GW - 202

WORK PLANS

Pro-Kem, Inc.
Lovington Yard

Installation of Monitor Wells and Investigation Results

Lea County, New Mexico

Safety & Environmental Solutions, Inc.
703 E. Clinton Suite 103
Hobbs, New Mexico 88240
(505) 397-0510

TABLE OF CONTENTS

I. Work Performed

Three monitor wells were drilled at the Pro-Kem, Inc. yard in Lovington, NM according to the Approved Work Plan (GW-202 Pit Closure). These wells were drilled by Eades Drilling and Pump Service of Hobbs, NM on August 20, 1997 (See Site Plan).

Monitor Well #1 was drilled in the NE area of the yard amid the Spoils Piles with pipe set at 72', top of screen at 57', top of sand at 54' and top of bentonite at 49'.

Monitor Well #2 was drilled southeast of Well #1 along the eastern boundary of the yard with pipe set at 70', top of screen at 55', top of sand at 52.5' and top of bentonite at 48.5'.

Monitor Well #3 was drilled directly south of Well #2 along the property boundary of the yard with pipe set at 69.5', top of screen at 54.5', top of sand at 52.5' and top of bentonite at 48'.

II. Monitor Well Testing

Initial soil sampling was performed on soils from each well site on August 21, 1997 after drilling activities were completed using SOPs found in **Environmental Protection Agency, 1984, Characterization of Hazardous Waste Site - A Methods Manual: Vol II.** The samples along with Chain of Custody were delivered to the laboratory for testing. The composite samples were analyzed for Total Petroleum Hydrocarbons (EPA Method 418.1) and BTEX (EPA Method 8020). The results of the BTEX and TPH were compared to the regulatory limits found in **"Guidelines for Remediation of Leaks, Spills and Releases"** *New Mexico Oil Conservation Division* - August 13, 1993 and the results were within limits. (See Analytical Report attached)

Initial water sampling from each of the three wells was performed on August 25, 1997 and the samples along with Chain of Custody were delivered to the laboratory for testing. The water samples were analyzed for Total Petroleum Hydrocarbons (EPA Method 418.1), BTEX (EPA Method 8020) and Chlorides (EPA Methods 300.0, 325) as well as a complete NMWQAC battery (Methods 600/4-79-020, -160.1, -91/0, 1311, 625/SW846-3510, -8015, -8260, -8270). Results were within limits except for Carbon Tetrachloride on Wells #1 and #3, Fluoride on Well #2 and Barium on Wells #1 and #3. (See Analytical Reports attached)

Follow-up water sampling was performed on Monitor Well #3 on September 9, 1997 for Carbon Tetrachloride. The sample along with Chain of Custody were delivered to the laboratory for testing. The sample was analyzed using EPA Method SW 846-8260 and were still found to be above limits. (see Analytical Report attached)

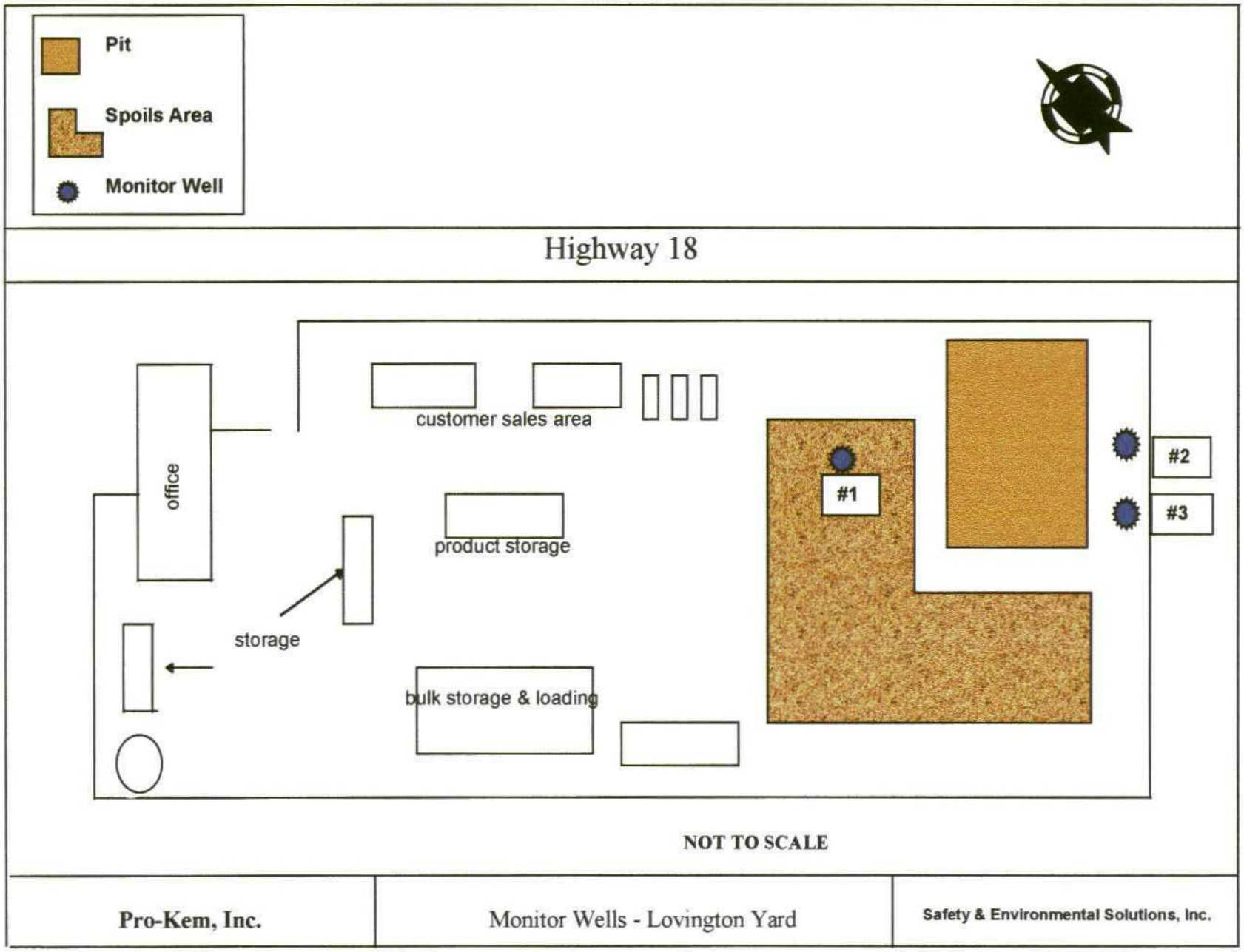
A soil sample was taken on September 23, 1997. This sample was a composite from various areas covering the complete spoils pile and was gathered using SOPs found in **Environmental Protection Agency, 1984, Characterization of Hazardous Waste Site - A Methods Manual: Vol II.** The sample along with Chain of Custody were submitted to the laboratory for testing. The sample was analyzed for Carbon Tetrachloride (EPA Methods 846-530, 8260) and was not detected. (see Analytical Report attached)

A water sampling was performed on Well #3 on October 1, 1997 for verification testing of Carbon Tetrachloride. The sample along with Chain of Custody were submitted to the laboratory for testing. The sample was analyzed for Carbon Tetrachloride (EPA Method 846-8260) and found to be above limits. (see Analytical Report attached)

John West Engineering conducted a site survey on November 11, 1997, indicating the location of the three monitor wells and their respective elevations. The top of casing was measured at 59' 3.04" for Monitor Well #1, 58' 5.07" for Monitor Well #2 and 59' 2.06" for Monitor Well #3.

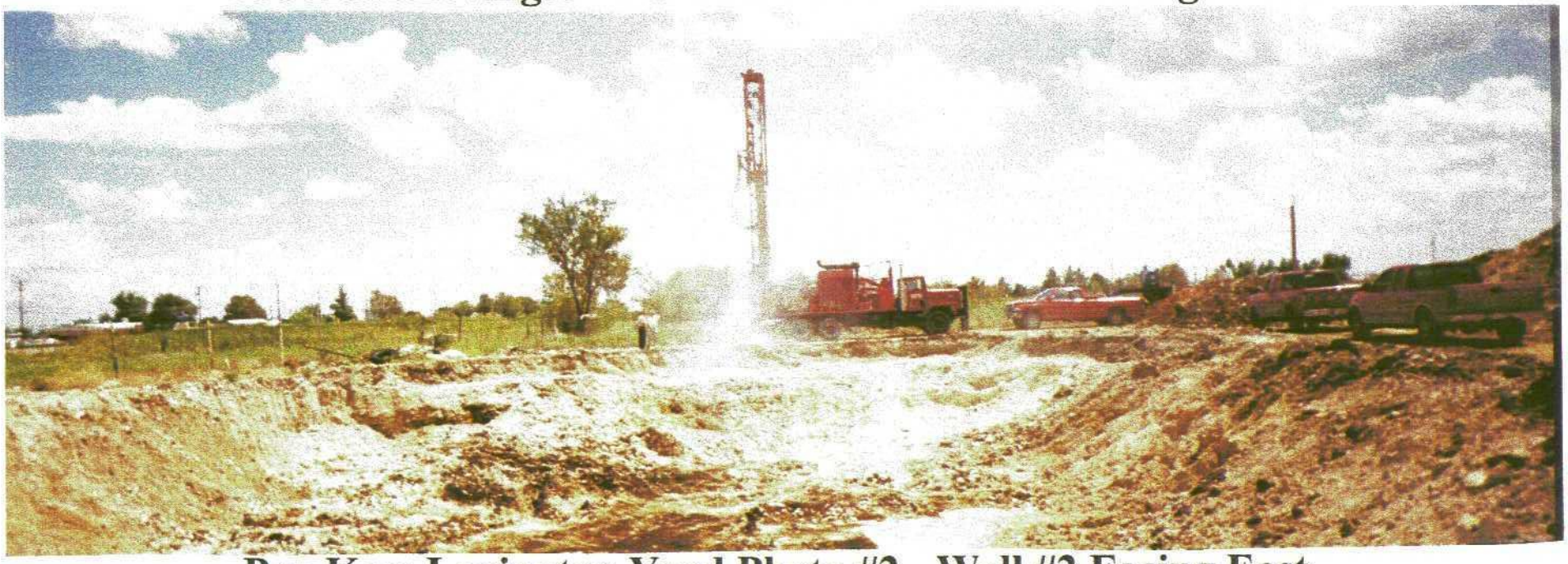
III. Maps and Figures

Site Plan
Photo Exhibits
Chain of Custody for Samples
Analytical Results
Survey Plat
Top of Water Site Plan



Pro-Kem, Inc.	Monitor Wells - Lovington Yard	Safety & Environmental Solutions, Inc.

Pro-Kem Lovington Yard Photo #1 - Well #1 Facing North



Pro-Kem Lovington Yard Photo #2 - Well #2 Facing East

Pro-Kem Lovington Yard Photo #3 - Well #3 Facing East

CARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Page ____ of ____

Company Name:	SESI
Project Manager:	Dee Wheatley
Address:	703 E. Clinton Suite 103
City:	Hobbs State: NM Zip: 88240
Phone #:	(505) 397-0510
Fax #:	(505) 393-4388
Project #:	3
Project Name:	ProKem Monitor Wells
Project Location:	ProKem ~~MW~~ Yard

BILL TO	PO #:
Company:	
Attn:	
Address:	
City:	
State:	Zip:
Phone #:	
Fax #:	

LAB I.D. #	Sample I.D.	COMP(C) OR GRAB(G)	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	PRESERVATION: ACID:	ICE / COOL	OTHER:	SAMPLING: DATE	TIME	ANALYSIS REQUEST: BTEX	TPH
H3147-1	ProKem MW#1 58'		1			✓					✓		8-20-97	10:00am	✓	✓
H3147-2	ProKem MW#2 58'		1			✓					✓		8-20-97	2:45pm	✓	✓
H3147-3	ProKem MW#3 57'		1			✓					✓		8-20-97	5:20pm	✓	✓

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 client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be 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: 8-21-97 Time: 9:35 AM	Received By:	8.21.97 9:35A
Relinquished By:	Date: 8-21-97 Time: 4:40p	Received By: (Lab Staff)	
Delivered By: (Circle One) UPS - Fed Ex - Bus - Other: In person		Sample Condition: Cool: Yes / No; Intact: Yes / No	CHECKED BY: (Initials)

Phone Result: ☐ Yes ☐ No Additional Fax #:
Fax Results: ☐ Yes ☐ No

REMARKS: samples transported by Alan Eades

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PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
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ANALYTICAL RESULTS FOR
SAFETY & ENVIRONMENTAL SOLUTIONS, INC.
ATTN: DEE WHATLEY
703 E. CLINTON, SUITE 103
HOBBS, NM 88240
FAX TO: 505-393-4388

Receiving Date: 08/21/97
Reporting Date: 08/25/97
Project Number: 3
Project Name: PROKEM MONITOR WELLS
Project Location: PROKEM YARD

Sampling Date: 08/20/97
Sample Type: SOIL
Sample Condition: COOL, INTACT
Sample Received By: GP
Analyzed By: BC/AH

LAB NUMBER	SAMPLE ID	TPH (mg/Kg)	BENZENE (mg/Kg)	TOLUENE (mg/Kg)	ETHYL BENZENE (mg/Kg)	TOTAL XYLENES (mg/Kg)
ANALYSIS DATE:		08/22/97	08/22/97	08/22/97	08/22/97	08/22/97
H3147-1	PROKEM MW #1 58'	<10	<0.002	<0.002	<0.002	<0.006
H3147-2	PROKEM MW #2 58'	<10	<0.002	<0.002	<0.002	<0.006
H3147-3	PROKEM MW #3 57'	<10	<0.002	<0.002	<0.002	<0.006
Quality Control		190	0.101	0.098	0.092	0.267
True Value QC		200	0.090	0.090	0.087	0.260
% Recovery		95	112	110	105	103
Relative Percent Difference		0.7	9.0	2.8	1.3	0.7

METHODS: TRPHC - EPA 600/7-79-020, 418.1; BTEX - EPA SW-846-8020

Burgess J. A. Cooke, Ph. D.

8/25/97
Date

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CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Page ___ of ___

Company Name:	SESI
Project Manager:	Doc Whitley
Address:	703 E. Clinton Suite 103
City:	Hobbs State: NM Zip: 88240
Phone #:	(505) 397-0510
Fax #:	(505) 393-4388
Project #:	3
Project Name:	ProKem Monitor Wells
Project Location:	ProKem Yard

BILL TO PO #:

Company:	
Attn:	
Address:	
City:	
State:	Zip:
Phone #:	
Fax #:	

ANALYSIS REQUEST

Complete ION Balance (Water Quality) + TPH + BTEX + Chlorides - If not in above. Call if questions. Doc

LAB I.D. #	Sample I.D.	COMP(C) OR GRAB(G)	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	PRESERVATIVE: ACID:	ICE / COOL	OTHER:	SAMPLING: DATE	TIME
H3150-1	ProKem MW #1		4	✓							✓		8-25-97	9:00am
-2	ProKem MW #2		4	✓							✓		8-25-97	1:00pm
-3	ProKem MW #3		4	✓							✓		8-25-97	1:00pm

Sampler Relinquished: Doc Whitley	Date: 8-25-97 Time: 3:40p	Received By: Bert Alders	Phone Result ☐ Yes ☐ No Additional Fax #:
Relinquished By: Bert Alders	Date: 8-25-97 Time: 4:45p	Received By: (Lab Staff) Amy Hill	Fax Results: ☐ Yes ☐ No
Delivered By: (Circle One) UPS - ~~Fed Ex~~ - Bus - (Other) In person	Sample Condition: Cool ☒ Yes ☐ No; Intact ☒ Yes ☐ No	CHECKED BY: (Initials)	REMARKS:

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ANALYTICAL RESULTS FOR
SAFETY & ENVIRONMENTAL SOLUTIONS
ATTN: DEE WHATLEY
703 E. CLINTON, SUITE 103
HOBBS, NM 88240
FAX TO: 505-393-4388

Receiving Date: 08/25/97
Reporting Date: 09/02/97
Project Number: 3
Project Name: PROKEM MONITORING WELLS
Project Location: PROKEM YARD

Analysis Date: 08/27/97
Sampling Date: 08/25/97
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: AH
Analyzed By: BC

LAB NUMBER	SAMPLE ID	TPH (ppm)
H3156-1	PROKEM MW #1	3.17
H3156-2	PROKEM MW #2	<1.0
H3156-3	PROKEM MW #3	<1.0
Quality Control		*
True Value QC		*
% Accuracy		*
Relative Percent Difference		*

METHOD: EPA SW 846-8015 M (gc/ms)

*See detailed report on H3156-1.

Chemist

9/2/97
Date

H3156T.XLS

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ANALYTICAL RESULTS FOR
SAFETY & ENVIRONMENTAL SOLUTIONS
ATTN: DEE WHATLEY
703 E. CLINTON, SUITE 103
HOBBS, NM 88240
FAX TO: 505-393-4388

Receiving Date: 08/25/97
Reporting Date: 09/02/97
Project Number: 3
Project Name: PROKEM MONITORING WELLS
Project Location: PROKEM YARD

Sampling Date: 08/25/97
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: AH
Analyzed By: GP

RCRA METALS

LAB NUMBER	SAMPLE ID	As ppm	Ag ppm	Ba ppm	Cd ppm	Cr ppm	Pb ppm	Hg ppm	Se ppm
ANALYSIS DATE:		08/28/97	08/28/97	08/28/97	08/28/97	08/28/97	08/28/97	08/29/97	08/28/97
H3156-1	PROKEM MW#1	0.005	<0.05	1.2	<0.01	<0.05	<0.05	<0.002	<0.01
H3156-2	PROKEM MW#2	0.007	<0.05	1.0	<0.01	<0.05	<0.05	<0.002	<0.01
H3156-3	PROKEM MW#3	0.003	<0.05	1.1	<0.01	<0.05	<0.05	<0.002	<0.01
Quality Control		0.098	4.02	19.8	1.996	1.01	4.99	0.111	0.105
True Value QC		0.100	4.00	20.0	2.000	1.00	5.00	0.100	0.100
% Recovery		98	100	99	100	101	100	111	105
Relative Percent Difference		3.4	0.7	2.1	0.6	0.55	0.3	3.1	13.8

METHODS: EPA 600/4-79-020	206.2	272.1	208.1	213.1	218.1	239.1	245.1	270.2
METHODS: SW-846	7060A	7760A	7080A	7130	7190	7420	7470A	7740

Chemist

09/02/97
Date

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Receiving Date: 08/25/97
Reporting Date: 09/02/97
Project Number: 3
Project Name: PROKEM MONITORING WELLS
Project Location: PROKEM YARD

Sampling Date: 08/25/97
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: AH
Analyzed By: GP

TOTAL METALS

LAB NUMBER	SAMPLE ID	Al (ppm)	B (ppm)	Co (ppm)	Cu (ppm)	Fe (ppm)
ANALYSIS DATE:		08/28/97	08/29/97	08/29/97	08/28/97	08/28/97
H3156-1	PROKEM MW#1	<0.1	0.44	<0.025	<0.01	0.336
H3156-2	PROKEM MW#2	<0.1	0.75	<0.025	<0.01	0.525
H3156-3	PROKEM MW#3	<0.1	0.24	<0.025	<0.01	0.524
Quality Control		19.5	0.99	0.099	3.980	3.982
True Value QC		20.0	1.00	0.100	4.000	4.000
% Accuracy		98	99	99	100	100
Relative Percent Difference		1.9	6.0	0	0.1	0.1
METHODS: EPA 600/04-79-020		202.1	212.3	219.1	220.1	236.1

LAB NUMBER	SAMPLE ID	Mn (ppm)	Mo (ppm)	Ni (ppm)	Zn (ppm)
ANALYSIS DATE:		08/28/97	08/29/97	08/28/97	08/28/97
H3156-1	PROKEM MW#1	0.058	<0.025	<0.01	0.178
H3156-2	PROKEM MW#2	0.045	<0.025	<0.01	0.052
H3156-3	PROKEM MW#3	0.065	<0.025	<0.01	0.066
Quality Control		1.008	0.0099	1.967	0.099
True Value QC		1.000	0.0100	2.000	0.100
% Accuracy		101	99	98	99
Relative Percent Difference		0.2	0	0.4	0
METHODS: EPA 600/04-79-020		243.1	246.1	249.1	289.1

Gayle A. Potter, Chemist

09/02/97
Date

H3156M2.XLS

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FAX TO: 505-393-4388

Receiving Date: 08/25/97
Reporting Date: 09/02/97
Project Number: 3
Project Name: PROKEM MONITORING WELLS
Project Location: PROKEM YARD

Sampling Date: 08/25/97
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: AH
Analyzed By: AH

LAB NUMBER	SAMPLE ID	Cl (mg/L)	CN (mg/L)	F (mg/L)	NO3 (mg/L)	SO4 (mg/L)	pH (s.u.)	TDS (mg/L)
ANALYSIS DATE		08/27/97	08/27/97	08/27/97	08/27/97	08/27/97	08/27/97	08/27/97
H3156-1	PROKEM MW #1	76	<0.1	1.26	0.80	52	7.38	601
H3156-2	PROKEM MW #2	172	<0.1	2.10	0.75	43	7.63	653
H3156-3	PROKEM MW #3	164	<0.1	1.34	0.85	31	7.36	885
Quality Control		484	0.105	0.97	5.08	98.5	6.97	NR
True Value QC		500	0.100	1.00	5.00	100	7.00	NR
% Accuracy		97	105	97	102	99	99.6	NR
Relative Percent Difference		0	4.8	0	1.6	1.5	0.4	NR
METHODS: EPA 600/4-79-020		325.3	335.2	340.1	353.2	375.4	150.1	160.1

Chemist

09/02/97
Date

H3156WC.XLS

CARDINAL LABORATORIES

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ANALYTICAL RESULTS FOR
SAFETY & ENVIRONMENTAL SOLUTIONS
ATTN: DEE WHATLEY
703 E. CLINTON, SUITE 103
HOBBS, NM 88240
FAX TO: 505-393-4388

Receiving Date: 08/25/97
Reporting Date: 08/30/97
Project Number: 3
Project Name: PROKEM MONITORING WELLS
Project Location: PROKEM YARD
Lab Number: H3156-1
Sample ID: PROKEM MW#1

Analysis Date: 08/29/97
Sampling Date: 08/25/97
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: AH
Analyzed By: BC

VOLATILES (mg/L)	Sample Result H3156-1	Method Blank	QC	%Recov.	True Value QC
Vinyl Chloride	<0.001	<0.001	0.086	86	0.100
1,1-Dichloroethylene	<0.002	<0.002	0.100	100	0.100
Methylene Chloride	0.007	0.011	0.108	108	0.100
Chloroform	<0.002	<0.002	0.113	113	0.100
1,1-Dichloroethane	<0.002	<0.002	0.114	114	0.100
1,2-Dichloroethane	<0.002	<0.002	0.100	100	0.100
Benzene	<0.002	<0.002	0.113	113	0.100
Carbon Tetrachloride	0.065	<0.002	0.104	104	0.100
Toluene	<0.002	<0.002	0.106	106	0.100
Trichloroethylene	<0.002	<0.002	0.108	108	0.100
Tetrachloroethylene	<0.002	<0.002	0.103	103	0.100
Ethylbenzene	<0.002	<0.002	0.104	104	0.100
m,p-Xylene	<0.004	<0.004	0.208	104	0.200
o-Xylene	<0.002	<0.002	0.104	104	0.100
1,1,1-Trichloroethane	<0.002	<0.002	0.111	111	0.100
1,1,2-Trichloroethane	<0.002	<0.002	0.103	103	0.100
1,1,2,2-Tetrachloroethane	<0.002	<0.002	0.104	104	0.100
Ethylene Dibromide	<0.001	<0.001	0.105	105	0.100

	% RECOVERY
Dibromofluoromethane	109
Toluene-d8	111
Bromofluorobenzene	118

METHODS: EPA SW 846-8260

Burgess J.A. Cooke, Ph. D.

8/30/97
Date

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FAX TO: 505-393-4388

Receiving Date: 08/25/97
Reporting Date: 08/27/97
Project Number: 3
Project Name: PROKEM MONITORING WELLS
Project Location: PROKEM YARD
Lab Number: H3156-1
Sample ID: PROKEM MW#1

Analysis Date: 08/26/97
Sampling Date: 08/25/97
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: AH
Analyzed By: BC

SEMIVOLATILES - PHENOLS (mg/L)	Sample Result H3156-1	Method Blank	QC	%Recov.	True Value QC
1 Phenol	<0.002	<0.002	0.015	30	0.050
2 2-Chlorophenol	<0.002	<0.002	0.034	68	0.050
3 2-Methylphenol	<0.002	<0.002	0.021	42	0.050
4 4-Methylphenol	<0.002	<0.002	0.021	42	0.050
5 2-Nitrophenol	<0.002	<0.002	0.044	88	0.050
6 2,4-Dimethylphenol	<0.002	<0.002	0.027	54	0.050
7 Other Dimethylphenols	<0.002	<0.002	NR	NR	NR
8 2,4-Dichlorophenol	<0.002	<0.002	0.044	88	0.050
9 2,6-Dichlorophenol	<0.002	<0.002	0.044	88	0.050
10 4-Chloro-3-methylphenol	<0.002	<0.002	0.032	64	0.050
11 2,4,6-Trichlorophenol	<0.002	<0.002	0.042	84	0.050
12 2,4,5-Trichlorophenol	<0.002	<0.002	0.039	78	0.050
13 2,4-Dinitrophenol	<0.002	<0.002	0.018	36	0.050
14 4-Nitrophenol	<0.002	<0.002	0.029	58	0.050
15 2,3,4,6-Tetrachlorophenol	<0.002	<0.002	0.043	86	0.050
16 4,6-Dinitro-2-methylphenol	<0.002	<0.002	0.028	56	0.050
17 Pentachlorophenol	<0.002	<0.002	0.042	84	0.050
Total Phenols	**<0.002**	**<0.002**			

	% Recovery
18 Nitrobenzene-d5	40
19 2-Fluorobiphenyl	62
20 Terphenyl-d14	95

METHODS: EPA 625/SW-846 8270

Burgess J. A. Cooke, Ph. D.

8/27/97
Date

CARDINAL LABORATORIES

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ANALYTICAL RESULTS FOR
SAFETY & ENVIRONMENTAL SOLUTIONS
ATTN: DEE WHATLEY
703 E. CLINTON, SUITE 103
HOBBS, NM 88240
FAX TO: 505-393-4388

Receiving Date: 08/25/97
Reporting Date: 08/27/97
Project Number: 3
Project Name: PROKEM MONITORING WELLS
Project Location: PROKEM YARD
Lab Number: H3156-1
Sample ID: PROKEM MW#1

Analysis Date: 08/26/97
Sampling Date: 08/25/97
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: AH
Analyzed By: BC

POLYNUCLEAR AROMATIC HYDROCARBON - 625 (mg/L)

		Sample Result H3156-1	Method Blank	QC	% Recov.	True Value QC
1	Naphthalene	<0.001	<0.001	0.075	75	0.100
2	2-Methylnaphthalene	<0.002	<0.002	0.040	80	0.050
3	1-Methylnaphthalene	<0.002	<0.002	NR	NR	NR
4	Acenaphthylene	<0.001	<0.001	0.090	90	0.100
5	Acenaphthene	<0.001	<0.001	0.094	94	0.100
6	Fluorene	<0.002	<0.002	0.092	92	0.100
7	Phenanthrene	<0.001	<0.001	0.100	100	0.100
8	Anthracene	<0.001	<0.001	0.093	93	0.100
9	Fluoranthene	<0.001	<0.001	0.094	94	0.100
10	Pyrene	<0.001	<0.001	0.103	103	0.100
11	Benzo(a)anthracene	<0.001	<0.001	0.102	102	0.100
12	Chrysene	<0.001	<0.001	0.101	101	0.100
13	Benzo(b)fluoranthene	<0.001	<0.001	0.101	101	0.100
14	Benzo(k)fluoranthene	<0.001	<0.001	0.106	106	0.100
15	Benzo(a)pyrene	<0.0007	<0.0007	0.105	105	0.100
16	Indeno(1,2,3-cd)pyrene	<0.002	<0.002	0.103	103	0.100
17	Dibenzo(a,h,)anthracene	<0.002	<0.002	0.104	104	0.100
18	Benzo(g,h,i)perylene	<0.002	<0.002	0.102	102	0.100

		% Recovery
19	Nitrobenzene-d5	40
20	2-Fluorobiphenyl	62
21	Terphenyl-d14	95

METHODS: EPA 625

Chemist

8/27/97
Date

H3156-1S.XLS

CARDINAL 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
ATTN: DEE WHATLEY
703 E. CLINTON, SUITE 103
HOBBS, NM 88240
FAX TO: 505-393-4388

Receiving Date: 08/25/97
Reporting Date: 08/28/97
Project Number: 3
Project Name: PROKEM MONITORING WELLS
Project Location: PROKEM YARD
Lab Number: H3156-1
Sample ID: PROKEM MW#1

Analysis Date: 08/27/97
Sampling Date: 08/25/97
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: AH
Analyzed By: BC

AROCLORS (PCB's) (mg/L)	Sample Result	Method Blank	True Value QC	True Value QC	%IA
PCB 1016	<0.001	<0.001	NR	NR	NR
PCB 1221	<0.001	<0.001	NR	NR	NR
PCB 1232	<0.001	<0.001	NR	NR	NR
PCB 1242	<0.001	<0.001	0.044	0.050	88
PCB 1248	<0.001	<0.001	NR	NR	NR
PCB 1254	<0.001	<0.001	0.045	0.050	90
PCB 1260	<0.001	<0.001	0.049	0.050	98

	% Recovery
Nitrobenzene-d5	41
2-Fluorobiphenyl	56
Terphenyl-d14	66
Matrix Spike (PCB 1260)	106
Matrix Spike Dupl. (PCB 1260)	98

METHOD: SW-846 3510, 8270

Chemist

8/28/97
Date

CARDINAL LABORATORIES

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ANALYTICAL RESULTS FOR
SAFETY & ENVIRONMENTAL SOLUTIONS
ATTN: DEE WHATLEY
703 E. CLINTON, SUITE 103
HOBBS, NM 88240
FAX TO: 505-393-4388

Receiving Date: 08/25/97
Reporting Date: 09/02/97
Project Number: 3
Project Name: PROKEM MONITORING WELLS
Project Location: PROKEM YARD
Lab Number: H3156-1
Sample ID: PROKEM MW#1

Analysis Date: 08/27/97
Sampling Date: 08/25/97
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: AH
Analyzed By: BC

EPA 8015M - (mg/L)	Sample Result H3156-1*	Method Blank	QC	%IA	True Value QC
C-9 n-Nonane	<0.010	<0.010	89.2	89	100
C-10 n-Decane	<0.010	<0.010	86.9	87	100
C-11 n-Undecane	<0.010	<0.010	92.1	92	100
C-12 n-Dodecane	<0.010	<0.010	95.7	96	100
C-13 n-Tridecane	<0.010	<0.010	86.1	86	100
C-14 n-Tetradecane	<0.010	<0.010	87.7	88	100
C-15 n-Pentadecane	<0.010	<0.010	87.2	87	100
C-16 n-Hexadecane	<0.010	<0.010	91.5	92	100
C-17 n-Heptadecane	<0.010	<0.010	94.7	95	100
C-18 n-Octadecane	<0.010	<0.010	96.2	96	100
C-19 n-Nonadecane	0.011	<0.010	95.3	95	100
C-20 n-Eicosane	0.017	<0.010	95.9	96	100
C-21 n-Heneicosane	0.037	<0.010	102	102	100
C-22 n-Docosane	0.017	<0.010	97.6	98	100
C-23 n-Tricosane	<0.010	<0.010	101	101	100
C-24 n-Tetracosane	0.013	<0.010	118	118	100
C-25 n-Pentacosane	0.015	<0.010	116	116	100
C-26 n-Hexacosane	<0.010	<0.010	105	105	100
C-27 n-Heptacosane	<0.010	<0.010	108	108	100
C-28 n-Octacosane	<0.010	<0.010	118	118	100
Total n-Alkanes	0.110	<0.010	1964	98	2000
Diesel Range Organics	**3.7**	**<1.0**			

METHOD: EPA SW 846-8015 M (gc/ms)
*No n-Alkanes detected in samples 2 and 3.

Chemist

9/3/97
Date

H3156-1T.XLS

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ANALYTICAL RESULTS FOR
SAFETY & ENVIRONMENTAL SOLUTIONS
ATTN: DEE WHATLEY
703 E. CLINTON, SUITE 103
HOBBS, NM 88240
FAX TO: 505-393-4388

Receiving Date: 08/25/97
Reporting Date: 08/27/97
Project Number: 3
Project Name: PROKEM MONITORING WELLS
Project Location: PROKEM YARD
Lab Number: H3156-2
Sample ID: PROKEM MW#2

Analysis Date: 08/26/97
Sampling Date: 08/25/97
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: AH
Analyzed By: BC

SEMIVOLATILES - PHENOLS (mg/L)	Sample Result H3156-2	Method Blank	QC	%Recov.	True Value QC
1 Phenol	<0.002	<0.002	0.015	30	0.050
2 2-Chlorophenol	<0.002	<0.002	0.034	68	0.050
3 2-Methylphenol	<0.002	<0.002	0.021	42	0.050
4 4-Methylphenol	<0.002	<0.002	0.021	42	0.050
5 2-Nitrophenol	<0.002	<0.002	0.044	88	0.050
6 2,4-Dimethylphenol	<0.002	<0.002	0.027	54	0.050
7 Other Dimethylphenols	<0.002	<0.002	NR	NR	NR
8 2,4-Dichlorophenol	<0.002	<0.002	0.044	88	0.050
9 2,6-Dichlorophenol	<0.002	<0.002	0.044	88	0.050
10 4-Chloro-3-methylphenol	<0.002	<0.002	0.032	64	0.050
11 2,4,6-Trichlorophenol	<0.002	<0.002	0.042	84	0.050
12 2,4,5-Trichlorophenol	<0.002	<0.002	0.039	78	0.050
13 2,4-Dinitrophenol	<0.002	<0.002	0.018	36	0.050
14 4-Nitrophenol	<0.002	<0.002	0.029	58	0.050
15 2,3,4,6-Tetrachlorophenol	<0.002	<0.002	0.043	86	0.050
16 4,6-Dinitro-2-methylphenol	<0.002	<0.002	0.028	56	0.050
17 Pentachlorophenol	<0.002	<0.002	0.042	84	0.050
Total Phenols	**<0.002**	**<0.002**			

	% Recovery
18 Nitrobenzene-d5	84
19 2-Fluorobiphenyl	103
20 Terphenyl-d14	114

METHODS: EPA 625/SW-846 8270

Burgess J. A. Cooke, Ph. D.

8/27/97
Date

CARDINAL LABORATORIES

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ANALYTICAL RESULTS FOR
SAFETY & ENVIRONMENTAL SOLUTIONS
ATTN: DEE WHATLEY
703 E. CLINTON, SUITE 103
HOBBS, NM 88240
FAX TO: 505-393-4388

Receiving Date: 08/25/97
Reporting Date: 08/27/97
Project Number: 3
Project Name: PROKEM MONITORING WELLS
Project Location: PROKEM YARD
Lab Number: H3156-2
Sample ID: PROKEM MW#2

Analysis Date: 08/26/97
Sampling Date: 08/25/97
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: AH
Analyzed By: BC

	POLYNUCLEAR AROMATIC HYDROCARBON - 625 (mg/L)	Sample Result H3156-2	Method Blank	QC	% Recov.	True Value QC
1	Naphthalene	<0.001	<0.001	0.075	75	0.100
2	2-Methylnaphthalene	<0.002	<0.002	0.040	80	0.050
3	1-Methylnaphthalene	<0.002	<0.002	NR	NR	NR
4	Acenaphthylene	<0.001	<0.001	0.090	90	0.100
5	Acenaphthene	<0.001	<0.001	0.094	94	0.100
6	Fluorene	<0.002	<0.002	0.092	92	0.100
7	Phenanthrene	<0.001	<0.001	0.100	100	0.100
8	Anthracene	<0.001	<0.001	0.093	93	0.100
9	Fluoranthene	<0.001	<0.001	0.094	94	0.100
10	Pyrene	<0.001	<0.001	0.103	103	0.100
11	Benzo(a)anthracene	<0.001	<0.001	0.102	102	0.100
12	Chrysene	<0.001	<0.001	0.101	101	0.100
13	Benzo(b)fluoranthene	<0.001	<0.001	0.101	101	0.100
14	Benzo(k)fluoranthene	<0.001	<0.001	0.106	106	0.100
15	Benzo(a)pyrene	<0.0007	<0.0007	0.105	105	0.100
16	Indeno(1,2,3-cd)pyrene	<0.002	<0.002	0.103	103	0.100
17	Dibenzo(a,h,)anthracene	<0.002	<0.002	0.104	104	0.100
18	Benzo(g,h,i)perylene	<0.002	<0.002	0.102	102	0.100

		% Recovery
19	Nitrobenzene-d5	84
20	2-Fluorobiphenyl	103
21	Terphenyl-d14	114

METHODS: EPA 625

Chemist

8/27/97
Date

H3156-2S.XLS

CARDINAL LABORATORIES

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ANALYTICAL RESULTS FOR
SAFETY & ENVIRONMENTAL SOLUTIONS
ATTN: DEE WHATLEY
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HOBBS, NM 88240
FAX TO: 505-393-4388

Receiving Date: 08/25/97
Reporting Date: 08/30/97
Project Number: 3
Project Name: PROKEM MONITORING WELLS
Project Location: PROKEM YARD
Lab Number: H3156-2
Sample ID: PROKEM MW#2

Analysis Date: 08/29/97
Sampling Date: 08/25/97
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: AH
Analyzed By: BC

VOLATILES (mg/L)	Sample Result H3156-2	Method Blank	QC	%Recov.	True Value QC
Vinyl Chloride	<0.001	<0.001	0.086	86	0.100
1,1-Dichloroethylene	<0.002	<0.002	0.100	100	0.100
Methylene Chloride	0.007	0.011	0.108	108	0.100
Chloroform	<0.002	<0.002	0.113	113	0.100
1,1-Dichloroethane	<0.002	<0.002	0.114	114	0.100
1,2-Dichloroethane	<0.002	<0.002	0.100	100	0.100
Benzene	<0.002	<0.002	0.113	113	0.100
Carbon Tetrachloride	<0.002	<0.002	0.104	104	0.100
Toluene	<0.002	<0.002	0.106	106	0.100
Trichloroethylene	<0.002	<0.002	0.108	108	0.100
Tetrachloroethylene	<0.002	<0.002	0.103	103	0.100
Ethylbenzene	<0.002	<0.002	0.104	104	0.100
m,p-Xylene	<0.004	<0.004	0.208	104	0.200
o-Xylene	<0.002	<0.002	0.104	104	0.100
1,1,1-Trichloroethane	<0.002	<0.002	0.111	111	0.100
1,1,2-Trichloroethane	<0.002	<0.002	0.103	103	0.100
1,1,2,2-Tetrachloroethane	<0.002	<0.002	0.104	104	0.100
Ethylene Dibromide	<0.001	<0.001	0.105	105	0.100

	% RECOVERY
Dibromofluoromethane	114
Toluene-d8	114
Bromofluorobenzene	114

METHODS: EPA SW 846-8260

Burgess J. A. Cooke, Ph. D.

8/30/97
Date

CARDINAL LABORATORIES

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

ANALYTICAL RESULTS FOR
SAFETY & ENVIRONMENTAL SOLUTIONS
ATTN: DEE WHATLEY
703 E. CLINTON, SUITE 103
HOBBS, NM 88240
FAX TO: 505-393-4388

Receiving Date: 08/25/97
Reporting Date: 08/28/97
Project Number: 3
Project Name: PROKEM MONITORING WELLS
Project Location: PROKEM YARD
Lab Number: H3156-2
Sample ID: PROKEM MW#2

Analysis Date: 08/27/97
Sampling Date: 08/25/97
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: AH
Analyzed By: BC

AROCLORS (PCB's) (mg/L)	Sample Result	Method Blank	True Value QC	QC	%IA
PCB 1016	<0.001	<0.001	NR	NR	NR
PCB 1221	<0.001	<0.001	NR	NR	NR
PCB 1232	<0.001	<0.001	NR	NR	NR
PCB 1242	<0.001	<0.001	0.044	0.050	88
PCB 1248	<0.001	<0.001	NR	NR	NR
PCB 1254	<0.001	<0.001	0.045	0.050	90
PCB 1260	<0.001	<0.001	0.049	0.050	98

	% Recovery
Nitrobenzene-d5	79
2-Fluorobiphenyl	99
Terphenyl-d14	78
Matrix Spike (PCB 1260)	106
Matrix Spike Dupl. (PCB 1260)	98

METHOD: SW-846 3510, 8270

Chemist

8/28/97
Date

CARDINAL LABORATORIES

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ANALYTICAL RESULTS FOR
SAFETY & ENVIRONMENTAL SOLUTIONS
ATTN: DEE WHATLEY
703 E. CLINTON, SUITE 103
HOBBS, NM 88240
FAX TO: 505-393-4388

Receiving Date: 08/25/97
Reporting Date: 08/30/97
Project Number: 3
Project Name: PROKEM MONITORING WELLS
Project Location: PROKEM YARD
Lab Number: H3156-3
Sample ID: PROKEM MW#3

Analysis Date: 08/29/97
Sampling Date: 08/25/97
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: AH
Analyzed By: BC

VOLATILES (mg/L)	Sample Result H3156-3	Method Blank	QC	%Recov.	True Value QC
Vinyl Chloride	<0.001	<0.001	0.086	86	0.100
1,1-Dichloroethylene	<0.002	<0.002	0.100	100	0.100
Methylene Chloride	0.007	0.011	0.108	108	0.100
Chloroform	<0.002	<0.002	0.113	113	0.100
1,1-Dichloroethane	<0.002	<0.002	0.114	114	0.100
1,2-Dichloroethane	<0.002	<0.002	0.100	100	0.100
Benzene	0.003	<0.002	0.113	113	0.100
Carbon Tetrachloride	0.013	<0.002	0.104	104	0.100
Toluene	<0.002	<0.002	0.106	106	0.100
Trichloroethylene	<0.002	<0.002	0.108	108	0.100
Tetrachloroethylene	<0.002	<0.002	0.103	103	0.100
Ethylbenzene	<0.002	<0.002	0.104	104	0.100
m,p-Xylene	<0.004	<0.004	0.208	104	0.200
o-Xylene	<0.002	<0.002	0.104	104	0.100
1,1,1-Trichloroethane	<0.002	<0.002	0.111	111	0.100
1,1,2-Trichloroethane	<0.002	<0.002	0.103	103	0.100
1,1,2,2-Tetrachloroethane	<0.002	<0.002	0.104	104	0.100
Ethylene Dibromide	<0.001	<0.001	0.105	105	0.100

% RECOVERY	
Dibromofluoromethane	MI(144)
Toluene-d8	110
Bromofluorobenzene	111

METHODS: EPA SW 846-8260
MI=Matrix Interference

Burgess J. A. Cooke, Ph. D.

8/30/97
Date

CARDINAL LABORATORIES

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ANALYTICAL RESULTS FOR
SAFETY & ENVIRONMENTAL SOLUTIONS
ATTN: DEE WHATLEY
703 E. CLINTON, SUITE 103
HOBBS, NM 88240
FAX TO: 505-393-4388

Receiving Date: 08/25/97
Reporting Date: 08/27/97
Project Number: 3
Project Name: PROKEM MONITORING WELLS
Project Location: PROKEM YARD
Lab Number: H3156-3
Sample ID: PROKEM MW#3

Analysis Date: 08/26/97
Sampling Date: 08/25/97
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: AH
Analyzed By: BC

SEMIVOLATILES - PHENOLS (mg/L)	Sample Result H3156-3	Method Blank	QC	%Recov.	True Value QC
1 Phenol	<0.002	<0.002	0.015	30	0.050
2 2-Chlorophenol	<0.002	<0.002	0.034	68	0.050
3 2-Methylphenol	<0.002	<0.002	0.021	42	0.050
4 4-Methylphenol	<0.002	<0.002	0.021	42	0.050
5 2-Nitrophenol	<0.002	<0.002	0.044	88	0.050
6 2,4-Dimethylphenol	<0.002	<0.002	0.027	54	0.050
7 Other Dimethylphenols	<0.002	<0.002	NR	NR	NR
8 2,4-Dichlorophenol	<0.002	<0.002	0.044	88	0.050
9 2,6-Dichlorophenol	<0.002	<0.002	0.044	88	0.050
10 4-Chloro-3-methylphenol	<0.002	<0.002	0.032	64	0.050
11 2,4,6-Trichlorophenol	<0.002	<0.002	0.042	84	0.050
12 2,4,5-Trichlorophenol	<0.002	<0.002	0.039	78	0.050
13 2,4-Dinitrophenol	<0.002	<0.002	0.018	36	0.050
14 4-Nitrophenol	<0.002	<0.002	0.029	58	0.050
15 2,3,4,6-Tetrachlorophenol	<0.002	<0.002	0.043	86	0.050
16 4,6-Dinitro-2-methylphenol	<0.002	<0.002	0.028	56	0.050
17 Pentachlorophenol	<0.002	<0.002	0.042	84	0.050
Total Phenols	**<0.002**	**<0.002**			

	% Recovery
18 Nitrobenzene-d5	40
19 2-Fluorobiphenyl	60
20 Terphenyl-d14	106

METHODS: EPA 625/SW-846 8270

Burgess J. A. Cooke, Ph. D.

8/27/97
Date

CARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
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ANALYTICAL RESULTS FOR
SAFETY & ENVIRONMENTAL SOLUTIONS
ATTN: DEE WHATLEY
703 E. CLINTON, SUITE 103
HOBBS, NM 88240
FAX TO: 505-393-4388

Receiving Date: 08/25/97
Reporting Date: 08/27/97
Project Number: 3
Project Name: PROKEM MONITORING WELLS
Project Location: PROKEM YARD
Lab Number: H3156-3
Sample ID: PROKEM MW#3

Analysis Date: 08/26/97
Sampling Date: 08/25/97
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: AH
Analyzed By: BC

POLYNUCLEAR AROMATIC HYDROCARBON - 625 (mg/L)

		Sample Result H3156-3	Method Blank	QC	% Recov.	True Value QC
1	Naphthalene	<0.001	<0.001	0.075	75	0.100
2	2-Methylnaphthalene	<0.002	<0.002	0.040	80	0.050
3	1-Methylnaphthalene	<0.002	<0.002	NR	NR	NR
4	Acenaphthylene	<0.001	<0.001	0.090	90	0.100
5	Acenaphthene	<0.001	<0.001	0.094	94	0.100
6	Fluorene	<0.002	<0.002	0.092	92	0.100
7	Phenanthrene	<0.001	<0.001	0.100	100	0.100
8	Anthracene	<0.001	<0.001	0.093	93	0.100
9	Fluoranthene	<0.001	<0.001	0.094	94	0.100
10	Pyrene	<0.001	<0.001	0.103	103	0.100
11	Benzo(a)anthracene	<0.001	<0.001	0.102	102	0.100
12	Chrysene	<0.001	<0.001	0.101	101	0.100
13	Benzo(b)fluoranthene	<0.001	<0.001	0.101	101	0.100
14	Benzo(k)fluoranthene	<0.001	<0.001	0.106	106	0.100
15	Benzo(a)pyrene	<0.0007	<0.0007	0.105	105	0.100
16	Indeno(1,2,3-cd)pyrene	<0.002	<0.002	0.103	103	0.100
17	Dibenzo(a,h,)anthracene	<0.002	<0.002	0.104	104	0.100
18	Benzo(g,h,i)perylene	<0.002	<0.002	0.102	102	0.100

		% Recovery
19	Nitrobenzene-d5	40
20	2-Fluorobiphenyl	60
21	Terphenyl-d14	106

METHODS: EPA 625

Chemist

8/27/97
Date

H3156-3S.XLS

CARDINAL LABORATORIES

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ANALYTICAL RESULTS FOR
SAFETY & ENVIRONMENTAL SOLUTIONS
ATTN: DEE WHATLEY
703 E. CLINTON, SUITE 103
HOBBS, NM 88240
FAX TO: 505-393-4388

Receiving Date: 08/25/97
Reporting Date: 08/28/97
Project Number: 3
Project Name: PROKEM MONITORING WELLS
Project Location: PROKEM YARD
Lab Number: H3156-3
Sample ID: PROKEM MW#3

Analysis Date: 08/27/97
Sampling Date: 08/25/97
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: AH
Analyzed By: BC

AROCLORS (PCB's) (mg/L)	Sample Result	Method Blank	True Value QC	QC	%IA
PCB 1016	<0.001	<0.001	NR	NR	NR
PCB 1221	<0.001	<0.001	NR	NR	NR
PCB 1232	<0.001	<0.001	NR	NR	NR
PCB 1242	<0.001	<0.001	0.044	0.050	88
PCB 1248	<0.001	<0.001	NR	NR	NR
PCB 1254	<0.001	<0.001	0.045	0.050	90
PCB 1260	<0.001	<0.001	0.049	0.050	98

	% Recovery
Nitrobenzene-d5	64
2-Fluorobiphenyl	98
Terphenyl-d14	115
Matrix Spike (PCB 1260)	106
Matrix Spike Dupl. (PCB 1260)	98

METHOD: SW-846 3510, 8270

Chemist

Date 8/28/97

CARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Page ___ of ___

Company Name:	SESI
Project Manager:	Dee Whatley
Address:	703 E. Clinton Suite 103
City:	Hobbs State: NM Zip: 88240
Phone #:	(505) 397-0510
Fax #:	(505) 393-4388
Project #:	
Project Name:	ProKem Monitor Well
Project Location:	ProKem MW #1

BILL TO	PO #:
Company:	
Attn:	
Address:	
City:	
State:	Zip:
Phone #:	
Fax #:	

LAB I.D. #	Sample I.D.	COMP(C) OR GRAB(G)	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	PRESERVATION: ACID:	ICE / COOL	OTHER:	SAMPLING: DATE	TIME
H3180-1	ProKem MW #1		2	✓							✓		9-9-97	1220

ANALYSIS REQUEST: Carbon Tetrachloride ✓

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 client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be 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: 9-9-97	Received By:	Phone Result ☐ Yes ☐ No Additional Fax #:
	Time: 12:20PM		Fax Results: ☐ Yes ☐ No
Relinquished By:	Date: 9-9-97	Received By: (Lab Staff)	REMARKS:
	Time: 430 pm	Amy Hill	
Delivered By: (Circle One) UPS - Fed Ex - Bus - Other:		Sample Condition: Cool ☒ Yes ☐ No; Intact ☒ Yes ☐ No	CHECKED BY: (Initials)

CARDINAL 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: DEE WHATLEY
703 E. CLINTON, SUITE 103
HOBBS, NM 88240
FAX TO: 505-393-4388

Receiving Date: 09/09/97
Reporting Date: 09/11/97
Project Number: NOT GIVEN
Project Name: PROKEM MONITOR WELL
Project Location: LOVINGTON, NM
Lab Number: H3186-1
Sample ID: PROKEM MW #1

Analysis Date: 09/11/97
Sampling Date: 09/09/97
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACTINTACT
Sample Received By: AH
Analyzed By: BC

VOLATILES (mg/L)	Sample Result H3186-1	Method Blank	QC	%Recov.	True Value QC
Carbon Tetrachloride	0.070	<0.002	0.115	115	0.100

	% RECOVERY
Dibromofluoromethane	84
Toluene-d8	95
Bromofluorobenzene	94

METHODS: EPA SW 846-8260

Burgess J. A. Cooke, Ph. D.

9/11/97
Date

82099/100 #[redacted] 398

Safety & Environmental Solutions, Inc.

703 E. Clinton, Suite 103, Hobbs, New Mexico 88240
(505)397-0510

(BETH)

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager: Safety & Environmental Solutions, Inc

Phone #: 505-397-0510

FAX #: 505-393-4388

Company Name & Address: 703 E. Clinton #103 PO Box 1613 Hobbs, NM 88240

Project #: Pro. Kem

Project Name:

Project Location:

Sampler Signature: [signature]

ANALYSIS REQUEST

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	OTHER	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	OTHER	SAMPLING: DATE	TIME	BTEX 8020/5030	TPH 418.1	TCLP Metals Ag As Ba Cd Cr Pb Hg Se	Total Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Volatiles	TCLP Semi Volatiles	TDS	RCI	Carbon Tetrachloride (8240)
82099	Prokem-Monitor well #1	2		X							X			9.23.97	8:03									~~X~~ will resample
82100	Prokem-Soil spile	1			X						X			9.23.97	8:12									X

$150.00 per test

please fax results on Wed 9.24.97

Relinquished by:	Date:	Time:	Received by:
[signature]	9.23.97	2:27	[signature]
[signature]	9.25.97	3:59	
	9.24.97	9:30A	Received by Laboratory: [signature]

REMARKS: H_2O in plastic jars
Soil sample is composite of spoils pile
Both water bottles are from well #1
Do Not run water per BETH will resample 9/24/97
Greyhound
2°C

6701 Aberdeen Avenue
Lubbock, Texas 79424
806•794•1296
FAX 806•794•1298

ANALYTICAL RESULTS FOR
SAFETY & ENVIRONMENTAL SOLUTIONS, INC.
P. O. Box 1613
Hobbs, NM 88240

September 26, 1997
Receiving Date: 09/24/97
Sample Type: Soil
Project No: NA
Project Location: NA

Prep Date: 09/24/97
Analysis Date: 09/24/97
Sampling Date: 09/23/97
Sample Condition: Intact & Cool
Sample Received by: JH
Project Name: Pro Kem

FIELD CODE: Pro Kem - Soils Pile
TA #: T82100

8240 Compounds	Concentration (ug/kg)	Reporting Limit
Carbon Tetrachloride	ND	25

SURROGATES	**RECOVERY**
Dibromofluoromethane	96
Toluene-d8	95
4-Bromofluorobenzene	98

ND = NOT DETECTED

METHODS: EPA SW 846-5030; EPA 8260.
CHEMIST: RW

9-26-97

Director, Dr. Blair Leftwich Date

Safety & Environmental Solutions, Inc.

703 E. Clinton, Suite 103, Hobbs, New Mexico 88240
(505)397-0510

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager: Bob Allen
Phone #: (505) 397-0510
FAX #:
Company Name & Address: Safety + Environmental Sol.
Project #:
Project Name: Pic Kom
Project Location: Prokem Yard
Sampler Signature: [signature]

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	OTHER	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	OTHER	SAMPLING: DATE	TIME	BTEX 8020/5030	TPH 418.1	TCLP Metals Ag As Ba Cd Cr Pb Hg Se	Total Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Volatiles	TCLP Semi Volatiles	TDS	RCI	Carbon Tetrachloride
82515	Prokem MW #1	1		✓					✓		✓			10/1/97	10:30am									✓

Cost is $150.00 as per Trace Analysis

Please do immediately & call in AM 10/2/97 505-397-0510 Beth

Relinquished by:	Date:	Time:	Received by:
[signature]	10-1-97	10:30 AM	[signature] 10:40a
	10-2-97	9:20 AM	Received by Laboratory: Vicki Windham

REMARKS

275 AC

Bus 901 763 325-1 -1°

6701 Aberdeen Avenue
Lubbock, Texas 79424
806•794•1296
FAX 806•794•1298

ANALYTICAL RESULTS FOR
SAFETY & ENVIRONMENTAL SOL.
Attention: Bob Allen
703 E. Clinton, Suite 103
Hobbs, NM 88240

October 10, 1997
Receiving Date: 10/02/97
Sample Type: Water
Project No: NA
Project Location: Pro Kem Yard

Prep Date: 10/02/97
Analysis Date: 10/02/97
Sampling Date: 10/01/97
Sample Condition: Intact & Cool
Sample Received by: VW
Project Name: Pro Kem

FIELD CODE: Pro Kem MW #1
TA #: T82515

8240 Compounds	Concentration (ug/L)	Reporting Limit
Carbon Tetrachloride	100	1

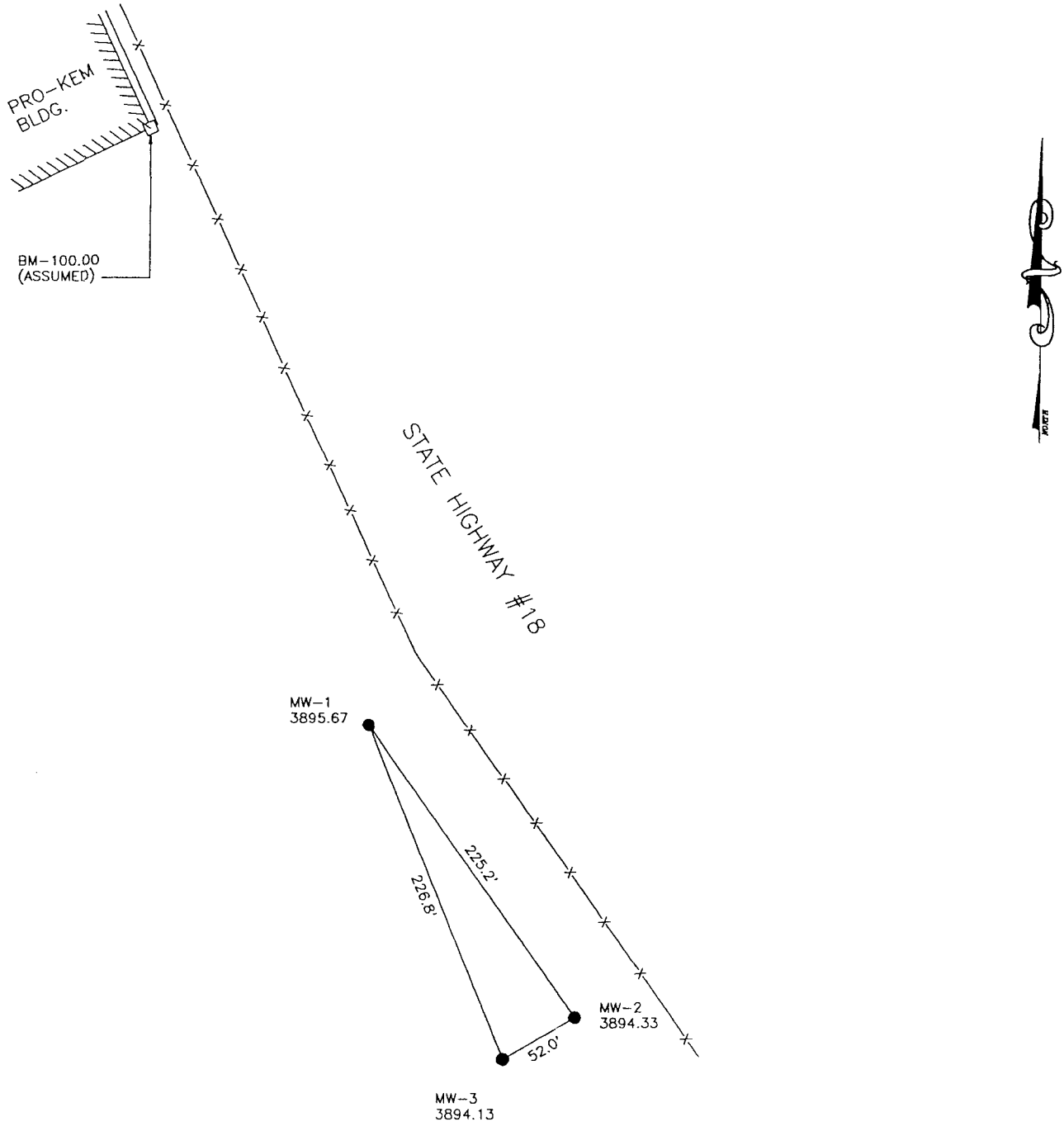
SURROGATES	RECOVERY
Dibromofluoromethane	100
Toluene-d8	98
4-Bromofluorobenzene	94

METHODS: EPA SW 846-5030; EPA 8260.
CHEMIST: RW

Director, Dr. Blair Leftwich

10-10-97
Date

SECTION 15. TOWNSHIP 16 SOUTH, RANGE 36 EAST, N.M.P.M.,
LEA COUNTY, NEW MEXICO



100 0 100 200 FEET

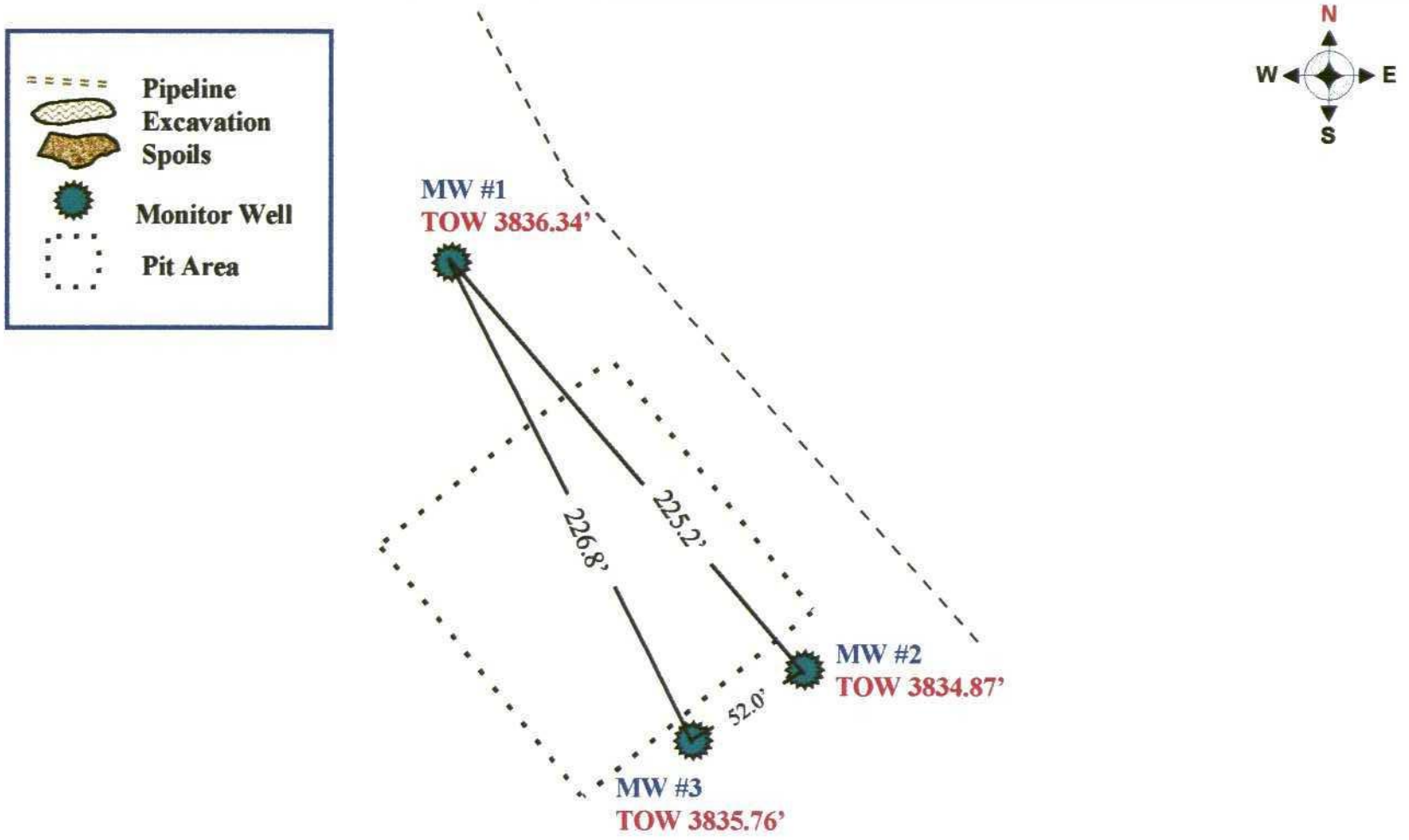
Scale: 1" = 100'

SAFETY & ENVIRONMENTAL SOLUTIONS, INC.

SEA LEVEL ELEVATIONS FOR
MW-1, MW-2 AND MW-3
SECTION 15,
TOWNSHIP 16 SOUTH,
RANGE 36 EAST, N.M.P.M.,
LEA COUNTY, NEW MEXICO

Survey Date: 11/7/97		Sheet 1 of 1 Sheets	
W.O. Number: 97-11-1832		Drawn By: D.McCARLEY	
Date: 11/10/97	SAFETY	SES1832	Scale: 1" = 100'

JOHN W. WEST ENGINEERING COMPANY
CONSULTING ENGINEERS & SURVEYORS – HOBBS, NEW MEXICO



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

NOT TO SCALE

ProKem, Inc	**Monitor Wells Top of Water Site Plan**	Safety & Environmental Solutions, Inc. Hobbs, New Mexico

NEW MEXICO ENERGY, MINERALS
& NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION
2040 South Pacheco Street
Santa Fe, New Mexico 87505
(505) 827-7131

July 30, 1997

CERTIFIED MAIL
RETURN RECEIPT NO. P-326-936-579

Mr. Gerald Phillips, President
Pro-Kem, Inc.
P.O. Box 1506
Lovington, NM 88260

RE: Extension Approval
GW-202 Pit Closure
Pro-Kem, Inc.

Dear Mr. Phillips:

The New Mexico Oil Conservation Division (OCD) received the your letter dated July 29, 1997 (via fax with hardcopy by mail to follow) requesting an extension to September 29, 1997 for the submittal of the delineation required by the OCD in letter dated April 18, 1997. **The extension is hereby approved with the following conditions:**

- All the terms and conditions of the April 18, 1997 letter from OCD titled "Work Plan - Approval, GW-202 Pit Closure" will be complied with, and no further extensions regarding this matter will be allowed. (**Note**: Attached is a copy of the April 18, 1997 letter from OCD.)

Note, that this OCD extension approval does not limit Pro-Kem, Inc. to the work proposed should it later be found that contamination exists which is beyond the scope of this plan, or if Pro-Kem, Inc. fails to completely define the extent of contamination. In addition, OCD approval does not relieve Pro-Kem, Inc. of responsibility for compliance with any other federal, state, or other local laws and regulations.

If you have any questions regarding this matter feel free to call Mr. Roger C. Anderson at (505)-827-7152 or Mr. Wayne Price at (505)-393-6161.

Sincerely,

Patricio W. Sanchez
Petroleum Engineering Specialist
Environmental Bureau, OCD

Attachment - April 18, 1997 from OCD "Work Plan - Approval, GW-202 Pit Closure."

c: Mr. Wayne Price - OCD, Hobbs District Office.
Mr. Bob Allen - Safety & Environmental Solutions, Inc.

P 326 936 579

US Postal Service
Receipt for Certified Mail
No Insurance Coverage Provided.
Do not use for International Mail *(See reverse)*

Sent to Mr. Phillips - ProKem	
Street & Number Invest. Extension.	
Post Office, State, & ZIP Code	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
TOTAL Postage & Fees	$
Postmark or Date	

PS Form **3800**, April 1995

NEW MEXICO ENERGY, MINERALS
& NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION
2040 South Pacheco Street
Santa Fe, New Mexico 87505
(505) 827-7131

April 18, 1997

CERTIFIED MAIL
RETURN RECEIPT NO. P-288-258-801

Mr. Gerald Phillips, President
Pro-Kem, Inc.
P.O. Box 1506
Lovington, NM 88260

RE: Work Plan - Approval
GW-202 Pit Closure
Pro-Kem, Inc.

Dear Mr. Phillips:

The New Mexico Oil Conservation Division (OCD) received the "Work Plan" proposal for the "pit closure" at GW-202 as dated March 24, 1997 by Safety & Environmental Solutions, Inc. on behalf of Pro-Kem, Inc. **The Work Plan is hereby approved with the following conditions:**

1. The first round of sampling at all three monitor wells will include the entire suite of constituents and parameters as listed in 20 NMAC 6.2.3103.

Note: All sampling methods and collection procedures will be EPA approved methods such as those outlined in SW-846, and 20 NMAC 6.2.3107.B.

2. The "Source Removal and Stabilization" will begin no later than April 28, 1997. When the 60 day stabilization period is complete a composite sample of the soil will be obtained in order to verify BTEX and TPH contaminant levels. This composite sample will be submitted to the OCD Santa Fe Office for approval before the soil can be placed back into the excavation.

3. The three groundwater monitor wells will be installed, developed, and sampled by June 28, 1997. (see 1. above for first round sampling requirements.)

4. A To-Scale map showing the location and elevation of the monitor wells will be prepared, and a To-Scale map showing the groundwater depth and flow direction will also be prepared.

5. Any solid wastes generated during this work plan will be properly stored, recycled and/or disposed of based on regulatory status after receiving approval from the OCD Santa Fe Office.

6. Prior to implementation of any field work Mr. Wayne Price with the Hobbs OCD District Office must be notified at (505)-393-6161 at least 72 hours in advance.

Pro-Kem, Inc. will submit a "Delineation Report" by July 28, 1997 to the OCD Santa Fe Office for approval that will contain all of the findings of the "Work Plan" dated March 24, 1997 and this approval letter and its conditions. A copy must also be sent to the OCD Hobbs District Office.

The report will include all field notes, well logs, photographs, and the above required information.

Note, that OCD approval does not limit Pro-Kem, Inc. to the work proposed should it later be found that contamination exists which is beyond the scope of this plan, or if Pro-Kem, Inc. fails to completely define the extent of contamination. In addition, OCD approval does not relieve Pro-Kem, Inc. of responsibility for compliance with any other federal, state, or other local laws and regulations.

If you have any questions regarding this matter feel free to call me at (505)-827-7156.

Sincerely,

Copy, Original Signed by
PWS on 4-18-97.

Patricio W. Sanchez
Petroleum Engineering Specialist
Environmental Bureau, OCD

c: Mr. Wayne Price - OCD, Hobbs District Office.
Mr. Bob Allen - Safety & Environmental Solutions, Inc.

Safety & Environmental Solutions, Inc.

July 29, 1997

Mr. Pat Sanchez
Petroleum Engineer
Oil Conservation Division
2040 S. Pacheco
Santa Fe, New Mexico 87505

AUG - 1 [illegible]

Dear Mr. Sanchez:

This letter is to formally request an extension on our proposed work plan for Prokem, Inc. (GW-202 Pit Closure) dated April 18, 1997. The reason for the delay was a problem in scheduling qualified drilling contractors in the time frame allotted.

We anticipate drilling the monitor wells requested on August 7, 1997, and analytical data from the water analyses from these wells should be forthcoming soon afterward.

We formally request an extension until September 29, 1997 to allow for unforeseen circumstances.

Thank you for your cooperation in this matter.

Cordially,

Gerald Phillips

Gerald Phillips - President
Prokem Inc.

Safety & Environmental Solutions, Inc.

July 29, 1997

Mr. Pat Sanchez
Petroleum Engineer
Oil Conservation Division
2040 S. Pacheco
Santa Fe, New Mexico 87505

Dear Mr. Sanchez:

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Cordially,

Gerald Phillips

Gerald Phillips - President
Prokem Inc.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

MEMORANDUM OF MEETING OR CONVERSATION

☒ Telephone ☐ Personal	Time 10:40 AM	Date 7/29/97

Originating Party	Other Parties
Pat Sanchez - OCD	Gerald Phillips - Pro-Kem.

Subject April 18, 1997 letter from OCD. (GW-202) "Work Plan - Approval"

Discussion Let Mr. Phillips know that the MW's should have already been installed and sampled and a "Delincation" report sent to the OCD. (See Above mentioned letter from OCD.)
Told Mr. Phillips that he needed to send in a request letter for an extension ASAP - i.e. "As Soon As Possible" because they are currently in non-compliance with the above mentioned work plan.

Conclusions or Agreements Mr. Phillips will get w/ Bob Allen his consultant and submit a request for an extension - to be no more than 60 days from today - i.e. September 29, 1997.

Distribution File, Wayne price.

Signed Patricia V. Sanchez

Pat Sanchez

From: Wayne Price
Sent: Tuesday, July 29, 1997 9:00 AM
To: Pat Sanchez
Cc: Chris Williams
Subject: Pro-Chem Lovington MW's

Per Dyke Browning of ES&S,

MW's are schedule to start Aug 8, 1997.

cc: PAT SANCHEZ
JERRY SEXTON
BOBBY BRADFORD

MILEAGE

UIC: _____
OTHER: _____

OIL CONSERVATION DIVISION
COMPLAINT FORM

PERSON COMPLAINING:

NAME: BOBBY BRADFORD
ADDRESS: P.O. 783 LOVINGTON NM 88260

PHONE: 396-5135

INFORMATION TAKEN BY:

TAKEN BY: WAYNE PRICE
DATE: 5/7/97 TIME: 10:08 AM
IN PERSON: _____ BY PHONE: ✓

COMPLAINT: MS BRADFORD LIVES JUST SOUTH of PRO-KEM YARD COMPLAINING ABOUT SMELL & WORRIED ABOUT GROUNDWATER

COMMENTS: _____

- INVESTIGATION -

INVESTIGATOR: W PRICE
DATE: 5/7/97
TIME: _____

DESCRIBE INVESTIGATION AND FINDINGS: _____

PRO-KEM IS CLOSING OLD BS&W PIT UNDER DIRECTION OF NMOCD-SANTA FE

RECEIVED
MAY 15 1997
Oil Conservation Division

- FOLLOW-UP -

DATE: _____
TIME: _____

ACTION TAKEN: CALLED PRO-KEM CONSULTANT, THEY ARE PLANNING ON REMOVING MAJOR SOURCE THAT IS CAUSING CONTAMINATION NEXT WEEK.

MS. BRADFORD REQUESTED THE RESULTS FROM MW 1.

*ATTACH ADDITIONAL SHEETS, IF NECESSARY

NEW MEXICO ENERGY, MINERALS
& NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION
2040 South Pacheco Street
Santa Fe, New Mexico 87505
(505) 827-7131

April 18, 1997

CERTIFIED MAIL
RETURN RECEIPT NO. P-288-258-801

Mr. Gerald Phillips, President
Pro-Kem, Inc.
P.O. Box 1506
Lovington, NM 88260

RE: Work Plan - Approval
GW-202 Pit Closure
Pro-Kem, Inc.

Dear Mr. Phillips:

The New Mexico Oil Conservation Division (OCD) received the "Work Plan" proposal for the "pit closure" at GW-202 as dated March 24, 1997 by Safety & Environmental Solutions, Inc. on behalf of Pro-Kem, Inc. **The Work Plan is hereby approved with the following conditions:**

1. The first round of sampling at all three monitor wells will include the entire suite of constituents and parameters as listed in 20 NMAC 6.2.3103.

Note: All sampling methods and collection procedures will be EPA approved methods such as those outlined in SW-846, and 20 NMAC 6.2.3107.B.

2. The "Source Removal and Stabilization" will begin no later than April 28, 1997. When the 60 day stabilization period is complete a composite sample of the soil will be obtained in order to verify BTEX and TPH contaminant levels. This composite sample will be submitted to the OCD Santa Fe Office for approval before the soil can be placed back into the excavation.

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If you have any questions regarding this matter feel free to call me at (505)-827-7156.

Sincerely,

Patricio W. Sanchez
Petroleum Engineering Specialist
Environmental Bureau, OCD

c: Mr. Wayne Price - OCD, Hobbs District Office.
Mr. Bob Allen - Safety & Environmental Solutions, Inc.

P 288 258 801

US Postal Service
Receipt for Certified Mail
No Insurance Coverage Provided.
Do not use for International Mail *(See reverse)*

Sent to PRO-KEM, Pit closure.	
Street & Number Mr. Phillips.	
Post Office, State, & ZIP Code	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
TOTAL Postage & Fees	$
Postmark or Date	

PS Form 3800, April 1995

Safety & Environmental Solutions, Inc.

March 24, 1997

Mr. Pat Sanchez
Petroleum Engineer
Oil Conservation Division
2040 S. Pacheco
Santa Fe, New Mexico 87505
Sincerely,

Dear Pat:

Enclosed please find the Work Plan for the closure of the pit at the ProKem, Inc. yard in Lovington, New Mexico. This Work Plan is based on the results of the vertical investigation performed by Safety & Environmental Solutions, Inc. (SES) on March 17, 1997 and work performed during preparation of the landfarm in 1996.

On March 17, 1997, SES drilled six bore holes in the pit area for the purpose of investigating the vertical extent of the contamination. Samples were taken using a split spoon sampler with bottom hole samples packed in a glass jar with no headspace, cooled, and transported under chain of custody to Cardinal Laboratories for final verification. The samples sent to the lab were analyzed for Total Petroleum Hydrocarbons, BTEX, and Chlorides. TPH field tests were run by SES using a Buck TPH Analyzer and a PID was used on some samples to approximate BTEX levels.

The laboratory and field analytical results are as follows:

Bore Hole #1 (55' FEL, 38' FSL)					
	Field TPH	Lab TPH	Field PID	Lab BTEX	Lab Cl^-
Sample # 1 10'	19.8	141	None	.476	480

Bore Hole #2 (27' FEL, 40' FSL)					
	Field TPH	Lab TPH	Field PID	Lab BTEX	Lab Cl^-
Sample # 1 10'	176	10.7	None	.042	360

Safety & Environmental Solutions, Inc.

Bore Hole #3 (70' FEL, 62' FSL)					
	Field TPH	Lab TPH	Field PID	Lab BTEX	Lab Cl^-
Sample # 1 15'	<10,000	None	None	None	None
Sample # 2 25'	>25	196	None	.0716	1664

Bore Hole #4 (50' FEL, 108' FSL)					
	Field TPH	Lab TPH	Field PID	Lab BTEX	Lab Cl^-
Sample # 1 25'	719.8	None	>100	None	None
Sample # 2 30'	585.8	None	116	None	None
Sample # 3 35'	826.4	None	500	None	None
Sample # 4 40'	273.6	<10	307	.138	5120

Bore Hole #5 (24' FEL, 140' FSL)					
	Field TPH	Lab TPH	Field PID	Lab BTEX	Lab Cl^-
Sample # 1 20'	585.6	None	None	None	None
Sample # 2 25'	600	21.5	None	.152	1280

Bore Hole #6 (69' FEL, 140' FSL)					
	Field TPH	Lab TPH	Field PID	Lab BTEX	Lab Cl^-
Sample # 1 30'	2552	1050	None	.417	2080

The foregoing results have been used to delineate the extent of the contamination in the pit area. (See Pit Profiles) The contamination at a level of 100 ppm TPH reaches a depth of 8' to 9' at the south end of the pit, 35' to 37' in the center of the pit, and 35' to 37' at the north end of the pit. The contamination level of 1000 ppm TPH appears to be around 25' and the physical bottom of the pit appears to be at around 12'. This observation is confirmed by the change in the cuttings from the bore holes at the 12' level. The chloride levels are high in the center of the pit and not at the south end.

Safety & Environmental Solutions, Inc.

The investigation did not include drilling into groundwater in order to avoid contaminating the groundwater with cuttings from the pit area. Groundwater investigation will be done during the installation of the monitor wells as proposed in the Work Plan.

I have enclosed the analytical results from Trace Analysis, Inc. dated April 8, 1996 for the background composite and the composite for the first lift of contaminated soils. I have also enclosed all analytical results since the inception of the project and submitted a copy to the Hobbs District Office of the OCD.

Please consider the enclosed Work Plan and contact me if you should have any questions. Thank you for your consideration in this matter.

Sincerely,

Bob Allen

Bob Allen REM, CET, CES
President

WORK PLAN
PROKEM, INC.
PIT CLOSURE

Purpose

The purpose of this Work Plan is to cause the closure of the pit located at the ProKem, Inc. Yard in Lovington, New Mexico in a manner that will protect the population, environment and groundwater of the area surrounding the ProKem location.

Background

In October of 1995, Pro-Kem, Inc. secured the services of Safety and Environmental Solutions, Inc. to complete all necessary sampling and testing of our yard which was suspected to contain an abandoned caliche pit.

Initial results of composite samples from several excavations indicated elevated levels of THP in all cases. Knowledge of process indicates that the material in the pit is exempt oil field waste.

Method

ProKem, Inc. proposes to remove the source of contamination in the pit, stabilize the source, install a impermeable liner in the bottom of the pit, replace the stabilized source, install a top impermeable liner and cap the pit with clean soil. The method used to accomplish the closure will be detailed below.

Source Removal and Stabilization

The source contamination in the abandoned caliche pit will be excavated and placed in the area adjacent to the pit where it will be stabilized by allowing the source to be exposed to the atmosphere. The bottom of the original pit is approximately 12' as evidenced by the change in cuttings from the bore hole used to investigate vertical extent. This material will be allowed to dry and the BTEX will evaporate from this material. The stabilization will take approximately sixty (60) days and the material will be turned during this time to allow complete drying. This stabilization process has been proven in the land farm effort of this material last year. See letter of October 10, 1996 from Safety & Environmental Solutions, Inc. (SES) This excavation will remove approximately 4044 cubic yards of source contamination from the pit. ProKem plans to dispose of approximately 1000 cubic yards of the most heavily contaminated source material at an approved OCD disposal facility to allow room in the pit for a cap of clean soil after closure is complete.

After the excavation of the source material, the sides and bottom of the original pit will be

exposed to the atmosphere for the sixty (60) day period used to stabilize the source material. This exposure will allow trapped BTEX to evaporate and the sides and bottom to dry. The removal of the source material will leave approximately 3370 cubic yards of soil with TPH levels of 8,000 to 1000 ppm and approximately 2981 cubic yards of soil with TPH levels of 999 ppm to 100 ppm in place.

Additional testing (TPH, BTEX, Chlorides) will be performed on the bottom of the pit and the area below the pit after excavation and stabilization in order to determine the effects of the stabilization effort.

Installation of Monitor Well

During the sixty (60 day) stabilization period, ProKem agree to install three (3) monitor wells in the pit area. One well will be installed up gradient of the pit and the other wells will be installed between the excavated pit and the property line down gradient of the pit.(See monitor well installation diagram) In the event the contamination of groundwater is found to have migrated outside of the ProKem property, an appropriate plan for plume investigation will be developed at that time.

The physical description of the monitor well installations is as follows:

> Each well will be drilled to a depth of ten (10) feet below the water table. Split spoon samples will collected at five (5) foot intervals and analyzed for TPH, BTEX, and Chlorides. A driller's log noting sample points and changes in lithology will be kept. The wells will cased with 2" PVC pipe with a minimum of fifteen (15) feet of well screen on the bottom. (Five (5) feet above the water table and ten (10) feet below the water table) Screen will gravel packed to a point 2-3 feet above the screen, with a bentonite plug set above the gravel pack. The remainder of the casing annulus to surface will grouted with cement containing 5% bentonite. Each well will be equipped with a locking well cap. (See monitor well diagram)

Monitoring Parameters

The monitor wells will be sampled quarterly for a period to be determined based upon initial analytical results. The samples will be analyzed for TPH, BTEX, Chlorides, major Cations and Anions, and Total Dissolved Solids with results filed with the OCD Santa Fe and Hobbs District offices.

Liner System

The bottom of the pit area and the top of the stabilized source material will be prepared in such a manner that will provide a smooth surface for the liner to rest upon. The top and bottom liners will be made of 30 mil polyethylene plastic with seams, if any, bound together with heat or adhesive methods in such a manner to prevent leakage or separation of the liner.

The bottom liner will be installed at the original pit bottom and the stabilized source material

will be backfilled over the liner to a depth of approximately 3' below the surface. The top liner will be installed and a cap of approximately 3' of clean soil will be backfilled over the top liner. This liner system will effectively encapsulate the stabilized source material and prevent the material from coming in contact with any surface moisture. Both top and bottom liners will extent past the horizontal extent of the contamination and form an umbrella which will protect the stabilized material and the soil left in place below the pit area.

CARDINAL 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
HOBBS, NM 88240
FAX TO:

Receiving Date: 03/14/97
Reporting Date: 03/18/97
Project Number: NOT GIVEN
Project Name: PRO KEM
Project Location: PRO KEM YARD

Sampling Date: 03/14/97
Sample Type: SOIL
Sample Condition: COOL & INTACT
Sample Received By: AH
Analyzed By: BC/AH

LAB NUMBER	SAMPLE ID	TPH (mg/Kg)	Cl (mg/Kg)	BENZENE (mg/Kg)	TOLUENE (mg/Kg)	ETHYL BENZENE (mg/Kg)	TOTAL XYLENES (mg/Kg)
ANALYSIS DATE:		03/17/96	03/17/96	03/15/97	03/15/97	03/15/97	03/15/97
H2851-1	HOLE #1 SAMPLE	141	480	<0.020	0.041	0.051	0.364
H2851-2	HOLE #2 SAMPLE	10.7	360	<0.020	0.040	0.044	0.316
H2851-3	HOLE #3 SAMPLE	196	1664	<0.020	0.031	<0.020	<0.060
H2851-4	HOLE #4 SAMPLE	<10	5120	<0.020	0.038	<0.020	0.060
H2851-5	HOLE #5 SAMPLE	21.5	1280	<0.020	0.042	<0.020	0.070
H2851-6	HOLE #6 SAMPLE	1050	2080	<0.020	0.057	0.079	0.261
Quality Control		202	480	0.097	0.098	0.095	0.286
True Value QC		200	500	0.100	0.100	0.100	0.300
% Accuracy		101	96.0	96.8	97.5	94.5	95.2
Relative Percent Difference		1.6	0	1.8	1.6	6.0	5.9

METHODS: TRPHC - EPA 600/7-79-020, 418.1; BTEX - EPA SW-846-8260; Cl - EPA 600/4-79-020 325.3

Burgess J. A. Cooke, Ph. D.

3/18/97
Date

Safety & Environmental Solutions, Inc.

703 E. Clinton, Suite 103, Hobbs, New Mexico 88240
(505)397-0510

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager: | Phone #: | FAX #:

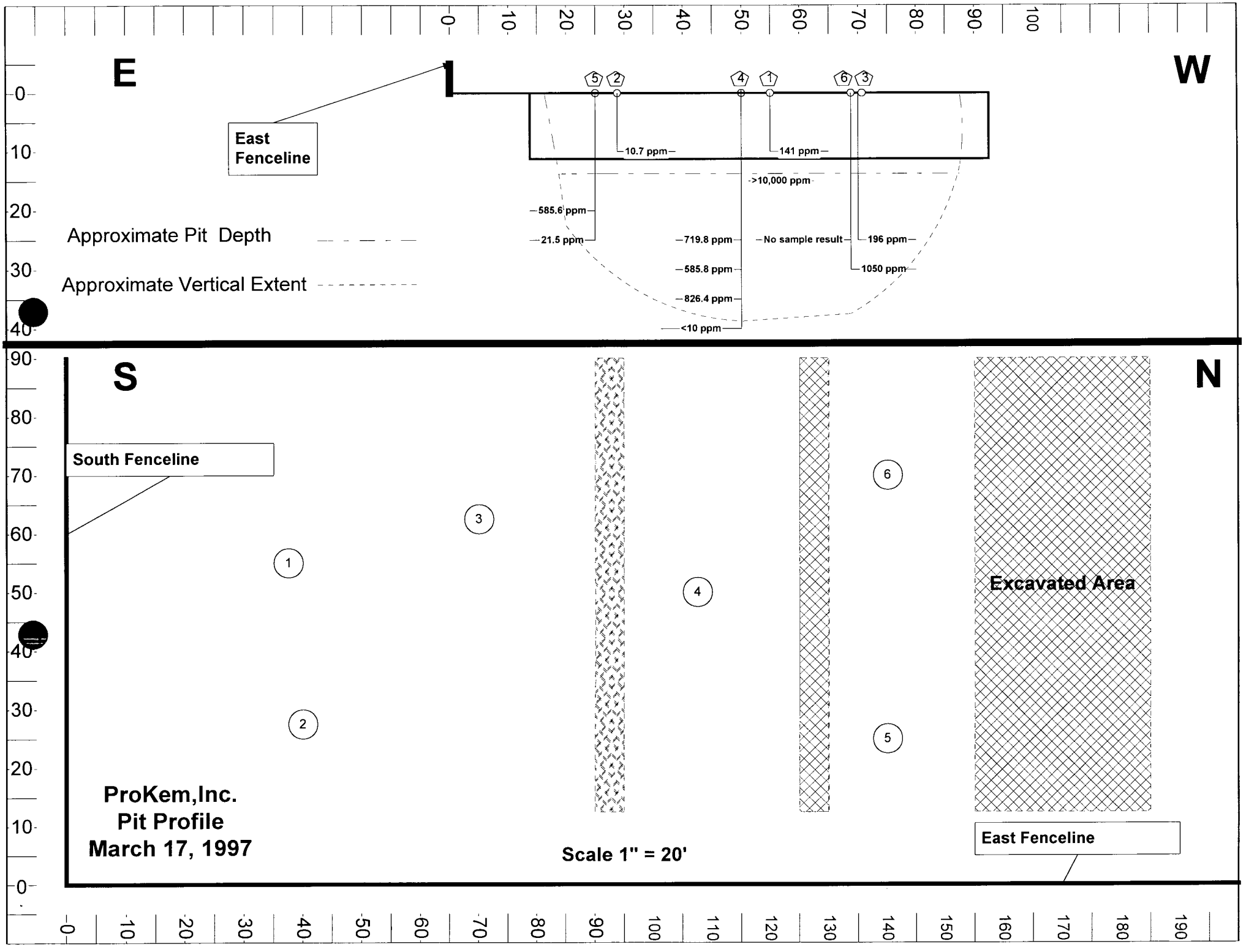
Company Name & Address: SAfety & Environmental Solutions

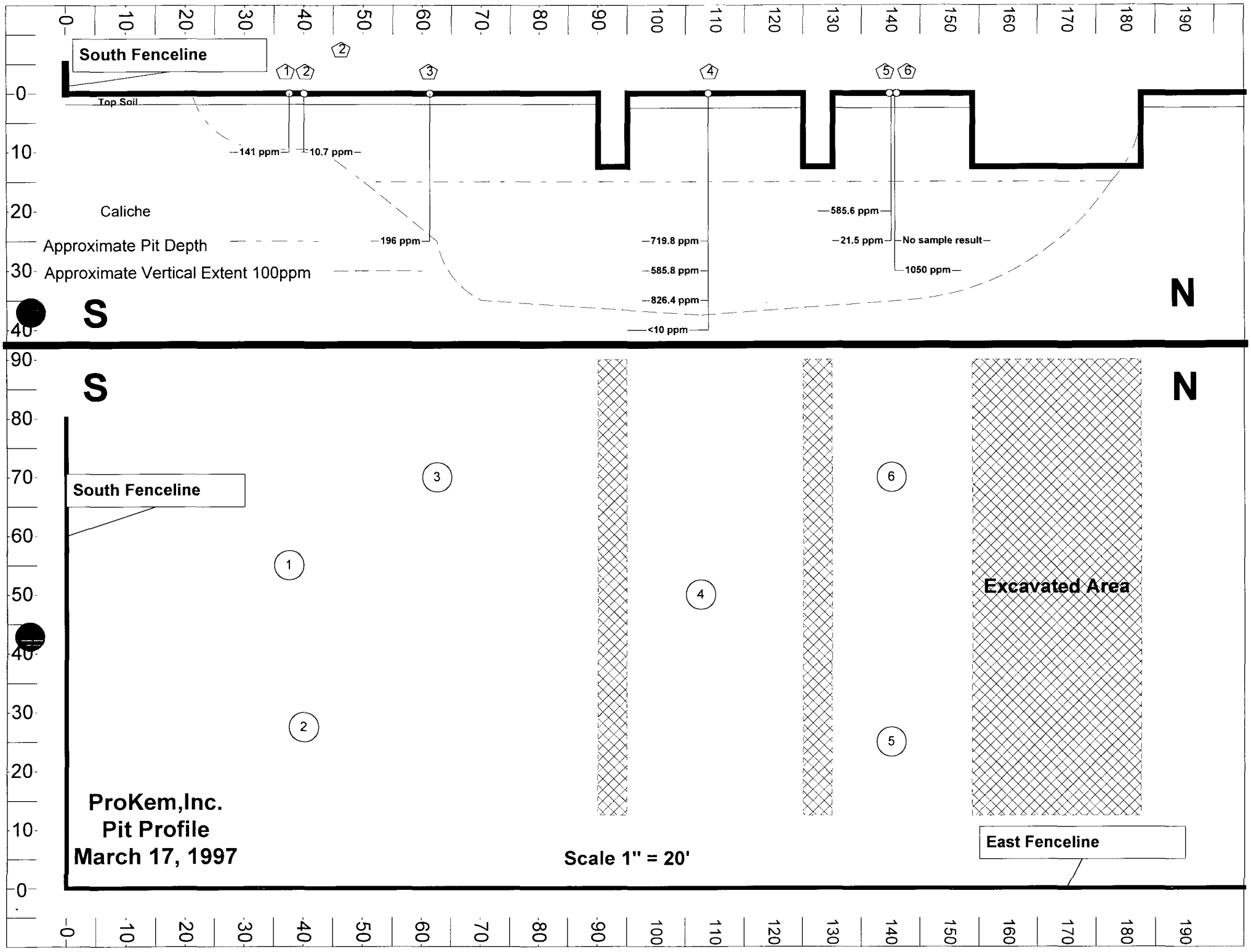
Project #: | Project Name: ProKem

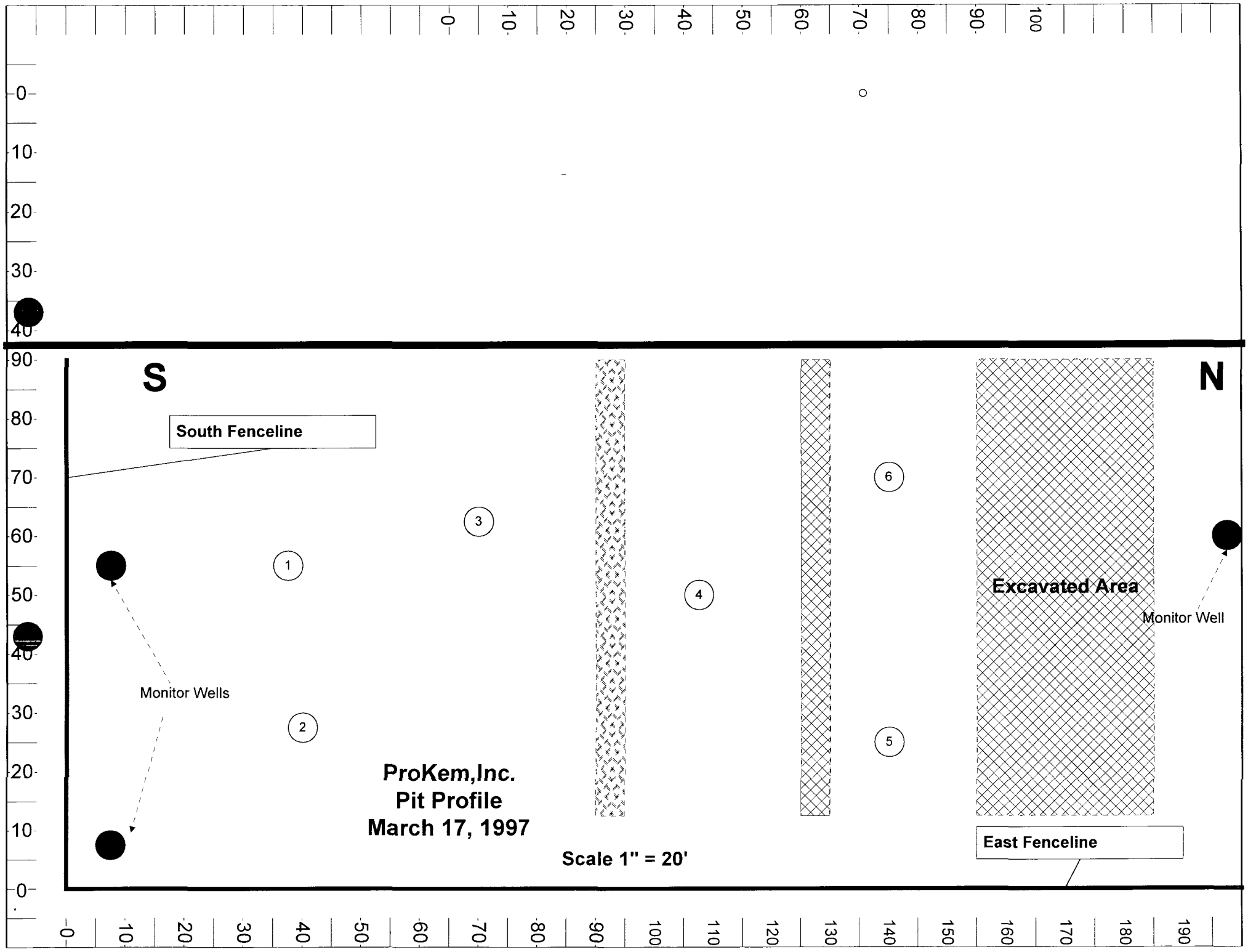
Project Location: [illegible]Kem YARD | Sampler Signature: [signature]

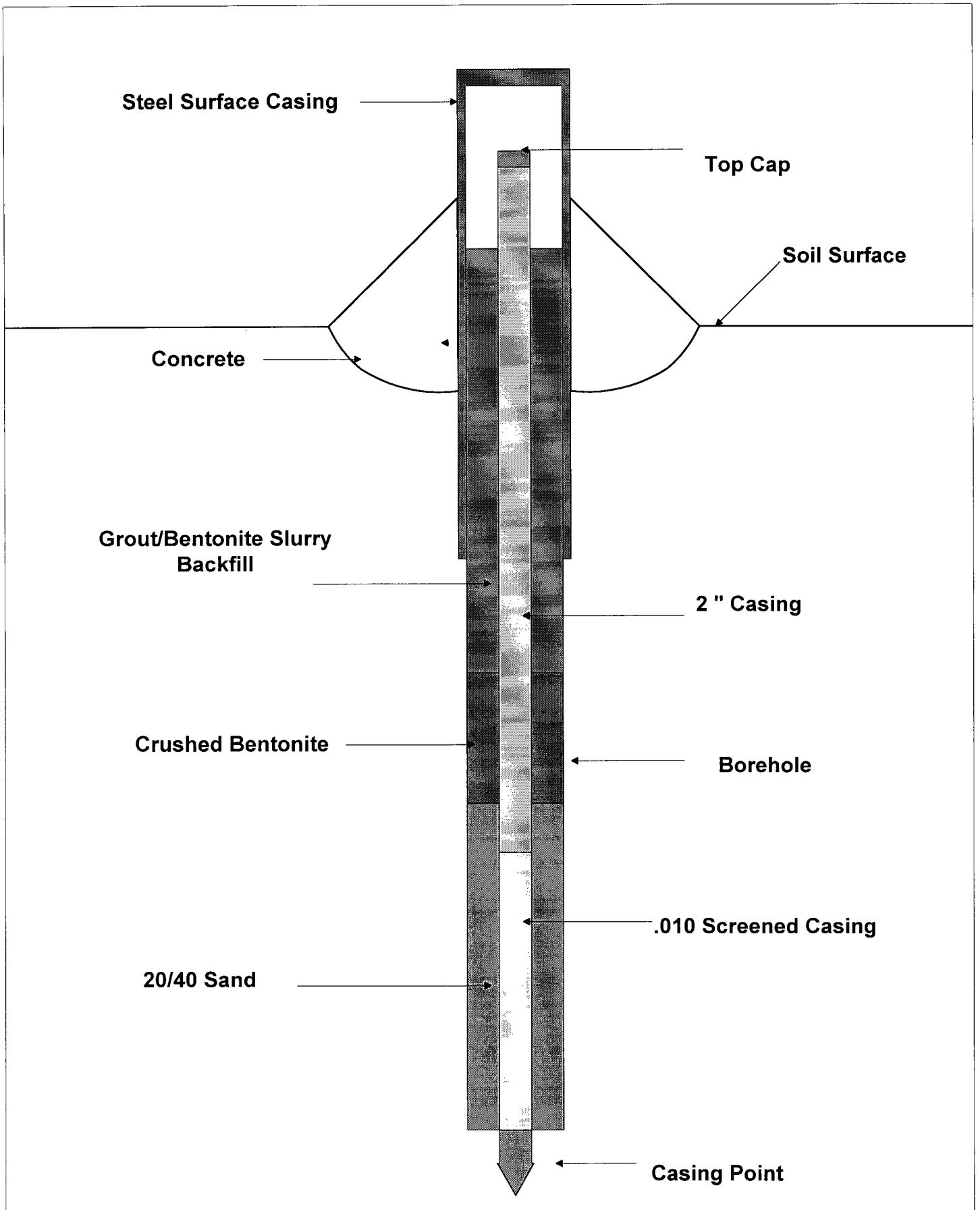
LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX: WATER	MATRIX: SOIL	MATRIX: AIR	MATRIX: SLUDGE	MATRIX: OTHER	PRESERVATIVE METHOD: HCL	PRESERVATIVE METHOD: HNO3	PRESERVATIVE METHOD: ICE	PRESERVATIVE METHOD: NONE	PRESERVATIVE METHOD: OTHER	SAMPLING: DATE	SAMPLING: TIME	BTEX 8020/5030	TPH 418.1	TCLP Metals Ag As Ba Cd Cr Pb Hg Se	Total Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Volatiles	TCLP Semi Volatiles	TDS	RCI	Chlorides								
	Hole #1 Sample	1	1/2 pt		Y									3/17	9:30	X	X							X								
	Hole #2 Sample	1	1/2 pt		Y									3/17	10:20	X	X							X								
	Hole #3 Sample	1	1/2 pt		Y									3/17	12:25	X	X							X								
	Hole #4 Sample	1	1/2 pt		Y									3/17	3:30	X	X							X								
	Hole #5 Sample	1	1/2 pt		Y									3/17	4:30	X	X							X								
	Hole #6 Sample	1	1/2 pt		Y									3/17	5:15	X	X							X								

Relinquished by:	Date:	Times:	Received by:	REMARKS
[signature]	3-14-97	9:19 Am	Amy Hill	
Relinquished by:	Date:	Times:	Received by:	
Relinquished by:	Date:	Times:	Received by Laboratory:	


E
W
East Fenceline
5
2
4
1
6
3
10.7 ppm
141 ppm
>10,000 ppm
585.6 ppm
21.5 ppm
719.8 ppm
585.8 ppm
826.4 ppm
<10 ppm
No sample result
196 ppm
1050 ppm
Approximate Pit Depth
Approximate Vertical Extent
S
N
South Fenceline
1
2
3
4
5
6
Excavated Area
East Fenceline
ProKem,Inc.
Pit Profile
March 17, 1997
Scale 1" = 20'


South Fenceline
Top Soil
Caliche
Approximate Pit Depth
Approximate Vertical Extent 100ppm
141 ppm
10.7 ppm
196 ppm
719.8 ppm
585.8 ppm
826.4 ppm
<10 ppm
585.6 ppm
21.5 ppm
No sample result
1050 ppm
S
N
South Fenceline
Excavated Area
East Fenceline
ProKem,Inc.
Pit Profile
March 17, 1997
Scale 1" = 20'


S
N
South Fenceline
East Fenceline
Monitor Wells
Monitor Well
Excavated Area
1
2
3
4
5
6
ProKem,Inc.
Pit Profile
March 17, 1997
Scale 1" = 20'



ProKem, Inc.	Ground Water Monitor Well	Safety & Environmental Solutions, Inc.

CARDINAL 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
HOBBS, NM 88240
FAX TO:

Receiving Date: 03/14/97
Reporting Date: 03/18/97
Project Number: NOT GIVEN
Project Name: PRO KEM
Project Location: PRO KEM YARD

Sampling Date: 03/14/97
Sample Type: SOIL
Sample Condition: COOL & INTACT
Sample Received By: AH
Analyzed By: BC/AH

LAB NUMBER	SAMPLE ID	TPH (mg/Kg)	Cl (mg/Kg)	BENZENE (mg/Kg)	TOLUENE (mg/Kg)	ETHYL BENZENE (mg/Kg)	TOTAL XYLENES (mg/Kg)
ANALYSIS DATE:		03/17/96	03/17/96	03/15/97	03/15/97	03/15/97	03/15/97
H2851-1	HOLE #1 SAMPLE	141	480	<0.020	0.041	0.051	0.364
H2851-2	HOLE #2 SAMPLE	10.7	360	<0.020	0.040	0.044	0.316
H2851-3	HOLE #3 SAMPLE	196	1664	<0.020	0.031	<0.020	<0.060
H2851-4	HOLE #4 SAMPLE	<10	5120	<0.020	0.038	<0.020	0.060
H2851-5	HOLE #5 SAMPLE	21.5	1280	<0.020	0.042	<0.020	0.070
H2851-6	HOLE #6 SAMPLE	1050	2080	<0.020	0.057	0.079	0.261
Quality Control		202	480	0.097	0.098	0.095	0.286
True Value QC		200	500	0.100	0.100	0.100	0.300
% Accuracy		101	96.0	96.8	97.5	94.5	95.2
Relative Percent Difference		1.6	0	1.8	1.6	6.0	5.9

METHODS: TRPHC - EPA 600/7-79-020, 418.1; BTEX - EPA SW-846-8260; Cl - EPA 600/4-79-020 325.3

RECEIVED
MAR 2 8 1997
Environmental Bureau
Oil Conservation Division

Burgess J. A. Cooke, Ph. D.

3/18/97
Date

Safety & Environmental Solutions, Inc.

703 E. Clinton, Suite 103, Hobbs, New Mexico 88240
(505)397-0510

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager:

Phone #:

FAX #:

Company Name & Address:
Safety & Environmental Solutions

Project #:

Project Name:
Proken

Project Location:
Proken YARD

Sampler Signature:

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	OTHER	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	OTHER	SAMPLING: DATE	TIME	BTEX 8020/5030	TPH 418.1	TCLP Metals Ag As Ba Cd Cr Pb Hg Se	Total Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Volatiles	TCLP Semi Volatiles	TDS	RCI	Chlorides
	Hole #1 Sample	1	1/2pt		Y									3/17	9:30	X	X							X
	Hole #2 Sample	1	1/2pt		Y									3/17	10:20	X	X							X
	Hole #3 Sample	1	1/2pt		Y									3/17	12:25	X	X							X
	Hole #4 Sample	1	1/2pt		X									3/17	3:30	X	X							X
	Hole #5 Sample	1	1/2pt		X									3/17	4:30	X	X							X
	Hole #6 Sample	1	1/2pt		Y									3/17	5:15	X	X							X

Relinquished by:	Date:	Time:	Received by:
	3-14-97	9:19 Am	Amy Hill
Relinquished by:	Date:	Time:	Received by:
Relinquished by:	Date:	Time:	Received by Laboratory:

REMARKS

WESTERN ENVIRONMENTAL CONSULTANTS
P.O. Box 1816
Hobbs New, Mexico 88240
(505) 392 - 5021

SOIL ANALYSIS REPORT

DATE: 10/08/96
CLIENT: S.E.S.
SUPERVISOR: A. Hodge
Sample Matrix: Soil

FACILITY: PRO-CHEM
Test Method: EPA 418.1
Order No.: Bob Allen
SAMPLE RECEIVED: Cool and intact

	TPH		DEPTH	LOCATION
SAMPLE NO. 1:	24,100	PPM	0-6"	Composite #1 landfarm
SAMPLE NO. 2:		PPM		
SAMPLE NO. 3:		PPM		
SAMPLE NO. 4:		PPM		
SAMPLE NO. 5:		PPM		
SAMPLE NO. 6:		PPM		
SAMPLE NO. 7:		PPM		
SAMPLE NO. 8:		PPM		
SAMPLE NO. 9:		PPM		
SAMPLE NO. 10:		PPM		

COMMENTS: This sample was a composite sample taken from the landfarm located at PRO-CHEM yard in lovington.

WESTERN ENVIRONMENTAL CONSULTANTS
P.O. Box 1816
Hobbs, New Mexico 88240
(505) 392-5021

CHEMICAL ANALYSIS REPORT

DATE: 10/08/96
CLIENT: S.E.S.
SUPERVISOR: Allen Hodge
SAMPLE MATRIX: Soil

SITE ID: PRO-CHEM
ORDERED BY: Bob Allen
TEST METHOD: 8020
SAMPLE RECEIVED: Cool and intact

Parameter	Value	Units	Test Method
Sample # 1 composite of landfarm 0-6"			
Benzene	<0.2	Mg/L	Headspace GC
Toluene	<0.2	Mg/L	8020/EPA
Ethylbenzene	<0.2	Mg/L	
Xylene (OMP)	<0.2	Mg/L	
Sample # 2			
Benzene		Mg/L	Headspace GC
Toluene		Mg/L	8020/EPA
Ethylbenzene		Mg/L	
Xylene (OMP)		Mg/L	
Sample # 3			
Benzene		Mg/L	Headspace GC
Toluene		Mg/L	8020/EPA
Ethylbenzene		Mg/L	
Xylene (OMP)		Mg/L	
Sample # 4			
Benzene		Mg/L	Headspace GC
Toluene		Mg/L	8020/EPA
Ethylbenzene		Mg/L	
Xylene (OMP)		Mg/L	
Sample # 5			
Benzene		Mg/L	Headspace GC
Toluene		Mg/L	8020/EPA
Ethylbenzene		Mg/L	
Xylene (OMP)		Mg/L	

COMMENTS: This sample was a composite sample taken from the landfarm located on PRO-CHEM yard in lovington (chain of custody was used).

Safety & Environmental Solutions, Inc.

703 E. Clinton, Suite 103, Hobbs, New Mexico 88240
(505)397-0510

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager: | Phone #: | FAX #:

Company Name & Address: Safety & Environmental Solutions

Project #: | Project Name: Land Farm

Project Location: Rokom, Inc. | Sampler Signature:

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	OTHER	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	OTHER	SAMPLING: DATE	TIME	BTEX 8020/5030	TPH 418.1	TCLP Metals Ag As Ba Cd Cr Pb Hg Se	Total Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Volatiles	TCLP Semi Volatiles	TDS	RCI
	Composite #1	1	pt		X									10/7/96	2:30PM	X	X						

Relinquished by:	Date:	Time:	Received by:	REMARKS
	10/7/96	4:24 PM 10-7-96		Sample Cool Intact
Relinquished by:	Date:	Time:	Received by:	
Relinquished by:	Date:	Time:	Received by Laboratory:	

CARDINAL LABORATORIES

PHONE (915) 673-7001 • 2. [redacted]ECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240
PHONE (505) 326-4669 • 118 S. COMMERCIAL AVE. • FARMINGTON, NM 87401

ANALYTICAL RESULTS FOR
WESTERN ENVIRONMENTAL
ATTN: A. HODGE
1533 CORDOBA
HOBBS, NM 88240
FAX TO:

Receiving Date: 05/25/96
Reporting Date: 05/29/96
Project Number: NOT GIVEN
Project Name: PRO KEM
Project Location: LOVINGTON, NM

Sampling Date: 05/24/96
Sample Type:
Sample Condition: COOL & INTACT
Sample Received By: BC
Analyzed By:BC

LAB NUMBER	SAMPLE ID	BENZENE (ppb)	TOLUENE (ppb)	ETHYLBENZENE (ppb)	TOTAL XYLENES (ppb)
ANALYSIS DATE		5/28/96	5/28/96	5/28/96	5/28/96
H2538-1	CENTER OF PIT 30'	<2.0	<2.0	<2.0	<6.0
Quality Control		111	104	110	331
True Value QC		100	100	100	300
% Accuracy		111	104	110	110
Relative Percent Difference		5.1	8.7	11.6	10.4

METHOD: EPA SW 846-8020, 5030, Gas Chromatography

Chemist

5/29/96
Date

#H 2538

Chain of Custody Record

ARDINAL LABORATORIES
PHONE: (505) 393-2326 · 101 E. MARLAND · HOBBS, NEW MEXICO 88240

Project I.D. PRO KEM
Project Location LOVINGTON N.M.
Sampled By A. HODGE
Client Name WESTERN ENV.
Address 1533 CORDOBA HOBBS N.M.
Telephone 392-9545

Sample Number	Date	Time	Composite	Grab	Sample Location	Number of Containers	Analysis Required: BTEX							Remarks (Type sample, preservation, etc.)
1	5-23	1.00		X	CENTER OF PIT 30'	1	X							

Relinquished by: (Signature)
Relinquished by: (Signature)

Date	Time	Received by: (Signature)
5-24	9:59	Daniel Ramos
Date	Time	Received by: (Signature)

Remarks:

Shipped/Delivered

TRACE ANALYSIS, INC.
6701 Aberdeen Avenue Lubbock, Texas 79424 806•794•1296 FAX 806•794•1298

ANALYTICAL RESULTS FOR
SAFETY & ENVIRONMENTAL SOLUTIONS, INC.
Attention: Pat Cleer
P. O. Box 1613
Hobbs, NM 88240

April 15, 1996
Receiving Date: 04/12/96
Sample Type: Soil
Project No: Land Farm #001
Project Location: Lea County

Prep Date: 04/12/96
Analysis Date: 04/12/96
Sampling Date: 04/10/96
Sample Condition: Intact & Cool
Sample Received by: SH
Project Name:

TA#	Field Code	TRPHC (mg/kg)	MTBE (mg/kg)	BENZENE (mg/kg)	TOLUENE (mg/kg)	ETHYL-BENZENE (mg/kg)	M,P,O XYLENE (mg/kg)	TOTAL BTEX (mg/kg)
T50947	Land Farm #001	72,900	<0.050	<0.050	0.066	0.477	3.020	3.563
QC	Quality Control	103.700	0.096	0.092	0.093	0.093	0.186	
Reporting Limit		10	0.050	0.050	0.050	0.050	0.050	
RPD		4	10	11	11	12	12	
% Extraction Accuracy		92	96	89	92	95	95	
% Instrument Accuracy		104	96	92	93	93	94	

METHODS: EPA SW 846-8020, 5030, 3550 HIGH LEVEL; EPA 418.1.
MTBE/BTEX SPIKE: 2.500 mg/kg MTBE/BTEX. MTBE/BTEX QC: 0.100 mg/L MTBE/BTEX.
TRPHC SPIKE: 250 mg/kg TRPHC.
TRPHC QC: 100 mg/L TRPHC.

Director, Dr. Blair Leftwich
Director, Dr. Bruce McDonell

4-15-96
Date

TraceAnalysis, Inc.

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

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager: Safety & Environmental
Phone #: 505-397-0510
FAX #: 505-393-4388
Company Name & Address: PO. 1613 Hobbs, N.M. 88240
Project #: Laws Farm #001
Project Name : Ball
Project Location: Lea County
Sampler Signature:

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX: WATER	MATRIX: SOIL	MATRIX: AIR	MATRIX: SLUDGE	PRESERVATIVE METHOD: HCL	PRESERVATIVE METHOD: HNO3	PRESERVATIVE METHOD: ICE	PRESERVATIVE METHOD: NONE	SAMPLING: DATE	SAMPLING: TIME	ANALYSIS REQUEST: BTEX, MTBE	ANALYSIS REQUEST: TPH
50947	Laws Farm #001 LAND				X							4-10-96	4:37 PM	X	X

ANALYSIS REQUEST: Total Metals Ag As Ba Cd Cr Pb Hg Se; TCLP Metals Ag As Ba Cd Cr Pb Hg Se; TCLP Volatiles; TCLP Semi Volatiles; RCI; 8240 / 8260; 8270

SPECIAL HANDLING: Turn around # of days; Fax ASAP; Hold

103AK

103AK

	Relinquished by:	Date:	Time:	Received by:	Date:	Time:
1		4-11-96	7:15 AM			
2	Relinquished by:	Date:	Time:	Received by:	Date:	Time:
3	Relinquished by:	Date:	Time:	Received at Laboratory by:	Date:	Time:
					4-12-96	9:35A

REMARKS

CF

TRACE ANALYSIS, INC.
6701 Aberdeen Avenue Lubbock, Texas 79424 806•794•1296 FAX 806•794•1298

April 8, 1996
Receiving Date: 04/03/96
Sample Type: Soil
Project No: Prokem
Project Location: Lea County

ANALYTICAL RESULTS FOR
SAFETY & ENVIRONMENTAL SOLUTION, INC.
Attention: Bob Allen
P. O. Box 1613
Hobbs, NM 88241

Prep Date: 04/04/96
Analysis Date: 04/04/96
Sampling Date: 04/02/96
Sample Condition: Intact & Cool
Sample Received by: SH
Project Name: NA

LA #	Field Code	TRPHC (mg/kg)	BENZENE (mg/kg)	TOLUENE (mg/kg)	ETHYL-BENZENE (mg/kg)	M,P,O XYLENE (mg/kg)	TOTAL BTEX (mg/kg)
T50495	Composite Cell	301,000	28.800	56.000	74.000	142.000	300.800
QC	Quality Control	102	0.095	0.096	0.096	0.191	
Reporting Limit		10	0.050	0.050	0.050	0.050	
RPD		2	3	3	2	2	
% Extraction Accuracy		101	94	95	97	96	
Instrument Accuracy		102	96	96	96	96	

METHODS: EPA SW 846-8020, 5030, 3550 HIGH LEVEL; EPA 418.1.
BTEX SPIKE: 2.5 mg/kg BTEX. BTEX QC: 0.100 mg/L BTEX.
TRPHC SPIKE: 250 mg/kg TRPHC. TRPHC QC: 100 mg/L TRPHC.

Director, Dr. Blair Leftwich
Director, Dr. Bruce McDonell

4-9-96
Date

Faxed 4-9

TraceAnalysis, Inc.

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

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager: Safety & Environmental Phone #: 505-397-0510
FAX #: 505-393-4388

Company Name & Address: P.O. 1613 Hobbs, N.M. 88240

Project #: Proken Project Name :

Project Location: Lea County Sampler Signature: Bob Cole

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	SAMPLING: DATE	TIME	BTEX, MTBE	TPH	Total Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	8240 / 8260	8270
50495	Composite cell				X							4/2/96	11:40	X	X							

ANALYSIS REQUEST

SPECIAL HANDLING: Turn around # of days; Fax ASAP X; Hold

94AD

94AD

Relinquished by: Pat Cole	Date: 4-2-96	Time: 2:40 Pm
Relinquished by:	Date:	Time:
Relinquished by:	Date:	Time:
Received by:	Date:	Time:
Received by:	Date:	Time:
Received at Laboratory by:	Date: 4-3-96	Time: 9:15A

REMARKS: Composite of Soil in cell.

B

CI

SES95

TRACE ANALYSIS, INC.
6701 Aberdeen Avenue Lubbock, Texas 79424 806•794•1296 FAX 806•794•1298

April 8, 1996
Receiving Date: 04/02/96
Sample Type: Soil
Project No: ProKem
Project Location: Lovington, [redacted]

ANALYTICAL RESULTS FOR
SAFETY & ENVIRONMENTAL SOLUTION, INC.
Attention: Bob Allen
P. O. Box 1613
Hobbs, NM 88241

Prep Date: 04/02/96
Analysis Date: 04/03/96
Sampling Date: 04/01/96
Sample Condition: Intact & Cool
Sample Received by: SH
Project Name: ProKem

[redacted]A#	Field Code	TRPHC (mg/kg)	MTBE (mg/kg)	BENZENE (mg/kg)	TOLUENE (mg/kg)	ETHYL-BENZENE (mg/kg)	M,P,O XYLENE (mg/kg)	TOTAL BTEX (mg/kg)	CHLORIDES (mg/kg)
T50447	Composite for Lift #1	179,000	2.710	84.800	160.000	142.000	244.000	630.800	NR
T50448	Background Sample	152	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	1,596
QC	Quality Control	104	0.100	0.101	0.102	0.101	0.200		500
Reporting Limit		10	0.050	0.050	0.050	0.050	0.050		2.000
RPD		3	3	2	2	1	1		1
% Extraction Accurac		98	97	96	98	98	98		101
[redacted]Instrument Accuracy		104	100	102	102	102	100		100

METHODS: EPA SW 846-8020, 5030, 3550 HIGH LEVEL; EPA 418.1; SM 4500 Cl-B.
MTBE/BTEX SPIKE: 2.500 mg/kg MTBE/BTEX. MTBE/BTEX QC: 0.100 mg/L MTBE/BTEX.
TRPHC SPIKE: 250 mg/kg TRPHC. TRPHC QC: 100 mg/L TRPHC.
CHLORIDE SPIKE: 100 mg/L Cl. CHLORIDE QC: 500 mg/L Cl.

Director, Dr. Blair Leftwich
Director, Dr. Bruce McDonell

4-9-96
Date

Faxed 4-4

TraceAnalysis, Inc.

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

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager: Bob Allen

Phone #:

FAX #: (505) 393-4388

Company Name & Address: SES, Inc.

Project #: ProKem

Project Name: ProKem

Project Location: Lovington

Sampler Signature:

ANALYSIS REQUEST

SPECIAL HANDLING

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	SAMPLING: DATE	TIME	BTEX, MTBE	TPH	Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	8240 / 8260	8270	Chlorides (Total)
50447	Composite for Lift #1	1	4oz		X					X		4/1/96	3:00p	X	X								
48	Background Sample	1	4oz		X					X		4/1/96	3:00p	X	X								X

93AC

93AC

Turn around # of days

(Fax ASAP)

Hold

Relinquished by: Dee McKay	**Date:** 4-1-96	**Time:** 3:22pm
Relinquished by:	**Date:**	**Time:**
Relinquished by:	**Date:**	**Time:**

Received by:	**Date:**	**Time:**
Received by:	**Date:**	**Time:**
Received at Laboratory by:	**Date:** 4-2-96	**Time:** 9:55A

RF

Safety & Environmental Solutions, Inc.
703 E. Clinton-Suite 103
505/397-0510
HOBBS, N.M. 88240

Do Not Run Total Metals!

Safety & Environmental Solutions, Inc.

March 17, 1997

Mr. Pat Sanchez
Petroleum Engineer
Oil Conservation Division
2040 S. Pacheco
Santa Fe, New Mexico 87505
Sincerely,

Dear Pat:

This letter will confirm our telephone conversation of Friday, March 14, 1997. As we discussed, Gerald will be out of town this week and the Implementation Plan promised on March 21, 1997 will be delayed until early in the week of March 24, 1997.

Thank you for your consideration in this matter.

Sincerely,

Bob Allen

Bob Allen REM, CET, CES
President

Ba/nh

505/397-0510
703 E. Clinton Suite 103
Hobbs, New Mexico 88240
Fax 505/393-4388

cc: PRO-KEM FILE
J. SEXTON

NEW MEXICO OIL CONSERVATION COMMISSION
FIELD TRIP REPORT

INSPECTION	CLASSIFICATION	FACILITY	HOURS	QUARTER HOURS

Name WAYNE PRICE Date 3-13-97 Miles ______ District I

Time of Departure 7 AM Time of Return 4 PM Car No. G 047

In the space below indicate the purpose of the trip and the duties performed, listing wells or leases visited and any action taken.

Signature [signature]

PRO-KEM - LOVINGTON N.M

WITNESSED DRILLING / SAMPLING of BORE HOLES IN OLD PIT AREA.

MET WITH GERALD PHILLIPS / BOB ALLEN THEY ARE PLANNING ON SUBMITTING PLAN TO NMOCD SF TO REMOVE MAJOR SOURCE of SLUDGE, INSTALL MW'S FOR RISK-BASED CLOSURE.

DRILL LOGS ATTACHED

RECEIVED
MAR 18 1997
Environmental Bureau
Oil Conservation Division

Mileage		Per Diem		Hours	
UIC		UIC		UIC	
RFA		RFA		RFA	
Other		Other		Other	

TYPE INSPECTION PERFORMED

H = Housekeeping
P = Plugging
C = Plugging Cleanup
T = Well Test
R = Repair/Workover
F = Waterflow
M = Mishap or Spill
W = Water Contamination
O = Other

INSPECTION CLASSIFICATION

U = Underground Injection Control - Any inspection of or related to injection project, facility, or well or resulting from injection into any well. (SWD, 2ndry injection and production wells, water flows or pressure tests, surface injection equipment, plugging, etc.)

R = Inspections relating to Reclamation Fund Activity

O = Other - Inspections not related to injection or The Reclamation Fund

E = Indicates some form of enforcement action taken in the field (show immediately below the letter U, R or O)

NATURE OF SPECIFIC WELL OR FACILITY INSPECTED

D = Drilling
P = Production
I = Injection
C = Combined prod. inj. operations
S = SWD
U = Underground Storage
G = General Operation
F = Facility or location
M = Meeting
O = Other

Company Drilled for: PRO-KEM

Location: LOVINGTON-NM YARD (OLD PLT) 62 FSL / 70 FEL L = FENCE

Witness: W PRICE-NMOCD 3-13-97 JP

Drilling Log

Well/Bore Number:	Date Drilled:	Driller:	Logged By:
BH 3A	3-13-97	HARRISON	BOB ESS / ALLEN

Drilling Method:	Depth of Boring:	Depth of Well:	Length of Casing:	Length of Screen:
HOLLOW STEM AUGER	25'	NA	NA	NA

Bore Diameter:	Casing Diameter:	Screen Diameter:	Slot Size:	Well Material:
≈ 6"	NA	NA	NA	NA

Depth	Lithology	Sample Type	OVA (PPM)	Remarks	Well Design	Depth
0	BLACK OILY SLUDGE CUTTINGS	SPLIT SPOON	PID – NMOCD			0
5			TPH – IR BUCK 404 418.1 (ESS)			5
10						10
15	CALICHIE -	CREAM COLOR	72500	PID		15
20	"	"	710K	TPH		20
25	CALICHIE-(SAND)	WHITE	—	MILD ODOR		25
30			100	PID		30
35			NO	TPH		35
40				CONTRACTOR KEPT BOTTOM HOLE SAMPLES FOR LAB		40
45				SAMPLES STORED 4°C. JP		45
50						50
55						55
60						60
65						65
70						70
75						75
80						80
85						85
90						90
95						95
100						100
105						105

Drilling Log

Company Drilled for: PRO-KEM	
Location: CENTER of PIT 50 FEL / 108 FSL	

Well/Bore Number:	Date Drilled:	Driller:	Logged By:
BH # 4			

Drilling Method:	Depth of Boring:	Depth of Well:	Length of Casing:	Length of Screen:

Bore Diameter:	Casing Diameter:	Screen Diameter:	Slot Size:	Well Material:

Depth	Lithology	Sample Type	OVA (PPM)	Remarks	Well Design	Depth
0	BLACK OILY SLUDGE CUTTINGS					0
15		—	—	STRONG HYDROCARBON ODOR - S.A.B		15
20	CALICHIE/SAND/GRAVEL	DK GREY	—			20
25	CALICHIE	GREY	106 719	PID MILD ODOR TPH		25
30	CALICHIE/SAND/CUTTINGS LT GREY - MILD/STRONG ODOR	WH POWDER CALICHIE	116 585	PID SLIGHT ODOR TPH		30
35	CALICHIE POWDER	WH	600 826	PID " " TPH		35
	CUTTING WET SAND GREY	CLAY/SAND		STRONG ODOR IN CUTTINGS		
40	SAND-CALICHIE-	TAN				40
45			307 273	PID OLFACTOR ODOR TPH VERY SLIGHT TO N.D.		45
50				CONTRACTOR KEPT BOTTOM HOLE SAMPLES FOR LAB 4°C.		50
55						55
60						60
65						65
70						70
75						75
80						80
85						85
90						90
95						95
100						100
105						105

Safety & Environmental Solutions, Inc.
703 E. Clinton, Suite 103
Hobbs, New Mexico 88240

FACSIMILE COVER SHEET

To: Pat Sanchez

From: Bob Allen

Subject: extension

Total Number of Pages: 2 including cover sheet

If any portion of the preceding fax is illegible, please call us immediately at:

(505) 397-0510

Fax (505) 393-4388

Safety & Environmental Solutions, Inc.

March 17, 1997

Mr. Pat Sanchez
Petroleum Engineer
Oil Conservation Division
2040 S. Pacheco
Santa Fe, New Mexico 87505
Sincerely,

Dear Pat:

This letter will confirm our telephone conversation of Friday, March 14, 1997. As we discussed, Gerald will be out of town this week and the Implementation Plan promised on March 21, 1997 will be delayed until early in the week of March 24, 1997.

Thank you for your consideration in this matter.

Sincerely,

Bob Allen

Bob Allen REM, CET, CES
President

Ba/nh

505/397-0510

703 E. Clinton Suite 103
Hobbs, New Mexico 88240

Fax 505/393-4388

Pat Sanchez

From: Pat Sanchez
Sent: Friday, March 07, 1997 10:14 AM
To: Wayne Price
Cc: Jerry Sexton
Subject: PRO-KEM GW-202, CONTAMINATION
Importance: High

MR. PRICE,

I SPOKE WITH BOB ALLEN TODAY WHO IS THE CONSULTANT FOR PRO-KEM IN LOVINGTON, NM. HE INDICATED THAT THEY WILL BE INSTALLING 5 SOIL/VADOSE ZONE BORINGS NEXT WEEK TO DELINEATE THE VERTICAL AND HORIZONTAL EXTENT OF BTEX AND TPH CONTAMINATION. I GAVE HIM THE GO AHEAD TO PROCEED WITH THE REQUIREMENT THAT HE NOTIFY YOU NEXT WEEK BEFORE THE WORK BEGINS SO THAT OCD MAY HAVE A WITNESS PRESENT AT THIS DICHARGE PLAN FACILITY DURING THE DELINEATION.

NOTE: MR. ALLEN WILL PLUG THE BORINGS WITH A GROUT COMPOSED OF CEMENT/BENTONITE FROM TD TO SURFACE OF EACH HOLE.

THANKS FOR YOU TIME!!!!!

Pat Sanchez

From: System Administrator
Sent: Friday, March 07, 1997 10:14 AM
To: Wayne Price
Subject: Delivered: PRO-KEM GW-202, CONTAMINATION
Importance: High

Your message

To: Wayne Price
Cc: Jerry Sexton
Subject: PRO-KEM GW-202, CONTAMINATION
Sent: 3/7/97 10:14:09 AM

was delivered to the following recipient(s):

Wayne Price on 3/7/97 10:14:11 AM

Pat Sanchez

From: Jerry Sexton

Sent: Tuesday, March 11, 1997 11:34 AM
To: Pat Sanchez
Subject: Registered: Jerry Sexton

Your message

To: Jerry Sexton
Subject: PRO-KEM GW-202, CONTAMINATION
Sent: 3/7/97 10:14:00 AM

was read on 3/11/97 11:34:00 AM

Pat Sanchez

From: Wayne Price
Sent: Friday, March 07, 1997 10:41 AM
To: Pat Sanchez
Subject: Registered: Wayne Price

Your message

To: Wayne Price
Subject: PRO-KEM GW-202, CONTAMINATION
Sent: 3/7/97 10:14:00 AM

was read on 3/7/97 10:41:00 AM

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

MEMORANDUM OF MEETING OR CONVERSATION

☒ Telephone ☐ Personal	Time 8:25 AM	Date 3-7-97

Originating Party	Other Parties
Bob Allen - Safety And Environ. Solutions.	Pat Sanchez - OCD.

Subject: Pro-Kem Lovington - GW-202, Pit Closure.

Discussion: (1) They will drill 5 borings next week to determine the vertical/Lateral Extent. Will plug the borings w/ a Bentonite/Cement Grout.

(2) By March 21, 1997 - He will submit a work plan that will address the issues ~~required~~ required by OCD on November 13, 1996 for the plan to be approved. - His plan will include timelines for implementation. I stressed that I felt that at least 3 Monitor wells would be required - 2 down gradient, 1 up gradient.

Conclusions or Agreements: (A) Mr. Allen will submit and adhere to (1) & (2) above. (B) OCD may adjust the timelines (up or down) in the plan that is submitted. (C) Monitor wells must cover the Entire Suite of 20 NMAC 6.2.3103 Constituents to Start.

Distribution: File - Wayne Price.

Signed: Patricia W. Sanchez

NEW MEXICO ENERGY, MINERALS
& NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION
2040 South Pacheco Street
Santa Fe, New Mexico 87505
(505) 827-7131

November 13, 1996

CERTIFIED MAIL
RETURN RECEIPT NO. P-288-258-684

Mr. Gerald Phillips, President
Pro-Kem, Inc.
P.O. Box 1506
Lovington, NM 88260

RE: Remediation Plan - Revision Proposal
GW-202 Pit Closure
Pro-Kem, Inc.

Dear Mr. Phillips:

The New Mexico Oil Conservation Division (OCD) received the Remediation Plan Revision Proposal for the "pit closure" at GW-202 as dated October 10, 1996 by Safety & Environmental Solutions, Inc. on behalf of Pro-Kem, Inc. **The Remediation Plan Revision concept appears to be approvable provided that the following concerns can be resolved by Pro-Kem, Inc. prior to the implementation of the Remediation Plan Revision:**

1. The vertical extent of the BTEX contamination in the soil below the pit has not yet been determined.

2. Has Ground water been impacted? The OCD feels that the placement of one monitor well based on Regional ground water flow direction information may be insufficient for this site in order to determine if ground water has been impacted at the site.

3. The OCD feels that one monitor well would be insufficient to address groundwater flow direction at the site - i.e. if a contamination plume were present under the site, how would its potential migration be monitored. Pro-Kem needs to include a portion in the plan to evaluate groundwater hydrologic/hydrogeologic parameters at the site.

4. What type of impermeable liner would be used? The letter states either a clay liner or a plastic liner would be used - what would be the installation methods and the material type (s) ?

5. The proposal does not include a monitoring parameters for the monitor well, i.e. what WQCC constituents would be analyzed for? The Parameters listed in 20NMAC6.2.3103 shall be the basis for establishing the constituents.

6. On March 7, 1996 the OCD approved the Remediation plan for the site, the following condition of that letter has not been addressed by Pro-Kem, Inc.:

- *All background samples as committed to in the Remediation Plan submitted by Environmental & Safety Solutions, Inc. on February 28, 1996 on behalf of Pro-Kem, Inc. will be submitted to the OCD Santa Fe office with proper lab QA/QC attached before start-up of the landfarm. All treatment zone monitoring and lift analysis will include proper lab QA/QC, and each new lift application shall be approved by the Santa Fe OCD office before a new lift can be applied. A copy of all of the above analysis shall also be provided to the Hobbs District Office to the attention of Mr. Wayne Price.*

This condition from the March 7, 1996 letter from the OCD must also be addressed.

Pro-Kem, Inc. will address the concerns listed above within 60 days of receipt of this letter, and submit the "Remediation Plan - Revision" to the OCD Santa Fe Office for approval, with a copy to the OCD Hobbs District Office.

Note, that OCD review does not limit Pro-Kem, Inc. to the work proposed should it later be found that contamination exists which is beyond the scope of this plan, or if Pro-Kem, Inc. fails to completely define the extent of contamination. In addition , OCD review does not relieve Pro-Kem, Inc. of responsibility for compliance with any other federal, state, or other local laws and regulations.

If you have any questions regarding this matter feel free to call me at (505)-827-7156.

Sincerely,

Patricio W. Sanchez
Petroleum Engineering Specialist
Environmental Bureau, OCD

xc: Mr. Wayne Price - OCD, Hobbs District Office.
Mr. Bob Allen - Safety & Environmental Solutions, Inc.

P 288 258 684

US Postal Service

Receipt for Certified Mail

No Insurance Coverage Provided.

Do not use for International Mail *(See reverse)*

Sent to Pro-Kem, Inc.-Mr. Phillips	
Street & Number GW 2R2 REM. PLN. REV. PWS.	
Post Office, State, & ZIP Code	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
TOTAL Postage & Fees	$
Postmark or Date	

PS Form **3800**, April 1995

Safety & Environmental Solutions, Inc.

October 10, 1996

Mr. Pat Sanchez
Petroleum Engineer
Oil Conservation Division
2040 S. Pacheco
Santa Fe, New Mexico 87505

Dear Pat:

This letter will update you on the limited progress of the landfarm operation at Pro-Kem, Inc. and request a different approach to the clean up of this pit. The current landfarm operation has seen moderate success due to the fact that the soil being landfarmed is filled with rocks that makes conventional methods for turning the soil impossible. The success that has been made is illustrated in the following table:

TPH 4/1/96	179,000 ppm
TPH 10/8/96	24,100 ppm

	Benzene	Toulene	Ethylbenzene	Xylene
BTEX 4/1/96	84.800 ppm	160.00 ppm	142.00 ppm	244.00 ppm
BTEX 10/8/96	<0.02 ppm	<0.02 ppm	<0.02 ppm	<0.02 ppm

As you can see, the project has only moderate reduction in TPH while the BTEX reduction is dramatic. I feel that the reduction in TPH is a result of not being able to farm this material properly. It is for this reason that I would like to request a different approach to this project.

Please consider the following:

Pro-Kem, Inc. will excavate the contents of the pit to a TPH level of 1000 ppm and allow the bottom of the pit to aerate. A clay or plastic liner will be installed in the bottom of the excavation. The spoils will be allowed to stabilize on top to the ground for a period of 45 to 60 days. The BTEX of the excavated material should be reduced to acceptable levels and backfilled into the excavation and another clay or plastic liner placed on top of the backfilled pit to isolate the contaminated material. In order to monitor the groundwater, Pro-Kem, Inc. will install a standard monitor well into the water bearing formation down gradient from the pit and will analyze the water quarterly and submit the results to the OCD.

If you agree that this method would meet the intent of the regulations, please contact me and

703 E. Clinton Suite 103
505/397-0510 *Hobbs, New Mexico 88240* *Fax 505/393-4388*

Safety & Environmental Solutions, Inc.

Pro-Kem, Inc. will provide the OCD with a detailed work plan designed to complete this project in a cost effective and timely manner. We feel that this proposal will accomplish the goal of protecting the groundwater and provide a cost effective solution to this problem for Pro-Kem, Inc.

Thank you for you cooperation in this matter.

Sincerely,

Bob Allen

Bob Allen, REM, CET, CES
President

cc. Gerald Phillips
Wayne Price

505/397-0510
703 E. Clinton Suite 103
Hobbs, New Mexico 88240
Fax 505/393-4388

TRACEANALYSIS, INC.
6701 Aberdeen Avenue Lubbock, Texas 79424 806•794•1796 FAX 806•794•1298

April 8, 1996
Receiving Date: 04/02/96
Sample Type: Soil
Project No: ProKem
Project Location: Lovington, [redacted]

ANALYTICAL RESULTS FOR
SAFETY & ENVIRONMENTAL SOLUTION, INC.
Attention: Bob Allen
P. O. Box 1613
Hobbs, NM 88241

Prep Date: 04/02/96
Analysis Date: 04/03/96
Sampling Date: 04/01/96
Sample Condition: Intact & Cool
Sample Received by: SH
Project Name: ProKem

	Field Code	TRPHC (mg/kg)	MTBE (mg/kg)	BENZENE (mg/kg)	TOLUENE (mg/kg)	ETHYL-BENZENE (mg/kg)	M,P,O XYLENE (mg/kg)	TOTAL BTEX (mg/kg)	CHLORIDES (mg/kg)
T50447	Composite for Lift #1	179,000	2.710	84.800	160.000	142.000	244.000	630.800	NR
T50448	Background Sample	152	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	1,596
QC	Quality Control	104	0.100	0.101	0.102	0.101	0.200		500
Reporting Limit		10	0.050	0.050	0.050	0.050	0.050		2.000
RPD		3	3	2	2	1	1		1
% Extraction Accurac		98	97	96	98	98	98		101
% Instrument Accuracy		104	100	102	102	102	100		100

METHODS: EPA SW 846-8020, 5030, 3550 HIGH LEVEL; EPA 418.1; SM 4500 Cl-B.
MTBE/BTEX SPIKE: 2.500 mg/kg MTBE/BTEX. MTBE/BTEX QC: 0.100 mg/L MTBE/BTEX.
TRPHC SPIKE: 250 mg/kg TRPHC. TRPHC QC: 100 mg/L TRPHC.
CHLORIDE SPIKE: 100 mg/L Cl. CHLORIDE QC: 500 mg/L Cl.

Director, Dr. Blair Leftwich
Director, Dr. Bruce McDonell

4-9-96
Date

TRACE ANALYSIS, INC.
6701 Aberdeen Avenue Lubbock, Texas 79424 806•794•1296 FAX 806•794•1298

ANALYTICAL RESULTS FOR
SAFETY & ENVIRONMENTAL SOLUTIONS, INC.
Attention: Pat Cleer
P. O. Box 1613
Hobbs, NM 88240

April 15, 1996
Receiving Date: 04/12/96
Sample Type: Soil
Project No: Land Farm #001
Project Location: Lea County

Prep Date: 04/12/96
Analysis Date: 04/12/96
Sampling Date: 04/10/96
Sample Condition: Intact & Cool
Sample Received by: SH
Project Name:

TA#	Field Code	TRPHC (mg/kg)	MTBE (mg/kg)	BENZENE (mg/kg)	TOLUENE (mg/kg)	ETHYL-BENZENE (mg/kg)	M,P,O XYLENE (mg/kg)	TOTAL BTEX (mg/kg)
T50947	Land Farm #001	72,900	<0.050	<0.050	0.066	0.477	3.020	3.563
QC	Quality Control	103.700	0.096	0.092	0.093	0.093	0.186	
Reporting Limit		10	0.050	0.050	0.050	0.050	0.050	
RPD		4	10	11	11	12	12	
% Extraction Accuracy		92	96	89	92	95	95	
% Instrument Accuracy		104	96	92	93	93	94	

METHODS: EPA SW 846-8020, 5030, 3550 HIGH LEVEL; EPA 418.1.
MTBE/BTEX SPIKE: 2.500 mg/kg MTBE/BTEX. MTBE/BTEX QC: 0.100 mg/L MTBE/BTEX.
TRPHC SPIKE: 250 mg/kg TRPHC.
TRPHC QC: 100 mg/L TRPHC.

Director, Dr. Blair Leftwich
Director, Dr. Bruce McDonell

4-15-96
Date

CARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240
PHONE (505) 326-4669 • 118 S. COMMERCIAL AVE. • FARMINGTON, NM 87401

ANALYTICAL RESULTS FOR
WESTERN ENVIRONMENTAL
ATTN: A. HODGE
1533 CORDOBA
HOBBS, NM 88240
FAX TO:

Receiving Date: 05/25/96
Reporting Date: 05/29/96
Project Number: NOT GIVEN
Project Name: PRO KEM
Project Location: LOVINGTON, NM

Sampling Date: 05/24/96
Sample Type:
Sample Condition: COOL & INTACT
Sample Received By: BC
Analyzed By:BC

LAB NUMBER	SAMPLE ID	BENZENE (ppb)	TOLUENE (ppb)	ETHYLBENZENE (ppb)	TOTAL XYLENES (ppb)
ANALYSIS DATE		5/28/96	5/28/96	5/28/96	5/28/96
H2538-1	CENTER OF PIT 30'	<2.0	<2.0	<2.0	<6.0
Quality Control		111	104	110	331
True Value QC		100	100	100	300
% Accuracy		111	104	110	110
Relative Percent Difference		5.1	8.7	11.6	10.4

METHOD: EPA SW 846-8020, 5030, Gas Chromatography

Chemist

5/29/96
Date

H2538.XLS

WESTERN ENVIRONMENTAL CONSULTANTS
P.O. Box 1816
Hobbs New, Mexico 88240
(505) 392 - 5021

SOIL ANALYSIS REPORT

DATE: 10/08/96
CLIENT: S.E.S.
SUPERVISOR: A. Hodge
Sample Matrix: Soil

FACILITY: PRO-CHEM
Test Method: EPA 418.1
Order No.: Bob Allen
SAMPLE RECEIVED: Cool and intact

	TPH		DEPTH	LOCATION
SAMPLE NO. 1:	24,100	PPM	0-6"	Composite #1 landfarm
SAMPLE NO. 2:		PPM		
SAMPLE NO. 3:		PPM		
SAMPLE NO. 4:		PPM		
SAMPLE NO. 5:		PPM		
SAMPLE NO. 6:		PPM		
SAMPLE NO. 7:		PPM		
SAMPLE NO. 8:		PPM		
SAMPLE NO. 9:		PPM		
SAMPLE NO. 10:		PPM		

COMMENTS: This sample was a composite sample taken from the landfarm located at PRO-CHEM yard in lovington.

WESTERN ENVIRONMENTAL CONSULTANTS
P.O. Box 1816
Hobbs, New Mexico 88240
(505) 392-5021

CHEMICAL ANALYSIS REPORT

DATE: 10/08/96
CLIENT: S.E.S.
SUPERVISOR: Allen Hodge
SAMPLE MATRIX: Soil

SITE ID: PRO-CHEM
ORDERED BY: Bob Allen
TEST METHOD: 8020
SAMPLE RECEIVED: Cool and intact

Parameter	Value	Units	Test Method
Sample # 1 composite of landfarm 0-6"			
Benzene	<0.2	Mg/L	Headspace GC
Toluene	<0.2	Mg/L	8020/EPA
Ethylbenzene	<0.2	Mg/L	
Xylene (OMP)	<0.2	Mg/L	
Sample # 2			
Benzene		Mg/L	Headspace GC
Toluene		Mg/L	8020/EPA
Ethylbenzene		Mg/L	
Xylene (OMP)		Mg/L	
Sample # 3			
Benzene		Mg/L	Headspace GC
Toluene		Mg/L	8020/EPA
Ethylbenzene		Mg/L	
Xylene (OMP)		Mg/L	
Sample # 4			
Benzene		Mg/L	Headspace GC
Toluene		Mg/L	8020/EPA
Ethylbenzene		Mg/L	
Xylene (OMP)		Mg/L	
Sample # 5			
Benzene		Mg/L	Headspace GC
Toluene		Mg/L	8020/EPA
Ethylbenzene		Mg/L	
Xylene (OMP)		Mg/L	

COMMENTS: This sample was a composite sample taken from the landfarm located on PRO-CHEM yard in lovington (chain of custody was used).

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

MEMORANDUM OF MEETING OR CONVERSATION

☒ Telephone ☐ Personal	Time 8:30 AM	Date 7-18-96

Originating Party	Other Parties
Bob Allen - Consultant for Pro-Kem	Pat Sanchez - OCD

Subject: Pit Remmediation at Pro-Kem - Lovington - GW-202

Discussion: Mr. Allen called to discuss ongoing pit clean-up and discuss options - such as "Risk based" closure for the pit using RBCA by ASTM and installation of impermeable liner.

Also, Mr. Allen said all the rocks in the pit is a problem in terms of Land Farming.

Conclusions or Agreements

I told Mr. Allen that if they (Pro-Kem) wanted to submit a risk based closure or other alternatives that the OCD is always open to proposals.

Distribution: File, Wayne Price.

Signed: Pat Sanchez

Safety & Environmental Solutions, Inc.

RECEIVED
FEB 1 8 1996
Environmental Bureau
Oil Conservation Division

March 7, 1996

Mr. Pat Sanchez
Petroleum Engineer
Oil Conservation Division
2040 S. Pacheco
Santa Fe, New Mexico 87505

Dear Mr. Sanchez:

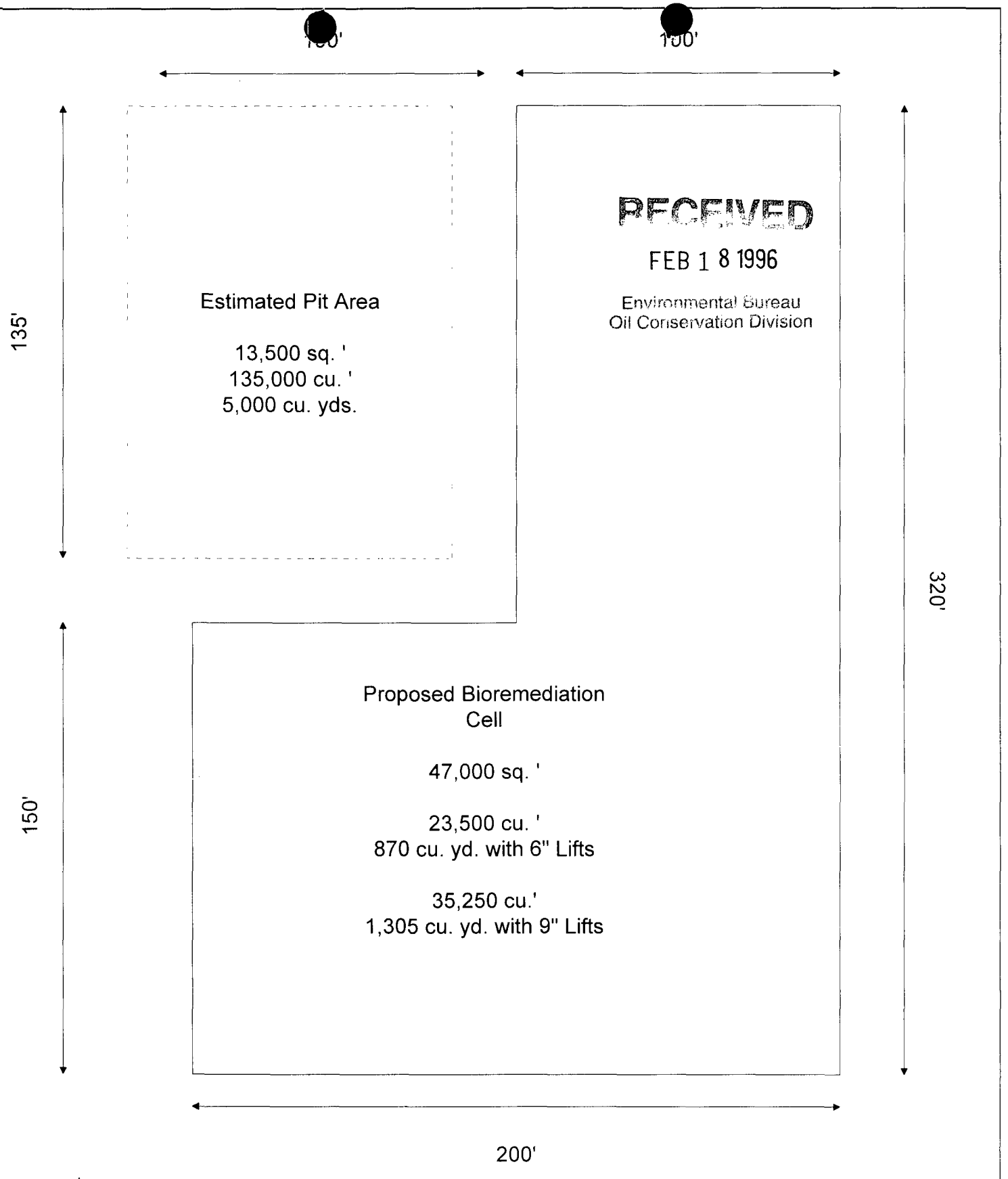
Enclosed please find the revised site plan for Pro-Kem's proposed landfarm. Notice that the cubic yards will depend upon the depth of the lifts. I have provided figures for 6" and 9" lifts.

If you should have any other questions or require any additional information, please call me.

Sincerely,

Bob Allen, REM, CET, CES
President

505/397-0510
703 E. Clinton Suite 103
Hobbs, New Mexico 88240
Fax 505/393-4388



NOT TO SCALE

PRO-KEM
LOVINGTON, NEW MEXICO

Figure A-3
PROPOSED BIOREMEDIATION CELL

Safety & Environmental Solutions, Inc.

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION
2040 S. PACHECO
SANTA FE, NEW MEXICO 87505
(505) 827-7131

March 7, 1996

CERTIFIED MAIL
RETURN RECEIPT NO.Z-765-963-034

Mr. Gerald Phillips
President
Pro-Kem, Inc.
P.O. Box 1506
Lovington, NM 88260

RE: Remediation Plan
GW-202 Pit Closure
Pro-Kem, Inc.

Dear Mr. Phillips:

The New Mexico Oil Conservation Division (OCD) received the Remediation Plan for the landfarm at GW-202 as submitted on February 28, 1996 by Safety & Environmental Solutions, Inc. on behalf of Pro-Kem, Inc. **The Remediation plan is hereby approved, with the following conditions:**

- This landfarm will be for the one time use of closing the pit at the site of GW-202. **No other contaminated soils may be placed on the landfarm.**

- All background samples as committed to in the Remediation Plan submitted by Environmental & Safety Solutions, Inc. on February 28, 1996 on behalf of Pro-Kem, Inc. will be submitted to the OCD Santa Fe office with proper lab QA/QC attached before start-up of the landfarm. All treatment zone monitoring and lift analysis will include proper lab QA/QC, and each new lift application shall be approved by the Santa Fe OCD office before a new lift can be applied. A copy of all of the above analysis shall also be provided to the Hobbs District Office to the attention of Mr. Wayne Price.

- All of the items listed in the letter dated February 28, 1996 from Safety & Environmental Solutions, Inc. on behalf of Pro-Kem, Inc. shall be adhered with during the remediation process.

- Upon completion of the project a final report for the closure of the pit and landfarm shall be submitted to the Santa Fe OCD office for approval within 30 days of final closure.

Note, that OCD approval does not limit Pro-Kem, Inc. to the work proposed should it later be found that contamination exists which is beyond the scope of this plan, or if Pro-Kem, Inc. fails to completely define the extent of contamination. In addition , OCD approval does not relieve Pro-Kem, Inc. of responsibility for compliance with any other Federal, State, or other Local Laws and Regulations.

If you have any questions regarding this matter feel free to call me at (505)-827-7156.

Sincerely,

Patricio W. Sanchez
Petroleum Engineering Specialist
Environmental Bureau, OCD

Z 765 963 034

Receipt for Certified Mail
No Insurance Coverage Provided
Do not use for International Mail
(See Reverse)

UNITED STATES POSTAL SERVICE

Sent to Gerald Phillips	
Street and No. PRO-KEM Inc. Gw-202	
P.O., State and ZIP Code	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, and Addressee's Address	
TOTAL Postage & Fees	$
Postmark or Date	

PS Form **3800**, March 1993

xc: Mr. Wayne Price

Safety & Environmental Solutions, Inc.
703 E. Clinton, Suite 103
Hobbs, New Mexico 88240

FACSIMILE COVER SHEET

To: Pat Sanchez

From: Bob Allen

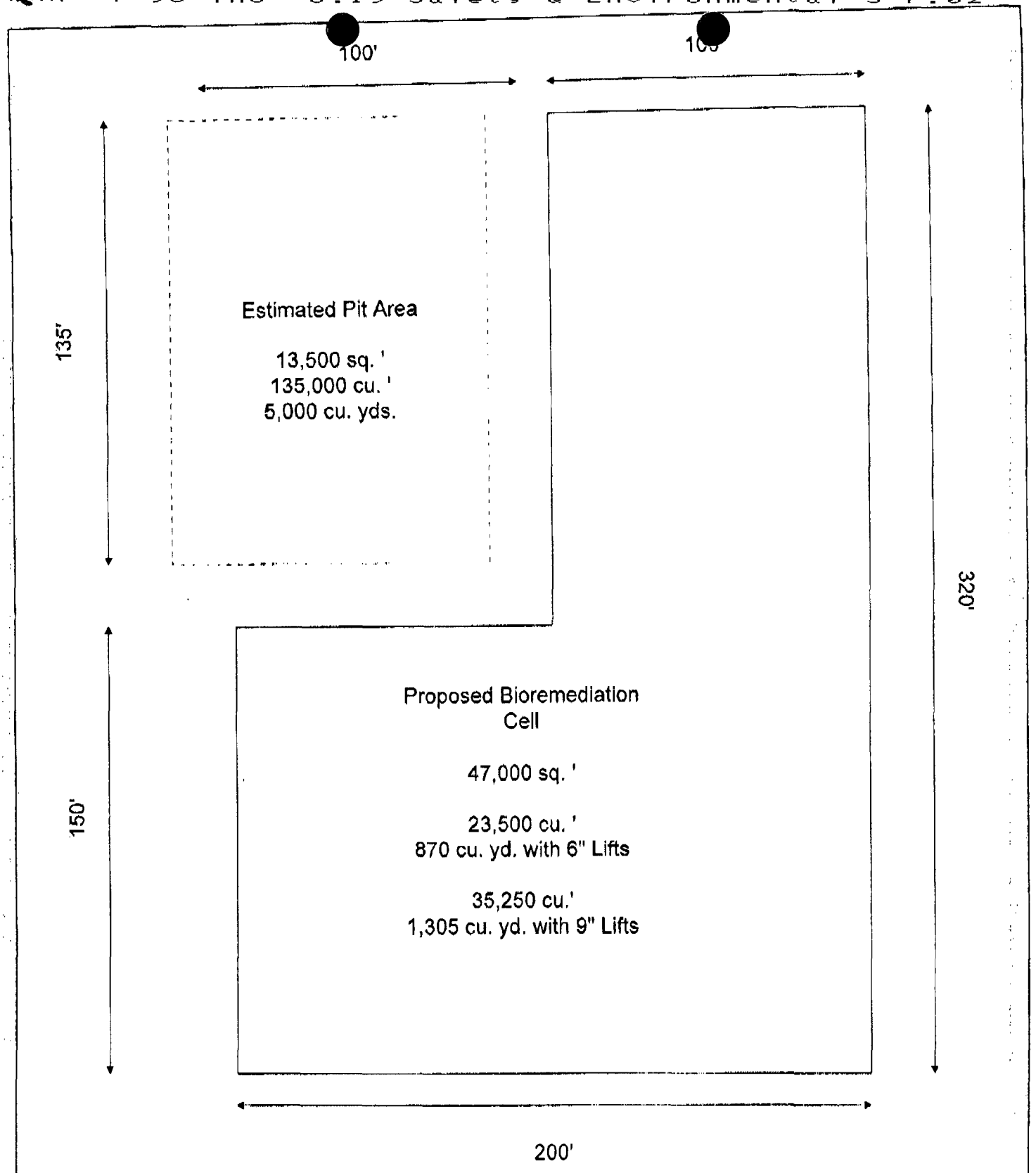
Subject: Prokem

Total Number of Pages: 2 including cover sheet

If any portion of the preceding fax is illegible, please call us immediately at:

(505) 397-0510

Fax (505) 393-4388



NOT TO SCALE

PRO-KEM
LOVINGTON, NEW MEXICO

Figure A-3
PROPOSED BIOREMEDIATION CELL

Safety & Environmental Solutions, Inc.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

MEMORANDUM OF MEETING OR CONVERSATION

☒ Telephone ☐ Personal	Time 10:00 AM	Date 3-5-96

Originating Party	Other Parties
Pat Sanchez - OCD	Dyke Browning w/ Safety & Environmental Solutions, Inc.

Subject PRO-KEM Inc. Plans. Dated 2-13-96 and 2-28-96.

Discussion Need to verify Dimensions of Land Farm Area - And If TPH/BTEX have already been taken supply Results along w/ RA/RC from the Lab. Will still need to take Background metals* (No BTEX or TPH Taken yet - Per Bob Allen on 3-7-96.)

* Dyke to check w/ Bob Allen and see what has been done.

Area = (100' x 170') + (150' x 200') = 47,000 ft²

Volume = 47,000 [ft²] x 0.5 [ft] / 27 [ft³]/yd³ = 870 yd³

Conclusions or Agreements

No. Lays = 5,000 yd³ / 870 yd³/Lay

No. Lays = 5.75 Lays.

They show 57,500 ft² and 1,597 yd³

They want 3 Lays.

✡ Bob Allen on 3-7-96 - will Send Proper Dimensions.

Distribution File.

Signed Patricia W. Sanchez

Safety & Environmental Solutions, Inc.

February 28, 1996

Mr. Pat Sanchez
Petroleum Engineer
Oil Conservation Division
2040 S. Pacheco
Santa Fe, New Mexico 87505

Dear Mr. Sanchez:

This letter is an amendment to the request for approval of a landfarm operation previously submitted by Pro-Kem, Inc. Pursuant to our telephone conversation yesterday, please consider the following:

I. **Type of Operation**

This landfarm will be used for the single purpose of remediating the exempt oil field waste excavated from the caliche pit which was discovered in the yard of Pro-Kem, Inc.

II. **Operator**

The operator of this facility will be Pro-Kem, Inc.

III. **Location of Landfarm**

The legal description of the property is as follows:

Lots 2,3,4,5,6,7 & 8 Block 1 of the Dencoe Addition in Lovington
SE/4, NW/4 of Section 15
Township 16 South, Range 36 East

IV. **Land and Ownership**

The owner of the landfarm is:

ProKem, Inc.
2400 S. Main P.O. Box 1506
Lovington, New Mexico 88260

505/397-0510 *703 E. Clinton Suite 103* *Hobbs, New Mexico 88240* *Fax 505/393-4388*

The owners of the adjoining properties are as follows:

Block 7 Dencoe Addition Lots 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18
Mrs. Elzy Thompson
1503 Bryan Circle
Carlsbad, New Mexico 88220

This property is vacant land with no residential adjoining properties. The nearest residential property is over 1000 feet to the South.

V. Facility Description

See Site Map

VI. Facility Construction/Operation & Waste Classification

1. The landfarm is not located in or adjacent to any watercourse, lakebed, sinkhole or other depression.

2. The entire landfarm will be constructed within the confines of the yard fence and will be signed with the name of facility, legal description, and emergency phone number.

3. The landfarm will no closer than 30 feet to the fence and property boundaries.

4. There are no pipelines within the area of the landfarm.

5. The entire landfarm will be bermed. Such berm to be constructed and maintained such that it will contain precipitation from a 100 year flood.

6. The treatment zone will be monitored in the following manner:

   a. One (1) background soil sample will be taken from the center of the landfarm two (2) feet below the surface prior to operation. The sample will be analyzed for TPH, BTEX and heavy metals using approved EPA methods.

   b. One random sample will be taken from the landfarm each quarter after the contaminated soil are received into the landfarm. These samples will be taken two to three feet below the surface. These samples will be analyzed for TPH and BTEX each quarter and for major cations/anions and heavy metals annually. All boreholes to be filled with bentonite. Copies of analytical results will be submitted to the NMOCD for review quarterly.

7. The location of the landfarm is in the yard of Pro-Kem. The yard has a caliche cap already applied to the surface which will help prevent migration of contaminants. However, the treatment zone monitoring will ensure that no contamination leaches downward from the landfarm. This project will consist of at least three (3) "lifts" of contaminated soil. After each lift is treated and removed from the landfarm, the condition of the underlying surface will be checked for the migration of contaminants and the test results submitted to the NMOCD for approval. Each lift will average 6" in depth and will be treated to a level of 1000 ppm TPH, 50 ppm BTEX and 10 ppm Benzene as recommended in the spill guidelines. With these precautions in place and in light of the high cost of lining the landfarm after each lift, Pro-Kem requests that the lining requirement be waived in this situation.

The foregoing information will hopefully assist you in the approval of the landfarm project for Pro-Kem, Inc.

Sincerely,

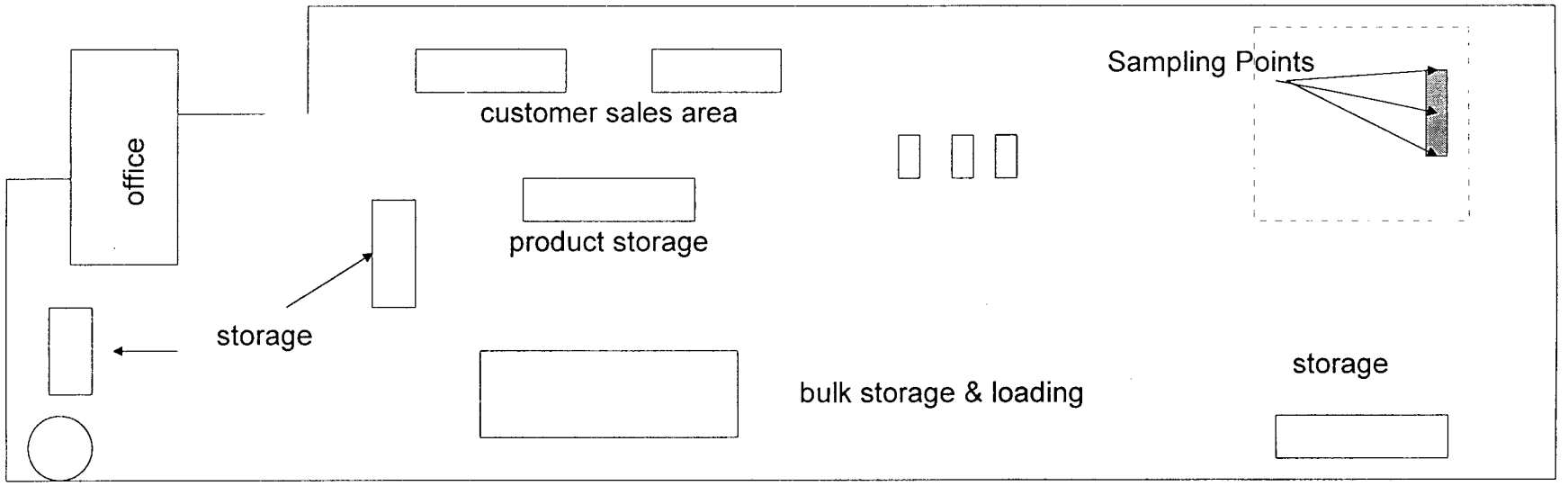
Bob Allen

Bob Allen, REM, CET, CES
President

Enclosures

505/397-0510
703 E. Clinton Suite 103
Hobbs, New Mexico 88240
Fax 505/393-4388

Highway 18



Proposed
Sample Trench

Abandoned Pit

N

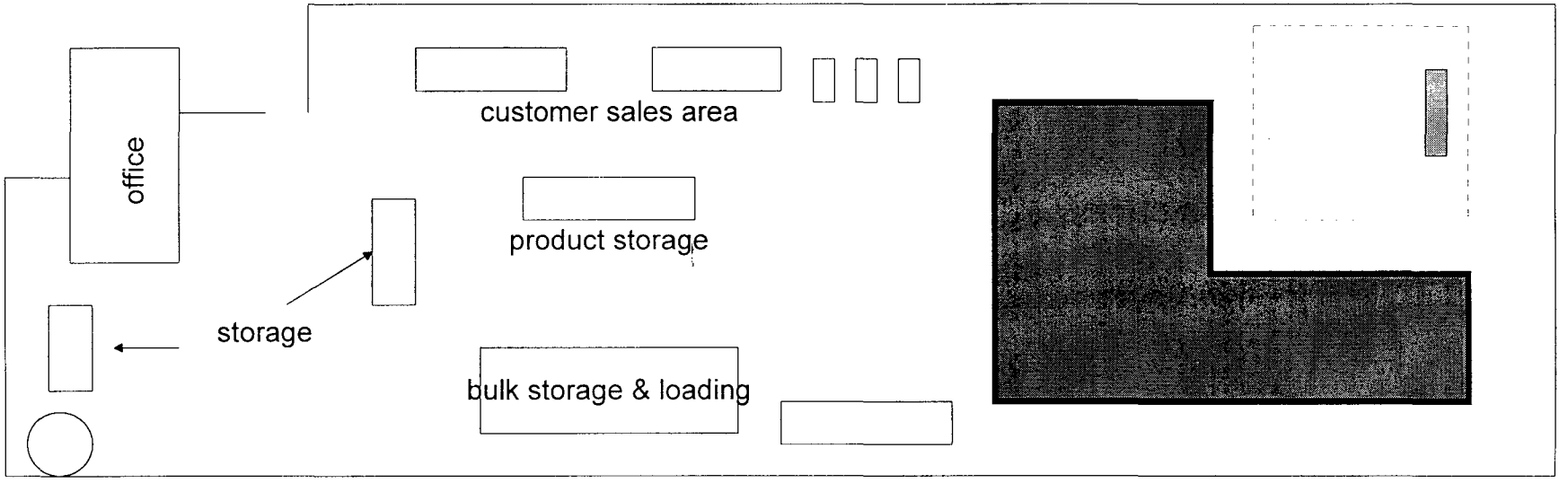
NOT TO SCALE

PRO-KEM
LOVINGTON, NEW MEXICO

Figure A-1
FACILITY LAYOUT MAP

Safety & Environmental Solutions, Inc.

Highway 18



Sample Trench

Proposed
Landfarm Location

Abandoned Pit

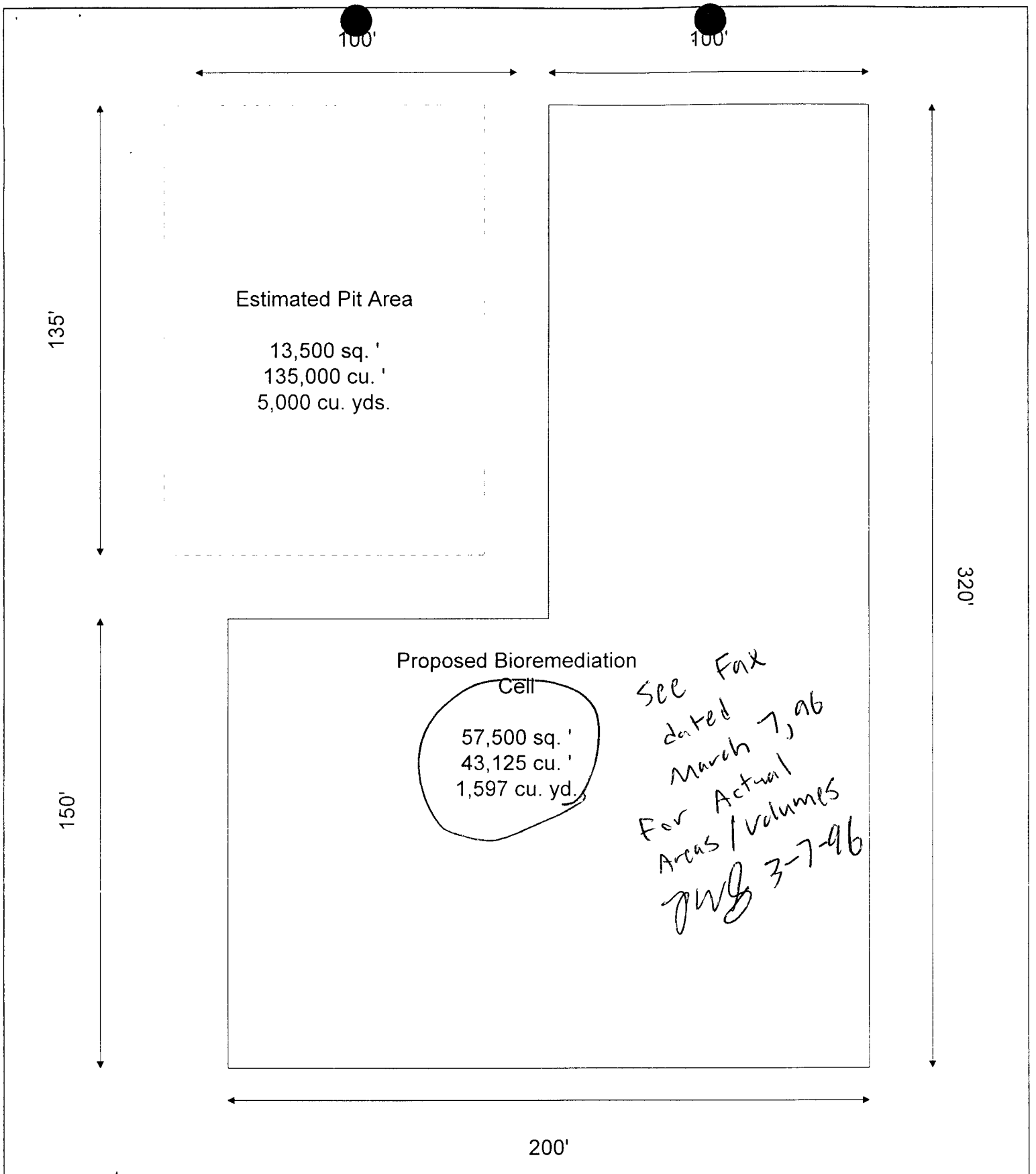
N

NOT TO SCALE

PRO-KEM
LOVINGTON, NEW MEXICO

Figure A-02
LANDFARM LOCATION MAP

Safety & Environmental Solutions, Inc.

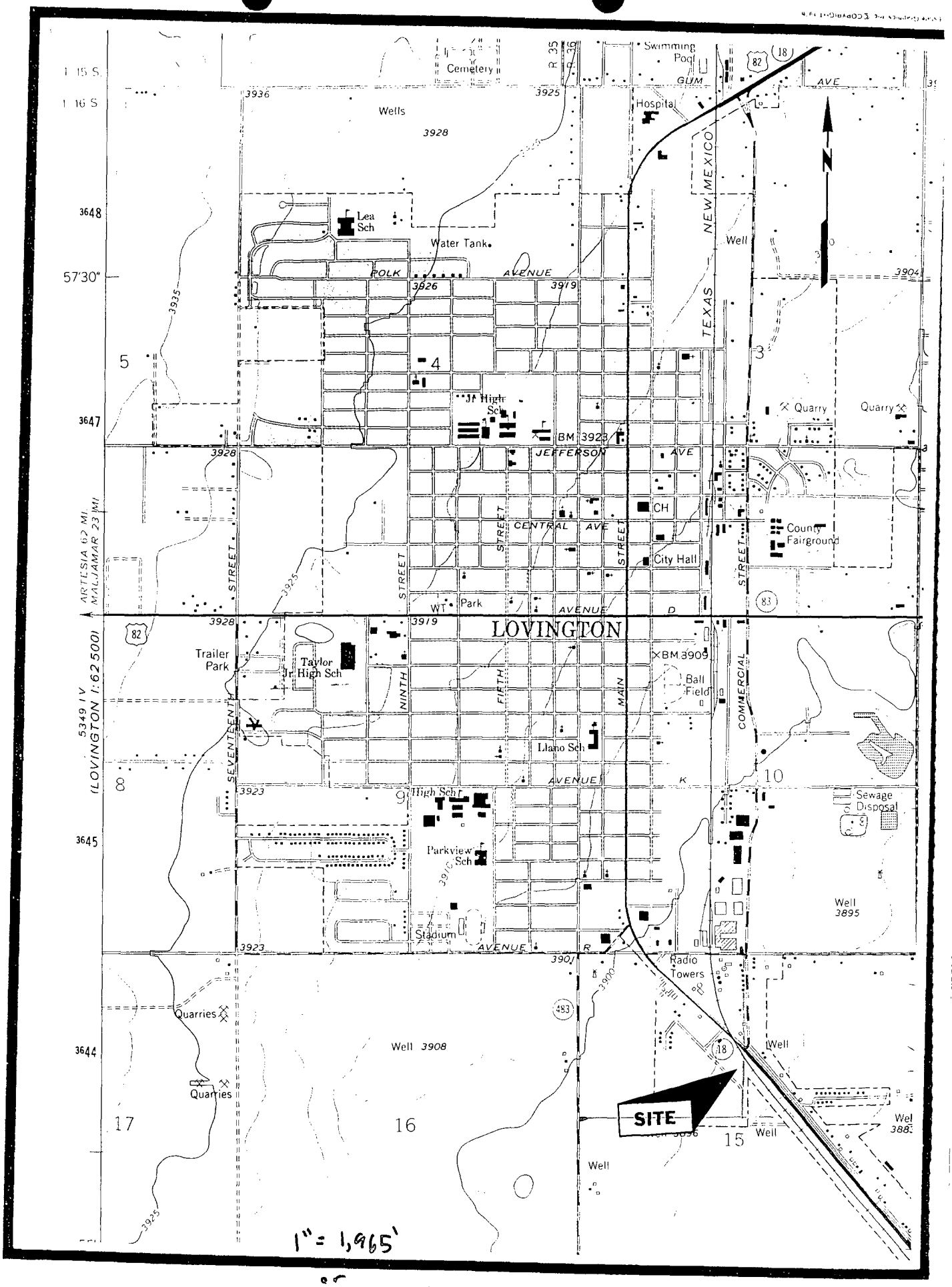


NOT TO SCALE

PRO-KEM
LOVINGTON, NEW MEXICO

Figure A-3
PROPOSED BIOREMEDIATION CELL

Safety & Environmental Solutions, Inc.



1" = 1,965'

1000' = 0.509" ~ 0.5"

Site Location:
SE/4 NW/4, Sec. 15, T16S, R36E,
NMPM, Lea County, NM.

SUBDIVISION- DENCDE ADD

```
*0090005*********************DIST-011
GAS COMPANY OF NM
ALVARADO SQUARE                    871580000
ALBUQUERQUE, NM
 LOT -    1
*0025439*********************DIST-011
PRO-KEM, INC
PO BOX 1506                        882600000
LOVINGTON, NM
 LOT -    2     3     4     5     6     7
 LOT -    8
 *LOC 2400 S MAIN*
 *1991-MILLSAP, WELDON &WILSON, J*
*
```

SUBDIVISION- DENCOE ADD

*0070616**********DIST-011
KITCHENS, PAUL S
RT 2, BOX 40 CE
LOVINGTON, NM 882600000
LOT - 1 2 3 4
*0077650**********DIST-011
KITCHENS, PAUL S
RT 2, BOX 40 CE
LOVINGTON, NM 882600000
LOT - 5 6 7 8 9 10
LOT - 11
*0023282**********DIST-011
STONEHAM, JOHNNY R
STONEHAM, LINDA G &
1701 W AVE J
LOVINGTON, NM 882600000
LOT - 12 13 14
1987-STONEHAM,JOHNNY
*0025641**********DIST-011
PAUL, GEORGE E
ROUTE 3, BOX 745
JOPLIN, MO 648010000
LOT - 15 16 17 18 19 20
LOT - 21 22 59 60 61 62
*0020230**********DIST-011
ARREOLA, BENJAMIN
PO BOX 542
LOVINGTON, NM 882600000
LOT - 23 24
*0021227**********DIST-011
GENERAL SURVEYING COMPANY
JONES, HERSHEL L %
1213 W AVE M
LOVINGTON, NM 882600000
LOT - 25 26
*0021226**********DIST-011
GENERAL SURVEYING COMPANY
JONES, HERSHEL L %
1213 W AVE M
LOVINGTON, NM 882600000
LOT - 27 28
*0022947**********DIST-011
SHIPLEY, BETTY M
BOX 1000
LOVINGTON, NM 882600000
LOT - 29 30
*0021777**********DIST-011
SAVISKY, ALFRED
BOX 1266
LOVINGTON, NM 882600000
LOT - 31 32 33 34 35 36
LOT - 52 53 54
*0078869**********DIST-011
SAVISKY, AL
PO BOX 1266
LOVINGTON, NM 882600000
LOT - 37 38
1985-KELLEY, CHARLES
*0022024**********DIST-011
DESAI, GOPALBHAI B
DESAI, VASANTKUMAR R %
2212 S MAIN
LOVINGTON, NM 882600000
LOT - 39 40 41 42 43 44
LOT - 45 46 49 50
*1991-BHAKTA, JAYANTILAL ET AL
FORMERLY SKYLINE MOTEL*
DBA WESTERN INN
2/95-CONTRACT
*0021730**********DIST-011
KELLEY, CHARLES R
1203 W AVE H
LOVINGTON, NM 882600000
LOT - 47 48
LESS N 25' OF 48
*0090005**********DIST-011
GAS COMPANY OF NM
ALVARADO SQUARE
ALBUQUERQUE, NM 871580000
LOT - 48

UNIT-

36.63' X 26.8' X 25' IN LC
*0021731**********
KELLEY, CHARLES R
1203 W AVE H
LOVINGTON, NM
LOT - 51
*0022315**********
MC KIBBEN, BILLY J
505 E ALTO
HOBBS, NM
LOT - 55 56 57
*0023245**********
THOMPSON, ELZY MRS
1503 BRYAN CIRCLE
CARLSBAD, NM
LOT - 58
*0023243**********
THOMPSON, ELZY MRS
1503 BRYAN CIRCLE
CARLSBAD, NM
LOT - 63
*0076278**********
SCHOOLEY, DAVID
2315 DENCOE DR
LOVINGTON, NM
LOT - 64 65
7/94-BENSON, GARRY L
MH LOC HERE #82962
*0070680**********
KITCHENS, PAUL S
RT 2 BOX 40 CE
LOVINGTON, NM
LOT - 66 67
*0077762**********
KITCHENS, PAUL S
RT 2 BOX 40 CE
LOVINGTON, NM
LOT - 68 69
*

SUBDIVISION- DENCOE ADD UNIT-

*0023245**********DIST-011
THOMPSON, ELZY MRS
1503 BRYAN CIRCLE
CARLSBAD, NM 882200000
LOT - 1 2 3 4 5 6
LOT - 7 8 9 10 11 12
LOT - 13 14 15 16 17
*0026071**********DIST-011
THOMPSON, ELZY
1503 BRYAN CIRCLE
CARLSBAD, NM 882200000
LOT - 18
*0025974**********DIST-011
RAMIREZ, FERMIN H
2202 S LOVE
LOVINGTON, NM 882600000
LOT - 19
1989-ROBERTS, BRENDA K
*0025973**********DIST-011
CARRASCO, ARTURO R
2200 S LOVE
LOVINGTON, NM 882600000
LOT - 20
LOC-2200 S LOVE
1990-WALSH, DANIEL B
1991-FED NAT'L MTG ASSOC
*0022804**********DIST-011
CABELLO, ABEL G
2112 S LOVE
LOVINGTON, NM 882600000
LOT - 21
LOC-2120 S LOVE
1991-CONTRACT
10/93-LONG, MYRTLE F
*0025972**********DIST-011
ENRIQUEZ, ELEAZAR
2110 S LOVE
LOVINGTON, NM 882600000
LOT - 22
*0020920**********DIST-011
LUNSFORD, EDWARD A
2108 S LOVE
LOVINGTON, NM 882600000
LOT - 23
6/93-SANDOVAL, DAVID Z
*0021462**********DIST-011
VILLAR, LESLIE WAYNE
PO BOX 487
LOVINGTON, NM 882600000
LOT - 24
1988- ELKINS, WILLIAM B
1989-FEDERAL NATL MRTG ASSOC
*0025781**********DIST-011
STEWART, CLIFFORD
WSR BOX 232
LOVINGTON, NM 882600000
LOT - 25
1988-WHITMAN, HENRY L
LOC-2104 S LOVE
*0020651**********DIST-011
CITY OF LOVINGTON
PO BOX 1268
LOVINGTON, NM 882600000
LOT - 26 32
*0025895**********DIST-011
GRIFFITH, ROBERT GRAFFORT ET AL
MARTIN, JERRY %
PO BOX 293
LOVINGTON, NM 882600000
LOT - 27 28 29 30 31
LOC-300-314 DENCOE DR
1979-GRP REDESCRIBED
1988-ROHLOFF, HORACE A
1991-LIBERTY NAT'L BK
*

SUBDIVISION- DENCOE ADD 4 UNIT-

*0022010**********DIST-011
SPEARS, OLAN TRAVIS
608 W AVE F
LOVINGTON, NM 882600000
LOT - 1
1993-MALONE, AGNES
*0023245**********DIST-011
THOMPSON, ELZY MRS
1503 BRYAN CIRCLE
CARLSBAD, NM 882200000
LOT - 2 3 4 5 6 7
LOT - 8 9 10 11 12 13
LOT - 14 15 17 18 19 20
LOT - 21 26 27 35 36 37
LOT - 38 39 40 41 42 43
LOT - 44 45 46 47 48 49
LOT - 50
*0020009**********DIST-011
ABERNATHY, C D
504 W AVE P
LOVINGTON, NM 882600000
LOT - 16
*0020151**********DIST-011
HOBBS COMPANY, THE
GOLDSTEIN, HERMAN H %
7021 E CALLE MORERA
TUCSON, AZ 857150000
LOT - 22 23 24 25
*0023102**********DIST-011
STANFORD, EDWIN T
2107 S LOVE
LOVINGTON, NM 882600000
LOT - 28
*0022984**********DIST-011
SIVILS, LELAND D
2109 S LOVE
LOVINGTON, NM 882600000
LOT - 29
LOC-2109 S LOVE
*0023482**********DIST-011
CANO, ROBERTO
2111 S LOVE
LOVINGTON, NM 882600000
LOT - 30
1987-ELLIOTT, JIM BOB
1990-VALLEY FED SAVINGS BK
*0020744**********DIST-011
CLAYTON, J P
2201 S LOVE
LOVINGTON, NM 882600000
LOT - 31
*0020745**********DIST-011
CLAYTON, J P
2201 S LOVE
LOVINGTON, N M 882600000
LOT - 32
*0025997**********DIST-011
THOMPSON, ELZY
1503 BRYAN CIRCLE
CARLSBAD, NM 882200000
LOT - 33 34
*

SUBDIVISIO DENCOE ADD 5 UNIT-

*0023245**********DIST-011
THOMPSON, ELZY MRS
1503 BRYAN CIRCLE
CARLSBAD, NM 882200000
LOT - 1 2 3 4 5 6
LOT - 7 8 9 10 11 12
LOT - 13 14 15 16 17 22
LOT - 23 33 34 35 36 37
LOT - 38 39 40 41
*0020151**********DIST-011
HOBBS COMPANY, THE
GOLDSTEIN, HERMAN H %
7021 E CALLE MORERA
TUCSON, AZ 857150000
LOT - 18 19 20 21
*0021890**********DIST-011
CITY OF LOVINGTON
PO BOX 1268
LOVINGTON, NM 882600000
LOT - 24
1991-PETERSEN, KAREN
*0022833**********DIST-011
RUNNELS, DOROTHY
8100 W ALABAMA
HOBBS, NM 882400000
LOT - 25 26 27
VACANT LOTS SOUTH OF LOVINGTON
*0023219**********DIST-011
TEAS, PAUL
TEAS. HARVEY %
3722 EUROPE CT
SANTA CLARA, CA 950510000
LOT - 28 29 30 31
*0023078**********DIST-011
SPEARS, OMA DEAN
608 W AVE F
LOVINGTON, NM 882600000
LOT - 32
*0022082**********DIST-011
MATLOCK, FRANCES W
BOX 982
LOVINGTON, NM 882600000
LOT - 42
*

SUBDIVISION- DENCOE ADD

6 UNIT-

*0023245**********DIST-011
THOMPSON, ELZY MRS
1503 BRYAN CIRCLE
CARLSBAD, NM 882200000
LOT - 1 2 3 4 5 6
LOT - 7 8 9 10 11 12
LOT - 13 14 15 16 17 20
LOT - 23 24 25 26 27 28
LOT - 29 30 31 32 33
*0020151**********DIST-011
HOBBS COMPANY, THE
GOLDSTEIN, HERMAN H %
7021 E CALLE MORERA
TUCSON, AZ 857150000
LOT - 18 19 21 22
*

SUBDIVISION- DENCOE ADD 7 UNIT-

*0023245**********DIST-011
THOMPSON, ELZY MRS
1503 BRYAN CIRCLE
CARLSBAD, NM 882200000

LOT -	1	2	3	4	5	6
LOT -	7	8	9	10	11	12
LOT -	13	14	15	16	17	18

*

Pro-Kem, Inc.
P K I
Box 1506
Lovington, NM 88260
505-396-7433

February 13, 1996

Mr. Pat Sanchez
Environmental Engineer
Oil Conservation Division
2040 S. Pacheco
Santa Fe, New Mexico 87505

Dear Mr. Sanchez:

Please consider this letter as our request to construct a biocell for the purpose of remediating the contaminated soil which was discovered during our sampling of the abandoned caliche pit. Pro Kem, Inc. wishes to install and operate a landfarm on the south end of our yard in Lovington, New Mexico, the following report and assurances of compliance are being submitted for your consideration.

Overview

In October of 1995, Pro-Kem, Inc. secured the services of Safety and Environmental Solutions, Inc. to complete all necessary sampling and testing of our yard which was suspected to contain an abandoned caliche pit.

Initial results of composite samples from several excavations indicated elevated levels of THP in all cases. Knowledge of process indicates that the material in the pit is exempt oil field waste.

Waste Landfarming Plan

Pro-Kem, Inc. will:

1) Treat only non-hazardous RCRA oilfield waste, generated on site.

2) Pro-Kem has attached full disclosure of the landfarm cell (See A-1 & A-3), including yard location, security, dimensions, design and operating plans (See A-2). The cell will not be lined because of the caliche cap that exists on the yard which should be adequate to preventing contaminant migration, and a rain run-off prevention berm, with a freeboard of a minimum of one foot will be constructed..

3) Five treatment zone monitoring background samples were composited from within the

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proposed cell site area. Samples included TPH and BTEX analyzed using EPA approved methods. All samples for background analyzed at well below regulatory limits.

4) No free liquids from waste, will be allowed in the cell.

5) The cell will be maintained at all times, to assure it's existence will never be a public nuisance, nor harmful to public health and/or the environment.

6) Pro-Kem will be responsible for maintaining all necessary and required records pertaining to the cell.

7) Pro-Kem will requisition approval from the NMOCD District I office for any removal and final disposition of any and all landfarm cell treated waste, noting all final treatment/remediation levels are pursuant to NMOCD guidelines.

8) Should Pro-Kem cease operating, we will ensure all waste materials left in cell will either be treated down to NMOCD approved levels, or will be removed under NMOCD auspices.

Enclosures - Figures and Laboratory Test Results

Please find enclosed for your records Pro-Kem Composite Sample Plan of Proposed Bioremediation Cell Site, Operation Plans and Pro-Kem Bioremediation Project Plot Plan.

Also enclosed for your records are test results from Cardinal laboratories for all tests completed.

Summary

Pro-Kem fully understands approval for this cell does not relieve any liability should contamination occur, and we will comply with any and all additional local, state and federal laws and/or regulations governing the project.

Thank you for your consideration and approval of our new project.

Sincerely,

Gerald Phillips

Gerald Phillips
President
Pro-Kem, Inc.

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P K I
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505 396 7433

OPERATIONS PLAN

(1) Landfarm will be maintained in a well-tended and odor-free state.

(2) Periodic aeration will be provided by turnover of the landfarm material, insuring optimum conditions for naturally occurring bacterial growth and reduction of the overall TPH and BTEX levels.

(3) Naturally occurring rainfall **may** be supplemented by watering of the site as needed to assure optimal bacterial growth.

(4) Addition of organics (manure) or nitrogen fertilizer **may** be indicated to hasten overall reduction of TPH levels. If necessary, minimal amounts will be utilized and the overall aesthetic state of the landfarm will be carefully monitored.

(5) When TPH and BTEX levels are suspected to be below regulatory limits, samples will be taken and analyzed to assure remediation is complete.

(6) Final closure will only occur after proper documentation and ultimate disposal of the materials is correctly completed and approved by governing agencies.

MEMORANDUM OF MEETING OR CONVERSATION

✓ TELEPHONE ___ PERSONAL TIME 1:30 AM/(PM) DATE 10/27/95

ORIGINATING PARTY: Wayne Price - OCD
OTHER PARTIES: Pat Sanchez - OCD

SUBJECT: PRO-KEM Inc. - Pit closure Investigation

DISCUSSION: Wayne called, the investigation has now revealed that the subsurface extent is much larger than intially suspected - i.e.
Original Area ≈ 8' x 8'
Now Abant ≈ 130' x 100'
Consultant to submit a phase II plan.
Wayne took pictures - I should recieve next week.
Also should receive, report & plan from consultant.

CONCLUSIONS/AGREEMENTS: Wait on detials.
* It appears that the former owner of the property sold Mr. Phillips their liability.

PATRICIO W. SANCHEZ: Patricio W. Sanchez

xc: FILE,

OIL CONSERVATION DIVISION

October 20, 1995

CERTIFIED MAIL
RETURN RECEIPT NO.Z-765-963-088

Mr. Gerald Phillips
President
Pro-Kem, Inc.
P.O. Box 1506
Lovington, NM 88260

RE: Investigation Plan-Pit
Pro-Kem, Inc.

Dear Mr. Phillips:

The New Mexico Oil Conservation Division (OCD) received the "Work Plan" on October 18, 1995 for the pit located at Pro-Kem, Inc. discharge plan number GW-202. Based upon the review by NMOCD the "Work Plan Pit Investigation Pro-Kem, Inc." as submitted **is approved, with the following conditions:**

1. Mr. Wayne Price with the Hobbs District will be notified by phone 72 hours in advance of any investigation activity prior to its commencement. (505)-393-6161.

2. All soils that are removed from the pit during the investigation will be placed on a plastic liner or other suitable barrier until the nature a composition of the possible contaminants may be determined by the confirmation composite sampling of the piled soils.

3. The soil that is placed as described on (2.) above will also be protected from run-off be some sort of berming.

4. All reports will be submitted in duplicate to the Santa Fe NMOCD to my attention for approval, with a copy sent to Mr. Wayne Price of the Hobbs NMOCD District office.

Note, that OCD approval does not limit Pro-Kem, Inc. to the work proposed should it later be found that contamination exists which is beyond the scope of this work plan, or if Pro-Kem, Inc. fails to completely define the extent of contamination. In addition , OCD approval does not relieve Pro-Kem, Inc. of responsibility for compliance with any other Federal, State, or other local laws and regulations.

If you have any questions regarding this matter feel free to call me at (505)-827-7156.

Sincerely,

Patricio W. Sanchez
Petroleum Engineer, Environmental Bureau OCD

XC: Mr. Wayne Price and Mr. Jerry Sexton

Z 765 963 088

Receipt for Certified Mail
No Insurance Coverage Provided
Do not use for International Mail
(See Reverse)

UNITED STATES POSTAL SERVICE

Sent to PRO-KEM, REM approval.	
Street and No.	
P.O., State and ZIP Code	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, and Addressee's Address	
TOTAL Postage & Fees	$
Postmark or Date	

PS Form 3800, March 1993

Work Plan
Pit Investigation
Pro-Kem, Inc.

Purpose and Scope

The purpose of this work plan is to investigate the extent of contamination (if any) that exists as a result of the operation of a gravel pit used twelve to fifteen years ago by a previous owner at Pro-Kem's location. (See Exhibit A) The scope of the plan is to use appropriate intrusive study techniques to provide adequate information to discover and explore any contamination present at the pit site. This investigation has been requested by the New Mexico Oil Conservation Division as an addendum to the Discharge Plan filed with the NMOCD by Pro-Kem, Inc.

Site Background Information

The site of this investigation is in the Southeast corner of the Pro-Kem yard located at 2400 South Main Street in Lovington, New Mexico. Pro-Kem purchased this location twelve years after the subject pit was filled with dirt. Pro-Kem has no knowledge regarding the use, age, or contents of the pit, other than what has been related by word of mouth since the purchase of the location. This information is limited to the following:

- The pit was only used six to nine months.
- The pit was filled with clean fill dirt 15 years ago.
- The pit was used as a caliche pit and may have once held exempt fluids (produced water).
- The pit was entered from the north side and was deepest at the south side. The estimated depth was 15 feet at the deepest point.

Suspected Level of Contamination

Pro-Kem has no reason to suspect any contamination caused by this pit. Pro-Kem has never received any complaints from neighboring residences or businesses regarding contamination of ground water or surface soils.

Site Characterization

The surface of the site suggests that the pit dimensions are approximately 80' by 80' in the east corner of the property. The surface indicates that the fill dirt is clean. The depth to ground water in the area is approximately 60', flowing in a southeasterly direction. The nearest well is over 1000' southeast of subject site. There is no surface water in the vicinity. The Soil Survey of Lea County (USDA Soil Conservation Service 1974) indicates the site is situated in the Kimbrough - Lea complex. This complex is about 60 percent Kimbrough gravelly loam, 25 percent Lea loam, 10 percent Stegall and Arvana soils, 5 percent Slaughter and Sharvana soils. It is a very shallow soil over a thick bed of indurated caliche at a depth of 20 to 40 inches. Soils in this complex are

Pat Sanchez

From: Pat Sanchez
To: Wayne Price
Subject: pro-kem, inc. investigation approval letter
Date: Friday, October 20, 1995 11:00AM
Priority: High

wayne here is the letter I sent pro-kem - a hardcopy will come to you an Mr. Sexton. thanks!!!!! pat s.

OIL CONSERVATION DIVISION

October 20, 1995

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Sincerely,

Patricio W. Sanchez
Petroleum Engineer, Environmental Bureau OCD

XC: Mr. Wayne Price and Mr. Jerry Sexton

Pat Sanchez

From: POSTOFFICE
To: Pat Sanchez
Subject: Registered: Wayne Price
Date: Friday, October 20, 1995 3:47PM

[013] ***** CONFIRMATION OF REGISTERED MAIL *****
Your message:

TO: Wayne Price DATE: 10-20-95
SUBJECT: pro-kem, inc. investigation approval let TIME: 11:03

Was accessed on 10-20-95 15:47

MEMORANDUM OF MEETING OR CONVERSATION

X TELEPHONE ___ PERSONAL TIME 9:45 (AM)/PM DATE 10/20/95

ORIGINATING PARTY: Pat Sanchez - OCD
OTHER PARTIES: WAYNE PRICE - OCD

SUBJECT: Work Plan for Pit Investigation for Proken, Inc.

DISCUSSION: Talked about contents of the work-Plan, WAYNE Both agreed it looked good - will send an approval to ~~proceed~~ proceed.

Also - told wayne that he needs to witness - I'll state in approval letter.

CONCLUSIONS/AGREEMENTS: Approve Plan, Wayne Price to witness field work.

*See Attach. cover for reference.

PATRICIO W. SANCHEZ: Patricio W. Sanchez

xc: FILE, WAYNE PRICE.

Work Plan
Pit Investigation
Pro-Kem, Inc.

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used as range, wildlife habitat, and recreational areas. It is also a source of caliche. Estimated engineering properties of the soil may be found in Exhibit B.

Sampling/Field Analysis Methods

In order to fully investigate the subject site, a trench will be excavated along the south side of the old pit with a back hoe. Several advantages associated with open test trenches include the ability to accurately characterize the soil profile, increased access to to larger area of soil when compared to a single soil boring, and more accurate aproach to characterizing landfills or dumping areas. A log of the excavation will be kept in the field notes and will include date, depth, dimensions, sampling method, soil/rock descriptions, test results, and photos. This location is chosen because the south end was the deepest part of the pit and any contamination present should be found in that area. Soil samples will be taken at five (5) foot intervals at three (3) locations along the trench and field tested for TPH with the Hanby Soil Test Kit. The samples will be gathered using a hand auger 1' below the bottom of the trench and the tests conducted onsite. The anticipated depth of the initial samples will be a maximum of 17'.

The results of the field tests will determine the use of a third party testing laboratory. If the field tests reveal any levels of TPH above regulatory limits as spelled out in the "Unlined Surface Impoundment Closure Guidelines" of the OCD, further samples will be taken in order to define the extent of contamination. If the field tests reveal no levels of TPH above regulatory limits, the final samples will be confirmed by a third party testing laboratory for Benzene, BTEX, and TPH. Upon receipt of the confirming test results, the appropriate reports will be filed with the OCD in order to resolve this matter.

The gathering of the soil samples and the field tests will be conducted by Safety & Environmental Solutions, Inc. of Hobbs, New Mexico. SES professionals are trained in the required EPA sampling methods and OSHA Health and Safety Regulations.

Standard Operating Procedures

Standard operating procedures (SOPs) were obtained from the Environmental Protection Agency, 1984, Characterization of Hazardous Waste Sites - A Methods Manual: Vol II. Available sampling methods. EPA/600/4-84-076.

This system consists of an auger bit, a series of drill rods, and a "T" handle. The auger bit is used to bore a hole to the desired sampling depth. Since this soil is expected to be rocky or caliche, the samples will be taken directly from the auger itself at the specified depths.

Procedure for Use

1. Clear the area to be sampled of any surface debris.

2. Begin drilling, periodically removing accumulated soils. This prevents accidentally brushing loose material back down the borehole when removing the auger or adding drill rods.

3. After reaching desired depth, slowly and carefully remove the auger, and collect sample from the auger.

4. Place sample in sample container. Check that a Teflon liner is present in the cap if required. Secure the cap tightly.

5. Label the sample container with appropriate sample tag. Complete all chain-of-custody forms and record in the field log book.

6. Perform field test or alternatively refrigerate and transport to laboratory.

7. Decontaminate equipment after use and between samples.

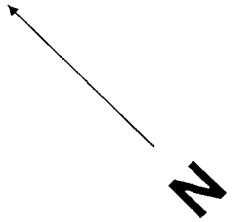
Site Safety

There are a number of health and safety concerns associated with the excavation of trenches at this type of site. Compliance with the following OSHA standards will be required at this site:

- Trenching and Shoring - 29 CFR 1926.650 - 653
- Hazwoper/Atmospheric Testing - 29 CFR 1910.120
- Respiratory Protection - 29 CFR 1910.134
- Personal Protective Equipment - 29 CFR 1910.132 - 140

PROKEM. INC.
SITE PLAN

not to scale



Highway 18

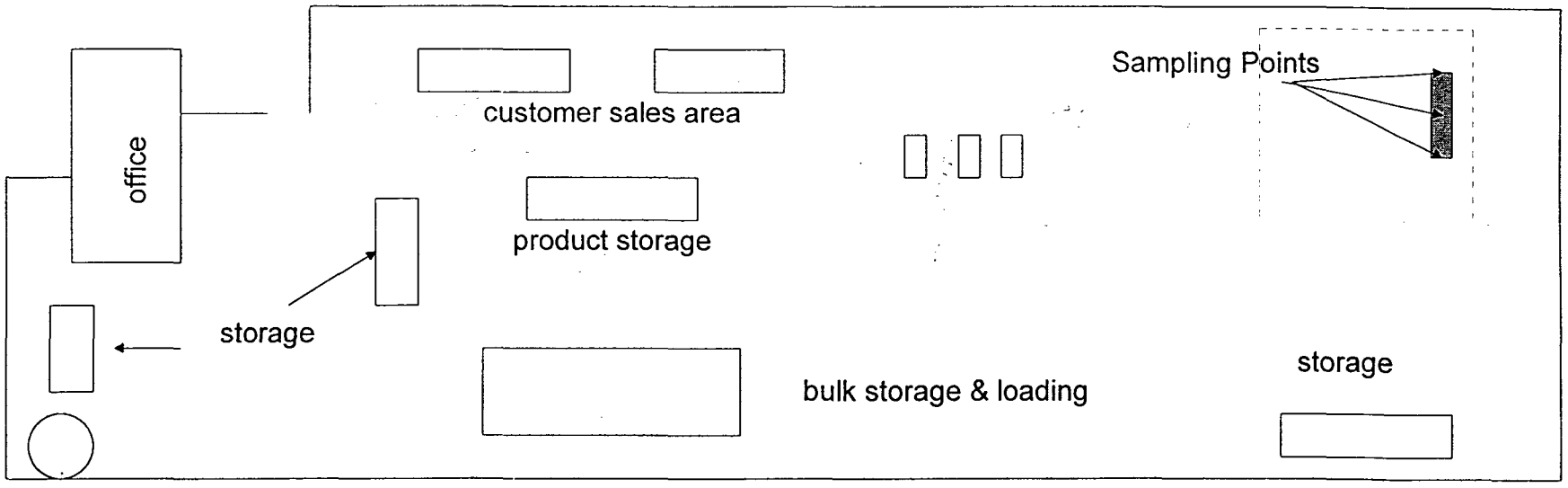


Exhibit A

Proposed Sample Trench

Abandoned Pit

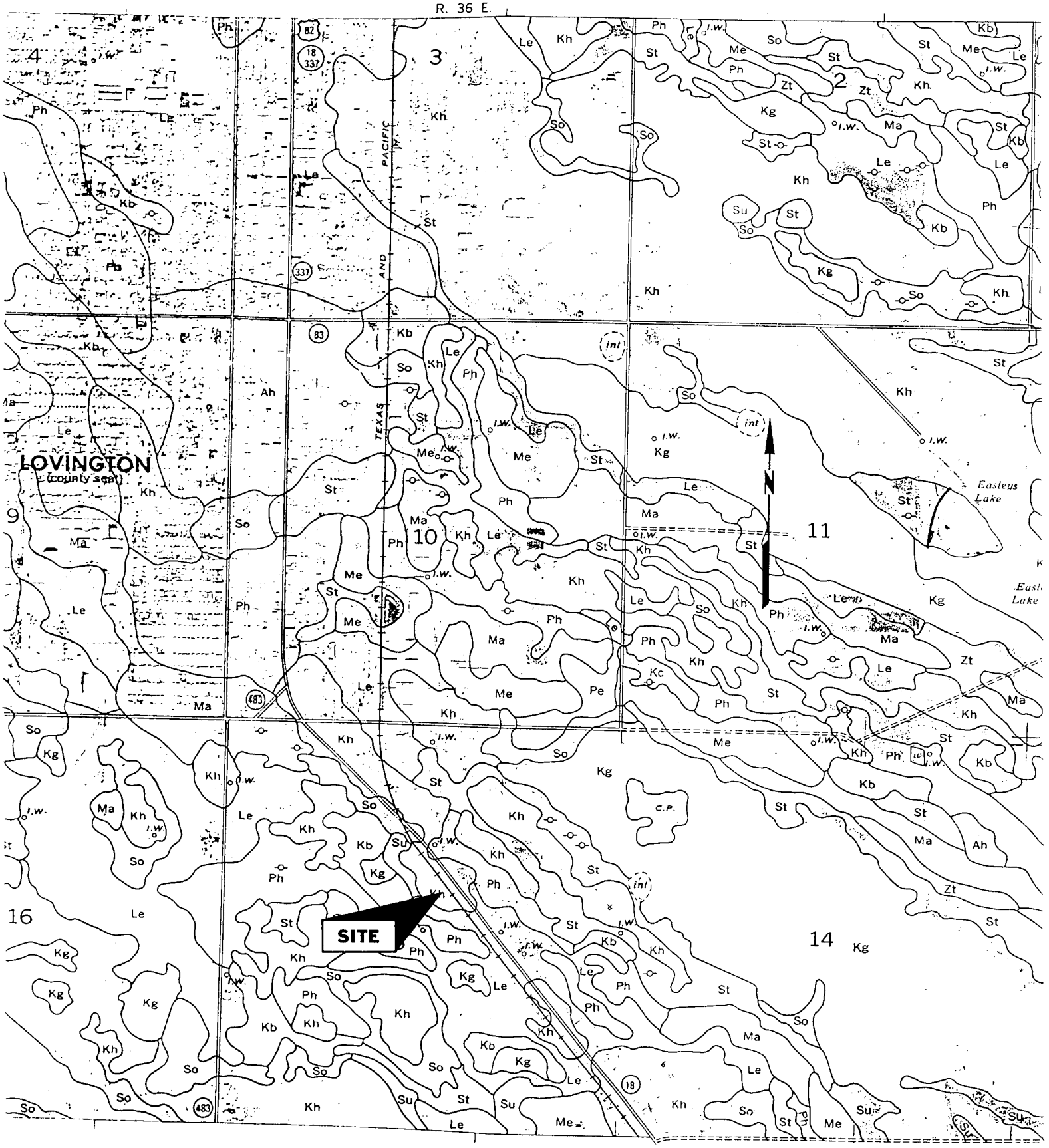

R. 36 E.
LOVINGTON
(county seat)
SITE
TEXAS AND PACIFIC
Easleys Lake
C.P.
3
2
4
9
10
11
16
14

Exhibit B

properties of the soils

in such mapping units may have different properties and limitations, and for this reason it is necessary to follow carefully the instructions first column of table. Symbol > means more than]

Percentage passing sieve—			Permeability	Available water capacity	Reaction	Salinity	Shrink-swell potential	Corrosivity of uncoated steel [1]
No. 4	No. 10	No. 200						
			In./hr.	*In./in. of soil*	*pH*	*Mmhos./cm.*		
100	100	0–5	>20	0. 04–0. 06	6. 6–7. 8	0–1	Low	Low.
100	100	40–50	0. 63–2. 0	0. 14–0. 16	6. 6–7. 3	0–1	Moderate	Moderate.
95–100	90–100	40–50	0. 63–2. 0		7. 9–8. 4	0–1	Low	Low.
100	100	78–80	0. 63–2. 0	0. 16–0. 18	7. 9–8. 4	0–2	Moderate	Moderate.
100	100	85–95	0. 63–2. 0		8. 5–9. 0	0–4	Moderate	High.
100	100	35–50	0. 63–2. 0	0. 14–0. 16	6. 6–7. 3	0–1	Moderate	Moderate.
100	100	35–45	0. 63–2. 0	0. 14–0. 16	6. 6–7. 8	0–2	Moderate	Moderate.
100	100	35–50	0. 63–2. 0		7. 9–8. 4	0–2	Moderate	Moderate.
100	100	20–30	6. 3–20. 0	0. 06–0. 08	6. 6–7. 3	0–1	Low	Low.
100	100	40–50	0. 63–2. 0	0. 14–0. 16	6. 6–7. 8	0–1	Moderate	Moderate.
100	100	25–50	2. 0–6. 3	0. 09–0. 15	6. 6–7. 3	0–1	Low	Low.
100	100	35–50	0. 63–2. 0	0. 14–0. 16	6. 6–7. 3	0–1	Moderate	Moderate.
100	100	60–80	0. 63–2. 0	0. 16–0. 18	8. 5–9. 0	8–15	Low	High.
100	100	50–60	0. 63–2. 0	0. 13–0. 15	7. 4–7. 8	0–4	Low	Moderate.
100	100	35–45	0. 63–2. 0	0. 14–0. 16	7. 9–8. 4	0–4	Moderate	Moderate.
100	100	20–35	6. 3–20. 0	0. 08–0. 10	7. 4–7. 8	0–4	Low	Moderate.
100	100	35–45	0. 63–2. 0	0. 14–0. 16	7. 9–8. 4	0–4	Moderate	Moderate.
100	100	15–30	6. 3–20. 0	0. 05–0. 09	6. 6–7. 8	0–1	Low	Low.
100	100	35–50	2. 0–6. 3	0. 13–0. 15	7. 4–7. 8	0–1	Low	Low.
100	100	35–50	2. 0–6. 3		7. 9–8. 4	0–2	Low	Moderate.
100	100	30–40	2. 0–6. 3	0. 11–0. 13	7. 9–8. 4	0–2	Low	Moderate.
100	100	50–65	0. 63–2. 0		8. 5–9. 0	0–4	Low	Moderate.
100	100	5–15	>20. 0	0. 04–0. 06	6. 6–7. 3	0–1	Low	Low.
85–95	75–90	40–60	0. 63–2. 0	0. 12–0. 18	7. 4–7. 8	0–2	Low	Low to moderate.
100	100	65–85	0. 2–0. 63	0. 17–0. 19	7. 4–8. 4	0–1	Moderate	Moderate.

TABLE 6.—*Estimated engineeri*

[An asterisk in the first column indicates that at least one mapping unit in this series is made up of two or more kinds of soil. The soi
for referring to other series that appear in th

Soil series and map symbols	Depth to bedrock or indurated caliche	Depth from surface	Classification		
			Dominant USDA texture	Unified	AASHO
	Ft.	*In.*			
Active dune land: Aa	>5	0–60	Fine sand	SP	A–3
*Amarillo: Ad, Ae, Af, Ag, Ah, Ak, AB, AL, AS, AU. For Arvana part of AB, AL, and AS, see Arvana series; for Gomez part of Ak and AU, see Gomez series.	>5	0–36 36–60	Sandy clay loam Chalky loam	SM or SC SC	A–4 or A–6 A–4
*Arch: Am, AV. For Drake part of AV, see Drake series.	>5	0–16 16–60	Loam Soft caliche (clay loam to silty clay loam).	ML or CL CL	A–4 or A–6 A–6
*Arvana: An, Ao, Ap, Ar, At, AW. For Lea part of AW, see Lea series.	1½–3	0–28 28	Sandy clay loam Indurated caliche.	SC	A–6
Badland: BD. Variable: no estimates of properties.					
*Berino: BE, BF, BH. For Cacique part of BE, BF, and BH, see Cacique series.	>5	0–48 48–60	Sandy clay loam Soft caliche (sandy clay loam)	SC SC	A–6 A–6
*Brownfield: Bp, BN, Br, BO, BS. For Patricia part of Br, Bp, and BN, see Patricia series; for Springer part of BO and BS, see Springer series.	>5	0–22 22–63	Fine sand Sandy clay loam	SM SM or SC	A–1 or A–2 A–4 or A–6
Cacique. Mapped only with Berino soils.	1½–3	0–12 12–28 28	Loamy fine sand Sandy clay loam Indurated caliche.	SM SC	A–2 or A–4 A–6
Cottonwood. Mapped only with Reeves soils.	(2)	0–8 8	Loam Gypsum.	ML	A–4
Drake: Dr	>5	0–30 30–60	Fine sandy loam Sandy clay loam	ML SC	A–4 A–6
Drake, low rainfall variant. Mapped only with Jal soils.	>5	0–12 12–60	Loamy fine sand Sandy clay loam	SM SC	A–2 A–6
Gomez: GF, Go, GM, Gs	>5	0–15 15–22 22–60	Loamy fine sand Fine sandy loam Soft caliche (fine sandy loam)	SM SM SM	A–2 A–4 A–4
*Jal: JA. For Drake part of JA, see Drake, low rainfall variant.	>5	0–12 12–60	Sandy loam Soft caliche (loam texture)	SM ML	A–2 or A–4 A–4
*Kermit: KD, KE, KM. For Palomas part of KD, see Palomas series; for Dune land part of KM, see Active dune land; for Wink part of KE, see Wink series.	>5	0–60	Fine sand	SP–SM or SM	A–2 or A–3
*Kimbrough: Kb, KN, Kc, Kg, KO, Kh, KU, Ks, KX. For Sharvana part of Ks and KX, see Sharvana series; for Lea part of Kh and KU, see Lea series.	½–1½	0–6 6	Gravelly loam Indurated caliche.	SM, SC, or ML	A–4
*Largo: LP. For Pajarito part of LP, see Parjarito series.	2 to 5	0–30 30	Loam, silty clay loam, and clay loam. Shale.	ML or CL	A–4 or A–6

See footnotes at end of table.

MEMORANDUM OF MEETING OR CONVERSATION

X TELEPHONE ___ PERSONAL TIME 1:45 (AM)/PM DATE 8/28/95

ORIGINATING PARTY: Pat Sanchez - Call back
OTHER PARTIES: Gerald Phillips PRO-Kem M Lavington.

SUBJECT: Pit Closure

DISCUSSION: Gerald mentioned the the "Pit" was an old Clachic Pit used about 15 years ago - for about one year to hold old Bold produced water. The pit was then filled in with clachic from various (unknown) locations.

Gerald wanted to close as is - I told him to use pit Guidelines so as to properly close - he agreed.

CONCLUSIONS/AGREEMENTS: Gerald will use his information - well logs and legal location and submit a plan to address the pit closure. Also he will get with Wayne in selecting the sample points.

Note: Pit closure will be approved out of Santa Fe.

PATRICIO W. SANCHEZ: Patricio W. Sanchez

xc: FILE, WAYNE PRICE,