

**GW -** 2002

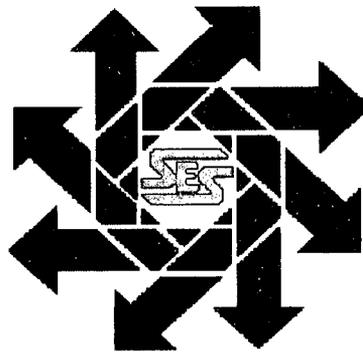
**MONITORING  
REPORTS**

**DATE:**

2002

**Pro-Kem, Inc.  
Monitor Well Report  
Section 15, T16S, R36E  
Lea County, New Mexico**

**June 25, 2002**



**Prepared for:**

**Pro-Kem, Inc.  
P.O. Box 1506  
Lovington, New Mexico 88260**

**By:**

**Safety & Environmental Solutions, Inc.  
703 E. Clinton, Suite 102  
Hobbs, New Mexico 88240  
(505) 397-0510**

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**I. Background**

The subject property is located in south Lovington, New Mexico adjacent to NM Highway 18 in Section 15, Township 16S, Range 36E. Safety & Environmental Solutions, Inc. (SESI) performed sampling and data collection on the three (3) ground water monitor wells previously installed in November 1997 at the site (See Vicinity Map). The casing size in all wells is 2".

**II. Work Performed**

On June 25, 2002 an environmental technician with SESI arrived at the site. Ground water samples were taken from each well after a hand bailer was used to develop the wells. Three to five casing volumes of water were removed from each well until pH and temperature of the water were stabilized. The samples were obtained and placed in appropriate containers, preserved and transported under chain of custody to Cardinal Laboratories of Hobbs, New Mexico for analysis for the contaminants Carbon Tetrachloride, and BTEX. (See Analytical Data)

In addition to the sampling, SESI also measured the depth to the top of the water table and the total depth of each well. The depth to the top of ground water was measured using a Solinst water level indicator. The total depth of each well was measured in order to compute the proper casing volumes. A groundwater potentiometric and gradient map was prepared using the measured depth to water and previously surveyed top of casing elevations. A summary of this data follows:

ID	DATE	TOP OF CASING ELEVATION	DEPTH TO WATER	POTENTIO METRIC ELEVATION	TOTAL WELL DEPTH	FREE PRODUCT THICKNESS
MW - 1	6/25/02	3895.67'	60.96'	3834.71'	73.36'	0.00
MW - 2	6/25/02	3894.33'	60.22'	3834.11'	70.51'	0.00
MW - 3	6/25/02	3894.13'	60.95'	3833.18'	71.44'	0.00

**III. Analytical Results**

The analysis of the groundwater samples performed by Cardinal Laboratories are summarized as follows:

<b>CONTAMINANT</b>	<b>WQCC STANDARD</b>	<b>MW #1</b>	<b>MW #2</b>	<b>MW #3</b>
Carbon Tet.	0.01 ppm	0.528ppm	0.022ppm	0.115ppm
Benzene	0.01 ppm	<0.005ppm	<0.005ppm	<0.005ppm
Toluene	0.75 ppm	<0.005ppm	<0.005ppm	<0.005ppm
Ethyl Benzene	0.75 ppm	<0.005ppm	<0.005ppm	<0.005ppm
Total Xylenes	0.62 ppm	<0.010ppm	<0.010ppm	<0.010ppm

**IV. Figures and Appendices**

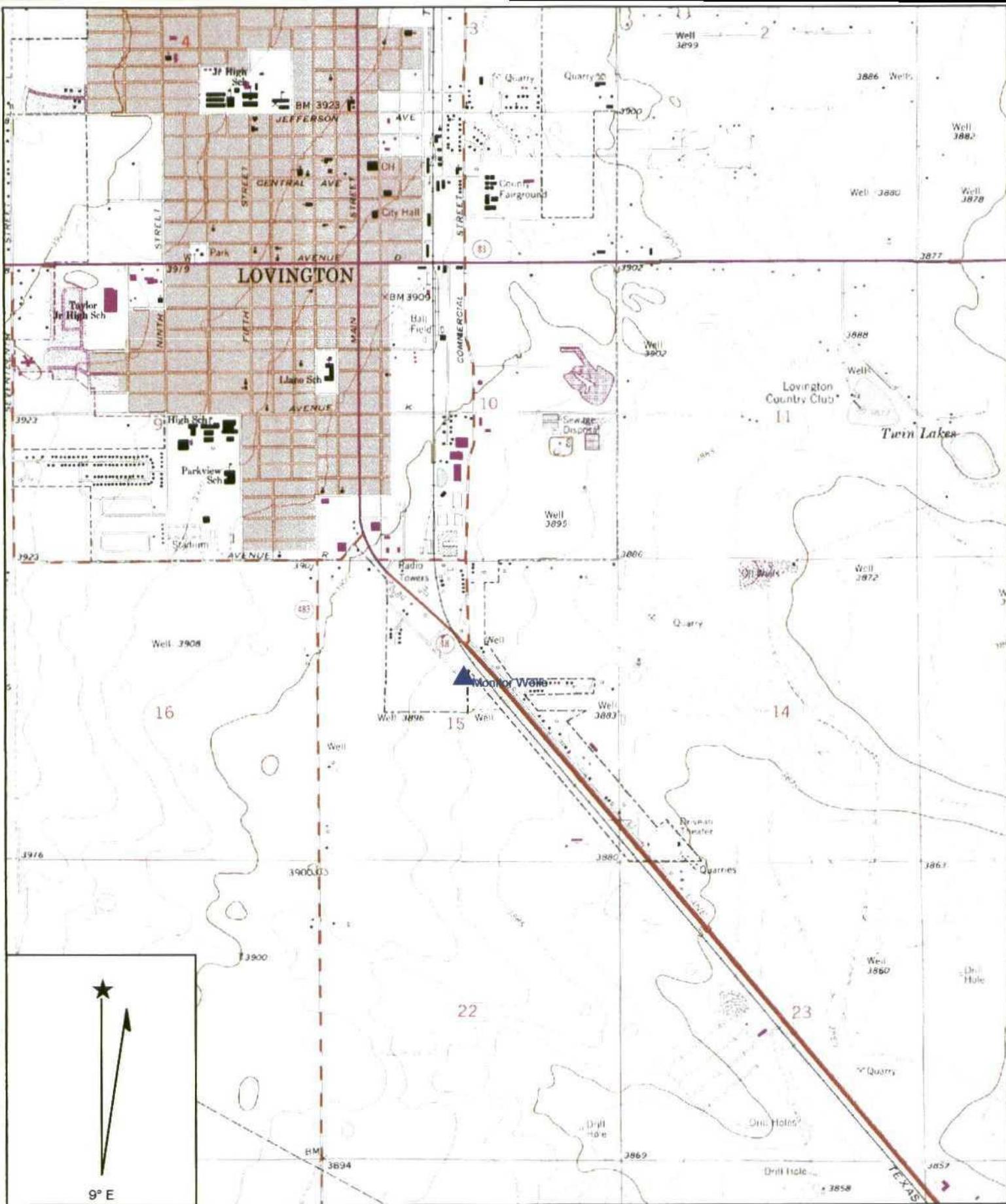
**Figures:**

- Vicinity Map
- Potentiometric Map

**Appendices:**

- Cumulative Well Water Quality Data Results
- Analytical Results

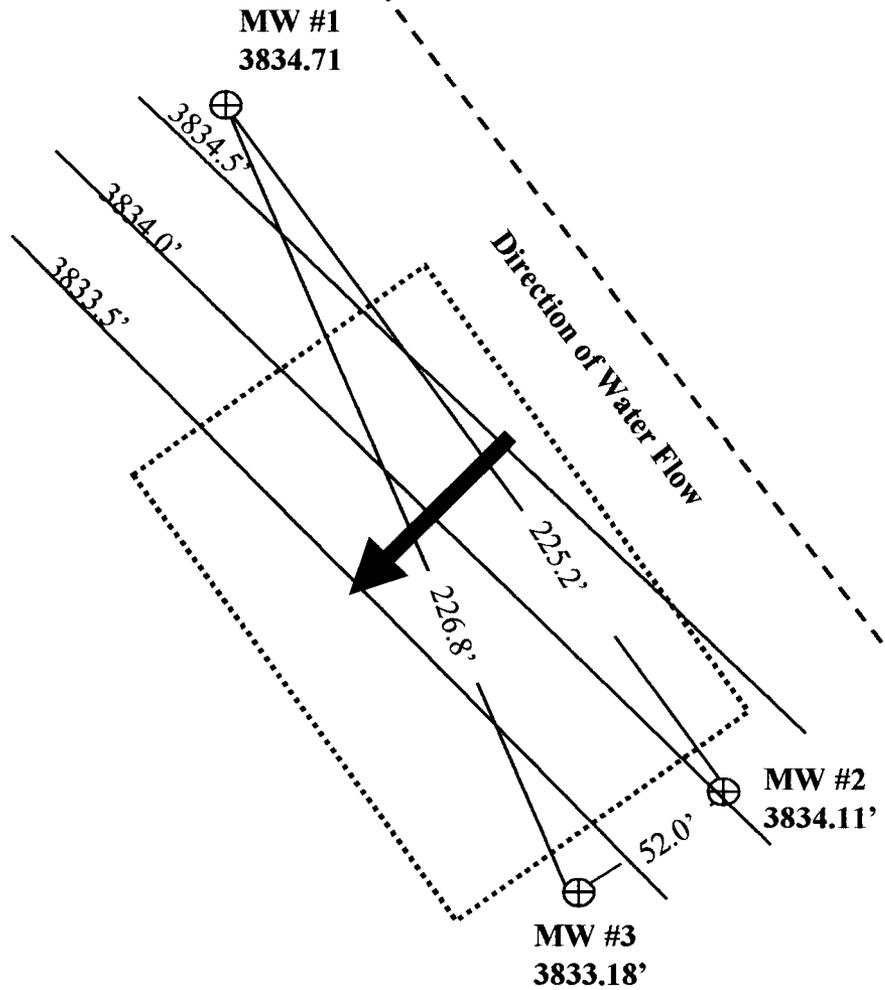
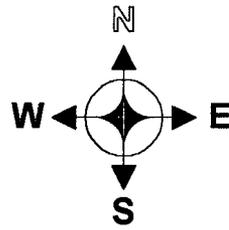
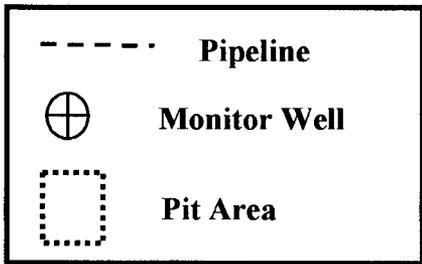
Figure 1  
Vicinity Map



Name: LOVINGTON  
 Date: 7/25/2002  
 Scale: 1 inch equals 2222 feet

Location: 032° 55' 37.4" N 103° 20' 23.6" W  
 Caption: Pro-Kem, Inc.  
 Lovington Yard Monitor Well  
 Vicinity Map

Figure 2  
Potentiometric Map



Section 15,  
Township 16 South  
Range 36 East , N.M.P.M.

1" = 50'  
Contour Interval 0.5'  
Gradient = 0.020



**ProKem, Inc.**  
June 25, 2002

**Groundwater  
Potentiometric Map**

**Safety & Environmental  
Solutions, Inc.**  
Hobbs, New Mexico

Appendix A  
Cumulative Well Water Quality Data Results

## ProKem, Inc. Cumulative Well Data

### Monitor Well #1

CONTAMINANT	WQCC STANDARD	TEST DATE 1/8/99	TEST DATE 4/16/99	TEST DATE 12/8/99
Chloride	250.0ppm	56ppm	N/A	N/A
Carbon Tetrachloride	0.002ppm	.342ppm	.338ppm	.366ppm
Benzene	0.01ppm	<0.002ppm	<0.002ppm	<0.002ppm
Toluene	0.75ppm	<0.002ppm	<0.002ppm	<0.002ppm
E. Benzene	0.75ppm	<0.002ppm	<0.002ppm	<0.002ppm
Total Xylenes	0.62ppm	<0.006ppm	<0.006ppm	<0.006ppm
TPH	N/A	<1.0ppm	N/A	N/A

CONTAMINANT	WQCC STANDARD	TEST DATE 2/22/00	TEST DATE 6/16/00	TEST DATE 9/6/00
Chloride	250.0ppm	N/A	N/A	N/A
Carbon Tetrachloride	0.002ppm	.589ppm	0.144ppm	0.460ppm
Benzene	0.01ppm	<0.002ppm	<0.002ppm	<0.005ppm
Toluene	0.75ppm	<0.002ppm	<0.002ppm	<0.005ppm
E. Benzene	0.75ppm	<0.002ppm	<0.002ppm	<0.005ppm
Total Xylenes	0.62ppm	<0.006ppm	<0.004ppm	<0.015ppm
TPH	N/A	N/A	N/A	N/A

CONTAMINANT	WQCC STANDARD	TEST DATE 3/19/01	TEST DATE 6/25/02
Chloride	250.0ppm	N/A	N/A
Carbon Tetrachloride	0.002ppm	0.817ppm	0.528ppm
Benzene	0.01ppm	<0.005ppm	<0.005ppm
Toluene	0.75ppm	<0.005ppm	<0.005ppm
E. Benzene	0.75ppm	<0.005ppm	<0.005ppm
Total Xylenes	0.62ppm	<0.010ppm	<0.010ppm
TPH	N/A	N/A	N/A

**Monitor Well #2**

<b>CONTAMINANT</b>	<b>WQCC STANDARD</b>	<b>TEST DATE 1/8/99</b>	<b>TEST DATE 4/16/99</b>	<b>TEST DATE 12/8/99</b>
Chloride	250.0ppm	94ppm	N/A	N/A
Carbon Tetrachloride	0.002ppm	0.17ppm	0.15ppm	.008ppm
Benzene	0.01ppm	<0.002ppm	<0.002ppm	<0.002ppm
Toluene	0.75ppm	<0.002ppm	<0.002ppm	<0.002ppm
Ethyl Benzene	0.75ppm	<0.002ppm	<0.002ppm	<0.002ppm
Total Xylenes	0.62ppm	<0.006ppm	<0.006ppm	<0.006ppm
TPH	N/A	1.47ppm	N/A	N/A

<b>CONTAMINANT</b>	<b>WQCC STANDARD</b>	<b>TEST DATE 2/22/00</b>	<b>TEST DATE 6/16/00</b>	<b>TEST DATE 9/6/00</b>
Chloride	250.0ppm	N/A	N/A	N/A
Carbon Tetrachloride	0.002ppm	.354ppm	0.006ppm	<0.005ppm
Benzene	0.01ppm	<0.002ppm	<0.002ppm	<0.005ppm
Toluene	0.75ppm	<0.002ppm	<0.002ppm	<0.005ppm
Ethyl Benzene	0.75ppm	<0.002ppm	<0.002ppm	<0.005ppm
Total Xylenes	0.62ppm	<0.006ppm	<0.004ppm	<0.015ppm
TPH	N/A	N/A	N/A	N/A

<b>CONTAMINANT</b>	<b>WQCC STANDARD</b>	<b>TEST DATE 3/19/01</b>	<b>TEST DATE 6/25/02</b>
Chloride	250.0ppm	N/A	N/A
Carbon Tetrachloride	0.002ppm	0.023ppm	0.022ppm
Benzene	0.01ppm	<0.005ppm	<0.005ppm
Toluene	0.75ppm	<0.005ppm	<0.005ppm
Ethyl Benzene	0.75ppm	<0.005ppm	<0.005ppm
Total Xylenes	0.62ppm	<0.010ppm	<0.010ppm
TPH	N/A	N/A	N/A

**Monitor Well #3**

<b>CONTAMINANT</b>	<b>WQCC STANDARD</b>	<b>TEST DATE 1/8/99</b>	<b>TEST DATE 4/16/99</b>	<b>TEST DATE 12/8/99</b>
Chloride	250.0ppm	116ppm	N/A	N/A
Carbon Tetrachloride	0.002ppm	.111ppm	.109ppm	.353ppm
Benzene	0.01ppm	<0.002ppm	<0.002ppm	<0.002ppm
Toluene	0.75ppm	<0.002ppm	<0.002ppm	<0.002ppm
Ethyl Benzene	0.75ppm	<0.002ppm	<0.002ppm	<0.002ppm
Total Xylenes	0.62ppm	<0.006ppm	<0.006ppm	<0.006ppm
TPH	N/A	<1.0ppm	N/A	N/A

<b>CONTAMINANT</b>	<b>WQCC STANDARD</b>	<b>TEST DATE 2/22/00</b>	<b>TEST DATE 6/16/00</b>	<b>TEST DATE 9/6/00</b>
Chloride	250.0ppm	N/A	N/A	N/A
Carbon Tetrachloride	0.002ppm	.007ppm	0.438ppm	0.155ppm
Benzene	0.01ppm	<0.002ppm	<0.002ppm	<0.005ppm
Toluene	0.75ppm	<0.002ppm	<0.002ppm	<0.005ppm
Ethyl Benzene	0.75ppm	<0.002ppm	<0.002ppm	<0.005ppm
Total Xylenes	0.62ppm	<0.006ppm	<0.004ppm	<0.015ppm
TPH	N/A	N/A	N/A	N/A

<b>CONTAMINANT</b>	<b>WQCC STANDARD</b>	<b>TEST DATE 3/19/01</b>	<b>TEST DATE 6/25/02</b>
Chloride	250.0ppm	N/A	N/A
Carbon Tetrachloride	0.002ppm	0.136ppm	0.115ppm
Benzene	0.01ppm	<0.005ppm	<0.005ppm
Toluene	0.75ppm	<0.005ppm	<0.005ppm
Ethyl Benzene	0.75ppm	<0.005ppm	<0.005ppm
Total Xylenes	0.62ppm	<0.010ppm	<0.010ppm
TPH	N/A	N/A	N/A

Appendix B  
Analytical Results



**ARDINAL**  
LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603

PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR  
SAFETY & ENVIRONMENTAL SOLUTIONS, INC.  
ATTN: BOB ALLEN  
703 E. CLINTON, #103  
HOBBS, NM 88240  
FAX TO: (505) 393-4388

Receiving Date: 06/25/02  
Reporting Date: 06/26/02  
Project Number: NOT GIVEN  
Project Name: PRO-KEM  
Project Location: LOVINGTON, NM  
Lab Number: H6838-1  
Sample ID: MW #1

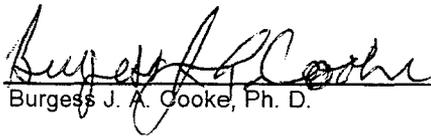
Analysis Date: 06/25/02  
Sampling Date: 06/25/02  
Sample Type: GROUNDWATER  
Sample Condition: COOL & INTACT  
Sample Received By: AH  
Analyzed By: BC

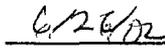
VOLATILES (mg/L)	Sample Result	Method Blank	True Value		
			QC	%Recov.	QC
Benzene	<0.005	<0.005	0.111	111	0.100
Carbon Tetrachloride	0.528	<0.005	0.116	116	0.100
Toluene	<0.005	<0.005	0.112	112	0.100
Ethylbenzene	<0.005	<0.005	0.111	111	0.100
m,p-Xylene	<0.005	<0.005	0.218	109	0.200
o-Xylene	<0.005	<0.005	0.110	110	0.100

% RECOVERY

Dibromofluoromethane	90
Toluene-d8	99
Bromofluorobenzene	101

METHODS: EPA SW-846 8260

  
Burgess J. A. Cooke, Ph. D.

  
Date



**ARDINAL**  
LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603

PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR  
SAFETY & ENVIRONMENTAL SOLUTIONS, INC.  
ATTN: BOB ALLEN  
703 E. CLINTON, #103  
HOBBS, NM 88240  
FAX TO: (505) 393-4388

Receiving Date: 06/25/02  
Reporting Date: 06/26/02  
Project Number: NOT GIVEN  
Project Name: PRO-KEM  
Project Location: LOVINGTON, NM  
Lab Number: H6838-2  
Sample ID: MW #2

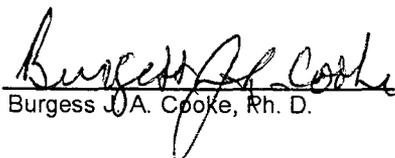
Analysis Date: 06/25/02  
Sampling Date: 06/25/02  
Sample Type: GROUNDWATER  
Sample Condition: COOL & INTACT  
Sample Received By: AH  
Analyzed By: BC

VOLATILES (mg/L)	Sample Result	Method Blank	QC	%Recov.	True Value QC
Benzene	<0.005	<0.005	0.111	111	0.100
Carbon Tetrachloride	0.022	<0.005	0.116	116	0.100
Toluene	<0.005	<0.005	0.112	112	0.100
Ethylbenzene	<0.005	<0.005	0.111	111	0.100
m,p-Xylene	<0.005	<0.005	0.218	109	0.200
o-Xylene	<0.005	<0.005	0.110	110	0.100

% RECOVERY

Dibromofluoromethane	83
Toluene-d8	99
Bromofluorobenzene	100

METHODS: EPA SW-846 8260

  
Burgess J.A. Cooke, Rh. D.

6/26/02  
Date



PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603

PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR  
SAFETY & ENVIRONMENTAL SOLUTIONS, INC.  
ATTN: BOB ALLEN  
703 E. CLINTON, #103  
HOBBS, NM 88240  
FAX TO: (505) 393-4388

Receiving Date: 06/25/02  
Reporting Date: 06/26/02  
Project Number: NOT GIVEN  
Project Name: PRO-KEM  
Project Location: LOVINGTON, NM  
Lab Number: H6838-3  
Sample ID: MW #3

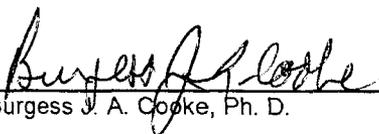
Analysis Date: 06/25/02  
Sampling Date: 06/25/02  
Sample Type: GROUNDWATER  
Sample Condition: COOL & INTACT  
Sample Received By: AH  
Analyzed By: BC

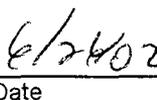
VOLATILES (mg/L)	Sample Result	Method Blank	QC	%Recov.	True Value QC
Benzene	<0.005	<0.005	0.111	111	0.100
Carbon Tetrachloride	0.115	<0.005	0.116	116	0.100
Toluene	<0.005	<0.005	0.112	112	0.100
Ethylbenzene	<0.005	<0.005	0.111	111	0.100
m,p-Xylene	<0.005	<0.005	0.218	109	0.200
o-Xylene	<0.005	<0.005	0.110	110	0.100

% RECOVERY

Dibromofluoromethane	81
Toluene-d8	93
Bromofluorobenzene	95

METHODS: EPA SW-846 8260

  
Burgess J. A. Cooke, Ph. D.

  
Date



# ARDINAL LABORATORIES, INC.

2111 Beechwood, Abilene, TX 79603 101 East Marland, Hobbs, NM 88240  
 (915) 673-7001 Fax (915) 673-7020 (805) 393-2326 Fax (505) 393-2476

## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Page 1 of 1

Company Name: <u>SEST</u>	P.O. #: <u>SAME</u>
Project Manager: <u>BOB ALLEN</u>	Company: <u>      </u>
Address: <u>707 E Clinton</u>	Attn: <u>      </u>
City: <u>Hobbs</u>	Address: <u>      </u>
State: <u>NM</u>	City: <u>      </u>
Zip: <u>88240</u>	State: <u>      </u>
Phone #: <u>(505) 397-0510</u>	Zip: <u>      </u>
Fax #: <u>(505) 393-2388</u>	Phone #: <u>      </u>
Project #: <u>      </u>	Fax #: <u>      </u>
Project Name: <u>PEO-KEM</u>	Project Location: <u>LOVINGTON, NM</u>
Project Location: <u>LOVINGTON, NM</u>	Sampler Name: <u>      </u>
FOR LAB USE ONLY	

Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX						DATE	TIME	ANALYSIS REQUEST
				GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:			
H0838-1	MW #1	G	2	X						6-25-02		BTEX
-2	MW #2	G	2	X						6-25-02		CARBON TET.
-3	MW #3	G	2	X						6-25-02		

**PLEASE NOTE: Liability and Damages:** Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analysis. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable analysis. In no event shall Cardinal be held liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Sampler Relinquished:        Date:        Time:       

Received By:        Date:        Time:       

Relinquished By:        Date: 6-25-02

Delivered By:        (Circle One) Type:       

Sampler - UPS - Bus - Other:       

Received By: (Lab Staff)       

Sample Condition Intact?  Yes  No

Checked By:        (Initials)

Phone Result:  Yes  No

Fax Result:  Yes  No

REMARKS:       

† Cardinal cannot accept verbal changes. Please fax written changes to (915) 673-7020.

