CAMBRIA

December 18, 2001

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

3646 RO 1223

Re: **Response to ACHCSA Correspondence Dated September 18, 2001 and Third Quarter 2001 Monitoring Report**
Shell-branded Service Station
540 Hegenberger Road
Oakland, California
Incident #98995752
Cambria Project #243-0414-002

DEC 2 8 2001

Dear Mr. Chan:

On behalf of Equiva Services LLC (Equiva), Cambria Environmental Technology, Inc. (Cambria) is submitting this groundwater monitoring report in accordance with the reporting requirements of 23 CCR 2652d.

THIRD QUARTER 2001 ACTIVITIES

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

Additional Oxygenate Analysis: In addition to the regular quarterly analysis for total petroleum hydrocarbons as gasoline (TPHg), benzene, toluene, ethylbenzene, xylenes (BTEX), and methyl-tertiary-butyl ether (MTBE), groundwater samples from monitoring wells MW-1 and MW-3 were analyzed for four extra oxygenates and ethanol. Analytical results for MTBE, di-isopropyl ether, ethyl tert-butyl ether, tert-amyl methyl ether, tert-butyl alcohol, and ethanol are presented on Table 1.

Oakland, CA
San Ramon, CA
Sonoma, CA

Cambria Environmental Technology, Inc.

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

Interim Remedial Action: From July 1999 through June 2000, groundwater extraction (GWE) was performed at the site to extract dissolved-phase hydrocarbons and MTBE in groundwater. From June through December 2000, dual-phase vacuum extraction (DVE) was performed at the site to enhance GWE and to extract vapor-phase hydrocarbon and MTBE from the soil. DVE was discontinued after the December 2000 event, and monthly DVE events were resumed in May 2001. Wells MW-1 and MW-3 have been used for extraction. Hydrocarbon mass removal data for liquid and vapor phase are presented in Tables 2 and 3, respectively. Mass removal and MTBE concentrations vs. time are plotted on graphs presented in Figures 3 and 4

ANTICIPATED FOURTH QUARTER 2001 ACTIVITIES

Groundwater Monitoring: Blaine will gauge water levels, sample the monitoring wells using the non-purging method, and tabulate the data. Regular quarterly sampling of tank backfill well BW-B has been added to the sampling scope. The sampling event will take place concurrently with sampling at the Arco station located at 566 Hegenberger Road, north of the site. Arco and Equiva will exchange water level and analytical data on these events. Cambria will prepare a report documenting those activities.

Surface Water and Storm Drain Sampling: As proposed in our *First Quarter 2001 Monitoring Report* and in response to Alameda County Health Care Services Agency's (ACHCSA) March 13, 2001 letter, storm drain and canal points were included in the third quarter sampling event. The two storm drain points were dry and were not sampled. No TPHg, BTEX, or MTBE was detected in the sample collected from the canal. Field sheets and laboratory analytical data for this sampling are included in Blaine's report in Attachment A.

Interim Remedial Action: Monthly extraction events will continue and will be reported in the fourth quarter report. Beginning with the October 2001 event, a tank backfill well, designated BW-D, was added to the extraction program. Data regarding extraction from this well is included in Table 2.

Because vapor mass removal rates are low (Table 3), the scope of the extraction events has been modified from DVE to GWE without vacuum enhancement. The majority of the mass removal has been achieved in the liquid phase through GWE, and will continue with monthly extraction events from monitoring wells MW-1 and MW-3 and tank backfill well BW-D.

Underground Storage Tank (UST) System Testing: During November 2001, enhanced testing was performed on the UST system as described in Appendix D of *the Final Draft Guidelines for*

Investigtion and Cleanup of MTBE and Other Oxygenates issued by the State Water Resources Control Board. This testing was performed at the request of Equiva Environmental Engineer Karen Petryna to investigate potential sources of the persistent MTBE concentrations observed in site monitoring wells.

Primary and secondary containment of the USTs and product lines was tested and records were reviewed. During the tests, a release was identified from the containment boots at the product dispensers. They were repaired, and an unauthorized release form describing the release and repair was submitted to ACHCSA by Equiva.

RESPONSE TO ACHCSA CORRESPONDENCE DATED SEPTEMBER 18, 2001

In September 18, 2001 correspondence, ACHCSA comments on the first and second quarter 2001 monitoring reports, and raises several issues. These issues are addressed below.

Interim Remediation Efforts: ACHCSA states that we should continue DVE on a regular schedule and include extraction from one of the tank backfill wells. Monthly DVE events from wells MW-1 and MW-3 had already resumed in May 2001. Extraction from one of the tank backfill wells was added to the program beginning in October 2001. As described above, GWE rather than DVE will now be performed during the monthly events.

Offsite Plume Delineation: The letter states ACHCSA's belief that the low detections of MTBE in well MW-4 are not sufficient to conclude that MTBE has not migrated offsite in the downgradient direction. We agree that the conduit study identified utility trenches in the street that could potentially act as preferential pathways for MTBE migration. Our rationale in proposing the course of action described in the second quarter 2001 report considered several points described below.

No drinking water wells were identified during the well survey reported in our February 15, 2001 *Offsite Subsurface Investigation Report*. The nearest receptor identified was the canal located northwest of the site. Various utility trenches in the vicinity of the site intersect each other in such a manner that there appears to be communication between the trenches, which could provide a direct route to the canal receptor if MTBE is migrating preferentially through utility trenches. However, during this sampling event, no MTBE was detected in the sample collected from the canal.

It is possible to collect groundwater samples from the sanitary sewer backfill in a manner similar to sampling which has been done at other sites. This would provide data on MTBE levels in

groundwater present within the trench. However, our approach was aimed instead at evaluating whether the nearest receptor had been impacted while continuing remedial efforts to remove MTBE mass from the groundwater near source areas. We believe that this approach will provide more meaningful data than collecting samples from the utility backfill. These efforts, combined with the discovery and elimination of the dispenser release source and coordinated sampling with the adjacent site will provide a better overall understanding of the site. We will continue to collect samples from the storm drains (when water is available) and canal during quarterly events.

Efforts were outward from site not from receptor

CLOSING

We appreciate the opportunity to work with you on this project. Please call Diane Lundquist at (510) 420-3334 if you have any questions or comments.

Sincerely,
Cambria Environmental Technology, Inc

Diane Lundquist, P.E.
Principal Engineer

Figures:
1 - Vicinity/Area Well Survey Map
2 - Underground Utility Map with Monitoring Wells and Soil Boring Locations and Groundwater Sampling Results
3 - GWE/DVE Effect on MTBE – MW-1
4 - GWE/DVE Effect on MTBE – MW-4

Tables:
1 - Groundwater Analytical Data – Oxygenates
2 - Groundwater Extraction - Mass Removal Data
3 - Vapor Extraction - Mass Removal Data

Attachment: A - Blaine Groundwater Monitoring Report and Field Notes

cc: Karen Petryna, Equiva Services LLC, P.O. Box 7869, Burbank, California 91510-7869

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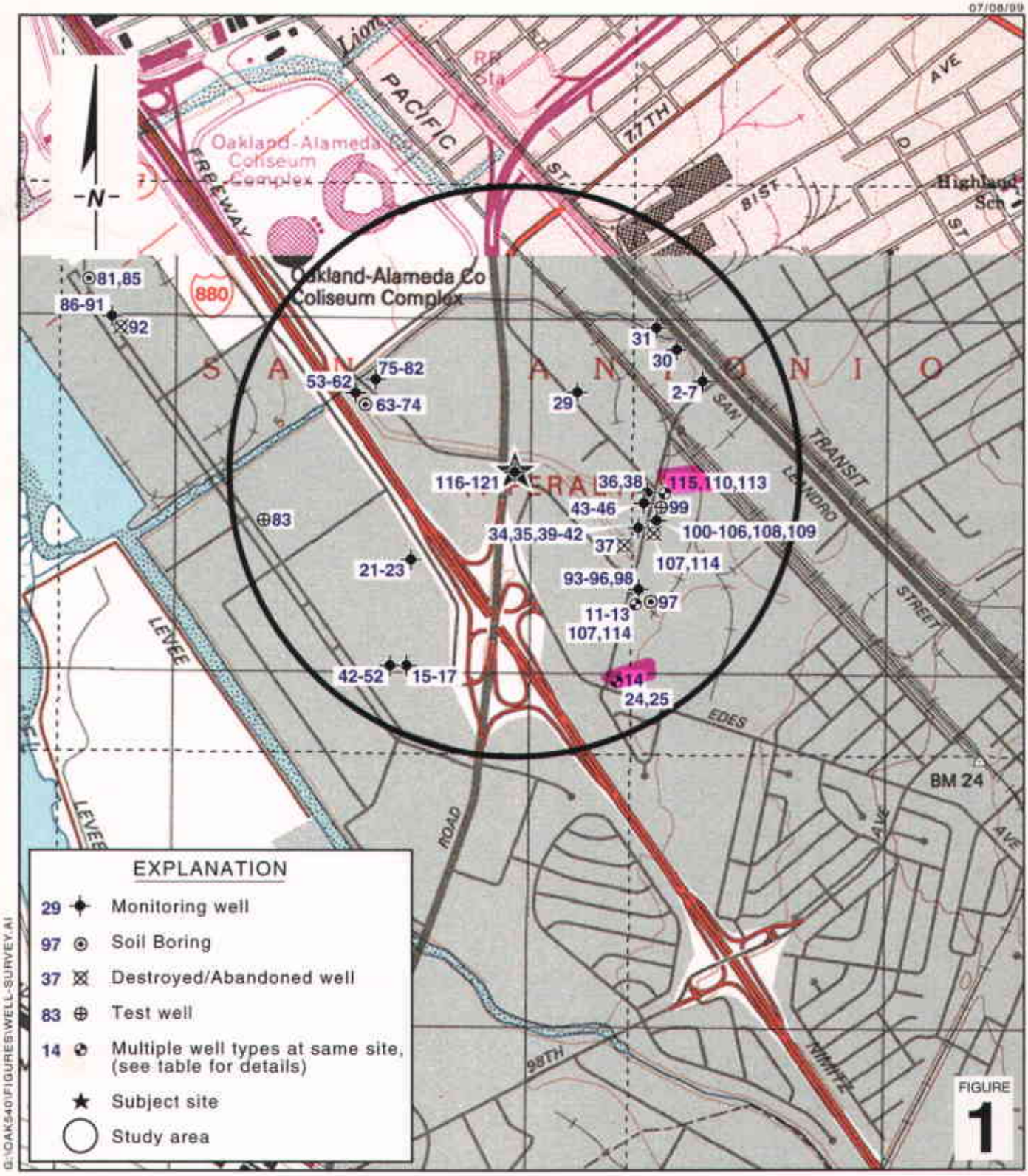

FIGURE 1

0 1/8 1/4 1/2 1 MILES

SCALE 1:1/4

Shell-branded Service Station
540 Hegenberger Road
Oakland, California
Incident #98995752

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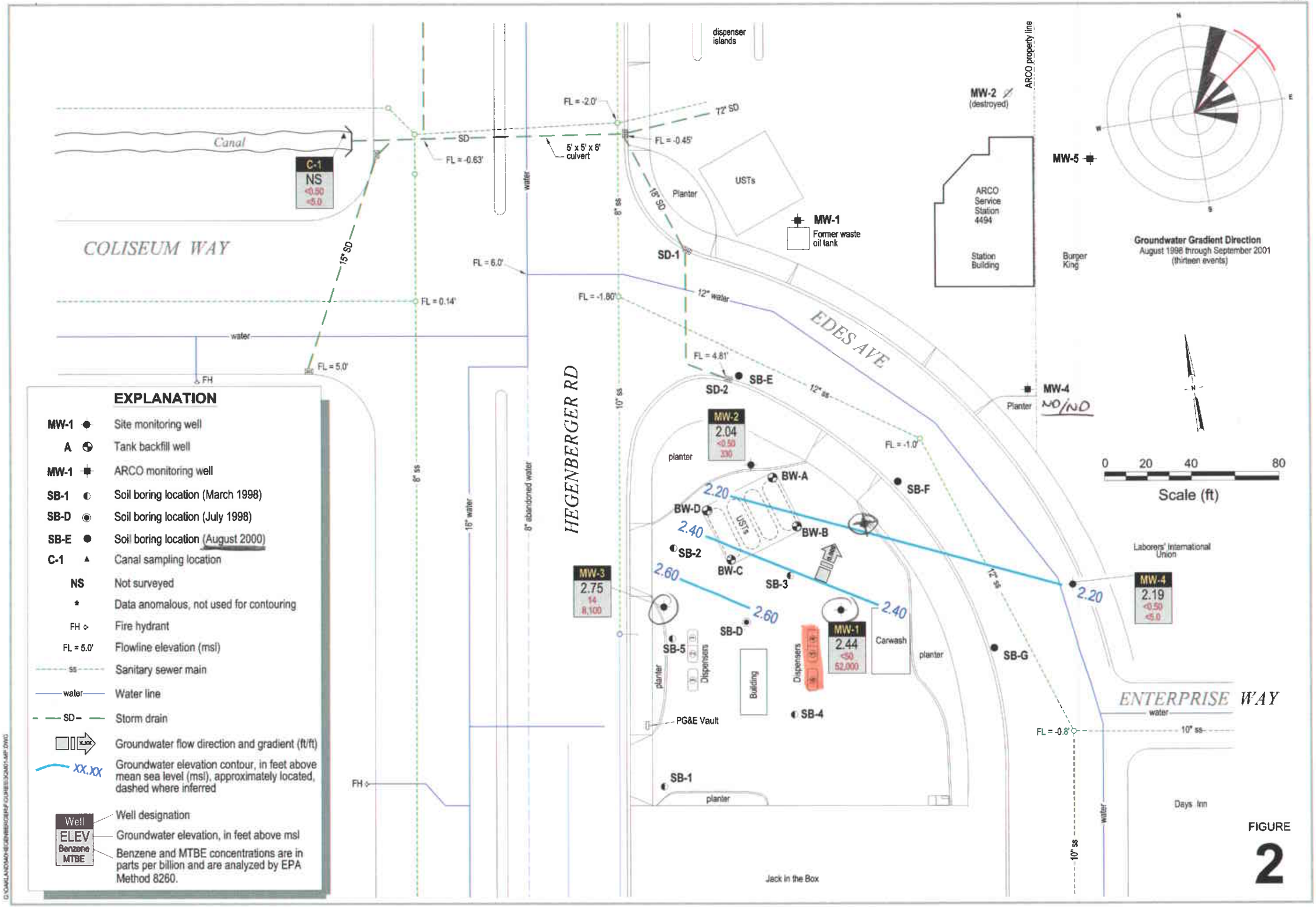
Area Well Survey

(1/2-Mile Radius)

Underground Utility Map with Monitoring Wells and Soil Boring Locations and Groundwater Sampling Results for

September 19, 2001

C A M B R I A



EXPLANATION

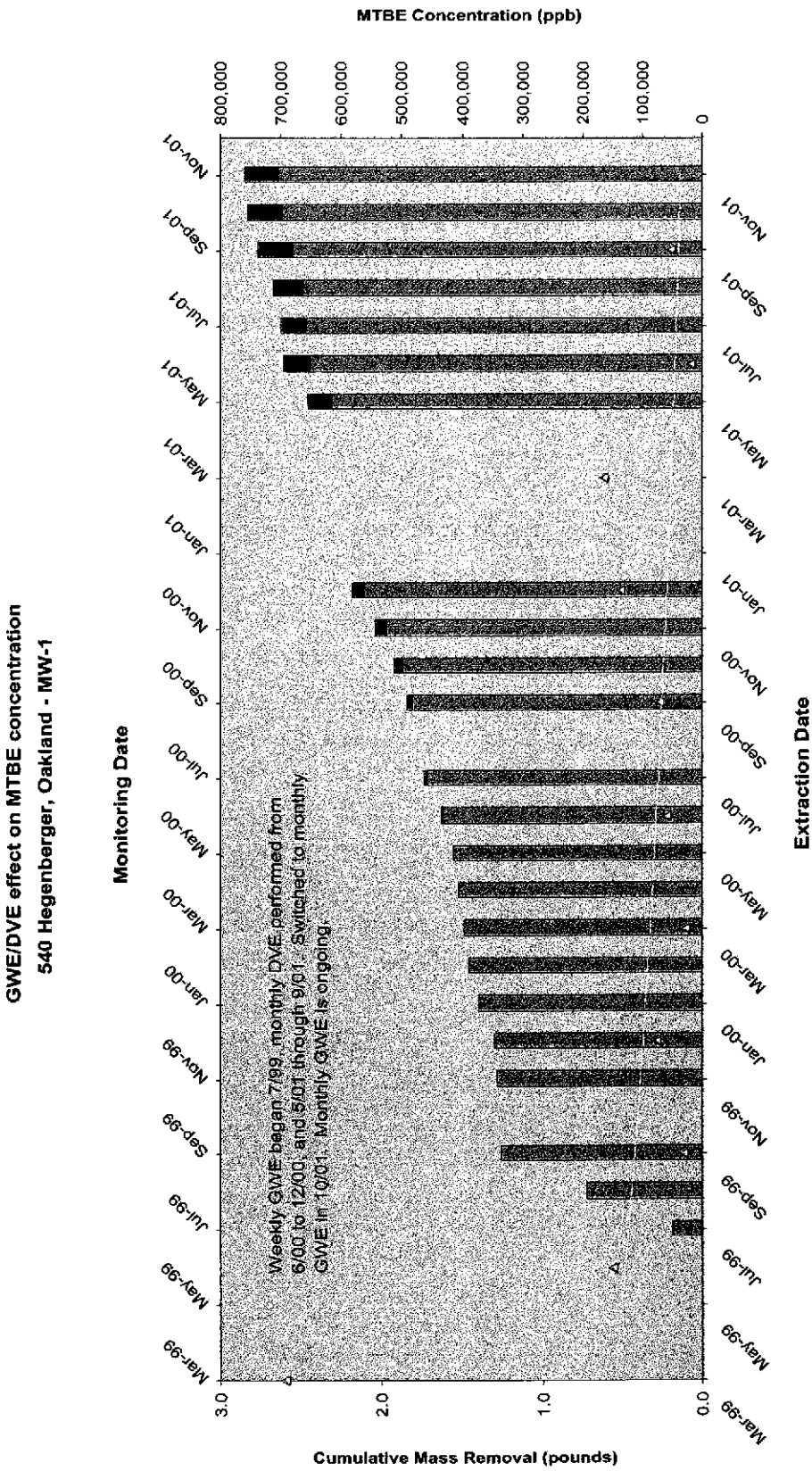
MW-1 ●	Site monitoring well
A ◔	Tank backfill well
MW-1 ✱	ARCO monitoring well
SB-1 ◐	Soil boring location (March 1998)
SB-D ◉	Soil boring location (July 1998)
SB-E ●	Soil boring location (August 2000)
C-1 ▲	Canal sampling location
NS	Not surveyed
*	Data anomalous, not used for contouring
FH ◇	Fire hydrant
FL = 5.0'	Flowline elevation (msl)
ss	Sanitary sewer main
water	Water line
SD	Storm drain
XXX	Groundwater flow direction and gradient (ft/ft)
xx.xx	Groundwater elevation contour, in feet above mean sea level (msl), approximately located, dashed where inferred

Well
ELEV
Benzene
MTBE

- Well designation
- Groundwater elevation, in feet above msl
- Benzene and MTBE concentrations are in parts per billion and are analyzed by EPA Method 8260.

Shell-branded Service Station
540 Hegenberger Road
Oakland, California
Incident #98995752

FIGURE
2



Date	DTW-ft
3/29/99	8.32
6/22/99	9.05
9/30/99	8.35
12/10/99	8.86
3/2/00	8.83
6/8/00	7.78
9/5/00	7.84
12/15/00	7.65
3/9/01	6.44
6/27/01	8.46
9/19/01	8.10

FIGURE

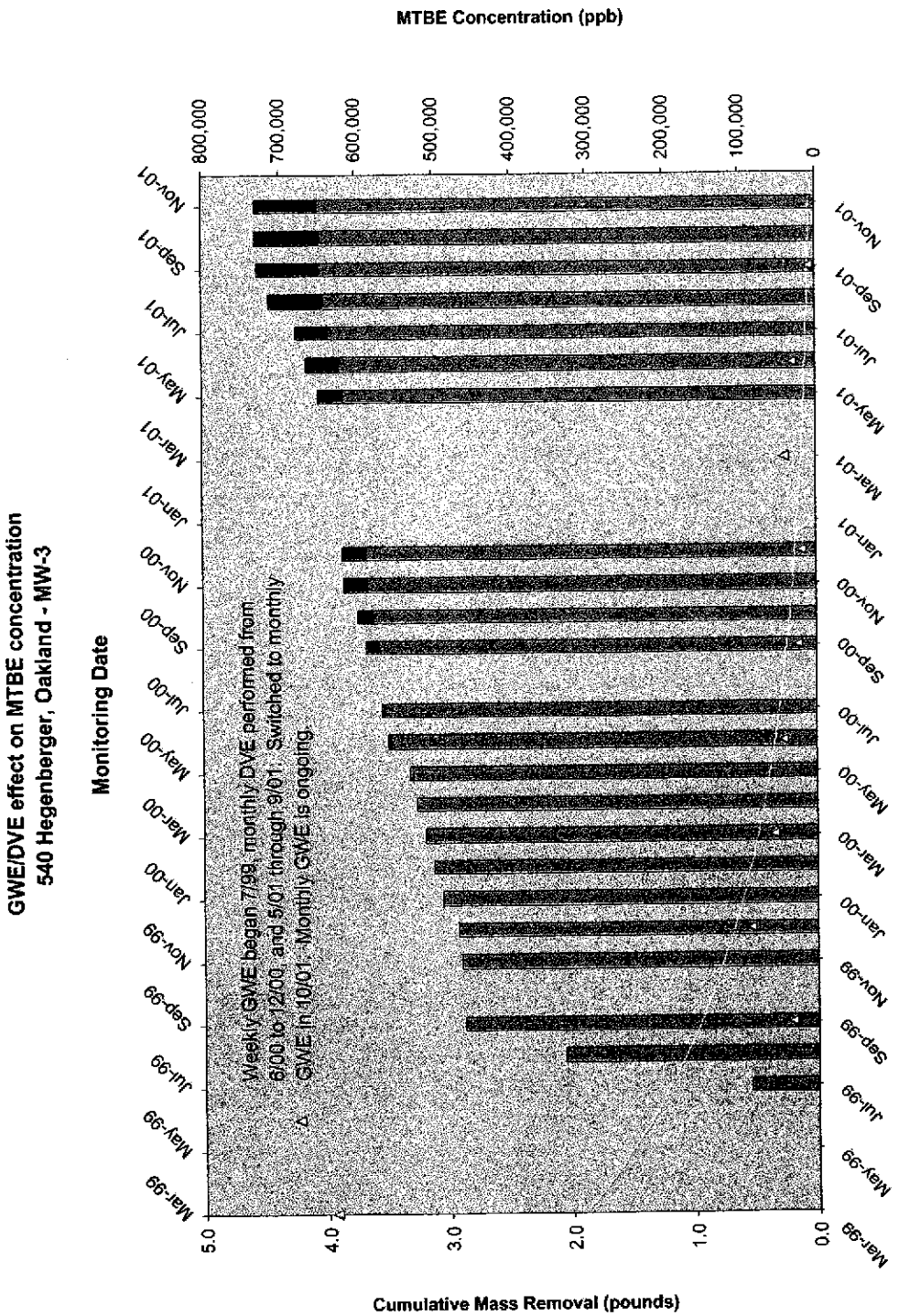
3

G:\OAKLAND540HEGENBERGER\FIGURES\GWE EFFECT ON MTBE - MW-1.AI

Shell-branded Service Station
540 Hegenberger Road
Oakland, California
Incident #98995752

CAMBRIA

GWE/DVE Effect on MTBE
MW-1



Date	DTW-ft
3/29/99	6.21
6/22/99	7.00
9/30/99	6.84
12/10/99	7.28
3/2/00	5.87
6/8/00	5.32
9/5/00	5.60
12/15/00	6.27
3/9/01	5.71
6/27/01	6.88
9/19/01	6.70

FIGURE

4

G:\OAKLAND\540HEGENBERGER\FIGURES\GWE EFFECT ON MTBE - MW-3.AI

Shell-branded Service Station

540 Hegenberger Road

Oakland, California

Incident #98995752

CAMBRIA

GWE/DVE Effect on MTBE
MW-3

Table 1. **Groundwater Analytical Data - Oxygenates** - Shell-branded Service Station, Incident #98995752, 540 Hegenberger Road, Oakland, California

Sample ID	Date Sampled	MTBE	DIPE	ETBE	TAME	TBA	Ethanol
		← (Concentrations in ppb) →					
MW-1	09/19/01	52,000	<50	<50	50	810	<500
MW-3	09/19/01	8,100	<5.0	<5.0	11	140	<500

Abbreviations:

MTBE = Methyl tert-butyl ether, analyzed by EPA Method 8260
DIPE = Di-isopropyl ether, analyzed by EPA Method 8260
ETBE = Ethyl tert-butyl ether, analyzed by EPA Method 8260
TAME = Tert-amyl methyl ether, analyzed by EPA Method 8260
TBA = Tert-butyl alcohol, analyzed by EPA Method 8260
Ethanol analyzed by EPA Method 8260
ppb = Parts per billion

Table 2: 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	TPPH			Benzene			MTBE		
					TPPH Concentration (ppb)	TPPH Removed (pounds)	TPPH Removed To Date (pounds)	Benzene Concentration (ppb)	Benzene Removed (pounds)	Benzene Removed To Date (pounds)	MTBE Concentration (ppb)	MTBE Removed (pounds)	MTBE Removed To Date (pounds)
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
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
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

Table 2: 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	TPPH Concentration (ppb)	TPPH Removed (pounds)	TPPH Removed To Date (pounds)	Benzene Concentration (ppb)	Benzene Removed (pounds)	Benzene Removed To Date (pounds)	MTBE Concentration (ppb)	MTBE Removed (pounds)	MTBE Removed To Date (pounds)
					TPPH			**Benzene**			**MTBE**		
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
10/22/01	BW-D	2,100	8,168	06/22/99	<50	0.00044	0.00170	<0.500	0.00000	0.00002	2,190	0.03838	0.14926
11/06/01	BW-D	2,600	10,768	06/22/99	<50	0.00054	0.00225	<0.500	0.00001	0.00002	2,190	0.04751	0.19678
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
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

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

					TPPH			Benzene			MTBE		
Date Purged	Well ID	Volume Pumped (gal)	Cumulative Volume Pumped (gal)	Date Sampled	TPPH Concentration (ppb)	TPPH Removed (pounds)	TPPH Removed To Date (pounds)	Benzene Concentration (ppb)	Benzene Removed (pounds)	Benzene Removed To Date (pounds)	MTBE Concentration (ppb)	MTBE Removed (pounds)	MTBE Removed To Date (pounds)
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
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

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

					TPPH			Benzene			MTBE		
Date Purged	Well ID	Volume Pumped (gal)	Cumulative Volume Pumped (gal)	Date Sampled	TPPH Concentration (ppb)	TPPH Removed (pounds)	TPPH Removed To Date (pounds)	Benzene Concentration (ppb)	Benzene Removed (pounds)	Benzene Removed To Date (pounds)	MTBE Concentration (ppb)	MTBE Removed (pounds)	MTBE Removed To Date (pounds)
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
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
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

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

					TPPH			Benzene			MTBE		
Date Purged	Well ID	Volume Pumped (gal)	Cumulative Volume Pumped (gal)	Date Sampled	TPPH Concentration (ppb)	TPPH Removed (pounds)	TPPH Removed To Date (pounds)	Benzene Concentration (ppb)	Benzene Removed (pounds)	Benzene Removed To Date (pounds)	MTBE Concentration (ppb)	MTBE Removed (pounds)	MTBE Removed To Date (pounds)
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
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

Table 2: 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	TPPH Concentration (ppb)	TPPH Removed (pounds)	TPPH Removed To Date (pounds)	Benzene Concentration (ppb)	Benzene Removed (pounds)	Benzene Removed To Date (pounds)	MTBE Concentration (ppb)	MTBE Removed (pounds)	MTBE Removed To Date (pounds)
					TPPH			**Benzene**			**MTBE**		
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	0.07467	**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	0.07526	**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	0.07469	**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	0.07527	**8,100**	0.00338	4.04910
Total Gallons Extracted:		**46,043**			**Total Pounds Removed:**		**1.25735**			**0.08257**			**8.60197**
					Total Gallons Removed:		**0.20612**			**0.01131**			**1.38741**

Abbreviations & Notes:

TPPH = Total purgeable hydrocarbons as gasoline
MtBE = Methyl tert-butyl ether
ppb = Parts per billion
gal = Gallon
* = 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)
TPPH, benzene analyzed by EPA Method 8015/8020
MTBE analyzed by EPA Method 8260 in bold font, all other MTBE analyzed by EPA Method 8020
Concentrations 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 provided by ACTI. Water disposed of at a Martinez Refinery.

Table 3: 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) TPHg	Benzene	MTBE	TPHg Removal Rate (#/hour)	TPHg Cumulative TPHg Removed (#)	Benzene Removal Rate (#/hour)	Benzene Cumulative Benzene Removed (#)	MTBE Removal Rate (#/hour)	MTBE Cumulative MTBE Removed (#)
							TPHg		**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	0.008	0.011	0.199
09/25/01	MW-1	4.00	5.8	160	<0.10	37	0.012	2.578	0.000	0.008	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:							**TPHg =**	**19.289**	**Benzene =**	**0.107**	**MTBE =**	**0.720**

Table 3: Vapor Extraction - Mass Removal Data - Shell-branded Service Station, Incident #98995752, 540 Hegenberger Road, Oakland, California

Abbreviations and Notes:

CFM = Cubic feet per minute

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

ppmv = Parts per million by volume

= Pounds

TPHG, Benzene, and MTBE analyzed by EPA Method 8015/8020 in 1 liter tedlar bag samples

TPHg / 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 TPHg, 78 lb/lb-mole for benzene, 88 lb/lb-mole for MTBE) x 60 min/hour x 1/1,000,000)

Cumulative TPHg / 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.

ATTACHMENT A

Blaine Groundwater Monitoring Report and Field Notes

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 17, 2001

Karen Petryna
Equiva Services LLC
P.O. Box 7869
Burbank, CA 91510-7869

Third Quarter 2001 Groundwater Monitoring at
Shell-branded Service Station
540 Hegenberger Road
Oakland, CA

Monitoring performed on September 19, 2001

Groundwater Monitoring Report **010919-F-3**

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,

Nick Sudano
Project Coordinator

NS/jt

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

cc: Anni Kreml
Cambria Environmental Technology, Inc.
1144 65th Street
Oakland, CA 94608-2411

WELL CONCENTRATIONS
Shell-branded Service Station
540 Hegenberger Road
Oakland, CA
WIC #204-5508-5900

Well ID	Date	TPPH (ug/L)	B (ug/L)	T (ug/L)	E (ug/L)	X (ug/L)	MTBE 8020 (ug/L)	MTBE 8260 (ug/L)	TOC (MSL)	Depth to Water (ft.)	GW Elevation (MSL)	DO Reading (ppm)
MW-1 (a)	08/26/1998	2,700	28	55	59	39	33,000	NA	10.54	7.91	2.63	1.8
MW-1 (b)	08/26/1998	<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	03/29/1999	<2,000	<20.0	<20.0	<20.0	<20.0	693,000	NA	10.54	8.32	2.22	2.0
MW-1	06/22/1999	20,000	<200	<200	<200	<200	150,000	NA	10.54	9.05	1.49	1.7
MW-1	09/30/1999	<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	12/02/1999	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	03/02/2000	<2,500	<25.0	<25.0	<25.0	<25.0	27,600	NA	10.54	8.83	1.71	3.2
MW-1	06/08/2000	<2,000	<20.0	<20.0	<20.0	<20.0	59,000	67,600	10.54	7.78	2.76	1.9
MW-1	09/05/2000	<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	03/09/2001	<10,000	1,390	<100	<100	<100	89,600	164,000	10.54	6.44	4.10	NA
MW-1	06/27/2001	<5,000	<50	<50	<50	<50	NA	19,000	10.54	8.46	2.08	NA
MW-1	**09/19/2001**	**<5,000**	**<50**	**<50**	**<50**	**<50**	**NA**	**52,000**	**10.54**	**8.10**	**2.44**	**NA**
MW-2 (a)	08/26/1998	<250	3.2	<2.5	<2.5	<2.5	4,000	NA	9.21	7.18	2.03	2.4
MW-2 (b)	08/26/1998	<250	3.1	<2.5	<2.5	<2.5	4,800	NA	9.21	7.18	2.03	2.7
MW-2 (D)(b)	08/26/1998	<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	03/29/1999	235	<0.500	<0.500	<0.500	3.4	101	NA	9.21	6.85	2.36	2.0
MW-2	06/22/1999	<50	<0.50	<0.50	<0.50	<0.50	<2.5	NA	9.21	7.10	2.11	1.9
MW-2	09/30/1999	<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	03/02/2000	<500	11.5	<5.00	<5.00	<5.00	5,280	NA	9.21	6.33	2.88	0.4

WELL CONCENTRATIONS
Shell-branded Service Station
540 Hegenberger Road
Oakland, CA
WIC #204-5508-5900

Well ID	Date	TPPH (ug/L)	B (ug/L)	T (ug/L)	E (ug/L)	X (ug/L)	MTBE 8020 (ug/L)	MTBE 8260 (ug/L)	TOC (MSL)	Depth to Water (ft.)	GW Elevation (MSL)	DO Reading (ppm)
MW-2	06/08/2000	<50.0	0.670	<0.500	<0.500	<0.500	3,160	NA	9.21	6.87	2.34	1.6
MW-2	09/05/2000	<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	03/09/2001	<500	<5.00	<5.00	<5.00	<5.00	17,200	NA	9.21	6.28	2.93	NA
MW-2	06/27/2001	<100	1.4	<1.0	<1.0	<2.0	NA	470	9.21	7.12	2.09	NA
MW-2	**09/19/2001**	**<50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**NA**	**330**	**9.21**	**7.17**	**2.04**	**NA**
MW-3 (a)	08/26/1998	2,300	180	330	<0.50	420	44,000	NA	9.45	6.52	2.93	1.8
MW-3 (b)	08/26/1998	<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	03/29/1999	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	06/22/1999	58,000	6,600	9,850	1,640	6,950	677,000	653,000	9.45	7.00	2.45	1.3
MW-3	09/30/1999	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	12/02/1999	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	03/02/2000	65,300	5,210	10,300	2,650	15,100	56,800	59,800e	9.45	5.87	3.58	d
MW-3	06/08/2000	72,700	3,570	10,200	2,100	13,400	44,400	NA	9.45	5.32	4.13	1.1
MW-3	09/05/2000	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	03/09/2001	5,880	472	42.2	392	1,290	41,800	NA	9.45	5.71	3.74	NA
MW-3	06/27/2001	9,100	330	79	140	1,600	NA	31,000	9.45	6.88	2.57	NA
MW-3	**09/19/2001**	**790**	**14**	**18**	**17**	**67**	**NA**	**8,100**	**9.45**	**6.70**	**2.75**	**NA**
MW-4	09/25/2000	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

WELL CONCENTRATIONS
Shell-branded Service Station
540 Hegenberger Road
Oakland, CA
WIC #204-5508-5900

Well ID	Date	TPPH (ug/L)	B (ug/L)	T (ug/L)	E (ug/L)	X (ug/L)	MTBE 8020 (ug/L)	MTBE 8260 (ug/L)	TOC (MSL)	Depth to Water (ft.)	GW Elevation (MSL)	DO Reading (ppm)
MW-4	03/09/2001	<50.0	<0.500	0.730	<0.500	0.529	3.16	NA	9.88	7.04	2.84	NA
MW-4	06/27/2001	<50	<0.50	<0.50	<0.50	<0.50	NA	<5.0	9.88	7.76	2.12	NA
MW-4	**09/19/2001**	**<50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**NA**	**<5.0**	**9.88**	**7.69**	**2.19**	**NA**
C-1	**09/19/2001**	**<50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**NA**	**<5.0**	**NA**	**1.44**	**NA**	**NA**
SD-1	**09/19/2001**	**Unable to sample**		**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**
SD-2	**09/19/2001**	**Unable to sample**		**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**
BW-A	06/22/1999	318	<0.50	<0.50	0.590	1.48	4,470	NA	NA	4.71	NA	1.1
BW-B	06/22/1999	<250	<2.5	<2.5	<2.5	<2.5	8,600	NA	NA	5.90	NA	1.2
BW-B	06/27/2001	<5,000	<50	<50	<50	<50	NA	40,000	NA	5.83	NA	NA
BW-C	06/22/1999	<50	<0.50	<0.50	<0.50	0.98	11,000	NA	NA	5.91	NA	1.6
BW-D	06/22/1999	<50.0	<0.500	<0.500	<0.500	<0.500	2,190	NA	NA	4.78	NA	1.4

WELL CONCENTRATIONS
Shell-branded Service Station
540 Hegenberger Road
Oakland, CA
WIC #204-5508-5900

Well ID	Date	TPPH (ug/L)	B (ug/L)	T (ug/L)	E (ug/L)	X (ug/L)	MTBE 8020 (ug/L)	MTBE 8260 (ug/L)	TOC (MSL)	Depth to Water (ft.)	GW Elevation (MSL)	DO Reading (ppm)

Abbreviations:

TPPH = 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

ug/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.

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.

KIFF ANALYTICAL LLC

Report Number : 22440
Date : 10/8/2001

Nick Sudano
Blaine Tech Services
1680 Rogers Avenue
San Jose, CA 95112-1105

Subject : 5 Water Samples
Project Name : 540 Hegenberger Road, Oakland
Project Number : 010919-F3
P.O. Number : 98995752

Dear Mr. Sudano,

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 : 22440
Date : 10/8/2001

Project Name : **540 Hegenberger Road, Oakland**
Project Number : **010919-F3**

Sample : **MW-1** Matrix : Water Lab Number : 22440-01
Sample Date :9/19/2001

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 50**	50	ug/L	EPA 8260B	10/2/2001
Toluene	**< 50**	50	ug/L	EPA 8260B	10/2/2001
Ethylbenzene	**< 50**	50	ug/L	EPA 8260B	10/2/2001
Total Xylenes	**< 50**	50	ug/L	EPA 8260B	10/2/2001
Methyl-t-butyl ether (MTBE)	**52000**	200	ug/L	EPA 8260B	10/3/2001
Diisopropyl ether (DIPE)	**< 50**	50	ug/L	EPA 8260B	10/2/2001
Ethyl-t-butyl ether (ETBE)	**< 50**	50	ug/L	EPA 8260B	10/2/2001
Tert-amyl methyl ether (TAME)	**50**	50	ug/L	EPA 8260B	10/2/2001
Tert-Butanol	**810**	500	ug/L	EPA 8260B	10/2/2001
Ethanol	**< 500**	500	ug/L	EPA 8260B	10/2/2001
TPH as Gasoline	**< 5000**	5000	ug/L	EPA 8260B	10/2/2001
Toluene - d8 (Surr)	101		% Recovery	EPA 8260B	10/2/2001
4-Bromofluorobenzene (Surr)	105		% Recovery	EPA 8260B	10/2/2001

Approved By: Joel Kiff

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

KIFF ANALYTICAL LLC

Report Number : 22440
Date : 10/8/2001

Project Name : **540 Hegenberger Road, Oakland**
Project Number : **010919-F3**

Sample : **MW-2** Matrix : Water Lab Number : 22440-02
Sample Date :9/19/2001

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.50**	0.50	ug/L	EPA 8260B	10/2/2001
Toluene	**< 0.50**	0.50	ug/L	EPA 8260B	10/2/2001
Ethylbenzene	**< 0.50**	0.50	ug/L	EPA 8260B	10/2/2001
Total Xylenes	**< 0.50**	0.50	ug/L	EPA 8260B	10/2/2001
Methyl-t-butyl ether (MTBE)	**330**	10	ug/L	EPA 8260B	10/3/2001
TPH as Gasoline	**< 50**	50	ug/L	EPA 8260B	10/2/2001
Toluene - d8 (Surr)	97.4		% Recovery	EPA 8260B	10/2/2001
4-Bromofluorobenzene (Surr)	95.7		% Recovery	EPA 8260B	10/2/2001

Approved By: Joel Kiff

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

KIFF ANALYTICAL LLC

Report Number : 22440
Date : 10/8/2001

Project Name : **540 Hegenberger Road, Oakland**
Project Number : **010919-F3**

Sample : **MW-3** Matrix : Water Lab Number : 22440-03
Sample Date :9/19/2001

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**14**	5.0	ug/L	EPA 8260B	10/2/2001
Toluene	**18**	5.0	ug/L	EPA 8260B	10/2/2001
Ethylbenzene	**17**	5.0	ug/L	EPA 8260B	10/2/2001
Total Xylenes	**67**	5.0	ug/L	EPA 8260B	10/2/2001
Methyl-t-butyl ether (MTBE)	**8100**	25	ug/L	EPA 8260B	10/3/2001
Diisopropyl ether (DIPE)	**< 5.0**	5.0	ug/L	EPA 8260B	10/2/2001
Ethyl-t-butyl ether (ETBE)	**< 5.0**	5.0	ug/L	EPA 8260B	10/2/2001
Tert-amyl methyl ether (TAME)	**11**	5.0	ug/L	EPA 8260B	10/2/2001
Tert-Butanol	**140**	50	ug/L	EPA 8260B	10/2/2001
Ethanol	**< 500**	500	ug/L	EPA 8260B	10/2/2001
TPH as Gasoline	**790**	500	ug/L	EPA 8260B	10/2/2001
Toluene - d8 (Surr)	101		% Recovery	EPA 8260B	10/2/2001
4-Bromofluorobenzene (Surr)	106		% Recovery	EPA 8260B	10/2/2001

Approved By: Joel Kiff

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

KIFF ANALYTICAL LLC

Report Number : 22440

Date : 10/8/2001

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

Project Number : **010919-F3**

Sample : **MW-4** Matrix : Water Lab Number : 22440-04

Sample Date :9/19/2001

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.50**	0.50	ug/L	EPA 8260B	10/1/2001
Toluene	**< 0.50**	0.50	ug/L	EPA 8260B	10/1/2001
Ethylbenzene	**< 0.50**	0.50	ug/L	EPA 8260B	10/1/2001
Total Xylenes	**< 0.50**	0.50	ug/L	EPA 8260B	10/1/2001
Methyl-t-butyl ether (MTBE)	**< 5.0**	5.0	ug/L	EPA 8260B	10/1/2001
TPH as Gasoline	**< 50**	50	ug/L	EPA 8260B	10/1/2001
Toluene - d8 (Surr)	105		% Recovery	EPA 8260B	10/1/2001
4-Bromofluorobenzene (Surr)	99.2		% Recovery	EPA 8260B	10/1/2001

Approved By: Joel Kiff

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

KIFF ANALYTICAL LLC

Report Number : 22440
Date : 10/8/2001

Project Name : **540 Hegenberger Road, Oakland**
Project Number : **010919-F3**

Sample : **C-1** Matrix : Water Lab Number : 22440-05
Sample Date :9/19/2001

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.50**	0.50	ug/L	EPA 8260B	10/2/2001
Toluene	**< 0.50**	0.50	ug/L	EPA 8260B	10/2/2001
Ethylbenzene	**< 0.50**	0.50	ug/L	EPA 8260B	10/2/2001
Total Xylenes	**< 0.50**	0.50	ug/L	EPA 8260B	10/2/2001
Methyl-t-butyl ether (MTBE)	**< 5.0**	5.0	ug/L	EPA 8260B	10/2/2001
TPH as Gasoline	**< 50**	50	ug/L	EPA 8260B	10/2/2001
Toluene - d8 (Surr)	98.7		% Recovery	EPA 8260B	10/2/2001
4-Bromofluorobenzene (Surr)	95.6		% Recovery	EPA 8260B	10/2/2001

Approved By: Joel Kiff

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

Report Number : 22440

Date : 10/8/2001

Project Name : **540 Hegenberger Road,**

Project Number : **010919-F3**

22440 Quality Control Data - Method Blank

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.50**	0.50	ug/L	EPA 8260B	9/29/2001
Toluene	**< 0.50**	0.50	ug/L	EPA 8260B	9/29/2001
Ethylbenzene	**< 0.50**	0.50	ug/L	EPA 8260B	9/29/2001
Total Xylenes	**< 0.50**	0.50	ug/L	EPA 8260B	9/29/2001
Methyl-t-butyl ether (MTBE)	**< 0.50**	0.50	ug/L	EPA 8260B	9/29/2001
Diisopropyl ether (DIPE)	**< 2.0**	2.0	ug/L	EPA 8260B	9/29/2001
Ethyl-t-butyl ether (ETBE)	**< 2.0**	2.0	ug/L	EPA 8260B	9/29/2001
Tert-amyl methyl ether (TAME)	**< 2.0**	2.0	ug/L	EPA 8260B	9/29/2001
Tert-Butanol	**< 50**	50	ug/L	EPA 8260B	9/29/2001
Ethanol	**< 500**	500	ug/L	EPA 8260B	9/29/2001
TPH as Gasoline	**< 50**	50	ug/L	EPA 8260B	9/29/2001
Toluene - d8 (Surr)	97.6		% Recovery	EPA 8260B	9/29/2001
4-Bromofluorobenzene (Surr)	101		% Recovery	EPA 8260B	9/29/2001

Approved By: Joel Kiff

Report Number : 22440

QC Report : Matrix Spike/ Matrix Spike Duplicate

Date : 10/8/2001

Project Name : **540 Hegenberger Road,**

Project Number : **010919-F3**

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
Spike Recovery Data														
Benzene	22438-03	<0.50	20.0	19.3	20.4	19.4	ug/L	EPA 8260B	9/29/2001	102	100	1.90	70-130	25
Toluene	22438-03	<0.50	20.0	19.3	20.0	19.1	ug/L	EPA 8260B	9/29/2001	100	98.9	1.08	70-130	25
Tert-Butanol	22438-03	<5.0	99.9	96.6	97.2	89.6	ug/L	EPA 8260B	9/29/2001	97.2	92.7	4.80	70-130	25
Methyl-t-Butyl Ether	22438-03	<0.50	20.0	19.3	20.8	19.8	ug/L	EPA 8260B	9/29/2001	104	102	1.60	70-130	25

Approved By: Joel Kiff

KIFF ANALYTICAL, LLC

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

Report Number : 22440

QC Report : Laboratory Control Sample (LCS)

Date : 10/8/2001

Project Name : **540 Hegenberger Road,**

Project Number : **010919-F3**

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
Benzene	19.6	ug/L	EPA 8260B	9/29/2001	98.5	70-130
Toluene	19.6	ug/L	EPA 8260B	9/29/2001	98.2	70-130
Tert-Butanol	97.8	ug/L	EPA 8260B	9/29/2001	93.2	70-130
Methyl-t-Butyl Ether	19.6	ug/L	EPA 8260B	9/29/2001	102	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

EQUIVA Services LLC Chain Of Custody Record

Equiva Project Manager to be invoiced: ~~22439~~ NO 092001 1540 22440

☑ SCIENCE & ENGINEERING

[redacted]

☐ CRMT HOUSTON

Karen Petryna

INCIDENT NUMBER (S&E ONLY): 9 8 9 9 5 7 5 2

SAP or CRMT NUMBER (TS/CRMT):

DATE: 9/19/01

PAGE: 1 of 1

CONSULTANT COMPANY: Blaine Tech Services

ADDRESS: 1680 Rogers Avenue

CITY: San Jose, CA 95112

TELEPHONE: 408-573-0555 FAX: 408-573-7771 E-MAIL: nsudano@blainetech.com

SITE ADDRESS (Street and City): 540 Hegenberger Road, Oakland

PROJECT CONTACT (Report to): Nick Sudano

CONSULTANT PROJECT NO.: BTS # 010919-F3

SAMPLER NAME(S) (Print): Suchern Sung

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: TEMPERATURE ON RECEIPT C°

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 - 0.5 ppbRL)	Oxygenates (5) by (8260)	Ethanol (8260B)	Methanol	1,2-DCA (8260B)	EDB (8260B)		TPH-Diesel, Extractable (8015m)		MTBE (8260B) Confirmation, See note						*		FIELD NOTES: Container/Preservative or PID Readings or Laboratory Notes
	MW-1	9/19/01	~~1544~~ 1616	GW	3	X	X	X		X	X															01
	MW-2	↓	1564	↓	↓	X	X	X																		02
	MW-3	↓	1636	↓	↓	X	X	X		X	X															03
	MW-4	↓	1544	↓	↓	X	X	X																		04
	C-1	↓	1532	↓	↓	X	X	X																		05

Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:
[signature]			
Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:
Relinquished by: (Signature)	Received by: (Signature) J. Navell Brown KIFF	Date: 092001	Time: 1115

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

10/16/00 Revision

WELL GAUGING DATA

Project # 010919-F3 Date 9-19-01 Client 98995752

Site 540 Hegenberger rd.

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	GAUGED W/STINGER IN WELL				8.10	23.63		
MW-2	2					7.17	19.57		
MW-3	2	GAUGED W/STINGER IN WELL				6.70	19.46		
MW-4	2					7.69	18.53		

WELL MONITORING DATA SHEET

Project #: 010919-F3	Client: 98995752
Sampler: JB/SS	Start Date: 9-19-01
Well I.D.: MW-1	Well Diameter: (2) 3 4 6 8 ___
Total Well Depth: 23.63	Depth to Water: 8.10
Before: After:	Before: After:
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): YSI HACH

Purge Method:

- X Bailer
- Disposable Bailer
- Middleburg
- Electric Submersible
- Waterra
- Peristaltic
- Extraction Pump
- Other ___

Sampling Method: X Bailer

- Disposable Bailer
- Extraction Port
- Dedicated Tubing
- Other: ___

2.5 (Gals.) X 3 = 7.5 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.	Turbidity	Gals. Removed	Observations
1612	67.6	7.0	12 ms	>200	2.5	
1613	67.4	7.2	12.3 ms	>200	5	
1614	67.0	7.2	13.3 ms	>200	7.5	

Did well dewater? Yes (No) Gallons actually evacuated: ~~7~~ 7.5

Sampling Time: 1616 Sampling Date: 9-19-01

Sample I.D.: MW-1 Laboratory: KIFF

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

Equipment Blank I.D.: @ Time Duplicate I.D.:

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

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

WELL MONITORING DATA SHEET

Project #: 010919-F3	Client: 98995152
Sampler: SB/SS	Start Date: 9-19-01
Well I.D.: MW-2	Well Diameter: (2) 3 4 6 8 ____
Total Well Depth: 19.57	Depth to Water: 7.17
Before: After:	Before: After:
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): YSI HACH

Purge Method:

- X Bailer
- Disposable Bailer
- Middleburg
- Electric Submersible
- Waterra
- Peristaltic
- Extraction Pump
- Other ____

Sampling Method: X 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	radius^2 * 0.163

Time	Temp (°F)	pH	Cond.	Turbidity	Gals. Removed	Observations
1558	71.8	7.1	960	>200	2	
1600	71.4	7.2	1009	>200	4	
1602	70.2	7.2	1019	>200	6	

Did well dewater? Yes (No)		Gallons actually evacuated: 6	
Sampling Time: 1604		Sampling Date: 9-19-01	
Sample I.D.: MW-2		Laboratory: Kiff	
Analyzed for: (TPH-G) (BTEX) (MTBE) TPH-D		Other:	
Equipment Blank I.D.: @ Time		Duplicate I.D.:	
Analyzed for: TPH-G BTEX MTBE TPH-D		Other:	
D.O. (if req'd):	Pre-purge: mg/L	Post-purge:	mg/L
ORP (if req'd):	Pre-purge: mV	Post-purge:	mV

WELL MONITORING DATA SHEET

Project #: 010919-F3	Client: 98995752
Sampler: JB/SS	Start Date: 9-19-01
Well I.D.: MW-3	Well Diameter: (2) 3 4 6 8 ____
Total Well Depth: 19.46	Depth to Water: 6.76
Before: After:	Before: After:
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): YSI HACH

Purge Method:

(Bailer)
~~Disposable Bailer~~
Middleburg
Electric Submersible
Waterra
Peristaltic
Extraction Pump
Other_____

Sampling Method: (Bailer)

Disposable Bailer
Extraction Port
Dedicated Tubing
Other: _____

2 (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	radius^2 * 0.163

Time	Temp (°F)	pH	Cond.	Turbidity	Gals. Removed	Observations
1630	69.8	7.2	8452	>200	2	light sheen
1632	69.9	7.2	9220	>200	4	
1634	69.3	7.3	9935	>200	6	

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

Sampling Time: 1636 Sampling Date: 9-19-01

Sample I.D.: MW-3 Laboratory: KIFF

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

Equipment Blank I.D.: @ Time Duplicate I.D.:

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

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

WELL MONITORING DATA SHEET

Project #: 010919-F3	Client: 98995152
Sampler: JB/SS	Start Date: 9-19-01
Well I.D.: MW-4	Well Diameter: 2 3 (4) 6 8 ____
Total Well Depth: 18.53	Depth to Water: 7.69
Before: After:	Before: After:
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): YSI HACH

Purge Method:

- Bailer
- Disposable Bailer
- Middleburg
- X Electric Submersible
- Waterra
- Peristaltic
- Extraction Pump
- Other_____

Sampling Method:

- X Bailer
- Disposable Bailer
- Extraction Port
- Dedicated Tubing
- Other: _____

7 (Gals.) X 3 = 21 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	radius^2 * 0.163

Time	Temp (°F)	pH	Cond.	Turbidity	Gals. Removed	Observations
1539	70.8	7.2	5169	>200	7	
1540	71.3	7.2	5283	>200	14	
1541	71.3	7.2	5189	>200	21	

Did well dewater? Yes (No) Gallons actually evacuated: 19.5 21

Sampling Time: 1544 Sampling Date: 9-19-01

Sample I.D.: MW-4 Laboratory: K

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

Equipment Blank I.D.: @ Time Duplicate I.D.:

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

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

WELL MONITORING DATA SHEET

Project #: 010919-FB	Client: 98995752
Sampler: O'Bryan	Start Date: 9-19-01
Well I.D.: ~~Grant~~ C-1	Well Diameter: 2 3 ~~4~~ ~~6~~ ~~8~~
Total Well Depth: NA	Depth to Water: 1.44
Before: After:	Before: After:
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC (Grade)	D.O. Meter (if req'd): YSI HACH

Purge Method:

Bailer
Disposable Bailer
Middleburg
Electric Submersible
Waterra
Peristaltic
Extraction ~~Pump~~
Other

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

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

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

Time	Temp (°F)	pH	Cond.	Turbidity	Gals. Removed	Observations
1532	68.1	6.1	40.8	122	.25	
			gassed from concrete block			
			DTW = 1.44			
			DTB unavailable			

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

Sampling Time: 1532 Sampling Date: 9-19-01

Sample I.D.: Grant C-1 Laboratory: Kiff

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

Equipment Blank I.D.: @ Time Duplicate I.D.:

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

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

WELL MONITORING DATA SHEET

Project #: 010919-F3	Client: 98995152
Sampler: O'Bryan	Start Date: 9-19-01
Well I.D.: SD-1	Well Diameter: ~~2~~ ~~3~~ ~~4~~ ~~6~~ ~~8~~ ___
Total Well Depth: NA	Depth to Water: NA
Before: After:	Before: After:
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	D.O. Meter (if req'd): YSI HACH

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 _____ = _____ 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	radius^2 * 0.163

Time	Temp (°F)	pH	Cond.	Turbidity	Gals. Removed	Observations
	Storm Drain dry & Filled w/ trash					
	DTB ≈ 3' (Unevenly Filled) From drain guard					
	No sample taken					

Did well dewater? Yes No		Gallons actually evacuated:	
Sampling Time:		Sampling Date: 9-19-01	
Sample I.D.:		Laboratory:	
Analyzed for: TPH-G BTEX MTBE TPH-D		Other:	
Equipment Blank I.D.:	@ Time	Duplicate I.D.:	
Analyzed for: TPH-G BTEX MTBE TPH-D		Other:	
D.O. (if req'd):	Pre-purge:	mg/L	Post-purge: mg/L
ORP (if req'd):	Pre-purge:	mV	Post-purge: mV

WELL MONITORING DATA SHEET

Project #: 010919-FB	Client: 98995752
Sampler: O'Bryan	Start Date: 9-19-01
Well I.D.: SD-2	Well Diameter: 2 3 4 6 8
Total Well Depth: NA	Depth to Water: NA
Before: After:	Before: After:
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	D.O. Meter (if req'd): YSI HACH

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 _____ = _____ 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.	Turbidity	Gals. Removed	Observations
	Storm Drain dry & Filled w/ trash					
	DTB ≈ 3' (uneven surface) From drain grate					
	No sample taken					

Did well dewater? Yes No		Gallons actually evacuated:	
Sampling Time:		Sampling Date: 9-19-01	
Sample I.D.:		Laboratory:	
Analyzed for: TPH-G BTEX MTBE TPH-D		Other:	
Equipment Blank I.D.:	@ Time	Duplicate I.D.:	
Analyzed for: TPH-G BTEX MTBE TPH-D		Other:	
D.O. (if req'd):	Pre-purge:	mg/L	Post-purge: mg/L
ORP (if req'd):	Pre-purge:	mV	Post-purge: mV