

**Shell Oil Products US**

November 14, 2002

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

**Subject: Shell-branded Service Station**  
230 West MacArthur Boulevard  
Oakland, California

**Alameda County**  
**NOV 19 2002**  
**Environmental Health**

Dear Ms. Drogos:

Attached for your review and comment is a copy of the *Third Quarter 2002 Monitoring Report* for the above referenced site. Upon information and belief, I declare, under penalty of perjury, that the information contained in the attached document is true and correct.

As always, please feel free to contact me directly at (559) 645-9306 with any questions or concerns.

Sincerely,

**Shell Oil Products US**

A handwritten signature in cursive script that reads "Karen Petryna".

Karen Petryna  
Sr. Environmental Engineer

14 November 2002

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

Re: **Third Quarter 2002 Monitoring Report**  
Shell-branded Service Station  
230 West MacArthur Boulevard  
Oakland, California  
Incident# 98995741  
Cambria Project# 244-0902-002



Dear Ms. Drogos:

On behalf of Equilon Enterprises LLC dba Shell Oil Products US (Shell), Cambria Environmental Technology, Inc. (Cambria) is submitting this groundwater monitoring report in accordance with the reporting requirements of 23 CCR 2652d.

## **THIRD QUARTER 2002 ACTIVITIES**

**Groundwater Monitoring:** Blaine Tech Services, Inc. (Blaine) of San Jose, California gauged and sampled all site wells, calculated groundwater elevations, and compiled the analytical data. Cambria prepared a site vicinity map which includes previously submitted well survey information (Figure 1) and a groundwater elevation contour map (Figure 2). Blaine's report, presenting the analytical laboratory reports, is included as Attachment A.

**AB 2886 Geotracker Well Survey:** Virgil Chavez Land Surveying of Vallejo, California surveyed the elevations, latitude and longitude of the site wells in compliance with the State AB 2886 requirements. The new surveyed elevations are incorporated into Blaine's table and this quarterly monitoring report.


Oakland, CA  
San Ramon, CA  
Sonoma, CA

**Cambria  
Environmental  
Technology, Inc.**

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

**ANTICIPATED FOURTH QUARTER 2002 ACTIVITIES**

**Groundwater Monitoring:** The fourth quarter sampling event is scheduled for December 2002. At that time, Blaine will gauge all wells, sample wells MW-2 and MW-4, and tabulate the data. Cambria will prepare a monitoring report. Wells MW-1 and MW-3 are sampled on an annual basis during the first quarterly groundwater monitoring event.



**Sensitive Receptor Survey, Conduit Study Report and Subsurface Investigation Work Plan:** Shell requested Cambria to conduct a sensitive receptor survey within a ½-mile radius of the site, perform a conduit study, and prepare a subsurface investigation work plan. The intent of the proposed offsite investigation is to evaluate the extent of methyl-tert-butyl ether (MTBE) impact to groundwater and potential transport to any nearby sensitive receptors. Cambria submitted the *Sensitive Receptor Survey, Conduit Study Report and Subsurface Investigation Work Plan* to your agency under separate cover on October 31, 2002. Proposed boring locations are shown on Figure 2.

**Joint Monitoring and Sampling with Adjacent Site:** Cambria recommends that the responsible party for the adjacent Oakland Auto Works site located at 240 West MacArthur Boulevard, survey the monitoring wells to the USGS datum, as required by the State AB 2886 Law (Geotracker) and conduct joint groundwater monitoring and sampling events with Shell to confirm groundwater flow patterns between the sites. Cambria also recommends that the responsible party for the 240 West MacArthur Boulevard site analyze the groundwater samples by EPA Method 8260 to confirm MTBE detections.

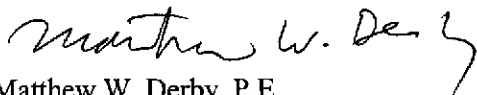
**CLOSING**

We appreciate the opportunity to work with you on this project. Please call Max Shahbazian at (510) 420-3344, if you should have any questions or comments.

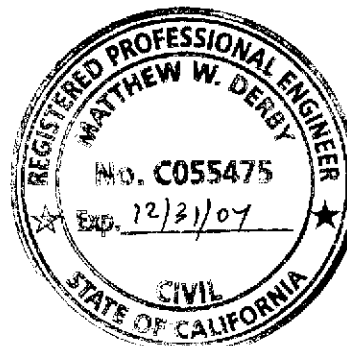
Sincerely,  
**Cambria Environmental Technology, Inc**



Max Shahbazian, R.G.  
Project Geologist



Matthew W. Derby, P.E.  
Senior Project Engineer



Figures: 1 - Vicinity/Area Well Survey Map  
2 - Groundwater Elevation Contour Map with Underground Utility and Proposed Monitoring Well Locations

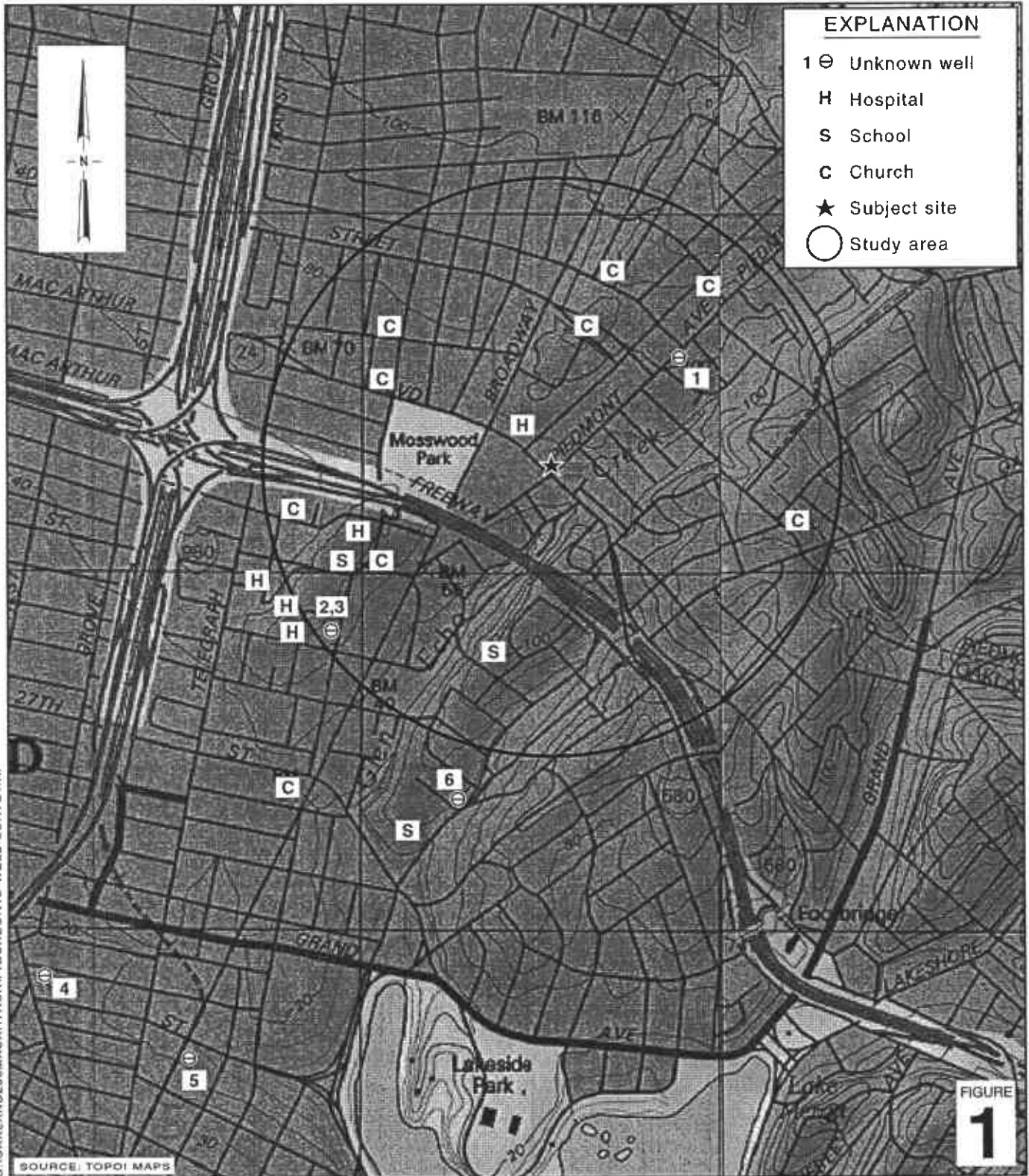
Attachment: A - Blaine Groundwater Monitoring Report

cc: Karen Petryna, Shell Oil Products US, P.O. Box 7869, Burbank, CA 91501-7869

G:\Oakland 230 MacArthur\QM\3q02\3q02qm.doc

**EXPLANATION**

- 1 ⊖ Unknown well
- H Hospital
- S School
- C Church
- ★ Subject site
- Study area



G:\OAKLAND\230MACARTHUR\FIGURES\VIC-WELL-SURVEY.AI

SOURCE: TOPOI MAPS

FIGURE 1

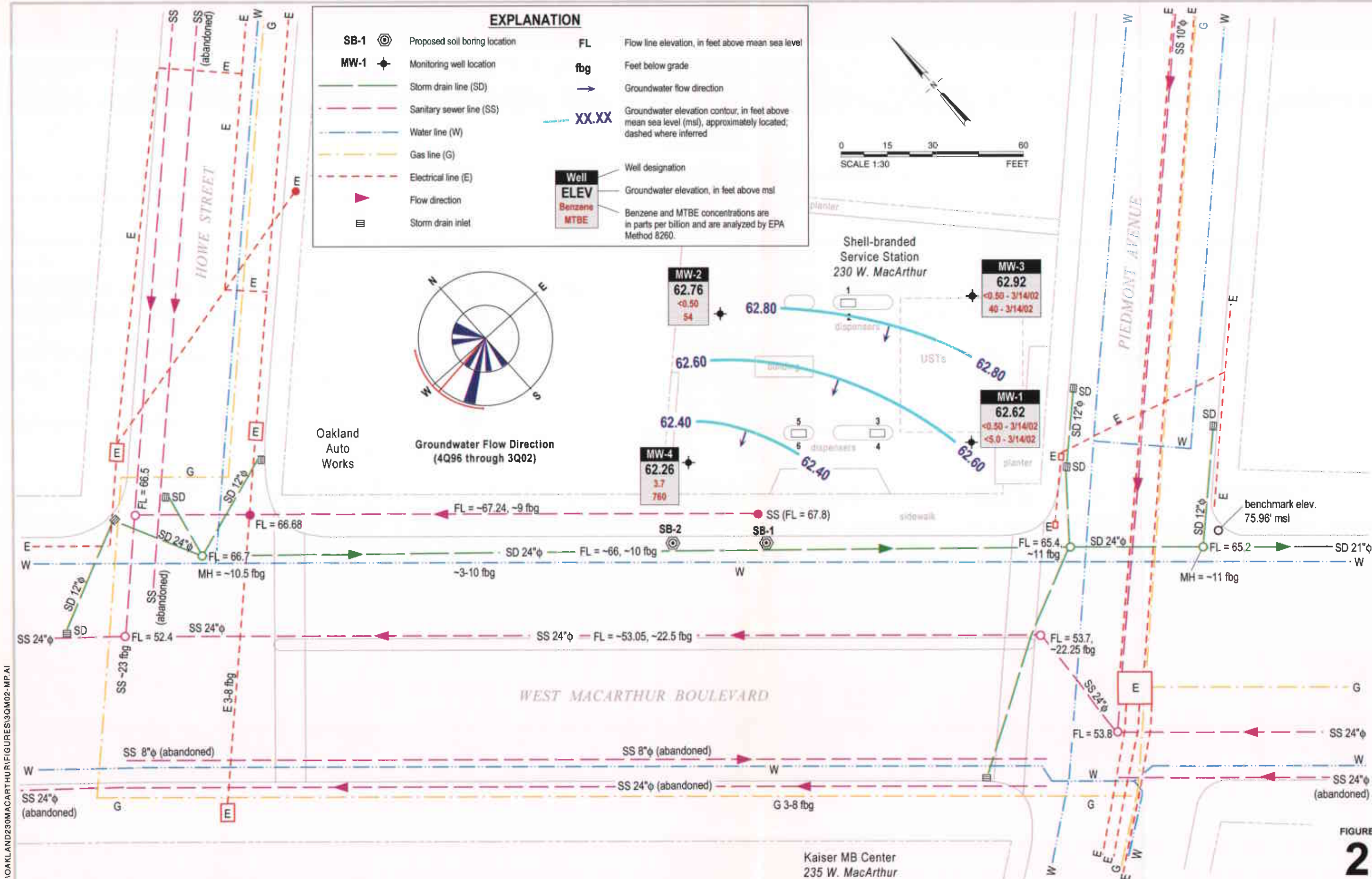
0 1/8 1/4 1/2 1  
SCALE : 1" = 1/4 MILE

**Shell-branded Service Station**  
 230 West MacArthur Boulevard  
 Oakland, California  
 Incident #98995741



C A M B R I A

**Vicinity/Area Well  
 Survey Map**  
 (1/2-Mile Radius)



**Groundwater Elevation Contour Map with  
Underground Utility and Proposed  
Monitoring Well Locations**

September 9, 2002



C A M B R I A

**Shell-branded Service Station**  
230 West MacArthur Boulevard  
Oakland, California  
Incident #98995741

**FIGURE 2**

G:\OAKLAND\230MACARTHUR\FIGURES\3Q02-MP.A1

**ATTACHMENT A**  
**Blaine Groundwater Monitoring Report**

**BLAINE**  
TECH SERVICES, INC.



1680 ROGERS AVENUE  
SAN JOSE, CA 95112-1105  
(408) 573-7771 FAX  
(408) 573-0555 PHONE  
CONTRACTOR'S LICENSE #746684  
www.blainetech.com

October 2, 2002

Karen Petryna  
Shell Oil Products US  
P.O. Box 7869  
Burbank, CA 92510-7869

Third Quarter 2002 Groundwater Monitoring at  
Shell-branded Service Station  
230 West MacArthur Blvd.  
Oakland, CA

Monitoring performed on September 9, 2002

---

Groundwater Monitoring Report 020909-EM-2

This report covers the routine monitoring of groundwater wells at this Shell-branded facility. In accordance with standard procedures that conform to Regional Water Quality Control Board requirements, routine field data collection includes depth to water, total well depth, thickness of any separate immiscible layer, water column volume, calculated purge volume (if applicable), elapsed evacuation time (if applicable), total volume of water removed (if applicable), and standard water parameter instrument readings. Sample material is collected, contained, stored, and transported to the laboratory in conformance with EPA standards. Purgewater (if applicable) is, likewise, collected and transported to the Martinez Refining Company.

Basic field information is presented alongside analytical values excerpted from the laboratory report in the cumulative table of **WELL CONCENTRATIONS**. The full analytical report for the most recent samples and the field data sheets are attached to this report.

At a minimum, Blaine Tech Services, Inc. field personnel are certified on completion of a forty-hour Hazardous Materials and Emergency Response training course per 29 CFR 1910.120. Field personnel are also enrolled in annual eight-hour refresher courses.



Blaine Tech Services, Inc. conducts sampling and documentation assignments of this type as an independent third party. Our activities at this site consisted of objective data and sample collection only. No interpretation of analytical results, defining of hydrological conditions or formulation of recommendations was performed.

Please call if you have any questions.

Yours truly,

Leon Gearhart  
Project Coordinator

LG/jt

attachments: Cumulative Table of WELL CONCENTRATIONS  
Certified Analytical Report  
Field Data Sheets

cc: Anni Kreml  
Cambria Environmental Technology, Inc.  
1144 65<sup>th</sup> Street, Suite C  
Oakland, CA 94608-2411

**WELL CONCENTRATIONS**  
**Shell-branded Service Station**  
**230 West MacArthur Boulevard**  
**Oakland, CA**

Well ID	Date	TPHg (ug/L)	B (ug/L)	T (ug/L)	E (ug/L)	X (ug/L)	MTBE 8020 (ug/L)	MTBE 8260 (ug/L)	TOC (MSL)	Depth to Water (ft)	GW Elevation (MSL)
MW-1	07/14/1988	ND	ND	ND	ND	ND	NA	NA	73.89	13.30	60.59
MW-1	10/04/1988	ND	8	4.3	ND	9	NA	NA	73.89	13.65	60.24
MW-1	11/10/1988	ND	ND	ND	ND	ND	NA	NA	73.89	13.55	60.34
MW-1	12/09/1988	ND	ND	ND	ND	ND	NA	NA	73.89	13.22	60.67
MW-1	01/10/1989	ND	ND	ND	ND	NA	NA	NA	73.89	12.86	61.03
MW-1	01/20/1989	ND	ND	NA	NA	ND	NA	NA	73.89	12.91	60.98
MW-1	02/06/1989	ND	ND	ND	ND	ND	NA	NA	73.89	12.94	60.95
MW-1	03/10/1989	ND	ND	ND	ND	ND	NA	NA	73.89	12.59	61.30
MW-1	06/06/1989	ND	ND	ND	ND	ND	NA	NA	73.89	14.05	59.84
MW-1	09/07/1989	ND	ND	ND	ND	ND	NA	NA	73.89	14.92	58.97
MW-1	12/18/1989	ND	ND	ND	ND	ND	NA	NA	73.89	14.88	59.01
MW-1	03/08/1990	ND	ND	ND	ND	ND	NA	NA	73.89	14.08	59.81
MW-1	06/07/1990	ND	ND	ND	ND	ND	NA	NA	73.89	13.89	60.00
MW-1	09/05/1990	ND	ND	ND	ND	ND	NA	NA	73.89	14.83	59.06
MW-1	12/03/1990	ND	ND	ND	ND	ND	NA	NA	73.89	15.05	58.84
MW-1	03/01/1991	ND	ND	ND	ND	ND	NA	NA	73.89	14.34	59.55
MW-1	06/03/1991	ND	ND	ND	ND	ND	NA	NA	73.89	14.16	59.73
MW-1	09/04/1991	ND	ND	ND	ND	ND	NA	NA	73.89	14.60	59.29
MW-1	03/13/1992	ND	ND	ND	ND	ND	NA	NA	73.89	13.40	60.49
MW-1	06/03/1992	ND	ND	ND	ND	ND	NA	NA	73.89	13.76	60.13
MW-1	08/19/1992	87	ND	ND	ND	ND	NA	NA	73.89	14.57	59.32
MW-1	11/16/1992	ND	ND	ND	ND	ND	NA	NA	73.89	14.78	59.11
MW-1	02/18/1993	59a	ND	ND	ND	ND	NA	NA	73.89	12.14	61.75
MW-1	06/01/1993	ND	ND	ND	ND	ND	NA	NA	73.89	13.30	60.59
MW-1	08/30/1993	ND	ND	ND	ND	ND	NA	NA	73.89	14.32	59.57
MW-1	12/13/1993	ND	ND	ND	ND	ND	NA	NA	73.89	14.06	59.83
MW-1	03/03/1994	100	ND	ND	ND	ND	NA	NA	73.89	13.12	60.77

**WELL CONCENTRATIONS**  
**Shell-branded Service Station**  
**230 West MacArthur Boulevard**  
**Oakland, CA**

Well ID	Date	TPHg (ug/L)	B (ug/L)	T (ug/L)	E (ug/L)	X (ug/L)	MTBE 8020 (ug/L)	MTBE 8260 (ug/L)	TOC (MSL)	Depth to Water (ft)	GW Elevation (MSL)
---------	------	----------------	-------------	-------------	-------------	-------------	------------------------	------------------------	--------------	---------------------------	--------------------------

MW-1	06/06/1994	ND	ND	ND	ND	ND	NA	NA	73.89	14.20	59.69
MW-1	09/12/1994	ND	ND	ND	ND	ND	NA	NA	73.89	15.72	58.17
MW-1	12/15/1994	ND	ND	ND	ND	ND	NA	NA	73.89	12.98	60.91
MW-1	3/13/1995 b	60	4.7	9.8	ND	2.9	NA	NA	73.89	11.74	62.15
MW-1	04/21/1995	ND	ND	ND	ND	ND	NA	NA	73.89	NA	NA
MW-1	06/26/1995	ND	ND	ND	ND	ND	NA	NA	73.89	13.00	60.89
MW-1	09/12/1995	ND	ND	ND	ND	ND	NA	NA	73.89	14.14	59.75
MW-1	03/21/1996	<50	<0.5	<0.5	<0.5	<0.5	ND	NA	73.89	11.03	62.86
MW-1	06/28/1996	<50	<0.5	<0.5	<0.5	<0.5	<2.5	NA	73.89	13.53	60.36
MW-1	09/19/1996	<50	<0.5	<0.5	<0.5	<0.5	<2.5	NA	73.89	14.33	59.56
MW-1	12/19/1996	NA	NA	NA	NA	NA	NA	NA	73.89	13.20	60.69
MW-1	12/05/1997	NA	NA	NA	NA	NA	NA	NA	73.89	12.39	61.50
MW-1	12/24/1998	NA	NA	NA	NA	NA	NA	NA	73.89	13.59	60.30
MW-1	12/23/1999	NA	NA	NA	NA	NA	NA	NA	73.89	15.63	58.26
MW-1	12/11/2000	NA	NA	NA	NA	NA	NA	NA	73.89	15.36	58.53
MW-1	12/27/2001	NA	NA	NA	NA	NA	NA	NA	73.89	12.09	61.80
MW-1	03/12/2002	NA	NA	NA	NA	NA	NA	NA	73.89	12.33	61.56
MW-1	03/14/2002	<50	<0.50	<0.50	<0.50	<0.50	NA	<5.0	73.89	12.08	61.81
MW-1	06/13/2002	NA	NA	NA	NA	NA	NA	NA	73.89	13.47	60.42
MW-1	09/09/2002	NA	NA	NA	NA	NA	NA	NA	76.92	14.30	62.62

MW-2	07/14/1988	ND	7.9	2.6	1.1	4	NA	NA	75.24	15.18	60.06
MW-2	10/04/1988	90	ND	1.3	2.3	12	NA	NA	75.24	15.30	59.94
MW-2	11/10/1988	ND	ND	ND	ND	2	NA	NA	75.24	15.17	60.07
MW-2	12/09/1988	ND	ND	0.6	ND	3	NA	NA	75.24	14.82	60.42
MW-2	01/20/1989	ND	ND	ND	ND	ND	NA	NA	75.24	14.54	60.70
MW-2	02/06/1989	NA	ND	ND	ND	ND	NA	NA	75.24	14.59	60.65

**WELL CONCENTRATIONS**  
**Shell-branded Service Station**  
**230 West MacArthur Boulevard**  
**Oakland, CA**

Well ID	Date	TPHg (ug/L)	B (ug/L)	T (ug/L)	E (ug/L)	X (ug/L)	MTBE 8020 (ug/L)	MTBE 8260 (ug/L)	TOC (MSL)	Depth to Water (ft)	GW Elevation (MSL)
MW-2	03/10/1989	ND	ND	ND	ND	ND	NA	NA	75.24	14.88	60.36
MW-2	06/06/1989	ND	ND	0.5	ND	ND	NA	NA	75.24	15.30	59.94
MW-2	09/07/1989	ND	ND	ND	ND	ND	NA	NA	75.24	16.76	58.48
MW-2	12/18/1989	ND	ND	ND	ND	ND	NA	NA	75.24	16.65	58.59
MW-2	03/08/1990	ND	ND	ND	ND	ND	NA	NA	75.24	15.92	59.32
MW-2	06/07/1990	ND	ND	ND	ND	ND	NA	NA	75.24	16.10	59.14
MW-2	09/05/1990	ND	ND	ND	ND	ND	NA	NA	75.24	16.61	58.63
MW-2	12/03/1990	ND	ND	ND	ND	ND	NA	NA	75.24	17.06	58.18
MW-2	03/01/1991	ND	ND	ND	ND	ND	NA	NA	75.24	16.62	58.62
MW-2	06/03/1991	ND	ND	ND	ND	ND	NA	NA	75.24	16.65	58.59
MW-2	09/04/1991	ND	ND	ND	ND	ND	NA	NA	75.24	16.57	58.67
MW-2	03/13/1992	ND	ND	ND	ND	ND	NA	NA	75.24	14.66	60.58
MW-2	06/03/1992	ND	ND	ND	ND	ND	NA	NA	75.24	15.90	59.34
MW-2	08/19/1992	67	ND	ND	ND	ND	NA	NA	75.24	16.72	58.52
MW-2	11/16/1992	50	ND	ND	ND	1.2	NA	NA	75.24	16.66	58.58
MW-2	02/18/1993	52a	ND	ND	ND	ND	NA	NA	75.24	13.88	61.36
MW-2 (D)	02/18/1993	52a	ND	ND	ND	ND	NA	NA	75.24	13.88	61.36
MW-2	06/01/1993	ND	ND	ND	ND	ND	NA	NA	75.24	14.74	60.50
MW-2	08/30/1993	70a	ND	ND	ND	ND	NA	NA	75.24	15.85	59.39
MW-2	12/13/1993	68a	ND	ND	ND	ND	NA	NA	75.24	15.83	59.41
MW-2	03/03/1994	280a	ND	ND	ND	ND	NA	NA	75.24	14.80	60.44
MW-2	06/06/1994	ND	ND	ND	ND	ND	NA	NA	75.24	16.65	58.59
MW-2	09/12/1994	ND	ND	ND	ND	ND	NA	NA	75.24	16.72	58.52
MW-2	12/15/1994	230a	ND	ND	ND	ND	NA	NA	75.24	15.25	59.99
MW-2	03/13/1995	ND	2.9	6.3	ND	2.7	NA	NA	75.24	15.32	59.92
MW-2	04/21/1995	ND	ND	ND	ND	ND	NA	NA	75.24	NA	NA
MW-2	06/26/1995	ND	ND	ND	ND	ND	NA	NA	75.24	14.65	60.59

**WELL CONCENTRATIONS**  
**Shell-branded Service Station**  
**230 West MacArthur Boulevard**  
**Oakland, CA**

Well ID	Date	TPHg (ug/L)	B (ug/L)	T (ug/L)	E (ug/L)	X (ug/L)	MTBE 8020 (ug/L)	MTBE 8260 (ug/L)	TOC (MSL)	Depth to Water (ft)	GW Elevation (MSL)
---------	------	----------------	-------------	-------------	-------------	-------------	------------------------	------------------------	--------------	---------------------------	--------------------------

MW-2	09/12/1995	ND	ND	ND	ND	ND	NA	NA	75.24	15.78	59.46
MW-2	03/21/1996	<50	<0.5	<0.5	<0.5	<0.5	ND	NA	75.24	12.72	62.52
MW-2	06/28/1996	<50	<0.5	<0.5	<0.5	<0.5	160	NA	75.24	14.95	60.29
MW-2	09/19/1996	<50	<0.5	<0.5	<0.5	<0.5	27	NA	75.24	15.64	59.60
MW-2	12/19/1996	NA	NA	NA	NA	NA	NA	NA	75.24	14.47	60.77
MW-2	12/05/1997	NA	NA	NA	NA	NA	NA	NA	75.24	14.22	61.02
MW-2	12/24/1998	NA	NA	NA	NA	NA	NA	NA	75.24	14.97	60.27
MW-2	12/23/1999	NA	NA	NA	NA	NA	NA	NA	75.24	16.07	59.17
MW-2	12/11/2000	NA	NA	NA	NA	NA	NA	NA	75.24	15.78	59.46
MW-2	12/27/2001	NA	NA	NA	NA	NA	NA	95	75.24	14.25	60.99
MW-2	03/14/2002	120	<0.50	<0.50	<0.50	<0.50	NA	31	75.24	14.59	60.65
MW-2	06/13/2002	100	<0.50	<0.50	<0.50	<0.50	NA	32	75.24	14.58	60.66
<b>MW-2</b>	<b>09/09/2002</b>	<b>90</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>NA</b>	<b>54</b>	<b>78.25</b>	<b>15.49</b>	<b>62.76</b>

MW-3	07/14/1988	ND	ND	ND	ND	ND	NA	NA	74.68	14.05	60.63
MW-3	10/04/1988	ND	ND	ND	ND	5	NA	NA	74.68	14.60	60.08
MW-3	11/10/1988	ND	ND	ND	ND	ND	NA	NA	74.68	14.35	60.33
MW-3	12/09/1988	ND	ND	ND	ND	ND	NA	NA	74.68	14.04	60.64
MW-3	01/10/1989	ND	ND	ND	ND	NA	NA	NA	74.68	13.70	60.98
MW-3	01/20/1989	NA	NA	ND	ND	ND	NA	NA	74.68	13.72	60.96
MW-3	02/08/1989	70	ND	ND	ND	ND	NA	NA	74.68	13.75	60.93
MW-3	03/10/1989	150	ND	ND	ND	ND	NA	NA	74.68	13.42	61.26
MW-3	06/06/1989	ND	ND	ND	ND	ND	NA	NA	74.68	14.52	60.16
MW-3	09/07/1989	ND	0.65	ND	ND	ND	NA	NA	74.68	15.52	59.16
MW-3	12/18/1989	46	1.3	ND	0.44	0.66	NA	NA	74.68	19.59	55.09
MW-3	03/08/1990	ND	ND	ND	ND	ND	NA	NA	74.68	14.72	59.96
MW-3	06/07/1990	ND	ND	ND	ND	ND	NA	NA	74.68	14.65	60.03

**WELL CONCENTRATIONS**  
**Shell-branded Service Station**  
**230 West MacArthur Boulevard**  
**Oakland, CA**

Well ID	Date	TPHg (ug/L)	B (ug/L)	T (ug/L)	E (ug/L)	X (ug/L)	MTBE 8020 (ug/L)	MTBE 8260 (ug/L)	TOC (MSL)	Depth to Water (ft)	GW Elevation (MSL)
MW-3	09/05/1990	ND	ND	ND	ND	ND	NA	NA	74.68	15.51	59.17
MW-3	12/03/1990	ND	ND	ND	ND	ND	NA	NA	74.68	14.85	59.83
MW-3	03/01/1991	1.9	59	ND	22	ND	NA	NA	74.68	14.92	59.76
MW-3	06/03/1991	ND	ND	ND	ND	ND	NA	NA	74.68	14.75	59.93
MW-3	09/04/1991	ND	ND	ND	ND	ND	NA	NA	74.68	15.14	59.54
MW-3	03/13/1992	ND	ND	ND	ND	ND	NA	NA	74.68	13.50	61.18
MW-3	06/03/1992	ND	ND	ND	ND	ND	NA	NA	74.68	14.39	60.29
MW-3	08/19/1992	92	ND	ND	ND	ND	NA	NA	74.68	15.08	59.60
MW-3 (D)	08/19/1992	76	ND	ND	ND	ND	NA	NA	74.68	15.08	59.60
MW-3	11/16/1992	200a	ND	ND	ND	ND	NA	NA	74.68	15.43	59.25
MW-3 (D)	11/16/1992	140a	ND	ND	ND	ND	NA	NA	74.68	15.43	59.25
MW-3	02/18/1993	680a	ND	ND	ND	ND	NA	NA	74.68	12.96	61.72
MW-3	06/01/1993	160a	ND	ND	ND	ND	NA	NA	74.68	13.98	60.70
MW-3 (D)	06/01/1993	150a	ND	ND	ND	ND	NA	NA	74.68	13.98	60.70
MW-3	08/30/1993	110a	ND	ND	ND	ND	NA	NA	74.68	14.82	59.86
MW-3	12/13/1993	140a	ND	ND	ND	ND	NA	NA	74.68	14.70	59.98
MW-3 (D)	12/13/1993	110a	ND	ND	ND	ND	NA	NA	74.68	14.70	59.98
MW-3	03/03/1994	61a	ND	ND	ND	ND	NA	NA	74.68	13.92	60.76
MW-3	06/06/1994	ND	ND	ND	ND	ND	NA	NA	74.68	14.73	59.95
MW-3	09/12/1994	ND	ND	ND	ND	ND	NA	NA	74.68	15.42	59.26
MW-3	12/15/1994	ND	ND	0.9	ND	0.6	NA	NA	74.68	13.80	60.88
MW-3	03/13/1995	100a	7.9	17	0.7	6.1	NA	NA	74.68	12.41	62.27
MW-3	04/21/1995	60	0.9	1.1	ND	1	NA	NA	74.68	NA	NA
MW-3	06/26/1995	ND	ND	ND	ND	ND	NA	NA	74.68	13.79	60.89
MW-3	09/12/1995 b	ND	ND	ND	ND	ND	NA	NA	74.68	14.77	59.91
MW-3	03/21/1996	<50	<0.5	<0.5	<0.5	<0.5	17	NA	74.68	11.80	62.88
MW-3	06/28/1996	<50	<0.5	<0.5	<0.5	<0.5	<0.5	NA	74.68	14.19	60.49

**WELL CONCENTRATIONS**  
**Shell-branded Service Station**  
**230 West MacArthur Boulevard**  
**Oakland, CA**

Well ID	Date	TPHg (ug/L)	B (ug/L)	T (ug/L)	E (ug/L)	X (ug/L)	MTBE 8020 (ug/L)	MTBE 8260 (ug/L)	TOC (MSL)	Depth to Water (ft)	GW Elevation (MSL)
---------	------	----------------	-------------	-------------	-------------	-------------	------------------------	------------------------	--------------	---------------------------	--------------------------

MW-3	09/19/1996	<50	<0.5	<0.5	<0.5	<0.5	<2.5	NA	74.68	14.85	59.83
MW-3	12/19/1996	NA	NA	NA	NA	NA	NA	NA	74.68	13.61	61.07
MW-3	12/05/1997	NA	NA	NA	NA	NA	NA	NA	74.68	13.16	61.52
MW-3	12/24/1998	NA	NA	NA	NA	NA	NA	NA	74.68	14.08	60.60
MW-3	12/23/1999	NA	NA	NA	NA	NA	NA	NA	74.68	15.92	58.76
MW-3	12/11/2000	NA	NA	NA	NA	NA	NA	NA	74.68	15.31	59.37
MW-3	12/27/2001	NA	NA	NA	NA	NA	NA	NA	74.68	12.84	61.84
MW-3	03/12/2002	NA	NA	NA	NA	NA	NA	NA	74.68	12.54	62.14
MW-3	03/14/2002	<50	<0.50	<0.50	<0.50	<0.50	NA	40	74.68	12.78	61.90
MW-3	06/13/2002	NA	NA	NA	NA	NA	NA	NA	74.68	14.06	60.62
<b>MW-3</b>	<b>09/09/2002</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>77.69</b>	<b>14.77</b>	<b>62.92</b>

MW-4	01/23/1990	1,600	100	10	30	20	NA	NA	73.83	14.68	59.15
MW-4	03/08/1990	4,200	260	18	88	39	NA	NA	73.83	14.38	59.45
MW-4	06/07/1990	2,000	150	6.9	14	17	NA	NA	73.83	14.27	59.56
MW-4	09/05/1990	1,700	130	10	7.2	19	NA	NA	73.83	15.40	58.43
MW-4	12/03/1990	2,600	108	41	17	59	NA	NA	73.83	15.90	57.93
MW-4	06/03/1991	2,800	160	15	8.8	32	NA	NA	73.83	14.60	59.23
MW-4	09/04/1991	Sheen	NA	NA	NA	NA	NA	NA	73.83	15.25	58.58
MW-4	03/13/1992	2,700	180	70	5.9	29	NA	NA	73.83	12.72	61.11
MW-4	06/03/1992	1,700	190	ND	30	23	NA	NA	73.83	14.33	59.50
MW-4	08/19/1992	170	4.2	ND	0.6	1	NA	NA	73.83	15.18	58.65
MW-4	11/16/1992	2,600	92	49	50	81	NA	NA	73.83	15.39	58.44
MW-4	02/18/1993	7,400	120	38	51	87	NA	NA	73.83	12.62	61.21
MW-4	06/01/1993	7,000	1,800	1,700	1,600	1,700	NA	NA	73.83	13.68	60.15
MW-4	08/30/1993	2,100	80	11	ND	11	NA	NA	73.83	14.83	59.00
MW-4 (D)	08/30/1993	2,100	77	5.6	ND	5.5	NA	NA	73.83	14.83	59.00

**WELL CONCENTRATIONS**  
**Shell-branded Service Station**  
**230 West MacArthur Boulevard**  
**Oakland, CA**

Well ID	Date	TPHg (ug/L)	B (ug/L)	T (ug/L)	E (ug/L)	X (ug/L)	MTBE 8020 (ug/L)	MTBE 8260 (ug/L)	TOC (MSL)	Depth to Water (ft)	GW Elevation (MSL)
MW-4	12/13/1993	2,000a	20	ND	21	52	NA	NA	73.83	14.50	59.33
MW-4	03/03/1994	3,500	150	86	85	90	NA	NA	73.83	13.48	60.35
MW-4 (D)	03/03/1994	3,200	130	73	74	76	NA	NA	73.83	13.48	60.35
MW-4	06/06/1994	590	25	ND	ND	ND	NA	NA	73.83	14.26	59.57
MW-4 (D)	06/06/1994	400	16	ND	ND	ND	NA	NA	73.83	14.26	59.57
MW-4	09/12/1994	1,800	42	ND	3.7	4.7	NA	NA	73.83	15.42	58.41
MW-4 (D)	09/12/1994	2,000	40	ND	5.7	8	NA	NA	73.83	15.42	58.41
MW-4	12/15/1994	2,900	78	14	94	17	NA	NA	73.83	13.43	60.40
MW-4 (D)	12/15/1994	2,900	90	7	96	18	NA	NA	73.83	13.43	60.40
MW-4	03/13/1995	2,700	240	24	99	34	NA	NA	73.83	12.13	61.70
MW-4 (D)	03/13/1995	2,500	300	24	140	28	NA	NA	73.83	12.13	61.70
MW-4	06/25/1995	2,100	87	10	67	25	NA	NA	73.83	13.26	60.57
MW-4 (D)	06/25/1995	2,300	92	12	74	26	NA	NA	73.83	13.26	60.57
MW-4	09/12/1995 b	1,300	33	13	9.3	15	NA	NA	73.83	14.64	59.19
MW-4 (D)	09/12/1995 b	1,500	2.1	16	11	17	NA	NA	73.83	14.64	59.19
MW-4	03/21/1996	2,100	50	3.2	40	5.4	ND	NA	73.83	11.55	62.28
MW-4 (D)	03/21/1996	1,700	24	<0.5	39	7.2	740	NA	73.83	11.55	62.28
MW-4	06/28/1996	1,300	61	6.2	53	11	1,000	NA	73.83	13.86	59.97
MW-4 (D)	06/28/1996	1,200	29	6.2	50	8.3	1,000	NA	73.83	13.86	59.97
MW-4	09/19/1996	820	12	<2.5	2.8	4.3	720	NA	73.83	14.72	59.11
MW-4 (D)	09/19/1996	580	9.6	<2.5	<2.5	<2.5	760	1,200	73.83	14.72	59.11
MW-4	12/19/1996	1,200	28	<5.0	<5.0	<5.0	<25	NA	73.83	13.06	60.77
MW-4	12/05/1997	1,900	36	9	16	18	630	NA	73.83	12.89	60.94
MW-4	12/24/1998	1,100	23	5.3	38	7.9	1,100	NA	73.83	13.92	59.91
MW-4	12/17/1999	1,100	22	21	13	11	3,800	3,200	73.83	14.28	59.55
MW-4	12/23/1999	NA	NA	NA	NA	NA	NA	NA	73.83	16.24	57.59
MW-4	12/11/2000	975	25.0	11.3	<5.00	<5.00	1960	1730c	73.83	14.15	59.68



**WELL CONCENTRATIONS**  
**Shell-branded Service Station**  
**230 West MacArthur Boulevard**  
**Oakland, CA**

Well ID	Date	TPHg (ug/L)	B (ug/L)	T (ug/L)	E (ug/L)	X (ug/L)	MTBE 8020 (ug/L)	MTBE 8260 (ug/L)	TOC (MSL)	Depth to Water (ft)	GW Elevation (MSL)
MW-4	12/27/2001	2,000	9.9	<5.0	18	<5.0	NA	1,400	73.83	12.61	61.22
MW-4	03/14/2002	1,700	6.6	<2.0	2.1	2.1	NA	1,100	73.83	12.35	61.48
MW-4	06/13/2002	1,200	4.7	<2.0	<2.0	<2.0	NA	1,100	73.83	13.72	60.11
<b>MW-4</b>	<b>09/09/2002</b>	<b>620</b>	<b>3.7</b>	<b>&lt;2.0</b>	<b>&lt;2.0</b>	<b>&lt;2.0</b>	<b>NA</b>	<b>760</b>	<b>76.82</b>	<b>14.56</b>	<b>62.26</b>

Abbreviations:

TPHg = Total petroleum hydrocarbons as gasoline by EPA Method 8260B; prior to December 27, 2001, by EPA Method 8015.

BTEX = Benzene, toluene, ethylbenzene, xylenes by EPA Method 8260B; prior to December 27, 2001, by EPA Method 8020.

MTBE = Methyl-tertiary-butyl ether

TOC = Top of Casing Elevation

GW = Groundwater

ug/L = Parts per billion

MSL = Mean sea level

ft = Feet

<n = Below detection limit

D = Duplicate sample

ND = Not detected at or above the quantitative limit.

NA = Not applicable

Notes:

a = Chromatogram pattern indicates the presence of an unidentified hydrocarbon.

b = The laboratory noted the sample was analyzed after the method specified holding time.

c = This sample was analyzed outside of EPA recommended hold time.

Site surveyed January 30, 2002, by Virgil Chavez Land Surveying of Vallejo, California.



Report Number : 28515

Date : 9/17/2002

Leon Gearhart  
Blaine Tech Services  
1680 Rogers Avenue  
San Jose, CA 95112-1105

Subject : 2 Water Samples  
Project Name : 230 W. MacArthur Blvd., Oakland  
Project Number : 020909-EM2  
P.O. Number : 98995741

Dear Mr. Gearhart,

Chemical analysis of the samples referenced above has been completed. Summaries of the data are contained on the following pages. Sample(s) were received under documented chain-of-custody. US EPA protocols for sample storage and preservation were followed.

Kiff Analytical is certified by the State of California (# 2236). If you have any questions regarding procedures or results, please call me at 530-297-4800.

Sincerely,



Joel Kiff



Report Number : 28515

Date : 9/17/2002

Subject : 2 Water Samples  
Project Name : 230 W. MacArthur Blvd., Oakland  
Project Number : 020909-EM2  
P.O. Number : 98995741

## Case Narrative

Hydrocarbons reported as TPH as Gasoline do not exhibit a typical Gasoline chromatographic pattern for sample MW-2.

  
Approved By: Joel Kiff



Report Number : 28515

Date : 9/17/2002

Project Name : 230 W. MacArthur Blvd., Oakland

Project Number : 020909-EM2

Sample : MW-2

Matrix : Water

Lab Number : 28515-01

Sample Date :9/9/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	9/15/2002
Toluene	< 0.50	0.50	ug/L	EPA 8260B	9/15/2002
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	9/15/2002
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	9/15/2002
Methyl-t-butyl ether (MTBE)	54	5.0	ug/L	EPA 8260B	9/15/2002
TPH as Gasoline	90	50	ug/L	EPA 8260B	9/15/2002
Toluene - d8 (Surr)	109		% Recovery	EPA 8260B	9/15/2002
4-Bromofluorobenzene (Surr)	96.7		% Recovery	EPA 8260B	9/15/2002

Sample : MW-4

Matrix : Water

Lab Number : 28515-02

Sample Date :9/9/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	3.7	2.0	ug/L	EPA 8260B	9/17/2002
Toluene	< 2.0	2.0	ug/L	EPA 8260B	9/17/2002
Ethylbenzene	< 2.0	2.0	ug/L	EPA 8260B	9/17/2002
Total Xylenes	< 2.0	2.0	ug/L	EPA 8260B	9/17/2002
Methyl-t-butyl ether (MTBE)	760	20	ug/L	EPA 8260B	9/17/2002
TPH as Gasoline	620	200	ug/L	EPA 8260B	9/17/2002
Toluene - d8 (Surr)	97.4		% Recovery	EPA 8260B	9/17/2002
4-Bromofluorobenzene (Surr)	94.8		% Recovery	EPA 8260B	9/17/2002

Approved By:  Joel Kiff

Report Number : 28515

Date : 9/17/2002

**QC Report : Method Blank Data**

**Project Name : 230 W. MacArthur Blvd., Oakland**

**Project Number : 020909-EM2**

<u>Parameter</u>	<u>Measured Value</u>	<u>Method Reporting Limit</u>	<u>Units</u>	<u>Analysis Method</u>	<u>Date Analyzed</u>
Benzene	< 0.50	0.50	ug/L	EPA 8260B	9/15/2002
Toluene	< 0.50	0.50	ug/L	EPA 8260B	9/15/2002
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	9/15/2002
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	9/15/2002
Methyl-t-butyl ether (MTBE)	< 5.0	5.0	ug/L	EPA 8260B	9/15/2002
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	9/15/2002
Toluene - d8 (Surr)	109		%	EPA 8260B	9/15/2002
4-Bromofluorobenzene (Surr)	95.5		%	EPA 8260B	9/15/2002

<u>Parameter</u>	<u>Measured Value</u>	<u>Method Reporting Limit</u>	<u>Units</u>	<u>Analysis Method</u>	<u>Date Analyzed</u>
------------------	-----------------------	-------------------------------	--------------	------------------------	----------------------

Approved By: Joel Kiff

KIFF ANALYTICAL, LLC

720 Olive Drive, Suite D Davis, CA 95616 530-297-4800

Report Number: 28515

Date: 9/17/2002

QC Report : Matrix Spike/ Matrix Spike Duplicate

Project Name : 230 W. MacArthur Blvd.,

Project Number : 020909-EM2

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
Benzene	28570-18	12	40.0	40.0	54.6	54.3	ug/L	EPA 8260B	9/15/02	107	106	0.847	70-130	25
Toluene	28570-18	<0.50	40.0	40.0	47.0	46.6	ug/L	EPA 8260B	9/15/02	117	116	0.791	70-130	25
Tert-Butanol	28570-18	<5.0	200	200	203	217	ug/L	EPA 8260B	9/15/02	102	108	6.32	70-130	25
Methyl-t-Butyl Ether	28570-18	4.5	40.0	40.0	40.8	41.1	ug/L	EPA 8260B	9/15/02	90.8	91.6	0.905	70-130	25



Approved By: Joel Kiff

KIFF ANALYTICAL, LLC

720 Olive Drive, Suite D Davis, CA 95616 530-297-4800

Report Number : 28515

Date : 9/17/2002

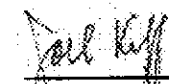
QC Report : Laboratory Control Sample (LCS)

Project Name : 230 W. MacArthur Blvd.,

Project Number : 020909-EM2

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
Benzene	40.0	ug/L	EPA 8260B	9/15/02	97.4	70-130
Toluene	40.0	ug/L	EPA 8260B	9/15/02	109	70-130
Tert-Butanol	200	ug/L	EPA 8260B	9/15/02	93.2	70-130
Methyl-t-Butyl Ether	40.0	ug/L	EPA 8260B	9/15/02	82.4	70-130

KIFF ANALYTICAL, LLC

Approved By:   
Joel Kiff

## CHAIN OF CUSTODY RECORD

Lab Identification (if necessary):

Address:

City, State, Zip:

Shell Project Manager to be invoiced:

SCIENCE & ENGINEERING  
 TECHNICAL SERVICES  
 CRMT HOUSTON

Karen Petryna

28515

INCIDENT NUMBER (SAE ONLY)

9 8 9 9 5 7 4 1

SAP or CRMT NUMBER (ITS/CRMT)

DATE: 9/9/02

PAGE: 1 of 1

SAMPLING COMPANY: <b>Blaine Tech Services</b>		LOG CODE: <b>BTSS</b>		SITE ADDRESS (Street and City): <b>230 W. MacArthur Blvd., Oakland</b>			GLOBAL ID NO.: <b>T0600101240</b>									
ADDRESS: <b>1680 Rogers Avenue, San Jose, CA 95112</b>				EDF DELIVERABLE TO (Responsible Party or Designee): <b>Anni Kremi</b>			PHONE NO.: <b>(510) 420-3335</b>		E-MAIL: <b>ShellOaklandEDF@cambria-env.com</b>	CONSULTANT PROJECT NO.: <b>020709-002</b>						
PROJECT CONTACT (Hardcopy or PDF Report to): <b>Leon Gearhart</b>				SAMPLER NAME(S) (Print): <b>EDTC M. R. BYRNOLDS</b>			LAB USE ONLY			BTS #						
TELEPHONE: <b>408-573-0555</b>		FAX: <b>408-573-7771</b>		E-MAIL: <b>lgearhart@blainetech.com</b>												
TURNAROUND TIME (BUSINESS DAYS): <input checked="" type="checkbox"/> 10 DAYS <input type="checkbox"/> 5 DAYS <input type="checkbox"/> 72 HOURS <input type="checkbox"/> 48 HOURS <input type="checkbox"/> 24 HOURS <input type="checkbox"/> LESS THAN 24 HOURS																
<b>REQUESTED ANALYSIS</b>																
<input type="checkbox"/> LA - RWQCB REPORT FORMAT <input type="checkbox"/> UST AGENCY: _____ GC/MS MTBE CONFIRMATION: HIGHEST _____ HIGHEST per BORING _____ ALL _____ SPECIAL INSTRUCTIONS OR NOTES: CHECK BOX IF EDD IS <u>NOT</u> NEEDED <input type="checkbox"/>																
LAB USE ONLY	Field Sample Identification					TPH - Gas, Purgeable	BTX	MTBE (#021B - 5ppb RL)	MTBE (#260B - 0.5ppb RL)	Oxygenates (5) by (#260B)	Ethanol (#260B)	Methanol	EDB & 1,2-DCA (#260B)	FIELD NOTES: Container/Preservative or PID Readings or Laboratory Notes  TEMPERATURE ON RECEIPT C°		
			DATE	TIME	MATRIX	NO. OF CONT.										
	mw-2		9/9	1330	w	3	X	X	X					501		
	mw-4		9/9	1340	w	3	X	X	X					-02		
Relinquished by: (Signature)			Received by: (Signature)			Date:		Time:								
Relinquished by: (Signature)			Received by: (Signature)			Date:		Time:								
Relinquished by: (Signature)			Received by: (Signature)			Date:		Time:								

DISTRIBUTION: White with final report, Green to File, Yellow and Pink to Client.

10/18/00 Revision

C&C Grponic (714) 898-9702