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REPORTS

DATE:

2000

Safety & Environmental Solutions, Inc.

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ENVIRONMENTAL BUREAU
OIL CONSERVATION DIVISION

KOCH PIPELINE CO., L.P.

Crouch Station

Lea County, New Mexico

Annual Report - April 1, 2000

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 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. 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)

Work Performed

The monitor wells were sampled biannually as per the approved Work Plan. Three to five casing volumes of water in each well was bailed prior to sample collection with a properly decontaminated bailer to completely develop the monitor wells. The samples were placed in the appropriate containers, preserved, and transported under chain of custody to the laboratory for analysis. The first sampling of the reporting year was performed on August 31, 1999, and the results were reported in *Crouch Station Monitor Well Report, September 20, 1999*. The ground water samples were analyzed for the contaminates Benzene, Chromium and Barium as identified in the initial sampling. (See Attached September 20, 1999 Monitor Well Report)

The wells were again sampled on February 21, 2000, following proper SOPs and these results area included in this report. The ground water samples were again analyzed for the contaminates BTEX, Chromium and Barium as identified in the initial sampling.

In addition to the sampling, SESI also measured the depth to the top of the water table and the total depth of each well. The depth to the top of ground water was measured using a Solinst water level indicator. The total depth of each well was measured in order to compute the proper casing volumes. (See Cumulative Depth to Water Table)

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 Reports – April 1999 to January 2000)

Summary

The analysis of the groundwater samples performed by Cardinal Laboratories indicated elevated levels of Barium in **all** wells as well as elevated levels of Benzene in Monitor Wells #3, the upgradient well for the first test period. Additionally, Monitor Well #3 exhibited elevated levels of Benzene during the second sampling period and slightly elevated levels of Barium (1.07 ppm with an allowable 1.00 ppm limit).

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.

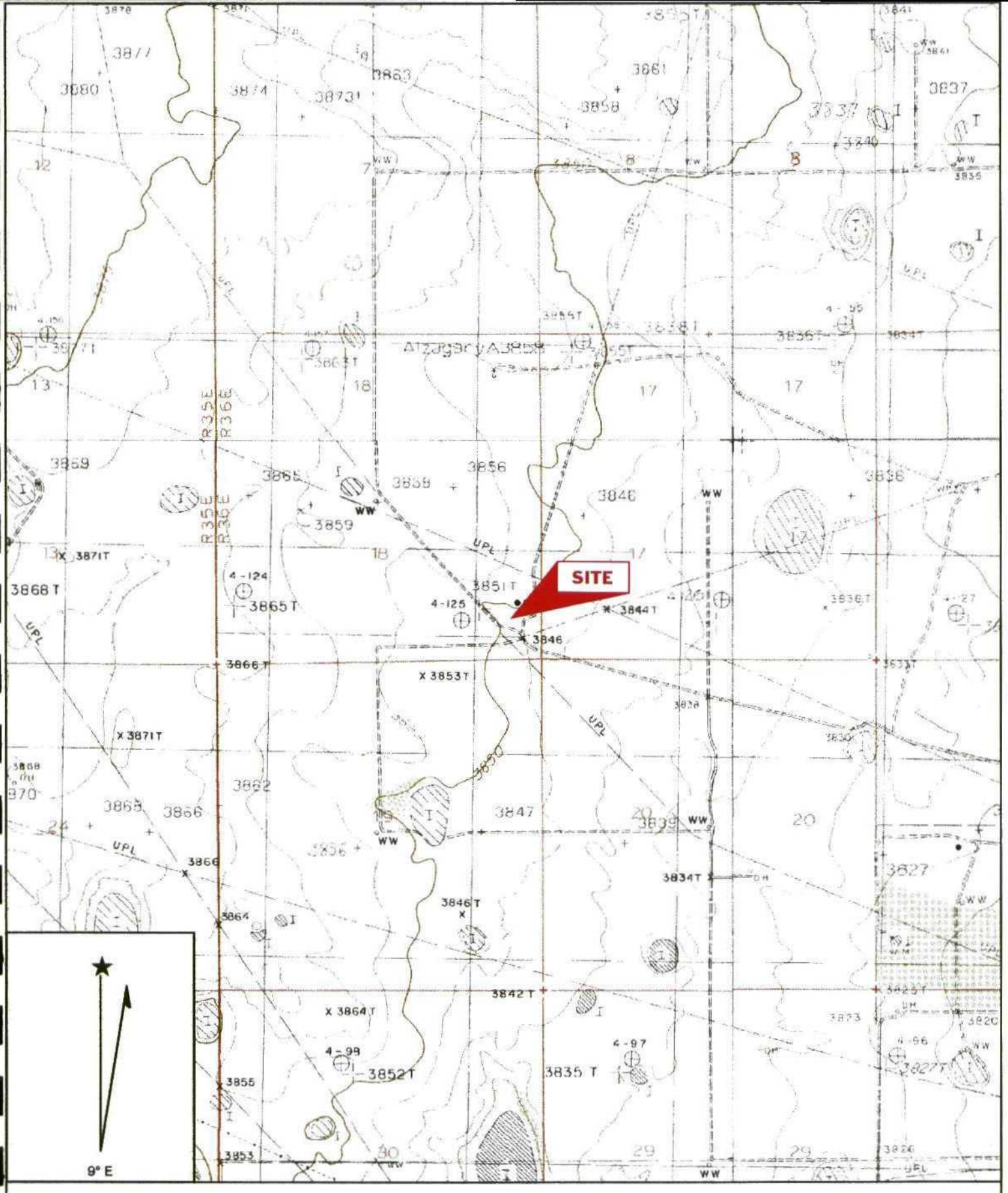
The Air Monitoring program has regularly shown that the Soil Vapor Extraction Unit is performing according to its specifications. The historical spill that this SVE unit is remediating is unrelated to the Monitor Well program.

Figures and Appendices

Figures:
Vicinity Map
Monitor Well Site Plan
Potentiometric Map for February 21, 2000

Appendices:
Interim Monitor Well Report of September 20, 1999
Crouch Cumulative Depth to Water Table
Crouch Station Cumulative Well Data
Laboratory Analyticals for February 21, 2000 Water Samples
Quarterly Air Sampling Reports

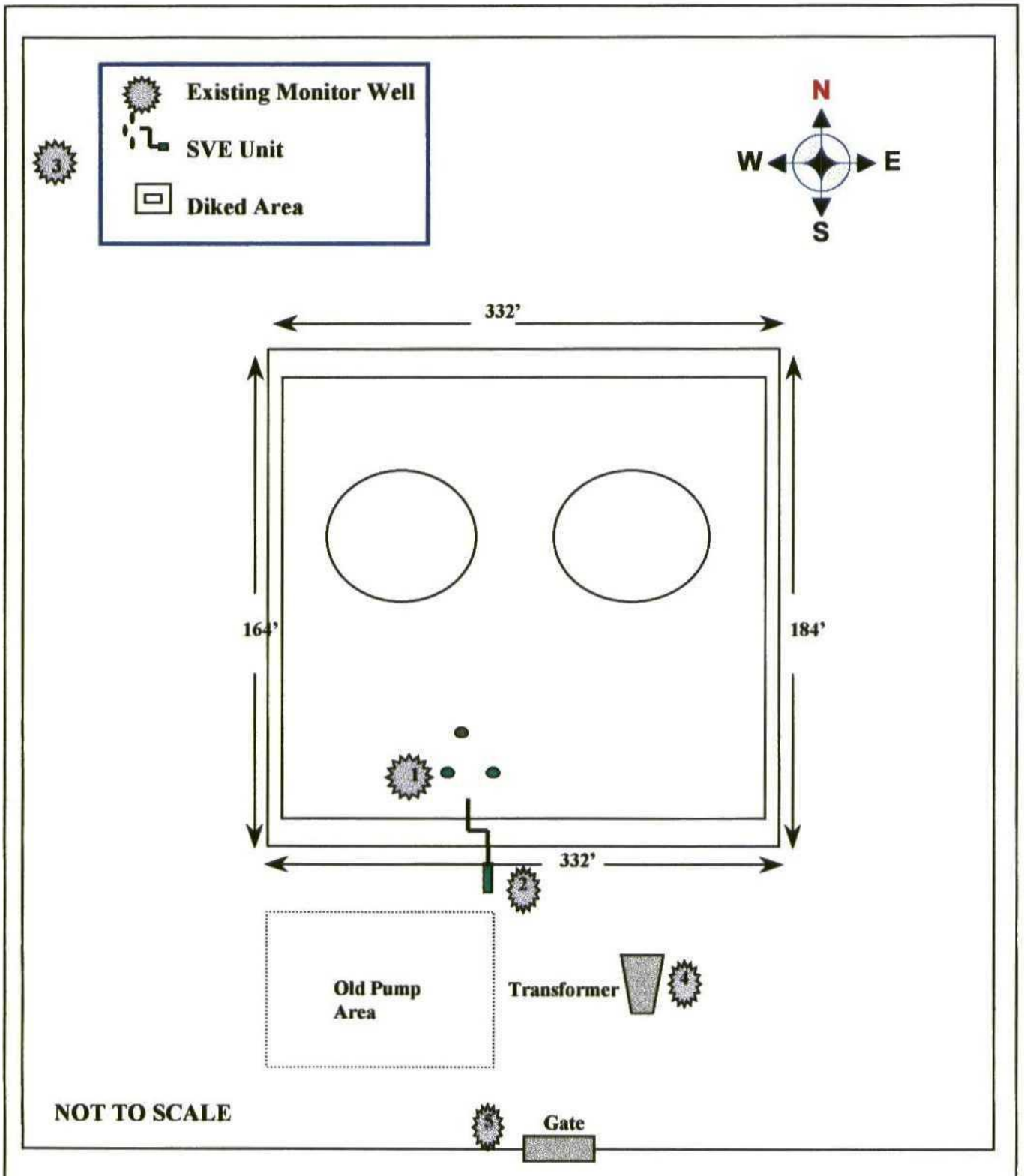
Figure 1
Vicinity Map



Name: IRONHOUSE DRAW
Date: 3/31/100
Scale: 1 inch equals 2000 feet

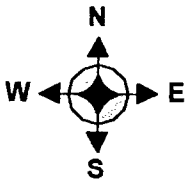
Location: 032° 44' 35.7" N 103° 23' 13.0" W
Caption: Koch Oil Co. Crouch Station Vicinity Map

Figure 2
Monitor Wells Site Plan



Koch Pipeline Co., L.P. February 21, 2000	**Monitor Well Site Plan**	Safety & Environmental Solutions, Inc. Hobbs, New Mexico

Figure 3
Potentiometric Map for February 21, 2000



3793.785

3791.681'

3792.389'

3791.914'

3792.186'

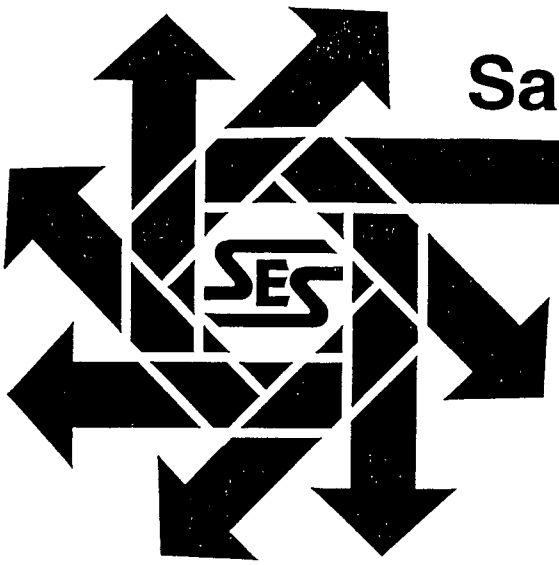
Koch Pipeline Company, L.P.
Potentiometric Surface Map

Crouch Station
Section 18, T18S, R 36E
Lea County, New Mexico

February 21, 2000

Scale: 1" = 100'

Appendix A
Monitor Well Report of September 20, 1999



Safety & Environmental Solutions, Inc.

COPY

Koch Pipeline Company, L.P.

Crouch Station
Monitor Well Report
Lea County, New Mexico

September 20, 1999

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

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I. Background

The purpose of this report is to present analytical results from ground water samples collected for compliance with NMOCD requirements on the monitor wells at Koch Pipeline Company's Crouch Station located in Section 18 Township 18S Range 36E in Lea County, New Mexico (See Vicinity Map).

Safety & Environmental Solutions, Inc. (SESI) performed sampling and data collection on the five (5) ground water monitor wells previously installed by SESI in 1998 and Western Technologies in 1997. The casing size in all wells is 2".

II. Work Performed

On August 31, 1999, SESI environmental technician W. Dee Whatley arrived at the site. Ground water samples were taken from each well after a hand bailer was used to develop the wells. Three to five casing volumes of water were removed from each well until pH and temperature of the water were stabilized. The samples were obtained and placed in appropriate containers, preserved and transported under chain of custody to Cardinal Laboratories of Hobbs, New Mexico for analysis of the contaminants identified in the initial sampling of April 1998. (See Analytical Data)

In addition to the sampling, SESI also measured the depth to the top of the water table and the total depth of each well. The depth to the top of ground water was measured using a Solinst water level indicator. The total depth of each well was measured in order to compute the proper casing volumes. This information will be included in the annual report due each April for the Crouch Station.

A summary of this data follows:

ID	Date	Depth to Water	Total Well Depth	Free Product Thickness
MW – 1	8/31/99	58.10'	63.51'	0.00
MW – 2	8/31/99	56.76'	61.21'	0.00
MW – 3	8/31/99	59.82'	67.95'	0.00
MW – 4	8/31/99	59.79'	64.62'	0.00
MW – 5	8/31/99	59.00'	67.25'	0.00

III. Analytical Results

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

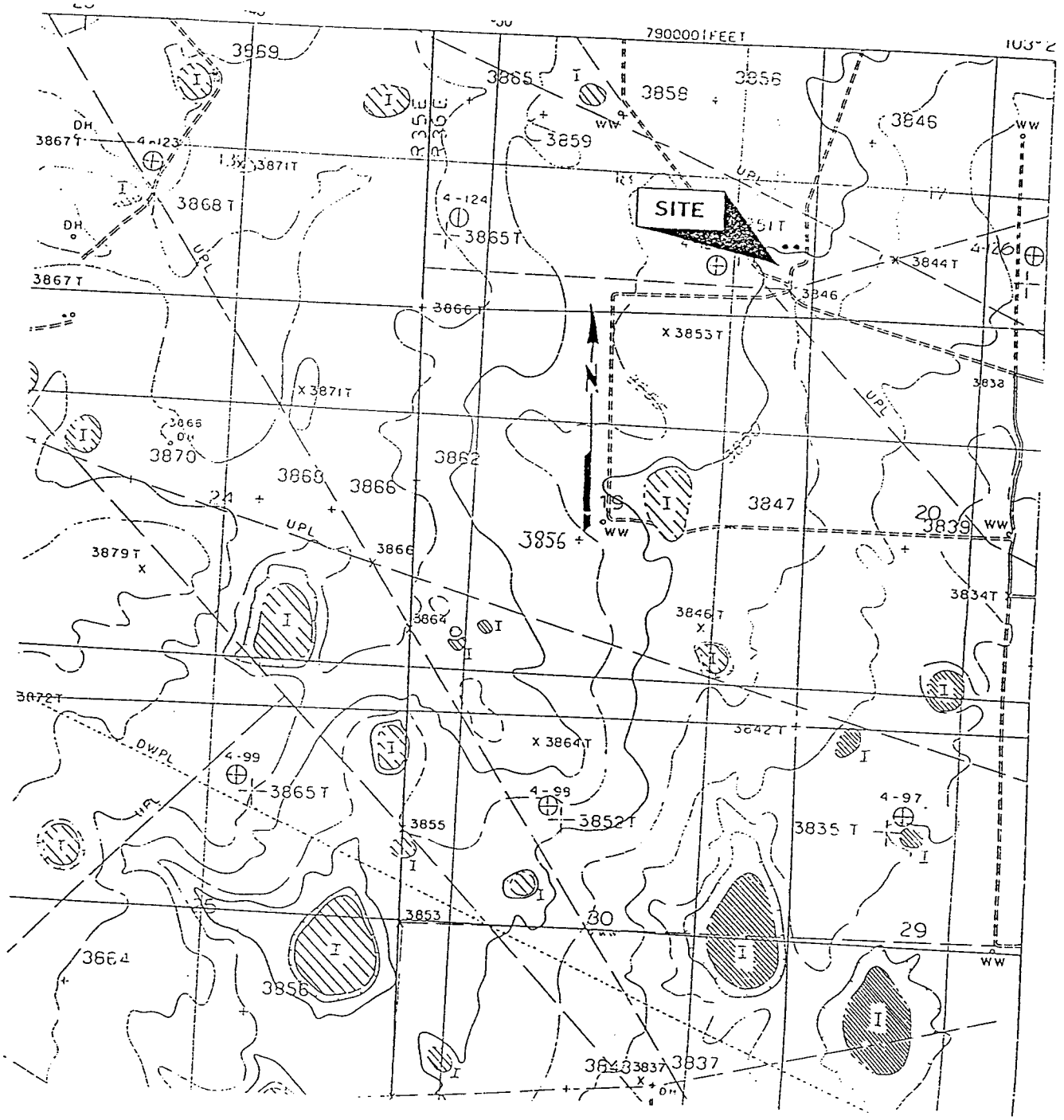
Contaminant	WQCC Standard	MW #1	MW #2	MW #3	MW #4	MW #5
Barium	1.00 ppm	5.179ppm	3.748ppm	6.095ppm	6.974ppm	5.285ppm
Benzene	0.01 ppm	N/A	N/A	0.628 ppm	N/A	N/A
Chromium	0.05 ppm	<0.05ppm	<0.05ppm	<0.05ppm	<0.05ppm	<0.05ppm

IV. Figures and Appendices

Figures:
Vicinity Map
Potentiometric Map

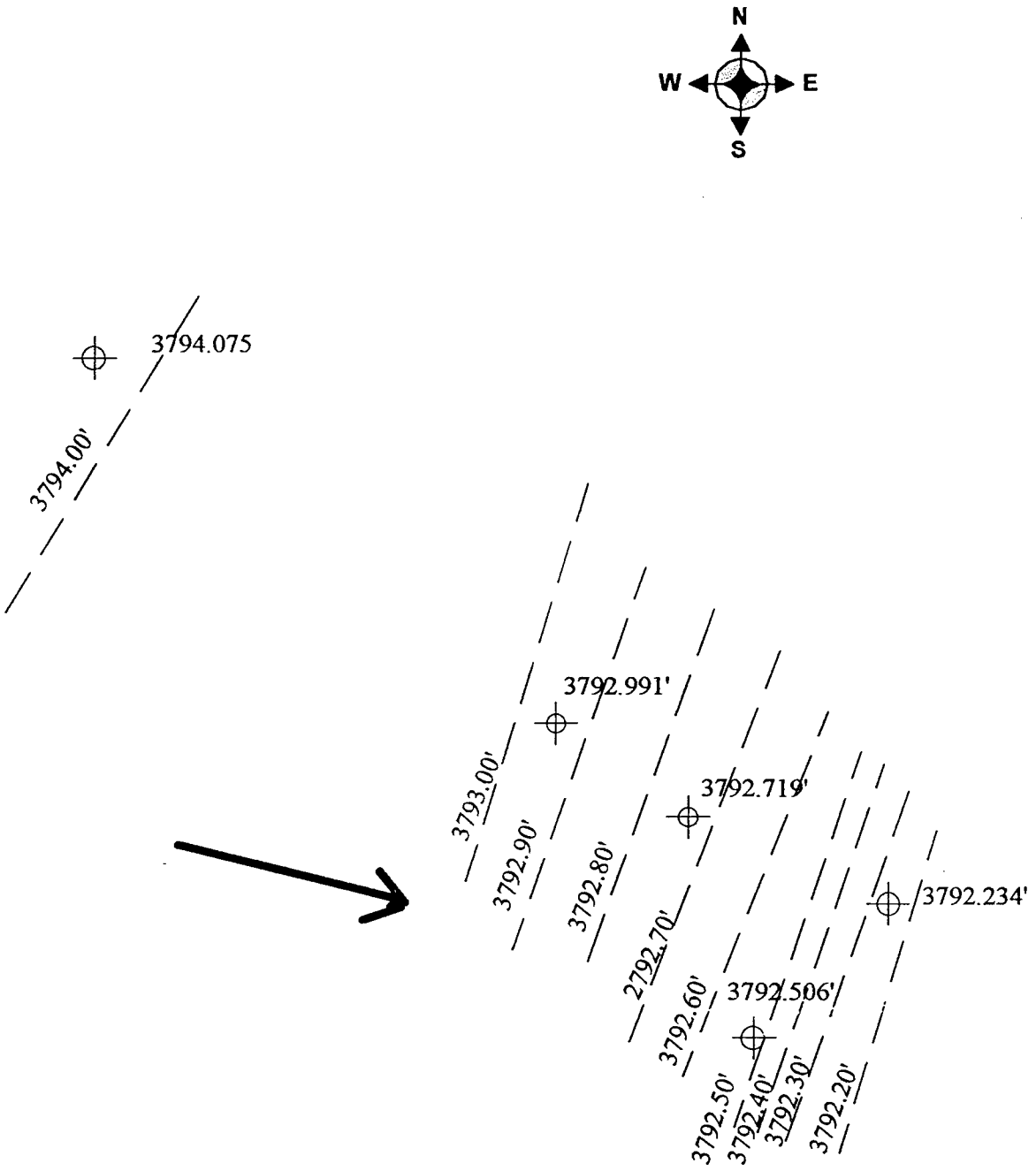
Appendices:
Analytical Results

Figure 1
Vicinity Map



Koch Pipeline Co., L.P.	**Crouch Station Vicinity Map**	*Safety & Environmental Solutions, Inc. Hobbs, NM*

Figure 2
Potentiometric Map



Koch Pipeline Company, L.P.
Potentiometric Surface Map

Crouch Station
Section 18, T18S, R 36E
Lea County, New Mexico

August 31, 1999

Scale: 1" = 100'

Appendix A
Analytical Results

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:

Receiving Date: 08/31/99
Reporting Date: 08/31/99
Project Owner: KOCH OIL
Project Name: CROUCH STATION MW
Project Location: CROUCH STATION
Sample ID: MW #3
Lab Number: H4311-3

Analysis Date: 08/31/99
Sampling Date: 08/31/99
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: BC
Analyzed By: BC

BENZENE (mg/L)	Sample Result H4311-3	Method Blank	QC	%Recov.	True Value QC
Benzene	0.628	<0.002	0.093	93	0.100

	% RECOVERY
Dibromofluoromethane	112
Toluene - d8	101
Bromofluorobenzene	104

METHODS: EPA SW-846 8260

Burgess J. A. Cooke, Ph. D.

8/31/99
Date

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:

Receiving Date: 08/31/99
Reporting Date: 09/01/99
Project Owner: KOCH OIL
Project Name: CROUCH STATION MW
Project Location: CROUCH STATION

Sampling Date: 08/31/99
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: BC
Analyzed By: AH

LAB NUMBER	SAMPLE ID	Ba (mg/L)	Cr (mg/L)
ANALYSIS DATE:		09/01/99	09/01/99
H4311-1	MW #1	5.179	<0.05
H4311-2	MW #2	3.748	<0.05
H4311-3	MW #3	6.095	<0.05
H4311-4	MW #4	6.974	<0.05
H4311-5	MW #5	5.285	<0.05
Quality Control		24.36	4.880
True Value QC		25.00	5.000
% Recovery		97.4	97.6
Relative Percent Difference		3.7	1.7
METHODS: EPA 600/4-79-020		208.1	218.1

Chemist

09/01/99
Date

CARDINAL LABORATORIES, INC.

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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

H4311

Page ____ of ____

Company Name:	SESI	BILL TO	PO #:
Project Manager:	Doc Watley	Company:	
Address:	703 E. Clinton, Suite 103	Attn:	
City:	Hobbs State: NM Zip: 88240	Address:	
Phone #:	397-0510	City:	
Fax #:	393-4388	State:	Zip:
Project #:	Project Owner: Koch Oil	Phone #:	
Project Name:	Crouch Station MW	Fax #:	
Project Location:	Crouch Station		

ANALYSIS REQUEST

FOR LAB USE ONLY LAB I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	PRES.: ACID:	ICE / COOL	OTHER:	SAMPLING: DATE	TIME	Barium	Chromium	Benzene
H4311-1	MW #1	G	1	✓							✓		8-31-99	8:45AM	✓	✓	
-2	MW #2	G	1	✓							✓				✓	✓	
-3	MW #3	G	3	✓							✓				✓	✓	✓
-4	MW #4	G	1	✓							✓				✓	✓	
-5	MW #5	G	3	✓							✓				✓	✓	

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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.

Sampler Relinquished:	Date: 8-31-99	Received By:	Phone Result ☐ Yes ☐ No Additional Fax #:
	Time: 9:15AM		Fax Result: ☐ Yes ☐ No
Relinquished By:	Date:	Received By: (Lab Staff)	REMARKS:
	Time:		
Delivered By: (Circle One)		Sample Condition: Cool ☒ Yes ☐ No; Intact ☒ Yes ☐ No	CHECKED BY: (Initials)
Sampler - UPS - Bus - Other:			

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

Appendix B
Crouch Cumulative Depth to Water Table

Crouch Cumulative Depth to Water Table
March 24, 2000

Monitor Well	Total Well Depth	Depth to Water 8/31/99	Depth to Water 2/21/00
#1	63.51'	58.10'	59.41'
#2	61.21'	56.76'	57.09'
#3	67.95'	59.82'	60.11'
#4	64.62'	59.79'	60.11'
#5	67.25'	59.00'	59.32'

Appendix C
Crouch Station Cumulative Well Data

Crouch Station Cumulative Well Data
March 24, 2000

Monitor Well #1

Contaminant	WQCC Standard	Test Date 8/31/99	Test Date 2/21/00
Barium	1.0 ppm	5.179 ppm	<1.0 ppm
Chromium	0.05 ppm	<0.05 ppm	<0.05 ppm
Benzene	0.01 ppm	n/a	<.002 ppm
Toluene	0.75 ppm	n/a	<.002 ppm
E. Benzene	0.75 ppm	n/a	<.002 ppm
Total Xylenes	0.62 ppm	n/a	<.006 ppm

Monitor Well #2

Contaminant	WQCC Standard	Test Date 8/31/99	Test Date 2/21/00
Barium	1.0 ppm	3.748 ppm	<1.0 ppm
Chromium	0.05 ppm	<0.05 ppm	<0.05 ppm
Benzene	0.01 ppm	n/a	0.002 ppm
Toluene	0.75 ppm	n/a	<.002 ppm
E. Benzene	0.75 ppm	n/a	<.002 ppm
Total Xylenes	0.62 ppm	n/a	<.006 ppm

Monitor Well #3

Contaminant	WQCC Standard	Test Date 8/31/99	Test Date 2/21/00
Barium	1.0 ppm	6.095 ppm	1.070 ppm
Chromium	0.05 ppm	<0.05 ppm	<0.05 ppm
Benzene	0.01 ppm	0.628 ppm	2.02 ppm
Toluene	0.75 ppm	n/a	<.002 ppm
E. Benzene	0.75 ppm	n/a	<.002 ppm
Total Xylenes	0.62 ppm	n/a	<.006 ppm

Monitor Well #4

Contaminant	WQCC Standard	Test Date 8/31/99	Test Date 2/21/00
Barium	1.0 ppm	6.974 ppm	<1.0 ppm
Chromium	0.05 ppm	<0.05 ppm	<0.05 ppm
Benzene	0.01 ppm	n/a	<.002 ppm
Toluene	0.75 ppm	n/a	<.002 ppm
E. Benzene	0.75 ppm	n/a	<.002 ppm
Total Xylenes	0.62 ppm	n/a	<.006 ppm

Monitor Well #5

Contaminant	WQCC Standard	Test Date 8/31/99	Test Date 2/21/00
Barium	1.0 ppm	5.285 ppm	<1.0 ppm
Chromium	0.05 ppm	<0.05 ppm	<0.05 ppm
Benzene	0.01 ppm	n/a	<.002 ppm
Toluene	0.75 ppm	n/a	<.002 ppm
E. Benzene	0.75 ppm	n/a	<.002 ppm
Total Xylenes	0.62 ppm	n/a	<.006 ppm

Appendix D
Analytical Results of February 21, 2000

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: BETH ALDRICH
703 E. CLINTON, SUITE #103
HOBBS, NM 88240
FAX TO: (505) 393-4388

Receiving Date: 02/21/00
Reporting Date: 02/28/00
Project Owner: KOCH
Project Name: NOT GIVEN
Project Location: CROUCH STATION

Sampling Date: 02/21/00
Sample Type: WATER
Sample Condition: COOL & INTACT
Sample Received By: AH
Analyzed By: AH

LAB NUMBER	SAMPLE ID	Ba (mg/L)	Cr (mg/L)
ANALYSIS DATE:		02/28/00	02/28/00
H4659-1	MW #1	<1	<0.005
H4659-2	MW #2	<1	<0.005
H4659-3	MW #3	1.07	<0.005
H4659-4	MW #4	<1	<0.005
H4659-5	MW #5	<1	<0.005
Quality Control		24.49	4.921
True Value QC		25.00	5.000
% Recovery		98	98
Relative Percent Difference		3.0	0.6
METHODS: EPA 600/4-79-020		208.1	218.1

Amy Hill
Chemist

02/28/00
Date

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: BETH ALDRICH
703 E. CLINTON, SUITE #103
HOBBS, NM 88240
FAX TO: (505) 393-4388

Receiving Date: 02/21/00
Reporting Date: 02/22/00
Project Owner: KOCH
Project Name: NOT GIVEN
Project Location: CROUCH STATION

Sampling Date: 02/21/00
Sample Type: WATER
Sample Condition: COOL & INTACT
Sample Received By: AH
Analyzed By: BC

LAB NO.	SAMPLE ID	BENZENE (mg/L)	TOLUENE (mg/L)	ETHYL BENZENE (mg/L)	TOTAL XYLENES (mg/L)
ANALYSIS DATE		02/21/00	02/21/00	02/21/00	02/21/00
H4659-1	MW #1	<0.002	<0.002	<0.002	<0.006
H4659-2	MW #2	0.002	<0.002	<0.002	<0.006
H4659-3	MW #3	2.02	<0.002	<0.002	<0.006
H4659-4	MW #4	0.004	<0.002	<0.002	<0.006
H4659-5	MW #5	<0.002	<0.002	<0.002	<0.006
Quality Control		0.098	0.092	0.086	0.267
True Value QC		0.100	0.100	0.100	0.300
% Recovery		98.4	91.5	86.3	88.8
Relative Percent Difference		2.2	8.3	14.7	11.7

METHOD: EPA SW 846-8021B, 5030, 5021 Gas Chromatography

Chemist

2/22/00
Date

H4659B.XLS

CARDINAL LABORATORIES, INC.

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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Page 1 of 1

Company Name: SESI	BILL TO PO #:
Project Manager:	Company: SAME
Address: 703 E. CLINTON, #103	Attn:
City: HOBBS State: NM Zip: 88240	Address:
Phone #: (505) 397-0510	City:
Fax #: (505) 393-4388	State: Zip:
Project #: Project Owner: Koch	Phone #:
Project Name:	Fax #:
Project Location: Crouch Station	

FOR LAB USE ONLY LAB I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	PRES.: ACID:	ICE / COOL	OTHER:	SAMPLING DATE	TIME	ANALYSIS REQUEST: Chromium	Barium	BTEX
H4659-1	MW#1	G	1	X							X		2/2/00	1:50 pm	X	X	X
-2	MW#2	G	1	X							X			1245 pm	X	X	X
-3	MW#3	G	1	X							X			1200 pm	X	X	X
-4	MW#4	G	1	X							X			1215 pm	X	X	X
-5	MW#5	G	1	X							X			1200 pm	X	X	X

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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.

Sampler Relinquished: Sergio Contreras Jr	Date: 2/2/00 Time: 2:00	Received By:	Phone Result ☐ Yes ☐ No Additional Fax #:
Relinquished By:	Date: 2/2/00 Time: 3:00	Received By: (Lab Staff)	Fax Result: ☐ Yes ☐ No REMARKS:
Delivered By: (Circle One) Sampler - UPS - Bus - Other:		Sample Condition Cool ☐ Yes ☐ No Intact ☐ Yes ☐ No	CHECKED BY: (Initials)

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

Appendix E
Quarterly Air Sampling Reports

Safety & Environmental

Solutions, Inc.

KOCH PIPELINE CO., L.P.
Crouch Station

Quarterly Report
January 2000
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 180-250ppm range, with the highest reading on October 29, 1999, at 250ppm. Readings on January 8, 2000 and January 14, 2000 were the lowest during the quarter at 172ppm and 180ppm and 196ppm and 180ppm respectively. (See Air Sampling Report) On November 12, 1999, readings of 1400ppm and 1415ppm were obtained. These anomalous readings were attributed to faulty calibration of the PID unit. Except for the anomaly on November 12, 1999, the readings have stayed in the above-mentioned range through January 24, 2000, the end of the sampling for this quarter. The flow rate for the system is currently 23scfm.

Water is being removed from the unit on a weekly basis with the volume remaining consistent. This water is stored onsite in drums until such time that it will be taken for disposal to an NMOCD approved disposal facility.

On January 24, 2000, 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 January 22, 2000 ranged from 180ppm to 196ppm (See Analytical Results). The following table represents the results of the air sample:

ANALYTES	AIR SAMPLE
Sample Date	1/24/00
BTEX	
Benzene	12.7
Toluene	10.3
Ethyl Benzene	4.14
Total Xylenes	5.50

These results are reported as mg/M^3 or parts per million (ppm).

Figures

Air Sampling Report
Sampling Log
Laboratory Analyticals

Figure 1
Air Sampling Report

Safety & Environmental Solutions, Inc.

Koch Operations Group Crouch Station
Quarterly Air Sampling Report
January 2000

Detector Type: Photoionization
Tester Brand: Microtip1**Tester Model:** MP 100
Serial Number: NA890005
Manufacture Date: 8/97

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

Date Sampled	Time Sampled	1st Sample Results	2nd Sample Results
10-22-99	1520	209ppm	228ppm
10-29-99	1636	228ppm	250ppm
11-05-99	1550	230ppm	241ppm
11-12-99*	1400	1400ppm	1415ppm
11-19-99	1230	240ppm	243ppm
11-26-99	1152	217ppm	199ppm
12-03-99	1020	202ppm	181ppm
12-10-99	0725	239ppm	231ppm
12-17-99	0815	186ppm	192ppm
12-23-99	0725	188ppm	191ppm
12-30-99	1550	222ppm	219ppm
01-08-00	1422	172ppm	180ppm
01-14-00	1420	190ppm	205ppm
01-22-00	0900	196ppm	180ppm

*There was a problem with the calibration of the PID unit.

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

Figure 2
Sampling Log

10-22-99	209	224 ppm	320 ppm
10-29-99	436 ppm	228 ppm	250 ppm
11-5-99	350 ppm	230 ppm	241 ppm
11-12-99	200 ppm	1400 ppm	1205 ppm
11-19-99	1230 ppm	240 ppm	243 ppm
11-26-99	1152 am	217 ppm	199 ppm
12-3-99	10:20 AM	202 ppm	181 ppm
12-10-99	7:55 am	239 ppm	231 ppm
12-17-99	8:15 am	186 ppm	192 ppm
12-23-99	7:35 am	88 ppm	191 ppm
12-30-99	350 ppm	222 ppm	219 ppm
1-6-00	222 ppm	172 ppm	180 ppm
1-14-00	2:20 pm	190 ppm	205 ppm
1-22-00	9:00 am	196 ppm	180 ppm

Koch Operations Group	**Koch Pipeline Crouch Station** **Copy of Sampling Log**	*Safety & Environmental Solutions, Inc.* *Hobbs, NM*

Figure 3
Laboratory Analyticals

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: BETH ALDRICH
703 E. CLINTON, SUITE #103
HOBBS, NM 88240
FAX TO: (505) 393-4388

Receiving Date: 01/24/00
Reporting Date: 01/25/00
Project Owner: KOCH
Project Name: CROUCH STATION
Project Location: NOT GIVEN

Sampling Date: 01/24/00
Sample Type: AIRBAG
Sample Condition: 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		01/24/00	01/24/00	01/24/00	01/24/00
H4603-1	AIR SAMPLE	12.7	10.3	4.14	5.50
Quality Control		92.0	94.6	93.1	290
True Value QC		100	100	100	300
% Recovery		92.0	94.6	93.1	96.5
Relative Percent Difference		3.9	7.3	2.7	1.4

METHOD: EPA SW-846 8260

Chemist

1/25/00
Date

H4603.XLS

CARDINAL LABORATORIES, INC.

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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: SEST	BILL TO PO #:
Project Manager:	
Address: 703 E. CLINTON, #103	Company: SAME
City: HOBBS State: NM Zip: 88240	Attn:
Phone #: (505) 397-0510	Address:
Fax #: (505) 393-4388	City:
Project #: Project Owner: Cook	State: Zip:
Project Name: Crouch Station	Phone #:
Project Location:	Fax #:

ANALYSIS REQUEST: BTEX (8021) Cost

FOR LAB USE ONLY LAB I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	PRES.: ACID:	ICE / COOL	OTHER:	SAMPLING: DATE	TIME	BTEX (8021) Cost
H4603-1	Air Sample	G	1						X						X

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the 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 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.

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.

Sampler Relinquished:	Date:	Received By:	Phone Result ☐ Yes ☐ No Additional Fax #:
	Time:		Fax Result: ☐ Yes ☐ No
Relinquished By:	Date: 1/24/00	Received By: (Lab Staff)	REMARKS:
	Time: 5:50PM		
Delivered By: (Circle One) Sampler - UPS - Bus - Other:		Sample Condition Cool: ☐ Yes ☐ No Intact: ☒ Yes ☐ No	CHECKED BY: (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
October 1999
Air Monitoring Program
Lea County, New Mexico

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

TABLE OF CONTENTS

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 220-460ppm range, with the highest reading on September 17, 1999, at 457ppm. Readings on October 8, 1999 and October 15, 1999 were the lowest during the quarter at 234ppm and 280ppm and 218ppm and 261ppm respectively. (See Air Sampling Report) They have stayed in the above mentioned range through October 15, 1999, the end of the sampling for this quarter. The flow rate for the system is currently 23scfm.

On July 30, 1999, the system was inadvertently shut down when a contractor onsite caused the unit to be turned off. Power was turned on at the unit on August 3, 1999, and the system continued to operate smoothly.

Water is being removed from the unit on a sporadic basis with the volume increasing towards the end of the quarter.

On October 8, 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 234ppm to 280ppm. The following table represents the results of the air sample:

ANALYTES	AIR SAMPLE
Sample Date	7/16/99
BTEX	
Benzene	190.0
Toluene	148.0
Ethyl Benzene	53.2
Total Xylenes	70.9

These results are reported as mg/M^3 or parts per million (ppm).

Figures

Air Sampling Report
Sampling Log
Laboratory Analyticals

Figure 1
Air Sampling Report

Safety & Environmental Solutions, Inc.

Koch Operations Group Crouch Station
Quarterly Air Sampling Report
October 1999

Detector Type: Photoionization
Tester Brand: Microtip
Tester Model: MP 100
Serial Number: NA890005
Manufacture Date: 8/97

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

Date Sampled	Time Sampled	1st Sample Results	2nd Sample Results
7-23-99	1332	307ppm	314ppm
7-30-99	1302	******	******
8-06-99	1122	309ppm	329ppm
8-13-99	1045	341ppm	363ppm
8-20-99	1336	349ppm	361ppm
8-27-99	1400	439ppm	442ppm
9-03-99	1550	387ppm	399ppm
9-10-99	0730	436ppm	448ppm
9-17-99	1507	450ppm	457ppm
9-24-99	1340	438ppm	437ppm
10-01-99	1115	248ppm	272ppm
10-08-99	0732	234ppm	280ppm
10-15-99	1500	218ppm	261ppm

**The power was inadvertently shut off to the SVE unit by contractors. It was restored on 6/28/99.

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

Figure 2
Sampling Log

4-20-99	345 ppm	376 ppm	6:45 pm
4-29-99	353 ppm	371 ppm	2:48 pm
5-7-99	358 ppm	359 ppm	428 pm
5-14-99 no H2O	298 ppm	304 ppm	1055 am
5-21-99	315 ppm	326 ppm	948 am
5-29-99 no H2O	296 ppm	317 ppm	1112 am
6-4-99 no H2O	307 ppm	319 ppm	1122 am
6-11-99 no H2O	330 ppm	312 ppm	108 pm
6-18-99 no H2O	no 316 ppm	307 ppm	437 pm
6-26-99 no power, water tank being	[illegible] power shut off		430 am
7-2-99 no water	303 ppm	313 ppm	1120 am
7-9-99	290 ppm	313 ppm	210 pm
7-16-99 no water	295 ppm	322 ppm	1125 am
7-23-99 no water	307 ppm	314 ppm	132 pm
7-30-99 NO WATER	34 [illegible] ppm	@ surface [illegible] ppm	102 pm
8-6-99 no water [illegible]	309 ppm	329 ppm	1122 am
8-13-99	341 ppm	363 ppm	10:45 am
8-20-99 no water	349 ppm	361 ppm	136 pm
8-27-99	439 ppm	442 ppm	2:00 pm
9-3-99	387 ppm	399 ppm	3:50 pm
9-10-99 no water	[illegible] 436 ppm	448 ppm	736 am
9-17-99 no water	450 ppm	457 ppm	307 pm
9-24-99	437 ppm	437 ppm	140 pm
10-1-99	248 ppm	272 ppm	1118 am
10-8-99 [illegible]	234 ppm	220 ppm	735 am
10-15-99	218 ppm	261 ppm	3:00 pm

Koch Operations Group	**Koch Pipeline Crouch Station Copy of Sampling Log**	*Safety & Environmental Solutions, Inc. Hobbs, NM*

Figure 3
Laboratory Analyticals

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: BETH ALDRICH
703 E. CLINTON, #103
HOBBS, NM 88240
FAX TO: (505) 393-4388

Receiving Date: 10/08/99
Reporting Date: 10/09/99
Project Owner: KOCH
Project Name: CROUCH STATION
Project Location: NOT GIVEN

Sampling Date: 10/08/99
Sample Type: GAS (TEDLAR BAG)
Sample Condition: INTACT
Sample Received By: AH
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		10/08/99	10/08/99	10/08/99	10/08/99
H4391-1	SVE AIR SAMPLE	190	148	53.2	70.9
Quality Control		88.2	95.6	93.3	286
True Value QC		100	100	100	300
% Recovery		88.2	95.6	93.3	95.3
Relative Percent Difference		8.7	0.2	2.7	1.7

METHOD: EPA SW 846-8021B, 5030, 5021 Gas Chromatography

Chemist

10/9/99
Date

H4391.XLS

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

CARDINAL 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

Company Name: SESI	BILL TO PO #:
Project Manager:	Company: SAME
Address: 703 E. CLINTON, #103	Attn:
City: HOBBS State: NM Zip: 88240	Address:
Phone #: (505) 397-0510	City:
Fax #: (505) 393-4388	State: Zip:
Project #: Project Owner: Koch	Phone #:
Project Name: Crouch Station	Fax #:
Project Location:	

FOR LAB USE ONLY				MATRIX							PRES.			SAMPLING		ANALYSIS REQUEST
LAB I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	ACID:	ICE / COOL	OTHER:	DATE	TIME	
H4391-1	SVE air sample	G	1						X			X	10-8	734	X BTEX

LEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the 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 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.

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.

Sampler Relinquished:	Date: 10-8-99	Received By:	Phone Result ☐ Yes ☐ No Additional Fax #:
	Time: 8:05am		Fax Result: ☐ Yes ☐ No
Relinquished By:	Date: 10/8/99	Received By: (Lab Staff)	REMARKS:
	Time: 8:10		
Delivered By: (Circle One)	Sample Condition Cool ☐ Yes ☐ No Intact ☐ Yes ☐ No	CHECKED BY: (Initials)	
Sampler - UPS - Bus - Other:			

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

Safety & Environmental Solutions, Inc.

KOCH PIPELINE CO., L.P.
Crouch Station

Quarterly Report
July 1999
Air Monitoring Program
Lea County, New Mexico

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

TABLE OF CONTENTS

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 280-380ppm range, with the highest reading on April 29, 1999, at 371ppm. Readings on July 7, 1999 and July 16, 1999 were the lowest during the quarter at 290ppm and 283ppm and 295ppm and 282ppm respectively. (See Air Sampling Report) They have stayed in the above mentioned range through July 16, 1999, the end of the sampling for this quarter. The flow rate for the system is currently 23scfm.

On June 26, 1999, the system was inadvertently shut down when the electricity to the unit was turned off. Power was turned on at the unit on June 28, 1999, and the system continued to operate smoothly.

Beginning with the sampling on May 14, 1999, water is no longer being accumulated in the system. This could be in part a response to the spring growing season or in increased irrigation.

On July 16, 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 295ppm to 282ppm. The following table represents the results of the air sample:

ANALYTES	AIR SAMPLE
Sample Date	7/16/99
BTEX	
Benzene	158.0
Toluene	86.4
Ethyl Benzene	20.4
Total Xylenes	25.8

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

Figures

Air Sampling Report
Sampling Log
Laboratory Test Results
Chain of Custody

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 Isobutelyne prior to testing on each sampling date.

Date Sampled	Time Sampled	1st Sample Results	2nd Sample Results
4-29-99	1448	353ppm	371ppm
5-07-99	1628	359ppm	351ppm
5-14-99	1055	298ppm	304ppm
5-21-99	0948	315ppm	326ppm
5-29-99	1112	296ppm	317ppm
6-04-99	1122	307ppm	319ppm
6-11-99	1308	330ppm	312ppm
6-18-99	1638	316ppm	307ppm
6-26-99	0930	***ppm	***ppm
7-02-99	1120	303ppm	313ppm
7-09-99	1410	290ppm	283ppm
7-16-99	1125	295ppm	282ppm

**The power was inadvertently shut off to the SVE unit by contractors. It was restored on 6/28/99.

4-20-99	345 ppm	376 ppm	6:45 pm
4-29-99	353 ppm	371 ppm	2:48 pm
5-7-99	359 ppm	359 ppm	428 pm
5-14-99 no H_2O	298 ppm	304 ppm	1055 am
5-21-99 no H_2O	315 ppm	326 ppm	948 am
5-29-99 no H_2O	296 ppm	317 ppm	1112 am
6-4-99 no H_2O	307 ppm	319 ppm	1122 am
6-11-99 no H_2O	330 ppm	312 ppm	108 pm
6-18-99 no H_2O	no 316 ppm	307 ppm	437 pm
6-26-99 no power, water transformer having	I power shut off		930 am
7-2-99 no water	303 ppm	313 ppm	1120 am
7-9-99 no water	290 ppm	323 ppm	210 pm
7-16-99 no water	295 ppm	322 ppm	1125 am

Koch Operations Group	**Koch Pipeline Crouch Station Copy of Sampling Log**	*Safety & Environmental Solutions, Inc. Hobbs, NM*

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: BETH ALDRICH
703 E. CLINTON, SUITE 103
HOBBS, NM 88240
FAX TO: (505) 393-4388

Receiving Date: 07/16/99
Reporting Date: 07/19/99
Project Number: NOT GIVEN
Project Name: KOCH CROUCH STATION
Project Location: NOT GIVEN

Sampling Date: 07/16/99
Sample Type: AIR (TEDLAR BAG)
Sample Condition: 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		07/16/99	07/16/99	07/16/99	07/16/99
H4235-1	AIR SAMPLE	158	86.4	20.8	25.8
Quality Control		90.3	97.4	95.4	285
True Value QC		100	100	100	300
% Recovery		90.3	97.4	95.4	95.1
Relative Percent Difference		4.5	1.1	3.1	4.9

METHOD: EPA SW-846 8260

Chemist

7/19/99
Date

H4235.XLS

CARDINAL LABORATORIES, INC.

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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: SESI
Project Manager: Beth Aldrich
Address: 103 E. Clinton
City: Hobbs State: NM Zip: 88240
Phone #: 397-0510
Fax #: 393-4388
Project #: Project Owner:
Project Name: Koch Crouch Station
Project Location:

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

LAB I.D. (FOR LAB USE ONLY)	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	PRES.: ACID:	ICE / COOL	OTHER:	SAMPLING: DATE	TIME	ANALYSIS REQUEST: BTEX
H4235-1	Air Sample	X	1						X			X	7-16	1200	X

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the 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 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.

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.

Sampler Relinquished: Beth Aldrich Date: 7-16-99 Time: 1240pm
Received By:
Relinquished By: Date: Time:
Received By: (Lab Staff) [signature]

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

Sample Condition: Cool ☒ Yes ☐ No; Intact ☒ Yes ☐ No
CHECKED BY: (Initials)

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

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

Safety & Environmental

Solutions, Inc.

KOCH PIPELINE CO., L.P.
Crouch Station

Quarterly Report
April 1999
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 180-380ppm range, with the highest reading on April 20, 1999, at 376ppm. Readings on January 27, 1999 and February 26, 1999 were the lowest during the quarter at 184ppm and 195ppm and 194ppm and 186ppm respectively. (See Air Sampling Report) They have stayed in the above mentioned range through April 20, 1999, the end of the sampling for this quarter. The flow rate for the system is currently 23scfm.

On April 20, 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	4/20/99
BTEX	
Benzene	43.1
Toluene	29.5
Ethyl Benzene	5.22
Total Xylenes	6.13

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 Isobutelyne prior to testing on each sampling date.

Date Sampled	Time Sampled	1st Sample Results	2nd Sample Results
1-27-99	0800	184ppm	195ppm
2-02-99	1300	201ppm	199ppm
2-12-99	1200	224ppm	225ppm
2-19-99	0816	211ppm	212ppm
2-26-99	1206	194ppm	186ppm
3-04-99	1532	222ppm	217ppm
3-11-99	0713	208ppm	210ppm
3-19-99	1030	192ppm	210ppm
3-26-99	1338	295ppm	296ppm
4-01-99	1530	300ppm	291ppm
4-07-99	1335	315ppm	300ppm
4-15-99	1705	328ppm	331ppm
4-20-99	1845	345ppm	376ppm

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

1-27-99	184 ppm	195 ppm	8:00 Am	
2-2-99	201 ppm	199 ppm	1:00 pm	
2-12-99	224 ppm	225 ppm	12:00 pm	
2-[illegible]-99	211 ppm	212 ppm	[illegible]:16 am	
2-26-99	194 ppm	186 ppm	12:06 pm	
3-4-99	222 ppm	217 ppm	3:32 pm	
3-11-99	208 ppm	210 ppm	713 pm	20 gal
3-19-99	192 ppm	210 ppm	1038 am	[illegible] +0'
3-26-99	295 ppm	296 ppm	1:38 PM	18 gal To
4-1-99	300 ppm	291 ppm	3:30 pm	[illegible]
4-7-99	315 ppm	300 ppm	1:35 pm	
4-15-99	328 ppm	331 ppm	5:03 pm	

4-20-99	345 ppm	376 ppm	6:45 pm
4-29-99			

Koch Operations Group	**Koch Pipeline Crouch Station Copy of Sampling Log**	*Safety & Environmental Solutions, Inc. Hobbs, NM*

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: BETH ALDRICH
703 E. CLINTON, SUITE #103
HOBBS, NM 88240
FAX TO: (505) 393-4388

Receiving Date: 04/20/99
Reporting Date: 04/21/99
Project Number: NOT GIVEN
Project Name: KOCH
Project Location: CROUCH STATION

Sampling Date: 04/20/99
Sample Type: AIR (TEDLAR BAG)
Sample Condition: 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		04/20/99	04/20/99	04/20/99	04/20/99
H4112-1	AIR SAMPLE	43.1	29.5	5.22	6.13
Quality Control		91.4	91.2	91.0	268
True Value QC		100	100	100	300
% Recovery		91.4	91.2	91.0	89.4
Relative Percent Difference		5.5	0.1	11.0	10.4

METHOD: EPA SW-846 8260

Chemist

4/21/99
Date

H4112.XLS

CARDINAL LABORATORIES, INC.

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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 1 of ____

Company Name: SESI	BILL TO PO #:
Project Manager:	
Address: 703 E. Clinton #103	Company:
City: Hobbs State: NM Zip: 88240	Attn: Sam
Phone #: 397-0510	Address:
Fax #: 393-4388	City:
Project #: Project Owner:	State: Zip:
Project Name: Koch	Phone #:
Project Location: Crouch Station	Fax #:

ANALYSIS REQUEST

BTEX (EC/MS 8020)

FOR LAB USE ONLY LAB I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER: Air	PRES.: ACID:	ICE / COOL	OTHER:	SAMPLING: DATE	TIME
H4112-1	Air Sample	G	1						X			X	4-20-99	1045p

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the 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 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequental 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.

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.

Sampler Relinquished:	Date: 4-20-99	Received By:	Phone Result ☐ Yes ☐ No Additional Fax #:
	Time: 1:15p		Fax Result: ☐ Yes ☐ No
Relinquished By:	Date:	Received By: (Lab Staff)	REMARKS:
	Time:		
Delivered By: (Circle One) Sampler - UPS - Bus - Other:		Sample Condition Cool: ☐ Yes ☐ No Intact: ☒ Yes ☐ No	CHECKED BY: (Initials)

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