

# 3769

February 8, 1999

Barney Chan  
Alameda County Health Care Services Agency  
1131 Harbor Bay Parkway, Suite 250  
Alameda, California 94502-6577

99 FEB 17 PM 2:25  
ENVIRONMENTAL  
PROTECTION

Re: **Fourth Quarter 1998 Monitoring Report**  
Shell-branded Service Station  
4255 MacArthur Boulevard  
Oakland, California  
WIC #204-5510-0600  
Cambria Project #24-314-498



Dear Mr. Chan:

On behalf of Equilon Enterprises LLC, Cambria Environmental Technology, Inc. (Cambria) is submitting this ground water monitoring report in accordance with the reporting requirements of 23 CCR 2652d.

<sup>8</sup>  
**FOURTH QUARTER 1999 ACTIVITIES**

**Ground Water Monitoring:** Blaine Tech Services, Inc. (Blaine) of San Jose, California checked for separate-phase hydrocarbons (SPH) and gauged and sampled the site wells (Figure 1). SPH was detected in well MW-2, but was not removed because the on site SPH storage container was missing a cap. Cambria calculated ground water elevations (Table 2), compiled the analytical data (Table 3), and prepared a ground water elevation contour map (Figure 1). The Blaine report is included as Attachment A.

Separate-Phase Hydrocarbon Removal Summary	
This Quarter (lbs)	Cumulative Removal (lbs)
0.00	21.18

Oakland, CA  
Sonoma, CA  
Portland, OR  
Seattle, WA

**Cambria  
Environmental  
Technology, Inc.**

1144 65th Street  
Suite B  
Oakland, CA 94608  
Tel (510) 420-0700  
Fax (510) 420-9170

Barney Chan  
February 8, 1999

**ANTICIPATED FIRST QUARTER 1999 ACTIVITIES**

*Ground Water Monitoring:* Blaine will measure and remove detected SPH, gauge and sample the site wells, and tabulate the data. Cambria will prepare a monitoring report. Cambria will also re-cap the SPH container so SPH can be purged in the future.



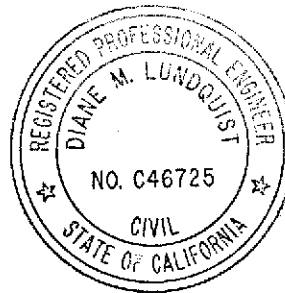
**CLOSING**

We appreciate the opportunity to work with you on this project. Please call Brian Busch at (510) 420-3312 if you have any questions or comments.

Sincerely,  
**Cambria Environmental Technology, Inc.**

Brian Busch  
Project Environmental Scientist

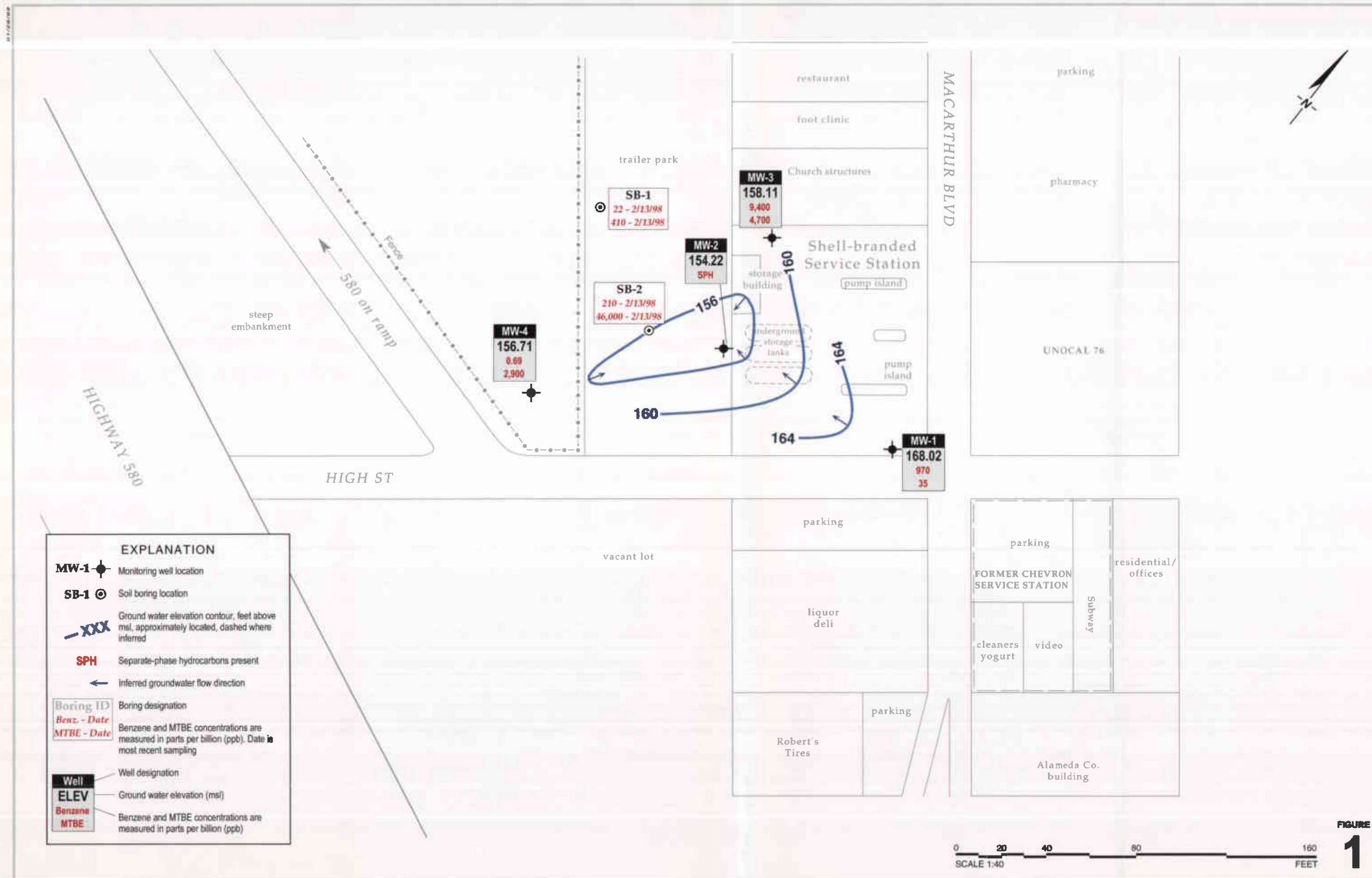
Diane M. Lundquist, P.E.  
Principal Engineer



Attachment: A - Blaine Ground Water Monitoring Report

cc: Karen Petryna, Equiva Services LLC, P.O. Box 6249, Carson, California 90749

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# CAMBRIA

**Table 1. Separate-Phase Hydrocarbon Removal – Shell-branded Service Station**  
WIC# 204-5510-0600, 4255 MacArthur Blvd., Oakland, California

Well ID	Date	SPH Thickness (ft)	SPH Removed (lbs)	Cumulative SPH Removed (lbs)
MW-2	08/10/95	0.52	5.98 <sup>a</sup>	5.98
	10/18/95	0.13	0.0	5.98
	01/17/96	0.17	1.74	7.72
	04/25/96	0.03	0.65	8.37
	07/17/96	0.48	2.11	10.48
	10/01/96	0.28	0.81	11.29
	01/22/97	0.11	0.48	11.77
	04/08/97	0.20	0.97	12.74
	07/08/97	0.19	0.97	13.71
	10/08/97	0.05	0.81	14.52
	01/08/98	0.08	1.29	15.81
	04/13/98	0.00	0.02	15.83
	07/17/98	0.10	0.81	16.64
	10/02/98	0.11	0.00 <sup>b</sup>	16.64
MW-3	01/13/95	---	0.02	0.02
	04/12/95	---	0.02	0.04
	08/10/95	0.06	0.69 <sup>a</sup>	0.73
	10/18/95	0.05	0.0	0.73
	01/17/96	0.24	2.62	3.35
	04/25/96	0.02	0.33	3.68
	07/17/96	0.03	0.70	4.38
	04/08/97	0.03	0.16	4.54
<b>TOTAL HYDROCARBONS REMOVED</b>				<b>21.18</b>

**Abbreviations and Notes:**

SPH = Separate-phase hydrocarbons

ft = Feet

lbs = Pounds

--- = Not measured

a = SPH in 10" boring and 4" well estimated by following factor: 1 ft of SPH = 11.5 lbs of SPH

b = No SPH removed because on-site storage drum was missing its cap seal

Weight of SPH converted from volume using the relation: 1 liter gasoline = 1.61 pounds

# CAMBRIA

**Table 2. Ground Water Elevations – Shell-branded Service Station WIC# 204-5510-0600, 4255 MacArthur Blvd., Oakland, California**

Well ID	Date Gauged	Top-of-Casing Elevation (ft above msl)	Depth to Water (ft below TOC)	SPH Thickness (ft)	Ground Water Elevation <sup>a</sup> (ft above msl)
MW-1	11/17/93	175.79	8.59	---	167.20
	01/20/94		8.22	---	167.57
	04/25/94		7.63	---	168.16
	07/07/94		8.31	---	167.48
	10/27/94		8.84	---	166.95
	11/17/94		7.60	---	168.19
	11/28/94		7.56	---	168.23
	01/13/95		7.11	---	168.68
	04/12/95		7.08	---	168.71
	07/25/95		7.73	---	168.06
	10/18/95		8.42	---	167.37
	01/17/96		7.83	---	167.96
	04/25/96		7.35	---	168.44
	07/17/96		7.70	---	168.09
	10/01/96		8.07	---	167.72
	01/22/97		7.21	---	168.58
	04/08/97		7.75	---	168.04
	07/08/97		8.01	---	167.78
	10/08/97		8.10	---	167.69
	01/08/98 <sup>b</sup>		7.14	---	168.65
04/13/98	6.78	---	169.01		
07/17/98	7.28	---	168.51		
<b>10/02/98</b>	<b>7.77</b>	---	<b>168.02</b>		
MW-2	11/17/93	170.91	12.31	---	158.60
	01/20/94		11.48	---	159.43
	04/25/94		10.84	---	160.07
	07/07/94		11.89	---	159.02
	10/27/94		12.89	---	158.02
	11/17/94		9.11	---	161.80
	11/28/94		9.22	---	161.69
	01/13/95		8.10	---	162.81
	04/12/95		10.12	---	160.79
	07/25/95		11.53	0.52	159.80
	10/18/95		14.02	0.13	156.99
	01/17/96		10.27	0.17	160.78
	04/25/96		11.68	0.03	159.25
	07/17/96		12.78	0.48	158.81
	10/01/96		14.21	0.28	156.70
	01/22/97		10.92	0.11	160.08
	04/08/97		14.12	0.20	156.95
	07/08/97		14.98	0.19	156.08
	10/08/97		12.97	0.05	157.98
	01/08/98		12.54	0.08	158.43
04/13/98	10.05	---	160.86		

**Table 2. Ground Water Elevations – Shell-branded Service Station WIC# 204-5510-0600, 4255 MacArthur Blvd., Oakland, California (continued)**

Well ID	Date Gauged	Top-of-Casing Elevation (ft above msl)	Depth to Water (ft below TOC)	SPH Thickness (ft)	Ground Water Elevation <sup>a</sup> (ft above msl)
	07/17/98		11.75	0.10	159.24
	<b>10/02/98</b>		<b>16.78</b>	<b>0.11</b>	<b>154.22</b>
MW-3	11/17/93	174.61	15.40	---	159.21
	01/20/94		14.61	---	160.00
	04/25/94		13.12	---	161.49
	07/07/94		14.54	0.02	160.07
	10/27/94		15.62	0.05	159.03
	11/17/94		13.83	---	160.78
	11/28/94		14.02	---	160.59
	01/13/95		12.13	---	162.48
	04/12/95		12.96	---	161.65
	07/25/95		14.28	0.06	160.38
	10/18/95		15.88	0.05	158.77
	01/17/96		13.86	0.24	160.94
	04/25/96		13.82	0.02	160.81
	07/17/96		16.11	0.03	158.52
	10/01/96		16.56	---	158.05
	01/22/97		13.07	---	161.54
	04/08/97		17.09	0.03	157.54
	07/08/97		15.85	---	158.76
	10/08/97		16.22	---	158.39
	01/08/98		13.80	---	160.81
	04/13/98		12.97	---	161.64
	07/17/98		11.51	---	163.10
	<b>10/02/98</b>		<b>16.50</b>	<b>---</b>	<b>158.11</b>
MW-4	11/17/94	164.06	6.62	---	157.44
	11/28/94		6.11	---	157.95
	01/13/95		6.05	---	158.01
	04/12/95		6.31	---	157.75
	07/25/95		7.36	---	156.70
	10/18/95		8.54	---	155.52
	01/17/96		8.48	---	155.58
	04/25/96		7.40	---	156.66
	07/17/96		7.75	---	156.31
	10/01/96		8.82	---	155.24
	01/22/97		7.51	---	156.55
	04/08/97		7.18	---	156.88
	07/08/97		9.00	---	155.06
	10/08/97		8.97	---	155.09
	01/08/98		7.90	---	156.16
	04/13/98		7.35	---	156.71
	07/17/98		6.95	---	157.11
	<b>10/02/98</b>		<b>7.35</b>	<b>---</b>	<b>156.71</b>

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**Table 2. Ground Water Elevations – Shell-branded Service Station WIC# 204-5510-0600, 4255 MacArthur Blvd., Oakland, California (continued)**

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**Abbreviations and Notes:**

msl = Mean sea level

TOC = Top of casing

SPH = Separate-phase hydrocarbons

--- = SPH not present

a = When SPH are present, ground water elevation is corrected using the relation:

Corrected ground water elevation = TOC elevation - depth to water + (0.8 x SPH thickness)

b = Well MW-1 sampled on January 9, 1998

# CAMBRIA

**Table 3. Ground Water Analytical Results for Petroleum Hydrocarbons – Shell-branded Service Station  
WIC# 204-5510-0600, 4255 MacArthur Boulevard, Oakland, California**

Well ID	Date Sampled	Depth to Water (ft)	(Concentrations in µg/L)					
			TPH-G	MTBE	B	T	E	X
MW-1	11/17/93	8.59	410	---	21	11	7.9	47
	01/20/94	8.22	1,200	---	180	19	48	47
	04/25/94	7.63	3,100	---	610	<10	130	27
	07/07/94	8.31	2,400	---	1,000	10	250	20
	10/27/94	8.84	2,200	---	500	3.1	72	1.8
	01/13/95	7.11	570	---	75	2.5	6.7	11
	04/12/95	7.08	1,800	---	480	<5.0	79	<5.0
	07/25/95	7.73	120	---	15	1.1	2.1	2.9
	07/25/95 <sup>dup</sup>	7.73	300	---	88	2.4	11	6.5
	10/18/95	8.42	130	---	9.5	0.8	1.3	1.7
	10/18/95 <sup>dup</sup>	8.42	120	---	11	0.8	1.4	1.8
	01/17/96	7.83	250	---	22	0.9	1.6	2.3
	04/25/96	7.35	<50	500 <sup>b</sup>	4.6	<0.5	<0.5	0.60
	07/17/96	7.70	<250	540	15	<2.5	<2.5	<2.5
	10/01/96	8.07	1,200	1,900	500	12	57	82
	01/22/97	7.21	640	1,200	170	4.3	33	33
	04/08/97	7.75	<200	950	34	<2.0	3.3	4.3
	04/08/97 <sup>dup</sup>	7.75	<200	740	66	<2.0	6.4	8.0
	07/08/97	8.01	190	560	49	1.2	5.8	8.6
	10/08/97	8.10	<100	620	7.0	<1.0	<1.0	<1.0
	01/09/98 <sup>c</sup>	7.14	970	1,200	390	12	48	71
	04/13/98	6.78	<50	170	136	<0.50	1.5	1.8
	07/17/98	7.28	2,500	150	750	11	88	67
<b>10/02/98</b>	<b>7.77</b>	<b>8,000</b>	<b>35</b>	<b>970</b>	<b>36</b>	<b>270</b>	<b>440</b>	
MW-2	11/17/93	12.31	31,000	---	9,400	4,600	1,000	3,900
	01/20/94	11.48	40,000	---	6,900	5,600	780	4,100
	01/20/94 <sup>dup</sup>	11.48	41,000	---	7,200	6,200	900	4,800
	04/25/94	10.84	60,000	---	9,300	6,100	1,400	6,200
	07/07/94	11.89	280,000 <sup>a</sup>	---	40,000	26,000	8,100	32,000
	07/07/94 <sup>dup</sup>	11.89	53,000	---	13,000	6,600	2,000	8,400
	10/27/94	12.89	130,000	---	14,000	12,000	2,400	13,000
	10/27/94 <sup>dup</sup>	12.89	390,000	---	8,800	7,000	1,700	11,000
	01/13/95	8.10	75,000	---	5,900	12,000	3,100	17,000



**Table 3. Ground Water Analytical Results for Petroleum Hydrocarbons – Shell-branded Service Station  
WIC# 204-5510-0600, 4255 MacArthur Boulevard, Oakland, California (continued)**

Well ID	Date Sampled	Depth to Water (ft)	TPH-G	MTBE	(Concentrations in µg/L)				
					B	T	E	X	
	04/12/95	10.12	100,000	---	8,500	11,000	2,400	12,000	
	04/12/95 <sup>dup</sup>	10.12	80,000	---	4,200	9,300	2,500	12,000	
	08/10/95 <sup>SPH</sup>	11.53	---	---	---	---	---	---	
	10/18/95 <sup>SPH</sup>	14.02	---	---	---	---	---	---	
	01/17/96 <sup>SPH</sup>	10.27	---	---	---	---	---	---	
	04/25/96 <sup>SPH</sup>	11.68	---	---	---	---	---	---	
	07/17/96 <sup>SPH</sup>	12.78	---	---	---	---	---	---	
	10/01/96 <sup>SPH</sup>	14.21	---	---	---	---	---	---	
	01/22/97 <sup>SPH</sup>	10.92	---	---	---	---	---	---	
	04/08/97 <sup>SPH</sup>	14.12	---	---	---	---	---	---	
	07/08/97 <sup>SPH</sup>	14.98	---	---	---	---	---	---	
	10/08/97 <sup>SPH</sup>	12.97	---	---	---	---	---	---	
	01/08/98 <sup>SPH</sup>	12.54	---	---	---	---	---	---	
	04/13/98	10.05	180,000	71,000	2,800	5,200	2,400	13,000	
	07/17/98 <sup>SPH</sup>	11.75	---	---	---	---	---	---	
	10/02/98 <sup>SPH</sup>	16.78	---	---	---	---	---	---	
MW-3	11/17/93	15.40	18,000	---	5,400	660	720	2,200	
	01/20/94	14.61	55,000	---	13,000	2,600	2,200	6,500	
	04/25/94	13.12	96,000	---	11,000	1,600	3,100	9,900	
	04/25/94 <sup>dup</sup>	13.12	78,000	---	12,000	1,900	2,600	7,300	
	07/07/94 <sup>SPH</sup>	14.54	---	---	---	---	---	---	
	10/27/94 <sup>SPH</sup>	15.62	---	---	---	---	---	---	
	01/13/95	12.13	180,000	---	3,200	2,700	1,700	5,200	
	01/13/95 <sup>dup</sup>	12.13	23,000	---	4,000	690	960	3,000	
	04/12/95	12.96	56,000	---	8,700	1,500	2,100	6,300	
	08/10/95 <sup>SPH</sup>	14.28	---	---	---	---	---	---	
	10/18/95 <sup>SPH</sup>	15.88	---	---	---	---	---	---	
	01/17/96 <sup>SPH</sup>	13.86	---	---	---	---	---	---	
	04/25/96 <sup>SPH</sup>	13.82	---	---	---	---	---	---	
	07/17/96 <sup>SPH</sup>	16.11	---	---	---	---	---	---	
	10/01/96	16.56	46,000	3,200	7,300	530	1,700	3,900	
	10/01/96 <sup>dup</sup>	16.56	47,000	2,900	7,100	530	1,700	4,000	
	01/22/97	13.07	82,000	1,100	5,200	1,300	2,800	8,900	

**Table 3. Ground Water Analytical Results for Petroleum Hydrocarbons – Shell-branded Service Station  
WIC# 204-5510-0600, 4255 MacArthur Boulevard, Oakland, California (continued)**

Well ID	Date Sampled	Depth to Water (ft)	TPH-G	MTBE	(Concentrations in µg/L)				
					B	T	E	X	
	01/22/97 <sup>dup</sup>	13.07	61,000	2,700	8,400	1,100	2,300	7,000	
	04/08/97 <sup>SPH</sup>	17.09	---	---	---	---	---	---	
	07/08/97	15.85	56,000	2,800	8,800	580	2,000	4,900	
	10/08/97	16.22	48,000	5,100	8,000	590	1,700	3,400	
	01/08/98	13.80	47,000	6,300	9,400	810	2,300	4,700	
	01/08/98 <sup>dup</sup>	13.80	48,000	5,800	8,100	750	2,000	4,100	
	04/13/98	12.97	32,000	4,000	6,800	540	1,400	3,400	
	04/13/98 <sup>dup</sup>	12.97	36,000	4,000	7,300	660	1,600	3,700	
	07/17/98	11.51	71,000	3,900	11,000	590	2,200	6,900	
	07/17/98 <sup>dup</sup>	11.51	76,000	3,000	12,000	700	2,600	8,000	
	10/02/98	16.50	66,000	4,600	8,900	510	2,000	4,900	
	10/02/98 <sup>dup</sup>	16.50	59,000	4,700	9,400	460	2,000	4,900	
MW-4	11/28/94	6.11	2,900	---	200	17	76	260	
	01/13/95	6.05	1,900	---	130	5.6	13	40	
	04/14/95	6.31	680	---	150	<2.0	10	13	
	07/25/95	7.36	340	---	100	0.8	8.8	3.0	
	10/18/95	8.54	150	---	31	<0.5	3.5	0.8	
	01/17/96	8.48	290	---	14	<0.5	1.8	0.8	
	04/25/96	7.40	<500	1,700	65	<5	<5	<5	
	04/25/96 <sup>dup</sup>	7.40	<500	1,500	66	<5	8.7	<5	
	07/17/96	7.75	<500	1,500	84	<5.0	6.5	<5.0	
	07/17/96 <sup>dup</sup>	7.75	<500	1,700 (2,100)	54	<5.0	<5.0	<5.0	
	10/01/96	8.82	<500	3,000	1.9	<5.0	<5.0	<5.0	
	01/22/97	7.51	580	1,200	130	<2.5	18	5.2	
	04/08/97	7.18	770	1,500	200	7.0	26	55	
	07/08/97	9.00	570	1,200	78	<5.0	14	11	
	07/08/97 <sup>dup</sup>	9.00	640	1,600	81	<5.0	16	19	
	10/08/97	8.97	<500	1,400	40	<5.0	7.4	5.4	
	10/08/97 <sup>dup</sup>	8.97	<500	1,400	36	<5.0	5.9	<5.0	
	01/08/98	7.90	<1,000	2,000	55	<10	13	<10	
	04/13/98	7.35	350	<2.5	110	2.4	20	26	
	07/17/98	6.95	210	1,700	66	0.78	5.4	9.8	
	10/02/98	7.35	<50	2,900	0.69	<0.50	<0.50	<0.50	

**Table 3. Ground Water Analytical Results for Petroleum Hydrocarbons – Shell-branded Service Station  
WIC# 204-5510-0600, 4255 MacArthur Boulevard, Oakland, California (continued)**

Well ID	Date Sampled	Depth to Water (ft)	TPH-G	MTBE	(Concentrations in µg/L)				
					B	T	E	X	
Trip	01/20/94		<50	---	<0.5	<0.5	<0.5	<0.5	
Blank	04/25/94		<50	---	<0.5	<0.5	<0.5	<0.5	
	07/07/94		<50	---	<0.5	<0.5	<0.5	<0.5	
	10/27/94		<50	---	<0.5	<0.5	<0.5	<0.5	
	01/13/95		<50	---	<0.5	<0.5	<0.5	<0.5	
	04/12/95		<50	---	<0.5	<0.5	<0.5	0.89	
	07/25/95		<50	---	<0.5	<0.5	<0.5	<0.5	
	10/18/95		<50	---	<0.5	<0.5	<0.5	<0.5	
	MCLs			NE	NE	1	150	700	1,750

**Abbreviations:**

TPH-G = Total petroleum hydrocarbons as gasoline by modified EPA Method 8015  
 MTBE = Methyl tert-butyl ether by EPA Method 8020. Result in parentheses indicates MTBE by EPA Method 8260  
 B = Benzene by EPA Method 8020  
 T = Toluene by EPA Method 8020  
 E = Ethylbenzene by EPA Method 8020  
 X = Total xylenes by EPA Method 8020  
 SPH = Separate-phase hydrocarbons present; well not sampled  
 dup = Duplicate sample  
 ft = Feet  
 µg/L = Micrograms per liter  
 MCLs = California primary maximum contaminant levels for drinking water (22 CCR 64444)  
 NE = MCLs not established

**Notes:**

a = Ground water surface had a sheen when sampled  
 b = MTBE value is estimated by Sequoia Analytical of Redwood City, California  
 c = Well MW-1 gauged on January 8, 1998  
 --- = Not analyzed/Not available  
 <n = Below detection limits of n µg/L

**ATTACHMENT A**

Blaine Ground Water Monitoring Report

**BLAINE**  
TECH SERVICES INC.



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SAN JOSE, CA 95112-1105  
(408) 573-7771 FAX  
(408) 573-0555 PHONE

October 26, 1998

Equilon Enterprises, L.L.C.  
P.O. Box 8080  
Martinez, CA 94553

Attn: Karen Petryna

Shell WIC #204-5510-0600  
4255 MacArthur Blvd.  
Oakland, California

4th Quarter 1998

## Groundwater Monitoring Report 981002-C-5

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Blaine Tech Services, Inc. performs environmental monitoring and documentation as an independent third party. Copies of our Monitoring Report along with the laboratory's Certified Analytical Report are forwarded to the consultant overseeing work at this site. Submission of the assembled documents to interested regulatory agencies will be made by the designated consultant.

Groundwater monitoring at this site was performed in accordance with Standard Operating Procedures provided to the interested regulatory agencies. If you have any questions about the work performed at this site please call me at (408) 573-0555 ext. 201.

Yours truly,



Francis Thie

attachments: Table of Well Gauging Data  
Chain of Custody  
Field Data Sheets  
Certified Analytical Report

cc: Cambria Environmental Technology, Inc.  
1144 65th Street, Suite C  
Oakland, CA 94608-2411  
Attn: Aubrey Cool

(Any professional evaluations or recommendations will be made by the consultant under separate cover.)

## TABLE OF WELL GAUGING DATA

WELL I.D.	DATA COLLECTION DATE	MEASUREMENT REFERENCED TO	QUALITATIVE OBSERVATIONS (sheen)	DEPTH TO FIRST IMMISCIBLES LIQUID (FPZ) (feet)	THICKNESS OF IMMISCIBLES LIQUID ZONE (feet)	VOLUME OF IMMISCIBLES REMOVED (ml)	DEPTH TO WATER (feet)	DEPTH TO WELL BOTTOM (feet)
MW-1	10/02/98	TOC	ODOR	NONE	-	-	7.77	23.32
MW-2	10/02/98	TOC	FREE PRODUCT	16.67	0.11	-	16.78	-
MW-3*	10/02/98	TOC	ODOR	NONE	-	-	16.50	21.85
MW-4	10/02/98	TOC	-	NONE	-	-	7.35	30.48

\* Sample DUP was a duplicate sample taken from well MW-3.



**SHELL OIL COMPANY**  
**RETAIL ENVIRONMENTAL ENGINEERING - WEST**

**CHAIN OF CUSTODY RECORD**  
 Serial No: 98002-C5

Date: \_\_\_\_\_  
 Page ( of )

7810304

Site Address: 4255 MacArthur Blvd., Oakland

WIC#: 204-5510-0600

Shell Engineer: Alex Perez Phone No.: (510) 675-6168  
 Fax #: 675-6172

Consultant Name & Address: Blaine Tech Services  
 1680 Rogers Ave.  
 San Jose, CA 95112

Consultant Contact: Fran Thie Phone No.: (408) 573-0555  
 Fax #: 573-7771

Comments:

Sampled by: *CFM*

Printed Name: *Cassidy*

**Analysis Required**

LAB: SCG 0019

CHECK ONE (1) BOX ONLY	CI/DI	TURN AROUND TIME
Quarterly Monitoring <input checked="" type="checkbox"/>	6441	24 hours <input type="checkbox"/>
Site Investigation <input type="checkbox"/>	6441	48 hours <input type="checkbox"/>
Soil Classify/Disposal <input type="checkbox"/>	6442	16 days <input checked="" type="checkbox"/> (Home)
Water Classify/Disposal <input type="checkbox"/>	6443	Other <input type="checkbox"/>
Soil/Air Rem. or Sys. O & M <input type="checkbox"/>	6442	
Water Rem. or Sys. O & M <input type="checkbox"/>	6443	
Other <input type="checkbox"/>		

NOTE: Notify Lab as soon as possible of 24/48 hrs. TAT.

TPH (EPA 8015 Mod. Gas)	TPH (EPA 8015 Mod. Diesel)	BTEX (EPA 8020/602)	Volatile Organics (EPA 8240)	Test for Disposal	Combination TPH 8015 & BTEX 8020 + MTBE	Asbestos	Container Size	Preparation Used	Composite Y/N
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MATERIAL DESCRIPTION

SAMPLE CONDITION/ COMMENTS

Sample ID	Date	Sludge	Soil	Water	Air	No. of conds.	TPH (EPA 8015 Mod. Gas)	TPH (EPA 8015 Mod. Diesel)	BTEX (EPA 8020/602)	Volatile Organics (EPA 8240)	Test for Disposal	Combination TPH 8015 & BTEX 8020 + MTBE	Asbestos	Container Size	Preparation Used	Composite Y/N	MATERIAL DESCRIPTION	SAMPLE CONDITION/ COMMENTS	
MW 1	10/2	01		W		3						X							SP 4 12 52
MW 3		02										X							
MW 4		03										X							
EB		04										X							
DUP		05										X							

Relinquished by (signature): <i>[Signature]</i>	Printed Name: <i>Cassidy</i>	Date: <i>10/1/98</i>	Time: <i>10:30</i>	Received (signature): <i>[Signature]</i>	Printed Name: <i>Charles Armstrong</i>	Date: <i>10-5</i>	Time: <i>10:30</i>
Relinquished by (signature): <i>[Signature]</i>	Printed Name: <i>Charles Armstrong</i>	Date: <i>10-5</i>	Time: _____	Received (signature): _____	Printed Name: _____	Date: _____	Time: _____
Relinquished by (signature): <i>[Signature]</i>	Printed Name: _____	Date: _____	Time: _____	Received (signature): <i>[Signature]</i>	Printed Name: <i>P. UE</i>	Date: <i>10/5/98</i>	Time: <i>12:51</i>

THE LABORATORY MUST PROVIDE A COPY OF THIS CHAIN-OF-CUSTODY WITH INVOICE AND RESULTS



# Sequoia Analytical

680 Chesapeake Drive  
404 N. Wiget Lane  
819 Striker Avenue, Suite 8  
1455 McDowell Blvd. North, Ste. D

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Walnut Creek, CA 94598  
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FAX (916) 921-0100  
FAX (707) 792-0342

Blaine Tech Services  
1680 Rogers Avenue  
San Jose, CA 95112  
Attention: Fran Thie

Project: Shell 4255 MacArthur

Enclosed are the results from samples received at Sequoia Analytical on October 5, 1998.  
The requested analyses are listed below:

<u>SAMPLE #</u>	<u>SAMPLE DESCRIPTION</u>	<u>DATE COLLECTED</u>	<u>TEST METHOD</u>
810364 -01	LIQUID, MW 1	10/02/98	STGM2W Purgeable TPH/BTEX
810364 -02	LIQUID, MW 3	10/02/98	STGM2W Purgeable TPH/BTEX
810364 -03	LIQUID, MW 4	10/02/98	STGM2W Purgeable TPH/BTEX
810364 -04	LIQUID, EB	10/02/98	STGM2W Purgeable TPH/BTEX
810364 -05	LIQUID, DUP	10/02/98	STGM2W Purgeable TPH/BTEX

Please contact me if you have any questions. In the meantime, thank you for the opportunity to work with you on this project.

Very truly yours,

SEQUOIA ANALYTICAL

Peggy Penner  
Project Manager







Blaine Tech Services 1680 Rogers Avenue San Jose, CA 95112 Attention: Fran Thie	Client Proj. ID: Shell 4255 MacArthur Sample Descript: MW 1 Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9810364-01	Sampled: 10/02/98 Received: 10/05/98 Analyzed: 10/09/98 Reported: 10/15/98
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**Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE**

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	1000	8000
Methyl t-Butyl Ether	50	35
Benzene	10	970
Toluene	10	36
Ethyl Benzene	10	270
Xylenes (Total)	10	440
Chromatogram Pattern:		C6-C12
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
Trifluorotoluene	70 130	70

Analytes reported as N.D. were not present above the stated limit of detection.

**SEQUOIA ANALYTICAL** - ELAP #1849

  
Peggy Renner  
Project Manager





**Sequoia  
Analytical**

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Blaine Tech Services 1680 Rogers Avenue San Jose, CA 95112 Attention: Fran Thie	Client Proj. ID: Shell 4255 MacArthur Sample Descript: MW 3 Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9810364-02	Sampled: 10/02/98 Received: 10/05/98 Analyzed: 10/09/98 Reported: 10/15/98
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**Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE**

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	5000	66000
Methyl t-Butyl Ether	250	4600
Benzene	50	8900
Toluene	50	510
Ethyl Benzene	50	2000
Xylenes (Total)	50	4900
Chromatogram Pattern:		C6-C12
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
Trifluorotoluene	70 130	90

analytes reported as N.D. were not present above the stated limit of detection.

**SEQUOIA ANALYTICAL - ELAP #1849**

  
Peggy Renner  
Project Manager





Blaine Tech Services 1680 Rogers Avenue San Jose, CA 95112 Attention: Fran Thie	Client Proj. ID: Shell 4255 MacArthur Sample Descript: MW 4 Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9810364-03	Sampled: 10/02/98 Received: 10/05/98 Analyzed: 10/09/98 Reported: 10/15/98
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**Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE**

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	N.D.
Methyl t-Butyl Ether	50	2900
Benzene	0.50	0.69
Toluene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Xylenes (Total)	0.50	N.D.
Chromatogram Pattern:		
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
Trifluorotoluene	70 130	100

Analytes reported as N.D. were not present above the stated limit of detection.

**SEQUOIA ANALYTICAL** - ELAP #1849

  
Peggy Penner  
Project Manager





**Sequoia  
Analytical**

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Blaine Tech Services 1680 Rogers Avenue San Jose, CA 95112	Client Proj. ID: Shell 4255 MacArthur Sample Descript: EB Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9810364-04	Sampled: 10/02/98 Received: 10/05/98 Analyzed: 10/09/98 Reported: 10/15/98
Attention: Fran Thie		

**Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE**

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	N.D.
Methyl t-Butyl Ether	2.5	N.D.
Benzene	0.50	N.D.
Toluene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Xylenes (Total)	0.50	N.D.
Chromatogram Pattern:		N.D.
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
Trifluorotoluene	70                      130	90

Analyses reported as N.D. were not present above the stated limit of detection.

**SEQUOIA ANALYTICAL - ELAP #1849**

  
Peggy Penner  
Project Manager





Blaine Tech Services 1680 Rogers Avenue San Jose, CA 95112 Attention: Fran Thie	Client Proj. ID: Shell 4255 MacArthur Sample Descript: DUP Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9810364-05	Sampled: 10/02/98 Received: 10/05/98 Analyzed: 10/09/98 Reported: 10/15/98
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**Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE**

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	5000	59000
Methyl t-Butyl Ether	250	4700
Benzene	50	9400
Toluene	50	460
Ethyl Benzene	50	2000
Xylenes (Total)	50	4900
Chromatogram Pattern:		C6-C12
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
Trifluorotoluene	70 130	70

Analytes reported as N.D. were not present above the stated limit of detection.

**SEQUOIA ANALYTICAL - ELAP #1849**

  
Peggy Penner  
Project Manager





**Sequoia  
Analytical**

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Blaine Tech Services, Inc.  
1680 Rogers Ave.  
San Jose, CA 95112  
Attention: Fran Thie

Client Project ID: Shell 4255 MacArthur  
Matrix: Liquid

Work Order #: 9810364 -01-05

Reported: Oct 19, 1998

**QUALITY CONTROL DATA REPORT**

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes
QC Batch#:	10V8152	10V8152	10V8152	10V8152
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Prep. Method:	EPA 8015M	EPA 8015M	EPA 8015M	EPA 8015M

Analyst:	L. Hall	L. Hall	L. Hall	L. Hall
LCS/LCSD #:	8100071	8100071	8100071	8100071
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Prepared Date:	10/9/98	10/9/98	10/9/98	10/9/98
Analyzed Date:	10/9/98	10/9/98	10/9/98	10/9/98
Instrument I.D.#:	-	-	-	-
Conc. Spiked:	20 µg/L	20 µg/L	20 µg/L	60 µg/L
Result:	19	19	19	58
LCS % Recovery:	95	95	95	97
Dup. Result:	19	20	20	59
LCSD % Recov.:	95	100	100	98
RPD:	0.0	5.1	5.1	1.7
RPD Limit:	0-30	0-30	0-30	0-30

MS/MSD	80-120	80-120	80-120	80-120
LCS				
Control Limits				

**SEQUOIA ANALYTICAL**  
Elap #1849

Peggy Penner  
Project Manager

**Please Note:**  
The LCS is a control sample of known, interferent-free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

\*\* MS=Matrix Spike, MSD=MS Duplicate, RPD=Relative % Difference

9810364.BLA <1>





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Blaine Tech Services  
1680 Rogers Avenue  
San Jose, CA 95112  
Attention: Fran Thie

Client Proj. ID: Shell 4255 MacArthur

Received: 10/05/98

Lab Proj. ID: 9810364

Reported: 10/15/98

### LABORATORY NARRATIVE

In order to properly interpret this report, it must be reproduced in its entirety. This report contains a total of 4 pages including the laboratory narrative, sample results, quality control, and related documents as required (cover page, COC, raw data, etc.).

**SEQUOIA ANALYTICAL**

  
Peggy Renner  
Project Manager

