



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

92 APR 27 11 20 AM '92

Marketing Department

April 24, 1992

Mr. Richard Hiett
California Regional Water Quality
Control Board
San Francisco Bay Region
2101 Webster Street, Suite 500
Oakland, CA 94612

Re: Quarterly Monitoring Report
Former Chevron Asphalt Plant & Terminal
1520 Powell Street
Emeryville, CA

Dear Mr. Hyatt:

Enclosed is a copy of the most recent quarterly monitoring report dated 3-26-92 by Sierra Environmental Services for your review.

If you have any question regarding the report, please feel free to call me at (510) 842-9655.

Sincerely,

Lucia R. Chou
Engineer

✓ Enclosure

cc: Mr. Dennis Byrne, Alameda County Environmental Health



Chevron U.S.A. Inc.

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

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Marketing Department

January 6, 1992

~~Mr. Richard Hyatt
California Regional Water Quality
Control Board
San Francisco Bay Region
2101 Webster Street, Suite 500
Oakland, CA 94612~~

Re: Quarterly Monitoring Report
Former Chevron Asphalt Plant & Terminal
1520 Powell Street
Emeryville, CA

Dear Mr. Hyatt:

Enclosed is a copy of the most recent quarterly monitoring report dated 12-19-91 by Sierra Environmental Services for your review,

In an effort to move forward with this project, Chevron is working on a proposal addressing the soil stock piles and the groundwater contamination at the site. You should be receiving a copy of the work plan shortly.

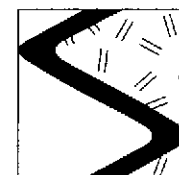
In the meantime, if you have any comments or questions, please feel free to call me at (510) 842-9655.

Sincerely,

Lucia R. Chou
Engineer

✓ Enclosure

cc: Mr. Dennis Byrn, Alameda County Environmental Health



April 20, 1992

Lucia Chou
Chevron USA
P.O. Box 5004
San Ramon, CA 94583

Re: Former Chevron Asphalt Plant &
Terminal #1001067
1520 Powell Street
Emeryville, California
SES Project #1-191-04

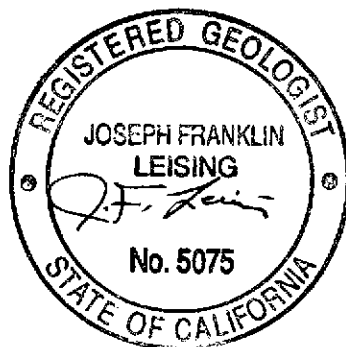
Dear Ms. Chou:

This report presents the results of the quarterly ground water sampling at Former Chevron Asphalt Plant and Terminal #1001067, located at 1520 Powell Street in Emeryville, California (Figure 1, Appendix A). Fifteen wells, MW-1, MW-2, MW-3, MW-7, MW-8 and MW-10 through MW-19, were sampled (Figure 2, Appendix A).

On March 26, 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 of the site 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).

The water samples were collected on March 26, 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 Tables 2 and 3 (Appendix B). The chain of custody documents 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. Please call if you have any questions.



Sincerely,
Sierra Environmental Services

Chris J. Bramer
Chris J. Bramer
Environmental Project Manager

J.F. Leising
J.F. Leising
Registered Geologist #005075

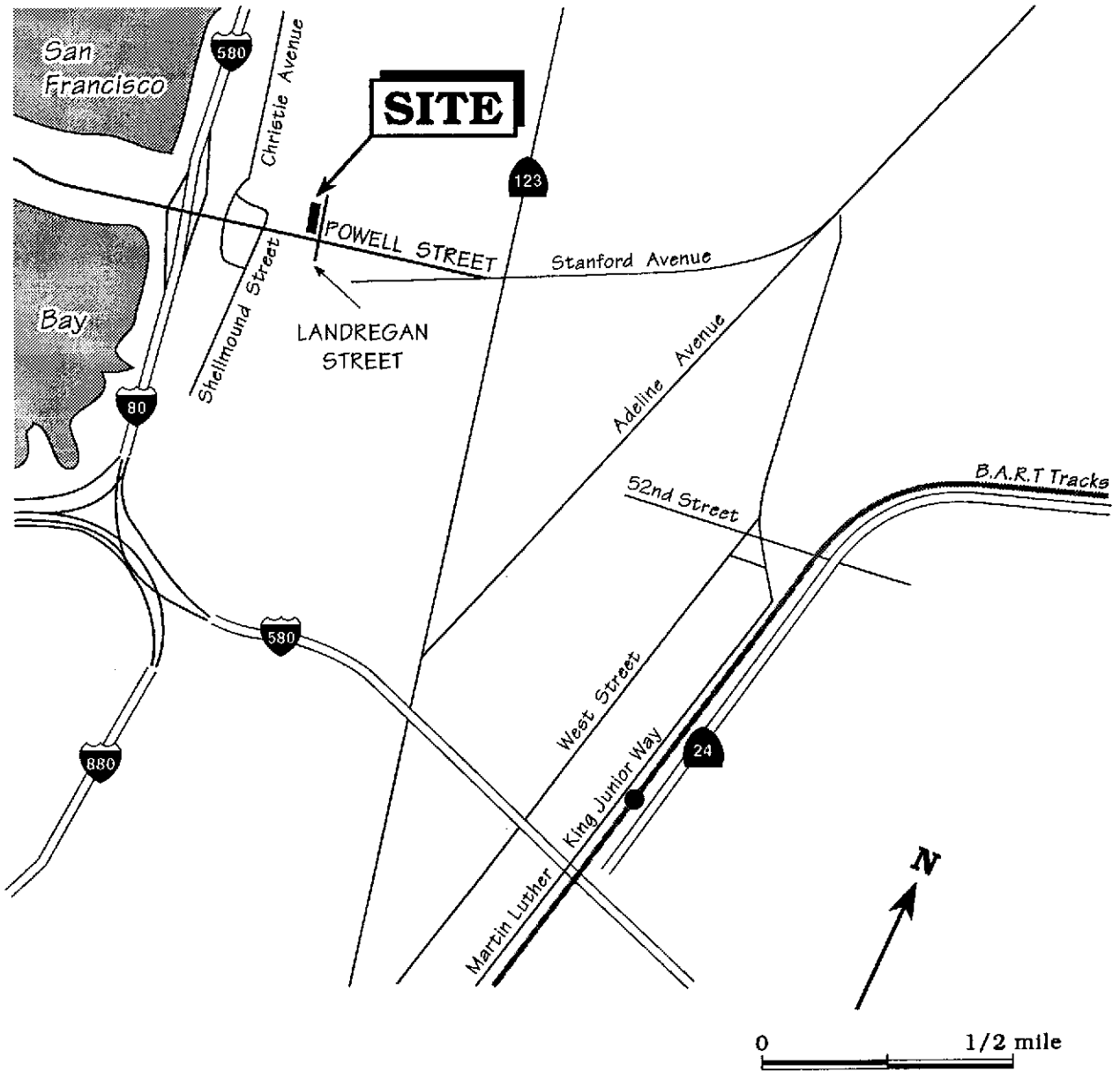
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Appendices

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



SIERRA



Base map ref: California State Automobile Association (AAA)

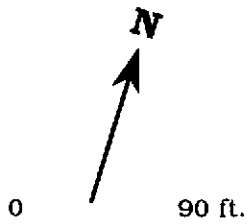
Figure 1. Site Location Map - Former Chevron Asphalt Plant and Terminal #1001067 - Emeryville, California



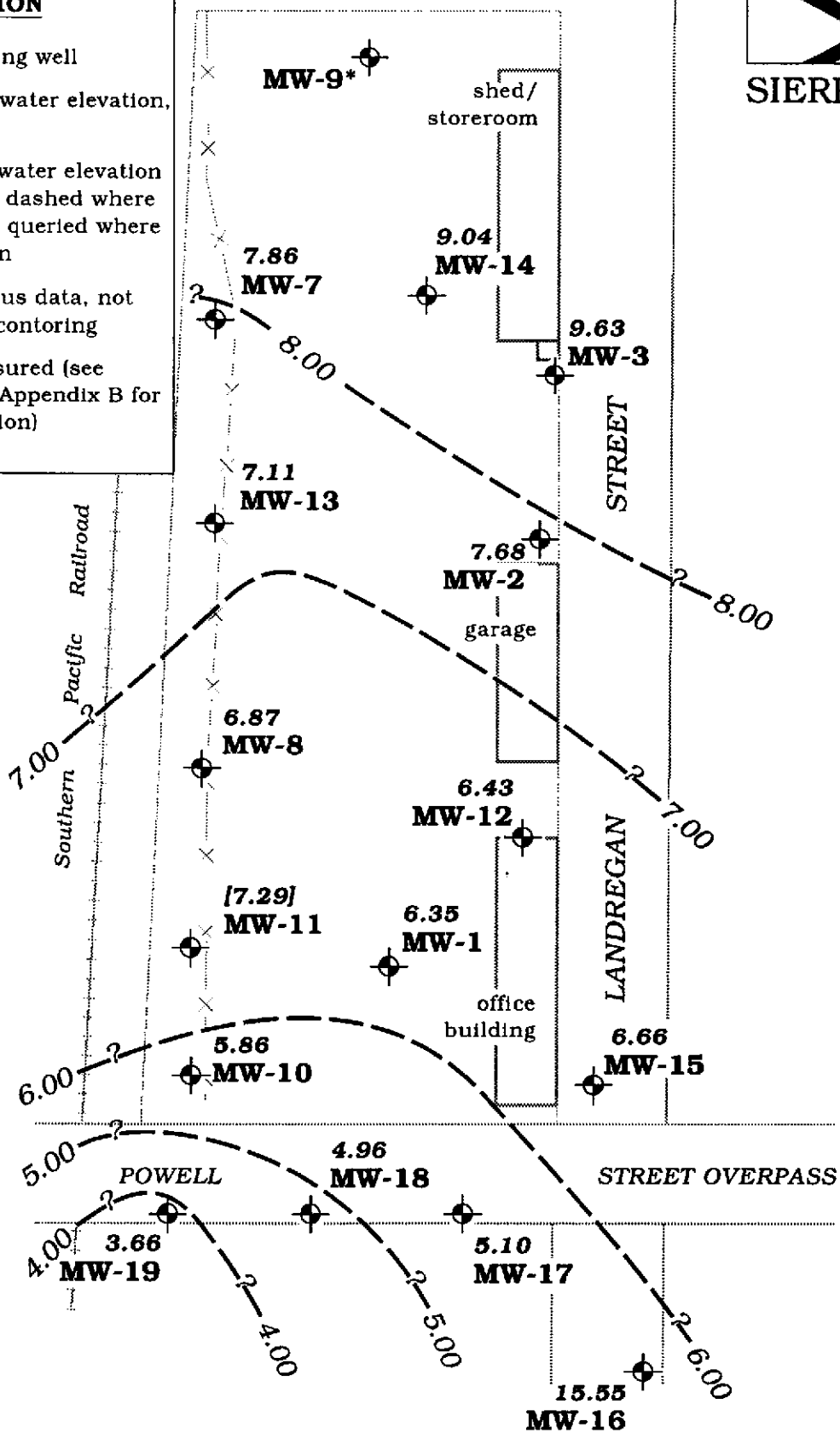
EXPLANATION

- MW-19** Monitoring well
- 3.66** Ground water elevation, in feet
- 8.00** Ground water elevation contour, dashed where inferred, queried where uncertain
- [7.29]** Anomalous data, not used in contouring
- MW-9*** Not measured (see Table 1, Appendix B for explanation)

Approximate ground water flow direction



Scale Approximate



Base map after Western Geologic Resources, Inc.

Figure 2. Monitoring Well Locations and Ground Water Elevation Contours - March 26, 1992 - Former Chevron Asphalt Plant and Terminal #1001067, Emeryville, California



Table 1. Water Level Data and Well Construction Details - Former Chevron Asphalt Plant and Terminal #1001067, Emeryville, California

Well ID	Date Measured	DTW (ft)	TOC ¹ (ft)	GWE (msl)	Product Thickness ² (ft)	Screen Interval ³	Sand Pack Interval ³	Bentonite/Grout Interval ³
						<-----feet below grade----->		
MW-1	4/13/89	3.72	10.67	6.95	---	1.5 - 11.5	1 - 12	0 - 1
	7/31/89	5.72		4.95	---			
	12/8/89	4.80		5.87	---			
	3/21/90	4.74		5.93	---			
	6/19/90	4.75		5.92	---			
	9/20/90	5.07		5.60	---			
	12/28/90	4.91		5.76	---			
	5/10/91	5.30		5.37	0			
	8/8/91	5.85		4.82	0			
	11/27/91	5.13		5.54	0			
	1/29/92	4.82		5.85	0			
	3/26/92	4.32		6.35	0			
MW-2	4/13/89	2.62	13.78	11.16	---	2 - 12	1 - 12	0 - 1
	7/31/89	4.63		9.15	---			
	12/8/89	5.98		7.80	---			
	3/21/90	5.85		7.93	---			
	6/19/90	5.95		7.83	---			
	9/20/90	6.86		6.92	---			
	12/28/90	6.34		7.44	---			
	5/10/91	5.96		7.82	0			
	8/8/91	7.66		6.12	0			
	11/27/91	8.04		5.74	0			
	1/29/92	6.01		7.77	0			
	3/26/92	6.10		7.68	0			
MW-3	4/13/89	2.34	11.73	9.39	---	2 - 12	1 - 12	0 - 1
	7/31/89	4.79	99.50 ¹	---	---			
	12/8/89	3.03	---	---	---			
	3/21/90	2.55	11.73	9.18	---			
	6/19/90	2.76		8.97	---			
	9/20/90	4.43		7.30	---			
	12/28/90	3.67		8.06	---			
	5/10/91	2.83	8.90	0				
8/8/91	5.09	6.64	0					



Table 1. Water Level Data and Well Construction Details - Former Chevron Asphalt Plant and Terminal #1001067, Emeryville, California (continued)

Well ID	Date Measured	DTW (ft)	TOC (ft)	GWE (msl)	Product Thickness ² (ft)	Screen Interval ³	Sand Pack Interval ³	Bentonite/Grout Interval ³
						<-----feet below grade----->		
MW-3	11/27/91	5.37		6.36	0			
(cont)	1/29/92	3.46		8.27	0			
	3/26/92	2.10		9.63	0			
MW-4 ⁴	4/13/89	2.12	99.86	---	---	2 - 12	1 - 12	0 - 1
MW-5 ⁴	4/13/89	2.79	98.53	---	---	2 - 12	1 - 12	0 - 1
MW-6 ⁴	4/13/89	1.90	99.03	---	---	2 - 12	1 - 12	0 - 1
MW-7	4/13/89	1.90	10.47	8.57	---	2 - 12	1 - 12	0 - 1
	7/31/89	4.24		6.23	---			
	12/8/89	2.65		7.82	---			
	3/21/90	2.76		7.71	---			
	6/19/90	3.24		7.23	---			
	9/20/90	4.57		5.90	---			
	12/28/90	3.12		7.35	---			
	5/10/91	3.53		6.94	0			
	8/8/91	4.64		5.83	0			
	11/27/91	3.66		6.81	0			
	1/29/92	3.24		7.23	0			
	3/26/92	2.61		7.86	0			
MW-8	4/13/89	2.80	10.46	7.66	---	2 - 12	1 - 12	0 - 1
	7/31/89	5.70		4.76	---			
	12/8/89	4.13		6.33	---			
	3/21/90	4.07		6.39	---			
	6/19/90	4.25		6.21	---			
	9/20/90	4.99		5.47	---			
	12/28/90	4.39		6.07	---			
	5/10/91	4.13		6.33	0			
	8/8/91	5.53		4.93	0			
	11/27/91	4.59		5.87	0			
	1/29/92	5.30		5.16	0			
	3/26/92	3.59		6.87	0			



Table 1. Water Level Data and Well Construction Details - Former Chevron Asphalt Plant and Terminal #1001067, Emeryville, California (continued)

Well ID	Date Measured	DTW (ft)	TOC (ft)	GWE (msl)	Product Thickness ² (ft)	Screen Interval ³	Sand Pack Interval ³	Bentonite/Grout Interval ³
						<-----feet below grade----->		
MW-9 ⁵	5/10/91	---	---	---	---	2 - 12	1 - 12	0 - 1
MW-10	3/21/90	4.60	10.82	6.22	---	---	---	---
	6/19/90	4.89		5.93	---	---	---	
	9/20/90	5.77		5.05	---	---	---	
	12/28/90	4.99		5.83	---	---	---	
	5/10/91	5.80		5.02	0	---	---	
	8/8/91	5.86		4.96	0	---	---	
	11/27/91	5.39		5.43	0	---	---	
	1/29/92	5.44		5.38	0	---	---	
	3/26/92	4.96		5.86	0			
MW-11	3/21/90	4.82	11.38	6.56	---	---	---	---
	6/19/90	5.14		6.24	---	---	---	
	9/20/90	6.11		5.27	---	---	---	
	12/28/90	5.16		6.22	---	---	---	
	5/10/91	7.83		3.55	0	---	---	
	8/8/91	6.32		5.06	0	---	---	
	11/27/91	5.67		5.71	0	---	---	
	1/29/92	5.83		5.55	0	---	---	
	3/26/92	4.09		7.29	0			
MW-12	3/21/90	6.76	13.03	6.27	---	---	---	---
	6/19/90	6.62		6.41	---	---	---	
	9/20/90	5.00		8.03	---	---	---	
	12/28/90	6.62		6.41	---	---	---	
	5/10/91	6.48		6.55	0	---	---	
	8/8/91	8.01		5.02	0	---	---	
	11/27/91	7.95		5.08	0	---	---	
	1/29/92	7.68		5.35	0	---	---	
	3/26/92	6.60		6.43	0			
MW-13	3/21/90	4.08	11.15	7.07	---	7.5 - 12	7 - 12	0 - 7
	6/19/90	4.34		6.81	---	---	---	
	9/20/90	5.31		5.84	---	---	---	



Table 1. Water Level Data and Well Construction Details - Former Chevron Asphalt Plant and Terminal #1001067, Emeryville, California (continued)

Well ID	Date Measured	DTW (ft)	TOC (ft)	GWE (msl)	Product Thickness ² (ft)	Screen Interval ³	Sand Pack Interval ³	Bentonite/Grout Interval ³
						<-----feet below grade----->		
MW-13 (cont)	12/28/90	4.79		6.36	---			
	5/10/91	4.20		6.95	0			
	8/8/91	5.13		6.02	0			
	11/27/91	4.72		6.43	0			
	1/29/92	4.69		6.46	0			
	3/26/92	4.04		7.11	0			
MW-14	3/21/90	0.91	9.78	8.87	---	5 - 10	6.5 - 10	0 - 6.5
	6/19/90	1.03		8.75	---			
	9/20/90	2.53		7.25	---			
	12/28/90	1.61		8.17	---			
	5/10/91	1.22		8.56	0			
	8/8/91	2.45		7.33	0			
	11/27/91	2.59		7.19	0			
	1/29/92	1.10		8.68	0			
3/26/92	0.74		9.04	0				
MW-15	3/21/90	4.72	11.01	6.29	---	5.5 - 10.5	5 - 10.5	0 - 5
	6/19/90	4.78		6.23	---			
	9/20/90	4.98		6.03	---			
	12/28/90	4.84		6.17	---			
	5/10/91	4.58		6.43	0			
	8/8/91	5.03		5.98	0			
	11/27/91	5.88		5.13	0			
	1/29/92	4.82		6.19	0			
	3/26/92	4.35		6.66	0			
MW-16	3/21/90	5.84	11.11	5.27	---	7 - 13.5	7 - 13.5	0 - 7
	6/19/90	5.90		5.21	---			
	9/20/90	6.36		4.75	---			
	12/28/90	5.98		5.13	---			
	5/10/91	5.89		5.22	0			
	8/8/91	6.28		4.83	0			



Table 1. Water Level Data and Well Construction Details - Former Chevron Asphalt Plant and Terminal #1001067, Emeryville, California (continued)

Well ID	Date Measured	DTW (ft)	TOC (ft)	GWE (msl)	Product Thickness ² (ft)	Screen Interval ³	Sand Pack Interval ³	Bentonite/Grout Interval ³
						<-----feet below grade----->		
MW-16 (cont)	11/27/91	5.62		5.49	0			
	1/29/92	5.88		5.23	0			
	3/26/92	5.56		5.55	0			
MW-17	3/21/90	5.61	10.41	4.80	---	4 - 12	3.5 - 12	0 - 3.5
	6/19/90	---		---	---			
	9/20/90	6.02		4.39	---			
	12/28/90	5.73		4.68	---			
	5/10/91	5.65		4.76	0			
	8/8/91	5.94		4.47	0			
	11/27/91	6.00		4.41	0			
	1/29/92	5.61		4.80	0			
	3/26/92	5.31		5.10	0			
MW-18	3/21/90	5.15	9.80	4.65	---	4 - 11	3.5 - 11	0 - 3.5
	6/19/90	5.19		4.61	---			
	9/20/90	5.54		4.26	---			
	12/28/90	5.26		4.54	---			
	5/10/91	5.18		4.62	0			
	8/8/91	5.45		4.35	0			
	11/27/91	5.24		4.56	0			
	1/29/92	5.12		4.68	0			
	3/26/92	4.84		4.96	0			
MW-19	3/21/90	5.00	8.45	3.45	---	5 - 9	4.5 - 9	0 - 4.5
	6/19/90	5.06		3.39	---			
	9/20/90	5.25		3.20	---			
	12/28/90	5.07		3.38	---			
	5/10/91	5.02		3.43	0			
	8/8/91	5.17		3.28	0			
	11/27/91	5.06		3.39	0			
	1/29/92	4.93		3.52	0			
	3/26/92	4.79		3.66	0			



Table 1. Water Level Data and Well Construction Details - Former Chevron Asphalt Plant and Terminal #1001067, Emeryville, California (continued)

EXPLANATION:

DTW = Depth to water
TOC = Top of casing elevation
GWE = Ground water elevation
msl = Measurements referenced relative to mean sea level
--- = Not measured

NOTES:

¹ Top of casing elevations shown prior to 3/21/90 were surveyed to an arbitrary datum point set at 100 ft. The TOCs shown for dates prior to 3/21/90 were corrected using new TOC elevations which were surveyed to a USGS benchmark (relative to mean sea level) in April 1990.

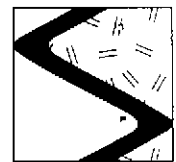
NOTES: (continued)

- ² Product thickness measurements on and after May 10, 1991 were made using an MMC flexi-dip interface probe. Product thickness information prior to May 10, 1991 was not available for inclusion in this report.
- ³ Construction information for MW-10, MW-11 and MW-12 was not available for inclusion in this report.
- ⁴ Monitoring wells destroyed during soil excavation.
- ⁵ MW-9 was not measured because it could not be located. Previous water level data was not available for this well.



Table 2. Analytic Results for Ground Water - Petroleum Hydrocarbons - Former Chevron Asphalt Plant and Terminal #1001067, Emeryville, California

Well ID	Date Sampled	Analytic Lab	Analytic Method	TPPH(G)	B	T	E	X	O&G
				-----ppb-----					
MW-1	4/26/85	MES		---	99	---	---	6	---
	9/11/87	SEQ		---	63	---	---	---	---
	7/7/88	C&T		<100	55	---	---	---	---
	4/14/89	CCAS	8260	<5,000	34	<5	<5	<10	---
	7/31/89	CCAS	8260	7,000	57	1.2	<0.2	1.6	---
	12/8/89	GTEL	8015/8020	---	26	0.4	0.9	2	---
	3/21/90	GTEL	8015/8020	3,500	120	9	3	3	---
	6/19/90	GTEL	8015/8020	2,700	100	<0.3	<0.3	7	---
	9/21/90	GTEL	8015/8020	2,200	120	2	2	0.79	---
	12/28/90	SAL	8015/8020	720	44	2	<0.5	9	---
	5/10/91	SAL	8015/8020	530	47	2	0.5	8	---
	8/8/91	SAL	8015/8020	1,400	37	8.3	3.7	12	---
	11/27/91	SPA	8015/8020	840	16	7.1	4.5	11	---
	1/29/92	SPA	8015/8020	350	18	9.3	3.7	7.7	---
3/26/92	SPA	8015/8020	420^b	19	2.2	1.2	4.0	---	
MW-2	4/26/85	MES		---	<10	---	---	---	---
	9/11/87	---		---	---	---	---	---	---
	7/7/88	C&T		<100	<5	---	---	---	---
	4/14/89	CCAS	8260	<100	<0.2	<0.2	<0.2	<0.4	<3,000
	7/31/89	CCAS	8260	<100	<0.2	<1.0	<0.2	<0.4	---
	12/8/89	GTEL	8015/8020	---	<0.3	<0.3	<0.3	<0.6	---
	3/21/90	GTEL	8015/8020	<50	<0.3	<0.3	<0.3	<0.6	---
	6/19/90	GTEL	8015/8020	<50	<0.3	<0.3	<0.3	<0.6	---
	9/21/90	GTEL	8015/8020	<50	<1.5	<1.5	<1.5	4.5	---
	12/28/90	SAL	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	---
	5/10/91	SAL	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	---
	8/8/91	SAL	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	---
	11/27/91	SPA	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	---
	1/29/92	SPA	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	---
3/26/92	SPA	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	---	
MW-3	4/26/85	MES		---	<10	---	---	---	---
	9/11/87	SEQ		---	<0.5	---	---	---	---
	7/7/88	C&T		<100	<5	---	---	---	---
	4/14/89	CCAS	8260	<100	<0.2	<0.2	<0.2	<0.4	<3,000
	7/31/89	CCAS	8260	<100	<0.2	<1.0	<0.2	<0.4	---
	12/8/89	GTEL	8015/8020	---	<0.3	<0.3	<0.3	<0.6	---



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Table 2. Analytic Results for Ground Water - Petroleum Hydrocarbons - Former Chevron Asphalt Plant and Terminal #1001067, Emeryville, California (continued)

Well ID	Date Sampled	Analytic Lab	Analytic Method	TPPH(G)	B	T	E	X	O&G
				-----ppb-----					
MW-3 (cont)	3/21/90	GTEL	8015/8020	<50	<0.3	<0.3	<0.3	<0.6	---
	6/19/90	GTEL	8015/8020	<50	<0.3	<0.3	<0.3	<0.6	---
	9/21/90	GTEL	8015/8020	<50	<0.3	<0.3	<0.3	<0.6	---
	12/28/90	SAL	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	---
	5/10/91	SAL	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	---
	8/8/91	SAL	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	---
	11/27/91	SPA	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	---
	1/29/92	SPA	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	---
	3/26/92	SPA	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	---
MW-4 ^{1,2}	4/26/85	MES		3,100	<10	---	---	---	---
	9/11/87	SEQ		---	<0.5	---	---	---	---
	7/7/88	C&T		<100	<5	---	---	---	---
	4/14/89	CCAS	8260	380	<0.5	<1	<1	<1	<3,000
MW-5 ^{1,2}	4/26/85	MES		1,600	<100	---	---	---	---
	9/11/87	SEQ		---	<10	---	---	---	---
	7/7/88	C&T		<100	<5	---	---	---	---
	4/14/89	CCAS	8260	4,300	<0.5	<1	<1	<1	<3,000
MW-6 ^{1,2}	4/26/85	MES		580	<100	---	---	---	---
	9/11/87	SEQ		---	<10	---	---	---	---
	7/7/88	C&T		8,000	<5	---	---	---	---
	4/14/89	CCAS	8260	3,300	<0.5	<1	<1	<1	<3,000
MW-7	4/26/85	MES		700	ND	---	---	---	---
	9/11/87	SEQ		---	<10	---	---	---	---
	7/7/88	C&T		17,000	<5	---	---	---	---
	4/14/89	CCAS	8260	<50	<0.5	<1	<1	<1	<3,000
1 (D)	7/31/89	CCAS	8260	160	<0.1	<0.5	<0.1	<0.2	---
	7/31/89	CCAS	8260	100	<0.1	<0.5	<0.1	<0.2	---
	12/8/89	GTEL	8015/8020	---	<0.3	<0.3	<0.3	<0.6	---
	3/21/90	GTEL	8015/8020	<50	<0.3	<0.3	<0.3	0.6	---
	6/19/90	GTEL	8015/8020	<50	<0.3	<0.3	<0.3	0.6	---
	9/21/90	GTEL	8015/8020	<50	1.5	<0.3	<0.3	0.6	---
	12/28/90	SAL	8015/8020	<50	0.7	<0.5	<0.5	0.7	---
	5/10/91	SAL	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	---



Table 2. Analytic Results for Ground Water - Petroleum Hydrocarbons - Former Chevron Asphalt Plant and Terminal #1001067, Emeryville, California (continued)

Well ID	Date Sampled	Analytic Lab	Analytic Method	TPPH(G)	B	T	E	X	O&G
				-----ppb-----					<-ppm->
MW-7 (cont)	8/8/91	SAL	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	---
	11/27/91	SPA	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	---
	1/29/92	SPA	8015/8020	<50	<0.5	<0.5	<0.5	0.9	---
	3/26/92	SPA	8015/8020	<50	<0.5	<0.5	<0.5	0.9	---
MW-8	4/26/85	MES		---	ND	---	---	---	---
	9/11/87	SEQ		---	<10	---	---	---	---
	7/7/88	C&T		20,000	<5	---	---	---	---
	4/14/89	CCAS	8260	<50	<0.5	<1	<1	<1	<3,000
	7/31/89	CCAS	8260	<50	<0.1	<0.5	<0.1	<0.2	---
	12/8/89	GTEL	8015/8020	---	<0.3	<0.3	<0.3	<0.6	---
	3/21/90	GTEL	8015/8020	<50	<0.3	<0.3	<0.3	<0.6	---
	6/19/90	GTEL	8015/8020	<50	<0.3	<0.3	<0.3	<0.6	---
	9/21/90	GTEL	8015/8020	<50	6	<0.3	<0.3	<0.3	<0.6
	12/28/90	SAL	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	---
	5/10/91	SAL	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	---
	8/8/91	SAL	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	---
	11/27/91	SPA	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	---
	1/29/92	SPA	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	---
	3/26/92	SPA	8015/8020	<50	<0.5	<0.5	<0.5	0.7	---
MW-9	4/26/85	MES		---	---	---	---	---	---
	9/11/87	SEQ		---	---	---	---	---	---
	7/7/88	C&T		400	---	---	---	---	---
	5/10/91 ³	---	---	---	---	---	---	---	---
MW-10	7/7/88	C&T		---	<5	---	---	---	---
	4/14/89	CCAS	8260	<50	<0.5	<1	<1	<1	<3,000
	7/31/89	CCAS	8260	<50	<0.1	<0.5	<0.1	<0.2	---
	12/8/89	GTEL	8015/8020	---	<0.3	<0.3	<0.3	<0.6	---
	3/21/90	GTEL	8015/8020	<50	<0.3	<0.3	<0.3	<0.6	---
	6/19/90	GTEL	8015/8020	<50	<0.3	<0.3	<0.3	<0.6	---
	9/21/90	GTEL	8015/8020	<50	<0.3	<0.3	<0.3	<0.6	---
	12/28/90	SAL	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	---
	5/10/91	SAL	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	---
	8/8/91	SAL	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	---
	11/27/91	SPA	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	---
	1/29/92	SPA	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	---
	3/26/92	SPA	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	---



Table 2. Analytic Results for Ground Water - Petroleum Hydrocarbons - Former Chevron Asphalt Plant and Terminal #1001067, Emeryville, California (continued)

Well ID	Date Sampled	Analytic Lab	Analytic Method	TPPH(G)	B	T	E	X	O&G
				-----ppb-----					<-ppm->
MW-11	7/7/88	C&T		---	<5	---	---	---	---
	4/14/89	CCAS	8260	<50	<0.5	<1	<1	<1	<3,000
	7/31/89	CCAS	8260	<100	<0.2	<0.2	<0.2	<0.2	---
	12/8/89	GTEL	8015/8020	---	<0.3	<0.3	<0.3	<0.6	---
	3/21/90	GTEL	8015/8020	<50	<0.3	<0.3	<0.3	<0.6	---
	6/19/90	GTEL	8015/8020	<50	<0.3	<0.3	<0.3	<0.6	---
	9/21/90	GTEL	8015/8020	<50	<0.3	<0.3	<0.3	<0.6	---
	12/28/90	SAL	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	---
	5/10/91	SAL	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	---
	8/8/91	SAL	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	---
	11/27/91	SPA	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	---
	1/29/92	SPA	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	---
	3/26/92	SPA	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	<0.5
MW-12	7/7/88	C&T		<100	<5	---	---	---	---
	4/14/89	CCAS	8260	<50	<0.5	<1	<1	<1	<3,000
	7/31/89	CCAS	8260	<100	<0.1	<0.5	<0.1	<0.2	---
	12/8/89	GTEL	8015/8020	---	<0.3	<0.3	<0.3	<0.6	---
	3/21/90	GTEL	8015/8020	<50	<0.3	<0.3	<0.3	<0.3	---
	6/19/90	GTEL	8015/8020	<50	<0.3	<0.3	<0.3	<0.3	---
	9/21/90	GTEL	8015/8020	<50	<0.3	<0.3	<0.3	<0.3	---
	12/28/90	SAL	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	---
	5/10/91	SAL	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	---
	8/8/91	SAL	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	---
	11/27/91	SPA	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	---
	1/29/92	SPA	8015/8020	<50	<0.5	<0.5	<0.5	1.0	---
	3/26/92	SPA	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	<0.5
MW-13	3/21/90	GTEL	8015/8020	480	<0.3	<0.3	1.0	5.0	---
	6/19/90	GTEL	8015/8020	180	<0.3	<0.3	0.8	3.0	---
	9/20/90	GTEL	8015/8020	150	<0.3	<0.3	<0.3	0.54	---
	12/28/90	SAL	8015/8020	160	<0.5	<0.5	<0.5	1	---
	5/10/91	SAL	8015/8020	110	<0.5	<0.5	<0.5	2	---
	8/8/91	SAL	8015/8020	220 ⁴	<0.5	<0.5	<0.5	1.8	---
	11/27/91	SPA	8015/8020	70	<0.5	<0.5	<0.5	1.2	---
	1/29/92	SPA	8015/8020	150	<0.5	<0.5	3.1	7.1	---
	3/26/92	SPA	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	---



Table 2. Analytic Results for Ground Water - Petroleum Hydrocarbons - Former Chevron Asphalt Plant and Terminal #1001067, Emeryville, California (continued)

Well ID	Date Sampled	Analytic Lab	Analytic Method	TPPH(G)	-----ppb-----					O&G <-ppm->
					B	T	E	X		
MW-14	3/21/90	GTEL	8015/8020	170	<0.3	<0.3	<0.4	2.0	---	
	6/19/90	GTEL	8015/8020	77	<0.3	<0.3	<0.3	<0.6	---	
	9/20/90	GTEL	8015/8020	<50	<0.3	<0.3	<0.3	<0.6	---	
	12/28/90	SAL	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	---	
	5/10/91	SAL	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	---	
	8/8/91	SAL	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	---	
	11/27/91	SPA	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	---	
	1/29/92	SPA	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	---	
	3/26/92	SPA	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	---	
MW-15	3/21/90	GTEL	8015/8020	<50	<0.3	<0.3	<0.3	<0.6	---	
	6/19/90	GTEL	8015/8020	<50	<0.3	<0.3	<0.3	<0.6	---	
	9/20/90	GTEL	8015/8020	<50	<0.3	<0.3	<0.3	<0.6	---	
	12/28/90	SAL	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	---	
	5/10/91	SAL	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	---	
	8/8/91	SAL	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	---	
	11/27/91	SPA	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	---	
	1/29/92	SPA	8015/8020	<50	1.9	2.6	0.8	2.6	---	
	3/26/92	SPA	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	---	
MW-16	3/21/90	GTEL	8015/8020	<50	<0.3	<0.3	<0.3	<0.6	---	
	6/19/90	GTEL	8015/8020	<50	<0.3	<0.3	<0.3	<0.6	---	
	9/20/90	GTEL	8015/8020	<50	<0.3	<0.3	<0.3	<0.6	---	
	12/28/90	SAL	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	---	
	5/10/91	SAL	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	---	
	8/8/91	SAL	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	---	
	11/27/91	SPA	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	---	
	1/29/92	SPA	8015/8020	65	3.6	6.2	1.9	6.6	---	
	3/26/92	SPA	8015/8020	270^b	21	27	9.5	41	---	
MW-17	3/21/90	GTEL	8015/8020	<50	<0.3	<0.3	<0.3	<0.6	---	
	6/19/90	GTEL	8015/8020	<50	<0.3	<0.3	<0.3	<0.6	---	
	9/20/90	GTEL	8015/8020	<50	<0.3	<0.3	<0.3	<0.6	---	
	12/28/90	SAL	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	---	
	5/10/91	SAL	8015/8020	<50	<0.5	<0.5	<0.5	0.8	---	
	8/8/91	SAL	8015/8020	82	1.9	2.5	0.9	5.4	---	
	11/27/91	SPA	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	---	
	1/29/92	SPA	8015/8020	<50	<0.5	0.9	<0.5	0.5	---	
	3/26/92	SPA	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	---	



Table 2. Analytic Results for Ground Water - Petroleum Hydrocarbons - Former Chevron Asphalt Plant and Terminal #1001067, Emeryville, California (continued)

Well ID	Date Sampled	Analytic Lab	Analytic Method	TPPH(G)	B	T	E	X	O&G
				-----ppb-----					<-ppm->
MW-18	3/21/90	GTEL	8015/8020	<50	<0.3	<0.3	<0.3	<0.6	---
	6/19/90	GTEL	8015/8020	<50	<0.3	<0.3	<0.3	<0.6	---
	9/20/90	GTEL	8015/8020	<50	<0.3	<0.3	<0.3	<0.6	---
	12/28/90	SAL	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	---
	5/10/91	SAL	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	---
	8/8/91	SAL	8015/8020	52	<0.5	<0.5	<0.5	<0.5	---
	11/27/91	SPA	8015/8020	<50	0.6	1.5	0.6	2.1	---
	1/29/92	SPA	8015/8020	67	3.7	5.2	1.5	5.0	---
	3/26/92	SPA	8015/8020	80^b	<0.5	<0.5	<0.5	0.8	---
MW-19	3/21/90	GTEL	8015/8020	<50	<0.3	<0.3	<0.3	<0.6	---
	6/19/90	GTEL	8015/8020	<50	<0.3	<0.3	<0.3	<0.6	---
	9/20/90	GTEL	8015/8020	<50	<0.3	<0.3	<0.3	<0.6	---
	12/28/90	SAL	8015/8020	66	<0.5	<0.5	<0.5	<0.5	---
	5/10/91	SAL	8015/8020	60 ^a	<0.5	<0.5	<0.5	<0.5	---
	8/8/91	SAL	8015/8020	58	<0.5	<0.5	<0.5	<0.5	---
	11/27/91	SPA	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	---
	1/29/92	SPA	8015/8020	<50	1.7	2.6	0.7	2.1	---
	3/26/92	SPA	8015/8020	80^b	<0.5	<0.5	<0.5	<0.5	---
AA	4/14/89	CCAS	8260	<50	<0.5	<1	<1	<1	---
	7/31/89	CCAS	8260	<50	<0.1	<0.5	<0.5	<0.2	---
	12/8/89	GTEL	8015/8020	---	<0.3	<0.3	<0.3	<0.6	---
	3/21/90	GTEL	8015/8020	<50	<0.3	<0.3	<0.3	<0.6	---
	3/26/90	GTEL	8015/8020	<50	<0.3	<0.3	<0.3	<0.6	---
	6/19/90	GTEL	8015/8020	<50	<0.3	<0.3	<0.3	<0.6	---
	9/21/90	GTEL	8015/8020	<50	<0.3	<0.3	<0.3	<0.6	---
	12/28/90	SAL	8015/8020	<50	<0.5	<0.5	<0.5	<0.6	---
	5/10/91	SAL	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	---
	8/8/91	SAL	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	---
	11/27/91	SPA	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	---
	1/29/92	SPA	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	---
	3/26/92	SPA	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	---



Table 2. Analytic Results for Ground Water - Petroleum Hydrocarbons - Former Chevron Asphalt Plant and Terminal #1001067, Emeryville, California (continued)

Well ID	Date Sampled	Analytic Lab	Analytic Method	TPPH(G)	B	T	E	X	O&G
				-----ppb-----					<-ppm->
BB	5/10/91	SAL	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	---
	8/8/91	SAL	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	---
	11/27/91	SPA	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	---
	1/29/92	SPA	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	---
	3/26/92	SPA	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	---

EXPLANATION:

TPPH(G) = Total Purgeable Petroleum Hydrocarbons as Gasoline
 B = Benzene
 T = Toluene
 E = Ethylbenzene
 X = Xylenes
 O&G = Oil and Grease
 ppb = Parts per billion
 --- = Not analyzed/Not applicable
 AA = Travel Blank
 BB = Bailer Blank
 (D) = Duplicate Analysis

ANALYTIC METHODS:

8260 = Approved Variance for Method EPA 8240 using capillary column and GC/MS for TPPH and BTEX
 8015 = EPA Method 8015 for TPPH(G)
 8020 = EPA Method 8020 for BTEX

ANALYTIC LABORATORIES:

MES = McKesson Environmental Services
 SEQ = Sequoia Analytical Laboratory
 C&T = Curtis & Tompkins, Ltd.
 CCAS = Coast to Coast Analytical Services of San Luis Obispo, California
 GTEL = Groundwater Technology Environmental Laboratory of Concord, California
 SAL = Superior Analytical Laboratory of Martinez and San Francisco, California
 SPA = Superior Precision Analytical, Inc. of Martinez, California

NOTES:

- ¹ TPPH as Diesel #2.
- ² Monitoring wells destroyed in 1989.
- ³ MW-9 was not sampled because it could not be located. Previous analytical data were not available for inclusion in this report.
- ⁴ Does not match a typical gasoline pattern.
- ⁵ Gasoline range concentration reported. The chromatogram shows only a single peak in the gasoline range.



Table 3. Analytic Results for Ground Water - Halogenated Volatile Organic Compounds - Former Chevron Asphalt Plant and Terminal #1001067, Emeryville, California (continued)

Well ID	Date Sampled	Analytic Lab	Analytic Method	1,1-DCE	1,2-DCE	t-1,2-DCE	c-1,2-DCE	1,1-DCA	TCA	TCE	PCE	CF	VC	Other HVOCs
				←-----ppb-----→										
MW-3 (cont)	11/27/91	SPA	8010	<0.5	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	ND
	1/29/92	SPA	8010	<0.5	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	ND
	3/26/92	SPA	8010	<0.5	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	ND
MW-4 ⁷	4/14/89	CCAS	8010	<1	<1	---	---	2	<1	<1	<1	<2	<1	---
MW-5 ⁷	4/14/89	CCAS	8010	<1	<1	---	---	2	<1	<1	<1	<2	<1	---
MW-6 ⁷	4/14/89	CCAS	8010	<1	<1	---	---	2	<1	<1	<1	<2	<1	---
MW-7 (D)	4/14/89	CCAS	8010	<1	<1	---	---	1	1	<1	<1	<2	<1	---
	7/31/89	CCAS	8010	<0.1	0.3	---	---	0.3	4.5	<0.1	<0.1	<0.5	<0.1	ND ⁸
	7/31/89	GTEL	8010	<0.1	0.4	---	---	0.2	2.6	<0.1	<0.1	<0.5	<0.1	ND ⁸
	12/8/89	GTEL	8010	<0.2	<0.5	---	---	<0.5	0.67	<0.5	<0.5	<0.5	<1.0	---
	3/21/90	GTEL	8010	<0.2	<0.5	---	---	<0.5	1.4	<0.5	<0.5	<0.5	<1	---
	6/19/90	GTEL	8010	<0.2	<0.5	---	---	<0.5	0.67	<0.5	<0.5	<0.5	<1	---
	9/21/90	GTEL	8010	<0.2	<0.5	---	---	<0.5	<0.5	<0.5	<0.5	<0.5	<1	---
	12/28/90	SAL	8010	<0.5	---	<0.5	<0.5	<0.5	0.9	<0.5	<0.5	<0.5	<1	---
	5/10/91	SAL	8010	<0.5	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	ND
	8/8/91	SAL	8010	<0.5	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	ND
	11/27/91	SPA	8010	<0.5	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	ND
	1/29/92	SPA	8010	<0.5	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	ND
	3/26/92	SPA	8010	<0.5	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	ND
MW-8	4/14/89	CCAS	8010	<1	<1	---	---	<1	<1	<1	<1	<2	<1	---
	7/31/89	CCAS	8010	<0.1	0.6	---	1.9	1.7	1.7	0.4	<0.1	<0.5	1.2	ND
	12/8/89	GTEL	8010	<0.2	0.53	---	---	<0.5	0.84	<0.5	<0.5	<0.5	<1.0	---
	3/21/90	GTEL	8010	<0.2	0.96	---	---	<0.5	0.72	<0.5	<0.5	<0.5	<1	---
	6/19/90	GTEL	8010	<0.2	0.59	---	---	<0.5	0.67	<0.5	<0.5	<0.5	<1	---
	9/21/90	GTEL	8010	<0.2	<0.5	---	---	<0.5	<0.5	<0.5	<0.5	<0.5	<1	---
	12/28/90	SAL	8010	<0.5	---	<0.5	<0.5	<0.5	2	<0.5	<0.5	<0.5	<1	---
	5/10/91	SAL	8010	<0.5	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	ND
	8/8/91	SAL	8010	<0.5	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	ND
	11/27/91	SPA	8010	<0.5	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	ND
	1/29/92	SPA	8010	<0.5	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	ND
	3/26/92	SPA	8010	<0.5	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	ND



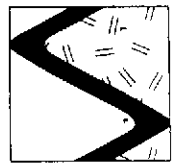
Table 3. Analytic Results for Ground Water - Halogenated Volatile Organic Compounds - Former Chevron Asphalt Plant and Terminal #1001067, Emeryville, California (continued)

Well ID	Date Sampled	Analytic Lab	Analytic Method	1,1-DCE	1,2-DCE	t-1,2-DCE	c-1,2-DCE	1,1-DCA	TCA	TCE	PCE	CF	VC	Other HVOCs
				-----ppb-----										
MW-9 ^s	5/10/91	---	---	---	---	---	---	---	---	---	---	---	---	---
	8/8/91	---	---	---	---	---	---	---	---	---	---	---	---	---
	11/27/91	---	---	---	---	---	---	---	---	---	---	---	---	---
	1/29/92	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-10	4/14/89	CCAS	8010	<1	15	---	---	2	<1	5	<1	<2	<1	---
	7/31/89	CCAS	8010	0.7	6.3	---	27	2.9	<0.1	5.3	<0.1	<0.5	<0.1	ND
	12/8/89	GTEL	8010	<0.2	24	---	---	3.1	<0.5	4.9	<0.5	0.6	<1.0	---
	3/21/90	GTEL	8010	0.7	30	---	---	2.5	<0.5	3.5	<0.5	<0.5	<1	---
	6/19/90	GTEL	8010	0.3	33	---	---	2.6	<0.5	6.3	<0.5	<0.5	<1	---
	9/21/90	GTEL	8010	<0.2	32	---	---	5.0	<0.5	5.9	<0.5	<0.5	<1	---
	12/28/90	SAL	8010	<0.5	---	6	19	2	<0.5	5	<0.5	<0.5	<1	---
	5/10/91	SAL	8010	0.6	---	7	24	2	<0.5	6	<0.5	<0.5	<1	ND
	8/8/91	SAL	8010	<0.5	---	7	33	3.1	<0.5	6.2	<0.5	<0.5	<1	ND
	11/27/91	SPA	8010	<0.5	---	6.8	100	<0.5	<0.5	8.5	<0.5	<0.5	<1	ND
	1/29/92	SPA	8010	<0.5	---	9.1	30	2.8	<0.5	7.4	<0.5	<0.5	<1	ND
	3/26/92	SPA	8010	0.7	---	9.2	29	2.5	<0.5	6.8	<0.5	<0.5	<1	ND
MW-11	4/14/89	CCAS	8010	<1	120	---	---	<1	<1	4	<1	<2	10	---
	7/31/89	CCAS	8010	0.9	40	---	110	2.2	1.4	2.9	<0.2	<0.2	<0.2	ND
	12/8/89	GTEL	8010	0.5	120	---	---	2.1	1.2	4.1	<0.5	<0.5	2.4	---
	3/21/90	GTEL	8010	1.3	150	---	---	1.2	1.7	3.5	<0.5	<0.5	4.3	ND ¹⁰
	6/19/90	GTEL	8010	0.068	140	---	---	1.3	<0.5	5.0	<0.5	<0.5	1	---
	9/21/90	GTEL	8010	<0.2	100	---	---	1.1	<0.5	3.8	<0.5	<0.5	<1	---
	12/28/90	SAL	8010	<0.5	---	23	43	0.9	0.7	3	<0.5	<0.5	<1	---
	5/10/91	SAL	8010	0.9	---	44	110	0.5	<0.5	5	<0.5	<0.5	<1	ND
	8/8/91	SAL	8010	<0.5	---	29	77	0.9	<0.5	2.4	<0.5	<0.5	<1	ND
	11/27/91	SPA	8010	<0.5	---	34	240	<0.5	<0.5	<0.5	<0.5	<0.5	<1	ND
	1/29/92	SPA	8010	<5	---	33	91	<5	<5	<5	<5	<5	<10	ND
	3/26/92	SPA	8010	<2.5	---	21	51	<2.5	<2.5	<2.5	<2.5	<2.5	<5	ND



Table 3. Analytic Results for Ground Water - Halogenated Volatile Organic Compounds - Former Chevron Asphalt Plant and Terminal #1001067, Emeryville, California (continued)

Well ID	Date Sampled	Analytic Lab	Analytic Method	1,1-	1,2-	t-1,2-	c-1,2-	1,1-	TCA	TCE	PCE	CF	VC	Other	
				DCE	DCE	DCE	DCE	DCA	ppb						
MW-12	4/14/89	CCAS	8010	<1	1	---	---	<1	<1	<1	<1	<2	<1	---	
	7/31/89	CCAS	8010	<0.1	1.7	---	---	<0.1	<0.1	0.8	<0.1	<0.5	<0.1	ND	
	12/8/89	GTEL	8010	<0.2	<0.5	---	---	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	---	
	3/21/90	GTEL	8010	<0.2	<0.5	<0.5	---	<0.5	<0.5	<0.5	<0.5	<0.5	<1	---	
	6/19/90	GTEL	8010	<0.2	<0.5	<0.5	---	<0.5	<0.5	<0.5	<0.5	<0.5	<1	---	
	9/21/90	GTEL	8010	<0.2	<0.5	<0.5	---	<0.5	<0.5	<0.5	<0.5	<0.5	<1	---	
	12/28/90	SAL	8010	<0.5	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	---	
	5/10/91	SAL	8010	<0.5	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	ND	
	8/8/91	SAL	8010	<0.5	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.9	<1	ND	
	11/27/91	SPA	8010	<0.5	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	ND	
	1/29/92	SPA	8010	<0.5	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	ND	
	3/26/92	SPA	8010	<0.5	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	ND	
MW-13	3/21/90	GTEL	8010	<0.2	<0.5	---	---	<0.5	<0.5	<0.5	<0.5	<0.5	<1	---	
	6/19/90	GTEL	8010	<0.2	<0.5	---	---	<0.5	<0.5	<0.5	<0.5	<0.5	<1	---	
	9/20/90	GTEL	8010	<0.2	<0.5	---	---	<0.5	<0.5	<0.5	<0.5	<0.5	<1	---	
	12/28/90	SAL	8010	<0.5	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	---	
	5/10/91	SAL	8010	<0.5	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	ND ¹¹	
	8/8/91	SAL	8010	<0.5	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	ND	
	11/27/91	SPA	8010	<0.5	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	ND	
	1/29/92	SPA	8010	<0.5	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	ND	
	3/26/92	SPA	8010	<0.5	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	ND	
MW-14	3/21/90	GTEL	8010	<2.0	<0.5	---	---	<0.5	<0.5	<0.5	<0.5	<0.5	<1	---	
	6/19/90	GTEL	8010	<2.0	<0.5	---	---	<0.5	<0.5	<0.5	<0.5	<0.5	<1	---	
	9/20/90	GTEL	8010	<2.0	<0.5	---	---	<0.5	<0.5	<0.5	<0.5	<0.5	<1	---	
	12/28/90	SAL	8010	<0.5	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	---	
	5/10/91	SAL	8010	<0.5	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	ND	
	8/8/91	SAL	8010	<0.5	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	ND	
	11/27/91	SPA	8010	<0.5	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	ND	
	1/29/92	SPA	8010	<0.5	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	ND	
	3/26/92	SPA	8010	<0.5	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	ND	



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Table 3. Analytic Results for Ground Water - Halogenated Volatile Organic Compounds - Former Chevron Asphalt Plant and Terminal #1001067, Emeryville, California (continued)

Well ID	Date Sampled	Analytic Lab	Analytic Method	1,1-	1,2-	t-1,2-	c-1,2-	1,1-	TCA	TCE	PCE	CF	VC	Other HVOCs
				DCE	DCE	DCE	DCE	DCA	ppb					
MW-15	3/21/90	GTEL	8010	<0.2	<0.5	---	---	<0.5	<0.5	<0.5	<0.5	<0.5	<1	---
	6/19/90	GTEL	8010	<0.2	<0.5	---	---	<0.5	<0.5	<0.5	<0.5	<0.5	<1	---
	9/20/90	GTEL	8010	<0.2	<0.5	---	---	<0.5	<0.5	<0.5	<0.5	<0.5	<1	---
	12/28/90	SAL	8010	<0.5	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	---
	5/10/91	SAL	8010	<0.5	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	ND ¹²
	8/8/91	SAL	8010	<0.5	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	ND
	11/27/91	SPA	8010	<0.5	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	ND
	1/29/92	SPA	8010	<0.5	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	ND
	3/26/92	SPA	8010	<0.5	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	ND
MW-16	3/21/90	GTEL	8010	<0.2	0.8	---	---	<0.5	<0.5	27	8	2	<1	---
	6/19/90	GTEL	8010	<0.2	<0.5	---	---	<0.5	<0.5	35	7	2	<1	---
	9/20/90	GTEL	8010	<0.2	0.9	---	---	<0.5	<0.5	49	15	4.1	<1	---
	12/28/90	SAL	8010	<0.5	---	<0.5	<0.5	<0.5	<0.5	29	18	4	<1	ND ¹³
	5/10/91	SAL	8010	<0.5	---	<0.5	0.5	<0.5	<0.5	32	10	4	<1	ND
	8/8/91	SAL	8010	<0.5	---	<0.5	<0.5	<0.5	<0.5	35	13	1.9	<1	ND
	11/27/91	SPA	8010	<0.5	---	<0.5	1.3	<0.5	<0.5	47	12	1.8	<1	ND ¹⁵
	1/29/92	SPA	8010	<0.5	---	<0.5	0.9	<0.5	<0.5	31	11	1.8	<1	ND
	3/26/92	SPA	8010	<0.8	---	<0.8	<0.8	<0.8	<0.8	24	8.5	1.7	<1.7	ND
MW-17	3/21/90	GTEL	8010	<0.2	5.2	---	---	0.7	1.3	32	11	1.1	<1	---
	6/19/90	GTEL	8010	<0.2	3.1	---	---	<0.5	1.0	38	13	1.2	<1	---
	9/20/90	GTEL	8010	<0.2	2.4	---	---	<0.5	1.4	44	16	2.8	<1	---
	12/28/90	SAL	8010	<0.5	---	<0.5	2	<0.5	0.6	34	15	2	<1	---
	5/10/91	SAL	8010	<0.5	---	<0.5	3	<0.5	0.6	37	14	1	<1	ND
	8/8/91	SAL	8010	<0.5	---	<0.5	2.5	<0.5	<0.5	69	15	0.9	<1	ND
	11/27/91	SPA	8010	<0.5	---	<0.5	13	<0.5	<0.5	59	14	2.4	<1	ND
	1/29/92	SPA	8010	<0.5	---	<0.5	2.9	<0.5	0.8	35	15	1.1	<1	ND
	3/26/92	SPA	8010	<0.5	---	<0.5	1.5	<0.5	0.7	41	12	0.6	<1	ND
MW-18	3/21/90	GTEL	8010	<0.2	1.7	---	---	<0.5	2.4	33	20	0.9	<1	---
	6/19/90	GTEL	8010	<0.2	2.7	---	---	<0.5	0.9	63	20	0.73	<1	---
	9/20/90	GTEL	8010	<0.2	3.3	---	---	<0.5	1.6	76	25	1.7	<1	---
	12/28/90	SAL	8010	<0.5	---	<0.5	2	<0.5	0.8	44	21	1	<1	---
	5/10/91	SAL	8010	<0.5	---	<0.5	2	<0.5	0.7	47	20	2	<1	ND



Table 3. Analytic Results for Ground Water - Halogenated Volatile Organic Compounds - Former Chevron Asphalt Plant and Terminal #1001067, Emeryville, California (continued)

Well ID	Date Sampled	Analytic Lab	Analytic Method	1,1-	1,2-	t-1,2-	c-1,2-	1,1-	TCA	TCE	PCE	CF	VC	Other HVOCs	
				DCE	DCE	DCE	DCE	DCA							
----->-----<-----ppb-----<-----															
MW-18	8/8/91	SAL	8010	<0.5	---	<0.5	2	<0.5	0.7	32	25	1.0	<1	ND	
(cont)	11/27/91	SPA	8010	<0.5	---	<0.5	3.6	<0.5	0.5	60	18	1.5	<1	ND	
	1/29/92	SPA	8010	<5	---	<5	<5	<5	<5	67	17	<5	<10	ND	
	3/26/92	SPA	8010	<1.2	---	<1.2	6.4	<1.2	<1.2	130	19	1.7	<2.5	ND	
MW-19	3/21/90	GTEL	8010	<0.2	10	---	---	<0.5	2.5	41	53	3.2	<1	---	
	6/19/90	GTEL	8010	<0.2	13	---	---	<0.5	1.5	46	47	2.8	<1	---	
	9/20/90	GTEL	8010	<0.2	5.8	---	---	<0.5	2.5	39	32	3.1	<1	---	
	12/28/90	SAL	8010	<0.5	---	0.8	22	<0.5	1	40	44	3	<1	---	
	5/10/91	SAL	8010	<0.5	---	2	12	<0.5	1	47	47	3	<1	ND	
	8/8/91	SAL	8010	<0.5	---	1.1	4.8	<0.5	1.1	41	35	2.8	<1	ND	
	11/27/91	SPA	8010	<0.5	---	1.9	29	<0.5	0.9	59	31	2.7	<1	ND	
	1/29/92	SPA	8010	<5	---	<5	8.9	<5	<5	51	44	3	<10	ND	
	3/26/92	SPA	8010	<1.2	---	1.7	23	<1.2	1.5	68	130	1.4	<2.5	ND¹⁷	
AA	4/14/89	CCAS	8010	<1	<0.5	---	---	<1	<1	<1	<1	<2	<1	---	
	7/31/89	CCAS	8010	<0.1	<0.5	---	---	<0.1	<0.1	<0.1	<0.1	<0.5	<0.1	---	
	12/8/89	GTEL	8010	<0.2	<0.5	---	---	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	---	
	3/21/90	GTEL	8010	<0.2	<0.5	---	---	<0.5	<0.5	<0.5	<0.5	<0.5	<1	---	
	3/26/90	GTEL	8010	<0.2	<0.5	---	---	<0.5	<0.5	<0.5	<0.5	<0.5	<1	---	
	6/19/90	GTEL	8010	<0.2	<0.5	---	---	<0.5	<0.5	<0.5	<0.5	<0.5	<1	---	
	9/21/90	GTEL	8010	<0.2	<0.5	---	---	<0.5	<0.5	<0.5	<0.5	<0.5	<1	---	
	12/28/90	SAL	8010	<0.5	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	---	
	5/10/91	SAL	8010	<0.5	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	ND	
	8/8/91	SAL	8010	<0.5	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	ND ¹⁴	
	11/27/91	SPA	8010	<0.5	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	ND ¹⁶	
	1/29/92	SPA	8010	<0.5	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	ND	
	3/26/92	SPA	8010	<0.5	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	ND	
BB	5/10/91	SAL	8010	<0.5	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	ND	
	8/8/91	SAL	8010	<0.5	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	ND	
	11/27/91	SPA	8010	<0.5	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	ND ¹⁶	
	1/29/92	SPA	8010	<0.5	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	ND	
	3/26/92	SPA	8010	<0.5	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	ND	



Table 3. Analytic Results for Ground Water - Halogenated Volatile Organic Compounds - Former Chevron Asphalt Plant and Terminal #1001067, Emeryville, California (continued)

EXPLANATION:

1,1-DCE = 1,1-Dichloroethene
1,2-DCE = 1,2-Dichloroethene
t-1,2-DCE = trans-1,2-Dichloroethene
c-1,2-DCE = cis-1,2-Dichloroethene
1,1-DCA = 1,1-Dichloroethane
TCA = 1,1,1-Trichloroethane
TCE = Trichloroethylene
PCE = Tetrachloroethene
CF = Chloroform
VC = Vinyl Chloride
Other HVOCs = Other Halogenated Volatile Organic Compounds
ppb = Parts per billion
--- = Not analyzed/not applicable
AA = Travel Blank
BB = Bailer Blank
ND = Not detected at detection limits of 0.5 to 1 ppb
D = Duplicate analysis

ANALYTIC METHOD:

8010 = EPA Method 8010 for Volatile Organic Compounds

ANALYTIC LABORATORIES:

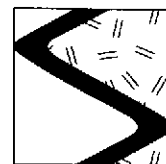
CCAS = Coast to Coast Analytical Services of San Luis Obispo, California
GTEL = Groundwater Technologies Environmental Laboratory of Concord, California
SAL = Superior Analytical Laboratory of Martinez and San Francisco, California
SPA = Superior Precision Analytical, Inc. of Martinez and San Francisco, California

NOTES:

Historic analytic data was compiled from the Quarterly Groundwater Sampling report prepared for this service station by Western Geologic Resources, February 8, 1991.

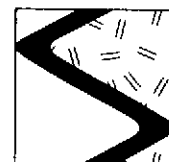
Selected HVOCs were reported by WGR; it is unknown whether other HVOCs were detected in the samples.

- ¹ 6 ppb 1,2-dichloropropane detected; other HVOCs not detected.
- ² 0.6 ppb 1,2-dichloroethane detected; other HVOCs not detected.
- ³ 63 ppb chloromethane and 0.6 ppb methylene chloride detected; other HVOCs not detected; sample contained 1,250 ppb total dissolved solids.
- ⁴ 0.9 ppb trans-1,3-dichloropropane detected; other HVOCs not detected; sample contained 810 ppb total dissolved solids.
- ⁵ 0.9 ppb trichlorofluoromethane and 1 ppb trans-1,3-dichloropropane detected; other HVOCs not detected.
- ⁶ 11 ppb trans-1,3-dichloropropane detected; other HVOCs not detected.
- ⁷ Monitoring well destroyed during excavation.
- ⁸ 0.1 ppb 1,2-dichlorobenzene detected; other HVOCs not detected.
- ⁹ MW-9 was not sampled because it was buried. No previous analytic data was available for this well.
- ¹⁰ 1.8 ppb 1,2-dichloroethane detected; other HVOCs not detected.
- ¹¹ 3 ppb 1,1,2,2-tetrachloroethane detected; other HVOCs not detected.
- ¹² 0.9 ppb 1,2-dichlorobenzene detected; other HVOCs not detected.
- ¹³ 0.5 ppb 1,2-dichloroethane detected; other HVOCs not detected.
- ¹⁴ 3.1 ppb 1,2-dichlorobenzene detected; other HVOCs not detected.
- ¹⁵ 0.9 ppb 1,2-dichloroethane detected; other HVOCs not detected.
- ¹⁶ Trace concentrations of trihalomethane compounds detected in blank water.
- ¹⁷ 1,1,2,2-Tetrachloroethane detected at 1.8 ppb, other HVOCs not detected at detection limits of 1.2 to 2.5 ppb.



SIERRA

APPENDIX C
SIERRA ENVIRONMENTAL SERVICES
STANDARD OPERATING PROCEDURES



SIERRA

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.

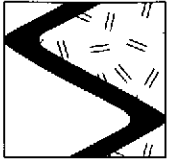
The chain of custody form includes the project number, analysis requested, sample ID, date analysis and the SES field person's name. The form is signed and dated (with the transfer time) by each person who yields or receives the samples beginning with the field personnel and ending with the laboratory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



SIERRA

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.

CWS-QMP2.SOP



SIERRA

APPENDIX D
CHAIN OF CUSTODY DOCUMENT AND
LABORATORY ANALYTIC REPORTS

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

85339 Sheet 1 of 2 Chain-of-Custody-Record

Chevron U.S.A. Inc.
P.O. BOX 5004
San Ramon, CA 94583
FAX (415)842-9591

Chevron Facility Number Asphalt Plant + Terminal # 1001067
 Facility Address 1520 Powell St., Emeryville CA
 Consultant Project Number 1-191-04
 Consultant Name Sierra Environmental Services
 Address Box 2546 Martinez CA 94553
 Project Contact (Name) Chris Brumer
 (Phone) (910) 370-1280 (Fax Number)

Chevron Contact (Name) Lucia Chou
 (Phone) (510) 842-9655
 Laboratory Name Superior Precision Analytical
 Laboratory Release Number 5334010
 Samples Collected by (Name) ARGY MENA
 Collection Date 26 MAR 1992
 Signature Argy Mena

Sample Number	Lab Sample Number	Number of Containers	Matrix S = Soil A = Air W = Water 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)				
AA	1	6	W	N/A	10:00	HCl	Yes	✓											Analyze
BB	2	6			10:10			✓											in order
MW-2	3				1335			✓											shown
MW-3	4				1350			✓											
MW-14	5				1410			✓											
MW-7	6				1205			✓											
MW-15	7				1400			✓											
MW-8	8				1325			✓											
MW-12	9				1315			✓											
MW-10	10				1440			✓											
MW-19	11				1505			✓											
MW-17	12				1435			✓											
MW-11	13				1300			✓											
MW-18	14				1450			✓											

Please Initial:
 Samples Stored in ice. E7
 Appropriate containers ✓
 Samples preserved ✓
 VOA's without headspace ✓
 Comments:

Relinquished By (Signature) <u>Argy Mena</u>	Organization <u>SES</u>	Date/Time <u>27 MAR 92</u>	Received By (Signature)	Organization	Date/Time	Turn Around Time (Circle Choice) 24 Hrs. 48 Hrs. <u>5 Days</u> 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) <u>Argy Mena</u>		Date/Time <u>3-27-92</u>	

12955 4-1

Section I

Chain of Custody and Analysis Request

page 1 of 2

Consultant Superior MT2
 Address _____

Turn Around Time
 (circle one)

Same Day 72 Hrs
 24 Hrs 48 Hrs
 Normal 5 Day



Superior Precision Analytical, Inc.

P.O. Box 1545
 Martinez, California 94553

Martinez 1 (510) 229-1512 Martinez 2 (510) 229-0166
 San Francisco (415) 647-2081

Phone No. _____ Fax No. _____

Project Manager Robin

Alternate Contact _____

Project No. 85339 P.O. No. Sierra 1-19-04

Sampler: _____

Regulatory Agency: _____

Section II: Analysis Request

Laboratory Sample Identification	Matrix S = Soil A = Air W = Water	mod 8015 - Gas	mod 8015 - BTEX	mod 8015 - Diesel	8010	8240	CAM17	TCLP Metals:	Metals:	418.1 - TPH by IR	O & G	PCBs	Date Sampled	Time Sampled	Number of Containers	Preservative (yes or no)	Sampling Remarks				
																	<input type="checkbox"/> Bio-remediation	<input type="checkbox"/> Underground storage tank	<input type="checkbox"/> Monitoring	<input type="checkbox"/> Recent Contamination	<input type="checkbox"/> Unknown Compounds
1	85339-1	Water			X																
2	-2				X																
3	-3				X																
4	-4				X																
5	-5				X																
6	-6				X																
7	-7				X																
8	-8				X																
9	-9				X																
10	-10				X																
11	-11				X																
12	-12				X																

Relinquished by Robin Kaubert
 Organization Superior

Date/Time
3/31/02 3:30pm

Received by _____
 Organization _____

Date/Time _____

Lab please initial the following:

Samples Stored in Ice yes
 Appropriate Containers yes
 Samples Preserved yes
 VOAs without Headspace yes
 Comments OK

Relinquished by _____
 Organization _____

Date/Time _____

Received by _____
 Organization _____

Date/Time _____

Relinquished by _____
 Organization _____

Date/Time
3/21/02

Received by Robin Kaubert
 Organization Superior

Date/Time _____

12955

Chain of Custody and Analysis Request

Section I

From: Superior Precision Analytical, Inc.
835 Arnold Drive Suite 106
Martinez, CA 94553

Phone No. (415) 229-0166 Fax No. (415) 229-0916

Contact: _____

P.O. No. 85339

Turn Around Time
(circle one)

Same Day 72 Hrs
24 Hrs 5 Day
48 Hrs 10 Day



Superior Precision Analytical, Inc.

P.O. Box 1545
Martinez, California 94553

Work Subcontracted to: _____

Section II: Analysis Request

Laboratory Sample Identification	S = Soil A = Air W = Water Matrix	8240	8270	8010	8080										Client Sample Identification	Number of Containers	Preservative (yes or no)			Sampling Remarks	
																				<input type="checkbox"/> Chevron	<input type="checkbox"/> Non-Chevron
1 85339-13	Water			X																	
2 -14				X																	
3 -15				X																	
4 -16				X																	
5 -17				X																	
6																					
7																					
8																					
9																					
10																					
11																					
12																					

Relinquished by <u>Robin Naulson</u> Organization <u>Superior</u>	Date/Time <u>3/31/92 3:30pm</u>	Received by _____ Organization _____	Date/Time _____	Lab please initial the following: Samples Stored in Ice <u>yes RP</u> Appropriate Containers <u>yes RP</u> Samples Preserved <u>yes RP</u> VOAs without Headspace <u>yes RP</u> Comments <u>ok</u>
Relinquished by _____ Organization _____	Date/Time _____	Received by _____ Organization _____	Date/Time _____	
Relinquished by _____ Organization _____	Date/Time _____	Received by <u>[Signature]</u> Organization <u>superior</u>	Date/Time <u>5/31/92 1730</u>	



Superior Precision Analytical, Inc.

1555 Burke, Unit I • San Francisco, California 94124 • (415) 647-2081 / fax (415) 821-7123

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

LABORATORY NO.: 12955-1
CLIENT: Sierra Environmental
Services
JOB NO.: 1-191-04

DATE SAMPLED: 03/26/92
DATE RECEIVED: 03/27/92
DATE ANALYZED: 04/02/92

EPA SW-846 METHOD 8010
HALOGENATED VOLATILE ORGANICS
SAMPLE:AA

Compound	MDL (ug/L)	RESULTS (ug/L)
Chloromethane/Vinyl Chloride	1.0	ND
Bromomethane/Chloroethane	1.0	ND
Trichlorofluoromethane	0.5	ND
1,1-Dichloroethene	0.5	ND
Methylene Chloride	0.5	ND
trans-1,2-Dichloroethene	0.5	ND
1,1-Dichloroethane	0.5	ND
Chloroform	0.5	ND
1,1,1-Trichloroethane	0.5	ND
Carbon tetrachloride	0.5	ND
1,2-Dichloroethane	0.5	ND
Trichloroethylene	0.5	ND
1,2-Dichloropropane	0.5	ND
Bromodichloromethane	0.5	ND
Cis-1,3-Dichloropropene	0.5	ND
trans-1,3-Dichloropropene	0.5	ND
1,1,2-Trichloroethane	0.5	ND
Tetrachloroethene	0.5	ND
Dibromochloromethane	0.5	ND
Chlorobenzene	0.5	ND
Bromoform	0.5	ND
1,1,2,2-Tetrachloroethane	0.5	ND
1,3-Dichlorobenzene	0.5	ND
1,2-Dichlorobenzene	0.5	ND
1,4-Dichlorobenzene	0.5	ND
Cis-1,2-Dichloroethene	0.5	ND

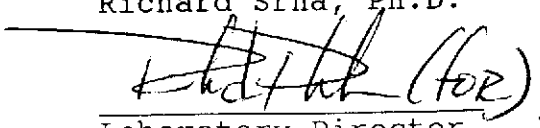
MDL = Method Detection Limit

ug/L = parts per billion (ppb)

QA/QC Summary: Daily Standard RPD = < 15%

MS/MSD average recovery = 96 % :MS/MSD RPD = 1.2 %

Richard Srna, Ph.D.


Laboratory Director



Superior Precision Analytical, Inc.

1555 Burke, Unit I • San Francisco, California 94124 • (415) 647-2081 / fax (415) 821-7123

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

LABORATORY NO.: 12955-2
CLIENT: Sierra Environmental
Services
JOB NO.: 1-191-04

DATE SAMPLED: 03/26/92
DATE RECEIVED: 03/27/92
DATE ANALYZED: 04/01/92

EPA SW-846 METHOD 8010
HALOGENATED VOLATILE ORGANICS
SAMPLE:BB

Compound	MDL (ug/L)	RESULTS (ug/L)
Chloromethane/Vinyl Chloride	1.0	ND
Bromomethane/Chloroethane	1.0	ND
Trichlorofluoromethane	0.5	ND
1,1-Dichloroethene	0.5	ND
Methylene Chloride	0.5	ND
trans-1,2-Dichloroethene	0.5	ND
1,1-Dichloroethane	0.5	ND
Chloroform	0.5	ND
1,1,1-Trichloroethane	0.5	ND
Carbon tetrachloride	0.5	ND
1,2-Dichloroethane	0.5	ND
Trichloroethylene	0.5	ND
1,2-Dichloropropane	0.5	ND
Bromodichloromethane	0.5	ND
Cis-1,3-Dichloropropene	0.5	ND
trans-1,3-Dichloropropene	0.5	ND
1,1,2-Trichloroethane	0.5	ND
Tetrachloroethene	0.5	ND
Dibromochloromethane	0.5	ND
Chlorobenzene	0.5	ND
Bromoform	0.5	ND
1,1,2,2-Tetrachloroethane	0.5	ND
1,3-Dichlorobenzene	0.5	ND
1,2-Dichlorobenzene	0.5	ND
1,4-Dichlorobenzene	0.5	ND
Cis-1,2-Dichloroethene	0.5	ND

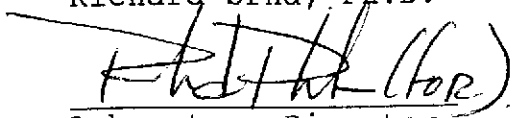
MDL = Method Detection Limit

ug/L = parts per billion (ppb)

QA/QC Summary: Daily Standard RPD = < 15%

MS/MSD average recovery = 97 % :MS/MSD RPD = 3.9 %

Richard Srna, Ph.D.


Laboratory Director



Superior Precision Analytical, Inc.

1555 Burke, Unit I • San Francisco, California 94124 • (415) 647-2081 / fax (415) 821-7123

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

LABORATORY NO.: 12955-3
CLIENT: Sierra Environmental
Services
JOB NO.: 1-191-04

DATE SAMPLED: 03/26/92
DATE RECEIVED: 03/27/92
DATE ANALYZED: 04/02/92

EPA SW-846 METHOD 8010
HALOGENATED VOLATILE ORGANICS
SAMPLE: MW-2

Compound	MDL (ug/L)	RESULTS (ug/L)
Chloromethane/Vinyl Chloride	1.0	ND
Bromomethane/Chloroethane	1.0	ND
Trichlorofluoromethane	0.5	ND
1,1-Dichloroethene	0.5	ND
Methylene Chloride	0.5	ND
trans-1,2-Dichloroethene	0.5	ND
1,1-Dichloroethane	0.5	ND
Chloroform	0.5	ND
1,1,1-Trichloroethane	0.5	ND
Carbon tetrachloride	0.5	ND
1,2-Dichloroethane	0.5	ND
Trichloroethylene	0.5	ND
1,2-Dichloropropane	0.5	ND
Bromodichloromethane	0.5	ND
Cis-1,3-Dichloropropene	0.5	ND
trans-1,3-Dichloropropene	0.5	ND
1,1,2-Trichloroethane	0.5	ND
Tetrachloroethene	0.5	ND
Dibromochloromethane	0.5	ND
Chlorobenzene	0.5	ND
Bromoform	0.5	ND
1,1,2,2-Tetrachloroethane	0.5	ND
1,3-Dichlorobenzene	0.5	ND
1,2-Dichlorobenzene	0.5	ND
1,4-Dichlorobenzene	0.5	ND
Cis-1,2-Dichloroethene	0.5	ND

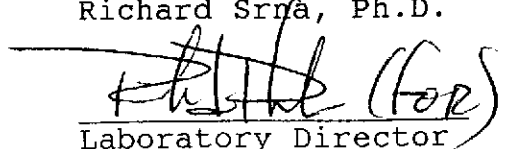
MDL = Method Detection Limit

ug/L = parts per billion (ppb)

QA/QC Summary: Daily Standard RPD = < 15%

MS/MSD average recovery = 96 % :MS/MSD RPD = 1.2 %

Richard Srna, Ph.D.


Laboratory Director



Superior Precision Analytical, Inc.

1555 Burke, Unit I • San Francisco, California 94124 • (415) 647-2081 / fax (415) 821-7123

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

LABORATORY NO.: 12955-4
CLIENT: Sierra Environmental
Services
JOB NO.: 1-191-04

DATE SAMPLED: 03/26/92
DATE RECEIVED: 03/27/92
DATE ANALYZED: 04/01/92

EPA SW-846 METHOD 8010
HALOGENATED VOLATILE ORGANICS
SAMPLE: MW-3

Compound	MDL (ug/L)	RESULTS (ug/L)
Chloromethane/Vinyl Chloride	1.0	ND
Bromomethane/Chloroethane	1.0	ND
Trichlorofluoromethane	0.5	ND
1,1-Dichloroethene	0.5	ND
Methylene Chloride	0.5	ND
trans-1,2-Dichloroethene	0.5	ND
1,1-Dichloroethane	0.5	ND
Chloroform	0.5	ND
1,1,1-Trichloroethane	0.5	ND
Carbon tetrachloride	0.5	ND
1,2-Dichloroethane	0.5	ND
Trichloroethylene	0.5	ND
1,2-Dichloropropane	0.5	ND
Bromodichloromethane	0.5	ND
Cis-1,3-Dichloropropene	0.5	ND
trans-1,3-Dichloropropene	0.5	ND
1,1,2-Trichloroethane	0.5	ND
Tetrachloroethene	0.5	ND
Dibromochloromethane	0.5	ND
Chlorobenzene	0.5	ND
Bromoform	0.5	ND
1,1,2,2-Tetrachloroethane	0.5	ND
1,3-Dichlorobenzene	0.5	ND
1,2-Dichlorobenzene	0.5	ND
1,4-Dichlorobenzene	0.5	ND
Cis-1,2-Dichloroethene	0.5	ND

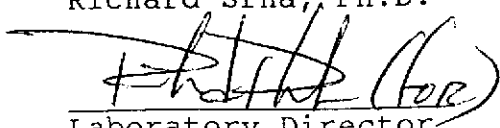
MDL = Method Detection Limit

ug/L = parts per billion (ppb)

QA/QC Summary: Daily Standard RPD = < 15%

MS/MSD average recovery = 97 % :MS/MSD RPD = 3.9 %

Richard Srna, Ph.D.


Laboratory Director



Superior Precision Analytical, Inc.

1555 Burke, Unit I • San Francisco, California 94124 • (415) 647-2081 / fax (415) 821-7123

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

LABORATORY NO.: 12955-17
CLIENT: Sierra Environmental
Services
JOB NO.: 1-191-04

DATE SAMPLED: 03/26/92
DATE RECEIVED: 03/27/92
DATE ANALYZED: 04/01/92

EPA SW-846 METHOD 8010
HALOGENATED VOLATILE ORGANICS
SAMPLE: MW-1

Compound	MDL (ug/L)	RESULTS (ug/L)
Chloromethane/Vinyl Chloride	100	260
Bromomethane/Chloroethane	100	ND
Trichlorofluoromethane	50	ND
1,1-Dichloroethene	50	ND
Methylene Chloride	50	ND
trans-1,2-Dichloroethene	50	ND
1,1-Dichloroethane	50	ND
Chloroform	50	ND
1,1,1-Trichloroethane	50	ND
Carbon tetrachloride	50	ND
1,2-Dichloroethane	50	ND
Trichloroethylene	50	ND
1,2-Dichloropropane	50	ND
Bromodichloromethane	50	ND
Cis-1,3-Dichloropropene	50	ND
trans-1,3-Dichloropropene	50	ND
1,1,2-Trichloroethane	50	ND
Tetrachloroethene	50	ND
Dibromochloromethane	50	ND
Chlorobenzene	50	ND
Bromoform	50	ND
1,1,2,2-Tetrachloroethane	50	ND
1,3-Dichlorobenzene	50	ND
1,2-Dichlorobenzene	50	ND
1,4-Dichlorobenzene	50	ND
Cis-1,2-Dichloroethene	50	1500

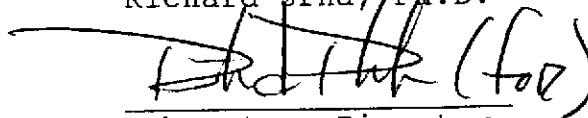
MDL = Method Detection Limit

ug/L = parts per billion (ppb)

QA/QC Summary: Daily Standard RPD =< 15%

MS/MSD average recovery = 97 % :MS/MSD RPD = 3.9 %

Richard Srna, Ph.D.


Laboratory Director



Superior Precision Analytical, Inc.

1555 Burke, Unit I • San Francisco, California 94124 • (415) 647-2081 / fax (415) 821-7123

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

LABORATORY NO.: 12955-6
CLIENT: Sierra Environmental
Services
JOB NO.: 1-191-04

DATE SAMPLED: 03/26/92
DATE RECEIVED: 03/27/92
DATE ANALYZED: 04/02/92

EPA SW-846 METHOD 8010
HALOGENATED VOLATILE ORGANICS
SAMPLE: MW-7

Compound	MDL (ug/L)	RESULTS (ug/L)
Chloromethane/Vinyl Chloride	1.0	ND
Bromomethane/Chloroethane	1.0	ND
Trichlorofluoromethane	0.5	ND
1,1-Dichloroethene	0.5	ND
Methylene Chloride	0.5	ND
trans-1,2-Dichloroethene	0.5	ND
1,1-Dichloroethane	0.5	ND
Chloroform	0.5	ND
1,1,1-Trichloroethane	0.5	ND
Carbon tetrachloride	0.5	ND
1,2-Dichloroethane	0.5	ND
Trichloroethylene	0.5	ND
1,2-Dichloropropane	0.5	ND
Bromodichloromethane	0.5	ND
Cis-1,3-Dichloropropene	0.5	ND
trans-1,3-Dichloropropene	0.5	ND
1,1,2-Trichloroethane	0.5	ND
Tetrachloroethene	0.5	ND
Dibromochloromethane	0.5	ND
Chlorobenzene	0.5	ND
Bromoform	0.5	ND
1,1,2,2-Tetrachloroethane	0.5	ND
1,3-Dichlorobenzene	0.5	ND
1,2-Dichlorobenzene	0.5	ND
1,4-Dichlorobenzene	0.5	ND
Cis-1,2-Dichloroethene	0.5	ND

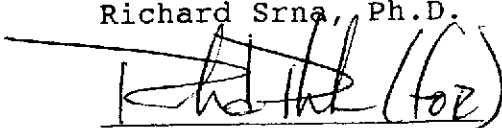
MDL = Method Detection Limit

ug/L = parts per billion (ppb)

QA/QC Summary: Daily Standard RPD = < 15%

MS/MSD average recovery = 96 % :MS/MSD RPD = 1.2 %

Richard Srna, Ph.D.


Laboratory Director



Superior Precision Analytical, Inc.

1555 Burke, Unit I • San Francisco, California 94124 • (415) 647-2081 / fax (415) 821-7123

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

LABORATORY NO.: 12955-8
CLIENT: Sierra Environmental
Services
JOB NO.: 1-191-04

DATE SAMPLED: 03/26/92
DATE RECEIVED: 03/27/92
DATE ANALYZED: 04/01/92

EPA SW-846 METHOD 8010
HALOGENATED VOLATILE ORGANICS
SAMPLE: MW-8

Compound	MDL (ug/L)	RESULTS (ug/L)
Chloromethane/Vinyl Chloride	1.0	ND
Bromomethane/Chloroethane	1.0	ND
Trichlorofluoromethane	0.5	ND
1,1-Dichloroethene	0.5	ND
Methylene Chloride	0.5	ND
trans-1,2-Dichloroethene	0.5	ND
1,1-Dichloroethane	0.5	ND
Chloroform	0.5	ND
1,1,1-Trichloroethane	0.5	ND
Carbon tetrachloride	0.5	ND
1,2-Dichloroethane	0.5	ND
Trichloroethylene	0.5	ND
1,2-Dichloropropane	0.5	ND
Bromodichloromethane	0.5	ND
Cis-1,3-Dichloropropene	0.5	ND
trans-1,3-Dichloropropene	0.5	ND
1,1,2-Trichloroethane	0.5	ND
Tetrachloroethene	0.5	ND
Dibromochloromethane	0.5	ND
Chlorobenzene	0.5	ND
Bromoform	0.5	ND
1,1,2,2-Tetrachloroethane	0.5	ND
1,3-Dichlorobenzene	0.5	ND
1,2-Dichlorobenzene	0.5	ND
1,4-Dichlorobenzene	0.5	ND
Cis-1,2-Dichloroethene	0.5	ND

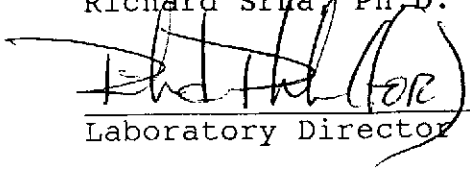
MDL = Method Detection Limit

ug/L = parts per billion (ppb)

QA/QC Summary: Daily Standard RPD = < 15%

MS/MSD average recovery = 97 % :MS/MSD RPD = 3.9 %

Richard Serra, Ph.D.


Laboratory Director



Superior Precision Analytical, Inc.

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

LABORATORY NO.: 12955-10
CLIENT: Sierra Environmental
Services
JOB NO.: 1-191-04

DATE SAMPLED: 03/26/92
DATE RECEIVED: 03/27/92
DATE ANALYZED: 04/01/92

EPA SW-846 METHOD 8010
HALOGENATED VOLATILE ORGANICS
SAMPLE: MW-10

Compound	MDL (ug/L)	RESULTS (ug/L)
Chloromethane/Vinyl Chloride	1.0	ND
Bromomethane/Chloroethane	1.0	ND
Trichlorofluoromethane	0.5	ND
1,1-Dichloroethene	0.5	0.7
Methylene Chloride	0.5	ND
trans-1,2-Dichloroethene	0.5	9.2
1,1-Dichloroethane	0.5	2.5
Chloroform	0.5	ND
1,1,1-Trichloroethane	0.5	ND
Carbon tetrachloride	0.5	ND
1,2-Dichloroethane	0.5	ND
Trichloroethylene	0.5	6.8
1,2-Dichloropropane	0.5	ND
Bromodichloromethane	0.5	ND
Cis-1,3-Dichloropropene	0.5	ND
trans-1,3-Dichloropropene	0.5	ND
1,1,2-Trichloroethane	0.5	ND
Tetrachloroethene	0.5	ND
Dibromochloromethane	0.5	ND
Chlorobenzene	0.5	ND
Bromoform	0.5	ND
1,1,2,2-Tetrachloroethane	0.5	ND
1,3-Dichlorobenzene	0.5	ND
1,2-Dichlorobenzene	0.5	ND
1,4-Dichlorobenzene	0.5	ND
Cis-1,2-Dichloroethene	0.5	29

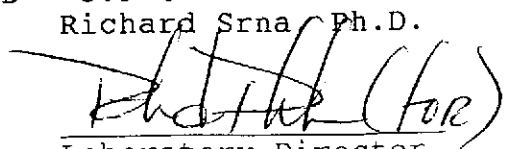
MDL = Method Detection Limit

ug/L = parts per billion (ppb)

QA/QC Summary: Daily Standard RPD = < 15%

MS/MSD average recovery = 97 % : MS/MSD RPD = 3.9 %

Richard Srna, Ph.D.


Laboratory Director



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

LABORATORY NO.: 12955-13
CLIENT: Sierra Environmental
Services
JOB NO.: 1-191-04

DATE SAMPLED: 03/26/92
DATE RECEIVED: 03/27/92
DATE ANALYZED: 04/01/92

EPA SW-846 METHOD 8010
HALOGENATED VOLATILE ORGANICS
SAMPLE: MW-11

Compound	MDL (ug/L)	RESULTS (ug/L)
Chloromethane/Vinyl Chloride	5.0	ND
Bromomethane/Chloroethane	5.0	ND
Trichlorofluoromethane	2.5	ND
1,1-Dichloroethene	2.5	ND
Methylene Chloride	2.5	ND
trans-1,2-Dichloroethene	2.5	21
1,1-Dichloroethane	2.5	ND
Chloroform	2.5	ND
1,1,1-Trichloroethane	2.5	ND
Carbon tetrachloride	2.5	ND
1,2-Dichloroethane	2.5	ND
Trichloroethylene	2.5	ND
1,2-Dichloropropane	2.5	ND
Bromodichloromethane	2.5	ND
Cis-1,3-Dichloropropene	2.5	ND
trans-1,3-Dichloropropene	2.5	ND
1,1,2-Trichloroethane	2.5	ND
Tetrachloroethene	2.5	ND
Dibromochloromethane	2.5	ND
Chlorobenzene	2.5	ND
Bromoform	2.5	ND
1,1,2,2-Tetrachloroethane	2.5	ND
1,3-Dichlorobenzene	2.5	ND
1,2-Dichlorobenzene	2.5	ND
1,4-Dichlorobenzene	2.5	ND
Cis-1,2-Dichloroethene	2.5	51

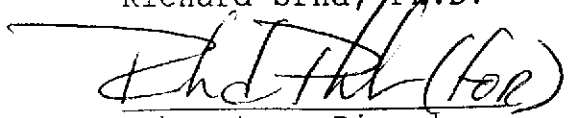
MDL = Method Detection Limit

ug/L = parts per billion (ppb)

QA/QC Summary: Daily Standard RPD = < 15%

MS/MSD average recovery = 97 % : MS/MSD RPD = 3.9 %

Richard Srna, Ph.D.


Laboratory Director



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

LABORATORY NO.: 12955-9
CLIENT: Sierra Environmental
Services
JOB NO.: 1-191-04

DATE SAMPLED: 03/26/92
DATE RECEIVED: 03/27/92
DATE ANALYZED: 04/01/92

EPA SW-846 METHOD 8010
HALOGENATED VOLATILE ORGANICS
SAMPLE: MW-12

Compound	MDL (ug/L)	RESULTS (ug/L)
Chloromethane/Vinyl Chloride	1.0	ND
Bromomethane/Chloroethane	1.0	ND
Trichlorofluoromethane	0.5	ND
1,1-Dichloroethene	0.5	ND
Methylene Chloride	0.5	ND
trans-1,2-Dichloroethene	0.5	ND
1,1-Dichloroethane	0.5	ND
Chloroform	0.5	ND
1,1,1-Trichloroethane	0.5	ND
Carbon tetrachloride	0.5	ND
1,2-Dichloroethane	0.5	ND
Trichloroethylene	0.5	ND
1,2-Dichloropropane	0.5	ND
Bromodichloromethane	0.5	ND
Cis-1,3-Dichloropropene	0.5	ND
trans-1,3-Dichloropropene	0.5	ND
1,1,2-Trichloroethane	0.5	ND
Tetrachloroethene	0.5	ND
Dibromochloromethane	0.5	ND
Chlorobenzene	0.5	ND
Bromoform	0.5	ND
1,1,2,2-Tetrachloroethane	0.5	ND
1,3-Dichlorobenzene	0.5	ND
1,2-Dichlorobenzene	0.5	ND
1,4-Dichlorobenzene	0.5	ND
Cis-1,2-Dichloroethene	0.5	ND

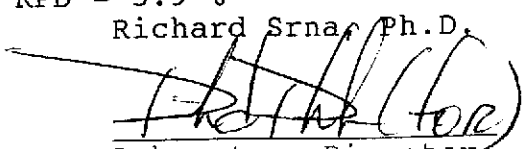
MDL = Method Detection Limit

ug/L = parts per billion (ppb)

QA/QC Summary: Daily Standard RPD = < 15%

MS/MSD average recovery = 97 % :MS/MSD RPD = 3.9 %

Richard Srna, Ph.D.


Laboratory Director



Superior Precision Analytical, Inc.

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

LABORATORY NO.: 12955-16
CLIENT: Sierra Environmental
Services
JOB NO.: 1-191-04

DATE SAMPLED: 03/26/92
DATE RECEIVED: 03/27/92
DATE ANALYZED: 04/01/92

EPA SW-846 METHOD 8010
HALOGENATED VOLATILE ORGANICS
SAMPLE: MW-13

Compound	MDL (ug/L)	RESULTS (ug/L)
Chloromethane/Vinyl Chloride	1.0	ND
Bromomethane/Chloroethane	1.0	ND
Trichlorofluoromethane	0.5	ND
1,1-Dichloroethene	0.5	ND
Methylene Chloride	0.5	ND
trans-1,2-Dichloroethene	0.5	ND
1,1-Dichloroethane	0.5	ND
Chloroform	0.5	ND
1,1,1-Trichloroethane	0.5	ND
Carbon tetrachloride	0.5	ND
1,2-Dichloroethane	0.5	ND
Trichloroethylene	0.5	ND
1,2-Dichloropropane	0.5	ND
Bromodichloromethane	0.5	ND
Cis-1,3-Dichloropropene	0.5	ND
trans-1,3-Dichloropropene	0.5	ND
1,1,2-Trichloroethane	0.5	ND
Tetrachloroethene	0.5	ND
Dibromochloromethane	0.5	ND
Chlorobenzene	0.5	ND
Bromoform	0.5	ND
1,1,2,2-Tetrachloroethane	0.5	ND
1,3-Dichlorobenzene	0.5	ND
1,2-Dichlorobenzene	0.5	ND
1,4-Dichlorobenzene	0.5	ND
Cis-1,2-Dichloroethene	0.5	ND

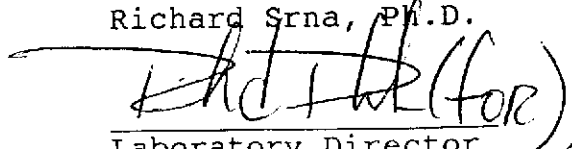
MDL = Method Detection Limit

ug/L = parts per billion (ppb)

QA/QC Summary: Daily Standard RPD = < 15%

MS/MSD average recovery = 96 % :MS/MSD RPD = 1.2 %

Richard Srna, Ph.D.


Laboratory Director



Superior Precision Analytical, Inc.

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

LABORATORY NO.: 12955-5
CLIENT: Sierra Environmental
Services
JOB NO.: 1-191-04

DATE SAMPLED: 03/26/92
DATE RECEIVED: 03/27/92
DATE ANALYZED: 04/01/92

EPA SW-846 METHOD 8010
HALOGENATED VOLATILE ORGANICS
SAMPLE: MW-14

Compound	MDL (ug/L)	RESULTS (ug/L)
Chloromethane/Vinyl Chloride	1.0	ND
Bromomethane/Chloroethane	1.0	ND
Trichlorofluoromethane	0.5	ND
1,1-Dichloroethene	0.5	ND
Methylene Chloride	0.5	ND
trans-1,2-Dichloroethene	0.5	ND
1,1-Dichloroethane	0.5	ND
Chloroform	0.5	ND
1,1,1-Trichloroethane	0.5	ND
Carbon tetrachloride	0.5	ND
1,2-Dichloroethane	0.5	ND
Trichloroethylene	0.5	ND
1,2-Dichloropropane	0.5	ND
Bromodichloromethane	0.5	ND
Cis-1,3-Dichloropropene	0.5	ND
trans-1,3-Dichloropropene	0.5	ND
1,1,2-Trichloroethane	0.5	ND
Tetrachloroethene	0.5	ND
Dibromochloromethane	0.5	ND
Chlorobenzene	0.5	ND
Bromoform	0.5	ND
1,1,2,2-Tetrachloroethane	0.5	ND
1,3-Dichlorobenzene	0.5	ND
1,2-Dichlorobenzene	0.5	ND
1,4-Dichlorobenzene	0.5	ND
Cis-1,2-Dichloroethene	0.5	ND

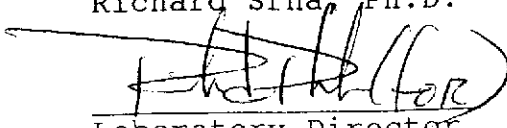
MDL = Method Detection Limit

ug/L = parts per billion (ppb)

QA/QC Summary: Daily Standard RPD = < 15%

MS/MSD average recovery = 97 % :MS/MSD RPD = 3.9 %

Richard Srna, Ph.D.


Laboratory Director



Superior Precision Analytical, Inc.

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

LABORATORY NO.: 12955-7
CLIENT: Sierra Environmental
Services
JOB NO.: 1-191-04

DATE SAMPLED: 03/26/92
DATE RECEIVED: 03/27/92
DATE ANALYZED: 04/01/92

EPA SW-846 METHOD 8010
HALOGENATED VOLATILE ORGANICS
SAMPLE: MW-15

Compound	MDL (ug/L)	RESULTS (ug/L)
Chloromethane/Vinyl Chloride	1.0	ND
Bromomethane/Chloroethane	1.0	ND
Trichlorofluoromethane	0.5	ND
1,1-Dichloroethene	0.5	ND
Methylene Chloride	0.5	ND
trans-1,2-Dichloroethene	0.5	ND
1,1-Dichloroethane	0.5	ND
Chloroform	0.5	ND
1,1,1-Trichloroethane	0.5	ND
Carbon tetrachloride	0.5	ND
1,2-Dichloroethane	0.5	ND
Trichloroethylene	0.5	ND
1,2-Dichloropropane	0.5	ND
Bromodichloromethane	0.5	ND
Cis-1,3-Dichloropropene	0.5	ND
trans-1,3-Dichloropropene	0.5	ND
1,1,2-Trichloroethane	0.5	ND
Tetrachloroethene	0.5	ND
Dibromochloromethane	0.5	ND
Chlorobenzene	0.5	ND
Bromoform	0.5	ND
1,1,2,2-Tetrachloroethane	0.5	ND
1,3-Dichlorobenzene	0.5	ND
1,2-Dichlorobenzene	0.5	ND
1,4-Dichlorobenzene	0.5	ND
Cis-1,2-Dichloroethene	0.5	ND

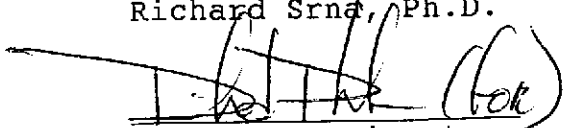
MDL = Method Detection Limit

ug/L = parts per billion (ppb)

QA/QC Summary: Daily Standard RPD = < 15%

MS/MSD average recovery = 97 % : MS/MSD RPD = 3.9 %

Richard Srna, Ph.D.


Laboratory Director



Superior Precision Analytical, Inc.

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

LABORATORY NO.: 12955-15
CLIENT: Sierra Environmental
Services
JOB NO.: 1-191-04

DATE SAMPLED: 03/26/92
DATE RECEIVED: 03/27/92
DATE ANALYZED: 04/01/92

EPA SW-846 METHOD 8010
HALOGENATED VOLATILE ORGANICS
SAMPLE: MW-16

Compound	MDL (ug/L)	RESULTS (ug/L)
Chloromethane/Vinyl Chloride	1.7	ND
Bromomethane/Chloroethane	1.7	ND
Trichlorofluoromethane	0.8	ND
1,1-Dichloroethene	0.8	ND
Methylene Chloride	0.8	ND
trans-1,2-Dichloroethene	0.8	ND
1,1-Dichloroethane	0.8	ND
Chloroform	0.8	1.7
1,1,1-Trichloroethane	0.8	ND
Carbon tetrachloride	0.8	ND
1,2-Dichloroethane	0.8	ND
Trichloroethylene	0.8	24
1,2-Dichloropropane	0.8	ND
Bromodichloromethane	0.8	ND
Cis-1,3-Dichloropropene	0.8	ND
trans-1,3-Dichloropropene	0.8	ND
1,1,2-Trichloroethane	0.8	ND
Tetrachloroethene	0.8	8.5
Dibromochloromethane	0.8	ND
Chlorobenzene	0.8	ND
Bromoform	0.8	ND
1,1,2,2-Tetrachloroethane	0.8	ND
1,3-Dichlorobenzene	0.8	ND
1,2-Dichlorobenzene	0.8	ND
1,4-Dichlorobenzene	0.8	ND
Cis-1,2-Dichloroethene	0.8	ND

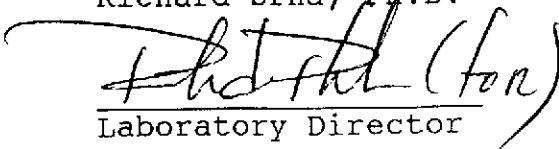
MDL = Method Detection Limit

ug/L = parts per billion (ppb)

QA/QC Summary: Daily Standard RPD = < 15%

MS/MSD average recovery = 97 % :MS/MSD RPD = 3.9 %

Richard Srna, Ph.D.


Laboratory Director



Superior Precision Analytical, Inc.

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

LABORATORY NO.: 12955-12
CLIENT: Sierra Environmental
Services
JOB NO.: 1-191-04

DATE SAMPLED: 03/26/92
DATE RECEIVED: 03/27/92
DATE ANALYZED: 04/01/92

EPA SW-846 METHOD 8010
HALOGENATED VOLATILE ORGANICS
SAMPLE: MW-17

Compound	MDL (ug/L)	RESULTS (ug/L)
Chloromethane/Vinyl Chloride	1.0	ND
Bromomethane/Chloroethane	1.0	ND
Trichlorofluoromethane	0.5	ND
1,1-Dichloroethene	0.5	ND
Methylene Chloride	0.5	ND
trans-1,2-Dichloroethene	0.5	ND
1,1-Dichloroethane	0.5	ND
Chloroform	0.5	0.6
1,1,1-Trichloroethane	0.5	0.7
Carbon tetrachloride	0.5	ND
1,2-Dichloroethane	0.5	ND
Trichloroethylene	0.5	41
1,2-Dichloropropane	0.5	ND
Bromodichloromethane	0.5	ND
Cis-1,3-Dichloropropene	0.5	ND
trans-1,3-Dichloropropene	0.5	ND
1,1,2-Trichloroethane	0.5	ND
Tetrachloroethene	0.5	12
Dibromochloromethane	0.5	ND
Chlorobenzene	0.5	ND
Bromoform	0.5	ND
1,1,2,2-Tetrachloroethane	0.5	ND
1,3-Dichlorobenzene	0.5	ND
1,2-Dichlorobenzene	0.5	ND
1,4-Dichlorobenzene	0.5	ND
Cis-1,2-Dichloroethene	0.5	1.5

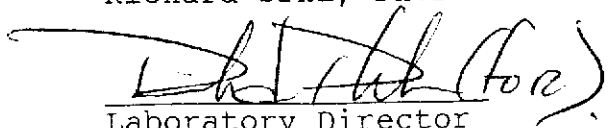
MDL = Method Detection Limit

ug/L = parts per billion (ppb)

QA/QC Summary: Daily Standard RPD = < 15%

MS/MSD average recovery = 97 % : MS/MSD RPD = 3.9 %

Richard Srna, Ph.D.


Laboratory Director



Superior Precision Analytical, Inc.

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

LABORATORY NO.: 12955-14
CLIENT: Sierra Environmental
Services
JOB NO.: 1-191-04

DATE SAMPLED: 03/26/92
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EPA SW-846 METHOD 8010
HALOGENATED VOLATILE ORGANICS
SAMPLE: MW-18

Compound	MDL (ug/L)	RESULTS (ug/L)
Chloromethane/Vinyl Chloride	2.5	ND
Bromomethane/Chloroethane	2.5	ND
Trichlorofluoromethane	1.2	ND
1,1-Dichloroethene	1.2	ND
Methylene Chloride	1.2	ND
trans-1,2-Dichloroethene	1.2	ND
1,1-Dichloroethane	1.2	ND
Chloroform	1.2	1.7
1,1,1-Trichloroethane	1.2	ND
Carbon tetrachloride	1.2	ND
1,2-Dichloroethane	1.2	ND
Trichloroethylene	1.2	130
1,2-Dichloropropane	1.2	ND
Bromodichloromethane	1.2	ND
Cis-1,3-Dichloropropene	1.2	ND
trans-1,3-Dichloropropene	1.2	ND
1,1,2-Trichloroethane	1.2	ND
Tetrachloroethene	1.2	19
Dibromochloromethane	1.2	ND
Chlorobenzene	1.2	ND
Bromoform	1.2	ND
1,1,2,2-Tetrachloroethane	1.2	ND
1,3-Dichlorobenzene	1.2	ND
1,2-Dichlorobenzene	1.2	ND
1,4-Dichlorobenzene	1.2	ND
Cis-1,2-Dichloroethene	1.2	6.4

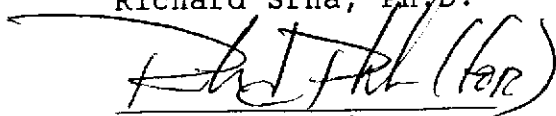
MDL = Method Detection Limit

ug/L = parts per billion (ppb)

QA/QC Summary: Daily Standard RPD = < 15%

MS/MSD average recovery = 96 % :MS/MSD RPD = 1.2 %

Richard Srna, Ph.D.


Laboratory Director



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

LABORATORY NO.: 12955-11
CLIENT: Sierra Environmental
Services
JOB NO.: 1-191-04

DATE SAMPLED: 03/26/92
DATE RECEIVED: 03/27/92
DATE ANALYZED: 04/01/92

EPA SW-846 METHOD 8010
HALOGENATED VOLATILE ORGANICS
SAMPLE: MW-19

Compound	MDL (ug/L)	RESULTS (ug/L)
Chloromethane/Vinyl Chloride	2.5	ND
Bromomethane/Chloroethane	2.5	ND
Trichlorofluoromethane	1.2	ND
1,1-Dichloroethene	1.2	ND
Methylene Chloride	1.2	ND
trans-1,2-Dichloroethene	1.2	1.7
1,1-Dichloroethane	1.2	ND
Chloroform	1.2	1.4
1,1,1-Trichloroethane	1.2	1.5
Carbon tetrachloride	1.2	ND
1,2-Dichloroethane	1.2	ND
Trichloroethylene	1.2	68
1,2-Dichloropropane	1.2	ND
Bromodichloromethane	1.2	ND
Cis-1,3-Dichloropropene	1.2	ND
trans-1,3-Dichloropropene	1.2	ND
1,1,2-Trichloroethane	1.2	ND
Tetrachloroethene	1.2	130
Dibromochloromethane	1.2	ND
Chlorobenzene	1.2	ND
Bromoform	1.2	ND
1,1,2,2-Tetrachloroethane	1.2	1.8
1,3-Dichlorobenzene	1.2	ND
1,2-Dichlorobenzene	1.2	ND
1,4-Dichlorobenzene	1.2	ND
Cis-1,2-Dichloroethene	1.2	23

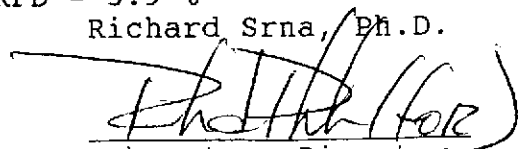
MDL = Method Detection Limit

ug/L = parts per billion (ppb)

QA/QC Summary: Daily Standard RPD = < 15%

MS/MSD average recovery = 97 % : MS/MSD RPD = 3.9 %

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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

LABORATORY NO.: 85339
CLIENT: Sierra Environmental
CLIENT JOB NO.: 1-191-04

DATE RECEIVED: 03/27/92
DATE REPORTED: 04/03/92

Page 1 of 3

Lab Number	Customer Sample Identification	Date Sampled	Date Analyzed
85339- 1	AA	03/26/92	03/30/92
85339- 2	BB	03/26/92	03/30/92
85339- 3	MW-2	03/26/92	03/31/92
85339- 4	MW-3	03/26/92	03/30/92
85339- 5	MW-14	03/26/92	03/31/92
85339- 6	MW-7	03/26/92	03/31/92
85339- 7	MW-15	03/26/92	03/31/92
85339- 8	MW-8	03/26/92	03/31/92
85339- 9	MW-12	03/26/92	03/30/92
85339-10	MW-10	03/26/92	03/31/92

Laboratory Number:	85339	85339	85339	85339	85339
	1	2	3	4	5

ANALYTE LIST	Amounts/Quantitation Limits (ug/L)				
OIL AND GREASE:	NA	NA	NA	NA	NA
TPH/GASOLINE RANGE:	ND<50	ND<50	ND<50	ND<50	ND<50
TPH/DIESEL RANGE:	NA	NA	NA	NA	NA
BENZENE:	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5
TOLUENE:	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5
ETHYL BENZENE:	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5
XYLENES:	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5

Laboratory Number:	85339	85339	85339	85339	85339
	6	7	8	9	10

ANALYTE LIST	Amounts/Quantitation Limits (ug/L)				
OIL AND GREASE:	NA	NA	NA	NA	NA
TPH/GASOLINE RANGE:	ND<50	ND<50	ND<50	ND<50	ND<50
TPH/DIESEL RANGE:	NA	NA	NA	NA	NA
BENZENE:	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5
TOLUENE:	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5
ETHYL BENZENE:	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5
XYLENES:	0.9	ND<0.5	0.7	ND<0.5	ND<0.5



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

LABORATORY NO.: 85339
CLIENT: Sierra Environmental
CLIENT JOB NO.: 1-191-04

DATE RECEIVED: 03/27/92
DATE REPORTED: 04/03/92

Page 2 of 3

Lab Number	Customer Sample Identification	Date Sampled	Date Analyzed
85339-11	MW-19	03/26/92	03/31/92
85339-12	MW-17	03/26/92	04/02/92
85339-13	MW-11	03/26/92	04/02/92
85339-14	MW-18	03/26/92	03/31/92
85339-15	MW-16	03/26/92	03/31/92
85339-16	MW-13	03/26/92	04/02/92
85339-17	MW-1	03/26/92	03/31/92

Laboratory Number:	85339	85339	85339	85339	85339
	11	12	13	14	15

ANALYTE LIST	Amounts/Quantitation Limits (ug/L)				
OIL AND GREASE:	NA	NA	NA	NA	NA
TPH/GASOLINE RANGE:	* 80	ND<50	ND<50	* 80	* 270
TPH/DIESEL RANGE:	NA	NA	NA	NA	NA
BENZENE:	ND<0.5	ND<0.5	ND<0.5	ND<0.5	21
TOLUENE:	ND<0.5	ND<0.5	ND<0.5	ND<0.5	27
ETHYL BENZENE:	ND<0.5	ND<0.5	ND<0.5	ND<0.5	9.5
XYLENES:	ND<0.5	ND<0.5	ND<0.5	0.8	41

Laboratory Number:	85339	85339
	16	17

ANALYTE LIST	Amounts/Quantitation Limits (ug/L)	
OIL AND GREASE:	NA	NA
TPH/GASOLINE RANGE:	ND<50	* 420
TPH/DIESEL RANGE:	NA	NA
BENZENE:	ND<0.5	19
TOLUENE:	ND<0.5	2.2
ETHYL BENZENE:	ND<0.5	1.2
XYLENES:	ND<0.5	4.0



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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 3 of 3
QA/QC INFORMATION
SET: 85339

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

* - Gasoline range concentration reported. The chromatogram shows only a single peak in the gasoline range.

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

Modified EPA-SW846 Method 8015 for Extractable Hydrocarbons:
Minimum Quantitation Limit for Diesel in Water: 50ug/L
Standard Reference: NA

EPA-SW846 Method 8015/5030 Total Purgable Petroleum Hydrocarbons:
Minimum Quantitation Limit for Gasoline in Water: 50ug/L
Standard Reference: 10/04/91

SW-846 Method 8020/BTXE
Minimum Quantitation Limit in Water: 0.5ug/L
Standard Reference: 10/11/91

ANALYTE	REFERENCE	SPIKE LEVEL	MS/MSD RECOVERY	RPD	CONTROL LIMIT
Oil & Grease	NA	NA	NA	NA	NA
Diesel	NA	NA	NA	NA	NA
Gasoline	03/03/92	200 ng	98/95	3	70-130
Benzene	02/26/92	200 ng	98/95	3	70-130
Toluene	02/26/92	200 ng	103/103	0	70-130
Ethyl Benzene	02/26/92	200 ng	108/108	0	70-130
Total Xylenes	02/26/92	200 ng	107/110	3	70-130

Richard Srna, Ph.D.


Laboratory Director