 by HL	Jul 17, 1998 13:12 by HL

XENCO Laboratories

CERTIFICATE OF ANALYSIS SUMMARY 1-82682

K.E.I. Consultants, Inc.

Project ID: 610057-2-17
Project Name: Monument Site #17
Date Received in Lab : Jul 16, 1998 09:15

Project Manager: Theresa Nix
Date Report Faxed: Aug 17, 1998

Project Location: Monument, Lea Co., NM
XENCO contact : Carlos Castro/Eddie Clemons

Analysis Requested	*Lab ID:*	182682 001		182682 002		182682 003		182682 004		182682 005		182682 006	
	Field ID:	MW17-7		MW17-7		MW17-7		MW17-6		MW17-6		MW17-6	
	Depth:	0'-2'		13'-15'		20'-22'		0'-2'		6'-8'		13'-15'	
	Matrix:	Solid		Solid		Solid		Solid		Solid		Solid	
	Sampled:	07/14/98 09:05		07/14/98 10:50		07/14/98 11:00		07/14/98 12:35		07/14/98 13:15		07/14/98 14:00	
TPH-DRO (Diesel) **EPA 8015 M**	*Analyzed:*	07/28/98		07/28/98		07/28/98		07/28/98		07/28/98		07/28/98	
	Units:	mg/kg	R.L.	mg/kg	R.L.	mg/kg	R.L.	mg/kg	R.L.	mg/kg	R.L.	mg/kg	R.L.
Total Petroleum Hydrocarbons		< 5.0	(5.0)	< 5.0	(5.0)	< 5.0	(5.0)	9.6	(5.0)	8.7	(5.0)	6.1	(5.0)
BTEX **EPA 8021B**	*Analyzed:*	07/17/98		07/17/98		07/17/98		07/17/98		07/17/98		07/17/98	
	Units:	ppm	R.L.	ppm	R.L.	ppm	R.L.	ppm	R.L.	ppm	R.L.	ppm	R.L.
Benzene		< 0.020	(0.020)	< 0.020	(0.020)	< 0.020	(0.020)	< 0.020	(0.020)	< 0.020	(0.020)	< 0.020	(0.020)
Toluene		< 0.020	(0.020)	< 0.020	(0.020)	< 0.020	(0.020)	< 0.020	(0.020)	< 0.020	(0.020)	< 0.020	(0.020)
Ethylbenzene		< 0.020	(0.020)	< 0.020	(0.020)	< 0.020	(0.020)	< 0.020	(0.020)	< 0.020	(0.020)	< 0.020	(0.020)
m,p-Xylenes		< 0.040	(0.040)	< 0.040	(0.040)	< 0.040	(0.040)	< 0.040	(0.040)	< 0.040	(0.040)	< 0.040	(0.040)
o-Xylene		< 0.020	(0.020)	< 0.020	(0.020)	< 0.020	(0.020)	< 0.020	(0.020)	< 0.020	(0.020)	< 0.020	(0.020)
Total BTEX		N.D.		N.D.		N.D.		N.D.		N.D.		N.D.	

Eddie L. Clemons, II
QA/QC Manager

XENCO Laboratories

CERTIFICATE OF ANALYSIS SUMMARY 1-82682

K.E.I. Consultants, Inc.

Project ID: 610057-2-17
Project Manager: Theresa Nix
Project Location: Monument, Lea Co., NM

Project Name: Monument Site #17

Date Received in Lab : Jul 16, 1998 09:15
Date Report Faxed: Aug 17, 1998
XENCO contact : Carlos Castro/Eddie Clemons

Analysis Requested	*Lab ID:* / *Field ID:* / *Depth:* / *Matrix:* / *Sampled:*	182682 007 MW17-8 0'-2' Solid 07/14/98 15:35	182682 008 MW17-8 2'-4' Solid 07/14/98 15:45	182682 009 MW17-8 13'-15' Solid 07/14/98 17:00			
TPH-DRO (Diesel) **EPA 8015 M**	*Analyzed:* / *Units:*	07/28/98 mg/kg R.L.	07/28/98 mg/kg R.L.	07/28/98 mg/kg R.L.			
Total Petroleum Hydrocarbons		7.4 (5.0)	86.5 (5.0)	10.1 (5.0)			
BTEX **EPA 8021B**	*Analyzed:* / *Units:*	07/17/98 ppm R.L.	07/17/98 ppm R.L.	07/17/98 ppm R.L.			
Benzene		< 0.020 (0.020)	< 0.020 (0.020)	< 0.020 (0.020)			
Toluene		< 0.020 (0.020)	< 0.020 (0.020)	< 0.020 (0.020)			
Ethylbenzene		< 0.020 (0.020)	< 0.020 (0.020)	< 0.020 (0.020)			
m,p-Xylenes		< 0.040 (0.040)	< 0.040 (0.040)	< 0.040 (0.040)			
o-Xylene		< 0.020 (0.020)	< 0.020 (0.020)	< 0.020 (0.020)			
Total BTEX		N.D.	N.D.	N.D.			
SPLP-Semivolatiles **EPA1312/8270**	*Analyzed:* / *Units:*		07/31/98 mg/L R.L.				
Acenaphthene			< 0.005 (0.005)				
Acenaphthylene			< 0.005 (0.005)				
Anthracene			< 0.005 (0.005)				
Benzo(a)anthracene			< 0.005 (0.005)				
Benzo(a)pyrene			< 0.005 (0.005)				
Benzo(b)fluoranthene			< 0.005 (0.005)				
Benzo(g,h,i)perylene			< 0.005 (0.005)				
Benzo(k)fluoranthene			< 0.005 (0.005)				
4-Bromophenyl-phenylether			< 0.005 (0.005)				
Butyl benzyl phthalate			< 0.005 (0.005)				
Carbazole			< 0.005 (0.005)				
4-Chloro-3-methylphenol			< 0.005 (0.005)				

Eddie L. Clemons, II
QA/QC Manager

XENCO Laboratories

CERTIFICATE OF ANALYSIS SUMMARY 1-82682

K.E.I. Consultants, Inc.

Project ID: 610057-2-17
Project Name: Monument Site #17
Date Received in Lab : Jul 16, 1998 09:15
Project Manager: Theresa Nix
Date Report Faxed: Aug 17, 1998
Project Location: Monument, Lea Co., NM
XENCO contact : Carlos Castro/Eddie Clemons

Analysis Requested	Lab ID: / Field ID: / Depth: / Matrix: / Sampled:	182682 007 MW17-8 0'-2' Solid 07/14/98 15:35	182682 008 MW17-8 2'-4' Solid 07/14/98 15:45	182682 009 MW17-8 13'-15' Solid 07/14/98 17:00			
EPA1312/8270	Analyzed: / Units:		07/31/98 mg/L R.L.				
4-Chloroaniline			< 0.005 (0.005)				
2-Chloronaphthalene			< 0.005 (0.005)				
2-Chlorophenol			< 0.005 (0.005)				
4-Chlorophenyl-phenyl ether			< 0.005 (0.005)				
Chrysene			< 0.005 (0.005)				
Di-n-butyl phthalate			< 0.005 (0.005)				
Di-n-octyl phthalate			< 0.005 (0.005)				
Dibenzo(a,h)anthracene			< 0.005 (0.005)				
Dibenzofuran			< 0.005 (0.005)				
1,2-Dichlorobenzene			< 0.005 (0.005)				
1,3-Dichlorobenzene			< 0.005 (0.005)				
1,4-Dichlorobenzene			< 0.005 (0.005)				
3,3'-Dichlorobenzidine			< 0.005 (0.005)				
2,4-Dichlorophenol			< 0.005 (0.005)				
Diethyl phthalate			< 0.005 (0.005)				
2,4-Dimethylphenol			< 0.005 (0.005)				
Dimethyl phthalate			< 0.005 (0.005)				
4,6-Dinitro-2-methylphenol			< 0.013 (0.013)				
2,4-Dinitrophenol			< 0.013 (0.013)				
2,4-Dinitrotoluene			< 0.005 (0.005)				
2,6-Dinitrotoluene			< 0.005 (0.005)				
Fluoranthene			< 0.005 (0.005)				
Fluorene			< 0.005 (0.005)				
Hexachlorobenzene			< 0.005 (0.005)				

Eddie L. Clemons, II
QA/QC Manager

XENCO Laboratories

CERTIFICATE OF ANALYSIS SUMMARY 1-82682

K.E.I. Consultants, Inc.

Project ID: 610057-2-17
Project Name: Monument Site #17
Date Received in Lab : Jul 16, 1998 09:15

Project Manager: Theresa Nix
Date Report Faxed: Aug 17, 1998

Project Location: Monument, Lea Co., NM
XENCO contact : Carlos Castro/Eddie Clemons

Analysis Requested	*Lab ID:* / *Field ID:* / *Depth:* / *Matrix:* / *Sampled:*	182682 007 MW17-8 0'-2' Solid 07/14/98 15:35	182682 008 MW17-8 2'-4' Solid 07/14/98 15:45	182682 009 MW17-8 13'-15' Solid 07/14/98 17:00			
EPA1312/8270	*Analyzed:* / *Units:*		07/31/98 mg/L R.L.				
Hexachlorobutadiene			< 0.005 (0.005)				
Hexachlorocyclopentadiene			< 0.005 (0.005)				
Hexachloroethane			< 0.005 (0.005)				
Indeno(1,2,3-cd)pyrene			< 0.005 (0.005)				
Isophorone			< 0.005 (0.005)				
2-Methylnaphthalene			0.007 (0.005)				
2-Methylphenol			< 0.005 (0.005)				
4-Methylphenol			< 0.005 (0.005)				
N-Nitroso-di-n-propylamine			< 0.005 (0.005)				
N-Nitrosodiphenylamine			< 0.005 (0.005)				
Naphthalene			< 0.005 (0.005)				
2-Nitroaniline			< 0.013 (0.013)				
3-Nitroaniline			< 0.013 (0.013)				
4-Nitroaniline			< 0.013 (0.013)				
Nitrobenzene			< 0.005 (0.005)				
2-Nitrophenol			< 0.005 (0.005)				
4-Nitrophenol			< 0.005 (0.005)				
Pentachlorophenol			< 0.013 (0.013)				
Phenanthrene			< 0.005 (0.005)				
Phenol			< 0.005 (0.005)				
Pyrene			< 0.005 (0.005)				
1,2,4-Trichlorobenzene			< 0.005 (0.005)				
2,4,5-Trichlorophenol			< 0.013 (0.013)				
2,4,6-Trichlorophenol			< 0.005 (0.005)				

Eddie L. Clemons, II
QA/QC Manager

XENCO Laboratories

CERTIFICATE OF ANALYSIS SUMMARY 1-82682

K.E.I. Consultants, Inc.

Project ID: 610057-2-17 | *Project Name: Monument Site #17* | **Date Received in Lab :** Jul 16, 1998 09:15

Project Manager: Theresa Nix | **Date Report Faxed:** Aug 17, 1998

Project Location: Monument, Lea Co., NM | **XENCO contact :** Carlos Castro/Eddie Clemons

Analysis Requested	*Lab ID:* / *Field ID:* / *Depth:* / *Matrix:* / *Sampled:*	182682 007 MW17-8 0'-2' Solid 07/14/98 15:35	182682 008 MW17-8 2'-4' Solid 07/14/98 15:45	182682 009 MW17-8 13'-15' Solid 07/14/98 17:00			
EPA1312/8270	*Analyzed:* / *Units:*		07/31/98 mg/L R.L.				
bis(2-Chloroethoxy) methane			< 0.005 (0.005)				
bis(2-Chloroethyl) ether			< 0.005 (0.005)				
bis(2-Chloroisopropyl) ether			< 0.005 (0.005)				
bis(2-Ethylhexyl) phthalate			0.010 (0.005)				
SPLP Volatiles **EPA 8260**	*Analyzed:* / *Units:*		08/04/98 mg/L R.L.				
Benzene			< 0.005 (0.005)				
Bromobenzene			< 0.005 (0.005)				
Bromochloromethane			< 0.005 (0.005)				
Bromodichloromethane			< 0.005 (0.005)				
Bromoform			< 0.005 (0.005)				
Bromomethane			< 0.005 (0.005)				
Carbon Tetrachloride			< 0.005 (0.005)				
Chlorobenzene			< 0.005 (0.005)				
Chloroethane			< 0.010 (0.010)				
Chloroform			< 0.005 (0.005)				
Chloromethane			< 0.010 (0.010)				
2-Chlorotoluene			< 0.005 (0.005)				
4-Chlorotoluene			< 0.005 (0.005)				
1,2-Dibromo-3-chloropropane			< 0.005 (0.005)				
Dibromochloromethane			< 0.005 (0.005)				
1,2-Dibromoethane			< 0.005 (0.005)				
Dibromomethane			< 0.005 (0.005)				

Eddie L. Clemons, II
QA/QC Manager

XENCO Laboratories

CERTIFICATE OF ANALYSIS SUMMARY 1-82682

K.E.I. Consultants, Inc.

Project ID: 610057-2-17
Project Manager: Theresa Nix
Project Location: Monument, Lea Co., NM

Project Name: Monument Site #17

Date Received in Lab : Jul 16, 1998 09:15
Date Report Faxed: Aug 17, 1998
XENCO contact : Carlos Castro/Eddie Clemons

Analysis Requested	*Lab ID:*	182682 007	182682 008	182682 009			
	Field ID:	MW17-8	MW17-8	MW17-8			
	Depth:	0'-2'	2'-4'	13'-15'			
	Matrix:	Solid	Solid	Solid			
	Sampled:	07/14/98 15:35	07/14/98 15:45	07/14/98 17:00			
EPA 8260	*Analyzed:*		08/04/98				
	Units:		mg/L R.L.				
1,2-Dichlorobenzene			< 0.005 (0.005)				
1,3-Dichlorobenzene			< 0.005 (0.005)				
1,4-Dichlorobenzene			< 0.005 (0.005)				
Dichlorodifluoromethane			< 0.005 (0.005)				
1,1-Dichloroethane			< 0.005 (0.005)				
1,2-Dichloroethane			0.020 (0.005)				
1,1-Dichloroethene			< 0.005 (0.005)				
1,2-Dichloropropane			< 0.005 (0.005)				
1,3-Dichloropropane			< 0.005 (0.005)				
2,2-Dichloropropane			< 0.005 (0.005)				
1,1-Dichloropropene			< 0.005 (0.005)				
Ethylbenzene			< 0.005 (0.005)				
Hexachlorobutadiene			< 0.005 (0.005)				
Isopropylbenzene			< 0.005 (0.005)				
MTBE			< 0.010 (0.010)				
Methylene chloride			< 0.020 (0.020)				
Naphthalene			< 0.005 (0.005)				
Styrene			< 0.005 (0.005)				
1,1,1,2-Tetrachloroethane			< 0.005 (0.005)				
1,1,2,2-Tetrachloroethane			< 0.005 (0.005)				
Tetrachloroethene			< 0.005 (0.005)				
Toluene			< 0.005 (0.005)				
1,2,3-Trichlorobenzene			< 0.005 (0.005)				
1,2,4-Trichlorobenzene			< 0.005 (0.005)				

Eddie L. Clemons, II
QA/QC Manager

XENCO Laboratories

CERTIFICATE OF ANALYSIS SUMMARY 1-82682

K.E.I. Consultants, Inc.

Project ID: 610057-2-17 | ***Project Name: Monument Site #17*** | **Date Received in Lab :** Jul 16, 1998 09:15

Project Manager: Theresa Nix | **Date Report Faxed:** Aug 17, 1998

Project Location: Monument, Lea Co., NM | **XENCO contact :** Carlos Castro/Eddie Clemons

Analysis Requested	*Lab ID:* / *Field ID:* / *Depth:* / *Matrix:* / *Sampled:*	182682 007 MW17-8 0'-2' Solid 07/14/98 15:35	182682 008 MW17-8 2'-4' Solid 07/14/98 15:45	182682 009 MW17-8 13'-15' Solid 07/14/98 17:00			
EPA 8260	*Analyzed:* / *Units:*		08/04/98 mg/L R.L.				
1,1,1-Trichloroethane			< 0.005 (0.005)				
1,1,2-Trichloroethane			< 0.005 (0.005)				
Trichloroethene			< 0.005 (0.005)				
Trichlorofluoromethane			< 0.005 (0.005)				
1,2,3-Trichloropropane			< 0.005 (0.005)				
1,2,4-Trimethylbenzene			0.008 (0.005)				
1,3,5-Trimethylbenzene			< 0.005 (0.005)				
Vinyl chloride			< 0.005 (0.005)				
cis-1,2-Dichloroethene			< 0.005 (0.005)				
cis-1,3-Dichloropropene			< 0.005 (0.005)				
m,p-Xylenes			< 0.005 (0.005)				
n-Butylbenzene			< 0.005 (0.005)				
n-Propylbenzene			< 0.005 (0.005)				
o-Xylene			< 0.005 (0.005)				
p-Isopropyltoluene			< 0.005 (0.005)				
sec-Butylbenzene			< 0.005 (0.005)				
tert-Butylbenzene			< 0.005 (0.005)				
trans-1,2-Dichloroethene			< 0.005 (0.005)				
trans-1,3-Dichloropropene			< 0.005 (0.005)				
SPLP TPH 1312/418.1	*Analyzed:* / *Units:*		07/31/98 ppm R.L.				
Total Petroleum Hydrocarbons			< 0.7 (0.7)				

Eddie L. Clemons, II
QA/QC Manager

XENCO Laboratories

Certificate Of Quality Control for Batch : 18A40D16

SW- 846 3015 M TPH- DRO (Diesel)

Date Validated: Jul 28, 1998 18:40
Date Analyzed: Jul 28, 1998 14:12

Analyst: AM
Matrix: *Solid*

	BLANK SPIKE ANALYSIS						
Parameter	[A] Blank Result mg/kg	[B] Blank Spike Result mg/kg	[C] Blank Spike Amount mg/kg	[D] Detection Limit mg/kg	[E] QC LIMITS Blank Spike Recovery %	[F] QC LIMITS Recovery Range %	[G] Qualifier
Total Petroleum Hydrocarbons	< 5.00	138	200	5.00	69.0	65-135	

Blank Spike Recovery [E] = 100(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

Jade E. Clemons, II
QA/QC Manager

XENCO Laboratories

Certificate Of Quality Control for Batch : 18A40D16

SW- 846 8015 M TPH- DRO (Diesel)

Date Validated: Jul 28, 1998 18:40
Date Analyzed: Jul 28, 1998 13:07

Analyst: AM
Matrix: Solid

	MATRIX SPIKE / MATRIX SPIKE DUPLICATE AND RECOVERY										
Q.C. Sample ID 182682- 002	[A] Sample Result	[B] Matrix Spike Result	[C] Matrix Spike Duplicate Result	[D] Matrix Spike Amount	[E] Detection Limit	Matrix Limit Relative Difference	[F] QC Spike Relative Difference	[G] QC Matrix Spike Recovery	[H] QC M.S.D. Recovery	[I] Matrix Spike Recovery Range	[J] Qualifier
Parameter	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	%	%	%	%	%	
Total Petroleum Hydrocarbons	< 25.00	136	149	200	25.00	30.0	9.1	68.0	74.5	65-135	

Spike Relative Difference [F] = 200*(B-C)/(B+C)
Matrix Spike Recovery [G] = 100*(B-A)/[D]
M.S.D. = Matrix Spike Duplicate
M.S.D. Recovery [H] = 100*(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

XENCO Laboratories

Certificate Of Quality Control for Batch : 18A25C32

SW- 846 5030/8020 BTEX

Date Validated: Jul 20, 1998 09:00
Date Analyzed: Jul 17, 1998 08:43

Analyst: HL
Matrix: Solid

	BLANK SPIKE ANALYSIS						
Parameter	[A] Blank Result ppm	[B] Blank Spike Result ppm	[C] Blank Spike Amount ppm	[D] Detection Limit ppm	[E] QC LIMITS Blank Spike Recovery %	[F] Recovery Range %	[G] Qualifier
Benzene	< 0.0010	0.1000	0.1000	0.0010	100.0	65-135	
Toluene	< 0.0010	0.0995	0.1000	0.0010	99.5	65-135	
Ethylbenzene	< 0.0010	0.0995	0.1000	0.0010	99.5	65-135	
m,p-Xylenes	< 0.0020	0.2070	0.2000	0.0020	103.5	65-135	
o-Xylene	< 0.0010	0.1020	0.1000	0.0010	102.0	65-135	

Blank Spike Recovery [E] = 100*(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

Eddie L. Clemons, II
QA/QC Manager

XENCO Laboratories

Certificate Of Quality Control for Batch : 18A25C32

SW- 846 5030/8020 BTEX

Date Validated: Jul 20, 1998 09:00
Date Analyzed: Jul 17, 1998 09:31

Analyst: HL
Matrix: Solid

MATRIX SPIKE / MATRIX SPIKE DUPLICATE AND RECOVERY

Q.C. Sample ID 182691- 001 / Parameter	[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] QC Spike Relative Difference %	[G] QC Matrix Spike Recovery %	[H] QC M.S.D. Recovery %	[I] Matrix Spike Recovery Range %	[J] Qualifier
Benzene	0.040	2.240	2.220	2.000	0.020	25.0	0.9	110.0	109.0	65-135	
Toluene	0.026	1.880	1.854	2.000	0.020	25.0	1.4	92.7	91.4	65-135	
Ethylbenzene	< 0.020	1.910	1.880	2.000	0.020	25.0	1.6	95.5	94.0	65-135	
m,p-Xylenes	< 0.040	4.020	3.980	4.000	0.040	25.0	1.0	100.5	99.5	65-135	
o-Xylene	< 0.020	1.846	1.836	2.000	0.020	25.0	0.5	92.3	91.8	65-135	

Spike Relative Difference [F] = 200*(B-C)/(B+C)
Matrix Spike Recovery [G] = 100*(B-A)/[D]
M.S.D. = Matrix Spike Duplicate
M.S.D. Recovery [H] = 100*(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

XENCO Laboratories

Certificate Of Quality Control for Batch : 18A34D34

EPA 311/8270 TCLP Semi- volatiles

Date Validated: Aug 3, 1998 16:00
Date Analyzed: Jul 31, 1998 16:51

Analyst: LC
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 Relative Difference %	[F] QC Spike Relative Difference %	[G] QC Blank Spike Recovery %	[H] QC B.S.D. Recovery %	[I] Blank Spike Recovery Range %	[J] Qualifier
Acenaphthene	< 0.0020	0.0710	0.0756	0.1000	0.0020	31.0	6.3	71.0	75.6	46-118	
4-Chloro-3-methylphenol	< 0.0006	0.0678	0.0592	0.1000	0.0006	42.0	13.5	67.8	59.2	23-97	
2-Chlorophenol	< 0.0040	0.0674	0.0592	0.1000	0.0040	40.0	13.0	67.4	59.2	27-123	
1,4-Dichlorobenzene	< 0.0040	0.0618	0.0622	0.1000	0.0040	28.0	0.6	61.8	62.2	36-97	
2,4-Dinitrotoluene	< 0.0008	0.0678	0.0692	0.1000	0.0008	38.0	2.0	67.8	69.2	24-96	
N-Nitroso-di-n-propylamine	< 0.0080	0.0672	0.0656	0.1000	0.0080	38.0	2.4	67.2	65.6	41-116	
4-Nitrophenol	< 0.0080	0.0364	0.0306	0.1000	0.0080	50.0	17.3	36.4	30.6	10-80	
Pentachlorophenol	< 0.0012	0.0686	0.0380	0.1000	0.0012	50.0	57.4	68.6	38.0	9-103	
Phenol	< 0.0040	0.0326	0.0286	0.1000	0.0040	42.0	13.1	32.6	28.6	12-89	
Pyrene	< 0.0040	0.0866	0.0888	0.1000	0.0040	31.0	2.5	86.6	88.8	26-127	
1,2,4-Trichlorobenzene	< 0.0040	0.0636	0.0642	0.1000	0.0040	28.0	0.9	63.6	64.2	39-98	

Spike Relative Difference [F] = 200*(B-C)/(B+C)
Blank Spike Recovery [G] = 100*(B-A)/[D]
B.S.D. = Blank Spike Duplicate
B.S.D. Recovery [H] = 100*(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. Clemons, II
QA/QC Manager

XENCO Laboratories

Certificate Of Quality Control for Batch : 18A23D00

EPA1312/8260 SPLP Volatiles

Date Validated: Aug 17, 1998 13:00
Date Analyzed: Aug 4, 1998 18:52

Analyst: CE
Matrix: Solid

	BLANK SPIKE ANALYSIS						
Parameter	[A] Blank Result mg/L	[B] Blank Spike Result mg/L	[C] Blank Spike Amount mg/L	[D] Detection Limit mg/L	[E] QC Blank Spike Recovery %	[F] LIMITS Recovery Range %	[G] Qualifier
Benzene	< 0.0010	0.0573	0.0500	0.0010	114.6	66-142	
Chlorobenzene	< 0.0010	0.0542	0.0500	0.0010	108.4	60-133	
1,1-Dichloroethene	< 0.0040	0.0614	0.0500	0.0040	122.8	59-172	
Toluene	< 0.0010	0.0575	0.0500	0.0010	115.0	59-139	
Trichloroethene	< 0.0030	0.0538	0.0500	0.0030	107.6	62-137	

Blank Spike Recovery [E] = 100*(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

Eddie L. Clemons, II
QA/QC Manager

XENCO Laboratories

Certificate Of Quality Control for Batch : 18A23D00

EPA1312/8260 SPLP Volatiles

Date Validated: Aug 17, 1998 13:00
Date Analyzed: Aug 4, 1998 20:08

Analyst: CE
Matrix: Solid

	MATRIX SPIKE / MATRIX SPIKE DUPLICATE AND RECOVERY										
Q.C. Sample ID 182683- 006 / Parameter	[A] Sample Result mg/L	[B] Matrix Spike Result mg/L	[C] Matrix Spike Duplicate Result mg/L	[D] Matrix Spike Amount mg/L	[E] Detection Limit mg/L	Matrix Limit Relative Difference %	[F] QC Spike Relative Difference %	[G] QC Matrix Spike Recovery %	[H] QC M.S.D. Recovery %	[I] Matrix Spike Recovery Range %	[J] Qualifier
Benzene	< 0 0010	0.0590	0.0545	0.0500	0.0010	20.0	7.9	118 0	109.0	66-142	
Chlorobenzene	< 0.0010	0.0524	0.0529	0.0500	0.0010	20.0	0.9	104.8	105.8	60-133	
1,1-Dichloroethene	< 0.0040	0.0612	0 0585	0.0500	0.0040	25.0	4.5	122.4	117.0	59-172	
Toluene	0.0060	0.0584	0.0589	0.0500	0.0010	20.0	0.9	104.8	105.8	59-139	
Trichloroethene	< 0.0030	0.0563	0.0537	0 0500	0.0030	20.0	4.7	112.6	107.4	62-137	

Spike Relative Difference [F] = 200*(B-C)/(B+C)
Matrix Spike Recovery [G] = 100*(B-A)/[D]
M S D = Matrix Spike Duplicate
M S D. Recovery [H] = 100*(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

XENCO Laboratories

Certificate Of Quality Control for Batch : 18A07D44

EPA 1312/418.1 SPLP TPH

Date Validated: Jul 31, 1998 16:45
Date Analyzed: Jul 31, 1998 14:35

Analyst: EZ
Matrix: Solid

	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] QC Spike Relative Difference %	[G] QC Blank Spike Recovery %	[H] QC B.S.D. Recovery %	[I] Blank Spike Recovery Range %	[J] Qualifier
Total Petroleum Hydrocarbons	< 0.50	4.23	4.27	4.01	0.50	20.0	0.9	105.5	106 5	65-135	

Spike Relative Difference [F] = 200*(B-C)/(B+C)
Blank Spike Recovery [G] = 100*(B-A)/[D]
B S D. = Blank Spike Duplicate
B S.D. Recovery [H] = 100*(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

XENCO Laboratories

11381 Meadowglen Suite L Houston, Texas 77082
(713) 589-0692 Fax (713) 589-0695

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST FORM

Lab. Batch # 182682-SA

Contractor: KET Consultants, Inc. Phone (210) 680-3767

Address: 5309 Wurzbach Road, Ste #100 / San Antonio, TX 78238

Project Name: Monument Site #17 Project Director: Teresa Nix

Project Location: Monument, Lea Co., NM Project Manager: Teresa Nix

Sampler Signature: [signature] Project No.: 610057/2/17

No. coolers this shipment: Contractor COC # 159

Carrier: Quote #:

Airbill No. P.O. No:

SAMPLE CHARACTERIZATION

	Field ID	Date	Time	DEPTH	SOIL	WATER	COMP	GRAB	Container Size	Container Type P, G	Preservative Ice	Preservative Other	Sample Description	No of CONTAINERS Total	BTEX (8030/8020-602)	TPH (418.1)	TPH (8015 mod - DRO)	BTEX (SW 846 - 8020)	TPH (1312/418.1)	VOCs (SW 846-1312/8260)	SVOAs (SW 846-1312/8270)			Please Hold	Remarks	LAB ONLY ID #
1	MW17-7 (0'-2')	7/14/98	09:05	0'-2'	X		X		9oz.	G	X			2			X	X							Run soils to	1
2	MW17-7 (13'-15')		10:50	13'-15'	X		X		9oz.	G	X			2			X	X							not exceed	2
3	MW17-7 (20'-22')		11:00	20'-22'	X		X		9oz.	G	X			2			X	X							holding time!	3
4	MW17-6 (0'-2')		12:35	0'-2'	X		X		9oz.	G	X			2			X	X								4
5	MW17-6 (6'-8')		13:15	6'-8'	X		X		9oz.	G	X			2			X	X								5
6	MW17-6 (13'-15')		14:00	13'-15'	X		X		9oz.	G	X			2			X	X								6
7	MW17-8 (0'-2')		15:35	0'-2'	X		X		9oz.	G	X			2			X	X								7
8	MW17-8 (2'-4')		15:45	2'-4'	X		X		9oz.	G	X			2			X	X								8
9	MW17-8 (13'-15')		17:00	13'-15'	X		X		9oz.	G	X			2			X	X								9
10																										10

Waste Oil

PIT No: Tank No:

Unl Dies Ker Unknown

(Run on highest TPH only) (Run on highest TPH only) (Run on highest TPH only)

Turn-around: * ASAP * 24 hrs 48 hrs Standard 10 days

Relinquished by: (Signature)	DATE	TIME	Received by: (Signature)	DATE	TIME
[signature]	7/15/98	16:00			
			Received For Laboratory by: [signature]	7/16/98	09:15

Remarks: Please fax results to Teresa Nix at (512) 364-3556. (Via UPS)

N235 4125 76 9

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

* Pre-scheduling is recommended

Precision Analytical Services

EXPORT 2

ANALYTICAL REPORT 1-83308

for

K.E.I. Consultants, Inc.

Project Manager: Theresa Nix

Project Name: Monument Site 17

Project Id: 610057-6-17-0

September 18, 1998

XENCO Laboratories

HOUSTON - DALLAS - SAN ANTONIO

11381 Meadowglen Lane Suite L * Houston, Texas 77082-2647
Phone (281) 589-0692 Fax (281) 589-0695

XENCO Laboratories

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

September 18, 1998

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

Reference: **XENCO Report No.: 1-83308**
Project Name: Monument Site 17
Project ID: 610057-6-17-0
Project Address: Monument, 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 1-83308. 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. 1-83308 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

XENCO Laboratories

CERTIFICATE OF ANALYSIS SUMMARY 1-83308

K.E.I. Consultants, Inc.

Project ID: 610057-6-17-0
Project Manager: Theresa Nix
Project Location: Monument, NM.

Project Name: Monument Site 17

Date Received in Lab : Aug 26, 1998 11:50
Date Report Faxed: Sep 18, 1998
XENCO contact : Carlos Castro/Eddie Clemons

Analysis Requested	*Lab ID:* / *Field ID:* / *Depth:* / *Matrix:* / *Sampled:*	183308 001 MW-1 Liquid 08/25/98	183308 002 MW-2 Liquid 08/25/98	183308 003 MW-3 Liquid 08/25/98	183308 004 MW-4 Liquid 08/25/98	183308 005 MW-5 Liquid 08/25/98	183308 006 MW-6 Liquid 08/25/98	
Metals by ICP **EPA 6010**	*Analyzed:* / *Units:*						09/04/98 mg/L	R.L.
Aluminum							< 0.5	(0.5)
Arsenic							< 0.10	(0.10)
Barium							0.22	(0.04)
Beryllium							< 0.02	(0.02)
Boron							< 0.20	(0.20)
Cadmium							< 0.01	(0.01)
Calcium							760	(0.5)
Chromium							< 0.05	(0.05)
Cobalt							< 0.05	(0.05)
Copper							< 0.10	(0.10)
Iron							0.27	(0.20)
Lead							< 0.05	(0.05)
Magnesium							24.1	(0.5)
Manganese							< 0.10	(0.10)
Molybdenum							< 0.40	(0.40)
Nickel							< 0.10	(0.10)
Potassium							4.69	(0.50)
Selenium							< 0.05	(0.05)
Silicon							22.8	(0.5)
Silver							< 0.04	(0.04)
Sodium							69.0	(0.5)
Strontium							1.93	(0.20)
Tin							< 0.20	(0.20)
Vanadium							< 0.10	(0.10)

Eddie L. Clemons, II
QA/QC Manager

XENCO Laboratories

CERTIFICATE OF ANALYSIS SUMMARY 1-83308

K.E.I. Consultants, Inc.

Project ID: 610057-6-17-0 | ***Project Name: Monument Site 17*** | **Date Received in Lab :** Aug 26, 1998 11:50

Project Manager: Theresa Nix | **Date Report Faxed:** Sep 18, 1998

Project Location: Monument, NM. | **XENCO contact :** Carlos Castro/Eddie Clemons

Analysis Requested	*Lab ID:*	183308 001	183308 002	183308 003	183308 004	183308 005	183308 006
	Field ID:	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6
	Depth:						
	Matrix:	Liquid	Liquid	Liquid	Liquid	Liquid	Liquid
	Sampled:	08/25/98	08/25/98	08/25/98	08/25/98	08/25/98	08/25/98
Metals by ICP	*Analyzed:*						09/04/98 R.L.
EPA 6010	*Units:*						mg/L
Zinc							< 0.10 (0.10)
Total Mercury	*Analyzed:*						09/04/98 R.L.
EPA 7470	*Units:*						mg/L
Mercury							< 0.0011 (0.0011)
BTEX	*Analyzed:*	08/27/98 R.L.	08/27/98 R.L.	08/27/98 R.L.	08/27/98 R.L.	08/27/98 R.L.	08/27/98 R.L.
EPA 8021B	*Units:*	ppm	ppm	ppm	ppm	ppm	ppm
Benzene		0.260 (0.001)	0.024 (0.001)	0.084 (0.001)	< 0.001 (0.001)	< 0.001 (0.001)	< 0.001 (0.001)
Toluene		0.007 (0.001)	0.003 (0.001)	0.002 (0.001)	< 0.001 (0.001)	< 0.001 (0.001)	< 0.001 (0.001)
Ethylbenzene		0.036 (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		0.043 (0.002)	< 0.002 (0.002)	< 0.002 (0.002)	< 0.002 (0.002)	< 0.002 (0.002)	< 0.002 (0.002)
o-Xylene		0.006 (0.001)	< 0.001 (0.001)	< 0.001 (0.001)	< 0.001 (0.001)	< 0.001 (0.001)	< 0.001 (0.001)
Total BTEX		0.352	0.027	0.087	N.D.	N.D.	N.D.
PAHs by GC-MS	*Analyzed:*						08/30/98 R.L.
EPA 8270	*Units:*						mg/L
Acenaphthene							< 0.002 (0.002)
Acenaphthylene							< 0.002 (0.002)
Anthracene							< 0.002 (0.002)
Benz(a)anthracene							< 0.002 (0.002)
Benzo(a)pyrene							< 0.002 (0.002)
Benzo(b)fluoranthene							< 0.002 (0.002)
Benzo(g,h,i)perylene							< 0.002 (0.002)
Benzo(k)fluoranthene							< 0.002 (0.002)

Eddie L. Clemons, II
QA/QC Manager

XENCO Laboratories

CERTIFICATE OF ANALYSIS SUMMARY 1-83308

K.E.I. Consultants, Inc.

Project ID: 610057-6-17-0
Project Name: Monument Site 17
Date Received in Lab : Aug 26, 1998 11:50
Project Manager: Theresa Nix
Date Report Faxed: Sep 18, 1998
Project Location: Monument, NM.
XENCO contact : Carlos Castro/Eddie Clemons

Analysis Requested	*Lab ID:* / *Field ID:* / *Depth:* / *Matrix:* / *Sampled:*	183308 001 MW-1 Liquid 08/25/98	183308 002 MW-2 Liquid 08/25/98	183308 003 MW-3 Liquid 08/25/98	183308 004 MW-4 Liquid 08/25/98	183308 005 MW-5 Liquid 08/25/98	183308 006 MW-6 Liquid 08/25/98	
PAHs by GC-MS **EPA 8270**	*Analyzed:* / *Units:*						08/30/98 mg/L	R.L.
Chrysene							< 0.002	(0.002)
Dibenz(a,h)anthracene							< 0.002	(0.002)
Fluoranthene							< 0.002	(0.002)
Fluorene							< 0.002	(0.002)
Indeno(1,2,3-cd)pyrene							< 0.002	(0.002)
Naphthalene							< 0.002	(0.002)
Phenanthrene							< 0.002	(0.002)
Pyrene							< 0.002	(0.002)
Bicarbonate **SM 4500CO2D**	*Analyzed:* / *Units:*						08/28/98 mg/L	R.L.
Bicarbonate							235	(4.0)
Carbonate **SM4500CO2D**	*Analyzed:* / *Units:*						08/28/98 mg/L	R.L.
Carbonate							< 4.0	(4.0)
Total Dissolved Solids **EPA 160.1**	*Analyzed:* / *Units:*						08/31/98 mg/L	R.L.
Total Dissolved Solids							772	(5.0)
Anions by Ion Chromatography **EPA 300.0**	*Analyzed:* / *Units:*						08/28/98 mg/L	R.L.
Chloride							164	(2)
Sulfate							67	(2)

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.

Eddie L. Clemons, II
QA/QC Manager

XENCO Laboratories

CERTIFICATE OF ANALYSIS SUMMARY 1-83308

K.E.I. Consultants, Inc.

Project ID: 610057-6-17-0 | ***Project Name: Monument Site 17*** | **Date Received in Lab :** Aug 26, 1998 11:50

Project Manager: Theresa Nix | **Date Report Faxed:** Sep 18, 1998

Project Location: Monument, NM. | **XENCO contact :** Carlos Castro/Eddie Clemons

Analysis Requested	*Lab ID:*	183308 007		183308 008		183308 009			
	Field ID:	MW-7		MW-8		Windmill			
	Depth:								
	Matrix:	Liquid		Liquid		Liquid			
	Sampled:	08/25/98		08/25/98		08/25/98			
Metals by ICP EPA 6010	*Analyzed:*	09/04/98		09/04/98					
	Units:	mg/L	R.L.	mg/L	R.L.				
Aluminum		< 0.50	(0.50)	0.69	(0.50)				
Arsenic		< 0.10	(0.10)	< 0.10	(0.10)				
Barium		0.18	(0.04)	0.50	(0.04)				
Beryllium		< 0.02	(0.02)	< 0.02	(0.02)				
Boron		0.21	(0.20)	0.20	(0.20)				
Cadmium		< 0.01	(0.01)	< 0.01	(0.01)				
Calcium		170	(0.5)	155	(0.5)				
Chromium		< 0.05	(0.05)	< 0.05	(0.05)				
Cobalt		< 0.05	(0.05)	< 0.05	(0.05)				
Copper		< 0.10	(0.10)	< 0.10	(0.10)				
Iron		< 0.20	(0.20)	0.45	(0.20)				
Lead		< 0.05	(0.05)	< 0.05	(0.05)				
Magnesium		21.2	(0.5)	28.0	(0.5)				
Manganese		< 0.10	(0.10)	0.26	(0.10)				
Molybdenum		< 0.40	(0.40)	< 0.40	(0.40)				
Nickel		< 0.10	(0.10)	< 0.10	(0.10)				
Potassium		4.22	(0.50)	3.96	(0.50)				
Selenium		< 0.05	(0.05)	< 0.05	(0.05)				
Silicon		19.8	(0.5)	20.5	(0.5)				
Silver		< 0.04	(0.04)	< 0.04	(0.04)				
Sodium		71.7	(0.5)	96.7	(0.5)				
Strontium		1.26	(0.20)	1.36	(0.20)				
Tin		< 0.20	(0.20)	< 0.20	(0.20)				
Vanadium		< 0.10	(0.10)	< 0.10	(0.10)				

Eddie L. Clemons, II
QA/QC Manager

XENCO Laboratories

CERTIFICATE OF ANALYSIS SUMMARY 1-83308

K.E.I. Consultants, Inc.

Project ID: 610057-6-17-0
Project Manager: Theresa Nix
Project Location: Monument, NM.

Project Name: Monument Site 17

Date Received in Lab : Aug 26, 1998 11:50
Date Report Faxed: Sep 18, 1998
XENCO contact : Carlos Castro/Eddie Clemons

Analysis Requested	*Lab ID:* / *Field ID:* / *Depth:* / *Matrix:* / *Sampled:*	183308 007 MW-7 Liquid 08/25/98	183308 008 MW-8 Liquid 08/25/98	183308 009 Windmill Liquid 08/25/98			
Metals by ICP EPA 6010	*Analyzed:* / *Units:*	09/04/98 mg/L R.L.	09/04/98 mg/L R.L.				
Zinc		0.28 (0.10)	< 0.10 (0.10)				
Total Mercury EPA 7470	*Analyzed:* / *Units:*	09/04/98 mg/L R.L.	09/04/98 mg/L R.L.				
Mercury		< 0.0011 (0.0011)	< 0.0011 (0.0011)				
BTEX EPA 8021B	*Analyzed:* / *Units:*	08/27/98 ppm R.L.	08/27/98 ppm R.L.	08/27/98 ppm R.L.			
Benzene		0.086 (0.004)	< 0.001 (0.001)	< 0.001 (0.001)			
Toluene		< 0.004 (0.004)	< 0.001 (0.001)	< 0.001 (0.001)			
Ethylbenzene		0.008 (0.004)	< 0.001 (0.001)	< 0.001 (0.001)			
m,p-Xylenes		< 0.008 (0.008)	< 0.002 (0.002)	< 0.002 (0.002)			
o-Xylene		< 0.004 (0.004)	< 0.001 (0.001)	< 0.001 (0.001)			
Total BTEX		0.094	N.D.	N.D.			
PAHs by GC-MS EPA 8270	*Analyzed:* / *Units:*	08/30/98 mg/L R.L.	08/30/98 mg/L R.L.				
Acenaphthene		< 0.002 (0.002)	< 0.002 (0.002)				
Acenaphthylene		< 0.002 (0.002)	< 0.002 (0.002)				
Anthracene		< 0.002 (0.002)	< 0.002 (0.002)				
Benz(a)anthracene		< 0.002 (0.002)	< 0.002 (0.002)				
Benzo(a)pyrene		< 0.002 (0.002)	< 0.002 (0.002)				
Benzo(b)fluoranthene		< 0.002 (0.002)	< 0.002 (0.002)				
Benzo(g,h,i)perylene		< 0.002 (0.002)	< 0.002 (0.002)				
Benzo(k)fluoranthene		< 0.002 (0.002)	< 0.002 (0.002)				

Eddie L. Clemons, II
QA/QC Manager

XENCO Laboratories

CERTIFICATE OF ANALYSIS SUMMARY 1-83308

K.E.I. Consultants, Inc.

Project ID: 610057-6-17-0 | ***Project Name: Monument Site 17*** | **Date Received in Lab :** Aug 26, 1998 11:50

Project Manager: Theresa Nix | **Date Report Faxed:** Sep 18, 1998

Project Location: Monument, NM. | **XENCO contact :** Carlos Castro/Eddie Clemons

Analysis Requested	*Lab ID:* / *Field ID:* / *Depth:* / *Matrix:* / *Sampled:*	183308 007 MW-7 Liquid 08/25/98	183308 008 MW-8 Liquid 08/25/98	183308 009 Windmill Liquid 08/25/98			
PAHs by GC-MS EPA 8270	*Analyzed:* / *Units:*	08/30/98 mg/L R.L.	08/30/98 mg/L R.L.				
Chrysene		< 0.002 (0.002)	< 0.002 (0.002)				
Dibenz(a,h)anthracene		< 0.002 (0.002)	< 0.002 (0.002)				
Fluoranthene		< 0.002 (0.002)	< 0.002 (0.002)				
Fluorene		< 0.002 (0.002)	< 0.002 (0.002)				
Indeno(1,2,3-cd)pyrene		< 0.002 (0.002)	< 0.002 (0.002)				
Naphthalene		0.003 (0.002)	< 0.002 (0.002)				
Phenanthrene		< 0.002 (0.002)	< 0.002 (0.002)				
Pyrene		< 0.002 (0.002)	< 0.002 (0.002)				
Bicarbonate SM 4500CO2D	*Analyzed:* / *Units:*	08/28/98 mg/L R.L.	08/28/98 mg/L R.L.				
Bicarbonate		325 (4.0)	273 (4.0)				
Carbonate SM4500CO2D	*Analyzed:* / *Units:*	08/28/98 mg/L R.L.	08/28/98 mg/L R.L.				
Carbonate		< 4.0 (4.0)	< 4.0 (4.0)				
Total Dissolved Solids EPA 160.1	*Analyzed:* / *Units:*	08/31/98 mg/L R.L.	08/31/98 mg/L R.L.				
Total Dissolved Solids		719 (5.0)	743 (5.0)				
Anions by Ion Chromatography EPA 300.0	*Analyzed:* / *Units:*	08/28/98 mg/L R.L.	08/28/98 mg/L R.L.				
Chloride		177 (2)	86 (20)				
Sulfate		48 (2)	1550 (20)				

Eddie L. Clemons, II
QA/QC Manager

XENCO Laboratories

Certificate Of Quality Control for Batch : 18A25C95

SW- 846 5030/8021B BTEX

Date Validated: Aug 28, 1998 11:30
Date Analyzed: Aug 27, 1998 11:08

Analyst: HL
Matrix: Liquid

	BLANK SPIKE ANALYSIS						
Parameter	[A] Blank Result ppm	[B] Blank Spike Result ppm	[C] Blank Spike Amount ppm	[D] Detection Limit ppm	[E] QC Blank Spike Recovery %	[F] LIMITS Recovery Range %	[G] Qualifier
Benzene	< 0.0010	0.1030	0.1000	0.0010	103.0	65-135	
Toluene	< 0.0010	0.1010	0.1000	0.0010	101.0	65-135	
Ethylbenzene	< 0.0010	0.0993	0.1000	0.0010	99.3	65-135	
m,p-Xylenes	< 0.0020	0.2080	0.2000	0.0020	104.0	65-135	
o-Xylene	< 0.0010	0.1050	0.1000	0.0010	105.0	65-135	

Blank Spike Recovery [E] = 100*(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

Eddie L. Clemons, II
QA/QC Manager

XENCO Laboratories

Certificate Of Quality Control for Batch : 18A25C95

SW- 846 5030/8021B BTEX

Date Validated: Aug 28, 1998 11:30
Date Analyzed: Aug 27, 1998 11:40

Analyst: HL
Matrix: Liquid

MATRIX SPIKE / MATRIX SPIKE DUPLICATE AND RECOVERY

Q.C. Sample ID 183286- 001 / Parameter	[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] QC Spike Relative Difference %	[G] QC Matrix Spike Recovery %	[H] QC M.S.D. Recovery %	[I] Matrix Spike Recovery Range %	[J] Qualifier
Benzene	< 0.0010	0.1020	0.1060	0.1000	0.0010	20.0	3.8	102.0	106.0	65-135	
Toluene	< 0.0010	0.1140	0.1190	0.1000	0.0010	20.0	4.3	114.0	119.0	65-135	
Ethylbenzene	< 0.0010	0.1120	0.1170	0.1000	0.0010	20.0	4.4	112.0	117.0	65-135	
m,p-Xylenes	< 0.0020	0.2340	0.2430	0.2000	0.0020	20.0	3.8	117.0	121.5	65-135	
o-Xylene	< 0.0010	0.1180	0.1230	0.1000	0.0010	20.0	4.1	118.0	123.0	65-135	

Spike Relative Difference [F] = 200*(B-C)/(B+C)
Matrix Spike Recovery [G] = 100*(B-A)/[D]
M.S.D. = Matrix Spike Duplicate
M.S.D. Recovery [H] = 100*(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

XENCO Laboratories

Certificate Of Quality Control for Batch : 18A25C85

EPA 602 BTEX

Date Validated: Aug 20, 1998 17:30
Date Analyzed: Aug 20, 1998 10:17

Analyst: HL
Matrix: Liquid

	BLANK SPIKE ANALYSIS						
Parameter	[A] Blank Result ppm	[B] Blank Spike Result ppm	[C] Blank Spike Amount ppm	[D] Detection Limit ppm	[E] QC Blank Spike Recovery %	[F] LIMITS Recovery Range %	[G] Qualifier
Benzene	< 0.0010	0.0959	0.1000	0.0010	95.9	70-125	
Toluene	< 0.0010	0.0925	0.1000	0.0010	92.5	70-125	
Ethylbenzene	< 0.0010	0.1000	0.1000	0.0010	100.0	70-125	
m,p-Xylenes	< 0.0020	0.1970	0.2000	0.0020	98.5	70-125	
o-Xylene	< 0.0010	0.0924	0.1000	0.0010	92.4	70-125	

Blank Spike Recovery [E] = 100*(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

Eddie L. Clemons, II
QA/QC Manager

XENCO Laboratories

Certificate Of Quality Control for Batch : 18A25C85

EPA 602 BTEX

Date Validated: Aug 20, 1998 17:30
Date Analyzed: Aug 20, 1998 11:22

Analyst: HL
Matrix: Liquid

	MATRIX SPIKE / MATRIX SPIKE DUPLICATE AND RECOVERY										
Q.C. Sample ID 183195- 001 / **Parameter**	[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] QC Spike Relative Difference %	[G] QC Matrix Spike Recovery %	[H] QC M.S.D. Recovery %	[I] Matrix Spike Recovery Range %	[J] Qualifier
Benzene	< 0.0010	0.0918	0.0952	0.1000	0.0010	20.0	3.6	91.8	95.2	70-125	
Toluene	< 0.0010	0.0912	0.0941	0.1000	0.0010	20.0	3.1	91.2	94.1	70-125	
Ethylbenzene	< 0.0010	0.0960	0.0995	0.1000	0.0010	20.0	3.6	96.0	99.5	70-125	
m,p-Xylenes	< 0.0020	0.1920	0.2000	0.2000	0.0020	20.0	4.1	96.0	100.0	70-125	
o-Xylene	< 0.0010	0.0906	0.0945	0.1000	0.0010	20.0	4.2	90.6	94.5	70-125	

Spike Relative Difference [F] = 200*(B-C)/(B+C)
Matrix Spike Recovery [G] = 100*(B-A)/[D]
M.S.D. = Matrix Spike Duplicate
M.S.D. Recovery [H] = 100*(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

XENCO Laboratories

Certificate Of Quality Control for Batch : 18A34D97

SW846-8270 PAHs by GC-MS (610 List)

Date Validated: Sep 1, 1998 14:05
Date Analyzed: Aug 29, 1998 16:35

Analyst: LC
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 Relative Difference %	[F] QC Spike Relative Difference %	[G] QC Blank Spike Recovery %	[H] QC B.S.D. Recovery %	[I] Blank Spike Recovery Range %	[J] Qualifier
Acenaphthene	< 0.0020	0.0355	0.0382	0.0500	0.0020	31.0	7.3	71.0	76.4	46-118	
4-Chloro-3-methylphenol	< 0.0020	0.0318	0.0356	0.0500	0.0020	42.0	11.3	63.6	71.2	23-97	
2-Chlorophenol	< 0.0020	0.0403	0.0429	0.0500	0.0020	40.0	6.3	80.6	85.8	27-123	
1,4-Dichlorobenzene	< 0.0020	0.0427	0.0454	0.0500	0.0020	28.0	6.1	85.4	90.8	36-97	
2,4-Dinitrotoluene	< 0.0020	0.0344	0.0371	0.0500	0.0020	38.0	7.6	68.8	74.2	24-96	
N-Nitrosodi-n-propylamine	< 0.0040	0.0445	0.0492	0.0500	0.0040	38.0	10.0	89.0	98.4	41-116	
4-Nitrophenol	< 0.0040	0.0303	0.0327	0.0500	0.0040	50.5	7.6	60.6	65.4	10-80	
Pentachlorophenol	< 0.0010	0.0314	0.0350	0.0500	0.0010	50.0	10.8	62.8	70.0	9-103	
Phenol	< 0.0010	0.0349	0.0380	0.0500	0.0010	42.0	8.5	69.8	76.0	12-89	
Pyrene	< 0.0020	0.0393	0.0442	0.0500	0.0020	31.0	11.7	78.6	88.4	26-127	
1,2,4-Trichlorobenzene	< 0.0010	0.0387	0.0407	0.0500	0.0010	28.0	5.0	77.4	81.4	39-98	

Spike Relative Difference [F] = 200*(B-C)/(B+C)
Blank Spike Recovery [G] = 100*(B-A)/[D]
B.S.D. = Blank Spike Duplicate
B.S.D. Recovery [H] = 100*(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

XENCO Laboratories

Certificate Of Quality Control for Batch : 18A20B52

SM 4500CO2D Bicarbonate

Date Validated: Aug 28, 1998 16:58
Date Analyzed: Aug 28, 1998 14:15

Analyst: IF
Matrix: Liquid

	BLANK SPIKE ANALYSIS						
Parameter	[A] Blank Result mg/L	[B] Blank Spike Result mg/L	[C] Blank Spike Amount mg/L	[D] Detection Limit mg/L	[E] QC Blank Spike Recovery %	[F] LIMITS Recovery Range %	[G] Qualifier
Bicarbonate	< 4.00	240	250	4.00	96.0	70-125	

Blank Spike Recovery [E] = 100*(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

Eddie L. Clemons, II
QA/QC Manager

XENCO Laboratories

Certificate Of Quality Control for Batch: 718A20B52

SM 4500C02D Bicarbonate

Date Validated: Aug 28, 1998 16:58
Date Analyzed: Aug 28, 1998 15:05

Analyst: IF
Matrix: Liquid

	MATRIX DUPLICATE ANALYSIS					
Q.C. Sample ID 183308- 006	[A] Sample Result	[B] Duplicate Result	[C] Detection Limit	[D] QC LIMITS Relative Difference	[E] QC LIMITS Relative Difference	[F] Qualifier
Parameter	mg/L	mg/L	mg/L	%	%	
Bicarbonate	235	232	4.00	1.3	25.0	

Relative Difference [D] = 200*(B-A)/(B+A)
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

Eddie L. Clemons, II
QA/QC Manager

XENCO Laboratories

Certificate Of Quality Control for Batch - 18A20B53

SM4500CO2D Carbonate

Date Validated: Aug 28, 1998 16:58
Date Analyzed: Aug 28, 1998 14:55

Analyst: IF
Matrix: Liquid

	MATRIX DUPLICATE ANALYSIS					
Q.C. Sample ID 183308- 006	[A] Sample Result	[B] Duplicate Result	[C]	[D] QC	[E] LIMITS	[F]
Parameter			Detection Limit	Relative Difference	Relative Difference	Qualifier
	mg/L	mg/L	mg/L	%	%	
Carbonate	< 4.00	< 4.00	4.00	N.C	25.0	

Relative Difference [D] = 200*(B-A)/(B+A)
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

Eddie L. Clemons, II
QA/QC Manager

XENCO Laboratories

Certificate Of Quality Control for Batch = 18A19C65

EPA 160.1 Total Dissolved Solids

Date Validated: Aug 31, 1998 17:40
Date Analyzed: Aug 31, 1998 10:25

Analyst: IF
Matrix: Liquid

	MATRIX DUPLICATE ANALYSIS					
Q.C. Sample ID 183308- 006	[A] Sample Result	[B] Duplicate Result	[C]	[D] QC	[E] LIMITS	[F]
Parameter			Detection Limit	Relative Difference	Relative Difference	Qualifier
	mg/L	mg/L	mg/L	%	%	
Total Dissolved Solids	772	729	5.00	5.7	25.0	

Relative Difference [D] = 200*(B-A)/(B+A)
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

Eddie L. Clemons, II
QA/QC Manager

XENCO Laboratories

Certificate Of Quality Control for Batch - 18A19C65

EPA 160.1 Total Dissolved Solids

Date Validated: Aug 31, 1998 17:40
Date Analyzed: Aug 31, 1998 09:35

Analyst: IF
Matrix: Liquid

	MATRIX DUPLICATE ANALYSIS					
Q.C. Sample ID 183232- 002	[A] Sample Result	[B] Duplicate Result	[C] Detection Limit	[D] QC Relative Difference	[E] LIMITS Relative Difference	[F] Qualifier
Parameter	mg/L	mg/L	mg/L	%	%	
Total Dissolved Solids	867	813	5.00	6.4	25.0	

Relative Difference [D] = 200*(B-A)/(B+A)
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

Eddie L. Clemons, II
QA/QC Manager

XENCO Laboratories

Certificate Of Quality Control for Batch : 18A10C03

EPA 300.0 Anions by Ion Chromatography

Date Validated: Aug 29, 1998 09:53
Date Analyzed: Aug 27, 1998 23:48

Analyst: OR
Matrix: Liquid

	MATRIX DUPLICATE ANALYSIS					
Q.C. Sample ID 183312- 004	[A] Sample Result	[B] Duplicate Result	[C]	[D] QC	[E] LIMITS	[F]
Parameter			Detection Limit	Relative Difference	Relative Difference	Qualifier
	mg/L	mg/L	mg/L	%	%	
Nitrate	< 1.00	< 1.00	1.00	N.C	20.0	
Sulfate	100	94.50	1.00	5.7	20.0	

Relative Difference [D] = 200*(B-A)/(B+A)
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

Eddie L. Clemons, II
QA/QC Manager

XENCO Laboratories

Certificate Of Quality Control for Batch : 18A10C03

EPA 300.0 Anions by Ion Chromatography

Date Validated: Aug 29, 1998 09:53
Date Analyzed: Aug 28, 1998 02:06

Analyst: OR
Matrix: Liquid

	MATRIX DUPLICATE ANALYSIS					
Q.C. Sample ID 183308- 008	[A] Sample Result	[B] Duplicate Result	[C] Detection Limit	[D] QC Relative Difference	[E] LIMITS Relative Difference	[F] Qualifier
Parameter	mg/L	mg/L	mg/L	%	%	
Chloride	86	91	20	5.6	20.0	
Sulfate	1550	1640	20	5.6	20.0	

Relative Difference [D] = 200*(B-A)/(B+A)
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

Eddie L. Clemons, II
QA/QC Manager

XENCO Laboratories

Certificate Of Quality Control for Batch : 18A10C03

EPA 300.0 Anions by Ion Chromatography

Date Validated: Aug 29, 1998 09:53
Date Analyzed: Aug 27, 1998 19:49

Analyst: OR
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 Relative Difference %	[F] QC Spike Relative Difference %	[G] QC Blank Spike Recovery %	[H] QC B.S.D. Recovery %	[I] Blank Spike Recovery Range %	[J] Qualifier
Chloride	< 0.20	5.64	5.94	5.00	0.20	20.0	5.2	112.8	118.8	70-125	
Nitrate	< 0.20	4.64	5.11	5.00	0.20	20.0	9.6	92.8	102.2	70-125	
Sulfate	< 0.20	5.07	5.60	5.00	0.20	20.0	9.9	101.4	112.0	70-125	

Spike Relative Difference [F] = 200*(B-C)/(B+C)
Blank Spike Recovery [G] = 100*(B-A)/[D]
B.S.D. = Blank Spike Duplicate
B.S.D. Recovery [H] = 100*(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

XENCO Laboratories

ANALYTICAL CHAIN OF CUSTODY REPORT
CHRONOLOGY OF SAMPLES

K.E.I. Consultants, Inc.

Project ID: 610057-6-17-0
Project Manager: Theresa Nix
Project Location: Monument, NM.

Project Name: Monument Site 17

XENCO COC#: 1-83308
Date Received in Lab: Aug 26, 1998 11:50 by JO
XENCO contact : Carlos Castro/Eddie Clemons

	Field ID	Lab. ID	Method Name	Method ID	Units	Turn Around	Date and Time: Sample Collected	Date and Time: Addition Requested	Date and Time: Extraction	Date and Time: Analysis
1	MW-1	183308-001	BTEX	SW-846	ppm	10 days	Aug 25, 1998		Aug 27, 1998 by HL	Aug 27, 1998 14:28 by HL
2	MW-2	183308-002	BTEX	SW-846	ppm	10 days	Aug 25, 1998		Aug 27, 1998 by HL	Aug 27, 1998 17:57 by HL
3	MW-3	183308-003	BTEX	SW-846	ppm	10 days	Aug 25, 1998		Aug 27, 1998 by HL	Aug 27, 1998 17:09 by HL
4	MW-4	183308-004	BTEX	SW-846	ppm	10 days	Aug 25, 1998		Aug 27, 1998 by HL	Aug 27, 1998 16:04 by HL
5	MW-5	183308-005	BTEX	SW-846	ppm	10 days	Aug 25, 1998		Aug 27, 1998 by HL	Aug 27, 1998 17:25 by HL
6	MW-6	183308-006	BTEX	SW-846	ppm	10 days	Aug 25, 1998		Aug 27, 1998 by HL	Aug 27, 1998 16:20 by HL
7			PAHs	SW846-8270	mg/L	10 days	Aug 25, 1998		Aug 27, 1998 by SS	Aug 30, 1998 03:15 by LC
8			Metals (ICP)	EPA 6010	mg/L	10 days	Aug 25, 1998		Sep 2, 1998 by AO	Sep 4, 1998 13:33 by CG
9			TDS	EPA 160.1	mg/L	10 days	Aug 25, 1998		Aug 28, 1998 by IF	Aug 31, 1998 10:20 by IF
10			Carbonate	SM4500CO2D	mg/L	10 days	Aug 25, 1998		Aug 28, 1998 by IF	Aug 28, 1998 14:55 by IF
11			Bicarbonate	SM 4500CO2D	mg/L	10 days	Aug 25, 1998		Aug 28, 1998 by IF	Aug 28, 1998 14:55 by IF
12			Anions	EPA 300.0	mg/L	10 days	Aug 25, 1998		Aug 28, 1998 by OR	Aug 28, 1998 01:22 by OR
13			Mercury, Tot	SW846-7470	mg/L	Standard	Aug 25, 1998		Sep 2, 1998 by AO	Sep 4, 1998 19:21 by CG
14	MW-7	183308-007	BTEX	SW-846	ppm	10 days	Aug 25, 1998		Aug 27, 1998 by HL	Aug 27, 1998 18:13 by HL
15			PAHs	SW846-8270	mg/L	10 days	Aug 25, 1998		Aug 27, 1998 by SS	Aug 30, 1998 06:59 by LC
16			Metals (ICP)	EPA 6010	mg/L	10 days	Aug 25, 1998		Sep 2, 1998 by AO	Sep 4, 1998 14:00 by CG
17			TDS	EPA 160.1	mg/L	10 days	Aug 25, 1998		Aug 28, 1998 by IF	Aug 31, 1998 10:30 by IF
18			Carbonate	SM4500CO2D	mg/L	10 days	Aug 25, 1998		Aug 28, 1998 by IF	Aug 28, 1998 15:15 by IF
19			Bicarbonate	SM 4500CO2D	mg/L	10 days	Aug 25, 1998		Aug 28, 1998 by IF	Aug 28, 1998 15:15 by IF
20			Anions	EPA 300.0	mg/L	10 days	Aug 25, 1998		Aug 28, 1998 by OR	Aug 28, 1998 02:53 by OR
21			Mercury, Tot	SW846-7470	mg/L	Standard	Aug 25, 1998		Sep 2, 1998 by AO	Sep 4, 1998 19:20 by CG
22	MW-8	183308-008	BTEX	SW-846	ppm	10 days	Aug 25, 1998		Aug 27, 1998 by HL	Aug 27, 1998 16:36 by HL
23			PAHs	SW846-8270	mg/L	10 days	Aug 25, 1998		Aug 27, 1998 by SS	Aug 30, 1998 04:00 by LC
24			Metals (ICP)	EPA 6010	mg/L	10 days	Aug 25, 1998		Sep 2, 1998 by AO	Sep 4, 1998 14:09 by CG
25			TDS	EPA 160.1	mg/L	10 days	Aug 25, 1998		Aug 28, 1998 by IF	Aug 31, 1998 10:35 by IF
26			Carbonate	SM4500CO2D	mg/L	10 days	Aug 25, 1998		Aug 28, 1998 by IF	Aug 28, 1998 15:25 by IF
27			Bicarbonate	SM 4500CO2D	mg/L	10 days	Aug 25, 1998		Aug 28, 1998 by IF	Aug 28, 1998 15:25 by IF
28			Anions	EPA 300.0	mg/L	10 days	Aug 25, 1998		Aug 28, 1998 by OR	Aug 28, 1998 02:06 by OR

XENCO Laboratories

ANALYTICAL CHAIN OF CUSTODY REPORT
CHRONOLOGY OF SAMPLES

K.E.I. Consultants, Inc.

Project ID: 610057-6-17-0
Project Manager: Theresa Nix
Project Location: Monument, NM.

Project Name: Monument Site 17

XENCO COC#: 1-83308
Date Received in Lab: Aug 26, 1998 11:50 by JO
XENCO contact : Carlos Castro/Eddie Clemons

							Date and Time			
	Field ID	Lab. ID	Method Name	Method ID	Units	Turn Around	Sample Collected	Addition Requested	Extraction	Analysis
29			Mercury, Tot	SW846-7470	mg/L	Standard	Aug 25, 1998		Sep 2, 1998 by AO	Sep 4, 1998 19:22 by CG
30	Windmill	183308-009	BTEX	SW-846	ppm	10 days	Aug 25, 1998		Aug 27, 1998 by HL	Aug 27, 1998 16:52 by HL

XENCO Laboratories

☐ 11381 Meadowglen, Suite L, Houston TX 77082 281-589-0692
☑ 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 & CHAIN OF CUSTODY RECORD

On-LINE Help & Technical Services at XENCO.com

10063

Company COC No: 176 **Work Order No:** Page 1 of 1

Company	K.E.I.
Phone	210-680-3767
Project Name	Monument Site 17 ☑ Previously done at XENCO
Project ID	610057-6-17-0
Location	Monument, NM
Project Manager (PM)	Theresa Nix
Project Director (PD)	Mike Hawthorne
Fax Results to	☑ PM and / or
Fax	512-364-3556
Invoice to	☑ Accounting ☐ Include Invoice with Final Report Attn PM ☐ Invoice must have a P.O Bill to: 610057-6-17-0
Quote No.	**P.O No** 610057-6-17 ☐ Call for a P.O.
Special DLs	(RRI RR II DW QAPP See Lab PM Call Proj. PM)
Specifications	
Sampler Name	Stas Glover Signature Stas Glover

Lab Only: 183308-SA

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

Lab Only Additions: From: / Rcv by: / Date

#	Sample ID	Sampling Date	Time	Depth ft / in / m	Matrix A P S W	Composite	Grab	# Containers	Container Size	Type	Preservatives	BTEX by 8021 8260 602 624 Other (8020)	BTEX-MTBE by 8020 8021 8260 602 624 Other	TPH by TX1005 418.1 8015GRO 8015DRO 8015JetF	PAHs by 8270 8100 8310	METALS by 6010 8RCRA Tot Pb TCLP8 13PP 23TAL See List	VOAs by 8260 624 BTEX MTBE PPs TCL See List Call PM	SVOAs by 8270 625 PAHs BN&A TCL PPs See List Call PM	TDS - 160.1	Cations/Anions	TAT 5h 12h 20h 24h 48h 3d 5d 7d 10d 14d 21d	Addn: PAH above mg/L W. mg/Kg S Highest Hit	Hold Analysis	Remarks
1	MW-1	8-25-98						2	40mL															
2	MW-2							2																
3	MW-3							2																
4	MW-4							2																
5	MW-5							2																
6	MW-6							6	40mL 3-1L Liters															
7	MW-7							6	VOA P															
8	MW-8							6																
9	Windmill							2	VOAs															C.C.
10																								

Relinquished by (Initials and Signature)	Relinquished to (Initials and Signature)	Date & Time
1		8/25/98 1600
2		
3	Lab: Johnny Orum	8/26/98 11:50

Total Containers per COC:

Rush TATs Fax Due: Final Fax Due:

Final Report Data Package Due Date:

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

Preservatives - Various (V), HCl pH<2 (H), H2SO4 pH<2 (S), HNO4 pH<2 (N), NaOH+Asbc 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), Tedlar Bag (B), Wipe (W), Other _____ **TYPE** Glass Amb (GA), Glass Clear (GC), Plastic (P), Other (O) _____

QA/QC PROCEDURES

DECONTAMINATION OF EQUIPMENT

Cleaning of drilling equipment was the responsibility of the drilling company. In general, the cleaning procedures consisted of using high pressure steam to wash the drilling and sampling equipment prior to drilling and prior to starting each hole. Prior to use, the sampling equipment was cleaned with Liqui-Nox detergent and rinsed with distilled water.

SOIL SAMPLING

Samples of the subsurface soils were obtained through the collection of auger cuttings at discrete intervals during drilling utilizing an air rotary drilling rig. A split spoon sampler was utilized where possible. Representative soil samples were divided into 2 separate portions using clean, disposable gloves and clean sampling tools. One portion of the soil sample was placed in a disposable sample bag. The bag was labeled and sealed for head-space analysis using a photoionization detector (PID) calibrated to a 100 ppm isobutylene standard. Each sample was allowed to volatilize for approximately 30 minutes at ambient temperature prior to conducting the analysis.

The other portion of the soil sample was placed in a sterile glass container equipped with a Teflon-lined lid furnished by the analytical laboratory. The container was filled to capacity to limit the amount of head-space present. Each container was labeled and placed on ice in an insulated cooler. Upon selection of samples for analysis, the cooler was sealed for shipment to the laboratory. Proper chain-of-custody documentation was maintained throughout the sampling process.

Soil samples were express mailed to Xenco Laboratories of San Antonio, Texas for BTEX, TPH, SPLP TPH, SPLP VOC, and SPLP SVOC analysis. Soil samples were analyzed for BTEX and TPH concentrations within 14 days following the collection date.

The soil samples were analyzed in accordance with the following methods:

- BTEX concentrations by EPA Method SW846-8021B
- TPH concentrations by EPA Method 8015 Diesel Range Organics
- SPLP TPH concentrations in accordance with EPA Method SW846-1312/418.1
- SPLP VOC concentrations in accordance with EPA Method SW846-1312/8260
- SPLP SVOC concentrations in accordance with EPA Method SW846-1312/8270

GROUND WATER SAMPLING

Monitoring wells were developed and purged with a clean PVC sampler. The sampler was cleaned prior to each use with Liqui-Nox detergent and rinsed with distilled water. Monitoring wells with sufficient recharge were purged by removing a minimum of 3 well volumes. Monitoring wells that did not recharge sufficiently were purged until no additional ground water could be obtained.

After purging the wells, ground water samples were collected with a disposable Teflon sampler and polyethylene line by personnel wearing clean, disposable gloves. Ground water sample containers were filled in the order of decreasing volatilization sensitivity (i.e., BTEX containers were filled first and PAH containers second).

Ground water samples collected for BTEX analysis were placed in 40 ml glass VOA vials equipped with Teflon-lined caps. The containers provided were pre-preserved with HCl by the analytical laboratory. The vials were filled to a positive meniscus, sealed, and visually checked to ensure the absence of air bubbles.

Ground water samples collected for PAH, cations and anions, TDS and metals analysis were filled to capacity in sterile, 1 liter glass containers equipped with Teflon-lined caps. Ground water samples collected for metals analysis were filled to capacity in sterile, 1 liter plastic containers equipped with Teflon-lined caps. The containers were provided by the analytical laboratory.

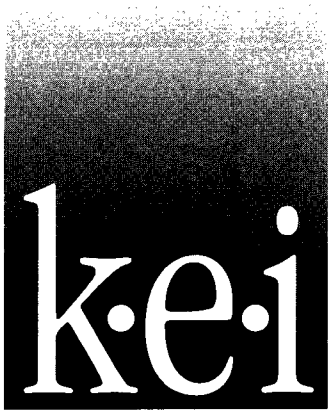
The filled containers were labeled and placed on ice in an insulated cooler. The cooler was sealed for transportation to the analytical laboratory. Proper chain-of-custody documentation was maintained throughout the sampling process.

The ground water samples were analyzed in accordance with the methods as follows:

- BTEX concentrations in accordance with EPA Method SW846-8021B
- Metals concentrations in accordance with EPA ICP Method 6010
- PAH concentrations in accordance with EPA Method 8270
- Anions concentrations in accordance with EPA Method 300.0
- Metals concentrations in accordance with EPA ICP Method 6010
- Total mercury concentrations in accordance with EPA Method 7470
- Bicarbonate concentrations in accordance with SM4500CO2D
- Carbonate concentrations in accordance with SM4500CO2D
- TDS concentrations in accordance with EPA Method 160.1

LABORATORY PROTOCOL

The laboratory was responsible for proper QA/QC procedures. These procedures are either transmitted with the laboratory reports or are on file at the laboratory.



SUBSURFACE INVESTIGATION REPORT

MONITORING WELLS MW17-4 AND MW17-5

TEXAS - NEW MEXICO PIPE LINE COMPANY
MONUMENT SITE NO. 17
LEA COUNTY, NEW MEXICO

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

SUBSURFACE INVESTIGATION REPORT

MONITORING WELLS MW17-4 AND MW17-5

TEXAS - NEW MEXICO PIPE LINE COMPANY
MONUMENT SITE NO. 17
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

Daryl Stacey
Project Manager

Theresa Nix
Project Manager

Pat Bullinger, P.E.

KEI Job No. 610057-2-17

April 7, 1998

TABLE OF CONTENTS

PURPOSE AND SCOPE

The purpose of the subsurface investigation was to install 2 additional monitoring wells to delineate hydrocarbon impact across the site. Previous activities at the site consisted of the advancement of soil borings B17-1 through B17-5 and installation of monitoring wells MW17-1 through MW17-3. The report for that investigation was dated September 9, 1997.

SOIL INVESTIGATION

During the subsurface investigation, 2 monitoring wells (designated MW17-4 and MW17-5) were installed utilizing air rotary technology. Soil samples were collected at selected intervals from the ground surface to the bottom of the boring. The soils were classified in the field, soil samples were field screened, and selected samples were prepared and shipped to the laboratory for analysis.

Upon advancement to total depth and collection of soil samples, a permanent well consisting of 2-inch perforated PVC and blank riser was placed in the open hole of each boring designated as a permanent monitoring well.

The monitoring well locations were surveyed by a Professional Land Surveyor registered in the State of New Mexico. The locations of the monitoring wells installed are presented on FIG. 1.

SOIL DESCRIPTION

The subsurface soil profile was classified in general accordance with the Unified Soil Classification System by visually observing the soil samples obtained during the assessment. In general, 3 soil types were encountered. A general description of the soil, approximate thickness, and head-space sample results for each soil type are as follows:

Soil Type I

This soil type consisted of a tan to brown clay encountered at the surface at both monitoring well locations. The clay was sandy, firm, contained some caliche gravel, and was moist. The thickness of this soil ranged from approximately 3 to 22 feet. Head-space readings from samples of this soil type were below instrument detection limits (ND).

Soil Type II

This soil type consisted of a tan to brown sand encountered beneath Soil Type I at both monitoring well locations. The sand was silty, fine-grained and contained calcareous nodules. The thickness of this soil type ranged from approximately 3 to 4.5 feet. Head-space readings from samples of this soil type were ND.

Soil Type III

This soil type consisted of a tan limestone encountered beneath Soil Type II at both monitoring well locations. The limestone was interbedded with poorly cemented caliche, and was moist. The thickness of this soil type was approximately 1 foot thick at both monitoring well locations. The head-space reading from a sample of this soil type was ND.

Logs indicating the typical subsurface soil profile, depths at which soil samples were obtained, head-space results, laboratory results, and generalized geologic profiles are presented on FIGs. 2 and 3.

ANALYTICAL RESULTS

Three soil samples were selected from each soil boring based on the following criteria:

- The sample collected from 5 to 7 feet below ground surface
- The sample collected from 10 to 12 feet below ground surface
- The sample directly above the ground water level measured at the time of drilling.

Soil samples selected for analytical testing consisted of the following:

- Six soil samples from the monitoring wells were selected for determination of benzene, toluene, ethylbenzene, and xylenes (BTEX) and total petroleum hydrocarbons - diesel range organics (TPH-DRO).
- Laboratory results for selected samples indicated the following concentration ranges:

CONSTITUENT	CONCENTRATIONS (mg/kg)
BENZENE	ND
BTEX	ND
TPH	28.4 to 79.1

Soil laboratory results are summarized in TABLE I. Soil analytical laboratory reports are presented in APPENDIX A.

GROUND WATER SAMPLING AND ANALYTICAL RESULTS

Upon completion of drilling and approximately once a month thereafter, each well was gauged to determine the depth to ground water and check for the presence of phase-separate hydrocarbons (PSH). Ground water depth during the February 19, 1998, gauging event indicated the depth to ground water in wells varied from 16.04 to 19.58 feet below the ground surface. No PSH was observed in any of the monitoring wells. Ground water elevations indicate an approximate gradient of 0.001 ft/ft towards the northwest. Ground water contours are presented on FIG. 4. Ground water measurements are summarized in TABLE II.

On February 19, 1998, each monitoring well was purged of approximately 3 well volumes of water and ground water samples were collected from each monitoring well. Purged water collected during the event was stored in steel drums pending disposal.

Water samples selected for analytical testing consisted of the following:

- Ground water samples collected from monitoring wells MW17-1 through MW17-5 were tested for BTEX.
- Ground water samples collected from monitoring wells MW17-4 and MW17-5 were also tested for polycyclic aromatic hydrocarbon (PAH), ICP heavy metals, major cations/anions, and total dissolved solids (TDS).

- Laboratory results indicated the following concentration ranges:

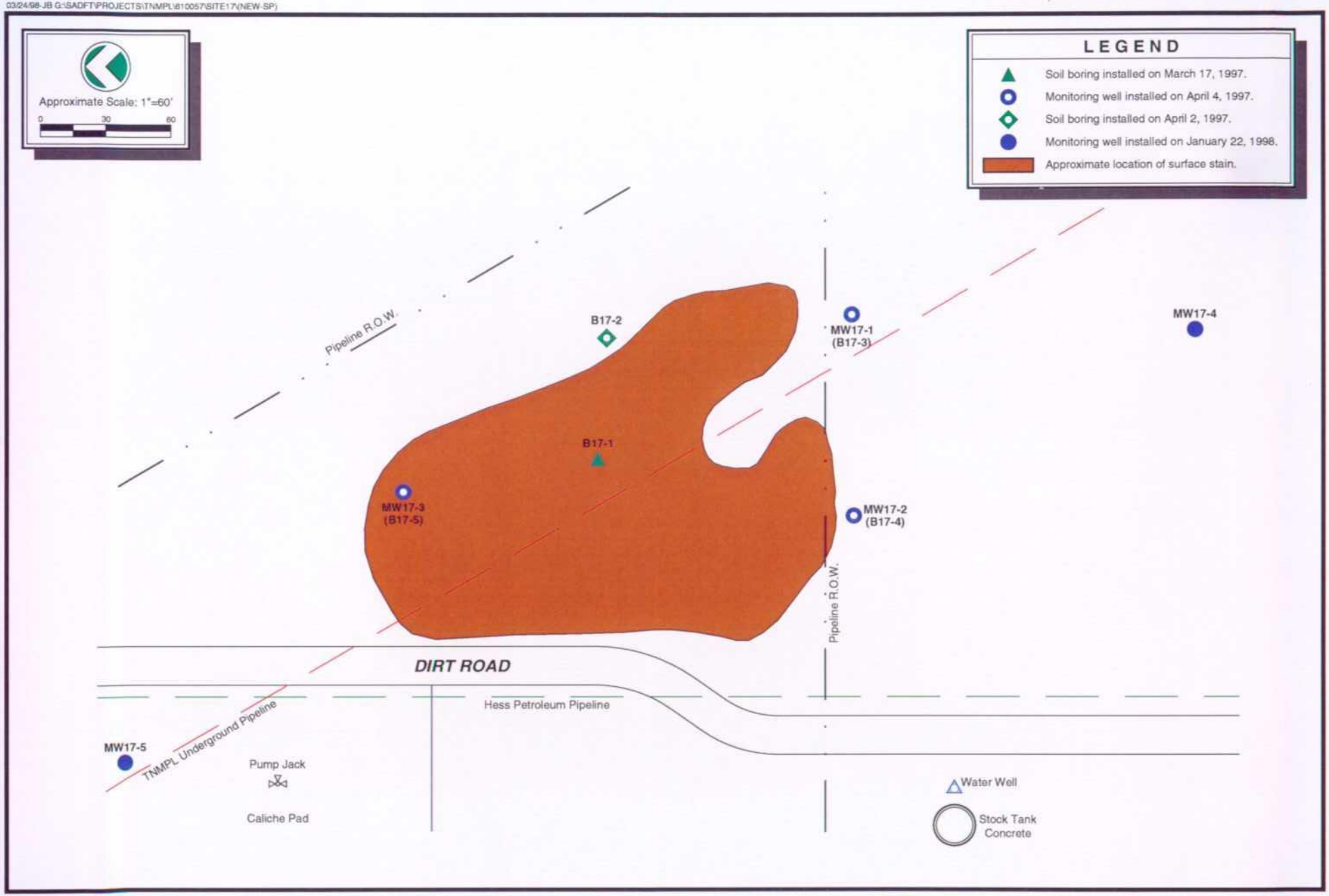
CONSTITUENT	CONCENTRATIONS (mg/L)
BENZENE	ND to 0.436
BTEX	ND to 0.511
BARIUM	0.12 and 0.16
CALCIUM	128 and 110
MAGNESIUM	19.1 and 23.1
POTASSIUM	3.86 and 5.21
SILICON	22.7 and 22.2
SODIUM	65.4 and 87.9
STRONTIUM	1.20 and 1.42
BICARBONATE	265 and 300
TDS	724 and 785
SULFATE	62.9 and 51.9
CHLORIDE	138 and 148

Constituents not listed above were ND. Ground water laboratory results are summarized in TABLES III through V. BTEX laboratory results are graphically presented on FIG. 4. Water analytical laboratory reports and chain-of-custody documentation are presented in APPENDIX B.

CONCLUSIONS AND RECOMMENDATIONS

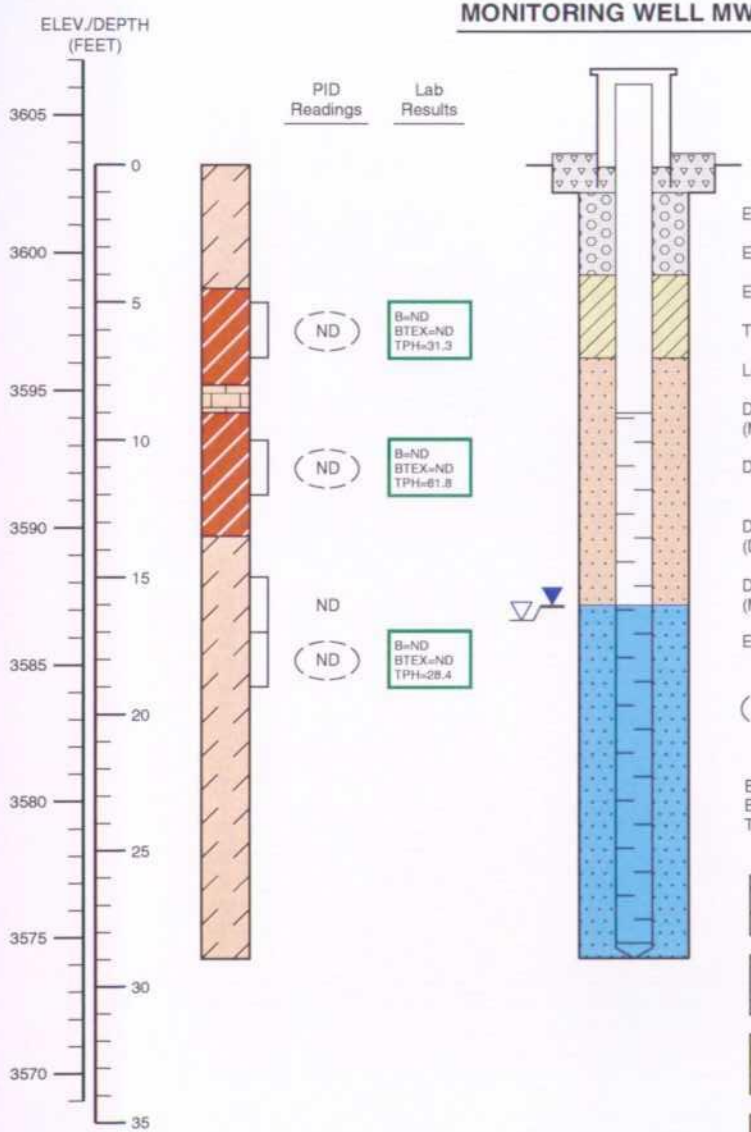
Based on the information obtained at the site, it appears hydrocarbon impact in soil has been delineated at the site horizontally and vertically. Hydrocarbon impact in ground water has been delineated upgradient and downgradient of the site, but requires confirmation laterally. Recommendations for soil and ground water remediation are as follows:

- install 2 delineation wells (1 east and 1 west of the release location)
- evaluate soil closure levels protective of ground water using existing SPLP laboratory results from previous assessments
- analyze mechanical versus intrinsic ground water remediation options
- develop a work plan for the selected soil and ground water remediation options.



k·e·i	*SITE DETAILS*	610057
	TEXAS - NEW MEXICO PIPE LINE CO. MONUMENT SITE NO. 17 LEA COUNTY, NEW MEXICO	FIG 1

MONITORING WELL MW17-4



Monitoring Well Details (MW17-4)

Elev of Concrete Pad	3603.61 ft
Elev of Ground Surface	3603.20 ft
Elev Top of PVC Well	3606.12 ft
Thickness of Bentonite Seal	3.0 ft
Length of PVC Well Screen	20.0 ft
Depth of PVC Well (Measured from top of PVC)	31.92 ft
Depth of Exploratory Hole	29.0 ft
Depth to Ground Water (During drilling, measured from top of PVC)	19.02 ft
Depth to Ground Water (Measured from top of PVC)	18.96 ft
Elev of Ground Water	3587.16 ft

( ) Indicates sample selected for laboratory analysis.

B = Benzene Concentration (mg/kg)
BTEX = Total BTEX Concentration (mg/kg)
TPH = Total Petroleum Hydrocarbon Concentration (mg/kg)

2' x 2' Concrete Pad

Cement / Bentonite Grout

Bentonite Pellet Seal

Sand Pack

LEGEND

Clay (CL), sandy, fine-grained, firm, contained some caliche gravel, tan to brown, moist.

Sand (SM), silty, fine-grained, calcareous nodules, tan to brown.

Limestone (LS), interbedded with poorly cemented caliche, tan, moist.

Indicates the depth of interval from which a soil sample was selected and prepared for field head-space and/or laboratory analysis.

Indicates the ground water level measured during drilling.

Indicates the ground water level measured on March 4, 1998.

PID Head-space readings in ppm obtained with a photo-ionization detector.

ND Indicates the constituent was not detected.

NOTES

1. Monitoring well MW17-4 was installed utilizing an air rotary rig on January 22, 1998.
2. The well was constructed with 2-inch ID, 0.010-inch factory slotted, threaded joint, Schedule 40 PVC pipe.
5. The well is protected with a stick up steel cover and a locked compression cap.
4. The lines between material types shown on the profile log represent approximate boundaries. Actual transitions may be gradual.
5. The depths indicated are referenced from the ground surface unless otherwise noted.

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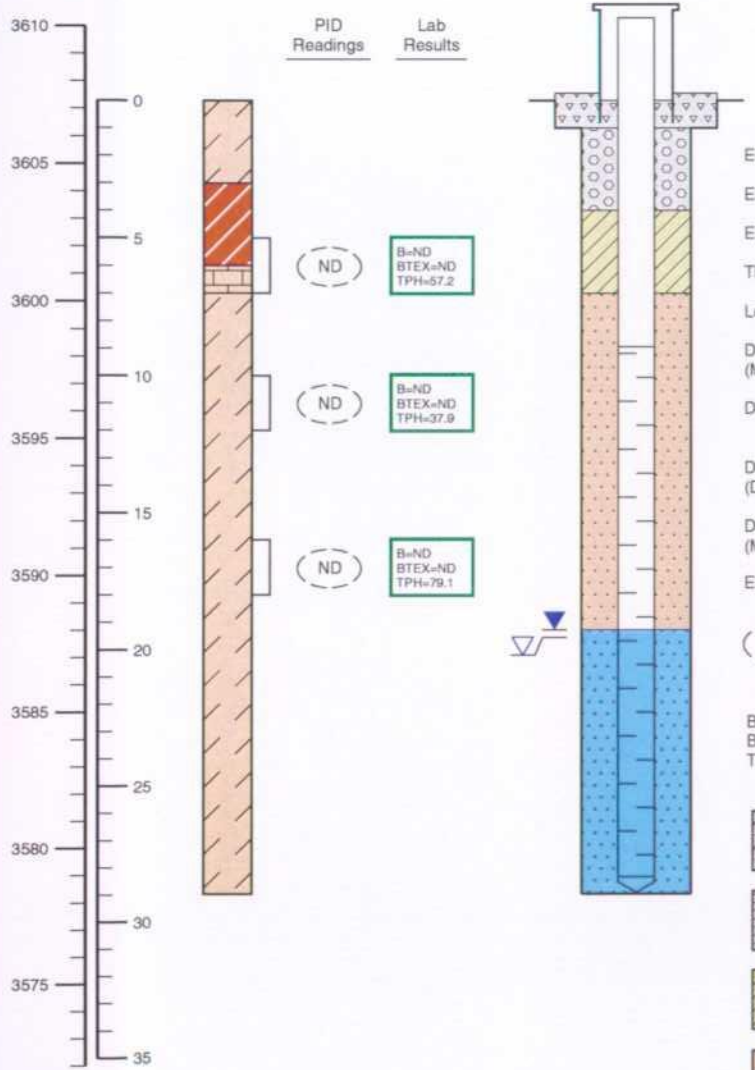
LOG AND DETAILS OF MONITORING WELL MW17-4

TEXAS - NEW MEXICO PIPE LINE CO. MONUMENT SITE NO. 17 LEA COUNTY, NEW MEXICO

610057

FIG 2

MONITORING WELL MW17-5



Monitoring Well Details (MW17-5)

Elev of Concrete Pad	3607.56 ft
Elev of Ground Surface	3607.29 ft
Elev Top of PVC Well	3610.17 ft
Thickness of Bentonite Seal	3.0 ft
Length of PVC Well Screen	20.0 ft
Depth of PVC Well (Measured from top of PVC)	31.88 ft
Depth of Exploratory Hole	29.0 ft
Depth to Ground Water (During drilling, measured from top of PVC)	22.46 ft
Depth to Ground Water (Measured from top of PVC)	22.46 ft
Elev of Ground Water	3587.71 ft

Indicates sample selected for laboratory analysis.

B = Benzene Concentration (mg/kg)
BTEX = Total BTEX Concentration (mg/kg)
TPH = Total Petroleum Hydrocarbon Concentration (mg/kg)

2' x 2' Concrete Pad

Cement / Bentonite Grout

Bentonite Pellet Seal

Sand Pack

LEGEND

Clay (CL), sandy, fine grained, firm, contained some caliche gravel, tan to brown, moist.

Sand (SM), silty, fine-grained, calcareous nodules, tan to brown.

Limestone (LS), interbedded with poorly cemented caliche, tan, moist.

Indicates the depth of interval from which a soil sample was selected and prepared for field head-space and/or laboratory analysis.

Indicates the ground water level measured during drilling.

Indicates the ground water level measured on March 4, 1998.

PID — Head-space readings in ppm obtained with a photo-ionization detector.

ND — Indicates the constituent was not detected.

NOTES

1. Monitoring well MW17-5 was installed utilizing an air rotary rig on January 22, 1998.
2. The well was constructed with 2-inch ID, 0.010-inch factory slotted, threaded joint, Schedule 40 PVC pipe.
5. The well is protected with a stick up steel cover and a locked compression cap.
4. The lines between material types shown on the profile log represent approximate boundaries. Actual transitions may be gradual.
5. The depths indicated are referenced from the ground surface unless otherwise noted.

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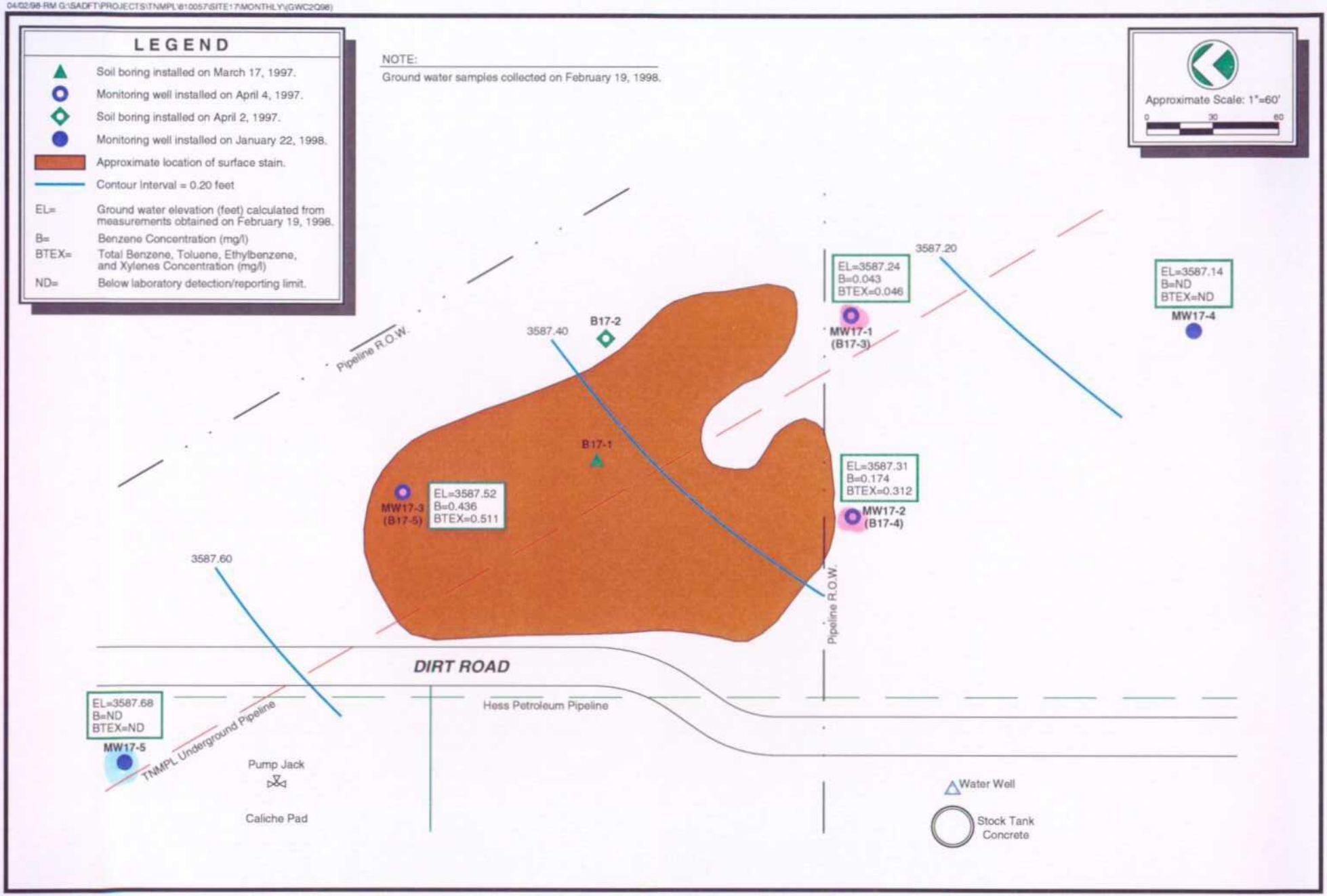
LOG AND DETAILS OF MONITORING WELL MW17-5

TEXAS - NEW MEXICO PIPE LINE CO. MONUMENT SITE NO. 17 LEA COUNTY, NEW MEXICO

610057

FIG 3

04/02/98-RM G:\SADFT\PROJECTS\TNMPL\610057\SITE17\MONTHLY\(GWC2Q98)



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GROUND WATER CONTOURS / CONCENTRATION MAP - FEBRUARY 1998	610057
TEXAS - NEW MEXICO PIPE LINE CO. MONUMENT SITE NO. 17 LEA COUNTY, NEW MEXICO	FIG 4

GENERAL NOTES

ND - Indicates constituent was not detected above the method detection or laboratory reporting limit.
PSH - Phase-separate hydrocarbons.

Method detection or reporting limits:

Soil:	BTEX	- 0.020 to 0.040 mg/kg
	TPH	- 10.0 mg/kg
Water:	BTEX	- 0.001 to 0.008 mg/l
	Metals	- 0.001 to 1.11 mg/l
	PAH	- 0.002 mg/l

Laboratory test methods:	BTEX	- EPA Method SW846-8020
	TPH	- Modified EPA Method 8015 DRO
	Metals	- EPA ICP Method 6010
	Total Mercury	- EPA Method 7470
	Bicarbonate	- SM4500CO2D
	Carbonate	- SM4500CO2D
	TDS	- EPA Method 160.1
	Anions	- EPA Method 300.0

TABLE I

SUMMARY OF SOIL LABORATORY RESULTS - BTEX AND TPH
TEXAS - NEW MEXICO PIPE LINE COMPANY
MONUMENT SITE NO. 17
LEA COUNTY, NEW MEXICO

SAMPLE LOCATION	SAMPLE DATE	DEPTH (feet)	BENZENE (mg/kg)	TOLUENE (mg/kg)	ETHYL-BENZENE (mg/kg)	XYLENES (mg/kg)	TOTAL BTEX (mg/kg)	TPH (mg/kg)
MW17-4	01/22/98	5 - 7	ND	ND	ND	ND	ND	31.3
MW17-4	01/22/98	10 - 12	ND	ND	ND	ND	ND	61.8
MW17-4	01/22/98	17 - 19	ND	ND	ND	ND	ND	28.4
MW17-5	01/22/98	5 - 6	ND	ND	ND	ND	ND	57.2
MW17-5	01/22/98	10 - 11	ND	ND	ND	ND	ND	37.9
MW17-5	01/22/98	16 - 18	ND	ND	ND	ND	ND	79.1

TABLE II

MONITORING WELL MW17-1
SUMMARY OF GROUND WATER MONITORING
TEXAS - NEW MEXICO PIPE LINE COMPANY
MONUMENT SITE NO. 17
LEA COUNTY, NEW MEXICO

DATE MEASURED	PVC ELEVATION (feet)	DEPTH TO WATER (feet)	GROUND WATER ELEVATION		PSH THICKNESS (feet)
			Actual	Corrected	
04/30/97	3,607.03	19.82	3587.21	---	---
08/27/97	3,607.03	19.92	3587.11	---	---
10/23/97	3,607.03	19.85	3587.18	---	---
11/01/97	3,607.03	19.88	3587.15	---	---
12/03/97	3,607.03	20.87	3586.16	---	---
01/02/98	3,607.16	19.85	3587.31	---	---
02/06/98	3,607.16	19.87	3587.29	---	---
02/19/98	3,607.16	19.92	3587.24	---	---
03/04/98	3,607.16	19.89	3587.27	---	---

TABLE II
(continued)

MONITORING WELL MW17-2
SUMMARY OF GROUND WATER MONITORING
TEXAS - NEW MEXICO PIPE LINE COMPANY
MONUMENT SITE NO. 17
LEA COUNTY, NEW MEXICO

DATE MEASURED	PVC ELEVATION (feet)	DEPTH TO WATER (feet)	GROUND WATER ELEVATION		PSH THICKNESS (feet)
			Actual	Corrected	
04/30/97	3,606.96	19.69	3587.27	---	---
08/27/97	3,606.96	19.79	3587.17	---	---
10/23/97	3,606.96	19.70	3587.26	---	---
11/01/97	3,606.96	19.75	3587.21	---	---
12/03/97	3,606.96	19.75	3587.21	---	---
01/02/98	3,607.08	19.71	3587.37	---	---
02/06/98	3,607.08	19.74	3587.34	---	---
02/19/98	3,607.08	19.77	3587.31	---	---
03/04/98	3,607.08	19.74	3587.34	---	---

TABLE II
(continued)

MONITORING WELL MW17-3
SUMMARY OF GROUND WATER MONITORING
TEXAS - NEW MEXICO PIPE LINE COMPANY
MONUMENT SITE NO. 17
LEA COUNTY, NEW MEXICO

DATE MEASURED	PVC ELEVATION (feet)	DEPTH TO WATER (feet)	GROUND WATER ELEVATION		PSH THICKNESS (feet)
			Actual	Corrected	
04/30/97	3,608.31	20.79	3587.52	---	---
08/27/97	3,608.31	20.89	3587.42	---	---
10/23/97	3,608.31	20.81	3587.50	---	---
11/01/97	3,608.31	20.85	3587.46	---	---
12/03/97	3,608.31	19.89	3588.42	---	---
01/02/98	3,608.43	20.83	3587.60	---	---
02/06/98	3,608.43	20.86	3587.57	---	---
02/19/98	3,608.43	20.91	3587.52	---	---
03/04/98	3,608.43	20.85	3587.58	---	---

TABLE II
(continued)

MONITORING WELL MW17-4
SUMMARY OF GROUND WATER MONITORING
TEXAS - NEW MEXICO PIPE LINE COMPANY
MONUMENT SITE NO. 17
LEA COUNTY, NEW MEXICO

DATE MEASURED	PVC ELEVATION (feet)	DEPTH TO WATER (feet)	GROUND WATER ELEVATION		PSH THICKNESS (feet)
			Actual	Corrected	
02/06/98	3,606.12	18.95	3587.17	---	---
02/19/98	3,606.12	18.98	3587.14	---	---
03/04/98	3,606.12	18.96	3587.16	---	---

TABLE II
(continued)

MONITORING WELL MW17-5
SUMMARY OF GROUND WATER MONITORING
TEXAS - NEW MEXICO PIPE LINE COMPANY
MONUMENT SITE NO. 17
LEA COUNTY, NEW MEXICO

DATE MEASURED	PVC ELEVATION (feet)	DEPTH TO WATER (feet)	GROUND WATER ELEVATION		PSH THICKNESS (feet)
			Actual	Corrected	
02/06/98	3,610.17	22.46	3587.71	---	---
02/19/98	3,610.17	22.49	3587.68	---	---
03/04/98	3,610.17	22.46	3587.71	---	---

TABLE III

SUMMARY OF GROUND WATER LABORATORY RESULTS - BTEX
TEXAS - NEW MEXICO PIPE LINE COMPANY
MONUMENT SITE NO. 17
LEA COUNTY, NEW MEXICO

MONITORING WELL NO.	DATE SAMPLED	BENZENE (mg/l)	TOLUENE (mg/l)	ETHYLBENZENE (mg/l)	XYLENES (mg/l)	BTEX (mg/l)
MW17-1	05/02/97	ND	ND	ND	ND	ND
MW17-1	08/27/97	0.740	0.013	0.221	0.046	1.020
MW17-1	11/01/97	0.143	0.003	0.021	0.015	0.182
MW17-1	02/19/98	0.043	0.001	0.002	ND	0.046
MW17-2	05/02/97	ND	ND	ND	ND	ND
MW17-2	08/27/97	0.980	0.278	0.229	0.091	1.578
MW17-2	11/01/97	0.194	0.050	0.049	0.033	0.326
MW17-2	02/19/98	0.174	0.066	0.047	0.025	0.312
MW17-3	05/02/97	0.685	ND	0.071	0.016	0.772
MW17-3	08/27/97	0.828	ND	0.096	0.016	0.940
MW17-3	11/01/97	0.438	0.006	0.068	0.025	0.537
MW17-3	02/19/98	0.436	0.015	0.045	0.015	0.511
MW17-4	02/19/98	ND	ND	ND	ND	ND
MW17-5	02/19/98	ND	ND	ND	ND	ND

TABLE IV

SUMMARY OF GROUND WATER LABORTORY RESULTS - METALS
TEXAS - NEW MEXICO PIPE LINE COMPANY
MONUMENT SITE NO. 17
LEA COUNTY, NEW MEXICO

SAMPLE LOCATION	MW17-1	MW17-2	MW17-3	MW17-4	MW17-5
DATE SAMPLED	05/02/97	05/02/97	05/02/97	02/19/98	02/19/98
METALS CONSTITUENT	CONCENTRATION (mg/l)				
Aluminum	21.2	8.07	2.36	ND	ND
Arsenic	ND	ND	ND	ND	ND
Barium	0.75	0.64	0.35	0.12	0.16
Beryllium	ND	ND	ND	ND	ND
Boron	ND	ND	ND	ND	ND
Cadmium	ND	ND	ND	ND	ND
Calcium	1,170	743	279	128	110
Chromium	ND	ND	ND	ND	ND
Cobalt	ND	ND	ND	ND	ND
Copper	ND	ND	ND	ND	ND
Iron	13.4	5.92	1.69	ND	ND
Lead	ND	ND	ND	ND	ND
Magnesium	40.0	32.9	26.3	19.1	23.1
Manganese	0.29	0.21	ND	ND	0.19
Molybdenum	ND	ND	ND	ND	ND
Nickel	ND	ND	ND	ND	ND
Potassium	7.84	5.95	4.89	3.86	5.21
Selenium	---	---	---	ND	ND
Silicon	24.5	12.9	13.3	22.7	22.2
Silver	ND	ND	ND	ND	ND
Sodium	80.7	69.7	95.8	65.4	87.9
Strontium	2.16	1.69	1.30	1.20	1.42
Tin	5.53	2.16	0.65	ND	ND
Vanadium	0.05	ND	ND	ND	ND
Zinc	ND	ND	ND	ND	ND
Mercury	ND	ND	ND	ND	ND

TABLE V

SUMMARY OF GROUND WATER LABORATORY RESULTS - MISCELLANEOUS
TEXAS - NEW MEXICO PIPE LINE COMPANY
MONUMENT SITE NO. 17
LEA COUNTY, NEW MEXICO

MONITORING WELL NO.	DATE SAMPLED	BICARBONATE (mg/l)	CARBONATE (mg/l)	TDS (mg/l)	SULFATE (mg/l)	CHLORIDE (mg/l)	TIC (mg/l)
MW17-1	05/02/97	319	ND	786	70.0	152	64.9
MW17-2	05/02/97	307	1.0	820	62.0	158	70.0
MW17-3	05/02/97	315	1.3	816	63.2	174	46.8
MW17-4	02/19/98	265	ND	724	62.9	138	---
MW17-5	02/19/98	300	ND	785	51.9	148	---

ANALYTICAL REPORT 1-80281

for

K.E.I. Consultants, Inc.

Project Manager: Theresa Nix

Project Name: TNMPL

Project Id: 610057

January 29, 1998

XENCO Laboratories

HOUSTON - DALLAS - SAN ANTONIO

11381 Meadowglen Lane Suite L * Houston, Texas 77082-2647
Phone (281) 589-0692 Fax (281) 589-0695

XENCO Laboratories

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

January 29, 1998

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

Reference: **XENCO Report No.: 1-80281**
Project Name: TNMPL
Project ID: 610057
Project Address: Monument Site 17

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 1-80281. 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, and completeness.

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. 1-80281 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 Laboratories is accredited by the American Association for Laboratory Accreditation (A2LA) for technical competence in the field of Environmental Testing (Certificate No. 0343-01). In accordance with A2LA's guidelines, XENCO operates a Quality System that meets ISO/IEC Guide 25 requirements and 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 Yonemoto, Ph.D.
QA/QC Manager

XENCO Laboratories

CERTIFICATE OF ANALYSIS SUMMARY 1-80281

K.E.I. Consultants, Inc.

Project ID: 610057 | ***Project Name: TNMPL*** | **Date Received in Lab :** Jan 24, 1998 11:11

Project Manager: Theresa Nix | **Date Report Faxed:** Jan 29, 1998

Project Location: Monument Site 17 | **XENCO contact :** Carlos Castro/Edward Yonemoto

Analysis Requested	*Lab ID:*	180281 001	180281 002	180281 003	180281 004	180281 005	180281 006
	Field ID:	MW-4	MW-4	MW-4	MW-5	MW-5	MW-5
	Depth:	5-7	10-12	17-19	5-6	10-11	16-18
	Matrix:	Solid	Solid	Solid	Solid	Solid	Solid
	Sampled:	01/22/98	01/22/98	01/22/98	01/22/98	01/22/98	01/22/98
TPH-DRO (Diesel) **EPA 8015 M**	*Analyzed:*	01/27/98	01/27/98	01/27/98	01/27/98	01/27/98	01/27/98
	Units:	mg/kg R.L.	mg/kg R.L.	mg/kg R.L.	mg/kg R.L.	mg/kg R.L.	mg/kg R.L.
Total Petroleum Hydrocarbons		31.3 (10.0)	61.8 (10.0)	28.4 (10.0)	57.2 (10.0)	37.9 (10.0)	79.1 (10.0)
BTEX **EPA 8020**	*Analyzed:*	01/28/98	01/28/98	01/28/98	01/28/98	01/28/98	01/28/98
	Units:	ppm R.L.	ppm R.L.	ppm R.L.	ppm R.L.	ppm R.L.	ppm R.L.
Benzene		< 0.020 (0.020)	< 0.020 (0.020)	< 0.020 (0.020)	< 0.020 (0.020)	< 0.020 (0.020)	< 0.020 (0.020)
Toluene		< 0.020 (0.020)	< 0.020 (0.020)	< 0.020 (0.020)	< 0.020 (0.020)	< 0.020 (0.020)	< 0.020 (0.020)
Ethylbenzene		< 0.020 (0.020)	< 0.020 (0.020)	< 0.020 (0.020)	< 0.020 (0.020)	< 0.020 (0.020)	< 0.020 (0.020)
m,p-Xylenes		< 0.040 (0.040)	< 0.040 (0.040)	< 0.040 (0.040)	< 0.040 (0.040)	< 0.040 (0.040)	< 0.040 (0.040)
o-Xylene		< 0.020 (0.020)	< 0.020 (0.020)	< 0.020 (0.020)	< 0.020 (0.020)	< 0.020 (0.020)	< 0.020 (0.020)
Total BTEX		N.D.	N.D.	N.D.	N.D.	N.D.	N.D.

Edward H. Yonemoto, Ph.D.
Technical Director

XENCO Laboratories

Certificate Of Quality Control for Batch : 18A25A31

SW- 846 5030/8020 BTEX

Date Validated: Jan 28, 1998 18:00
Date Analyzed: Jan 28, 1998 10:16
QA/QC Manager: Edward H. Yonemoto, Ph.D.

Analyst: HL
Matrix: Solid

Q.C. Sample ID 180279- 001	MATRIX SPIKE / MATRIX SPIKE DUPLICATE AND RECOVERY										
Parameter	[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] QC Spike Relative Difference %	[G] QC Matrix Spike Recovery %	[H] QC M.S.D. Recovery %	[I] Matrix Spike Recovery Range %	[J] Qualifier
Benzene	< 0.020	1.928	1.938	2.000	0.020	25.0	0.5	96.4	96.9	65-135	
Toluene	< 0.020	1.904	1.894	2.000	0.020	25.0	0.5	95.2	94.7	65-135	
Ethylbenzene	< 0.020	1.948	1.968	2.000	0.020	25.0	1.0	97.4	98.4	65-135	
m,p-Xylenes	< 0.040	4.240	4.300	4.000	0.040	25.0	1.4	106.0	107.5	65-135	
o-Xylene	< 0.020	1.910	1.948	2.000	0.020	25.0	2.0	95.5	97.4	65-135	

Spike Relative Difference [F] = 200*(B-C)/(B+C)
Matrix Spike Recovery [G] = 100*(B-A)/[D]
M.S.D. = Matrix Spike Duplicate
M.S.D. Recovery [H] = 100*(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

XENCO Laboratories

Certificate Of Quality Control for Batch : 18A25A31

SW- 846 5030/8020 BTEX

Date Validated: Jan 28, 1998 18:00
Date Analyzed: Jan 28, 1998 09:20
QA/QC Manager: Edward H. Yonemoto, Ph.D.

Analyst: HL
Matrix: Solid

	BLANK SPIKE ANALYSIS						
Parameter	[A] Blank Result ppm	[B] Blank Spike Result ppm	[C] Blank Spike Amount ppm	[D] Method Detection Limit ppm	[E] QC LIMITS Blank Spike Recovery %	[F] LIMITS Recovery Range %	[G] Qualifier
Benzene	< 0.0010	0.0945	0.1000	0.0010	94.5	65-135	
Toluene	< 0.0010	0.0930	0.1000	0.0010	93.0	65-135	
Ethylbenzene	< 0.0010	0.0961	0.1000	0.0010	96.1	65-135	
m,p-Xylenes	< 0.0020	0.2050	0.2000	0.0020	102.5	65-135	
o-Xylene	< 0.0010	0.0930	0.1000	0.0010	93.0	65-135	

Blank Spike Recovery [E] = 100*(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

XENCO Laboratories

Certificate Of Quality Control for Batch : 18Z99A14

SW- 846 8015 M TPH- DRO (Diesel)

Date Validated: Jan 30, 1998 14:10
Date Analyzed: Jan 27, 1998 06:00
QA/QC Manager: Edward H. Yonemoto, Ph.D.

Analyst: OR
Matrix: Solid

	BLANK SPIKE ANALYSIS						
Parameter	[A] Blank Result mg/kg	[B] Blank Spike Result mg/kg	[C] Blank Spike Amount mg/kg	[D] Method Detection Limit mg/kg	[E] QC Blank Spike Recovery %	[F] LIMITS Recovery Range %	[G] Qualifier
Total Petroleum Hydrocarbons	< 10.00	240	200	10.00	120.0	65-135	

Blank Spike Recovery [E] = 100*(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

XENCO Laboratories

Certificate Of Quality Control for Batch : 18Z99A14

SW- 846 8015 M TPH- DRO (Diesel)

Date Validated: Jan 30, 1998 14:10
Date Analyzed: Jan 27, 1998 03:48
QA/QC Manager: Edward H. Yonemoto, Ph.D.

Analyst: OR
Matrix: Solid

	MATRIX SPIKE / MATRIX SPIKE DUPLICATE AND RECOVERY										
Q.C. Sample ID 180280- 008	[A] Sample Result	[B] Matrix Spike Result	[C] Matrix Spike Duplicate Result	[D] Matrix Spike Amount	[E] Method Detection Limit	Matrix Limit Relative Difference	[F] QC Spike Relative Difference	[G] QC Matrix Spike Recovery	[H] QC M.S.D. Recovery	[I] Matrix Spike Recovery Range	[J] Qualifier
Parameter	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	%	%	%	%	%	
Total Petroleum Hydrocarbons	< 10.00	299	342	400	10.00	30.0	13.4	74.8	85.5	65-135	

Spike Relative Difference [F] = 200*(B-C)/(B+C)
Matrix Spike Recovery [G] = 100*(B-A)/[D]
M.S.D. = Matrix Spike Duplicate
M.S.D. Recovery [H] = 100*(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

XENCO Laboratories

Certificate Of Quality Control for Batch : 18Z99A15

SW- 846 8015 M TPH- DRO (Diesel)

Date Validated: Jan 30, 1998 16:45
Date Analyzed: Jan 27, 1998 06:09
QA/QC Manager: Edward H. Yonemoto, Ph.D.

Analyst: OR
Matrix: Solid

	BLANK SPIKE ANALYSIS						
Parameter	[A] Blank Result mg/kg	[B] Blank Spike Result mg/kg	[C] Blank Spike Amount mg/kg	[D] Method Detection Limit mg/kg	[E] QC Blank Spike Recovery %	[F] LIMITS Recovery Range %	[G] Qualifier
Total Petroleum Hydrocarbons	< 10.00	232	200	10.00	116.0	65-135	

Blank Spike Recovery [E] = 100*(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

XENCO Laboratories

Certificate Of Quality Control for Batch : 18Z99A15

SW- 846 8015 M TPH- DRO (Diesel)

Date Validated: Jan 30, 1998 16:45
Date Analyzed: Jan 27, 1998 11:08
QA/QC Manager: Edward H. Yonemoto, Ph.D.

Analyst: OR
Matrix: Solid

	MATRIX SPIKE / MATRIX SPIKE DUPLICATE AND RECOVERY										
Q.C. Sample ID 180281- 001	[A] Sample Result	[B] Matrix Spike Result	[C] Matrix Spike Duplicate Result	[D] Matrix Spike Amount	[E] Method Detection Limit	Matrix Limit Relative Difference	[F] QC Spike Relative Difference	[G] QC Matrix Spike Recovery	[H] QC M.S.D. Recovery	[I] Matrix Spike Recovery Range	[J] Qualifier
Parameter	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	%	%	%	%	%	
Total Petroleum Hydrocarbons	31.26	341	361	400	10.00	30.0	5.7	77.4	82.4	65-135	

Spike Relative Difference [F] = 200*(B-C)/(B+C)
Matrix Spike Recovery [G] = 100*(B-A)/[D]
M.S.D. = Matrix Spike Duplicate
M.S.D. Recovery [H] = 100*(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

XENCO Laboratories

ANALYTICAL CHAIN OF CUSTODY REPORT
CHRONOLOGY OF SAMPLES

K.E.I. Consultants, Inc.

Project ID: 610057
Project Manager: Theresa Nix
Project Location: Monument Site 17

Project Name: TNMPL

XENCO COC#: 1-80281
Date Received in Lab: Jan 24, 1998 11:11 by CC
XENCO contact : Carlos Castro/Edward Yonemoto

	Field ID	Lab. ID	Method Name	Method ID	Units	Turn Around	Date and Time: Sample Collected	Date and Time: Addition Requested	Date and Time: Extraction	Date and Time: Analysis
1	MW-4 / 5-7	180281-001	BTEX	SW-846	ppm	7 days	Jan 22, 1998		Jan 28, 1998 by HL	Jan 28, 1998 14:23 by HL
2			TPH8015M-D	SW-846 8015 M	mg/kg	7 days	Jan 22, 1998		Jan 26, 1998 by SS	Jan 27, 1998 11:08 by OR
3	MW-4 / 10-12	180281-002	BTEX	SW-846	ppm	7 days	Jan 22, 1998		Jan 28, 1998 by HL	Jan 28, 1998 14:42 by HL
4			TPH8015M-D	SW-846 8015 M	mg/kg	7 days	Jan 22, 1998		Jan 26, 1998 by SS	Jan 27, 1998 11:35 by OR
5	MW-4 / 17-19	180281-003	BTEX	SW-846	ppm	7 days	Jan 22, 1998		Jan 28, 1998 by HL	Jan 28, 1998 15:02 by HL
6			TPH8015M-D	SW-846 8015 M	mg/kg	7 days	Jan 22, 1998		Jan 26, 1998 by SS	Jan 27, 1998 12:02 by OR
7	MW-5 / 5-6	180281-004	BTEX	SW-846	ppm	7 days	Jan 22, 1998		Jan 28, 1998 by HL	Jan 28, 1998 15:21 by HL
8			TPH8015M-D	SW-846 8015 M	mg/kg	7 days	Jan 22, 1998		Jan 26, 1998 by SS	Jan 27, 1998 12:30 by OR
9	MW-5 / 10-11	180281-005	BTEX	SW-846	ppm	7 days	Jan 22, 1998		Jan 28, 1998 by HL	Jan 28, 1998 15:40 by HL
10			TPH8015M-D	SW-846 8015 M	mg/kg	7 days	Jan 22, 1998		Jan 26, 1998 by SS	Jan 27, 1998 12:57 by OR
11	MW-5 / 16-18	180281-006	BTEX	SW-846	ppm	7 days	Jan 22, 1998		Jan 28, 1998 by HL	Jan 28, 1998 17:16 by HL
12			TPH8015M-D	SW-846 8015 M	mg/kg	7 days	Jan 22, 1998		Jan 26, 1998 by SS	Jan 27, 1998 13:24 by OR

XENCO Laboratories

11381 Meadowglen Suite L Houston, Texas 77082
(713) 589-0692 Fax (713) 589-0695

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST FORM

Lab. Batch # 180281-SA

Contractor: KET Consultants | Phone (800) 253-0507

Address: 5309 Wurzbach Suite 100 San Antonio, Tx 78238

Project Name | Project Director: Mike Hawthorne

Project Location: Monument Site 17 | Project Manager: Theresa Nix

Sampler Signature | Project No.: 610057

No. coolers this shipment: | Contractor COC #

Carrier: | Quote #:

Airbill No. | P.O. No.:

Turn-around: * ASAP, * 24 hrs, 48 hrs, (Standard)

LAB ONLY ID #

	Field ID	Date	Time	Depth	Soil	Water	Comp	Grab	Container Size	Container Type P, G	Preservative Ice	Preservative Other	Sample Description	No of Containers Total	BTEX (8020/8020-602)	TPH (418.1/8015 DRO)	SPLP TPH	SPLP SVOC	SPLP VOC	Please Hold	Remarks	LAB ONLY ID #
1	MW-4	1-22-98		5-7			X		9oz	G	X			1								1
2	MW-4	1-22-98		10-12			X				X			1								2
3	MW-4	1-22-98		17-19			X				X			1								3
4	MW-5	1-22-98		5-7			X				X			1								4
5	MW-5	1-22-98		10-11			X				X			1								5
6	MW-5	1-22-98		16-18			X				X			1								6
7																						7
8																						8
9																						9
10																						10

Unl Dies Ker Unknown

Waste Oil

PIT No: Tank No:

Relinquished by: (Signature)	DATE	TIME	Received by: (Signature)	DATE	TIME
	1-23-98	1100			
			Received For Laboratory by: Connie P	1-24-98	11:11

Remarks: Sample w/ highest TPH 8015 run SPLP TPH SVOC VOC (via UPS)

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

* Pre-scheduling is recommended

Precision Analytical Services

XENCO Laboratories

CERTIFICATE OF ANALYSIS SUMMARY 1-80691

K.E.I. Consultants, Inc.

Project ID: 610057-6-17-0 | ***Project Name: Monument Site #17*** | **Date Received In Lab :** Feb 23, 1998 09:30

Project Manager: Theresa Nix | **Date Report Faxed:** Mar 24, 1998

Project Location: Monument, NM | **XENCO contact :** Carlos Castro/Edward Yonemoto

Analysis Requested	*Lab ID:* / *Field ID:* / *Depth:* / *Matrix:* / *Sampled:*	180691 001 MW-1 Liquid 02/19/98 12:32	180691 002 MW-2 Liquid 02/19/98 12:18	180691 003 MW-3 Liquid 02/19/98 13:00	180691 004 MW-4 Liquid 02/19/98 12:41	180691 005 MW-5 Liquid 02/19/98 13:10
Metals by ICP EPA 6010	*Analyzed:* / *Units:*				03/10/98 mg/L R.L.	03/10/98 mg/L R.L.
Aluminum					< 0.56 (0.56)	< 0.56 (0.56)
Barium					0.12 (0.09)	0.16 (0.09)
Beryllium					< 0.022 (0.022)	< 0.022 (0.022)
Boron					< 0.22 (0.22)	< 0.22 (0.22)
Calcium					128 (2.2)	110 (2.2)
Chromium					< 0.05 (0.05)	< 0.05 (0.05)
Cobalt					< 0.05 (0.05)	< 0.05 (0.05)
Copper					< 0.11 (0.11)	< 0.11 (0.11)
Iron					< 0.22 (0.22)	< 0.11 (0.11)
Magnesium					19.1 (0.2)	23.1 (0.2)
Manganese					< 0.06 (0.06)	0.19 (0.06)
Molybdenum					< 0.56 (0.56)	< 0.56 (0.56)
Nickel					< 0.11 (0.11)	< 0.11 (0.11)
Potassium					3.86 (1.11)	5.21 (1.11)
Silicon					22.7 (0.2)	22.2 (0.2)
Silver					< 0.05 (0.05)	< 0.05 (0.05)
Sodium					65.4 (2.2)	87.9 (2.2)
Strontium					1.20 (0.22)	1.42 (0.22)
Tin					< 0.22 (0.22)	< 0.22 (0.22)
Vanadium					< 0.11 (0.11)	< 0.11 (0.11)
Zinc					< 0.56 (0.56)	< 0.56 (0.56)
RCRA Metals EPA 6010	*Analyzed:* / *Units:*				03/18/98 mg/L R.L.	03/18/98 mg/L R.L.

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

XENCO Laboratories

CERTIFICATE OF ANALYSIS SUMMARY 1-80691

K.E.I. Consultants, Inc.

Project ID: 610057-6-17-0 | ***Project Name: Monument Site #17*** | **Date Received In Lab :** Feb 23, 1998 09:30

Project Manager: Theresa Nix | **Date Report Faxed:** Mar 24, 1998

Project Location: Monument, NM | **XENCO contact :** Carlos Castro/Edward Yonemoto

Analysis Requested	*Lab ID:* / *Field ID:* / *Depth:* / *Matrix:* / *Sampled:*	180691 001 MW-1 Liquid 02/19/98 12:32	180691 002 MW-2 Liquid 02/19/98 12:18	180691 003 MW-3 Liquid 02/19/98 13:00	180691 004 MW-4 Liquid 02/19/98 12:41	180691 005 MW-5 Liquid 02/19/98 13:10
EPA 6010	*Analyzed:* / *Units:*				03/18/98 mg/L R.L.	03/18/98 mg/L R.L.
Arsenic					< 0.10 (0.10)	< 0.10 (0.10)
Cadmium					< 0.010 (0.010)	< 0.010 (0.010)
Lead					< 0.050 (0.050)	< 0.050 (0.050)
Selenium					< 0.050 (0.050)	< 0.050 (0.050)
Total Mercury EPA 7470	*Analyzed:* / *Units:*				02/26/98 mg/L R.L.	02/26/98 mg/L R.L.
Mercury					< 0.0011 (0.0011)	< 0.0011 (0.0011)
BTEX EPA 8020	*Analyzed:* / *Units:*	02/23/98 ppm R.L.	02/23/98 ppm R.L.	02/23/98 ppm R.L.	02/23/98 ppm R.L.	02/23/98 ppm R.L.
Benzene		0.043 (0.001)	0.174 (0.001)	0.436 (0.004)	< 0.001 (0.001)	< 0.004 (0.004)
Toluene		0.001 (0.001)	0.066 (0.001)	0.015 (0.004)	< 0.001 (0.001)	< 0.004 (0.004)
Ethylbenzene		0.002 (0.001)	0.047 (0.001)	0.045 (0.004)	< 0.001 (0.001)	< 0.004 (0.004)
m,p-Xylenes		< 0.002 (0.002)	0.018 (0.002)	0.015 (0.008)	< 0.002 (0.002)	< 0.008 (0.008)
o-Xylene		< 0.001 (0.001)	0.007 (0.001)	< 0.004 (0.004)	< 0.001 (0.001)	< 0.004 (0.004)
Total BTEX		0.046	0.312	0.511	N.D.	N.D.
PAHs by GC-MS (610 List) EPA 8270	*Analyzed:* / *Units:*				02/28/98 mg/L R.L.	02/28/98 mg/L R.L.
Acenaphthene					< 0.002 (0.002)	< 0.002 (0.002)
Acenaphthylene					< 0.002 (0.002)	< 0.002 (0.002)
Anthracene					< 0.002 (0.002)	< 0.002 (0.002)
Benzo(a)anthracene					< 0.002 (0.002)	< 0.002 (0.002)
Benzo(a)pyrene					< 0.002 (0.002)	< 0.002 (0.002)

Edward K. Yonemoto, Ph.D.
Technical Director

XENCO Laboratories

CERTIFICATE OF ANALYSIS SUMMARY 1-80691

K.E.I. Consultants, Inc.

Project ID: 610057-6-17-0 | ***Project Name: Monument Site #17*** | **Date Received In Lab :** Feb 23, 1998 09:30

Project Manager: Theresa Nix | **Date Report Faxed:** Mar 24, 1998

Project Location: Monument, NM | **XENCO contact :** Carlos Castro/Edward Yonemoto

Analysis Requested	*Lab ID:* / *Field ID:* / *Depth:* / *Matrix:* / *Sampled:*	180691 001 MW-1 Liquid 02/19/98 12:32	180691 002 MW-2 Liquid 02/19/98 12:18	180691 003 MW-3 Liquid 02/19/98 13:00	180691 004 MW-4 Liquid 02/19/98 12:41	180691 005 MW-5 Liquid 02/19/98 13:10
EPA 8270	*Analyzed:* / *Units:*				02/28/98 mg/L R.L.	02/28/98 mg/L R.L.
Benzo(b)fluoranthene					< 0.002 (0.002)	< 0.002 (0.002)
Benzo(g,h,i)perylene					< 0.002 (0.002)	< 0.002 (0.002)
Benzo(k)fluoranthene					< 0.002 (0.002)	< 0.002 (0.002)
Chrysene					< 0.002 (0.002)	< 0.002 (0.002)
Dibenzo(a,h)anthracene					< 0.002 (0.002)	< 0.002 (0.002)
Fluoranthene					< 0.002 (0.002)	< 0.002 (0.002)
Fluorene					< 0.002 (0.002)	< 0.002 (0.002)
Indeno(1,2,3-cd)pyrene					< 0.002 (0.002)	< 0.002 (0.002)
Naphthalene					< 0.002 (0.002)	< 0.002 (0.002)
Phenanthrene					< 0.002 (0.002)	< 0.002 (0.002)
Pyrene					< 0.002 (0.002)	< 0.002 (0.002)
Bicarbonate SM 4500CO2D	*Analyzed:* / *Units:*				02/25/98 mg/L R.L.	02/25/98 mg/L R.L.
Bicarbonate					265 (1.0)	300 (1.0)
Carbonate SM4500CO2D	*Analyzed:* / *Units:*				02/25/98 ppm R.L.	02/25/98 ppm R.L.
Carbonate					< 1.0 (1.0)	< 1.0 (1.0)
Total Dissolved Solids EPA 160.1	*Analyzed:* / *Units:*				02/26/98 mg/L R.L.	02/26/98 mg/L R.L.
Total Dissolved Solids					724 (4.0)	785 (4.0)

Edward H. Yonemoto, Ph.D.
Technical Director

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CERTIFICATE OF ANALYSIS SUMMARY 1-80691

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Anions by Ion Chromatography EPA 300.0	*Analyzed:* / *Units:*				03/02/98 mg/L	R.L.	03/02/98 mg/L	R.L.	
Chloride					138	(2.0)	148	(2.0)	
Sulfate					62.9	(2.0)	51.9	(2.0)	

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

XENCO Laboratories
11381 Meadowglen Suite L Houston Texas 77082
(713) 589-0692 Fax (713) 589-0695

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST FORM

Page 1 of 1

Lab Batch #

Contractor: KEI

Phone: (210) 680-3767

Address: 5309 WURZBACH RD, STE 100

Project Name: MONUMENT SITE #17

Project Director: MIKE HAWTHORNE

Project Location: MONUMENT, NM

Project Manager: THERESA NIX

Sampler Signature: [signature]

Project No.: 610057-6-17-0

No. coolers this shipment:

Carrier: UPS

Airbill No.

Contractor COC #

Quote #:

P.O. No: 8641

Turn-around: • ASAP • 24 hrs 48 hrs (Standard)

SAMPLE CHARACTERIZATION

Field ID	Date	Time	DEPTH	SOIL	WATER	COMP	GRAB	Container Size	Container Type P, G	Preservative Ice	Preservative Other	Sample Description (Ual Dies Ker Unknown / Waste Oil / PIT No: Tank No:)	No. of CONTAINERS Total	BTEX (8020/8020-8020) CHARACTERIZED SW846-8020	TPH (418.1)	PAH	ICP SCAN	CATIONS/ANIONS	TDS				Please Hold	Remarks	LAB ONLY ID #
MW-1	19 FEB 99	1232			/		/			/			2	/											1
MW-2	|	1218			/		/			/			2	/											2
MW-3	|	1300			/		/			/			2	/											3
MW-4	|	1241			/		/			/			6	/		/	/	/	/						4
MW-5	|	1310			/		/			/			6	/		/	/	/	/						5
																									6
																									7
																									8
																									9
																									10

Relinquished by: (Signature)	DATE	TIME	Received by:	(Signature)	DATE	TIME
[signature]	2-20-99	1630				
			Received For Laboratory by			

Remarks: Please fax analytical to Theresa at 210-680-3763 and STAN Grover at 505-392-2065

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

• Pre-scheduling is recommended

Precision Analytical Services