



ENVIRONMENTAL  
PROTECTION  
97 AUG 26 PM 4: 13

August 21, 1997

Susan Hugo  
Alameda County Department of  
Environmental Health  
1131 Harbor Bay Parkway, Suite 250  
Alameda, California 94502-6577

Re: **Second Quarter 1997 Monitoring Report**  
Shell Service Station  
3420 San Pablo Avenue  
Oakland, California  
WIC #204-5508-5306  
Cambria Project #240-314-297

Dear Ms. Hugo:

On behalf of Shell Oil Products Company (Shell), Cambria Environmental Technology, Inc. (Cambria) is submitting this monitoring report to satisfy the quarterly reporting requirements prescribed by California Administrative Code Title 23, Waters, Division 3, Chapter 16, Article 5, Section 2652.d.

## **SECOND QUARTER 1997 ACTIVITIES**

**Station Renovation:** As discussed during your April 3, 1997 telephone conversation with Paul Waite (Cambria), the Shell service station at 3420 San Pablo Avenue, Oakland, California is undergoing building renovations. The facility is not currently operational, but it will be used as a service station when the renovations are completed. We will inform you when the renovations are completed or if the plans for this facility change.

**Ground Water Monitoring:** Blaine Tech Services, Inc. (Blaine) of San Jose, California measured ground water depths and collected water samples from the site wells (Figure 1). The Blaine report, describing these sampling activities and presenting the analytic results, is included as Attachment A. Cambria summarized separate-phase hydrocarbon removal (Table 1), calculated ground water elevations (Table 2), compiled the analytic data (Table 3), and prepared a ground water elevation contour map (Figure 1).

CAMBRIA  
ENVIRONMENTAL  
TECHNOLOGY, INC.  
1144 65TH STREET,  
SUITE B  
OAKLAND,  
CA 94608  
PH: (510) 420-0700  
FAX: (510) 420-9170

Susan Hugo  
August 21, 1997

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**ANTICIPATED THIRD QUARTER 1997 ACTIVITIES**

Blaine will gauge ground water elevations, check for separate-phase hydrocarbons, and sample selected monitoring wells. Building renovations will continue. Cambria will submit a report presenting a summary of activities for the upcoming quarter.

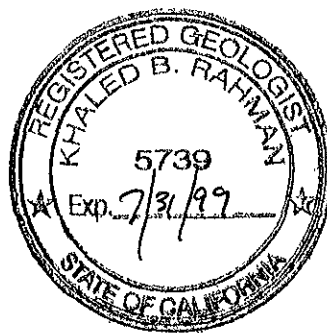
**CLOSING**

We appreciate the opportunity to work with you on this project. Please call if you have any questions.

Sincerely,  
Cambria Environmental Technology, Inc.



Khaled B. Rahman, R.G., C.H.G.  
Senior Geologist



Attachments: A - Blaine Quarterly Ground Water Monitoring Report

cc: A.E.(Alex) Perez, Shell Oil Products Company, P.O. Box 4023, Concord, California 94524

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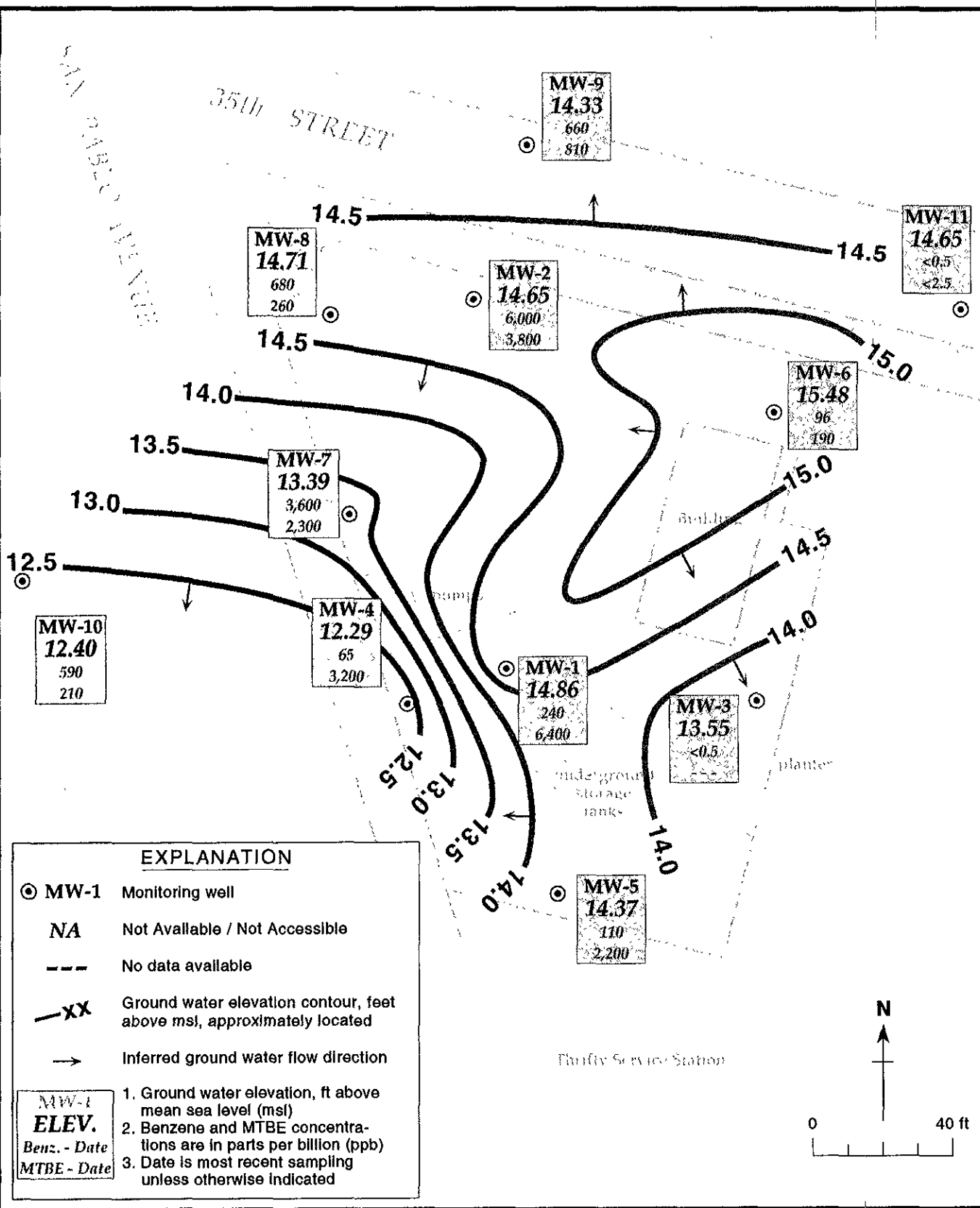


Figure 1. Ground Water Elevation Contours - April 1, 1997 - Shell Service Station WIC #204-5508-5306, 3420 San Pablo Avenue, Oakland, California

**Table 1. Separate-Phase Hydrocarbon Removal - Shell Service Station WIC #204-5508-5306, 3420 San Pablo Avenue, Oakland, California**

Well ID	Date	Separate-Phase Hydrocarbon Thickness (ft)	Separate-Phase Hydrocarbons Removed (lbs)	Cumulative Separate-Phase Hydrocarbons Removed (lbs)
MW-1	10/23/91	0.01	---	---
	05/04/92	<0.01	---	---
	10/12/92	0.09	---	---
	01/12/93	0.02	3.12	3.12
	04/06/93	<0.01	0.78	3.90
	07/12/93	0.01	0.18	4.08
	10/13/93	0.01	0.06	4.14
	01/20/94	0.01	0.03	4.17
	04/03/94	0.02	0.12	4.29
MW-2	10/12/92	0.03	---	---
	01/12/93	0.01	1.56	1.56
	04/06/93	<0.01	0.78	2.34
	04/03/94	<0.01	0.03	2.37
MW-4	10/12/92	0.78	---	---
	01/12/93	1.0	---	---
	04/06/93	0.95	---	---
	07/12/93	0.03	6.36	6.36
	10/13/93	0.12	0.78	7.14
	01/20/94	0.02	0.03	7.17
	04/13/94	0.01	0.12	7.29
	10/27/94	0.03	0.79	8.08
	01/03/95	0.01	0.16	8.24
04/13/95	0.03	0.16	8.40	
MW-5	10/12/92	0.01	---	---
	01/12/93	<0.01	---	---
	10/13/93	0.03	---	---
	01/20/94	0.01	---	---
	04/13/94	0.01	0.03	0.06
MW-6	10/12/92	0.48	---	---
	01/12/93	<0.01	---	---
	10/13/93	0.2	---	---
	01/20/94	0.02	---	---
	04/13/94	0.01	0.03	0.03
	07/19/94	0.07	0.03	0.06
	10/27/94	0.11	1.43	1.49
	01/03/95	0.02	0.12	1.61
	04/13/95	0.02	0.13	1.74

**Table 1. Separate-Phase Hydrocarbon Removal - Shell Service Station WIC #204-5508-5306, 3420 San Pablo Avenue, Oakland, California (continued)**

Well ID	Date	Separate-Phase Hydrocarbon Thickness (ft)	Separate-Phase Hydrocarbons Removed (lbs)	Cumulative Separate-Phase Hydrocarbons Removed (lbs)
MW-7	01/20/94	0.05	---	---
	04/13/94	0.16	0.66	0.66
	07/19/94	0.20	0.04	0.70
	10/27/94	0.04	1.11	1.81
	01/03/95	0.02	0.16	1.97
	04/13/95	0.02	0.16	2.13
	10/31/95	0.04	0.80	2.93
	01/17/96	0.04	0.09	3.02
	04/10/96	0.05	0.00	3.02
	07/03/96	0.03	0.00	3.02
	10/17/96	0.02	0.16	3.18
Total Separate-Phase Hydrocarbons Removed				<b>20.01</b>

**Table 2. Ground Water Elevations - Shell Service Station WIC #204-5508-5306,  
3420 San Pablo Avenue, Oakland, California**

Well ID	Date	Top-of-Casing Elevation (ft above msl)	Depth to Water (ft)	Separate-Phase Hydrocarbon Thickness (ft)	Ground Water Elevation (ft above msl) <sup>a</sup>
MW-1	08/06/91	21.28	10.86	---	10.43
	10/23/91		11.05	0.01	10.24
	01/28/92		10.84	---	10.44
	05/04/92		9.42	<0.01	11.86
	07/13/92		11.36	---	9.92
	10/12/92		13.14	0.09	8.21
	01/12/93		7.52	0.02	13.78
	04/06/93		7.13	<0.01	14.16
	07/12/93		11.02	0.01	10.27
	10/13/93		12.18	0.01	9.11
	01/20/94		9.18	0.01	12.10
	04/13/94		8.72	0.02	12.58
	07/19/94		8.76	---	12.52
	10/27/94		10.49	---	10.79
	01/03/95		6.15	---	15.13
	04/13/95		5.24	---	16.04
	06/30/95		7.24	---	14.04
	10/11/95		9.48	---	11.80
	01/17/96		6.48	---	14.80
	04/10/96		5.38	---	15.90
07/30/96	7.61	---	13.67		
10/17/96	8.66	---	12.62		
01/22/97	5.00	---	16.28		
04/01/97	6.42	---	14.86		
MW-2	08/06/91	21.56	9.72	---	11.84
	10/23/91		10.03	---	11.53
	01/28/92		8.78	---	12.78
	05/04/92		7.58	---	13.98
	07/13/92		9.63	---	11.93
	10/12/92		11.66	0.03	9.92
	01/12/93		7.13	0.01	14.44
	04/06/93		6.40	<0.01	15.17
	07/12/93		8.75	---	12.81
	10/13/93		10.28	---	11.28
	01/20/94		---	---	---
	04/13/94		7.35	<0.01	14.22
	07/19/94		8.24	---	13.32
	10/27/94		10.26	---	13.32
	01/03/95		6.44	---	15.12
	04/13/95		5.89	---	15.67
	06/30/95		7.41	---	14.15
10/11/95	8.02	---	13.54		
01/17/96	7.42	---	14.14		

**Table 2. Ground Water Elevations - Shell Service Station WIC #204-5508-5306,  
3420 San Pablo, Avenue, Oakland, California (continued)**

Well ID	Date	Top-of-Casing Elevation (ft above msl)	Depth to Water (ft)	Separate-Phase Hydrocarbon Thickness (ft)	Ground Water Elevation (ft above msl) <sup>a</sup>
	04/10/96		6.91	---	14.65
	07/30/96		7.63	---	13.93
	10/17/96		8.28	---	13.29
	01/22/97		7.09	---	14.47
	<del>04/01/97</del>		<del>6.91</del>	<del>---</del>	<del>14.65</del>
MW-3	08/06/91	21.78	11.18	---	10.60
	10/23/91		11.69	---	10.09
	01/28/92		9.99	---	11.79
	05/04/92		9.46	---	12.32
	07/13/92		11.29	---	10.49
	10/12/92		13.10	---	8.68
	01/12/93		7.32	---	14.46
	04/06/93		7.44	---	14.34
	07/12/93		10.62	---	11.16
	10/13/93		12.05	---	9.73
	01/20/94		9.62	---	12.16
	04/13/94		9.15	---	12.63
	07/19/94		10.13	---	11.65
	10/27/94		11.66	---	10.12
	01/03/95		6.89	---	14.89
	04/13/95		6.79	---	14.99
	06/30/95		8.94	---	12.84
	10/11/95		10.62	---	11.16
	01/17/96		7.18	---	14.60
	04/10/96		6.76	---	15.02
	07/30/96		9.04	---	12.74
	10/17/96		9.04	---	12.74
	01/22/97		5.03	---	16.75
	<del>04/01/97</del>		<del>8.23</del>	<del>---</del>	<del>13.55</del>
MW-4	08/06/91	20.31	10.57	---	9.74
	10/23/91		10.46	---	9.85
	01/28/92		9.54	---	10.77
	05/04/92		8.33	---	11.98
	07/13/92		9.87	---	10.44
	10/12/92		12.43	0.78	8.50
	01/12/93		7.12	1.0	13.99
	04/06/93		7.23	0.95	13.84
	07/12/93		10.08	0.03	10.25
	10/13/93		11.35	0.12	9.06
	01/20/94		9.06	0.02	11.26
	04/13/94		8.58	0.01	11.74
	07/19/94		9.71	---	10.60

**Table 2. Ground Water Elevations - Shell Service Station WIC #204-5508-5306, 3420 San Pablo, Avenue, Oakland, California (continued)**

Well ID	Date	Top-of-Casing Elevation (ft above msl)	Depth to Water (ft)	Separate-Phase Hydrocarbon Thickness (ft)	Ground Water Elevation (ft above msl) <sup>a</sup>
	10/27/94		10.60	0.03	9.73
	01/03/95		5.49	0.01	14.83
	04/13/95		6.53	0.03	13.80
	06/30/95		9.57	---	10.74
	10/11/95		10.30	---	10.01
	01/17/96		6.68	---	13.63
	04/10/96		7.90	---	12.41
	07/30/96		8.73	---	11.58
	10/17/96		9.97	---	10.34
	01/22/97		5.26	---	15.05
	<del>04/01/97</del>		<del>8.02</del>	<del>---</del>	<del>12.29</del>
MW-5	08/06/91	20.91	10.23	---	10.68
	10/23/91		10.89	---	10.02
	01/28/92		8.45	---	12.46
	05/04/92		8.05	---	12.86
	07/13/92		10.00	---	10.91
	10/12/92		11.83	0.01	9.09
	01/12/93		6.10	<0.01	14.81
	04/06/93		6.18	---	14.73
	07/12/93		9.59	---	11.32
	10/13/93		10.80	0.03	10.13
	01/20/94		7.42	0.01	13.49
	04/13/94		7.05	0.01	13.87
	07/19/94		8.57	---	12.34
	10/27/94		10.14	---	10.77
	01/03/95		5.84	---	15.07
	04/13/95		5.28	---	15.63
	06/30/95		7.43	---	13.48
	10/11/95		8.90	---	12.01
	01/17/96		6.40	---	14.51
	04/10/96		5.70	---	15.21
	07/30/96		7.71	---	13.20
	10/17/96		9.04	---	11.87
	01/22/97		4.85	---	16.06
	<del>04/01/97</del>		<del>6.54</del>	<del>---</del>	<del>14.37</del>
MW-6	08/06/91	22.32	10.61	---	11.71
	10/23/91		11.68	---	10.64
	01/28/92		8.90	---	13.42
	05/04/92		8.01	---	14.31
	07/13/92		10.77	---	11.55
	10/12/92		13.36	0.48	9.34
	01/12/93		6.40	<0.01	15.92



**Table 2. Ground Water Elevations - Shell Service Station WIC #204-5508-5306, 3420 San Pablo, Avenue, Oakland, California (continued)**

Well ID	Date	Top-of-Casing Elevation (ft above msl)	Depth to Water (ft)	Separate-Phase Hydrocarbon Thickness (ft)	Ground Water Elevation (ft above msl) <sup>a</sup>
	04/06/93		5.93	---	16.39
	07/12/93		10.25	---	12.07
	10/13/93		12.28	0.2	10.20
	01/20/94		9.14	0.02	13.20
	04/13/94		7.67	0.01	14.66
	07/19/94		10.07	0.07	12.31
	10/27/94		11.84	0.11	10.57
	01/03/95		7.80	0.02	14.54
	04/13/95		5.77	0.02	16.57
	06/30/95		7.78	---	14.54
	10/11/95		10.06	---	12.26
	01/17/96		6.91	---	15.41
	04/10/96		5.92	---	16.40
	07/30/96		8.97	---	13.35
	10/17/96		9.87	---	12.45
	01/22/97		4.43	---	17.89
	<b>04/01/97</b>		<b>6.84</b>	<b>---</b>	<b>15.48</b>
MW-7	08/06/91	20.36	8.00	---	12.36
	10/23/91		8.16	---	12.20
	01/28/92		7.11	---	13.25
	05/04/92		6.47	---	13.89
	07/13/92		7.73	---	12.63
	10/12/92		8.68	---	11.68
	01/12/93		6.26	---	14.10
	04/06/93		5.92	---	14.44
	07/12/93		7.27	---	13.09
	10/13/93		9.40	---	10.96
	01/20/94		7.03	0.05	13.37
	04/13/94		6.56	0.16	13.93
	07/19/94		6.91	0.20	13.61
	10/27/94		8.28	0.04	12.11
	01/03/95		6.48	0.02	13.90
	04/13/95		6.54	0.02	13.84
	06/30/95		7.08	---	13.28
	10/11/95		7.88	0.04	12.51
	01/17/96		7.26	0.04	13.13
	04/10/96		6.98	0.05	13.42
	07/30/96		7.34	0.03	13.04
	10/17/96		7.63	0.02	12.75
	01/22/97		6.46	---	13.90
	<b>04/01/97</b>		<b>6.97</b>	<b>---</b>	<b>13.39</b>

**Table 2. Ground Water Elevations - Shell Service Station WIC #204-5508-5306,  
3420 San Pablo, Avenue, Oakland, California (continued)**

Well ID	Date	Top-of-Casing Elevation (ft above msl)	Depth to Water (ft)	Separate-Phase Hydrocarbon Thickness (ft)	Ground Water Elevation (ft above msl) <sup>a</sup>
MW-8	08/06/91	20.95	9.60	---	11.35
	10/23/91		9.73	---	11.22
	01/28/92		7.72	---	13.23
	05/04/92		6.48	---	14.47
	07/13/92		8.55	---	12.40
	10/12/92		9.97	---	10.98
	01/12/93		6.94	---	14.01
	04/06/93		5.72	---	15.23
	07/12/93		7.65	---	13.30
	10/13/93		8.25	---	12.70
	01/20/94		7.25	---	13.70
	04/13/94		7.12	---	13.83
	07/19/94		7.43	---	13.52
	10/27/94		7.55	---	13.40
	01/03/95		6.04	---	14.91
	04/13/95		5.04	---	15.91
	06/30/95		5.72	---	15.23
	10/11/95		7.06	---	13.89
	01/17/96		5.84	---	15.11
	04/10/96		5.03	---	15.92
07/30/96	6.36	---	14.59		
10/17/96	5.94	---	15.01		
01/22/97	5.93	---	15.02		
04/01/97	6.24	---	14.71		
MW-9	08/06/91	21.19	10.33	---	10.86
	10/23/91		11.13	---	10.06
	01/28/92		9.02	---	12.17
	05/04/92		7.67	---	13.52
	07/13/92		10.26	---	10.93
	10/12/92		12.19	---	9.0
	01/12/93 <sup>b</sup>		---	---	---
	04/06/93 <sup>b</sup>		---	---	---
	07/12/93 <sup>b</sup>		---	---	---
	10/13/92		11.17	---	10.02
	01/20/94		8.03	---	13.16
	04/13/94		7.81	---	13.38
	07/19/94		8.96	---	12.23
	10/27/94		11.00	---	10.19
	01/03/95		6.60	---	14.59
	04/13/95		6.73	---	14.46
	06/30/95		7.32	---	13.87
	10/11/95		8.10	---	13.09
01/17/96	5.75	---	15.44		

**Table 2. Ground Water Elevations - Shell Service Station WIC #204-5508-5306, 3420 San Pablo, Avenue, Oakland, California (continued)**

Well ID	Date	Top-of-Casing Elevation (ft above msl)	Depth to Water (ft)	Separate-Phase Hydrocarbon Thickness (ft)	Ground Water Elevation (ft above msl) <sup>a</sup>
	04/10/96		5.17	---	16.02
	07/30/96		8.10	---	13.09
	10/17/96		9.12	---	12.07
	01/22/97		4.72	---	16.47
	<b>04/01/97</b>		<b>6.86</b>	<b>---</b>	<b>14.33</b>
MW-10	10/23/91	19.74	8.57	---	11.17
	01/28/92		7.60	---	12.14
	05/04/92		7.54	---	12.20
	07/13/92		8.59	---	11.15
	10/12/92		10.23	---	9.51
	01/12/93 <sup>b</sup>		---	---	---
	04/06/93		6.70	---	13.04
	07/12/93 <sup>b</sup>		8.05	---	11.69
	10/13/93		8.25	---	11.49
	01/20/94		7.20	---	12.54
	04/13/94		7.57	---	12.17
	07/19/94		8.18	---	11.56
	10/27/94		8.68	---	11.06
	01/03/95		6.86	---	12.88
	04/13/95		6.91	---	12.83
	06/30/95		7.61	---	12.13
	10/11/95		---	---	---
	01/17/96		7.00	---	12.74
	07/30/96 <sup>b</sup>		---	---	---
	10/17/96		---	---	---
	01/22/97		6.68	---	13.06
	<b>04/01/97</b>		<b>7.34</b>	<b>---</b>	<b>12.40</b>
MW-11	10/23/91	22.06	14.00	---	8.06
	01/28/92		8.74	---	3.32
	05/04/92		8.29	---	13.77
	07/13/92		10.50	---	11.56
	10/12/92		12.40	---	9.66
	01/12/93 <sup>b</sup>		---	---	---
	04/06/93 <sup>b</sup>		---	---	---
	07/12/93 <sup>b</sup>		---	---	---
	10/13/93		11.47	---	10.59
	01/20/94		9.09	---	12.97
	04/13/94		8.02	---	14.04
	07/19/94		9.82	---	12.24
	10/27/94		11.66	---	10.40
	01/03/95		6.15	---	15.91
	04/13/95		6.00	---	16.06

**Table 2. Ground Water Elevations - Shell Service Station WIC #204-5508-5306, 3420 San Pablo, Avenue, Oakland, California (continued)**

Well ID	Date	Top-of-Casing Elevation (ft above msl)	Depth to Water (ft)	Separate-Phase Hydrocarbon Thickness (ft)	Ground Water Elevation (ft above msl) <sup>a</sup>
	06/30/95		8.31	---	13.75
	10/11/95		10.30	---	11.76
	01/17/96		6.45	---	15.61
	04/10/96		6.05	---	16.01
	07/30/96		8.92	---	13.14
	10/17/96		9.24	---	12.82
	01/22/97		5.12	---	16.94
	<b>04/01/97</b>		<b>7.41</b>	---	<b>14.65</b>

**Notes and Abbreviations:**

a = When separate-phase hydrocarbons are present ground water elevation is adjusted using the relation: Ground Water Elevation = Top-of-casing elevation - depth to water + (0.8 x hydrocarbon thickness).

b = Well inaccessible, covered by construction debris.

--- = Not measured/not available.

msl = Mean sea level

# CAMBRIA

**Table 3. Analytic Results for Ground Water - Shell Service Station WIC #204-5508-5306, 3420 San Pablo Avenue , Oakland, California (continued)**

Well ID	Date Sampled	Depth to Water (ft)	TPH-G	B	T	E	X	MTBE	DO (mg/l)
MW-1	08/06/91 <sup>SRH</sup>	10.86	----	----	----	----	----	----	----
	10/23/91	11.05	32,000	2,700	360	550	3,700	----	----
	01/28/92	10.84	14,000	1,000	106	450	1,600	----	----
	05/05/92	9.42	98,000	11,000	1,200	3,500	18,000	----	----
	07/13/92	11.36	11,000	1,100	130	740	1,300	----	----
	10/12/92 <sup>SRH</sup>	13.14	----	----	----	----	----	----	----
	01/12/93 <sup>SRH</sup>	7.52	----	----	----	----	----	----	----
	04/06/93 <sup>SRH</sup>	7.13	----	----	----	----	----	----	----
	07/12/93 <sup>SRH</sup>	11.02	----	----	----	----	----	----	----
	10/13/93 <sup>SRH</sup>	12.18	----	----	----	----	----	----	----
	01/20/94 <sup>SRH</sup>	9.18	----	----	----	----	----	----	----
	04/13/94 <sup>SRH</sup>	8.72	----	----	----	----	----	----	----
	07/19/94	8.76	17,000	420	140	530	1,300	----	----
	10/27/94	10.49	23,000	1,200	130	990	960	----	----
	01/03/95	6.15	31,000	610	160	1,200	5,000	----	----
	04/13/95	5.24	20,000	340	42	680	2,900	----	----
	06/30/95	7.24	16,000	450	62	460	1,200	----	----
	10/11/95	9.48	8,400	660	47	510	850	8,000	----
	10/13/95	----	7,400	730	54	490	1,100	8,200	----
	01/17/96	6.48	24,000	570	110	820	2,900	15,000	----
	04/10/96	5.38	20,000	120	11	420	1,400	15,000	----
	07/30/96	7.61	7,900	240	22	170	300	12,000	----
	10/17/96	8.66	6,600	1,000	20	120	130	10,000	1.4
01/22/97	5.00	13,000	170	<50	330	1,200	18,000	1.6	
04/01/97	6.42	7,900	240	26	130	200	6,400	1.4	
MW-2	08/06/91	9.72	50,000	15,000	----	2,700	13,000	----	----
	10/23/91	10.03	120,000	11,000	1,400	3,500	19,000	----	----
	01/28/92	8.78	49,000	7,400	800	1,800	8,300	----	----
	05/05/92	7.58	52,000	12,000	1,100	2,200	12,000	----	----
	07/13/92	9.63	47,000	15,000	2,400	4,500	16,000	----	----
	10/12/92 <sup>SRH</sup>	11.66	----	----	----	----	----	----	----
	01/12/93 <sup>SRH</sup>	7.13	----	----	----	----	----	----	----
	04/06/93 <sup>SRH</sup>	6.40	----	----	----	----	----	----	----
	07/12/93	8.75	59,000	12,000	950	2,400	11,000	----	----
	10/13/93	10.28	54,000	14,000	1,200	3,700	22,000	----	----
	01/20/94	----	----	----	----	----	----	----	----
	04/13/94	7.35	79,000	9,400	740	2,100	12,000	----	----
	04/13/94 <sup>dup</sup>	7.35	110,000	11,000	710	2,400	13,000	----	----
	07/19/94	8.24	63,000	13,000	810	1,900	13,000	----	----
	07/19/94 <sup>dup</sup>	8.24	12,000	12,000	140	340	12,000	----	----
	10/27/94	10.26	64,000	8,800	480	2,100	10,000	----	----
	01/03/95	6.44	67,000	9,800	720	2,800	11,000	----	----
	01/03/95 <sup>dup</sup>	6.44	58,000	9,700	620	2,700	12,000	----	----
	04/13/95	5.89	83,000	10,000	490	2,600	13,000	----	----
	04/13/95 <sup>dup</sup>	5.89	74,000	9,500	350	2,100	11,000	----	----
	06/30/95	7.41	65,000	12,000	1,800	2,400	12,000	----	----
	10/11/95	8.02	68,000	8,800	840	3,000	13,000	1,400	----
	01/17/96	7.42	79,000	12,000	640	2,700	14,000	2,200	----
01/17/96 <sup>dup</sup>	7.42	78,000	12,000	920	2,500	12,000	2,500	----	
04/10/96	6.91	84,000	7,200	310	1,700	7,800	2,900	----	
07/30/96	7.63	26,000	6,800	210	1,300	5,500	4,500	----	
10/17/96	8.27	46,000	9,800	340	2,000	6,500	4,900	1.8	
01/22/97	7.09	52,000	6,200	220	1,400	6,600	3,000	1.9	

# CAMBRIA

**Table 3. Analytic Results for Ground Water - Shell Service Station WIC #204-5508-5306, 3420 San Pablo Avenue , Oakland, California (continued)**

Well ID	Date Sampled	Depth to Water (ft)	TPH-G	B	T	E	X	MTBE	DO (mg/l)
	01/22/97 <sup>dup</sup>	7.09	54,000	6,100	230	1,400	6,500	2,600	1.9
	04/01/97	6.91	69,000	6,000	380	2,400	11,000	3,800	2.4
MW-3	08/06/91	11.18	430	8	1	4	15	---	---
	10/23/91	11.69	390	2.10	<0.3	0.48	2	---	---
	01/28/92	9.99	190	<0.5	<0.5	<0.5	<0.5	---	---
	05/04/92	9.46	190	<1	<1	<1	0.71	---	---
	07/20/92	11.29	200 <sup>u</sup>	<0.5	<0.5	<0.5	<0.5	---	---
	10/12/92	13.10	180 <sup>u</sup>	<0.5	<0.5	<0.5	<0.5	---	---
	01/12/93	7.32	180	<0.5	2.3	0.9	5.6	---	---
	01/12/93 <sup>dup</sup>	7.32	260	<0.5	<0.5	<0.5	<0.5	---	---
	04/06/93	7.44	280	<0.5	<0.5	<0.5	<0.5	---	---
	07/12/93	10.62	310 <sup>u</sup>	<0.5	<0.5	<0.5	<0.5	---	---
	10/13/93	12.05	150	<0.5	<0.5	<0.5	<0.5	---	---
	01/20/94	9.62	180	<0.5	<0.5	<0.5	<0.5	---	---
	04/13/94	9.15	270	<0.5	<0.5	<0.5	<0.5	---	---
	07/19/94	10.13	190*	<0.5	<0.5	<0.5	<0.5	---	---
	10/27/94	11.66	160*	<0.5	<0.5	<0.5	<0.5	---	---
	01/03/95	6.89	100*	<0.5	<0.5	<0.5	<0.5	---	---
	04/13/95	6.79	120*	<0.5	<0.5	<0.5	<0.5	---	---
	06/30/95	8.94	180*	<0.5	<0.5	<0.5	<0.5	---	---
	10/11/95	10.62	150	2.2	<0.5	<0.5	<0.5	2.3	---
	01/17/96	7.18	120	<0.5	<0.5	<0.5	<0.5	7.8	---
	04/10/96	6.76	160	<0.5	<0.5	<0.5	<0.5	12	---
	07/30/96	9.04	57	<0.5	<0.5	<0.5	<0.5	<2.5	---
	10/17/96	9.04	<50	<0.5	<0.5	<0.5	<0.5	<2.5	2.0
	01/22/97	5.03	<50	<0.5	<0.5	<0.5	<0.5	3.7	2.4
	04/01/97	8.23	71	<0.50	<0.50	<0.50	<0.50	---	1.0
MW-4	08/06/91	10.57	1,300	28	18	68	150	---	---
	10/23/91	10.46	1,900	97	6.10	38	77	---	---
	01/28/92	9.54	200	7.60	<0.5	3	3.30	---	---
	05/04/92	8.33	690	98	3	13	<1	---	---
	07/13/92	9.87	1,500	140	2.90	17	12	---	---
	07/13/92 <sup>dup</sup>	9.87	870	95	1.90	10	7.10	---	---
	10/12/92 <sup>SPH</sup>	12.43	---	---	---	---	---	---	---
	01/12/93 <sup>SPH</sup>	7.12	---	---	---	---	---	---	---
	04/06/93 <sup>SPH</sup>	7.23	---	---	---	---	---	---	---
	07/12/93 <sup>SPH</sup>	10.08	---	---	---	---	---	---	---
	10/13/93 <sup>SPH</sup>	11.35	---	---	---	---	---	---	---
	01/20/94 <sup>SPH</sup>	9.06	---	---	---	---	---	---	---
	04/13/94 <sup>SPH</sup>	8.58	---	---	---	---	---	---	---
	07/18/94	9.71	12,000	230	43	230	660	---	---
	10/27/94 <sup>SPH</sup>	10.60	---	---	---	---	---	---	---
	01/03/95 <sup>SPH</sup>	5.49	---	---	---	---	---	---	---
	04/13/95 <sup>SPH</sup>	6.53	---	---	---	---	---	---	---
	06/30/95	9.57	7,400	140	<0.5	160	350	---	---
	10/11/95	10.30	3,000	29	10	100	82	9,700	---
	01/17/96	6.68	9,700	190	<0.5	190	410	4,500	---
	04/10/96	7.90	2,800	16	<0.5	22	50	6,100	---
	07/30/96	8.73	1,600	68	<12	58	39	8,500	2.8
	10/17/96	7.63	4,800	120	<25	150	96	11,000	2.8
	01/22/97	5.26	12,000	83	<20	170	240	4,300	2.6
	04/01/97	8.02	4,800	65	<5.0	81	93	3,200	2.4

# CAMBRIA

**Table 3. Analytic Results for Ground Water - Shell Service Station WIC #204-5508-5306, 3420 San Pablo Avenue, Oakland, California (continued)**

Well ID	Date Sampled	Depth to Water (ft)	TPH-G	(µg/L)					DO (mg/l)
				B	T	E	X	MTBE	
MW-5	08/06/91	10.23	9,100	210	27	240	660	---	---
	10/23/91	10.89	12,000	92	18	230	450	---	---
	01/28/92	8.45	3,300	130	10	180	220	---	---
	05/04/92	8.05	3,900	95	<12.5	260	120	---	---
	07/13/92	10.00	4,100	180	12	250	73	---	---
	10/12/92 <sup>SPH</sup>	11.83	---	---	---	---	---	---	---
	01/12/93 <sup>SPH</sup>	6.10	---	---	---	---	---	---	---
	04/06/93	6.18	6,200	71	<0.5	53	150	---	---
	07/12/93	9.59	3,400	130	<0.5	170	130	---	---
	10/13/93 <sup>SPH</sup>	10.80	---	---	---	---	---	---	---
	01/20/94 <sup>SPH</sup>	7.42	---	---	---	---	---	---	---
	04/13/94 <sup>SPH</sup>	7.05	---	---	---	---	---	---	---
	07/19/94	8.57	11,000	180	13	180	260	---	---
	10/27/94	10.14	6,900	82	<5	210	1110	---	---
	01/03/95	5.84	12,000	110	46	790	510	---	---
	04/13/95	5.28	10,000	61	<20	330	140	---	---
	06/30/95	7.43	12,000	180	8.60	440	340	---	---
	10/11/95	8.90	11,000	<50	<50	440	340	5,100	---
	10/11/96 <sup>dup</sup>	8.90	11,000	95	<50	440	330	660	---
	01/17/96	6.40	82,000	330	120	960	1,400	820	---
	04/10/96	5.70	23,000	<50	<50	360	190	770	---
	04/10/96 <sup>dup</sup>	5.70	19,000	84	<50	430	200	590	---
	07/30/96	7.71	38,000	3,000	<100	1,100	2,600	560	---
	10/17/96	9.04	13,000	36	<10	210	160	720	1.4
	10/17/96 <sup>dup</sup>	9.04	11,000	75	<10	180	150	450	1.4
	01/22/97	4.85	20,000	63	<50	380	390	650	1.6
	04/01/97	6.54	16,000	110	<50	390	320	2,200	1.4
MW-6	08/06/91	10.61	28,000	1,400	200	1,300	4,200	---	---
	10/23/91	11.68	53,000	1,400	230	1,800	6,700	---	---
	01/28/92	8.90	87,000	1,200	470	2,000	6,600	---	---
	05/05/92	8.01	230,000	<500	<500	3,200	11,000	---	---
	07/13/92	10.77	2,700,000	<2,500	3,500	14,000	36,000	---	---
	10/12/92 <sup>SPH</sup>	8.68	---	---	---	---	---	---	---
	01/12/93 <sup>SPH</sup>	6.40	---	---	---	---	---	---	---
	04/06/93	5.93	320,000	2,500	14,000	980	14,000	---	---
	07/12/93	10.25	31,000	1,100	4,500	150	4,500	---	---
	07/12/93 <sup>dup</sup>	10.25	25,000	1,200	4,800	270	4,800	---	---
	10/13/93 <sup>SPH</sup>	12.28	---	---	---	---	---	---	---
	01/20/94 <sup>SPH</sup>	9.14	---	---	---	---	---	---	---
	04/13/94 <sup>SPH</sup>	7.67	---	---	---	---	---	---	---
	07/19/94 <sup>SPH</sup>	10.07	---	---	---	---	---	---	---
	10/27/94 <sup>SPH</sup>	11.84	---	---	---	---	---	---	---
	01/03/95 <sup>SPH</sup>	7.80	---	---	---	---	---	---	---
	04/13/95 <sup>SPH</sup>	5.77	---	---	---	---	---	---	---
	06/30/95	7.78	1,100,000	6,600	6,100	12,000	29,000	---	---
	10/11/95	10.06	30,000	130	<50	1,400	4,200	710	---
	01/17/96	6.91	450,000	510	1,400	2,700	11,000	630	---
	04/10/96	5.92	22,000	47	<10	350	860	<50	---
	07/30/96	8.97	38,000	3,000	<100	1,100	2,600	560	---
	07/30/96 <sup>dup</sup>	8.97	38,000	450	100	1,000	3,100	800	---
	10/17/96 <sup>SPH</sup>	9.87	34,000	470	<100	1,300	3,900	<500	1.0
	01/22/97	4.43	26,000	<100	<100	600	1,700	<500	1.3
	04/01/97	6.84	30,000	96	33	840	2,600	190	1.4

# CAMBRIA

**Table 3. Analytic Results for Ground Water - Shell Service Station WIC #204-5508-5306, 3420 San Pablo Avenue, Oakland, California (continued)**

Well ID	Date Sampled	Depth to Water (ft)	TPH-G	B	T	E	X	MTBE	DO (mg/l)
MW-7	08/06/91	8.00	13,000	4,300	76	770	730	----	----
	10/23/91	8.16	18,000	3,200	31	660	770	----	----
	01/28/92	7.11	5,000	1,200	<10	220	54	----	----
	05/05/92	6.47	9,500	3,100	72	620	880	----	----
	07/13/92	7.73	20,000	4,200	130	1,600	1,100	----	----
	10/12/92	9.97	16,000	2,500	170	560	170	----	----
	01/12/93	6.26	15,000	2,300	<50	690	440	----	----
	04/06/93	5.92	26,000	5,400	<0.5	1,200	3,000	----	----
	04/06/93 <sup>dup</sup>	5.92	21,000	5,200	180	1,200	3,000	----	----
	07/12/93	7.27	10,000	3,000	100	510	530	----	----
	10/13/93	9.40	59,000	13,000	4,400	4,400	20,000	----	----
	01/20/94 <sup>SRH</sup>	7.03	----	----	----	----	----	----	----
	04/13/94 <sup>SRH</sup>	6.56	----	----	----	----	----	----	----
	07/19/94 <sup>SRH</sup>	6.91	----	----	----	----	----	----	----
	10/27/94 <sup>SRH</sup>	8.28	----	----	----	----	----	----	----
	01/03/95 <sup>SRH</sup>	6.48	----	----	----	----	----	----	----
	04/13/95 <sup>SRH</sup>	6.54	----	----	----	----	----	----	----
	06/30/95	7.08	900,000	11,000	8,500	14,000	52,000	----	----
	10/11/95 <sup>SRH</sup>	7.88	----	----	----	----	----	----	----
	01/17/96 <sup>SRH</sup>	7.26	----	----	----	----	----	----	----
	04/10/96 <sup>SRH</sup>	6.98	----	----	----	----	----	----	----
	07/30/96	7.34	----	----	----	----	----	----	----
	10/17/96 <sup>SRH</sup>	7.63	----	----	----	----	----	----	----
01/22/97	6.46	56,000	2,000	520	1,400	8,400	1,800	0.5	
04/01/97	6.97	66,000	3,600	460	2,400	10,000	2,300	1.6	
MW-8	08/06/91	9.60	32,000	3,700	1,100	1,400	6,100	----	----
	10/23/91	9.73	63,000	4,800	1,300	1,300	6,900	----	----
	01/28/92	7.72	32,000	1,900	750	1,400	6,300	----	----
	05/05/92	6.48	180,000	2,200	2,000	2,700	13,000	----	----
	07/13/92	8.55	56,000	4,500	1,500	2,700	9,100	----	----
	10/12/92	9.97	34,000	2,400	550	1,400	6,400	----	----
	10/12/92 <sup>dup</sup>	9.97	34,000	3,100	700	1,500	7,200	----	----
	01/12/93	6.94	110,000	2,100	1,200	2,400	12,000	----	----
	04/06/93	5.72	38,000	2,500	840	1,100	4,900	----	----
	07/12/93	7.65	27,000	2,800	990	1,200	5,300	----	----
	10/13/93	8.25	32,000	3,300	1,300	1,600	8,400	----	----
	10/13/93 <sup>dup</sup>	8.25	47,000	3,200	1,300	1,600	8,500	----	----
	01/20/94	7.25	78,000	1,900	670	1,300	6,600	----	----
	01/20/94 <sup>dup</sup>	7.25	60,000	1,700	680	1,100	5,500	----	----
	04/13/94	7.12	41,000	1,300	720	1,200	6,000	----	----
	07/19/94	7.43	140,000	1,800	1,400	2,000	9,000	----	----
	10/27/94	7.55	32,000	1,200	670	1,200	5,700	----	----
	10/27/94 <sup>dup</sup>	7.55	42,000	1,100	650	1,100	5,700	----	----
	01/03/95	6.04	38,000	1,000	700	1,500	7,500	----	----
	04/13/95	5.04	31,000	1,200	570	1,000	5,300	----	----
	06/30/95	5.72	110,000	2,000	1,500	2,000	9,700	----	----
	10/11/95	7.06	36,000	170	60	1,300	6,300	510	----
	01/17/96	5.84	38,000	1,000	520	1,100	6,200	950	----
04/10/96	5.03	54,000	650	260	850	4,700	<250	----	
07/30/96	6.36	33,000	780	330	830	4,200	1,700	----	
10/17/96	5.94	35,000	750	300	1,100	5,000	1,200	1.6	
01/22/97	5.93	25,000	260	78	420	2,400	120	1.8	
04/01/97	6.24	22,000	680	180	550	2,500	260	1.8	



# CAMBRIA

**Table 3. Analytic Results for Ground Water - Shell Service Station WIC #204-5508-5306, 3420 San Pablo Avenue, Oakland, California (continued)**

Well ID	Date Sampled	Depth to Water (ft)	TPH-G	B	T	E	X	MTBE	DO
MW-9	08/06/91	10.33	11,000	1,700	95	520	1,400	---	---
	10/23/91	11.13	20,000	1,000	47	<0.3	940	---	---
	01/28/92	9.02	3,500	120	<10	280	36	---	---
	05/04/92	7.67	7,700	1,200	<50	380	630	---	---
	07/20/92	10.26	11,000	910	<50	220	1,200	---	---
	10/12/92	12.19	2,100	340	15	77	44	---	---
	01/12/93 <sup>b</sup>	---	---	---	---	---	---	---	---
	04/06/93 <sup>b</sup>	---	---	---	---	---	---	---	---
	07/12/93 <sup>b</sup>	---	---	---	---	---	---	---	---
	10/13/93	11.17	2,900	140	<5	<5	120	---	---
	01/20/94	8.03	1,700	380	6.90	150	400	---	---
	04/13/94	7.81	6,000	1,000	<20	450	420	---	---
	07/19/94	8.96	12,000	1,400	<5	740	1,200	---	---
	10/27/94	11.00	10,000	1,200	160	280	860	---	---
	01/03/95	6.60	4,400	680	7.70	180	370	---	---
	04/13/95	6.73	1,700	270	<10	69	170	---	---
	06/30/95	7.32	14,000	2,200	18	900	2,600	---	---
	06/30/95 <sup>dup</sup>	7.32	13,000	2,100	17	870	2,500	---	---
	10/11/95	8.10	9,600	35	12	360	980	590	---
	01/17/96	5.75	2,800	150	7.41	54	130	170	---
	04/10/96	5.17	5,200	290	<5	92	220	240	---
	07/30/96	8.1	5,100	960	<10	380	770	670	---
	10/17/96	9.12	15,000	2,100	<25	590	1,300	1,500	2.4
01/22/97	4.72	5,600	690	<5.0	140	310	620	2.2	
04/01/97	6.86	4,000	590	<10	140	200	600	2.2	
04/01/97 <sup>dup</sup>	6.86	4,800	660	<25	160	230	810	2.2	
MW-10	10/23/91	8.57	27,000	1,600	110	1,800	510	---	---
	01/28/92	7.60	3,800	360	14	170	39	---	---
	05/04/92	7.54	3,000	360	<12.5	140	26	---	---
	07/20/92	8.59	15,000	400	<25	180	67	---	---
	10/12/92	10.23	16,000	320	<50	360	100	---	---
	01/12/93 <sup>b</sup>	---	---	---	---	---	---	---	---
	04/06/93	6.70	14,000	370	<0.5	880	210	---	---
	07/12/93	8.05	10,000	440	58	890	220	---	---
	10/13/93	8.25	15,000	1,000	51	810	170	---	---
	01/20/94	7.20	12,000	820	56	1,100	350	---	---
	04/13/94	7.57	18,000	760	36	700	130	---	---
	07/19/94	8.18	24,000	400	2.30	800	22	---	---
	10/27/94	8.68	11,000	360	43	310	89	---	---
	01/03/95	6.86	17,000	770	38	690	160	---	---
	04/13/95	6.91	9,900	650	16	280	40	---	---
	06/30/95	7.61	12,000	750	20	480	130	---	---
	01/17/96	7.00	17,000	870	260	93	830	---	---
	04/10/96	6.80	14,000	470	38	110	370	---	---
	07/30/96	---	---	---	---	---	---	---	---
	10/17/96	---	---	---	---	---	---	---	---
01/22/97	6.68	10,000	520	<20	64	32	180	3.1	
04/01/97	7.34	11,000	590	<20	53	32	210	2.8	
MW-11	10/23/91	8.06	140	<12	<0.3	0.37	0.56	---	---
	01/28/92	13.32	<50	<0.5	<0.5	<0.5	<0.5	---	---
	05/04/92	13.77	<50	<0.5	<0.5	<0.5	<0.5	---	---
	07/13/92	11.56	140	<0.5	<0.5	<0.5	<0.5	---	---

# CAMBRIA

**Table 3. Analytic Results for Ground Water - Shell Service Station WIC #204-5508-5306, 3420 San Pablo Avenue , Oakland, California (continued)**

Well ID	Date Sampled	Depth to Water (ft)	TPH-G	←----- (ug/L) -----→					DO (mg/l)
				B	T	E	X	MTBE	
	10/12/92	12.40	75	<0.5	<0.5	<0.5	<0.5	----	----
	01/12/93 <sup>b</sup>	----	----	----	----	----	----	----	----
	04/06/93 <sup>b</sup>	----	----	----	----	----	----	----	----
	07/12/93 <sup>b</sup>	----	----	----	----	----	----	----	----
	10/13/93	11.47	<50	<0.5	<0.5	<0.5	<0.5	----	----
	01/20/94	9.09	<50	<0.5	<0.5	<0.5	<0.5	----	----
	04/13/94	8.02	<50	<0.5	<0.5	<0.5	<0.5	----	----
	07/19/94	9.82	50	<0.5	<0.5	<0.5	<0.5	----	----
	10/27/94	11.66	60*	<0.5	<0.5	<0.5	<0.5	----	----
	01/03/95	6.15	<50	<0.5	<0.5	<0.5	<0.5	----	----
	04/13/95	6.00	<50	<0.5	<0.5	<0.5	<0.5	----	----
	06/30/95	8.31	70	<0.5	<0.5	<0.5	<0.5	----	----
	10/11/95	10.30	60	53	<0.5	<0.5	0.80	3.0	----
	01/17/96	6.45	<50	<0.5	<0.5	<0.5	<0.5	<2	----
	04/10/96	6.05	<50	<0.5	<0.5	<0.5	<0.5	3.9	----
	07/30/96	8.92	<50	<0.5	<0.5	<0.5	<0.5	<2.5	----
	10/17/96	9.24	3,000	28	23	29	210	76	----
	01/22/97	5.12	<50	<0.5	<0.5	<0.5	<0.5	<2.5	3.7
	04/01/97	7.41	<50	<0.50	<0.50	<0.50	<0.50	<2.5	2.8
Equipment	07/13/92	----	<50	<0.5	<0.5	<0.5	<0.5	----	----
Blank	07/20/92	----	<50	<0.5	<0.5	<0.5	<0.5	----	----
	10/12/92	----	<50	<0.5	<0.5	<0.5	<0.5	----	----
	04/13/94	----	<50	<0.5	0.67	<0.5	<0.5	----	----
	07/19/94	----	<50	<0.5	<0.5	<0.5	<0.5	----	----
	10/27/94	----	<50	<0.5	<0.5	<0.5	<0.5	----	----
	01/03/95	----	<50	<0.5	<0.5	<0.5	<0.5	----	----
	04/13/95	----	<50	<0.5	<0.5	<0.5	<0.5	----	----
	06/30/95	----	<50	<0.5	<0.5	<0.5	<0.5	----	----
	10/11/95	----	<50	<0.5	<0.5	<0.5	<0.5	<0.5	----
	01/17/96	----	<50	<0.5	<0.5	<0.5	<0.5	<2	----
	04/01/97	----	<50	<0.50	<0.50	<0.50	<0.50	<2.5	----
Trip Blank	01/28/92	----	<50	<0.5	<0.5	<0.5	<0.5	----	----
	05/05/92	----	<50	<0.5	<0.5	<0.5	<0.5	----	----
	07/13/92	----	<50	<0.5	<0.5	<0.5	<0.5	----	----
	07/20/92	----	<50	<0.5	<0.5	<0.5	<0.5	----	----
	10/12/92	----	<50	<0.5	<0.5	<0.5	<0.5	----	----
	01/12/93	----	<50	<0.5	<0.5	<0.5	<0.5	----	----
	04/06/93	----	<50	<0.5	<0.5	<0.5	<0.5	----	----
	07/12/93	----	<50	<0.5	<0.5	<0.5	<0.5	----	----
	10/13/93	----	<50	<0.5	<0.5	<0.5	<0.5	----	----
	01/20/94	----	<50	<0.5	<0.5	<0.5	<0.5	----	----
	04/13/94	----	<50	<0.5	<0.5	<0.5	<0.5	----	----
	07/19/94	----	<50	<0.5	<0.5	<0.5	<0.5	----	----
	10/27/94	----	<50	<0.5	<0.5	<0.5	<0.5	----	----
	01/03/95	----	<50	<0.5	<0.5	<0.5	<0.5	----	----
	04/13/95	----	<50	<0.5	<0.5	<0.5	<0.5	----	----
	06/30/95	----	<50	<0.5	<0.5	<0.5	<0.5	----	----
	10/11/95	----	<50	<0.5	<0.5	<0.5	<0.5	<0.5	----
MCLs	----	----	NE	1	150	700	1,750	NE	----

# CAMBRIA

**Table 3. Analytic Results for Ground Water - Shell Service Station WIC #204-5508-5306, 3420 San Pablo Avenue , Oakland, California (continued)**

Well ID	Date Sampled	Depth to Water (ft)	TPH-G	B	T	E	X	MTBE	DO (mg/l)
---------	--------------	---------------------	-------	---	---	---	---	------	-----------

**Abbreviations:**

- TPH-G = Total petroleum hydrocarbons as gasoline by Modified EPA Method 8015
- B = Benzene by EPA Method 8020
- T = Toluene by EPA Method 8020
- E = Ethylbenzene by EPA Method 8020
- X = Xylenes by EPA Method 8020
- MTBE = Methyl tert-Butyl Ether by EPA Method 8020
- DO = Dissolved oxygen
- NE = Not established
- MCLs = California Primary maximum contaminant levels for drinking water (22 CCR 64444)
- = Not analyzed
- < n = Not detected at detection limits of n ppb
- dup = Duplicate sample
- SPH = Not sampled, separate-phase hydrocarbons detected in well
- ppb = Parts per billion
- µg/L = Micrograms per liter (ppb)
- mg/L = Milligrams per liter

**Notes:**

- a = Concentration reported as gasoline is due to the presence of a discrete hydrocarbon peak that is not indicative of gasoline
- b = Not sampled. Well inaccessible
- c = Analytic Laboratory noted that MTBE could not be quantified for this sample due to co-eluting compounds.
- \* = The result for gasoline is an unknown hydrocarbon which consists of a single peak as confirmed by NET Laboratory

**BLAINE**  
TECH SERVICES INC.



1680 ROGERS AVENUE  
SAN JOSE, CALIFORNIA 95112  
(408) 573-7771 FAX  
(408) 573-0555 PHONE

April 23, 1997

Shell Oil Company  
P.O. Box 5278  
Concord, CA 94520-9998

Attn: Alex Perez

Shell WIC #204-5508-5306  
3420 San Pablo Avenue  
Oakland, California

2nd Quarter 1997

## Quarterly Groundwater Monitoring Report 970401-X-1

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Blaine Tech Services, Inc. performs environmental sampling and documentation as an independent third party. Copies of our Sampling 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  
Attn: Josh Bergstrom

(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	4/1/97	TOC	-	NONE	-	-	6.42	24.90
MW-2	4/1/97	TOC	SHEEN/ODOR	-	-	-	6.91	19.26
MW-3	4/1/97	TOC	-	NONE	-	-	8.23	27.39
MW-4	4/1/97	TOC	ODOR	NONE	-	-	8.02	25.00
MW-5	4/1/97	TOC	ODOR	NONE	-	-	6.54	24.80
MW-6	4/1/97	TOC	-	NONE	-	-	6.84	19.88
MW-7	4/1/97	TOC	SHEEN/ODOR	-	-	-	6.97	19.80
MW-8	4/1/97	TOC	SHEEN	-	-	-	6.24	20.00
MW-9 *	4/1/97	TOC	ODOR	NONE	-	-	6.86	19.68
MW-10	4/1/97	TOC	-	NONE	-	-	7.34	18.69
MW-11	4/1/97	TOC	-	NONE	-	-	7.41	18.95

\* Sample DUP was a duplicate sample taken from well MW-9.



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

**CHAIN OF CUSTODY RECORD**

Serial No: 970421K1

Date:

Page 1 of 2

Site Address: 3420 San Pablo Ave., Oakland, CA

WIC#: 204-5506-5306

Shell Engineer: R. Jeff Granberry  
Phone No.: (510) 675-6168  
Fax #: 675-6172

Consultant Name & Address:  
Blaine Tech Services, Inc.  
985 Timothy Dr., San Jose, CA 95133

Consultant Contact: Fran Thie  
Phone No.: (408) 995-5535  
Fax #: 293-8773

Comments:

Sampled by: K. Weddingfeld

Printed Name: Ken Weddingfeld

**Analysis Required**

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	Asbestos	Container Size	Preparation Used	Composite Y/N
					X				

LAB: Sequoia

CHECK ONE (1) BOX ONLY	CT/DT	TURN AROUND TIME
G.W. Monitoring <input checked="" type="checkbox"/>	4461	24 hours <input type="checkbox"/>
Site Investigation <input type="checkbox"/>	4441	48 hours <input type="checkbox"/>
Soil Classify/Disposal <input type="checkbox"/>	4442	15 days <input checked="" type="checkbox"/> (Normal)
Water Classify/Disposal <input type="checkbox"/>	4443	Other <input type="checkbox"/>
Soil/Air Rem. or Sys. O & M <input type="checkbox"/>	4452	
Water Rem. or Sys. O & M <input type="checkbox"/>	4453	
Other <input type="checkbox"/>		

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

UST AGENCY: 9704222

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	Asbestos	Container Size	Preparation Used	Composite Y/N	MATERIAL DESCRIPTION	SAMPLE CONDITION/ COMMENTS	
1 mw-1	4/1			W		3						X							
2 mw-2																			
3 mw-3																			
4 mw-4																			
5 mw-5																			
6 mw-6																			
7 mw-7																			
8 mw-8																			

Relinquished By (signature): <u>[Signature]</u>	Printed Name: <u>Ken Weddingfeld</u>	Date: <u>4/2/97</u>	Time: <u>7:00</u>	Received (signature): <u>[Signature]</u>	Printed Name: <u>F. Hatcher</u>	Date: <u>4/2/97</u>	Time: <u>7:00</u>
Relinquished By (signature): <u>[Signature]</u>	Printed Name:	Date: <u>4/2/97</u>	Time:	Received (signature):	Printed Name:	Date:	Time:
Relinquished By (signature):	Printed Name:	Date:	Time:	Received (signature): <u>LO Cardenas</u>	Printed Name: <u>LO Cardenas</u>	Date: <u>4-2-97</u>	Time: <u>16:31</u>

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



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

**CHAIN OF CUSTODY RECORD**

Serial No: 970401X1

Date:

Page 2 of 2

Site Address: 3420 San Pablo Ave., Oakland, CA

**Analysis Required**

LAB: Sequoia

WIC#: 204-5506-5306

Shell Engineer: R. Jeff Granberry Phone No.: (510) 675-6168  
Fax #: 675-6172

Consultant Name & Address: Blaine Tech Services, Inc.  
985 Timothy Dr., San Jose, CA 95133

Consultant Contact: Fran Thie Phone No.: (408) 995-5535  
Fax #: 293-8773

Comments:

Sampled by: Ken Weddmgfeld

Printed Name: Ken Weddmgfeld

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	Asbestos	Container Size	Preparation Used	Composite Y/N
					<u>MT 8015</u>				

CHECK ONE (1) BOX ONLY	CT/DT	TURN AROUND TIME
G.W. Monitoring <input checked="" type="checkbox"/>	4441	24 hours <input type="checkbox"/>
Site Investigation <input type="checkbox"/>	4441	48 hours <input type="checkbox"/>
Soil Classfy/Disposal <input type="checkbox"/>	4442	15 days <input checked="" type="checkbox"/> (Normal)
Water Classfy/Disposal <input type="checkbox"/>	4443	Other <input type="checkbox"/>
Soil/Air Rem. or Sys. O & M <input type="checkbox"/>	4452	
Water Rem. or Sys. O & M <input type="checkbox"/>	4453	
Other <input type="checkbox"/>		

UST AGENCY: 9704228

Sample ID	Date	Sludge	Soil	Water	Alr	No. of confs.	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	Asbestos	Container Size	Preparation Used	Composite Y/N	MATERIAL DESCRIPTION	SAMPLE CONDITION/ COMMENTS
<u>1 MW-10</u>	<u>4/1</u>			<u>W</u>		<u>3</u>						<u>X</u>	<u>X</u>					
<u>1 MW-11</u>																		
<u>2 Dup</u>																		
<u>3 FB</u>																		

Relinquished By (signature): <u>[Signature]</u>	Printed Name: <u>Ken Weddmgfeld</u>	Date: <u>4/1/99</u>	Time: <u>12:06</u>	Received (signature): <u>[Signature]</u>	Printed Name: <u>F. Hatcher</u>	Date: <u>4/1/99</u>	Time: <u>2:50</u>
Relinquished By (signature): <u>[Signature]</u>	Printed Name:	Date: <u>4/2/99</u>	Time:	Received (signature): <u>[Signature]</u>	Printed Name:	Date:	Time:
Relinquished By (signature): <u>[Signature]</u>	Printed Name:	Date:	Time:	Received (signature): <u>[Signature]</u>	Printed Name: <u>LDCarvernes</u>	Date: <u>4-2-97</u>	Time: <u>16:31</u>

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

Redwood City, CA 94063  
Walnut Creek, CA 94598  
Sacramento, CA 95834

(415) 364-9600  
(510) 988-9600  
(916) 921-9600

FAX (415) 364-9233  
FAX (510) 988-9673  
FAX (916) 921-0100

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

Project: Shell Oakland/970401X1

Enclosed are the results from samples received at Sequoia Analytical on April 2, 1997.  
The requested analyses are listed below:

<u>SAMPLE #</u>	<u>SAMPLE DESCRIPTION</u>	<u>DATE COLLECTED</u>	<u>TEST METHOD</u>
9704222 -01	LIQUID, MW-1	04/01/97	TPGBMW Purgeable TPH/BTEX
9704222 -02	LIQUID, MW-2	04/01/97	TPGBMW Purgeable TPH/BTEX
9704222 -03	LIQUID, MW-3	04/01/97	TPGBMW Purgeable TPH/BTEX
9704222 -04	LIQUID, MW-4	04/01/97	TPGBMW Purgeable TPH/BTEX
9704222 -05	LIQUID, MW-5	04/01/97	TPGBMW Purgeable TPH/BTEX
9704222 -06	LIQUID, MW-6	04/01/97	TPGBMW Purgeable TPH/BTEX
9704222 -07	LIQUID, MW-7	04/01/97	TPGBMW Purgeable TPH/BTEX
9704222 -08	LIQUID, MW-8	04/01/97	TPGBMW Purgeable TPH/BTEX
9704222 -09	LIQUID, MW-9	04/01/97	TPGBMW Purgeable TPH/BTEX
9704222 -10	LIQUID, MW-10	04/01/97	TPGBMW Purgeable TPH/BTEX
9704222 -11	LIQUID, MW-11	04/01/97	TPGBMW Purgeable TPH/BTEX
9704222 -12	LIQUID, DUP	04/01/97	TPGBMW Purgeable TPH/BTEX
9704222 -13	LIQUID, EB	04/01/97	TPGBMW 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	Client Proj. ID: Shell Oakland/970401X1 Sample Descript: MW-1 Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9704222-01	Sampled: 04/01/97 Received: 04/02/97 Analyzed: 04/10/97 Reported: 04/15/97
--	---	---

QC Batch Number: GC041097BTEX22A  
Instrument ID: GCHP22

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

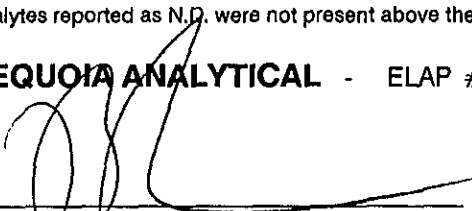
Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	1000	7900
Methyl t-Butyl Ether	50	6400
Benzene	10	240
Toluene	10	26
Ethyl Benzene	10	130
Xylenes (Total)	10	200
Chromatogram Pattern:		C6-C12

Surrogates	Control Limits %	% Recovery
Trifluorotoluene	70 130	83

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

**SEQUOIA ANALYTICAL** - ELAP #1210

  
Peggy Penner  
Project Manager





Blaine Tech Services  
1680 Rogers Avenue  
San Jose, CA 95112

Client Proj. ID: Shell Oakland/970401X1  
Sample Descript: MW-2  
Matrix: LIQUID  
Analysis Method: 8015Mod/8020  
Lab Number: 9704222-02

Sampled: 04/01/97  
Received: 04/02/97  
Analyzed: 04/10/97  
Reported: 04/15/97

Attention: Fran Thie

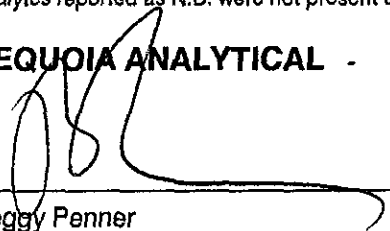
QC Batch Number: GC041097BTEX22A  
Instrument ID: GCHP22

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

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	5000	69000
Methyl t-Butyl Ether	250	3800
Benzene	50	6000
Toluene	50	380
Ethyl Benzene	50	2400
Xylenes (Total)	50	11000
Chromatogram Pattern:		C6-C12
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
Trifluorotoluene	70 130	128

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

**SEQUOIA ANALYTICAL - ELAP #1210**

  
Peggy Penner  
Project Manager





Blaine Tech Services  
1680 Rogers Avenue  
San Jose, CA 95112

Client Proj. ID: Shell Oakland/970401X1  
Sample Descript: MW-3  
Matrix: LIQUID  
Analysis Method: 8015Mod/8020  
Lab Number: 9704222-03

Sampled: 04/01/97  
Received: 04/02/97  
Analyzed: 04/10/97  
Reported: 04/15/97

Attention: Fran Thie

QC Batch Number: GC041097BTEX22A  
Instrument ID: GCHP22

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

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	71
Methyl t-Butyl Ether	2.5	-
Benzene	0.50	N.D.
Toluene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Xylenes (Total)	0.50	N.D.
Chromatogram Pattern:		C6-C8
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
Trifluorotoluene	70 130	96

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

**SEQUOIA ANALYTICAL** - ELAP #1210

Peggy Penner  
Project Manager





Blaine Tech Services  
1680 Rogers Avenue  
San Jose, CA 95112

Client Proj. ID: Shell Oakland/970401X1  
Sample Descript: MW-4  
Matrix: LIQUID  
Analysis Method: 8015Mod/8020  
Lab Number: 9704222-04

Sampled: 04/01/97  
Received: 04/02/97  
Analyzed: 04/10/97  
Reported: 04/15/97

Attention: Fran Thie

QC Batch Number: GC041097BTEX22A  
Instrument ID: GCHP22

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

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	500	4800
Methyl t-Butyl Ether	25	3200
Benzene	5.0	65
Toluene	5.0	N.D.
Ethyl Benzene	5.0	81
Xylenes (Total)	5.0	93
Chromatogram Pattern:		C6-C12
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
Trifluorotoluene	70 130	96

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

**SEQUOIA ANALYTICAL** - ELAP #1210

Peggy Penner  
Project Manager





Blaine Tech Services 1680 Rogers Avenue San Jose, CA 95112	Client Proj. ID: Shell Oakland/970401X1 Sample Descript: MW-5 Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9704222-05	Sampled: 04/01/97 Received: 04/02/97 Analyzed: 04/10/97 Reported: 04/15/97
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QC Batch Number: GC041097BTEX22A  
Instrument ID: GCHP22

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

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	5000	16000
Methyl t-Butyl Ether	250	2200
Benzene	50	110
Toluene	50	N.D.
Ethyl Benzene	50	390
Xylenes (Total)	50	320
Chromatogram Pattern:		C6-C12

Surrogates	Control Limits %	% Recovery
Trifluorotoluene	70 130	117

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

SEQUOIA ANALYTICAL - ELAP #1210

  
Peggy Penner  
Project Manager





Blaine Tech Services 1680 Rogers Avenue San Jose, CA 95112	Client Proj. ID: Shell Oakland/970401X1 Sample Descript: MW-6 Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9704222-06	Sampled: 04/01/97 Received: 04/02/97 Analyzed: 04/10/97 Reported: 04/15/97
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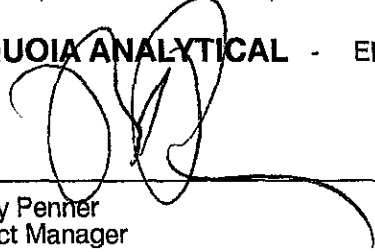
GC Batch Number: GC041097BTEX22A  
Instrument ID: GCHP22

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

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	2000	30000
Methyl t-Butyl Ether	100	190
Benzene	20	96
Toluene	20	33
Ethyl Benzene	20	840
Xylenes (Total)	20	2600
Chromatogram Pattern:		C6-C12
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
Trifluorotoluene	70	130
		104

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

**SEQUOIA ANALYTICAL** - ELAP #1210



Peggy Penner  
Project Manager





Blaine Tech Services  
1680 Rogers Avenue  
San Jose, CA 95112

Attention: Fran Thie

Client Proj. ID: Shell Oakland/970401X1  
Sample Descript: MW-7  
Matrix: LIQUID  
Analysis Method: 8015Mod/8020  
Lab Number: 9704222-07

Sampled: 04/01/97  
Received: 04/02/97  
Analyzed: 04/10/97  
Reported: 04/15/97

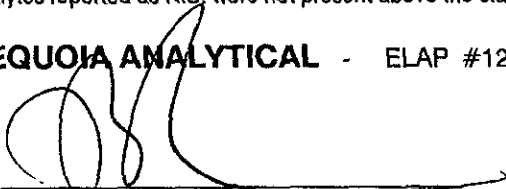
QC Batch Number: GC041097BTEX22A  
Instrument ID: GCHP22

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

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	10000	66000
Methyl t-Butyl Ether	500	2300
Benzene	100	3600
Toluene	100	460
Ethyl Benzene	100	2400
Xylenes (Total)	100	10000
Chromatogram Pattern:		C6-C12
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
Trifluorotoluene	70 130	108

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

**SEQUOIA ANALYTICAL** - ELAP #1210

  
Peggy Penner  
Project Manager





Blaine Tech Services  
1680 Rogers Avenue  
San Jose, CA 95112

Client Proj. ID: Shell Oakiand/970401X1  
Sample Descript: MW-8  
Matrix: LIQUID  
Analysis Method: 8015Mod/8020  
Lab Number: 9704222-08

Sampled: 04/01/97  
Received: 04/02/97  
Analyzed: 04/11/97  
Reported: 04/15/97

Attention: Fran Thie

QC Batch Number: GC041197BTEX22A  
Instrument ID: GCHP22

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

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	5000	22000
Methyl t-Butyl Ether	250	260
Benzene	50	680
Toluene	50	180
Ethyl Benzene	50	550
Xylenes (Total)	50	2500
Chromatogram Pattern:		C6-C12
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
Trifluorotoluene	70 130	134 Q

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

SEQUOIA ANALYTICAL - ELAP #1210

  
Peggy Penner  
Project Manager







Blaine Tech Services  
1680 Rogers Avenue  
San Jose, CA 95112

Attention: Fran Thie

Client Proj. ID: Shell Oakland/970401X1  
Sample Descript: MW-9  
Matrix: LIQUID  
Analysis Method: 8015Mod/8020  
Lab Number: 9704222-09

Sampled: 04/01/97  
Received: 04/02/97  
Analyzed: 04/10/97  
Reported: 04/15/97

QC Batch Number: GC041097BTEX22A  
Instrument ID: GCHP22

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

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	1000	4000
Methyl t-Butyl Ether	50	600
Benzene	10	590
Toluene	10	N.D.
Ethyl Benzene	10	140
Xylenes (Total)	10	200
Chromatogram Pattern:		C6-C12
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
Trifluorotoluene	70 130	117

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

**SEQUOIA ANALYTICAL** - ELAP #1210

Peggy Penner  
Project Manager





Blaine Tech Services 1680 Rogers Avenue San Jose, CA 95112	Client Proj. ID: Shell Oakland/970401X1 Sample Descript: MW-10 Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9704222-10	Sampled: 04/01/97 Received: 04/02/97 Analyzed: 04/11/97 Reported: 04/15/97
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JC Batch Number: GC041197BTEX22A  
Instrument ID: GCHP22

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

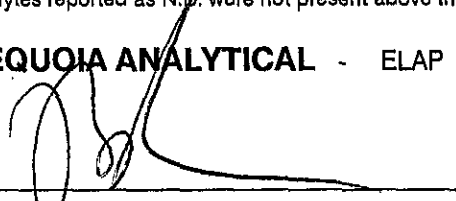
Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	2000	11000
Methyl t-Butyl Ether	100	210
Benzene	20	590
Toluene	20	N.D.
Ethyl Benzene	20	53
Xylenes (Total)	20	32
Chromatogram Pattern:		C6-C12

Surrogates	Control Limits %	% Recovery
Trifluorotoluene	70 130	71

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

**SEQUOIA ANALYTICAL** - ELAP #1210

  
Peggy Penner  
Project Manager





Blaine Tech Services 1680 Rogers Avenue San Jose, CA 95112	Client Proj. ID: Shell Oakland/970401X1 Sample Descript: MW-11 Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9704222-11	Sampled: 04/01/97 Received: 04/02/97 Analyzed: 04/10/97 Reported: 04/15/97
Attention: Fran Thie		


QC Batch Number: GC041097BTEX22A  
Instrument ID: GCHP22

**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:		
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
Trifluorotoluene	70 130	83

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

**SEQUOIA ANALYTICAL** - ELAP #1210



\_\_\_\_\_  
Peggy Penner  
Project Manager





Blaine Tech Services 1680 Rogers Avenue San Jose, CA 95112	Client Proj. ID: Shell Oakland/970401X1 Sample Descript: DUP Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9704222-12	Sampled: 04/01/97 Received: 04/02/97 Analyzed: 04/11/97 Reported: 04/15/97
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QC Batch Number: GC041197BTEX22A  
Instrument ID: GCHP22

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

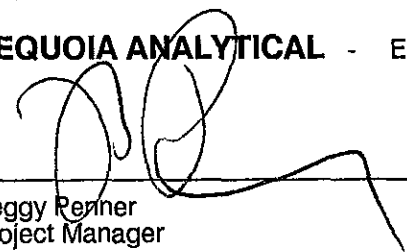
Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	2500	4800
Methyl t-Butyl Ether	125	810
Benzene	25	660
Toluene	25	N.D.
Ethyl Benzene	25	160
Xylenes (Total)	25	230
Chromatogram Pattern:		C6-C12

Surrogates	Control Limits %	% Recovery
Trifluorotoluene	70 130	100

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

**SEQUOIA ANALYTICAL** - ELAP #1210

  
Peggy Renner  
Project Manager





Blaine Tech Services 1680 Rogers Avenue San Jose, CA 95112	Client Proj. ID: Shell Oakland/970401X1 Sample Descript: EB Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9704222-13	Sampled: 04/01/97 Received: 04/02/97 Analyzed: 04/10/97 Reported: 04/15/97
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QC Batch Number: GC041097BTEX22A  
Instrument ID: GCHP22

**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:		
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
Trifluorotoluene	70 130	88

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

**SEQUOIA ANALYTICAL - ELAP #1210**

  
Peggy Penner  
Project Manager





Sequoia  
Analytical

680 Chesapeake Drive  
404 N. Wiget Lane  
819 Striker Avenue, Suite 8

Redwood City, CA 94063  
Walnut Creek, CA 94598  
Sacramento, CA 95834

(415) 364-9600  
(510) 988-9600  
(916) 921-9600

FAX (415) 364-9233  
FAX (510) 988-9673  
FAX (916) 921-0100

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

Client Proj. ID: Shell Oakland/970401X1

Received: 04/02/97

Lab Proj. ID: 9704222

Reported: 04/15/97

### LABORATORY NARRATIVE

In order to properly interpret this report, it must be reproduced in its entirety. This report contains a total of 17 pages including the laboratory narrative, sample results, quality control, and related documents as required (cover page, COC, raw data, etc.).

Please note: MTBE could not be quantitated for sample 9704222-03 due to co-eluting compounds.

SEQUOIA ANALYTICAL

Peggy Penner  
Project Manager





Blaine Tech Services, Inc.  
1680 Rogers Avenue  
San Jose, CA 95112  
Attention: Fran Thle

Client Project ID: Shell Oakland/970401X1  
Matrix: Liquid

Work Order #: 9704222 -01-07, -09, -11, -13

Reported: Apr 16, 1997

**QUALITY CONTROL DATA REPORT**

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes	Gas
QC Batch#:	GC041097BTEX22A	GC041097BTEX22A	GC041097BTEX22A	GC041097BTEX22A	GC041097BTEX22A
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020	EPA 8015M
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030	EPA 5030

Analyst:	A. Porter	A. Porter	A. Porter	A. Porter	A. Porter
MS/MSD #:	970405301	970405301	970405301	970405301	970405301
Sample Conc.:	N.D.	N.D.	N.D.	N.D.	N.D.
Prepared Date:	4/10/97	4/10/97	4/10/97	4/10/97	4/10/97
Analyzed Date:	4/10/97	4/10/97	4/10/97	4/10/97	4/10/97
Instrument I.D.#:	GCHP22	GCHP22	GCHP22	GCHP22	GCHP22
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L	60 µg/L
Result:	9.3	9.2	9.5	28	69
MS % Recovery:	93	92	95	93	115
Dup. Result:	9.9	9.8	10	29	71
MSD % Recov.:	99	98	100	97	115
RPD:	6.2	6.3	5.1	3.5	2.9
RPD Limit:	0-25	0-25	0-25	0-25	0-25

LCS #:	BLK041097	BLK041097	BLK041097	BLK041097	BLK041097
Prepared Date:	4/10/97	4/10/97	4/10/97	4/10/97	4/10/97
Analyzed Date:	4/10/97	4/10/97	4/10/97	4/10/97	4/10/97
Instrument I.D.#:	GCHP22	GCHP22	GCHP22	GCHP22	GCHP22
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L	60 µg/L
LCS Result:	10	10	10	30	73
LCS % Recov.:	100	100	100	100	122

MS/MSD	60-140	60-140	60-140	60-140	60-140
LCS	70-130	70-130	70-130	70-130	70-130
Control Limits					

**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.

**SEQUOIA ANALYTICAL**

*Peggy Penner*  
Project Manager

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

9704222.BLA <1>





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

Client Project ID: Shell Oakland/970401X1  
Matrix: Liquid

Work Order #: 9704222-08, -10, -12

Reported: Apr 16, 1997

### QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes	Gas
QC Batch#:	GC041197BTEX22A	GC041197BTEX22A	GC041197BTEX22A	GC041197BTEX22A	GC041197BTEX22A
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020	EPA 8015M
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030	EPA 5030
Analyst:	A. Porter	A. Porter	A. Porter	A. Porter	A. Porter
MS/MSD #:	970405302	970405302	970405302	970405302	970405302
Sample Conc.:	N.D.	N.D.	N.D.	N.D.	N.D.
Prepared Date:	4/11/97	4/11/97	4/11/97	4/11/97	4/11/97
Analyzed Date:	4/11/97	4/11/97	4/11/97	4/11/97	4/11/97
Instrument I.D.#:	GCHP22	GCHP22	GCHP22	GCHP22	GCHP22
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L	60 µg/L
Result:	10	10	9.8	29	71
MS % Recovery:	100	100	98	97	118
Dup. Result:	11	10	10	29	73
MSD % Recov.:	110	100	100	97	122
RPD:	9.5	0.0	2.0	0.0	2.8
RPD Limit:	0-25	0-25	0-25	0-25	0-25

LCS #:	BLK041197	BLK041197	BLK041197	BLK041197	BLK041197
Prepared Date:	4/11/97	4/11/97	4/11/97	4/11/97	4/11/97
Analyzed Date:	4/11/97	4/11/97	4/11/97	4/11/97	4/11/97
Instrument I.D.#:	GCHP22	GCHP22	GCHP22	GCHP22	GCHP22
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L	60 µg/L
LCS Result:	10	9.7	9.7	28	70
LCS % Recov.:	100	97	97	93	117

MS/MSD	60-140	60-140	60-140	60-140	60-140
LCS	70-130	70-130	70-130	70-130	70-130
Control Limits					

**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.

SEQUOIA ANALYTICAL

Peggy Fenner  
Project Manager

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

9704222.BLA <2>

