1R - 299

REPORTS

DATE:

4/17/2006

IR0299

2006 APR 14 AM 11 09

Mr. Glen Von Gonten
Case Coordinator
New Mexico Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

Shell Oil Products US
HSE Science & Engineering
P.O. Box 1087
Huffman, TX. 77336
Tel (281) 324 5921
Fax (281) 324 5934
Email Kenneth.springer@shell.com

April 17, 2006

Re: 2005 Annual Groundwater Monitoring and Sampling Report
Shell Oil Products US
Penrose 'A" (Winnie Kennan Ranch)
Lea County, New Mexico

Dear Mr. Von Gonten,

The attached report documents our annual groundwater monitoring program conducted at the above referenced Site. Data included in this report was collected during four quarterly sampling events conducted in 2005. As indicated in the 2005 Annual Report, the LNAPL plume appears to be stable with no outlying dissolved plume away from the source. As such, Shell requests reducing sampling to semi-annually and eliminating PAH analysis from future sampling.

Should you have any questions, please contact me at (281) 324-5921 or by email at kenneth.springer@shell.com.

Sincerely,

SHELL OIL PRODUCTS US

K. R. Springer

Mr. K.R. Springer
Staff Project Manager
SHE/Science & Engineering

Attachments (1)

cc: Jeff Kindley — Conestoga-Rovers & Associates - Midland
Paul Sheeley — NMOCD – Hobbs

1R0299

2005 ANNUAL GROUNDWATER MONITORING AND SAMPLING REPORT

PENROSE 'A' LEASE (WINNIE KENNAN RANCH)
LEA COUNTY, NEW MEXICO
INCIDENT NUMBER 300108

2005 ANNUAL GROUNDWATER MONITORING AND SAMPLING REPORT

PENROSE 'A' LEASE (WINNIE KENNAN RANCH)
LEA COUNTY, NEW MEXICO
INCIDENT NUMBER 300108

Prepared For:

MR. KENNETH SPRINGER
SHELL OIL PRODUCTS US
P.O. BOX 1087
HUFFMAN, TEXAS 77336

Prepared by:
Conestoga-Rovers & Associates

2135 S. Loop 250 West
Midland, Texas 79703

Office: (432) 686-0086
Fax: (432) 686-0186

web: http:\\www.CRAworld.com

APRIL 2006
REF. NO. 044041 (1)

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF FIGURES (CONT.)

LIST OF TABLES

LIST OF APPENDICES

1.0 INTRODUCTION

This annual report has been prepared to document the results of groundwater monitoring, sampling and remediation activities conducted during 2005 at the Penrose 'A' Lease (Winnie Kennan Ranch) located approximately 7 miles southeast of Eunice, off New Mexico State Highway 18, in Lea County, New Mexico (FIGURE 1).

This report complies with the New Mexico Oil Conservation Division (NMOCD) requirements and addresses all activities performed during the annual period of 2005. Quarterly groundwater monitoring and sampling events were performed to further evaluate the nature and extent of petroleum hydrocarbon constituents benzene, toluene, ethylbenzene, and total xylenes (BTEX) and polycyclic aromatic hydrocarbons (PAH) in groundwater. The sampling events were performed on January 25, April 25, September 1, and October 25, 2005. In addition, maintenance of the onsite remediation and light non-aqueous phase liquid (LNAPL) abatement activities were performed monthly throughout 2005.

2.0 CHRONOLOGY OF EVENTS

A summary of significant events and activities performed at the site is presented below.

March 2000	Shell and Enercon perform a site walk of the property in an area of historic crude oil releases of an unknown amount.
October to November 2000	Enercon was onsite to excavate approximately 10,800 cubic yards of soil, which were transported and landfarmed offsite. The site was excavated to a depth of 40 feet below ground surface (bgs) with TPH exceeding NMOCD standards at that depth. The NMOCD agreed with Shell that for safety purposes further excavation should be halted.
May 2001	Enercon submits the excavation report to the NMOCD.
November 2001	NMOCD requests installation of a soil boring/monitor well in center of excavation to determine amount of remaining hydrocarbon impacts to the soils/groundwater.
January 2002	Enercon is onsite to advance one soil boring within the excavation from a depth of 40 feet bgs to groundwater located at approximately 75 feet bgs. The soil boring was converted to temporary monitor well TMW-1. Soils exceeded NMOCD standards of 1,000 milligrams per kilogram (mg/Kg) TPH. LNAPL in the form of crude oil was measured in TMW-1.
April 2002	Enercon submits *Workplan for Soil Remediation and Monitor Well Installation* to NMOCD. Workplan includes installation of clay liner over remaining hydrocarbon impacted soils.
May 2002	Enercon submits *Report Detailing the Installation of Temporary Monitor Well TMW-1* to NMOCD.
April 2004	NMOCD agrees to work plan design and installation of additional monitor wells to delineate site groundwater impacts.
June 2004	Enercon places a 4-foot clay liner above remaining hydrocarbon impacted soils and backfills excavation with soils from surrounding sand dunes. Temporary monitor well TMW-1 is converted to monitor well MW-1.
July 2004	Enercon advances four soil borings to approximately 80-feet bgs and converts soil borings to monitor wells (MW-2 through MW-5). Monthly LNAPL recovery of MW-1 initiated.
November 2004	Enercon submits *Phase II Backfilling Activities with Site Groundwater/Soil Characterization* to NMOCD.
March 2005	Enercon submits *2004 Annual Groundwater Monitoring Report* to NMOCD.

September 2005	Enercon installs one Clean Environments CEE© Product Only Pump in monitor well MW-1submits *2001 Comprehensive Site Activity Report* to RRC.
January 2006	Site maintenance and environmental management of property transitioned from Enercon to Conestoga-Rovers and Associates (CRA).

3.0 2005 GROUNDWATER MONITORING AND SAMPLING ACTIVITIES

3.1 FIELD PROCEDURES

Groundwater sampling events were performed on January 25, April 25, September 1, and October 25, 2005. Monitor well locations and site details are illustrated on the aerial photograph in FIGURE 2. Prior to sampling, fluid levels were measured in each well. Wells that did not contain measurable LNAPL (less than 0.01 feet) were purged of approximately three well volumes of groundwater or to dryness. After purging, samples were collected from each well with a new disposable Teflon® bailer. The samples were transferred directly from the bailer into laboratory supplied containers. The samples were then placed into coolers and chilled with ice. Purged water collected during each event was stored in several 55-gallon drums located on site.

3.2 GROUNDWATER GAUGING DATA

During 2005, depth to groundwater across the site ranged from 70.09 feet to 73.01 feet below the top of the casing, with an average groundwater gradient of approximately 0.002625 ft/ft to the south. These observations are consistent with historical data collected at the site. Average groundwater elevations at the site, adjusted for LNAPL, during the January, April, September, and October 2005 sampling events were 3,226.64 feet, 3,226.72 feet, 3,226.72 feet and 3,226.68 feet above mean sea level, respectively. This data indicates that average depth to groundwater at the site fluctuated by a maximum 0.08 feet across the site throughout the year. Groundwater gradient maps for the January, April, September, and October 2005 sampling events are illustrated on FIGURES 3 through 6, respectively. Groundwater gauging data is summarized in TABLE I.

3.3 ANALYTICAL RESULTS

Groundwater samples were analyzed by Trace Analysis, Inc, of Lubbock, Texas for BTEX concentrations by Environmental Protection Agency (EPA) Method SW846-8021B and polynuclear aromatic hydrocarbons (PAH) concentrations by EPA Method 8270C.

During the 2005 reporting period, dissolved-phase concentrations of BTEX and PAH's were below detection limits in all sampled wells. This is consistent with historical analytical data.

The BTEX and PAH analytical results are summarized in TABLES II and III and on FIGURES 7 through 10. Copies of the certified laboratory reports and chain-of-custody documentation are presented in APPENDIX A.

4.0 LNAPL RECOVERY ACTIVITIES

During the 2005 monitoring period, measurable LNAPL in the form of crude oil was present in monitor well MW-1 with an average thickness of 1.79 feet. Historically, the LNAPL thickness has averaged 2.47 feet in MW-1. This is a decrease of 0.68 feet for 2005. LNAPL thickness maps for January, April, September, and October 2005 are illustrated on FIGURES 9 through 12, respectively. During 2005, monthly LNAPL abatement activities were performed by hand bailing of monitor well MW-1 from January through August and by a Clean Environments CEE© Product Only Pump installed in September and operated through early November. The product only pump, which is operated by a carbon dioxide cylinder, was shut down in early November and remained off the rest of the year due to transference of the site from Enercon to CRA. LNAPL recovery from the onsite remediation system is summarized on TABLE I. As of December 31, 2005, an approximate total of 18.5 gallons of LNAPL have been recovered at the site. Of this, approximately 11.50 gallons of LNAPL have been recovered by hand bailing, and 7 gallons by the onsite remediation system. Recovered LNAPL is stored in a 55-gallon steel drum within a fiberglass secondary containment adjacent to monitor well MW-1. Compared to historical data, the measured LNAPL thickness at the site has decreased throughout 2005.

5.0 SUMMARY OF FINDINGS

Key findings based on the assessment/remediation activities conducted during 2005 are presented below:

- The groundwater gradient remains relatively constant at approximately 0.002625 ft/ft to the south.
- LNAPL was present throughout the year in monitor well MW-1 with an average thickness of 1.79 feet.
- The dissolved-phase concentrations of BTEX and PAH were below detection limits in all sampled wells during the year.
- A CEE© Product Only Pump was installed in monitor well MW-1 in September to enhance recovery of LNAPL.

All of Which is Respectfully Submitted,
Conestoga-Rovers & Associates

Jeffrey Kindley, P.G.
Project Manager

Thomas C. Larson, P.G.
Operations Manager

RATTLESNAKE CANYON QUADRANGLE
NEW MEXICO

LAT= 32° 19' 35.51" N
LONG=103° 08' 54.21" W

PHOTOREVISED 1977

USGS MAP SERIES 1:24000

0 1/2 1 2
(Miles)

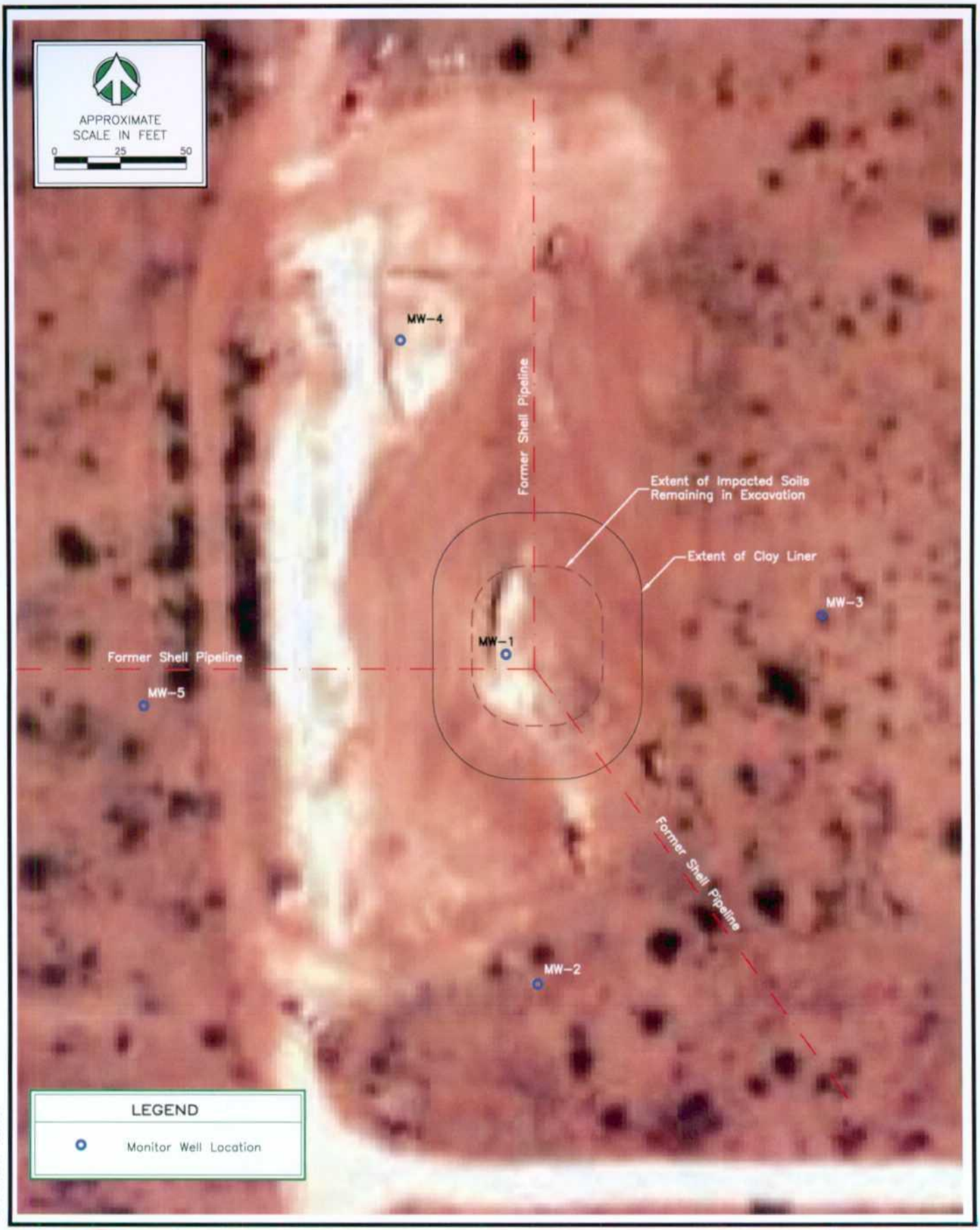
0 2000 4000 6000 8000
(Feet)

CONTOUR INTERVAL 10 FEET

NORTH

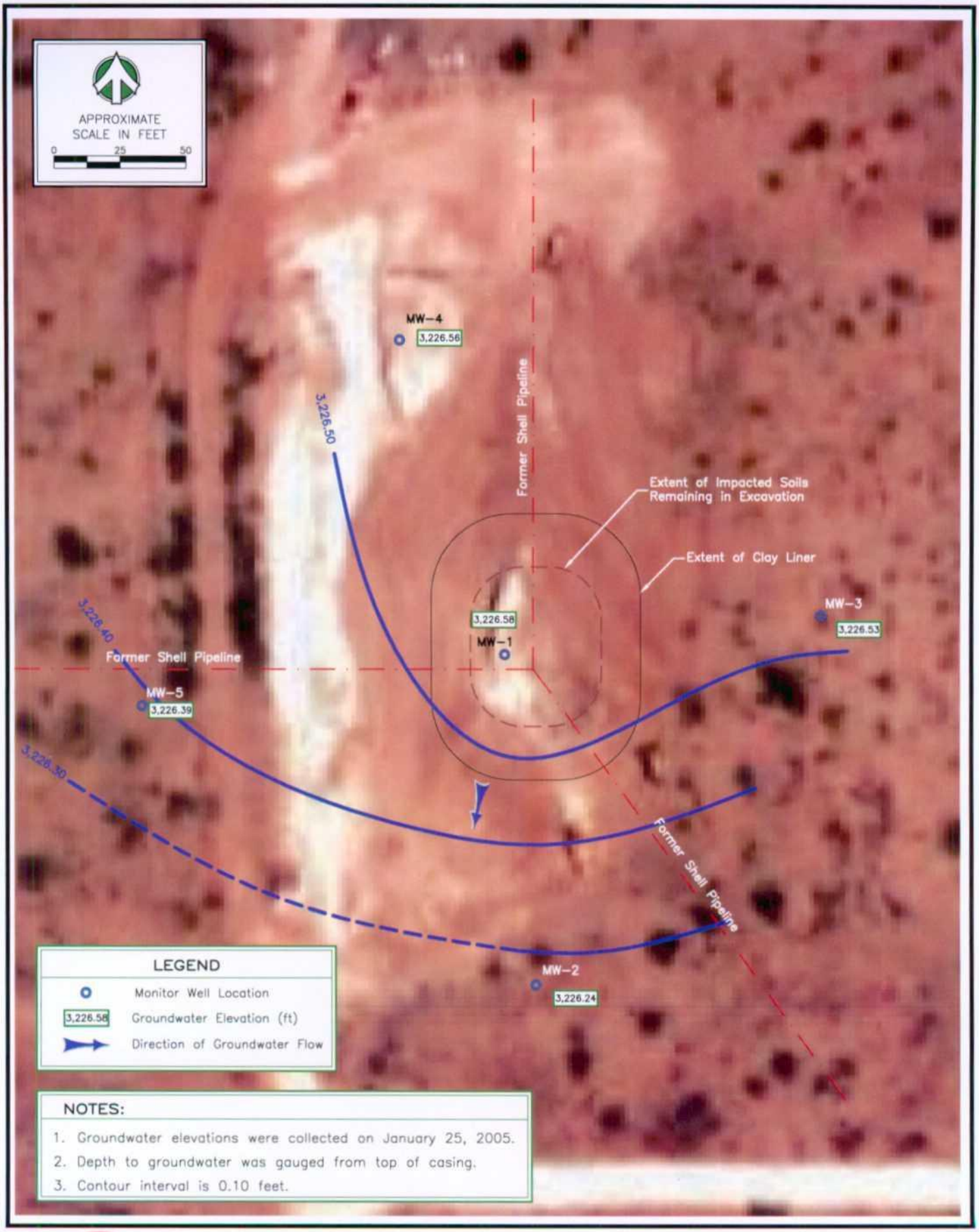
044041 SLR 030806

SITE LOCATION MAP	JOB No. 044041
SHELL OIL PRODUCTS US PENROSE "A" LEASE (WINNIE KENNAN RANCH) LEA CO., NEW MEXICO	FIGURE 1



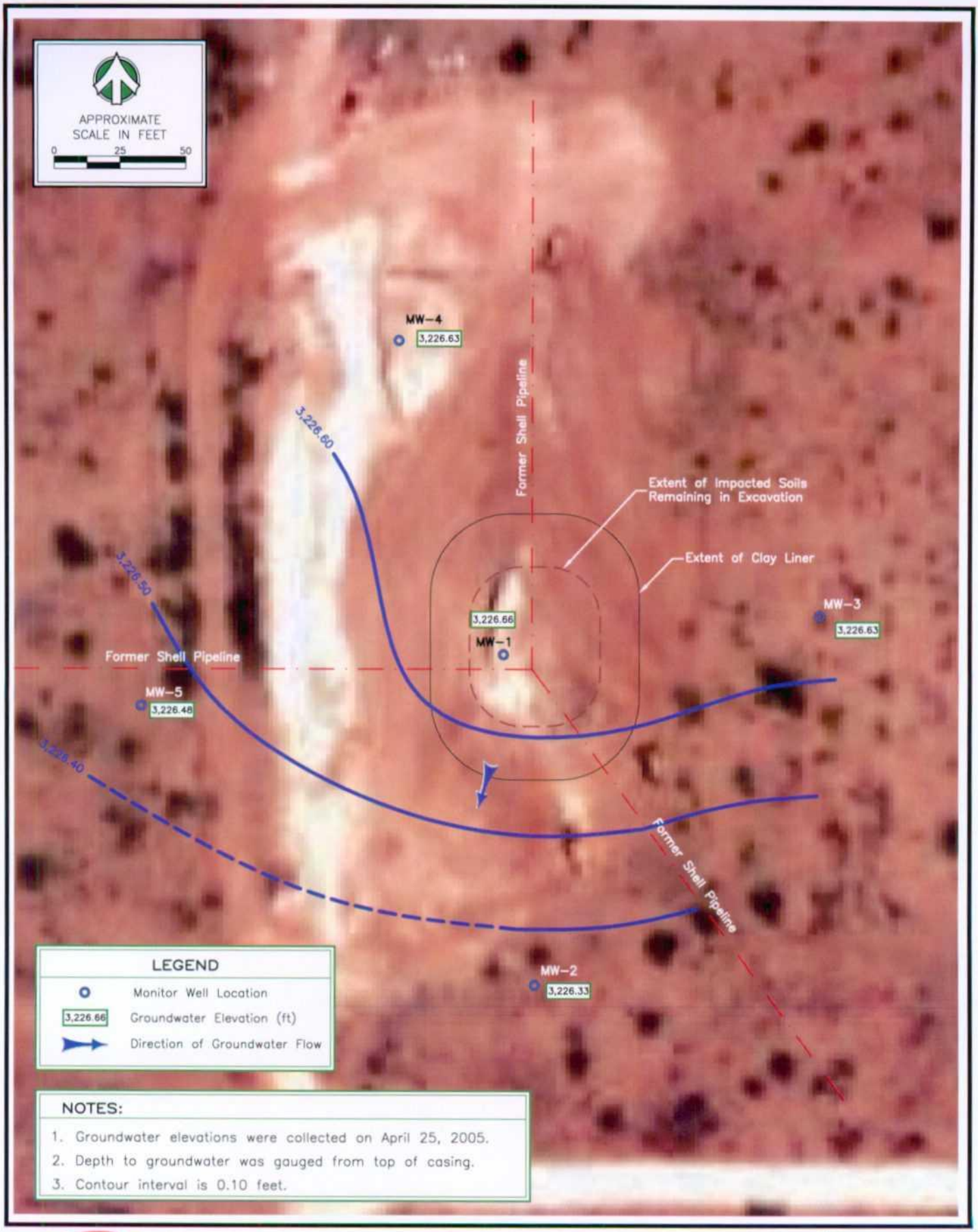
044041 SLR 032906

SITE DETAILS	JOB No. 044041
SHELL OIL PRODUCTS US PENROSE "A" LEASE (WINNIE KENNAN RANCH) LEA CO., NEW MEXICO	FIGURE 2



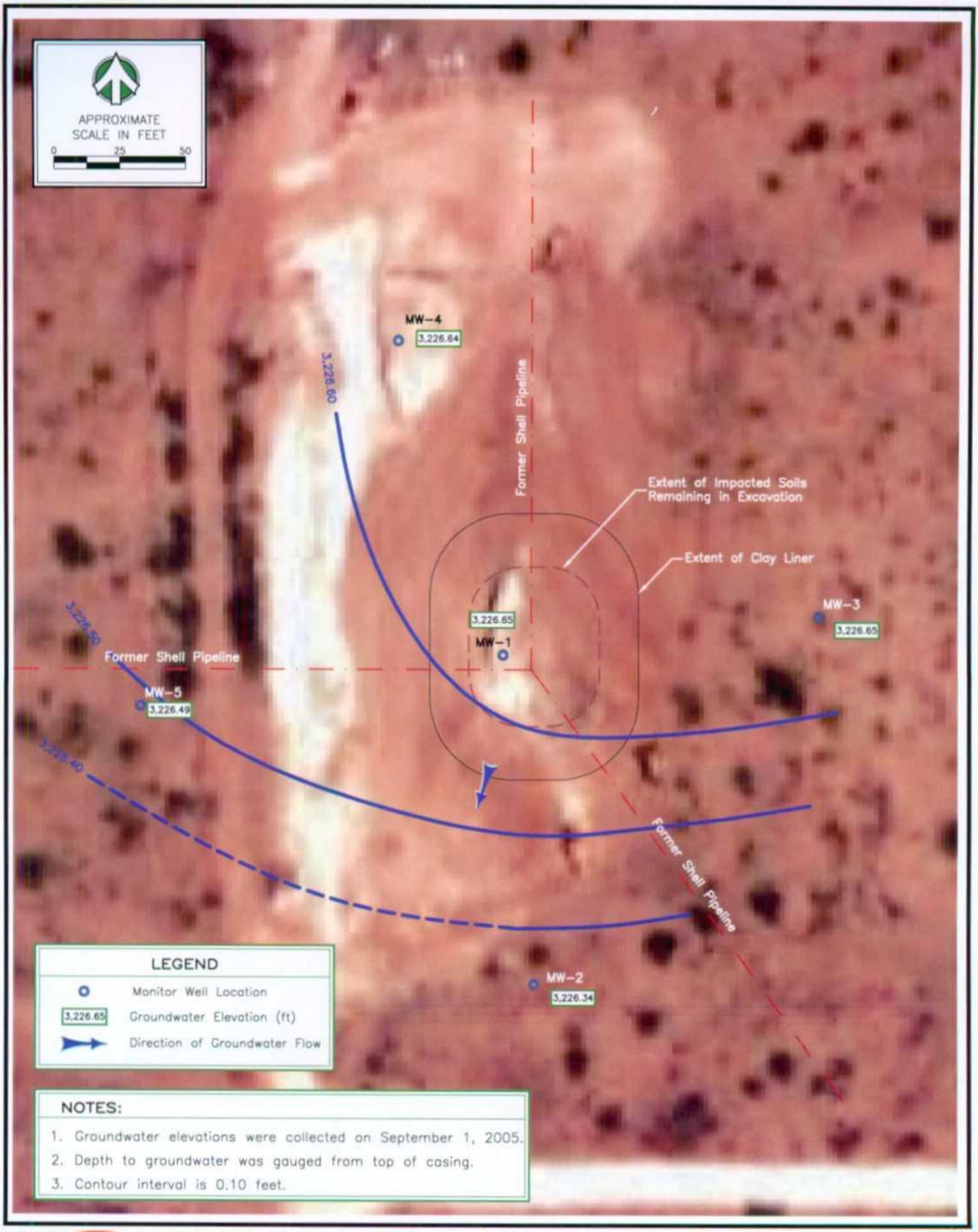
044041 SLR 032906

	GROUNDWATER GRADIENT MAP – JANUARY 2005	JOB No. 044041
	SHELL OIL PRODUCTS US PENROSE "A" LEASE (WINNIE KENNAN RANCH) LEA CO., NEW MEXICO	FIGURE 3



044041 SLR 032906

	GROUNDWATER GRADIENT MAP – APRIL 2005	JOB No. 044041
	SHELL OIL PRODUCTS US PENROSE "A" LEASE (WINNIE KENNAN RANCH) LEA CO., NEW MEXICO	FIGURE 4



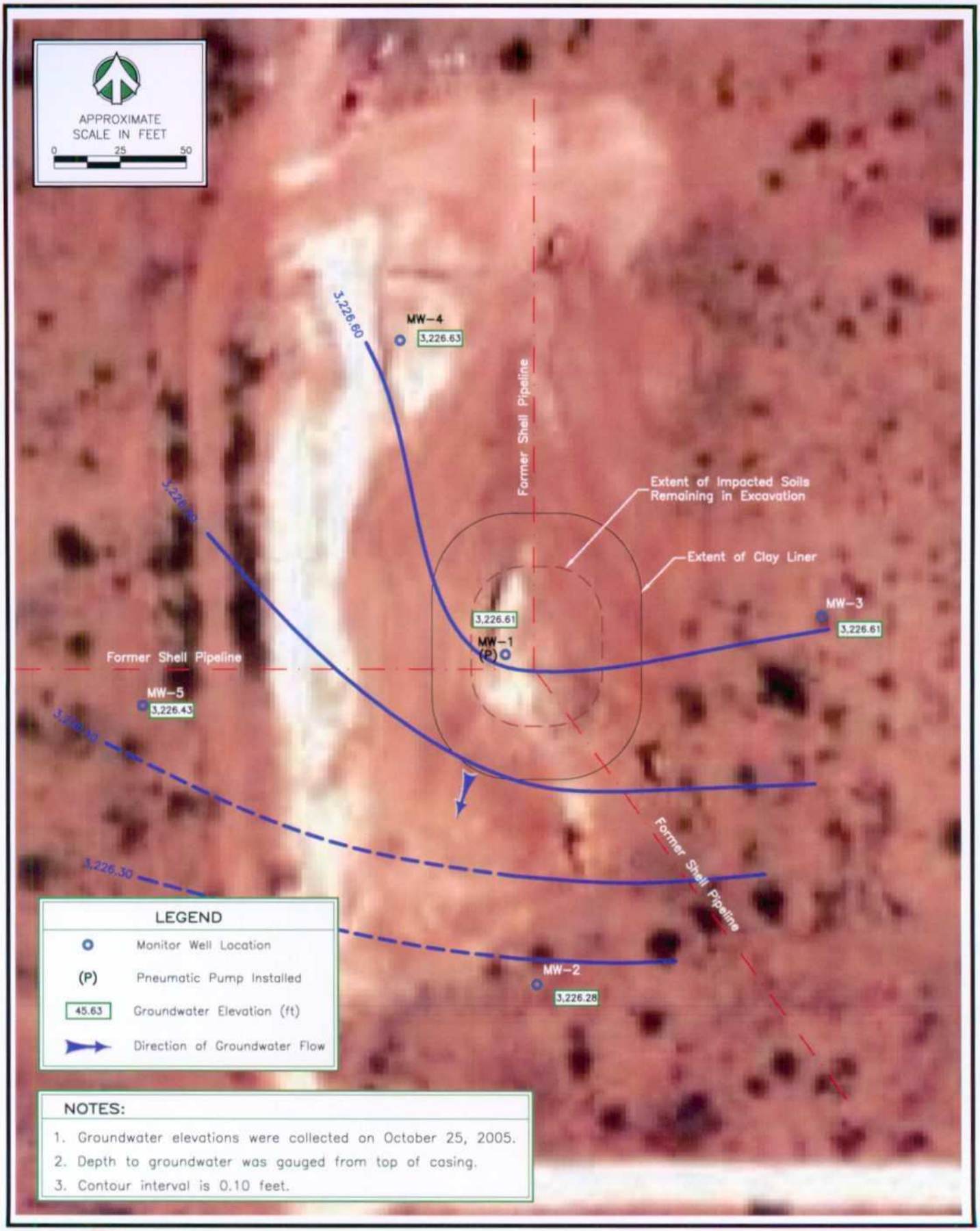
044041 SLR 032906

GROUNDWATER GRADIENT MAP – SEPTEMBER 2005

SHELL OIL PRODUCTS US
PENROSE "A" LEASE (WINNIE KENNAN RANCH) LEA CO., NEW MEXICO

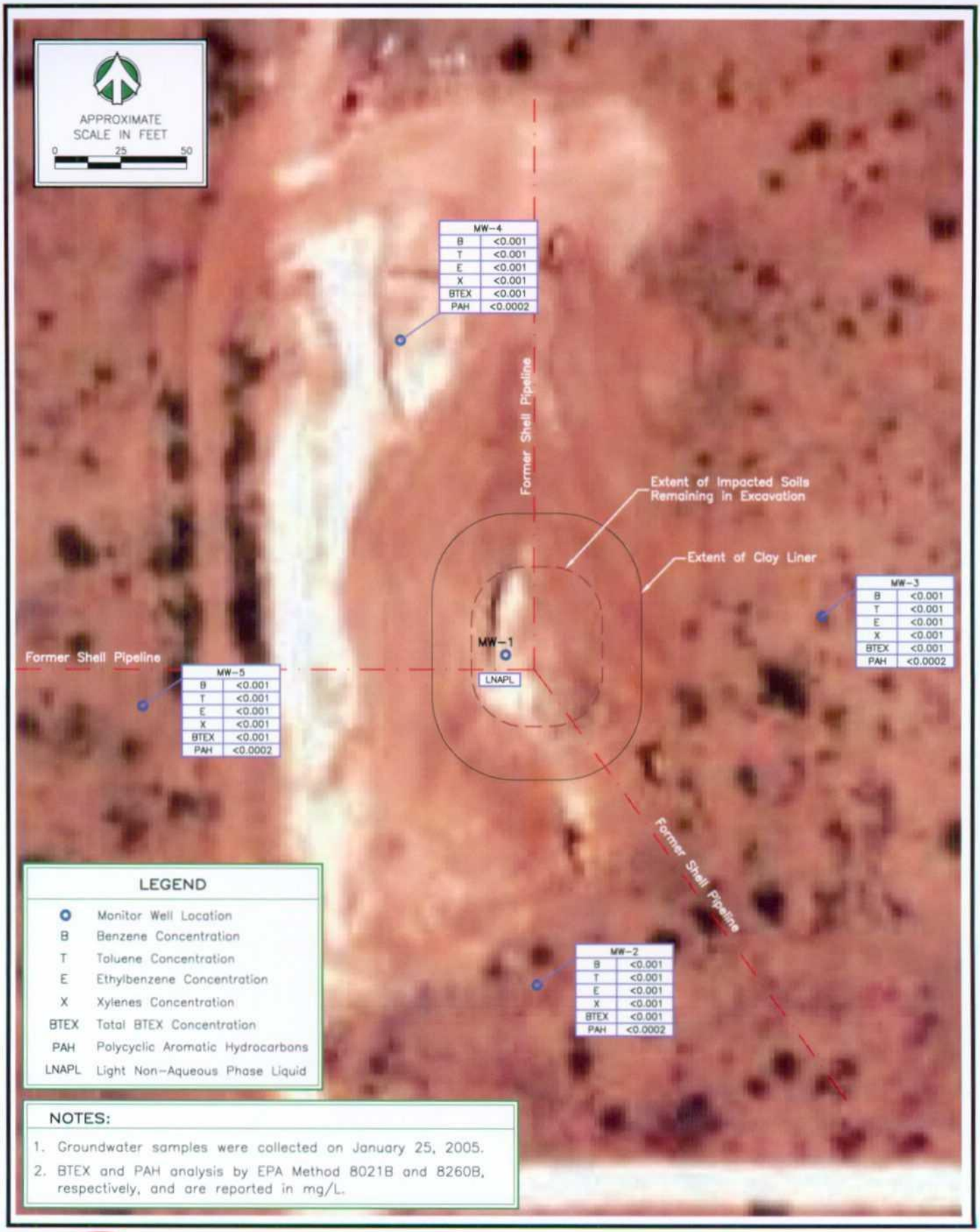
JOB No. 044041

FIGURE 5



044041 SLR 032906

GROUNDWATER GRADIENT MAP – OCTOBER 2005	JOB No. 044041
SHELL OIL PRODUCTS US PENROSE "A" LEASE (WINNIE KENNAN RANCH) LEA CO., NEW MEXICO	FIGURE 6

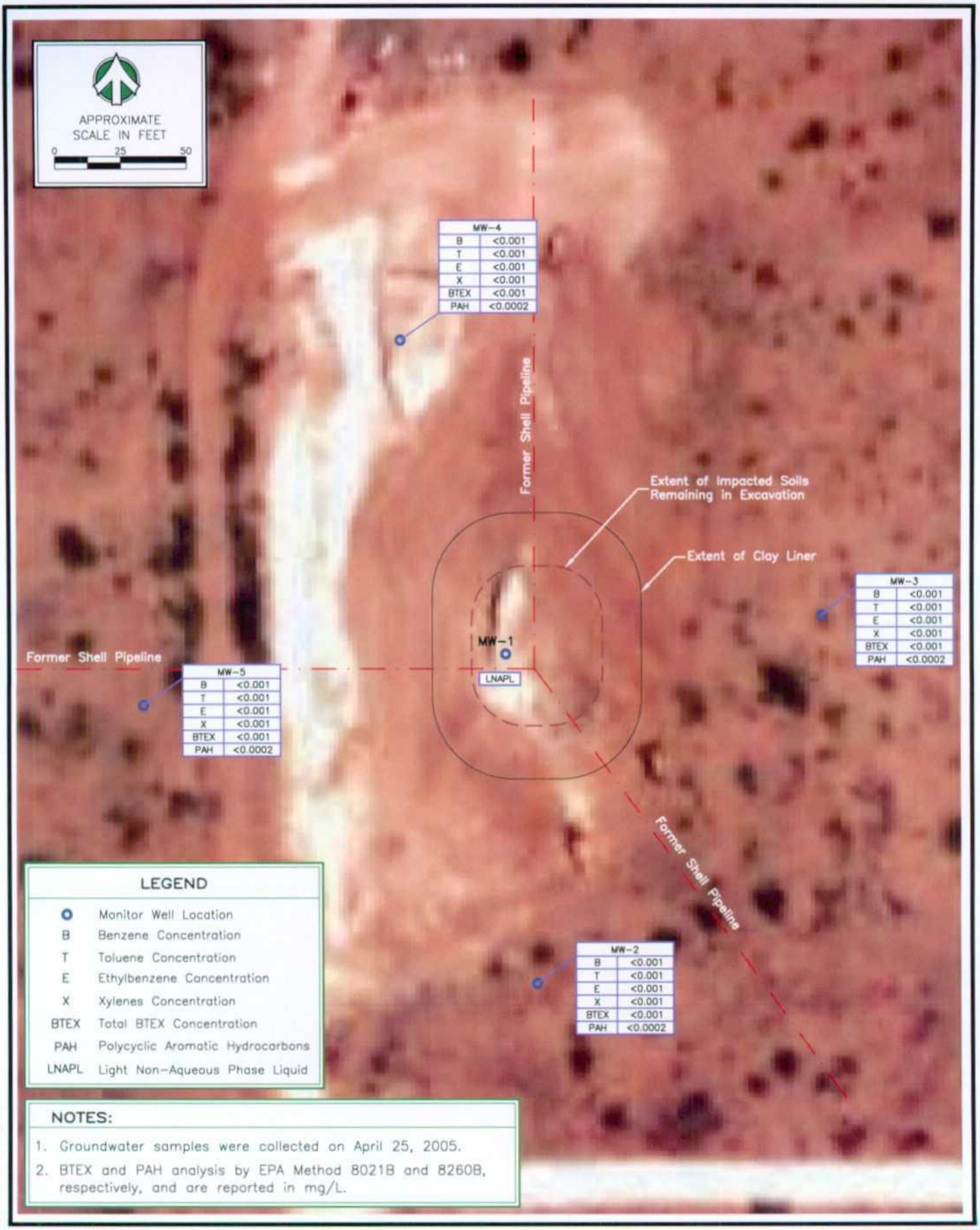


044041 SLR 032906

GROUNDWATER BTEX AND PAH
ANALYTICAL RESULTS – JANUARY 2005
SHELL OIL PRODUCTS US
PENROSE "A" LEASE (WINNIE KENNAN RANCH) LEA CO., NEW MEXICO

JOB No. 044041

FIGURE 7



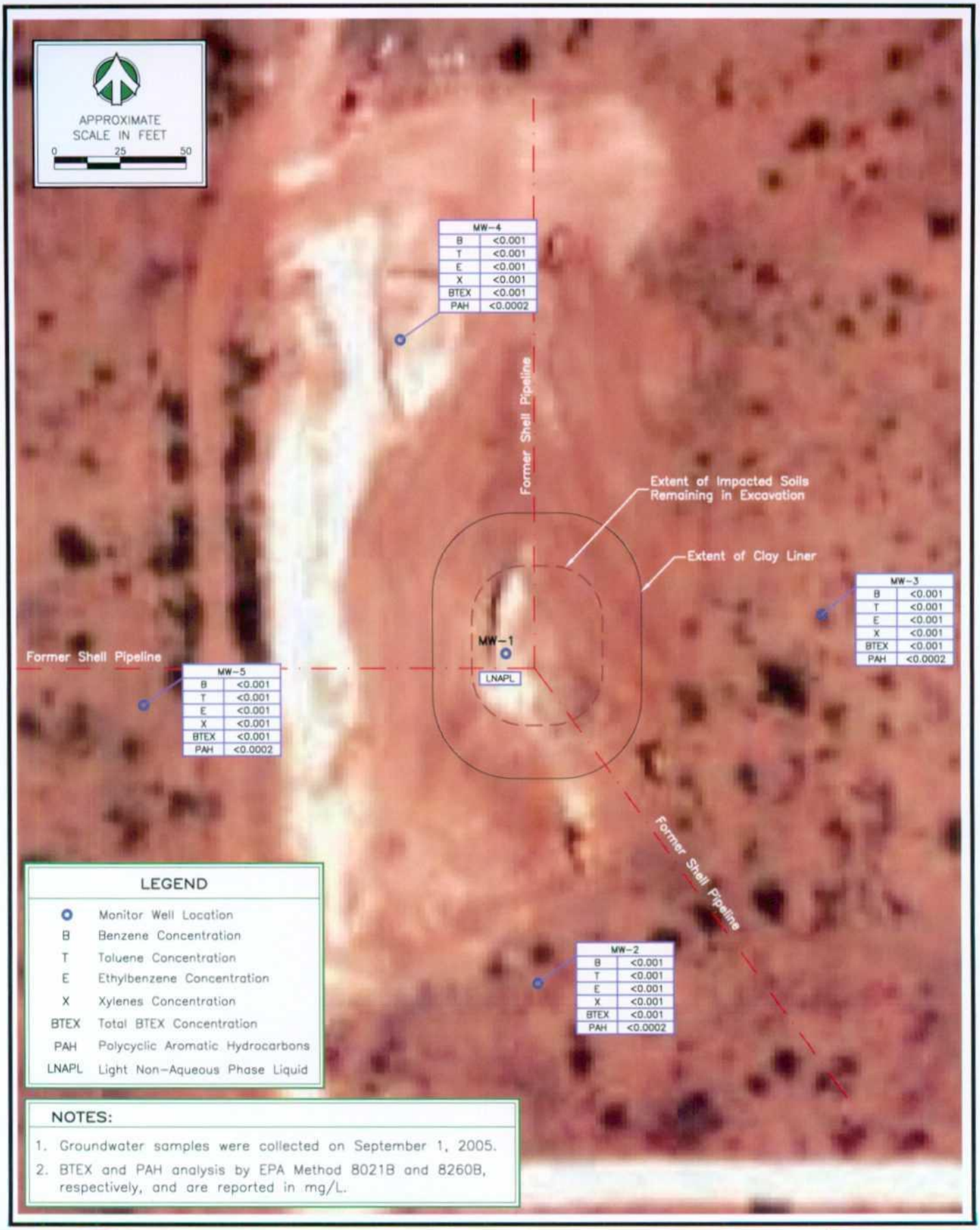
044041 SLR 032906

GROUNDWATER BTEX AND PAH
ANALYTICAL RESULTS – APRIL 2005

SHELL OIL PRODUCTS US
PENROSE "A" LEASE (WINNIE KENNAN RANCH) LEA CO., NEW MEXICO

JOB No.
044041

FIGURE
8



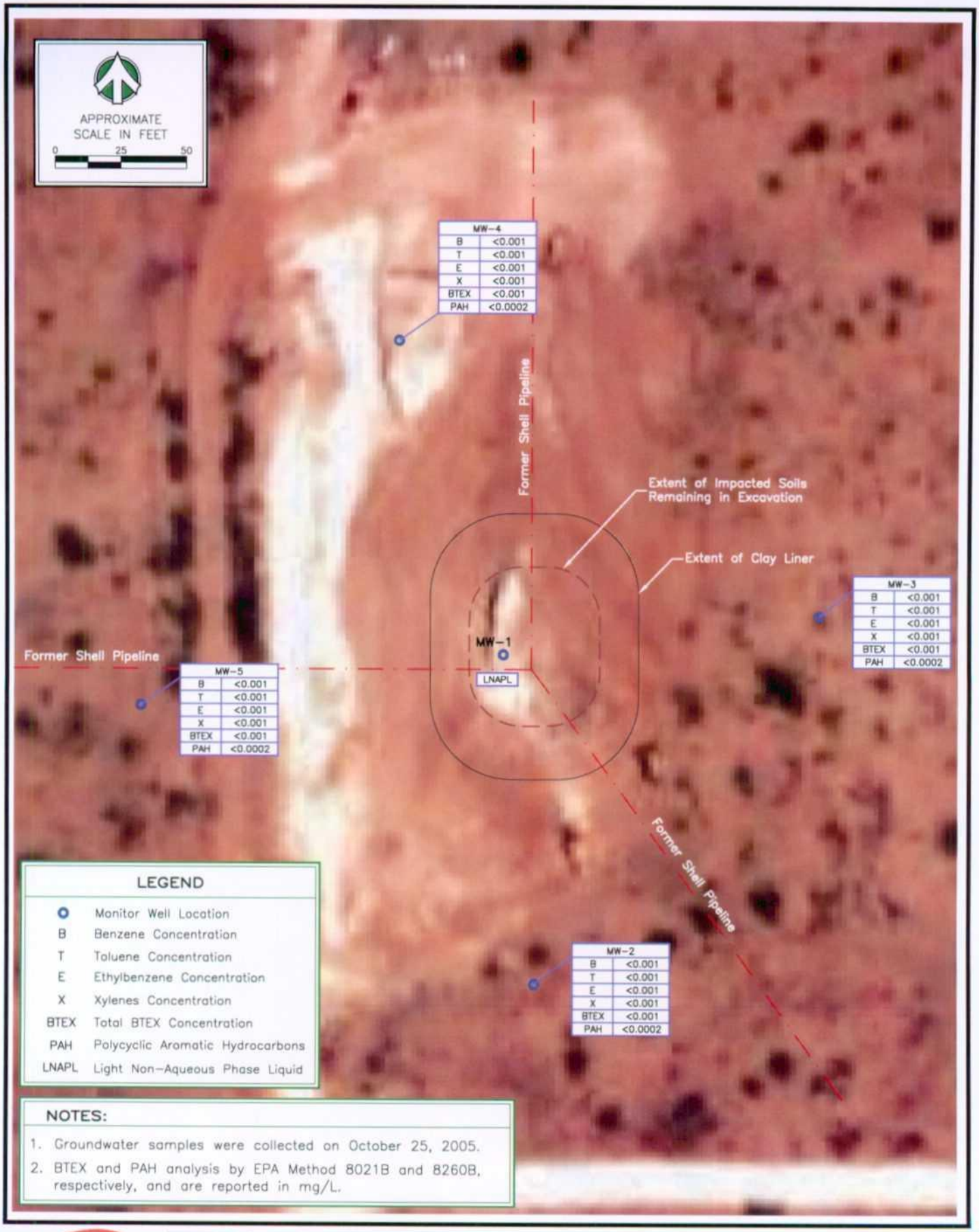
044041 SLR 032906

GROUNDWATER BTEX AND PAH
ANALYTICAL RESULTS – SEPTEMBER 2005

SHELL OIL PRODUCTS US
PENROSE "A" LEASE (WINNIE KENNAN RANCH) LEA CO., NEW MEXICO

JOB No.
044041

FIGURE
9



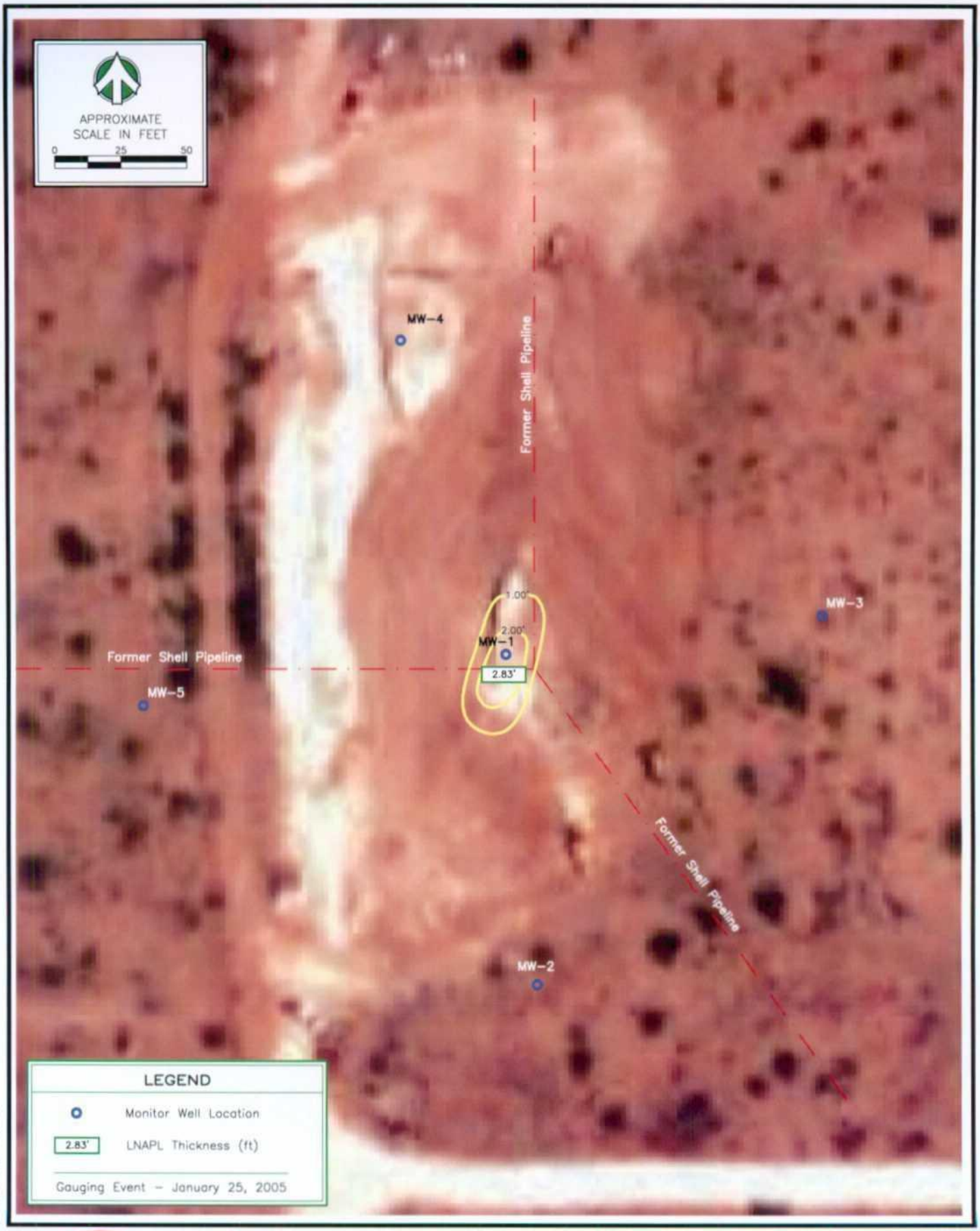
044041 SLR 032906

GROUNDWATER BTEX AND PAH
ANALYTICAL RESULTS – OCTOBER 2005

SHELL OIL PRODUCTS US
PENROSE "A" LEASE (WINNIE KENNAN RANCH) LEA CO., NEW MEXICO

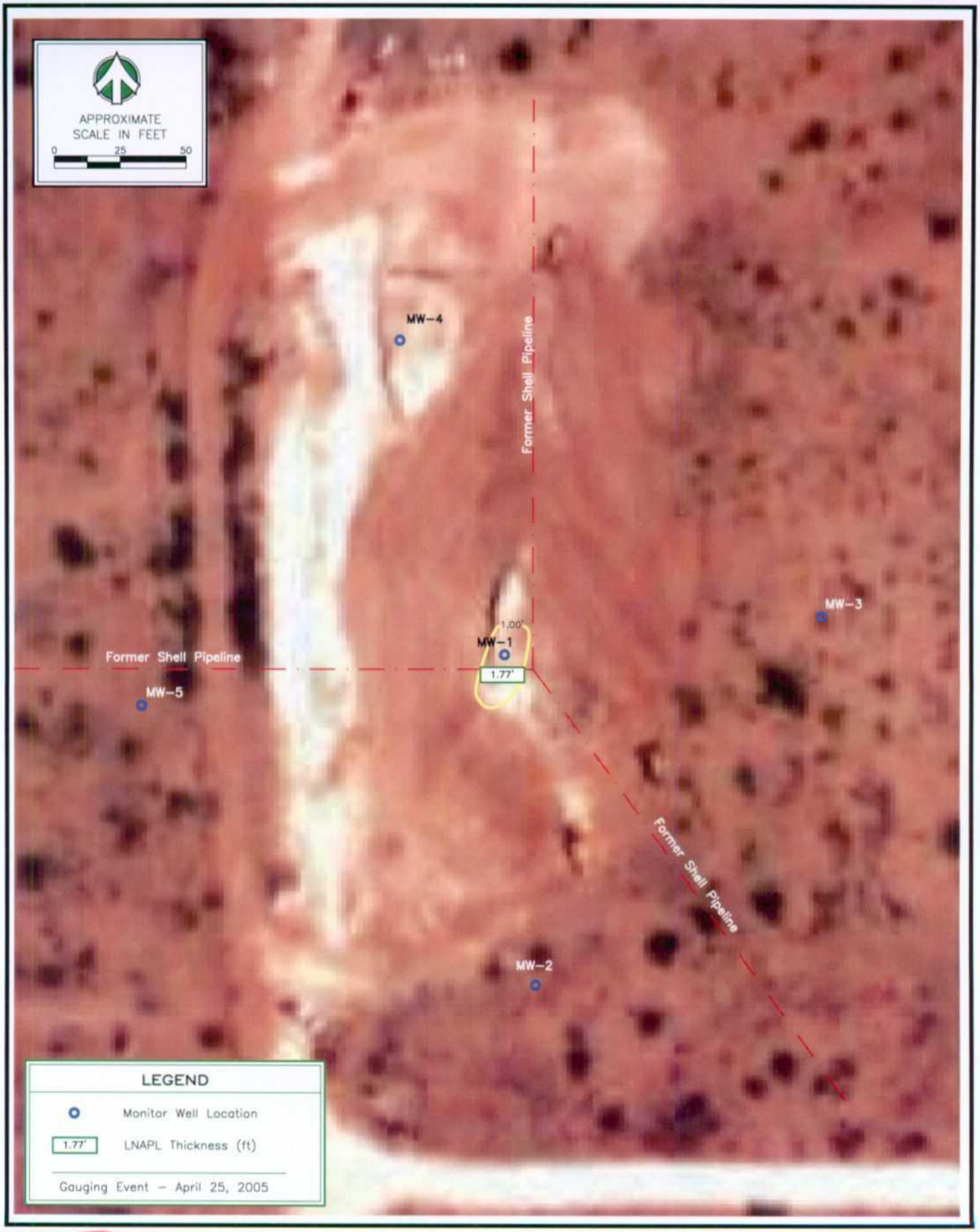
JOB No.
044041

FIGURE
10



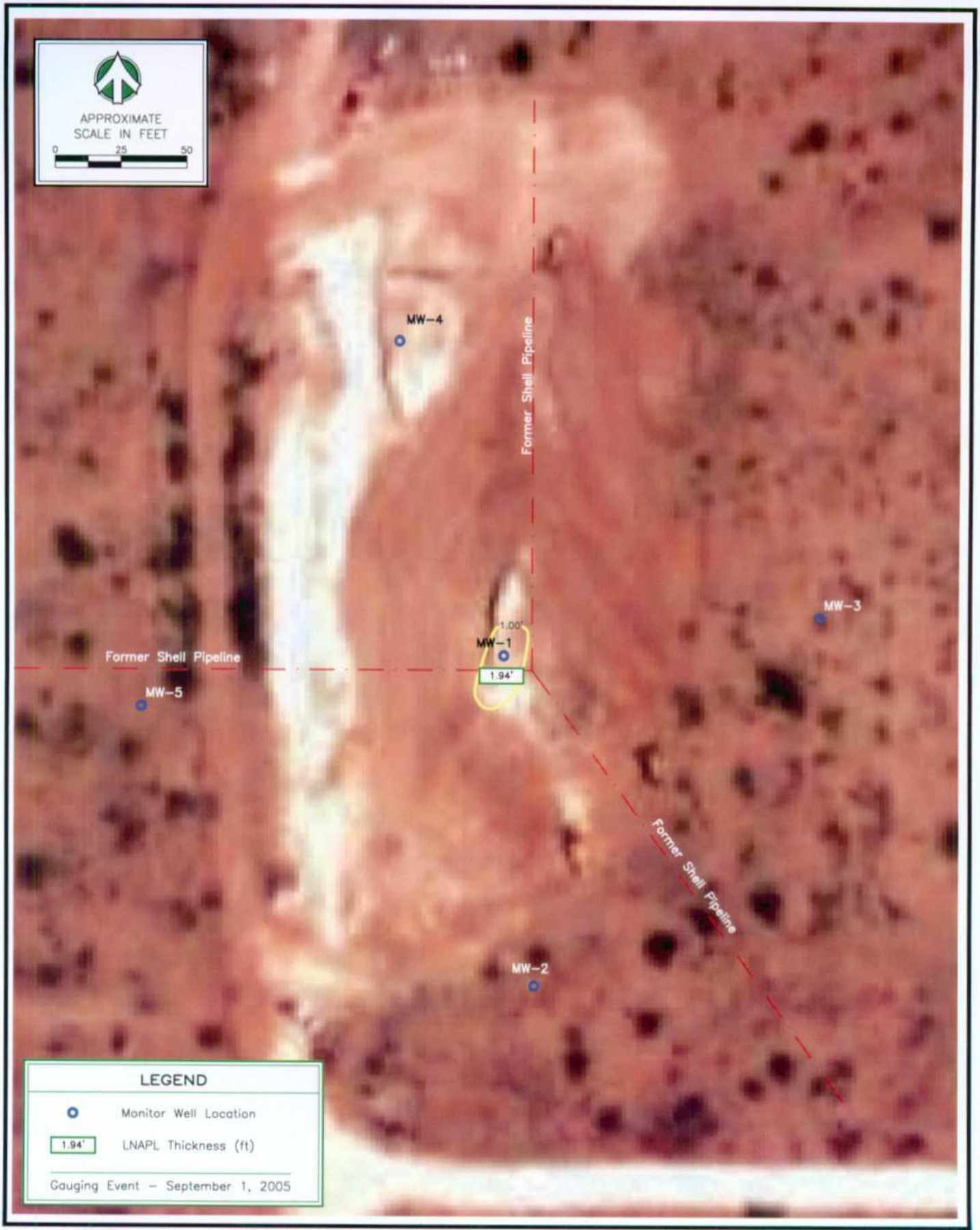
044041 SLR 032906

LNAPL THICKNESS MAP – JANUARY 2005	JOB No. 044041
SHELL OIL PRODUCTS US PENROSE "A" LEASE (WINNIE KENNAN RANCH) LEA CO., NEW MEXICO	FIGURE 11



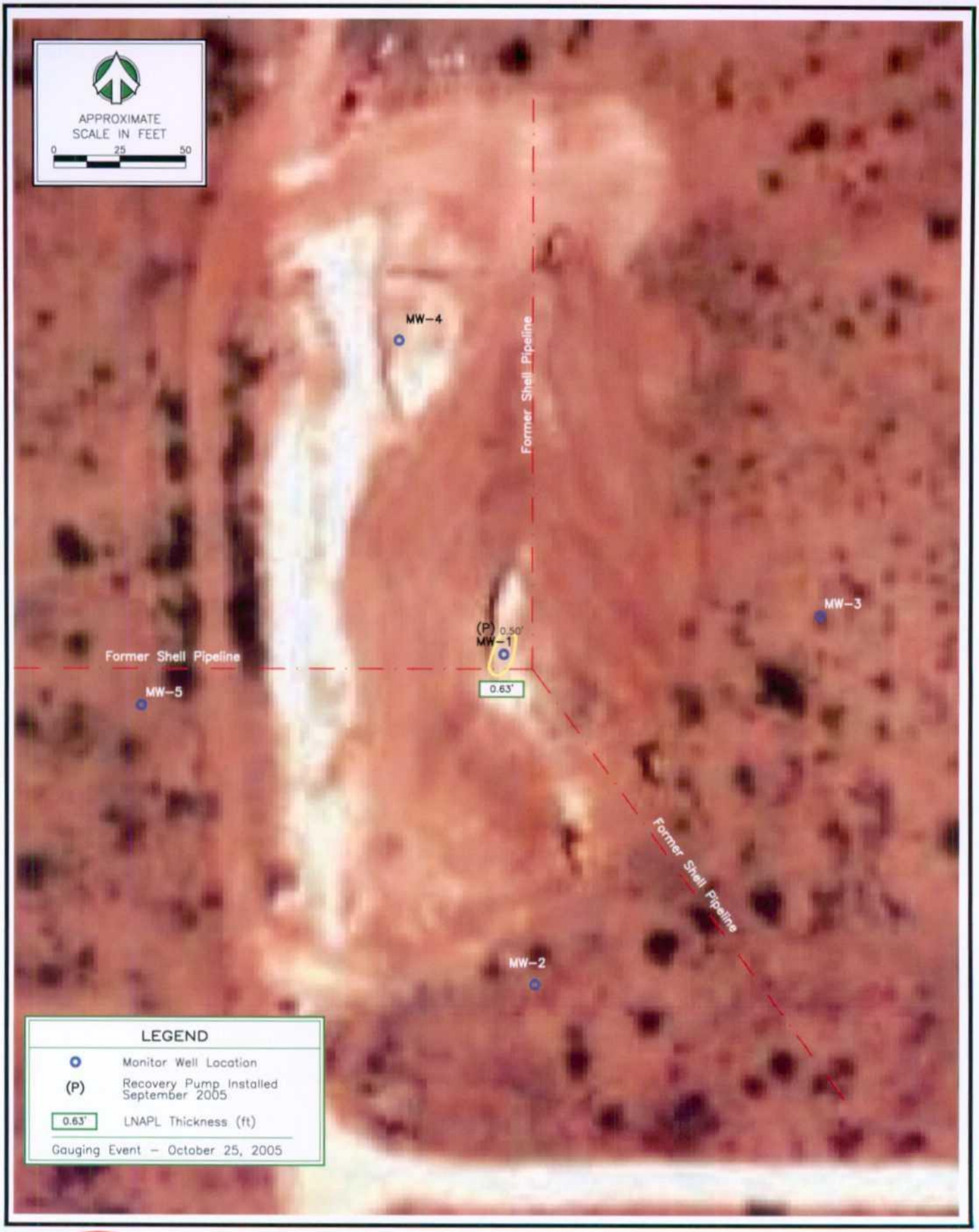
044041 SLR 032906

LNAPL THICKNESS MAP – APRIL 2005	JOB No. 044041
SHELL OIL PRODUCTS US PENROSE "A" LEASE (WINNIE KENNAN RANCH) LEA CO., NEW MEXICO	FIGURE 12



044041 SLR 032906

LNAPL THICKNESS MAP – SEPTEMBER 2005	JOB No. 044041
SHELL OIL PRODUCTS US PENROSE "A" LEASE (WINNIE KENNAN RANCH) LEA CO., NEW MEXICO	FIGURE 13



044041 SLR 040606

LNAPL THICKNESS MAP – OCTOBER 2005	JOB No. 044041
SHELL OIL PRODUCTS US PENROSE "A" LEASE (WINNIE KENNAN RANCH) LEA CO., NEW MEXICO	FIGURE 14

TABLE I

SUMMARY OF GROUNDWATER ELEVATION DATA
SHELL OIL PRODUCTS US
PENROSE "A" LEASE (WINNIE KENNAN RANCH)
LEA COUNTY, NEW MEXICO

Well ID TOC[1] *Elevation*	Date	Casing Diameter (in)	Depth to LNAPL[2] (ft TOC[1])	Depth to Groundwater (ft TOC[1])	Groundwater Elevation[3] (ft)	LNAPL[2] Thickness (ft)	LNAPL[2] Recovery (gallons)	LNAPL[2] Cumulative Recovery (gallons)	Type of Recovery
MW-1	07/26/04	2	69.94	72.90	3226.51	2.96	0.50	0.50	Hand Bail
3,296.75	10/14/04		70.10	72.26	3226.43	2.16	0.00	0.50	Hand Bail
	10/27/04		69.99	72.54	3226.51	2.55	2.00	2.50	Hand Bail
	11/21/04		69.98	72.67	3226.50	2.69	1.50	4.00	Hand Bail
	12/22/04		70.01	72.01	3226.54	2.00	1.50	5.50	Hand Bail
	01/25/05		69.89	72.72	3226.58	2.83	2.00	7.50	Hand Bail
	04/25/05		69.91	71.68	3226.66	1.77	2.00	9.50	Hand Bail
	09/01/05		69.91	71.85	3226.65	1.94	2.00	11.50	System installed
	10/25/05		70.08	70.71	3226.61	0.63	7.00	18.50	Adjusted pump
MW-2	07/26/04	4	---	73.01	3226.24	0.00	---	---	---
3,299.25	10/14/04		---	73.06	3226.19	0.00	---	---	---
	01/25/05		---	73.01	3226.24	0.00	---	---	---
	04/25/05		---	72.92	3226.33	0.00	---	---	---
	09/01/05		---	72.91	3226.34	0.00	---	---	---
	10/25/05		---	72.97	3226.28	0.00	---	---	---
MW-3	07/26/04	4	---	71.88	3227.37	0.00	---	---	---
3,299.25	10/14/04		---	71.93	3227.32	0.00	---	---	---
	01/25/05		---	71.90	3227.35	0.00	---	---	---
	04/25/05		---	71.80	3227.45	0.00	---	---	---
	09/01/05		---	71.78	3227.47	0.00	---	---	---
	10/25/05		---	71.82	3227.43	0.00	---	---	---
MW-4	07/26/04	4	---	70.85	3226.58	0.00	---	---	---
3,297.43	10/14/04		---	70.90	3226.53	0.00	---	---	---
	01/25/05		---	70.87	3226.56	0.00	---	---	---
	04/25/05		---	70.80	3226.63	0.00	---	---	---
	09/01/01		---	70.79	3226.64	0.00	---	---	---
	10/25/05		---	70.80	3226.63	0.00	---	---	---
MW-5	07/26/04	4	---	72.97	3226.37	0.00	---	---	---
3,299.34	10/14/04		---	73.03	3226.31	0.00	---	---	---
	01/25/05		---	72.95	3226.39	0.00	---	---	---
	04/25/05		---	72.86	3226.48	0.00	---	---	---
	09/01/05		---	72.85	3226.49	0.00	---	---	---
	10/25/05		---	72.91	3226.43	0.00	---	---	---
							Total Recovered LNAPL is	18.50	gallons

Notes:

1. TOC-Top of Casing.
2. LNAPL - Light non-aqueous phase liquid.
3. Corrected groundwater elevations were calculated using an LNAPL specific gravity of 0.90 per previously reported data.

TABLE II

SUMMARY OF ANALYTICAL RESULTS-BTEX
SHELL OIL PRODUCTS US
PENROSE "A" LEASE (WINNIE KENNAN RANCH)
LEA COUNTY, NEW MEXICO

Sample ID	Date	Benzene	Toluene	Ethylbenzene	Total Xylenes	Total BTEX
		NMWQCC Standard 3102.A,B.				
		0.01[1] (mg/L)	0.75[1] (mg/L)	0.75[1] (mg/L)	0.62[1] (mg/L)	--- (mg/L)
MW-1	07/26/04	**LNAPL**	**LNAPL**	**LNAPL**	**LNAPL**	**LNAPL**
	10/14/04	**LNAPL**	**LNAPL**	**LNAPL**	**LNAPL**	**LNAPL**
	01/25/05	**LNAPL**	**LNAPL**	**LNAPL**	**LNAPL**	**LNAPL**
	04/25/05	**LNAPL**	**LNAPL**	**LNAPL**	**LNAPL**	**LNAPL**
	09/01/05	**LNAPL**	**LNAPL**	**LNAPL**	**LNAPL**	**LNAPL**
	10/25/05	**LNAPL**	**LNAPL**	**LNAPL**	**LNAPL**	**LNAPL**
MW-2	07/26/04	<0.001	<0.001	<0.001	<0.001	<0.001
	10/14/04	<0.005	<0.005	<0.005	<0.005	<0.005
	01/25/05	<0.001	<0.001	<0.001	<0.001	<0.001
	04/25/05	<0.001	<0.001	<0.001	<0.001	<0.001
	09/01/05	<0.001	<0.001	<0.001	<0.001	<0.001
	10/25/05	<0.001	<0.001	<0.001	<0.001	<0.001
MW-3	07/26/04	<0.001	<0.001	<0.001	<0.001	<0.001
	10/14/04	<0.005	<0.005	<0.005	<0.005	<0.005
	01/25/05	<0.001	<0.001	<0.001	<0.001	<0.001
	04/25/05	<0.001	<0.001	<0.001	<0.001	<0.001
	09/01/05	<0.001	<0.001	<0.001	<0.001	<0.001
	10/25/05	<0.001	<0.001	<0.001	<0.001	<0.001
MW-4	07/26/04	<0.001	<0.001	<0.001	<0.001	<0.001
	10/14/04	<0.005	<0.005	<0.005	<0.005	<0.005
	01/25/05	<0.001	<0.001	<0.001	<0.001	<0.001
	04/25/05	<0.001	<0.001	<0.001	<0.001	<0.001
	09/01/05	<0.001	<0.001	<0.001	<0.001	<0.001
	10/25/05	<0.001	<0.001	<0.001	<0.001	<0.001
MW-5	07/26/04	<0.001	<0.001	<0.001	<0.001	<0.001
	10/14/04	<0.005	<0.005	<0.005	<0.005	<0.005
	01/25/05	<0.001	<0.001	<0.001	<0.001	<0.001

TABLE II

SUMMARY OF ANALYTICAL RESULTS-BTEX
SHELL OIL PRODUCTS US
PENROSE "A" LEASE (WINNIE KENNAN RANCH)
LEA COUNTY, NEW MEXICO

Sample ID	Date	Benzene	Toluene	Ethylbenzene	Total Xylenes	Total BTEX
		NMWQCC Standard 3102.A,B.				
		0.01[1] (mg/L)	0.75[1] (mg/L)	0.75[1] (mg/L)	0.62[1] (mg/L)	--- (mg/L)
MW-5	04/25/05	<0.001	<0.001	<0.001	<0.001	<0.001
(cont.)	09/01/05	<0.001	<0.001	<0.001	<0.001	<0.001
	10/25/05	<0.001	<0.001	<0.001	<0.001	<0.001

Notes:

1. New Mexico Water Quality Control Commission Standard 3103.A,B.
2. Results shown in mg/L
3. BTEX analysis by EPA Method 8021B.
4. LNAPL - Light non-aqeous phase liquids.
5. Data prior to Jan 06 collected by Enercon Services.

TABLE III

SUMMARY OF ANALYTICAL RESULTS-PAH
SHELL OIL PRODUCTS US
PENROSE "A" LEASE (WINNIE KENNAN RANCH)
LEA COUNTY, NEW MEXICO

Sample ID	Sample Date	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a) anthracene	Benzo(a) pyrene	Benzo(b) fluoranthene	Benzo (g,h,i) perylene	Benzo(k) fluoranthene	Chrysene	Dibenzo (a,h) anthracene	Fluoranthene	Fluorene	Indeno (1,2,3-cd) pyrene	Total[1] Naphthalene	Phenanthrene	Pyrene
		--- (mg/L)	--- (mg/L)	--- (mg/L)	--- (mg/L)	0.0007[2] (mg/L)	--- (mg/L)	--- (mg/L)	--- (mg/L)	--- (mg/L)	--- (mg/L)	--- (mg/L)	--- (mg/L)	--- (mg/L)	0.03[2] (mg/L)	--- (m/L)	--- (mg/L)
MW-1	07/26/04	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL
	10/14/04	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL
	01/25/05	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL
	04/25/05	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL
	09/01/05	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL
	10/25/05	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL
MW-2	07/26/04	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
	10/14/04	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
	01/25/05	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
	04/25/05	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
	09/01/05	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
	10/25/05	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
MW-3	07/26/04	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
	10/14/04	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
	01/25/05	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
	04/25/05	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
	09/01/05	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
	10/25/05	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
MW-4	07/26/04	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
	10/14/04	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
	01/25/05	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
	04/25/05	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
	09/01/05	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
	10/25/05	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
MW-5	07/26/05	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
	10/14/04	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
	01/25/05	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
	04/25/05	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
	09/01/05	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
	10/25/05	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002

Notes:

1. Includes total Napthalene plus monomethyl naphthalenes.
2. New Mexico Water Quality Control Commission Standard 3103 A.B.
3. Results in milligrams per liter (mg/L).
4. PAH analysis by EPAH Method 8270C.
5. **BOLD Value:** Indicates detection.
6. Data prior to Jan 06 collected by Enercon.

TRACEANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 ... bock, Texas 79424 800•378•1296 806•794•1296 FAX 806•794•1298
1555 McCutcheon, Suite H El Paso, Texas 79932 800•588•3443 915•585•3443 FAX 915•585•4944
E-Mail: lab@traceanalysis.com

Analytical and Quality Control Report

Ken Springer
Shell Oil Products-Ken Springer
FM 1960 E #508
P.O. BOX 7561
Humble, TX 77346

Report Date: February 3, 2005

Work Order: 5012710

Incident #: 300108
Project Location: Lea Co,NM
Project Name: Penrose A
Project Number: ES-533

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
53388	MW-2	water	2005-01-25	00:00	2005-01-27
53389	MW-3	water	2005-01-25	00:00	2005-01-27
53390	MW-4	water	2005-01-25	00:00	2005-01-27
53391	MW-5	water	2005-01-25	00:00	2005-01-27

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

Dr. Blair Leftwich, Director

Analytical Report

Sample: 53388 - MW-2

Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	15516	Date Analyzed:	2005-01-27	Analyzed By:	MS
Prep Batch:	13684	Date Prepared:	2005-01-27	Prepared By:	MS

Parameter	Flag	RL Result	Units	Dilution	RL
Benzene		<0.00100	mg/L	1	0.00100
Toluene		<0.00100	mg/L	1	0.00100
Ethylbenzene		<0.00100	mg/L	1	0.00100
Xylene		<0.00100	mg/L	1	0.00100

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.0942	mg/L	1	0.100	94	73.8 - 121
4-Bromofluorobenzene (4-BFB)		0.0689	mg/L	1	0.100	69	52.4 - 119

Sample: 53388 - MW-2

Analysis:	PAH	Analytical Method:	S 8270C	Prep Method:	S 3510C
QC Batch:	15637	Date Analyzed:	2005-02-01	Analyzed By:	RC
Prep Batch:	13797	Date Prepared:	2005-01-27	Prepared By:	RC

Parameter	Flag	RL Result	Units	Dilution	RL
Naphthalene		<0.000200	mg/L	0.001	0.200
Acenaphthylene		<0.000200	mg/L	0.001	0.200
Acenaphthene		<0.000200	mg/L	0.001	0.200
Fluorene		<0.000200	mg/L	0.001	0.200
Phenanthrene		<0.000200	mg/L	0.001	0.200
Anthracene		<0.000200	mg/L	0.001	0.200
Fluoranthene		<0.000200	mg/L	0.001	0.200
Pyrene		<0.000200	mg/L	0.001	0.200
Benzo(a)anthracene		<0.000200	mg/L	0.001	0.200
Chrysene		<0.000200	mg/L	0.001	0.200
Benzo(b)fluoranthene		<0.000200	mg/L	0.001	0.200
Benzo(k)fluoranthene		<0.000200	mg/L	0.001	0.200
Benzo(a)pyrene		<0.000200	mg/L	0.001	0.200
Indeno(1,2,3-cd)pyrene		<0.000200	mg/L	0.001	0.200
Dibenzo(a,h)anthracene		<0.000200	mg/L	0.001	0.200
Benzo(g,h,i)perylene		<0.000200	mg/L	0.001	0.200

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Nitrobenzene-d5		0.00972	mg/L	0.001	80.0	12	0 - 128
2-Fluorobiphenyl		0.0366	mg/L	0.001	80.0	46	0 - 140
Terphenyl-d14		0.0736	mg/L	0.001	80.0	92	0 - 165

Sample: 53389 - MW-3

Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	15496	Date Analyzed:	2005-01-27	Analyzed By:	MS
Prep Batch:	13668	Date Prepared:	2005-01-27	Prepared By:	MS

Parameter	Flag	RL Result	Units	Dilution	RL
Benzene		<0.00100	mg/L	1	0.00100
Toluene		<0.00100	mg/L	1	0.00100
Ethylbenzene		<0.00100	mg/L	1	0.00100
Xylene		<0.00100	mg/L	1	0.00100

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.0937	mg/L	1	0.100	94	73.8 - 121
4-Bromofluorobenzene (4-BFB)		0.0767	mg/L	1	0.100	77	52.4 - 119

Sample: 53389 - MW-3

Analysis:	PAH	Analytical Method:	S 8270C	Prep Method:	S 3510C
QC Batch:	15637	Date Analyzed:	2005-02-01	Analyzed By:	RC
Prep Batch:	13797	Date Prepared:	2005-01-27	Prepared By:	RC

Parameter	Flag	RL Result	Units	Dilution	RL
Naphthalene		<0.000200	mg/L	0.001	0.200
Acenaphthylene		<0.000200	mg/L	0.001	0.200
Acenaphthene		<0.000200	mg/L	0.001	0.200
Fluorene		<0.000200	mg/L	0.001	0.200
Phenanthrene		<0.000200	mg/L	0.001	0.200
Anthracene		<0.000200	mg/L	0.001	0.200
Fluoranthene		<0.000200	mg/L	0.001	0.200
Pyrene		<0.000200	mg/L	0.001	0.200
Benzo(a)anthracene		<0.000200	mg/L	0.001	0.200
Chrysene		<0.000200	mg/L	0.001	0.200
Benzo(b)fluoranthene		<0.000200	mg/L	0.001	0.200
Benzo(k)fluoranthene		<0.000200	mg/L	0.001	0.200
Benzo(a)pyrene		<0.000200	mg/L	0.001	0.200
Indeno(1,2,3-cd)pyrene		<0.000200	mg/L	0.001	0.200
Dibenzo(a,h)anthracene		<0.000200	mg/L	0.001	0.200
Benzo(g,h,i)perylene		<0.000200	mg/L	0.001	0.200

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Nitrobenzene-d5		0.0580	mg/L	0.001	80.0	72	0 - 128
2-Fluorobiphenyl		0.0588	mg/L	0.001	80.0	74	0 - 140
Terphenyl-d14		0.0707	mg/L	0.001	80.0	88	0 - 165

Sample: 53390 - MW-4

Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	15516	Date Analyzed:	2005-01-27	Analyzed By:	MS
Prep Batch:	13684	Date Prepared:	2005-01-27	Prepared By:	MS

Parameter	Flag	RL Result	Units	Dilution	RL
Benzene		<0.00100	mg/L	1	0.00100
Toluene		<0.00100	mg/L	1	0.00100
Ethylbenzene		<0.00100	mg/L	1	0.00100
Xylene		<0.00100	mg/L	1	0.00100

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.0960	mg/L	1	0.100	96	73.8 - 121
4-Bromofluorobenzene (4-BFB)		0.0699	mg/L	1	0.100	70	52.4 - 119

Sample: 53390 - MW-4

Analysis:	PAH	Analytical Method:	S 8270C	Prep Method:	S 3510C
QC Batch:	15637	Date Analyzed:	2005-02-01	Analyzed By:	RC
Prep Batch:	13797	Date Prepared:	2005-01-27	Prepared By:	RC

Parameter	Flag	RL Result	Units	Dilution	RL
Naphthalene		<0.000200	mg/L	0.001	0.200
Acenaphthylene		<0.000200	mg/L	0.001	0.200
Acenaphthene		<0.000200	mg/L	0.001	0.200
Fluorene		<0.000200	mg/L	0.001	0.200
Phenanthrene		<0.000200	mg/L	0.001	0.200
Anthracene		<0.000200	mg/L	0.001	0.200
Fluoranthene		<0.000200	mg/L	0.001	0.200
Pyrene		<0.000200	mg/L	0.001	0.200
Benzo(a)anthracene		<0.000200	mg/L	0.001	0.200
Chrysene		<0.000200	mg/L	0.001	0.200
Benzo(b)fluoranthene		<0.000200	mg/L	0.001	0.200
Benzo(k)fluoranthene		<0.000200	mg/L	0.001	0.200
Benzo(a)pyrene		<0.000200	mg/L	0.001	0.200
Indeno(1,2,3-cd)pyrene		<0.000200	mg/L	0.001	0.200
Dibenzo(a,h)anthracene		<0.000200	mg/L	0.001	0.200
Benzo(g,h,i)perylene		<0.000200	mg/L	0.001	0.200

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Nitrobenzene-d5		0.0478	mg/L	0.001	80.0	60	0 - 128
2-Fluorobiphenyl		0.0470	mg/L	0.001	80.0	59	0 - 140
Terphenyl-d14		0.0672	mg/L	0.001	80.0	84	0 - 165

Sample: 53391 - MW-5

Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	15496	Date Analyzed:	2005-01-27	Analyzed By:	MS
Prep Batch:	13668	Date Prepared:	2005-01-27	Prepared By:	MS

Parameter	Flag	RL Result	Units	Dilution	RL
Benzene		<0.00100	mg/L	1	0.00100

continued ...

sample 53391 continued . . .

Parameter	Flag	RL Result	Units	Dilution	RL
Toluene		<0.00100	mg/L	1	0.00100
Ethylbenzene		<0.00100	mg/L	1	0.00100
Xylene		<0.00100	mg/L	1	0.00100

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.0950	mg/L	1	0.100	95	73.8 - 121
4-Bromofluorobenzene (4-BFB)		0.0728	mg/L	1	0.100	73	52.4 - 119

Sample: 53391 - MW-5

Analysis:	PAH	Analytical Method:	S 8270C	Prep Method:	S 3510C
QC Batch:	15637	Date Analyzed:	2005-02-01	Analyzed By:	RC
Prep Batch:	13797	Date Prepared:	2005-01-27	Prepared By:	RC

Parameter	Flag	RL Result	Units	Dilution	RL
Naphthalene		<0.000200	mg/L	0.001	0.200
Acenaphthylene		<0.000200	mg/L	0.001	0.200
Acenaphthene		<0.000200	mg/L	0.001	0.200
Fluorene		<0.000200	mg/L	0.001	0.200
Phenanthrene		<0.000200	mg/L	0.001	0.200
Anthracene		<0.000200	mg/L	0.001	0.200
Fluoranthene		<0.000200	mg/L	0.001	0.200
Pyrene		<0.000200	mg/L	0.001	0.200
Benzo(a)anthracene		<0.000200	mg/L	0.001	0.200
Chrysene		<0.000200	mg/L	0.001	0.200
Benzo(b)fluoranthene		<0.000200	mg/L	0.001	0.200
Benzo(k)fluoranthene		<0.000200	mg/L	0.001	0.200
Benzo(a)pyrene		<0.000200	mg/L	0.001	0.200
Indeno(1,2,3-cd)pyrene		<0.000200	mg/L	0.001	0.200
Dibenzo(a,h)anthracene		<0.000200	mg/L	0.001	0.200
Benzo(g,h,i)perylene		<0.000200	mg/L	0.001	0.200

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Nitrobenzene-d5		0.0625	mg/L	0.001	80.0	78	0 - 128
2-Fluorobiphenyl		0.0647	mg/L	0.001	80.0	81	0 - 140
Terphenyl-d14		0.0688	mg/L	0.001	80.0	86	0 - 165

Method Blank (1) QC Batch: 15496

Parameter	Flag	Result	Units	RL
Benzene		<0.00100	mg/L	0.001
Toluene		<0.00100	mg/L	0.001
Ethylbenzene		<0.00100	mg/L	0.001
Xylene		<0.00100	mg/L	0.001

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.0930	mg/L	1	0.100	93	73.8 - 121
4-Bromofluorobenzene (4-BFB)		0.0858	mg/L	1	0.100	86	52.4 - 113

Method Blank (1) QC Batch: 15516

Parameter	Flag	Result	Units	RL
Benzene		<0.00100	mg/L	0.001
Toluene		<0.00100	mg/L	0.001
Ethylbenzene		<0.00100	mg/L	0.001
Xylene		<0.00100	mg/L	0.001

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.0952	mg/L	1	0.100	95	73.8 - 121
4-Bromofluorobenzene (4-BFB)		0.0655	mg/L	1	0.100	66	52.4 - 113

Method Blank (1) QC Batch: 15637

Parameter	Flag	Result	Units	RL
Naphthalene		<0.000200	mg/L	0.2
Acenaphthylene		<0.000200	mg/L	0.2
Acenaphthene		<0.000200	mg/L	0.2
Fluorene		<0.000200	mg/L	0.2
Phenanthrene		<0.000200	mg/L	0.2
Anthracene		<0.000200	mg/L	0.2
Fluoranthene		<0.000200	mg/L	0.2
Pyrene		<0.000200	mg/L	0.2
Benzo(a)anthracene		<0.000200	mg/L	0.2
Chrysene		<0.000200	mg/L	0.2
Benzo(b)fluoranthene		<0.000200	mg/L	0.2
Benzo(k)fluoranthene		<0.000200	mg/L	0.2
Benzo(a)pyrene		<0.000200	mg/L	0.2
Indeno(1,2,3-cd)pyrene		<0.000200	mg/L	0.2
Dibenzo(a,h)anthracene		<0.000200	mg/L	0.2
Benzo(g,h,i)perylene		<0.000200	mg/L	0.2

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Nitrobenzene-d5		0.0439	mg/L	0.001	80.0	55	0 - 128
2-Fluorobiphenyl		0.0461	mg/L	0.001	80.0	58	0 - 140
Terphenyl-d14		0.0657	mg/L	0.001	80.0	82	0 - 165

Laboratory Control Spike (LCS-1) QC Batch: 15496

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
Benzene	0.0872	0.0892	mg/L	1	0.100	<0.000136	87	2	72.8 - 113	20
Toluene	0.0918	0.0943	mg/L	1	0.100	<0.000247	92	3	75.2 - 112	20
Ethylbenzene	0.0942	0.0957	mg/L	1	0.100	<0.000550	94	2	81 - 112	20
Xylene	0.303	0.308	mg/L	1	0.300	<0.00156	101	2	82.9 - 119	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	0.0936	0.0944	mg/L	1	0.100	94	94	72.9 - 121
4-Bromofluorobenzene (4-BFB)	0.108	0.108	mg/L	1	0.100	108	108	77.8 - 119

Laboratory Control Spike (LCS-1) QC Batch: 15516

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
Benzene	0.0916	0.0920	mg/L	1	0.100	<0.000136	92	0	72.8 - 113	20
Toluene	0.0918	0.0934	mg/L	1	0.100	<0.000247	92	2	75.2 - 112	20
Ethylbenzene	0.0963	0.0974	mg/L	1	0.100	<0.000550	96	1	81 - 112	20
Xylene	0.309	0.311	mg/L	1	0.300	<0.00156	103	1	82.9 - 119	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	0.0940	0.0955	mg/L	1	0.100	94	96	72.9 - 121
4-Bromofluorobenzene (4-BFB)	0.106	0.106	mg/L	1	0.100	106	106	77.8 - 119

Laboratory Control Spike (LCS-1) QC Batch: 15637

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
Naphthalene	0.0321	0.0316	mg/L	0.001	80.0	<0.0000445	40	2	22.5 - 119	20
Acenaphthylene	0.0508	0.0507	mg/L	0.001	80.0	<0.0000383	64	0	42.3 - 127	20
Acenaphthene	0.0504	0.0500	mg/L	0.001	80.0	<0.0000421	63	1	38 - 125	20
Fluorene	0.0644	0.0641	mg/L	0.001	80.0	<0.0000655	80	0	36.6 - 130	20
Phenanthrene	0.0700	0.0699	mg/L	0.001	80.0	<0.0000383	88	0	40.3 - 131	20
Anthracene	0.0778	0.0780	mg/L	0.001	80.0	<0.0000468	97	0	36.7 - 135	20
Fluoranthene	0.0835	0.0838	mg/L	0.001	80.0	<0.0000550	104	0	43.2 - 133	20
Pyrene	0.0727	0.0720	mg/L	0.001	80.0	<0.0000904	91	1	48.8 - 157	20
Benzo(a)anthracene	0.0834	0.0842	mg/L	0.001	80.0	<0.0000993	104	1	40.2 - 138	20
Chrysene	0.0775	0.0780	mg/L	0.001	80.0	<0.000121	97	1	5.5 - 179	20
Benzo(b)fluoranthene	0.0796	0.0846	mg/L	0.001	80.0	<0.000171	100	6	16.4 - 156	20
Benzo(k)fluoranthene	0.0850	0.0801	mg/L	0.001	80.0	<0.0000951	106	6	40.9 - 150	20
Benzo(a)pyrene	0.0876	0.0876	mg/L	0.001	80.0	<0.000135	110	0	38.7 - 149	20
Indeno(1,2,3-cd)pyrene	0.0863	0.0866	mg/L	0.001	80.0	<0.000176	108	0	32 - 153	20
Dibenzo(a,h)anthracene	0.0798	0.0801	mg/L	0.001	80.0	<0.000184	100	0	0 - 202	20
Benzo(g,h,i)perylene	0.0863	0.0866	mg/L	0.001	80.0	<0.000134	108	0	39.1 - 144	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Nitrobenzene-d5	0.0398	0.0393	mg/L	0.001	80.0	50	49	0 - 128
2-Fluorobiphenyl	0.0396	0.0406	mg/L	0.001	80.0	50	51	0 - 140
Terphenyl-d14	0.0541	0.0541	mg/L	0.001	80.0	68	68	0 - 165

Standard (ICV-1) QC Batch: 15496

Param	Flag	Units	CCVs True Conc	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/L	0.100	0.0935	94	85 - 115	2005-01-27
Toluene		mg/L	0.100	0.102	102	85 - 115	2005-01-27
Ethylbenzene		mg/L	0.100	0.101	101	85 - 115	2005-01-27
Xylene		mg/L	0.300	0.324	108	85 - 115	2005-01-27

Standard (CCV-1) QC Batch: 15496

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/L	0.100	0.0891	89	85 - 115	2005-01-27
Toluene		mg/L	0.100	0.0941	94	85 - 115	2005-01-27
Ethylbenzene		mg/L	0.100	0.0989	99	85 - 115	2005-01-27
Xylene		mg/L	0.300	0.317	106	85 - 115	2005-01-27

Standard (CCV-2) QC Batch: 15496

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/L	0.100	0.0899	90	85 - 115	2005-01-27
Toluene		mg/L	0.100	0.0896	90	85 - 115	2005-01-27
Ethylbenzene		mg/L	0.100	0.0946	95	85 - 115	2005-01-27
Xylene		mg/L	0.300	0.303	101	85 - 115	2005-01-27

Standard (ICV-1) QC Batch: 15516

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/L	0.100	0.0963	96	85 - 115	2005-01-27
Toluene		mg/L	0.100	0.0965	96	85 - 115	2005-01-27
Ethylbenzene		mg/L	0.100	0.102	102	85 - 115	2005-01-27
Xylene		mg/L	0.300	0.325	108	85 - 115	2005-01-27

Standard (CCV-1) QC Batch: 15516

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/L	0.100	0.0914	91	85 - 115	2005-01-27
Toluene		mg/L	0.100	0.0939	94	85 - 115	2005-01-27
Ethylbenzene		mg/L	0.100	0.0986	99	85 - 115	2005-01-27
Xylene		mg/L	0.300	0.314	105	85 - 115	2005-01-27

Standard (CCV-1) QC Batch: 15637

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Naphthalene		mg/L	60.0	63.0	105	80 - 120	2005-02-01
Acenaphthylene		mg/L	60.0	61.8	103	80 - 120	2005-02-01
Acenaphthene		mg/L	60.0	62.6	104	80 - 120	2005-02-01
Fluorene		mg/L	60.0	65.3	109	80 - 120	2005-02-01
Phenanthrene		mg/L	60.0	62.3	104	80 - 120	2005-02-01
Anthracene		mg/L	60.0	64.1	107	80 - 120	2005-02-01
Fluoranthene		mg/L	60.0	65.7	110	80 - 120	2005-02-01
Pyrene		mg/L	60.0	56.8	95	80 - 120	2005-02-01
Benzo(a)anthracene		mg/L	60.0	64.0	107	80 - 120	2005-02-01
Chrysene		mg/L	60.0	63.8	106	80 - 120	2005-02-01
Benzo(b)fluoranthene		mg/L	60.0	60.7	101	80 - 120	2005-02-01
Benzo(k)fluoranthene		mg/L	60.0	62.4	104	80 - 120	2005-02-01
Benzo(a)pyrene		mg/L	60.0	63.0	105	80 - 120	2005-02-01
Indeno(1,2,3-cd)pyrene		mg/L	60.0	61.7	103	80 - 120	2005-02-01
Dibenzo(a,h)anthracene		mg/L	60.0	71.6	119	80 - 120	2005-02-01
Benzo(g,h,i)perylene		mg/L	60.0	61.7	103	80 - 120	2005-02-01

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limit
Nitrobenzene-d5		67.3	mg/L	1	60.0	112	80 - 120
2-Fluorobiphenyl		61.4	mg/L	1	60.0	102	80 - 120
Terphenyl-d14		61.2	mg/L	1	60.0	102	80 - 120

TRACE ANALYSIS INC.
6701 Aberdeen Ave., Suite 9
Lubbock, TX 79424
800-378-1296 Fax 806-794-1298
Email Lab @ traceanalysis.com

SHELL OIL PRODUCTS US / MOTIVA Chain of Custody Record

Shell Project Manager to be Invoiced:
☐ SCIENCE & ENGINEERING
☐ TECHNICAL SERVICES
☐ CRMT HOUSTON

Name: Ken Springer
Address: 7561 FM 1960 East # 508
City/State: Humble, Texas Zip: 77346
Telephone: Email:

INCIDENT NUMBER (S&E ONLY): 3 0 0 1 C 8
SAP or CRMT NUMBER (TS/CRMT): [redacted]

LAB ORDER ID: 5012710
LAB USE ONLY:
PAGE: ____ of ____

CONSULTANT COMPANY: Enercon Services Inc
ADDRESS: 306 West Wall, Suite 1312
CITY: Midland, Texas 79701
TELEPHONE: 432-570-8726
FAX: 432-684-7587
EMAIL: JKINDLEY@ENERCON...

SITE NAME/ADDRESS (Street and City): Penrose 'A' Lease
PROJECT CONTACT (Required): Jeff Kindley
CONSULTANT PROJECT NO: ES-533
SAMPLER NAME(S) (Print): Jeff Kindley

TURNAROUND TIME (BUSINESS DAYS): ☑ 10 DAYS ☐ 5 DAYS ☐ 72 HOURS ☐ 48 HOURS ☐ 24 HOURS ☐ LESS THAN 24 HOURS
☐ LA - RWQCB REPORT FORMAT ☐ UST AGENCY
GC/MS MTBE CONFIRMATION: HIGHEST HIGHEST per BORING ALL

ANALYSIS REQUEST (Circle or Specify Method No.)

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCl	HNO_3	H_2SO_4	NaOH	ICE	NONE	SAMPLING: DATE	TIME	MTBE 8021B/602	BTEX 8021B/602	TPH 418.1/TX1005	TPH TX1005 Extended	PAH 8270C	[illegible]	[illegible]	TCLP Volatiles	TCLP Semi Volatiles	TCLP Pesticides	RCI	GC/MS Vol 8260B/624	GC/MS Sem Vol 8270C/625	PCB's 8082/608	Pesticides 8081A/608	BOD, TSS, pH	[illegible]	Hold
53388	mw-2	3	[illegible]	✓				✓					✓	01/25/05			✓			✓													
89	mw-3	3	↓	✓				✓					✓	01/25/05			✓			✓													
90	mw-4	3	↓	✓				✓					✓	01/25/05			✓			✓													
91	mw-5	3	↓	✓				✓					✓	01/25/05			✓			✓													

Relinquished by:	Date:	Time:	Received by:	Date:	Time:
Jeff Kindley	01/26/05	0800	Helen Shelton	01/26/05	0810
Helen Shelton	01/26/05	1700			
			Received at Laboratory by: Vicki Kinsley	1-27-05	9:18

LAB USE ONLY
Intact: (Y)/N
Headspace: Y/(N)
Temp: 1°C
Log-In Review: [illegible]

REMARKS: Normal
☐ Check if Dry Weight Reporting is Required
☐ Check if Special Reporting Limits Are Needed
☐ Check if TRRP Reports Are Required

Carrier #: Lone Star P1203867

Submittal of samples constitutes agreement to Terms and Conditions listed on reverse side of C.O.C. 12 samples

ORIGINAL COPY

TRACE ANALYSIS INC.

6701 Aberdeen Ave., Suite 9
Lubbock, TX 79424
800-378-1296 Fax 806-794-1298
Email Lab @ traceanalysis.com

SHELL OIL PRODUCTS US / MOTIVA Chain of Custody Record

Shell Project Manager to be invoiced:
☐ SCIENCE & ENGINEERING ☐ TECHNICAL SERVICES ☐ CRMT HOUSTON
Name: Ken Springer
Address: 7561 FM 1960 East # 508
City/State: Humble, Texas Zip 77346
Telephone: Email:

INCIDENT NUMBER (S&E ONLY): 3 0 0 1 0 8
SAP or CRMT NUMBER (TS/CRMT): [redacted]

LAB ORDER ID: 5012210
LAB USE ONLY
PAGE ____ of ____

CONSULTANT COMPANY: Envirum Services Inc
ADDRESS: 306 West Wall, Suite 1312
CITY: Midland, Texas 79701
TELEPHONE: 432-570-3726 FAX: 432-684-7587
EMAIL: JKINDLEY@ENERCUM...

SITE NAME/ADDRESS (Street and City): Penrose 'A' Lease
PROJECT CONTACT (Report to): Jeff Kindley
CONSULTANT PROJECT NO.: ES-533
SAMPLER NAME(S) (Print): JEFF Kindley

TURNAROUND TIME (BUSINESS DAYS): ✓ 10 DAYS ☐ 5 DAYS ☐ 72 HOURS ☐ 48 HOURS ☐ 24 HOURS ☐ LESS THAN 24 HOURS
LA - RWQCB REPORT FORMAT ☐ UST AGENCY
GC/MS MTBE CONFIRMATION: HIGHEST ____ HIGHEST per BORING ____ ALL

ANALYSIS REQUEST (Circle or Specify Method No.)

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume/Amount	WATER	SOIL	AIR	SLUDGE	HCl	HNO3	H2SO4	NaOH	ICE	NONE	DATE	TIME	MTBE 8021B/602	BTEX 8021B/602	TPH 418.1/TX1005	TPH TX1005 Extended	PAH 8270C			TCLP Volatiles	TCLP Semi Volatiles	TCLP Pesticides	RCI	GC/MS Vol 8260B/624	GC/MS Semi Vol 8270C/625	PCB's 8082/608	Pesticides 8081A/608	BOD, TSS, pH		Hold
53388	MW-2	3	40ml	✓				✓					✓	01/25/05			✓			✓													
89	MW-3	3	↓	✓				✓					✓	01/25/05			✓			✓													
90	MW-4	3	↓	✓				✓					✓	01/25/05			✓			✓													
91	MW-5	3	↓	✓				✓					✓	01/25/05			✓			✓													

Relinquished by:	Date:	Time:	Received by:	Date:	Time:
Jeffrey Kindley	01/26/05	0800			
Relinquished by:	Date:	Time:	Received by:	Date:	Time:
Relinquished by:	Date:	Time:	Received at Laboratory by: Vicki Kensley	Date: 1-27-05	Time: 9:18

LAB USE ONLY
Intact Ⓨ/N
Headspace Y/Ⓝ
Temp 1°C
Log-in Review

REMARKS: Normal
MF 2/4/05
☐ Check if Dry Weight Reporting is Required
☐ Check if Special Reporting Limits Are Needed
☐ Check if TRRP Reports Are Required

Carrier # P1203967

Submittal of samples constitutes agreement to Terms and Conditions listed on reverse side of C.O.C.

Analytical and Quality Control Report

Jeffery Kindley
Enercon Services-Midland
306 West Wall Street
Suite 1312
Midland, TX 79701

Report Date: May 5, 2005

Work Order: 5042709

Incident #: 300108
Project Location: Lea Co,NM
Project Name: Penrose A
Project Number: ES-533

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
60971	MW-2	water	2005-04-25	00:00	2005-04-27
60972	MW-3	water	2005-04-25	00:00	2005-04-27
60973	MW-4	water	2005-04-25	00:00	2005-04-27
60974	MW-5	water	2005-04-25	00:00	2005-04-27

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

Michael Abel

Dr. Blair Leftwich, Director

Analytical Report

Sample: 60971 - MW-2

Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	17799	Date Analyzed:	2005-04-30	Analyzed By:	AG
Prep Batch:	15656	Sample Preparation:	2005-04-28	Prepared By:	MT

Parameter	Flag	RL Result	Units	Dilution	RL
Benzene		<0.00100	mg/L	1	0.00100
Toluene		<0.00100	mg/L	1	0.00100
Ethylbenzene		<0.00100	mg/L	1	0.00100
Xylene		<0.00100	mg/L	1	0.00100

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.101	mg/L	1	0.100	101	73.8 - 121
4-Bromofluorobenzene (4-BFB)		0.0773	mg/L	1	0.100	77	52.4 - 119

Sample: 60971 - MW-2

Analysis:	PAH	Analytical Method:	S 8270C	Prep Method:	S 3510C
QC Batch:	17856	Date Analyzed:	2005-05-01	Analyzed By:	RC
Prep Batch:	15732	Sample Preparation:	2005-04-29	Prepared By:	RC

Parameter	Flag	RL Result	Units	Dilution	RL
Naphthalene		<0.000200	mg/L	0.001	0.200
Acenaphthylene		<0.000200	mg/L	0.001	0.200
Acenaphthene		<0.000200	mg/L	0.001	0.200
Fluorene		<0.000200	mg/L	0.001	0.200
Phenanthrene		<0.000200	mg/L	0.001	0.200
Anthracene		<0.000200	mg/L	0.001	0.200
Fluoranthene		<0.000200	mg/L	0.001	0.200
Pyrene		<0.000200	mg/L	0.001	0.200
Benzo(a)anthracene		<0.000200	mg/L	0.001	0.200
Chrysene		<0.000200	mg/L	0.001	0.200
Benzo(b)fluoranthene		<0.000200	mg/L	0.001	0.200
Benzo(k)fluoranthene		<0.000200	mg/L	0.001	0.200
Benzo(a)pyrene		<0.000200	mg/L	0.001	0.200
Indeno(1,2,3-cd)pyrene		<0.000200	mg/L	0.001	0.200
Dibenzo(a,h)anthracene		<0.000200	mg/L	0.001	0.200
Benzo(g,h,i)perylene		<0.000200	mg/L	0.001	0.200

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Nitrobenzene-d5		0.0790	mg/L	0.001	80.0	99	15.1 - 128
2-Fluorobiphenyl		0.0596	mg/L	0.001	80.0	74	19.9 - 130
Terphenyl-d14		0.0326	mg/L	0.001	80.0	41	38.9 - 138

Sample: 60972 - MW-3

Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	17799	Date Analyzed:	2005-04-30	Analyzed By:	AG
Prep Batch:	15656	Sample Preparation:	2005-04-28	Prepared By:	MT

Parameter	Flag	RL Result	Units	Dilution	RL
Benzene		<0.00100	mg/L	1	0.00100
Toluene		<0.00100	mg/L	1	0.00100
Ethylbenzene		<0.00100	mg/L	1	0.00100
Xylene		<0.00100	mg/L	1	0.00100

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.100	mg/L	1	0.100	100	73.8 - 121
4-Bromofluorobenzene (4-BFB)		0.0738	mg/L	1	0.100	74	52.4 - 119

Sample: 60972 - MW-3

Analysis:	PAH	Analytical Method:	S 8270C	Prep Method:	S 3510C
QC Batch:	17856	Date Analyzed:	2005-05-01	Analyzed By:	RC
Prep Batch:	15732	Sample Preparation:	2005-04-29	Prepared By:	RC

Parameter	Flag	RL Result	Units	Dilution	RL
Naphthalene		<0.000200	mg/L	0.001	0.200
Acenaphthylene		<0.000200	mg/L	0.001	0.200
Acenaphthene		<0.000200	mg/L	0.001	0.200
Fluorene		<0.000200	mg/L	0.001	0.200
Phenanthrene		<0.000200	mg/L	0.001	0.200
Anthracene		<0.000200	mg/L	0.001	0.200
Fluoranthene		<0.000200	mg/L	0.001	0.200
Pyrene		<0.000200	mg/L	0.001	0.200
Benzo(a)anthracene		<0.000200	mg/L	0.001	0.200
Chrysene		<0.000200	mg/L	0.001	0.200
Benzo(b)fluoranthene		<0.000200	mg/L	0.001	0.200
Benzo(k)fluoranthene		<0.000200	mg/L	0.001	0.200
Benzo(a)pyrene		<0.000200	mg/L	0.001	0.200
Indeno(1,2,3-cd)pyrene		<0.000200	mg/L	0.001	0.200
Dibenzo(a,h)anthracene		<0.000200	mg/L	0.001	0.200
Benzo(g,h,i)perylene		<0.000200	mg/L	0.001	0.200

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Nitrobenzene-d5		0.0704	mg/L	0.001	80.0	88	15.1 - 128
2-Fluorobiphenyl		0.0544	mg/L	0.001	80.0	68	19.9 - 130
Terphenyl-d14		0.0377	mg/L	0.001	80.0	47	38.9 - 138

Sample: 60973 - MW-4

Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	17799	Date Analyzed:	2005-04-30	Analyzed By:	AG
Prep Batch:	15656	Sample Preparation:	2005-04-28	Prepared By:	MT

Parameter	Flag	RL Result	Units	Dilution	RL
Benzene		<0.00100	mg/L	1	0.00100
Toluene		<0.00100	mg/L	1	0.00100
Ethylbenzene		<0.00100	mg/L	1	0.00100
Xylene		<0.00100	mg/L	1	0.00100

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.0998	mg/L	1	0.100	100	73.8 - 121
4-Bromofluorobenzene (4-BFB)		0.0737	mg/L	1	0.100	74	52.4 - 119

Sample: 60973 - MW-4

Analysis:	PAH	Analytical Method:	S 8270C	Prep Method:	S 3510C
QC Batch:	17856	Date Analyzed:	2005-05-01	Analyzed By:	RC
Prep Batch:	15732	Sample Preparation:	2005-04-29	Prepared By:	RC

Parameter	Flag	RL Result	Units	Dilution	RL
Naphthalene		<0.000200	mg/L	0.001	0.200
Acenaphthylene		<0.000200	mg/L	0.001	0.200
Acenaphthene		<0.000200	mg/L	0.001	0.200
Fluorene		<0.000200	mg/L	0.001	0.200
Phenanthrene		<0.000200	mg/L	0.001	0.200
Anthracene		<0.000200	mg/L	0.001	0.200
Fluoranthene		<0.000200	mg/L	0.001	0.200
Pyrene		<0.000200	mg/L	0.001	0.200
Benzo(a)anthracene		<0.000200	mg/L	0.001	0.200
Chrysene		<0.000200	mg/L	0.001	0.200
Benzo(b)fluoranthene		<0.000200	mg/L	0.001	0.200
Benzo(k)fluoranthene		<0.000200	mg/L	0.001	0.200
Benzo(a)pyrene		<0.000200	mg/L	0.001	0.200
Indeno(1,2,3-cd)pyrene		<0.000200	mg/L	0.001	0.200
Dibenzo(a,h)anthracene		<0.000200	mg/L	0.001	0.200
Benzo(g,h,i)perylene		<0.000200	mg/L	0.001	0.200

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Nitrobenzene-d5		0.0886	mg/L	0.001	80.0	111	15.1 - 128
2-Fluorobiphenyl		0.0674	mg/L	0.001	80.0	84	19.9 - 130
Terphenyl-d14		0.0503	mg/L	0.001	80.0	63	38.9 - 138

Sample: 60974 - MW-5

Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	17799	Date Analyzed:	2005-04-30	Analyzed By:	AG
Prep Batch:	15656	Sample Preparation:	2005-04-28	Prepared By:	MT

Parameter	Flag	RL Result	Units	Dilution	RL
Benzene		<0.00100	mg/L	1	0.00100
Toluene		<0.00100	mg/L	1	0.00100
Ethylbenzene		<0.00100	mg/L	1	0.00100
Xylene		<0.00100	mg/L	1	0.00100

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.0996	mg/L	1	0.100	100	73.8 - 121
4-Bromofluorobenzene (4-BFB)		0.0728	mg/L	1	0.100	73	52.4 - 119

Sample: 60974 - MW-5

Analysis:	PAH	Analytical Method:	S 8270C	Prep Method:	S 3510C
QC Batch:	17856	Date Analyzed:	2005-05-01	Analyzed By:	RC
Prep Batch:	15732	Sample Preparation:	2005-04-29	Prepared By:	RC

Parameter	Flag	RL Result	Units	Dilution	RL
Naphthalene		<0.000200	mg/L	0.001	0.200
Acenaphthylene		<0.000200	mg/L	0.001	0.200
Acenaphthene		<0.000200	mg/L	0.001	0.200
Fluorene		<0.000200	mg/L	0.001	0.200
Phenanthrene		<0.000200	mg/L	0.001	0.200
Anthracene		<0.000200	mg/L	0.001	0.200
Fluoranthene		<0.000200	mg/L	0.001	0.200
Pyrene		<0.000200	mg/L	0.001	0.200
Benzo(a)anthracene		<0.000200	mg/L	0.001	0.200
Chrysene		<0.000200	mg/L	0.001	0.200
Benzo(b)fluoranthene		<0.000200	mg/L	0.001	0.200
Benzo(k)fluoranthene		<0.000200	mg/L	0.001	0.200
Benzo(a)pyrene		<0.000200	mg/L	0.001	0.200
Indeno(1,2,3-cd)pyrene		<0.000200	mg/L	0.001	0.200
Dibenzo(a,h)anthracene		<0.000200	mg/L	0.001	0.200
Benzo(g,h,i)perylene		<0.000200	mg/L	0.001	0.200

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Nitrobenzene-d5		0.0737	mg/L	0.001	80.0	92	15.1 - 128
2-Fluorobiphenyl		0.0572	mg/L	0.001	80.0	72	19.9 - 130
Terphenyl-d14		0.0505	mg/L	0.001	80.0	63	38.9 - 138

Method Blank (1) QC Batch: 17799

Parameter	Flag	MDL Result	Units	RL
Benzene		<0.000136	mg/L	0.001
Toluene		<0.000247	mg/L	0.001
Ethylbenzene		<0.000552	mg/L	0.001
Xylene		<0.00156	mg/L	0.001

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.102	mg/L	1	0.100	102	73.8 - 121
4-Bromofluorobenzene (4-BFB)		0.0743	mg/L	1	0.100	74	52.4 - 113

Method Blank (1) QC Batch: 17856

Parameter	Flag	MDL Result	Units	RL
Naphthalene		<0.0000445	mg/L	0.2
Acenaphthylene		<0.0000383	mg/L	0.2
Acenaphthene		<0.0000421	mg/L	0.2
Fluorene		<0.0000655	mg/L	0.2
Phenanthrene		<0.0000383	mg/L	0.2
Anthracene		<0.0000468	mg/L	0.2
Fluoranthene		<0.0000550	mg/L	0.2
Pyrene		<0.0000904	mg/L	0.2
Benzo(a)anthracene		<0.0000993	mg/L	0.2
Chrysene		<0.000121	mg/L	0.2
Benzo(b)fluoranthene		<0.000171	mg/L	0.2
Benzo(k)fluoranthene		<0.0000951	mg/L	0.2
Benzo(a)pyrene		<0.000135	mg/L	0.2
Indeno(1,2,3-cd)pyrene		<0.000176	mg/L	0.2
Dibenzo(a,h)anthracene		<0.000184	mg/L	0.2
Benzo(g,h,i)perylene		<0.000134	mg/L	0.2

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Nitrobenzene-d5		0.0632	mg/L	0.001	80.0	79	15.1 - 128
2-Fluorobiphenyl		0.0455	mg/L	0.001	80.0	57	19.9 - 130
Terphenyl-d14		0.0917	mg/L	0.001	80.0	115	38.9 - 138

Laboratory Control Spike (LCS-1) QC Batch: 17799

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
Benzene	0.0883	0.0899	mg/L	1	0.100	<0.000136	88	2	72.8 - 113	20
Toluene	0.0909	0.0923	mg/L	1	0.100	<0.000247	91	2	75.2 - 112	20
Ethylbenzene	0.0968	0.0978	mg/L	1	0.100	<0.000550	97	1	81 - 112	20
Xylene	0.309	0.312	mg/L	1	0.300	<0.00156	103	1	82.9 - 119	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	0.103	0.104	mg/L	1	0.100	103	104	72.9 - 121
4-Bromofluorobenzene (4-BFB)	0.100	0.0999	mg/L	1	0.100	100	100	77.8 - 119

Laboratory Control Spike (LCS-1) QC Batch: 17856

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
Naphthalene	0.0593	0.0600	mg/L	0.001	80.0	<0.0000445	74	1	10 - 131	20
Acenaphthylene	0.0667	0.0674	mg/L	0.001	80.0	<0.0000383	83	1	10 - 175	20
Acenaphthene	0.0697	0.0696	mg/L	0.001	80.0	<0.0000421	87	0	10 - 146	20
Fluorene	0.0693	0.0694	mg/L	0.001	80.0	<0.0000655	87	0	10.9 - 156	20
Phenanthrene	0.0759	0.0770	mg/L	0.001	80.0	<0.0000383	95	1	10 - 156	20
Anthracene	0.0782	0.0785	mg/L	0.001	80.0	<0.0000468	98	0	10 - 172	20
Fluoranthene	0.0884	0.0891	mg/L	0.001	80.0	<0.0000550	110	1	10 - 171	20
Pyrene	0.0690	0.0675	mg/L	0.001	80.0	<0.0000904	86	2	18.1 - 159	20
Benzo(a)anthracene	0.0727	0.0721	mg/L	0.001	80.0	<0.0000993	91	1	10 - 173	20
Chrysene	0.0802	0.0799	mg/L	0.001	80.0	<0.000121	100	0	10 - 162	20
Benzo(b)fluoranthene	0.0784	0.0780	mg/L	0.001	80.0	<0.000171	98	0	15.7 - 157	20
Benzo(k)fluoranthene	0.0601	0.0602	mg/L	0.001	80.0	<0.0000951	75	0	14 - 163	20
Benzo(a)pyrene	0.0790	0.0795	mg/L	0.001	80.0	<0.000135	99	1	12.1 - 176	20
Indeno(1,2,3-cd)pyrene	0.0836	0.0855	mg/L	0.001	80.0	<0.000176	104	2	13 - 170	20
Dibenzo(a,h)anthracene	0.0777	0.0786	mg/L	0.001	80.0	<0.000184	97	1	10 - 159	20
Benzo(g,h,i)perylene	0.0835	0.0854	mg/L	0.001	80.0	<0.000134	104	2	12.9 - 170	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Nitrobenzene-d5	0.162	0.162	mg/L	0.001	160	101	101	10 - 123
2-Fluorobiphenyl	0.110	0.113	mg/L	0.001	160	69	71	10 - 125
Terphenyl-d14	0.113	0.113	mg/L	0.001	160	71	71	10 - 147

Standard (ICV-1) QC Batch: 17799

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/L	0.100	0.0902	90	85 - 115	2005-04-30
Toluene		mg/L	0.100	0.0947	95	85 - 115	2005-04-30
Ethylbenzene		mg/L	0.100	0.0992	99	85 - 115	2005-04-30
Xylene		mg/L	0.300	0.318	106	85 - 115	2005-04-30

Standard (CCV-1) QC Batch: 17799

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/L	0.100	0.0879	88	85 - 115	2005-04-30
Toluene		mg/L	0.100	0.0905	90	85 - 115	2005-04-30

continued ...

standard continued . . .

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Ethylbenzene		mg/L	0.100	0.0961	96	85 - 115	2005-04-30
Xylene		mg/L	0.300	0.307	102	85 - 115	2005-04-30

Standard (CCV-1) QC Batch: 17856

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Naphthalene		mg/L	60.0	59.2	99	80 - 120	2005-05-01
Acenaphthylene		mg/L	60.0	57.6	96	80 - 120	2005-05-01
Acenaphthene		mg/L	60.0	60.8	101	80 - 120	2005-05-01
Fluorene		mg/L	60.0	52.0	87	80 - 120	2005-05-01
Phenanthrene		mg/L	60.0	57.8	96	80 - 120	2005-05-01
Anthracene		mg/L	60.0	59.2	99	80 - 120	2005-05-01
Fluoranthene		mg/L	60.0	65.6	109	80 - 120	2005-05-01
Pyrene		mg/L	60.0	53.1	88	80 - 120	2005-05-01
Benzo(a)anthracene		mg/L	60.0	69.2	115	80 - 120	2005-05-01
Chrysene		mg/L	60.0	63.8	106	80 - 120	2005-05-01
Benzo(b)fluoranthene		mg/L	60.0	53.9	90	80 - 120	2005-05-01
Benzo(k)fluoranthene		mg/L	60.0	49.8	83	80 - 120	2005-05-01
Benzo(a)pyrene		mg/L	60.0	56.9	95	80 - 120	2005-05-01
Indeno(1,2,3-cd)pyrene		mg/L	60.0	62.3	104	80 - 120	2005-05-01
Dibenzo(a,h)anthracene		mg/L	60.0	57.7	96	80 - 120	2005-05-01
Benzo(g,h,i)perylene		mg/L	60.0	62.2	104	80 - 120	2005-05-01

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limit
Nitrobenzene-d5		86.7	mg/L	1	60.0	144	80 - 120
2-Fluorobiphenyl		64.0	mg/L	1	60.0	107	80 - 120
Terphenyl-d14		52.0	mg/L	1	60.0	87	80 - 120

6701 Aberdeen Avenue, Ste. 9
Lubbock, Texas 79424
Tel (806) 794-1296
Fax (806) 794-1298
1 (800) 378-1296

TraceAnalysis, Inc.

155 McCutcheon,Suite H
El Paso, Texas 79932
Tel (915) 585-3443
Fax (915) 585-4944
1 (888) 588-3443

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

LAB Order ID # 5042709

Company Name: Enercon Services Inc
Phone #: 432-570-8726
Address: (Street, City, Zip) 306 West Wall Suite 1312 Midland, TX 79701
Fax #: 432-684-7587
Contact Person: Jeff Kindley
Invoice to: (If different from above) Ken Spunger c/o Shell Oil
Project #: ES-533 Incident # 300108
Project Name: Penrose
Project Location: Lea County NM
Sampler Signature: Jeff Kindley

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCl	HNO_3	H_2SO_4	NaOH	ICE	NONE	SAMPLING: DATE	TIME
60971	MW-2	3	1 Liter 40ml	✓				✓					✓	04/25/05	
972	MW-3	3		✓				✓					✓		
973	MW-4	3		✓				✓					✓		
974	MW-5	3		✓				✓					✓		

ANALYSIS REQUEST (Circle or Specify Method No.)

MTBE 8021B/602	BTEX 8021B/602	TPH 418.1/TX1005	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg 6010B/2007	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	TCLP Pesticides	RCI	GC/MS Vol 8260B/624	GC/MS Semi Vol 8270C/625	PCB's 8082/608	Pesticides 8081A/608	BOD, TSS, pH						Turn Around Time if different from standard	Hold
	✓		✓																		
	✓		✓																		
	✓		✓																		
	✓		✓																		

Relinquished by: Jeff Kindley Date: 4/26 2005 Time: 900
Received by: Helen Shelton Date: 4/26/05 Time: 0900

Relinquished by: Helen Shelton 4/26/05 1930
Received by: Date: Time:

Relinquished by: Date: Time:
Received at Laboratory by: Vicki Date: 4/27/05 Time: 10:00

Submittal of samples constitutes agreement to Terms and Conditions listed on reverse side of C.O.C.

ORIGINAL COPY

12 of Samples-11

LAB USE ONLY
Intact Y N
Headspace Y N
Temp 4 °
Log-in Review NM

REMARKS:
Normal

☐ Check If Special Reporting Limits Are Needed

Carrier # Enercon PT394607

Analytical and Quality Control Report

Jeffrey Kindley
Enercon Services-Midland
306 West Wall Street
Suite 1312
Midland, TX 79701

Report Date: September 8, 2005

Work Order: 5090203

Incident #: 300108
Project Location: Eunice,New Mexico
Project Name: Kennan
Project Number: ES-533

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
72627	MW-2	water	2005-09-01	00:00	2005-09-02
72628	MW-3	water	2005-09-01	00:00	2005-09-02
72629	MW-4	water	2005-09-01	00:00	2005-09-02
72630	MW-5	water	2005-09-01	00:00	2005-09-02

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

Blair Leftwich

Dr. Blair Leftwich, Director

Analytical Report

Sample: 72627 - MW-2

Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	21007	Date Analyzed:	2005-09-02	Analyzed By:	MT
Prep Batch:	18442	Sample Preparation:	2005-09-02	Prepared By:	MT

Parameter	Flag	RL Result	Units	Dilution	RL
Benzene		<0.00100	mg/L	1	0.00100
Toluene		<0.00100	mg/L	1	0.00100
Ethylbenzene		<0.00100	mg/L	1	0.00100
Xylene		<0.00100	mg/L	1	0.00100

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.0919	mg/L	1	0.100	92	73.8 - 121
4-Bromofluorobenzene (4-BFB)		0.0863	mg/L	1	0.100	86	52.4 - 119

Sample: 72627 - MW-2

Analysis:	PAH	Analytical Method:	S 8270C	Prep Method:	S 3510C
QC Batch:	21068	Date Analyzed:	2005-09-06	Analyzed By:	RC
Prep Batch:	18466	Sample Preparation:	2005-09-02	Prepared By:	RC

Parameter	Flag	RL Result	Units	Dilution	RL
Naphthalene		<0.000200	mg/L	1	0.000200
Acenaphthylene		<0.000200	mg/L	1	0.000200
Acenaphthene		<0.000200	mg/L	1	0.000200
Dibenzofuran		<0.000200	mg/L	1	0.000200
Fluorene		<0.000200	mg/L	1	0.000200
Phenanthrene		<0.000200	mg/L	1	0.000200
Anthracene		<0.000200	mg/L	1	0.000200
Fluoranthene		<0.000200	mg/L	1	0.000200
Pyrene		<0.000200	mg/L	1	0.000200
Benzo(a)anthracene		<0.000200	mg/L	1	0.000200
Chrysene		<0.000200	mg/L	1	0.000200
Benzo(b)fluoranthene		<0.000200	mg/L	1	0.000200
Benzo(k)fluoranthene		<0.000400	mg/L	1	0.000400
Benzo(a)pyrene		<0.000200	mg/L	1	0.000200
Indeno(1,2,3-cd)pyrene		<0.000400	mg/L	1	0.000400
Dibenzo(a,h)anthracene		<0.000200	mg/L	1	0.000200
Benzo(g,h,i)perylene		<0.000200	mg/L	1	0.000200

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Nitrobenzene-d5		0.0623	mg/L	1	0.0800	78	10 - 129
2-Fluorobiphenyl		0.0565	mg/L	1	0.0800	71	16 - 108
Terphenyl-d14		0.0682	mg/L	1	0.0800	85	37 - 116

Sample: 72628 - MW-3

Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	21007	Date Analyzed:	2005-09-02	Analyzed By:	MT
Prep Batch:	18442	Sample Preparation:	2005-09-02	Prepared By:	MT

Parameter	Flag	RL Result	Units	Dilution	RL
Benzene		<0.00100	mg/L	1	0.00100
Toluene		<0.00100	mg/L	1	0.00100
Ethylbenzene		<0.00100	mg/L	1	0.00100
Xylene		<0.00100	mg/L	1	0.00100

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.0918	mg/L	1	0.100	92	73.8 - 121
4-Bromofluorobenzene (4-BFB)		0.0845	mg/L	1	0.100	84	52.4 - 119

Sample: 72628 - MW-3

Analysis:	PAH	Analytical Method:	S 8270C	Prep Method:	S 3510C
QC Batch:	21068	Date Analyzed:	2005-09-06	Analyzed By:	RC
Prep Batch:	18466	Sample Preparation:	2005-09-02	Prepared By:	RC

Parameter	Flag	RL Result	Units	Dilution	RL
Naphthalene		<0.000200	mg/L	1	0.000200
Acenaphthylene		<0.000200	mg/L	1	0.000200
Acenaphthene		<0.000200	mg/L	1	0.000200
Dibenzofuran		<0.000200	mg/L	1	0.000200
Fluorene		<0.000200	mg/L	1	0.000200
Phenanthrene		<0.000200	mg/L	1	0.000200
Anthracene		<0.000200	mg/L	1	0.000200
Fluoranthene		<0.000200	mg/L	1	0.000200
Pyrene		<0.000200	mg/L	1	0.000200
Benzo(a)anthracene		<0.000200	mg/L	1	0.000200
Chrysene		<0.000200	mg/L	1	0.000200
Benzo(b)fluoranthene		<0.000200	mg/L	1	0.000200
Benzo(k)fluoranthene		<0.000400	mg/L	1	0.000400
Benzo(a)pyrene		<0.000200	mg/L	1	0.000200
Indeno(1,2,3-cd)pyrene		<0.000400	mg/L	1	0.000400
Dibenzo(a,h)anthracene		<0.000200	mg/L	1	0.000200
Benzo(g,h,i)perylene		<0.000200	mg/L	1	0.000200

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Nitrobenzene-d5		0.0693	mg/L	1	0.0800	87	10 - 129
2-Fluorobiphenyl		0.0653	mg/L	1	0.0800	82	16 - 108
Terphenyl-d14		0.0579	mg/L	1	0.0800	72	37 - 116

Sample: 72629 - MW-4

Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	21007	Date Analyzed:	2005-09-02	Analyzed By:	MT
Prep Batch:	18442	Sample Preparation:	2005-09-02	Prepared By:	MT

Parameter	Flag	RL Result	Units	Dilution	RL
Benzene		<0.00100	mg/L	1	0.00100
Toluene		<0.00100	mg/L	1	0.00100
Ethylbenzene		<0.00100	mg/L	1	0.00100
Xylene		<0.00100	mg/L	1	0.00100

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.0908	mg/L	1	0.100	91	73.8 - 121
4-Bromofluorobenzene (4-BFB)		0.0839	mg/L	1	0.100	84	52.4 - 119

Sample: 72629 - MW-4

Analysis:	PAH	Analytical Method:	S 8270C	Prep Method:	S 3510C
QC Batch:	21068	Date Analyzed:	2005-09-06	Analyzed By:	RC
Prep Batch:	18466	Sample Preparation:	2005-09-02	Prepared By:	RC

Parameter	Flag	RL Result	Units	Dilution	RL
Naphthalene		<0.000200	mg/L	1	0.000200
Acenaphthylene		<0.000200	mg/L	1	0.000200
Acenaphthene		<0.000200	mg/L	1	0.000200
Dibenzofuran		<0.000200	mg/L	1	0.000200
Fluorene		<0.000200	mg/L	1	0.000200
Phenanthrene		<0.000200	mg/L	1	0.000200
Anthracene		<0.000200	mg/L	1	0.000200
Fluoranthene		<0.000200	mg/L	1	0.000200
Pyrene		<0.000200	mg/L	1	0.000200
Benzo(a)anthracene		<0.000200	mg/L	1	0.000200
Chrysene		<0.000200	mg/L	1	0.000200
Benzo(b)fluoranthene		<0.000200	mg/L	1	0.000200
Benzo(k)fluoranthene		<0.000400	mg/L	1	0.000400
Benzo(a)pyrene		<0.000200	mg/L	1	0.000200
Indeno(1,2,3-cd)pyrene		<0.000400	mg/L	1	0.000400
Dibenzo(a,h)anthracene		<0.000200	mg/L	1	0.000200
Benzo(g,h,i)perylene		<0.000200	mg/L	1	0.000200

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Nitrobenzene-d5		0.0706	mg/L	1	0.0800	88	10 - 129
2-Fluorobiphenyl		0.0670	mg/L	1	0.0800	84	16 - 108
Terphenyl-d14		0.0749	mg/L	1	0.0800	94	37 - 116

Sample: 72630 - MW-5

Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	21007	Date Analyzed:	2005-09-02	Analyzed By:	MT
Prep Batch:	18442	Sample Preparation:	2005-09-02	Prepared By:	MT

Parameter	Flag	RL Result	Units	Dilution	RL
Benzene		<0.00100	mg/L	1	0.00100
Toluene		<0.00100	mg/L	1	0.00100
Ethylbenzene		<0.00100	mg/L	1	0.00100
Xylene		<0.00100	mg/L	1	0.00100

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.0930	mg/L	1	0.100	93	73.8 - 121
4-Bromofluorobenzene (4-BFB)		0.0853	mg/L	1	0.100	85	52.4 - 119

Sample: 72630 - MW-5

Analysis:	PAH	Analytical Method:	S 8270C	Prep Method:	S 3510C
QC Batch:	21068	Date Analyzed:	2005-09-06	Analyzed By:	RC
Prep Batch:	18466	Sample Preparation:	2005-09-02	Prepared By:	RC

Parameter	Flag	RL Result	Units	Dilution	RL
Naphthalene		<0.000200	mg/L	1	0.000200
Acenaphthylene		<0.000200	mg/L	1	0.000200
Acenaphthene		<0.000200	mg/L	1	0.000200
Dibenzofuran		<0.000200	mg/L	1	0.000200
Fluorene		<0.000200	mg/L	1	0.000200
Phenanthrene		<0.000200	mg/L	1	0.000200
Anthracene		<0.000200	mg/L	1	0.000200
Fluoranthene		<0.000200	mg/L	1	0.000200
Pyrene		<0.000200	mg/L	1	0.000200
Benzo(a)anthracene		<0.000200	mg/L	1	0.000200
Chrysene		<0.000200	mg/L	1	0.000200
Benzo(b)fluoranthene		<0.000200	mg/L	1	0.000200
Benzo(k)fluoranthene		<0.000400	mg/L	1	0.000400
Benzo(a)pyrene		<0.000200	mg/L	1	0.000200
Indeno(1,2,3-cd)pyrene		<0.000400	mg/L	1	0.000400
Dibenzo(a,h)anthracene		<0.000200	mg/L	1	0.000200
Benzo(g,h,i)perylene		<0.000200	mg/L	1	0.000200

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Nitrobenzene-d5		0.0529	mg/L	1	0.0800	66	10 - 129
2-Fluorobiphenyl		0.0494	mg/L	1	0.0800	62	16 - 108
Terphenyl-d14		0.0719	mg/L	1	0.0800	90	37 - 116

Method Blank (1) QC Batch: 21007

Parameter	Flag	MDL Result	Units	RL
Benzene		<0.000136	mg/L	0.001
Toluene		<0.000247	mg/L	0.001
Ethylbenzene		<0.000552	mg/L	0.001
Xylene		<0.00156	mg/L	0.001

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.0932	mg/L	1	0.100	93	73.8 - 121
4-Bromofluorobenzene (4-BFB)		0.0861	mg/L	1	0.100	86	52.4 - 113

Method Blank (1) QC Batch: 21068

Parameter	Flag	MDL Result	Units	RL
Naphthalene		<0.0000853	mg/L	0.0002
Acenaphthylene		<0.0000768	mg/L	0.0002
Acenaphthene		<0.000103	mg/L	0.0002
Dibenzofuran		<0.000200	mg/L	0.0002
Fluorene		<0.0000861	mg/L	0.0002
Phenanthrene		<0.0000884	mg/L	0.0002
Anthracene		<0.000170	mg/L	0.0002
Fluoranthene		<0.0000969	mg/L	0.0002
Pyrene		<0.0000855	mg/L	0.0002
Benzo(a)anthracene		<0.0000703	mg/L	0.0002
Chrysene		<0.000113	mg/L	0.0002
Benzo(b)fluoranthene		<0.000134	mg/L	0.0002
Benzo(k)fluoranthene		<0.000227	mg/L	0.0004
Benzo(a)pyrene		<0.000200	mg/L	0.0002
Indeno(1,2,3-cd)pyrene		<0.000253	mg/L	0.0004
Dibenzo(a,h)anthracene		<0.000180	mg/L	0.0002
Benzo(g,h,i)perylene		<0.000158	mg/L	0.0002

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Nitrobenzene-d5		0.0560	mg/L	1	0.0800	70	10 - 129
2-Fluorobiphenyl		0.0512	mg/L	1	0.0800	64	16 - 108
Terphenyl-d14		0.0603	mg/L	1	0.0800	75	37 - 116

Laboratory Control Spike (LCS-1) QC Batch: 21007

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
Benzene	0.0996	0.0980	mg/L	1	0.100	<0.000136	100	2	72.8 - 113	20
Toluene	0.100	0.0982	mg/L	1	0.100	<0.000247	100	2	75.2 - 112	20
Ethylbenzene	0.108	0.107	mg/L	1	0.100	<0.000550	108	1	81 - 112	20
Xylene	0.347	0.342	mg/L	1	0.300	<0.00156	116	1	82.9 - 119	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	0.0954	0.0969	mg/L	1	0.100	95	97	72.9 - 121
4-Bromofluorobenzene (4-BFB)	0.0943	0.0965	mg/L	1	0.100	94	96	77.8 - 119

Laboratory Control Spike (LCS-1) QC Batch: 21068

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
Naphthalene	0.0803	0.0799	mg/L	1	0.0800	<0.0000853	100	0	10 - 131	20
Acenaphthylene	0.0720	0.0727	mg/L	1	0.0800	<0.0000768	90	1	10 - 175	20
Acenaphthene	0.0725	0.0725	mg/L	1	0.0800	<0.000103	91	0	10 - 146	20
Dibenzofuran	0.0743	0.0740	mg/L	1	0.0800	<0.000200	93	0	16 - 120	20
Fluorene	0.0795	0.0804	mg/L	1	0.0800	<0.0000861	99	1	10.9 - 156	20
Phenanthrene	0.0924	0.0918	mg/L	1	0.0800	<0.0000884	116	1	10 - 156	20
Anthracene	0.0910	0.0918	mg/L	1	0.0800	<0.000170	114	1	10 - 172	20
Fluoranthene	0.104	0.105	mg/L	1	0.0800	<0.0000969	130	1	10 - 171	20
Pyrene	0.0895	0.0911	mg/L	1	0.0800	<0.0000855	112	2	18.1 - 159	20
Benzo(a)anthracene	0.0968	0.0973	mg/L	1	0.0800	<0.0000703	121	0	10 - 173	20
Chrysene	0.0810	0.0813	mg/L	1	0.0800	<0.000113	101	0	10 - 162	20
Benzo(b)fluoranthene	0.0796	0.0827	mg/L	1	0.0800	<0.000134	100	4	15.7 - 157	20
Benzo(k)fluoranthene	0.0791	0.0871	mg/L	1	0.0800	<0.000227	99	10	14 - 163	20
Benzo(a)pyrene	0.0938	0.0936	mg/L	1	0.0800	<0.000200	117	0	12.1 - 176	20
Indeno(1,2,3-cd)pyrene	0.0994	0.0991	mg/L	1	0.0800	<0.000253	124	0	13 - 170	20
Dibenzo(a,h)anthracene	0.0911	0.0917	mg/L	1	0.0800	<0.000180	114	1	10 - 159	20
Benzo(g,h,i)perylene	0.0958	0.0961	mg/L	1	0.0800	<0.000158	120	0	12.9 - 170	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Nitrobenzene-d5	0.0799	0.0806	mg/L	1	0.0800	100	101	10 - 123
2-Fluorobiphenyl	0.0692	0.0679	mg/L	1	0.0800	86	85	10 - 125
Terphenyl-d14	0.0919	0.0924	mg/L	1	0.0800	115	116	10 - 147

Matrix Spike (MS-1) QC Batch: 21007 Spiked Sample: 72627

Param		MS Result	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
Benzene	[1]	0.0884	NA	mg/L	1	0.100	<0.000136	88	200	70 - 130	20
Toluene	[2]	0.0875	NA	mg/L	1	0.100	<0.000247	88	200	70 - 130	20
Ethylbenzene	[3]	0.0950	NA	mg/L	1	0.100	<0.000550	95	200	70 - 130	20
Xylene	[4]	0.306	NA	mg/L	1	0.300	<0.00156	102	200	70 - 130	20

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

[1] RPD is out of range because a matrix spike duplicate was not prepared.
[2] RPD is out of range because a matrix spike duplicate was not prepared.
[3] RPD is out of range because a matrix spike duplicate was not prepared.
[4] RPD is out of range because a matrix spike duplicate was not prepared.

Surrogate		MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	[5]	0.0918	NA	mg/L	1	0.1	92	0	70 - 130
4-Bromofluorobenzene (4-BFB)	[6]	0.0928	NA	mg/L	1	0.1	93	0	70 - 130

Standard (ICV-1) QC Batch: 21007

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/L	0.100	0.0980	98	85 - 115	2005-09-02
Toluene		mg/L	0.100	0.0995	100	85 - 115	2005-09-02
Ethylbenzene		mg/L	0.100	0.107	107	85 - 115	2005-09-02
Xylene		mg/L	0.300	0.342	114	85 - 115	2005-09-02

Standard (CCV-1) QC Batch: 21007

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/L	0.100	0.0958	96	85 - 115	2005-09-02
Toluene		mg/L	0.100	0.0960	96	85 - 115	2005-09-02
Ethylbenzene		mg/L	0.100	0.104	104	85 - 115	2005-09-02
Xylene		mg/L	0.300	0.332	111	85 - 115	2005-09-02

Standard (CCV-1) QC Batch: 21068

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Naphthalene		mg/L	60.0	67.6	113	80 - 120	2005-09-06
Acenaphthylene		mg/L	60.0	60.3	100	80 - 120	2005-09-06
Acenaphthene		mg/L	60.0	59.6	99	80 - 120	2005-09-06
Dibenzofuran		mg/L	60.0	59.6	99	80 - 120	2005-09-06
Fluorene		mg/L	60.0	57.9	96	80 - 120	2005-09-06
Phenanthrene		mg/L	60.0	59.9	100	80 - 120	2005-09-06
Anthracene		mg/L	60.0	58.1	97	80 - 120	2005-09-06
Fluoranthene		mg/L	60.0	58.0	97	80 - 120	2005-09-06
Pyrene		mg/L	60.0	48.3	80	80 - 120	2005-09-06
Benzo(a)anthracene		mg/L	60.0	63.0	105	80 - 120	2005-09-06
Chrysene		mg/L	60.0	57.1	95	80 - 120	2005-09-06
Benzo(b)fluoranthene		mg/L	60.0	63.1	105	80 - 120	2005-09-06
Benzo(k)fluoranthene		mg/L	60.0	63.1	105	80 - 120	2005-09-06
Benzo(a)pyrene		mg/L	60.0	62.4	104	80 - 120	2005-09-06
Indeno(1,2,3-cd)pyrene		mg/L	60.0	63.0	105	80 - 120	2005-09-06
Dibenzo(a,h)anthracene		mg/L	60.0	60.8	101	80 - 120	2005-09-06
Benzo(g,h,i)perylene		mg/L	60.0	62.3	104	80 - 120	2005-09-06

[5]RPD is out of range because a matrix spike duplicate was not prepared.
[6]RPD is out of range because a matrix spike duplicate was not prepared.

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limit
Nitrobenzene-d5		67.3	mg/L	1	60.0	112	80 - 120
2-Fluorobiphenyl		60.6	mg/L	1	60.0	101	80 - 120
Terphenyl-d14		49.2	mg/L	1	60.0	82	80 - 120

6701 Aberdeen Avenue, Ste. 9
Lubbock, Texas 79424
Tel (806) 794-1296
Fax (806) 794-1298
1 (800) 378-1296
email: lab@traceanalysis.com

TraceAnalysis, Inc.

155 McCutcheon,Suite H
El Paso, Texas 79932
Tel (915) 585-3443
Fax (915) 585-4944
1 (888) 588-3443

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

LAB Order ID # 5090203

Company Name: Enron Services Inc
Phone #: 432-570-8726
Address: (Street, City, Zip) 306 west Wall, Suite 1312, Midland, Tx 79701
Fax #: 432-684-7587
e-mail: JKIND2112@aol.com
Contact Person: Jeffrey Kindley
Invoice to: (If different from above) Ken Springer c/o Shell Oil Products
Project #: ES-533 / Incident # 300108
Project Name: Kennan
Project Location: Lea County, New Mexico
Sampler Signature:

ANALYSIS REQUEST
(Circle or Specify Method No.)

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCl	HNO_3	H_2SO_4	NaOH	ICE	NONE	SAMPLING: DATE	TIME	MTBE 8021B/602	BTEX 8021B/602	TPH 418.1/TX1005	TX 1005 Extended (C35)	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg 6010B/2007	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	TCLP Pesticides	RCI	GC/MS Vol 8260B/624	GC/MS Semi Vol 8270C/625	PCB's 8082/608	Pesticides 8081A/608	BOD TSS pH	Moisture Content			Turn Around Time if different from standard	Hold
72627	MW-2	3	40ml 1 Liter	✓				✓					✓	09/01/05			✓			✓															
28	MW-3	3	40ml 1 Liter	✓				✓					✓	09/01/05			✓			✓															
29	MW-4	3	40ml 1 Liter	✓				✓					✓	09/01/05			✓			✓															
30	MW-5	3	40ml 1 Liter	✓				✓					✓	09/01/05			✓			✓															

Relinquished by:	Date:	Time:	Received by:	Date:	Time:
Jeffrey Kindley	09/01/05	1630	Celeste Peterson	9/01/05	1630
Relinquished by:	Date:	Time:	Received by:	Date:	Time:
Celeste Peterson	9/01/05	1745			
Relinquished by:	Date:	Time:	Received at Laboratory by:	Date:	Time:
			Megan Mcord	9-2-05	8:45 am

Submittal of samples constitutes agreement to Terms and Conditions listed on reverse side of C.O.C. 12 samples HS

ORIGINAL COPY

LAB USE ONLY

Intact (Y) N
Headspace Y (N)
Temp 4 °
Log-in Review

REMARKS:

- ☐ Dry Weight Basis Required
- ☐ TRRP Report Required
- ☐ Check If Special Reporting Limits Are Needed

Carrier # Fine Arrt P1577844

Analytical and Quality Control Report

Jeffrey Kindley
Enercon Services-Midland
306 West Wall Street
Suite 1312
Midland, TX 79701

Report Date: October 31, 2005

Work Order: 5102708

Incident #: 300108
Project Location: Eunice,New Mexico
Project Name: Kennan
Project Number: ES-533

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
76824	MW-2	water	2005-10-25	00:00	2005-10-27
76825	MW-3	water	2005-10-25	00:00	2005-10-27
76826	MW-4	water	2005-10-25	00:00	2005-10-27
76827	MW-5	water	2005-10-25	00:00	2005-10-27

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

Michael Abel

Dr. Blair Leftwich, Director

Analytical Report

Sample: 76824 - MW-2

Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	22371	Date Analyzed:	2005-10-28	Analyzed By:	MT
Prep Batch:	19644	Sample Preparation:	2005-10-28	Prepared By:	MT

Parameter	Flag	RL Result	Units	Dilution	RL
Benzene		<0.00100	mg/L	1	0.00100
Toluene		<0.00100	mg/L	1	0.00100
Ethylbenzene		<0.00100	mg/L	1	0.00100
Xylene		<0.00100	mg/L	1	0.00100

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.0904	mg/L	1	0.100	90	48.4 - 119
4-Bromofluorobenzene (4-BFB)		0.0905	mg/L	1	0.100	90	17.1 - 138

Sample: 76824 - MW-2

Analysis:	PAH	Analytical Method:	S 8270C	Prep Method:	S 3510C
QC Batch:	22358	Date Analyzed:	2005-10-29	Analyzed By:	AG
Prep Batch:	19626	Sample Preparation:	2005-10-29	Prepared By:	AG

Parameter	Flag	RL Result	Units	Dilution	RL
Naphthalene		<0.000200	mg/L	1	0.000200
Acenaphthylene		<0.000200	mg/L	1	0.000200
Acenaphthene		<0.000200	mg/L	1	0.000200
Dibenzofuran		<0.000200	mg/L	1	0.000200
Fluorene		<0.000200	mg/L	1	0.000200
Phenanthrene		<0.000200	mg/L	1	0.000200
Anthracene		<0.000200	mg/L	1	0.000200
Fluoranthene		<0.000200	mg/L	1	0.000200
Pyrene		<0.000200	mg/L	1	0.000200
Benzo(a)anthracene		<0.000200	mg/L	1	0.000200
Chrysene		<0.000200	mg/L	1	0.000200
Benzo(b)fluoranthene		<0.000200	mg/L	1	0.000200
Benzo(k)fluoranthene		<0.000400	mg/L	1	0.000400
Benzo(a)pyrene		<0.000200	mg/L	1	0.000200
Indeno(1,2,3-cd)pyrene		<0.000400	mg/L	1	0.000400
Dibenzo(a,h)anthracene		<0.000200	mg/L	1	0.000200
Benzo(g,h,i)perylene		<0.000200	mg/L	1	0.000200

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Nitrobenzene-d5		0.0523	mg/L	1	0.0800	65	10 - 129
2-Fluorobiphenyl		0.0569	mg/L	1	0.0800	71	16 - 108
Terphenyl-d14		0.0525	mg/L	1	0.0800	66	37 - 116

Sample: 76825 - MW-3

Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	22371	Date Analyzed:	2005-10-28	Analyzed By:	MT
Prep Batch:	19644	Sample Preparation:	2005-10-28	Prepared By:	MT

Parameter	Flag	RL Result	Units	Dilution	RL
Benzene		<0.00100	mg/L	1	0.00100
Toluene		<0.00100	mg/L	1	0.00100
Ethylbenzene		<0.00100	mg/L	1	0.00100
Xylene		<0.00100	mg/L	1	0.00100

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.0916	mg/L	1	0.100	92	48.4 - 119
4-Bromofluorobenzene (4-BFB)		0.0910	mg/L	1	0.100	91	17.1 - 138

Sample: 76825 - MW-3

Analysis:	PAH	Analytical Method:	S 8270C	Prep Method:	S 3510C
QC Batch:	22358	Date Analyzed:	2005-10-29	Analyzed By:	AG
Prep Batch:	19626	Sample Preparation:	2005-10-29	Prepared By:	AG

Parameter	Flag	RL Result	Units	Dilution	RL
Naphthalene		<0.000200	mg/L	1	0.000200
Acenaphthylene		<0.000200	mg/L	1	0.000200
Acenaphthene		<0.000200	mg/L	1	0.000200
Dibenzofuran		<0.000200	mg/L	1	0.000200
Fluorene		<0.000200	mg/L	1	0.000200
Phenanthrene		<0.000200	mg/L	1	0.000200
Anthracene		<0.000200	mg/L	1	0.000200
Fluoranthene		<0.000200	mg/L	1	0.000200
Pyrene		<0.000200	mg/L	1	0.000200
Benzo(a)anthracene		<0.000200	mg/L	1	0.000200
Chrysene		<0.000200	mg/L	1	0.000200
Benzo(b)fluoranthene		<0.000200	mg/L	1	0.000200
Benzo(k)fluoranthene		<0.000400	mg/L	1	0.000400
Benzo(a)pyrene		<0.000200	mg/L	1	0.000200
Indeno(1,2,3-cd)pyrene		<0.000400	mg/L	1	0.000400
Dibenzo(a,h)anthracene		<0.000200	mg/L	1	0.000200
Benzo(g,h,i)perylene		<0.000200	mg/L	1	0.000200

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Nitrobenzene-d5		0.0644	mg/L	1	0.0800	80	10 - 129
2-Fluorobiphenyl		0.0716	mg/L	1	0.0800	90	16 - 108
Terphenyl-d14		0.0479	mg/L	1	0.0800	60	37 - 116

Sample: 76826 - MW-4

Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	22371	Date Analyzed:	2005-10-28	Analyzed By:	MT
Prep Batch:	19644	Sample Preparation:	2005-10-28	Prepared By:	MT

Parameter	Flag	RL Result	Units	Dilution	RL
Benzene		<0.00100	mg/L	1	0.00100
Toluene		<0.00100	mg/L	1	0.00100
Ethylbenzene		<0.00100	mg/L	1	0.00100
Xylene		<0.00100	mg/L	1	0.00100

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.0903	mg/L	1	0.100	90	48.4 - 119
4-Bromofluorobenzene (4-BFB)		0.0909	mg/L	1	0.100	91	17.1 - 138

Sample: 76826 - MW-4

Analysis:	PAH	Analytical Method:	S 8270C	Prep Method:	S 3510C
QC Batch:	22358	Date Analyzed:	2005-10-29	Analyzed By:	AG
Prep Batch:	19626	Sample Preparation:	2005-10-29	Prepared By:	AG

Parameter	Flag	RL Result	Units	Dilution	RL
Naphthalene		<0.000200	mg/L	1	0.000200
Acenaphthylene		<0.000200	mg/L	1	0.000200
Acenaphthene		<0.000200	mg/L	1	0.000200
Dibenzofuran		<0.000200	mg/L	1	0.000200
Fluorene		<0.000200	mg/L	1	0.000200
Phenanthrene		<0.000200	mg/L	1	0.000200
Anthracene		<0.000200	mg/L	1	0.000200
Fluoranthene		<0.000200	mg/L	1	0.000200
Pyrene		<0.000200	mg/L	1	0.000200
Benzo(a)anthracene		<0.000200	mg/L	1	0.000200
Chrysene		<0.000200	mg/L	1	0.000200
Benzo(b)fluoranthene		<0.000200	mg/L	1	0.000200
Benzo(k)fluoranthene		<0.000400	mg/L	1	0.000400
Benzo(a)pyrene		<0.000200	mg/L	1	0.000200
Indeno(1,2,3-cd)pyrene		<0.000400	mg/L	1	0.000400
Dibenzo(a,h)anthracene		<0.000200	mg/L	1	0.000200
Benzo(g,h,i)perylene		<0.000200	mg/L	1	0.000200

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Nitrobenzene-d5		0.0519	mg/L	1	0.0800	65	10 - 129
2-Fluorobiphenyl		0.0558	mg/L	1	0.0800	70	16 - 108
Terphenyl-d14		0.0540	mg/L	1	0.0800	68	37 - 116

Sample: 76827 - MW-5

Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	22371	Date Analyzed:	2005-10-28	Analyzed By:	MT
Prep Batch:	19644	Sample Preparation:	2005-10-28	Prepared By:	MT

Parameter	Flag	Result	RL	Units	Dilution	RL
Benzene		<0.00100		mg/L	1	0.00100
Toluene		<0.00100		mg/L	1	0.00100
Ethylbenzene		<0.00100		mg/L	1	0.00100
Xylene		<0.00100		mg/L	1	0.00100

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.0911	mg/L	1	0.100	91	48.4 - 119
4-Bromofluorobenzene (4-BFB)		0.0908	mg/L	1	0.100	91	17.1 - 138

Sample: 76827 - MW-5

Analysis:	PAH	Analytical Method:	S 8270C	Prep Method:	S 3510C
QC Batch:	22358	Date Analyzed:	2005-10-29	Analyzed By:	AG
Prep Batch:	19626	Sample Preparation:	2005-10-29	Prepared By:	AG

Parameter	Flag	Result	RL	Units	Dilution	RL
Naphthalene		<0.000200		mg/L	1	0.000200
Acenaphthylene		<0.000200		mg/L	1	0.000200
Acenaphthene		<0.000200		mg/L	1	0.000200
Dibenzofuran		<0.000200		mg/L	1	0.000200
Fluorene		<0.000200		mg/L	1	0.000200
Phenanthrene		<0.000200		mg/L	1	0.000200
Anthracene		<0.000200		mg/L	1	0.000200
Fluoranthene		<0.000200		mg/L	1	0.000200
Pyrene		<0.000200		mg/L	1	0.000200
Benzo(a)anthracene		<0.000200		mg/L	1	0.000200
Chrysene		<0.000200		mg/L	1	0.000200
Benzo(b)fluoranthene		<0.000200		mg/L	1	0.000200
Benzo(k)fluoranthene		<0.000400		mg/L	1	0.000400
Benzo(a)pyrene		<0.000200		mg/L	1	0.000200
Indeno(1,2,3-cd)pyrene		<0.000400		mg/L	1	0.000400
Dibenzo(a,h)anthracene		<0.000200		mg/L	1	0.000200
Benzo(g,h,i)perylene		<0.000200		mg/L	1	0.000200

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Nitrobenzene-d5		0.0650	mg/L	1	0.0800	81	10 - 129
2-Fluorobiphenyl		0.0717	mg/L	1	0.0800	90	16 - 108
Terphenyl-d14		0.0546	mg/L	1	0.0800	68	37 - 116

Method Blank (1) QC Batch: 22358

Parameter	Flag	MDL Result	Units	RL
Naphthalene		<0.0000853	mg/L	0.0002
Acenaphthylene		<0.0000768	mg/L	0.0002
Acenaphthene		<0.000103	mg/L	0.0002
Dibenzofuran		<0.000200	mg/L	0.0002
Fluorene		<0.0000861	mg/L	0.0002
Phenanthrene		<0.0000884	mg/L	0.0002
Anthracene		<0.000170	mg/L	0.0002
Fluoranthene		<0.0000969	mg/L	0.0002
Pyrene		<0.0000855	mg/L	0.0002
Benzo(a)anthracene		<0.0000703	mg/L	0.0002
Chrysene		<0.000113	mg/L	0.0002
Benzo(b)fluoranthene		<0.000134	mg/L	0.0002
Benzo(k)fluoranthene		<0.000227	mg/L	0.0004
Benzo(a)pyrene		<0.000200	mg/L	0.0002
Indeno(1,2,3-cd)pyrene		<0.000253	mg/L	0.0004
Dibenzo(a,h)anthracene		<0.000180	mg/L	0.0002
Benzo(g,h,i)perylene		<0.000158	mg/L	0.0002

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Nitrobenzene-d5		0.0474	mg/L	1	0.0800	59	10 - 129
2-Fluorobiphenyl		0.0475	mg/L	1	0.0800	59	16 - 108
Terphenyl-d14		0.0382	mg/L	1	0.0800	48	37 - 116

Method Blank (1) QC Batch: 22371

Parameter	Flag	MDL Result	Units	RL
Benzene		<0.000650	mg/L	0.001
Toluene		<0.00101	mg/L	0.001
Ethylbenzene		<0.000840	mg/L	0.001
Xylene		<0.000737	mg/L	0.001

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.0908	mg/L	1	0.100	91	48.4 - 119
4-Bromofluorobenzene (4-BFB)		0.0907	mg/L	1	0.100	91	17.1 - 138

Laboratory Control Spike (LCS-1) QC Batch: 22358

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
Naphthalene	0.0666	0.0674	mg/L	1	0.0800	<0.0000853	83	1	10 - 131	20
Acenaphthylene	0.0804	0.0811	mg/L	1	0.0800	<0.0000768	100	1	10 - 175	20
Acenaphthene	0.0739	0.0758	mg/L	1	0.0800	<0.000103	92	2	10 - 146	20
Dibenzofuran	0.0679	0.0684	mg/L	1	0.0800	<0.000200	85	1	16 - 145	20
Fluorene	0.0662	0.0678	mg/L	1	0.0800	<0.0000861	83	2	10.9 - 156	20

continued ...

control spikes continued ...

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
Phenanthrene	0.0742	0.0747	mg/L	1	0.0800	<0.0000884	93	1	10 - 156	20
Anthracene	0.0789	0.0787	mg/L	1	0.0800	<0.000170	99	0	10 - 172	20
Fluoranthene	0.0850	0.0859	mg/L	1	0.0800	<0.0000969	106	1	10 - 171	20
Pyrene	0.0884	0.0911	mg/L	1	0.0800	<0.0000855	110	3	18.1 - 159	20
Benzo(a)anthracene	0.0888	0.0898	mg/L	1	0.0800	<0.0000703	111	1	10 - 173	20
Chrysene	0.0724	0.0739	mg/L	1	0.0800	<0.000113	90	2	10 - 162	20
Benzo(b)fluoranthene	0.0836	0.0897	mg/L	1	0.0800	<0.000134	104	7	15.7 - 157	20
Benzo(k)fluoranthene	0.0665	0.0727	mg/L	1	0.0800	<0.000227	83	9	14 - 163	20
Benzo(a)pyrene	0.0835	0.0843	mg/L	1	0.0800	<0.000200	104	1	12.1 - 176	20
Indeno(1,2,3-cd)pyrene	0.0888	0.0924	mg/L	1	0.0800	<0.000253	111	4	13 - 170	20
Dibenzo(a,h)anthracene	0.0864	0.0876	mg/L	1	0.0800	<0.000180	108	1	10 - 159	20
Benzo(g,h,i)perylene	0.0693	0.0709	mg/L	1	0.0800	<0.000158	87	2	12.9 - 170	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Nitrobenzene-d5	0.0740	0.0755	mg/L	1	0.0800	92	94	10 - 123
2-Fluorobiphenyl	0.0833	0.0828	mg/L	1	0.0800	104	104	10 - 125
Terphenyl-d14	0.0633	0.0640	mg/L	1	0.0800	79	80	10 - 147

Laboratory Control Spike (LCS-1) QC Batch: 22371

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
Benzene	0.0952	0.0970	mg/L	1	0.100	<0.000650	95	2	81.9 - 114	20
Toluene	0.0942	0.0967	mg/L	1	0.100	<0.00101	94	3	82.8 - 112	20
Ethylbenzene	0.0942	0.0978	mg/L	1	0.100	<0.000840	94	4	82.2 - 111	20
Xylene	0.291	0.301	mg/L	1	0.300	<0.000737	97	3	83.5 - 112	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	0.0950	0.0955	mg/L	1	0.100	95	96	48.4 - 119
4-Bromofluorobenzene (4-BFB)	0.0966	0.0970	mg/L	1	0.100	97	97	17.1 - 138

Matrix Spike (MS-1) QC Batch: 22371 Spiked Sample: 76837

Param		MS Result	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
Benzene	[1]	0.0967	na	mg/L	1	0.100	<0.000650	97	200	81.9 - 114	20
Toluene	[2]	0.0966	na	mg/L	1	0.100	<0.00101	97	200	82.8 - 112	20
Ethylbenzene	[3]	0.0971	na	mg/L	1	0.100	<0.000840	97	200	82.2 - 111	20
Xylene	[4]	0.299	na	mg/L	1	0.300	<0.000737	100	200	83.5 - 112	20

[1] RPD is out of range because a matrix spike duplicate was not prepared.
[2] RPD is out of range because a matrix spike duplicate was not prepared.
[3] RPD is out of range because a matrix spike duplicate was not prepared.
[4] RPD is out of range because a matrix spike duplicate was not prepared.

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

Surrogate		MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	[5]	0.0953	na	mg/L	1	0.1	95	0	48.4 - 119
4-Bromofluorobenzene (4-BFB)	[6]	0.0965	na	mg/L	1	0.1	96	0	17.1 - 138

Standard (CCV-1) QC Batch: 22358

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Naphthalene		mg/L	60.0	62.4	104	80 - 120	2005-10-29
Acenaphthylene		mg/L	60.0	59.0	98	80 - 120	2005-10-29
Acenaphthene		mg/L	60.0	58.0	97	80 - 120	2005-10-29
Dibenzofuran		mg/L	60.0	55.6	93	80 - 120	2005-10-29
Fluorene		mg/L	60.0	56.8	95	80 - 120	2005-10-29
Phenanthrene		mg/L	60.0	60.2	100	80 - 120	2005-10-29
Anthracene		mg/L	60.0	61.5	102	80 - 120	2005-10-29
Fluoranthene		mg/L	60.0	50.2	84	80 - 120	2005-10-29
Pyrene		mg/L	60.0	68.9	115	80 - 120	2005-10-29
Benzo(a)anthracene		mg/L	60.0	71.8	120	80 - 120	2005-10-29
Chrysene		mg/L	60.0	56.6	94	80 - 120	2005-10-29
Benzo(b)fluoranthene		mg/L	60.0	60.5	101	80 - 120	2005-10-29
Benzo(k)fluoranthene		mg/L	60.0	60.0	100	80 - 120	2005-10-29
Benzo(a)pyrene		mg/L	60.0	63.6	106	80 - 120	2005-10-29
Indeno(1,2,3-cd)pyrene		mg/L	60.0	71.1	118	80 - 120	2005-10-29
Dibenzo(a,h)anthracene		mg/L	60.0	62.9	105	80 - 120	2005-10-29
Benzo(g,h,i)perylene		mg/L	60.0	64.8	108	80 - 120	2005-10-29

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limit
Nitrobenzene-d5		68.1	mg/L	1	60.0	114	80 - 120
2-Fluorobiphenyl		65.1	mg/L	1	60.0	108	80 - 120
Terphenyl-d14		61.2	mg/L	1	60.0	102	80 - 120

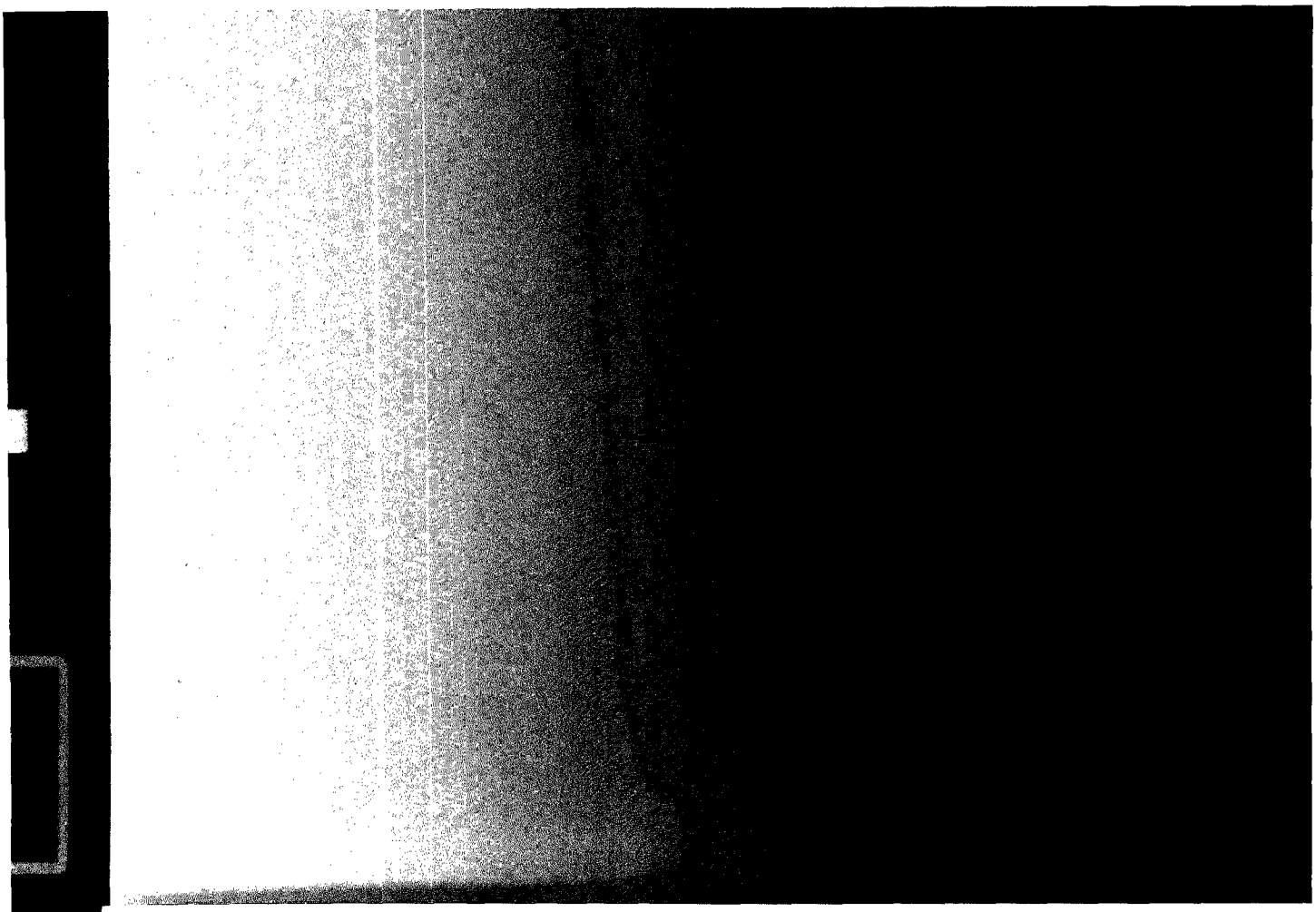
Standard (ICV-1) QC Batch: 22371

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/L	0.100	0.0975	98	85 - 115	2005-10-28
Toluene		mg/L	0.100	0.0971	97	85 - 115	2005-10-28
Ethylbenzene		mg/L	0.100	0.0978	98	85 - 115	2005-10-28
Xylene		mg/L	0.300	0.300	100	85 - 115	2005-10-28

Standard (CCV-1) QC Batch: 22371

[5]RPD is out of range because a matrix spike duplicate was not prepared.
[6]RPD is out of range because a matrix spike duplicate was not prepared.

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/L	0.100	0.0977	98	85 - 115	2005-10-28
Toluene		mg/L	0.100	0.0968	97	85 - 115	2005-10-28
Ethylbenzene		mg/L	0.100	0.0980	98	85 - 115	2005-10-28
Xylene		mg/L	0.300	0.300	100	85 - 115	2005-10-28



ORIGINAL COPY

Submittal of samples constitutes agreement to Terms and Conditions listed on reverse side of C.O.C.

relinquished by:	Date:	Time:	Received by:	Date:	Time:
relinquished by:	Date:	Time:	Received by:	Date:	Time:
relinquished by:	Date:	Time:	Received at Laboratory by:	Date:	Time:

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCl	HNO3	H2SO4	NaOH	ICE	NONE	SAMPLING: DATE	TIME
708 34	MW-2	4	40ml	✓				✓				✓		10/25/05	
35	MW-3	4	40ml	✓				✓				✓		10/25/05	
36	MW-4	4	40ml	✓				✓				✓		10/25/05	
37	MW-5	4	40ml	✓				✓				✓		10/25/05	

MTBE 8021B/602	
BTEX 8021B/602	✓
TPH 418.1/TX1005	✓
TX 1005 Extended (C35)	✓
PAH 8270C	✓
Total Metals Ag As Ba Cd Cr Pb Se Hg 6010B/200.7	✓
TCLP Metals Ag As Ba Cd Cr Pb Se Hg	
TCLP Volatiles	
TCLP Semi Volatiles	
TCLP Pesticides	
RCI	
GC/MS Vol. 8260B/624	
GC/MS Semi. Vol. 8270C/625	
PCB's 8082/608	
Pesticides 8081A/608	
BOD, TSS, pH	
Moisture Content	
Turn Around Time if different from standard	
Hold	

(circle or specify method No.)

REMARKS:

LAB USE ONLY

Intact (Y) N
Headspace Y / N
Temp 4°C
Log-in Review

Courier #

- ☐ Dry Weight Basis Required
- ☐ TRRP Report Required
- ☐ Check If Special Reporting Limits Are Needed