



Chevron U.S.A. Products Company

2410 Camino Ramon, San Ramon, California • Phone (510) 842-9500
Mail Address: P.O. Box 5004, San Ramon, CA 94583-0804

January 8, 1993

Ms. Susan Hugo
Alameda County Environmental Health
80 Swan Way, Room 200
Oakland, CA 94621

Re : Chevron Service Station No. 9-1740
6550 Moraga Avenue, Oakland, CA 94611

Dear Ms. Hugo :

Enclosed is the quarterly monitoring and sampling report prepared by Sierra Environmental Services (SES) and dated January 5, 1993.

Briefly, monitoring well C-3 was nondetect for total petroleum hydrocarbon as gasoline (TPH-G), benzene, toluene, ethylbenzene, and xylenes (BTEX). The remaining wells C-2 and C-4 have the following concentrations of dissolved hydrocarbon constituents : 280 and 590 ppb TPH-G, 160 and 130 ppb benzene, 6.2 and 18 ppb toluene, 7.4 and 5.6 ppb ethylbenzene, 5.0 and 29 ppb xylenes, respectively. Well C-1 was abandoned during the over-excavation of the waste oil tank. Depth to water ranged from 5.57 to 14.52 feet.

Chevron will continue to monitor and sample the wells on this site on a quarterly basis.

If you have any questions or comments, please feel free to call me at (510) 842-8752.

Sincerely,

Chevron U.S.A. Products Co.

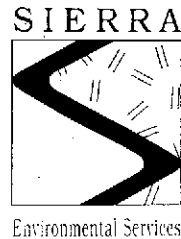
Kenneth Kan
Engineer

LKAN/MacFile 9-1740R8

Enclosures

cc : Mr. Eddy So
RWQCB-S.F. Bay Region
2101 Webster Street, Suite 500
Oakland, CA 94612

Mr. Steve Willer
Chevron U.S.A. Products Co.



January 5, 1993

Kenneth Kan
Chevron USA
P.O. Box 5004
San Ramon, CA 94583

Re: Chevron Service Station #9-1740
6550 Moraga Avenue
Oakland, California
SES Project #1-221-04

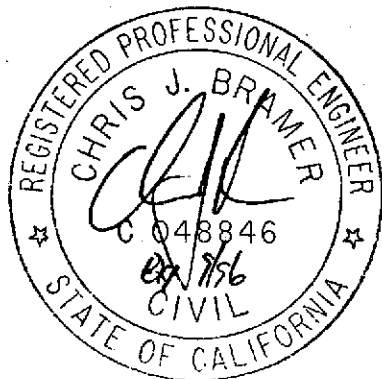
Dear Mr. Kan:

This report presents the results of the quarterly ground water sampling at Chevron Service Station #9-1740, located at 6550 Moraga Avenue in Oakland, California (Figure 1, Appendix A). Three wells, C-2 through C-4, were sampled (Figure 2, Appendix A).

On December 16, 1992, SES personnel visited the site. Water level measurements were collected in all site wells and all wells were checked for the presence of free-phase hydrocarbons. Free-phase hydrocarbons were not present in any wells. Water level data are shown in Table 1 (Appendix B) and a ground water elevation contour map is included as Figure 2 (Appendix A).

Ground water samples were collected on December 16, 1992 in accordance with SES Standard Operating Procedure - Ground Water Sampling (Appendix C). All analyses were performed by Superior Precision Analytical, Inc. of Martinez, California. Analytic results for ground water are presented in Table 2 (Appendix B). The chain of custody document and laboratory analytic reports are included in Appendix D. SES is not responsible for laboratory omissions or errors.

Thank you for allowing us to provide services to Chevron USA. Please call if you have any questions.



Sincerely,
Sierra Environmental Services

Argy Meza
Argy Meza
Staff Geologist

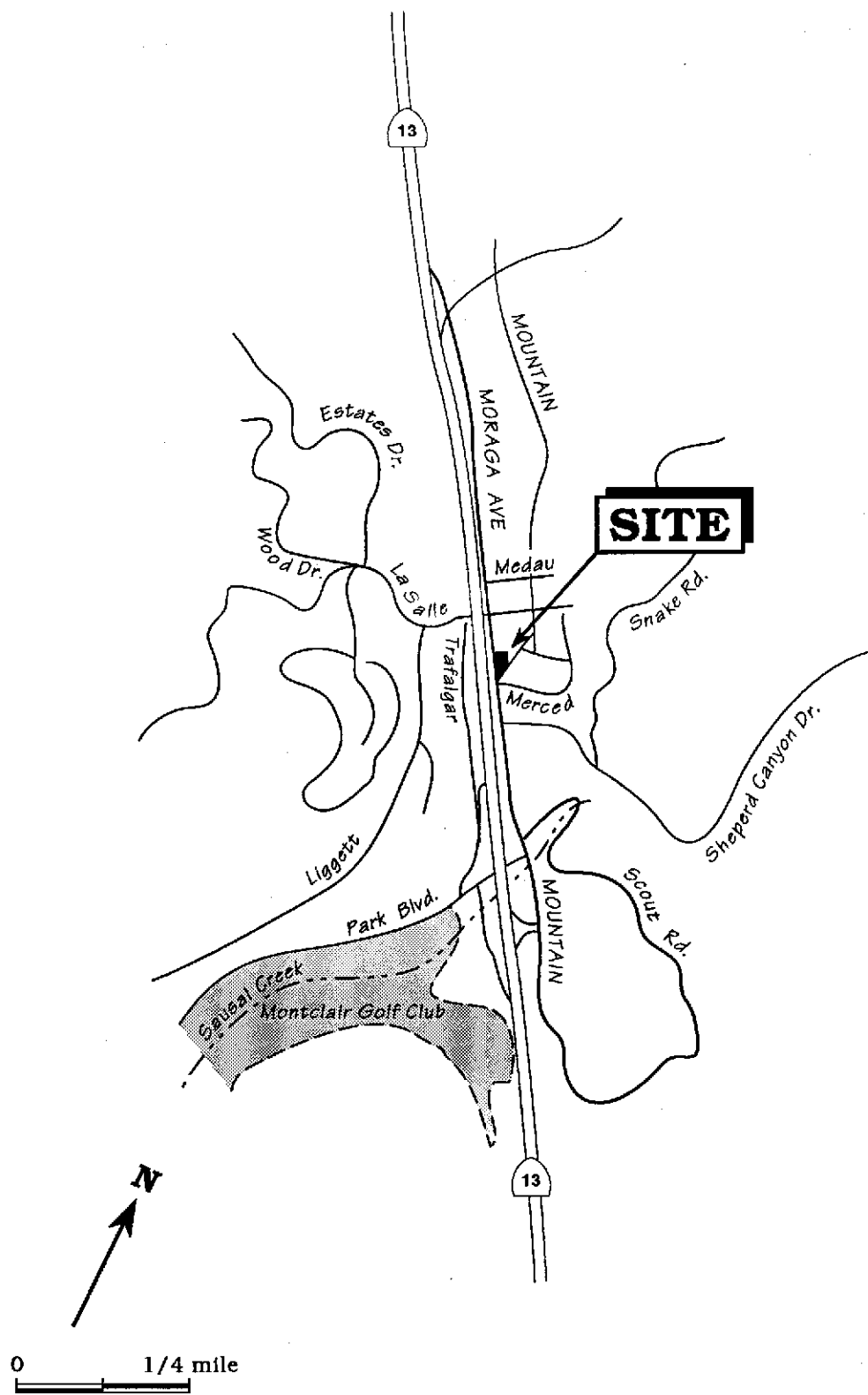
Chris J. Bramer
Chris J. Bramer
Professional Engineer #C48846

AJM/CJB/ly
22104GMJA3

- Appendices
- A - Figures
 - B - Tables
 - C - SES Standard Operating Procedure
 - D - Chain of Custody Document and Laboratory Analytic Reports

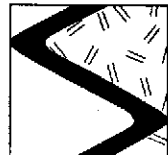


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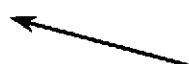
Base map ref: California Automobile Association (AAA)

Figure 1. Site Location Map – Chevron Service Station #9-1740, 6550 Moraga Avenue, Oakland, California

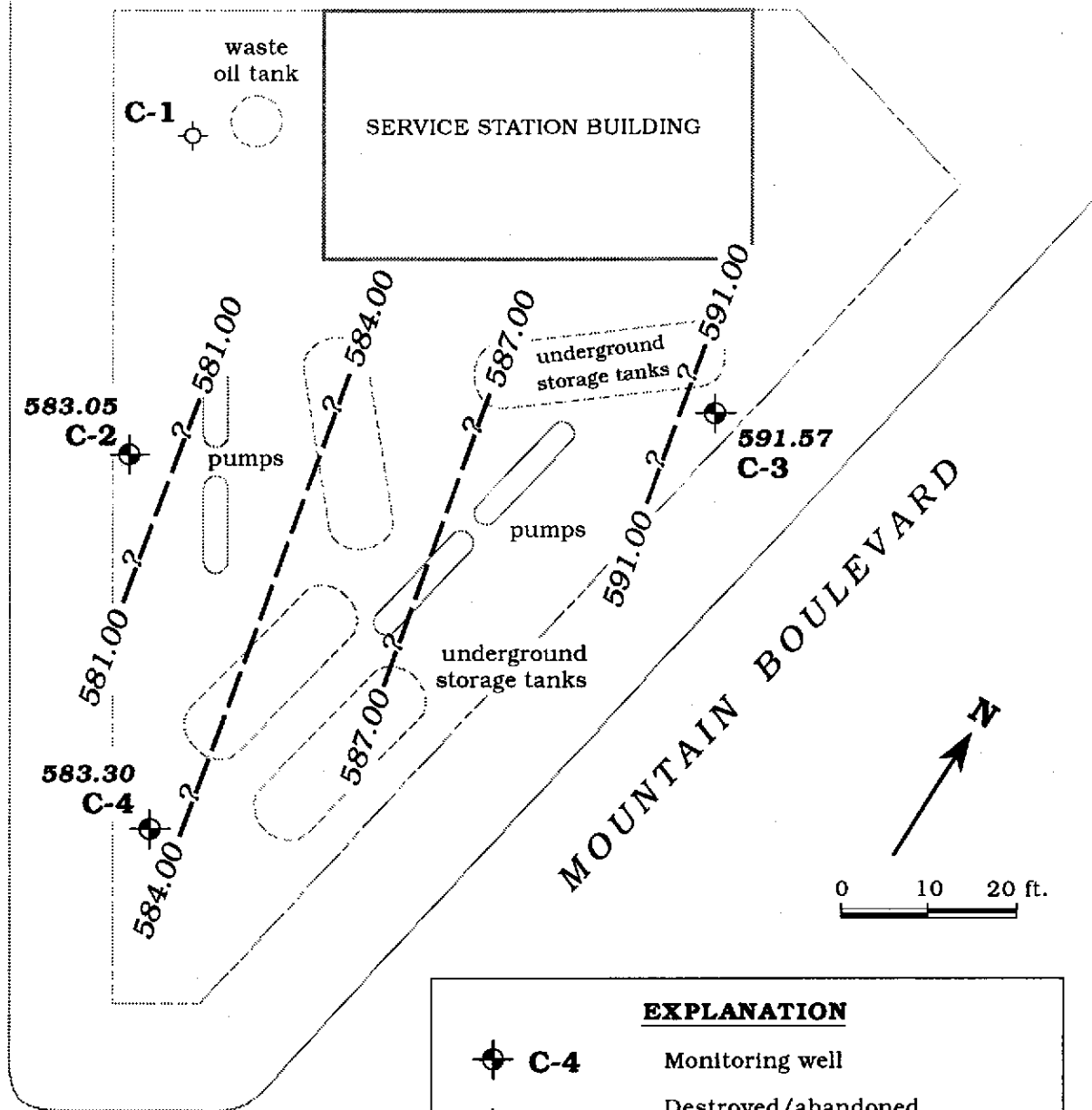


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Approximate ground water flow direction



MORAGA AVENUE

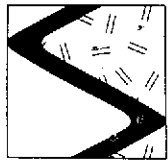


EXPLANATION

- C-4** Monitoring well
- C-1** Destroyed/abandoned monitoring well
- 583.05** Ground water elevation, in feet
- 584.00** Ground water elevation contour, dashed where inferred, queried where uncertain

Base map after: Pacific Environmental Group, Inc.

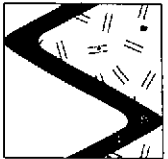
Figure 2. Monitoring Well Locations and Ground Water Elevation Contour Map – December 16, 1992 – Chevron Service Station #9-1740, 6550 Moraga Avenue, Oakland, California



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Table 1. Water Level Data and Well Construction Details - Chevron Service Station #9-1740, 6550 Moraga Avenue, Oakland, California

Well ID	Date Measured	DTW (ft)	TOC (ft)	GWE (msl)	Product Thickness* (ft)	Screen Interval	Sand Pack Interval	Bentonite/Grout Interval
						-----feet below grade----->		
C-1	3/25/91	3.28	595.82	592.54	0	5 - 25	4 - 25	0 - 4
	7/1/91	3.43		592.39	0			
	9/25/91	4.15		591.67	0			
	12/23/91	3.71		592.11	0			
	3/24/92	3.02		592.80	0			
	6/23/92	3.76		592.06	0			
	9/30/92 ²	---		---	---			
C-2	3/25/91	22.89	594.57	571.68	0	5 - 25	4 - 25	0 - 4
	7/1/91	7.37		587.20	0			
	9/25/91	6.98		587.59	0			
	12/23/91	5.01		589.56	0			
	3/24/92	17.27		577.30	0			
	6/23/92	3.82		590.75	0			
	9/30/92	14.01		580.56	0			
	12/16/92	14.52		580.05	0			
C-3	3/25/91	5.16	597.14	591.98	0	5 - 25	4 - 25	0 - 4
	7/1/91	5.84		591.30	0			
	9/25/91	5.94		591.20	0			
	12/23/91	5.94		591.20	0			
	3/24/92	4.77		592.37	0			
	6/23/92	5.67		591.47	0			
	9/30/92	6.30		590.84	0			
	12/16/92	5.57		591.57	0			
C-4	3/25/91	4.45	593.10	588.65	0	5 - 25	4 - 25	0 - 4
	7/1/91	5.33		587.77	0			
	9/25/91	5.50		587.60	0			
	12/23/91	4.92		588.18	0			



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Table 1. Water Level Data and Well Construction Details - Chevron Service Station #9-1740, 6550 Moraga Avenue, Oakland, California (continued)

Well ID	Date Measured	DTW (ft)	TOC (ft)	GWE (msl)	Product Thickness* (ft)	Screen Interval	Sand Pack Interval	Bentonite/Grout Interval
						<-----feet below grade----->		
C-4	3/24/92	4.19		589.06 ¹	.19			
(cont)	6/23/92	4.91		588.43 ¹	.30			
	9/30/92	8.66		584.44	0			
	12/16/92	9.80		583.30	0			

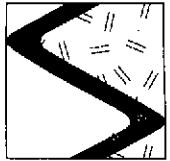
EXPLANATION:

DTW = Depth to water
TOC = Top of casing elevation
GWE = Ground water elevation
msl = Measurements referenced relative to mean sea level

NOTES:

Depth to water measurements prior to July 1, 1991, top of casing elevations, and well construction details were compiled from the Soil and Groundwater Investigation Report prepared for this service station by Pacific Environmental Group, Inc. dated June 13, 1991.

- Product thickness measurements prior to July 1, 1991 were measured with a clear teflon bailer. Measurements made since July 1, 1991 used an MMC flexi-dip interface probe.
- ¹ GWE corrected for presence of free-phase hydrocarbons using the formula: [TOC - DTW] + product thickness x 0.80 (assumed specific gravity of free-phase hydrocarbons).
- ² Monitoring well abandoned during excavation activities.



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Table 2. Analytic Results for Ground Water - Chevron Service Station #9-1740, 6550 Moraga Avenue, Oakland, California (continued)

Well ID	Date Sampled	Analytic Lab	Analytic Method	TPPH(G)	TPH(D)	O&G	B	T	E	X
-----ppb-----										
Trip Blank (AA)	3/25/91	SAL	8015/8020	<50	---	---	<0.5	<0.5	<0.5	<0.5
	7/1/91	SAL	8015/8020	<50	---	---	<0.5	<0.5	<0.5	<0.5
	9/25/91	SAL	8015/8020	<50	---	---	<0.5	<0.5	<0.5	<0.5
	12/23/91	SPA	8015/8020	<50	---	---	<0.5	<0.5	<0.5	<0.5
TB-LB	3/24/92	SPA	8015/8020	<50	---	---	<0.5	<0.5	<0.5	<0.5
	6/23/92	SPA	8015/8020	<50	---	---	<0.5	<0.5	<0.5	<0.5
	9/30/92	SPA	8015/8020	<50	---	---	<0.5	<0.5	<0.5	<0.5
	12/16/92	SPA	8015/8020	<50	---	---	<0.5	<0.5	<0.5	<0.5
Bailer Blank (BB)	3/25/91	SAL	8015/8020	<50	---	---	<0.5	<0.5	<0.5	<0.5
	7/1/91	SAL	8015/8020	<50	---	---	<0.5	<0.5	<0.5	<0.5
	9/25/91	SAL	8015/8020	<50	---	---	<0.5	<0.5	<0.5	<0.5
	12/23/91	SPA	8015/8020	<50	---	---	<0.5	<0.5	<0.5	<0.5
	3/24/92	SPA	8015/8020	<50	---	---	<0.5	<0.5	<0.5	<0.5
	6/23/92	SPA	8015/8020	<50	---	---	<0.5	<0.5	<0.5	<0.5
	9/30/92	SPA	8015/8020	<50	---	---	<0.5	<0.5	<0.5	<0.5
	12/16/92	SPA	8015/8020	<50	---	---	<0.5	<0.5	<0.5	<0.5

EXPLANATION:

TPPH(G) = Total Purgeable Petroleum Hydrocarbons as Gasoline
 TPH(D) = Total Petroleum Hydrocarbons as Diesel
 O&G = Oil and Grease
 B = Benzene
 T = Toluene
 E = Ethylbenzene
 X = Xylenes
 ppb = Parts per billion
 --- = Not analyzed/Not applicable

ANALYTIC METHODS:

8015 = EPA Method 8015/5030 for TPPH(G)
 8015 = EPA Method 8015 for TPH(D)
 8020 = EPA Method 8020 for BTEX
 503E = Standard Methods Method 503E for O&G

ANALYTIC LABORATORIES:

SAL = Superior Analytic Laboratory of Martinez, California
 SPA = Superior Precision Analytical, Inc. of Martinez, California

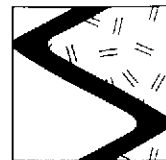
NOTE:

Analytic data prior to July 1, 1991 were compiled from the Soil and Groundwater Investigation Report prepared for this service station by Pacific Environmental Group, Inc. dated June 13, 1991.
 * Free-phase hydrocarbons were measured in this well, therefore the well was not sampled.
 1. Monitoring well abandoned during excavation activities.



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APPENDIX C
SIERRA ENVIRONMENTAL SERVICES
STANDARD OPERATING PROCEDURES



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SES STANDARD OPERATING PROCEDURE GROUND WATER SAMPLING - QUARTERLY MONITORING

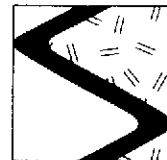
The following describes sampling procedures used by SES field personnel to collect and handle ground water samples. Before samples are collected, careful consideration is given to the type of analysis to be performed so that precautions are taken to prevent loss of volatile components or contamination of the sample, and to preserve the sample for subsequent analysis. Wells will be sampled no less than 24 hours after well development. Collection methods specific to ground water sampling are presented below.

Prior to sampling, each well is checked for the presence of free-phase hydrocarbons using an MMC flexi-dip interface probe. Product thickness (measured to the nearest 0.01 foot) is noted on the sampling form. Water level measurements are also made using either a water level meter or the interface probe. The water level measurements are also noted on the sampling form.

Prior to sampling, each well is purged of a minimum of three well casing volumes of water using a steam-cleaned PVC bailer, or a pre-cleaned pump. Temperature, pH and electrical conductivity are measured during purging. Purging is continued until these parameters have stabilized for consecutive readings.

Ground water samples are collected from the wells with steam-cleaned Teflon bailers. The water samples are decanted into the appropriate container for the analysis to be performed. Pre-preserved sample containers may be used or the analytic laboratory may add preservative to the sample upon arrival. Duplicate samples are collected from each well as a back-up sample and/or to provide quality control. The samples are labeled to include the project number, sample ID, date, preservative, and the field person's initials. The samples are placed in polyethylene bags and in an ice chest (maintained at 4°C with blue ice or ice) for transport under chain of custody to the laboratory.

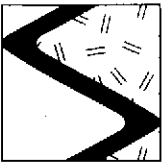
The chain of custody form includes the project number, analysis requested, sample ID, date analysis and the SES field person's name. The form is signed and dated (with the transfer time) by each person who yields or receives the samples beginning with the field personnel and ending with the laboratory personnel.



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A trip blank and bailer blank accompanies each sampling set, or 5% trip blanks and 5% bailer blanks are included for sets of greater than 20 samples. The bailer blank is prepared by pouring previously boiled water into a steam-cleaned Teflon bailer prior to sampling a well. The trip and bailer blanks are analyzed for some or all of the same compounds as the ground water samples.

GWS-QMP2.SOP



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APPENDIX D
CHAIN OF CUSTODY DOCUMENT AND
LABORATORY ANALYTIC REPORTS

Fax copy of Lab Report and COC to Chevron Contact: Yes No

87444 Chain-of-Custody-Record

Chevron U.S.A. Inc. P.O. BOX 5004 San Ramon, CA 94583 FAX (415)842-9591	Chevron Facility Number <u>9-1740</u>	Chevron Contact (Name) <u>Ken Kam</u>
	Facility Address <u>6550 Moraga Ave., Oakland</u>	(Phone) <u>842-8752</u>
	Consultant Project Number <u>1-221-04</u>	Laboratory Name <u>Superior Precision Analytical</u>
	Consultant Name <u>Sierra Environmental Services</u>	Laboratory Release Number <u>4600980</u>
	Address <u>P.O. Box 2546, Martinez, CA</u>	Samples Collected by (Name) <u>Carol Eaton</u>
Project Contact (Name) <u>Chris Bramer</u>	Collection Date <u>12/16/92</u>	Signature <u>Carol Eaton</u>
	(Phone) <u>370-1280</u> (Fax Number) <u>370-7459</u>	

Sample Number	Lab Sample Number	Number of Containers	Matrix S = Soil W = Water A = Air C = Charcoal	Type G = Grab C = Composite D = Discrete	Time	Sample Preservation	Iced (Yes or No)	Analyses To Be Performed											Remarks
								BTEX + TPH GAS (8020 + 8015)	TPH Diesel (8015)	Oil and Grease (5520)	Purgeable Halocarbons (8010)	Purgeable Aromatics (8020)	Purgeable Organics (8240)	Extractable Organics (8270)	Metals Cd, Cr, Pb, Zn, Ni (ICAP or AA)				
TBUB		3	W	G	13:10	HCl	Y	✓											Analyze in order
BB					13:15			✓											
C-3					13:20			✓											
C-2					13:30			✓											
C-4					13:40			✓											

Please Initial: _____
 Samples Stored in Ice: _____
 Appropriate containers: _____
 Samples preserved: _____
 VOA's without headspace: _____
 Comments: _____

Note:
Do Not Bill
TB-LB Samples

Relinquished By (Signature) <u>Carol Eaton</u>	Organization <u>SES</u>	Date/Time <u>12/16/92</u>	Received By (Signature) _____	Organization _____	Date/Time _____	Turn Around Time (Circle Choice) 24 Hrs. 48 Hrs. 5 Days 10 Days As Contracted
Relinquished By (Signature) _____	Organization _____	Date/Time _____	Received By (Signature) _____	Organization _____	Date/Time _____	
Relinquished By (Signature) _____	Organization _____	Date/Time _____	Received For Laboratory By (Signature) _____	Date/Time <u>12/16/92</u>		

COC-3086/US 8/1/92



Superior Precision Analytical, Inc.

P.O. Box 1545 • Martinez, California 94553 • (510) 229-1590 / fax (510) 229-0916

Sierra Environmental
Attn: Chris Bramer

Project 1-221-04
Reported 12/31/92

TOTAL PETROLEUM HYDROCARBONS

Lab #	Sample Identification	Sampled	Analyzed Matrix
87449- 1	TB-LB	12/16/92	12/29/92 Water
87449- 2	BB	12/16/92	12/29/92 Water
87449- 3	C-3	12/16/92	12/30/92 Water
87449- 4	C-2	12/16/92	12/29/92 Water
87449- 5	C-4	12/16/92	12/30/92 Water

RESULTS OF ANALYSIS

Laboratory Number: 87449- 1 87449- 2 87449- 3 87449- 4 87449- 5

Gasoline:	ND<50	ND<50	ND<50	280	590
Benzene:	ND<0.5	ND<0.5	ND<0.5	100	100
Toluene:	ND<0.5	ND<0.5	ND<0.5	6.2	18
Ethyl Benzene:	ND<0.5	ND<0.5	ND<0.5	7.4	5.6
Xylenes:	ND<0.5	ND<0.5	ND<0.5	5.0	29
Concentration:	ug/L	ug/L	ug/L	ug/L	ug/L



Superior Precision Analytical, Inc.

825 Arnold Drive, Suite 114 • Martinez, California 94553 • (510) 229-1512 / fax (510) 229-1526

C E R T I F I C A T E O F A N A L Y S I S

ANALYSIS FOR TOTAL PETROLEUM HYDROCARBONS

Page 2 of 2
QA/QC INFORMATION
SET: 87449

NA = ANALYSIS NOT REQUESTED
ND = ANALYSIS NOT DETECTED ABOVE QUANTITATION LIMIT
ug/L = parts per billion (ppb)

OIL AND GREASE ANALYSIS By Standard Methods Method 5520F:
Minimum Detection Limit in Water: 5000ug/L

Modified EPA SW-846 Method 8015 for Extractable Hydrocarbons:
Minimum Quantitation Limit for Diesel in Water: 50ug/L

EPA SW-846 Method 8015/5030 Total Purgable Petroleum Hydrocarbons:
Minimum Quantitation Limit for Gasoline in Water: 50ug/L

EPA SW-846 Method 8020/BTXE
Minimum Quantitation Limit in Water: 0.5ug/L

ANALYTE	SPIKE LEVEL	MS/MSD RECOVERY	RPD	CONTROL LIMIT
Gasoline:	200 ng	105/91	14%	70-130
Benzene:	200 ng	83/91	9%	70-130
Toluene:	200 ng	88/95	8%	70-130
Ethyl Benzene:	200 ng	95/100	5%	70-130
Xylenes:	200 ng	98/105	7%	70-130

Richard Srna, Ph.D.

Richard Srna (for)
Laboratory Director