

CAMBRIA

October 30, 2001

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

4017

Re: **Third Quarter 2001 Monitoring Report**
Shell-branded Service Station
610 Market Street
Oakland, California
Incident #99895750
Cambria Project #243-0594-002

NOV 02 2001



Dear Mr. Chan:

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

REMEDIATION SUMMARY

Mobile Dual-Phase Vacuum Extraction Treatment (DVE): From March to October 2000, Cambria coordinated mobile DVE from wells MW-2 and MW-3. DVE removes soil vapors and separate-phase hydrocarbons from the vadose zone and enhances groundwater removal from remediation or monitoring wells. Due to low water-extraction volumes, DVE was discontinued. The estimated mass of total petroleum hydrocarbons as gasoline (TPHg) and methyl tertiary butyl ether (MTBE) removed by groundwater extraction during DVE events is summarized on Table 1, and the estimated mass removed by vapor extraction is summarized on Table 2. DVE activities at the site removed approximately 35.5 pounds of TPHg, 0.2 pounds benzene, and 15.3 pounds of MTBE.

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

Mobile Groundwater Extraction (GWE): As recommended in the August 29, 2001 *Site Conceptual Model and Pilot Test Report*, Cambria is currently coordinating weekly GWE from well MW-3 using a vacuum truck, beginning in August 2001. Cumulative groundwater purge volume and estimated mass removal data are presented in Table 1. Figure 1 shows concentrations and mass removal estimates over time for GWE, as well as the previously conducted soil vapor extraction and groundwater extraction during DVE events. The cumulative estimated mass of

TPHg and MTBE removed to date, including that removed through previous DVE, is 36.24 pounds and 32.31 pounds, respectively. Continued GWE will be based on extracted groundwater volumes and concentration trends.

THIRD QUARTER 2001 ACTIVITIES



Groundwater Monitoring: Blaine Tech Services, Inc. (Blaine) of San Jose, California gauged and sampled the site wells, calculated groundwater elevations, and compiled the analytical data. Cambria prepared a vicinity/area well-survey map which includes previously submitted well-survey information and a groundwater elevation contour map (Figures 2 and 3). 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 TPHg, benzene, toluene, ethylbenzene, xylenes and MTBE, groundwater samples from monitoring wells MW-2 and MW-3 were analyzed for four extra oxygenates and ethanol. Analytical results for MTBE, diisopropyl ether, ethyl tertiary butyl ether, tertiary amyl methyl ether, tertiary butyl alcohol, and ethanol are presented on Table 3.

ANTICIPATED FOURTH QUARTER 2001 ACTIVITIES

Groundwater Monitoring: Blaine will gauge and sample all wells and tabulate the data. Cambria will prepare a monitoring report.

Soil Vapor Extraction (SVE) Pilot Test: As recommended in the August 29, 2001 *Site Conceptual Model and Pilot Test Report*, Cambria conducted a long-term SVE pilot test on one of the onsite tank backfill wells on October 8 through 12, 2001. Results of the SVE pilot test will be presented under separate cover.

Mobile GWE: Weekly GWE is scheduled to continue through fourth quarter 2001.

C A M B R I A

Mr. Barney Chan
October 30, 2001

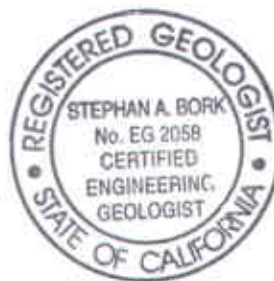
CLOSING

We appreciate the opportunity to work with you on this project. Please call Jacquelyn Jones at (510) 420-3316 if you have any questions or comments.

Sincerely,
Cambria Environmental Technology, Inc



Jacquelyn L. Jones
Project Geologist



Stephan A. Bork, C.E.G., C.H.G.
Associate Hydrogeologist

Figures: 1 - MTBE and Mass Removal – Well MW-3
2 - Vicinity/Area Well Survey Map
3 - Groundwater Elevation Contour Map

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

Attachment: A - Blaine Groundwater Monitoring Report and Field Notes

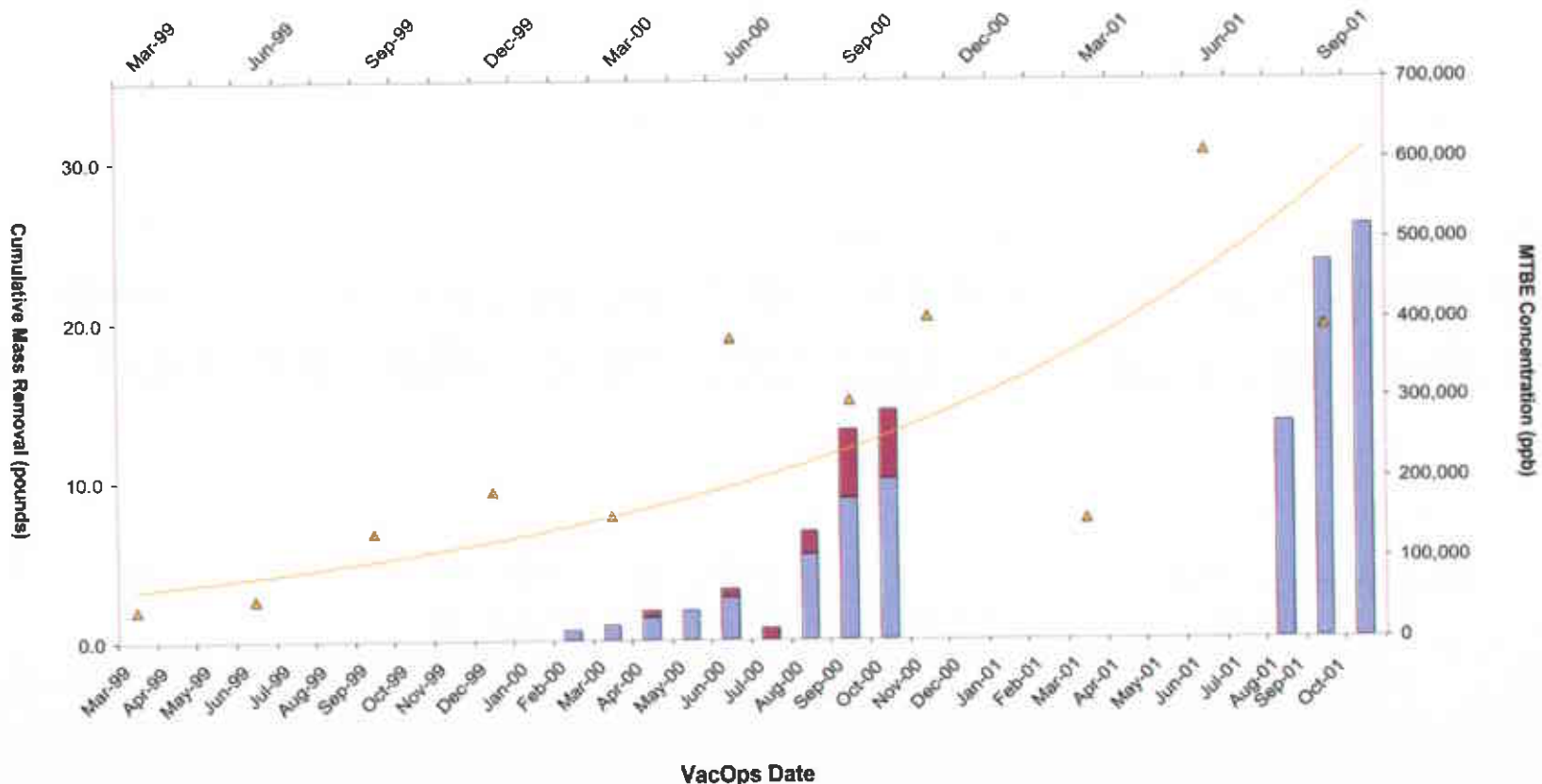
cc: Karen Petryna, Equiva Services LLC, P.O. Box 7869, Burbank, California 91510-7869
Virginia R. Rawson, Tr., 1860 Tice Creek Drive #1353, Walnut Creek, CA 94595
Ronald L. & Cathy L. Labatt, PO Box 462, Kamiah, ID 83536

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MTBE and Mass Removal

Well MW-3

Monitoring Date



VacOps Date

Date	DTW - ft
3/9/99	11.03
6/16/99	11.89
9/29/99	12.35
12/22/99	13.45
3/21/00	10.00
6/20/00	11.15
9/21/00	11.58
11/30/00	12.10
3/6/01	11.00
6/28/01	11.98
9/12/01	12.05

EXPLANATION

- (GWE) Cumulative MTBE mass removed
- (SVE) Cumulative MTBE vapor mass removed
- ▲ MTBE Concentration
- Expon. (MTBE Concentration)

FIGURE

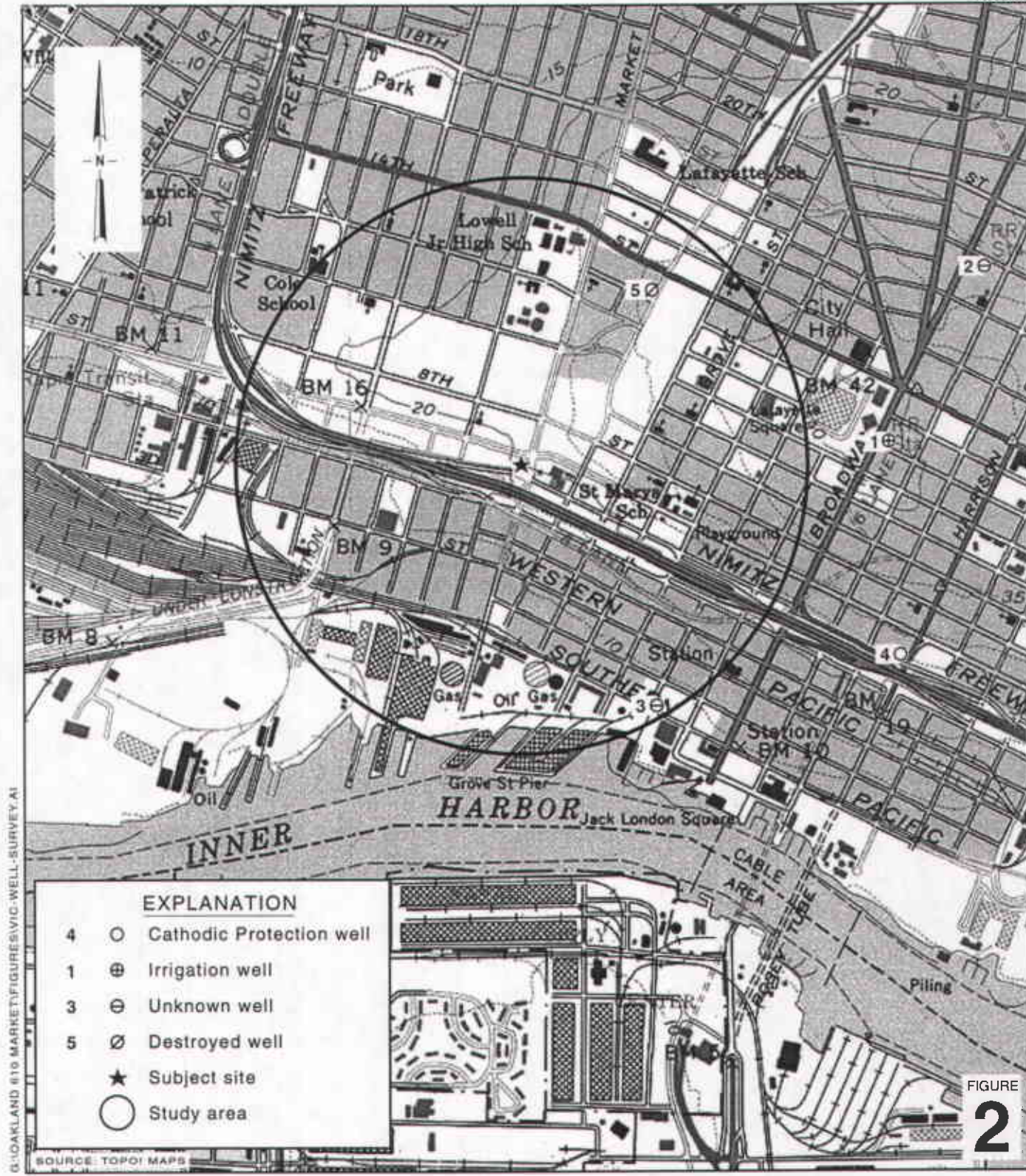
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Shell-branded Service Station
610 Market Street
Oakland, California
Incident #988995750



C A M B R I A

MTBE and Mass Removal
Well MW-3



G:\OAKLAND 610 MARKET\FIGURES\VIC-WELL-SURVEY.A1

SOURCE: TOPOI MAPS

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

Shell-branded Service Station
610 Market Street
Oakland, California
Incident #98995750



C A M B R I A

**Vicinity / Area Well
Survey Map**
1/2 Mile Radius

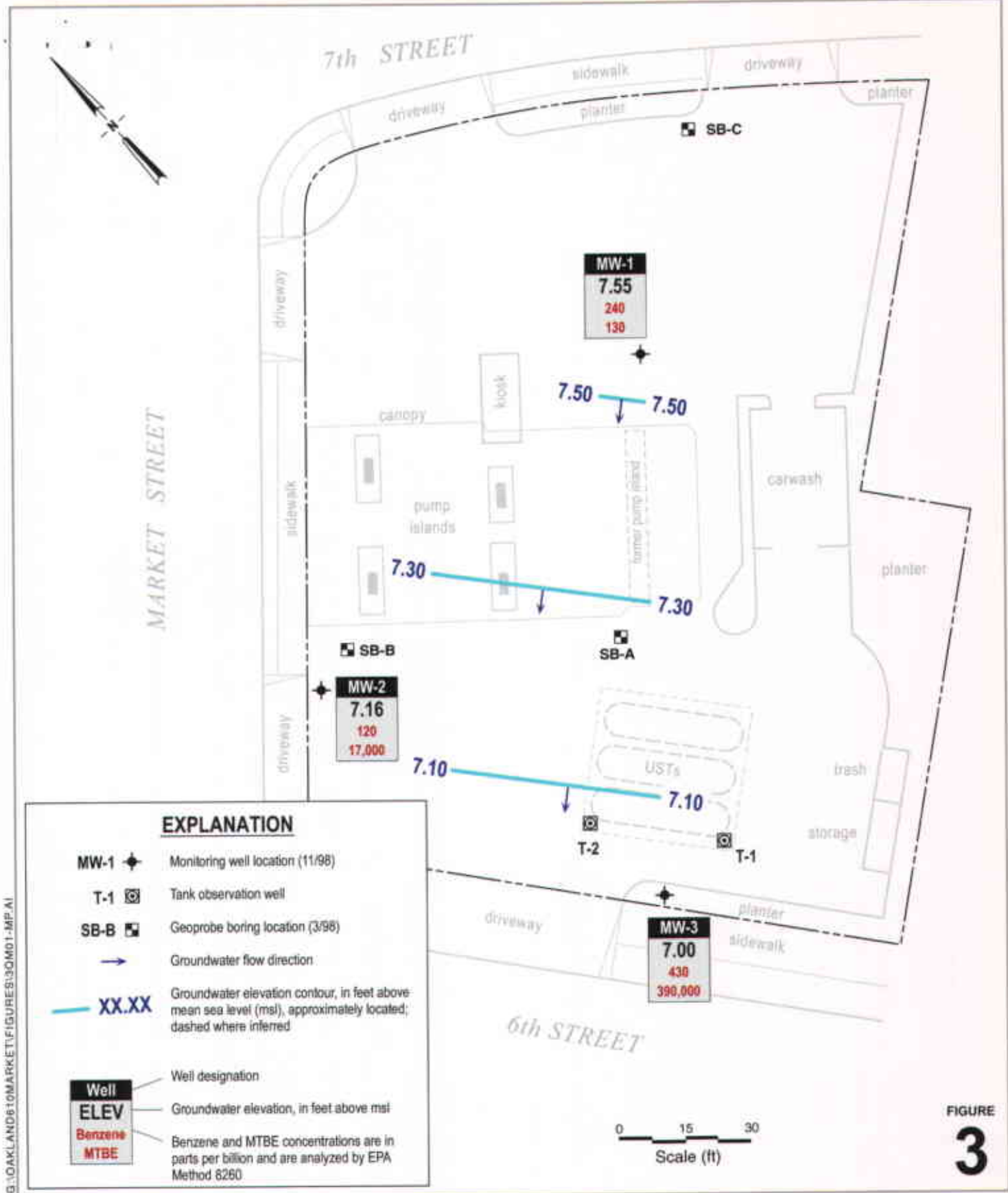


FIGURE 3

Shell-branded Service Station

610 Market Street
 Oakland, California
 Incident #98995750



C A M B R I A

Groundwater Elevation Contour Map

September 12, 2001

Table 1: Groundwater Extraction - Mass Removal Data - Shell-branded Service Station, Incident #98995750, 610 Market Street, Oakland, CA

Date Purged	Well ID	Volume Pumped (gal)	Cumulative Volume Pumped (gal)	Date Sampled	TPPH			Benzene			MTBE		
					TPPH Concentration (ppb)	TPPH Removed (lb)	TPPH Removed To Date (lb)	Benzene Concentration (ppb)	Benzene Removed (lb)	Benzene Removed to Date (lb)	MTBE Concentration (ppb)	MTBE Removed (lb)	MTBE Removed To Date (lb)
03/15/00	MW-2	0	0	03/21/00	<5,000	0.00000	0.00000	94.7	0.00000	0.00000	13,900	0.00000	0.00000
03/22/00	MW-2	100	100	03/21/00	<5,000	0.00209	0.00209	94.7	0.00008	0.00008	13,900	0.01160	0.01160
03/27/00	MW-2	75	175	03/21/00	<5,000	0.00156	0.00365	94.7	0.00006	0.00014	13,900	0.00870	0.02030
04/03/00	MW-2	100	275	03/21/00	<5,000	0.00209	0.00574	94.7	0.00008	0.00022	13,900	0.01160	0.03190
04/17/00	MW-2	200	475	03/21/00	<5,000	0.00417	0.00991	94.7	0.00016	0.00038	13,900	0.02320	0.05509
04/24/00	MW-2	125	600	03/21/00	<5,000	0.00261	0.01252	94.7	0.00010	0.00047	13,900	0.01450	0.06959
05/01/00	MW-2	50	650	03/21/00	<5,000	0.00104	0.01356	94.7	0.00004	0.00051	13,900	0.00580	0.07539
05/15/00	MW-2	75	725	03/21/00	<5,000	0.00156	0.01512	94.7	0.00006	0.00057	13,900	0.00870	0.08409
05/22/00	MW-2	100	825	03/21/00	<5,000	0.00209	0.01721	94.7	0.00008	0.00065	13,900	0.01160	0.09569
05/29/00	MW-2	75	900	03/21/00	<5,000	0.00156	0.01877	94.7	0.00006	0.00071	13,900	0.00870	0.10439
06/05/00	MW-2	617	1,517	03/21/00	<5,000	0.01287	0.03165	94.7	0.00049	0.00120	13,900	0.07156	0.17595
08/17/00	MW-2	665	2,182	06/20/00	101	0.00056	0.03221	5.95	0.00003	0.00123	7,670	0.04256	0.21851
09/13/00	MW-2	429	2,611	06/20/00	101	0.00036	0.03257	5.95	0.00002	0.00125	7,670	0.02746	0.24597
10/27/00*	MW-2	75	2,686	06/20/00	101	0.00006	0.03263	5.95	0.00000	0.00126	7,670	0.00480	0.25077
03/15/00	MW-3	500	500	03/21/00	<25,000	0.01043	0.01043	466	0.00194	0.00194	155,000	0.64669	0.64669
03/22/00	MW-3	100	600	03/21/00	<25,000	0.00782	0.01825	466	0.00039	0.00233	155,000	0.12934	0.77603
03/27/00	MW-3	75	675	03/21/00	<25,000	0.01043	0.02868	466	0.00029	0.00262	155,000	0.09700	0.87303
04/03/00	MW-3	100	775	03/21/00	<25,000	0.02086	0.04954	466	0.00039	0.00301	155,000	0.12934	1.00237
04/17/00	MW-3	200	975	03/21/00	<25,000	0.01304	0.06258	466	0.00078	0.00379	155,000	0.25868	1.26104
04/24/00	MW-3	125	1,100	03/21/00	<25,000	0.01043	0.07301	466	0.00049	0.00428	155,000	0.16167	1.42271
05/01/00	MW-3	100	1,200	03/21/00	<25,000	0.00782	0.08084	466	0.00039	0.00467	155,000	0.12934	1.55205
05/15/00	MW-3	75	1,275	03/21/00	<25,000	0.00522	0.08605	466	0.00029	0.00496	155,000	0.09700	1.64905
05/22/00	MW-3	50	1,325	03/21/00	<25,000	0.00782	0.09387	466	0.00019	0.00515	155,000	0.06467	1.71372
05/29/00	MW-3	75	1,400	03/21/00	<25,000	0.07041	0.16428	466	0.00029	0.00544	155,000	0.09700	1.81073
06/05/00	MW-3	675	2,075	03/21/00	<25,000	0.03744	0.20172	466	0.00262	0.00807	155,000	0.87303	2.68375
08/17/00	MW-3	554	2,629	06/20/00	16,200	0.07489	0.27661	1,140	0.00527	0.01334	579,000	2.67659	5.36034

Table 1: Groundwater Extraction - Mass Removal Data - Shell-branded Service Station, Incident #98995750, 610 Market Street, Oakland, CA

Date Purged	Well ID	Volume Pumped (gal)	Cumulative Volume Pumped (gal)	Date Sampled	TPPH			Benzene			MTBE		
					TPPH Concentration (ppb)	TPPH Removed (lb)	TPPH Removed To Date (lb)	Benzene Concentration (ppb)	Benzene Removed (lb)	Benzene Removed to Date (lb)	MTBE Concentration (ppb)	MTBE Removed (lb)	MTBE Removed To Date (lb)
09/13/00	MW-3	716	3,345	06/20/00	16,200	0.09679	0.37340	1,140	0.00681	0.02015	579,000	3.45927	8.81961
10/27/00*	MW-3	250	3,595	06/20/00	16,200	0.03379	0.40720	1,140	0.00238	0.02253	579,000	1.20785	10.02745
08/22/01	MW-3	90	3,685	06/28/01	<50,000	0.01877	0.42597	1,200	0.00090	0.02343	610,000	0.45811	10.48556
08/28/01	MW-3	600	4,285	06/28/01	<50,000	0.12517	0.55114	1,200	0.00601	0.02944	610,000	3.05403	13.53959
09/05/01	MW-3	750	5,035	06/28/01	<50,000	0.15646	0.70759	1,200	0.00751	0.03695	610,000	3.81754	17.35714
09/18/01	MW-3	1,900	6,935	09/12/01	<20,000	0.15854	0.86614	430	0.00682	0.04376	390,000	6.18317	23.54031
10/10/01	MW-3	500	7,435	09/12/01	<20,000	0.04172	0.90786	430	0.00179	0.04556	390,000	1.62715	25.16745
10/16/01	MW-3	200	7,635	09/12/01	<20,000	0.01669	0.92455	430	0.00072	0.04628	390,000	0.65086	25.81831
Total Gallons Extracted:			10,321	Total Pounds Removed:			0.95718	Total Pounds Removed:			0.04753	26.06908	
				Total Gallons Removed:			0.15691				0.00651	4.20469	

Abbreviations & Notes:

TPPH = Total purgeable hydrocarbons as gasoline

MtBE = Methyl tert-butyl ether

ppb = Parts per billion

lb = Pound

gal = Gallon

* = Groundwater volume pumped estimated; data not available

Mass removed based on the formula: volume extracted (gal) x Concentration (µg/L) x (g/10⁶µg) x (pound/453.6g) x (3.785 L/gal)

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

TPPH and benzene analyzed by EPA Method 8015/8020

MTBE data in bold font analyzed by EPA Method 8260, 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 2: Vapor Extraction - Mass Removal Data - Shell-branded Service Station, Incident #98995750, 610 Market Street, Oakland, California

Date	Well ID	Interval Hours of Operation (hours)	System Flow Rate (CFM)	Hydrocarbon Concentrations			TPHg		Benzene		MTBE	
				TPHg	Benzene	MTBE	TPHg Removal Rate (#/hour)	Cumulative TPHg Removed (#)	Benzene Removal Rate (#/hour)	Cumulative Benzene Removed (#)	MTBE Removal Rate (#/hour)	Cumulative MTBE Removed (#)
				(Concentrations in ppmv)								
03/15/00	MW-2	0	0	NA	NA	NA	0.000	0.000	0.000	0.000	0.000	0.000
04/17/00	MW-2	1.25	0.86	15.9	0.340	519	0.000	0.000	0.000	0.000	0.006	0.008
06/05/00	MW-2	4.00	9.8	1,910	62.7	363	0.250	1.001	0.007	0.030	0.049	0.202
07/07/00	MW-2	4.00	13.7	473	<3.1	42	0.087	1.348	0.000	0.031	0.008	0.234
08/17/00	MW-2	4.00	17	1,799	61	149	0.409	2.983	0.013	0.081	0.035	0.372
09/13/00	MW-2	1.20	38	3,300	<15.7	631	1.676	4.995	0.004	0.085	0.328	0.766
10/27/00	MW-2	1.75	5.8	16.8	0.229	9.29	0.001	4.997	0.000	0.085	0.001	0.767
03/15/00	MW-3	0.22	0.87	3,400	50	410	0.040	0.009	0.001	0.000	0.005	0.001
03/15/00	MW-3	2.75	0.74	3,700	47	410	0.037	0.109	0.000	0.001	0.004	0.012
04/17/00	MW-3	1.25	7.8	246	8.05	2,850	0.026	0.141	0.001	0.002	0.304	0.393
06/05/00	MW-3	4.00	5	2,130	23.0	529	0.142	0.711	0.001	0.008	0.036	0.537
07/07/00	MW-3	4.00	0.8	<2,833	57	3,861	0.015	0.771	0.001	0.010	0.042	0.706
08/17/00	MW-3	4.00	2.8	22,833	346	4,222	0.855	4.190	0.012	0.057	0.162	1.353
09/13/00	MW-3	3.75	34	15,200	<31.4	1,670	6.909	30.097	0.006	0.081	0.777	4.266
10/27/00	MW-3	1.50	6.4	11.7	0.215	9.27	0.001	30.098	0.000	0.081	0.001	4.267
Total Pounds Removed:							TPHg =	35.095	Benzene =	0.167	MTBE =	5.034

Table 2: Vapor Extraction - Mass Removal Data - Shell-branded Service Station, Incident #98995750, 610 Market Street, 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

NA = Not available

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.

Table 3. Groundwater Analytical Data - Oxygenates - Shell-branded Service Station, Incident #98995750, 610 Market Street, Oakland, California

Sample ID	Date Sampled	MTBE	DIPE	ETBE	TAME	TBA	Ethanol
		(Concentrations in ppb)					
MW-2	09/12/01	17,000	<20	<20	28	2,200	<500
MW-3	09/12/01	390,000	<200	<200	500	40,000	<2,000

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

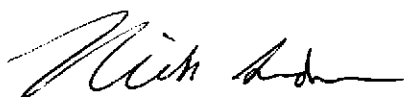
ppb = Parts per billion

ATTACHMENT A
Blaine Groundwater Monitoring Report
and Field Notes

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,

A handwritten signature in black ink, appearing to read "Nick Sudano".

Nick Sudano
Project Coordinator

NS/jt

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

cc: Anni Kreml
Cambria Environmental
1144 65th St. Suite C
Oakland, CA 94608-2411

WELL CONCENTRATIONS
Shell-branded Service Station
610 Market Street
Oakland, CA
WIC #204-5508-5702

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)
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MW-1	12/17/1998	2,200	20	<10	110	420	<50	NA	21.70	13.71	7.99
MW-1	03/09/1999	4,320	25.8	<10.0	338	474	<100	NA	21.70	13.03	8.67
MW-1	06/16/1999	6,150	107	84.0	615	1,050	<250	NA	21.70	13.82	7.88
MW-1	09/29/1999	3,440	97.3	58.7	433	578	89.1	NA	21.70	14.45	7.25
MW-1	12/22/1999	1,370	34.5	4.38	196	49.1	29.3	NA	21.70	15.39	6.31
MW-1	03/21/2000	2,550	10.3	3.36	164	312	65.6	NA	21.70	11.94	9.76
MW-1	06/20/2000	4,770	64.3	18.6	387	732	51.3	NA	21.70	13.15	8.55
MW-1	09/21/2000	7,490	350	229	690	1,490	160	NA	21.70	13.65	8.05
MW-1	11/30/2000	5,410	420	168	494	1,170	167	NA	21.70	14.20	7.50
MW-1	03/06/2001	965	25.7	9.14	13.3	9.12	<25.0	NA	21.70	12.99	8.71
MW-1	06/28/2001	5,900	190	71	360	910	NA	110	21.70	13.98	7.72
MW-1	09/12/2001	7,400	240	110	460	1,300	NA	130	21.70	14.15	7.55

MW-2	12/17/1998	<5,000	<50	<50	<50	<50	11,000	NA	19.61	12.07	7.54
MW-2	03/09/1999	<250	5.20	<2.50	<2.50	<2.50	9,870	NA	19.61	11.46	8.15
MW-2	06/16/1999	<50.0	0.569	<0.500	<0.500	<0.500	3,440	NA	19.61	12.26	7.35
MW-2	09/29/1999	58.6	2.51	0.978	<0.500	<0.500	3,930	NA	19.61	12.51	7.10
MW-2	12/22/1999	<2,000	50.4	<20.0	<20.0	<20.0	15,000	NA	19.61	13.40	6.21
MW-2	03/21/2000	<5,000	94.7	<50.0	<50.0	<50.0	13,900	NA	19.61	10.36	9.25
MW-2	06/20/2000	101	5.95	<0.500	<0.500	0.552	7,670	NA	19.61	11.12	8.49
MW-2	09/21/2000	<2,000	<20.0	<20.0	<20.0	<20.0	4,460	NA	19.61	11.95	7.66
MW-2	11/30/2000	81.1	4.46	0.924	0.841	3.23	3,450	NA	19.61	12.48	7.13
MW-2	03/06/2001	<500	183	<5.00	<5.00	<5.00	14,000	NA	19.61	11.10	8.51
MW-2	06/28/2001	<1,000	<10	<10	<10	<10	NA	4,200	19.61	12.40	7.21
MW-2	09/12/2001	<2,000	120	<20	<20	<20	NA	17,000	19.61	12.45	7.16

WELL CONCENTRATIONS
Shell-branded Service Station
610 Market Street
Oakland, CA
WIC #204-5508-5702

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)
MW-3	12/17/1998	30,000	890	110	2,100	4,300	42,000	43,000	19.05	11.65	7.40
MW-3	03/09/1999	22,700	536	<200	1,030	1,510	35,400	38,500	19.05	11.03	8.02
MW-3	06/16/1999	19,300	625	129	805	1,210	42,400	51,600	19.05	11.89	7.16
MW-3	09/29/1999	20,200	727	155	1,000	1,180	84,100	136,000a	19.05	12.35	6.70
MW-3	12/22/1999	44,500	767	64.4	1,810	2,090	191,000	186,000a	19.05	13.45	5.60
MW-3	03/21/2000	<25,000	466	<250	727	2,280	126,000	155,000	19.05	10.00	9.05
MW-3	06/20/2000	16,200	1,140	98.8	1,140	1,410	579,000	376,000a	19.05	11.15	7.90
MW-3	09/21/2000	<50,000	712	<500	520	795	293,000	298,000	19.05	11.58	7.47
MW-3	11/30/2000	18,000	1,050	124	1,120	2,010	543,000a	403,000a	19.05	12.10	6.95
MW-3	03/06/2001	19,900	1,290	115	1,450	1,760	706,000	149,000	19.05	11.00	8.05
MW-3	06/28/2001	<50,000	1,200	<250	1,100	1,300	NA	610,000	19.05	11.96	7.09
MW-3	09/12/2001	<20,000	430	<200	230	480	NA	390,000	19.05	12.05	7.00

Abbreviations:

TPPH = Total petroleum hydrocarbons as gasoline by EPA Method 8260B; prior to June 28, 2001 analyzed by EPA Method 8015

BTEX = benzene, toluene, ethylbenzene, xylenes by EPA Method 8260B; prior to June 28, 2001 analyzed by EPA Method 8020

MTBE = methyl-tertiary-butyl ether

TOC = Top of Casing Elevation

GW = Groundwater

ug/L = parts per billion

msl = Mean sea level

ft = Feet

<n = Below detection limit

NA = Not applicable

WELL CONCENTRATIONS
Shell-branded Service Station
610 Market Street
Oakland, CA
WIC #204-5508-5702

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)
---------	------	----------------	-------------	-------------	-------------	-------------	------------------------	------------------------	--------------	----------------------------	--------------------------

Notes:

Wells MW-1, MW-2, and MW-3 surveyed December 9, 1998 by Virgil Chavez Land Surveying of Vallejo, California.

a = Sample was analyzed outside the EPA recommended holding time.



Report Number : 22290

Date : 10/2/2001

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

Subject : 3 Water Samples
Project Name : 610 Market Street, Oakland
Project Number : 010912-T2
P.O. Number : 98995750

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,

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

Joel Kiff



Report Number : 22290

Date : 10/2/2001

Project Name : 610 Market Street, Oakland

Project Number : 010912-T2

Sample : MW-1

Matrix : Water

Lab Number : 22290-01

Sample Date :9/12/2001

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	240	1.0	ug/L	EPA 8260B	9/22/2001
Toluene	110	1.0	ug/L	EPA 8260B	9/22/2001
Ethylbenzene	460	2.5	ug/L	EPA 8260B	9/25/2001
Total Xylenes	1300	2.5	ug/L	EPA 8260B	9/25/2001
Methyl-t-butyl ether (MTBE)	130	10	ug/L	EPA 8260B	9/22/2001
TPH as Gasoline	7400	250	ug/L	EPA 8260B	9/25/2001
Toluene - d8 (Surr)	100		% Recovery	EPA 8260B	9/22/2001
4-Bromofluorobenzene (Surr)	93.6		% Recovery	EPA 8260B	9/22/2001

Approved By:  Joel Kiff



Report Number : 22290

Date : 10/2/2001

Project Name : 610 Market Street, Oakland

Project Number : 010912-T2

Sample : MW-2

Matrix : Water

Lab Number : 22290-02

Sample Date : 9/12/2001

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	120	20	ug/L	EPA 8260B	9/19/2001
Toluene	< 20	20	ug/L	EPA 8260B	9/19/2001
Ethylbenzene	< 20	20	ug/L	EPA 8260B	9/19/2001
Total Xylenes	< 20	20	ug/L	EPA 8260B	9/19/2001
Methyl-t-butyl ether (MTBE)	17000	50	ug/L	EPA 8260B	9/21/2001
Diisopropyl ether (DIPE)	< 20	20	ug/L	EPA 8260B	9/19/2001
Ethyl-t-butyl ether (ETBE)	< 20	20	ug/L	EPA 8260B	9/19/2001
Tert-amyl methyl ether (TAME)	28	20	ug/L	EPA 8260B	9/19/2001
Tert-Butanol	2200	200	ug/L	EPA 8260B	9/19/2001
Ethanol	< 500	500	ug/L	EPA 8260B	9/19/2001
TPH as Gasoline	< 2000	2000	ug/L	EPA 8260B	9/19/2001
Toluene - d8 (Surr)	99.3		% Recovery	EPA 8260B	9/19/2001
4-Bromofluorobenzene (Surr)	95.1		% Recovery	EPA 8260B	9/19/2001

Approved By:  Joel Kiff



Report Number : 22290

Date : 10/2/2001

Project Name : 610 Market Street, Oakland

Project Number : 010912-T2

Sample : MW-3

Matrix : Water

Lab Number : 22290-03

Sample Date :9/12/2001

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	430	200	ug/L	EPA 8260B	9/19/2001
Toluene	< 200	200	ug/L	EPA 8260B	9/19/2001
Ethylbenzene	230	200	ug/L	EPA 8260B	9/19/2001
Total Xylenes	480	200	ug/L	EPA 8260B	9/19/2001
Methyl-t-butyl ether (MTBE)	390000	500	ug/L	EPA 8260B	9/21/2001
Diisopropyl ether (DIPE)	< 200	200	ug/L	EPA 8260B	9/19/2001
Ethyl-t-butyl ether (ETBE)	< 200	200	ug/L	EPA 8260B	9/19/2001
Tert-amyl methyl ether (TAME)	500	200	ug/L	EPA 8260B	9/19/2001
Tert-Butanol	40000	2000	ug/L	EPA 8260B	9/19/2001
Ethanol	< 2000	2000	ug/L	EPA 8260B	9/19/2001
TPH as Gasoline	< 20000	20000	ug/L	EPA 8260B	9/19/2001
Toluene - d8 (Surr)	99.2		% Recovery	EPA 8260B	9/19/2001
4-Bromofluorobenzene (Surr)	95.9		% Recovery	EPA 8260B	9/19/2001

Approved By:  Joel Kiff

Report Number : 22290

Date : 10/2/2001

Project Name : **610 Market Street, Oakland**

Project Number : **010912-T2**

22290 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	9/20/2001
Toluene	< 0.50	0.50	ug/L	EPA 8260B	9/20/2001
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	9/20/2001
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	9/20/2001
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	9/20/2001
Diisopropyl ether (DIPE)	< 2.0	2.0	ug/L	EPA 8260B	9/20/2001
Ethyl-t-butyl ether (ETBE)	< 2.0	2.0	ug/L	EPA 8260B	9/20/2001
Tert-amyl methyl ether (TAME)	< 2.0	2.0	ug/L	EPA 8260B	9/20/2001
Tert-Butanol	< 50	50	ug/L	EPA 8260B	9/20/2001
Ethanol	< 500	500	ug/L	EPA 8260B	9/20/2001
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	9/20/2001
Toluene - d8 (Surr)	102		% Recovery	EPA 8260B	9/20/2001
4-Bromofluorobenzene (Surr)	108		% Recovery	EPA 8260B	9/20/2001

Approved By:  Joel Kiff

Report Number : 22290

Date : 10/2/2001

QC Report : Matrix Spike/ Matrix Spike Duplicate

Project Name : 610 Market Street, Oakland

Project Number : 010912-T2

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	22224-04	<0.50	18.6	19.2	17.5	17.9	ug/L	EPA 8260B	9/20/2001	94.2	93.5	0.773	70-130	25
Toluene	22224-04	<0.50	18.6	19.2	17.6	18.0	ug/L	EPA 8260B	9/20/2001	94.7	94.2	0.609	70-130	25
Tert-Butanol	22224-04	<5.0	93.0	95.8	79.4	85.3	ug/L	EPA 8260B	9/20/2001	185.3	89.0	4.28	70-130	25
Methyl-t-Butyl Ether	22224-04	<0.50	18.6	19.2	15.3	15.5	ug/L	EPA 8260B	9/20/2001	182.0	80.8	1.50	70-130	25

Approved By:  Joel Kiff

KIFF ANALYTICAL, LLC

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

Report Number : 22290

Date : 10/2/2001

QC Report : Laboratory Control Sample (LCS)

Project Name : **610 Market Street, Oakland**

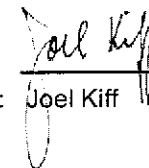
Project Number : **010912-T2**

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
Benzene	19.4	ug/L	EPA 8260B	9/20/2001	94.2	70-130
Toluene	19.4	ug/L	EPA 8260B	9/20/2001	95.2	70-130
Tert-Butanol	96.8	ug/L	EPA 8260B	9/20/2001	90.0	70-130
Methyl-t-Butyl Ether	19.4	ug/L	EPA 8260B	9/20/2001	80.6	70-130

KIFF ANALYTICAL, LLC

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

Approved By: Joel Kiff



LAB: KFFF

EQUIVA Services LLC Chain Of Custody Record

Lab Identification (if necessary):

Address:

City, State, Zip:

Equiva Project Manager to be Invoiced:

- SCIENCE & ENGINEERING
- TECHNICAL SERVICES
- CRMT HOUSTON

Karen Petryna

22290

INCIDENT NUMBER (S&E ONLY)

9 8 9 9 5 7 5 0

SAP or CRMT NUMBER (TS/CRMT)

DATE: 9-12-01

PAGE: 1 of 1

CONSULTANT COMPANY:

Blaine Tech Services

ADDRESS:

1680 Rogers Avenue

CITY:

San Jose, CA 95112

TELEPHONE:

408-573-0555

FAX:

408-673-7771

E-MAIL:

nsudano@blainetesh.com

SITE ADDRESS (Street and City):

610 Market Street, Oakland

PROJECT CONTACT (Report to):

Nick Sudano

CONSULTANT PROJECT NO

BTS# 010912-T2

SAMPLER NAME(S) (Print):

Mike Toll

LAB USE ONLY

TURNAROUND TIME (BUSINESS DAYS):

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

IA - 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 TIME

MATRIX

NO. OF CONT.

TPH - Gas, Purgeable

BTEX

MTBE (8021B - Spab 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

Requisitioned by: (Signature)

[Signature]

Received by: (Signature)

Date:

Time:

Requisitioned by: (Signature)

Received by: (Signature)

Date:

Time:

Requisitioned by: (Signature)

[Signature] Kiff Analytical

Date

091301

Time

1410

DISTRIBUTION: White with final report, Green to File, Yellow and Pink to C&S/d

10/16/00 Revision

WELL GAUGING DATA

Project # D1912-T2 Date 9-12-01 Client 98995750

Site 610 Market, Oakland

Well ID	Well Size (in.)	Sheen / Odor	Depth to Immiscible Liquid (ft.)	Thickness of Immiscible Liquid (ft.)	Volume of Immiscibles Removed (ml)	Depth to water (ft.)	Depth to well bottom (ft.)	Survey Point: TOB or TOC	
MW-1	4					14.15	24.70	↓	
MW-2	4					12.45	19.79		Stinger
MW-3	4					12.05	19.70		Stinger

EQUIVA WELL MONITORING DATA SHEET

BTS #: <u>010912-Te</u>	Site: <u>98995750</u>
Sampler: <u>MT & Sooch</u>	Date: <u>9-12-01</u>
Well I.D.: <u>MW-1</u>	Well Diameter: 2 3 <u>4</u> 6 8 _____
Total Well Depth: <u>24.70</u>	Depth to Water: <u>14.15</u>
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>EVO</u> 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: _____

$$\frac{6.9 \text{ (Gals.)} \times 3}{1 \text{ Case Volume}} = \frac{20.7}{\text{Specified Volumes}} \text{ Gals.}$$
 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
1512	11.2	6.7	845	15.9	7	
		<u>Down to 14'</u>	<u>@</u>		11	
1550	10.7	6.7	920	10		DTW = 13.25

Did well dewater? Yes No Gallons actually evacuated: 11

Sampling Time: 1555 Sampling Date: 9-12-01

Sample I.D.: MW-1 Laboratory: Sequoia Columbia Other KEEF

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

EQUIVA WELL MONITORING DATA SHEET

BTS #: <u>010912-T1</u>	Site: <u>98995750</u>
Sampler: <u>MT & Sooch</u>	Date: <u>9-12-01</u>
Well I.D.: <u>MW-2</u>	Well Diameter: 2 3 <u>4</u> 6 8
Total Well Depth: <u>19.79</u>	Depth to Water: <u>12.45</u>
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>PVC</u> 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: _____

$$4.8 \text{ (Gals.)} \times 3 = 14.4 \text{ Gals.}$$
 I 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
<u>1450</u>	<u>71.7</u>	<u>6.7</u>	<u>775</u>	<u>2.6</u>	<u>5</u>	
<u>1452</u>	<u>71.9</u>	<u>6.7</u>	<u>762</u>	<u>6.2</u>	<u>10</u>	
<u>1454</u>	<u>71.8</u>	<u>6.6</u>	<u>752</u>	<u>4.6</u>	<u>15</u>	
<u>* Removed & Replace Stinger</u>						

Did well dewater? Yes No Gallons actually evacuated: 15

Sampling Time: 1450 1455 Sampling Date: 9-12-01

Sample I.D.: MW-2 Laboratory: Sequoia Columbia Other KIEF

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

EQUIVA WELL MONITORING DATA SHEET

BTS #: D10912-T2	Site: 98995756
Sampler: MT & Soech	Date: 9-12-01
Well I.D.: MW-3	Well Diameter: 2 3 4 6 8 _____
Total Well Depth: 19.70	Depth to Water: 12.05
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: _____

$$5.0 \text{ (Gals.)} \times 3 = 15 \text{ Gals.}$$
 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	
1525	73.1	6.8	554	2.0	5		
1530	72.7	6.7	643	3.5	10	smalls like Gals. foams/white.	
1535	72.5	6.8	559	1.8	15	"	
		NO FILTER NOTICED DURING PURGE.					
		* REMOVED / REPLACED SINGER					

Did well dewater? Yes No Gallons actually evacuated: **15**

Sampling Time: **1535 1540** Sampling Date: **9-12-01**

Sample I.D.: **MW-3** Laboratory: Sequoia Columbia Other **KLEF**

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: