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REPORTS

DATE:

1999



Safety & Environmental

Solutions, Inc.

KOCH PIPELINE CO., L.P.

Crouch Station

Lea County, New Mexico

Annual Report 1999

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ENVIRONMENTAL BUREAU
OIL CONSERVATION DIVISION

Safety & Environmental Solutions, Inc.

703 E. Clinton Suite 103

Hobbs, New Mexico 88240

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Purpose

The purpose of this report is to present a summary of site monitoring at the Crouch Station in Section 18 Township 18S Range 36E in Lea County, New Mexico for the past year. (See Vicinity Map)

Background

This report is the result of the requirement of the New Mexico Oil Conservation Division to report the results of the investigation to delineate the possibility of groundwater contamination at the Crouch Station site.

Work Performed

Three additional monitor wells were installed at the Crouch Station on May 1 and May 2, 1998, supplementing two monitor wells drilled initially in 1997 by Western Technologies. (See Monitor Well Site Plan)

Soil samples were collected during the drilling using a split spoon sampler driven into the undisturbed soil through the hollow stem auger used to drill the monitor wells. The samples were placed in proper containers with no headspace, preserved on ice and transported under chain of custody to the laboratory for analysis. The soil samples were analyzed for the Total Petroleum Hydrocarbon (TPH), and Benzene, Toluene, Ethyl Benzene, and Xylenes (BTEX) content. The bottom hole sample in Monitor Well #4 was too wet for testing.

Test results of the soil samples are summarized below:

ANALYTES	MW # 3 20'	MW # 3 58'	MW #4 30'	MW #5 30'	MW # 5 57'-59'
Sample Date	4/30/98	4/30/98	5/1/98	5/1/98	5/1/98
TPH	<10	51700	75	65	19
BTEX					
Benzene	<0.002	0.057	<0.002	<0.002	<0.002
Toluene	<0.002	<0.002	<0.002	<0.002	<0.002
Ethyl Benzene	<0.002	<0.002	<0.002	<0.002	<0.002
Total Xylenes	<0.006	<0.006	<0.006	<0.006	<0.006

As noted by the red highlighting, the bottom hole soil sample in Monitor Well #3 was the only sample to exceed regulatory limits for TPH or BTEX, with elevated levels of both TPH and Benzene.

Once drilled, bailing 3 to 5 casing volumes of water prior to sample collection with a properly decontaminated bailer developed the monitor wells. The samples were placed in the appropriate container, preserved, and transported under chain of custody to the laboratory for analysis. The existing monitor wells were also developed and sampled at this time. Monitor Well #2, however, did not yield any samples because the well takes in excess of 24 hours to recharge after well development.

The ground water samples were analyzed for BTEX, Polynuclear Aromatic Hydrocarbons (PAH), New Mexico Water Quality Control Commission (WQCC) metals, Major Cations & Anions, and Total Dissolved Solids (TDS). SW - 846 protocols were followed for all sample collection to insure the integrity of the sample.

The following table presents the results of the initial analysis of the groundwater samples from monitor wells #1, #3, #4, and #5:

ANALYTES	MW # 1	MW # 3	MW #4	MW #5	WQCC Limits
Sample Date	4/30/98	5/1/98	5/1/98	5/1/98	
Polynuclear Aromatic Hydrocarbons					
Naphthalene	<0.001	<0.001	<0.001	<0.001	0.03
2-Methylnaphthalene	<0.002	<0.002	<0.002	<0.002	0.03
1-Methylnaphthalene	<0.002	<0.002	<0.002	<0.002	0.03
Acenaphthylene	<0.001	<0.001	<0.001	<0.001	
Acenaphthene	<0.001	<0.001	<0.001	<0.001	
Fluorene	<0.001	<0.001	<0.001	<0.001	
Phenanthrene	<0.001	<0.001	<0.001	<0.001	
Anthracene	<0.001	<0.001	<0.001	<0.001	
Fluoranthene	<0.001	<0.001	<0.001	<0.001	
Pyrene	<0.001	<0.001	<0.001	<0.001	
Benzo(a)anthracene	<0.001	<0.001	<0.001	<0.001	
Chrysene	<0.001	<0.001	<0.001	<0.001	
Benzo(b)fluoranthene	<0.001	<0.001	<0.001	<0.001	
Benzo(k)fluoranthene	<0.001	<0.001	<0.001	<0.001	
Benzo(a)pyrene	<0.0007	<0.0007	<0.0007	<0.0007	0.0007
Indeno(1,2,3-cd)pyrene	<0.001	<0.001	<0.001	<0.001	
Dibenzo(a,h)anthracene	<0.001	<0.001	<0.001	<0.001	
Benzo(g,h,i)perylene	<0.001	<0.001	<0.001	<0.001	
Metals					
As	<0.01	<0.01	<0.01	<0.01	0.1
Ag	<0.05	<0.05	<0.05	<0.05	0.05
Ba	1.12	1.37	1.72	2.10	1.0
Cr	<0.05	<0.05	<0.05	0.083	0.05
Pb	<0.05	<0.05	<0.05	<0.05	0.05
Hg	<0.002	<0.002	<0.002	<0.002	0.002
Se	<0.01	<0.01	<0.01	<0.01	0.05

ANALYTES	MW # 1	MW # 3	MW # 4	MW # 5	WQCC Limits
Sample Date	4/30/98	5/1/98	5/1/98	5/1/98	
Major Cations & Anion					
Na	17	104	143	<1	
Ca	126	115	115	128	
Mg	20	81	42	63	
K	2.3	3.9	11.9	5.7	
Conductivity	1415	1245	1421	1257	
T-Alkalinity	225	420	168	140	
Cl ⁻	66	66	89	59	250
SO ₄	113	398	507	349	600
CO ₃	0	0	0	0	
HCO ₃	275	420	168	171	
PH	6.68	7.15	7.57	7.67	
TDS	770	930	950	892	1000
BTEX					
Benzene	<0.002	<0.160	<0.007	<0.002	
Toluene	<0.002	<0.002	<0.002	<0.002	
Ethyl Benzene	<0.002	<0.002	<0.002	<0.002	
Total Xylenes	<0.006	<0.006	<0.006	<0.006	

As noted by the red highlighting, all four monitor wells sampled exhibited elevated Barium levels slightly greater than the WQCC limit. In addition, The sample from Monitor Well # 5 also exhibited a Chromium level of .083ppm, which is greater than the WQCC limit.

Also noted by the red highlighting, the water sample from Monitor Well #3 shows 0.160 ppm Benzene. The New Mexico Water Quality Control Commission (WQCC) Benzene Standard for this type of groundwater is 0.010 ppm. The result for Monitor Well #3 may indicate that the groundwater entering the area underneath Crouch Station is already contaminated above the WQCC limit for Benzene. The sample from Monitor Well # 4 exhibited a slightly elevated Benzene level, however, this level is below WQCC limits for Benzene.

To verify the elevated Benzene levels in Monitor Wells #3 and #4, confirmation samples were taken on 5/6/98 and the results are as follows:

ANALYTES	MW # 3	MW # 4
Sample Date	5/6/98	5/6/98
BTEX		
Benzene	<1.201	<0.005
Toluene	<0.001	<0.001
Ethyl Benzene	<0.001	<0.001
Total Xylenes	<0.003	<0.003

Monitor Well #3 exhibits Benzene at 120 times the WQCC limit. The fact that this sample contains such a high level of Benzene supports the observation that the contamination is entering the property from an up-gradient direction. Public records obtained from the New Mexico Oil Conservation Division from the existing Texas New Mexico Pipeline remediation confirm the direction of groundwater flow. (See Excerpts of KEI Subsurface Investigation Report for Texas-New Mexico Pipeline Company)

On February 12, 1999, semi-annual water sampling was performed on the monitor wells to verify the encountered contamination. Each well was developed and sampled, and the sample was tested for only those contaminants found at the initial testing.

Following is a summary of these results:

ANALYTES	MW #1	MW #3	MW #4	MW #5
Barium	<1.0	<1.0	<1.0	<1.0
Benzene	N/A	126ppm	N/A	N/A
Chromium	<0.05	<0.05	<0.05	<0.05

As noted by the red highlighting, only the Benzene levels in Monitor Well #3 is above the NMWQCC limits. A water table elevation study was performed at the Crouch Station site in conjunction with the sampling of the monitor wells. (See Water Table Elevation Map Crouch Station) Both the Barium and Chromium levels in all four monitor wells tested were below the NMWQCC limits.

Additional Work

Beginning in October 1997, Safety & Environmental Solutions, Inc. was contracted by Koch Oil Company to monitor the installed Soil Vapor Extraction Unit setup on a prior spill. The air emissions are sampled weekly with a MTIP Photovac PID for BTEX. A quarterly air sample is taken to a third party laboratory for confirmation using standard protocols, then a quarterly report is filed with the New Mexico Environment Department Air Quality Bureau. (See Quarterly Air Sampling Report) Condensate from the system is collected and disposed of at an approved NMOCD facility. (See Condensate Disposal Record)

Summary

The results of the analytical tests performed on soil and ground water samples obtained from the monitor well installations at the Crouch Station may be summarized as follows:

Highly contaminated soil (Benzene) was encountered at the depth of 58' in Monitor Well # 3.

Elevated levels of Benzene were also found in all of the up-gradient Monitor Well #3 ground water samples. No other monitor wells sampled exhibited Benzene in excess of the WQCC limits in the ground water samples.

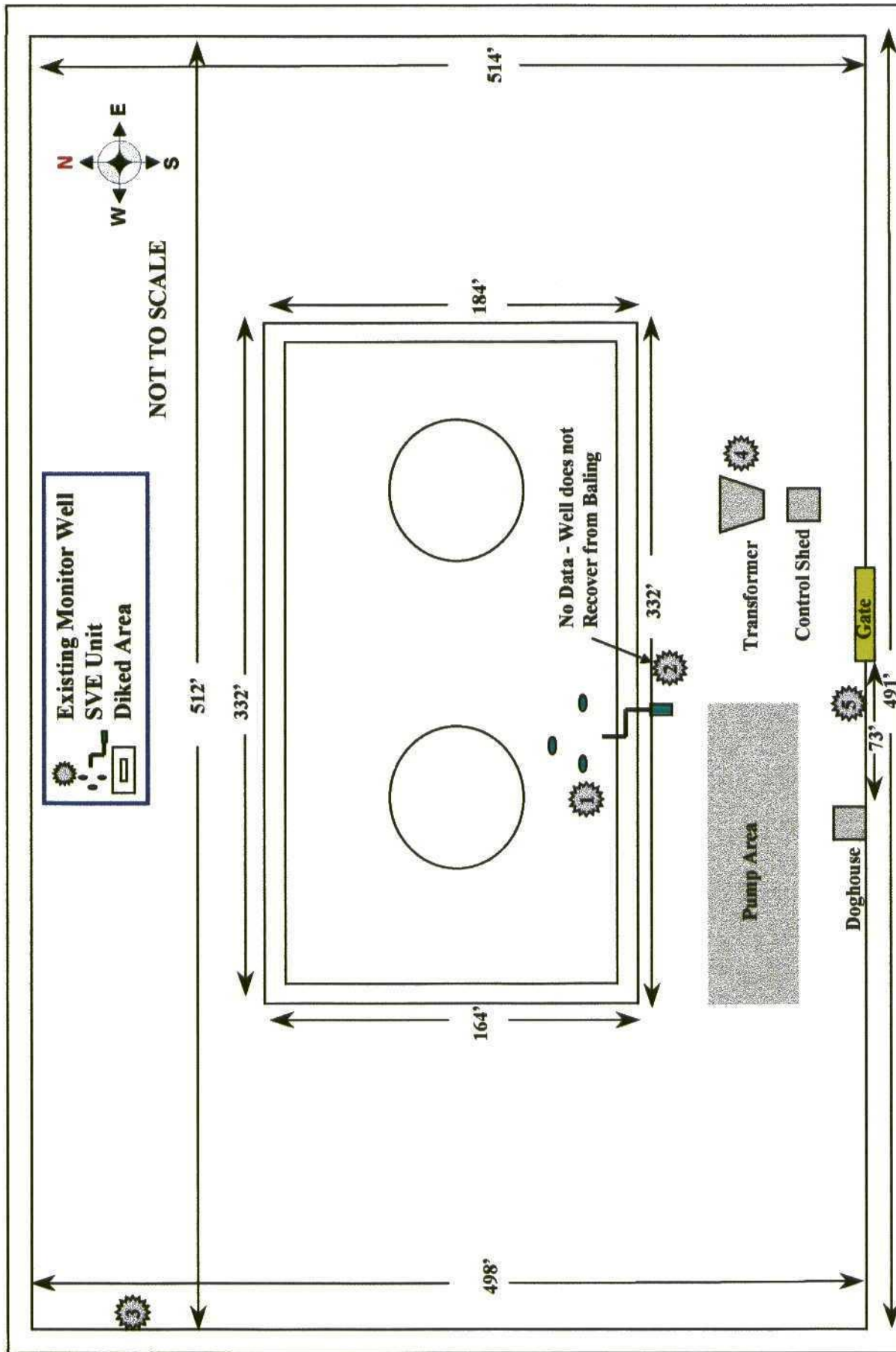
All wells sampled exhibited elevated levels of Barium in the initial ground water samples. However, the follow up semi-annual testing revealed no elevation in levels above the NMWQCC limit. Monitor Well #5, a down gradient well, also exhibited an elevated level of Chromium upon initial testing. Once again, the follow up testing revealed no elevated Chromium levels in any well above the NMWQCC limit.

The Benzene contamination has entered the property at the northwest property line in the water table that flows from the northwest to the southeast at a bearing of approximately 140°. This contamination is almost certainly the result of a source that is located clearly outside the property boundaries of the Crouch Station. The obvious suspected source of the contamination entering this area is the historical leak to the northwest of Crouch Station. This leak occurred approximately 10 years ago and is currently undergoing remediation by Texas New Mexico Pipeline Company and Southwestern Public Service. The most current report of sampling of the 18 monitor wells installed at that site indicate the contamination may have traveled past the most down-gradient well.

The Air Monitoring program has regularly shown that the Soil Vapor Extraction Unit is performing according to its specifications. The historical spill that this SVE unit is remediating is unrelated to the Monitor Well program.

Maps and Figures

- Vicinity Map
- Monitor Well Site Plan
- John West Engineering Company Elevations and Ties Plat
- KEI Ground Water Contour Map May 1, 1997
- Water Table Elevation Map Crouch Station February 12, 1999
- Excerpts of KEI Subsurface Investigation Report for Texas-New Mexico Pipeline
- Analytical Results for Soil and Water Samples
- Quarterly Air Sampling Reports
- Disposal Records for Condensate



Safety & Environmental Solutions,
Hobbs, New Mexico

Monitor Well Site Plan

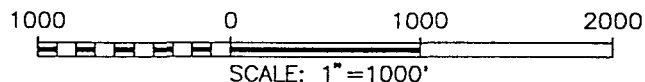
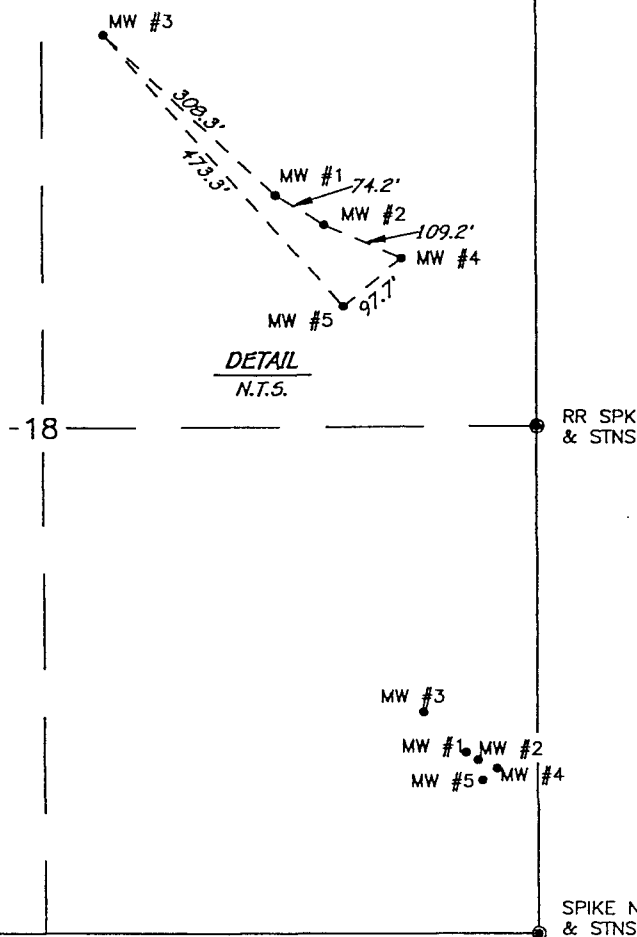
Koch Pipeline Co., L.P.

SECTION 18, TOWNSHIP 18 SOUTH, RANGE 36 EAST, N.M.P.M.,
LEA COUNTY, NEW MEXICO.

SPIKE NAIL
& STNS

NEW MEXICO.
CALC.

WELL NO.	LOCATION IN SECTION	NORTH SIDE ELEVATIONS (NAVD 29)
MW #1	944' FSL 378' FEL	3850.200 GROUND 3850.305 CONC. SLAB 3851.091 TOP PVC 3851.844 TOP CASING
MW #2	905' FSL 315' FEL	3849.167 GROUND 3849.765 CONC. SLAB 3849.479 TOP PVC
MW #3	1153' FSL 604' FEL	3851.132 GROUND 3851.929 CONC. SLAB 3853.895 TOP PVC
MW #4	862' FSL 215' FEL	3849.587 GROUND 3849.788 CONC. SLAB 3852.024 TOP PVC
MW #5	800' FSL 291' FEL	3848.899 GROUND 3849.121 CONC. SLAB 3851.506 TOP PVC



I HEREBY CERTIFY THAT I DIRECTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT THIS SURVEY AND PLAN MEET THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO.

NEW MEXICO
12641
5-12-98
GARY G. EIDSON
REGISTERED PROFESSIONAL SURVEYOR

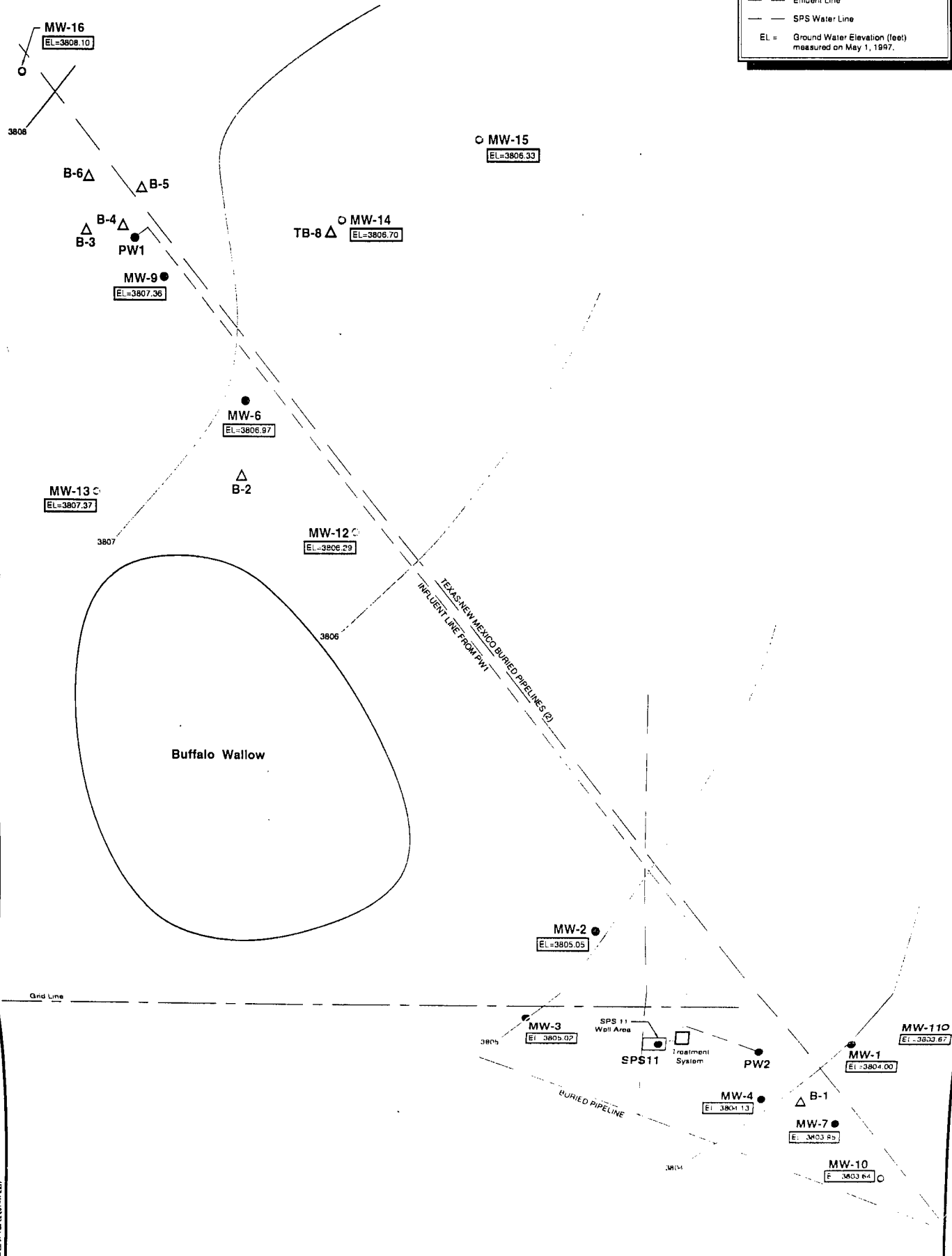
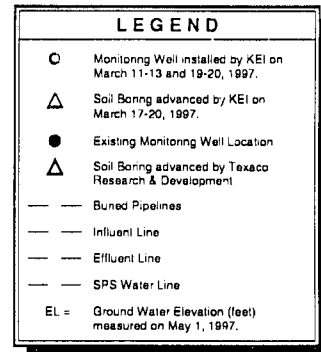
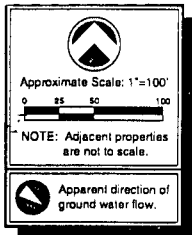
RONALD J. EIDSON, N.M. R.P.S. No. 3239
GARY G. EIDSON, N.M. R.P.S. No. 12641

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

SAFETY & ENVIRONMENTAL SOLUTIONS INC.

LOCATE MONITOR WELLS AT KOCH PIPELINE CO., L.P.
CROUCH STATION LOCATED IN SECTION 18, TOWNSHIP
18 SOUTH, RANGE 36 EAST, N.M.P.M., LEA COUNTY,
NEW MEXICO.

Survey Date: 5/7/98	Sheet 1 of 1 Sheets
W.O. Number: 98-11-0724	Drawn By: J. L. Presley
Date: 5/11/98	DISK: JLP#200 SES0724



kei

GROUND WATER CONTOUR MAP - MAY 1, 1997

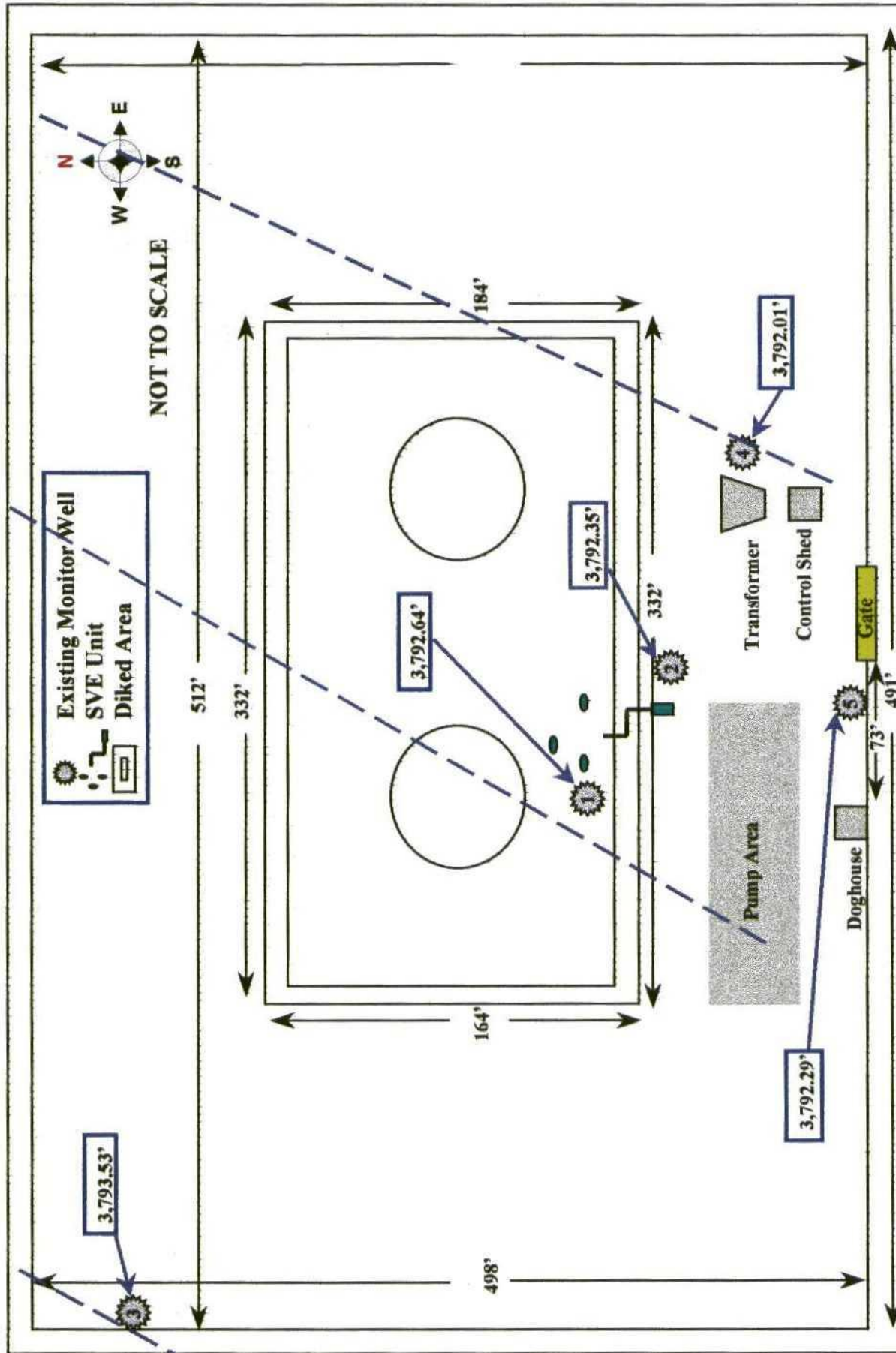
TNMPL

SPS-11

LEA COUNTY, NEW MEXICO

610099

FIG 5



Koch Pipeline Co., L.P.

Monitor Well Groundwater
Elevation 2-12-99

Safety & Environmental Solutions,
Hobbs, New Mexico

CONCLUSIONS

The following conclusions are based on field and laboratory data:

- The standard New Mexico Oil Conservation Division (OCD) levels for soils at the site are:

Total Petroleum Hydrocarbons (TPH)	100 mg/kg
Benzene	10 mg/kg
Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX)	50 mg/kg

- Soil samples obtained from soil borings B-3 through B-6 and monitoring wells MW-10, MW-11, MW-12, MW-14, and MW-16 indicated TPH, benzene, and BTEX concentrations above closure standards.
- Ground water samples obtained from monitoring wells MW-1, MW-7, MW-9, MW-10, MW-11, MW-14, and MW-16 indicated benzene concentrations above the New Mexico Water Quality Control Commission (NMWQCC) drinking water standard for benzene.

TABLE I

SUMMARY OF LABORATORY RESULTS - SOIL
TEXAS - NEW MEXICO PIPE LINE COMPANY
TNMPL SPS-11
LEA COUNTY, NEW MEXICO

SAMPLE LOCATION	SAMPLE DATE	DEPTH (feet)	BENZENE (mg/kg)	TOLUENE (mg/kg)	ETHYLBENZENE (mg/kg)	XYLENES (mg/kg)	TOTAL BTEX (mg/kg)	TPH (mg/kg)
B-1	03/20/97	0 - 1	0.222	10.991	18.776	32.826	62.815	3,710
B-1	03/20/97	10 - 11	0.198	0.151	ND	0.113	0.462	20
B-1	03/20/97	40 - 41	10.758	85.292	75.323	108.244	279.617	3,720
B-1	03/20/97	53 - 54	ND	8.441	17.652	28.752	54.845	9,400
B-2	03/17/97	0	ND	ND	ND	0.237	0.237	ND
B-2	03/17/97	5	ND	ND	ND	ND	ND	10
B-2	03/17/97	30	ND	ND	ND	ND	ND	ND
B-2	03/17/97	55	ND	ND	ND	ND	ND	10
B-3	03/17/97	0	ND	ND	ND	ND	ND	1,220
B-3	03/17/97	10	ND	ND	ND	0.214	0.214	70
B-3	03/17/97	40	ND	7.219	16.764	29.543	53.526	3,900
B-4	03/18/97	5	0.927	7.593	55.077	98.756	162.353	12,100
B-4	03/18/97	30	0.337	0.485	0.639	13.435	14.896	2,200
B-4	03/18/97	50	1.594	11.293	11.954	21.815	46.656	5,800
B-5	03/19/97	10	0.316	ND	8.727	16.076	25.119	3,230
B-5	03/19/97	30	0.17	ND	ND	0.14	0.31	70
B-5	03/19/97	51	1.942	20.447	22.087	34.083	78.559	2,210
B-6	03/18/97	0	1.278	15.924	55.441	93.772	166.415	5,300
B-6	03/18/97	10	ND	0.123	0.163	0.49	0.776	250
B-6	03/18/97	50	0.878	50.806	40.788	59.522	151.994	5,680
MW-10	03/21/97	0 - 1	ND	ND	ND	0.154	0.154	1,750
MW-10	03/21/97	20 - 21	ND	ND	ND	0.415	0.415	20
MW-10	03/21/97	40 - 41	ND	ND	0.196	1.4	1.596	4,030
MW-10	03/21/97	55 - 56	ND	ND	ND	ND	ND	ND
MW-11	03/11/97	20	ND	ND	ND	ND	ND	10
MW-11	03/11/97	40	ND	ND	ND	ND	ND	150
MW-11	03/11/97	55	ND	ND	ND	ND	ND	10
MW-12	03/20/97	0 - 1	0.104	0.136	ND	0.861	1.101	20
MW-12	03/20/97	40 - 41	0.143	ND	ND	0.943	1.086	1,820
MW-12	03/20/97	50 - 51	0.158	ND	ND	0.161	0.319	50
MW-12	03/20/97	66 - 67	0.106	ND	ND	0.179	0.285	ND
MW-13	03/12/97	20	ND	ND	ND	ND	ND	10
MW-13	03/12/97	50	ND	ND	ND	ND	ND	ND
MW-13	03/12/97	55	ND	ND	ND	0.144	0.144	ND
MW-14	03/13/97	1	ND	ND	ND	ND	ND	800
MW-14	03/12/97	10	ND	ND	ND	ND	ND	ND
MW-14	03/12/97	50	0.2	1.402	11.461	24.03	37.093	2,570
MW-14	03/13/97	55	ND	ND	0.182	0.561	0.743	1,020
MW-15	03/13/97	20	ND	ND	ND	ND	ND	ND
MW-15	03/13/97	50	ND	ND	ND	ND	ND	ND
MW-15	03/13/97	55	ND	ND	ND	ND	ND	ND
MW-16	03/19/97	0 - 1	ND	ND	ND	ND	ND	60
MW-16	03/19/97	20	ND	4.056	14.763	34.137	52.956	6,400
MW-16	03/19/97	30	22.853	99.739	72.631	109.15	304.373	6,000
MW-16	03/19/97	50	ND	0.644	1.169	2.784	4.597	540

Appendix A

Appendix B

TABLE II
(continued)

SUMMARY OF LABORATORY RESULTS - GROUND WATER
TEXAS - NEW MEXICO PIPE LINE COMPANY
SPS-11
LEA COUNTY, NEW MEXICO

MONITORING WELL	SAMPLE DATE	BENZENE (mg/l)	TOLUENE (mg/l)	ETHYLBENZENE (mg/l)	XYLENES (mg/l)	BTEX (mg/l)
MW-16	05/01/97	0.101	0.090	0.015	0.012	0.218
PW-1	10/15/96	0.007	ND	ND	ND	0.007
PW-2	05/07/92	0.048	0.054	0.022	0.024	0.148
PW-2	10/15/96	ND	0.001	0.001	0.013	0.015

Appendix A

Appendix B

TABLE III

SUMMARY OF GROUND WATER MONITORING
TEXAS - NEW MEXICO PIPE LINE COMPANY
SPS-11
LEA COUNTY, NEW MEXICO

Appendix A

Appendix B

WELL NO.	DATE MEASURED	PVC ELEVATION (feet)	DEPTH: TO WATER (feet)	GROUND WATER ELEVATION		PSH THICKNESS (feet)
				Actual	Corrected	
MW-1	05/06/92	3,859.20	55.37	3803.83	—	—
	07/13/92	3,859.20	55.93	3803.27	—	—
	05/01/97	3,859.20	55.20	3804.00	—	—
MW-2	05/06/92	3,860.90	56.06	3804.84	—	—
	07/13/92	3,860.90	56.43	3804.47	—	—
	05/01/97	3,860.90	55.85	3805.05	—	—
MW-3	05/06/92	3,861.30	56.48	3804.82	—	—
	07/13/92	3,861.30	56.86	3804.44	—	—
	05/01/97	3,861.30	56.28	3805.02	—	—
MW-4	05/06/92	3,859.40	55.36	3804.04	—	—
	07/13/92	3,859.40	55.83	3803.57	—	—
	05/01/97	3,859.40	55.27	3804.13	—	—
MW-5	07/13/92	Unknown	26.48	—	—	—
MW-6	05/06/92	3,862.70	55.78	3806.92	—	—
	07/13/92	3,862.70	56.23	3806.47	—	—
	05/01/97	3,862.70	55.73	3806.97	—	—
MW-7	05/06/92	3,859.40	55.65	3803.75	—	—
	07/13/92	3,859.40	56.15	3803.25	—	—
	05/01/97	3,859.40	55.45	3803.95	—	—
MW-9	05/06/92	3,862.10	54.69	3807.41	—	—
	07/13/92	3,862.10	55.18	3806.92	—	—
	05/01/97	3,862.10	54.74	3807.36	—	—
MW-10	05/01/97	3,860.60	56.96	3803.64	—	—
MW-11	05/01/97	3,860.10	56.43	3803.67	—	—
MW-12	05/01/97	3,863.20	56.91	3806.29	—	—
MW-13	05/01/97	3,862.60	55.23	3807.37	—	—
MW-14	05/01/97	3,863.10	56.40	3806.70	—	—
MW-15	05/01/97	3,861.90	55.57	3806.33	—	—
MW-16	05/01/97	3,863.40	55.30	3808.10	—	—



ARDINAL LABORATORIES

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

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

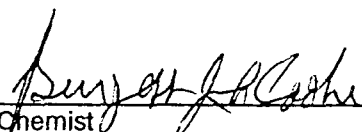
ANALYTICAL RESULTS FOR
SAFETY & ENVIRONMENTAL SOLUTIONS, INC.
ATTN: DEE WHATLEY
703 E. CLINTON, SUITE 103
HOBBS, NM 88240
FAX TO:

Receiving Date: 04/30 & 05/01/98
Reporting Date: 05/02/98
Project Owner: KOCH OIL
Project Name: KOCH KROUCH ST. MW
Project Location: KROUCH STATION

Sampling Date: SEE BELOW
Sample Type: GROUNDWATER
Sample Condition: COOL, INTACT
Sample Received By: GP
Analyzed By: BC

LAB NUMBER	SAMPLE ID	BENZENE (mg/L)	TOLUENE (mg/L)	ETHYL BENZENE (mg/L)	TOTAL XYLENES (mg/L)
ANALYSIS DATE		05/01/98	05/01/98	05/01/98	05/01/98
H3616-1	EXISTING MW INSIDE BERM (04/030/98)	<0.002	<0.002	<0.002	<0.006
H3616-4	MW #3 (05/01/98)	0.160	<0.002	<0.002	<0.006
H3616-5	MW #4	0.007	<0.002	<0.002	<0.006
H3616-6	MW #5	<0.002	<0.002	<0.002	<0.006
Quality Control		0.108	0.104	0.104	0.315
True Value QC		0.100	0.100	0.100	0.300
% Accuracy		108	104	104	105
Relative Percent Difference		1.8	0	1.1	0.7

METHOD: EPA SW 846-8020


Chemist

5/12/98
Date

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

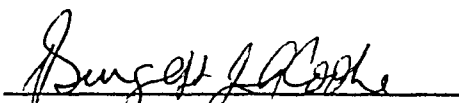
Receiving Date: 04/30 & 05/01/98
Reporting Date: 05/02/98
Project Owner: KOCH OIL
Project Name: KOCH KROUCH ST. MW
Project Location: KROUCH STATION

Sampling Date: SEE BELOW
Sample Type: SOIL
Sample Condition: COOL, INTACT
Sample Received By: GP
Analyzed By: BC

LAB NUMBER	SAMPLE ID	TPH (mg/Kg)	BENZENE (mg/Kg)	TOLUENE (mg/Kg)	ETHYL BENZENE (mg/Kg)	TOTAL XYLENES (mg/Kg)
------------	-----------	----------------	--------------------	--------------------	-----------------------------	-----------------------------

ANALYSIS DATE:		05/02/98	05/01/98	05/01/98	05/01/98	05/01/98
H3616-2	MW #3 20' (04/30/98)	<10	<0.002	<0.002	<0.002	<0.006
H3616-3	MW #3 58'	51700	0.057	<0.002	<0.002	<0.006
H3616-5A	MW #4 30' (05/01/98)	75	<0.002	<0.002	<0.002	<0.006
H3616-6A	MW #5 30'	65	<0.002	<0.002	<0.002	<0.006
H3616-6B	MW #5 57'-59'	19	<0.002	<0.002	<0.002	<0.006
Quality Control		186	0.108	0.104	0.104	0.315
True Value QC		200	0.100	0.100	0.100	0.300
% Recovery		93.2	108	104	104	105
Relative Percent Difference		1.9	1.8	0	1.1	0.7

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


Burgess J. A. Cooke, Ph. D.

5/2/98
Date

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ATTN: DEE WHATLEY
703 E. CLINTON, SUITE 103
HOBBS, NM 88240
FAX TO:

Receiving Date: 04/30/98
Reporting Date: 05/02/98
Project Owner: KOCH OIL
Project Name: KOCH KROUCH ST. MW
Project Location: KROUCH STATION
Lab Number: H3616-1
Sample ID: EXISTING MW INSIDE BERM

Analysis Date: 05/01/98
Sampling Date: 04/30/98
Sample Type: GROUNDWATER
Sample Condition: COOL, INTACT
Sample Received By: GP
Analyzed By: BC

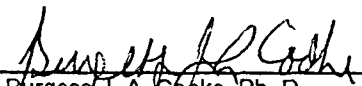
POLYNUCLEAR AROMATIC HYDROCARBONS - 625 (mg/L)

	Sample Result H3616-1	Method Blank	QC	% Recov.	True Value QC
1 Naphthalene	<0.001	<0.001	0.042	84	0.050
2 2-Methylnaphthalene	<0.002	<0.002	0.046	92	0.050
3 1-Methylnaphthalene	<0.002	<0.002	NR	NR	NR
4 Acenaphthylene	<0.001	<0.001	0.048	96	0.050
5 Acenaphthene	<0.001	<0.001	0.048	96	0.050
6 Fluorene	<0.001	<0.001	0.048	96	0.050
7 Phenanthrene	<0.001	<0.001	0.052	104	0.050
8 Anthracene	<0.001	<0.001	0.048	96	0.050
9 Fluoranthene	<0.001	<0.001	0.049	98	0.050
10 Pyrene	<0.001	<0.001	0.046	92	0.050
11 Benzo(a)anthracene	<0.001	<0.001	0.046	92	0.050
12 Chrysene	<0.001	<0.001	0.046	92	0.050
13 Benzo(b)fluoranthene	<0.001	<0.001	0.044	88	0.050
14 Benzo(k)fluoranthene	<0.001	<0.001	0.046	92	0.050
15 Benzo(a)pyrene	<0.0007	<0.0007	0.045	90	0.050
16 Indeno(1,2,3-cd)pyrene	<0.001	<0.001	0.042	84	0.050
17 Dibenzo(a,h)anthracene	<0.001	<0.001	0.048	96	0.050
18 Benzo(g,h,i)perylene	<0.001	<0.001	0.044	88	0.050

% Recovery

19 Nitrobenzene-d5	49
20 2-Fluorobiphenyl	66
21 Terphenyl-d14	76

METHODS: EPA 625


Burgess J. A. Cooke, Ph. D.

5/2/98
Date

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ANALYTICAL RESULTS FOR
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ATTN: DEE WHATLEY
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HOBBS, NM 88240
FAX TO:

Receiving Date: 05/01/98
Reporting Date: 05/02/98
Project Owner: KOCH OIL
Project Name: KOCH KROUCH ST. MW
Project Location: KROUCH STATION
Lab Number: H3616-4
Sample ID: MW #3

Analysis Date: 05/01/98
Sampling Date: 05/01/98
Sample Type: GROUNDWATER
Sample Condition: COOL, INTACT
Sample Received By: GP
Analyzed By: BC

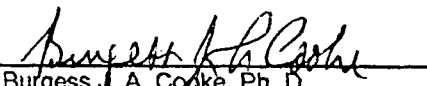
POLYNUCLEAR AROMATIC
HYDROCARBONS - 625 (mg/L)

	Sample Result H3616-4	Method Blank	QC	% Recov.	True Value QC
1 Naphthalene	<0.001	<0.001	0.042	84	0.050
2 2-Methylnaphthalene	<0.002	<0.002	0.046	92	0.050
3 1-Methylnaphthalene	<0.002	<0.002	NR	NR	NR
4 Acenaphthylene	<0.001	<0.001	0.048	96	0.050
5 Acenaphthene	<0.001	<0.001	0.048	96	0.050
6 Fluorene	<0.001	<0.001	0.048	96	0.050
7 Phenanthrene	<0.001	<0.001	0.052	104	0.050
8 Anthracene	<0.001	<0.001	0.048	96	0.050
9 Fluoranthene	<0.001	<0.001	0.049	98	0.050
10 Pyrene	<0.001	<0.001	0.046	92	0.050
11 Benzo(a)anthracene	<0.001	<0.001	0.046	92	0.050
12 Chrysene	<0.001	<0.001	0.046	92	0.050
13 Benzo(b)fluoranthene	<0.001	<0.001	0.044	88	0.050
14 Benzo(k)fluoranthene	<0.001	<0.001	0.046	92	0.050
15 Benzo(a)pyrene	<0.0007	<0.0007	0.045	90	0.050
16 Indeno(1,2,3-cd)pyrene	<0.001	<0.001	0.042	84	0.050
17 Dibenzo(a,h)anthracene	<0.001	<0.001	0.048	96	0.050
18 Benzo(g,h,i)perylene	<0.001	<0.001	0.044	88	0.050

% Recovery

19 Nitrobenzene-d5	70
20 2-Fluorobiphenyl	90
21 Terphenyl-d14	118

METHODS: EPA 625


Burgess J. A. Cooke, Ph. D.

5/12/98
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ATTN: DEE WHATLEY
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HOBBS, NM 88240
FAX TO:

Receiving Date: 05/01/98
Reporting Date: 05/02/98
Project Owner: KOCH OIL
Project Name: KOCH KROUCH ST. MW
Project Location: KROUCH STATION
Lab Number: H3616-5
Sample ID: MW #4

Analysis Date: 05/01/98
Sampling Date: 05/01/98
Sample Type: GROUNDWATER
Sample Condition: COOL, INTACT
Sample Received By: GP
Analyzed By: BC

POLYNUCLEAR AROMATIC
HYDROCARBONS - 625 (mg/L)

	Sample Result H3616-5	Method Blank	QC	% Recov.	True Value QC
1 Naphthalene	<0.001	<0.001	0.042	84	0.050
2 2-Methylnaphthalene	<0.002	<0.002	0.046	92	0.050
3 1-Methylnaphthalene	<0.002	<0.002	NR	NR	NR
4 Acenaphthylene	<0.001	<0.001	0.048	96	0.050
5 Acenaphthene	<0.001	<0.001	0.048	96	0.050
6 Fluorene	<0.001	<0.001	0.048	96	0.050
7 Phenanthrene	<0.001	<0.001	0.052	104	0.050
8 Anthracene	<0.001	<0.001	0.048	96	0.050
9 Fluoranthene	<0.001	<0.001	0.049	98	0.050
10 Pyrene	<0.001	<0.001	0.046	92	0.050
11 Benzo(a)anthracene	<0.001	<0.001	0.046	92	0.050
12 Chrysene	<0.001	<0.001	0.046	92	0.050
13 Benzo(b)fluoranthene	<0.001	<0.001	0.044	88	0.050
14 Benzo(k)fluoranthene	<0.001	<0.001	0.046	92	0.050
15 Benzo(a)pyrene	<0.0007	<0.0007	0.045	90	0.050
16 Indeno(1,2,3-cd)pyrene	<0.001	<0.001	0.042	84	0.050
17 Dibenzo(a,h,)anthracene	<0.001	<0.001	0.048	96	0.050
18 Benzo(g,h,i)perylene	<0.001	<0.001	0.044	88	0.050

% Recovery

19 Nitrobenzene-d5	56
20 2-Fluorobiphenyl	52
21 Terphenyl-d14	79

METHODS: EPA 625


Burgess J. A. Cope, Ph. D.

5/12/98
Date

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

Receiving Date: 05/01/98
Reporting Date: 05/02/98
Project Owner: KOCH OIL
Project Name: KOCH KROUCH ST. MW
Project Location: KROUCH STATION
Lab Number: H3616-6
Sample ID: MW #5

Analysis Date: 05/01/98
Sampling Date: 05/01/98
Sample Type: GROUNDWATER
Sample Condition: COOL, INTACT
Sample Received By: GP
Analyzed By: BC

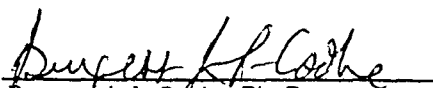
POLYNUCLEAR AROMATIC
HYDROCARBONS - 625 (mg/L)

	Sample Result H3616-6	Method Blank	QC	% Recov.	True Value QC
1 Naphthalene	<0.001	<0.001	0.042	84	0.050
2 2-Methylnaphthalene	<0.002	<0.002	0.046	92	0.050
3 1-Methylnaphthalene	<0.002	<0.002	NR	NR	NR
4 Acenaphthylene	<0.001	<0.001	0.048	96	0.050
5 Acenaphthene	<0.001	<0.001	0.048	96	0.050
6 Fluorene	<0.001	<0.001	0.048	96	0.050
7 Phenanthrene	<0.001	<0.001	0.052	104	0.050
8 Anthracene	<0.001	<0.001	0.048	96	0.050
9 Fluoranthene	<0.001	<0.001	0.049	98	0.050
10 Pyrene	<0.001	<0.001	0.046	92	0.050
11 Benzo(a)anthracene	<0.001	<0.001	0.046	92	0.050
12 Chrysene	<0.001	<0.001	0.046	92	0.050
13 Benzo(b)fluoranthene	<0.001	<0.001	0.044	88	0.050
14 Benzo(k)fluoranthene	<0.001	<0.001	0.046	92	0.050
15 Benzo(a)pyrene	<0.0007	<0.0007	0.045	90	0.050
16 Indeno(1,2,3-cd)pyrene	<0.001	<0.001	0.042	84	0.050
17 Dibenzo(a,h)anthracene	<0.001	<0.001	0.048	96	0.050
18 Benzo(g,h,i)perylene	<0.001	<0.001	0.044	88	0.050

% Recovery

19 Nitrobenzene-d5	54
20 2-Fluorobiphenyl	68
21 Terphenyl-d14	77

METHODS: EPA 625


Burgess J. A. Cooke, Ph. D.

5/2/98
Date

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

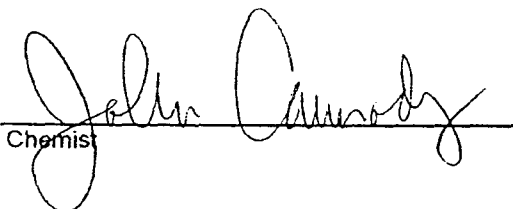
Receiving Date: 04/30/98* & 05/01/98**
Reporting Date: 05/04/98
Project Owner: KOCH OIL
Project Name: KOCH KROUCH ST. MW
Project Location: KROUCH STATION

Sampling Date: 04/30/98* & 05/01/98**
Sample Type: GROUNDWATER
Sample Condition: COOL, INTACT
Sample Received By: GP
Analyzed By: JC/BC

LAB NUMBER	SAMPLE ID	Na (mg/L)	Ca (mg/L)	Mg (mg/L)	K (mg/L)	Conductivity (μ mhos/cm)	T-Alkalinity (mgCaCO ₃ /L)
ANALYSIS DATE:		05/04/98	05/02/98	05/02/98	05/02/98	05/02/98	05/02/98
H3616-1*	EXISTING MW INSIDE BERM	17	126	20	2.3	1415	225
H3616-4**	MW #3	104	115	81	3.9	1245	420
H3616-5**	MW #4	143	115	42	11.9	1421	168
H3616-6**	MW #5	<1	128	63	5.7	1257	140
Quality Control		NR	48	53	NR	1445	NR
True Value QC		NR	50	50	NR	1413	NR
% Accuracy		NR	96	106	NR	102	NR
Relative Percent Difference		NR	6.2	6.0	NR	0.3	NR
METHODS:		SM3500-Ca D	3500-Mg E		8049	120.1	310.1

		Cl ⁻ (mg/L)	SO ₄ (mg/L)	CO ₃ (mg/L)	HCO ₃ (mg/L)	pH (s.u.)	TDS (mg/L)
ANALYSIS DATE:		05/02/98	05/02/98	05/02/98	05/02/98	05/02/98	05/02/98
H3616-1*	EXISTING MW INSIDE BERM	66	113	0	275	6.68	770
H3616-4**	MW #3	66	398	0	420	7.15	930
H3616-5**	MW #4	89	507	0	168	7.57	950
H3616-6**	MW #5	59	349	0	171	7.67	892
Quality Control		1500	48.9	124	221	7.02	NR
True Value QC		1360	50.0	112	259	7.00	NR
% Accuracy		110	97.8	110	85.4	100	NR
Relative Percent Difference		10.8	2.6	-	-	0.3	
METHODS:		SM4500-Cl-B	375.4	310.1	310.1	150.1	160.1

SM=Std. Methods


Chemist

5-4-98
Date

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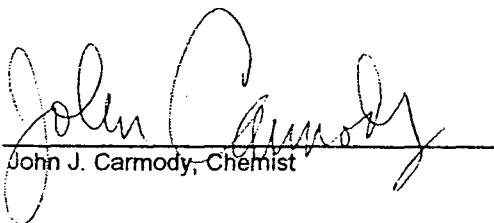
ANALYTICAL RESULTS FOR
SAFETY & ENVIRONMENTAL SOLUTIONS, INC.
ATTN: DEE WHATLEY
703 E. CLINTON, SUITE 103
HOBBS, NM 88240
FAX TO:

Receiving Date: 04/30/98* & 05/01/98**
Reporting Date: 05/04/98
Project Owner: KOCH OIL
Project Name: KOCH KROUCH ST. MW
Project Location: KROUCH STATION

Sampling Date: 04/30/98* & 05/01/98**
Sample Type: GROUNDWATER
Sample Condition: COOL, INTACT
Sample Received By: GP
Analyzed By: GP/JC

RCRA METALS

LAB NUMBER SAMPLE ID	As ppm	Ag ppm	Ba ppm	Cd ppm	Cr ppm	Pb ppm	Hg ppm	Se ppm
ANALYSIS DATE:	05/04/98	05/02/98	05/02/98	05/02/98	05/02/98	05/02/98	05/02/98	05/04/98
H3616-1* EXISTING MW	<0.01	<0.05	1.12	<0.01	<0.05	<0.05	<0.002	<0.01
INSIDE BERM								
H3616-4** MW #3	<0.01	<0.05	1.37	<0.01	<0.05	<0.05	<0.002	<0.01
H3616-5** MW #4	<0.01	<0.05	1.72	<0.01	<0.05	<0.05	<0.002	<0.01
H3616-6** MW #5	<0.01	<0.05	2.10	<0.01	0.083	<0.05	<0.002	<0.01
Quality Control	0.480	1.058	19.78	1.013	5.151	5.045	0.0179	0.485
True Value QC	0.500	1.000	20.00	1.000	5.000	5.000	0.0200	0.500
% Recovery	96.0	106	98.9	101	103	101	89.5	97.0
Relative Percent Difference	1.1	0.1	0.9	0.8	1.4	1.6	5.0	1.0
METHODS: EPA 600/4-79-020	206.2	272.1	208.1	213.1	218.1	239.1	245.1	270.2


John J. Carmody, Chemist

5-4-98
Date

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ANALYTICAL RESULTS FOR
SAFETY & ENVIRONMENTAL SOLUTIONS, INC.
ATTN: DEE WHATLEY
703 EAST CLINTON, SUITE 103
HOBBS, NM 88240
FAX TO:

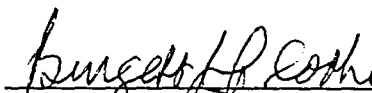
Receiving Date: 05/06/98
Reporting Date: 05/07/98
Project Number: NOT GIVEN
Project Name: KOCH KROUCH STATION
Project Location: KROUCH STATION

Sampling Date: 05/06/98
Sample Type: WATER
Sample Condition: COOL & INTACT
Sample Received By: BC
Analyzed By: BC

LAB NO.	SAMPLE ID	BENZENE (mg/kg)	TOLUENE (mg/kg)	ETHYL BENZENE (mg/kg)	TOTAL XYLENES (mg/kg)
---------	-----------	--------------------	--------------------	-----------------------------	-----------------------------

ANALYSIS DATE:	05/06/98	05/06/98	05/06/98	05/06/98
H3628-1 M.W. #3	1.201	<0.001	<0.001	<0.003
H3628-2 M.W. #4	0.005	<0.001	<0.001	<0.003
Quality Control	0.879	0.099	0.102	0.307
True Value QC	0.100	0.100	0.100	0.300
% Recovery	97.0	99.1	102	103
Relative Percent Difference	5.8	5.9	4.9	4.9

METHODS: BTEX - EPA SW846-8260


Burgess A. Cooke, Ph.D.

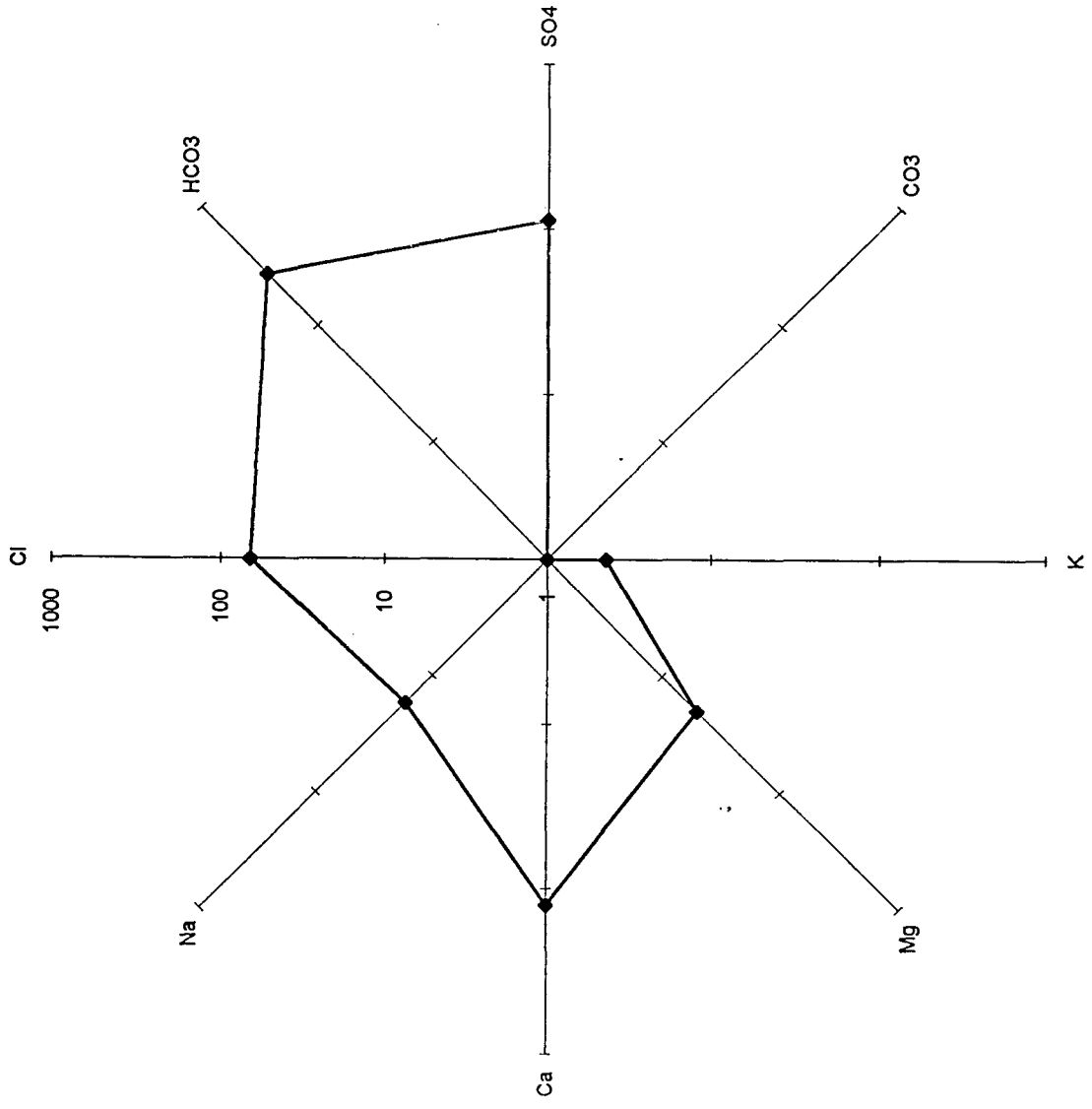
5/7/98
Date

H3628-1.XLS

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Radar Plot

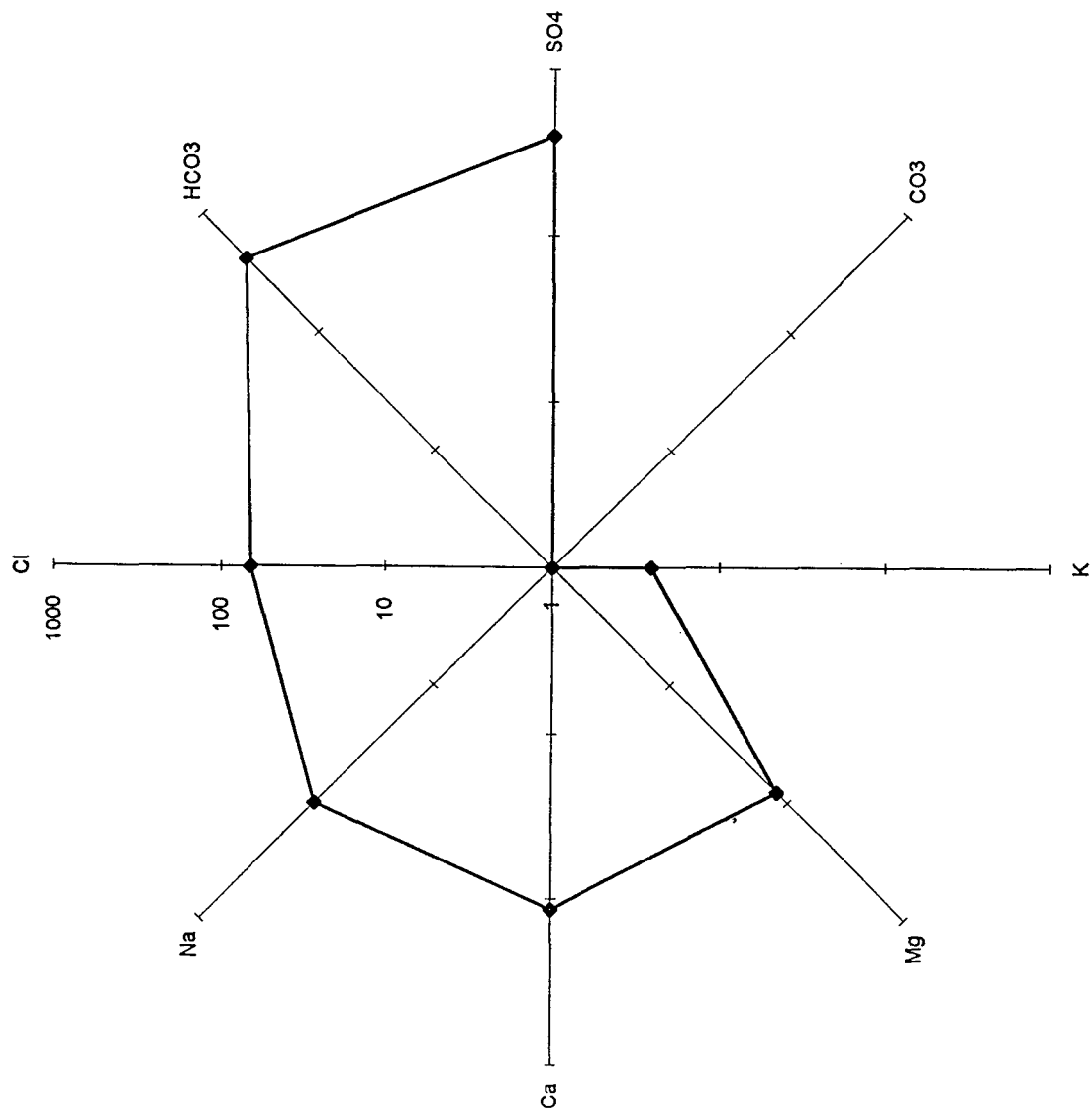
Existing MW inside berm



Cardinal Labs

Radar Plot

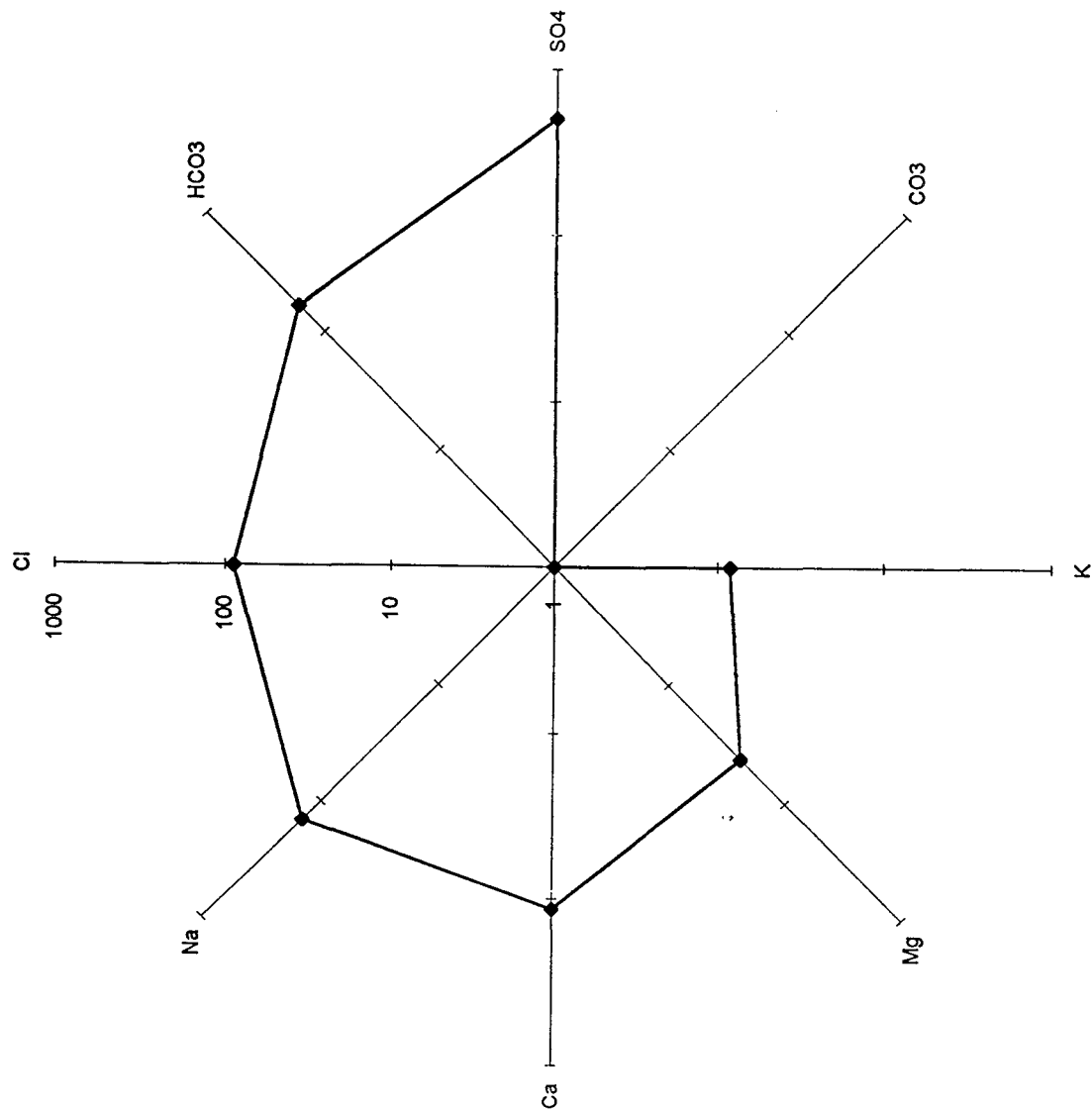
MW #3



Cardinal Labs

Radar Plot

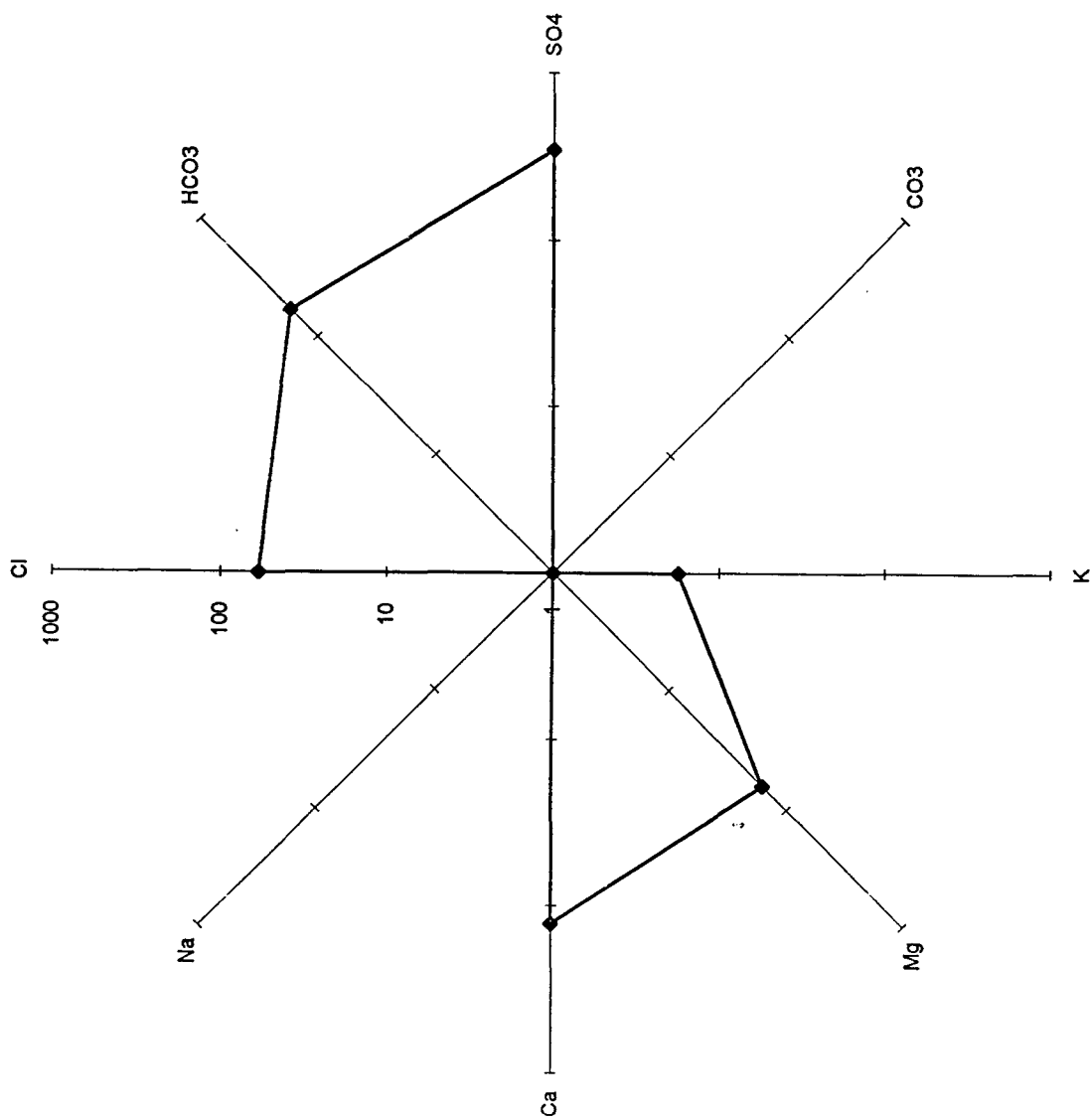
MW #4



Cardinal Labs

Radar Plot

MW #5



Cardinal Labs



ARDINAL
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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: 02/12/99
Reporting Date: 02/17/99
Project Number: NOT GIVEN
Project Name: KOCH OIL MONITOR WELL
Project Location: KROUCH STATION

Analysis Date: 02/15/99
Sampling Date: 02/12/99
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: AH
Analyzed By: BC

LAB NUMBER	SAMPLE ID	BENZENE (mg/l)
H4019-2	M.W. #3	126
Quality Control		0.090
True Value QC		0.100
% Accuracy		90.2
Relative Percent Difference		3.1

METHOD: EPA SW 846-8260

Burgess R. Cash
Chemist

2/17/99
Date

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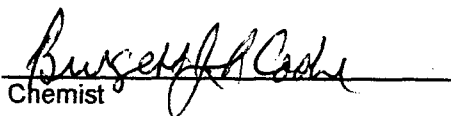
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

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: 02/12/99
Reporting Date: 02/24/99
Project Number: NOT GIVEN
Project Name: KOCH OIL MONITOR WELL
Project Location: KROUCH STATION

Sampling Date: 02/12/99
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: AH
Analyzed By: AH

LAB NUMBER	SAMPLE ID	Ba (mg/L)	Cr (mg/L)
ANALYSIS DATE:		02/16/99	02/17/99
H4019-1	M.W. #1	<1	<0.05
H4019-2	M.W. #3	<1	<0.05
H4019-3	M.W. #4	<1	<0.05
H4019-4	M.W. #5	<1	<0.05
Quality Control		17.58	0.990
True Value QC		20.00	1.000
% Recovery		88	99
Relative Percent Difference		3.03	0.4
METHODS: EPA 600/4-79-020		208.1	218.1


Chemist

2/24/99
Date

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

CITIZEN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

WS 1

Phone #: 397-0510
FAX #: 393-4388

703 E. Clinton #703 Johns, Ann

Project Name:

Couch Monitor Wells

Sanjiv S. Srinivasan

Koch Crock Station

LAB # (LAB USE) ONLY	FIELD CODE	# CONTAINERS:	Volume/Amount	MATRIX	PRESERVATIVE METHOD		SAMPLING								
				WATER	SOIL	AIR	SLUDGE	OTHER	HCL	HNO3	ACE/CO2	NONE	OTHER	DATE	TIME

H306 - Existing monitor well inside berm #1

H3016	Existing mortar well inside berm	5	X		X	29	loop
-------	----------------------------------	---	---	--	---	----	------

Signature: _____

4/30/98

7:50 am

Received by:
Beitz Albert

Relinquished by: Dez Adams

4/30/98

7.15am

RECEIVED BY

Relinquished by:

21/2010

45

Received by Laboratory: *Jan 10 1964*

Received by Laboratory: *1000*

Safety & Environmental Solutions, Inc.

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

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

Project Name:

Phone #:

ESI

FAX #:

ANALYSIS REQUEST

Company Name & Address:

Project #:

Project Name:

Koch Krouch St. M.W.

Project Location:

Sampler Signature:

Krouch station

D. W. K.

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX				PRESERVATIVE METHOD						SAMPLING		
				WATER	SOIL	AIR	SLUDGE	OTHER	HCL	HNO3	ICE	NONE	OTHER	DATE	TIME	
136162	#1 M.W.#3 20'	1		✓								✓			4-30-98	1:04
136163	#2 M.W.#3 58'	1		✓								✓				
136164	M.W.#3	4		✓								✓				

Relinquished by:

D. W. K.

Date:

4-30-98

Relinquished by:

Date:

Relinquished by:

Date:

Received by:

Received by:

Received by Laboratory:

REMARKS

TCLP Metals Ag As Ba Cd Cr Pb Hg Se
TCLP Metals Ag As Ba Cd Cr Pb Hg Se
TCLP Volatiles
TCLP Semi Volatiles
TDS
RCI
WQCC Metals
PAH
Cations Anions

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

CITIZEN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

Phone #:

3278

Company Name & Address:

Project Name:

Sampler Signature:

Kroach St. M.W.

[Handwritten signature]

[illegible]

<div style="display: flex; justify-content: space-between;"> <div> <p> 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 </p> </div> <div> <p> 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 </p> </div> </div>	<div style="display: flex; justify-content: space-between;"> <div> <p> 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 </p> </div> <div> <p> 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184</</p></div></div>
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Time:

314/150

De-Li, 11

Time:

Digitized by

Thema:

ARDINAL LABORATORIES, INC.

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

Page of [illegible]

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Page ____ of ____

ANALYSIS REQUEST

Company Name: <i>SESF</i>	BILL TO		PO #:
Project Manager:			
Address:	Company:		
City:	State:	Zip:	Attn:
Phone #:	Address:		
Fax #:	City:		
Project #:	Project Owner:		State:
Project Name:			Zip:
Project Location:	Phone #:		
	Fax #:		

[illegible]

Terms and Conditions: Interest will be charged on all accounts more than 90 days past due at the rate of 24% per annum from the original date of invoice, and all costs of collections, including attorney's fees.

Sampler Relinquished: _____ Date: _____ Time: _____		Received By: _____ Date: 5/1/98 Time: 3:30		Checked By: _____ (Initials)	
Relinquished By: _____ Date: _____ Time: _____		Received By: (Lab Staff) _____ Date: _____ Time: _____		Sample Condition: Cool <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Intact <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Delivered By: (Circle One) _____ Date: _____ Time: _____		Received By: _____ Date: _____ Time: _____		Checked By: _____ (Initials)	

Sampler - UPS - Bus - Other: _____

Remarks: _____

Phone Result: ☐ Yes ☐ No
 Fax Result: ☐ Yes ☐ No

Additional Fax #: _____

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

CITIZEN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

ಇದರಲ್ಲಿ ೨೦೦೦

Phone #:

Итого:

SEI

Company Name & Address:

॥ ५५॥

Project Name:

Mon. Feb.

Koch Krack Station wells

॥४५॥

Sample Size

Kroual Station

0-1176

TRIN	PRESERVATIVE	SAMPLING
------	--------------	----------

LABOR

FIELD CODE

(ONLY LAB USE)

M. W. #3

-2 M, W, #4

Rechnungsnummer:

Oce Wha Hcy

Relinquished by:

Relinquished by: *Austin Lind*

Received by:

Relinquished by:

Date:

85-9-5

D. 1. 2.

5-1-98

Date:

Date: _____

Time:

2:00:8

Time

WFOO: b

முடிவு:

Tues:

Received by

Received by:

Received by Laboratory:

REMARKS

received by: Bureau of Cash

Received by Laboratory:

ARDINAL LABORATORIES, INC.

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

Page _____ of _____

Company Name: SEI		BILL TO PO #:	
Project Manager: Dec Whalley		Company:	
Address: 203 E. Clinton Suite 103		Attn:	
City: Hobbs State: NM Zip: 88240		Address:	
Phone #: 397-0510		City:	
Fax #: 393-4388		State:	
Project #: _____		Zip: _____	
Project Name: Koch Oil Monitor Well		Phone #: _____	
Project Location: Krocker Station		Fax #: _____	

LAB I.D.	Sample I.D.	(G)RAB OR (C)OMP.	MATRIX						PRES.	SAMPLING	DATE	TIME
			GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:				
144019-1	M.W. #1	1	✓						✓		2-12-99	12:00pm
-2	M.W. #3	3	✓						✓		2-12-99	✓
-3	M.W. #4	1	✓						✓		2-12-99	✓
-4	M.W. #5	1	✓						✓		2-12-99	✓

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Terms and Conditions: Interest will be charged on all accounts more than 30 days past due at the rate of 24% per annum from the original date of invoice, and all costs of collections, including attorney's fees.

Relinquished By: Date: 2-12-99 Time: 12:00pm	Received By: Lab Staff Date: 2/12/99 Time: 12:00
--	---

Delivered By: (Circle One) Sampler - UPS - Bus - Other:	Checked By: (Initials)
--	----------------------------

Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No Fax Result: <input type="checkbox"/> Yes <input type="checkbox"/> No Additional Fax #: _____	REMARKS:
---	----------

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**Safety & Environmental
Solutions, Inc.**

**KOCH PIPELINE CO., L.P.
Crouch Station**

COPY

COPY

**Quarterly Report
January 1999
Air Monitoring Program
Lea County, New Mexico**

*Safety & Environmental Solutions, Inc.
703 E. Clinton Suite 103*

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Method1

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Purpose

The purpose of this project is to monitor the air quality from the SVE unit at the Crouch Station in Section 18 Township 18S Range 36E in Lea County, New Mexico and provide quarterly reports of the findings.

Background

Koch Pipeline, Co., L.P., had previously installed a SVE Unit at the Crouch Station, as required by the New Mexico Oil Conservation Division. Safety and Environmental Solutions was contracted to monitor the air quality of the SVE unit beginning in October 1997 and to report the findings on a quarterly basis.

Method

A Photovac MicroTIP Photo Ionization Detector is used for air sampling at the SVE Unit for BTEX detection, following the SOP delineated by the manufacturer. The procedure for sampling is as follows:

- The PID sets its zero point using Zero Grade Gas, which is placed, in a SKC Tedlar sample bag. After setting zero point, the concentration of the isobutylene Span Gas, 100ppm, is entered into the PID and the PID is then calibrated with the Span Gas which is placed in a new SKC Tedlar sample bag that has been purged with Span Gas prior to sampling.
- Three samples of air from the SVE Unit are collected in the SKC Tedlar sample bags, then tested using the MicroTIP PID. The first result is thrown out, to accommodate any purging, and the next two samples are recorded. (See Sampling Log)

Sampling was done on a weekly basis at the SVE Unit, following the same protocol for each test.

Observations

The readings have stayed in the 100-350ppm range, with the highest reading on December 3, 1998, at 347ppm. Two weeks later the reading taken on December 17, 1998, showed the lowest readings at 97.8 & 101ppm respectively. (See Air Sampling Report) They have stayed in the above mentioned range through January 19, 1999, the end of the sampling for this quarter. The flow rate for the system is currently 23scfm.

On January 19, 1999, an air sample was collected using the correct SOPs and taken to Cardinal Laboratories for third party analysis and confirmation of our results. Our results on that date ranged from 212ppm to 217ppm. The following table represents the results of the air sample:

ANALYTES	AIR SAMPLE
Sample Date	1/19/99
BTEX	
Benzene	<2.0
Toluene	12.0
Ethyl Benzene	13.8
Total Xylenes	17.8

These results are reported in parts per million (ppm).

Figures

Air Sampling Report
Sampling Log
Laboratory Test Results
Chain of Custody

Safety & Environmental Solutions, Inc.

Koch Operations Group Crouch Station Quarterly Air Sampling Report

Detector Type: Photoionization

Tester Brand: Microtip

Tester Model: MP 100

Serial Number: NA890005

Manufacture Date: 8/97

Monitor is calibrated with 100ppm Isobutylene prior to testing on each sampling date.

Date Sampled	Time Sampled	1st Sample Results	2nd Sample Results
10-31-98	1433	276ppm	300ppm
11-07-98	1635	301ppm	326ppm
11-14-98	1626	299ppm	310ppm
11-19-98	1345	200ppm	216ppm
11-26-98	1423	222ppm	236ppm
12-03-98	1347	322ppm	347ppm
12-10-98	1123	198ppm	216ppm
12-17-98	0900	97.8ppm	101ppm
12-23-98	0857	111ppm	119ppm
12-30-98	0953	198ppm	202ppm
01-04-99	1217	206ppm	206ppm
01-06-99	1121	188ppm	184ppm
01-13-99	1423	194ppm	199ppm
01-19-99	0736	212ppm	217ppm

*Safety & Environmental
Solutions, Inc.
Hobbs, NM*



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: BETH ALDRICH
703 E. CLINTON, SUITE 103
HOBBS, NM 88240
FAX TO:

Receiving Date: 01/19/99
Reporting Date: 01/20/99
Project Owner: KOCH OIL
Project Name: NOT GIVEN
Project Location: CROUCH STATION

Sampling Date: 01/19/99
Sample Type: AIR BAG
Sample Condition: COOL & INTACT
Sample Received By: BC
Analyzed By: BC

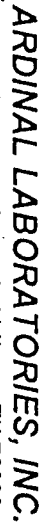
LAB NO.	SAMPLE ID	BENZENE (mg/M ³)	TOLUENE (mg/M ³)	ETHYL BENZENE (mg/M ³)	TOTAL XYLENES (mg/M ³)
ANALYSIS DATE		01/19/99	01/19/99	01/19/99	01/19/99
H3998-1	AIR	<2.0	12.0	13.8	17.8
Quality Control		88.8	98.7	97.4	294
True Value QC		100	100	100	300
% Recovery		89	99	97	98
Relative Percent Difference		7.9	5.1	4.1	1.4

METHOD: EPA SW- 846 8260

Bryan R. Coche
Chemist

V20/99
Date

H3998-1.XLS



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

Page _____ of _____

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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Safety & Environmental

Solutions, Inc.

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KOCH PIPELINE CO., L.P.
Crouch Station

Quarterly Report
Air Monitoring Program
Lea County, New Mexico

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

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Purpose

The purpose of this project is to monitor the air quality from the SVE unit at the Crouch Station in Section 18 Township 18S Range 36E in Lea County, New Mexico and provide quarterly reports of the findings.

Background

Koch Pipeline, Co., L.P., had previously installed a SVE Unit at the Crouch Station, as required by the New Mexico Oil Conservation Division. Safety and Environmental Solutions was contracted to monitor the air quality of the SVE unit beginning in October 1997 and to report the findings on a quarterly basis.

Method

A Photovac MicroTIP Photo Ionization Detector is used for air sampling at the SVE Unit for BTEX detection, following the SOP delineated by the manufacturer. The procedure for sampling is as follows:

- The PID sets its zero point using Zero Grade Gas, which is placed, in a SKC Tedlar sample bag. After setting zero point, the concentration of the isobutylene Span Gas, 100ppm, is entered into the PID and the PID is then calibrated with the Span Gas which is placed in a new SKC Tedlar sample bag that has been purged with Span Gas prior to sampling.
- Three samples of air from the SVE Unit are collected in the SKC Tedlar sample bags, then tested using the MicroTIP PID. The first result is thrown out, to accommodate any purging, and the next two samples are recorded. (See Sampling Log)

Sampling was done on a weekly basis at the SVE Unit, following the same protocol for each test.

Observations

The readings have stayed in the 200ppm range, with the highest reading on September 11, 1998, at 283ppm. The next reading, taken on September 18, 1998, showed the lowest readings at 127 & 136ppm. (See Air Sampling Report) They have stayed in the 200ppm range through October 23, 1998, the end of the sampling for this quarter.

On October 16, 1998, an air sample was collected using the correct SOPs and taken to Cardinal Laboratories for third party analysis confirmation of our results. Our results on that date ranged from 213ppm to 215ppm. The following table presents the results of the air sample:

ANALYTES		AIR
		SAMPLE
Sample Date		10/16/98
BTEX		
Benzene		0.419
Toluene		4.12
Ethyl Benzene		3.39
Total Xylenes		4.51

Figures

Air Sampling Report
Sampling Log
Laboratory Test Results
Chain of Custody

Safety & Environmental Solutions, Inc.

Koch Operations Group Crouch Station Quarterly Air Sampling Report

Detector Type: Photoionization

Tester Brand: Microtip

Tester Model: MP 100

Serial Number: NA890005

Manufacture Date: 8/97

Monitor is calibrated with 100ppm Isobutylene prior to testing on each sampling date.

Date Sampled	Time Sampled	1st Sample Results	2nd Sample Results
7-29-98	1132	267ppm	269ppm
8-05-98	0712	243ppm	246ppm
8-16-98	1540	219ppm	221ppm
8-22-98	1730	241ppm	243ppm
8-29-98	1516	199ppm	236ppm
9-05-98	1651	206ppm	206ppm
9-11-98	1058	275ppm	283ppm
9-18-98	1148	127ppm	136ppm
9-25-98	1428	142ppm	144ppm
10-02-98	0924	220ppm	222ppm
10-08-98	0748	219ppm	229ppm
10-16-98	0835	213ppm	215ppm
10-23-98	1433	176ppm	184ppm

5/6/98	295 ppm	279 ppm	8:00 AM
5/8/98	302 ppm	307 ppm	3:00 PM
5-12-98	266 ppm	223 ppm	1:51 PM
5-13-98	266 ppm	223 ppm	1:51 PM
5-15-98	211 ppm	218 ppm	6:45 PM
5-18-98	246 ppm	252 ppm	2:27 PM
5-22-98	223 ppm	226 ppm	7:49 AM
5-29-98	274 ppm	282 ppm	8:16 AM
6-1-98	300 ppm		9:44 AM
6-11-98	211 ppm	215 ppm	8:30 AM
6-19-98	255 ppm	263 ppm	7:11 AM
6-26-98	297 ppm	294 ppm	10:29 AM
6-30-98	294 ppm	301 ppm	2:29 PM
7-7-98	287 ppm	291 ppm	10:47 AM
7-14-98	254 ppm	262 ppm	9:36 AM
7-22-98	228 ppm	234 ppm	2:18 PM
7-29-98	267 ppm	269 ppm	11:32 AM
8-5-98	243 ppm	246 ppm	7:12 AM
8-16-98	219 ppm	221 ppm	3:40 PM
8-27-98	241 ppm	242 ppm	5:50 PM
8-29-98	199 ppm	236 ppm	3:16 PM
9-5-98	206 ppm	206 ppm	4:51 PM
9-11-98	275 ppm	283 ppm	10:58 AM
9-18-98	127 ppm	136 ppm	11:48 AM
9-25-98	142 ppm	144 ppm	2:28 PM
10-2-98	220 ppm	222 ppm	9:24 AM
10-8-98	219 ppm	229 ppm	7:46 AM
10-16-98	213 ppm	215 ppm	8:55 AM
10-23-98	176 ppm	184 ppm	2:33 PM

20 gal
more
to bbl

Koch Operations Group

Koch Pipeline
Crouch Station
Copy of Sampling Log

Safety & Environmental
Solutions, Inc.
Hobbs, NM



ARDINAL LABORATORIES

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

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

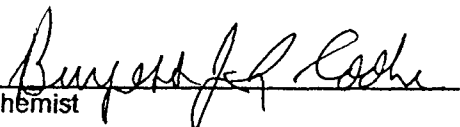
ANALYTICAL RESULTS FOR
SAFETY & ENVIRONMENTAL SOLUTIONS, INC.
ATTN: BETH ALDRICH
703 E. CLINTON SUITE 103
HOBBS, NM 88240
FAX TO:

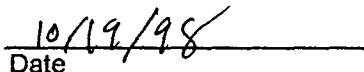
Receiving Date: 10/16/98
Reporting Date: 10/19/98
Project Number: NOT GIVEN
Project Name: AIR MONITOR
Project Location: CROUCH STATION

Sampling Date: 10/16/98
Sample Type: AIR BAG
Sample Condition: INTACT
Sample Received By: JS
Analyzed By: BC

LAB NO.	SAMPLE ID	BENZENE (mg/M ³)	TOLUENE (mg/M ³)	ETHYL BENZENE (mg/M ³)	TOTAL XYLENES (mg/M ³)
ANALYSIS DATE		10/16/98	10/16/98	10/16/98	10/16/98
H3885-1	AIR SAMPLE	0.419	4.12	3.39	4.51
Quality Control		90.2	103	101	303
True Value QC		100	100	100	300
% Recovery		90.2	103	101	101
Relative Percent Difference		7.7	11.4	10.3	8.5

METHOD: EPA SW 846-8260


Chemist


Date

H3885-1.XLS

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.

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(915) 673-7001 Fax (915) 673-7020 (505) 393-2326 Fax (505) 393-2476

Page of

ANALYSIS REQUEST

Company Name: <i>SARAH H. KENNEDY & ASSOCIATES</i>	BULL TO	PO #:
Project Manager: <i>BETH A. ADKINS</i>	Company: <i>SAH</i>	
Address: <i>703 E. CITTENOW ST. #103</i>	Attn: <i>BEITH</i>	
City: <i>ALBANY</i>	Address:	
State: <i>NY</i>	City:	
Zip: <i>12204</i>	State:	
Phone #: <i>(518) 397-0510</i>	Phone #:	
Fax #:	Fax #:	
Project #: <i>000</i>	Project Owner: <i>Kennedy</i>	
Project Name: <i>AIR MONITOR</i>		
Project Location: <i>CROUCH STATION</i>		

[illegible]

Terms and Conditions: Interest will be charged on all accounts more than 30 days past due at the rate of 24% per annum from the original date of invoice, and all costs of collections, including attorney's fees.

the client for the
ation of the applicable
its subsidiaries,
or otherwise.

Phone Result ☐ Yes ☐ No Additional Fax #:

Fax Result: ☐ Yes ☐ No

REMARKS:

Received By:

Date: _____

10/16/98

Time: _____

Received By: (Lab Staff)

Date:

86-91001

Time:

Delivered By: (Circle One)

Sampler - UPS - Bus - Other:

Sample Condition	CHECKED BY:
Cool Intact	(Initials)

+ Cardinal cannot accept verbal changes. Please fax written changes to 915-673-7020.



Safety & Environmental Solutions, Inc.

COPY

**KOCH PIPELINE CO., L.P.
Crouch Station**

**Quarterly Report
Air Monitoring Program
Lea County, New Mexico,**

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

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Purpose

The purpose of this project is to monitor the air quality from the SVE unit at the Crouch Station in Section 18 Township 18S Range 36E in Lea County, New Mexico and provide quarterly reports of the findings.

Background

Koch Pipeline, Co., L.P., had previously installed a SVE Unit at the Crouch Station, as required by the New Mexico Oil Conservation Division. Safety and Environmental Solutions was contracted to monitor the air quality of the SVE unit beginning in October 1997 and to report the findings on a quarterly basis.

Method

A Photovac MicroTIP Photo Ionization Detector is used for air sampling at the SVE Unit for BTEX detection, following the SOP delineated by the manufacturer. The procedure for sampling is as follows:

- The PID sets its zero point using Zero Grade Gas, which is placed, in a SKC Tedlar sample bag. After setting zero point, the concentration of the isobutylene Span Gas, 100ppm, is entered into the PID and the PID is then calibrated with the Span Gas which is placed in a new SKC Tedlar sample bag that has been purged with Span Gas prior to sampling.
- Three samples of air from the SVE Unit are collected in the SKC Tedlar sample bags, then tested using the MicroTIP PID. The first result is thrown out, to accommodate any purging, and the next two samples are recorded. (See Sampling Log)

Sampling was done twice weekly basis at the SVE Unit, following the same protocol for each test until June 1, 1998, when Koch personnel requested that we only sample once per week.

Observations

The readings stayed in the 3000ppm range and peaked on May 1, 1998 at 4000ppm. The next reading, taken on May 6, 1998, showed the readings in the 300ppm range once again. (See Air Sampling Report) They have stayed in that range through July 22, 1998, the end of the sampling for this quarter.

On July 7, 1998, an air sample was collected using the correct SOPs and taken to Cardinal Laboratories for third party analysis confirmation of our results. Our results on that date ranged from 287ppm to 291ppm. The following table presents the results of the air sample:

ANALYTES		AIR	
		SAMPLE	
Sample Date		7/07/98	
BTEX			
Benzene		24.6	
Toluene		132	
Ethyl Benzene		93.0	
M, P - Xylene		86.3	
O - Xylene		32.0	

Figures

Air Sampling Report
Sampling Log
Laboratory Test Results
Chain of Custody

Safety & Environmental Solutions, Inc.

Koch Operations Group Crouch Station Quarterly Air Sampling Report

Detector Type: Photoionization

Tester Brand: Microtip

Tester Model: MP 100

Serial Number: NA890005

Manufacture Date: 8/97

Monitor is calibrated with 100ppm Isobutylene prior to testing on each sampling date.

Date Sampled	Time Sampled	1 st Sample Results	2 nd Sample Results
4-21-98	1323	2993ppm	3045ppm
4-24-98	1430	2926ppm	2990ppm
4-29-98	1105	2561ppm	2785ppm
5-01-98	1235	4019ppm	4044ppm
5-06-98	0800	295ppm	299ppm
5-08-98	1500	302ppm	307ppm
5-12-98	1351	266ppm	223ppm
5-15-98	1845	211ppm	218ppm
5-18-98	1427	246ppm	252ppm
5-22-98	0749	223ppm	226ppm
5-29-98	0816	274ppm	282ppm
6-01-98	0944	300ppm	300ppm
6-11-98	0830	211ppm	215ppm
6-19-98	0911	255ppm	263ppm
6-26-98	1029	297ppm	294ppm
6-30-98	1429	294ppm	301ppm
7-07-98	1047	287ppm	291ppm
7-14-98	0936	254ppm	262ppm
7-22-98	1132	267ppm	269ppm

4-21-98	2993 ppm	3045 ppm	1:23 pm
4-24-98	2926 ppm	2990 ppm	2:30 pm
4-29-98	2561 ppm	2785 ppm	11:05 AM
5-1-98	4019 ppm	4044 ppm	12:35 pm

5/6/98	295 ppm	299 ppm	8:00 AM
5/8/98	302 ppm	307 ppm	3:00 pm
5-12-98	266 ppm	223 ppm	1:51 pm
5-15-98	211 ppm	218 ppm	6:45 pm
5-15-98	211 ppm	218 ppm	6:45 pm
5-18-98	246 ppm	252 ppm	2:27 pm
5-22-98	223 ppm	226 ppm	7:49 AM
5-29-98	274 ppm	282 ppm	8:16 AM
6-1-98	300 ppm	302 ppm	9:44 AM
6-11-98	211 ppm	215 ppm	8:30 AM
6-19-98	255 ppm	263 ppm	9:11 AM
6-26-98	297 ppm	294 ppm	10:29 AM
6-30-98	294 ppm	301 ppm	2:29 pm
7-7-98	287 ppm	291 ppm	10:47 AM
7-14-98	254 ppm	262 ppm	9:36 AM
7-22-98	228 ppm	234 ppm	2:18 pm
7-29-98	267 ppm	269 ppm	11:37 AM

Koch Operations Group

Koch Pipeline
Crouch Station
Copy of Sampling Log

Safety & Environmental
Solutions, Inc.
Hobbs, NM



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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/SCOTT WINDHAM
703 E. CLINTON, SUITE 103
HOBBS, NM 88240
FAX TO: (505) 393-4388

Receiving Date: 07/07/98
Reporting Date: 07/09/98
Project Number: 2
Project Owner: KOCH OIL CO.
Project Name: KOCH OIL COMPANY CROUCH
Project Location: CROUCH STATION
Sample ID: NOT GIVEN
Lab Number: H3718-1
Modified Reporting Date: 07/27/98

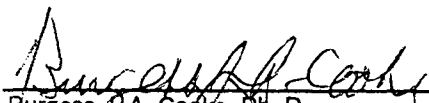
Analysis Date: 07/07/98
Sampling Date: 07/07/98
Sample Type: GAS (TEDLAR BAG)
Sample Condition: INTACT
Sample Received By: AH
Analyzed By: BC

VOLATILES - 8260 (mg/M ³)		Sample Result	Method	True Value	
		H3718-1	Blank	QC %Recov.	QC
1	Benzene	24.6	<2.0	91.0	100
2	Toluene	132	<2.0	96.3	100
3	Ethylbenzene	93.0	<2.0	96.9	100
4	m, p - Xylene	86.3	<2.0	194	200
5	o-Xylene	32.0	<2.0	96.5	100

% Recovery

6	Dibromofluoromethane	89
7	Toluene-D8	98
8	4-Bromofluorobenzene	104

METHODS: EPA SW-846-8260.


Burgess A. Cooke, Ph. D.

7/27/98
Date

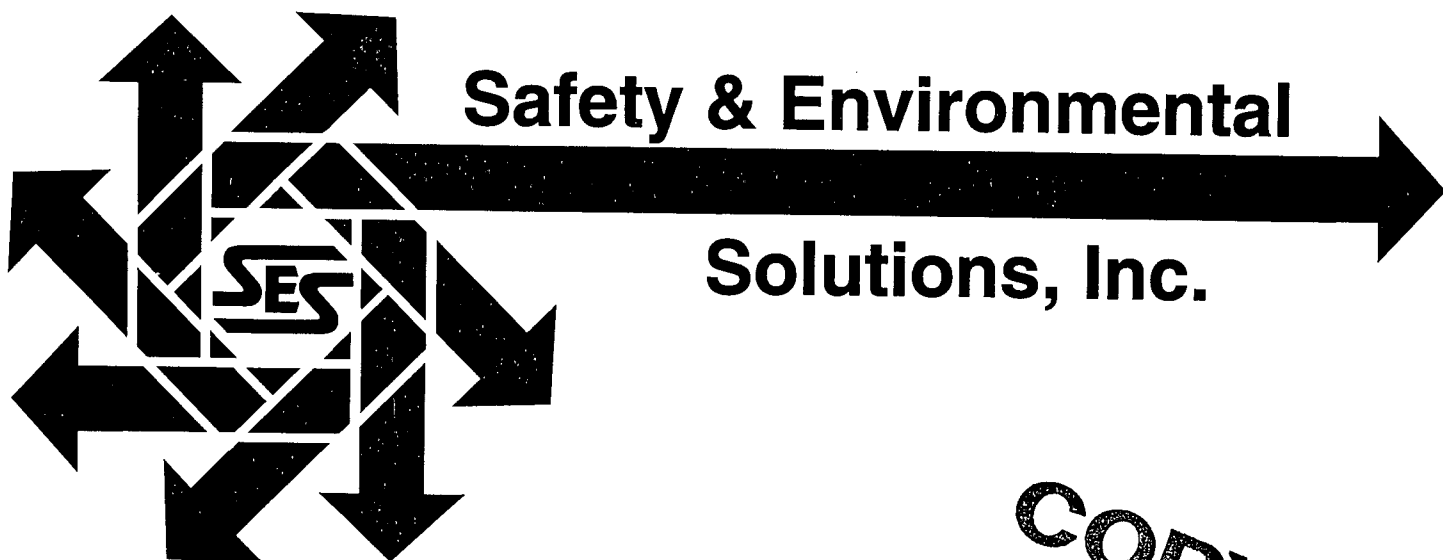
PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of 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.

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Page 7 of 1[illegible]

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Safety & Environmental

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KOCH PIPELINE CO., L.P.
Crouch Station

Quarterly Report
Air Monitoring Program
Lea County, New Mexico

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

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- The PID sets its zero point using Zero Grade Gas which is placed in a SKC Tedlar sample bag. After setting zero point, the concentration of the isobutylene Span Gas, 100ppm, is entered into the PID and the PID is then calibrated with the Span Gas which is placed in a new SKC Tedlar sample bag that has been purged with Span Gas prior to sampling.
- Three samples of air from the SVE Unit are collected in the SKC Tedlar sample bags, then tested using the MicroTIP PID. The first result is thrown out, to accommodate any purging, and the next two samples are recorded. (See Sampling Log)

Sampling is done on twice weekly basis at the SVE Unit, following the same protocol for each test.

Results

The sampling has produced test results in the around the 200ppm range until early March 1998. On February 24, 1998, the Condensate that is produced was disposed of through proper channels (See attached Disposal records). On March 10, 1998, the readings jumped to the 600ppm range, still under the 1000ppm limit.

Beginning on March 10, 1998, however, the readings began to rise, surpassing the 1000ppm limit on March 31, 1998, and remaining above the limit through the April 17, 1998 reading for the quarter. (See Air Sampling Report) On April 3, 1998, some minor maintenance was performed on the top of the evaporator. The rise in the amount of contaminant that has been observed

Crouch Station
Quarterly Sampling Report

KOCH PIPELINE CO., L.P.
May 12, 1998

during this quarter could be the result of an increase in soil temperature due to the changing seasons and the evaporative nature of the contaminant as well as the maintenance problem with the top of the evaporator.

Figures

Air Sampling Report

Sampling Log

Disposal Records for Produced Condensate

Safety & Environmental Solutions, Inc.

Koch Operations Group Crouch Station Quarterly Air Sampling Report

Detector Type: Photoionization

Tester Brand: Microtip

Tester Model: MP 100

Serial Number: NA890005

Manufacture Date: 8/97

Monitor is calibrated with 100ppm Isobutylene prior to testing on each sampling date.

Date Sampled	Time Sampled	1 st Sample Results	2 nd Sample Results
01-24-98	0830	113ppm	96ppm
01-27-98	1015	96ppm	83ppm
01-30-98	1500	95ppm	62ppm
02-03-98	0950	74ppm	77ppm
02-06-98	1400	63.6ppm	67.2ppm
02-11-98	1400	58.4ppm	60.3ppm
02-13-98	1000	61.3ppm	65.7ppm
02-17-98	1300	100ppm	111ppm
02-20-98	1500	188ppm	191ppm
02-24-98	1300	191ppm	194ppm*
02-27-98	1230	181ppm	183ppm
03-02-98	1503	181ppm	183ppm
03-06-98	1130	166ppm	167ppm
03-10-98	1110	609ppm	610ppm
03-13-98	1020	500ppm	504ppm
03-17-98	0732	538ppm	548ppm
03-20-98	0846	448ppm	456ppm
03-25-98	0706	783ppm	801ppm
03-27-98	1502	790ppm	825ppm
03-31-98	1404	1106ppm	1162ppm
04-03-98	1349	1433ppm	1443ppm
04-07-98	0817	1244ppm	1275ppm
04-10-98	0914	1628ppm	1632ppm
04-14-98	1339	1604ppm	1624ppm
04-17-98	1400	2083ppm	2096ppm

* Water from SVE unit disposed of through proper channels. (See Disposal Forms)

1/30/98	3:00pm	95ppm	62ppm
2-3-98	4:50pm	74ppm	77ppm
2-6-98	2:00pm	63ppm	67.2ppm
2-11-98	2:40pm	58.7ppm	60.3ppm
2-13-98	10:00pm	61.3ppm	65.7ppm
2-17-98	1:00pm	100ppm	111ppm
2-20-98	3:00pm	188ppm	191ppm
2-24-98	1:00pm	191ppm	194ppm
2-27-98	12:30pm	91ppm	183ppm
3-2-98	3:03pm	181ppm	183ppm
3-6-98	11:30	166ppm	167ppm
3-10-98	11:10	609ppm	610ppm
3-13-98	10:20	500ppm	504ppm
3-17-98	7:32pm	538ppm	548ppm
3-20-98	4:46pm	445ppm	456ppm
3-25-98	7:06pm	763ppm	801ppm
3-27-98	5:02pm	790ppm	825ppm
3-31-98	2:04pm	1106ppm	1162ppm
4-3-98	1:49pm	1433ppm	1443ppm
4-7-98	8:17pm	1244ppm	1275ppm
4-10-98	9:14pm	1628ppm	1632ppm
4-14-98	1:34pm	1604ppm	1624ppm
4-17-98	2:02pm	2083ppm	2096ppm
4-21-98	2:49pm	3045ppm	1:23pm
4-24-98	2:26pm	2490ppm	2:30pm

Dispose of water

NO WATER TO DISPOSE

5:25pm
TOP OF EVAPORATOR

Koch Operations Group

Koch Pipeline
Crouch Station
Copy of Sampling Log

Safety & Environmental
Solutions, Inc.
Hobbs, NM

Sundance Services, Inc.

P.O. Box 1737 ★ Eunice, NM 88231
(505) 394-2511

112 10565

LEASE OPERATOR/SHIPPER/COMPANY: *Krook Operations Group*

LEASE NAME: *Krook Station*

TRANSPORTER COMPANY: *SESI*

TIME: *2:50 AM* ☒ PM

DATE: *2-24-98*

VEHICLE NO.: *1*

DRIVER NO.:

CHARGE TO: *SESI*

TYPE OF MATERIAL

☐ Production Water

☐ Drilling Fluids

☐ Completion Fluids

☐ Tank Bottoms

☐ Contaminated soil

☐ C-117 No.: _____

☒ Other Material:

☐ BS&W Content: _____

Description: *Exempt water 3 Drums (rinse)*

VOLUME OF MATERIAL ☐ BBLs. _____ : ☐ YARD _____ : ☒ *Drums*

AS A CONDITION TO SUNDANCE SERVICES, INC.'S ACCEPTANCE OF THE MATERIALS SHIPPED WITH THIS JOB TICKET, OPERATOR/SHIPPER REPRESENTS AND WARRANTS THAT THE WASTE MATERIAL SHIPPED HEREWITH IS MATERIAL EXEMPT FROM THE RESOURCE, CONSERVATION AND RECOVERY ACT OF 1976, AS AMENDED FROM TIME TO TIME, 40 U.S.C. § 6901, et seq., THE NM HEALTH AND SAF. CODE § 361.001, et seq., AND REGULATIONS RELATED THERETO, BY VIRTUE OF THE EXEMPTION AFFORDED DRILLING FLUIDS, PRODUCED WATERS, AND OTHER WASTE ASSOCIATED WITH THE EXPLORATION, DEVELOPMENT OR PRODUCTION OF CRUDE OIL OR NATURAL GAS OR GEOTHERMAL ENERGY.

ALSO AS A CONDITION TO SUNDANCE SERVICES, INC.'S ACCEPTANCE OF THE MATERIALS SHIPPED WITH THIS JOB TICKET, TRANSPORTER REPRESENTS AND WARRANTS THAT ONLY THE MATERIAL DELIVERED BY OPERATOR/SHIPPER TO TRANSPORTER IS NOW DELIVERED BY TRANSPORTER TO SUNDANCE SERVICES, INC.'S FACILITY FOR DISPOSAL.

THIS WILL CERTIFY that the above Transporter loaded the material represented by this Transporter Statement at the above described location, and that it was tendered by the above described shipper. This will certify that no additional materials were added to this load, and that the material was delivered without incident.

DRIVER: *W. D. ...*

(SIGNATURE)

FACILITY REPRESENTATIVE: *...*

(SIGNATURE)

FEB-23-98 MON 10:35

SUNDANCE SERVICES INC

FAX NO. 5053942590

P. 01

TRANSPORTER'S MANIFEST

MANIFEST# 1

Koch

SHIPPING FACILITY NAME & ADDRESS:

Koch Operations Group
Wichita Kansas
Attn: Dana Mourning

LOCATION OF MATERIAL:

Krouck Station

TRANSPORTER NAME & ADDRESS:

SESI
703 E. Clinton St. 103
Hobbs, NM 88240

DESCRIPTION OF WASTE:

QUANTITY:

3 drums

Exempt Water

Facility Contact:

Beth Aldrich
for SESI/Koch

Date:

2-24-98

Signature of Contact:

Beth Aldrich

NAME OF TRANSPORTER: (Driver)

Date:

2-24-98

Signature of Driver:

D. Whatley

W. Dee Whatley
DISPOSAL SITE:

Date:

Signature of
Representative

SUNDANCE SERVICES, INC.
PARABO FACILITY
P.O. BOX 1737
EUNICE, NM 88231



**Safety & Environmental
Solutions, Inc.**

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**KOCH PIPELINE CO., L.P.
Crouch Station**

**Quarterly Report
Air Monitoring Program
Lea County, New Mexico**

*Safety & Environmental Solutions, Inc.
703 E. Clinton Suite 103
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- Three samples of air from the SVE Unit are collected in the Kevlar sample bags, then tested using the MicroTIP PID. The first result is thrown out, to accommodate any purging, and the next two samples are recorded. (See Sampling Log)

Sampling is done on twice weekly basis at the SVE Unit, following the same protocol for each test.

Results

The sampling has produced test results in the single digit to just under 400ppm range, under the allowable 1000ppm limit. (See Air Sampling Report) No significant amount of contaminant has been observed during this quarter.

Figures

**Air Sampling Report
Sampling Log**

Safety & Environmental Solutions, Inc.

Koch Operations Group Crouch Station Quarterly Air Sampling Report

Detector Type: Photoionization

Tester Brand: Microtip

Tester Model: MP 100

Serial Number: NA890005

Manufacture Date: 8/97

OPY

Monitor is calibrated with 100ppm Isobutylene prior to testing on each sampling date.

Date Sampled	Time Sampled	1 st Sample Results	2 nd Sample Results
10-17-97	1400	388ppm	397ppm
10-29-97	1045	299ppm	315ppm
11-04-97	1415	356ppm	361ppm
11-06-97	0830	232ppm	260ppm
11-11-97	1300	296ppm	305ppm
11-14-97	1100	269ppm	270ppm
11-18-97	1640	287ppm	289ppm
11-21-97	1303	257ppm	262ppm
11-25-97	1203	194ppm	207ppm
12-02-97	0810	202ppm	213ppm
12-05-97	0915	187ppm	196ppm
12-09-97	1020	178ppm	208ppm
12-12-97	1330	153ppm	165ppm
12-16-97	0645	183ppm	197ppm
12-19-97	1427	97ppm	91ppm
12-23-97	1050	54ppm	51ppm
12-26-97	1700	91ppm	103ppm
12-28-97	1700	142ppm	159ppm
12-30-97	1310	3.7ppm	3ppm
01-02-98	1350	176ppm	164ppm
01-06-98	1620	188ppm	193ppm
01-10-98	0900	214ppm	193ppm
01-13-98	1755	190ppm	133ppm
01-16-98	0800	176ppm	182ppm
01-19-98	0735	183ppm	205ppm

COPY

DATE	TIME	Sample #1	Sample #2	Flow	mw#1 TOW	mw#2 TOW	mw#3 TOW
10-17-97	2:00pm	388ppm	397ppm				
10-29-97	10:45	299ppm	315ppm				
11-4-97	2:15PM	356PPM	361PPM				
11-6-97	8:30AM	232ppm	260PPM				
11-11-97	1:00PM	296PPM	305PPM				
11-14-97	11:00AM	269ppm	270ppm				
11-18-97	4:40pm	287PPM	289PPM				
11-21-97	1:03pm	257ppm	262ppm				
11-26-97	2:23pm	194ppm	207ppm				
12-2-97	6:10AM	202PPM	213PPM				
12/5/97	9:15AM	187PPM	196PPM				
12/9/97	10:30AM	178PPM	206PPM				
12/12/97	130PM	153PPM	165PPM				
12/16/97	6:45AM	183PPM	197PPM				
12/19/97	2:27PM	97PPM	91PPM				
12/23/97	10:50AM	54PPM	51PPM				
12/26/97	5:00PM	91PPM	103PPM				
12/28/97	5:00PM	143PPM	159PPM				
12/30/97	11:00PM	37PPM	30PPM				
1-2-98	1:50pm	176ppm	164ppm				
1-6-98	4:20PM	188PPM	193PPM				
1-10-98	7:00AM	214PPM	193PPM				
1-13-98	5:55PM	190PPM	133PPM				
1-16-98	8:00AM	176PPM	182PPM				
1-20-98	7:35AM	183PPM	205PPM				

Koch Operations Group

Koch Pipeline
Crouch Station
Copy of Sampling Log

Safety & Environmental
Solutions, Inc.
Hobbs, NM

Sundance Services, Inc.

P.O. Box 1737 ★ Eunice, NM 88231
(505) 394-2511

NE 10565

LEASE OPERATOR/SHIPPER/COMPANY: *Kent. Operations Group*

LEASE NAME: *Kearch Station*

TRANSPORTER COMPANY: *SESI*

TIME: *2:50 AM* (PM)

DATE: *2-24-98*

VEHICLE NO.: *1*

DRIVER NO.:

CHARGE TO: *SESI*

TYPE OF MATERIAL

☐ Production Water

☐ Drilling Fluids

☐ Completion Fluids

☐ Tank Bottoms

☐ Contaminated soil

☐ C-117 No.: _____

☒ Other Material:

☐ BS&W Content: _____

Description:

Exempt Water 3 Drums (rinse)

VOLUME OF MATERIAL ☐ BBLs. _____ :

☐ YARD _____ :

3 Drums

AS A CONDITION TO SUNDANCE SERVICES, INC.'S ACCEPTANCE OF THE MATERIALS SHIPPED WITH THIS JOB TICKET, OPERATOR/SHIPPER REPRESENTS AND WARRANTS THAT THE WASTE MATERIAL SHIPPED HERewith IS MATERIAL EXEMPT FROM THE RESOURCE, CONSERVATION AND RECOVERY ACT OF 1976, AS AMENDED FROM TIME TO TIME, 40 U.S.C. § 6901, et seq., THE NM HEALTH AND SAF. CODE § 361.001, et seq., AND REGULATIONS RELATED THERETO, BY VIRTUE OF THE EXEMPTION AFFORDED DRILLING FLUIDS, PRODUCED WATERS, AND OTHER WASTE ASSOCIATED WITH THE EXPLORATION, DEVELOPMENT OR PRODUCTION OF CRUDE OIL OR NATURAL GAS OR GEOTHERMAL ENERGY.

ALSO AS A CONDITION TO SUNDANCE SERVICES, INC.'S ACCEPTANCE OF THE MATERIALS SHIPPED WITH THIS JOB TICKET, TRANSPORTER REPRESENTS AND WARRANTS THAT ONLY THE MATERIAL DELIVERED BY OPERATOR/SHIPPER TO TRANSPORTER IS NOW DELIVERED BY TRANSPORTER TO SUNDANCE SERVICES, INC.'S FACILITY FOR DISPOSAL.

THIS WILL CERTIFY that the above Transporter loaded the material represented by this Transporter Statement at the above described location, and that it was tendered by the above described shipper. This will certify that no additional materials were added to this load, and that the material was delivered without incident.

DRIVER:

(SIGNATURE)

FACILITY REPRESENTATIVE:

(SIGNATURE)

White-Sundance Canary-Sundance Acct#1 Pink-Sundance Acct#2 Gold-Transporter
Revised 12/27/95

TRANSPORTER'S MANIFEST

MANIFEST# 1Koch

SHIPPING FACILITY NAME & ADDRESS:

Koch Operations Group
Wichita Kansas
Attn: Dana Mourning

LOCATION OF MATERIAL:

Krouch Station

TRANSPORTER NAME & ADDRESS:

SESI
703 E. Clinton St. 103
Hobbs, NM 88240

DESCRIPTION OF WASTE:

QUANTITY:

3 drumsExempt Water

Facility Contact:

Beth Aldrich
for SESI/Koch

Date:

2-24-98

Signature of Contact:

Beth Aldrich

NAME OF TRANSPORTER: (Driver)

Date:

2-24-98

Signature of Driver:

Dana Mourning

W. Dee Whatley
DISPOSAL SITE:

Date:

Signature of
Representative

SUNDANCE SERVICES, INC.
PARABO FACILITY
P.O. BOX 1737
EUNICE, NM 88231