



November 29, 2002

120486

Alameda County
DEC 26 2002
Environmental Health

Mr. Barney Chan
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway, Suite 2500
Alameda, California 94502-6577

SITE: SHELL-BRANDED SERVICE STATION
4255 MACARTHUR BOULEVARD
OAKLAND, CALIFORNIA

RE: THIRD QUARTER 2002 GROUNDWATER MONITORING REPORT
AND GROUNDWATER EXTRACTION UPDATE REPORT

Dear Mr. Chan:

Miller Brooks Environmental, Inc. (Miller Brooks), on behalf of Equilon Enterprises LLC dba Shell Oil Products US (Shell), submits this report to summarize Third Quarter 2002 groundwater monitoring and sampling activities and to provide a groundwater extraction update for the Shell Service Station located at 4255 MacArthur Boulevard, Oakland, California. See Figure 1 for the site location.

In addition to the standard quarterly monitoring scope of work for this site, parameters for remediation by natural attenuation (RNA) were also collected. The recommendation to conduct RNA studies originated in Cambria Environmental Technology, Inc.'s *Remediation Action Plan* dated April 15, 1998. This is the fifth year that RNA parameters have been collected for this site. To thoroughly evaluate the progress of RNA at this site over the past 5 years, Miller Brooks will prepare a RNA Evaluation Report. This report will be submitted to the County upon completion.

THIRD QUARTER 2002 GROUNDWATER MONITORING AND SAMPLING ACTIVITIES

Groundwater Monitoring and Sampling

On July 18, 2002, Monitoring Wells MW-1 through MW-5, Tank Backfill Well TB-1 and TB-2 were monitored and sampled by Blaine Tech Services, Inc. (Blaine Tech), the groundwater monitoring program contractor for Shell. Groundwater levels in the wells were measured prior to sampling activities using an electronic water-level meter. At the time of monitoring, Blaine Tech measured 0.03 foot of separate-phase hydrocarbons (SPH) in Well MW-3. Blaine Tech subsequently purged the well of SPH down to a thickness of 0.01 foot and removed approximately 50 milliliters of SPH from Well MW-3.

During purging activities, groundwater was measured for pH, conductivity, turbidity, and temperature to show stabilization prior to sampling. Following purging and stabilization of the measured groundwater parameters, groundwater samples were collected in accordance with standard regulatory protocol. Fluid-level monitoring data are presented in Attachment A, and a groundwater elevation contour map is presented on Figure 2. A general description of groundwater monitoring and sampling procedures is included with copies of the field data sheets in Attachment B.

Joint sampling was conducted this quarter with Gettler-Ryan Inc. for the Unocal Station (Tosco Station #1156) located directly upgradient (northeast) of the Shell Service Station at the intersection of MacArthur Boulevard and High Street (see Figure 3). The laboratory results provided to Miller Brooks from Gettler-Ryan Inc. are presented in Attachment C.

Waste Disposal

Groundwater generated during well purging and equipment decontamination activities (approximately 38 gallons) was transported to the Shell refinery in Martinez, California.

Laboratory Analysis

Groundwater samples collected during this investigation were submitted to Kiff Analytical (Kiff), a State-certified laboratory, for analysis. The groundwater samples were analyzed for total petroleum hydrocarbons as gasoline (TPH-G), benzene, toluene, ethylbenzene, total xylenes (BTEX), and methyl tertiary butyl ether (MTBE) using Environmental Protection Agency (EPA) Method 8260B. Benzene and MTBE results of laboratory analysis of groundwater samples are presented on Figure 3 and in Attachment A, and copies of Kiff's laboratory report and chain of custody record are included in Attachment D.

Findings

Groundwater was measured at depths ranging between 7.38 feet and 15.48 feet below ground surface (bgs) in the monitoring wells (groundwater elevations of 156.68 feet to 167.50 feet above mean sea level [North American Vertical Datum, 1988]). The groundwater flow direction beneath the site is generally toward the west under a hydraulic gradient of approximately 0.089 foot per foot, which is consistent with previous monitoring events.

SPH were measured in Well MW-3 at a thickness of 0.03 foot during this quarter. No measurable SPH have been found in this well since April 1997; however, trace accumulations of SPH (less than 0.01 foot) have occasionally been detected.

Results of laboratory analysis of groundwater samples collected during this sampling event indicated the following:

- Detectable TPH-G concentrations were found in the groundwater samples collected from Wells MW-2, MW-3, and TB-2 at concentrations ranging from 7,500 micrograms per liter ($\mu\text{g/L}$) in Well TB-2 to 87,000 $\mu\text{g/L}$ in Well MW-2.
- Detectable benzene concentrations were found in groundwater samples collected from Wells MW-1, MW-2, MW-3 and TB-2 at concentrations ranging from 6.1 $\mu\text{g/L}$ in Well MW-1 to 3,300 $\mu\text{g/L}$ in Well MW-3.

- Detectable toluene concentrations were found in groundwater samples collected from Wells MW-2, MW-3 and TB-2 at concentrations ranging from 270 µg/L in Well MW-3 to 2,200 µg/L in Well MW-2.
- Detectable ethylbenzene concentrations were found in groundwater samples collected from Wells MW-2 and MW-3 at concentrations of 1400 µg/L and 1700 µg/L, respectively.
- Detectable total xylene concentrations were found in groundwater samples collected from Wells MW-1, MW-2, MW-3 and TB-2 at concentrations ranging from 0.98 µg/L in Well MW-1 to 10,000 µg/L in Well MW-2.
- Detectable MTBE concentrations were found in groundwater samples collected from Wells MW-2, MW-3, MW-4, MW-5 and TB-2 at concentrations ranging from 75 µg/L in Well MW-5 to 44,000 µg/L in Well TB-2.

GROUNDWATER EXTRACTION (GWE) UPDATE

Beginning in April 1999, Shell initiated semi-monthly mobile GWE at the site using Monitoring Well MW-2 and Tank Backfill Wells TB-1 and TB-2. Tank Backfill Well TB-1 was removed from the GWE program due to low hydrocarbon concentrations and Monitoring Well MW-3 was added in May 2001 due to high hydrocarbon concentrations. Mobile GWE consists of lowering dedicated stingers into selected monitoring wells and extracting fluids using a vacuum truck. The volume of extracted fluid is recorded and used to calculate the quantity of aqueous-phase hydrocarbons and oxygenates removed from the subsurface. After 39 events, which were conducted from September 1999 to September 2002, a total of 8,104 gallons of water was pumped from Well MW-2, 600 gallons of water from Well MW-3, and 86,135 gallons of water from Tank Backfill Well TB-2 by GWE. Individual GWE event details and cumulative groundwater extraction data are presented in Table 1.

Miller Brooks estimated that 2.24 gallons of TPH-G, 0.09 gallon of benzene, and 3.96 gallons of MTBE have been removed from the subsurface by GWE since April 1999. These mass

calculations are approximate and are based on the volume of groundwater extracted per event and the concentration in Wells MW-2, MW-3, and TB-2 closest in time to the respective extraction events. Table 1 presents GWE data and cumulative mass removal data for TPH-G, benzene, and MTBE. The mass and volume removal formulas are also presented on the table.

From July 2002 to September 2002, hydrocarbon removal efforts were augmented by mobile dual vapor extraction (DVE). The process of DVE involves applying a high vacuum through an airtight well seal to simultaneously extract soil vapors from the vadose zone and enhance GWE from the saturated zone. During the third quarter 2002 operating period, DVE was applied to Wells MW-2 and MW-3. Miller Brooks estimated that 2.72 pounds of TPH-G, 1.00 pound of benzene, and 0.11 pound of MTBE have been removed from the subsurface by DVE since November 2000. Table 2 presents DVE data and cumulative pounds removed for TPH-G, benzene, and MTBE. The mass and volume removal formulas are also presented on the table.

Historical data from groundwater monitoring events using the groundwater extraction well and wells adjacent to the probable source area (underground storage tanks [USTs]) exhibit decreasing MTBE concentration trends (see Attachment A). Before the start of GWE from Well TB-2, a concentration of 112,000 µg/L MTBE was detected in Well MW-2, located closest to the USTs. At the end of monthly GWE from Well TB-2, a concentration of 19,000 µg/L MTBE was detected in Well MW-2. Figure 4 presents the effect of GWE and DVE on MTBE concentrations on Well MW-2 over time.

PROPOSED WORK ACTIVITIES

Proposed work activities for the Fourth Quarter of 2002 are as follows:

- Shell has notified Miller Brooks that this service station will likely close in December and the USTs, fuel dispensers, and associated product piping will be removed. Miller Brooks proposes to conduct remedial soil excavation in impacted areas and batch groundwater extraction from the open excavations, as appropriate, following UST closure activities.

- Considering that soil and groundwater remediation activities are anticipated to occur in the short-term future, as outlined above, and because the added benefit of DVE is limited at this facility, monthly DVE has been discontinued as of this quarter. GWE events will continue according to the current schedule.

- Continue the quarterly groundwater monitoring and sampling program to monitor hydrocarbon plume stability and groundwater quality trends over time. Analytical testing will be expanded to include tertiary butyl alcohol (TBA) beginning in the first quarter of 2003 (the fourth quarter 2002 sampling event has already been completed).

- Continue joint monitoring and sampling with Gcttler-Ryan Inc. for the Unocal station (Tosco Station #1156) located upgradient of the site.

- Evaluate RNA trends over the past 5 years and prepare a *RNA Evaluation Report* to assess and monitor the progress of RNA at this site. The report will be submitted to the County within the next 45 days.

If you have any questions regarding this site, please call Miller Brooks at (510) 891-0092, or Karen Petryna of Shell at (559) 645-9306.

Sincerely,

MILLER BROOKS ENVIRONMENTAL, INC.



Darren W. Butler
Senior Staff Scientist



Heidi M. Bauer, RG 7050
Senior Geologist

Tables: 1 - Groundwater Extraction - Mass Removal Data
 2 - Vapor Extraction - Mass Removal Data

Figures: 1 - Vicinity and Well Survey Map
 2 - Groundwater Elevation Contour Map
 3 - Dissolved-Phase Hydrocarbon Distribution Map
 4 - Dual-Phase Vapor/Groundwater Extraction Effect on MTBE Concentrations
 in MW-2

Attachments: A - Blaine Tech Services, Inc. - Groundwater Gauging and Analytical Data
 B - Blaine Tech Services, Inc. - General Field Procedures and Field Data Sheets
 C - Sampling and Monitoring Results for Tosco Station #1156
 D - Kiff Laboratory Report and Chain of Custody Record

cc: Karen Petryna, Shell Oil Products US, P.O. Box 7869, Burbank, CA 91510-7869

Table 1: Groundwater Extraction - Mass Removal Data - Shell-branded Service Station, Incident #98995758, 4255 MacArthur Boulevard, Oakland, CA

Date Purged	Well ID	Volume Pumped (gal)	Cumulative Volume Pumped (gal)	Date Sampled	TPH-G			Benzene			MTBE		
					TPH-G Concentration (ppb)	TPH-G Removed (lbs)	TPH-G Removed To Date (lbs)	Benzene Concentration (ppb)	Benzene Removed (lbs)	Benzene Removed to Date (lbs)	MTBE Concentration (ppb)	MTBE Removed (lbs)	MTBE Removed To Date (lbs)
04/23/99	MW-2	200	200	04/13/98	180,000	0.30040	0.30040	2,800	0.00467	0.00467	71,000	0.11849	0.11849
05/24/99	MW-2	200	400	04/13/98	180,000	0.30040	0.60079	2,800	0.00467	0.00935	71,000	0.11849	0.23698
06/28/99	MW-2	200	600	04/13/98	180,000	0.30040	0.90119	2,800	0.00467	0.01402	71,000	0.11849	0.35547
07/30/99	MW-2	200	800	07/23/99	65,800	0.10981	1.01100	6,500	0.01085	0.02487	46,600	0.07777	0.43324
08/24/99	MW-2	100	900	07/23/99	65,800	0.05491	1.06591	6,500	0.00542	0.03029	46,600	0.03888	0.47212
10/29/99	MW-2	100	1,000	07/23/99	65,800	0.05491	1.12081	6,500	0.00542	0.03571	46,600	0.03888	0.51101
11/30/99	MW-2	100	1,100	07/23/99	65,800	0.05491	1.17572	6,500	0.00542	0.04114	46,600	0.03888	0.54989
02/02/00	MW-2	200	1,300	01/17/00	46,000	0.07677	1.25249	6,000	0.01001	0.05115	31,000	0.05174	0.60163
11/16/00	MW-2	150	1,450	10/12/00	63,200	0.07910	1.33159	5,840	0.00731	0.05846	66,600	0.08336	0.68499
02/23/01	MW-2	200	1,650	01/15/01	59,700	0.09963	1.43122	2,630	0.00439	0.06285	5,080	0.00848	0.69347
03/14/01	MW-2	300	1,950	01/15/01	59,700	0.14945	1.58067	2,630	0.00658	0.06943	5,080	0.01272	0.70618
04/20/01*	MW-2	200	2,150	04/09/01	56,900	0.09496	1.67563	1,860	0.00310	0.07254	46,600	0.07777	0.78395
05/30/01	MW-2	200	2,350	04/09/01	56,900	0.09496	1.77059	1,860	0.00310	0.07564	46,600	0.07777	0.86172
06/12/01	MW-2	100	2,450	04/09/01	56,900	0.04748	1.81807	1,860	0.00155	0.07719	46,600	0.03888	0.90061
11/06/01	MW-2	1,350	3,800	10/31/01	45,000	0.50692	2.32499	2,200	0.02478	0.10198	29,000	0.32668	1.22729
11/23/01	MW-2	1,000	4,800	10/31/01	45,000	0.37550	2.70048	2,200	0.01836	0.12033	29,000	0.24199	1.46927
12/04/01	MW-2	20	4,820	10/31/01	45,000	0.00751	2.70799	2,200	0.00037	0.12070	29,000	0.00484	1.47411
12/20/01	MW-2	50	4,870	10/31/01	45,000	0.01877	2.72677	2,200	0.00092	0.12162	29,000	0.01210	1.48621
01/14/02	MW-2	10	4,880	01/10/02	28,000	0.00234	2.72911	840	0.00007	0.12169	32,000	0.00267	1.48888
02/11/02	MW-2	62	4,942	01/10/02	28,000	0.01449	2.74359	840	0.00043	0.12212	32,000	0.01656	1.50544
02/25/02	MW-2	100	5,042	01/10/02	28,000	0.02336	2.76696	840	0.00070	0.12282	32,000	0.02670	1.53214
03/08/02*	MW-2	125	5,167	01/10/02	28,000	0.02921	2.79616	840	0.00088	0.12370	32,000	0.03338	1.56552
03/22/02	MW-2	125	5,292	01/10/02	28,000	0.02921	2.82537	840	0.00088	0.12458	32,000	0.03338	1.59890
04/10/02	MW-2	53	5,345	01/10/02	28,000	0.01238	2.83775	840	0.00037	0.12495	32,000	0.01415	1.61305
04/16/02	MW-2	100	5,445	01/10/02	28,000	0.02336	2.86111	840	0.00070	0.12565	32,000	0.02670	1.63975
04/24/02	MW-2	100	5,545	01/10/02	28,000	0.02336	2.88448	840	0.00070	0.12635	32,000	0.02670	1.66645
05/08/02	MW-2	29	5,574	04/25/02	41,000	0.00992	2.89440	1,900	0.00046	0.12681	17,000	0.00411	1.67057
05/22/02	MW-2	300	5,874	04/25/02	41,000	0.10264	2.99703	1,900	0.00476	0.13157	17,000	0.04256	1.71312
05/29/02	MW-2	122	5,996	04/25/02	41,000	0.04174	3.03877	1,900	0.00193	0.13350	17,000	0.01731	1.73043

Table 1: Groundwater Extraction - Mass Removal Data - Shell-branded Service Station, Incident #98995758, 4255 MacArthur Boulevard, Oakland, CA

Date Purged	Well ID	Volume Pumped (gal)	Cumulative Volume Pumped (gal)	Date Sampled	TPH-G			Benzene			MTBE		
					TPH-G Concentration (ppb)	TPH-G Removed (lbs)	TPH-G Removed To Date (lbs)	Benzene Concentration (ppb)	Benzene Removed (lbs)	Benzene Removed to Date (lbs)	MTBE Concentration (ppb)	MTBE Removed (lbs)	MTBE Removed To Date (lbs)
06/05/02	MW-2	30	6,026	04/25/02	41,000	0.01026	3.04904	1,900	0.00048	0.13398	17,000	0.00426	1.73468
06/19/02	MW-2	500	6,526	04/25/02	41,000	0.17106	3.22010	1,900	0.00793	0.14190	17,000	0.07093	1.80561
06/26/02	MW-2	50	6,576	04/25/02	41,000	0.01711	3.23720	1,900	0.00079	0.14270	17,000	0.00709	1.81270
07/10/02	MW-2	900	7,476	04/25/02	41,000	0.30791	3.54511	1,900	0.01427	0.15696	17,000	0.12767	1.94037
07/17/02	MW-2	400	7,876	04/25/02	41,000	0.13685	3.68196	1,900	0.00634	0.16331	17,000	0.05674	1.99711
08/22/02	MW-2	50	7,926	07/18/02	87,000	0.03630	3.71825	2,000	0.00083	0.16414	19,000	0.00793	2.00504
09/25/02	MW-2	178	8,104	07/18/02	87,000	0.12922	3.84747	2,000	0.00297	0.16711	19,000	0.02822	2.03326
05/30/01	MW-3	50	50	04/09/01	33,800	0.01410	0.01410	7,100	0.00296	0.00296	13,000	0.00542	0.00542
06/12/01	MW-3	50	100	04/09/01	33,800	0.01410	0.02820	7,100	0.00296	0.00592	13,000	0.00542	0.01085
08/22/02	MW-3	300	400	07/18/02	56,000	0.14019	0.16839	3,300	0.00826	0.01419	8,400	0.02103	0.03188
09/25/02	MW-3	200	600	07/18/02	56,000	0.09346	0.26185	3,300	0.00551	0.01969	8,400	0.01402	0.04589
09/05/01	TB-1	300	300	10/31/01	1,000	0.00250	0.00250	85	0.00021	0.00021	4,100	0.01026	0.01026
09/19/01	TB-1	1,400	1,700	10/31/01	1,000	0.01168	0.01419	85	0.00099	0.00121	4,100	0.04790	0.05816
10/16/01	TB-1	1,200	2,900	10/31/01	1,000	0.01001	0.02420	85	0.00085	0.00206	4,100	0.04105	0.09921
04/16/02	TB-1	1,111	4,011	10/31/01	5,000	0.04635	0.07055	410	0.00380	0.00586	9,000	0.08344	0.18265
04/23/99	TB-2	4,800	4,800	08/24/99	6,240	0.24993	0.24993	400	0.01602	0.01602	86,100	3.44856	3.44856
05/24/99	TB-2	4,800	9,600	08/24/99	6,240	0.24993	0.49986	400	0.01602	0.03204	86,100	3.44856	6.89711
06/28/99	TB-2	4,800	14,400	08/24/99	6,240	0.24993	0.74979	400	0.01602	0.04806	86,100	3.44856	10.34567
07/30/99	TB-2	4,800	19,200	08/24/99	6,240	0.24993	0.99972	400	0.01602	0.06408	86,100	3.44856	13.79422
08/24/99	TB-2	2,400	21,600	08/24/99	6,240	0.12497	1.12469	400	0.00801	0.07210	86,100	1.72428	15.51850
10/29/99	TB-2	2,255	23,855	10/29/99	7,460	0.14037	1.26506	656	0.01234	0.08444	442	0.00832	15.52682
11/30/99	TB-2	3,800	27,655	10/29/99	7,460	0.23655	1.50160	656	0.02080	0.10524	442	0.01402	15.54083
02/02/00	TB-2	4,500	32,155	01/31/00	2,070	0.07773	1.57933	108	0.00406	0.10930	6,550	0.24595	15.78678
11/16/00	TB-2	974	33,129	11/16/00	107,000	0.86963	2.44896	3,390	0.02755	0.13685	16,800	0.13654	15.92332
02/23/01	TB-2	2,506	35,635	02/23/01	80,600	1.68542	4.13439	2,410	0.05040	0.18724	38,100	0.79671	16.72003
03/14/01	TB-2	1,075	36,710	02/23/01	80,600	0.72300	4.85738	2,410	0.02162	0.20886	38,100	0.34176	17.06179

Table 1: Groundwater Extraction - Mass Removal Data - Shell-branded Service Station, Incident #98995758, 4255 MacArthur Boulevard, Oakland, CA

Date Purged	Well ID	Volume Pumped (gal)	Cumulative Volume Pumped (gal)	Date Sampled	TPH-G			Benzene			MTBE		
					TPH-G Concentration (ppb)	TPH-G Removed (lbs)	TPH-G Removed To Date (lbs)	Benzene Concentration (ppb)	Benzene Removed (lbs)	Benzene Removed to Date (lbs)	MTBE Concentration (ppb)	MTBE Removed (lbs)	MTBE Removed To Date (lbs)
04/20/01	TB-2*	1,760	38,470	04/09/01	46,600	0.68437	5.54175	1,240	0.01821	0.22707	31,300	0.45967	17.52147
05/30/01	TB-2	2,100	40,570	04/09/01	46,600	0.81658	6.35833	1,240	0.02173	0.24880	31,300	0.54847	18.06994
06/12/01	TB-2	2,400	42,970	04/09/01	46,600	0.93323	7.29156	1,240	0.02483	0.27363	31,300	0.62683	18.69677
08/07/01	TB-2	2,510	45,480	07/24/01	11,000	0.23039	7.52195	630	0.01319	0.28683	11,000	0.23039	18.92716
08/21/01	TB-2	2,700	48,180	07/24/01	11,000	0.24783	7.76978	630	0.01419	0.30102	11,000	0.24783	19.17499
09/05/01	TB-2	2,100	50,280	07/24/01	11,000	0.19275	7.96253	630	0.01104	0.31206	11,000	0.19275	19.36774
09/19/01	TB-2	1,500	51,780	07/24/01	11,000	0.13768	8.10022	630	0.00789	0.31995	11,000	0.13768	19.50542
10/16/01	TB-2	1,750	53,530	07/24/01	11,000	0.16063	8.26085	630	0.00920	0.32915	11,000	0.16063	19.66605
11/06/01	TB-2	1,500	55,030	10/31/01	7,500	0.09387	8.35472	530	0.00663	0.33578	2,500	0.03129	19.69734
11/23/01	TB-2	1,500	56,530	10/31/01	7,500	0.09387	8.44859	530	0.00663	0.34241	2,500	0.03129	19.72863
10/04/01	TB-2	2,900	59,430	10/31/01	7,500	0.18149	8.63008	530	0.01283	0.35524	2,500	0.06050	19.78913
12/20/01	TB-2	2,950	62,380	10/31/01	7,500	0.18462	8.81470	530	0.01305	0.36829	2,500	0.06154	19.85067
01/14/02	TB-2	2,542	64,922	01/10/02	<5,000	0.05303	8.86773	480	0.01018	0.37847	12,000	0.25454	20.10521
02/11/02	TB-2	1,300	66,222	01/10/02	<5,000	0.02712	8.89485	480	0.00521	0.38367	12,000	0.13017	20.23538
02/25/02	TB-2	2,400	68,622	01/10/02	<5,000	0.05007	8.94492	480	0.00961	0.39329	12,000	0.24032	20.47570
03/08/02	TB-2*	3,052	71,674	01/10/02	<5,000	0.06367	9.00858	480	0.01222	0.40551	12,000	0.30560	20.78130
03/22/02	TB-2	2,234	73,908	01/10/02	<5,000	0.04660	9.05519	480	0.00895	0.41446	12,000	0.22370	21.00499
04/10/02	TB-2	2,156	76,064	01/10/02	<5,000	0.04498	9.10016	480	0.00864	0.42309	12,000	0.21589	21.22088
04/24/02	TB-2	1,308	77,372	01/10/02	<5,000	0.02729	9.12745	480	0.00524	0.42833	12,000	0.13097	21.35185
05/08/02	TB-2	1,400	78,772	04/27/02	4,700	0.05491	9.18235	470	0.00549	0.43382	7,400	0.08645	21.43830
05/22/02	TB-2	1,707	80,479	04/27/02	4,700	0.06695	9.24930	470	0.00669	0.44052	7,400	0.10540	21.54370
05/29/02	TB-2	900	81,379	04/27/02	4,700	0.03530	9.28460	470	0.00353	0.44405	7,400	0.05557	21.59928
06/05/02	TB-2	1,615	82,994	04/27/02	4,700	0.06334	9.34793	470	0.00633	0.45038	7,400	0.09972	21.69900
06/19/02	TB-2	400	83,394	04/27/02	4,700	0.01569	9.36362	470	0.00157	0.45195	7,400	0.02470	21.72370
06/26/02	TB-2	1,027	84,421	04/27/02	4,700	0.04028	9.40390	470	0.00403	0.45598	7,400	0.06342	21.78712
07/10/02	TB-2	165	84,586	04/27/02	4,700	0.00647	9.41037	470	0.00065	0.45662	7,400	0.01019	21.79730
07/17/02	TB-2	315	84,901	04/27/02	4,700	0.01235	9.42272	470	0.00124	0.45786	7,400	0.01945	21.81676
08/22/02	TB-2	34	84,935	07/18/02	7,500	0.00213	9.42485	630	0.00018	0.45804	44,000	0.01248	21.82924
09/25/02	TB-2	1,200	86,135	07/18/02	7,500	0.07510	9.49995	630	0.00631	0.46435	44,000	0.44058	22.26982

Table 1: Groundwater Extraction - Mass Removal Data - Shell-branded Service Station, Incident #98995758, 4255 MacArthur Boulevard, Oakland, CA

Date Purged	Well ID	Volume Pumped (gal)	Cumulative Volume Pumped (gal)	Date Sampled	<u>TPH-G</u>			<u>Benzene</u>			<u>MTBE</u>		
					TPH-G Concentration (ppb)	TPH-G Removed (lbs)	TPH-G Removed To Date (lbs)	Benzene Concentration (ppb)	Benzene Removed (lbs)	Benzene Removed to Date (lbs)	MTBE Concentration (ppb)	MTBE Removed (lbs)	MTBE Removed To Date (lbs)
Total Gallons Extracted:					Total Pounds Removed:			0.65701			24.53162		
					Total Gallons Removed:			0.09000			3.95671		

Abbreviations & Notes:

TPH-G = Total petroleum hydrocarbons as gasoline, analyzed by EPA Method 8260

MTBE = Methyl tert-butyl ether by EPA Method 8020; MTBE results in bold are analyzed by EPA Method 8260

ppb = Parts per billion

lbs = Pounds

gal = Gallon

* = Purge volume estimated

Mass removed based on the formula: volume extracted (gal) x Concentration ($\mu\text{g/L}$) x ($10^6 \mu\text{g}$) x (pound/453.6g) x (3.785 L/gal)

Volume removal data based on the formula: density (in gms/cc) x 9.339 (cc/lbs/gmsxgals)

Benzene analyzed by EPA Method 8020

Table 2: Vapor Extraction - Mass Removal Data - Shell-branded Service Station, Incident #98995758, 4255 MacArthur Boulevard, Oakland, CA

Date	Well ID	Interval Hours of Operation (hours)	System Flow Rate (cfm)	Hydrocarbon Concentrations			TPH-G		Benzene		MTBE	
				TPH-G	Benzene	MTBE	TPH-G Removal Rate	Cumulative TPH-G	Benzene Removal Rate	Cumulative Benzene	MTBE Removal Rate	Cumulative MTBE
				(Concentrations in ppmv)			(lbs/hour)	(lbs)	(lbs/hour)	(lbs)	(lbs/hour)	(lbs)
11/16/00	MW-2	0.67	0.5	663	7.00	42.0	0.004	0.003	0.000	0.000	0.000	0.000
02/23/01	MW-2	7.00	3.2	24.1	0.93	11.9	0.001	0.010	0.000	0.000	0.001	0.004
03/14/01	MW-2	6.00	4.0	203	4.13	51.9	0.011	0.075	0.000	0.001	0.003	0.021
04/20/01*	MW-2	4.00	6.2	310	4.4	49	0.026	0.178	0.000	0.003	0.004	0.037
05/30/01	MW-2	3.00	7.7	360	4.4	50	0.037	0.289	0.000	0.004	0.005	0.053
06/12/01	MW-2	3.00	5.1	56	0.33	2.0	0.004	0.301	0.000	0.004	0.000	0.054
04/16/02	MW-2	6.00	7.7	1,600	7.2	47	0.165	1.289	0.001	0.008	0.005	0.083
05/22/02	MW-2	2.00	7.5	160	1.3	13	0.016	1.321	0.000	0.008	0.001	0.086
06/19/02	MW-2	5.00	11.5	95	0.94	10	0.015	1.394	0.000	0.009	0.002	0.094
07/17/02	MW-2	6.00	10.0	420	3.2	18	0.056	1.731	0.000	0.011	0.002	0.109
08/22/02	MW-2	2.50	10.0	720	6.1	45	0.096	1.971	0.001	0.013	0.006	0.124
09/25/02	MW-2	3.00	16.4	980	4.0	20	0.214	2.614	0.001	0.016	0.004	0.138
05/30/01	MW-3	3.00	4.0	4,200	7.1	14	0.225	0.674	0.000	0.001	0.001	0.002
06/12/01	MW-3	3.00	3.3	2,400	5.8	9.8	0.106	0.991	0.000	0.002	0.000	0.004
08/22/02	MW-3	4.00	3.5	7,300	13	18	0.342	2.358	0.001	0.004	0.001	0.007
09/25/02	MW-3	1.50	11.4	8,800	11	14	1.341	4.369	0.002	0.006	0.002	0.010
Total Pounds Removed:							TPH-G =	2.722	Benzene =	1.003	MTBE =	0.112

Table 2: Vapor Extraction - Mass Removal Data - Shell-branded Service Station, Incident #98995758, 4255 MacArthur Boulevard, Oakland, CA

Abbreviations and Notes:

cfm = Cubic feet per minute

TPH-G = Total petroleum hydrocarbons as gasoline (C6-C12) by modified EPA Method 8015 in 1 liter tedlar bag samples

ppmv = Parts per million by volume

= Pounds

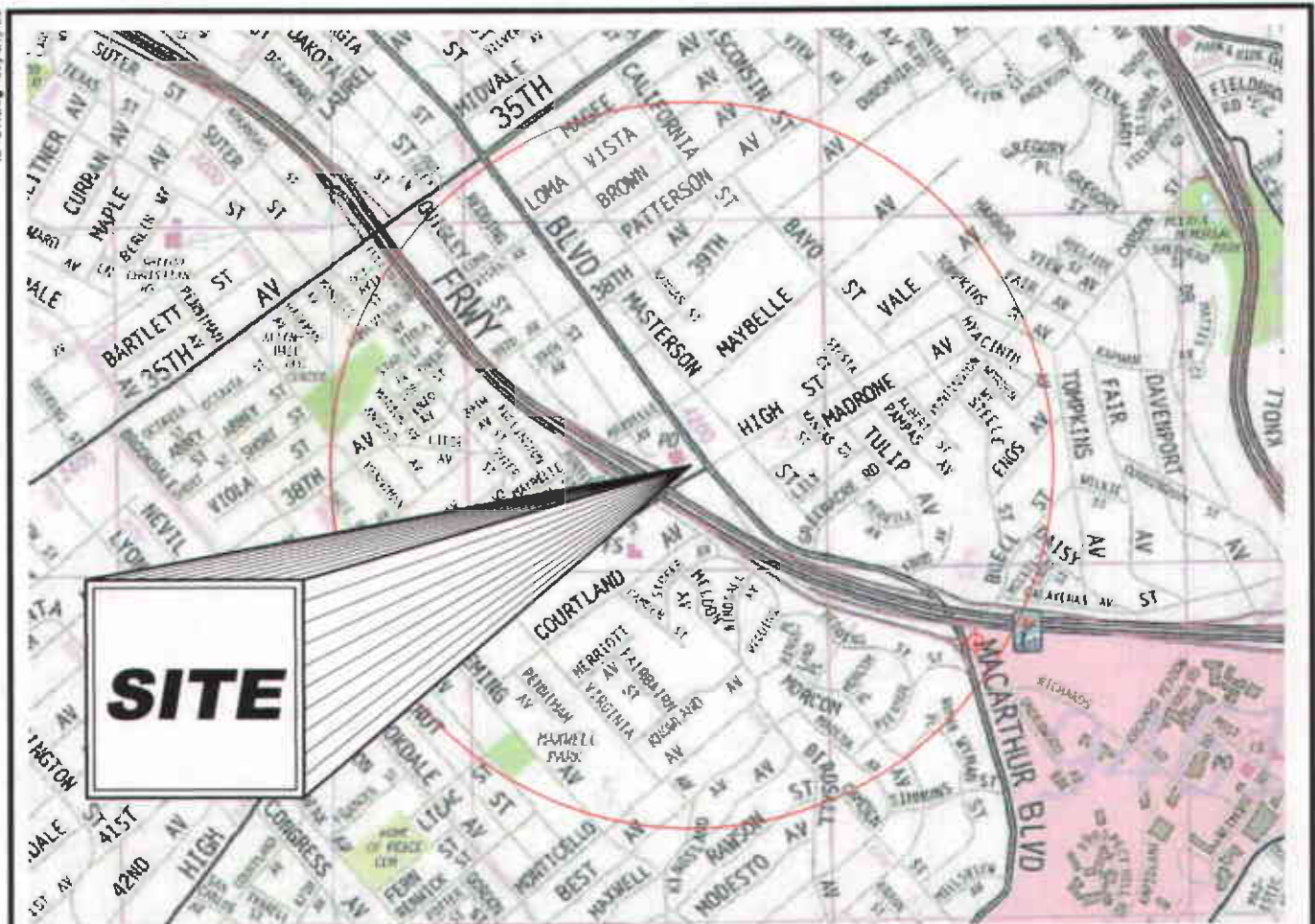
TPH-G, Benzene, and MTBE analyzed by EPA Method 8260B in 1 liter tedlar bag samples

TPH-G / Benzene / MTBE removal rate = Rate based on Bay Area Air Quality Management District's Manual of Procedures for Soil Vapor Extraction dated July 17, 1991.

(Rate = Concentration (ppmv) x system flow rate (cfm) x (1lb-mole/386ft³) x molecular weight (86 lb/lb-mole for TPH-G, 78 lb/lb-mole for benzene, 88 lb/lb-mole for MTBE)
x 60 min/hour x 1/1,000,000)

Cumulative TPH-G / Benzene / MTBE removal = Previous removal rate multiplied by the hour-interval of operation plus the previous total

* = Interval hours of operation estimated.



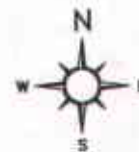
LEGEND



DOMESTIC WELL



STUDY AREA (1/2 MILE RADIUS)



FROM: U.S. GEOLOGICAL SURVEY, 1967
 QUADRANGLE: OAKLAND
 COUNTY: ALAMEDA
 SERIES: 7.5-MINUTE QUAD

NOTE: ALL BOUNDARIES AND LOCATIONS ARE APPROXIMATE



2425 W. 14TH STREET, D-2
 OAKLAND, CA.
 (510) 891-0092

PROJECT NO. 06-155-0303-01

DRAWN BY:
 PEL
 DATE:
 02/05/01
 REVISED BY:
 DWB
 REVISED:
 10/3/02
 APPROVED BY:
 DWB
 DATE:
 10/3/02

VICINITY AND
 WELL SURVEY MAP

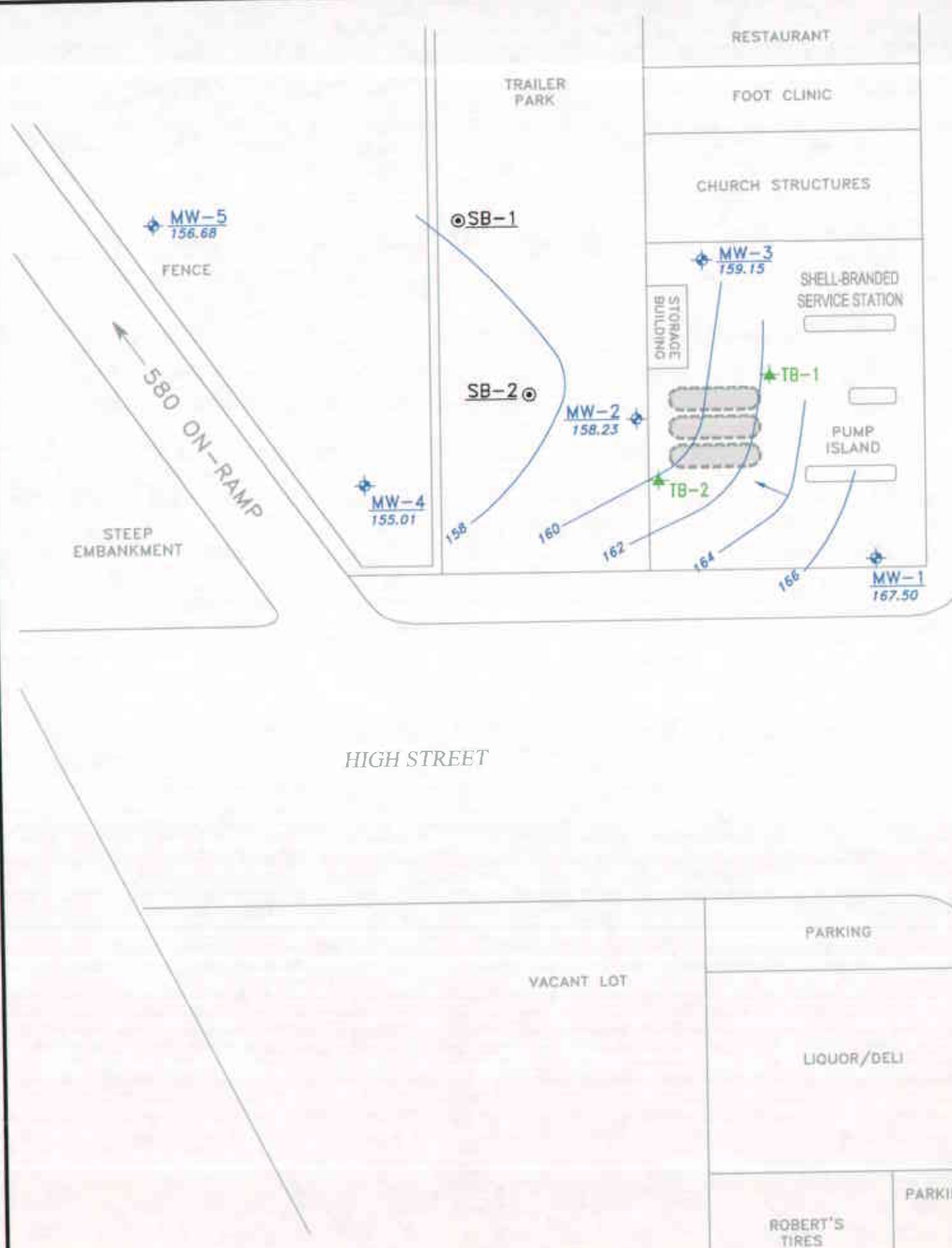
SHELL SERVICE STATION
 5755 BROADWAY AVE.
 OAKLAND, CA.

FIGURE

1

FILE: K:\DWGS\EQUILON\OAKLAND (105 5TH ST.)\HYD. IN SOIL MAP
 DATE PLOTTED: 09/26/02

B-11.dwg-09/21/00

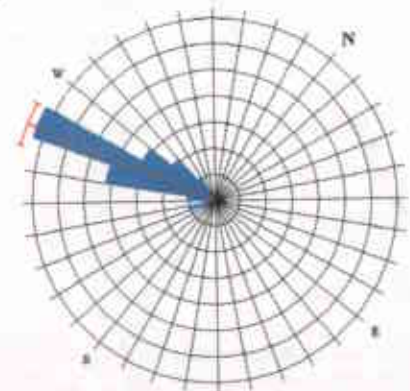


LEGEND

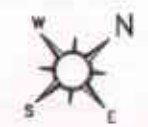
- MW-5 MONITORING WELL LOCATION
- TB-1 TANK BACKFILL WELL LOCATION
- SB-2 CAMBRIA SOIL BORING LOCATION (12/98)
- MW-1 TOSCO MONITORING WELL LOCATION (NOT CONTOURED - TOSCO MONITORING WELLS ARE NOT SURVEYED TO SAME BENCHMARK AS SHELL MONITORING WELLS. (TOSCO WELLS SURVEYED FROM BENCHMARK NO. 3967, ELEV. = 174.40 FT. MSL.)
- 155.01 GROUNDWATER ELEVATION IN FEET (RELATIVE TO MEAN SEA LEVEL)
- 158 GROUNDWATER ELEVATION CONTOUR INTERVAL = 2.0 FEET
- APPROXIMATE DIRECTION OF GROUNDWATER FLOW
- UNDERGROUND STORAGE TANKS (USTs)
- DISPENSER ISLAND (PUMP)

NOTES:

- 1) CONTOUR LINES ARE INTERPRETIVE BASED ON GROUNDWATER LEVELS MEASURED ON JULY 18, 2002

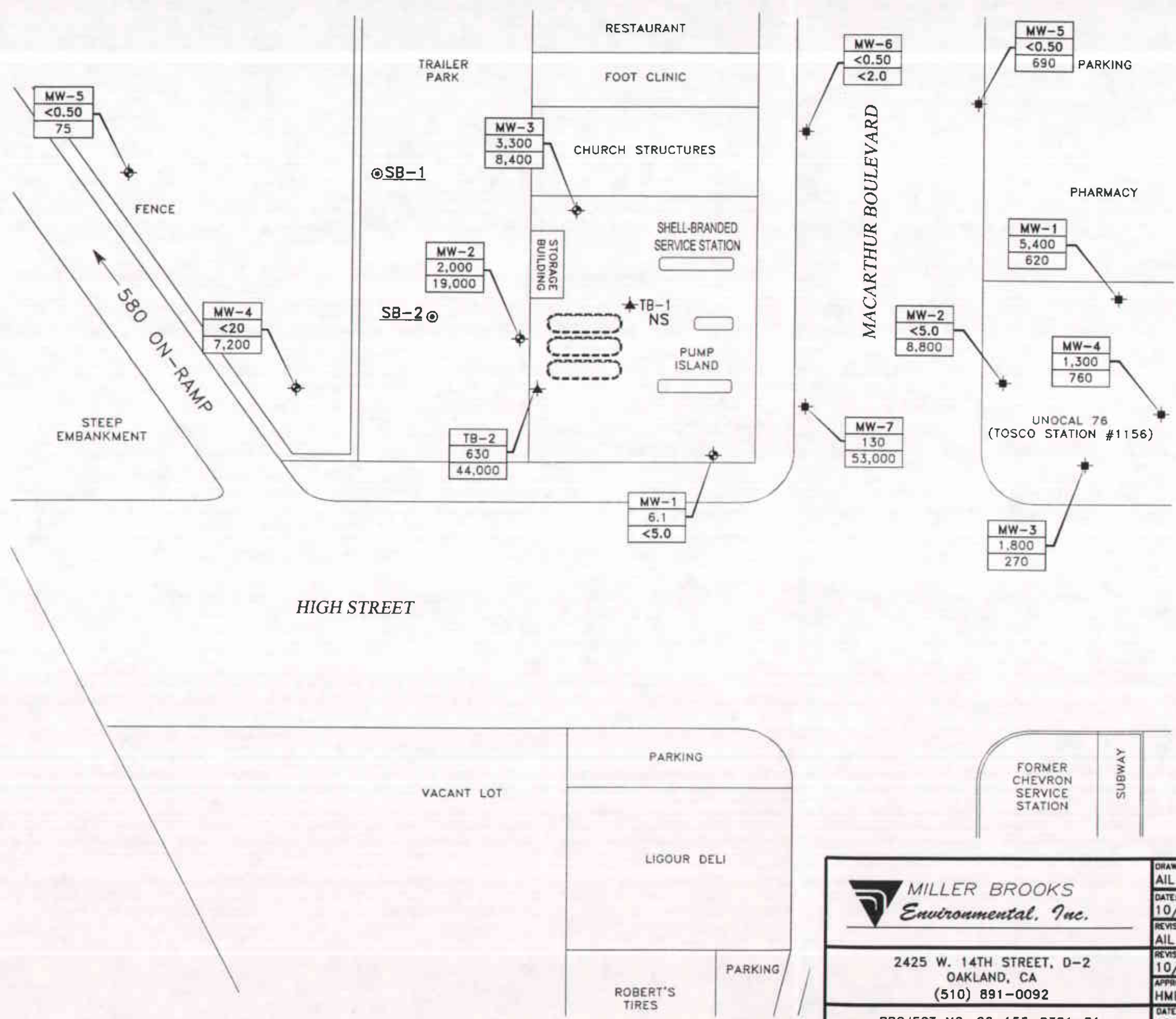


GROUNDWATER GRADIENT DIRECTION (109B-3002)



	DRAWN BY: AIL	GROUNDWATER ELEVATION CONTOUR MAP JULY 18, 2002	FIGURE 2
	DATE: 10/01/02		
2425 W. 14TH STREET, D-2 OAKLAND, CA (510) 891-0092	REVISED BY: AIL	SHELL SERVICE STATION 4255 MACARTHUR BLVD. OAKLAND, CA.	
	REVISED: 10/01/02		
PROJECT NO. 01-155-0301-01	APPROVED BY: HMB	FILE: K:\DWGS\EQUILON\OAKLAND (4255 MACARTHUR BLVD.)\SITE PLAN DATE PLOTTED: 10/01/02	
	DATE: 10/01/02		

10-31.dwg-09/21/00



LEGEND

- MW-5 MONITORING WELL LOCATION
- TB-1 TANK BACKFILL WELL LOCATION
- MW-3 TOSCO MONITORING WELL LOCATION
- SB-2 CAMBRIA SOIL BORING LOCATION (12/98)
- UNDERGROUND STORAGE TANKS (UST'S)
- DISPENSER ISLAND (PUMP)
- | |
|---------|
| WELL ID |
| BENZENE |
| MTBE |

 DISSOLVED-PHASE HYDROCARBON CONCENTRATIONS (IN ug/L)

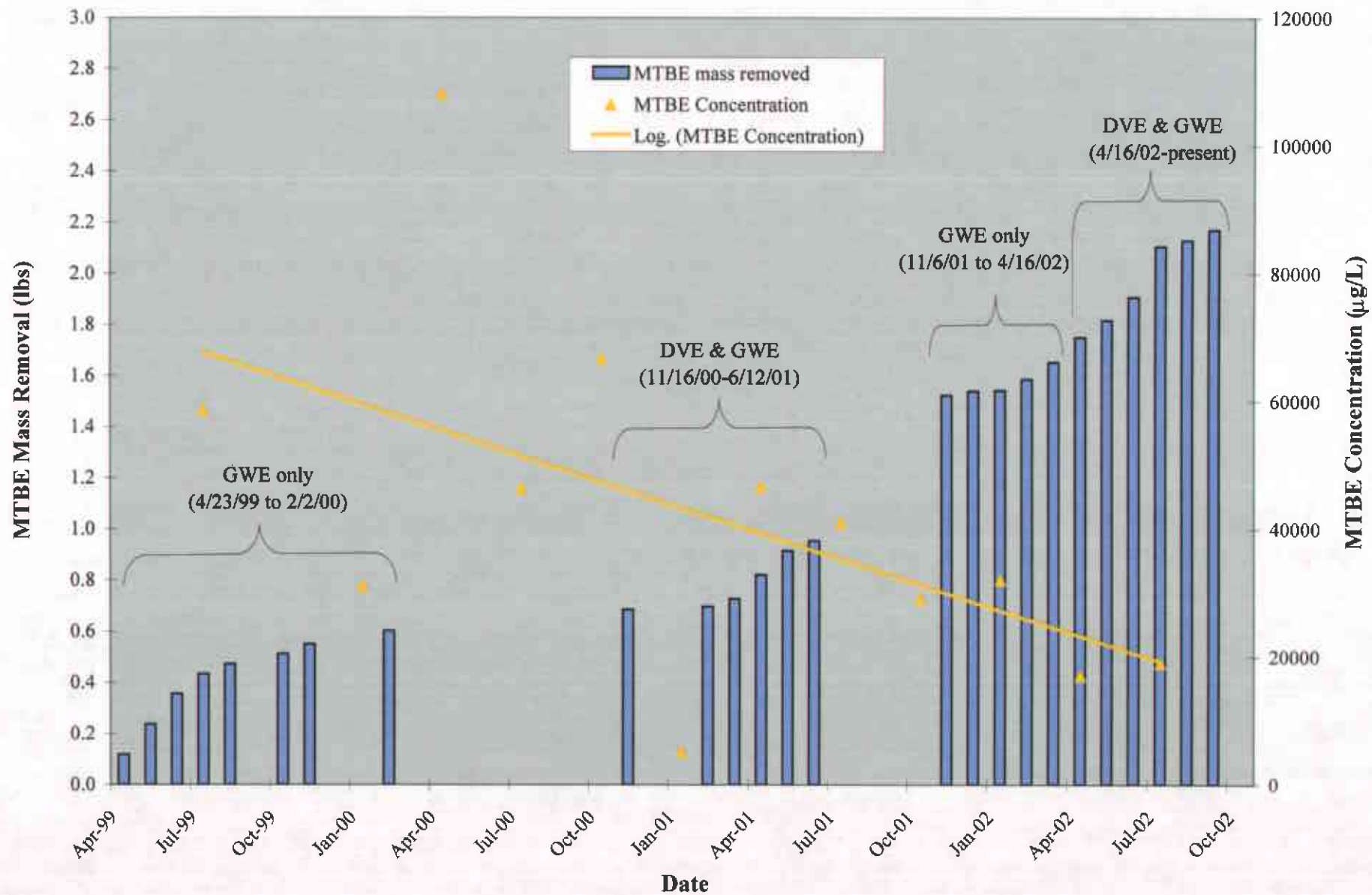
- NOTES:
- 1) DISSOLVED-PHASE DATA ARE BASED ON GROUNDWATER SAMPLING CONDUCTED ON JULY 18, 2002.
 - 2) BENZENE (EPA METHOD 8260B), MTBE = METHYL TERTIARY BUTYL ETHER (EPA METHOD 8260B), ug/L = MICROGRAMS PER LITER, ND = NOT DETECTED AT LIMIT INDICATED ON OFFICIAL LABORATORY REPORT.
 - 3) TB-1 NOT SAMPLED (NS) DUE TO INSUFFICIENT WATER.
 - 4) TOSCO STATION #1156 WELLS MW-1 THROUGH MW-7 WERE SAMPLED BY GETTLER-RYAN INC. ON JULY 18, 2002.



<p>MILLER BROOKS <i>Environmental, Inc.</i></p>	DRAWN BY: AIL	<p>DISSOLVED-PHASE HYDROCARBON DISTRIBUTION MAP JULY 18, 2002</p>	<p>FIGURE 3</p>
	DATE: 10/01/02		
<p>2425 W. 14TH STREET, D-2 OAKLAND, CA (510) 891-0092</p>	REVISED BY: AIL	<p>SHELL SERVICE STATION 4255 MACARTHUR BLVD. OAKLAND, CA.</p>	<p>FILE: K:\DWG5\EQUILON\OAKLAND (4255 MACARTHUR BLVD.)\SITE PLAN DATE PLOTTED: 10/22/02</p>
	REVISID: 10/22/02		
PROJECT NO. 06-155-0301-01	APPROVED BY: HMB		
	DATE: 10/22/02		

**SHELL SERVICE STATION
4255 MACARTHUR BLVD.
OAKLAND, CA**

Figure 4 - Dual Vapor/Groundwater Extraction Effect on MTBE Concentration in Well MW-2



BLAINE
TECH SERVICES, INC.



1680 ROGERS AVENUE
SAN JOSE, CA 95112-1105
(408) 573-7771 FAX
(408) 573-0555 PHONE
CONTRACTOR'S LICENSE #748684
www.blainetech.com

August 16, 2002

Karen Petryna
Shell Oil Products US
P.O. Box 7869
Burbank, CA 91510-7869

Third Quarter 2002 Groundwater Monitoring at
Shell-branded Service Station
4255 MacArthur Boulevard
Oakland, CA

Monitoring performed on July 18, 2002

Groundwater Monitoring Report **020718-DA-1**

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 65th Street, Suite C
Oakland, CA 94608-2411

WELL CONCENTRATIONS
Shell-branded Service Station
4255 MacArthur Boulevard
Oakland, CA

Well ID	Date	TPH-G (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE 8020 (µg/L)	MTBE 8260 (µg/L)	TOC (MSL)	Depth to Water (ft.)	Depth to SPH (ft.)	GW Elevation (MSL)	SPH Thickness (ft.)	DO Reading (ppm)	ORP Reading (mV)
MW-1	11/17/1993	410	21	11	7.9	47	NA	NA	175.79	8.59	NA	167.20	NA	NA	NA
MW-1	1/20/1994	1,200	180	19	48	47	NA	NA	175.79	8.22	NA	167.57	NA	NA	NA
MW-1	4/25/1994	3,100	610	<10	130	27	NA	NA	175.79	7.63	NA	168.16	NA	NA	NA
MW-1	7/7/1994	2,400	1,000	10	250	20	NA	NA	175.79	8.31	NA	167.48	NA	NA	NA
MW-1	10/27/1994	2,200	500	3.1	72	1.8	NA	NA	175.79	8.84	NA	166.95	NA	NA	NA
MW-1	11/17/1994	NA	NA	NA	NA	NA	NA	NA	175.79	7.60	NA	168.19	NA	NA	NA
MW-1	11/28/1994	NA	NA	NA	NA	NA	NA	NA	175.79	7.56	NA	168.23	NA	NA	NA
MW-1	1/13/1995	570	75	2.5	6.7	11	NA	NA	175.79	7.11	NA	168.68	NA	NA	NA
MW-1	4/12/1995	1,800	480	<5.0	79	<5.0	NA	NA	175.79	7.08	NA	168.71	NA	NA	NA
MW-1	7/25/1995	120	15	1.1	2.1	2.9	NA	NA	175.79	7.73	NA	168.06	NA	NA	NA
MW-1 (D)	7/25/1995	300	88	2.4	11	6.5	NA	NA	175.79	7.73	NA	168.06	NA	NA	NA
MW-1	10/18/1995	130	9.5	0.8	1.3	1.7	NA	NA	175.79	8.42	NA	167.37	NA	NA	NA
MW-1 (D)	10/18/1995	120	11	0.8	1.4	1.8	NA	NA	175.79	8.42	NA	167.37	NA	NA	NA
MW-1	1/17/1996	250	22	0.9	1.6	2.3	NA	NA	175.79	7.83	NA	167.96	NA	NA	NA
MW-1	4/25/1996	<50	4.6	<0.5	<0.5	0.6	500b	NA	175.79	7.35	NA	168.44	NA	NA	NA
MW-1	7/17/1996	<250	15	<2.5	<2.5	<2.5	540	NA	175.79	7.70	NA	168.09	NA	NA	NA
MW-1	10/1/1996	1,200	500	12	57	82	1,900	NA	175.79	8.07	NA	167.72	NA	NA	NA
MW-1	1/22/1997	640	170	4.3	33	33	1,200	NA	175.79	7.21	NA	168.58	NA	NA	NA
MW-1	4/8/1997	<200	34	<2.0	3.3	4.3	950	NA	175.79	7.75	NA	168.04	NA	NA	NA
MW-1 (D)	4/8/1997	<200	66	<2.0	6.4	8	740	NA	175.79	7.75	NA	168.04	NA	NA	NA
MW-1	7/8/1997	190	49	1.2	5.8	8.6	560	NA	175.79	8.01	NA	167.78	NA	NA	NA
MW-1	10/8/1997	<100	7	<1.0	<1.0	<1.0	620	NA	175.79	8.10	NA	167.69	NA	NA	NA
MW-1	1/9/1998	970	390	12	48	71	1,200	NA	175.79	7.14	NA	168.65	NA	NA	NA
MW-1	4/13/1998	<50	136	<0.50	1.5	1.8	170	NA	175.79	6.78	NA	169.01	NA	NA	NA
MW-1	7/17/1998	2,500	750	11	88	67	150	NA	175.79	7.28	NA	168.51	NA	NA	NA
MW-1	10/2/1998	8,000	970	36	270	440	35	NA	175.79	7.77	NA	168.02	NA	NA	NA

WELL CONCENTRATIONS
Shell-branded Service Station
4255 MacArthur Boulevard
Oakland, CA

Well ID	Date	TPH-G (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE 8020 (µg/L)	MTBE 8260 (µg/L)	TOC (MSL)	Depth to Water (ft.)	Depth to SPH (ft.)	GW Elevation (MSL)	SPH Thickness (ft.)	DO Reading (ppm)	ORP Reading (mV)
---------	------	-----------------	-------------	-------------	-------------	-------------	------------------------	------------------------	--------------	----------------------------	--------------------------	--------------------------	---------------------------	------------------------	------------------------

MW-1	2/3/1999	210	56	0.82	<0.50	3.2	220	NA	175.79	7.45	NA	168.34	NA	1.4	NA
MW-1	4/29/1999	<50	4.5	<0.50	0.56	<0.50	140	196	175.79	7.58	NA	168.21	NA	1.2	140
MW-1	7/23/1999	<50.0	<0.500	<0.500	<0.500	<0.500	120	111*	175.79	8.51	NA	167.28	NA	1.0	NA
MW-1	11/1/1999	<50.0	<0.500	<0.500	<0.500	<0.500	2.90	NA	175.79	8.30	NA	167.49	NA	1.4	-71
MW-1	1/17/2000	<50	<0.50	<0.50	<0.50	<0.50	3.30	NA	175.79	8.04	NA	167.75	NA	16.9	64
MW-1	4/17/2000	<50.0	1.08	<0.500	<0.500	<0.500	<2.50	NA	175.79	8.00	NA	167.79	NA	1.8	112
MW-1	7/26/2000	125	54.3	2.16	5.45	9.86	33.1	NA	175.79	7.52	NA	168.27	NA	13.2	-140
MW-1	10/12/2000	101	40.7	2.68	3.00	5.18	25.0	NA	175.79	7.71	NA	168.08	NA	>20	534
MW-1	1/15/2001	<50.0	0.633	<0.500	0.505	1.74	<2.50	NA	175.79	7.33	NA	168.46	NA	16.9	-127
MW-1	4/9/2001	<50.0	<0.500	<0.500	<0.500	0.927	<2.50	NA	175.79	7.68	NA	168.11	NA	12.8	-117
MW-1	7/24/2001	<50	4.0	0.65	0.53	1.3	NA	<5.0	175.79	8.00	NA	167.79	NA	>20	43
MW-1	10/31/2001	<50	4.4	<0.50	<0.50	0.98	NA	<5.0	175.79	7.94	NA	167.85	NA	13.6	123
MW-1	1/10/2002	<50	2.2	<0.50	<0.50	1.2	NA	6.1	175.79	7.63	NA	168.16	NA	0.1	63
MW-1	4/25/2002	<50	2.0	<0.50	<0.50	<0.50	NA	<5.0	175.79	7.76	NA	168.03	NA	0.3	54
MW-1	7/18/2002	<50	6.1	<0.50	<0.50	0.98	NA	<5.0	175.79	8.29	NA	167.50	NA	1.1	32

MW-2	11/17/1993	31,000	9,400	4,600	1,000	3,900	NA	NA	170.91	12.31	NA	158.60	NA	NA	NA
MW-2	1/20/1994	40,000	6,900	5,600	780	4,100	NA	NA	170.91	11.48	NA	159.43	NA	NA	NA
MW-2 (D)	1/20/1994	41,000	7,200	6,200	900	4,800	NA	NA	170.91	11.48	NA	159.43	NA	NA	NA
MW-2	4/25/1994	60,000	9,300	6,100	1,400	6,200	NA	NA	170.91	10.84	NA	160.07	NA	NA	NA
MW-2	7/7/1994	280,000a	40,000	26,000	8,100	32,000	NA	NA	170.91	11.89	NA	159.02	NA	NA	NA
MW-2 (D)	7/7/1994	53,000	13,000	6,600	2,000	8,400	NA	NA	170.91	11.89	NA	159.02	NA	NA	NA
MW-2	10/27/1994	130,000	14,000	12,000	2,400	13,000	NA	NA	170.91	12.89	NA	158.02	NA	NA	NA
MW-2 (D)	10/27/1994	390,000	8,800	7,000	1,700	11,000	NA	NA	170.91	12.89	NA	158.02	NA	NA	NA
MW-2	11/17/1994	NA	NA	NA	NA	NA	NA	NA	170.91	9.11	NA	161.80	NA	NA	NA
MW-2	11/28/1994	NA	NA	NA	NA	NA	NA	NA	170.91	9.22	NA	161.69	NA	NA	NA

WELL CONCENTRATIONS
Shell-branded Service Station
4255 MacArthur Boulevard
Oakland, CA

Well ID	Date	TPH-G (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE 8020 (µg/L)	MTBE 8260 (µg/L)	TOC (MSL)	Depth to Water (ft.)	Depth to SPH (ft.)	GW Elevation (MSL)	SPH Thickness (ft.)	DO Reading (ppm)	ORP Reading (mV)
MW-2	1/13/1995	75,000	5,900	12,000	3,100	17,000	NA	NA	170.91	8.10	NA	162.81	NA	NA	NA
MW-2	4/12/1995	100,000	8,500	11,000	2,400	12,000	NA	NA	170.91	10.12	NA	160.79	NA	NA	NA
MW-2 (D)	4/12/1995	80,000	4,200	9,300	2,500	12,000	NA	NA	170.91	10.12	NA	160.79	NA	NA	NA
MW-2	7/25/1995	NA	NA	NA	NA	NA	NA	NA	170.91	11.53	NA	159.80	0.52	NA	NA
MW-2	10/18/1995	NA	NA	NA	NA	NA	NA	NA	170.91	14.02	NA	156.99	0.13	NA	NA
MW-2	1/17/1996	NA	NA	NA	NA	NA	NA	NA	170.91	10.27	NA	160.78	0.17	NA	NA
MW-2	4/25/1996	NA	NA	NA	NA	NA	NA	NA	170.91	11.68	NA	159.25	0.03	NA	NA
MW-2	7/17/1996	NA	NA	NA	NA	NA	NA	NA	170.91	12.78	NA	158.81	0.48	NA	NA
MW-2	10/11/1996	NA	NA	NA	NA	NA	NA	NA	170.91	14.21	NA	156.70	0.28	NA	NA
MW-2	1/22/1997	NA	NA	NA	NA	NA	NA	NA	170.91	10.92	NA	160.08	0.11	NA	NA
MW-2	4/8/1997	NA	NA	NA	NA	NA	NA	NA	170.91	14.12	NA	156.95	0.20	NA	NA
MW-2	7/8/1997	NA	NA	NA	NA	NA	NA	NA	170.91	14.98	NA	156.08	0.19	NA	NA
MW-2	10/8/1997	NA	NA	NA	NA	NA	NA	NA	170.91	12.97	NA	157.98	0.05	NA	NA
MW-2	1/8/1998	NA	NA	NA	NA	NA	NA	NA	170.91	12.54	NA	158.43	0.08	NA	NA
MW-2	4/13/1998	180,000	2,800	5,200	2,400	13,000	71,000	NA	170.91	10.05	NA	160.86	NA	NA	NA
MW-2	7/17/1998	NA	NA	NA	NA	NA	NA	NA	170.91	11.75	NA	159.24	0.10	NA	NA
MW-2	10/2/1998	NA	NA	NA	NA	NA	NA	NA	170.91	16.78	NA	154.22	0.11	NA	NA
MW-2	2/3/1999	NA	NA	NA	NA	NA	NA	NA	170.91	9.90	9.82	161.07	0.08	NA	NA
MW-2	4/29/1999	NA	NA	NA	NA	NA	NA	NA	170.91	9.86	9.81	161.09	0.05	NA	NA
MW-2	7/23/1999	65,800	6,500	4,480	1,960	8,960	46,600	58,500*	170.91	14.45	NA	156.46	NA	1.4	NA
MW-2	11/1/1999	NA	NA	NA	NA	NA	NA	NA	170.91	11.84	11.81	159.09	0.03	NA	NA
MW-2	1/17/2000	46,000	6,000	2,400	1,500	5,500	50,000	31,000	170.91	11.00	NA	159.91	NA	1.3	-54
MW-2	4/17/2000	96,300	8,150	10,200	2,820	14,900	112,000	108,000	170.91	11.06	NA	159.85	NA	2.6	125
MW-2	7/26/2000	72,400	8,680	5,620	2,810	13,400	66,200	46,300	170.91	12.82	NA	158.09	NA	2.2	113
MW-2	10/12/2000	63,200	5,840	4,180	2,310	11,100	61,200	66,600	170.91	11.32	NA	159.59	NA	0.4	55
MW-2	1/15/2001	59,700	2,630	4,800	2,050	11,500	44,400	5,080	170.91	10.19	NA	160.72	NA	1.1	-22

WELL CONCENTRATIONS
Shell-branded Service Station
4255 MacArthur Boulevard
Oakland, CA

Well ID	Date	TPH-G (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE 8020 (µg/L)	MTBE 8260 (µg/L)	TOC (MSL)	Depth to Water (ft.)	Depth to SPH (ft.)	GW Elevation (MSL)	SPH Thickness (ft.)	DO Reading (ppm)	ORP Reading (mV)
---------	------	-----------------	-------------	-------------	-------------	-------------	------------------------	------------------------	--------------	----------------------------	--------------------------	--------------------------	---------------------------	------------------------	------------------------

MW-2	4/9/2001	56,900	1,860	2,550	1,810	9,720	40,000	46,600	170.91	11.15	NA	159.76	NA	1.0	-55
MW-2	7/24/2001	84,000	3,000	4,600	2,500	13,000	NA	41,000	170.91	11.67	NA	159.24	NA	0.2	53
MW-2	10/31/2001	45,000	2,200	3,000	1,500	7,700	NA	29,000	170.91	11.04	NA	159.87	NA	1.2	-17
MW-2	1/10/2002	28,000	840	740	760	3,300	NA	32,000	170.91	9.58	NA	161.33	NA	2.1	-76
MW-2	4/25/2002	41,000	1,900	2,000	1,200	6,900	NA	17,000	170.91	11.40	NA	159.51	NA	0.8	-95
MW-2	7/18/2002	87,000	2,000	2,200	1,400	10,000	NA	19,000	170.91	12.68	NA	158.23	NA	0.7	-34

MW-3	11/17/1993	18,000	5,400	660	720	2,200	NA	NA	174.61	15.40	NA	159.21	NA	NA	NA
MW-3	1/20/1994	55,000	13,000	2,600	2,200	6,500	NA	NA	174.61	14.61	NA	160.00	NA	NA	NA
MW-3	4/25/1994	96,000	11,000	1,600	3,100	9,900	NA	NA	174.61	13.12	NA	161.49	NA	NA	NA
MW-3 (D)	4/25/1994	78,000	12,000	1,900	2,600	7,300	NA	NA	174.61	13.12	NA	161.49	NA	NA	NA
MW-3	7/7/1994	NA	NA	NA	NA	NA	NA	NA	174.61	14.54	NA	160.07	0.02	NA	NA
MW-3	10/27/1994	NA	NA	NA	NA	NA	NA	NA	174.61	15.62	NA	159.03	0.05	NA	NA
MW-3	11/17/1994	NA	NA	NA	NA	NA	NA	NA	174.61	13.83	NA	160.78	NA	NA	NA
MW-3	11/28/1994	NA	NA	NA	NA	NA	NA	NA	174.61	14.02	NA	160.59	NA	NA	NA
MW-3	1/13/1995	180,000	3,200	2,700	1,700	5,200	NA	NA	174.61	12.13	NA	162.48	NA	NA	NA
MW-3 (D)	1/13/1995	23,000	4,000	690	960	3,000	NA	NA	174.61	12.13	NA	162.48	NA	NA	NA
MW-3	4/12/1995	56,000	8,700	1,500	2,100	6,300	NA	NA	174.61	12.96	NA	161.65	NA	NA	NA
MW-3	7/25/1995	NA	NA	NA	NA	NA	NA	NA	174.61	14.28	NA	160.38	0.06	NA	NA
MW-3	10/18/1995	NA	NA	NA	NA	NA	NA	NA	174.61	15.88	NA	158.77	0.05	NA	NA
MW-3	1/17/1996	NA	NA	NA	NA	NA	NA	NA	174.61	13.86	NA	160.94	0.24	NA	NA
MW-3	4/25/1996	NA	NA	NA	NA	NA	NA	NA	174.61	13.82	NA	160.81	0.02	NA	NA
MW-3	7/17/1996	NA	NA	NA	NA	NA	NA	NA	174.61	16.11	NA	158.52	0.03	NA	NA
MW-3	10/1/1996	46,000	7,300	530	1,700	3,900	3,200	NA	174.61	16.56	NA	158.05	NA	NA	NA
MW-3 (D)	10/1/1996	47,000	7,100	530	1,700	4,000	2,900	NA	174.61	16.56	NA	158.05	NA	NA	NA
MW-3	1/22/1997	82,000	5,200	1,300	2,800	8,900	1,100	NA	174.61	13.07	NA	161.54	NA	NA	NA

WELL CONCENTRATIONS
Shell-branded Service Station
4255 MacArthur Boulevard
Oakland, CA

Well ID	Date	TPH-G (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE 8020 (µg/L)	MTBE 8260 (µg/L)	TOC (MSL)	Depth to Water (ft.)	Depth to SPH (ft.)	GW Elevation (MSL)	SPH Thickness (ft.)	DO Reading (ppm)	ORP Reading (mV)
MW-3 (D)	1/22/1997	61,000	8,400	1,100	2,300	7,000	2,700	NA	174.61	13.07	NA	161.54	NA	NA	NA
MW-3	4/8/1997	NA	NA	NA	NA	NA	NA	NA	174.61	17.09	NA	157.54	0.03	NA	NA
MW-3	7/8/1997	56,000	8,800	580	2,000	4,900	2,800	NA	174.61	15.85	NA	158.76	NA	NA	NA
MW-3	10/8/1997	48,000	8,000	590	1,700	3,400	5,100	NA	174.61	16.22	NA	158.39	NA	NA	NA
MW-3	1/8/1998	47,000	9,400	810	2,300	4,700	6,300	NA	174.61	13.80	NA	160.81	NA	NA	NA
MW-3 (D)	1/8/1998	48,000	8,100	750	2,000	4,100	5,800	NA	174.61	13.80	NA	160.81	NA	NA	NA
MW-3	4/13/1998	32,000	6,800	540	1,400	3,400	4,000	NA	174.61	12.97	NA	161.64	NA	NA	NA
MW-3 (D)	4/13/1998	36,000	7,300	660	1,600	3,700	4,000	NA	174.61	12.97	NA	161.64	NA	NA	NA
MW-3	7/17/1998	71,000	11,000	590	2,200	6,900	3,900	NA	174.61	11.51	NA	163.10	NA	NA	NA
MW-3 (D)	7/17/1998	76,000	12,000	700	2,600	8,000	3,000	NA	174.61	11.51	NA	163.10	NA	NA	NA
MW-3	10/2/1998	66,000	8,900	510	2,000	4,900	4,600	NA	174.61	16.50	NA	158.11	NA	NA	NA
MW-3 (D)	10/2/1998	59,000	9,400	460	2,000	4,900	4,700	NA	174.61	16.50	NA	158.11	NA	NA	NA
MW-3	2/3/1999	36,000	6,800	300	1,600	2,900	18,000	NA	174.61	15.21	NA	159.40	NA	1.3	NA
MW-3	4/29/1999	45,000	8,100	580	2,200	5,800	4,700	5,150	174.61	15.43	NA	159.18	NA	1.5	-68
MW-3	7/23/1999	29,400	3,540	215	810	3,800	4,720	6,950*	174.61	14.95	NA	159.66	NA	1.3	NA
MW-3	11/1/1999	20,000	4,190	294	1,060	1,740	5,540	8,590	174.61	14.66	NA	159.95	NA	0.6	-110
MW-3	1/17/2000	17,000	3,900	89	1,100	1,200	7,900	NA	174.61	13.94	NA	160.67	NA	1.3	-40
MW-3	4/17/2000	28,100	5,240	247	1,540	2,750	16,600	NA	174.61	14.00	NA	160.61	NA	1.1	-86
MW-3	7/26/2000	24,300	6,680	159	1,610	1,640	17,100	NA	174.61	13.72	NA	160.89	NA	0.9	-70
MW-3	10/12/2000	14,300	2,630	86.7	241	1,360	16,300	NA	174.61	14.15	NA	160.46	NA	0.9	50
MW-3	1/15/2001	22,100	4,400	266	977	2,990	13,200	NA	174.61	13.05	NA	161.56	NA	1.3	-40
MW-3	4/9/2001	33,800	7,100	147	1,700	2,660	13,000	NA	174.61	13.59	NA	161.02	NA	0.6	-56
MW-3	7/24/2001	220,000	5,600	1,900	4,400	19,000	NA	12,000	174.61	14.43	NA	160.18	NA	0.4	29
MW-3	10/31/2001	65,000	2,700	510	1,800	7,200	NA	9,800	174.61	14.59	NA	160.02	NA	0.9	-27
MW-3	1/10/2002	66,000	2,400	490	1,700	6,600	NA	5,500	174.61	12.65	NA	161.96	NA	1.7	-76
MW-3	4/25/2002	55,000	4,600	460	2,400	6,900	NA	8,100	174.61	14.13	NA	160.48	NA	1.2	-96

WELL CONCENTRATIONS
Shell-branded Service Station
4255 MacArthur Boulevard
Oakland, CA

Well ID	Date	TPH-G (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE 8020 (µg/L)	MTBE 8260 (µg/L)	TOC (MSL)	Depth to Water (ft.)	Depth to SPH (ft.)	GW Elevation (MSL)	SPH Thickness (ft.)	DO Reading (ppm)	ORP Reading (mV)
---------	------	-----------------	-------------	-------------	-------------	-------------	------------------------	------------------------	--------------	----------------------------	--------------------------	--------------------------	---------------------------	------------------------	------------------------

MW-3	7/18/2002	56,000	3,300	270	1,700	5,000	NA	8,400	174.61	15.48	15.45	159.15	0.03	0.8	-41
------	-----------	--------	-------	-----	-------	-------	----	-------	--------	-------	-------	--------	------	-----	-----

MW-4	11/17/1994	NA	NA	NA	NA	NA	NA	NA	164.06	6.62	NA	157.44	NA	NA	NA
MW-4	11/28/1994	2,900	200	17	76	260	NA	NA	164.06	6.11	NA	157.95	NA	NA	NA
MW-4	1/13/1995	1,900	130	5.6	13	40	NA	NA	164.06	6.05	NA	158.01	NA	NA	NA
MW-4	4/12/1995	680	150	<2.0	10	13	NA	NA	164.06	6.31	NA	157.75	NA	NA	NA
MW-4	7/25/1995	340	100	0.8	8.8	3	NA	NA	164.06	7.36	NA	156.70	NA	NA	NA
MW-4	10/18/1995	150	31	<0.5	3.5	0.8	NA	NA	164.06	8.54	NA	155.52	NA	NA	NA
MW-4	1/17/1996	290	14	<0.5	1.8	0.8	NA	NA	164.06	8.48	NA	155.58	NA	NA	NA
MW-4	4/25/1996	<500	65	<5	<5	<5	1,700	NA	164.06	7.40	NA	156.66	NA	NA	NA
MW-4 (D)	4/25/1996	<500	66	<5	8.7	<5	1,500	NA	164.06	7.40	NA	156.66	NA	NA	NA
MW-4	7/17/1996	<500	84	<5.0	6.5	<5.0	1,500	NA	164.06	7.75	NA	156.31	NA	NA	NA
MW-4 (D)	7/17/1996	<500	54	<5.0	<5.0	<5.0	1,700	2,100	164.06	7.75	NA	156.31	NA	NA	NA
MW-4	10/1/1996	<500	1.9	<5.0	<5.0	<5.0	3,000	NA	164.06	8.82	NA	155.24	NA	NA	NA
MW-4	1/22/1997	580	130	<2.5	18	5.2	1,200	NA	164.06	7.51	NA	156.55	NA	NA	NA
MW-4	4/8/1997	770	200	7	26	55	1,500	8	164.06	7.18	NA	156.88	NA	NA	NA
MW-4	7/8/1997	570	78	<5.0	14	11	1,200	NA	164.06	9.00	NA	155.06	NA	NA	NA
MW-4 (D)	7/8/1997	640	81	<5.0	16	19	1,600	NA	164.06	9.00	NA	155.06	NA	NA	NA
MW-4	10/8/1997	<500	40	<5.0	7.4	5.4	1,400	NA	164.06	8.97	NA	155.09	NA	NA	NA
MW-4 (D)	10/8/1997	<500	36	<5.0	5.9	<5.0	1,400	NA	164.06	8.97	NA	155.09	NA	NA	NA
MW-4	1/8/1998	<1,000	55	<10	13	<10	2,000	NA	164.06	7.90	NA	156.16	NA	NA	NA
MW-4	4/13/1998	350	110	2.4	20	26	<2.5	NA	164.06	7.35	NA	156.71	NA	NA	NA
MW-4	7/17/1998	210	66	0.78	5.4	9.8	1,700	NA	164.06	6.95	NA	157.11	NA	NA	NA
MW-4	10/2/1998	<50	0.89	<0.50	<0.50	<0.50	2,900	NA	164.06	7.35	NA	156.71	NA	NA	NA
MW-4	2/3/1999	560	120	2.5	29	34	6,800	NA	164.06	7.71	NA	156.35	NA	0.9	NA
MW-4	4/29/1999	390	80	1.9	13	19	7,000	8,360	164.06	7.83	NA	156.23	NA	1.1	-125

WELL CONCENTRATIONS
Shell-branded Service Station
4255 MacArthur Boulevard
Oakland, CA

Well ID	Date	TPH-G (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE 8020 (µg/L)	MTBE 8260 (µg/L)	TOC (MSL)	Depth to Water (ft.)	Depth to SPH (ft.)	GW Elevation (MSL)	SPH Thickness (ft.)	DO Reading (ppm)	ORP Reading (mV)
---------	------	-----------------	-------------	-------------	-------------	-------------	------------------------	------------------------	--------------	----------------------------	--------------------------	--------------------------	---------------------------	------------------------	------------------------

MW-4	7/23/1999	460	93.6	8.40	25.2	28.8	3,760	6,000*	164.06	11.33	NA	152.73	NA	0.9	NA
MW-4	11/1/1999	77.3	0.520	<0.500	<0.500	<0.500	539	NA	164.06	10.66	NA	153.40	NA	2.8	3
MW-4	1/17/2000	160	27	<0.50	12	6.3	12,000	NA	164.06	10.15	NA	153.91	NA	3.9	-17
MW-4	4/17/2000	<500	26	6.38	9.35	10.4	9,070	NA	164.06	10.10	NA	153.96	NA	1.7	-129
MW-4	7/26/2000	<500	22.7	<5.00	7.59	6.96	7,660	NA	164.06	10.09	NA	153.97	NA	1.4	-137
MW-4	10/12/2000	172	19.8	<0.500	7.47	4.50	8,290	NA	164.06	9.35	NA	154.71	NA	3.5	529
MW-4	1/15/2001	53.6	1.50	<0.500	2.45	1.80	9,260	NA	164.06	8.77	NA	155.29	NA	2.3	53
MW-4	4/9/2001	<500	<5.00	<5.00	<5.00	5.52	10,300	NA	164.06	7.75	NA	156.31	NA	1.0	-133
MW-4	7/24/2001	58	3.8	<0.50	3.2	2.9	NA	1,700	164.06	10.07	NA	153.99	NA	0.5	106
MW-4	10/31/2001	<1,000	<10	<10	<10	<10	NA	7,400	164.06	9.97	NA	154.09	NA	0.8	22
MW-4	1/10/2002	<2,000	<20	<20	<20	<20	NA	12,000	164.06	8.53	NA	155.53	NA	8.9	224
MW-4	4/25/2002	<2,000	<20	<20	<20	<20	NA	7,900	164.06	7.33	NA	156.73	NA	3.6	-84
MW-4	7/18/2002	<2,000	<20	<20	<20	<20	NA	7,200	164.06	9.05	NA	155.01	NA	1.7	120

MW-5	1/4/2002	NA	NA	NA	NA	NA	NA	NA	NA	5.62	NA	NA	NA	NA	NA
MW-5	1/10/2002	<50	<0.50	<0.50	<0.50	<0.50	NA	110	164.06	5.88	NA	158.18	NA	3.3	172
MW-5	4/25/2002	<50	<0.50	<0.50	<0.50	<0.50	NA	73	164.06	6.81	NA	157.25	NA	0.3	-44
MW-5	7/18/2002	<50	<0.50	<0.50	<0.50	<0.50	NA	75	164.06	7.38	NA	156.68	NA	0.4	170

TB-1	4/29/1999	NA	NA	NA	NA	NA	NA	NA	NA	6.00	NA	NA	NA	3.8	-132
TB-1	11/1/1999	NA	NA	NA	NA	NA	NA	NA	NA	12.65	NA	NA	NA	0.2	-165
TB-1	1/17/2000	NA	NA	NA	NA	NA	NA	NA	NA	7.72	NA	NA	NA	0.8	-178
TB-1	4/17/2000	NA	NA	NA	NA	NA	NA	NA	NA	7.65	NA	NA	NA	0.5	-152
TB-1	7/26/2000	NA	NA	NA	NA	NA	NA	NA	NA	5.13	NA	NA	NA	1.0	-124
TB-1	10/12/2000	NA	NA	NA	NA	NA	NA	NA	NA	5.20	NA	NA	NA	0.7	-73
TB-1	1/15/2001	NA	NA	NA	NA	NA	NA	NA	NA	5.09	NA	NA	NA	1.2	-118

WELL CONCENTRATIONS
Shell-branded Service Station
4255 MacArthur Boulevard
Oakland, CA

Well ID	Date	TPH-G (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE 8020 (µg/L)	MTBE 8260 (µg/L)	TOC (MSL)	Depth to Water (ft.)	Depth to SPH (ft.)	GW Elevation (MSL)	SPH Thickness (ft.)	DO Reading (ppm)	ORP Reading (mV)
---------	------	-----------------	-------------	-------------	-------------	-------------	------------------------	------------------------	--------------	----------------------------	--------------------------	--------------------------	---------------------------	------------------------	------------------------

TB-1	4/9/2001	NA	NA	NA	NA	NA	NA	NA	NA	4.96	NA	NA	NA	1.0	-72
TB-1	7/24/2001	NA	NA	NA	NA	NA	NA	NA	NA	6.03	NA	NA	NA	1.4	31
TB-1	10/31/2001	1,000	85	<10	<10	42	NA	4,100	NA	5.89	NA	NA	NA	1.8	88
TB-1	1/10/2002	5,000	410	390	65	620	NA	9,000	NA	7.47	NA	NA	NA	2.0	95
TB-1	4/25/2002	5,000	780	60	49	91	NA	6,000	NA	11.71	NA	NA	NA	1.7	-136
TB-1	7/18/2002	Insufficient water		NA	NA	NA	NA	NA	NA	13.50	NA	NA	NA	NA	NA

TB-2	4/29/1999	NA	NA	NA	NA	NA	NA	NA	NA	4.76	NA	NA	NA	4.2	-108
TB-2	11/1/1999	NA	NA	NA	NA	NA	NA	NA	NA	11.33	NA	NA	NA	0.5	-148
TB-2	1/17/2000	NA	NA	NA	NA	NA	NA	NA	NA	9.79	NA	NA	NA	0.7	-162
TB-2	4/17/2000	NA	NA	NA	NA	NA	NA	NA	NA	9.75	NA	NA	NA	0.9	-121
TB-2	7/26/2000	NA	NA	NA	NA	NA	NA	NA	NA	4.73	NA	NA	NA	0.9	-85
TB-2	10/12/2000	NA	NA	NA	NA	NA	NA	NA	NA	4.05	NA	NA	NA	0.6	-47
TB-2	1/15/2001	NA	NA	NA	NA	NA	NA	NA	NA	3.87	NA	NA	NA	0.7	-91
TB-2	4/9/2001	46,600	1,240	1,310	1,110	12,100	31,300	NA	NA	3.76	NA	NA	NA	0.8	-24
TB-2	7/24/2001	11,000	630	<25	310	200	NA	11,000	NA	4.75	NA	NA	NA	0.4	-51
TB-2	10/31/2001	7,500	530	1,500	100	500	NA	2,500	NA	4.24	NA	NA	NA	0.6	-7
TB-2	1/10/2002	<5,000	480	47	34	110	NA	12,000	NA	6.26	NA	NA	NA	1.3	-81
TB-2	4/25/2002	4,700	470	140	<20	80	NA	7,400	NA	11.78	NA	NA	NA	0.9	-107
TB-2	7/18/2002	7,500	630	650	<25	390	NA	44,000	NA	12.34	NA	NA	NA	0.9	-67

WELL CONCENTRATIONS
Shell-branded Service Station
4255 MacArthur Boulevard
Oakland, CA

Well ID	Date	TPH-G (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE 8020 (µg/L)	MTBE 8260 (µg/L)	TOC (MSL)	Depth to Water (ft.)	Depth to SPH (ft.)	GW Elevation (MSL)	SPH Thickness (ft.)	DO Reading (ppm)	ORP Reading (mV)
---------	------	-----------------	-------------	-------------	-------------	-------------	------------------------	------------------------	--------------	----------------------------	--------------------------	--------------------------	---------------------------	------------------------	------------------------

Abbreviations:

TPH-G = Total petroleum hydrocarbons as gasoline by EPA Method 8260B; prior to July 24, 2001, analyzed by EPA Method 8015.

BTEX = Benzene, toluene, ethylbenzene, xylenes by EPA Method 8260B; prior to July 24, 2001, analyzed by EPA Method 8020.

MTBE = Methyl-tertiary-butyl ether

TOC = Top of Casing Elevation

SPH = Separate-Phase Hydrocarbons

GW = Groundwater

µg/L = Parts per billion

MSL = Mean sea level

ft = Feet

<n = Below detection limit

D = Duplicate sample

NA = Not applicable

DO = Dissolved Oxygens

ppm = Parts per million

ORP = Oxidation Reduction Potential

mV = Millivolts

Notes:

* = Sample analyzed outside the EPA recommended holding time.

a = Ground water surface had a sheen when sampled.

b = MTBE value is estimated by Sequoia Analytical of Redwood City, California.

Site surveyed March 14, 2002, by Virgil Chavez Land Surveying of Vallejo, California.

When separate-phase hydrocarbons are present, ground water elevation is adjusted using the relation:

Corrected ground water elevation = Top-of-casing elevation - depth to water + (0.8 x hydrocarbon thickness).

BLAINE TECH SERVICES, INC. METHODS AND PROCEDURES FOR THE ROUTINE MONITORING OF GROUNDWATER WELLS AT EQUIVA SITES

Blaine Tech Services, Inc. performs environmental sampling and documentation as an independent third party. We specialize in groundwater monitoring assignments and intentionally limit the scope of our services to those centered on the generation of objective information.

To avoid conflicts of interest, Blaine Tech Services, Inc. personnel do not evaluate or interpret the information we collect. As a state licensed contractor (C-57 well drilling –water – 746684) performing strictly technical services, we do not make any professional recommendations and perform no consulting of any kind.

SAMPLING PROCEDURES OVERVIEW

SAFETY

All groundwater monitoring assignments performed for Equiva comply with Equiva's safety guidelines, 29 CFR 1910.120 and SB-198 Injury and Illness Prevention Program (IIPP). All Field Technicians receive the full 40 hour 29CFR 1910.120 OSHA SARA HAZWOPER course, medical clearance and on-the-job training prior to commencing any work on any Equiva site.

INSPECTION AND GAUGING

Wells are inspected prior to evacuation and sampling. The condition of the wellhead is checked and noted according to a wellhead inspection checklist.

Standard measurements include the depth to water (DTW) and the total well depth (TD) obtained with industry standard electronic sounders, which are graduated in increments of hundredths of a foot.

The water in each well is inspected for the presence of Immiscibles or sheen and when free product is suspected, it is confirmed using an electronic interface probe (e.g. MMC). No samples are collected from a well containing over two-hundredths of a foot (0.02') of product.

EVACUATION

Depth to water measurements are collected by our personnel prior to purging and minimum purge volumes are calculated anew for each well based on the height of the water column and the diameter of the well. Expected purge volumes are never less than three case volumes and are set at no less than four case volumes in some jurisdictions.

Well purging devices are selected on the basis of the well diameter and the total volume to be evacuated. In most cases the well will be purged using an electric submersible pump (i.e. Grundfos) suspended near (but not touching) the bottom of the well. Small volumes of purgewater are often removed by hand bailing with a disposable bailer.

PARAMETER STABILIZATION

Well purging completion standards include minimum purge volumes, but additionally require stabilization of specific groundwater parameters prior to sample collection. Typical groundwater parameters used to measure stability are electrical conductivity, pH, and temperature. Instrument readings are obtained at regular intervals during the evacuation process (no less than once per case volume).

Stabilization standards for routine quarterly monitoring of fuel sites include the following: Temperature is considered to have stabilized when successive readings do not fluctuate more than +/- 1 degree Celsius. Electrical conductivity is considered stable when successive readings are within 10%. pH is considered to be stable when successive readings remain constant or vary no more than 0.2 of a pH unit.

DEWATERED WELLS

Normal evacuation removes no less than three case volumes of water from the well. However, less water may be removed in cases where the well dewateres and does not recharge.

Wells known to dewater are evacuated as early as possible during each site visit in order to allow for the greatest amount of recovering. Any well that does not recharge to 80% of its original volume will be sampled prior to the departure of our personnel from the site in order to eliminate the need of a return visit.

In jurisdictions where a certain percentage of recovery is included in the local completion standard, our personnel follow the regulatory expectation.

PURGEWATER CONTAINMENT

All non-hazardous purgewater evacuated from each groundwater monitoring well is captured and contained in on-board storage tanks on the Sampling Vehicle and/or special water hauling trailers. Effluent from the decontamination of reusable apparatus (sounders, electric pumps and hoses etc.), consisting of groundwater combined with deionized water and non-phosphate soap, is also captured and pumped into effluent tanks.

Non-hazardous purgewater is transported under standard Bill of Lading documentation to a Blaine Tech Services, Inc. facility before being transported to an Equiva approved disposal facility.

SAMPLE COLLECTION DEVICES

All samples are collected using a stainless steel, teflon or disposable bailers.

SAMPLE CONTAINERS

Sample material is decanted directly from the sampling bailer into sample containers provided by the laboratory that will analyze the samples. The transfer of sample material from the bailer to the sample container conforms to specifications contained in the USEPA T.E.G.D. The type of sample container, material of construction, method of closure and filling requirements are specific to the intended analysis. Chemicals needed to preserve the sample material are commonly placed inside the sample containers by the laboratory or glassware vendor prior to delivery of the bottle to our personnel. The laboratory sets the number of replicate containers.

TRIP BLANKS

Upon request, a Trip Blank is carried to each site and is kept inside the cooler for the duration of the sampling event. It is turned over to the laboratory for analysis with the samples from that site.

DUPLICATES

Upon request, one Duplicate sample is collected at each site. It is up to the Field Technician to choose the well at which the Duplicate is collected. Typically, a duplicate is collected from one of the most contaminated wells. The Duplicate sample is labeled DUP thus rendering the sample blind.

SAMPLE STORAGE

All sample containers are promptly placed in food grade ice chests for storage in the field and transport (direct or via our facility) to the analytical laboratory that will perform the intended analytical procedures. These ice chests contain quantities of restaurant grade ice as a refrigerant material. The samples are maintained in either an ice chest or a refrigerator until relinquished into the custody of the laboratory or laboratory courier.

DOCUMENTATION CONVENTIONS

Each and every sample container has a label affixed to it. In most cases these labels are generated by our office personnel and are partially preprinted. Labels can also be hand written by our field personnel. The site is identified with the store number and site address, as is the particular groundwater well from which the sample is drawn (e.g. MW-1, MW-2, S-1 etc.). The time at which the sample was collected and the initials of the person collecting the sample are handwritten onto the label.

Chain of Custody records are created using client specific preprinted forms following USEPA specifications.

Bill of Lading records are contemporaneous records created in the field at the site where the non-hazardous purgewater is generated. Field Technicians use preprinted Bill of Lading forms.

DECONTAMINATION

All equipment is brought to the site in clean and serviceable condition and is cleaned after use in each well and before subsequent use in any other well. Equipment is decontaminated before leaving the site.

The primary decontamination device is a commercial steam cleaner. The steam cleaner is de-tuned to function as a hot pressure washer, which is then operated with high quality deionized water which is produced at our facility and stored onboard our sampling vehicle. Cleaning is facilitated by the use of proprietary fixtures and devices included in the patented workstation (U.S. Patent 5,535,775) that is incorporated in each sampling vehicle. The steam cleaner is used to decon reels, pumps and bailers.

Any sensitive equipment or parts (i.e. Dissolved Oxygen sensor membrane, sounder etc.) that cannot be washed using the hot high pressure water, will be sprayed with a non-phosphate soap and deionized water solution and rinsed with deionized water.

EXAMPLE: The sounder is cleaned between wells using the non-phosphate soap and deionized water solution followed by deionized water rinses. The sounder is then washed with the steam cleaner between sites or as necessitated by use in a particularly contaminated well.

DISSOLVED OXYGEN READINGS

All Dissolved Oxygen readings are taken using YSI meters (e.g. YSI Model 58 or equivalent YSI meter). These meters are equipped with a YSI stirring device that enables them to collect accurate in-situ readings. The probe/stirring devices are modified to allow downhole measurements to be taken from wells as small as two-inch diameter.

The probe and reel is decontaminated between wells as described above. The meter is calibrated between wells as per the instructions in the operating manual. The probe and stirrer is lowered into the water column allowed to stabilize before use.

OXIDATION REDUCTION POTENTIAL READINGS

All readings are obtained with either Corning or Myron-L meters (e.g. Corning ORP-65 or a Myron-L Ultrameter GP). The meter is cleaned between wells as described above. The meter is calibrated at the start of each day according to the instruction manual. In use the probe is placed in a cup of freshly obtained monitoring well water and allowed to stabilize.

WELL GAUGING DATA

Project # 020713-DA-1 Date 7/18/02 Client Shell

Site 4255 MacArthur Blvd. Oakland

Well ID	Well Size (in.)	Sheen / Odor	Depth to Immiscible Liquid (ft.)	Thickness of Immiscible Liquid (ft.)	Volume of Immiscibles Removed (ml)	Depth to water (ft.)	Depth to well bottom (ft.)	Survey Point: TOB or TOC
Mw-1	4					8.29	23.32	TOC
Mw-2	4					12.68	19.71	
Mw-3	4	0	15.45	0.03	50ml	15.45 15.48	21.94	
Mw-4	2					9.05	30.56	
Mw-5	2					7.38	19.96	
TB-1	4					13.50	13.43 13.65	
TB-2	4					12.34	12.96	

WELLHEAD INSPECTION CHECKLIST AND REPAIR ORDER

Client Shell Inspection Date 7/10/02
 Site Address 4255 MacArthur Blvd Inspected By EM

1. Lid on box?	6. Casing secure?	12. Water standing in wellbox?	15. Well cap functional?
2. Lid broken?	7. Casing cut level?	12a. Standing above the top of casing?	16. Can cap be pulled loose?
3. Lid bolts missing?	8. Debris in wellbox?	12b. Standing below the top of casing?	17. Can cap seal out water?
4. Lid bolts stripped?	9. Wellbox is too far above grade?	12c. Water even with the top of casing?	18. Padlock present?
5. Lid seal intact?	10. Wellbox is too far below grade?	13. Well cap present?	19. Padlock functional?
	11. Wellbox is crushed/damaged?	14. Well cap found secure?	

Check box if no deficiencies were found. Note below deficiencies you were able to correct.

Well I.D.	Deficiency	Corrective Action Taken
MW-4	Bolts not threading properly	Tapped, lubed
MW-3	No bolts	Tapped, lubed, labeled, 2 new 3/8" bolts
		Removed debris
	① large indentation/pothole - Trip hazard	
MW-2	No bolts, bad cap, casing uneven. 1" PVC inside 4" casing preventing cap from sealing properly	Levelled casing, new 4" cap & 2357 lock, tapped, 2 new 3/8" bolts, lubed, labeled
TB-2	Well box imploding	
TB-1	No bolts	Tapped, ① new 1/4" & ① 5/16" bolts lubed, labeled

Note below all deficiencies that could not be corrected and still need to be corrected.

Well I.D.	Persisting Deficiency	BTS Office assigns or defers Correction to:	Date assigned	Date corrected
TB-2	Well box imploding ^{needs} new w.B.			
MW-1	Bolt tabs broken - needs new w.B.			

SHELL WELL MONITORING DATA SHEET

BTS #: 020718-DA-1	Site: 4255 MacArthur Blvd. Oakland
Sampler: David A.	Date: 7/18/02
Well I.D.: MW-1	Well Diameter: 2 3 ④ 6 8
Total Well Depth: 23.32	Depth to Water: 8.29
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>PVC</u> Grade	D.O. Meter (if req'd): <u>YSI</u> HACH

Purge Method: <input type="checkbox"/> Bailer <input type="checkbox"/> Disposable Bailer <input type="checkbox"/> Middleburg <input checked="" type="checkbox"/> Electric Submersible	Waterra <input type="checkbox"/> Peristaltic <input type="checkbox"/> Extraction Pump Other: _____	Sampling Method: <input checked="" type="checkbox"/> Bailer <input checked="" type="checkbox"/> Disposable Bailer <input type="checkbox"/> Extraction Port <input type="checkbox"/> Dedicated Tubing Other: _____
--	---	---

$9.8 \text{ (Gals.)} \times 3 = 29.4 \text{ Gals.}$ 1 Case Volume Specified Volumes Calculated Volume	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Well Diameter</th> <th>Multiplier</th> <th>Well Diameter</th> <th>Multiplier</th> </tr> </thead> <tbody> <tr> <td>1"</td> <td>0.04</td> <td>④ 6"</td> <td>0.65</td> </tr> <tr> <td>2"</td> <td>0.16</td> <td>5"</td> <td>1.47</td> </tr> <tr> <td>3"</td> <td>0.37</td> <td>Other</td> <td>radius² * 0.163</td> </tr> </tbody> </table>	Well Diameter	Multiplier	Well Diameter	Multiplier	1"	0.04	④ 6"	0.65	2"	0.16	5"	1.47	3"	0.37	Other	radius ² * 0.163
Well Diameter	Multiplier	Well Diameter	Multiplier														
1"	0.04	④ 6"	0.65														
2"	0.16	5"	1.47														
3"	0.37	Other	radius ² * 0.163														

Time	Temp (°F)	pH	Cond. (mS or μ S)	Turbidity (NTUs)	Gals. Removed	Observations
834	66.5	7.3	1027	21	10	clear
834	well dewatered @ 10g.			—	—	DTW = 19.21
						80% = 11.29
1035	66.6	7.1	1109	19	⊖	DTW = 10.91

Did well dewater? Yes No Gallons actually evacuated: 10

Sampling Time: 1038 Sampling Date: 7/18/02

Sample I.D.: MW-1 Laboratory: Kiff SPL Other _____

Analyzed for: ~~TPH-G~~ BTEX MTBE TPH-D Other: Alkalinity, Nitrate, Sulfate, Ferrrous Iron

EB I.D. (if applicable): @ _____ Duplicate I.D. (if applicable):

Analyzed for: TPH-G BTEX MTBE TPH-D Other: _____

D.O. (if req'd):	Pre-purge:	1.1	mg/L	Post-purge:	mg/L
O.R.P. (if req'd):	Pre-purge:	32	mV	Post-purge:	mV

SHELL WELL MONITORING DATA SHEET

BTS #: 020718-DA-1	Site: 4255 MacArthur Blvd. Oakland
Sampler: David A.	Date: 7/19/02
Well I.D.: 19.71 MW-2	Well Diameter: 2 3 <u>4</u> 6 8
Total Well Depth: 19.71	Depth to Water: 12.68
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>PVT</u> Grade	D.O. Meter (if req'd): <u>YSI</u> HACH

Purge Method: Bailer	Water: _____	Sampling Method: <input checked="" type="checkbox"/> Bailer
Disposable Bailer	Peristaltic	Disposable Bailer
Middleburg	Extraction Pump	Extraction Port
<u>Electric Submersible</u>	Other: _____	Dedicated Tubing

$4.6 \text{ (Gals.)} \times 3 = 13.8 \text{ Gals.}$ <p>1 Case Volume Specified Volumes Calculated Volume</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Well Diameter</th> <th>Multiplier</th> <th>Well Diameter</th> <th>Multiplier</th> </tr> </thead> <tbody> <tr> <td>1"</td> <td>0.04</td> <td><u>4"</u></td> <td>0.65</td> </tr> <tr> <td>2"</td> <td>0.16</td> <td>6"</td> <td>1.47</td> </tr> <tr> <td>3"</td> <td>0.37</td> <td>Other</td> <td>radius² * 0.163</td> </tr> </tbody> </table>	Well Diameter	Multiplier	Well Diameter	Multiplier	1"	0.04	<u>4"</u>	0.65	2"	0.16	6"	1.47	3"	0.37	Other	radius ² * 0.163
Well Diameter	Multiplier	Well Diameter	Multiplier														
1"	0.04	<u>4"</u>	0.65														
2"	0.16	6"	1.47														
3"	0.37	Other	radius ² * 0.163														

Time	Temp (°F)	pH	Cond. (mS or μ S)	Turbidity (NTUs)	Gals. Removed	Observations
No SPH detected, but bailer dropped in well had 1 min SPH on top. Sampled as normal.						
9:45	68.5	6.7	931	164	5	heavy sheen
9:45	well dewatered @		5 g	-	-	DTW = 16.85
10:50	68.9	7.0	958	81	0	Sheen, odor DTW = 12.94

Did well dewater? Yes No Gallons actually evacuated: 5 80% = 14.01

Sampling Time: 1055 Sampling Date: 7/19/02

Sample I.D.: MW-2 Laboratory: Kiff SPL Other: _____

Analyzed for: ~~TPH-G BTEX MTBE~~ TPH-D Other: Alkalinity, Nitrate, Sulfate, Ferrrous Iron

EB I.D. (if applicable): @ _____ Duplicate I.D. (if applicable):

Analyzed for: TPH-G BTEX MTBE TPH-D Other: _____

D.O. (if req'd):	Pre-purge:	0.7	mg/L	Post-purge:	mg/L
O.R.P. (if req'd):	Pre-purge:	-34	mV	Post-purge:	mV

SHELL WELL MONITORING DATA SHEET

BTS #: 020718-DA-1	Site: 4255 MacArthur Blvd. Oakland
Sampler: David A.	Date: 7/19/02
Well I.D.: Mw-3	Well Diameter: 2 3 <u>4</u> 6 8
Total Well Depth: 15.48 21.94	Depth to Water: 15.48
Depth to Free Product: 15.45	Thickness of Free Product (feet):
Referenced to: <u>PVT</u> Grade	D.O. Meter (if req'd): <u>YSI</u> HACH

Purge Method: Bailer Watera Sampling Method: ~~Bailer~~

Disposable Bailer Peristaltic Disposable Bailer

Middleburg Extraction Pump Extraction Port

Electric Submersible Other _____ Dedicated Tubing

Other: _____

$4.1 \text{ (Gals.)} \times 3 = 12.3 \text{ Gals.}$	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Well Diameter</th> <th>Multiplier</th> <th>Well Diameter</th> <th>Multiplier</th> </tr> </thead> <tbody> <tr> <td>1"</td> <td>0.04</td> <td><u>4"</u></td> <td>0.65</td> </tr> <tr> <td>2"</td> <td>0.16</td> <td>6"</td> <td>1.47</td> </tr> <tr> <td>3"</td> <td>0.37</td> <td>Other</td> <td>radius² * 0.163</td> </tr> </tbody> </table>	Well Diameter	Multiplier	Well Diameter	Multiplier	1"	0.04	<u>4"</u>	0.65	2"	0.16	6"	1.47	3"	0.37	Other	radius ² * 0.163
Well Diameter	Multiplier	Well Diameter	Multiplier														
1"	0.04	<u>4"</u>	0.65														
2"	0.16	6"	1.47														
3"	0.37	Other	radius ² * 0.163														
I Case Volume	Specified Volumes	Calculated Volume															

Time	Temp (°F)	pH	Cond. (mS or μ S)	Turbidity (NTUs)	Gals. Removed	Observations
1020	66.5	6.4	914	143	5	heavy sheen, odor
1020	well dewatered @ 5g.					DW = 19.96
						DW = 16.80
1100	69.1	6.6	1103	19	0	sheen, clear 80% = 16.77
Pre-purge bailed SPH to a thickness of 0.01, removed 50ml.						

Did well dewater? Yes No Gallons actually evacuated: 5

Sampling Time: 1105 @ site departure Sampling Date: 7/19/02

Sample I.D.: Mw-3 Laboratory: Kiff SPL Other _____

Analyzed for: ~~TPH-G~~ BTEX MTBE TPH-D Other: Alkalinity, Nitrate, Sulfate, Ferrons Iron

EB I.D. (if applicable): @ Time Duplicate I.D. (if applicable):

Analyzed for: TPH-G BTEX MTBE TPH-D Other:

D.O. (if req'd):	Pre-purge:	0.8 ^{mg/L}	Post-purge:		
O.R.P. (if req'd):	Pre-purge:	-41 mV	Post-purge:		mV

SHELL WELL MONITORING DATA SHEET

BTS #: 020718-DA-1	Site: 4255 MacArthur Blvd. Oakland
Sampler: David A.	Date: 7/18/02
Well I.D.: Mw-4	Well Diameter: <input checked="" type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 6 <input type="radio"/> 8
Total Well Depth: 30.50	Depth to Water: 9.05
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <input checked="" type="checkbox"/> PVC Grade	D.O. Meter (if req'd): <input checked="" type="checkbox"/> YSI HACH

Purge Method: <input checked="" type="checkbox"/> Bailer Disposable Bailer Middleburg Electric Submersible	Waterra Peristaltic Extraction Pump Other _____	Sampling Method: <input checked="" type="checkbox"/> Bailer <input checked="" type="checkbox"/> Disposable Bailer Extraction Port Dedicated Tubing Other: _____
--	--	---

$3.4 \text{ (Gals.)} \times 3 = 10.2 \text{ Gals.}$ I Case Volume Specified Volumes Calculated Volume	<table border="1" style="width: 100%; border-collapse: collapse; font-size: small;"> <thead> <tr> <th>Well Diameter</th> <th>Multiplier</th> <th>Well Diameter</th> <th>Multiplier</th> </tr> </thead> <tbody> <tr> <td>1"</td> <td>0.04</td> <td>4"</td> <td>0.65</td> </tr> <tr> <td><input checked="" type="radio"/> 2"</td> <td>0.16</td> <td>6"</td> <td>1.47</td> </tr> <tr> <td>3"</td> <td>0.37</td> <td>Other</td> <td>radius² + 0.163</td> </tr> </tbody> </table>	Well Diameter	Multiplier	Well Diameter	Multiplier	1"	0.04	4"	0.65	<input checked="" type="radio"/> 2"	0.16	6"	1.47	3"	0.37	Other	radius ² + 0.163
Well Diameter	Multiplier	Well Diameter	Multiplier														
1"	0.04	4"	0.65														
<input checked="" type="radio"/> 2"	0.16	6"	1.47														
3"	0.37	Other	radius ² + 0.163														

Time	Temp (°F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	Gals. Removed	Observations
800	63.0	6.7	1063	7200	3.5	cloudy, color
803	63.2	6.9	1075	7200	8	"
806	63.8	6.8	1065	7200	10.5	"

Did well dewater? Yes NO Gallons actually evacuated: 10.5

Sampling Time: 9:00 Sampling Date: 7/18/02

Sample I.D.: Mw-4 Laboratory: KIF SPL Other _____

Analyzed for: ~~TPH-G~~ BTEX MTBE TPH-D Other: Alkalinity, Nitrate, Sulfate, Ferrrous Iron

EB I.D. (if applicable): @ _____ Time Duplicate I.D. (if applicable):

Analyzed for: TPH-G BTEX MTBE TPH-D Other:

D.O. (if req'd):	Pre-purge:	1.7	mg/L	Post-purge:	mg/L
O.R.P. (if req'd):	Pre-purge:	120	mV	Post-purge:	mV

SHELL WELL MONITORING DATA SHEET

BTS #: 020718-DA-1	Site: 4255 MacArthur Blvd. Oakland
Sampler: David A.	Date: 7/18/02
Well I.D.: MW-5	Well Diameter: (2) 3 4 6 8
Total Well Depth: 19.96	Depth to Water: 7.38
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>PVT</u> Grade	D.O. Meter (if req'd): <u>YSI</u> HACH

Purge Method: <input type="checkbox"/> Bailer <input type="checkbox"/> Disposable Bailer <input checked="" type="checkbox"/> Middleburg <input type="checkbox"/> Electric Submersible	Water <input type="checkbox"/> Peristaltic <input type="checkbox"/> Extraction Pump Other: _____	Sampling Method: <input checked="" type="checkbox"/> Bailer <input checked="" type="checkbox"/> Disposable Bailer <input type="checkbox"/> Extraction Port <input type="checkbox"/> Dedicated Tubing Other: _____
--	---	---

$2.0 \text{ (Gals.)} \times 3 = 6.0 \text{ Gals.}$ 1 Case Volume Specified Volumes Calculated Volume	<table border="1" style="width: 100%; border-collapse: collapse; font-size: small;"> <thead> <tr> <th>Well Diameter</th> <th>Multiplier</th> <th>Well Diameter</th> <th>Multiplier</th> </tr> </thead> <tbody> <tr> <td>1"</td> <td>0.04</td> <td>4"</td> <td>0.65</td> </tr> <tr> <td>(2) 2"</td> <td>0.16</td> <td>6"</td> <td>1.47</td> </tr> <tr> <td>3"</td> <td>0.37</td> <td>Other</td> <td>radius² * 0.163</td> </tr> </tbody> </table>	Well Diameter	Multiplier	Well Diameter	Multiplier	1"	0.04	4"	0.65	(2) 2"	0.16	6"	1.47	3"	0.37	Other	radius ² * 0.163
Well Diameter	Multiplier	Well Diameter	Multiplier														
1"	0.04	4"	0.65														
(2) 2"	0.16	6"	1.47														
3"	0.37	Other	radius ² * 0.163														

Time	Temp (°F)	pH	Cond. (mS or <u>µS</u>)	Turbidity (NTUs)	Gals. Removed	Observations
734	62.4	7.0	1370	7200	2	tan, turbid
735	62.3	6.7	997	7200	4	"
936 736	62.1	7.0	910	7200	6	"

Did well dewater? Yes No Gallons actually evacuated: 6

Sampling Time: ~~940~~ 740 Sampling Date: 7/18/02

Sample I.D.: MW-5 Laboratory: Kiff SPL Other: _____

Analyzed for: ~~PHG BTEX MTBE~~ TPH-D Other: Alkalinity, Nitrate, Sulfate, Ferrrous Iron

EB I.D. (if applicable): @ Time Duplicate I.D. (if applicable):

Analyzed for: TPH-G BTEX MTBE TPH-D Other:

D.O. (if req'd):	Pre-purge:	0.4 mg/L	Post-purge:	mg/L
O.R.P. (if req'd):	Pre-purge:	170 mV	Post-purge:	mV

SHELL WELL MONITORING DATA SHEET

BTS #: 020718-DA-1	Site: 4255 MacArthur Blvd. Oakland
Sampler: David A.	Date: 7/19/02
Well I.D.: TB-1	Well Diameter: 2 3 <u>4</u> 6 8
Total Well Depth: 13.65	Depth to Water: 13.50
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>PVD</u> Grade	D.O. Meter (if req'd): <u>YSI</u> HACH

Purge Method: Bailer Disposable Bailer Middleburg Electric Submersible	Water: Peristaltic Extraction Pump Other:	Sampling Method: <input checked="" type="checkbox"/> Bailer Disposable Bailer Extraction Port Dedicated Tubing Other:
---	---	---

(Gals.) X <u>3</u> = _____ Gals. I Case Volume Specified Volumes Calculated Volume	<table border="1" style="width: 100%; border-collapse: collapse; font-size: small;"> <thead> <tr> <th>Well Diameter</th> <th>Multiplier</th> <th>Well Diameter</th> <th>Multiplier</th> </tr> </thead> <tbody> <tr> <td>1"</td> <td>0.04</td> <td>4"</td> <td>0.65</td> </tr> <tr> <td>2"</td> <td>0.16</td> <td>6"</td> <td>1.47</td> </tr> <tr> <td>3"</td> <td>0.37</td> <td>Other</td> <td>radius² * 0.163</td> </tr> </tbody> </table>	Well Diameter	Multiplier	Well Diameter	Multiplier	1"	0.04	4"	0.65	2"	0.16	6"	1.47	3"	0.37	Other	radius ² * 0.163
Well Diameter	Multiplier	Well Diameter	Multiplier														
1"	0.04	4"	0.65														
2"	0.16	6"	1.47														
3"	0.37	Other	radius ² * 0.163														

Time	Temp (°F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	Gals. Removed	Observations
						Not enough water for a sample. No purge, no sample.

Did well dewater? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Gallons actually evacuated:
Sampling Time:	Sampling Date: 7/19/02
Sample I.D.: 1	Laboratory: <u>Kiff</u> SPL Other: _____
Analyzed for: <u>TPH-G BTEX MTBE</u> TPH-D	Other: Alkalinity, Nitrate, Sulfate, Ferrrous Iron
EB I.D. (if applicable): @ _____	Duplicate I.D. (if applicable):
Analyzed for: TPH-G BTEX MTBE TPH-D	Other:
D.O. (if req'd): Pre-purge: _____ mg/L	Post-purge: _____ mg/L
D.R.P. (if req'd): Pre-purge: _____ mV	Post-purge: _____ mV

SHELL WELL MONITORING DATA SHEET

BTS #: 020718-DA-1	Site: 4255 MacArthur Blvd. Oakland
Sampler: David A.	Date: 7/18/02
Well I.D.: TB-2	Well Diameter: 2 3 <u>4</u> 6 8
Total Well Depth: 12.96	Depth to Water: 12.34
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>PVT</u> Grade	D.O. Meter (if req'd): <u>YSI</u> HACH

Purge Method: Bailer <input checked="" type="checkbox"/> Disposable Bailer Middleburg Electric Submersible	Waterra Peristaltic Extraction Pump Other: _____	Sampling Method: <input checked="" type="checkbox"/> Bailer <input checked="" type="checkbox"/> Disposable Bailer Extraction Port Dedicated Tubing Other: _____
---	---	---

$0.4 \text{ (Gals.)} \times 3 = 1.2 \text{ Gals.}$	<table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th>Well Diameter</th> <th>Multiplier</th> <th>Well Diameter</th> <th>Multiplier</th> </tr> </thead> <tbody> <tr> <td>1"</td> <td>0.04</td> <td><u>4"</u></td> <td>0.65</td> </tr> <tr> <td>2"</td> <td>0.16</td> <td>6"</td> <td>1.47</td> </tr> <tr> <td>3"</td> <td>0.37</td> <td>Other</td> <td>radius² * 0.163</td> </tr> </tbody> </table>	Well Diameter	Multiplier	Well Diameter	Multiplier	1"	0.04	<u>4"</u>	0.65	2"	0.16	6"	1.47	3"	0.37	Other	radius ² * 0.163
Well Diameter	Multiplier	Well Diameter	Multiplier														
1"	0.04	<u>4"</u>	0.65														
2"	0.16	6"	1.47														
3"	0.37	Other	radius ² * 0.163														
1 Case Volume	Specified Volumes	Calculated Volume															

Time	Temp (°F)	pH	Cond. (mS or μ S)	Turbidity (NTUs)	Gals. Removed	Observations
857	71.6	6.4	806	92	0.4	Clear, organic matter
901	71.9	6.4	797	90	0.8	"
903	71.9	6.4	795	81	1.2	"

Did well dewater? Yes No Gallons actually evacuated: 1.2

Sampling Time: 908 Sampling Date: 7/18/02

Sample I.D.: TB-2 Laboratory: KIF SPL Other: _____

Analyzed for: ~~TPH-G~~ BTEX MTBE TPH-D Other: Alkalinity, Nitrate, Sulfate, Ferrous Iron

EB I.D. (if applicable): @ Time Duplicate I.D. (if applicable):

Analyzed for: TPH-G BTEX MTBE TPH-D Other:

D.O. (if req'd):	Pre-purge:	0.9 mg/L	Post-purge:	mg/L
O.R.P. (if req'd):	Pre-purge:	-67 mV	Post-purge:	mV

Table 1
Groundwater Monitoring Data and Analytical Results
Tosco 76 Service Station #1156
4276 MacArthur Boulevard
Oakland, California

WELL ID/ TOC*(ft.)	DATE	DTW (ft.)	S.I. (ft. hgs)	GWE (msl)	Product							
					Thickness (ft.)	TPH-D (ppb)	TPH-G (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	MTBE (ppb)
MW-1												
174.86	07/20/99 ⁵	7.50	5.0-25.0	167.36	—	16,000 ²	120,000	11,000	27,000	3,300	18,000	ND ¹
	09/28/99	8.75		166.11	<0.01	2,410 ²	6,020 ⁶	1,030	1,040	68.5	412	321/333 ³
	01/07/00	9.05		165.83**	0.02	7,870 ^{2,4}	72,700 ⁶	7,410	13,900	2,070	9,620	ND ¹
	03/31/00	7.18		167.68	0.00	3,600 ²	92,000 ⁶	10,000	23,000	3,200	14,000	ND ¹
	07/14/00	7.68		167.18	0.00	8,580 ²	108,000 ⁶	8,250	18,700	3,750	17,800	ND ¹
	10/03/00	7.99		166.87	0.00	9,260 ²	96,000 ⁶	8,760	20,000	3,350	15,600	ND ¹
	01/03/01	9.18		165.68	0.00	11,000 ⁸	37,000 ⁶	5,800	13,000	1,700	8,100	2,200
	04/04/01	8.05		166.81	0.00	14,000 ⁸	86,900 ⁶	7,780	18,500	2,470	11,800	¹ ND/481 ³
	07/17/01	7.01		167.85	0.00	2,200 ⁸	79,000 ⁶	5,600	11,000	2,800	12,000	¹ ND/230 ³
177.54	10/03/01	7.89		169.65	0.00	—	99,000 ⁶	8,200	18,000	3,000	16,000	<2,500
	10/05/01	7.91		169.63	0.00	13,000 ²	—	—	—	—	—	—
	01/28/02	5.98		171.56	0.00	4,400 ¹¹	110,000 ¹²	8,900	19,000	2,600	12,000	3,000/440 ³
	04/25/02	6.19		171.35	0.00	9,000 ¹³	93,000	8,100	18,000	3,000	15,000	810/670 ³
	07/18/02	6.99		170.55	0.00	9,200 ¹³	69,000	5,400	10,000	2,100	10,000	<500/620 ³
MW-2												
173.01	07/20/99	5.40	5.0-25.0	167.61	—	—	ND ¹	ND ¹	ND ¹	ND ¹	ND ¹	4,500/11,000 ^{3,4}
	09/28/99	5.60		167.41	0.00	—	1,390 ⁶	124	ND ¹	62.9	43.1	5,280/6,150 ³
	01/07/00	5.92		167.09	0.00	—	1,450 ⁶	99.0	ND ¹	23.8	16.0	33,100
	03/31/00	5.23		167.78	0.00	—	ND ¹	42	ND ¹	ND ¹	ND ¹	17,000
	07/14/00	5.52		167.49	0.00	—	ND ¹	44.7	ND ¹	ND ¹	ND ¹	66,500
	10/03/00	6.04		166.97	0.00	—	ND ¹	56.7	ND ¹	ND ¹	ND ¹	57,500
	01/03/01	6.42		166.59	0.00	—	ND ¹	ND ¹	ND ¹	ND ¹	ND ¹	49,000
	04/04/01	6.14		166.87	0.00	—	ND ¹	ND ¹	ND ¹	ND ¹	ND ¹	38,700/37,800 ³
	07/17/01	5.30		167.71	0.00	—	ND ¹	ND ¹	ND ¹	ND ¹	ND ¹	65,000/56,000 ³
173.50	10/03/01	7.38		166.12	0.00	—	<250	2.7	<2.5	<2.5	<2.5	14,000/18,000 ³

Table 1
Groundwater Monitoring Data and Analytical Results
 Tosco 76 Service Station #1156
 4276 MacArthur Boulevard
 Oakland, California

WELL ID/ TOC*(ft.)	DATE	DTW (ft.)	S.I. (ft. hgs)	GWE (msl)	Product							
					Thickness (ft.)	TPH-D (ppb)	TPH-G (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	MTBE (ppb)
MW-2	01/28/02	5.68		167.82	0.00	--	<250	2.5	4.4	2.8	7.4	11,000/10,000 ³
(cont)	04/25/02	5.82		167.68	0.00	--	<50	<0.50	<0.50	<0.50	<0.50	8,400/8,100 ³
	07/18/02	6.90		166.60	0.00	--	<500	<5.0	<5.0	<5.0	<5.0	4,300/8,800 ³
MW-3												
178.44	07/20/99	8.50	5.0-25.0	169.94	--	--	1,000	76	52	79	76	330
	09/28/99	8.31		170.13	0.00	--	1,860 ⁶	174	95.4	71.8	135	443/288 ³
	01/07/00	8.56		169.88	0.00	--	28,400 ⁶	2,450	3,090	1,560	3,910	1,940
	03/31/00	8.42		170.02	0.00	--	26,000 ⁶	1,300	2,900	2,600	3,500	2,800
	07/14/00	8.61		169.83	0.00	--	24,500 ⁶	1,850	2,630	2,750	3,900	548
	10/03/00	9.14		169.30	0.00	--	22,000 ⁶	1,910	2,020	2,400	2,680	965
	01/03/01	9.06		169.38	0.00	--	14,000 ⁶	1,600	1,100	2,300	1,400	3,300
	04/04/01	8.98		169.46	0.00	--	19,600 ⁶	1,150	1,470	2,100	1,820	1,050/450 ³
	07/17/01	7.46		170.98	0.00	--	26,000 ⁶	1,500	2,100	2,100	3,400	¹ ND/350 ³
178.13	10/03/01	9.81		168.32	0.00	--	22,000 ⁶	830	1,900	1,700	3,000	<1,000
	01/28/02	7.39		170.74	0.00	--	30,000 ¹²	880	2,600	1,800	4,300	3,200/210 ³
	04/25/02	7.86		170.27	0.00	--	18,000	500	2,000	1,300	3,800	500/260 ³
	07/18/02	8.83		169.30	0.00	--	37,000	1,800	3,800	2,200	8,000	<250/270 ³
MW-4												
179.10	07/20/99	7.40	5.0-25.0	171.70	--	--	69	2.7	0.77	ND	7.1	100
	09/28/99	7.19		171.91	0.00	--	4,050 ⁶	1,250	72.0	51.3	133	416/459 ³
	01/07/00	8.98		170.12	0.00	--	7,010 ⁶	2,260	167	271	276	764
	03/31/00	7.26		171.84	0.00	--	5,500 ⁶	1,800	230	330	400	1,000
	07/14/00	7.67		171.43	0.00	--	7,940 ⁶	2,810	332	450	247	1,530
	10/03/00	8.12		170.98	0.00	--	11,400 ⁶	3,110	437	519	816	1,040
	01/03/01 ⁷	9.10		170.00	0.00	--	8,600 ⁶	2,500	340	480	960	850

Table 1
Groundwater Monitoring Data and Analytical Results
Tosco 76 Service Station #1156
4276 MacArthur Boulevard
Oakland, California

WELL ID/ TOC*(ft.)	DATE	DTW (ft.)	S.I. (ft. bgs)	GWE (msl)	Product							
					Thickness (ft.)	TPH-D (ppb)	TPH-G (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	MTBE (ppb)
MW-4	04/04/01	8.63		170.47	0.00	--	9,950 ⁶	2,380	126	416	725	1,140/819 ³
(cont)	07/17/01	6.49		172.61	0.00	--	10,000 ⁶	2,300	110	410	800	1,200/900 ³
178.96	10/03/01	7.01		171.95	0.00	--	7,800 ⁶	2,100	85	380	390	580/820 ³
	01/28/02	6.21		172.75	0.00	--	12,000 ¹²	2,100	130	350	670	1,100/500 ³
	04/25/02	5.49		173.47	0.00	--	3,300	1,300	42	270	250	680/600 ³
	07/18/02	8.28		170.68	0.00	--	4,800	1,300	71	290	220	530/760³
MW-5												
169.18	10/03/01 ¹⁰	2.81	--	166.37	0.00	--	<50	<0.50	<0.50	<0.50	<0.50	1,800/2,100 ³
	01/28/02	1.88		167.30	0.00	--	<50	<0.50	<0.50	<0.50	<0.50	650/550 ³
	04/25/02	1.99		167.19	0.00	--	<50	<0.50	<0.50	<0.50	<0.50	2,200/2,400 ³
	07/18/02	2.49		166.69	0.00	--	<50	<0.50	<0.50	<0.50	<0.50	530/690³
MW-6												
169.04	10/03/01 ¹⁰	2.87	--	166.17	0.00	--	<50	<0.50	<0.50	<0.50	<0.50	200/270 ³
	01/28/02	1.82		167.22	0.00	--	<50	<0.50	<0.50	<0.50	<0.50	<2.5
	04/25/02	2.01		167.03	0.00	--	<50	<0.50	<0.50	<0.50	<0.50	<2.5
	07/18/02	2.44		166.60	0.00	--	<50	<0.50	<0.50	<0.50	<0.50	<2.5/<2.0³
MW-7												
171.64	10/03/01 ¹⁰	7.62	--	164.02	0.00	--	10,000 ⁹	210	<50	<50	800	35,000/40,000 ³
	01/28/02	7.21		164.43	0.00	--	<1,000	<10	<10	<10	<10	42,000/38,000 ³
	04/25/02	7.25		164.39	0.00	--	<5,000	660	<50	<50	<50	42,000/45,000 ³
	07/18/02	8.12		163.52	0.00	--	<5,000	130	<50	<50	<50	51,000/53,000³

Table 1
Groundwater Monitoring Data and Analytical Results
 Tosco 76 Service Station #1156
 4276 MacArthur Boulevard
 Oakland, California

WELL ID/ TOC*(ft.)	DATE	DTW (ft.)	S.I. (ft. bgs)	GWE (mst)	Product							
					Thickness (ft.)	TPH-D (ppb)	TPH-G (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	MTBE (ppb)
Trip Blank												
TB-LB	07/20/99	--	--	--	--	--	--	--	--	--	--	--
	09/28/99	--	--	--	--	--	ND	ND	ND	ND	ND	ND
	01/07/00	--	--	--	--	--	ND	ND	ND	ND	ND	ND
	03/31/00	--	--	--	--	--	ND	ND	ND	ND	ND	ND
	07/14/00	--	--	--	--	--	ND	ND	ND	ND	ND	ND
	10/03/00	--	--	--	--	--	ND	ND	ND	ND	ND	ND
	01/03/01	--	--	--	--	--	ND	ND	ND	ND	ND	ND
	04/04/01	--	--	--	--	--	ND	ND	ND	ND	ND	ND
	07/17/01	--	--	--	--	--	ND	ND	ND	ND	ND	ND
	10/03/01	--	--	--	--	--	<50	<0.50	<0.50	<0.50	<0.50	<5.0
	10/05/01	--	--	--	--	--	<50	<0.50	<0.50	<0.50	<0.50	<5.0
	01/28/02	--	--	--	--	--	<50	<0.50	<0.50	<0.50	<0.50	<2.5
	04/25/02	--	--	--	--	--	<50	<0.50	<0.50	<0.50	<0.50	<2.5
	07/18/02	--	--	--	--	--	<50	<0.50	<0.50	<0.50	<0.50	<2.5

Table 1
Groundwater Monitoring Data and Analytical Results
 Tosco 76 Service Station #1156
 4276 MacArthur Boulevard
 Oakland, California

EXPLANATIONS:

Groundwater monitoring data and laboratory analytical results prior to September 28, 1999, were compiled from reports prepared by Environmental Resolutions, Inc.

TOC = Top of Casing	TPH-D = Total Petroleum Hydrocarbons as Diesel	(ppb) = Parts per billion
(ft.) = Feet	TPH-G = Total Petroleum Hydrocarbons as Gasoline	ND = Not Detected
DTW = Depth to Water	B = Benzene	-- = Not Measured/Not Analyzed
S.I. = Screen Interval	T = Toluene	
(ft. bgs) = Feet Below Ground Surface	E = Ethylbenzene	
GWE = Groundwater Elevation	X = Xylenes	
(msl) = Mean sea level	MTBE = Methyl tertiary butyl ether	

* TOC elevations were resurveyed in September 2001, by Morrow Surveying. TOC elevations are based on City of Oakland Benchmark No. 3967, (Elevation = 174.40 feet, msl).

** GWE has been corrected due to the presence of free product; correction factor: $[(TOC - DTW) + (Product\ Thickness \times 0.77)]$.

- 1 Detection limit raised. Refer to analytical reports.
- 2 Laboratory report indicates unidentified hydrocarbons C9-C24.
- 3 MTBE by EPA Method 8260.
- 4 Laboratory analyzed sample past EPA recommended holding time.
- 5 Total Recoverable Petroleum Oil was ND.
- 6 Laboratory report indicates gasoline C6-C12.
- 7 This sample was originally analyzed within holding time. Re-analysis for confirmation or dilution was performed past the recommended holding time.
- 8 Laboratory report indicates unidentified hydrocarbons <C16.
- 9 Laboratory report indicates weathered gasoline C6-C12.
- 10 Well development performed.
- 11 Laboratory report indicates unidentified hydrocarbons C10-C28.
- 12 Laboratory report indicates gasoline C6-C10.
- 13 Laboratory report indicates hydrocarbon pattern is present in the requested fuel quantitation range but it does not resemble the pattern of the requested fuel.

Table 2
Groundwater Analytical Results
Tosco 76 Service Station #1156
4276 MacArthur Boulevard
Oakland, California

WELL ID	DATE	ETHANOL (ppb)	TBA (ppb)	MTBE (ppb)	DIPE (ppb)	ETBE (ppb)	TAME (ppb)	1,2-DCA (ppb)	EDB (ppb)	HVOCs (ppb)	SVOCs (ppb)
MW-1	07/20/99	--	--	11,000 ³	--	--	--	--	--	ND ¹	ND ²
	09/28/99	--	ND ⁶	333	ND ⁶	ND ⁶	ND ⁶	--	--	ND ⁴	ND ⁵
	01/07/00	--	--	--	--	--	--	--	--	ND ^{7,8}	ND ⁹
	03/31/00	--	--	--	--	--	--	--	--	-- ¹¹	ND ¹⁰
	07/14/00	--	--	--	--	--	--	--	--	ND ¹²	ND ¹³
	10/03/00	--	--	--	--	--	--	--	--	ND ¹⁵	ND ¹⁴
	01/03/01	--	--	--	--	--	--	--	--	ND ¹⁵	ND ¹⁶
	04/04/01	ND ⁶	ND ⁶	481	ND ⁶	ND ⁶	ND ⁶	ND ⁶	ND ⁶	ND ¹⁷	ND ¹⁸
	07/17/01	ND ⁶	ND ⁶	230	ND ⁶	ND ⁶	ND ⁶	ND ⁶	ND ⁶	ND ²⁰	ND ¹⁹
	01/28/02	--	--	440	--	--	--	--	--	--	--
04/25/02	--	--	670	--	--	--	--	--	--	--	
07/18/02	<2,500	<100	620	<10	<10	<10	<10	<10	<10	--	--
MW-2	09/28/99	--	ND ⁶	6,150	ND ⁶	ND ⁶	ND ⁶	--	--	--	--
	04/04/01	ND ⁶	ND ⁶	37,800	ND ⁶	ND ⁶	ND ⁶	ND ⁶	ND ⁶	--	--
	07/17/01	ND ⁶	ND ⁶	56,000	ND ⁶	ND ⁶	ND ⁶	ND ⁶	ND ⁶	--	--
	10/03/01	--	--	18,000	--	--	--	--	--	--	--
	01/28/02	--	--	10,000	--	--	--	--	--	--	--
	04/25/02	--	--	8,100	--	--	--	--	--	--	--
	07/18/02	<25,000	<1,000	8,800	<100	<100	<100	<100	<100	<100	--
MW-3	09/28/99	--	ND ⁶	288	ND ⁶	ND ⁶	8.80	--	--	--	--
	04/04/01	ND ⁶	ND ⁶	450	ND ⁶	ND ⁶	ND ⁶	ND ⁶	ND ⁶	--	--
	07/17/01	ND ⁶	ND ⁶	350	ND ⁶	ND ⁶	ND ⁶	ND ⁶	ND ⁶	--	--
	01/28/02	--	--	210	--	--	--	--	--	--	--
	04/25/02	--	--	260	--	--	--	--	--	--	--
	07/18/02	<1,200	<50	270	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	--

Table 2
Groundwater Analytical Results
Tosco 76 Service Station #1156
4276 MacArthur Boulevard
Oakland, California

WELL ID	DATE	ETHANOL (ppb)	TBA (ppb)	MTBE (ppb)	DIPE (ppb)	ETBE (ppb)	TAME (ppb)	1,2-DCA (ppb)	EDB (ppb)	HVOCs (ppb)	SVOCs (ppb)
MW-4	09/28/99	--	ND ⁶	459	ND ⁶	ND ⁶	ND ⁶	--	--	--	--
	04/04/01	ND ⁶	ND ⁶	819	ND ⁶	ND ⁶	ND ⁶	ND ⁶	ND ⁶	--	--
	07/17/01	ND ⁶	ND ⁶	900	ND ⁶	ND ⁶	ND ⁶	ND ⁶	ND ⁶	--	--
	10/03/01	--	--	820	--	--	--	--	--	--	--
	01/28/02	--	--	500	--	--	--	--	--	--	--
	04/25/02	--	--	600	--	--	--	--	--	--	--
	07/18/02	<2,500	<100	760	<10	<10	<10	49	<10	--	--
MW-5	10/03/01	--	--	2,100	--	--	--	--	--	--	--
	01/28/02	--	--	550	--	--	--	--	--	--	--
	04/25/02	--	--	2,400	--	--	--	--	--	--	--
	07/18/02	<500	<20	690	<2.0	<2.0	<2.0	<2.0	<2.0	--	--
MW-6	10/03/01	--	--	270	--	--	--	--	--	--	--
	07/18/02	<500	<20	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	--	--
MW-7	10/03/01	--	--	40,000	--	--	--	--	--	--	--
	01/28/02	--	--	38,000	--	--	--	--	--	--	--
	04/25/02	--	--	45,000	--	--	--	--	--	--	--
	07/18/02	<5,000	33,000	53,000	<20	<20	<20	<20	<20	--	--

Table 2
Groundwater Analytical Results
 Tosco 76 Service Station #1156
 4276 MacArthur Boulevard
 Oakland, California

EXPLANATIONS:

Groundwater laboratory analytical results prior to September 28, 1999, were compiled from reports prepared by Environmental Resolutions, Inc.

TBA = Tertiary butyl alcohol	TAME = Tertiary amyl methyl ether	(ppb) = Parts per billion
MTBE = Methyl tertiary butyl ether	EDB = 1,2-Dibromoethane	ND = Not Detected
DIPE = Di-isopropyl ether	HVOCs = Halogenated Volatile Organic Compounds	-- = Not Analyzed
ETBE = Ethyl tertiary butyl ether	SVOCs = Semi-Volatile Organic Compounds	

- ¹ All HVOCs were ND except for Chlorobenzene at 12 ppb; 1,2-Dichlorobenzene (1,2-DCB) at 3.9 ppb; 1,1-Dichloroethane (1,1-DCA) at 2.0 ppb; 1,2-Dichloroethane (1,2-DCA) at 20 ppb; cis-1,2-Dichloroethene (cis-1,2-DCE) at 3.6 ppb and 1,2-Dichloropropane (1,2-DCP) at 0.92 ppb.
- ² All SVOCs were ND except for Benzyl alcohol at 37 ppb; 2,4-Dimethylphenol at 140 ppb; 2-Methylnaphthalene at 240 ppb; 4-Methylphenol at 27 ppb and Naphthalene at 600 ppb.
- ³ Laboratory analyzed sample past EPA recommended holding time.
- ⁴ All HVOCs were ND except for Benzene at 6,130 ppb; Ethylbenzene at 1,590 ppb; Naphthalene at 534 ppb; Toluene at 11,900 ppb; 1,2,4-Trimethylbenzene at 1,240 ppb; 1,3,5-Trimethylbenzene at 318 ppb and Total Xylenes at 7,360 ppb.
- ⁵ All SVOCs were ND (with a raised detection limit) except for 2,4-Dimethylphenol at 13.6 ppb; 2-Methylnaphthalene at 87.4 ppb; 2-Methylphenol at 26.4; 4-Methylphenol at 35.6 and Naphthalene at 292 ppb.
- ⁶ Detection limit raised. Refer to analytical reports.
- ⁷ All HVOCs were ND (with a raised detection limit) except for Benzene at 8,380 ppb; Ethylbenzene at 2,380 ppb; Naphthalene at 1,050 ppb; n-Propylbenzene at 371 ppb; Toluene at 17,600 ppb; 1,2,4-Trimethylbenzene at 2,210 ppb; 1,3,5-Trimethylbenzene at 597 ppb and Total Xylenes at 10,800 ppb.
- ⁸ EPA Method 8260 for HVOCs.
- ⁹ All SVOCs were ND (with a raised detection limit) except for 2-Methylnaphthalene at 315 ppb and Naphthalene at 615 ppb.
- ¹⁰ All SVOCs were ND except for Bis(2-ethylhexyl)phthalate at 10 ppb; 1,2-DCB at 6.2 ppb; 2-Methylnaphthalene at 73 ppb; 2-Methylphenol at 31 ppb; 4-Methylphenol at 18 ppb and Naphthalene at 140 ppb. Laboratory report indicates all SVOCs were analyzed outside the EPA recommended holding time.
- ¹¹ Laboratory did not analyze for HVOCs.
- ¹² All HVOCs were ND (with a raised detection limit) except for Tetrachloroethene at 334 ppb.
- ¹³ All SVOCs were ND (with a raised detection limit) except for 2-Methylnaphthalene at 300 ppb and Naphthalene at 690 ppb.
- ¹⁴ All SVOCs were ND (with a raised detection limit) except for Benzoic acid at 362 ppb; Bis(2-ethylhexyl)phthalate at 51.6 ppb; 2-Methylnaphthalene at 98.1 ppb; 4-Methylphenol at 28.9 ppb and Naphthalene at 361 ppb.
- ¹⁵ All HVOCs were ND (with a raised detection limit).
- ¹⁶ All SVOCs were ND (with a raised detection limit) except for 2-Methylnaphthalene at 180 ppb and Naphthalene at 400 ppb.
- ¹⁷ All HVOCs were ND except for cis-1,2-DCA at 3.4 ppb; 1,2-DCA at 5.7 ppb; Chlorobenzene at 5.6 ppb and 1,2-DCB at 4.6 ppb.
- ¹⁸ All SVOCs were ND except for Benzoic acid at 28 ppb; Bis(2-ethylhexyl)phthalate at 55 ppb; 2-Methylnaphthalene at 78 ppb and Naphthalene at 490 ppb.

Table 2
Groundwater Analytical Results
Tosco 76 Service Station #1156
4276 MacArthur Boulevard
Oakland, California

EXPLANATIONS: (cont)

- ¹⁹ All SVOCs were ND except for Bis(2-ethylhexyl)phthalate at 400 ppb; 1,2-DCB at 18 ppb; 2,4-Dimethylphenol at 16 ppb; 2-Methylnaphthalene at 290 ppb; 2-Methylphenol at 47 ppb; 4-Methylphenol at 25 ppb; Naphthalene at 740 ppb and N-Nitrosodimethylamine at 7.7 ppb.
- ²⁰ Volatile Organic Compounds (VOCs) by EPA Method 8021B were ND with a raised detection limit.

ANALYTICAL METHODS:

EPA Method 8260 for Oxygenate Compounds

EPA Method 8010 for HVOCs

EPA Method 8270 for SVOCs



Report Number : 27543

Date : 7/26/02

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

Subject : 6 Water Samples
Project Name : 4255 MacArthur Boulevard, Oakland
Project Number : 020718-DA-1
P.O. Number : 98995758

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,

A handwritten signature in black ink that reads "Joel Kiff". The signature is written in a cursive style with a large initial "J".

Joel Kiff



Report Number : 27543

Date : 7/26/02

Subject : 6 Water Samples
Project Name : 4255 MacArthur Boulevard, Oakland
Project Number : 020718-DA-1
P.O. Number : 98995758

Case Narrative

Matrix Spike/Matrix Spike Duplicate Results associated with samples MW-2, MW-3, TB-2, MW-4 for the analytes Methyl-t-butyl ether were affected by the analyte concentrations already present in the un-spiked sample.

Approved By:  _____
Joel Kiff

720 Olive Drive, Suite D Davis, CA 95616 916-297-4800



Report Number : 27543

Date : 7/26/02

Project Name : 4255 MacArthur Boulevard, Oakland

Project Number : 020718-DA-1

Sample : MW-1

Matrix : Water

Lab Number : 27543-01

Sample Date :7/18/02

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	6.1	0.50	ug/L	EPA 8260B	7/18/02
Toluene	< 0.50	0.50	ug/L	EPA 8260B	7/18/02
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	7/18/02
Total Xylenes	0.98	0.50	ug/L	EPA 8260B	7/18/02
Methyl-t-butyl ether (MTBE)	< 5.0	5.0	ug/L	EPA 8260B	7/18/02
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	7/18/02
Toluene - d8 (Surr)	99.7		% Recovery	EPA 8260B	7/18/02
4-Bromofluorobenzene (Surr)	98.7		% Recovery	EPA 8260B	7/18/02

Sample : MW-2

Matrix : Water

Lab Number : 27543-02

Sample Date :7/18/02

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	2000	50	ug/L	EPA 8260B	7/21/02
Toluene	2200	50	ug/L	EPA 8260B	7/21/02
Ethylbenzene	1400	50	ug/L	EPA 8260B	7/21/02
Total Xylenes	10000	50	ug/L	EPA 8260B	7/21/02
Methyl-t-butyl ether (MTBE)	19000	500	ug/L	EPA 8260B	7/21/02
TPH as Gasoline	87000	5000	ug/L	EPA 8260B	7/21/02
Toluene - d8 (Surr)	97.0		% Recovery	EPA 8260B	7/21/02
4-Bromofluorobenzene (Surr)	112		% Recovery	EPA 8260B	7/21/02

Approved By:  Joel Kiff



Report Number : 27543

Date : 7/26/02

Project Name : 4255 MacArthur Boulevard, Oakland

Project Number : 020718-DA-1

Sample : MW-3

Matrix : Water

Lab Number : 27543-03

Sample Date :7/18/02

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	3300	20	ug/L	EPA 8260B	7/21/02
Toluene	270	20	ug/L	EPA 8260B	7/21/02
Ethylbenzene	1700	20	ug/L	EPA 8260B	7/21/02
Total Xylenes	5000	20	ug/L	EPA 8260B	7/21/02
Methyl-t-butyl ether (MTBE)	8400	200	ug/L	EPA 8260B	7/21/02
TPH as Gasoline	56000	2000	ug/L	EPA 8260B	7/21/02
Toluene - d8 (Surr)	103		% Recovery	EPA 8260B	7/21/02
4-Bromofluorobenzene (Surr)	95.8		% Recovery	EPA 8260B	7/21/02

Sample : MW-4

Matrix : Water

Lab Number : 27543-04

Sample Date :7/18/02

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 20	20	ug/L	EPA 8260B	7/22/02
Toluene	< 20	20	ug/L	EPA 8260B	7/22/02
Ethylbenzene	< 20	20	ug/L	EPA 8260B	7/22/02
Total Xylenes	< 20	20	ug/L	EPA 8260B	7/22/02
Methyl-t-butyl ether (MTBE)	7200	200	ug/L	EPA 8260B	7/24/02
TPH as Gasoline	< 2000	2000	ug/L	EPA 8260B	7/22/02
Toluene - d8 (Surr)	96.9		% Recovery	EPA 8260B	7/22/02
4-Bromofluorobenzene (Surr)	111		% Recovery	EPA 8260B	7/22/02

Approved By:  Joel Kiff

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



Report Number : 27543

Date : 7/26/02

Project Name : 4255 MacArthur Boulevard, Oakland

Project Number : 020718-DA-1

Sample : MW-5

Matrix : Water

Lab Number : 27543-05

Sample Date : 7/18/02

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	7/18/02
Toluene	< 0.50	0.50	ug/L	EPA 8260B	7/18/02
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	7/18/02
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	7/18/02
Methyl-t-butyl ether (MTBE)	75	5.0	ug/L	EPA 8260B	7/18/02
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	7/18/02
Toluene - d8 (Surr)	100		% Recovery	EPA 8260B	7/18/02
4-Bromofluorobenzene (Surr)	100		% Recovery	EPA 8260B	7/18/02

Sample : TB-2

Matrix : Water

Lab Number : 27543-06

Sample Date : 7/18/02

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	630	25	ug/L	EPA 8260B	7/21/02
Toluene	650	25	ug/L	EPA 8260B	7/21/02
Ethylbenzene	< 25	25	ug/L	EPA 8260B	7/21/02
Total Xylenes	390	25	ug/L	EPA 8260B	7/21/02
Methyl-t-butyl ether (MTBE)	44000	1000	ug/L	EPA 8260B	7/24/02
TPH as Gasoline	7500	2500	ug/L	EPA 8260B	7/21/02
Toluene - d8 (Surr)	96.2		% Recovery	EPA 8260B	7/21/02
4-Bromofluorobenzene (Surr)	110		% Recovery	EPA 8260B	7/21/02

Approved By:  Joel Kiff

Report Number : 27543

Date : 7/26/02

QC Report : Method Blank Data

Project Name : **4255 MacArthur Boulevard, Oakland**

Project Number : **020718-DA-1**

<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	7/21/02
Toluene	< 0.50	0.50	ug/L	EPA 8260B	7/21/02
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	7/21/02
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	7/21/02
Methyl-t-butyl ether (MTBE)	< 5.0	5.0	ug/L	EPA 8260B	7/21/02
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	7/21/02
Toluene - d8 (Surr)	97.2		%	EPA 8260B	7/21/02
4-Bromofluorobenzene (Surr)	102		%	EPA 8260B	7/21/02
Benzene	< 0.50	0.50	ug/L	EPA 8260B	7/18/02
Toluene	< 0.50	0.50	ug/L	EPA 8260B	7/18/02
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	7/18/02
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	7/18/02
Methyl-t-butyl ether (MTBE)	< 5.0	5.0	ug/L	EPA 8260B	7/18/02
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	7/18/02
Toluene - d8 (Surr)	98.9		%	EPA 8260B	7/18/02
4-Bromofluorobenzene (Surr)	101		%	EPA 8260B	7/18/02

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

KIFF ANALYTICAL, LLC

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

Approved By:  Joel Kiff

Report Number : 27543

Date : 7/26/02

QC Report : Matrix Spike/ Matrix Spike Duplicate

Project Name : **4255 MacArthur**

Project Number : **020718-DA-1**

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	27566-02	1.9	19.9	19.6	22.3	21.7	ug/L	EPA 8260B	7/21/02	102	101	1.06	70-130	25
Toluene	27566-02	1.0	19.9	19.6	20.5	19.9	ug/L	EPA 8260B	7/21/02	97.5	96.6	0.924	70-130	25
Tert-Butanol	27566-02	5300	99.7	97.8	4400	4500	ug/L	EPA 8260B	7/21/02	0.00	0.00	0.00	70-130	25
Methyl-t-Butyl Ether	27566-02	5400	19.9	19.6	3400	2980	ug/L	EPA 8260B	7/21/02	0.00	0.00	0.00	70-130	25
Benzene	27489-10	<0.50	40.0	40.0	38.6	37.9	ug/L	EPA 8260B	7/18/02	96.4	94.8	1.62	70-130	25
Toluene	27489-10	<0.50	40.0	40.0	38.7	38.2	ug/L	EPA 8260B	7/18/02	96.8	95.4	1.43	70-130	25
Tert-Butanol	27489-10	<5.0	200	200	185	187	ug/L	EPA 8260B	7/18/02	92.6	93.4	0.860	70-130	25
Methyl-t-Butyl Ether	27489-10	<0.50	40.0	40.0	38.7	37.9	ug/L	EPA 8260B	7/18/02	96.8	94.8	2.11	70-130	25

Approved By:  _____
 Approved By: Joel Kiff

Report Number : 27543

Date : 7/26/02

QC Report : Laboratory Control Sample (LCS)

Project Name : **4255 MacArthur**

Project Number : **020718-DA-1**

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
Benzene	20.0	ug/L	EPA 8260B	7/21/02	108	70-130
Toluene	20.0	ug/L	EPA 8260B	7/21/02	104	70-130
Tert-Butanol	100	ug/L	EPA 8260B	7/21/02	103	70-130
Methyl-t-Butyl Ether	20.0	ug/L	EPA 8260B	7/21/02	103	70-130
Benzene	40.0	ug/L	EPA 8260B	7/18/02	98.6	70-130
Toluene	40.0	ug/L	EPA 8260B	7/18/02	98.8	70-130
Tert-Butanol	200	ug/L	EPA 8260B	7/18/02	97.3	70-130
Methyl-t-Butyl Ether	40.0	ug/L	EPA 8260B	7/18/02	92.0	70-130

KIFF ANALYTICAL, LLC

Approved By:  Joel Kiff

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

California Laboratory Services

Environmental
Laboratory
Information
System

*Automated Facsimile Reporting Module
Call (916)838-7381 to have this report
re-transmitted.*

This facsimile was using recycled devices.

To: Joel Kiff

Date: 7-25-102

From: California Laboratory Services

Page 001 of 002

This report is also available via E-MAIL.

You may request individual or all reports also be sent to you via e-mail directly to your desk. You may also request that you would like both fax and e-mail reports sent to you.

For more information, send an e-mail request to reports@californialab.com

The following facsimile report is of a preliminary nature and as such, does not include data that will be forthcoming in the complete report package. Interpretation of the report results should be made only after the complete report package has been delivered.

Analysis Report: Ferrous Iron, SM 3500 Fe D

Client: Joel Kiff
720 Olive Drive,
Suite D
Davis, CA 95616

Project No.: 020718-DA-1
Contact: Joel Kiff
Phone: (530)297-4800

Project: 4255 MacArthur Boulevard,
Oakland

Lab Contact: James Liang
Lab ID No.: T9714
Job No.: 849714
COC Log No.: 27543
Batch No.: M020718S
Instrument ID: UV002
Analyst ID: CINDYG
Matrix: WATER

Date Sampled: 07/18/2002
Date Received: 07/18/2002
Date Extracted: N/A
Date Analyzed: 07/19/2002
Date Reported: 07/25/2002

ANALYTICAL RESULTS

Lab / Client ID Analyte	CAS No.	Results (mg/L)	Rep. Limit (mg/L)	Dilution (factor)
1A / MW-1 Ferrous Iron	5352	ND	0.10	1.0
2A / MW-2 Ferrous Iron	5352	0.20	0.10	1.0
3A / MW-3 Ferrous Iron	5352	3.2	0.50	5.0
4A / MW-4 Ferrous Iron	5352	ND	0.10	1.0
5A / MW-5 Ferrous Iron	5352	ND	0.10	1.0
6A / TB-2 Ferrous Iron	5352	2.6	0.50	5.0

ND = Not detected at or above indicated Reporting Limit

Calscience
Environmental
Laboratories, Inc.

July 26, 2002

Joel Kiff
Kiff Analytical
720 Olive Drive, Suite D1
Davis, CA 95616-4740

Subject: Calscience Work Order No.: 02-07-0772
Client Reference: 4255 MacArthur Boulevard, Oakland


Dear Client:

Enclosed is an analytical report for the above-referenced project. The samples included in this report were received 7/19/02 and analyzed in accordance with the attached chain-of-custody.

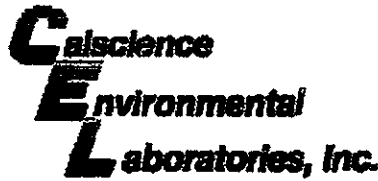
Unless otherwise noted, all analytical testing was accomplished in accordance with the guidelines established in our Quality Assurance Program Manual, applicable standard operating procedures, and other related documentation. The results in this analytical report are limited to the samples tested and any reproduction thereof must be made in its entirety.

If you have any questions regarding this report, please do not hesitate to contact the undersigned.

Sincerely


Calscience Environmental
Laboratories, Inc.
Stephen Nowak
Project Manager


Michael J. Crisostomo
Quality Assurance Manager



ANALYTICAL REPORT

Kiff Analytical
720 Olive Drive, Suite D1
Davis, CA 95616-4740

Date Received: 07/19/02
Work Order No: 02-07-0772
Preparation: N/A
Method: SM 2320B

Project: 4255 MacArthur Boulevard, Oakland

Page 1 of 1

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
11W-4	02-07-0772-1	07/19/02	Water	N/A	07/19/02	20718AL-K01

Parameter	Result	RL	DF	Qual	Units
Alkalinity, Total (as CaCO3)	500	5.0	1		mg/L

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
11W-4	02-07-0772-2	07/19/02	Water	N/A	07/19/02	20718AL-K02

Parameter	Result	RL	DF	Qual	Units
Alkalinity, Total (as CaCO3)	440	5.0	1		mg/L

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
11W-4	02-07-0772-3	07/19/02	Water	N/A	07/19/02	20718AL-K03

Parameter	Result	RL	DF	Qual	Units
Alkalinity, Total (as CaCO3)	650	5.0	1		mg/L

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
11W-4	02-07-0772-4	07/19/02	Water	N/A	07/19/02	20718AL-K04

Parameter	Result	RL	DF	Qual	Units
Alkalinity, Total (as CaCO3)	560	5.0	1		mg/L

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
11W-4	02-07-0772-5	07/19/02	Water	N/A	07/19/02	20718AL-K05

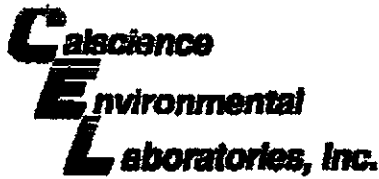
Parameter	Result	RL	DF	Qual	Units
Alkalinity, Total (as CaCO3)	310	5.0	1		mg/L

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
11W-4	02-07-0772-6	07/19/02	Water	N/A	07/19/02	20718AL-K06

Parameter	Result	RL	DF	Qual	Units
Alkalinity, Total (as CaCO3)	320	5.0	1		mg/L

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

7440 Lincoln Way, Garden Grove, CA 92641-1432 • TEL: (714) 895-5494 • FAX: (714) 894-7501



ANALYTICAL REPORT

Kiff Analytical
 720 Olive Drive, Suite D1
 Davis, CA 95616-4740

Date Received: 07/19/02
Work Order No: 02-07-0772
Preparation: N/A
Method: EPA 300.0

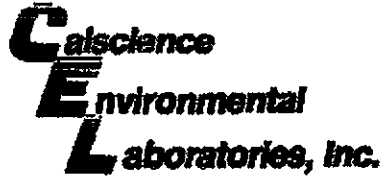
Project: 4255 MacArthur Boulevard, Oakland

Page 1 of 1

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID					
10101	10101	07/19/02	Water	07/19/02	07/19/02	10101					
Parameter	Result	RL	DF	Qual	Units	Parameter	Result	RL	DF	Qual	Units
Nitrate-N	0.78	0.10	1		mg/L	Sulfate	22	10	10	D	mg/L
10102	10102	07/19/02	Water	07/19/02	07/19/02	10102					
Parameter	Result	RL	DF	Qual	Units	Parameter	Result	RL	DF	Qual	Units
Nitrate-N	ND	0.10	1		mg/L	Sulfate	1.5	1.0	1		mg/L
10103	10103	07/19/02	Water	07/19/02	07/19/02	10103					
Parameter	Result	RL	DF	Qual	Units	Parameter	Result	RL	DF	Qual	Units
Nitrate-N	0.24	0.10	1		mg/L	Sulfate	4.0	1.0	1		mg/L
10104	10104	07/19/02	Water	07/19/02	07/19/02	10104					
Parameter	Result	RL	DF	Qual	Units	Parameter	Result	RL	DF	Qual	Units
Nitrate-N	0.14	0.10	1		mg/L	Sulfate	2.4	1.0	1		mg/L
10105	10105	07/19/02	Water	07/19/02	07/19/02	10105					
Parameter	Result	RL	DF	Qual	Units	Parameter	Result	RL	DF	Qual	Units
Nitrate-N	1.5	0.1	1		mg/L	Sulfate	28	10	10	D	mg/L
10106	10106	07/19/02	Water	07/19/02	07/19/02	10106					
Parameter	Result	RL	DF	Qual	Units	Parameter	Result	RL	DF	Qual	Units
Nitrate-N	ND	0.10	1		mg/L	Sulfate	ND	1.0	1		mg/L
10107	10107	07/19/02	Water	07/19/02	07/19/02	10107					
Parameter	Result	RL	DF	Qual	Units	Parameter	Result	RL	DF	Qual	Units
Nitrate-N	ND	0.10	1		mg/L	Sulfate	ND	1.0	1		mg/L

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

7440 Lincoln Way, Garden Grove, CA 92641-1432 • TEL: (714) 895-5484 • FAX: (714) 894-7501



Quality Control - Duplicate

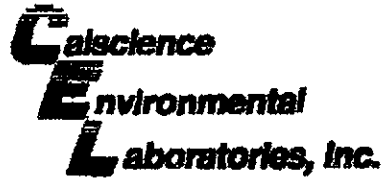
Kiff Analytical
720 Olive Drive, Suite D1
Davis, CA 95618-4740

Date Received:
Work Order No:
Preparation:
Method:

7/19/02
02-07-0772
N/A
SM 2320B

Project: 4255 MacArthur Boulevard, Oakland

Quality Control Sample ID	Matrix	Instrument	Date Prepared:	Date Analyzed:	Duplicate Batch Number
02-07-0772	Water	TD	7/19/02	7/19/02	02-07-0772
Parameter	Sample Cons.	DUP Cons	SPD	RSD CL	Qualifier
Alkalinity, Total (as CaCO3)	200	200	1	0-25	



Quality Control - Spike/Spike Duplicate

Kiff Analytical
 720 Olive Drive, Suite D1
 Davis, CA 95616-4740

Date Received: 07/19/02
 Work Order No: 02-07-0772
 Preparation: N/A
 Method: EPA 300.0

Project: 4255 MacArthur Boulevard, Oakland

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
101	Water	IC-2	N/A	07/19/02	02071902

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Nitrate-N	97	97	50-150	0	0-25	
Sulfate	103	101	50-150	2	0-25	



Quality Control - LCS/LCS Duplicate

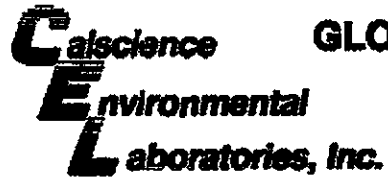
Kiff Analytical
720 Olive Drive, Suite D1
Davis, CA 95616-4740

Date Received: 07/19/02
Work Order No: 02-07-0772
Preparation: N/A
Method: EPA 300.0

Project: 4255 MacArthur Boulevard, Oakland

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
02-07-0772-001	Aqueous	ICAP	N/A	07/19/02	02-07-0772

Parameter	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Nitrate-N	97	97	60-120	0	0-25	
Sulfate	101	102	60-120	0	0-25	



GLOSSARY OF TERMS AND QUALIFIERS

Work Order Number: 02-07-0772

<u>Qualifier</u>	<u>Definition</u>
D	The sample data was reported from a diluted analysis.
ND	Not detected at indicated reporting limit.

7440 Lincoln Way, Garden Grove, CA 92641-1432 • TEL: (714) 895-5494 • FAX: (714) 894-7501

(0772)



720 Olive Drive, Suite D
Davis, CA 95618
Lab: 530.297.4800
Fax: 530.297.4803

Cal Science
Environmental

Project Contact (Hardcopy or PDF to): Joel Kiff	EDF Report? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Chain-of-Custody Record and Analysis Request	
--	---	--	--

Company/Address: Kiff Analytical, LLC	Recommended but not mandatory to complete this section: Sampling Company Log Code: BTSS		Analysis Request	Date due: Due July 28, 2002	For Lab Use Only
Phone No.:	FAX No.:	Global ID: T0600101261			
Project Number: 020718-DA-1	P.O. No.: 27543	EDF Deliverable to (Email Address): inbox@kiffanalytical.com			
Project Name: 4255 MacArthur Boulevard, Oakland		E-mail address: inbox@kiffanalytical.com			

Sample Designation	Sampling		Container				Preservative				Matrix		Total Alkalinity	Nitrate as Nitrate	Sulfate				
	Date	Time	Glass Jar	Poly	Amber		HCl	HNO3	ICE	NONE	WATER	SOIL							
1 MW-1	7/18/02	1038	2					X		X			X	X	X				X
2 MW-2	7/18/02	1055	2					X		X			X	X	X				X
3 MW-3	7/18/02	1105	2					X		X			X	X	X				X
4 MW-4	7/18/02	810	2					X		X			X	X	X				X
5 MW-5	7/18/02	740	2					X		X			X	X	X				X
6 TB-2	7/18/02	908	2					X		X			X	X	X				X

Relinquished by: <i>Kiff A. Kiff / KIFF ANALYTICAL</i>	Date: 5/18/02	Time: 18:10	Received by:	Remarks: Return Shipped Coolers
Relinquished by:	Date:	Time:	Received by:	Incident#: 98965768
Relinquished by:	Date: 7/9/02	Time: 15:10	Received by Laboratory: <i>[Signature]</i>	Bill to:



WORK ORDER #: 02-07-0772

Cooler 1 of 1

SAMPLE RECEIPT FORM

CLIENT: Kiff Analytical

DATE: 7/19/02

TEMPERATURE - SAMPLES RECEIVED BY:

CALSCIENCE COURIER:

- Chilled, cooler with temperature blank provided.
Chilled, cooler without temperature blank.
Chilled and placed in cooler with wet ice.
Ambient and placed in cooler with wet ice.
Ambient temperature.
C Temperature blank.

LABORATORY (Other than Calscience Courier):

- 4 C Temperature blank.
C IR thermometer.
Ambient temperature.

Initial: BH

CUSTODY SEAL INTACT:

Sample(s): Cooler: [checked] No (Not intact): Not Applicable (N/A):

Initial: BH

SAMPLE CONDITION:

Table with 4 columns: Description, Yes, No, N/A. Rows include Chain-Of-Custody document(s), Sample container label(s), Sample container(s) intact, Correct containers for analyses, Proper preservation noted, VOA vial(s) free of headspace, Tedlar bag(s) free of condensation.

Initial: BH

COMMENTS:

Blank lines for handwritten comments.

LAB: Kitt

SHELL Chain Of Custody Record

Lab Identification (if necessary):

Address:

City, State, Zip:

Shell Project Manager to be Invoiced:

Karen Petryna

27543

INCIDENT NUMBER (SEE ONLY)

9 8 9 9 5 7 5 8

DATE OF DRIFT NUMBER (SUCHMIT)

DATE: 7/18/02

PAGE: 1 of 1

SAMPLING COMPANY:

Blaine Tech Services

LOG CODE:

BTSS

SITE ADDRESS (Street and City):

4255 MacArthur Boulevard, Oakland

GLOBAL ID NO.:

T0600101261

ADDRESS:

1650 Rogers Avenue, San Jose, CA 95112

EXP DELIVERABLE TO (Responsible Party or Designee):

Ann Kream

PHONE NO.:

510-420-3335

EMAIL:

ShellOaklandEDF@cambris-env.com

CONSULTANT PROJECT NO.:

BTS # 020715-0A-1

PROJECT CONTACT (hardcopy or PDF Report to):

Leon Gearhart

SAMPLER NUMBER (Print):

David Allbut

LAB USE ONLY

TELEPHONE:

408-573-0555

FAX:

408-573-7771

EMAIL:

lgearhart@blainetech.com

TURNAROUND TIME (BUSINESS DAYS):

10 DAYS 5 DAYS 72 HOURS 48 HOURS 24 HOURS LESS THAN 24 HOURS

LA - RWQCB REPORT FORMAT UST AGENCY:

GC/MS MTBE CONFIRMATION: HIGHEST _____ HIGHEST per BORING _____ ALL _____

SPECIAL INSTRUCTIONS OR NOTES: CHECK BOX IF EDD IS NOT NEEDED

For a copy of the COC to
Leon Gearhart @ (408) 573-7771
ASAP

REQUESTED ANALYSIS

FIELD NOTES:

Container/Preservative
or PID Readings
or Laboratory Notes

TEMPERATURE ON RECEIPT C°

LAB USE ONLY	Field Sample Identification				REQUESTED ANALYSIS																TEMPERATURE ON RECEIPT C°
	DATE	TIME	MATRIX	NO. OF CONT.	TPH - Gen. Purpose	BTEX	MTBE (8241B - 5ppb RL)	MTBE (82801B - 1.5ppb RL)	Chloroethanes (8) by (82801B)	Ethanol (82801B)	Methanol	1,2-DCA (82801B)	EDB (82801B)	TPH - Diesel, Extractable (5015m)	Total Alkalinity	Ferrrous Iron 24hr hold	Nitrate as Nitrate 24hr hold	Sulfate	MTBE (82801B) Confirmation, See Note		
	MW-1	7/18/02	1030	W	6	X	X	X								X	X	X	X		-01
	MW-2		1035			X	X	X								X	X	X	X		-02
	MW-3		1105			X	X	X								X	X	X	X		-03
	MW-4		910			X	X	X								X	X	X	X		-04
	MW-5		740			X	X	X								X	X	X	X		-05
	D.A. PART TB-1																				
	TB-2		708			X	X	X								X	X	X	X		-06

Relinquished by: (Signature)

David Allbut

Received by: (Signature)

Date:

Time:

Relinquished by: (Signature)

Received by: (Signature)

Date:

Time:

Relinquished by: (Signature)

Received by: (Signature)

John Little / Kiff Analytical

Date:

07/18/02

Time:

1118

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

10/19/00 Revision

CS&G Graphic (714) 869-9702