MILLER BROOKS
Environmental, Inc.

November 26, 2002

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
540 HEGENBERGER ROAD
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 540 Hegenberger Road, Oakland, California. See Figure 1 for the site location.

THIRD QUARTER 2002 GROUNDWATER MONITORING AND SAMPLING ACTIVITIES

Groundwater Monitoring and Sampling

On September 19, 2002, Monitoring Wells MW-1, MW-2, MW-3, MW-4, and MW-5, and Tank Backfill Wells BW-A, BW-B, BW-C, and BW-D were monitored and sampled by Blaine Tech Services, Inc. (Blaine Tech), the groundwater monitoring program contractor for Shell. In addition, Blaine Tech collected Sample C-1 from the canal located at the corner of Hegenberger Road and Coliseum Way, and monitored and attempted to sample two storm drains (shown as SD-1 and SD-2 on Figure 3), but the storm drain locations were dry at the time of sampling.

Groundwater levels in the wells were measured prior to sampling activities using an electronic water-level meter. 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 Blaine Tech's groundwater monitoring and sampling procedures is included with copies of the field data sheets in Attachment B.

Waste Disposal

Groundwater generated during well purging and equipment decontamination activities (approximately 267 gallons) was transported to the Shell refinery in Martinez, California.

Laboratory Analysis

Groundwater samples collected during the investigation were submitted to Kiff Analytical, 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 C.

Findings

Groundwater was measured at depths of 6.51 feet to 8.58 feet below ground surface (bgs) in the monitoring wells (groundwater elevations of 2.94 feet to 1.59 feet above mean sea level [North American Vertical Datum, 1988]). The groundwater flow direction beneath the site is generally toward the northeast under a hydraulic gradient of approximately 0.019 foot per foot, which is consistent with previous investigation findings.

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

- No detectable TPH-G concentrations were found in any of the groundwater samples collected during this event, though detection limits were elevated.

- Detectable BTEX concentrations were only found in the groundwater sample collected from Well MW-3 (650 micrograms per liter [µg/L] benzene, no detectable toluene, 280 µg/L ethylbenzene, and 360 µg/L total xylenes).

- Detectable MTBE concentrations were found in groundwater samples collected from Wells MW-1, MW-2, MW-3, MW-5, and BW-C at concentrations ranging from 90 µg/L in Well MW-2 to 84,000 µg/L in Well MW-3.

- The groundwater samples collected from the adjacent drainage canal (Sample C-1) contained no detectable TPH-G, BTEX, or MTBE concentrations. As discussed and recommended in Miller Brook's *Second Quarter 2002 Groundwater Monitoring Report,* this is the last event to include sampling from the storm drains or drainage canal due to the historically clean results found in samples collected from these locations and the potential for contamination from other sources.

- During the third quarter of 2002, analytical data was obtained for two ARCO groundwater monitoring wells located east (Well MW-4) and north of the site (Well MW-1). These wells were sampled by URS Corporation on August 8, 2002, on behalf of the ARCO Station located at 566 Hegenberger Road (see Figure 3), which is located north of the site. Groundwater samples collected from ARCO Wells, MW-1 and MW-4, contained no detectable TPH-G, BTEX, or MTBE concentrations.

GROUNDWATER EXTRACTION (GWE) UPDATE

Various phases of GWE and dual-phase vapor extraction (DVE) events have been performed at this site. 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. DVE involves the application of a high vacuum to an airtight well seal, extracting vapors simultaneously with groundwater, thereby enhancing groundwater extraction from the saturated zone. See Figures 4 and 5, and Tables 1 and 2, for a summary of activities conducted to

date. DVE activities were discontinued in June 2001 and GWE activities are conducted at the site on a monthly basis.

Miller Brooks calculated the volume of contaminants removed during GWE during the third quarter 2002 monitoring period, and estimates that 0.24 gallon of TPH-G, 0.01 gallon of benzene, and 1.64 gallons of MTBE were removed from the subsurface since July 1999. These mass calculations are approximate and are based on the volume of groundwater extracted per event and the concentration in Wells MW-1 and MW-3 closest in time to the respective extraction events. Table 1 presents GWE data and cumulative mass removal data for TPH-G, benzene, and MTBE. Table 2 presents DVE data and cumulative mass removal data for TPH-G, benzene, and MTBE. The mass and volume removal formulas are also presented on the tables.

PROPOSED WORK ACTIVITIES

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

- As documented in Miller Brooks *Second Quarter 2002 Groundwater Monitoring Report,* an Interim Remedial Action Plan (IRAP) is being prepared to install a fixed groundwater extraction and treatment system at the site. The IRAP will be submitted for agency review during the fourth quarter of 2002.

- Continue the quarterly groundwater monitoring and sampling program to monitor hydrocarbon plume stability and groundwater quality trends over time.

- Continue the GWE events to further reduce the mass of hydrocarbons in the saturated zone until the proposed groundwater extraction system is installed.

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 Vapor/Groundwater Extraction Effect on MTBE Concentrations in Well MW-1
5 – Dual Vapor/Groundwater Extraction Effect on MTBE Concentrations in Well MW-3

Attachments:
A – Blaine Tech Services, Inc. - Groundwater Gauging and Analytical Data
B – Blaine Tech Services, Inc. - General Field Procedures and Field Data Sheets
C – 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 #98995752, 540 Hegenberger Road, Oakland, California

Date Purged	Well ID	Volume Pumped (gal)	Cumulative Volume Pumped (gal)	Date Sampled	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)
					TPH-G			**Benzene**			**MTBE**		
07/29/99	BW-A	400	400	06/22/99	318	0.00106	0.00106	<0.50	0.00000	0.00000	4,470	0.01492	0.01492
08/04/99	BW-A	2,000	2,400	06/22/99	318	0.00531	0.00637	<0.50	0.00000	0.00001	4,470	0.07460	0.08952
08/11/99	BW-A	2,437	4,837	06/22/99	318	0.00647	0.01284	<0.50	0.00001	0.00001	4,470	0.09090	0.18042
08/20/99	BW-A	1,213	6,050	06/22/99	318	0.00322	0.01605	<0.50	0.00000	0.00001	4,470	0.04524	0.22566
08/30/99	BW-A	2,673	8,723	06/22/99	318	0.00709	0.02315	<0.50	0.00001	0.00002	4,470	0.09970	0.32536
09/03/99*	BW-A	325	9,048	06/22/99	318	0.00086	0.02401	<0.50	0.00000	0.00002	4,470	0.01212	0.33748
09/10/99*	BW-A	425	9,148	06/22/99	318	0.00113	0.02514	<0.50	0.00000	0.00002	4,470	0.01585	0.35334
09/23/99	BW-A	615	9,763	06/22/99	318	0.00163	0.02677	<0.50	0.00000	0.00002	4,470	0.02294	0.37628
09/29/99	BW-A	800	10,563	06/22/99	318	0.00212	0.02889	<0.50	0.00000	0.00002	4,470	0.02984	0.40611
11/05/99	BW-A	675	11,238	06/22/99	318	0.00179	0.03068	<0.50	0.00000	0.00002	4,470	0.02518	0.43129
07/29/99	BW-B	1,000	1,000	06/22/99	<250	0.00104	0.00104	2.5	0.00002	0.00002	8,600	0.07176	0.07176
08/04/99	BW-B	800	1,800	06/22/99	<250	0.00083	0.00188	2.5	0.00002	0.00106	8,600	0.05741	0.12917
08/11/99	BW-B	2,213	4,013	06/22/99	<250	0.00231	0.00419	2.5	0.00005	0.00192	8,600	0.15881	0.28798
08/20/99	BW-B	1,213	5,226	06/22/99	<250	0.00127	0.00545	2.5	0.00003	0.00421	8,600	0.08705	0.37503
08/30/99	BW-B	877	6,103	06/22/99	<250	0.00091	0.00637	2.5	0.00002	0.00547	8,600	0.06293	0.43796
09/03/99*	BW-B	325	6,428	06/22/99	<250	0.00034	0.00670	2.5	0.00001	0.00637	8,600	0.02332	0.46128
09/10/99*	BW-B	425	6,853	06/22/99	<250	0.00044	0.00715	2.5	0.00001	0.00671	8,600	0.03050	0.49178
09/23/99	BW-B	750	7,603	06/22/99	<250	0.00078	0.00793	2.5	0.00002	0.00716	8,600	0.05382	0.54560
09/29/99	BW-B	600	8,203	06/22/99	<250	0.00063	0.00856	2.5	0.00001	0.00794	8,600	0.04306	0.58866
11/05/99	BW-B	650	8,853	06/22/99	<250	0.00068	0.00923	2.5	0.00001	0.00857	8,600	0.04664	0.63530
04/30/02	BW-B	1,050	9,903	03/14/02	<2000	0.00876	0.01800	<20	0.00018	0.00941	9,400	0.08236	0.71766
05/28/02	BW-B	2,650	12,553	03/14/02	<2000	0.02211	0.04011	<20	0.00044	0.01844	9,400	0.20786	0.92552
06/25/02	BW-B	2,170	14,723	06/25/02	<2000	0.01811	0.05822	<20	0.00036	0.04047	6,600	0.11951	1.04503
07/30/02	BW-B	2,321	17,044	06/25/02	<2000	0.01937	0.07758	<20	0.00039	0.05860	6,600	0.12782	1.17285
08/20/02	BW-B	2,380	19,424	06/25/02	<2000	0.01986	0.09744	<20	0.00040	0.07798	6,600	0.13107	1.30393
09/20/02	BW-B	1,600	21,024	09/19/02	<500	0.00334	0.10078	<5.0	0.00007	0.09751	<50	0.00067	1.30459
07/29/99	BW-C	300	300	06/22/99	<50	0.00006	0.00006	<0.50	0.00000	0.00000	11,000	0.02754	0.02754
08/04/99	BW-C	700	1,000	06/22/99	<50	0.00015	0.00021	<0.50	0.00000	0.00000	11,000	0.06425	0.09179
08/11/99	BW-C	0	1,000	06/22/99	<50	0.00000	0.00021	<0.50	0.00000	0.00000	11,000	0.00000	0.09179

Table 1 - Groundwater Extraction - Mass Removal Data - Shell-branded Service Station, Incident #98995752, 540 Hegenberger Road, Oakland, California

Date Purged	Well ID	Volume Pumped (gal)	Cumulative Volume Pumped (gal)	Date Sampled	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)
					TPH-G			**Benzene**			**MTBE**		
08/20/99	BW-C	1,013	2,013	06/22/99	<50	0.00021	0.00042	<0.50	0.00000	0.00000	11,000	0.09298	0.18477
08/30/99	BW-C	375	2,388	06/22/99	<50	0.00008	0.00050	<0.50	0.00000	0.00000	11,000	0.03442	0.21919
09/03/99*	BW-C	325	2,713	06/22/99	<50	0.00007	0.00057	<0.50	0.00000	0.00001	11,000	0.02983	0.24902
09/10/99*	BW-C	425	3,138	06/22/99	<50	0.00009	0.00065	<0.50	0.00000	0.00001	11,000	0.03901	0.28803
09/23/99	BW-C	750	3,888	06/22/99	<50	0.00016	0.00081	<0.50	0.00000	0.00001	11,000	0.06884	0.35687
09/29/99	BW-C	700	4,588	06/22/99	<50	0.00015	0.00096	<0.50	0.00000	0.00001	11,000	0.06425	0.42112
11/05/99	BW-C	550	5,138	06/22/99	<50	0.00011	0.00107	<0.50	0.00000	0.00001	11,000	0.05048	0.47161
06/06/00	BW-C	926	6,064	06/22/99	<50	0.00019	0.00127	<0.50	0.00000	0.00001	11,000	0.08500	0.55660
09/07/00	BW-C	1,000	7,064	06/22/99	<50	0.00021	0.00147	<0.50	0.00000	0.00001	11,000	0.09179	0.64839
07/29/99	BW-D	1,500	1,500	06/22/99	<50	0.00031	0.00031	<0.500	0.00000	0.00000	2,190	0.02741	0.02741
08/04/99	BW-D	250	1,750	06/22/99	<50	0.00005	0.00037	<0.500	0.00000	0.00000	2,190	0.00457	0.03198
08/11/99	BW-D	0	1,750	06/22/99	<50	0.00000	0.00037	<0.500	0.00000	0.00000	2,190	0.00000	0.03198
08/20/99	BW-D	1,213	2,963	06/22/99	<50	0.00025	0.00062	<0.500	0.00000	0.00001	2,190	0.02217	0.05415
08/30/99	BW-D	280	3,243	06/22/99	<50	0.00006	0.00068	<0.500	0.00000	0.00001	2,190	0.00512	0.05926
09/03/99*	BW-D	325	3,568	06/22/99	<50	0.00007	0.00074	<0.500	0.00000	0.00001	2,190	0.00594	0.06520
09/10/99*	BW-D	425	3,993	06/22/99	<50	0.00009	0.00083	<0.500	0.00000	0.00001	2,190	0.00777	0.07297
09/23/99	BW-D	750	4,743	06/22/99	<50	0.00016	0.00099	<0.500	0.00000	0.00001	2,190	0.01371	0.08667
09/29/99	BW-D	700	5,443	06/22/99	<50	0.00015	0.00114	<0.500	0.00000	0.00001	2,190	0.01279	0.09947
11/05/99	BW-D	625	6,068	06/22/99	<50	0.00013	0.00127	<0.500	0.00000	0.00001	2,190	0.01142	0.11089
01/18/02	BW-D	2,520	8,588	06/22/99	<50	0.00053	0.00179	<0.500	0.00001	0.00002	2,190	0.04605	0.15694
02/18/02	BW-D	2,751	11,339	06/22/99	<50	0.00057	0.00237	<0.500	0.00001	0.00002	2,190	0.05027	0.20721
03/27/02	BW-D	1,400	12,739	06/22/99	<50	0.00029	0.00266	<0.500	0.00000	0.00003	2,190	0.02558	0.23279
07/29/99	MW-1	150	150	06/22/99	20,000	0.02503	0.02503	100	0.00013	0.00013	150,000	0.18775	0.18775
08/04/99	MW-1	150	300	06/22/99	20,000	0.02503	0.05007	100	0.00013	0.00025	150,000	0.18775	0.37550
08/11/99	MW-1	15	315	06/22/99	20,000	0.00250	0.05257	100	0.00001	0.00026	150,000	0.01877	0.39427
08/20/99	MW-1	44	359	06/22/99	20,000	0.00734	0.05991	100	0.00004	0.00030	150,000	0.05507	0.44934
08/30/99	MW-1	218	577	06/22/99	20,000	0.03638	0.09629	100	0.00018	0.00048	150,000	0.27286	0.72220
09/03/99*	MW-1	125	702	06/22/99	20,000	0.02086	0.11715	100	0.00010	0.00059	150,000	0.15646	0.87866
09/10/99*	MW-1	75	777	06/22/99	20,000	0.01252	0.12967	100	0.00006	0.00065	150,000	0.09387	0.97253

Table 1 - Groundwater Extraction - Mass Removal Data - Shell-branded Service Station, Incident #98995752, 540 Hegenberger Road, Oakland, California

					TPH-G			Benzene			MTBE		
Date Purged	Well ID	Volume Pumped (gal)	Cumulative Volume Pumped (gal)	Date Sampled	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)
09/23/99	MW-1	175	952	06/22/99	20,000	0.02921	0.15888	100	0.00015	0.00079	150,000	0.21904	1.19157
09/29/99	MW-1	50	1,002	06/22/99	20,000	0.00834	0.16722	100	0.00004	0.00084	150,000	0.06258	1.25416
11/05/99	MW-1	50	1,052	09/30/99	<2,500	0.00052	0.16774	<25.0	0.00001	0.00084	30,900	0.01289	1.26705
11/19/99	MW-1	22.5	1,075	09/30/99	<2,500	0.00023	0.16798	<25.0	0.00000	0.00084	30,900	0.00580	1.27285
11/24/99	MW-1	25	1,100	09/30/99	<2,500	0.00026	0.16824	<25.0	0.00000	0.00085	30,900	0.00645	1.27930
12/02/99	MW-1	25	1,125	09/30/99	<2,500	0.00026	0.16850	<25.0	0.00000	0.00085	30,900	0.00645	1.28574
12/17/99	MW-1	25	1,150	12/10/99	<50.0	0.00001	0.16850	29.7	0.00001	0.00086	76,300	0.01592	1.30166
01/03/00	MW-1	40	1,190	12/10/99	<50.0	0.00001	0.16851	29.7	0.00001	0.00086	76,300	0.02547	1.32713
01/07/00	MW-1	0	1,190	12/10/99	<50.0	0.00000	0.16851	29.7	0.00000	0.00086	76,300	0.00000	1.32713
01/13/00	MW-1	45	1,235	12/10/99	<50.0	0.00001	0.16852	29.7	0.00001	0.00088	76,300	0.02865	1.35578
01/12/00	MW-1	35	1,270	12/10/99	<50.0	0.00001	0.16853	29.7	0.00001	0.00088	76,300	0.02228	1.37806
01/25/00	MW-1	35	1,305	12/10/99	<50.0	0.00001	0.16854	29.7	0.00001	0.00089	76,300	0.02228	1.40034
02/01/00	MW-1	22	1,327	12/10/99	<50.0	0.00000	0.16854	29.7	0.00001	0.00090	76,300	0.01401	1.41435
02/11/00	MW-1	28	1,355	12/10/99	<50.0	0.00001	0.16855	29.7	0.00001	0.00091	76,300	0.01783	1.43218
02/15/00	MW-1	25	1,380	12/10/99	<50.0	0.00001	0.16855	29.7	0.00001	0.00091	76,300	0.01592	1.44809
02/23/00	MW-1	20	1,400	12/10/99	<50.0	0.00000	0.16856	29.7	0.00000	0.00092	76,300	0.01273	1.46083
03/02/00	MW-1	7.5	1,407	03/02/00	<2,500	0.00008	0.16863	<25.0	0.00000	0.00092	27,600	0.00173	1.46255
03/10/00	MW-1	40	1,447	03/02/00	<2,500	0.00042	0.16905	<25.0	0.00000	0.00092	27,600	0.00921	1.47177
03/15/00	MW-1	25	1,472	03/02/00	<2,500	0.00026	0.16931	<25.0	0.00000	0.00092	27,600	0.00576	1.47752
03/21/00	MW-1	25	1,497	03/02/00	<2,500	0.00026	0.16957	<25.0	0.00000	0.00093	27,600	0.00576	1.48328
03/27/00	MW-1	30	1,527	03/02/00	<2,500	0.00031	0.16989	<25.0	0.00000	0.00093	27,600	0.00691	1.49019
04/07/00	MW-1	45	1,572	03/02/00	<2,500	0.00047	0.17036	<25.0	0.00000	0.00094	27,600	0.01036	1.50056
04/13/00	MW-1	30	1,602	03/02/00	<2,500	0.00031	0.17067	<25.0	0.00000	0.00094	27,600	0.00691	1.50746
04/20/00	MW-1	25	1,627	03/02/00	<2,500	0.00026	0.17093	<25.0	0.00000	0.00094	27,600	0.00576	1.51322
04/26/00	MW-1	25	1,652	03/02/00	<2,500	0.00026	0.17119	<25.0	0.00000	0.00094	27,600	0.00576	1.51898
05/04/00	MW-1	28	1,680	03/02/00	<2,500	0.00029	0.17148	<25.0	0.00000	0.00095	27,600	0.00645	1.52543
05/09/00	MW-1	45	1,725	03/02/00	<2,500	0.00047	0.17195	<25.0	0.00000	0.00095	27,600	0.01036	1.53579
05/17/00	MW-1	27	1,752	03/02/00	<2,500	0.00028	0.17223	<25.0	0.00000	0.00095	27,600	0.00622	1.54201
05/22/00	MW-1	25	1,777	03/02/00	<2,500	0.00026	0.17249	<25.0	0.00000	0.00096	27,600	0.00576	1.54777
06/01/00	MW-1	25	1,802	03/02/00	<2,500	0.00026	0.17275	<25.0	0.00000	0.00096	27,600	0.00576	1.55353
06/06/00	MW-1	175	1,977	03/02/00	<2,500	0.00183	0.17458	<25.0	0.00002	0.00098	27,600	0.04030	1.59383

Table 1 - Groundwater Extraction - Mass Removal Data - Shell-branded Service Station, Incident #98995752, 540 Hegenberger Road, Oakland, California

					TPH-G			Benzene			MTBE		
Date Purged	Well ID	Volume Pumped (gal)	Cumulative Volume Pumped (gal)	Date Sampled	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)
06/08/00	MW-1	43	2,020	03/02/00	<2,500	0.00045	0.17503	<25.0	0.00000	0.00098	27,600	0.00990	1.60373
06/15/00	MW-1	29	2,049	06/08/00	<2,000	0.00024	0.17527	<20.0	0.00000	0.00098	**67,600**	0.01636	1.62009
07/10/00	MW-1	169	2,218	06/08/00	<2,000	0.00141	0.17668	<20.0	0.00001	0.00100	**67,600**	0.09533	1.71542
09/07/00	MW-1	100	2,318	09/05/00	<10,000	0.00417	0.18085	411	0.00034	0.00134	**115,000**	0.09596	1.81138
10/23/00*	MW-1	100	2,418	09/05/00	<10,000	0.00417	0.18502	411	0.00034	0.00168	71,100	0.05933	1.87071
11/30/00	MW-1	160	2,578	09/05/00	<10,000	0.00668	0.19170	411	0.00055	0.00223	71,100	0.09493	1.96563
12/21/00	MW-1	125	2,703	12/15/00	35,600	0.03713	0.22883	1,310	0.00137	0.00360	136,000	0.14185	2.10749
05/16/01	MW-1	150	2,853	03/09/01	<10,000	0.00626	0.23509	1,390	0.00174	0.00534	**164,000**	0.20527	2.31276
06/19/01	MW-1	100	2,953	03/09/01	<10,000	0.00417	0.23926	1,390	0.00116	0.00650	**164,000**	0.13685	2.44961
07/24/01	MW-1	150	3,103	06/27/01	<5,000	0.00313	0.24239	<50	0.00003	0.00653	**19,000**	0.02378	2.47339
08/17/01	MW-1	100	3,203	06/27/01	<5,000	0.00209	0.24448	<50	0.00002	0.00655	**19,000**	0.01585	2.48924
09/25/01	MW-1	150	3,353	09/19/01	<5,000	0.00313	0.24761	<50	0.00003	0.00658	**52,000**	0.06509	2.55433
10/22/01	MW-1	150	3,503	09/19/01	<5,000	0.00313	0.25074	<50	0.00003	0.00661	**52,000**	0.06509	2.61941
11/06/01	MW-1	50	3,553	09/19/01	<5,000	0.00104	0.25178	<50	0.00001	0.00662	**52,000**	0.02170	2.64111
12/04/01	MW-1	100	3,653	09/19/01	<5,000	0.00209	0.25387	<50	0.00002	0.00664	**52,000**	0.04339	2.68450
01/28/02	MW-1	125	3,778	12/31/01	<5,000	0.00261	0.25647	<25	0.00001	0.00666	**17,000**	0.01773	2.70223
02/18/02	MW-1	50	3,828	12/31/01	<5,000	0.00104	0.25752	<25	0.00001	0.00666	**17,000**	0.00709	2.70932
03/27/02	MW-1	200	4,028	03/14/02	<20,000	0.01669	0.27420	<200	0.00017	0.00683	**60,000**	0.10013	2.80946
04/30/02	MW-1	108	4,136	03/14/02	<20,000	0.00901	0.28322	<200	0.00009	0.00692	**60,000**	0.05407	2.86353
05/28/02	MW-1	253	4,389	03/14/02	<20,000	0.02111	0.30433	<200	0.00021	0.00713	**60,000**	0.12667	2.99019
06/25/02	MW-1	125	4,514	06/25/02	<5,000	0.00261	0.30694	<50	0.00003	0.00716	**34,000**	0.03546	3.02566
07/30/02	MW-1	50	4,564	06/25/02	<5,000	0.00104	0.30798	<50	0.00001	0.00717	**34,000**	0.01419	3.03984
08/20/02	MW-1	50	4,614	06/25/02	<5,000	0.00104	0.30902	<50	0.00001	0.00718	**34,000**	0.01419	3.05403
09/20/02	MW-1	139	4,753	09/19/02	<2,500	0.00145	0.31047	<25	0.00001	0.00719	**18,000**	0.02088	3.07491
07/29/99	MW-3	100	100	06/22/99	58,000	0.04840	0.04840	6,600	0.00551	0.00551	**653,000**	0.54489	0.54489
08/04/99	MW-3	100	200	06/22/99	58,000	0.04840	0.09679	6,600	0.00551	0.01101	**653,000**	0.54489	1.08977
08/11/99	MW-3	45	245	06/22/99	58,000	0.02178	0.11857	6,600	0.00248	0.01349	**653,000**	0.24520	1.33497
08/20/99	MW-3	55	300	06/22/99	58,000	0.02662	0.14519	6,600	0.00303	0.01652	**653,000**	0.29969	1.63466
08/30/99	MW-3	77	377	06/22/99	58,000	0.03727	0.18246	6,600	0.00424	0.02076	**653,000**	0.41956	2.05422
09/03/99	MW-3*	50	427	06/22/99	58,000	0.02420	0.20666	6,600	0.00275	0.02352	**653,000**	0.27244	2.32667

Table 1 - Groundwater Extraction - Mass Removal Data - Shell-branded Service Station, Incident #98995752, 540 Hegenberger Road, Oakland, California

Date Purged	Well ID	Volume Pumped (gal)	Cumulative Volume Pumped (gal)	Date Sampled	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)
					TPH-G			**Benzene**			**MTBE**		
09/10/99	MW-3*	40	467	06/22/99	58,000	0.01936	0.22602	6,600	0.00220	0.02572	**653,000**	0.21795	2.54462
09/23/99	MW-3	10	477	06/22/99	58,000	0.00484	0.23085	6,600	0.00055	0.02627	**653,000**	0.05449	2.59911
09/29/99	MW-3	50	527	06/22/99	58,000	0.02420	0.25505	6,600	0.00275	0.02902	**653,000**	0.27244	2.87155
11/05/99	MW-3	50	577	09/30/99	4,360	0.00182	0.25687	121	0.00005	0.02907	**35,600**	0.01485	2.88640
11/19/99	MW-3	22.5	600	09/30/99	4,360	0.00082	0.25769	121	0.00002	0.02910	**35,600**	0.00668	2.89309
11/24/99	MW-3	28	628	09/30/99	4,360	0.00102	0.25871	121	0.00003	0.02912	**35,600**	0.00832	2.90141
12/02/99	MW-3	25	653	09/30/99	4,360	0.00091	0.25962	121	0.00003	0.02915	**35,600**	0.00743	2.90883
12/17/99	MW-3	35	688	12/10/99	4,220	0.00123	0.26085	973	0.00028	0.02943	**88,200**	0.02576	2.93459
01/03/00	MW-3	40	728	12/10/99	4,220	0.00141	0.26226	973	0.00032	0.02976	**88,200**	0.02944	2.96403
01/07/00	MW-3	0	728	12/10/99	4,220	0.00000	0.26226	973	0.00000	0.02976	**88,200**	0.00000	2.96403
01/13/00	MW-3	45	773	12/10/99	4,220	0.00158	0.26385	973	0.00037	0.03012	**88,200**	0.03312	2.99715
01/21/00	MW-3	35	808	12/10/99	4,220	0.00123	0.26508	973	0.00028	0.03041	**88,200**	0.02576	3.02291
01/25/00	MW-3	38	846	12/10/99	4,220	0.00134	0.26642	973	0.00031	0.03072	**88,200**	0.02797	3.05088
02/01/00	MW-3	23	869	12/10/99	4,220	0.00081	0.26723	973	0.00019	0.03090	**88,200**	0.01693	3.06780
02/11/00	MW-3	22	891	12/10/99	4,220	0.00077	0.26800	973	0.00018	0.03108	**88,200**	0.01619	3.08399
02/15/00	MW-3	22	913	12/10/99	4,220	0.00077	0.26877	973	0.00018	0.03126	**88,200**	0.01619	3.10019
02/23/00	MW-3	30	943	12/10/99	4,220	0.00106	0.26983	973	0.00024	0.03150	**88,200**	0.02208	3.12226
03/02/00	MW-3	7	950	03/02/00	65,300	0.00381	0.27365	5,210	0.00030	0.03181	**59,800**	0.00349	3.12576
03/10/00	MW-3	42	992	03/02/00	65,300	0.02289	0.29653	5,210	0.00183	0.03363	**59,800**	0.02096	3.14672
03/15/00	MW-3	20	1,012	03/02/00	65,300	0.01090	0.30743	5,210	0.00087	0.03450	**59,800**	0.00998	3.15670
03/21/00	MW-3	25	1,037	03/02/00	65,300	0.01362	0.32105	5,210	0.00109	0.03559	**59,800**	0.01247	3.16917
03/27/00	MW-3	40	1,077	03/02/00	65,300	0.02180	0.34285	5,210	0.00174	0.03733	**59,800**	0.01996	3.18913
04/07/00	MW-3	45	1,122	03/02/00	65,300	0.02452	0.36737	5,210	0.00196	0.03929	**59,800**	0.02245	3.21158
04/13/00	MW-3	30	1,152	03/02/00	65,300	0.01635	0.38371	5,210	0.00130	0.04059	**59,800**	0.01497	3.22655
04/20/00	MW-3	25	1,177	03/02/00	65,300	0.01362	0.39733	5,210	0.00109	0.04168	**59,800**	0.01247	3.23903
04/26/00	MW-3	30	1,207	03/02/00	65,300	0.01635	0.41368	5,210	0.00130	0.04298	**59,800**	0.01497	3.25400
05/04/00	MW-3	26	1,233	03/02/00	65,300	0.01417	0.42785	5,210	0.00113	0.04411	**59,800**	0.01297	3.26697
05/09/00	MW-3	45	1,278	03/02/00	65,300	0.02452	0.45237	5,210	0.00196	0.04607	**59,800**	0.02245	3.28943
05/17/00	MW-3	27	1,305	03/02/00	65,300	0.01471	0.46708	5,210	0.00117	0.04724	**59,800**	0.01347	3.30290
05/22/00	MW-3	25	1,330	03/02/00	65,300	0.01362	0.48070	5,210	0.00109	0.04833	**59,800**	0.01247	3.31537
06/01/00	MW-3	25	1,355	03/02/00	65,300	0.01362	0.49432	5,210	0.00109	0.04942	**59,800**	0.01247	3.32785

Table 1 - Groundwater Extraction - Mass Removal Data - Shell-branded Service Station, Incident #98995752, 540 Hegenberger Road, Oakland, California

Date Purged	Well ID	Volume Pumped (gal)	Cumulative Volume Pumped (gal)	Date Sampled	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)
					TPH-G			**Benzene**			**MTBE**		
06/06/00	MW-3	240	1,595	03/02/00	65,300	0.13077	0.62510	5,210	0.01043	0.05985	**59,800**	0.11976	3.44761
06/08/00	MW-3	42	1,637	03/02/00	65,300	0.02289	0.64798	5,210	0.00183	0.06168	**59,800**	0.02096	3.46857
06/15/00	MW-3	29	1,666	06/08/00	72,700	0.01759	0.66557	3,570	0.00086	0.06254	44,400	0.01074	3.47931
07/10/00	MW-3	101	1,767	06/08/00	72,700	0.06127	0.72684	3,570	0.00301	0.06555	44,400	0.03742	3.51673
09/07/00	MW-3	265	2,032	09/05/00	26,100	0.05771	0.78456	959	0.00212	0.06767	24,000	0.05307	3.56980
10/23/00	MW-3*	250	2,282	09/05/00	26,100	0.05445	0.83901	959	0.00200	0.06967	24,000	0.05007	3.61987
11/30/00	MW-3	210	2,492	09/05/00	26,100	0.04574	0.88474	959	0.00168	0.07135	24,000	0.04206	3.66192
12/21/00	MW-3	150	2,642	12/15/00	5,190	0.00650	0.89124	438	0.00055	0.07190	**11,800**	0.01477	3.67669
05/16/01	MW-3	500	3,142	03/09/01	5,880	0.02453	0.91577	472	0.00197	0.07387	41,800	0.17440	3.85109
06/19/01	MW-3	100	3,242	03/09/01	5,880	0.00491	0.92068	472	0.00039	0.07426	41,800	0.03488	3.88597
07/24/01	MW-3	350	3,592	06/27/01	9,100	0.02658	0.94725	330	0.00096	0.07522	**31,000**	0.09054	3.97650
08/17/01	MW-3	150	3,742	06/27/01	9,100	0.01139	0.95864	330	0.00041	0.07564	**31,000**	0.03880	4.01530
09/25/01	MW-3	300	4,042	09/19/01	790	0.00198	0.96062	14	0.00004	0.07567	**8,100**	0.02028	4.03558
10/22/01	MW-3	150	4,192	09/19/01	790	0.00099	0.96161	14	0.00002	0.07569	**8,100**	0.01014	4.04572
11/06/01	MW-3	50	4,242	09/19/01	790	0.00033	0.96194	14	0.00001	0.07570	**8,100**	0.00338	4.04910
12/04/01	MW-3	150	4,392	09/19/01	790	0.00099	0.96293	14	0.00002	0.07571	**8,100**	0.01014	4.05924
01/28/02	MW-3	50	4,442	12/31/01	<5,000	0.00104	0.96397	220	0.00009	0.07581	**22,000**	0.00918	4.06842
02/18/02	MW-3	49	4,491	12/31/01	<5,000	0.00102	0.96499	220	0.00009	0.07590	**22,000**	0.00900	4.07741
03/27/02	MW-3	220	4,711	03/14/02	<2,500	0.00229	0.96729	<25	0.00002	0.07592	**12,000**	0.02203	4.09944
04/30/02	MW-3	50	4,761	03/14/02	<2,500	0.00052	0.96781	<25	0.00001	0.07592	**12,000**	0.00501	4.10445
05/28/02	MW-3	2,520	7,281	03/14/02	<2,500	0.02628	0.99409	<25	0.00026	0.07619	**12,000**	0.25233	4.35678
06/25/02	MW-3	50	7,331	06/25/02	<10,000	0.00209	0.99618	160	0.00007	0.07625	**42,000**	0.01752	4.37430
07/30/02	MW-3	20	7,351	06/25/02	<10,000	0.00083	0.99701	160	0.00003	0.07628	**42,000**	0.00701	4.38131
08/20/02	MW-3	50	7,401	06/25/02	<10,000	0.00209	0.99910	160	0.00007	0.07635	**42,000**	0.01752	4.39884
09/20/02	MW-3	100	7,501	09/19/02	<10,000	0.00417	1.00327	650	0.00054	0.07689	**84,000**	0.07009	4.46893
Total Gallons Extracted:		**64,644**			**Total Pounds Removed:**		**1.44934**			**0.08616**			**10.16090**
					Total Gallons Removed:		**0.23760**			**0.01180**			**1.63886**

Table 1 - Groundwater Extraction - Mass Removal Data - Shell-branded Service Station, Incident #98995752, 540 Hegenberger Road, Oakland, California

					TPH-G			Benzene			MTBE		
Date Purged	Well ID	Volume Pumped (gal)	Cumulative Volume Pumped (gal)	Date Sampled	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)

Abbreviations & Notes:

TPH-G = Total petroleum hydrocarbons as gasoline
MTBE = Methyl tertiary butyl ether
TPH-G = Total petroleum hydrocarbons as gasoline
µg/L = Micrograms per liter
ppb = Parts per billion, equivalent to µg/L
lbs = pounds
L = Liter
gal = Gallon
g = Gram
* = Groundwater extracted per well estimated; subcontractor did not report individual well volumes
Mass removed based on the formula: volume extracted (gal) x Concentration (µg/L) x (g/10^6µg) x (pound/453.6g) x (3.785 L/gal)
Volume removal data based on the formula: density (in gms/cc) x 9.339 (ccxlbs/gmsxgals)
TPH-G, benzene and MTBE analyzed by EPA Method 8260B
Concentrations are based on most recent groundwater monitoring results
If concentration is less than the laboratory detection limit, one half of the detection limit concentration is used in the mass removal calculation.
Groundwater extracted by vacuum trucks operated by Onyx Environmental Services. Water disposed of at Shell Martinez Refinery.

Table 2: Vapor Extraction - Mass Removal Data - Shell-branded Service Station, Incident #98995752, 540 Hegenberger Road, Oakland, California

Date	Well ID	Interval Hours of Operation (hours)	System Flow Rate (cfm)	Hydrocarbon Concentrations (Concentrations in ppmv) TPH-G	Benzene	MTBE	TPH-G Removal Rate (lbs/hour)	TPH-G Cumulative Removed (lbs)	Benzene Removal Rate (lbs/hour)	Benzene Cumulative Removed (lbs)	MTBE Removal Rate (lbs/hour)	MTBE Cumulative Removed (lbs)
							TPH-G		**Benzene**		**MTBE**	
06/06/00	MW-1	3.00	12.76	4.4	0.192	20.7	0.001	0.002	0.000	0.000	0.004	0.011
07/10/00	MW-1	3.00	11	<28	<0.31	30	0.002	0.008	0.000	0.000	0.005	0.024
09/07/00	MW-1	2.00	2.4	25.4	2.51	138	0.001	0.010	0.000	0.000	0.005	0.033
10/23/00	MW-1	4.00	0.7	1,650	61.6	392	0.015	0.072	0.001	0.002	0.004	0.048
11/30/00	MW-1	4.00	7.0	561	<1.57	62.8	0.052	0.282	0.000	0.003	0.006	0.073
12/21/00	MW-1	3.60	2.1	<2.838	<0.031	<0.277	0.000	0.282	0.000	0.003	0.000	0.073
05/16/01	MW-1	4.00	28.4	400	0.26	44	0.152	0.889	0.000	0.003	0.017	0.141
06/19/01	MW-1	3.83	5.8	350	<0.40	52	0.027	0.993	0.000	0.003	0.004	0.157
07/24/01	MW-1	4.00	10.3	<5.0	<0.050	<0.10	0.000	0.995	0.000	0.003	0.000	0.157
08/17/01	MW-1	4.00	15.1	1,900	7.3	51	0.384	2.529	0.001	0.009	0.011	0.199
09/25/01	MW-1	4.00	5.8	160	<0.10	37	0.012	2.578	0.000	0.009	0.003	0.211
06/06/00	MW-3	3.50	9.35	1,371	27.6	32	0.171	0.600	0.003	0.011	0.004	0.014
07/10/00	MW-3	2.00	11	564	8.9	76	0.083	0.766	0.001	0.013	0.011	0.037
09/07/00	MW-3	4.00	4.7	2,832	109	244	0.178	1.477	0.006	0.038	0.016	0.100
10/23/00	MW-3	4.00	1.4	3,040	45.6	323	0.057	1.705	0.001	0.041	0.006	0.125
11/30/00	MW-3	2.00	2.5	23,800	59.9	974	0.795	3.296	0.002	0.045	0.033	0.191
12/21/00	MW-3	4.50	3.0	<2.838	<0.031	<0.277	0.000	3.296	0.000	0.045	0.000	0.191
05/16/01	MW-3	4.25	0.9	21,000	64	270	0.253	4.370	0.001	0.048	0.003	0.205
06/19/01	MW-3	5.83	2.4	14,000	62	300	0.449	6.988	0.002	0.058	0.010	0.263
07/24/01	MW-3	4.00	5.3	<5.0	0.10	0.80	0.000	6.989	0.000	0.058	0.000	0.263
08/17/01	MW-3	4.00	11.0	11,000	53	290	1.618	13.459	0.007	0.087	0.044	0.438
09/25/01	MW-3	4.00	3.2	19,000	79	410	0.813	16.710	0.003	0.099	0.018	0.509
Total Pounds Removed:							**TPH-G =**	**7.984**	**Benzene =**	**0.062**	**MTBE =**	**0.420**

Table 2: Vapor Extraction - Mass Removal Data - Shell-branded Service Station, Incident #98995752, 540 Hegenberger Road, Oakland, California

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

lbs = Pounds

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

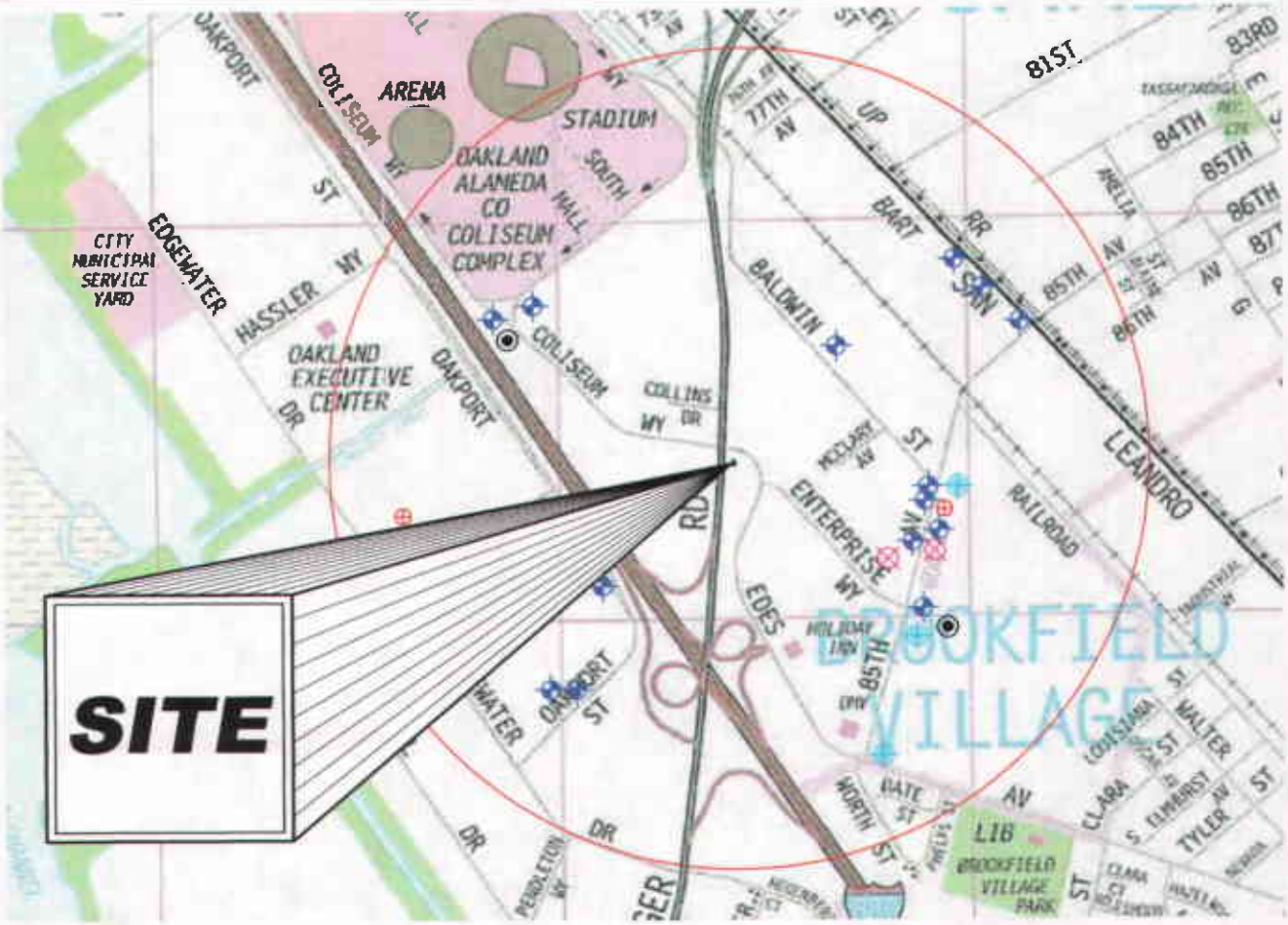
TPH-G / Benzene / MTBE removal rate = Rate based on Bay Area Air Quality Management District's Manual of Procedures for Soil Vapor Extraction dated July 17, 1991.

(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

If concentration is less than the laboratory detection limit, one half of the detection limit concentration is used in the mass removal calculation.

fs-b1.dwg-09/21/00



LEGEND

- MONITORING WELL
- TEST WELL
- SOIL BORING
- DESTROYED/ABANDONED WELL
- MULTIPLE WELL TYPES AT SAME SITE

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

N
W E
S

0 2000 Feet
SCALE

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

PROJECT NO. 06-155-0302-01

DRAWN BY:	PEL
DATE:	02/05/01
REVISED BY:	DWB
REVISED:	10/30/02
APPROVED BY:	DWB
DATE:	10/30/02

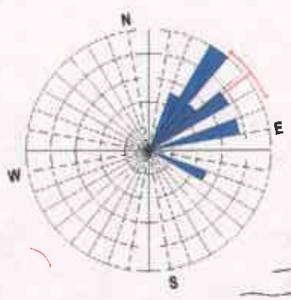
VICINITY/WELL SURVEY MAP

SHELL SERVICE STATION
540 HEGENBERGER ROAD
OAKLAND, CA.

FIGURE 1

FILE: K:\DWGS\EQUILON\OAKLAND (540 HEGENBERGER)\VIC/WELL SURVEY
DATE PLOTTED: 09/26/02

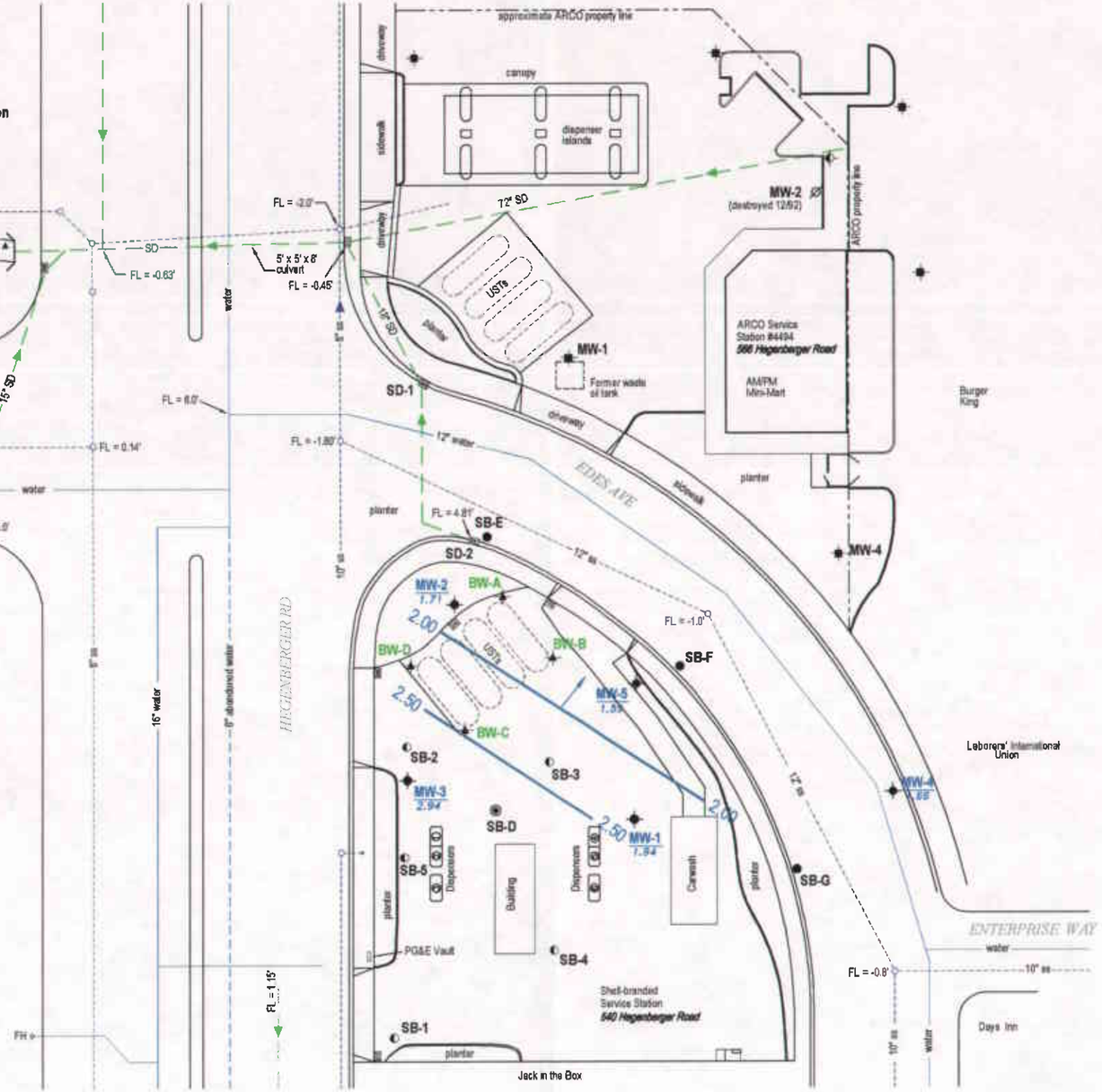
fb-b1.dwg -09/21/00

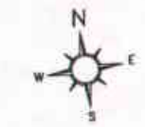


Groundwater Gradient Direction
(3Q98-3Q02)

EXPLANATION

MW-1	⊕	Site monitoring well
BW-A	⊕	Tank backfill well
MW-1	⊕	ARCO monitoring well, not referenced to mean sea level, not used for contouring
RW-1	⊕	ARCO recovery well
SB-1	◐	Soil boring location (March 1998)
SB-D	◉	Soil boring location (July 1998)
SB-E	●	Soil boring location (August 2000)
C-1	▲	Canal sampling location
SD-1	▥	Storm Drain Sample Location
FH	◇	Fire hydrant
FL = 5.0'		Flowline elevation (msl)
ss		Sanitary sewer main
water		Water line
SD		Storm drain
	►	Flow direction
NS		Not surveyed
NA		Not available
	◄	Groundwater flow direction
2.00		Groundwater lines are interpretive based on groundwater levels measured on September 19th, 2002.

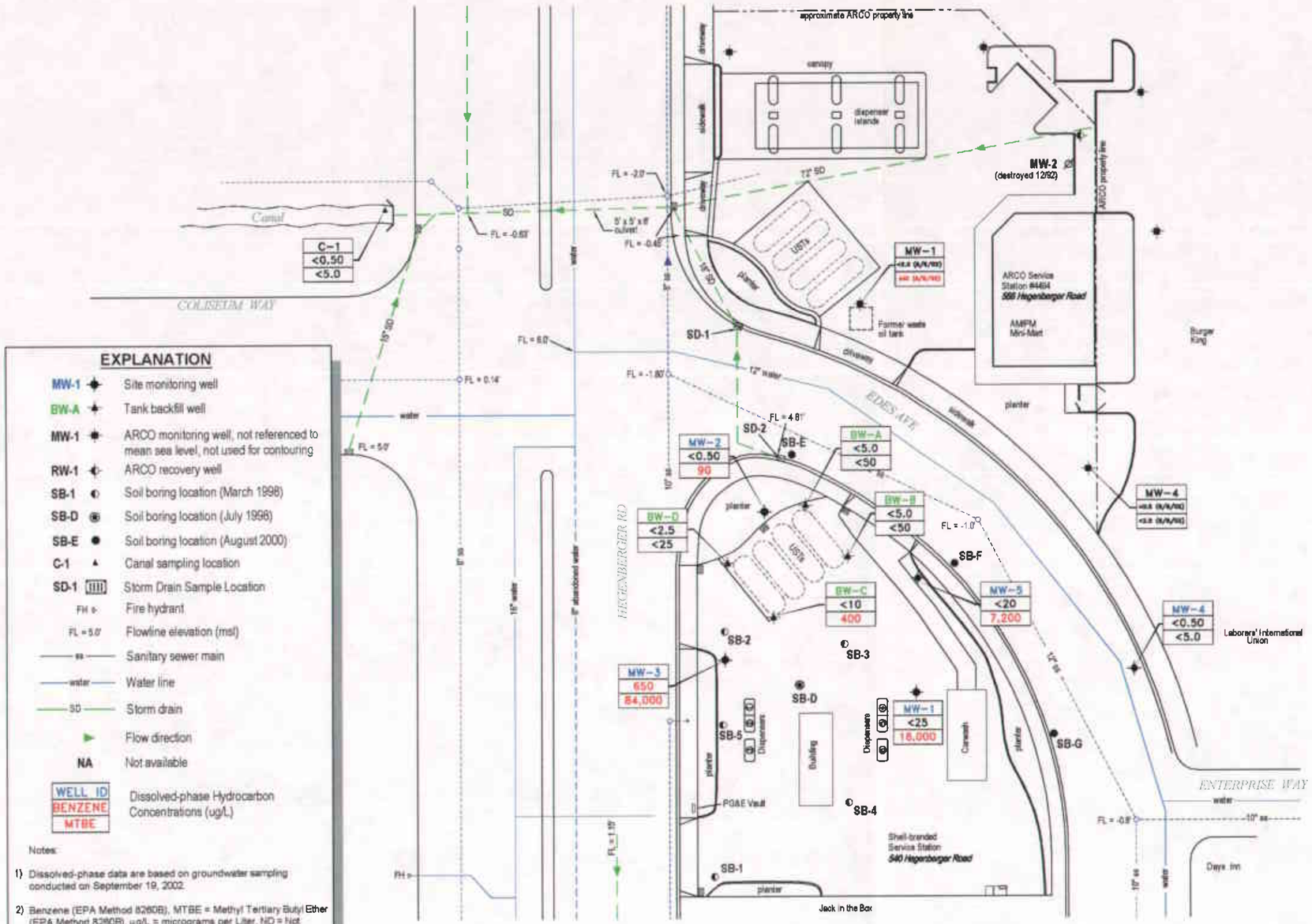




0 50 FEET
SCALE

MILLER BROOKS Environmental, Inc.	DRAWN BY: PEL	GROUNDWATER ELEVATION CONTOUR MAP SEPTEMBER 19, 2002	FIGURE 2
2425 W. 14TH STREET, D-2 OAKLAND, CA (510) 891-0092	DATE: 09/15/02 REVISED BY: DWB REVISED: 10/31/02 APPROVED BY: HB	SHELL SERVICE STATION 540 HEGENBERGER ROAD OAKLAND, CA.	
PROJECT NO. 06-155-0302-01	DATE: 09/16/02	FILE: K:\DWGS\EQUILON\OAKLAND (540 HEGENBERGER RD.)\SP Q3-02 DATE PLOTTED: 09/16/02	

fb-b1.dwg-09/21/00



EXPLANATION

- MW-1 — Site monitoring well
- BW-A — Tank backfill well
- MW-1 — ARCO monitoring well, not referenced to mean sea level, not used for contouring
- RW-1 — ARCO recovery well
- SB-1 — Soil boring location (March 1998)
- SB-D — Soil boring location (July 1998)
- SB-E — Soil boring location (August 2000)
- C-1 — Canal sampling location
- SD-1 — Storm Drain Sample Location
- FH — Fire hydrant
- FL = 5.0' — Flowline elevation (msl)
- ss — Sanitary sewer main
- water — Water line
- SD — Storm drain
- Flow direction
- NA — Not available
- WELL ID / BENZENE / MTBE — Dissolved-phase Hydrocarbon Concentrations (ug/L)

Notes:

1) Dissolved-phase data are based on groundwater sampling conducted on September 19, 2002.
2) Benzene (EPA Method 8260B), MTBE = Methyl Tertiary Butyl Ether (EPA Method 8260B), µg/L = micrograms per Liter, ND = Not Detected at limit indicated on official laboratory report.
3) SD-1 and SD-2 not sampled due to insufficient water.
4) ARCO Station #4484 Wells MW-1 and MW-4 sampled by URS Corporation on August 8, 2002.

MILLER BROOKS Environmental, Inc.

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

PROJECT NO. 06-155-0302-01

DRAWN BY:	PEL
DATE:	09/15/02
REVISED BY:	DWB
REVISED:	10/31/02
APPROVED BY:	
DATE:	

DISSOLVED-PHASE HYDROCARBON DISTRIBUTION MAP
SEPTEMBER 19, 2002

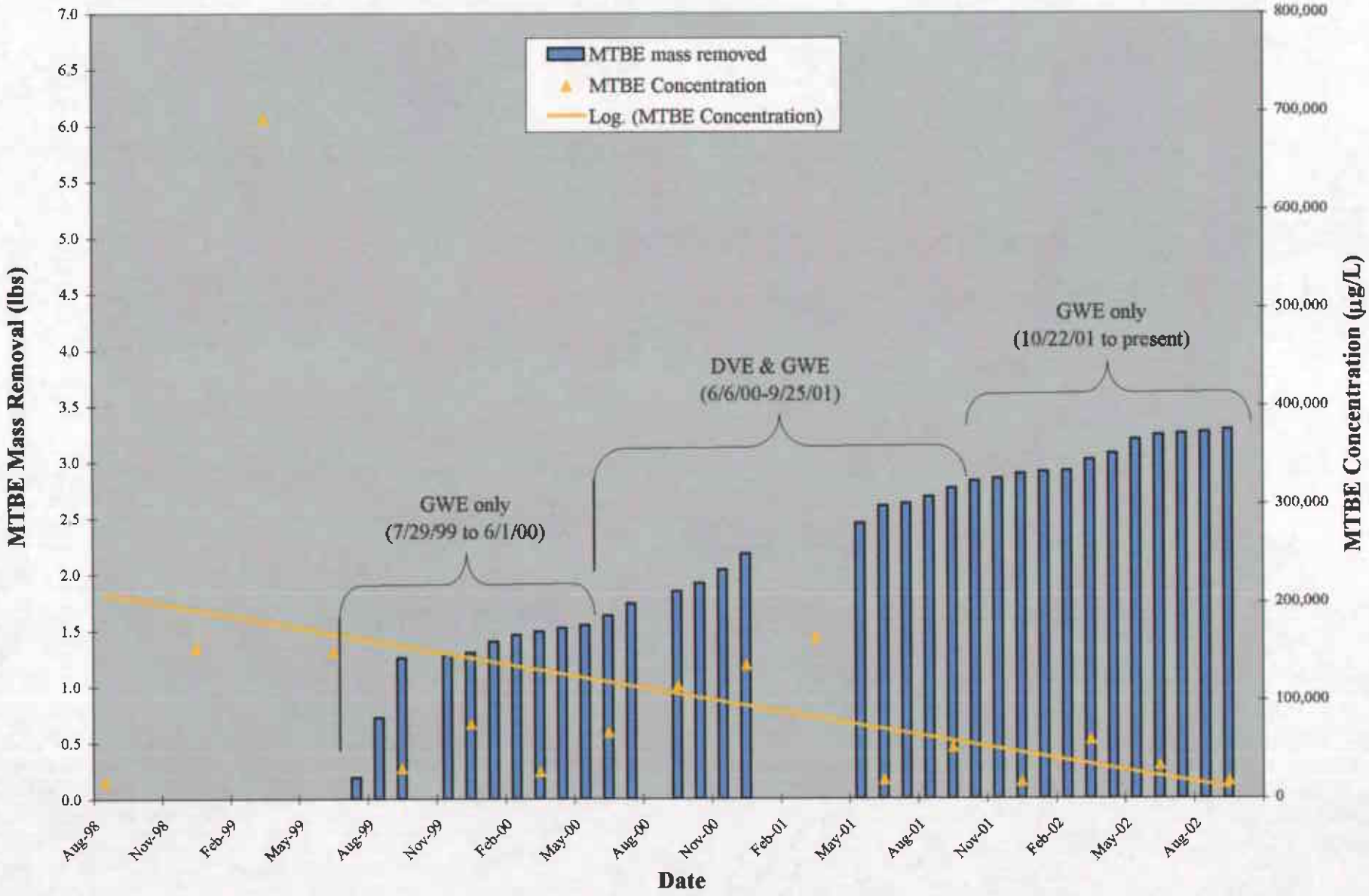
SHELL SERVICE STATION
540 HEGENBERGER ROAD
OAKLAND, CA.

FIGURE 3

FILE: K:\DWGS\EQUILON\OAKLAND (540 HEGENBERGER RD.)\SP Q3-02
DATE PLOTTED: 09/16/02

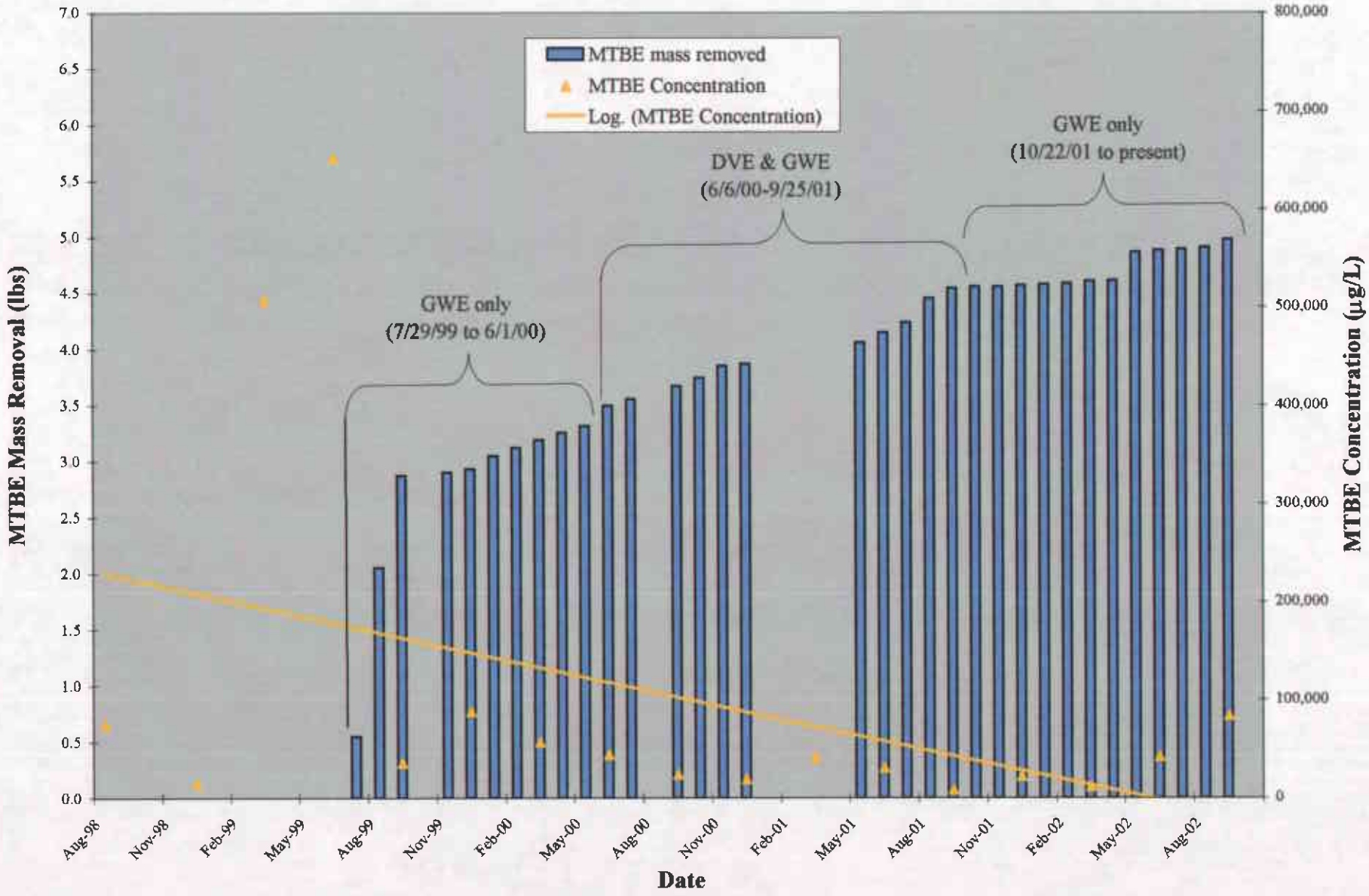
SHELL SERVICE STATION
540 HEGENBERGER ROAD
OAKLAND, CA

Figure 4 - Dual Vapor/Groundwater Extraction Effect on MTBE Concentration in Well MW-1



SHELL SERVICE STATION
540 HEGENBERGER ROAD
OAKLAND, CA

Figure 5 - Dual Vapor/Groundwater Extraction effect on MTBE concentration in MW-3



BLAINE
TECH SERVICES, INC.

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

October 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
540 Hegenberger Road
Oakland, CA

Monitoring performed on September 19, 2002

Groundwater Monitoring Report **020919-AM-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: Heidi Bauer
Miller Brooks Environmental, Inc.
2525 West 14th Street, Suite D2
Oakland, CA 94607

WELL CONCENTRATIONS
Shell-branded Service Station
540 Hegenberger Road
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.)	GW Elevation (MSL)	DO Reading (ppm)
MW-1 (a)	8/26/1998	2,700	28	55	59	39	33,000	NA	10.54	7.91	2.63	1.8
MW-1 (b)	8/26/1998	<1,000	22	<10	<10	<10	17,000	NA	10.54	7.91	2.63	2.2
MW-1	12/28/1998	<5,000	<50.0	<50.0	<50.0	<50.0	153,000	33,000	10.54	8.75	1.79	1.9
MW-1	3/29/1999	<2,000	<20.0	<20.0	<20.0	<20.0	693,000	NA	10.54	8.32	2.22	2.0
MW-1	6/22/1999	20,000	<200	<200	<200	<200	150,000	NA	10.54	9.05	1.49	1.7
MW-1	9/30/1999	<2,500	<25.0	<25.0	<25.0	<25.0	30,900	NA	10.54	8.35	2.19	2.6
MW-1	11/19/1999	NA	NA	NA	NA	NA	NA	NA	10.54	9.58	0.96	NA
MW-1	11/24/1999	NA	NA	NA	NA	NA	NA	NA	10.54	9.65	0.89	NA
MW-1	12/2/1999	NA	NA	NA	NA	NA	NA	NA	10.54	9.55	0.99	NA
MW-1	12/10/1999	<50.0	29.7	<20.0	<20.0	<20.0	76,300	NA	10.54	8.86	1.68	1.2
MW-1	3/2/2000	<2,500	<25.0	<25.0	<25.0	<25.0	27,600	NA	10.54	8.83	1.71	3.2
MW-1	6/8/2000	<2,000	<20.0	<20.0	<20.0	<20.0	59,000	67,600	10.54	7.78	2.76	1.9
MW-1	9/5/2000	<10,000	411	<100	<100	<100	71,100	115,000e	10.54	7.84	2.70	NA
MW-1	12/15/2000	35,600	1,310	<50.0	<50.0	<50.0	136,000	f	10.54	7.65	2.89	NA
MW-1	3/9/2001	<10,000	1,390	<100	<100	<100	89,600	164,000	10.54	6.44	4.10	NA
MW-1	6/27/2001	<5,000	<50	<50	<50	<50	NA	19,000	10.54	8.46	2.08	NA
MW-1	9/19/2001	<5,000	<50	<50	<50	<50	NA	52,000	10.54	8.10	2.44	NA
MW-1	12/31/2001	<5,000	<25	<25	<25	<25	NA	17,000	10.54	7.31	3.23	NA
MW-1	3/14/2002	<20,000	<200	<200	<200	<200	NA	60,000	10.54	7.68	2.86	NA
MW-1	6/25/2002	<5,000	<50	<50	<50	<50	NA	34,000	10.54	8.40	2.14	NA
MW-1	**9/19/2002**	**<2,500**	**<25**	**<25**	**<25**	**<25**	**NA**	**18,000**	**10.52**	**8.58**	**1.94**	**NA**
MW-2 (a)	8/26/1998	<250	3.2	<2.5	<2.5	<2.5	4,000	NA	9.21	7.18	2.03	2.4
MW-2 (b)	8/26/1998	<250	3.1	<2.5	<2.5	<2.5	4,800	NA	9.21	7.18	2.03	2.7
MW-2 (D)(b)	8/26/1998	<250	4.8	<2.5	<2.5	6.0	3,300	NA	9.21	7.18	2.03	2.7
MW-2	12/28/1998	<50.0	<0.500	<0.500	<0.500	<0.500	28.8	NA	9.21	7.34	1.87	2.1
MW-2	3/29/1999	235	<0.500	<0.500	<0.500	3.4	101	NA	9.21	6.85	2.36	2.0

WELL CONCENTRATIONS
Shell-branded Service Station
540 Hegenberger Road
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.)	GW Elevation (MSL)	DO Reading (ppm)
MW-2	6/22/1999	<50	<0.50	<0.50	<0.50	<0.50	<2.5	NA	9.21	7.10	2.11	1.9
MW-2	9/30/1999	<50.0	<0.500	<0.500	<0.500	<0.500	1,700	NA	9.21	8.06	1.15	1.0
MW-2	12/10/1999	<50.0	<0.500	<0.500	<0.500	<0.500	<2.50	NA	9.21	8.61	0.60	1.4
MW-2	3/2/2000	<500	11.5	<5.00	<5.00	<5.00	5,280	NA	9.21	6.33	2.88	0.4
MW-2	6/8/2000	<50.0	0.670	<0.500	<0.500	<0.500	3,160	NA	9.21	6.87	2.34	1.6
MW-2	9/5/2000	<1,000	<10.0	<10.0	<10.0	<10.0	9,600	NA	9.21	6.79	2.42	NA
MW-2	12/15/2000	<200	<2.00	<2.00	<2.00	<2.00	6,320	NA	9.21	6.76	2.45	NA
MW-2	3/9/2001	<500	<5.00	<5.00	<5.00	<5.00	17,200	NA	9.21	6.28	2.93	NA
MW-2	6/27/2001	<100	1.4	<1.0	<1.0	<2.0	NA	470	9.21	7.12	2.09	NA
MW-2	9/19/2001	<50	<0.50	<0.50	<0.50	<0.50	NA	330	9.21	7.17	2.04	NA
MW-2	12/31/2001	<100	<1.0	<1.0	<1.0	<1.0	NA	420	9.21	6.24	2.97	NA
MW-2	3/14/2002	<250	4.5	3.3	<2.5	<2.5	NA	1,600	9.21	6.72	2.49	NA
MW-2	6/25/2002	<50	<0.50	<0.50	<0.50	<0.50	NA	110	9.21	7.23	1.98	NA
MW-2	**9/19/2002**	**<50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**NA**	**90**	**9.19**	**7.48**	**1.71**	**NA**
MW-3 (a)	8/26/1998	2,300	180	330	<0.50	420	44,000	NA	9.45	6.52	2.93	1.8
MW-3 (b)	8/26/1998	<50	<0.50	<0.50	<0.50	<0.50	52,000	75,000	9.45	6.52	2.93	2.3
MW-3	12/28/1998	<5,00	139	<50.0	<50.0	<50.0	15,100	NA	9.45	6.73	2.72	1.7
MW-3	3/29/1999	52,500	5,500	6,900	1,360	6,250	508,000	630,000 (c)	9.45	6.21	3.24	2.1
MW-3	6/22/1999	58,000	6,600	9,850	1,640	6,950	677,000	653,000	9.45	7.00	2.45	1.3
MW-3	9/30/1999	4,360	121	122	36.1	647	33,700	35,600	9.45	6.84	2.61	0.6
MW-3	11/19/1999	NA	NA	NA	NA	NA	NA	NA	9.45	7.93	1.52	NA
MW-3	11/24/1999	NA	NA	NA	NA	NA	NA	NA	9.45	8.25	1.20	NA
MW-3	12/2/1999	NA	NA	NA	NA	NA	NA	NA	9.45	7.55	1.90	NA
MW-3	12/10/1999	4,220	973	26.3	273	584	88,200	NA	9.45	7.28	2.17	2.5
MW-3	3/2/2000	65,300	5,210	10,300	2,650	15,100	56,800	59,800e	9.45	5.87	3.58	d
MW-3	6/8/2000	72,700	3,570	10,200	2,100	13,400	44,400	NA	9.45	5.32	4.13	1.1

WELL CONCENTRATIONS
Shell-branded Service Station
540 Hegenberger Road
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.)	GW Elevation (MSL)	DO Reading (ppm)
MW-3	9/5/2000	26,100	959	2,910	1,090	5,640	24,000	NA	9.45	5.60	3.85	NA
MW-3	12/15/2000	5,190	438	8.39	483	530	19,100	11,800f	9.45	6.27	3.18	NA
MW-3	3/9/2001	5,880	472	42.2	392	1,290	41,800	NA	9.45	5.71	3.74	NA
MW-3	6/27/2001	9,100	330	79	140	1,600	NA	31,000	9.45	6.88	2.57	NA
MW-3	9/19/2001	790	14	18	17	67	NA	8,100	9.45	6.70	2.75	NA
MW-3	12/31/2001	<5,000	220	<50	86	<50	NA	22,000	9.45	5.92	3.53	NA
MW-3	3/14/2002	<2,500	<25	<25	<25	<25	NA	12,000	9.45	6.25	3.20	NA
MW-3	6/25/2002	<10,000	160	<100	<100	<100	NA	42,000	9.45	6.65	2.80	NA
MW-3	**9/19/2002**	**<10,000**	**650**	**<100**	**280**	**360**	**NA**	**84,000**	**9.45**	**6.51**	**2.94**	**NA**
MW-4	9/25/2000	NA	NA	NA	NA	NA	NA	NA	9.88	7.64	2.24	NA
MW-4	12/15/2000	<50.0	<0.500	<0.500	<0.500	<0.500	<2.50	NA	9.88	7.55	2.33	NA
MW-4	3/9/2001	<50.0	<0.500	0.730	<0.500	0.529	3.16	NA	9.88	7.04	2.84	NA
MW-4	6/27/2001	<50	<0.50	<0.50	<0.50	<0.50	NA	<5.0	9.88	7.76	2.12	NA
MW-4	9/19/2001	<50	<0.50	<0.50	<0.50	<0.50	NA	<5.0	9.88	7.69	2.19	NA
MW-4	12/31/2001	<50	<0.50	<0.50	<0.50	<0.50	NA	<5.0	9.88	7.08	2.80	NA
MW-4	3/14/2002	<50	<0.50	<0.50	<0.50	<0.50	NA	<5.0	9.88	7.57	2.31	NA
MW-4	6/25/2002	<50	<0.50	<0.50	<0.50	<0.50	NA	<5.0	9.88	8.50	1.38	NA
MW-4	**9/19/2002**	**<50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**NA**	**<5.0**	**9.88**	**8.22**	**1.66**	**NA**
MW-5	6/18/2002	NA	NA	NA	NA	NA	NA	NA	NA	8.36	NA	NA
MW-5	6/25/2002	<10,000	<100	<100	<100	<100	NA	60,000	NA	8.30	NA	NA
MW-5	**9/19/2002**	**<2,000**	**<20**	**<20**	**<20**	**<20**	**NA**	**7,200**	**10.03**	**8.44**	**1.59**	**NA**
C-1	9/19/2001	<50	<0.50	<0.50	<0.50	<0.50	NA	<5.0	NA	1.44	NA	NA
C-1	3/29/2002	<50	<0.50	<0.50	<0.50	<0.50	NA	<5.0	NA	2.59	NA	NA
C-1	6/25/2002	<50	<0.50	<0.50	<0.50	<0.50	NA	<5.0	NA	3.72	NA	NA

WELL CONCENTRATIONS
Shell-branded Service Station
540 Hegenberger Road
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.)	GW Elevation (MSL)	DO Reading (ppm)
C-1	**9/19/2002**	**<50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**NA**	**<5.0**	**NA**	**3.08**	**NA**	**NA**
SD-1	9/19/2001	Unable to sample		NA	NA	NA	NA	NA	NA	NA	NA	NA
SD-1	3/29/2002	Dry	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SD-1	6/25/2002	Dry	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SD-1	**9/19/2002**	**Dry**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**
SD-2	9/19/2001	Unable to sample		NA	NA	NA	NA	NA	NA	NA	NA	NA
SD-2	3/29/2002	Dry	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SD-2	6/25/2002	Dry	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SD-2	**9/19/2002**	**Dry**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**
BW-A	6/22/1999	318	<0.50	<0.50	0.590	1.48	4,470	NA	NA	4.71	NA	1.1
BW-A	6/25/2002	<500	<5.0	<5.0	<5.0	18	NA	3,100	NA	5.14	NA	NA
BW-A	**9/19/2002**	**<200**	**<2.0**	**<2.0**	**<2.0**	**<2.0**	**NA**	**<20**	**NA**	**7.19**	**NA**	**NA**
BW-B	6/22/1999	<250	<2.5	<2.5	<2.5	<2.5	8,600	NA	NA	5.90	NA	1.2
BW-B	6/27/2001	<5,000	<50	<50	<50	<50	NA	40,000	NA	5.83	NA	NA
BW-B	12/31/2001	<2,000	<20	<20	<20	<20	NA	9,200	NA	4.19	NA	NA
BW-B	3/14/2002	<2,000	<20	<20	<20	<20	NA	9,400	NA	5.24	NA	NA
BW-B	6/25/2002	<2,000	<20	<20	<20	<20	NA	6,600	NA	6.19	NA	NA
BW-B	**9/19/2002**	**<500**	**<5.0**	**<5.0**	**<5.0**	**<5.0**	**NA**	**<50**	**NA**	**8.46**	**NA**	**NA**
BW-C	6/22/1999	<50	<0.50	<0.50	<0.50	0.98	11,000	NA	NA	5.91	NA	1.6
BW-C	6/25/2002	<5,000	<50	<50	<50	<50	NA	20,000	NA	6.49	NA	NA
BW-C	**9/19/2002**	**<1,000**	**<10**	**<10**	**<10**	**<10**	**NA**	**400**	**NA**	**8.52**	**NA**	**NA**

WELL CONCENTRATIONS
Shell-branded Service Station
540 Hegenberger Road
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.)	GW Elevation (MSL)	DO Reading (ppm)
BW-D	6/22/1999	<50.0	<0.500	<0.500	<0.500	<0.500	2,190	NA	NA	4.78	NA	1.4
BW-D	6/25/2002	Well inaccessible		NA	NA	NA	NA	NA	NA	NA	NA	NA
BW-D	7/2/2002	<1,000	23	<10	<10	<10	NA	<100	NA	6.36	NA	NA
BW-D	**9/19/2002**	**<250**	**<2.5**	**<2.5**	**<2.5**	**<2.5**	**NA**	**<25**	**NA**	**7.25**	**NA**	**NA**

Abbreviations:

TPH-G = Total petroleum hydrocarbons as gasoline by EPA Method 8260B; prior to June 27, 2001, analyzed by EPA Method 8015.

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

MTBE = Methyl-tertiary-butyl ether

TOC = Top of Casing Elevation

GW = Groundwater

DO = Dissolved Oxygen

ppm = Parts per million

µg/L = Parts per billion

MSL = Mean sea level

ft = Feet

<n = Below detection limit

D = Duplicate sample

NA = Not applicable

Notes:

a = pre-purge

b = post purge

c = Lab confirmed MTBE by mistake. MTBE value at MW-1 should have been confirmed instead.

d = DO reading not taken.

e = Sample was analyzed outside of the EPA recommended holding time.

f = The second highest MTBE hit was mistakenly confirmed. MTBE for MW-1 should have been confirmed.

WELL CONCENTRATIONS
Shell-branded Service Station
540 Hegenberger Road
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.)	GW Elevation (MSL)	DO Reading (ppm)

Site surveyed September 21, 2000 by Virgil Chavez Land Surveying of Vallejo, California.

C-1 is a canal sample location.

SD-1 and SD-2 are storm drains.

Wells MW-1 through MW-5 surveyed January 24 and June 19, 2002, by Virgil Chavez Land Surveying of Vallejo, California.

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 dewaters 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.

OXIDATON 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 # 020918An1 Date 9-19-02 Client Shell

Site 540 Heinberger Rd 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	2					6.56	23.63		
	MW-2	2					7.46	19.57		
*	MW-3	2					6.51	19.46		
	MW-4	4					8.22	18.53		
	MW-5	4					6.44	19.57		
*	BW-A	12					7.19	12.66		
*	BW-B	4					8.96	11.74		
*	BW-C	4					6.52	12.96		
*	BW-D	12					7.25	12.52		
	GEO-1						3.06	—		
	SD-1						dry	—		
	SD-2						dry	—		
	* Groundwater w/ sheen in well									

WELLHEAD INSPECTION CHECKLIST AND REPAIR ORDER

Client Shell Inspection Date 9-19-02

Site Address 540 Hegenberger Rd Inspected By AM

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

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
MW-3	NO screws #2			

SHELL WELL MONITORING DATA SHEET

BTS #: 020919-AM-1	Site: Shell
Sampler: AM	Date: 9-19-02
Well I.D.: MW-1	Well Diameter: (2) 3 4 6 8 ___
Total Well Depth (TD): 23.63	Depth to Water (DTW): 6.58
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): YSI HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: 80% 11.58	

Purge Method: Bailer; Disposable Bailer; Middleburg; Electric Submersible; Waterra; Peristaltic; Extraction Pump; Other_____

Sampling Method: X Bailer; Disposable Bailer; Extraction Port; Dedicated Tubing; Other:_____

1 Case Volume		Specified Volumes		Calculated Volume
2.4 (Gals.)	X	3	=	7.2 Gals.

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius² * 0.163

Time	Temp (°F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	Gals. Removed	Observations
11:13	74.6	7.6	12.19	>200	2.4	Cloudy
11:15	72.0	7.6	13.55	>200	4.8	" "
11:17	71.9	7.6	13.46	>200	7.2	" "

Did well dewater? Yes (No) Gallons actually evacuated: 7.2

Sampling Date: 9-19-02 Sampling Time: 11:20 Depth to Water: = 10.58

Sample I.D.: MW-1 Laboratory: (Kiff) SPL Other_____

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

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

SHELL WELL MONITORING DATA SHEET

BTS #: 020919-AM-1	Site: Shell
Sampler: AM	Date: 9-19-02
Well I.D.: MW-2	Well Diameter: (2) 3 4 6 8 ___
Total Well Depth (TD): 19.57	Depth to Water (DTW): 7.48
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): YSI HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: 80% 9.66	

Purge Method: Bailer ✓ / Disposable Bailer / Middleburg / Electric Submersible / Waterra / Peristaltic / Extraction Pump / Other_____

Sampling Method: ✕ Bailer / Disposable Bailer / Extraction Port / Dedicated Tubing / Other:_____

1.9 (Gals.) X	3	= 5.7 Gals.
1 Case Volume	Specified Volumes	Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius² * 0.163

Time	Temp (°F)	pH	Cond. (mS or (µS))	Turbidity (NTUs)	Gals. Removed	Observations
12:01	75.6	7.4	1265	126	1.9	Clear
12:03	74.6	7.4	660	99	3.6	" "
12:05	74.2	7.3	964	105	5.7	" "

Did well dewater? Yes (No) Gallons actually evacuated: 5.7

Sampling Date: 9-19-02 Sampling Time: 12:10 Depth to Water: = 9.60

Sample I.D.: MW-2 Laboratory: (Kiff) SPL Other_____

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

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

SHELL WELL MONITORING DATA SHEET

BTS #: 020919-AM-1	Site: Shell
Sampler: AM	Date: 9-19-02
Well I.D.: MW-3	Well Diameter: (2) 3 4 6 8 ___
Total Well Depth (TD): 19.46	Depth to Water (DTW): 6.51
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): YSI HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: 80% 9.09	

Purge Method: Bailer X; Disposable Bailer; Middleburg; Electric Submersible; Waterra; Peristaltic; Extraction Pump; Other_____

Sampling Method: (Bailer); Disposable Bailer; Extraction Port; Dedicated Tubing; Other:_____

2.0 (Gals.) X	3	=	6 Gals.
1 Case Volume	Specified Volumes		Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius² * 0.163

Time	Temp (°F)	pH	Cond. (mS or (uS))	Turbidity (NTUs)	Gals. Removed	Observations
12:22	76.0	7.3	3263	>200	2	Cloudy/odor
12:24	75.2	7.3	4660	>200	4	" "
12:26	74.6	7.4	6434	>200	6	" "

Did well dewater? Yes (No) Gallons actually evacuated: 6

Sampling Date: 9-19-02 Sampling Time: 12:30 Depth to Water: = 6.55

Sample I.D.: MW-3 Laboratory: (Kiff) SPL Other_____

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

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

SHELL WELL MONITORING DATA SHEET

BTS #: 02019-AM-1	Site: Shell
Sampler: AM	Date: 9-19-02
Well I.D.: MW-4	Well Diameter: 2 3 (4) 6 8 ___
Total Well Depth (TD): 18.53	Depth to Water (DTW): 8.22
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): YSI HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: 80%	

Purge Method: Bailer; Disposable Bailer; Middleburg; Electric Submersible X; Waterra; Peristaltic; Extraction Pump; Other_____

Sampling Method: X Bailer; Disposable Bailer; Extraction Port; Dedicated Tubing; Other: _____

6.7 (Gals.) X	3	= 20.1 Gals.
1 Case Volume	Specified Volumes	Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius² * 0.163

Time	Temp (°F)	pH	Cond. (mS or (µS))	Turbidity (NTUs)	Gals. Removed	Observations
10:20	68.4	7.6	732	>200	6.7	Cloudy
10:22	62.7	7.6	4826	>200	13.4	" "
10:24	76.0		5321	>200	20.1	" "

Did well dewater? Yes (No) Gallons actually evacuated: 20.1

Sampling Date: 9-19-02 Sampling Time: 10:25 Depth to Water: -

Sample I.D.: MW-4 Laboratory: (Kiff) SPL Other_____

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

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

SHELL WELL MONITORING DATA SHEET

BTS #: 020919-AM-1	Site: Shell
Sampler: AM	Date: 9-19-02
Well I.D.: MW-5	Well Diameter: 2 3 (4) 6 8 ___
Total Well Depth (TD): 19.57	Depth to Water (DTW): 8.44
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): YSI HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: 80% 10.66	

Purge Method: Bailer; Disposable Bailer; Middleburg; Electric Submersible X; Waterra; Peristaltic; Extraction Pump; Other_____

Sampling Method: X Bailer; Disposable Bailer; Extraction Port; Dedicated Tubing; Other:_____

1 Case Volume	Specified Volumes	Calculated Volume
7.2 (Gals.) X	3	= 21.6 Gals.

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius² * 0.163

Time	Temp (°F)	pH	Cond. (mS or (µS))	Turbidity (NTUs)	Gals. Removed	Observations
11:35	64.7	7.6	5967	>200	7.2	Cloudy
11:36	79.4	7.4	5692	>200	14.4	" "
11:37	76.8	7.6	9106	>200	21.6 ~~28.6~~	" "

Did well dewater? Yes (No) Gallons actually evacuated: 21.6

Sampling Date: 9-19-02 Sampling Time: 11:45 Depth to Water: =10.62

Sample I.D.: MW-5 Laboratory: (Kiff) SPL Other_____

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

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

SHELL WELL MONITORING DATA SHEET

BTS #: 020919-AM-1	Site: Shell
Sampler: AM	Date: 9-19-02
Well I.D.: BW-A	Well Diameter: 2 3 4 6 8 12
Total Well Depth (TD): 12.66	Depth to Water (DTW): 7.19
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): YSI HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: 80% 8.33	

Purge Method: Bailer, Disposable Bailer, Middleburg, Electric Submersible (X), Waterra, Peristaltic, Extraction Pump, Other_____

Sampling Method: (X) Bailer, Disposable Bailer, Extraction Port, Dedicated Tubing, Other:_____

33.3 (Gals.) X 3 = 99.9 Gals.
1 Case Volume Specified Volumes Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius² * 0.163

12" 5.46

Time	Temp (°F)	pH	Cond. (mS or (µS))	Turbidity (NTUs)	Gals. Removed	Observations
13:15	76.3	7.1	875	67	33.3	Clear
13:16	77.1	7.1	870	70	66.6	" "
13:21	76.6	7.1	873	69	99.9	" "

Did well dewater? Yes (No) Gallons actually evacuated: 99.9

Sampling Date: 9-19-02 Sampling Time: 13:25 Depth to Water: = 8.15

Sample I.D.: BW-A Laboratory: (Kiff) SPL Other_____

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

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

SHELL WELL MONITORING DATA SHEET

BTS #: 02019-Am1	Site: Shell
Sampler: Am	Date: 9-19-02
Well I.D.: BW-B	Well Diameter: 2 3 (4) 6 8 ___
Total Well Depth (TD): 11.74	Depth to Water (DTW): 8.46
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): YSI HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: 80% 9.10	

Purge Method: Bailer; Disposable Bailer; Middleburg; Electric Submersible X; Waterra; Peristaltic; Extraction Pump; Other_____

Sampling Method: X Bailer; Disposable Bailer; Extraction Port; Dedicated Tubing; Other:_____

2.1 (Gals.) X	3	= 6.3 Gals.
1 Case Volume	Specified Volumes	Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius² * 0.163

Time	Temp (°F)	pH	Cond. (mS or (µS))	Turbidity (NTUs)	Gals. Removed	Observations
13:46	81.5	7.2	883	61	2.1	clear
13:49	83.4	7.1	6886	66	4.2	" "
13:50	82.2	7.1	919	86	6.3	" "

Did well dewater? Yes (No) Gallons actually evacuated: 6.3

Sampling Date: 9-19-02 Sampling Time: 13:45 Depth to Water: = 8.61

Sample I.D.: BW-B Laboratory: (Kiff) SPL Other_____

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

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

SHELL WELL MONITORING DATA SHEET

BTS #: 02919-M1	Site: Shell
Sampler: AM	Date: 9-19-02
Well I.D.: BW-C	Well Diameter: 2 3 (4) 6 8 ___
Total Well Depth (TD): 12.96	Depth to Water (DTW): 8.52
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): YSI HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: 80% 9.40	

Purge Method: Bailer; Disposable Bailer; Middleburg; Electric Submersible ✓; Waterra; Peristaltic; Extraction Pump; Other_____

Sampling Method: ✓ Bailer; Disposable Bailer; Extraction Port; Dedicated Tubing; Other:_____

2.6 (Gals.) X 3 = 8.4 Gals.
1 Case Volume Specified Volumes Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius² * 0.163

Time	Temp (°F)	pH	Cond. (mS or (uS))	Turbidity (NTUs)	Gals. Removed	Observations
14:00	63.7	7.2	932	97	2.8	Clear
14:01	64.4	7.1	941	73	5.6	" "
14:02	63.3	7.1	996	111	8.4	" "

Did well dewater? Yes (No) Gallons actually evacuated: 8.4

Sampling Date: 9-19-02 Sampling Time: 14:05 Depth to Water: = 8.69

Sample I.D.: BW-C Laboratory: (Kiff) SPL Other_____

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

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

SHELL WELL MONITORING DATA SHEET

BTS #: 020919-AM-1	Site: Shell
Sampler: AM	Date: 9-19-02
Well I.D.: BW-D	Well Diameter: 2 3 4 6 8 12
Total Well Depth (TD): 12.52	Depth to Water (DTW): 7.25
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): YSI HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: 80% 8.29	

Purge Method: Bailer; Disposable Bailer; Middleburg; Electric Submersible X; Waterra; Peristaltic; Extraction Pump; Other

Sampling Method: X Bailer; Disposable Bailer; Extraction Port; Dedicated Tubing; Other:

30.6 (Gals.) X 3 = 92.4 Gals.
1 Case Volume | Specified Volumes | Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65 5.86
2"	0.16	6"	1.47
3"	0.37	Other	radius² * 0.163

Time	Temp (°F)	pH	Cond. (mS or (µS))	Turbidity (NTUs)	Gals. Removed	Observations
12:51	74.7	7.3	1467	>200	30.6	Clear
12:54	77.9	7.2	943	65	61.6	" "
12:57	78.1	7.2	905	72	92.4	" "

Did well dewater? Yes (No) Gallons actually evacuated: 92.4

Sampling Date: 9-19-02 Sampling Time: 13:00 Depth to Water: 7.45

Sample I.D.: BW-D Laboratory: (Kiff) SPL Other

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

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

SHELL WELL MONITORING DATA SHEET

BTS #: 020919-AM-1	Site: Shell
Sampler: AM	Date: 9-19-02
Well I.D.: C-1	Well Diameter: 2 3 4 6 8 ___
Total Well Depth (TD): —	Depth to Water (DTW): 3.08
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): YSI HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: 80%	

Purge Method: Bailer; Disposable Bailer (X); Middleburg; Electric Submersible; Waterra; Peristaltic; Extraction Pump; Other_____

Sampling Method: Bailer; (X) Disposable Bailer; Extraction Port; Dedicated Tubing; Other: _____

GRAB SAMPLE

_____(Gals.) X 3 = _____ Gals.
1 Case Volume | Specified Volumes | Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius² * 0.163

Time	Temp (°F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	Gals. Removed	Observations
10:45	76.1	7.6	43	>200	0	CLEAR

Did well dewater? Yes (No) Gallons actually evacuated: 0

Sampling Date: 9-19-02 Sampling Time: 10:45 Depth to Water:

Sample I.D.: C-1 Laboratory: (Kiff) SPL Other_____

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

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

SHELL WELL MONITORING DATA SHEET

BTS #: 020919-AM-1	Site: Shell
Sampler: AM	Date: 9-19-02
Well I.D.: SD-1	Well Diameter: 2 3 4 6 8 ___
Total Well Depth (TD): —	Depth to Water (DTW): —
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): YSI HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: 80%	

Purge Method: Bailer, Disposable Bailer, Middleburg, Electric Submersible, Waterra, Peristaltic, Extraction Pump, Other_____

Sampling Method: Bailer, Disposable Bailer, Extraction Port, Dedicated Tubing, Other: _____

_____(Gals.) X 3 = _____ Gals.
1 Case Volume | Specified Volumes | Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius² * 0.163

Time	Temp (°F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	Gals. Removed	Observations
	storm drain dry					

Did well dewater? Yes No Gallons actually evacuated:

Sampling Date: 9-19-02 Sampling Time: Depth to Water:

Sample I.D.: Laboratory: (Kiff) SPL Other_____

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

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

SHELL WELL MONITORING DATA SHEET

BTS #: 020919-AM-1	Site: Shell
Sampler: AM	Date: 9-19-02
Well I.D.: SB-2	Well Diameter: 2 3 4 6 8 ___
Total Well Depth (TD):	Depth to Water (DTW):
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): YSI HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: 80%	

Purge Method: Bailer, Disposable Bailer, Middleburg, Electric Submersible, Waterra, Peristaltic, Extraction Pump, Other_____

Sampling Method: Bailer, Disposable Bailer, Extraction Port, Dedicated Tubing, Other_____

_____(Gals.) X 3 = _____ Gals.
1 Case Volume | Specified Volumes | Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius² * 0.163

Time	Temp (°F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	Gals. Removed	Observations
	storm drain			dry		

Did well dewater? Yes No Gallons actually evacuated:

Sampling Date: 9-19-02 Sampling Time: Depth to Water:

Sample I.D.: Laboratory: (Kiff) SPL Other_____

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

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

KIFF ANALYTICAL LLC

Report Number : 28753
Date : 10/3/02

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

Subject : 10 Water Samples
Project Name : 540 Hegenberger Road, Oakland
Project Number : 020919-AM1
P.O. Number : 98995752

Dear Mr. Gearhart,

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

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

Sincerely,

Joel Kiff

Joel Kiff

KIFF ANALYTICAL LLC

Report Number : 28753
Date : 10/3/02

Subject : 10 Water Samples
Project Name : 540 Hegenberger Road, Oakland
Project Number : 020919-AM1
P.O. Number : 98995752

Case Narrative

The Method Reporting Limits for samples BW-A, BW-B, BW-C, and BW-D are increased due to high levels of Tert-butanol present in the samples.

Approved By: Joel Kiff

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

KIFF ANALYTICAL LLC

Report Number : 28753
Date : 10/3/02

Project Name : **540 Hegenberger Road, Oakland**
Project Number : **020919-AM1**

Sample : **MW-1** Matrix : Water Lab Number : 28753-01
Sample Date :9/19/02

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 25**	25	ug/L	EPA 8260B	10/2/02
Toluene	**< 25**	25	ug/L	EPA 8260B	10/2/02
Ethylbenzene	**< 25**	25	ug/L	EPA 8260B	10/2/02
Total Xylenes	**< 25**	25	ug/L	EPA 8260B	10/2/02
Methyl-t-butyl ether (MTBE)	**18000**	250	ug/L	EPA 8260B	10/2/02
TPH as Gasoline	**< 2500**	2500	ug/L	EPA 8260B	10/2/02
Toluene - d8 (Surr)	96.3		% Recovery	EPA 8260B	10/2/02
4-Bromofluorobenzene (Surr)	110		% Recovery	EPA 8260B	10/2/02

Sample : **MW-2** Matrix : Water Lab Number : 28753-02
Sample Date :9/19/02

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.50**	0.50	ug/L	EPA 8260B	9/22/02
Toluene	**< 0.50**	0.50	ug/L	EPA 8260B	9/22/02
Ethylbenzene	**< 0.50**	0.50	ug/L	EPA 8260B	9/22/02
Total Xylenes	**< 0.50**	0.50	ug/L	EPA 8260B	9/22/02
Methyl-t-butyl ether (MTBE)	**90**	5.0	ug/L	EPA 8260B	9/22/02
TPH as Gasoline	**< 50**	50	ug/L	EPA 8260B	9/22/02
Toluene - d8 (Surr)	105		% Recovery	EPA 8260B	9/22/02
4-Bromofluorobenzene (Surr)	86.8		% Recovery	EPA 8260B	9/22/02

Approved By: Joel Kiff

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

KIFF ANALYTICAL LLC

Report Number : 28753
Date : 10/3/02

Project Name : **540 Hegenberger Road, Oakland**
Project Number : **020919-AM1**

Sample : **MW-3** Matrix : Water Lab Number : 28753-03
Sample Date :9/19/02

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**650**	100	ug/L	EPA 8260B	10/2/02
Toluene	**< 100**	100	ug/L	EPA 8260B	10/2/02
Ethylbenzene	**280**	100	ug/L	EPA 8260B	10/2/02
Total Xylenes	**360**	100	ug/L	EPA 8260B	10/2/02
Methyl-t-butyl ether (MTBE)	**84000**	2000	ug/L	EPA 8260B	10/3/02
TPH as Gasoline	**< 10000**	10000	ug/L	EPA 8260B	10/2/02
Toluene - d8 (Surr)	97.3		% Recovery	EPA 8260B	10/2/02
4-Bromofluorobenzene (Surr)	108		% Recovery	EPA 8260B	10/2/02

Sample : **MW-4** Matrix : Water Lab Number : 28753-04
Sample Date :9/19/02

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.50**	0.50	ug/L	EPA 8260B	9/22/02
Toluene	**< 0.50**	0.50	ug/L	EPA 8260B	9/22/02
Ethylbenzene	**< 0.50**	0.50	ug/L	EPA 8260B	9/22/02
Total Xylenes	**< 0.50**	0.50	ug/L	EPA 8260B	9/22/02
Methyl-t-butyl ether (MTBE)	**< 5.0**	5.0	ug/L	EPA 8260B	9/22/02
TPH as Gasoline	**< 50**	50	ug/L	EPA 8260B	9/22/02
Toluene - d8 (Surr)	106		% Recovery	EPA 8260B	9/22/02
4-Bromofluorobenzene (Surr)	85.9		% Recovery	EPA 8260B	9/22/02

Approved By: Joel Kiff

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

KIFF ANALYTICAL LLC

Report Number : 28753
Date : 10/3/02

Project Name : **540 Hegenberger Road, Oakland**
Project Number : **020919-AM1**

Sample : **MW-5** Matrix : Water Lab Number : 28753-05
Sample Date :9/19/02

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 20**	20	ug/L	EPA 8260B	9/28/02
Toluene	**< 20**	20	ug/L	EPA 8260B	9/28/02
Ethylbenzene	**< 20**	20	ug/L	EPA 8260B	9/28/02
Total Xylenes	**< 20**	20	ug/L	EPA 8260B	9/28/02
Methyl-t-butyl ether (MTBE)	**7200**	200	ug/L	EPA 8260B	9/28/02
TPH as Gasoline	**< 2000**	2000	ug/L	EPA 8260B	9/28/02
Toluene - d8 (Surr)	98.1		% Recovery	EPA 8260B	9/28/02
4-Bromofluorobenzene (Surr)	99.4		% Recovery	EPA 8260B	9/28/02

Sample : **BW-A** Matrix : Water Lab Number : 28753-06
Sample Date :9/19/02

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 2.0**	2.0	ug/L	EPA 8260B	9/28/02
Toluene	**< 2.0**	2.0	ug/L	EPA 8260B	9/28/02
Ethylbenzene	**< 2.0**	2.0	ug/L	EPA 8260B	9/28/02
Total Xylenes	**< 2.0**	2.0	ug/L	EPA 8260B	9/28/02
Methyl-t-butyl ether (MTBE)	**< 20**	20	ug/L	EPA 8260B	9/28/02
TPH as Gasoline	**< 200**	200	ug/L	EPA 8260B	9/28/02
Toluene - d8 (Surr)	99.4		% Recovery	EPA 8260B	9/28/02
4-Bromofluorobenzene (Surr)	100		% Recovery	EPA 8260B	9/28/02

Approved By: Joel Kiff

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

KIFF ANALYTICAL LLC

Report Number : 28753
Date : 10/3/02

Project Name : **540 Hegenberger Road, Oakland**
Project Number : **020919-AM1**

Sample : **BW-B** Matrix : Water Lab Number : 28753-07
Sample Date :9/19/02

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 5.0**	5.0	ug/L	EPA 8260B	9/28/02
Toluene	**< 5.0**	5.0	ug/L	EPA 8260B	9/28/02
Ethylbenzene	**< 5.0**	5.0	ug/L	EPA 8260B	9/28/02
Total Xylenes	**< 5.0**	5.0	ug/L	EPA 8260B	9/28/02
Methyl-t-butyl ether (MTBE)	**< 50**	50	ug/L	EPA 8260B	9/28/02
TPH as Gasoline	**< 500**	500	ug/L	EPA 8260B	9/28/02
Toluene - d8 (Surr)	98.5		% Recovery	EPA 8260B	9/28/02
4-Bromofluorobenzene (Surr)	99.0		% Recovery	EPA 8260B	9/28/02

Sample : **BW-C** Matrix : Water Lab Number : 28753-08
Sample Date :9/19/02

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 10**	10	ug/L	EPA 8260B	9/28/02
Toluene	**< 10**	10	ug/L	EPA 8260B	9/28/02
Ethylbenzene	**< 10**	10	ug/L	EPA 8260B	9/28/02
Total Xylenes	**< 10**	10	ug/L	EPA 8260B	9/28/02
Methyl-t-butyl ether (MTBE)	**400**	100	ug/L	EPA 8260B	9/28/02
TPH as Gasoline	**< 1000**	1000	ug/L	EPA 8260B	9/28/02
Toluene - d8 (Surr)	98.5		% Recovery	EPA 8260B	9/28/02
4-Bromofluorobenzene (Surr)	99.3		% Recovery	EPA 8260B	9/28/02

Approved By: Joel Kiff

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

KIFF ANALYTICAL LLC

Report Number : 28753
Date : 10/3/02

Project Name : **540 Hegenberger Road, Oakland**
Project Number : **020919-AM1**

Sample : **BW-D** Matrix : Water Lab Number : 28753-09
Sample Date :9/19/02

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 2.5**	2.5	ug/L	EPA 8260B	9/28/02
Toluene	**< 2.5**	2.5	ug/L	EPA 8260B	9/28/02
Ethylbenzene	**< 2.5**	2.5	ug/L	EPA 8260B	9/28/02
Total Xylenes	**< 2.5**	2.5	ug/L	EPA 8260B	9/28/02
Methyl-t-butyl ether (MTBE)	**< 25**	25	ug/L	EPA 8260B	9/28/02
TPH as Gasoline	**< 250**	250	ug/L	EPA 8260B	9/28/02
Toluene - d8 (Surr)	98.4		% Recovery	EPA 8260B	9/28/02
4-Bromofluorobenzene (Surr)	98.4		% Recovery	EPA 8260B	9/28/02

Sample : **C-1** Matrix : Water Lab Number : 28753-10
Sample Date :9/19/02

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.50**	0.50	ug/L	EPA 8260B	9/22/02
Toluene	**< 0.50**	0.50	ug/L	EPA 8260B	9/22/02
Ethylbenzene	**< 0.50**	0.50	ug/L	EPA 8260B	9/22/02
Total Xylenes	**< 0.50**	0.50	ug/L	EPA 8260B	9/22/02
Methyl-t-butyl ether (MTBE)	**< 5.0**	5.0	ug/L	EPA 8260B	9/22/02
TPH as Gasoline	**< 50**	50	ug/L	EPA 8260B	9/22/02
Toluene - d8 (Surr)	108		% Recovery	EPA 8260B	9/22/02
4-Bromofluorobenzene (Surr)	85.8		% Recovery	EPA 8260B	9/22/02

Approved By: Joel Kiff

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

Report Number : 28753

Date : 10/3/02

QC Report : Method Blank Data

Project Name : **540 Hegenberger Road, Oakland**

Project Number : **020919-AM1**

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	9/27/02
Toluene	< 0.50	0.50	ug/L	EPA 8260B	9/27/02
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	9/27/02
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	9/27/02
Methyl-t-butyl ether (MTBE)	< 5.0	5.0	ug/L	EPA 8260B	9/27/02
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	9/27/02
Toluene - d8 (Surr)	98.6		%	EPA 8260B	9/27/02
4-Bromofluorobenzene (Surr)	99.7		%	EPA 8260B	9/27/02
Benzene	< 0.50	0.50	ug/L	EPA 8260B	9/22/02
Toluene	< 0.50	0.50	ug/L	EPA 8260B	9/22/02
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	9/22/02
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	9/22/02
Methyl-t-butyl ether (MTBE)	< 5.0	5.0	ug/L	EPA 8260B	9/22/02
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	9/22/02
Toluene - d8 (Surr)	106		%	EPA 8260B	9/22/02
4-Bromofluorobenzene (Surr)	85.9		%	EPA 8260B	9/22/02

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed

Approved By: Joel Kiff

KIFF ANALYTICAL, LLC

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

Report Number : 28753

Date : 10/3/02

QC Report : Matrix Spike/ Matrix Spike Duplicate

Project Name : **540 Hegenberger Road,**

Project Number : **020919-AM1**

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	28806-01	<0.50	40.0	40.0	40.8	40.6	ug/L	EPA 8260B	9/27/02	102	101	0.614	70-130	25
Toluene	28806-01	<0.50	40.0	40.0	39.9	39.9	ug/L	EPA 8260B	9/27/02	99.8	99.8	0.0501	70-130	25
Tert-Butanol	28806-01	<5.0	200	200	223	222	ug/L	EPA 8260B	9/27/02	111	111	0.198	70-130	25
Methyl-t-Butyl Ether	28806-01	<0.50	40.0	40.0	32.0	32.5	ug/L	EPA 8260B	9/27/02	79.9	81.2	1.61	70-130	25
Benzene	28719-06	<0.50	40.0	40.0	41.0	39.8	ug/L	EPA 8260B	9/22/02	102	99.6	2.80	70-130	25
Toluene	28719-06	<0.50	40.0	40.0	43.1	42.4	ug/L	EPA 8260B	9/22/02	108	106	1.66	70-130	25
Tert-Butanol	28719-06	<5.0	200	200	200	204	ug/L	EPA 8260B	9/22/02	100	102	2.22	70-130	25
Methyl-t-Butyl Ether	28719-06	2.8	40.0	40.0	39.5	39.6	ug/L	EPA 8260B	9/22/02	91.8	92.1	0.381	70-130	25

Approved By: Joel Kiff

KIFF ANALYTICAL, LLC

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

Report Number : 28753

Date : 10/3/02

QC Report : Laboratory Control Sample (LCS)

Project Name : **540 Hegenberger Road,**

Project Number : **020919-AM1**

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
Benzene	40.0	ug/L	EPA 8260B	9/27/02	101	70-130
Toluene	40.0	ug/L	EPA 8260B	9/27/02	102	70-130
Tert-Butanol	200	ug/L	EPA 8260B	9/27/02	109	70-130
Methyl-t-Butyl Ether	40.0	ug/L	EPA 8260B	9/27/02	82.2	70-130
Benzene	40.0	ug/L	EPA 8260B	9/22/02	99.0	70-130
Toluene	40.0	ug/L	EPA 8260B	9/22/02	104	70-130
Tert-Butanol	200	ug/L	EPA 8260B	9/22/02	97.0	70-130
Methyl-t-Butyl Ether	40.0	ug/L	EPA 8260B	9/22/02	91.3	70-130

Approved By: Joel Kiff

KIFF ANALYTICAL, LLC

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

LAB: Kiff

Lab Identification (if necessary):

Address:

City, State, Zip:

SHELL Chain Of Custody Record

Shell Project Manager to be invoiced: Karen Petryna

☑ SCIENCE & ENGINEERING ☐ TECHNICAL SERVICES ☐ CRMT HOUSTON

28753

INCIDENT NUMBER (S&E ONLY): 98995752

SAP or CRMT NUMBER (TS/CRMT):

DATE: 9-19-02

PAGE: 1 of 1

SAMPLING COMPANY: Blaine Tech Services	LOG CODE: BTSS
ADDRESS: 1680 Rogers Avenue, San Jose, CA 95112	
PROJECT CONTACT (Hardcopy or PDF Report to): Leon Gearhart	
TELEPHONE: 408-573-0555	FAX: 408-573-7771
E-MAIL: lgearhart@blainetech.com	
SITE ADDRESS (Street and City): 540 Hegenberger Road, Oakland	GLOBAL ID NO.: T0600102123
EDF DELIVERABLE TO (Responsible Party or Designee): Anni Kreml	PHONE NO.: 510-420-3335
E-MAIL: ShellOaklandEDF@cambria-env.com	CONSULTANT PROJECT NO.: 020919-Am1
SAMPLER NAME(S) (Print): Albert MADRIGAL	BTS #: LAB USE ONLY

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 ☐

REQUESTED ANALYSIS

LAB USE ONLY	Field Sample Identification	SAMPLING DATE	SAMPLING TIME	MATRIX	NO. OF CONT.	TPH - Gas, Purgeable	BTEX	MTBE (8021B - 5ppb RL)	MTBE (8260B - 0.5ppb RL)	Oxygenates (5) by (8260B)	Ethanol (8260B)	Methanol	1,2-DCA (8260B)	EDB (8260B)	TPH - Diesel, Extractable (8015m)	TEMPERATURE ON RECEIPT C°
	MW-1	9.19.02	11:20	W	3	X	X	X								-01
	MW-2		12:10			X	X	X								-02
	MW-3		12:30			X	X	X								-03
	MW-4		10:25			X	X	X								-04
	MW-5		11:45			X	X	X								-05
	BW-A		13:25			X	X	X								-06
	BW-B		13:45			X	X	X								-07
	BW-C		14:05			X	X	X								-08
	BW-D		13:00			X	X	X								-09
	C-1		10:45			X	X	X								-10

FIELD NOTES: Container/Preservative or PID Readings or Laboratory Notes

Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:
Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:
Relinquished by: (Signature)	Received by: (Signature) John Cuttler/Kiff Analytical	Date: 092002	Time: 1042

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

10/18/00 Revision

Q&Q Graphic (714) 895-9702