



Chevron

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October 15, 1993

Chevron U.S.A. Products Company

2410 Camino Ramon
San Ramon, CA 94583
P.O. Box 5004
San Ramon, CA 94583-0804

Marketing Department

Phone 510 842 9500

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

Re: Former Chevron Service Station No. 9-3864
5101 Telegraph Avenue, Oakland, California

Dear Ms. Hugo :

Enclosed is the October 11, 1993 quarterly monitoring and sampling report from Sierra Environmental Services.

Dissolved hydrocarbons were present in all monitoring wells during this sampling event. Levels in C-4 were again close to the detection limit for total petroleum hydrocarbons as gasoline (TPH-g), benzene, toluene, ethylbenzene, and xylenes (BTEX). In comparison with last quarters results, well C-1 had elevated levels of dissolved hydrocarbons.

RESNA completed the installation of the additional off-site wells. A report documenting their work and findings will be sent to your office.

Please refer to the report for additional information. 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
Site Assessment and Remediation Engineer

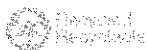
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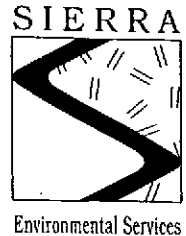
Enclosure

cc: Mr. Richard Hiatt, RWQCB-San Francisco Bay Area
2101 Webster Street, Suite 500, Oakland, CA 94612

Dr. Ravi Arulananthum, Alameda County Health Care Services
80 Swan Way, Room 200, Oakland, CA 94621

Ms. Bette Owen, Chevron U.S.A. Products Co.





October 11, 1993

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

Re: Former Chevron Service Station #9-3864
5101 Telegraph Avenue
Oakland, California
SES Project #1-203-04

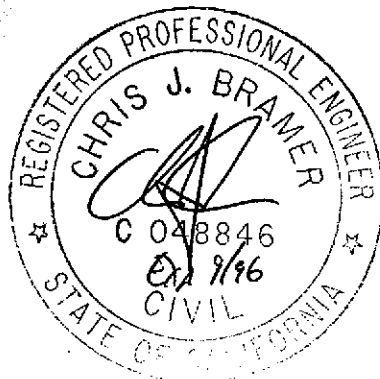
Dear Mr. Kan:

This report presents the results of quarterly ground water sampling at Former Chevron Service Station #9-3864, located at 5101 Telegraph Avenue in Oakland, California. Four wells, C-1 through C-4, were sampled (Figure 1).

On September 13, 1993, 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 of the site wells. Water level data are shown in Table 1 and ground water elevation contours are included on Figure 1.

The water samples were collected on September 13, 1993 in accordance with SES Standard Operating Procedure - Ground Water Sampling (attached). All analyses were performed by Superior Precision Analytical, Inc. of Martinez, California. Analytic results for ground water are presented in Table 2. The chain of custody document and laboratory analytic reports are attached. SES is not responsible for laboratory omissions or errors.

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



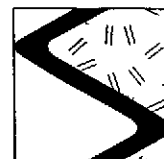
Sincerely,
Sierra Environmental Services

Argy Mena
Argy Mena
Staff Geologist

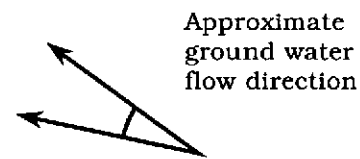
Chris J. Bramer
Chris J. Bramer
Professional Engineer #C48846

AJM/CJB/cb
20304QM.OC3

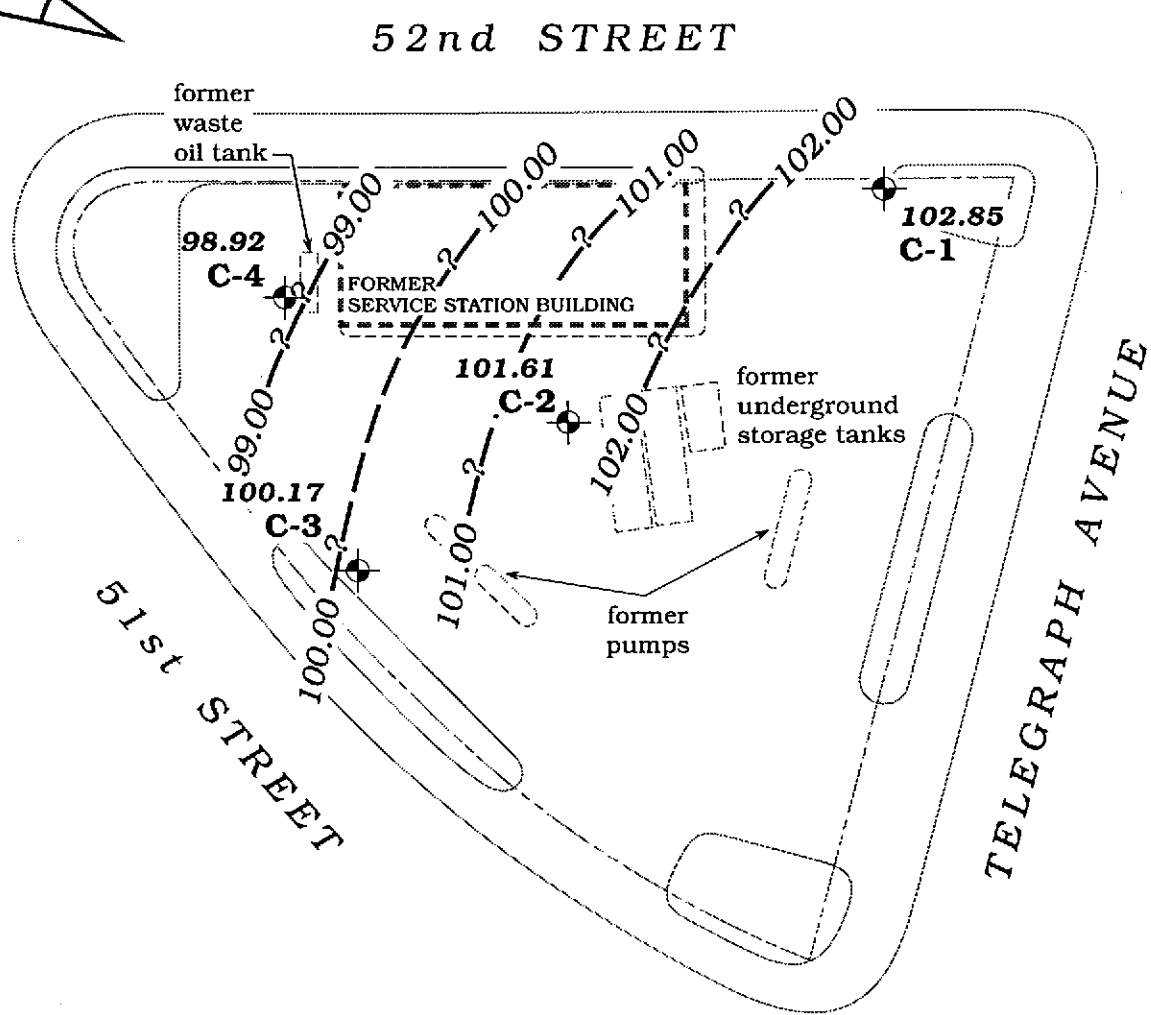
Attachments Figure
 Tables
 SES Standard Operating Procedure
 Chain of Custody Document and Laboratory Analytic Reports



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Approximate ground water flow direction



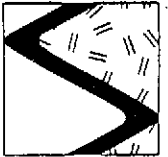
EXPLANATION	
	C-4 Monitoring well
100.17	Ground water elevation, in feet
	101.00 Ground water elevation contour, dashed where inferred, queried where uncertain



0 20 40 ft.

Base map after: GeoStrategies Inc.

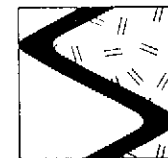
Figure 2. Monitoring Well Location and Ground Water Contour Map - September 13, 1993 - Former Chevron Service Station #9-3864, 5101 Telegraph Avenue, Oakland, California



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Table 1. Water Level Data and Well Construction Details - Former Chevron Service Station #9-3864, 5101 Telegraph 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	12/6/90	15.34	117.45	102.11	0	10 - 29.5	8 - 30	0 - 8
	6/6/91	14.62		102.83	0			
	12/4/91	14.48		102.97	0			
	6/2/92	14.53		102.92	0			
	9/16/92	14.93		102.52	0			
	12/21/92	13.73		103.72	0			
	3/11/93	13.83		103.62	0			
	6/11/93	14.19		103.26	0			
	9/13/93	14.60		102.85	0			
C-2	12/6/90	15.34	116.16	100.82	0	10 - 29.5	8 - 30	0 - 8
	6/6/91	14.62		101.54	0			
	12/4/91	15.43		100.73	0			
	6/2/92	14.42		101.74	0			
	9/16/92	14.81		101.35	0			
	12/21/92	13.37		102.79	0			
	3/11/93	13.47		102.69	0			
	6/11/93	13.98		102.18	0			
	9/13/93	14.55		101.61	0			
C-3	12/6/90	16.86	115.70	98.84	0	10 - 29.5	8 - 30	0 - 8
	6/6/91	15.69		100.01	0			
	12/4/91	15.38		100.32	0			
	6/2/92	15.40		100.30	0			
	9/16/92	15.89		99.81	0			
	12/21/92	13.91		101.79	0			
	3/11/93	13.75		101.95	0			
	6/11/93	14.67		101.03	0			
	9/13/93	15.53		100.17	0			
C-4	12/6/90	17.68	116.10	98.42	0	10 - 29.5	8 - 30	0 - 8
	6/6/91	16.49		99.61	0			
	12/4/91	16.82		99.28	0			
	6/2/92	16.92		99.18	0			
	9/16/92	17.71		98.39	0			
	12/21/92	15.36		100.74	0			
	3/11/93	15.49		100.61	0			
	6/11/93	16.27		99.83	0			
	9/13/93	17.18		98.92	0			



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Table 1. Water Level Data and Well Construction Details - Former Chevron Service Station #9-3864, 5101 Telegraph Avenue, Oakland, California (continued)

EXPLANATION:

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

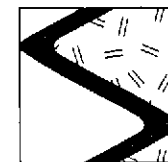
NOTES:

Depth to water measurements and top of casing elevations prior to June 6, 1991 were compiled from the January 17, 1991 Site Update Report prepared for this service station by GeoStrategies, Inc. of Hayward, California.

Well construction details were compiled from November 14 and 15, 1990 boring logs by GeoStrategies, Inc.

- * Product thickness was measured by GeoStrategies, Inc. on December 6, 1990 with an electronic oil-water interface probe. SES product thickness measurements after 12/6/90 were made with an MMC flexi-dip interface probe.

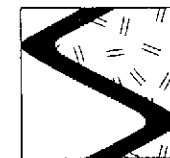
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Table 2. Analytic Results for Ground Water - Former Chevron Service Station #9-3864, 5101 Telegraph Avenue, Oakland, California

Well ID	Date Sampled	Analytic Lab	Analytic Method	TPPH(G)	B	T	E	X
				-----ppb----->				
C-1	12/6/90	SAL	8015/8020	1,900	17	11	3	21
	6/6/91	SAL	8015/8020	3,400	21	15	11	18
	12/4/91	SPA	8015/8020	2,700	22	16	13	23
	6/2/92	SPA	8015/8020	1,900	170	170	13	83
	9/16/92	SPA	8015/8020	810	5.8	5.7	2.0	6.3
	12/21/92	SPA	8015/8020	75	2.4	2.9	1.4	4.7
	3/11/93	SPA	8015/8020	150	2.4	20	3.3	23
	6/11/93	SPA	8015/8020	400	4.3	2.3	1.0	3.5
	9/13/93	SPA	8015/8020	4,100	62	43	34	57
C-2	12/6/90	SAL	8015/8020	210	140	9	2	11
	6/6/91	SAL	8015/8020	4,800	340	23	19	23
	12/4/91	SPA	8015/8020	3,900	85	15	9.1	15
	6/2/92	SPA	8015/8020	3,300	76	9.2	14	15
	9/16/92	SPA	8015/8020	3,000	16	15	3.4	7.5
	12/21/92	SPA	8015/8020	2,200	21	12	7.1	15
	3/11/93	SPA	8015/8020	2,200	33	24	12	25
	6/11/93	SPA	8015/8020	2,600	21	25	11	26
	9/13/93	SPA	8015/8020	2,100	31	25	18	39
C-3	12/6/90	SAL	8015/8020	210	2	<0.5	<0.5	1
	12/6/90 ¹	SAL	8015/8020	220	2	0.6	<0.5	2
	6/6/91	SAL	8015/8020	6,400	310	21	16	21
	12/4/91	SPA	8015/8020	5,100	120	18	17	20
	6/2/92	SPA	8015/8020	6,700	140	44	17	37
	9/16/92	SPA	8015/8020	7,100	130	26	12	30
	12/21/92	SPA	8015/8020	13,000	390	360	100	410
	3/11/93	SPA	8015/8020	5,100	86	20	12	23
	6/11/93	SPA	8015/8020	7,200	91	38	19	38
9/13/93	SPA	8015/8020	6,800	100	52	41	75	
C-4	12/6/90	SAL	8015/8020	<50	<0.5	<0.5	<0.5	<0.5
	12/18/90 ²	SAL	8015/8020	<50	<0.5	<0.5	<0.5	<0.5
	6/6/91	SAL	8015/8020	<50	1.0	1.0	<0.5	0.7
	12/4/91	SPA	8015/8020	70	6.5	9.8	1.7	8.6
	6/2/92	SPA	8015/8020	70	3.0	4.4	1.8	9.0
	9/16/92	SPA	8015/8020	<50	1.4	1.8	<0.5	1.1
	12/21/92	SPA	8015/8020	<50	0.6	0.7	<0.5	1.5
	3/11/93	SPA	8015/8020	<50	<0.5	<0.5	<0.5	<1.5
	6/11/93	SPA	8015/8020	52	0.9	3.1	0.7	3.8
9/13/93	SPA	8015/8020	64	0.9	1.0	<0.5	1.7	



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Table 2. Analytic Results for Ground Water - Chevron Service Station #9-3864, 5101 Telegraph Avenue, Oakland, California (continued)

Well ID	Date Sampled	Analytic Lab	Analytic Method	TPPH(G) B T E X				
				←-----ppb-----→				
Trip Blank	12/6/90	SAL	8015/8020	<50	<0.5	<0.5	<0.5	<0.5
	12/18/90 ³	SAL	8015/8020	<50	<0.5	<0.5	<0.5	<0.5
(AA)	6/6/91	SAL	8015/8020	<50	<0.5	<0.5	<0.5	<0.5
	12/4/91	SPA	8015/8020	<50	<0.5	<0.5	<0.5	<0.5
TB-LB	6/2/92	SPA	8015/8020	<50	<0.5	<0.5	<0.5	<0.5
	9/16/92	SPA	8015/8020	<50	<0.5	<0.5	<0.5	<0.5
	12/21/92	SPA	8015/8020	<50	<0.5	<0.5	<0.5	<0.5
	3/11/93	SPA	8015/8020	<50	<0.5	<0.5	<0.5	<1.5
	6/11/93	SPA	8015/8020	<50	<0.5	<0.5	<0.5	<1.5
	9/13/93	SPA	8015/8020	<50	<0.5	<0.5	<0.5	<1.5
	9/13/93	SPA	8015/8020	<50	<0.5	<0.5	<0.5	<1.5
Bailer Blank (BB)	6/6/91	SAL	8015/8020	<50	<0.5	<0.5	<0.5	<0.5
	12/4/91	SPA	8015/8020	<50	<0.5	<0.5	<0.5	<0.5
	6/2/92	SPA	8015/8020	<50	<0.5	<0.5	<0.5	<0.5
	9/16/92	SPA	8015/8020	<50	<0.5	<0.5	<0.5	<0.5
	12/21/92	SPA	8015/8020	<50	<0.5	<0.5	<0.5	<0.5
	3/11/93	SPA	8015/8020	<50	<0.5	<0.5	<0.5	<1.5
	6/11/93	SPA	8015/8020	<50	<0.5	<0.5	<0.5	<1.5
	9/13/93	SPA	8015/8020	<50	<0.5	<0.5	<0.5	<1.5

EXPLANATION:

TPPH(G) = Total Purgeable Petroleum Hydrocarbons as Gasoline
 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)
 8020 = EPA Method 8020 for BTEX

ANALYTIC LABORATORIES:

SAL = Superior Analytical Laboratory of Martinez and San Francisco, California
 SPA = Superior Precision Analytical, Inc. of Martinez, California

NOTES:

Ground water analytic data from December 6 and 18, 1990 was compiled from the January 17, 1991 Site Update Reports prepared for this service station by GeoStrategies, Inc. of Hayward, California.

- ¹ Duplicate sample.
- ² C-4 was also analyzed for halogenated volatile organic compounds (HVOCs) by EPA Method 8010, and metals (Cd, Cr, Pb, Ni and Zn) by EPA-approved methods. Two ppb chloroform, 0.18 ppm chromium, 0.25 ppm nickel and 0.23 ppm zinc were detected. Other HVOCs, Cd and Pb were not detected.
- ³ The trip blank was also analyzed for HVOCs. HVOCs were not detected.



SES STANDARD OPERATING PROCEDURE GROUND WATER SAMPLING

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 at least three times during purging. Purging is continued until these parameters have stabilized (i.e., changes in temperature, pH or conductivity do not exceed $\pm 0.5^{\circ}\text{F}$, 0.1 or 5%, respectively).

The purge water is taken to Chevron's Richmond Refinery for disposal.

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) 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.

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.



Superior Precision Analytical, Inc.

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

Sierra Environmental
Attn: Rick Hilton

Project 1-203-04
Reported 09/20/93

TOTAL PETROLEUM HYDROCARBONS

Lab #	Sample Identification	Sampled	Analyzed Matrix
89962- 1	TB-LB	09/13/93	09/16/93 Water
89962- 2	BB	09/13/93	09/16/93 Water
89962- 3	C-4	09/13/93	09/16/93 Water
89962- 4	C-1	09/13/93	09/14/93 Water
89962- 5	C-2	09/13/93	09/16/93 Water
89962- 6	C-3	09/13/93	09/16/93 Water

RESULTS OF ANALYSIS

Laboratory Number: 89962- 1 89962- 2 89962- 3 89962- 4 89962- 5

Gasoline:	ND<50	ND<50	64	4100	2100
Benzene:	ND<0.5	ND<0.5	0.9	62	31
Toluene:	ND<0.5	ND<0.5	1.0	43	25
Ethyl Benzene:	ND<0.5	ND<0.5	ND<0.5	34	18
Total Xylenes:	ND<1.5	ND<1.5	1.7	57	39
Concentration:	ug/L	ug/L	ug/L	ug/L	ug/L

Laboratory Number: 89962- 6

Gasoline:	6800
Benzene:	100
Toluene:	52
Ethyl Benzene:	41
Total Xylenes:	75
Concentration:	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

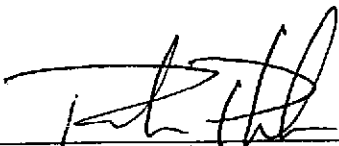
Page 2 of 2
QA/QC INFORMATION
SET: 89962

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

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	MS/MSD RECOVERY	RPD	CONTROL LIMIT
Gasoline:	100/100	0%	70-130
Benzene:	78/80	3%	70-130
Toluene:	85/87	2%	70-130
Ethyl Benzene:	100/101	1%	70-130
Total Xylenes:	106/106	0%	70-130


9/21/93
Senior Chemist