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C A M B R I A

February 4, 2004

Mr. Barney M. Chan
Alameda County Environmental Health Services
UST Local Oversight Program
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

Re: **Fourth Quarter 2003 Monitoring Report**
Former ARCO Service Station
706 Harrison Street
Oakland, California
STID 3749
Cambria Project #230-0116

Alameda County
FEB 09 2004
Environmental Health



Dear Mr. Chan:

On behalf of Mr. Bo K. Gin, Cambria Environmental Technology, Inc. (Cambria) is submitting this *Fourth Quarter 2003 Monitoring Report* for the above-referenced site. Presented in the report are the fourth quarter 2003 activities and results and the anticipated first quarter 2004 activities.

If you have any questions or comments regarding this report, please call me at (510) 420-3314.

Sincerely,
Cambria Environmental Technology, Inc.

Matthew A. Meyers
Senior Staff Geologist

Attachments: Fourth Quarter 2003 Monitoring Report

cc: Mr. Bo K. Gin, 342 Lester Avenue, Oakland, California 94606

**Cambria
Environmental
Technology, Inc.**

5900 Hollis Street
Suite A
Emeryville, CA 94608
Tel (510) 420-0700
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S. MacLeod

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FOURTH QUARTER 2003 MONITORING REPORT

Former ARCO Service Station
706 Harrison Street
Oakland, California
STID 3749
Cambria Project #230-0116



February 4, 2004

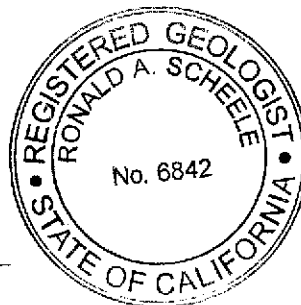
Alameda County
FEB 09 2004
Environmental Section

Prepared for:

Mr. Bo K. Gin
342 Lester Avenue
Oakland, California 94606

Prepared by:

Cambria Environmental Technology, Inc.
5900 Hollis Street, Suite A
Emeryville, California 94608



Matthew A. Meyers
Senior Staff Geologist

Ron Scheele, R.G.
Senior Geologist

FOURTH QUARTER 2003 MONITORING REPORT

Former ARCO Service Station (Bo Gin)
706 Harrison Street
Oakland, California
STID 3749
Cambria Project #230-0116

February 4, 2004



INTRODUCTION

On behalf of Mr. Bo K. Gin, Cambria Environmental Technology, Inc. (Cambria) is submitting this *Fourth Quarter 2003 Monitoring Report* for the above-referenced site. Presented below are the fourth quarter 2003 activities and results and the anticipated first quarter 2004 activities.

FOURTH QUARTER 2003 ACTIVITIES

Monitoring Activities

Field Activities: October 9, 2003, Cambria conducted quarterly monitoring and sampling activities. Cambria gauged groundwater levels in monitoring wells MW-1 through MW-7 (see Figure 1). Groundwater samples were collected from wells MW-1, MW-2, and MW-4 as per the well sampling schedule. Field activities were performed jointly with Aqua Science Engineers, Inc. (Aqua Science), of Danville, California. Aqua Science has been retained by owners of the adjacent lot (a former Shell service station) to perform monitoring and sampling. Field Data Sheets are presented as Appendix A. The well gauging data has been submitted to the Geotracker database. See Appendix D for the electronic delivery confirmation.

Sample Analyses: Groundwater samples were analyzed for total petroleum hydrocarbons as gasoline (TPHg) by modified EPA Method 8015C; benzene, toluene, ethylbenzene, and xylenes (BTEX), and methyl tertiary butyl ether (MTBE) by EPA Method 8021B. Groundwater samples collected from wells MW-2 and MW-4 were analyzed for MTBE by EPA Method 8260B. The laboratory analytical report is included as Appendix B. Groundwater analytical results are shown on Table 1 and summarized on Figure 1. The groundwater analytical results have been submitted to the Geotracker database. See Appendix D for the electronic delivery confirmation.

Monitoring Results

Groundwater Gradient: Based on depth-to-water measurements collected during Cambria and Aqua Science's joint monitoring event on October 9, 2003, groundwater generally flows towards the southwest with a gradient of 0.014 ft/ft with a groundwater depression around well MW-2 (Figure 1). The flow direction and gradient is generally consistent with the previous quarter.


Hydrocarbon Distribution in Groundwater: Hydrocarbon concentrations were detected in wells MW-2 and MW-4. TPHg concentrations were detected in wells MW-2 and MW-4 at 49,000 and 210 micrograms per liter ($\mu\text{g/L}$), respectively. Benzene was detected in these same wells at concentrations of 1,800 and 4.7 $\mu\text{g/L}$, respectively. MTBE was also detected in monitoring wells MW-2 and MW-4 at concentrations of 26 and 10 $\mu\text{g/L}$, respectively. No hydrocarbon or MTBE concentrations were detected in well MW-1. Hydrocarbon concentrations in MW-2 have decreased slightly as compared to the previous quarter. The remaining TPHg and MTBE concentrations in MW-4 are likely related to the historical high TPHg and MTBE concentrations present in upgradient Shell wells MW-1 and MW-5 (see Figure 1 and Appendix E). No MTBE was ever stored or used at the former ARCO service station prior to the USTs being removed in 1991.

ANTICIPATED FIRST QUARTER 2004 ACTIVITIES

Monitoring Activities

Cambria will gauge water levels and collect groundwater samples from wells MW-1 through MW-7. As per Alameda County Department of Environmental Health's letter dated February 25, 2003, the well sampling schedule has been revised so that wells MW-1, MW-2, and MW-4 are sampled on a quarterly basis and wells MW-3, MW-5, MW-6, and MW-7 are sampled on a semi-annual basis during the first and third quarters. Groundwater samples will be analyzed for TPHg by Modified EPA Method 8015C, and BTEX and MTBE by EPA Method 8021B. Samples from MW-2 and MW-4 will also be analyzed for MTBE by EPA Method 8260. Cambria will prepare a groundwater monitoring report summarizing the monitoring activities and results.

Corrective Action Activities



Cambria plans to submit a work plan that will propose the preparation of a site-specific Human Health Risk Assessment based on the collection of post-remediation soil, groundwater, and soil vapor samples from the former 6,000-gallon UST cavity and from the vicinity of MW-2. A comparison of the remaining benzene concentrations in well MW-2 with the Regional Water Quality Control Board's environmental screening levels indicates a potentially unacceptable risk to human health, which warrants collection and evaluation of soil vapor, in addition to soil and groundwater samples. The work plan will also include hydrogeologic cross-sections, hydrocarbon mass estimates, and a subsurface utility survey.

ATTACHMENTS

Figure 1 – Groundwater Elevation Contour and Hydrocarbon Concentration Map

Table 1 – Groundwater Elevations and Analytical Data

Appendix A – Groundwater Monitoring Field Data Sheets









Appendix B – Laboratory Analytical Report

Appendix C – Benzene and MTBE Concentration Graphs

Appendix D – Electronic Delivery Confirmations

Appendix E – Former Shell Station Groundwater Monitoring and Analytical Results

EXPLANATION

-  Monitoring well location
-  Dual SVE/Sparging well
-  SVE well location
-  Shell Monitoring well location
-  12.00 Groundwater elevation contour, dashed where inferred
-  Groundwater flow direction and gradient (ft/ft)
-  Well ID
ELEV
TPHg
Benzene
MTBE
Groundwater elevation, in feet above mean sea level (msl).
TPHg, Benzene and MTBE concentrations are in micrograms per liter (µg/L)
-  NS Not Sampled

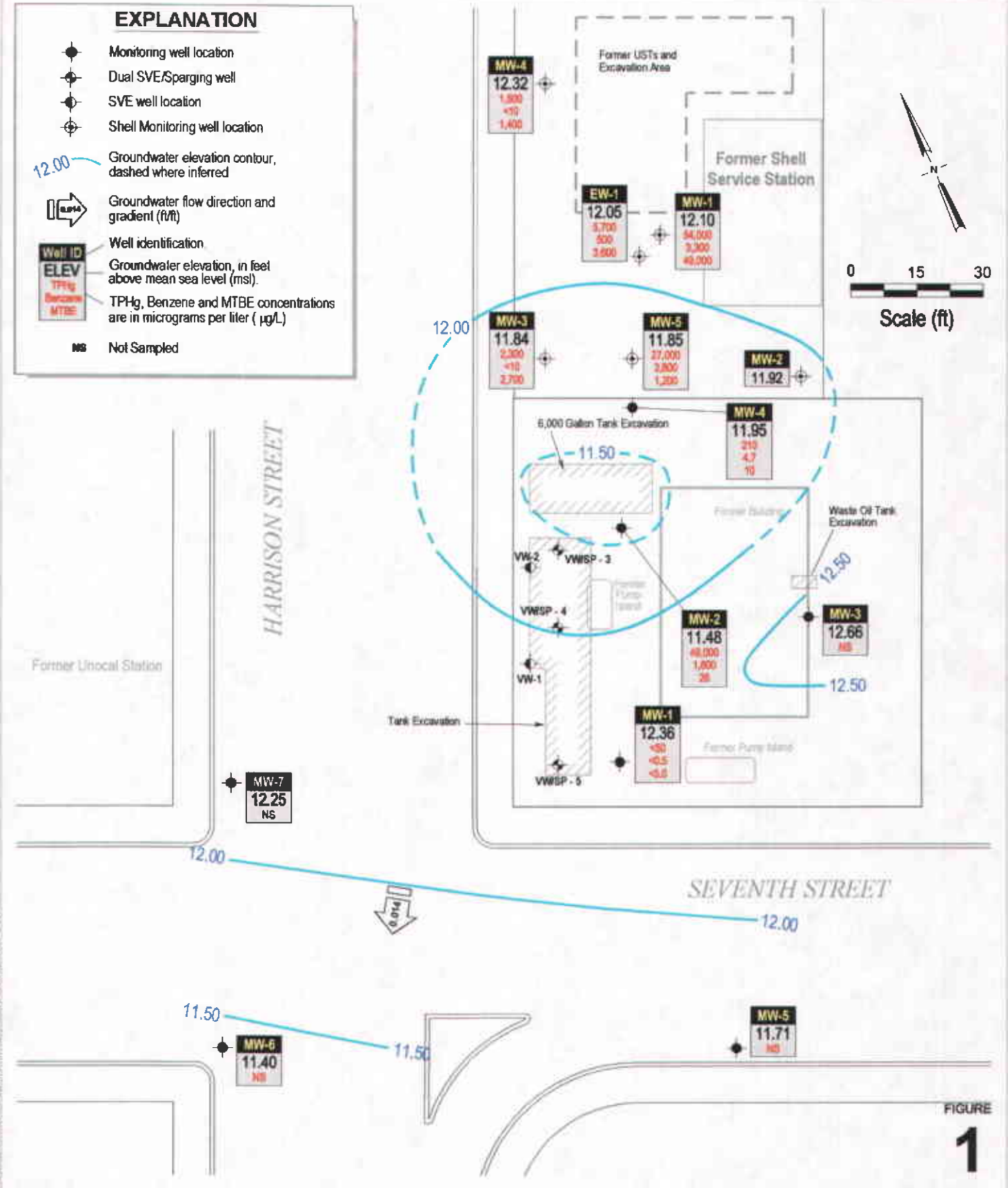


FIGURE 1

Former Arco Station

706 Harrison Street
Oakland, California



Groundwater Elevation Contour and Hydrocarbon Concentration Map

C A M B R I A

October 9, 2003

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Table 1. Groundwater Elevations and Analytical Data: Former ARCO Station - 706 Harrison Street, Oakland, California

Well ID		Depth to	Groundwater								
TOC		Water	Elevation	TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE (8020)	MTBE (8260)	Notes
Sampling Frequency	Date Sampled	(ft)	(ft-msl)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	
MW-1	8/13/1993	17.40	11.75	20,000	8,500	640	280	440	-	-	
29.15	12/14/1993	17.27	11.88	17,000	9,200	1,200	4,400	540	-	-	
Quarterly	4/15/1994	17.00	12.15	9,500	3,600	530	160	280	-	-	
	12/29/1994	16.40	12.75	-	-	-	-	-	-	-	
	7/19/1996	15.83	13.32	17,000	5,200	1,100	330	530	-	-	sheen/odor
	1/27/1997	13.58	15.57	30,000	9,800	1,300	790	880	400	-	b, sheen/odor
	6/18/1997	16.11	13.04	19,000	5,600	1,400	510	770	1,200	800	a, b
	9/18/1997	16.62	12.53	48,000	18,000	4,400	1,000	1,700	<640	-	b
	12/10/1997	15.93	13.22	22,000	4,900	1,300	580	650	460	260	a, b, odor
	2/18/1998	11.56	17.59	16,000	5,000	750	400	780	1,800	-	b
	5/12/1998	13.53	15.62	19,000	4,600	810	450	770	5,500	-	b, c
	8/18/1998	15.19	13.96	12,000	3,600	1,300	300	570	5,100	3,700	a, b
	11/24/1998	15.67	13.48	13,000	3,600	890	330	380	6,100	-	b
	2/4/1999	15.31	13.84	20,000	5,900	830	450	500	4,900	-	b
	5/18/1999	14.95	14.20	23,000	7,000	1,600	520	830	6,100	-	b
	8/27/1999	15.84	13.31	19,000	5,800	1,700	410	710	1,800	2,100	a, b
	11/18/1999	16.39	12.76	20,000	4,900	630	410	580	4,900	3,600	b
	2/29/2000	13.43	15.72	12,000	2,800	24	290	170	3,100	3,400	a
	5/25/2000	15.08	14.07	12,000	2,200	120	330	260	9,100	12,000	a, b
	8/9/2000	16.09	13.06	13,000	2,500	44	310	140	16,000	-	b
	11/9/2000	15.90	13.25	11,000	2,500	140	380	150	11,000	12,000	b
	1/29/2001	16.05	13.10	9,600	3,100	100	77	200	2,600	2,400	b
	4/16/2001	16.90	12.25	3,300	1,200	4.4	2.7	28	900	940	b
	8/14/2001	17.13	12.02	2,000	500	3.4	24	7.8	68	53	a
	10/22/2001	16.11	13.04	220	83	0.63	2.8	<0.5	<10	5.7	a
	2/1/2002	16.93	12.22	640	220	1.7	4.7	0.57	<10	-	a
	5/10/2002	15.09	14.06	230	26	0.97	<0.5	<0.5	<5.0	-	a
	7/8/2002	15.20	13.95	<50	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5	
	10/2/2002	15.70	13.45	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	1/23/2003	15.09	14.06	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	4/29/2003	13.02	16.13	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
26.17	7/18/2003	14.50	11.67	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	10/9/2003	13.81	12.36	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	

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Table 1. Groundwater Elevations and Analytical Data: Former ARCO Station - 706 Harrison Street, Oakland, California

Well ID	TOC	Depth to Water (ft)	Groundwater Elevation (ft-msl)	TPHg (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	MTBE (8020) (µg/L)	MTBE (8260) (µg/L)	Notes	
MW-2		8/13/1993	17.05	13.46	34,000	6,800	10,000	740	3,900	-	-	
30.51		12/14/1993	18.28	12.23	16,000	3,200	4,200	500	1,700	-	-	
Quarterly		4/15/1994	18.10	12.41	23,000	2,500	4,200	470	1,800	-	-	
		12/29/1994	17.40	13.11	-	-	-	-	-	-	-	
		7/19/1996	16.72	13.79	90,000	7,300	14,000	1,600	7,300	-	-	odor
		1/27/1997	14.89	15.62	63,000	7,100	13,000	1,600	7,100	500	-	b, odor
		6/18/1997	17.12	13.39	52,000	5,100	10,000	1,400	6,000	<200	-	b
		9/18/1997	17.63	12.88	110,000	9,400	23,000	2,600	13,000	<890	-	b, sheen/odor
		12/10/1997	16.98	13.53	39,000	2,600	5,300	940	3,900	780	320	b, odor
		2/18/1998	12.61	17.90	85,000	9,000	19,000	2,300	11,000	2,400	-	b
		5/12/1998	14.45	16.06	110,000	9,500	21,000	2,500	12,000	<1,200	-	b
		8/18/1998	16.14	14.37	64,000	6,000	13,000	1,700	7,800	2,000	1,300	a, b
		11/24/1998	16.70	13.81	78,000	5,300	14,000	2,300	11,000	<2,000	-	b, g
		2/4/1999	18.39	12.12	66,000	5,800	16,000	2,600	12,000	3,000	-	b, g
		5/18/1999	15.90	14.61	78,000	6,700	17,000	2,400	10,000	4,300	-	b
		8/27/1999	16.79	13.72	91,000	7,400	17,000	2,300	11,000	1,200	1,000	a, b
		11/18/1999	17.32	13.19	180,000	7,000	20,000	3,300	16,000	<6,000	1,700	b, g
		2/29/2000	14.37	16.14	86,000	5,500	13,000	2,000	9,500	3,500	4,700	a
		5/25/2000	16.01	14.50	110,000	6,300	14,000	2,400	10,000	7,500	6,500	a, b, g
		8/9/2000	17.02	13.49	77,000	5,000	13,000	2,000	8,600	5,900	-	b
		11/9/2000	17.00	13.51	70,000	4,800	12,000	1,900	8,000	9,400	8,300	b
		1/29/2001	18.31	12.20	110,000	8,200	21,000	2,800	13,000	2,500	1,900	b, g
	4/16/2001	18.59	11.92	97,000	7,400	15,000	2,500	12,000	<3,000	<50	b, g	
	8/14/2001	18.74	11.77	97,000	6,200	14,000	2,400	13,000	<250	<50	a, j	
	10/22/2001	18.27	12.24	71,000	5,900	15,000	2,400	12,000	<1,400	150	a	
	2/1/2002	18.05	12.46	1,400	11	88	44	210	<5.0	-	a	
	5/10/2002	17.15	13.36	97,000	4,500	15,000	2,500	12,000	<3,000	-	a, g	
	7/8/2002	15.30	15.21	42,000	2,100	6,500	2,200	8,800	<1,000	65	a	
	10/2/2002	15.89	14.62	70,000	1,700	5,700	1,900	8,300	<1,700	-	a	
	1/23/2003	17.51	13.00	40,000	1,900	7,800	1,200	5,600	<1,000	-	a	
	4/29/2003	15.31	15.20	82,000	2,500	11,000	2,200	9,400	<2,000	-	a	
27.53		7/18/2003	16.84	10.69	57,000	2,100	8,700	2,200	10,000	-	<50	a
		10/9/2003	16.05	11.48	49,000	1,800	7,000	1,700	7,600	<1,500	26	a

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Table 1. Groundwater Elevations and Analytical Data: Former ARCO Station - 706 Harrison Street, Oakland, California

Well ID	TOC	Depth to Water (ft)	Groundwater Elevation (ft-msl)	TPHg (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	MTBE (8020) (µg/L)	MTBE (8260) (µg/L)	Notes
Sampling Frequency	Date Sampled										
MW-3	8/13/1993	17.05	12.72	<50	<0.50	<0.50	<0.50	<1.5	-	-	
29.77	12/14/1993	17.70	12.07	<50	<0.50	<0.50	<0.50	<1.5	-	-	
Semi-annually	4/15/1994	17.40	12.37	<50	<0.5	<0.5	<0.5	<0.5	-	-	
	12/29/1994	16.80	12.97	-	-	-	-	-	-	-	
	7/19/1996	16.28	13.49	<50	<0.5	<0.5	<0.5	<0.5	-	-	
	1/27/1997	13.83	15.94	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	6/18/1997	16.53	13.24	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	9/18/1997	17.07	12.70	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	12/10/1997	16.15	13.62	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	2/18/1998	11.80	17.97	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	5/12/1998	13.85	15.92	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	8/18/1998	15.57	14.20	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	11/24/1998	16.04	13.73	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	2/4/1999	17.80	11.97	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	5/18/1999	15.29	14.48	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	8/27/1999	16.15	13.62	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	11/18/1999	16.77	13.00	-	-	-	-	-	-	-	
	2/29/2000	13.71	16.06	<50	2	<0.5	<0.5	<0.5	<5.0	-	
	5/25/2000	15.46	14.31	-	-	-	-	-	-	-	
	8/9/2000	16.46	13.31	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	11/9/2000	16.25	13.52	-	-	-	-	-	-	-	
	1/29/2001	16.52	13.25	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
4/16/2001	16.95	12.82	-	-	-	-	-	-	-		
8/14/2001	17.11	12.66	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-		
10/22/2001	16.50	13.27	-	-	-	-	-	-	-		
2/1/2002	16.90	12.87	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-		
5/10/2002	15.03	14.74	-	-	-	-	-	-	-		
7/8/2002	14.45	15.32	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-		
10/2/2002	15.03	14.74	-	-	-	-	-	-	-		
1/23/2003	15.48	14.29	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-		
4/29/2003	12.49	17.28	-	-	-	-	-	-	-		
26.79	7/18/2003	14.80	11.99	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	10/9/2003	14.13	12.66	-	-	-	-	-	-	-	

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Table 1. Groundwater Elevations and Analytical Data: Former ARCO Station - 706 Harrison Street, Oakland, California

Well ID		Depth to	Groundwater									
TOC		Water	Elevation	TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE (8020)	MTBE (8260)		
Sampling	Date Sampled	(ft)	(ft-msl)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)		Notes
Frequency												
MW-4	12/16/1994	18.10	13.08	2,500	32	6.5	4.5	17	-	-		
31.18	12/29/1994	17.95	13.23	-	-	-	-	-	-	-		
Quarterly	7/19/1996	17.38	13.80	3,300	520	39	67	60	-	-		
	1/27/1997	15.25	15.93	4,500	860	55	100	91	1,100	-		b
	6/18/1997	17.61	13.57	2,700	700	52	81	76	2,200	2,300		a, b
	9/18/1997	18.01	13.17	3,900	760	38	56	64	<170	-		b
	12/10/1997	17.45	13.73	12,000	1,800	120	210	210	2,900	2,600		a, b
	2/18/1998	13.09	18.09	1,700	210	8	6.7	16	200	-		b
	5/12/1998	14.78	16.40	2,100	300	15	36	34	920	-		b, c
	8/18/1998	16.59	14.59	4,700	1,000	130	110	150	5,200	4,900		a, b
	11/24/1998	17.18	14.00	3,000	810	44	76	94	4,800	-		b
	2/4/1999	18.90	12.28	2,800	770	50	69	69	3,100	-		b
	5/18/1999	16.30	14.88	4,000	780	57	7.7	79	4,800	-		b
	8/27/1999	17.21	13.97	4,100	870	51	74	99	3,300	4,100		a, b
	11/18/1999	17.77	13.41	3,000	760	43	67	65	5,100	5,400		b
	2/29/2000	14.85	16.33	4,600	1,000	64	94	170	4,100	4,600		a
	5/25/2000	16.45	14.73	2,600	540	39	59	41	3,500	5,300		b
	8/9/2000	17.47	13.71	4,400	930	66	98	79	9,400	-		b
	11/9/2000	17.45	13.73	4,200	630	34	54	44	7,800	9,400		b
	1/29/2001	18.90	12.28	3,100	710	34	66	51	9,400	8,000		b
	4/16/2001	19.17	12.01	160	1.2	1.3	<0.5	12	22	20		b
	8/14/2001	19.20	11.98	1,700	190	11	35	13	300	250		b
	10/22/2001	18.95	12.23	1,100	120	3.7	29	7.9	<25	16		a
	2/1/2002	19.05	12.13	2,600	25	43	21	280	<5.0	-		a
	5/10/2002	17.69	13.49	490	3.5	2.0	2.1	2.2	<5.0	-		a
	7/8/2002	15.75	15.43	170	0.51	0.62	1.6	1.2	<5.0	2.0		m
	10/2/2002	16.30	14.88	240	1.7	2.0	2.2	0.88	<5.0	-		a
	1/23/2003	17.74	13.44	<50	0.52	4.1	<0.5	1.9	<5.0	-		
	4/29/2003	15.47	15.71	1,300	75	4.8	21	7.3	130	120		a
28.20	7/18/2003	17.08	11.12	<50	<0.5	<0.5	<0.5	<0.5	-	0.74		a
	10/9/2003	16.25	11.95	210	4.7	0.57	1.6	1.1	<10	10		a

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Table 1. Groundwater Elevations and Analytical Data: Former ARCO Station - 706 Harrison Street, Oakland, California

Well ID		Depth to	Groundwater								
TOC		Water	Elevation	TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE (8020)	MTBE (8260)	Notes
Sampling	Date Sampled	(ft)	(ft-msl)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	
Frequency											
MW-5	12/16/1994	16.07	11.97	<50	1.1	<0.5	<0.5	2.4	-	-	
28.04	12/29/1994	16.10	11.94	-	-	-	-	-	-	-	
Semi-annually	7/19/1996	15.49	12.55	<50	<0.5	<0.5	<0.5	<0.5	-	-	
	1/27/1997	13.60	14.44	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	6/18/1997	15.55	12.49	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	9/18/1997	16.16	11.88	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	12/10/1997	15.41	12.63	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	2/18/1998	10.93	17.11	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	5/12/1998	13.25	14.79	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	8/18/1998	14.75	13.29	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	11/24/1998	15.15	12.89	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	2/4/1999	14.61	13.43	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	5/18/1999	14.15	13.89	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	8/27/1999	15.43	12.61	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	11/18/1999	15.97	12.07	-	-	-	-	-	-	-	
	2/29/2000	13.16	14.88	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	5/25/2000	14.72	13.32	-	-	-	-	-	-	-	
	8/9/2000	15.68	12.36	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	11/9/2000	15.39	12.65	-	-	-	-	-	-	-	
	1/29/2001	15.97	12.07	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	4/16/2001	16.24	11.80	-	-	-	-	-	-	-	
	8/14/2001	17.39	10.65	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	10/22/2001	15.90	12.14	-	-	-	-	-	-	-	
	2/1/2002	16.55	11.49	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	5/10/2002	15.12	12.92	-	-	-	-	-	-	-	
	7/8/2002	15.92	12.12	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	10/2/2002	16.42	11.62	-	-	-	-	-	-	-	
	1/23/2003	14.90	13.14	<50	20	<0.5	<0.5	<0.5	<5.0	-	
	4/29/2003	12.05	15.99	-	-	-	-	-	-	-	
25.07	7/18/2003	14.28	10.79	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	10/9/2003	13.36	11.71	-	-	-	-	-	-	-	

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Table 1. Groundwater Elevations and Analytical Data: Former ARCO Station - 706 Harrison Street, Oakland, California

Well ID		Depth to	Groundwater								
TOC		Water	Elevation	TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE (8020)	MTBE (8260)	Notes
Sampling	Date Sampled	(ft)	(ft-msl)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	
Frequency											
MW-6	12/16/1994	17.74	11.36	-	-	-	-	-	-	-	
29.10	12/29/1994	17.40	11.70	-	-	-	-	-	-	-	
Semi-annually	7/19/1996	16.60	12.50	<50	<0.5	<0.5	<0.5	<0.5	-	-	
	1/27/1997	14.88	14.22	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	6/18/1997	16.73	12.37	51	22	<0.5	<0.5	<0.5	<5.0	-	c
	9/18/1997	17.24	11.86	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	12/10/1997	16.56	12.54	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	2/18/1998	12.93	16.17	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	5/12/1998	14.35	14.75	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	8/18/1998	15.94	13.16	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	11/24/1998	16.46	12.64	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	2/4/1999	18.25	10.85	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	5/18/1999	15.73	13.37	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	8/27/1999	15.64	13.46	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	11/18/1999	17.04	12.06	-	-	-	-	-	-	-	
	2/29/2000	14.55	14.55	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	5/25/2000	15.86	13.24	-	-	-	-	-	-	-	
	8/9/2000	16.80	12.30	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	11/9/2000	16.60	12.50	-	-	-	-	-	-	-	
	1/29/2001	17.00	12.10	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	4/16/2001	17.15	11.95	-	-	-	-	-	-	-	
	8/14/2001	17.30	11.80	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	10/22/2001	17.13	11.97	-	-	-	-	-	-	-	
	2/1/2002	16.57	12.53	70	37	<0.5	<0.5	<0.5	<5.0	-	a
	5/10/2002	15.25	13.85	-	-	-	-	-	-	-	
	7/8/2002	15.79	13.31	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	10/2/2002	16.38	12.72	-	-	-	-	-	-	-	
	1/23/2003	16.03	13.07	<50	21	<0.5	<0.5	<0.5	<5.0	-	
	4/29/2003	14.19	14.91	-	-	-	-	-	-	-	
26.13	7/18/2003	15.47	10.66	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	10/9/2003	14.73	11.40	-	-	-	-	-	-	-	

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Table 1. Groundwater Elevations and Analytical Data: Former ARCO Station - 706 Harrison Street, Oakland, California

Well ID		Depth to	Groundwater								
TOC		Water	Elevation	TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE (8020)	MTBE (8260)	Notes
Sampling Frequency	Date Sampled	(ft)	(ft-msl)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	
MW-7	12/16/1994	17.07	12.60	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
29.67	12/29/1994	17.65	12.02	-	-	-	-	-	-	-	
Semi-annually	7/19/1996	16.44	13.23	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	1/27/1997	15.09	14.58	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	6/18/1997	16.59	13.08	73	<0.5	0.55	<0.5	<0.5	<5.0	-	d
	9/18/1997	17.06	12.61	94	<0.5	<0.5	<0.5	<0.5	<5.0	-	b, f
	12/10/1997	16.58	13.09	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	2/18/1998	12.60	17.07	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	5/12/1998	14.81	14.86	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	8/18/1998	15.67	14.00	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	11/24/1998	16.30	13.37	200	<0.5	<0.5	<0.5	<0.5	<5.0	-	d
	2/4/1999	15.99	13.68	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	5/18/1999	15.42	14.25	200	<0.5	<0.5	<0.5	<0.5	<5.0	-	d
	8/27/1999	16.35	13.32	140	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	11/18/1999	16.81	12.86	--	--	--	--	--	--	-	
	2/29/2000	14.16	15.51	100	<0.5	<0.5	<0.5	<0.5	<5.0	-	f
	5/25/2000	15.54	14.13	--	--	--	--	--	--	-	
	8/9/2000	16.56	13.11	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	11/9/2000	16.45	13.22	-	-	-	-	-	-	-	
	1/29/2001	16.92	12.75	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	4/16/2001	17.03	12.64	-	-	-	-	-	-	-	
	8/14/2001	17.27	12.40	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	10/22/2001	16.95	12.72	-	-	-	-	-	-	-	
	2/1/2002	16.14	13.53	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	5/10/2002	15.30	14.37	-	-	-	-	-	-	-	
	7/8/2002	15.73	13.94	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	10/2/2002	16.24	13.43	-	-	-	-	-	-	-	
	1/23/2003	15.70	13.97	<50	23	<0.5	<0.5	<0.5	<5.0	-	
	4/29/2003	12.68	16.99	-	-	-	-	-	-	-	
26.70	7/18/2003	15.19	11.51	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	10/9/2003	14.45	12.25	-	-	-	-	-	-	-	

CAMBRIA

Table 1. Groundwater Elevations and Analytical Data: Former ARCO Station - 706 Harrison Street, Oakland, California

Well ID	TOC	Depth to Water (ft)	Groundwater Elevation (ft-msl)	TPHg (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	MTBE (8020) (µg/L)	MTBE (8260) (µg/L)	Notes
VW-3	3/6/2003	-	-	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	i
-	3/25/2003	-	-	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	i
VW-4	3/6/2003	-	-	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
-	3/25/2003	-	-	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
Trip Blank	11/9/2000	-	-	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	

Abbreviations and Analyses:

TPHg = Total petroleum hydrocarbons as gasoline by modified EPA Method 8015
 Benzene, ethylbenzene, toluene and xylenes by EPA Method 8020.
 MTBE = Methyl tertiary butyl ether by EPA Method 8020 and/or 8260.
 µg/L = Micrograms per liter
 TOC = Top of casing elevation with respect to mean sea level
 - = not sampled, not analyzed, or not applicable
 Data prior to 12/16/94 provided by previous consultant.
 ft-msl = measured in feet relative to mean sea level
 ft = measured in feet
 Wells were re-surveyed on October 27, 2003 to City of Oakland benchmark 25A.

Notes

a = Analytical laboratory notes that unmodified or weakly modified gasoline is significant.
 b = Analytical laboratory notes that heavier gasoline range compounds are significant.
 c = Analytical laboratory notes that lighter gasoline range compounds are significant.
 d = Analytical laboratory notes that isolated peaks are present.
 f = Analytical laboratory notes hydrocarbons with no recognizable patterns are present.
 g = Analytical laboratory notes lighter than water immiscible sheen is present.
 j = Sample diluted due to high organic content.
 i = Sample contains greater than ~2 vol. % sediment.

APPENDIX A

Groundwater Monitoring Field Data Sheets

Groundwater Monitoring Field Sheet

Well ID	Time	DTP	DTW	Product Thickness	Amount of Product Removed	Casing Diam.	Comment
MW-1	2:50		13.81				
MW-2	2:55		16.05				
MW-3	2:40		14.13				
MW-4	2:45		16.25				
MW-5	2:30		13.36				
MW-6	2:20		14.73				
MW-7	2:10		14.45				

Project Name: Bo Gin

Project Number/Task: 230-0116

Measured By: S. Hill

Date: 10-9-03

WELL SAMPLING FORM

Project Name: Bo Gin	Cambria Mgr: RAS	Well ID: MW-1
Project Number: 230-0116	Date: 10-9-03	Well Yield:
Site Address: 706 Harrison St. Oakland, Ca	Sampling Method: Disposable Bailer	Well Diameter: 2" pvc
		Technician(s): SA
Initial Depth to Water: 13.81	Total Well Depth: 24.20	Water Column Height: 10.39
Volume/ft: 0.16	1 Casing Volume: 1.66	3 Casing Volumes: 4.98
Purging Device: Disposable bailer	Did Well Dewater?: no	Total Gallons Purged: 5
Start Purge Time: 5:00	Stop Purge Time: 5:29	Total Time: 29 mins

1 Casing Volume = Water column height x Volume/ft.

Well Diam.	Volume/ft (gallons)
2"	0.16
4"	0.65
6"	1.47

Time	Casing Volume	Temp. (°C)	pH	Cond. (uS)	Comments
5:10	1.5	19.2	7.29	1038	
5:20	3	19.2	7.13	1070	
5:30	5	19.1	7.15	1125	

Fe = mg/L ORP = mV DO = mg/L

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
MW-1	10-9-03	5:35	BVOA	HCl	TPH, BTEX, MTBE	8015/8020

WELL SAMPLING FORM

Project Name: Bo Gin	Cambria Mgr: RAS	Well ID: MW-2
Project Number: 230-0116	Date: 10-9-03	Well Yield:
Site Address: 706 Harrison St. Oakland, Ca	Sampling Method: Disposable Bailer	Well Diameter: 2" pvc
		Technician(s): SA
Initial Depth to Water: 16.05	Total Well Depth: 25.50	Water Column Height: 9.45
Volume/ft: 0.16	1 Casing Volume: 1.51	3 Casing Volumes: 4.53
Purging Device: Disposable bailer	Did Well Dewater?: NO	Total Gallons Purged: 4.5
Start Purge Time: 4:10	Stop Purge Time: 4:39	Total Time: 29 mins

1 Casing Volume = Water column height x Volume/ ft.

Well Diam.	Volume/ft (gallons)
2"	0.16
4"	0.65
6"	1.47

Time	Casing Volume	Temp. (°C)	pH	Cond. (uS)	Comments
4:20	1.5	19.3	7.24	610	
4:30	3.5	19.1	7.26	695	
4:40	4.5	19.2	7.30	740	

Fe = mg/L ORP = mV DO = mg/L

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
MW-2	10-9-03	4:45	3VOA	HCl	TPH, BTEX MTBE	8015/8020

WELL SAMPLING FORM

Project Name: <u>Bo Gin</u>	Cambria Mgr: <u>RAS</u>	Well ID: <u>MW-4</u>
Project Number: <u>230-0116</u>	Date: <u>10-9-03</u>	Well Yield:
Site Address: <u>706 Harrison St.</u> <u>Oakland, Ca</u>	Sampling Method: <u>Disposable Bailer</u>	Well Diameter: <u>2" pvc</u>
		Technician(s): <u>SA</u>
Initial Depth to Water: <u>16.25</u>	Total Well Depth: <u>25.40</u>	Water Column Height: <u>9.15</u>
Volume/ft: <u>0.16</u>	1 Casing Volume: <u>1.46</u>	3 Casing Volumes: <u>4.39</u>
Purging Device: <u>Disposable bailer</u>	Did Well Dewater?: <u>NO</u>	Total Gallons Purged: <u>5</u>
Start Purge Time: <u>3:30</u>	Stop Purge Time: <u>3:44</u>	Total Time: <u>24mins</u>

1 Casing Volume = Water column height x Volume/ ft.

Well Diam.	Volume/ft (gallons)
2"	0.16
4"	0.65
6"	1.47

Time	Casing Volume	Temp. (°C)	pH	Cond. (uS)	Comments
<u>3:35</u>	<u>1.5</u>	<u>19.1</u>	<u>7.21</u>	<u>3999</u>	
<u>3:40</u>	<u>3</u>	<u>18.9</u>	<u>7.28</u>	<u>1040</u>	
<u>3:45</u>	<u>5</u>	<u>18.9</u>	<u>7.30</u>	<u>1137</u>	

Fe = mg/L ORP = mV DO = mg/L

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
<u>MW-4</u>	<u>10-9-03</u>	<u>3:50</u>	<u>BVOA</u>	<u>HCl</u>	<u>TPH, BTEX MTBE</u>	<u>8015/8020</u>

McCAMPBELL ANALYTICAL INC.

110 2nd AVENUE SOUTH #D7
PACHECO, CA 94553-5560

Telephone: (925) 798-1620

Fax: (925) 798-1622

FILE COPY

CHAIN OF CUSTODY RECORD

TUE WED THU FRI SAT SUN

EDF Required? Yes No
RUSH 24 HOUR 48 HOUR 5 DAY

Report To: Matt Meyers Bill To: Cambria Env. Tech
Company: Cambria Environmental Technology Inc.
5900 Hollis Street
Emeryville, CA 94608 E-mail:
Tele: 510-420-3314 Fax: 510-420-9170
Project #: 230-0116/137 Project Name: BoGin
Project Location: 706 Harrison St. Oakland, CA
Sampler Signature: [Signature]

Analysis Request Other Comments

SAMPLE ID (Field Point Name)	LOCATION	SAMPLING		# Containers	Type Containers	MATRIX					METHOD PRESERVED							
		Date	Time			Water	Soil	Air	Sludge	Other	Ice	HCl	HNO ₃	Other				
MW-1		10-9-03	5:35	3	Voa	X					X	X						
MW-2		10-9-03	4:45	3	Voa	X					X	X						
MW-4		10-9-03	3:50	3	Voa	X					X	X						

BTEX & TPH as Gas (602/8020 + 8015) MTBE	
TPH as Diesel (8015)	
Total Petroleum Oil & Grease (5520 E&F/B&F)	
Total Petroleum Hydrocarbons (418.1)	
EPA 601 / 8010	
BTEX ONLY (EPA 602 / 8020)	
EPA 608 / 8080	
EPA 608 / 8080 PCB's ONLY	
EPA 624 / 8240 / 8260	
EPA 625 / 8270	
PAH's / PNA's by EPA 625 / 8270 / 8310	
CAM-17 Metals	
LUFT 5 Metals	
Lead (7240/7421/239.2/6010)	
RCI	

MW-2 & MW-4 MTBE by 8260
MW-1 confirm MTBE kits
by 8260

Relinquished By: [Signature] Date: 10-9-03 Time: 6:10 Received By: secure location
Relinquished By: _____ Date: _____ Time: _____ Received By: _____
Relinquished By: _____ Date: _____ Time: _____ Received By: _____

Remarks:

APPENDIX B

Laboratory Analytical Report



McC Campbell Analytical Inc.

110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
<http://www.mcccampbell.com> E-mail: main@mcccampbell.com

Cambria Env. Technology 5900 Hollis St, Suite A Emeryville, CA 94608	Client Project ID: #230-0116/137; BoGin	Date Sampled: 10/09/03
		Date Received: 10/14/03
	Client Contact: Matt Meyers	Date Reported: 10/17/03
	Client P.O.:	Date Completed: 10/17/03

WorkOrder: 0310207

October 17, 2003

Dear Matt:

Enclosed are:

- 1). the results of 3 analyzed samples from your #230-0116/137; BoGin project,
- 2). a QC report for the above samples
- 3). a copy of the chain of custody, and
- 4). a bill for analytical services.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits.

If you have any questions please contact me. McC Campbell Analytical Laboratories strives for excellence in quality, service and cost. Thank you for your business and I look forward to working with you again.

Yours truly,

Angela Rydelius, Lab Manager



McC Campbell Analytical Inc.

110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
 Telephone : 925-798-1620 Fax : 925-798-1622
 http://www.mcccampbell.com E-mail: main@mcccampbell.com

Cambria Env. Technology 5900 Hollis St, Suite A Emeryville, CA 94608	Client Project ID: #230-0116/137; BoGin	Date Sampled: 10/09/03
		Date Received: 10/14/03
	Client Contact: Matt Meyers	Date Extracted: 10/16/03-10/17/03
	Client P.O.:	Date Analyzed: 10/16/03-10/17/03

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE*

Extraction method: SW5030B

Analytical methods: SW8021B/8015Cm

Work Order: 0310207

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS
001A	MW-1	W	ND	ND	ND	ND	ND	ND	1	104
002A	MW-2	W	49,000,a	ND<1500	1800	7000	1700	7600	20	106
003A	MW-4	W	210,a	ND<10	4.7	0.57	1.6	1.1	1	107

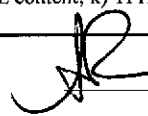
Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	50	5.0	0.5	0.5	0.5	0.5	1	µg/L
	S	NA	NA	NA	NA	NA	NA	1	mg/Kg

* water and vapor samples and all TCLP & SPLP extracts are reported in ug/L, soil/sludge/solid samples in mg/kg, wipe samples in µg/wipe, product/oil/non-aqueous liquid samples in mg/L.

cluttered chromatogram; sample peak coelutes with surrogate peak.

+The following descriptions of the TPH chromatogram are cursory in nature and McC Campbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds having broad chromatographic peaks are significant; biologically altered gasoline?; e) TPH pattern that does not appear to be derived from gasoline (stoddard solvent / mineral spirit?); f) one to a few isolated non-target peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~2 vol. % sediment; j) reporting limit raised due to high MTBE content; k) TPH pattern that does not appear to be derived from gasoline (aviation gas). m) no recognizable pattern.

DHS Certification No. 1644

 Angela Rydelius, Lab Manager



McC Campbell Analytical Inc.

110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
http://www.mcccampbell.com E-mail: rmain@mcccampbell.com

Cambria Env. Technology
5900 Hollis St, Suite A
Emeryville, CA 94608

Client Project ID: #230-0116/137; BoGin

Date Sampled: 10/09/03

Date Received: 10/14/03

Client Contact: Matt Meyers

Date Extracted: 10/14/03

Client P.O.:

Date Analyzed: 10/14/03

Methyl tert-Butyl Ether*

Extraction method: SW5030B

Analytical methods: SW8260B

Work Order: 0310207

Lab ID	Client ID	Matrix	Methyl-t-butyl ether (MTBE)	DF	% SS
002B	MW-2	W	26	50	103
003B	MW-4	W	10	1	104

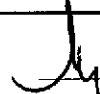
Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	0.5	µg/L
	S	NA	NA

* water and vapor samples and all TCLP & SPLP extracts are reported in µg/L, soil/sludge/solid samples in µg/kg, wipe samples in µg/wipe, product/oil/non-aqueous liquid samples in mg/L.

ND means not detected above the reporting limit; N/A means analyte not applicable to this analysis.

surrogate diluted out of range or surrogate coelutes with another peak.

h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~2 vol. % sediment; j) sample diluted due to high organic content.

 Angela Rydelius, Lab Manager



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QC SUMMARY REPORT FOR SW8021B/8015Cm

Matrix: W

WorkOrder: 0310207

EPA Method: SW8021B/8015Cm		Extraction: SW5030B		BatchID: 8932		Spiked Sample ID: 0310226-023A				
	Sample	Spiked	MS*	MSD*	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	Low	High
TPH(btex) [£]	ND	60	99.2	102	2.61	108	111	2.79	70	130
MTBE	ND	10	106	103	2.94	109	110	0.362	70	130
Benzene	ND	10	94.2	101	6.72	106	107	1.38	70	130
Toluene	ND	10	96	102	6.52	97.4	102	4.51	70	130
Ethylbenzene	ND	10	99.1	105	5.92	108	109	0.533	70	130
Xylenes	ND	30	100	110	9.52	100	99.7	0.334	70	130
%SS:	104	100	96.3	97.7	1.40	102	103	0.934	70	130

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:
 NONE

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = $100 * (MS - Sample) / (Amount Spiked)$; RPD = $100 * (MS - MSD) / (MS + MSD) * 2$.

* MS and / or MSD spike recoveries may not be near 100% or the RPDs near 0% if: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) if that specific sample matrix interferes with spike recovery.

£ TPH(btex) = sum of BTEX areas from the FID.

cluttered chromatogram; sample peak coelutes with surrogate peak.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.



McC Campbell Analytical Inc.

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QC SUMMARY REPORT FOR SW8260B

Matrix: W

WorkOrder: 0310207

EPA Method: SW8260B	Extraction: SW5030B		BatchID: 8921			Spiked Sample ID: 0310193-004C				
	Sample	Spiked	MS*	MSD*	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	Low	High
Methyl-t-butyl ether (MTBE)	ND	10	105	107	2.51	113	115	1.08	70	130
%SS1:	109	100	104	104	0	101	100	3.38	70	130

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:
 NONE

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = $100 * (MS - Sample) / (Amount Spiked)$; RPD = $100 * (MS - MSD) / (MS + MSD) * 2$.

* MS and / or MSD spike recoveries may not be near 100% or the RPDs near 0% if: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) if that specific sample matrix interferes with spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

Laboratory extraction solvents such as methylene chloride and acetone may occasionally appear in the method blank at low levels.

McC Campbell Analytical Inc.



110 Second Avenue South, #D7
 Pacheco, CA 94553-5560
 (925) 798-1620

CHAIN-OF-CUSTODY RECORD

WorkOrder: 0310207

Client:

Cambria Env. Technology
 5900 Hollis St, Suite A
 Emeryville, CA 94608

TEL: (510) 420-0700
 FAX: (510) 420-3394
 ProjectNo: #230-0116/137; BoGin
 PO:

Date Received: 10/14/03
Date Printed: 10/14/03

Sample ID	ClientSampID	Matrix	Collection Date	Hold	Requested Tests		
					<>	SW8021B/8015Cm	SW8260B
0310207-001	MW-1	Water	10/9/03 5:35:00	<input type="checkbox"/>	A	A	
0310207-002	MW-2	Water	10/9/03 4:45:00	<input type="checkbox"/>		A	B
0310207-003	MW-4	Water	10/9/03 3:50:00	<input type="checkbox"/>		A	B

Prepared by: Maria Venegas

Comments:

NOTE: Samples are discarded 60 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense.

0310207

McCAMPBELL ANALYTICAL INC.

110 2nd AVENUE SOUTH, #D7
PACHECO, CA 94553-5560

Telephone: (925) 798-1620

Fax: (925) 798-1622

CHAIN OF CUSTODY RECORD

TURN AROUND TIME:

RUSH 24 HOUR 48 HOUR 5 DAY

EDF Required? Yes No

Report To: Matt Meyer S Bill To: Cambria Env. Tech

Company: Cambria Environmental Technology Inc.

5900 Hollis Street

Emeryville, CA 94608

E-mail:

Tele: 510-420-3314

Fax: 510-420-9170

Project #: 230-0116/137

Project Name: BoGin

Project Location: 706 Harrison St. Oakland, CA

Sampler Signature: [Signature]

Analysis Request

Other

Comments

SAMPLE ID (Field Point Name)	LOCATION	SAMPLING		# Containers	Type Containers	MATRIX					METHOD PRESERVED									
		Date	Time			Water	Soil	Air	Sludge	Other	Ice	HCl	HNO ₃	Other						
MW-1		10-9-03	5:35	3	Voa	X					X	X								
MW-2		10-9-03	4:45	3	Voa	X					X	X								
MW-4		10-9-03	3:50	3	Voa	X					X	X								

BTEX & TPH as Gas (602/8020 + 8015) MTBE	
TPH as Diesel (8015)	
Total Petroleum Oil & Grease (5320 E&F/B&F)	
Total Petroleum Hydrocarbons (418.1)	
EPA 601 / 8010	
BTEX ONLY (EPA 602 / 8020)	
EPA 608 / 8080	
EPA 608 / 8080 PCB's ONLY	
EPA 624 / 8240 / 8260	<u>MTBE Only</u>
EPA 625 / 8270	
PAH's / PNA's by EPA 625 / 8270 / 8310	
CAM-17 Metals	
LUFT 5 Metals	
Lead (7240/7421/239.2/6010)	
RCI	

MW-2 & MW-4 MTBE by 8260
MW-1 confirm MTBE kits
by 8260

Relinquished By: <u>[Signature]</u>	Date: <u>10-9-03</u>	Time: <u>6:10</u>	Received By: <u>secure location</u>
Relinquished By: <u>[Signature]</u>	Date: <u>10/14/03</u>	Time: <u>8:00</u>	Received By: <u>[Signature]</u>
Relinquished By:	Date:	Time:	Received By:

Remarks:

ICE? GOOD CONDITION HEAD SPACE ABSENT DECHLORINATED IN LAB PRESERVATION

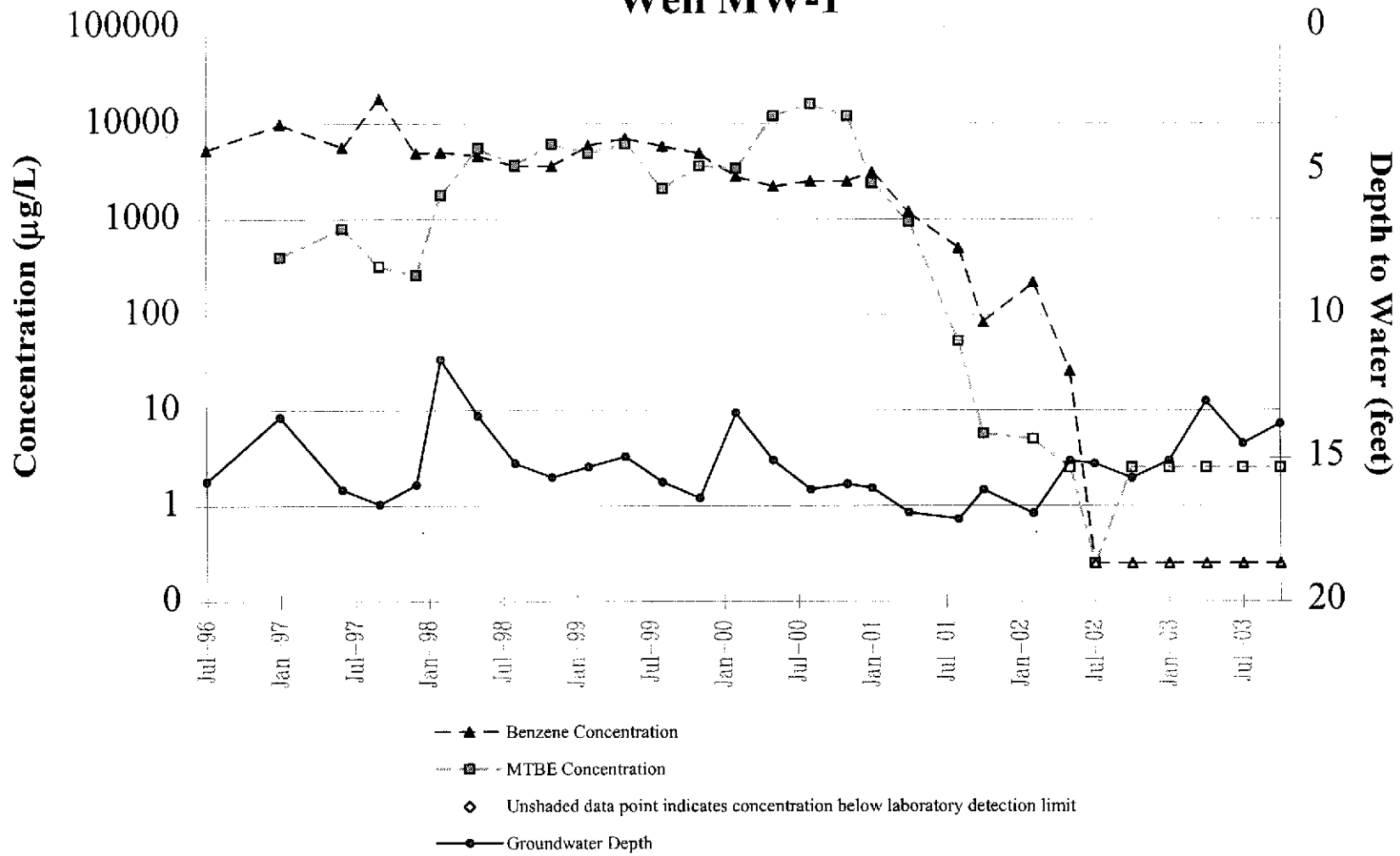
APPROPRIATE CONTAINERS PRESERVED IN LAB

VOAS ORG METALS OTHER

APPENDIX C

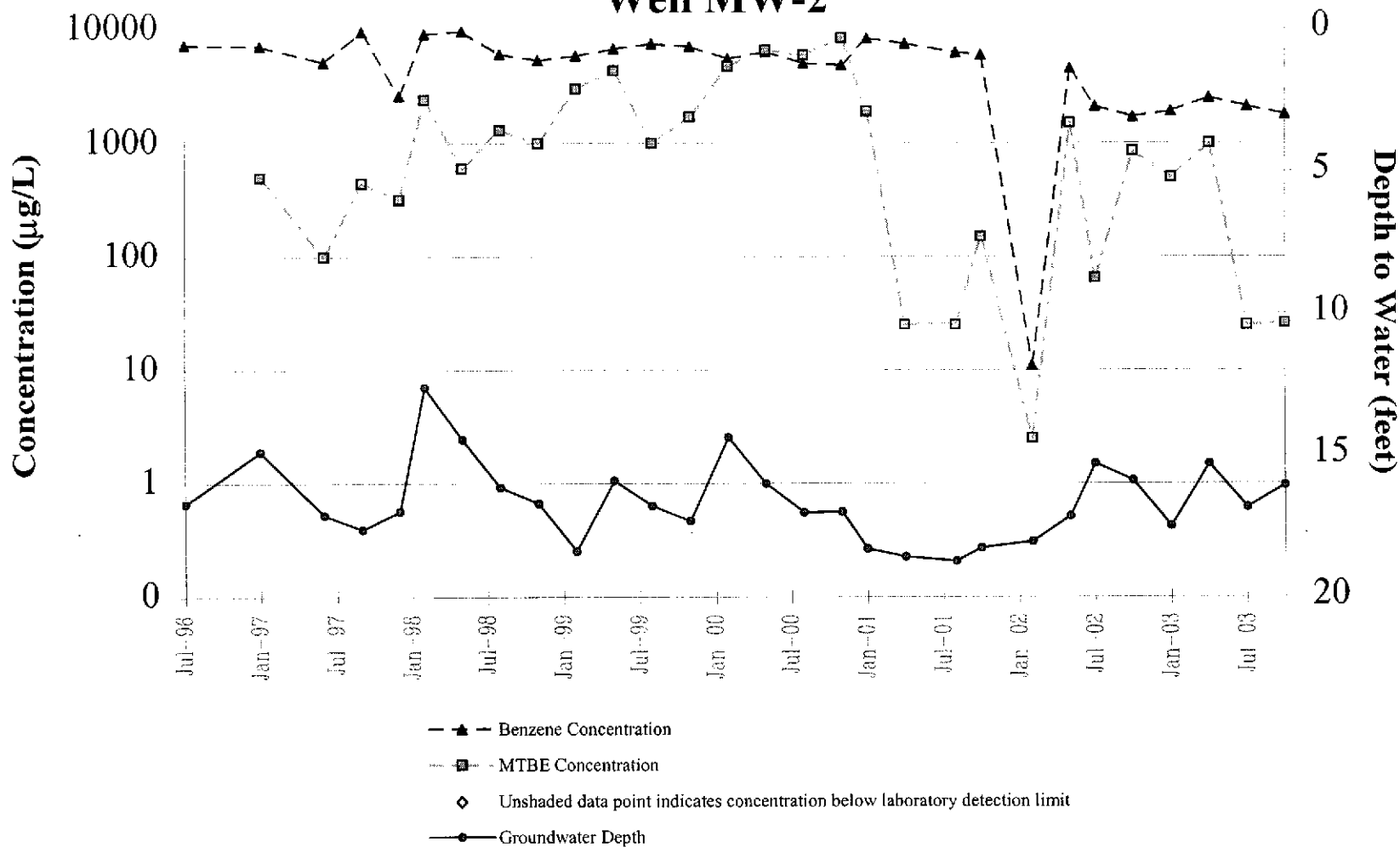
Benzene and MTBE Concentration Graphs

Benzene and MTBE Concentration Trends Well MW-1



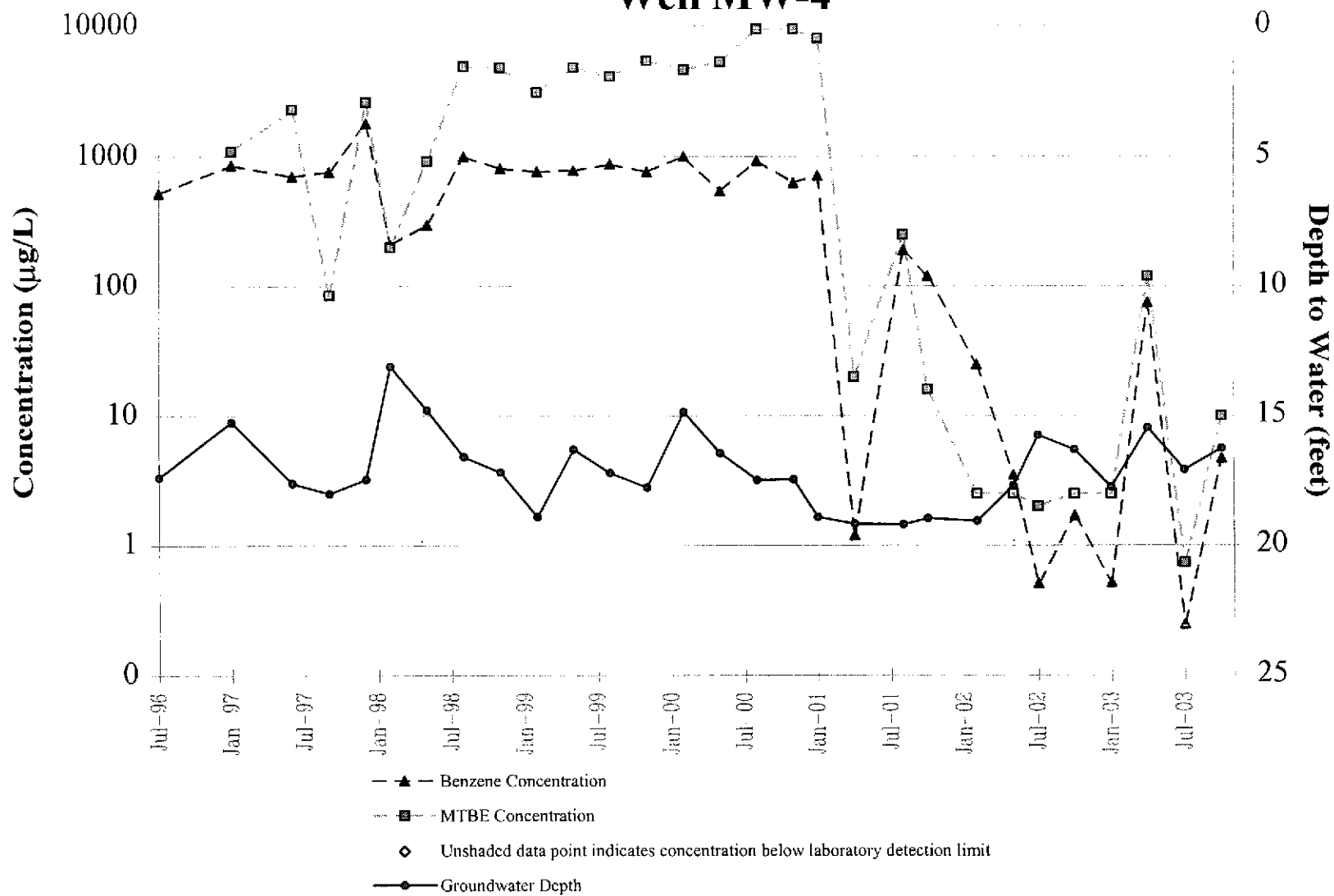
Benzene and MTBE Concentration Trends

Well MW-2



Benzene and MTBE Concentration Trends

Well MW-4



APPENDIX D

Electronic Delivery Confirmations

AB2886 Electronic Delivery

[Main Menu](#) | [View/Add Facilities](#) | [Upload EDD](#) | [Check EDD](#)

Your EDF file has been successfully uploaded!

Confirmation Number: 8503265678

Date/Time of Submittal: 12/29/2003 2:25:15 PM

Facility Global ID: T0600100985

Facility Name: OAKLAND AUTO PARTS

Submittal Title: 4th Qtr 2003, GW Analytical Data

Submittal Type: GW Monitoring Report

Logged in as CAMBRIA-EM (AUTH_RP)

CONTACT SITE [ADMINISTRATOR](#)

AB2886 Electronic Delivery

[Main Menu](#) | [View/Add Facilities](#) | [Upload EDD](#) | [Check EDD](#)

UPLOADING A GEO_WELL FILE

**Processing is complete. No errors were found!
Your file has been successfully submitted!**

Submittal Title: 4th Qtr 2003, GW Depth Data for 706 Harrison St.,
Oakland

Submittal Date/Time: 12/29/2003 2:28:13 PM

**Confirmation
Number:** 1108418107

[Back to Main Menu](#)

Logged in as CAMBRIA-EM (AUTH_RP)

[CONTACT SITE ADMINISTRATOR](#)

APPENDIX E

Former Shell Station Groundwater Monitoring and Analytical Results

TABLE ONE
Groundwater Elevation Data
Former Chan's Shell Station
726 Harrison St., Oakland, CA

Well ID	Date of Measurement (Relative to Mean Sea Le	Top of Casing Elevation (Relative to Mean Sea Le	Depth to Water (feet)	Groundwater Elevation project data
MW-1	12/15/1998	31.95*	17.32	14.63
	3/4/1999		15.52	16.43
	6/17/1999		16.9	15.05
	8/27/1999		17.39	14.56
	12/9/1999		18.03	13.92
	3/7/2000		15.11	16.84
	6/7/2000		16.66	15.29
	10/11/2000		18.08	13.87
	1/18/2001		17.96	13.99
	4/5/2001		16.35	15.60
	7/17/2001		16.94	15.01
	10/5/2001	28.98	17.35	11.63
	1/18/2002		15.40	13.58
	4/11/2002		15.76	13.22
	7/8/2002		16.17	12.81
	10/9/2002		16.72	12.26
	1/29/2003		16.26	12.72
	4/11/2003		16.56	12.42
	7/18/2003		16.42	12.56
10/9/2003			16.88	12.10
MW-2	12/15/1998	32.40*	18.03	14.37
	3/4/1999		16.11	16.29
	6/17/1999		17.72	14.68
	8/27/1999	Inaccessible		
	12/9/1999	Inaccessible		
	3/7/2000	Inaccessible		
	6/7/2000		17.67	14.73
	10/11/2000		18.91	13.49
	1/18/2001		18.66	13.74
	4/5/2001		16.97	15.43
	7/17/2001		17.54	14.86
10/5/2001	29.44	17.98	11.46	

TABLE ONE
Groundwater Elevation Data
Former Chan's Shell Station
726 Harrison St., Oakland, CA

Well ID	Date of Measurement (Relative to Mean Sea Le	Top of Casing Elevation	Depth to Water (feet)	Groundwater Elevation project data
	1/18/2002		15.87	13.57
	4/11/2002		16.36	13.08
	7/8/2002		16.72	12.72
	10/9/2002		17.33	12.11
	1/29/2003		16.82	12.62
	4/11/2003		17.15	12.29
	7/18/2003		17.05	12.39
	10/9/2003		17.52	11.92
MW-3	12/15/1998	31.61*	17.26	14.35
	3/4/1999		15.47	16.14
	6/17/1999		16.92	14.69
	8/27/1999		17.40	14.21
	12/9/1999		18.01	13.60
	3/7/2000		16.15	15.46
	6/7/2000		16.85	14.76
	10/11/2000		18.07	13.54
	1/18/2001		17.89	13.72
	4/5/2001		16.21	15.40
	7/17/2001		16.90	14.71
	10/5/2001	28.64	17.32	11.32
	1/18/2002		15.35	13.29
	4/11/2002		15.82	12.82
	7/8/2002		16.15	12.49
	10/9/2002		16.67	11.97
	1/29/2003		16.19	12.45
	4/11/2003		16.49	12.15
	7/18/2003		16.42	12.22
	10/9/2003		16.80	11.84

TABLE ONE
Groundwater Elevation Data
Former Chan's Shell Station
726 Harrison St., Oakland, CA

Well ID	Date of Measurement	Top of Casing Elevation (Relative to Mean Sea Level)	Depth to Water (feet)	Groundwater Elevation project data
MW-4	12/15/1998	32.53*	17.59	14.94
	3/4/1999		15.88	16.65
	6/17/1999		17.14	15.39
	8/27/1999		17.65	14.88
	12/9/1999		18.28	14.25
	3/7/2000		15.41	17.12
	6/7/2000		17.09	15.44
	10/11/2000		18.33	14.20
	1/18/2001		18.23	14.30
	4/5/2001		16.69	15.84
	7/17/2001		17.32	15.21
	10/5/2001	29.58	17.71	11.87
	1/18/2002		15.85	13.73
	4/11/2002		16.14	13.44
	7/8/2002		16.56	13.02
	10/9/2002		17.09	12.49
	1/29/2003		16.65	12.93
	4/11/2003		16.93	12.65
7/18/2003		16.78	12.80	
	10/9/2003		17.26	12.32
MW-5	8/29/2001	29.06	17.42	11.64
	1/18/2002		15.68	13.38
	4/11/2002		16.17	12.89
	7/8/2002		16.51	12.55
	10/9/2002		17.10	11.96
	1/29/2003		16.58	12.48
	4/11/2003		16.87	12.19
	7/18/2003		16.77	12.29
	10/9/2003		17.21	11.85

TABLE ONE
Groundwater Elevation Data
Former Chan's Shell Station
726 Harrison St., Oakland, CA

Well ID	Date of Measurement	Top of Casing Elevation (Relative to Mean Sea Level)	Depth to Water (feet)	Groundwater Elevation project data
EW-1	1/18/2002	28.89	15.35	13.54
	4/11/2002		15.73	13.16
	7/8/2002		16.13	12.76
	10/9/2002		16.70	12.19
	1/29/2003		16.20	12.69
	4/11/2003		16.52	12.37
	7/18/2003		16.38	12.51
	10/9/2003		16.84	12.05

* Top of casing elevation relative to arbitrary project datum

TABLE THREE
Certified Analytical Results for GROUNDWATER Samples
Former Chan's Shell Station
726 Harrison St., Oakland, CA
All results are in parts per billion (ppb)

Well ID & Dates Sampled	TPH-G	Benzene	Toluene	Ethyl- benzene	Total Xylenes	MTBE
MW-1						
7/3/1997	18,000	2,700	350	450	900	7,400
12/5/1998	18,000	1,500	270	260	560	14,000
3/4/1999	44,000	2,800	400	440	960	43,000
6/17/1999	33,000	2,200	250	460	660	25,000
8/27/1999	6,000	1,000	97	190	230	14,000/ 16,000*
12/9/1999	15,000	1,500	160	220	420	17,000
3/7/2000	9,300	1,500	210	66	530	12,000
6/7/2000	26,000**	1,700	< 250	360	580	30,000
10/11/2000	13,000**	1,600	< 100	140	160	19,000
1/18/2001	14,000**	450	< 100	110	230	9,600
4/5/2001	38,000	2,200	180	290	590	35,000
7/17/2001	35,000**	1,800	< 100	300	170	35,000
10/5/2001	17,000	1,500	210	420	790	27,000
1/18/2002	18,000	1,500	120	160	220	22,000
4/11/2002	41,000	2,700	210	340	380	30,000
7/8/2002	36,000	2,800	140	360	300	31,000
10/9/2002	30,000	1,700	310	< 100	< 100	19,000
1/29/2003	26,000	2,400	< 100	310	520	20,000
4/11/2003	22,000	1,700	< 100	270	580	16,000
7/18/2003	40,000	3,200	290	480	830	39,000
10/9/2003	54,000**	3,300	< 130	350	310	49,000
MW-2						
12/5/1998	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 5
3/4/1999		Inaccessible due to car parked over well				
6/17/1999	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 5
8/27/1999		Inaccessible due to car parked over well				
12/9/1999		Inaccessible due to car parked over well				
3/7/2000		Inaccessible due to car parked over well				
6/7/2000	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0
10/11/2000	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0
1/18/2001	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0
4/5/2001	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0
7/17/2001		No Longer Sampled				
MW-3						
12/5/1998	6,500***	< 50	50	60	50	3,900
3/4/1999	2,800	< 25	< 25	< 25	< 25	1,600
6/17/1999	1,000	< 10	< 10	< 10	< 10	1,400
8/27/1999	230	< 0.5	0.51	0.5	1	1,500/

TABLE THREE
Certified Analytical Results for GROUNDWATER Samples
Former Chan's Shell Station
726 Harrison St., Oakland, CA
All results are in parts per billion (ppb)

Well ID & Dates Sampled	TPH-G	Benzene	Toluene	Ethyl- benzene	Total Xylenes	MTBE
						1,600*
12/9/1999	870**	< 0.5	< 0.5	< 0.5	< 0.5	2,100
3/7/2000	150**	4	< 0.5	< 0.5	< 0.5	830
6/7/2000	140**	< 0.5	< 0.5	< 0.5	< 0.5	1,100
10/11/2000	620**	< 5.0	< 5.0	< 5.0	< 5.0	1,500
1/18/2001	1,200**	< 5.0	< 5.0	< 5.0	< 5.0	1,000
4/5/2001	1,700**	< 5.0	< 5.0	< 5.0	< 5.0	1,900
7/17/2001	1,400**	< 10	< 10	< 10	< 10	1,700
10/5/2001	< 1,000	< 10	< 10	< 10	< 10	1,700
1/18/2002	1,600	26	20	16	54	2,100
4/11/2002	2,600	21	16	< 10	21	2,300
7/8/2002	2,800	< 10	< 10	< 10	< 10	3,800
10/9/2002	6,000	< 50	< 50	< 50	< 50	4,900
1/29/2003	1,800	< 10	< 10	< 10	< 10	2,300
4/11/2003	2,900	< 25	< 25	< 25	< 25	3,100
7/18/2003	3,400	< 10	< 10	< 10	< 10	3,200
10/9/2003	2,300	< 10	< 10	< 10	< 10	2,700
MW-4						
12/5/1998	880	3	< 0.5	< 0.5	< 0.5	950
3/4/1999	3,800	< 25	< 25	< 25	< 25	3,700
6/17/1999	2,700	< 25	< 25	< 25	< 25	2,700
8/27/1999	440	4.7	1.1	0.58	1.3	1,600/ 1,700*
12/9/1999	1,100**	< 2.5	< 2.5	< 2.5	< 2.5	1,700
3/7/2000	< 250	< 2.5	< 2.5	< 2.5	< 2.5	1,700
6/7/2000	530**	8.8	< 2.5	< 2.5	< 2.5	440
10/11/2000	700**	3.9	< 2.5	< 2.5	< 2.5	680
1/18/2001	2,000**	< 2.5	< 2.5	< 2.5	< 2.5	780
4/5/2001	810**	< 2.5	< 2.5	< 2.5	< 2.5	620
7/17/2001	880**	< 2.5	< 2.5	< 2.5	< 2.5	570
10/5/2001	550**	< 2.5	< 2.5	< 2.5	< 2.5	710
1/18/2002	960**	< 5.0	< 5.0	< 5.0	< 5.0	1,300
4/11/2002	1,100**	< 5.0	< 5.0	< 5.0	< 5.0	550
7/8/2002	1,200**	< 5.0	< 5.0	< 5.0	< 5.0	890
10/9/2002	1,300**	< 5.0	< 5.0	< 5.0	< 5.0	880
1/29/2003	530**	< 1.0	< 1.0	< 1.0	< 1.0	190
4/11/2003	690**	< 2.5	< 2.5	< 2.5	< 2.5	310
7/18/2003	1,600**	< 10	< 10	< 10	< 10	1,300
10/9/2003	1500***	< 10	< 10	< 10	< 10	1,400

TABLE THREE
Certified Analytical Results for GROUNDWATER Samples
Former Chan's Shell Station
726 Harrison St., Oakland, CA
All results are in parts per billion (ppb)

Well ID & Dates Sampled	TPH-G	Benzene	Toluene	Ethyl- benzene	Total Xylenes	MTBE
MW-5						
8/29/2001	14,000	1,300	470	230	800	14,000
1/18/2002	24,000	3,200	1,300	390	1,500	5,700
4/11/2002	23,000	2,700	980	38	950	4,300
7/8/2002	19,000	3,300	25	360	1,100	2,100
10/9/2002	24,000	2,800	990	360	820	2,400
1/29/2003	17,000	2,100	1,400	380	1,400	< 250
4/11/2003	26,000	2,900	2,200	590	2,200	630
7/18/2003	26,000	3,500	1,700	480	1,300	1,300
10/9/2003	27,000	3,800	1,900	510	1,700	1,200
EW-1						
1/18/2002	11,000	1,000	< 100	220	350	6,700
4/11/2002	17,000	1,000	< 100	120	140	9,700
7/8/2002	21,000	1,300	< 100	< 100	200	12,000
10/9/2002	12,000	900	< 25	< 25	200	9,200
1/29/2003	12,000	860	73	130	500	4,500
4/11/2003	8,700	890	< 25	< 25	82	5,400
7/18/2003	8,200	650	77	99	140	4,300
10/9/2003	5,700**	500	28	53	35	3,600
ESL	400	46	130	290	13	1,800

Notes:

* EPA Method 8020/EPA Method 8260 (MTBE confirmation)

** Hydrocarbon reported in the gasoline range does not match the laboratory gasoline stan

*** Sample contains a discrete peak in addition to gasoline

ESL = Environmental screening levels presented in the "Screening For Environmental Concerns

at Sites With Contaminated Soil and Groundwater (July 2003)" document prepared

Most current data is in **Bold**

Non-detectable concentrations noted by the less than sign (<) followed by the laboratory method reporting limit.