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REPORTS

DATE:

3/4/1999



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SUBSURFACE INVESTIGATION REPORT

SOIL BORING B11-10

TEXAS - NEW MEXICO PIPE LINE COMPANY
MONUMENT SITE 11
UNIT A, SECTION 30, TOWNSHIP 19 SOUTH, RANGE 37 EAST
LEA COUNTY, NEW MEXICO

PREPARED FOR:

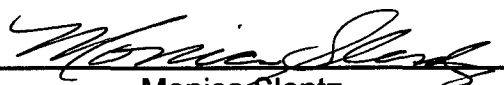
TEXAS - NEW MEXICO PIPE LINE COMPANY


P. O. Box 1030
Jal, New Mexico 88252

Mr. Tony Savoie

PREPARED BY:

KEI


Monica Slentz
Project Manager


Theresa Nix
Project Manager


Pat Bullinger, P.E.

TABLE OF CONTENTS

PURPOSE AND SCOPE	1
PREVIOUS ACTIVITIES	1
SOIL INVESTIGATION	1
SOIL DESCRIPTION	
SOIL SAMPLING AND ANALYTICAL RESULTS	
SOIL CLOSURE STANDARDS	2
CONCLUSIONS AND RECOMMENDATIONS	3
FIGURES	
FIG. 1 - SITE DETAILS	
FIG. 2 - LOG AND DETAILS OF SOIL BORING B11-10	
TABLES	
GENERAL NOTES	
TABLE I - SUMMARY OF SOIL RESULTS - BTEX AND TPH	
TABLE II - SUMMARY OF SOIL RESULTS - SPLP	
APPENDICES	
APPENDIX A - ANALYTICAL LABORATORY REPORTS - SOIL CHAIN-OF-CUSTODY DOCUMENTATION	
APPENDIX B - QA/QC PROCEDURES	

PURPOSE AND SCOPE

The purpose of the subsurface investigation was to determine the vertical extent of hydrocarbon impact and approximate depth to ground water at the site. The scope consisted of installing 1 soil boring in the vicinity of the previously installed soil boring B11-2. The release site is located in Unit A, Section 30, Township 19 South, Range 37 East in Lea County, New Mexico.

PREVIOUS ACTIVITIES

A previous subsurface investigation consisting of the installation of soil borings B11-1 through B11-9 was conducted at the subject site in January 1998 and documented in a Comprehensive Assessment Report dated June 11, 1998.

SOIL INVESTIGATION

During the subsurface investigation, 1 soil boring was installed utilizing air rotary drilling. 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.

Soil boring location B11-10 was surveyed by a Professional Land Surveyor registered in the State of New Mexico. The locations of all soil borings installed to date are presented on FIG. 1. Upon completion of sampling activities, the soil boring was backfilled to the surface with cement/bentonite grout.

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 investigation. In general, 4 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 brown clay. The clay was sandy, firm, and was slightly moist. The observed thickness of this soil type was approximately 3.5 feet. Head-space readings from samples of this soil type ranged from 1 to 2 ppm.

Soil Type II

This soil type consisted of tan to white calcareous gravel encountered below Soil Type I. The gravel was medium dense and dry. The observed thickness of this soil type was approximately 1 foot. Head-space readings from samples of this soil type was 533 ppm.

Soil Type III

This soil type consisted of tan to brown sand encountered below Soil Type II and again beneath Soil Type IV to the bottom of the boring. The sand was fine grained and silty with calcareous nodules, medium dense and slightly moist to wet. The observed thickness of

this soil type ranged from approximately 1 to 12 feet. Head-space reading from samples of this soil type varied from 295 to 587 ppm.

Soil Type IV

This soil type consisted of a tan to white limestone encountered beneath the first layer of Soil Type III. The limestone was hard and brittle. The observed thickness of this soil type was approximately 5 feet. The head-space reading from a sample of this soil type was 284 ppm.

A log indicating the typical subsurface soil profile, depths at which soil samples were obtained, head-space results, and laboratory results are presented on FIG. 2.

SOIL SAMPLING AND ANALYTICAL RESULTS

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

- the sample with the highest PID reading between the surface and ground water
- the sample directly above the ground water level measured at the time of drilling

Soil samples selected for analytical testing consisted of the following:

- two soil samples from the soil boring were tested for benzene, toluene, ethylbenzene, and xylenes (BTEX) and total petroleum hydrocarbons diesel range organics (TPH-DRO)
- the soil sample exhibiting the highest concentration of TPH was tested for SPLP volatile organic compounds (VOC), SPLP semi-volatile organic compounds (SVOC), and SPLP TPH
- laboratory results for the selected soil sample indicated the following concentration ranges:

CONSTITUENT	CONCENTRATION RANGE
BENZENE	0.76 and 0.83 mg/kg
BTEX	3.61 and 10.77 mg/kg
TPH	466 and 5,910 mg/kg
SPLP SVOC	ND
SPLP VOC	ND to 0.026 mg/L
SPLP TPH	ND

Soil laboratory results are summarized in TABLES I and II. Soil analytical laboratory reports and chain-of-custody documentation are presented in APPENDIX A. QA/QC procedures are presented in APPENDIX B.

SOIL CLOSURE STANDARDS

The New Mexico OCD Guidelines for Remediation of Leaks, Spills, and Releases contains the standard criteria for remediation activities. A ranking analysis for the site was performed to determine appropriate soil remediation levels. The ranking analysis is as follows:

Depth to Ground Water	Less Than 50 Feet	20 Points
	Greater Than 1000 Feet to Water Source	
Well Head Protection	Greater Than 200 Feet to Private Water Source	0 Points
Surface Water Body	Greater Than 1000 Feet	0 Points
Total Ranking Score		20 Points

Based on the total ranking score, the closure objectives for this site for concentrations of benzene, BTEX, and TPH in soil are summarized below.

CONSTITUENT	CONCENTRATION RANGE (mg/kg)	CLOSURE CONCENTRATIONS (mg/kg)
BENZENE	0.76 and 0.83	10
BTEX	3.610 and 10.770	50
TPH	466 and 5,910	100 + Background

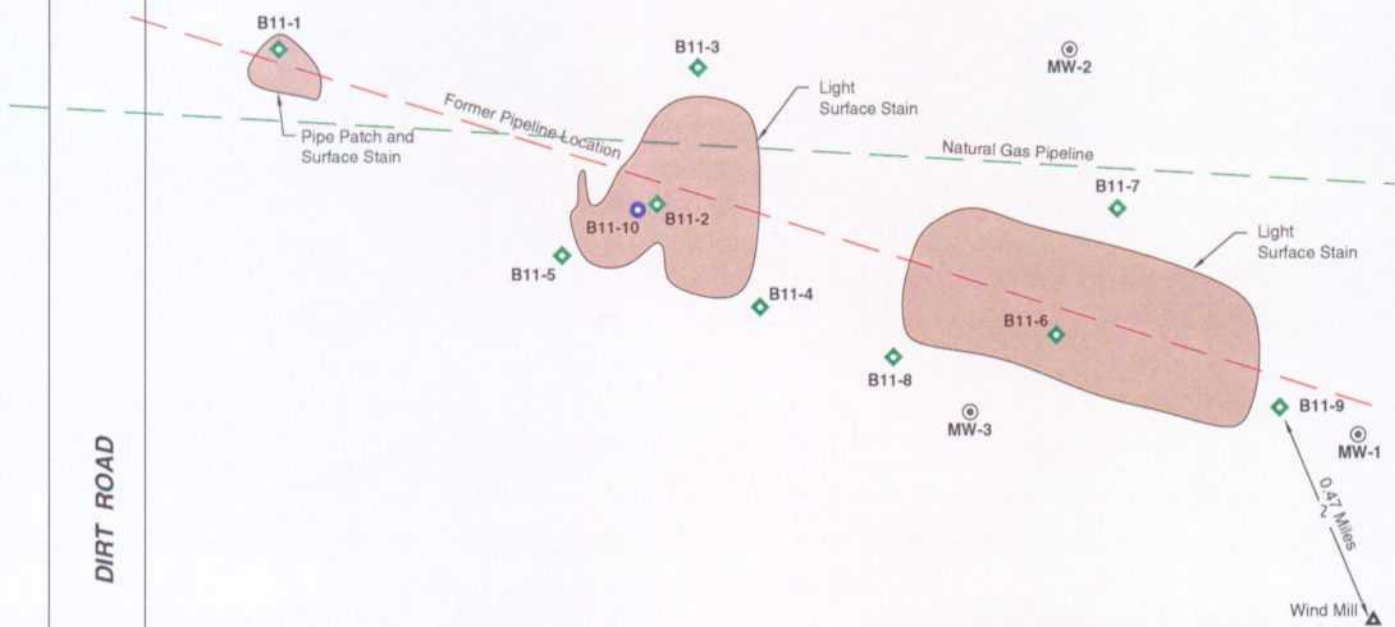
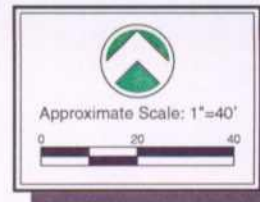
CONCLUSIONS AND RECOMMENDATIONS

The following conclusions are presented based on the field observations, drilling activities, and soil laboratory results:

- apparent hydrocarbon impact to ground water has occurred at the subject site
- extent of ground water impact has been neither quantified nor delineated
- hydrocarbon impact to soil appears to extend from the surface to approximately 23 feet below ground surface at the soil boring
- TPH concentrations in the soil boring are above the OCD closure standards

Recommendations include the following:

- Install 3 delineation monitoring wells as indicated on FIG. 1. Monitoring well MW10-7 at Monument Site 10 (located up gradient to the northwest of the subject site) will be used as the upgradient well for Monument Site 11.
- Collect ground water samples for determination of BTEX, polycyclic aromatic hydrocarbon (PAH), metals, major cations/anions, and total dissolved solid (TDS) concentrations.
- Develop a work plan for soil and ground water remediation, if necessary.



LEGEND

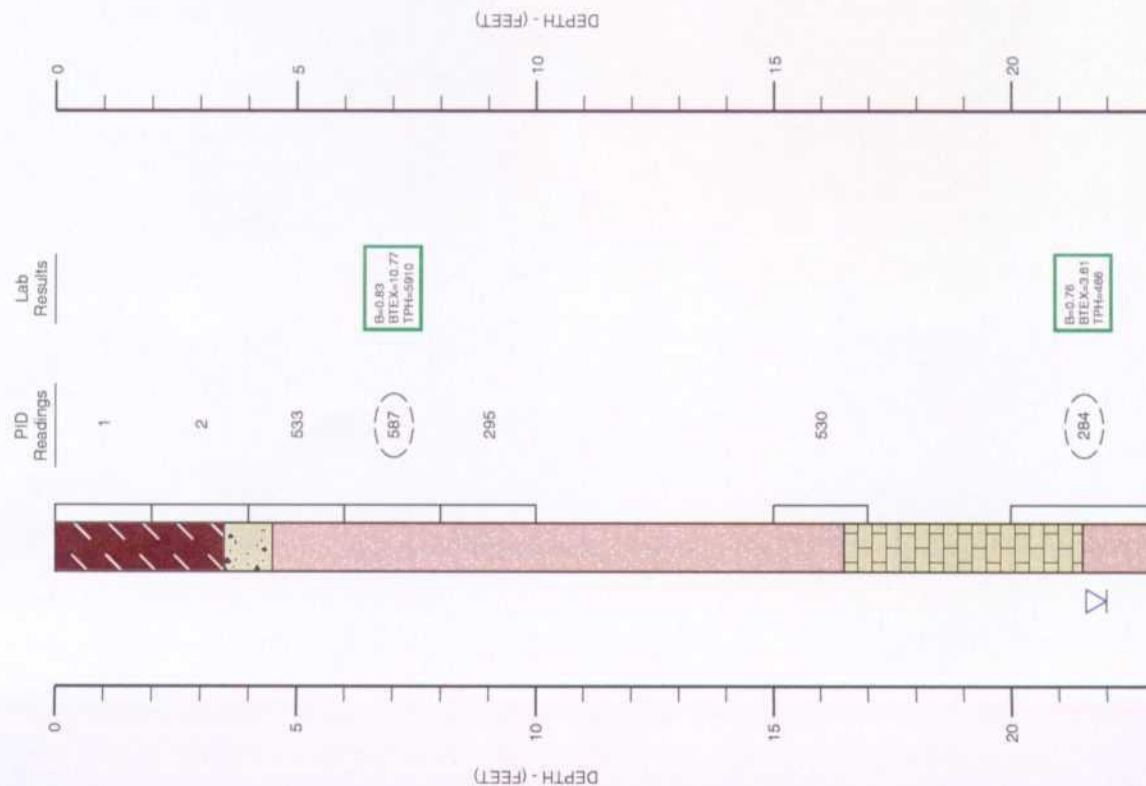
- ⊙ Proposed Monitoring well locations. Actual locations may be changed in the field.
- ⦿ Soil Boring advanced by KEI on November 9, 1998.
- ◆ Soil Borings advanced by KEI on January 21, 1998.
- Approximate location of surface stain.

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SITE DETAILS		
TEXAS - NEW MEXICO PIPE LINE CO.	MONUMENT SITE NO. 11	LEA COUNTY, NEW MEXICO

610057-2-11
FIG 1

B11-10**LEGEND**

Clay (CL), sandy, firm, slightly moist, brown.



Gravel (GC), calcareous, medium dense, dry, tan to white.



Sand (SM), fine grained, silty, calcareous nodules, medium dense, slightly moist to wet, tan to brown.



Limestone, hard, brittle, tan to white.



Indicates the depth interval from which a soil sample was selected and prepared for field head-space and/or laboratory analysis. The soil samples were obtained using a split-spoon sampler.



Indicates sample selected for laboratory analysis.

B = Benzene Concentration (mg/kg)

BTEX = Total BTEX Concentration (mg/kg)

TPH = Total Petroleum Hydrocarbon Concentration (mg/kg)

PID =

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

ND =

Indicates the concentration was below laboratory detection limits.



Indicates approximate depth to ground water during drilling.

NOTES:

1. The soil boring was advanced utilizing an air rotary rig on November 9, 1998.
2. The lines between material types shown on the profile log represent approximate boundaries. Actual transitions may be gradual.
3. The depths indicated are referenced from the ground surface.
4. The soil boring was grouted to the ground surface with a cement and bentonite grout.

GENERAL NOTES

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

Depth to ground water is referenced from ground surface unless otherwise noted.

Method detection or reporting limits:

BTEX	- 0.050 to 1.00 mg/kg
TPH	- 10.0 to 250 ppm
SPLP VOC	- 0.005 to 0.050 mg/l
SPLP SVOC	- 0.005 to 0.013 mg/l
SPLP TPH	- 0.9 ppm

Laboratory test methods:

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

TABLE I

**SUMMARY OF SOIL RESULTS - BTEX AND TPH
TEXAS - NEW MEXICO PIPE LINE COMPANY
TNM-96-11
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)
B11-10	11/9/98	6 - 8	0.83	1.51	2.44	5.99	10.770	5,910
	11/9/98	20 - 23	0.76	0.46	0.68	1.71	3.610	466

TABLE II

**SUMMARY OF SOIL RESULTS - SPLP
TEXAS - NEW MEXICO PIPE LINE COMPANY
MONUMENT SITE 11
LEA COUNTY, NEW MEXICO**

PARAMETER	CONCENTRATION (mg/l)
SVOC	
All Constituents	ND
VOC	
1,2-Dichloroethane	0.010
Ethylbenzene	0.014
Isopropylbenzene (Cumene)	0.006
p-Isopropyltoluene (p-Cymene)	0.007
Toluene	0.009
sec-Butylbenzene	0.007
1,3,5-Trimethylbenzene	0.026
o-Xylene	0.007
TPH (ppm)	ND

NOTES:

1. Sample was collected from soil boring B11-10 from 6 to 8 feet on 11/09/98.
2. Those constituents not listed above were ND.

ANALYTICAL REPORT 1-84388

for

K.E.I. Consultants, Inc.

Project Manager: Theresa Nix

Project Name: Monument 11

Project Id: 610057-2-11

December 8, 1998



HOUSTON - DALLAS - SAN ANTONIO

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Houston - Dallas - San Antonio - Latin America

December 8, 1998

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

Reference: **XENCO Report No.: 1-84388**
Project Name: Monument 11
Project ID: 610057-2-11
Project Address: 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 1-84388. 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.

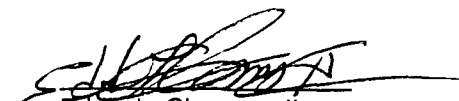
All the results for the quality control samples passed thorough examination. Also, all parameters for data reduction and validation checked satisfactorily. In view of this, we are able to release the analytical data for this report within acceptance criteria for accuracy, precision, completeness or properly 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. 1-84388 will be filed for 60 days, and after that time they will be properly disposed of without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

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

Sincerely,



Eddie L. Clemons, II
QA/QC Manager

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

Certified and approved by numerous States and Agencies.

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

ANALYTICAL CHAIN OF CUSTODY REPORT CHRONOLOGY OF SAMPLES

K.E.I. Consultants, Inc.

Project ID: 610057-2-11
Project Manager: Theresa Nix
Project Location: Lea Co., NM

Project Name: Monument 11

XENCO COC#: 1-84388

Date Received in Lab: Nov 13, 1998 10:00 by LY

XENCO contact : Carlos Castro/Karen Olson

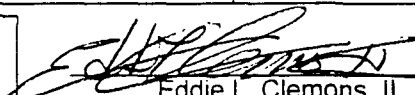
Date and Time									
Field ID	Lab. ID	Method Name	Method ID	Units	Turn Around	Sample Collected	Addition Requested	Extraction	Analysis
1 B11-10	184388-001	BTEX	SW-846	ppm	7 days	Nov 9, 1998 10:15		Nov 17, 1998 by HL	Nov 17, 1998 16:42 by HL
2		TPH8015M-D	SW-846 8015 M	mg/kg	7 days	Nov 9, 1998 10:15		Nov 19, 1998 by RK	Nov 20, 1998 00:03 by MM
3		VOA (8260)	EPA1312/8260	mg/kg	7 days	Nov 9, 1998 10:15	Nov 20, 1998 13:00	Dec 1, 1998 by CCE	Dec 1, 1998 14:45 by CCE
4		SPLP TPH	EPA	ppm	7 days	Nov 9, 1998 10:15	Nov 20, 1998 13:00	Nov 24, 1998 by EZ	Nov 24, 1998 12:30 by EZ
5		SPLP-SV(TCL)	SW846-1312/82	ug/L	7 days	Nov 9, 1998 10:15	Nov 20, 1998 13:00	Dec 1, 1998 by SS	Dec 3, 1998 02:57 by MM
6	184388-002	BTEX	SW-846	ppm	7 days	Nov 9, 1998 11:00		Nov 17, 1998 by HL	Nov 17, 1998 16:24 by HL
7		TPH8015M-D	SW-846 8015 M	mg/kg	7 days	Nov 9, 1998 11:00		Nov 19, 1998 by RK	Nov 20, 1998 00:23 by MM

K.E.I. Consultants, Inc.
Project Name: Monument 11
Project ID: 610057-2-11
Project Manager: Theresa Nix
Project Location: Lea Co., NM
Date Received in Lab : Nov 13, 1998 10:00
Date Report Faxed: Dec 8, 1998
XENCO contact : Carlos Castro/Karen Olson

Analysis Requested	<i>Lab ID:</i>	184388 001	184388 002		
	<i>Field ID:</i>	B11-10	B11-10		
	<i>Depth:</i>	6-8'	20-23'		
	<i>Matrix:</i>	Solid	Solid		
	<i>Sampled:</i>	11/09/98 10:15	11/09/98 11:00		
TPH-DRO (Diesel) EPA 8015 M	<i>Analyzed:</i>	11/20/98 R.L.	11/20/98 R.L.		
	<i>Units:</i>	mg/kg	mg/kg		
Total Petroleum Hydrocarbons		5910 (100)	466 (25.0)		
BTEX EPA 8021B	<i>Analyzed:</i>	11/17/98 R.L.	11/17/98 R.L.		
	<i>Units:</i>	ppm	ppm		
Benzene		0.83 (0.20)	0.76 (0.10)		
Toluene		1.51 (0.20)	0.46 (0.10)		
Ethylbenzene		2.44 (0.20)	0.68 (0.10)		
m,p-Xylene		4.02 (0.40)	1.16 (0.20)		
o-Xylene		1.97 (0.20)	0.55 (0.10)		
Total BTEX		10.770	3.610		
SPLP-Semivolatiles EPA1312/8270	<i>Analyzed:</i>	12/03/98 R.L.			
	<i>Units:</i>	mg/L			
Acenaphthene		< 0.005 (0.005)			
Acenaphthylene		< 0.005 (0.005)			
Anthracene		< 0.005 (0.005)			
Benz(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)			
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-octylphthalate		< 0.005 (0.005)			
Dibenz(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)			

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

K.E.I. Consultants, Inc.
Project Name: Monument 11

Project ID: 610057-2-11

Project Manager: Theresa Nix

Project Location: Lea Co., NM

Date Received in Lab : Nov 13, 1998 10:00

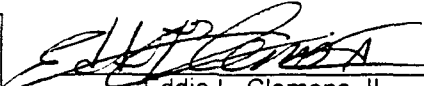
Date Report Faxed: Dec 8, 1998

XENCO contact : Carlos Castro/Karen Olson

Analysis Requested	Lab ID:	184388 001	184388 002		
	Field ID:	B11-10	B11-10		
	Depth:	6-8'	20-23'		
	Matrix:	Solid	Solid		
	Sampled:	11/09/98 10:15	11/09/98 11:00		
SPLP-Semivolatiles	Analyzed:	12/03/98	R.L.		
EPA1312/8270	Units:	mg/L			
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)			
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		< 0.005 (0.005)			
2-Methylphenol		< 0.005 (0.005)			
4-Methylphenol		< 0.005 (0.005)			
N-Nitrosodi-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)			

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 Eddie L. Clemons, II
 QA/QC Manager

K.E.I. Consultants, Inc.
Project Name: Monument 11

Project ID: 610057-2-11

Project Manager: Theresa Nix

Project Location: Lea Co., NM

Date Received in Lab : Nov 13, 1998 10:00


Date Report Faxed: Dec 8, 1998

XENCO contact : Carlos Castro/Karen Olson

Analysis Requested	Lab ID:	184388 001	184388 002		
	Field ID:	B11-10	B11-10		
	Depth:	6-8'	20-23'		
	Matrix:	Solid	Solid		
	Sampled:	11/09/98 10:15	11/09/98 11:00		
SPLP-Semivolatiles EPA1312/8270	Analyzed:	12/03/98	R.L.		
	Units:	mg/L			
2,4,6-Trichlorophenol		< 0.005 (0.005)			
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		< 0.005 (0.005)			
SPLP Volatiles EPA 8260	Analyzed:	12/01/98	R.L.		
	Units:	mg/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)			
Chlorodibromomethane		< 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)			
1,2-Dibromoethane		< 0.005 (0.005)			
Dibromomethane		< 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)			
Dichlorodifluoromethane		< 0.005 (0.005)			
1,1-Dichloroethane		< 0.005 (0.005)			
1,2-Dichloroethane		0.010 (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)			

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Eddie L. Clemons, II
QA/QC Manager

K.E.I. Consultants, Inc.
Project Name: Monument 11
Project ID: 610057-2-11
Project Manager: Theresa Nix
Project Location: Lea Co., NM
Date Received in Lab : Nov 13, 1998 10:00
Date Report Faxed: Dec 8, 1998
XENCO contact : Carlos Castro/Karen Olson

Analysis Requested	Lab ID:	184388 001	184388 002		
	Field ID:	B11-10	B11-10		
	Depth:	6-8'	20-23'		
	Matrix:	Solid	Solid		
	Sampled:	11/09/98 10:15	11/09/98 11:00		
SPLP Volatiles	Analyzed:	12/01/98	R.L.		
EPA 8260	Units:	mg/L			
1,1-Dichloropropene		< 0.005 (0.005)			
Ethylbenzene		0.014 (0.005)			
Hexachlorobutadiene		< 0.005 (0.005)			
Isopropylbenzene (Cumene)		0.006 (0.005)			
MTBE		< 0.010 (0.010)			
Methylene chloride		< 0.010 (0.010)			
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		0.009 (0.005)			
1,2,3-Trichlorobenzene		< 0.005 (0.005)			
1,2,4-Trichlorobenzene		< 0.005 (0.005)			
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		< 0.005 (0.005)			
1,3,5-Trimethylbenzene		0.026 (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-Xylene		< 0.005 (0.005)			
n-Butylbenzene		< 0.005 (0.005)			
n-Propylbenzene		< 0.005 (0.005)			
o-Xylene		0.007 (0.005)			
p-Isopropyltoluene (p-Cymene)		0.007 (0.005)			
sec-Butylbenzene		0.007 (0.005)			
tert-Butylbenzene		< 0.005 (0.005)			
trans-1,2-Dichloroethene		< 0.005 (0.005)			
trans-1,3-Dichloropropene		< 0.005 (0.005)			

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

K.E.I. Consultants, Inc.
Project Name: Monument 11

Project ID: 610057-2-11

Project Manager: Theresa Nix

Project Location: Lea Co., NM

Date Received in Lab : Nov 13, 1998 10:00


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XENCO contact : Carlos Castro/Karen Olson

Analysis Requested	Lab ID:	184388 001	184388 002		
	Field ID:	B11-10	B11-10		
	Depth:	6-8'	20-23'		
	Matrix:	Solid	Solid		
	Sampled:	11/09/98 10:15	11/09/98 11:00		
SPLP TPH 1312/418.1	Analyzed:	11/24/98	R.L.		
	Units:	ppm			
Total Petroleum Hydrocarbons		< 0.6 (0.6)			

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Eddie L. Clemons, II
QA/QC Manager



Certificate Of Quality Control for Batch : 18A02D56

SW- 846 8015 M TPH- DRO (Diesel)

Date Validated: Nov 20, 1998 11:45

Analyst: MM

Date Analyzed: Nov 19, 1998 19:28

Matrix: Solid

BLANK SPIKE ANALYSIS

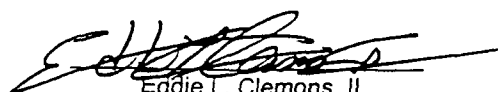
Parameter	[A]	[B]	[C]	[D]	[E]	[F]	[G]
	Blank	Blank Spike	Blank	Detection	QC	LIMITS	Qualifier
	Result	Result	Spike		Blank Spike	Recovery	
	mg/kg	mg/kg	Amount		Recovery	Range	
			mg/kg	Limit	%	%	
Total Petroleum Hydrocarbons	< 5.00	124	100	5.00	124.0	65-135	

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

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

N.D. = Below detection limit

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


Eddie L. Clemons, II
QA/QC Manager

Certificate Of Quality Control for Batch : 18A02D56

SW- 846 8015 M TPH- DRO (Diesel)

Date Validated: Nov 20, 1998 11:45


Date Analyzed: Nov 19, 1998 22:05

Analyst: MM

Matrix: Solid

MATRIX SPIKE / MATRIX SPIKE DUPLICATE AND RECOVERY													
Q.C. Sample ID 13A390- 011	[A] Sample Result mg/kg	[B] Matrix Spike Result mg/kg	[C] Matrix Spike Duplicate Result mg/kg	[D] Matrix Spike Amount mg/kg	[E] Detection Limit mg/kg	Matrix Limit Relative Difference %	[F]		[G]		[H]		[J] Qualifier
							Spike Relative Difference %	QC	Matrix Spike Recovery	QC	M.S.D. Recovery %	Matrix Spike Recovery Range %	
Parameter													
Total Petroleum Hydrocarbons	5.68	114	115	100	5.00	30.0	0.9		108.3		109.3	65-135	

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


 Eddie L. Clemons, II
 QA/QC Manager

SW- 846 5030/8021B BTEX

Date Validated: Nov 18, 1998 15:00

Analyst: HL

Date Analyzed: Nov 17, 1998 12:21

Matrix: Solid

BLANK SPIKE ANALYSIS

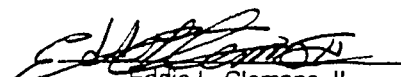
Parameter	[A]	[B]	[C]	[D]	[E]	[F]	[G]
	Blank Result	Blank Spike Result	Blank Spike Amount	Detection Limit	QC	LIMITS	Qualifier
	ppm	ppm	ppm	ppm	Blank Spike Recovery %	Recovery Range %	
Benzene	< 0.0010	0.1080	0.1000	0.0010	108.0	65-135	
Toluene	< 0.0010	0.1050	0.1000	0.0010	105.0	65-135	
Ethylbenzene	< 0.0010	0.1030	0.1000	0.0010	103.0	65-135	
m,p-Xylene	< 0.0020	0.2100	0.2000	0.0020	105.0	65-135	
o-Xylene	< 0.0010	0.1030	0.1000	0.0010	103.0	65-135	

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

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

N.D. = Below detection limit

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


 Eddie L. Clemons, II
 QA/QC Manager

EPA1312/8260 SPLP Volatiles
Date Validated: Dec 3, 1998 12:00

Analyst: CCE

Date Analyzed: Dec 1, 1998 19:45

Matrix: Solid

BLANK SPIKE ANALYSIS

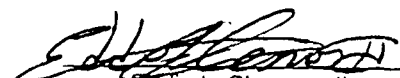
Parameter	[A]	[B]	[C]	[D]	[E]	[F]	[G] Qualifier
	Blank	Blank Spike	Blank	Detection	QC	LIMITS	
	Result	Result	Spike		Blank Spike	Recovery	
	mg/kg	mg/kg	Amount		Recovery	Range	
			mg/kg	Limit	%	%	
Benzene	< 0.0010	0.0383	0.0500	0.0010	76.6	66-142	
Chlorobenzene	< 0.0010	0.0400	0.0500	0.0010	80.0	60-133	
1,1-Dichloroethene	< 0.0040	0.0358	0.0500	0.0040	71.6	59-172	
Toluene	< 0.0010	0.0395	0.0500	0.0010	79.0	59-139	
Trichloroethene	< 0.0030	0.0372	0.0500	0.0030	74.4	62-137	

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

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

N.D. = Below detection limit

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


 Eddie L. Clemons, II
 QA/QC Manager

[illegible]

Preservatives - Various (V), H₂SO₄ pH=2 (S), HNO₃ pH=2 (N), NaOH+Asbc Acid (NA)
SIZE: 4oz (4), 8oz (8), 32oz (32), 40ml VOA (V), 1L (1), 500ml (.5), Tiedlar Bag (B), Wipe (W), Other

N240 1476 06 8

TYPE Glass Am

EXPORT 2

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 utilizing an air rotary drilling rig with split spoon samples at discrete intervals. 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 photo-ionization 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-DRO, SPLP SVOC, SPLP VOC, and SPLP TPH analyses using the methods described below. Soil samples were prepared for analysis by the analytical laboratory for BTEX, TPH, and SPLP concentrations within 14 days following the collection date.

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

- BTEX concentrations in accordance with EPA Method SW846-8021B
- TPH concentrations in accordance with modified EPA Method 8015-DRO
- SPLP TPH concentrations in accordance with EPA Method 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