1R - 120

REPORTS

DATE:

6/11/1998

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

COMPREHENSIVE ASSESSMENT REPORT

MONUMENT SITE NO. 11
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. 610057-4-11

June 11, 1998

TABLE OF CONTENTS

INTRODUCTION

This report summarizes the results of the subsurface assessment activities conducted in response to suspected crude oil impact at Monument Site No. 11, located in Lea County, New Mexico. Site No. 11 consisted of three surface stains. A site location map is presented as FIG. 1.

A scope of work for the subsurface assessment was prepared based upon field observations obtained during a preliminary investigation of surface site conditions. The proposed work plan was presented in the Phase I - Preliminary Site Characterization report dated June 21, 1996, and was approved by the State of New Mexico Oil Conservation Division in a letter dated August 16, 1996. The general scope of work for the subsurface investigation included:

- A sensitive receptor survey, migration pathway analysis, and registered water well search.
- Soil borings within and in the vicinity of the soil stain areas.

SUBSURFACE INVESTIGATION

SENSITIVE RECEPTOR SURVEY/MIGRATION PATHWAY EVALUATION

Receptor Survey

A sensitive receptor survey/migration pathway evaluation was conducted at the site. No potential receptors were identified within a 500-foot radius of the site. Adjacent properties consisted of a Hess Petroleum storage unit to the west, rangeland and a pump jack to the south, pump jacks and active rangeland to the north, TNMPL Monument Site No. 10 to the northwest, and rangeland and pump jacks to the east.

A search of State of New Mexico water well registrations indicated 2 registered water wells potentially within a 1/2-mile radius of the site (exact locations of the wells could not be determined from the well registration coordinates). A copy of the well registration is presented in APPENDIX A.

Migration Pathway Analysis

Potential manmade migration pathways identified during the survey included a TNMPL crude oil pipeline extending through the center of the site from northwest to southeast. A natural gas pipeline extends through the center of the site from the east to the west.

FIELD ACTIVITIES

On January 21, 1998, soil borings B11-1 through B11-9 were advanced utilizing an air rotary rig. Field observations obtained during the soil boring advancement included the following:

- Hydrocarbon impact extends from the ground surface to approximately 10 to 12 feet in the suspected source areas.

- Groundwater was not encountered during drilling.
- Phase-separate hydrocarbons (PSH) was observed on the soil sample collected from 5 to 7 feet at soil boring B11-2.

Upon completion of sampling activities, each soil boring was backfilled to the ground surface with a cement/bentonite grout. Approximate locations of the soil borings are presented on FIG. 2.

SOIL ASSESSMENT

The subsurface profile was classified in general accordance with the Unified Soil Classification System by visually observing soil samples obtained during drilling. In general, 4 soil types were encountered. A general description, approximate thickness, and head-space results of each soil type are discussed as follows:

Soil Type I
This soil type consisted of a brown clay encountered at the surface of all soil boring locations. This sandy clay was slightly moist, fine-grained and firm. Observed thicknesses of this soil type varied from approximately 1.5 to 7 feet. The head-space reading from a sample of this soil type was below instrument detection levels (ND).

Soil Type II
This soil type consisted of a tan to white gravel with caliche encountered beneath the upper sand at all soil boring locations except soil boring B11-4. Observed thicknesses of this soil type varied from approximately 1 to 9 feet. The head-space readings from samples of this soil type were ND.

Soil Type III
This soil type consisted of a tan to brown sand encountered beneath Soil Type II at all soil boring locations except soil boring B11-4. This sand was fine-grained, silty and contained calcareous nodules. Observed thicknesses of this soil type varied from approximately 5 to 9 feet. The head-space readings from samples of this soil type were ND.

Soil Type IV
This soil type consisted of a tan to white limestone. The limestone was hard and brittle. This soil type was encountered at depths ranging from 11 to 17 feet to the maximum depth investigated in soil borings B11-1, B11-2, B11-5, and B11-7. Observed thickness of this soil type varied from approximately 0.5 to 2 feet. The head-space reading from a sample of this soil type was ND.

Graphic logs indicating the subsurface soil profile, depths at which soil samples were obtained, head-space results, laboratory results, and the soil boring details are indicated on FIGS. 3 through 6.

LABORATORY ANALYSIS

Soil samples selected for laboratory analysis from sample intervals represented the 5 to 7 feet interval and the bottom of the hole. The selected soil samples were express mailed to Xenco Laboratories in San Antonio, Texas for determination of TPH concentrations by EPA Method 8015 Diesel Range Organics (DRO) and BTEX concentrations by EPA Method SW846-8020. Additional analyses of SPLP VOC by EPA Method SW846-1312/8260,

SPLP SVOC by EPA Method SW846-1312/8270 and SPLP TPH by EPA Method 1312/418.1 were conducted on the soil boring sample with the highest TPH concentration (B11-2 at 10 to 12 feet). A determination of fraction organic carbon and moisture content was conducted on an unimpacted sample collected from soil boring B11-4.

Analytical results indicated the following range of constituent concentrations for the soil boring samples:

CONSTITUENT	RANGE OF CONCENTRATIONS
TPH	ND to 9,920 mg/kg
BTEX	ND to 20.94 mg/kg
Benzene	ND to 2.04 mg/kg
SPLP VOC	
Ethylbenzene	0.028 mg/L
Trichlorofluoromethane	1.680 mg/L
SPLP TPH	5.7 mg/kg
Fraction Organic Carbon	1.3%
Moisture Content	9.3%

All SPLP VOC and SPLP SVOC constituent concentrations not listed above were ND. Trichlorofluoromethane result was beyond calibration limits, possible laboratory contamination.

A complete summary of analytical results for soil samples is presented in TABLES I through III. Copies of the certified laboratory reports and chain-of-custody documentation are presented in APPENDIX A. The QA/QC procedures used during decontamination of drilling equipment, sampling, and laboratory protocol are presented in APPENDIX B.

CLOSURE OBJECTIVES

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
Well Head Protection	Greater Than 1000 Feet to Water Source Greater Than 200 Feet to Private Water Source	0
Surface Water Body	Greater Than 1000 Feet	0
	Total Ranking Score	20

The depth to groundwater is estimated to be approximately 18 feet below ground surface. This assumption is based on ground water depth at Monument Site No. 10 located approximately 500 feet northwest of the site.

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

CONSTITUENT	CLOSURE CONCENTRATIONS (mg/kg)
BENZENE	10
BTEX	50
TPH	100 + Background Concentration

CONCLUSIONS

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

- Soil is impacted in soil borings B11-2, B11-6, B11-8, and B11-9 based on laboratory results.
- Soil impact extends from the ground surface to a minimum of 12 feet below the ground surface in soil borings B11-2, B11-6, B11-8, and B11-9 based on laboratory results.
- Soil is impacted from a depth of 7 feet to 12 feet below ground surface inside the stressed vegetation area.
- PSH was observed in the field screening soil sample collected from soil boring B11-2 at 5 to 7 feet below ground surface.
- The estimated in-place volume of apparently impacted soil is approximately 1,530 cubic yards assuming an impacted surface area of 3,450 square feet and a depth of 12 feet. However, the depth of soil impact was not defined in soil boring B11-2 because the bottom of hole sample TPH concentration exceeds closure levels.

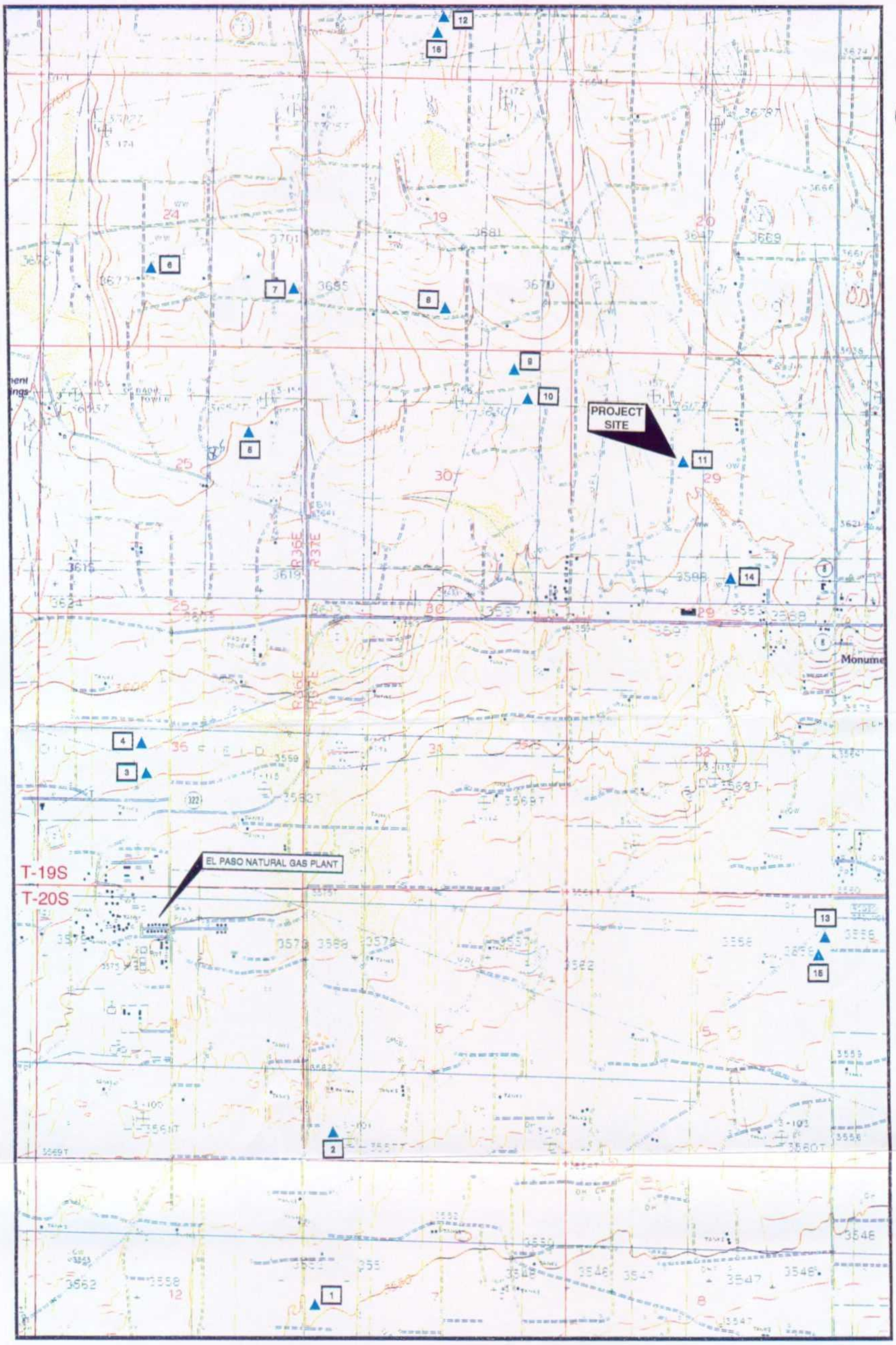
RECOMMENDATIONS

Based on the data collected from the site, we recommend the following activities:

- One soil boring should be installed in the vicinity of boring B11-2 to determine vertical extent of hydrocarbon impact.
- If groundwater is encountered prior to defining the vertical extent of hydrocarbon impact, the boring should be converted to a monitoring well and 2 additional monitoring wells should also be installed.

MONUMENT NORTH QUADRANGLE
NEW MEXICO - LEA COUNTY
PRINTED 1985

MONUMENT SOUTH QUADRANGLE
NEW MEXICO - LEA COUNTY
PRINTED 1985



SCALE 1:24000

1 1/2 0 1 MILE

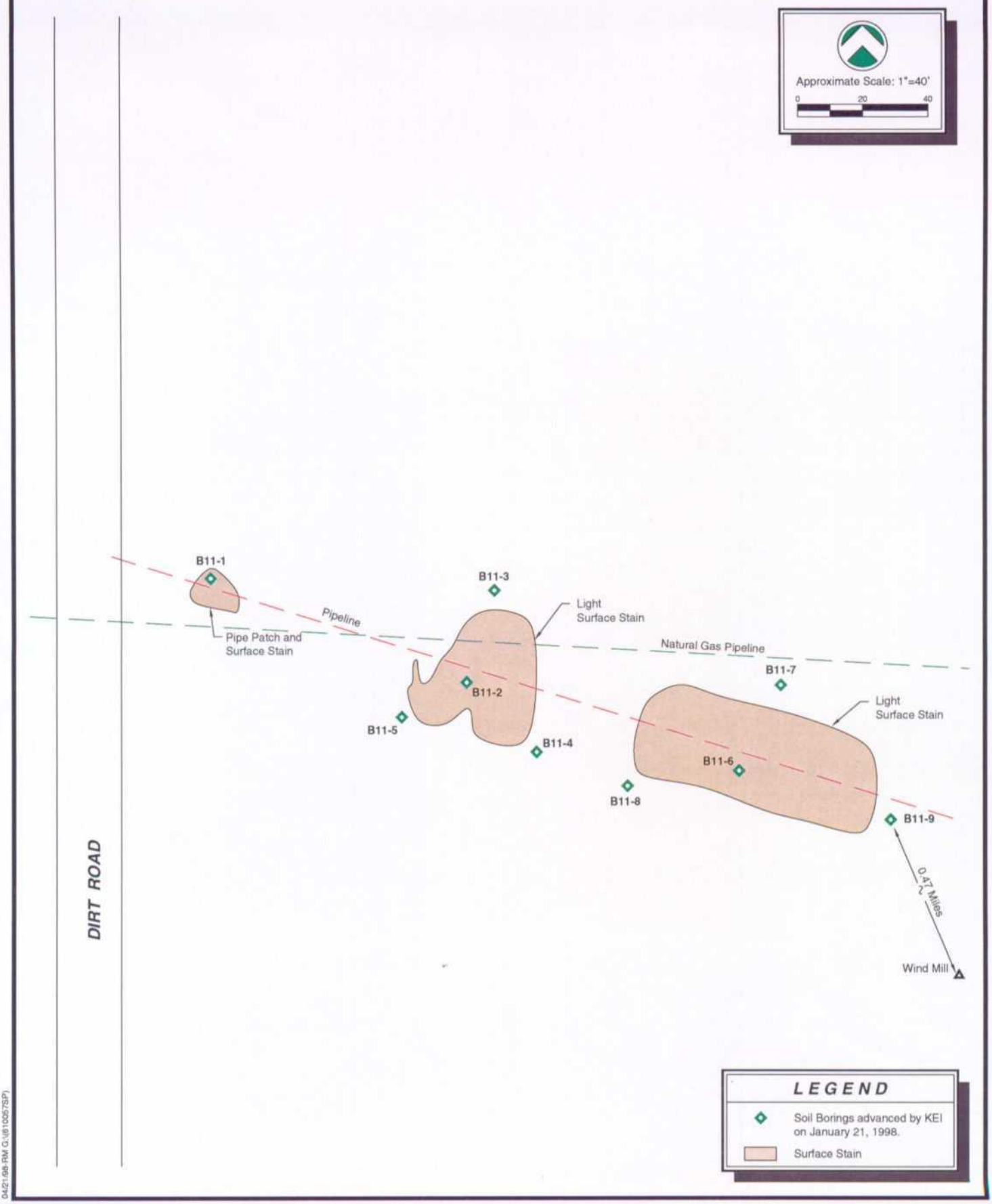
1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 .5 0 1 KILOMETRE

CONTOUR INTERVAL 5 FEET

k·e·i

SITE LOCATION MAP	610057
TEXAS - NEW MEXICO PIPE LINE CO. MONUMENT SITE NO. 11 LEA COUNTY, NEW MEXICO	FIG 1



0421-6B-RM G:\610057SP)

k·e·i

SITE DETAILS			610057
TEXAS - NEW MEXICO PIPE LINE CO.	MONUMENT SITE NO. 11	LEA COUNTY, NEW MEXICO	FIG 2

LEGEND

Clay (CL), sandy, fine-grained, firm, slightly moist, brown.

Gravel (GC), caliche, tan to white.

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

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 photoionization detector.

ND = Indicates the concentration was below laboratory detection limits.

NM = Not measured

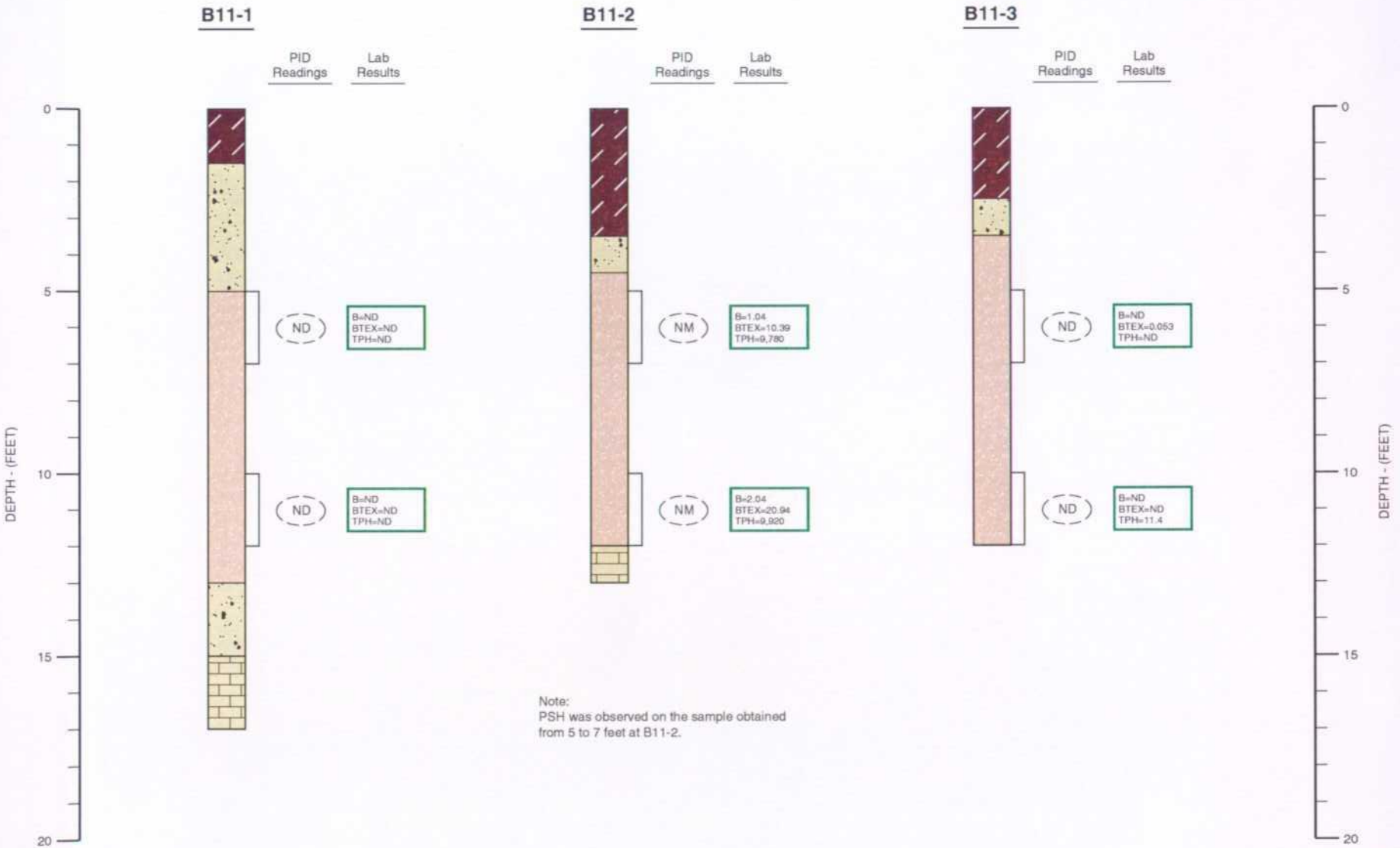
NOTES:

1. The soil borings were advanced utilizing an air rotary rig on January 21, 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 borings not completed as monitoring wells were grouted to the ground surface with a cement and bentonite grout.

04/07/98-RM G:\610057L\

k·e·i

LEGEND AND NOTES FOR SOIL BORINGS	610057
TEXAS - NEW MEXICO PIPE LINE CO. MONUMENT SITE NO. 11 LEA COUNTY, NEW MEXICO	FIG 3



Note:
PSH was observed on the sample obtained from 5 to 7 feet at B11-2.

k·e·i

LOG AND DETAILS OF SOIL BORINGS	610057
TEXAS - NEW MEXICO PIPE LINE CO. MONUMENT SITE NO. 11 LEA COUNTY, NEW MEXICO	FIG 4

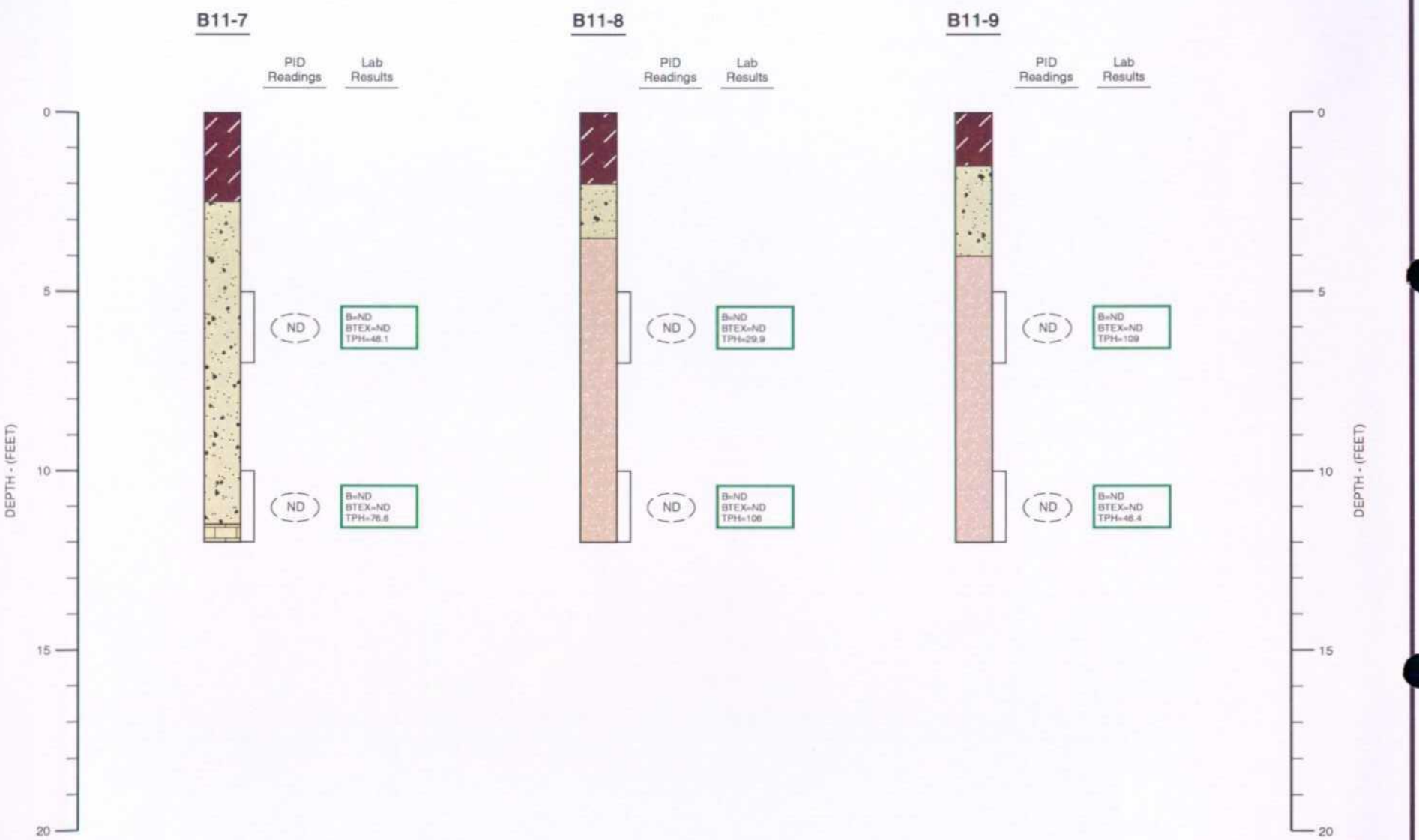
k·e·i

LOG AND DETAILS OF SOIL BORINGS

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

610057

FIG 5



k·e·i

LOG AND DETAILS OF SOIL BORINGS

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

610057

FIG 6

GENERAL NOTES

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

Method detection limits or reporting limits:

BTEX	-	0.020 to 1.00 ppm
TPH	-	10.0 mg/kg
SPLP VOCs	-	0.025 to 0.050 mg/l
SPLP SVOCs	-	0.010 to 0.025 mg/l
SPLP TPH	-	0.7 ppm
Moisture Content	-	0.1%
Organic Content	-	0.1%

Laboratory test methods:

BTEX	-	EPA Method SW846-8020
TPH	-	EPA Method 8015 DRO
SPLP VOCs	-	EPA Method 1312/8260
SPLP SVOCs	-	EPA Method 1312/8270
SPLP TPH	-	EPA Method 1312/418.1
Moisture Content	-	ASTM 2216-71
Organic Content	-	ASTM D2974

TABLE I

SUMMARY OF SOIL LABORATORY RESULTS - BTEX AND TPH
TEXAS - NEW MEXICO PIPE LINE COMPANY
MONUMENT SITE NO. 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)
B11-1	01/21/98	5 - 6	ND	ND	ND	ND	ND	ND
B11-1	01/21/98	10 - 12	ND	ND	ND	ND	ND	ND
B11-2	01/21/98	5 - 7	1.04	0.68	2.91	5.76	10.39	9,780
B11-2	01/21/98	10 - 12	2.04	2.45	3.46	12.99	20.94	9,920
B11-3	01/21/98	5 - 7	ND	ND	ND	0.053	0.053	ND
B11-3	01/21/98	10 - 12	ND	ND	ND	ND	ND	11.4
B11-4	01/21/98	5 - 7	ND	ND	ND	ND	ND	ND
B11-4	01/21/98	10 - 12	ND	ND	ND	ND	ND	ND
B11-5	01/21/98	5 - 7	ND	ND	ND	ND	ND	85.2
B11-5	01/21/98	10 - 11	ND	ND	ND	ND	ND	27.8
B11-6	01/21/98	5 - 7	ND	ND	ND	ND	ND	119
B11-6	01/21/98	10 - 12	ND	ND	ND	ND	ND	116
B11-7	01/21/98	5 - 7	ND	ND	ND	ND	ND	48.1
B11-7	01/21/98	10 - 11.5	ND	ND	ND	ND	ND	76.6
B11-8	01/21/98	5 - 7	ND	ND	ND	ND	ND	29.9
B11-8	01/21/98	10 - 12	ND	ND	ND	ND	ND	106
B11-9	01/21/98	5 - 7	ND	ND	ND	ND	ND	109
B11-9	01/21/98	10 - 12	ND	ND	ND	ND	ND	46.4

TABLE II

SUMMARY OF LABORATORY SPLP RESULTS
TEXAS - NEW MEXICO PIPE LINE COMPANY
MONUMENT SITE NO. 11
LEA COUNTY, NEW MEXICO

CONSTITUENT	CONCENTRATION (mg/l)
Ethylbenzene	0.028
Trichlorofluoromethane	1.680
SPLP TPH	5.7

NOTES:

1. Sample B11-2 (10 to 12 feet) was sampled on 01/21/98 and analyzed for SPLP volatiles, semi-volatiles and TPH concentrations.
2. Those constituents not listed were ND.
3. Trichlorofluoromethane measurement was beyond calibration limits, possible laboratory contamination.

TABLE III

SUMMARY OF GEOTECHNICAL PARAMETER RESULTS
TEXAS - NEW MEXICO PIPE LINE COMPANY
MONUMENT SITE NO. 11
LEA COUNTY, NEW MEXICO

PARAMETER	RESULT (%)
Fraction Organic Carbon (FOC)	1.3
Moisture Content	9.3

NOTE:

1. Sample B11-4 (5 to 6 feet) was sampled on 01/21/98 and analyzed for FOC and moisture content.

ANALYTICAL REPORT 1-80280

for

K.E.I. Consultants, Inc.

Project Manager: Theresa Nix

Project Name: TNMPL

Project Id: 610057

February 13, 1998

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

February 13, 1998

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

Reference: **XENCO Report No.: 1-80280**
Project Name: TNMPL
Project ID: 610057
Project Address: Monument Site 11

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 1-80280. 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. 1-80280 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 Yonemoto, Ph.D.
Technical Director

XENCO Laboratories

CERTIFICATE OF ANALYSIS SUMMARY 1-80280

K.E.I. Consultants, Inc.

Project ID: 610057
Project Manager: Theresa Nix
Project Location: Monument Site 11

Project Name: TNMPL

Date Received in Lab : Jan 24, 1998 11:11
Date Report Faxed: Feb 13, 1998
XENCO contact : Carlos Castro/Edward Yonemoto

Analysis Requested	*Lab ID:*	180280 001	180280 002	180280 003	180280 004	180280 005	180280 006
	Field ID:	B11-1	B11-1	B11-2	B11-2	B11-3	B11-3
	Depth:	5-6	10-12	5-7	10-12	5-7	10-12
	Matrix:	Solid	Solid	Solid	Solid	Solid	Solid
	Sampled:	01/21/98	01/21/98	01/21/98	01/21/98	01/21/98	01/21/98
TPH-DRO (Diesel)	*Analyzed:*	01/27/98	01/27/98	01/27/98	01/27/98	01/27/98	01/27/98
EPA 8015 M	*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		< 10.0 (10.0)	< 10.0 (10.0)	9780 (10.0)	9920 (10.0)	< 10.0 (10.0)	11.4 (10.0)
BTEX	*Analyzed:*	01/26/98	01/26/98	01/26/98	01/26/98	01/26/98	01/26/98
EPA 8020	*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)	1.04 (0.50)	2.04 (0.10)	< 0.020 (0.020)	< 0.020 (0.020)
Toluene		< 0.020 (0.020)	< 0.020 (0.020)	0.68 (0.50)	2.45 (0.10)	< 0.020 (0.020)	< 0.020 (0.020)
Ethylbenzene		< 0.020 (0.020)	< 0.020 (0.020)	2.91 (0.50)	3.46 (0.10)	< 0.020 (0.020)	< 0.020 (0.020)
m,p-Xylenes		< 0.040 (0.040)	< 0.040 (0.040)	5.10 (1.00)	11.50 (0.20)	0.053 (0.040)	< 0.040 (0.040)
o-Xylene		< 0.020 (0.020)	< 0.020 (0.020)	0.66 (0.50)	1.49 (0.10)	< 0.020 (0.020)	< 0.020 (0.020)
Total BTEX		N.D.	N.D.	10.39	20.94	0.053	N.D.
SPLP-Semivolatiles	*Analyzed:*				02/04/98		
EPA1312/8270	*Units:*				mg/L R.L.		
Acenaphthene					< 0.010 (0.010)		
Acenaphthylene					< 0.010 (0.010)		
Anthracene					< 0.010 (0.010)		
Benzo(a)anthracene					< 0.010 (0.010)		
Benzo(a)pyrene					< 0.010 (0.010)		
Benzo(b)fluoranthene					< 0.010 (0.010)		
Benzo(g,h,i)perylene					< 0.010 (0.010)		
Benzo(k)fluoranthene					< 0.010 (0.010)		
4-Bromophenyl-phenylether					< 0.010 (0.010)		
Butyl benzyl phthalate					< 0.010 (0.010)		
Carbazole					< 0.010 (0.010)		
4-Chloro-3-Methylphenol					< 0.010 (0.010)		

Edward H. Yonemoto, Ph.D.
Technical Director

XENCO Laboratories

CERTIFICATE OF ANALYSIS SUMMARY 1-80280

K.E.I. Consultants, Inc.

Project ID: 610057
Project Name: TNMPL
Project Manager: Theresa Nix
Project Location: Monument Site 11

Date Received in Lab : Jan 24, 1998 11:11
Date Report Faxed: Feb 13, 1998
XENCO contact : Carlos Castro/Edward Yonemoto

Analysis Requested	*Lab ID:*	180280 001	180280 002	180280 003	180280 004	180280 005	180280 006
	Field ID:	B11-1	B11-1	B11-2	B11-2	B11-3	B11-3
	Depth:	5-6	10-12	5-7	10-12	5-7	10-12
	Matrix:	Solid	Solid	Solid	Solid	Solid	Solid
	Sampled:	01/21/98	01/21/98	01/21/98	01/21/98	01/21/98	01/21/98
	Analyzed:				02/04/98		
	Units:				mg/L R.L.		
4-Chloroaniline					< 0.010 (0.010)		
2-Chloronaphthalene					< 0.010 (0.010)		
2-Chlorophenol					< 0.010 (0.010)		
4-Chlorophenyl-phenyl ether					< 0.010 (0.010)		
Chrysene					< 0.010 (0.010)		
Di-n-butyl phthalate					< 0.010 (0.010)		
Di-n-octyl phthalate					< 0.010 (0.010)		
Dibenzo(a,h)anthracene					< 0.010 (0.010)		
Dibenzofuran					< 0.010 (0.010)		
1,2-Dichlorobenzene					< 0.010 (0.010)		
1,3-Dichlorobenzene					< 0.010 (0.010)		
1,4-Dichlorobenzene					< 0.010 (0.010)		
3,3'-Dichlorobenzidine					< 0.010 (0.010)		
2,4-Dichlorophenol					< 0.010 (0.010)		
Diethyl phthalate					< 0.010 (0.010)		
2,4-Dimethylphenol					< 0.010 (0.010)		
Dimethyl phthalate					< 0.010 (0.010)		
4,6-Dinitro-2-methylphenol					< 0.025 (0.025)		
2,4-Dinitrophenol					< 0.025 (0.025)		
2,4-Dinitrotoluene					< 0.010 (0.010)		
2,6-Dinitrotoluene					< 0.010 (0.010)		
Fluoranthene					< 0.010 (0.010)		
Fluorene					< 0.010 (0.010)		
Hexachlorobenzene					< 0.010 (0.010)		

Edward H. Yonemoto, Ph.D.
Technical Director

XENCO Laboratories

CERTIFICATE OF ANALYSIS SUMMARY 1-80280

K.E.I. Consultants, Inc.

Project ID: 610057
Project Name: *TNMPL*
Project Manager: Theresa Nix
Project Location: Monument Site 11

Date Received in Lab : Jan 24, 1998 11:11
Date Report Faxed: Feb 13, 1998
XENCO contact : Carlos Castro/Edward Yonemoto

Analysis Requested	Lab ID: / Field ID: / Depth: / Matrix: / Sampled:	180280 001 B11-1 5-6 Solid 01/21/98	180280 002 B11-1 10-12 Solid 01/21/98	180280 003 B11-2 5-7 Solid 01/21/98	180280 004 B11-2 10-12 Solid 01/21/98	180280 005 B11-3 5-7 Solid 01/21/98	180280 006 B11-3 10-12 Solid 01/21/98
	Analyzed: / Units:				02/04/98 mg/L R.L.		
Hexachlorobutadiene					< 0.010 (0.010)		
Hexachlorocyclopentadiene					< 0.010 (0.010)		
Hexachloroethane					< 0.010 (0.010)		
Indeno(1,2,3-cd)pyrene					< 0.010 (0.010)		
Isophorone					< 0.010 (0.010)		
2-Methylnaphthalene					< 0.010 (0.010)		
2-Methylphenol					< 0.010 (0.010)		
4-Methylphenol					< 0.010 (0.010)		
N-Nitroso-di-n-propylamine					< 0.010 (0.010)		
N-Nitrosodiphenylamine					< 0.010 (0.010)		
Naphthalene					< 0.010 (0.010)		
2-Nitroaniline					< 0.025 (0.025)		
3-Nitroaniline					< 0.025 (0.025)		
4-Nitroaniline					< 0.025 (0.025)		
Nitrobenzene					< 0.010 (0.010)		
2-Nitrophenol					< 0.010 (0.010)		
4-Nitrophenol					< 0.010 (0.010)		
Pentachlorophenol					< 0.025 (0.025)		
Phenanthrene					< 0.010 (0.010)		
Phenol					< 0.010 (0.010)		
Pyrene					< 0.010 (0.010)		
1,2,4-Trichlorobenzene					< 0.010 (0.010)		
2,4,5-Trichlorophenol					< 0.025 (0.025)		
2,4,6-Trichlorophenol					< 0.010 (0.010)		

Edward H. Yonemoto, Ph.D.
Technical Director

XENCO Laboratories

CERTIFICATE OF ANALYSIS SUMMARY 1-80280

K.E.I. Consultants, Inc.

Project ID: 610057
Project Name: TNMPL
Project Manager: Theresa Nix
Project Location: Monument Site 11

Date Received in Lab : Jan 24, 1998 11:11
Date Report Faxed: Feb 13, 1998
XENCO contact : Carlos Castro/Edward Yonemoto

Analysis Requested	*Lab ID:*	180280 001	180280 002	180280 003	180280 004	180280 005	180280 006
	Field ID:	B11-1	B11-1	B11-2	B11-2	B11-3	B11-3
	Depth:	5-6	10-12	5-7	10-12	5-7	10-12
	Matrix:	Solid	Solid	Solid	Solid	Solid	Solid
	Sampled:	01/21/98	01/21/98	01/21/98	01/21/98	01/21/98	01/21/98
	Analyzed:				02/04/98		
	Units:				mg/L R.L.		
bis [2-Chloroethoxy] methane					< 0.010 (0.010)		
bis [2-Chloroethyl] ether					< 0.010 (0.010)		
bis [2-Chloroisopropyl] ether					< 0.010 (0.010)		
bis [2-Ethylhexyl] phthalate					< 0.010 (0.010)		
SPLP Volatiles EPA 8260	*Analyzed:*				02/12/98		
	Units:				mg/L R.L.		
Benzene					< 0.025 (0.025)		
Bromobenzene					< 0.025 (0.025)		
Bromochloromethane					< 0.025 (0.025)		
Bromodichloromethane					< 0.025 (0.025)		
Bromoform					< 0.025 (0.025)		
Bromomethane					< 0.025 (0.025)		
Carbon Tetrachloride					< 0.025 (0.025)		
Chlorobenzene					< 0.025 (0.025)		
Chloroethane					< 0.050 (0.050)		
Chloroform					< 0.025 (0.025)		
Chloromethane					< 0.050 (0.050)		
2-Chlorotoluene					< 0.025 (0.025)		
4-Chlorotoluene					< 0.025 (0.025)		
1,2-Dibromo-3-chloropropane					< 0.025 (0.025)		
Dibromochloromethane					< 0.025 (0.025)		
1,2-Dibromoethane					< 0.025 (0.025)		

Edward H. Yonemoto, Ph.D.
Technical Director

XENCO Laboratories

CERTIFICATE OF ANALYSIS SUMMARY 1-80280

K.E.I. Consultants, Inc.

Project ID: 610057
Project Name: *TNMPL*
Project Manager: Theresa Nix
Project Location: Monument Site 11

Date Received in Lab : Jan 24, 1998 11:11
Date Report Faxed: Feb 13, 1998
XENCO contact : Carlos Castro/Edward Yonemoto

Analysis Requested	Lab ID:	180280 001	180280 002	180280 003	180280 004	180280 005	180280 006
	Field ID:	B11-1	B11-1	B11-2	B11-2	B11-3	B11-3
	Depth:	5-6	10-12	5-7	10-12	5-7	10-12
	Matrix:	Solid	Solid	Solid	Solid	Solid	Solid
	Sampled:	01/21/98	01/21/98	01/21/98	01/21/98	01/21/98	01/21/98
	Analyzed:				02/12/98		
	Units:				mg/L R.L.		
Dibromomethane					< 0.025 (0.025)		
1,2-Dichlorobenzene					< 0.025 (0.025)		
1,3-Dichlorobenzene					< 0.025 (0.025)		
1,4-Dichlorobenzene					< 0.025 (0.025)		
Dichlorodifluoromethane					< 0.025 (0.025)		
1,1-Dichloroethane					< 0.025 (0.025)		
1,2-Dichloroethane					< 0.025 (0.025)		
1,1-Dichloroethene					< 0.025 (0.025)		
1,2-Dichloropropane					< 0.025 (0.025)		
1,3-Dichloropropane					< 0.025 (0.025)		
2,2-Dichloropropane					< 0.025 (0.025)		
1,1-Dichloropropene					< 0.025 (0.025)		
Ethylbenzene					0.028 (0.025)		
Hexachlorobutadiene					< 0.025 (0.025)		
Isopropylbenzene					< 0.025 (0.025)		
MTBE					< 0.050 (0.050)		
Methylene chloride					< 0.050 (0.050)		
Naphthalene					< 0.025 (0.025)		
Styrene					< 0.025 (0.025)		
1,1,1,2-Tetrachloroethane					< 0.025 (0.025)		
1,1,2,2-Tetrachloroethane					< 0.025 (0.025)		
Tetrachloroethene					< 0.025 (0.025)		
Toluene					< 0.025 (0.025)		
1,2,3-Trichlorobenzene					< 0.025 (0.025)		

Edward H. Yonemoto, Ph.D.
Technical Director

XENCO Laboratories

CERTIFICATE OF ANALYSIS SUMMARY 1-80280

K.E.I. Consultants, Inc.

Project ID: 610057
Project Name: TNMPL
Project Manager: Theresa Nix
Project Location: Monument Site 11

Date Received in Lab : Jan 24, 1998 11:11
Date Report Faxed: Feb 13, 1998
XENCO contact : Carlos Castro/Edward Yonemoto

Analysis Requested	*Lab ID:*	180280 001	180280 002	180280 003	180280 004	180280 005	180280 006
	Field ID:	B11-1	B11-1	B11-2	B11-2	B11-3	B11-3
	Depth:	5-6	10-12	5-7	10-12	5-7	10-12
	Matrix:	Solid	Solid	Solid	Solid	Solid	Solid
	Sampled:	01/21/98	01/21/98	01/21/98	01/21/98	01/21/98	01/21/98
	Analyzed:				02/12/98		
	Units:				mg/L R.L.		
1,2,4-Trichlorobenzene					< 0.025 (0.025)		
1,1,1-Trichloroethane					< 0.025 (0.025)		
1,1,2-Trichloroethane					< 0.025 (0.025)		
Trichloroethene					< 0.025 (0.025)		
Trichlorofluoromethane					** 1.680 (0.025)		
1,2,3-Trichloropropane					< 0.025 (0.025)		
1,2,4-Trimethylbenzene					< 0.025 (0.025)		
1,3,5-Trimethylbenzene					< 0.025 (0.025)		
Vinyl chloride					< 0.025 (0.025)		
cis-1,2-Dichloroethene					< 0.025 (0.025)		
cis-1,3-Dichloropropene					< 0.025 (0.025)		
m,p-Xylenes					< 0.025 (0.025)		
n-Butylbenzene					< 0.025 (0.025)		
n-Propylbenzene					< 0.025 (0.025)		
o-Xylene					< 0.025 (0.025)		
p-Isopropyltoluene					< 0.025 (0.025)		
sec-Butylbenzene					< 0.025 (0.025)		
tert-Butylbenzene					< 0.025 (0.025)		
trans-1,2-Dichloroethene					< 0.025 (0.025)		
trans-1,3-Dichloropropene					< 0.025 (0.025)		
** Result beyond calibration limits, possible laboratory contamination							
SPLP TPH 1312/418.1	*Analyzed:*				02/04/98		
	Units:				ppm R.L.		

Edward H. Yonemoto, Ph.D.
Technical Director

XENCO Laboratories

CERTIFICATE OF ANALYSIS SUMMARY 1-80280

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: Feb 13, 1998

Project Location: Monument Site 11
XENCO contact : Carlos Castro/Edward Yonemoto

Analysis Requested	*Lab ID:*	180280 001	180280 002	180280 003	180280 004	180280 005	180280 006
	Field ID:	B11-1	B11-1	B11-2	B11-2	B11-3	B11-3
	Depth:	5-6	10-12	5-7	10-12	5-7	10-12
	Matrix:	Solid	Solid	Solid	Solid	Solid	Solid
	Sampled:	01/21/98	01/21/98	01/21/98	01/21/98	01/21/98	01/21/98
	Analyzed:				02/04/98		
	Units:				ppm R.L.		
Total Petroleum Hydrocarbons					5.7 (0.7)		

Edward H. Yonemoto, Ph.D.
Technical Director

XENCO Laboratories

CERTIFICATE OF ANALYSIS SUMMARY 1-80280

K.E.I. Consultants, Inc.

Project ID: 610057
Project Name: TNMPL
Project Manager: Theresa Nix
Project Location: Monument Site 11

Date Received in Lab : Jan 24, 1998 11:11
Date Report Faxed: Feb 13, 1998
XENCO contact : Carlos Castro/Edward Yonemoto

Analysis Requested	*Lab ID:*	180280 007	180280 008	180280 009	180280 010	180280 011	180280 012
	Field ID:	B11-4	B11-4	B11-5	B11-5	B11-6	B11-6
	Depth:	5-7	10-12	5-7	10-11	5-7	10-12
	Matrix:	Solid	Solid	Solid	Solid	Solid	Solid
	Sampled:	01/21/98	01/21/98	01/21/98	01/21/98	01/21/98	01/21/98
TPH-DRO (Diesel)	*Analyzed:*	01/27/98	01/27/98	01/27/98	01/27/98	01/27/98	01/27/98
EPA 8015 M	*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		< 10.0 (10.0)	< 10.0 (10.0)	85.2 (10.0)	27.8 (10.0)	119 (10.0)	116 (10.0)
BTEX	*Analyzed:*	01/26/98	01/26/98	01/26/98	01/26/98	01/26/98	01/26/98
EPA 8020	*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 ANALYSIS SUMMARY 1-80280

K.E.I. Consultants, Inc.

Project ID: 610057
Project Name: TNMPL
Project Manager: Theresa Nix
Project Location: Monument Site 11

Date Received in Lab : Jan 24, 1998 11:11
Date Report Faxed: Feb 13, 1998
XENCO contact : *Carlos Castro/Edward Yonemoto*

Analysis Requested	*Lab ID:*	180280 013	180280 014	180280 015	180280 016	180280 017	180280 018
	Field ID:	B11-7	B11-7	B11-8	B11-8	B11-9	B11-9
	Depth:	5-7	10-11.5	5-7	10-12	10-12	5-7
	Matrix:	Solid	Solid	Solid	Solid	Solid	Solid
	Sampled:	01/21/98	01/21/98	01/21/98	01/21/98	01/21/98	01/21/98
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		48.1 (10.0)	76.6 (10.0)	29.9 (10.0)	106 (10.0)	46.4 (10.0)	109 (10.0)
BTEX **EPA 8020**	*Analyzed:*	01/26/98	01/26/98	01/26/98	01/26/98	01/26/98	01/26/98
	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 ANALYSIS SUMMARY 1-80280

K.E.I. Consultants, Inc.

Project ID: 610057
Project Manager: Theresa Nix
Project Location: Monument Site 11

Project Name: TNMPL

Date Received in Lab : Jan 24, 1998 11:11
Date Report Faxed: Feb 13, 1998
XENCO contact : Carlos Castro/Edward Yonemoto

Analysis Requested	*Lab ID:* / *Field ID:* / *Depth:* / *Matrix:* / *Sampled:*	180280 019 / B11-4 / 5-6 / Solid / 01/21/98					
Moisture Content **ASTM 2216-71**	*Analyzed:* / *Units:*	01/26/98 / %	R.L.				
Moisture Content		9.3	(0.1)				
Organic Content **ASTM D2974**	*Analyzed:* / *Units:*	01/28/98 / %	R.L.				
Organic Content		1.3	(0.1)				

Edward H. Yonemoto, Ph.D.
Technical Director

XENCO Laboratories

Certificate Of Quality Control for Batch : 18Z99A12

SW- 846 8015 M TPH- DRO (Diesel)

Date Validated: Jan 28, 1998 14:00
Date Analyzed: Jan 26, 1998 18:44
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 LIMITS Blank Spike Recovery %	[F] Recovery Range %	[G] Qualifier
Total Petroleum Hydrocarbons	< 10.00	92.40	100	10.00	92.4	65-135	

Blank Spike Recovery [E] = 100*(B-A)/(C)
N.C. = Not calculated, data below detection limit
N.D. = Below detection limit
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 : 18A25A30

SW- 846 5030/8020 BTEX

Date Validated: Jan 28, 1998 14:00
Date Analyzed: Jan 26, 1998 11:08
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 Blank Spike Recovery %	[F] LIMITS Recovery Range %	[G] Qualifier
Benzene	< 0.0010	0.1070	0.1000	0.0010	107.0	65-135	
Toluene	< 0.0010	0.1050	0.1000	0.0010	105.0	65-135	
Ethylbenzene	< 0.0010	0.1080	0.1000	0.0010	108.0	65-135	
m,p-Xylenes	< 0.0020	0.2350	0.2000	0.0020	117.5	65-135	
o-Xylene	< 0.0010	0.1110	0.1000	0.0010	111.0	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 : 18A25A30

SW- 846 5030/8020 BTEX

Date Validated: Jan 28, 1998 14:00
Date Analyzed: Jan 26, 1998 11:45
QA/QC Manager: Edward H. Yonemoto, Ph.D.

Analyst: HL
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	ppm	ppm	ppm	ppm	ppm	%	%	%	%	%	
Benzene	< 0.020	1.992	1.996	2.000	0.020	25.0	0.2	99.6	99.8	65-135	
Toluene	< 0.020	1.944	1.944	2.000	0.020	25.0	0.0	97.2	97.2	65-135	
Ethylbenzene	< 0.020	1.978	1.976	2.000	0.020	25.0	0.1	98.9	98.8	65-135	
m,p-Xylenes	< 0.040	4.300	4.300	4.000	0.040	25.0	0.0	107.5	107.5	65-135	
o-Xylene	< 0.020	1.958	1.936	2.000	0.020	25.0	1.1	97.9	96.8	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

Edward H. Yonemoto, Ph.D.
Technical Director

XENCO Laboratories

Certificate Of Quality Control for Batch : 18A01A57

SW846- 8260 Volatile Organic Analysis

Date Validated: Feb 13, 1998 15:30
Date Analyzed: Feb 12, 1998 13:05
QA/QC Manager: Sunil Ajai, M.S.

Analyst: CE
Matrix: Liquid

	BLANK SPIKE ANALYSIS						
Parameter	[A] Blank Result mg/L	[B] Blank Spike Result mg/L	[C] Blank Spike Amount mg/L	[D] Method Detection Limit mg/L	[E] QC Blank Spike Recovery %	[F] LIMITS Recovery Range %	[G] Qualifier
Benzene	< 0.0010	0.0535	0.0500	0.0010	107.0	76-127	
Chlorobenzene	< 0.0010	0.0508	0.0500	0.0010	101.6	75-130	
1,1-Dichloroethene	< 0.0040	0.0510	0.0500	0.0040	102.0	61-145	
Toluene	< 0.0010	0.0532	0.0500	0.0010	106.4	76-125	
Trichloroethene	< 0.0030	0.0526	0.0500	0.0030	105.2	71-120	

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 : 18A01A57

SW846- 8260 Volatile Organic Analysis

Date Validated: Feb 13, 1998 15:30
Date Analyzed: Feb 12, 1998 18:11
QA/QC Manager: Sunil Ajai, M.S.

Analyst: CE
Matrix: Liquid

MATRIX SPIKE / MATRIX SPIKE DUPLICATE AND RECOVERY

Q.C. Sample ID 180429- 009 / 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] Method 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	0.0527	0.0533	0.0500	0.0010	11.0	1.1	105.4	106.6	76-127	
Chlorobenzene	< 0.0010	0.0499	0.0494	0.0500	0.0010	13.0	1.0	99.8	98.8	75-130	
1,1-Dichloroethene	< 0.0040	0.0457	0.0436	0.0500	0.0040	14.0	4.7	91.4	87.2	61-145	
Toluene	< 0.0010	0.0501	0.0498	0.0500	0.0010	13.0	0.6	100.2	99.6	76-125	
Trichloroethene	< 0.0030	0.0487	0.0494	0.0500	0.0030	14.0	1.4	97.4	98.8	71-120	

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 T. Tonemoto, Ph.D.
Technical Director

XENCO Laboratories

Certificate Of Quality Control for Batch : 18A02A55

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

Date Validated: Feb 4, 1998 11:25
Date Analyzed: Feb 3, 1998 22:18
QA/QC Manager: Edward H. Yonemoto, Ph.D.

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] Method 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	< 0.0040	0.0752	0.0774	0.1000	0.0040	31.0	2.9	75.2	77.4	46-118	
4-Chloro-3-Methylphenol	< 0.0040	0.0734	0.0846	0.1000	0.0040	42.0	14.2	73.4	84.6	23-97	
2-Chlorophenol	< 0.0040	0.0680	0.0796	0.1000	0.0040	40.0	15.7	68.0	79.6	27-123	
1,4-Dichlorobenzene	< 0.0040	0.0726	0.0746	0.1000	0.0040	28.0	2.7	72.6	74.6	36-97	
2,4-Dinitrotoluene	< 0.0040	0.0584	0.0602	0.1000	0.0040	38.0	3.0	58.4	60.2	24-96	
N-Nitroso-di-n-propylamine	< 0.0080	0.0808	0.0844	0.1000	0.0080	38.0	4.4	80.8	84.4	41-116	
4-Nitrophenol	< 0.0080	0.0242	0.0312	0.1000	0.0080	50.5	25.3	24.2	31.2	10-80	
Pentachlorophenol	< 0.0020	0.0482	0.0574	0.1000	0.0020	50.0	17.4	48.2	57.4	9-103	
Phenol	< 0.0020	0.0324	0.0386	0.1000	0.0020	42.0	17.5	32.4	38.6	12-89	
Pyrene	< 0.0040	0.0804	0.0814	0.1000	0.0040	31.0	1.2	80.4	81.4	26-127	
1,2,4-Trichlorobenzene	< 0.0020	0.0728	0.0750	0.1000	0.0020	28.0	3.0	72.8	75.0	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

Edward H. Yonemoto, Ph.D.
Technical Director

XENCO Laboratories

Certificate Of Quality Control for Batch : 18A19A32

ASTM D2974 Organic Content

Date Validated: Jan 28, 1998 11:45
Date Analyzed: Jan 28, 1998 11:05
QA/QC Manager: Edward H. Yonemoto, Ph.D.

Analyst: RR
Matrix: Solid

	MATRIX DUPLICATE ANALYSIS					
Q.C. Sample ID 180280- 019	[A] Sample Result	[B] Duplicate Result	[C] Method Detection Limit	[D] QC Relative Difference	[E] LIMITS Relative Difference	[F] Qualifier
Parameter	%	%	%	%	%	
Organic Content	1.26	1.28	0.1	1.6	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

Edward H. Yonemoto, Ph.D.
Technical Director

XENCO Laboratories

Certificate Of Quality Control for Batch : 18A19A29

ASTM 2216- 71 Moisture Content

Date Validated: Jan 27, 1998 08:40
Date Analyzed: Jan 26, 1998 19:17
QA/QC Manager: Edward H. Yonemoto, Ph.D.

Analyst: OG
Matrix: Solid

	MATRIX DUPLICATE ANALYSIS					
Q.C. Sample ID 180292- 001	[A] Sample Result	[B] Duplicate Result	[C] Method Detection Limit	[D] QC LIMITS Relative Difference	[E] LIMITS Relative Difference	[F] Qualifier
Parameter	%	%	%	%	%	
Moisture Content	39.50	39.97	0.1	1.2	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

Edward H. Yonemoto, Ph.D.
Technical Director

XENCO Laboratories

Certificate Of Quality Control for Batch : 18A07B13

EPA 1312/418.1 SPLP TPH

Date Validated: Feb 4, 1998 13:30
Date Analyzed: Feb 4, 1998 13:17
QA/QC Manager: Edward H. Yonemoto, Ph.D.

Analyst: RR
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] Method 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	4.14	4.18	4.02	0.50	20.0	1.0	103.0	104.0	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

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

Lab. Batch #180280-SA

Contractor: KEI Consultants
Phone (800) 253-0507
Address: 5309 Wurzbach Suite 100 San Antonio, Tx 78238
Project Name:
Project Director: Mike HawThorne
Project Location: Monument Site 11
Project Manager: Theresa Nix
Sampler Signature:
Project No.: 610057

No. coolers this shipment:
Carrier:
Airbill No.
Contractor COC #
Quote #:
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 (5030/8020-602)	TPH (8015 DRO)	SPLP TPH	SPLP VOC	SPLP SVOC	Please Hold	Turn-around * ASAP * 24 hrs 48 hrs Standard	Remarks	LAB ONLY ID #
1	B11-1	1-21-98		5-6	/		/		9oz	G	/			1	/	/	/	/	/				1
2	B11-1	1-21-98		10-12	/		/				/			1	/	/	/	/	/				2
3	B11-2	1-21-98		5-7	/		/				/			1	/	/	/	/	/				3
4	B11-2	1-21-98		10-12	/		/				/			1	/	/	/	/	/				4
5	B11-3	1-21-98		5-7	/		/				/			1	/	/	/	/	/				5
6	B11-3	1-21-98		10-12	/		/				/			1	/	/	/	/	/				6
7	B11-4	1-21-98		5-7	/		/				/			1	/	/	/	/	/				7
8	B11-4	1-21-98		10-12	/		/				/			1	/	/	/	/	/				8
9	B11-5	1-21-98		5-7	/		/				/			1	/	/	/	/	/				9
10	B11-5	1-21-98		10-11	/		/				/			1	/	/	/	/	/				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:	1-24-98	11:11

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

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

* Pre-scheduling is recommended

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 # 180280-SA

Contractor: KEI Consultants
Phone: (210) 680-3767
Address: 5309 Wurzbach Suite 100 San Antonio, Tx 78238
Project Name:
Project Director: Mike Hawthorne
Project Location: Monument site II
Project Manager: Theresa Nix
Sampler Signature:
Project No.: 610057

No. coolers this shipment:
Carrier:
Airbill No.
Contractor COC #
Quote #:
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 (8020/8020-602)	TPH (418.1) 8015 DRO	SPLP TPH	SPLP VOC	SPLP SVOC	FOL	Moisture Content			Please Hold		LAB ONLY ID #
1	B11-6	1-21-98		5-7	/		/		9oz	G	/			1	/	/	/	/	/							1
2	B11-6			10-12	/		/				/			1	/	/	/	/	/							2
3	B11-7			5-7	/		/				/			1	/	/	/	/	/							3
4	B11-7			10-11.5	/		/				/			1	/	/	/	/	/							4
5	B11-8			5-7	/		/				/			1	/	/	/	/	/							5
6	B11-8			10-12	/		/				/			1	/	/	/	/	/							6
7	B11-9			10-12	/		/				/			1	/	/	/	/	/							7
8	B11-9			5-7	/		/				/			1	/	/	/	/	/							8
9	B11-4			5-6	/			/			/			1	/					/	/					9
10																										10

Turn-around
- ASAP
- 24 hrs
- 48 hrs
- Standard

Remarks

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

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

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

* Pre-scheduling is recommended

Precision Analytical Services

[redacted]	L	[redacted]			[redacted]		[redacted]		[redacted]	[redacted]		15	[redacted]	[redacted]		[redacted]		[redacted]		[redacted] DRG C[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
10695	L	07073			12	07	1956	FMT	NOT	19S	37E	15	130	19S	37E	15	0864	64		MAKIN DRG CO	0.00	0.00	0	
10696	L	03525			05	06	1957	FMT	OWD	19S	37E	15	320	19S	37E	15	0964	64		DENVER DRG CORP	0.00	0.00	0	
10697	L	03417			01	23	1957	FMT	OWD	19S	37E	15	330	19S	37E	15	0864	64		SHELRO DRG CO	0.00	0.00	0	
10698	L	02602			08	04	1954	FMT	OWD	19S	37E	16	110	19S	37E	16	0764	64		OSCAR BOURG DRG CO	0.00	0.00	0	
10699	L	03185			04	26	1956	FMT	OWD	19S	37E	16	240	19S	37E	16	0864	64		CARPER DRG CO	0.00	0.00	0	
10700	L	01975			02	10	1953	FMT	OWD	19S	37E	16	430	19S	37E	16	0764	64		O & W DRILLING CO	0.00	0.00	0	
10701	L	03223			06	20	1956	FMT	OWD	19S	37E	16	440	19S	37E	16	0864	64		MAKIN DRG CO	0.00	0.00	0	
10702	L	06933			04	12	1972	FMT	OWD	19S	37E	17	423	19S	37E	17	0672	64		GULF OIL CORP	0.00	0.00	0	
12791	L	10271 EXP	L	10271	07	07	1992	FMT	EXP SHA	19S	37E	18	11	19S	37E	18	0792	64		SNYDER RANCHES INC	0.00	0.00	0	THIS EXP WELL WILL BE U
SEE FOR COM AT WHEN APPL L-10,271 APPROVED																								
12915	L	10271	L	10271 EXP	07	07	1992	FMT	COM SHA	19S	37E	18	11	19S	37E	18	0792	64	M	SNYDER RANCHES INC	0.00	10.00	10	THIS WELL IS EXPLORATOR
Y WELL L-10,271-EXP																								
10703	L	02033			03	02	1953	LIC	MTU	19S	37E	18	1111	19S	37E	18	0764	64		SNYDER RANCHES LTD	0.00	17.00	14	
10704	L	01277			10	18	1951	FMT	NOT	19S	37E	18	241	19S	37E	18	0564	64		GULF OIL CORP	0.00	0.00	0	
10705	L	02515	L	02512	08	09	1954	LIC	PFP	19S	37E	18	3120	19S	36E	36	0266	64		WARREN PETRO CORP	0.00	102.87	103	
10706	L	00155	L	02512	08	09	1954	LIC	PFP	19S	37E	18	3310	20S	36E	01	0364	64		WARREN PETRO CORP	0.00	0.00	0	
10707	L	00157	L	02511	06	28	1945	LIC	PFP	19S	37E	18	3320	20S	36E	01	0266	64		WARREN PETRO CORP	0.00	93.75	94	
10708	L	00061	L	00062	04	23	1937	LIC	NOT	19S	37E	18	430	19S	37E	18	0364	64		TEXAS COMPANY THE	0.00	0.00	0	
10709	L	00062	L	00061	04	23	1937	LIC	NOT	19S	37E	18	440	19S	37E	18	0364	64		TEXAS COMPANY THE	0.00	0.00	0	
10710	L	00039	L	00041	08	26	1935	FMT	NOT	19S	37E	19	110	19S	37E	19	0364	64		HOLLAND L B	0.00	0.00	0	
10711	L	00040	L	00039	08	26	1935	FMT	NOT	19S	37E	19	110	19S	37E	19	0765	64		HOLLAND L B	0.00	0.00	0	
10712	L	00041	L	00039	08	26	1935	FMT	NOT	19S	37E	19	110	19S	37E	19	0765	64		HOLLAND L B	0.00	0.00	0	
10713	L	04313			10	23	1959	FMT	OWD	19S	37E	19	110	19S	37E	19	0964	64		MCVAY & STAFFORD	0.00	0.00	0	
10714	L	01259			10	16	1951	FMT	DOM	19S	37E	19	121	19S	37E	19	0564	64		GULF OIL CORP	0.00	3.00	0	
10715	L	00042	L	00044	08	26	1935	FMT	NOT	19S	37E	19	130	19S	37E	19	0364	64		HOLLAND L B	0.00	0.00	0	
10716	L	00043	L	00039	08	26	1935	FMT	NOT	19S	37E	19	130	19S	37E	19	0765	64		HOLLAND L B	0.00	0.00	0	
10717	L	00044	L	00039	08	26	1935	FMT	NOT	19S	37E	19	130	19S	37E	19	0765	64		HOLLAND L B	0.00	0.00	0	
10718	L	01246			10	18	1951	FMT	NOT	19S	37E	19	131	19S	37E	19	0564	64		GULF OIL CORP	0.00	0.00	0	
10719	L	01251			10	13	1951	FMT	OWD	19S	37E	19	132	19S	37E	19	0765	64		GULF OIL CORP	0.00	0.00	0	
10720	L	05433			07	15	1954	CAN	NOT	19S	37E	19	140	19S	37E	19	0775	64		GULF OIL CORP	0.00	0.00	0	
10721	L	06822	Monument Site No. 10, 11		06	17	1971	CAN	NOT	19S	37E	19	310	19S	37E	19	0672	64		REPUBLIC FACTORS	0.00	0.00	0	
[illegible]	L	[illegible]			05	14	1992	FMT	EXP SHA	19S	37E	19	10000	19S	37E	19	0892	64		SNYDER RANCHES INC	0.00	3.00	0	
[illegible]																				[illegible]	0.00	0.00	0	

[redacted]	L	[redacted]	S	[redacted]	[redacted]	A	02	24	1965	LIC	IRR	SAN	19S	37E	28	[redacted]	19S	37E	28	0695	64	COOPER JIMMIE T ET AL	0.00	0.00	0
10750	L	04104					04	06	1959	PMT	DOM		19S	37E	29	444	19S	37E	28	0964	64	BYRD N A	0.00	3.00	0
10751	L	05790					10	25	1965	CAN	NOT		19S	37E	29	000	19S	37E	29	0566	64	MONUMENT WATER	0.00	0.00	0
10752	L	03955					08	05	1958	PMT	DOM		19S	37E	29	019	19S	37E	29	0964	64	SMITH DENNIS L	0.00	3.00	0
10753	L	03922					07	14	1958	PMT	DOM		19S	37E	29	020	19S	37E	29	0964	64	DICKERSON LEON	0.00	3.00	0
10754	L	03949					07	31	1958	PMT	DOM		19S	37E	29	029	19S	37E	29	0964	64	WHEELER ROY L	0.00	3.00	0
10755	L	03976					08	20	1958	PMT	DOM		19S	37E	29	048	19S	37E	29	0964	64	COOPER JIMMY T	0.00	3.00	0
10756	L	01251					10	18	1951	PMT	NOT		19S	37E	29	114	19S	37E	29	0564	64	GULF OIL CORP	0.00	0.00	0
10757	L	06496					03	24	1968	PMT	DOM		19S	37E	29	300	19S	37E	29	0569	64	GROVE O E	0.00	3.00	0
10758	L	02346					07	28	1954	PMT	OWD		19S	37E	29	320	19S	37E	29	0764	64	MARIN DRILLING CO	0.00	0.00	0
10759	L	05545					01	31	1965	PMT	DOM		19S	37E	29	343	19S	37E	29	0365	64	HARSHBARGER TED	0.00	3.00	0
10760	L	04887	L	05314			04	20	1962	PMT	DOM		19S	37E	29	344	19S	37E	29	1064	64	HOBBS MUN SCHOOLS	0.00	3.00	0
10761	L	05222	L	04887			06	19	1963	CAN	NOT		19S	37E	29	344+	19S	37E	29	0765	64	HOBBS MUN SCHOOLS	0.00	0.00	0
11984	L	06633					02	28	1965	PMT	OWD		19S	37E	29	41	19S	37E	29	0285	64	ROBINETT L L	0.00	3.00	0
11985	L	06632					02	28	1965	PMT	OWD		19S	37E	29	41	19S	37E	29	0285	64	ROBINETT L L	0.00	3.00	0
11986	L	06631					02	28	1965	PMT	OWD		19S	37E	29	41	19S	37E	29	0285	64	ROBINETT L L	0.00	3.00	0
10762	L	01252					10	18	1951	PMT	NOT		19S	37E	29	431	19S	37E	29	0564	64	GULF OIL CORP	0.00	0.00	0
10763	L	05314	L	04887			12	27	1963	LIC	MTU		19S	37E	29	431	19S	37E	29	1164	64	HOBBS MUN SCHOOLS	6.10	18.30	15
10764	L	04799					02	03	1962	PMT	DOM		19S	37E	29	440	19S	37E	29	1064	64	WHITAKER W V	0.00	3.00	0
10765	L	05511	I	L	05811		04	29	1965	PMT	MUN		19S	37E	29	440	19S	37E	32	0765	64	MONUMENT WATER USERS COOP	0.00	40.00	34
10766	L	05590					11	16	1964	PMT	DOM		19S	37E	29	442	19S	37E	29	0365	64	FIRST BAPTIST CH	0.00	3.00	0
10767	L	03905					06	30	1958	PMT	DOM		19S	37E	30	440	19S	37E	30	0964	64	LONGNECKER LILLIE	0.00	3.00	0
10768	L	03906					06	30	1958	PMT	DOM		19S	37E	30	440	19S	37E	30	0964	64	SHORT ROBERT P III	0.00	3.00	0
10769	L	03936					07	23	1958	PMT	DOM		19S	37E	30	440	19S	37E	30	0964	64	MCKNIGHT JOY DEE	0.00	3.00	0
10770	L	03954					08	05	1958	PMT	DOM		19S	37E	30	440	19S	37E	30	0964	64	LITTLE K W	0.00	3.00	0
10771	L	03995					09	15	1958	PMT	DOM		19S	37E	30	440	19S	37E	30	0964	64	COFFELAND W E	0.00	3.00	0
10772	L	04720					09	22	1961	WDN	NOT		19S	37E	30	440	19S	37E	30	0765	64	CLIMAX CHEMICAL CO	0.00	0.00	0
10773	L	03917					05	30	1958	PMT	DOM		19S	37E	30	442	19S	37E	30	0864	64	NILE J H	0.00	3.00	0
10774	L	05995					07	27	1966	PMT	DOM		19S	37E	30	442	19S	37E	30	1068	64	STEPHENS H L	0.00	3.00	0
10775	L	03815					03	14	1958	PMT	DOM		19S	37E	31	111	19S	37E	31	0964	64	BYRD W C	0.00	3.00	0
[redacted]																									
[redacted]																						GULF OIL CORP	0.00	3.00	0

Monument Site No. 10, 11

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 a direct-push sampling device. Representative soil samples were divided into two 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 TPH-DRO, BTEX, SPLP VOC, SPLP SVOC, SPLP TPH, moisture content, and FOC analyses using the methods described below. Soil samples were analyzed for BTEX, TPH, SPLP VOC, SPLP SVOC, and SPLP TPH within 14 days following the collection date.

The soil samples were analyzed for TPH concentrations in accordance with modified EPA Method 8015 DRO, for BTEX concentrations in accordance with EPA Method SW846-8020, for SPLP VOC concentrations using EPA Method 1312/8260, for SPLP SVOC concentrations using EPA Method 1312/8270, for SPLP TPH using EPA Method 1312/418.1, for moisture content using ASTM 2216-71, and for FOC concentration using ASTM D2974.

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.