

C A M B R I A

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May 7, 2003

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

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

Alameda County  
MAY 13 2003  
Environmental Health

Dear Mr. Chan:

On behalf of Mr. Bo K. Gin, Cambria Environmental Technology, Inc. (Cambria) is submitting this first quarter 2003 groundwater monitoring report for the above-referenced site. Presented in the report are the first quarter 2003 activities and results and the anticipated second quarter 2003 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: First 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  
Fax (510) 420-9170

# C A M B R I A

## FIRST QUARTER 2003 MONITORING REPORT

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



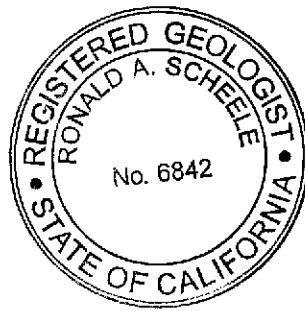
**May 7, 2003**

*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



*Ron Scheele*

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Ron Scheele, R.G.  
Associate Geologist

**Cambria  
Environmental  
Technology, Inc.**

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Senior Staff Geologist

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# C A M B R I A

## FIRST QUARTER 2003 MONITORING REPORT

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

**May 7, 2003**



### INTRODUCTION

On behalf of Mr. Bo K. Gin, Cambria Environmental Technology, Inc. (Cambria) is submitting this first quarter 2003 groundwater monitoring report for the above-referenced site. Presented below are the first quarter 2003 activities and results and the anticipated second quarter 2003 activities.

### FIRST QUARTER 2003 ACTIVITIES

#### Monitoring Activities

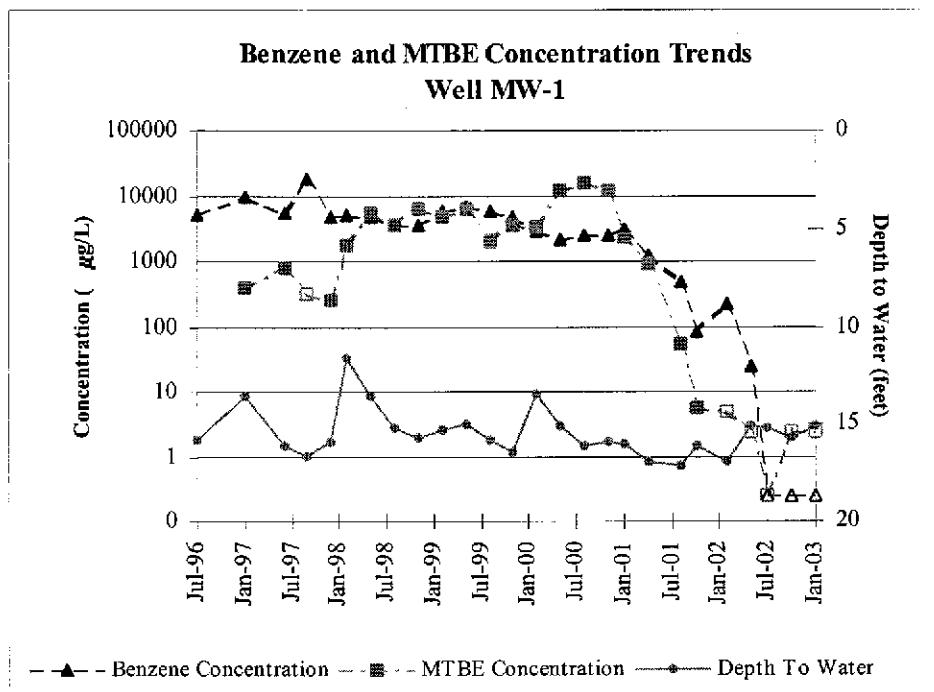
**Field Activities:** On January 23, 2003, Cambria conducted quarterly monitoring and sampling activities. Cambria gauged groundwater levels in monitoring wells MW-1 through MW-7 (see Figure 1). Groundwater samples were collected from wells MW-1 through MW-7. Field Data Sheets are presented as Attachment A. The well gauging data has been submitted to the Geotracker database. See Appendix D for the Electronic Delivery confirmations.

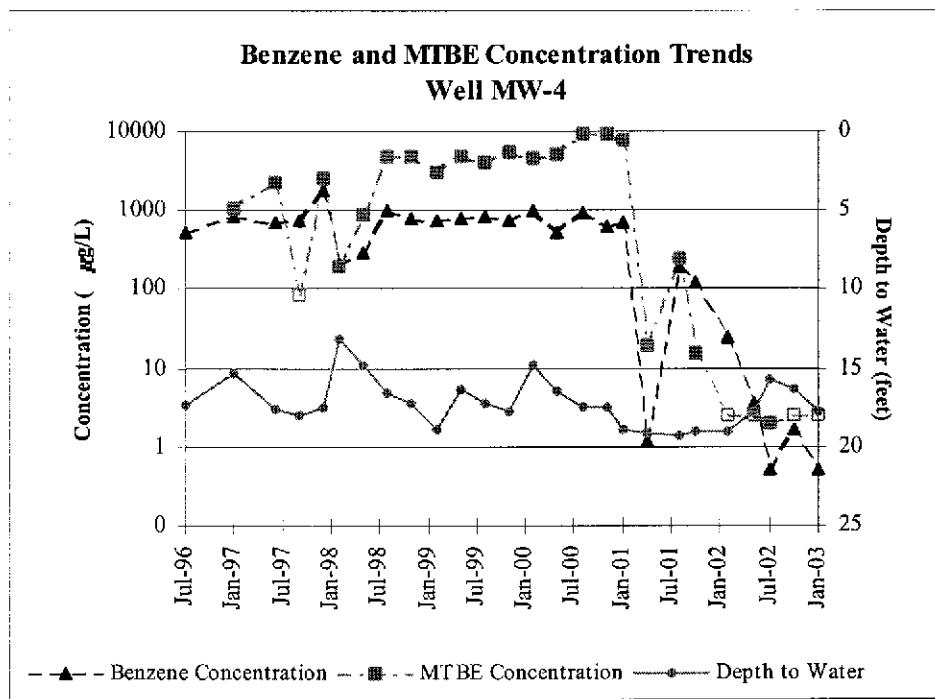
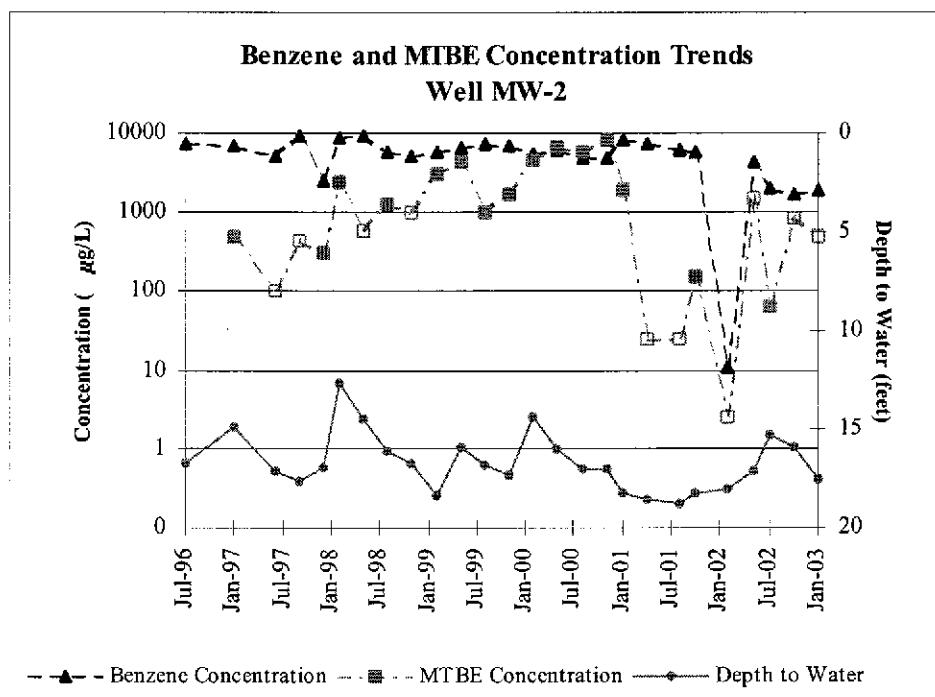
**Sample Analyses:** Groundwater samples were analyzed for total petroleum hydrocarbons as gasoline (TPHg) by modified EPA Method 8015; benzene, toluene, ethylbenzene, and xylenes (BTEX), and methyl tertiary butyl ether (MTBE) by EPA Method 8021B. The laboratory analytical report is included as Attachment B. Groundwater analytical results are shown on Table 1 and summarized on Figure 1. The groundwater sampling results have been submitted to the Geotracker database. See Appendix D for the Electronic Delivery confirmations.

## Monitoring Results

**Groundwater Gradient:** Based on depth-to-water measurements collected during Cambria's January 23, 2003 site visit, groundwater in the southern portion of the site flows toward the south-southwest at a rate of 0.017 ft/ft and in the northern portion of the site flows north at a rate of 0.029 ft/ft (Figure 1). This split gradient has been observed during previous first quarter monitoring events.

**Hydrocarbon Distribution in Groundwater:** Hydrocarbon concentrations were detected in five of the seven monitoring wells sampled this quarter. Maximum TPHg and benzene concentrations were detected in well MW-2 at 40,000 and 1,900 micrograms per liter ( $\mu\text{g}/\text{L}$ ), respectively. MTBE was not detected in any of the wells sampled during the first quarter sampling event. Overall, hydrocarbon concentrations were similar to or less than the previous quarter, except for the very low benzene concentrations detected in wells MW-5, MW-6, and MW-7. These single constituent, low-level detections in previously clean wells may possibly be due to an undetected constituent (i.e. TCE) that elutes at or close to the same time as benzene on a gas chromatogram. Further laboratory analysis using a mass spectrometer would be needed to confirm this possibility. Wells MW-1, MW-2, and MW-4 continue to exhibit decreasing benzene and MTBE concentration trends as shown in the graphs below and in Attachment C. Please note that benzene and MTBE have been below laboratory detection limits in MW-1 the last three sampling events as indicated by the unshaded boxes.





**Corrective Action Activities**

**System Evaluation:** As requested by Barney Chan of the Alameda County Department of Environmental Health (ACDEH), Cambria sampled vapor wells VW-3 and VW-4 to determine the groundwater concentrations in the southwest UST cavity and to evaluate whether air sparging is still warranted. On March 6, 2003, Cambria collected groundwater samples from vapor wells VW-3 and VW-4 while the air sparge (AS) system was operating. On March 17, 2003, the AS system was turned off and on March 25, 2003, groundwater samples were again collected from vapor wells VW-3 and VW-4 to see if groundwater concentrations would rebound.



**Sample Analyses:** Vapor well groundwater samples were analyzed for TPHg by modified EPA Method 8015 and BTEX and MTBE by EPA Method 8021B. The laboratory analytical report is included as Attachment B. Vapor well groundwater analytical results are shown on Table 1.

**System Evaluation Results**

No hydrocarbon or MTBE concentrations were detected in vapor wells VW-3 or VW-4 sampled on March 6 and 25, 2003. Since hydrocarbon and MTBE concentrations were below detection limits in groundwater within the southwest UST excavation, Cambria has discontinued air sparging operations and recommends no further sampling of these vapor wells.

**ANTICIPATED SECOND QUARTER 2003 ACTIVITIES****Monitoring Activities**

Cambria will gauge water levels in all wells and collect groundwater samples from wells MW-1, MW-2, and MW-4. As per ACDEH'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 8015, and BTEX and MTBE by EPA Method 8021. Any samples containing MTBE will be confirmed by EPA Method 8260. Cambria will prepare a groundwater monitoring report summarizing the monitoring activities and results.

### **Corrective Action Activities**

Cambria will prepare and submit a work plan that will propose the drilling of several soil borings to enable the collection of groundwater and soil vapor samples in the former 6,000-gallon UST cavity and in the vicinity of MW-2. The work plan will also include hydrogeologic cross-sections, hydrocarbon mass estimates, and a utility survey.



### **ATTACHMENTS**

Figure 1 – Groundwater Elevation Contour Map

Table 1 – Groundwater Elevations and Analytical Data

Attachment A – Groundwater Monitoring Field Data Sheets

Attachment B – Laboratory Analytical Report

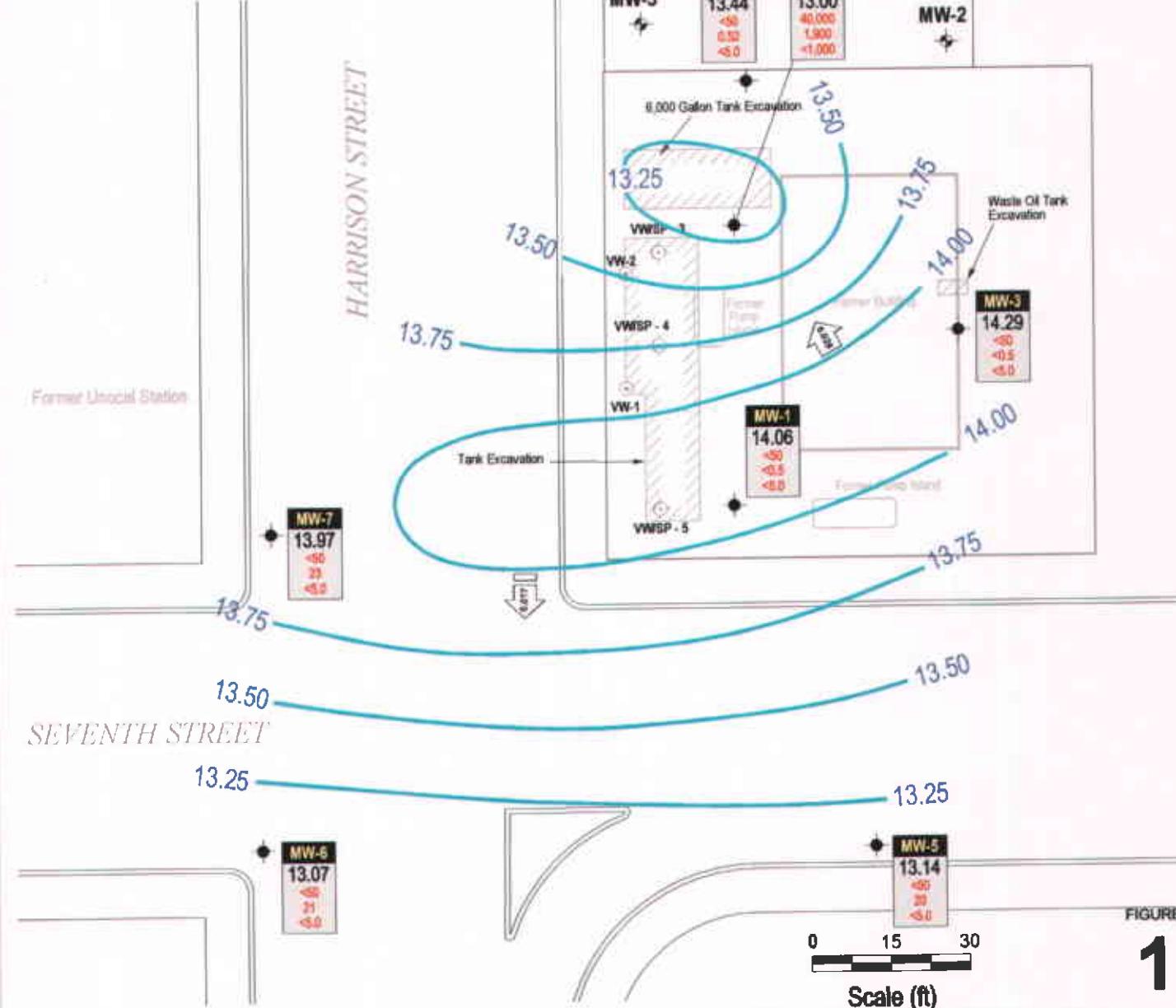
Attachment C – Benzene and MTBE Concentration Graphs

Attachment D – Electronic Delivery Confirmations

## EXPLANATION

- Monitoring Well Location
- Dual Well, SVE/Sparging Well
- ◎ SVE Well
- 14.00 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 ( $\mu\text{g/L}$ ).

Former USTs and Excavation Area



**Former Arco Station**  
706 Harrison Street  
Oakland, California

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**Groundwater Elevation  
Contour Map**  
January 23, 2003

# CAMBRIA

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

Well ID <i>TOC</i> Monitoring Frequency	Date Sampled	Depth to Water (ft)	Groundwater Elevation (ft-msl)	TPHg ( $\mu\text{g/L}$ )	Benzene ( $\mu\text{g/L}$ )	Toluene ( $\mu\text{g/L}$ )	Ethylbenzene ( $\mu\text{g/L}$ )	Xylenes ( $\mu\text{g/L}$ )	MTBE (8020) ( $\mu\text{g/L}$ )	MTBE (8260) ( $\mu\text{g/L}$ )	Notes
MW-1	8/13/93	17.40	11.75	20,000	8,500	640	280	440	-	-	
29.15	12/14/93	17.27	11.88	17,000	9,200	1,200	4,400	540	-	-	
Quarterly	4/15/94	17.00	12.15	9,500	3,600	530	160	280	-	-	
	12/29/94	16.40	12.75	-	-	-	-	-	-	-	
	7/19/96	15.83	13.32	17,000	5,200	1,100	330	530	-	-	sheen/odor
	1/27/97	13.58	15.57	30,000	9,800	1,300	790	880	400	-	b, sheen/odor
	6/18/97	16.11	13.04	19,000	5,600	1,400	510	770	1,200	800	a, b
	9/18/97	16.62	12.53	48,000	18,000	4,400	1,000	1,700	<640	-	b
	12/10/97	15.93	13.22	22,000	4,900	1,300	580	650	460	260	a, b, odor
	2/18/98	11.56	17.59	16,000	5,000	750	400	780	1,800	-	b
	5/12/98	13.53	15.62	19,000	4,600	810	450	770	5,500	-	b, c
	8/18/98	15.19	13.96	12,000	3,600	1,300	300	570	5,100	3,700	a, b
	11/24/98	15.67	13.48	13,000	3,600	890	330	380	6,100	-	b
	2/4/99	15.31	13.84	20,000	5,900	830	450	500	4,900	-	b
	5/18/99	14.95	14.20	23,000	7,000	1,600	520	830	6,100	-	b
	8/27/99	15.84	13.31	19,000	5,800	1,700	410	710	1,800	2,100	a, b
	11/18/99	16.39	12.76	20,000	4,900	630	410	580	4,900	3,600	b
	2/29/00	13.43	15.72	12,000	2,800	24	290	170	3,100	3,400	a
	5/25/00	15.08	14.07	12,000	2,200	120	330	260	9,100	12,000	a, b
	8/9/00	16.09	13.06	13,000	2,500	44	310	140	16,000	-	b
	11/9/00	15.90	13.25	11,000	2,500	140	380	150	11,000	12,000	b
	1/29/01	16.05	13.10	9,600	3,100	100	77	200	2,600	2,400	b
	4/16/01	16.90	12.25	3,300	1,200	4.4	2.7	28	900	940	b
	8/14/01	17.13	12.02	2,000	500	3.4	24	7.8	68	53	a
	10/22/01	16.11	13.04	220	83	0.63	2.8	<0.5	<10	5.7	a
	2/1/02	16.93	12.22	640	220	1.7	4.7	0.57	<10	-	a
	5/10/02	15.09	14.06	230	26	0.97	<0.5	<0.5	<5.0	-	a
	7/8/02	15.20	13.95	<50	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5	
	10/2/02	15.70	13.45	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	1/23/03	15.09	14.06	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	

# CAMBRIA

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

Well ID TOC Monitoring Frequency	Date Sampled	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	8/13/93	17.05	13.46	34,000	6,800	10,000	740	3,900	-	-	
30.5J	12/14/93	18.28	12.23	16,000	3,200	4,200	500	1,700	-	-	
Quarterly	4/15/94	18.10	12.41	23,000	2,500	4,200	470	1,800	-	-	
	12/29/94	17.40	13.11	-	-	-	-	-	-	-	
	7/19/96	16.72	13.79	90,000	7,300	14,000	1,600	7,300	-	-	odor
	1/27/97	14.89	15.62	63,000	7,100	13,000	1,600	7,100	500	-	b, odor
	6/18/97	17.12	13.39	52,000	5,100	10,000	1,400	6,000	<200	-	b
	9/18/97	17.63	12.88	110,000	9,400	23,000	2,600	13,000	<890	-	b, sheen/odor
	12/10/97	16.98	13.53	39,000	2,600	5,300	940	3,900	780	320	b, odor
	2/18/98	12.61	17.90	85,000	9,000	19,000	2,300	11,000	2,400	-	b
	5/12/98	14.45	16.06	110,000	9,500	21,000	2,500	12,000	<1,200	-	b
	8/18/98	16.14	14.37	64,000	6,000	13,000	1,700	7,800	2,000	1,300	a, b
	11/24/98	16.70	13.81	78,000	5,300	14,000	2,300	11,000	<2,000	-	b, g
	2/4/99	18.39	12.12	66,000	5,800	16,000	2,600	12,000	3,000	-	b, g
	5/18/99	15.90	14.61	78,000	6,700	17,000	2,400	10,000	4,300	-	b
	8/27/99	16.79	13.72	91,000	7,400	17,000	2,300	11,000	1,200	1,000	a, b
	11/18/99	17.32	13.19	180,000	7,000	20,000	3,300	16,000	<6,000	1,700	b,g
	2/29/00	14.37	16.14	86,000	5,500	13,000	2,000	9,500	3,500	4,700	a
	5/25/00	16.01	14.50	110,000	6,300	14,000	2,400	10,000	7,500	6,500	a, b, g
	8/9/00	17.02	13.49	77,000	5,000	13,000	2,000	8,600	5,900	-	b
	11/9/00	17.00	13.51	70,000	4,800	12,000	1,900	8,000	9,400	8,300	b
	1/29/01	18.31	12.20	110,000	8,200	21,000	2,800	13,000	2,500	1,900	b,g
	4/16/01	18.59	11.92	97,000	7,400	15,000	2,500	12,000	<3,000	<50	b,g
	8/14/01	18.74	11.77	97,000	6,200	14,000	2,400	13,000	<250	<50	a,j
	10/22/01	18.27	12.24	71,000	5,900	15,000	2,400	12,000	<1,400	150	a
	2/1/02	18.05	12.46	1,400	11	88	44	210	<5.0	-	a
	5/10/02	17.15	13.36	97,000	4,500	15,000	2,500	12,000	<3,000	-	a,g
	7/8/02	15.30	15.21	42,000	2,100	6,500	2,200	8,800	<1,000	65	a
	10/2/02	15.89	14.62	70,000	1,700	5,700	1,900	8,300	<1,700	-	a
	1/23/03	17.51	13.00	40,000	1,900	7,800	1,200	5,600	<1,000	-	a

# CAMBRIA

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

Well ID <i>TOC</i> Monitoring Frequency	Date Sampled	Depth to Water (ft)	Groundwater Elevation (ft-msl)	TPHg ( $\mu\text{g/L}$ )	Benzene ( $\mu\text{g/L}$ )	Toluene ( $\mu\text{g/L}$ )	Ethylbenzene ( $\mu\text{g/L}$ )	Xylenes ( $\mu\text{g/L}$ )	MTBE (8020) ( $\mu\text{g/L}$ )	MTBE (8260) ( $\mu\text{g/L}$ )	Notes
MW-3	8/13/93	17.05	12.72	<50	<0.50	<0.50	<0.50	<1.5	-	-	
29.77	12/14/93	17.70	12.07	<50	<0.50	<0.50	<0.50	<1.5	-	-	
Semi-annually	4/15/94	17.40	12.37	<50	<0.5	<0.5	<0.5	<0.5	-	-	
	12/29/94	16.80	12.97	-	-	-	-	-	-	-	
	7/19/96	16.28	13.49	<50	<0.5	<0.5	<0.5	<0.5	-	-	
	1/27/97	13.83	15.94	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	6/18/97	16.53	13.24	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	9/18/97	17.07	12.70	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	12/10/97	16.15	13.62	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	2/18/98	11.80	17.97	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	5/12/98	13.85	15.92	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	8/18/98	15.57	14.20	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	11/24/98	16.04	13.73	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	2/4/99	17.80	11.97	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	5/18/99	15.29	14.48	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	8/27/99	16.15	13.62	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	11/18/99	16.77	13.00	-	-	-	-	-	-	-	
	2/29/00	13.71	16.06	<50	2	<0.5	<0.5	<0.5	<5.0	-	
	5/25/00	15.46	14.31	-	-	-	-	-	-	-	
	8/9/00	16.46	13.31	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	11/9/00	16.25	13.52	-	-	-	-	-	-	-	
	1/29/01	16.52	13.25	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	4/16/01	16.95	12.82	-	-	-	-	-	-	-	
	8/14/01	17.11	12.66	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	10/22/01	16.50	13.27	-	-	-	-	-	-	-	
	2/1/02	16.90	12.87	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	5/10/02	15.03	14.74	-	-	-	-	-	-	-	
	7/8/02	14.45	15.32	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	10/2/02	15.03	14.74	-	-	-	-	-	-	-	
	1/23/03	15.48	14.29	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	

# CAMBRIA

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

Well ID TOC Monitoring Frequency	Date Sampled	Depth to Water (ft)	Groundwater Elevation (ft-msl)	TPHg ( $\mu\text{g/L}$ )	Benzene ( $\mu\text{g/L}$ )	Toluene ( $\mu\text{g/L}$ )	Ethylbenzene ( $\mu\text{g/L}$ )	Xylenes ( $\mu\text{g/L}$ )	MTBE (8020) ( $\mu\text{g/L}$ )	MTBE (8260) ( $\mu\text{g/L}$ )	Notes
MW-4	12/16/94	18.10	13.08	2,500	32	6.5	4.5	17	-	-	
31.18	12/29/94	17.95	13.23	-	-	-	-	-	-	-	
Quarterly	7/19/96	17.38	13.80	3,300	520	39	67	60	-	-	
	1/27/97	15.25	15.93	4,500	860	55	100	91	1,100	-	b
	6/18/97	17.61	13.57	2,700	700	52	81	76	2,200	2,300	a, b
	9/18/97	18.01	13.17	3,900	760	38	56	64	<170	-	b
	12/10/97	17.45	13.73	12,000	1,800	120	210	210	2,900	2,600	a, b
	2/18/98	13.09	18.09	1,700	210	8	6.7	16	200	-	b
	5/12/98	14.78	16.40	2,100	300	15	36	34	920	-	b, c
	8/18/98	16.59	14.59	4,700	1,000	130	110	150	5,200	4,900	a, b
	11/24/98	17.18	14.00	3,000	810	44	76	94	4,800	-	b
	2/4/99	18.90	12.28	2,800	770	50	69	69	3,100	-	b
	5/18/99	16.30	14.88	4,000	780	57	7.7	79	4,800	-	b
	8/27/99	17.21	13.97	4,100	870	51	74	99	3,300	4,100	a, b
	11/18/99	17.77	13.41	3,000	760	43	67	65	5,100	5,400	b
	2/29/00	14.85	16.33	4,600	1,000	64	94	170	4,100	4,600	a
	5/25/00	16.45	14.73	2,600	540	39	59	41	3,500	5,300	b
	8/9/00	17.47	13.71	4,400	930	66	98	79	9,400	-	b
	11/9/00	17.45	13.73	4,200	630	34	54	44	7,800	9,400	b
	1/29/01	18.90	12.28	3,100	710	34	66	51	9,400	8,000	b
	4/16/01	19.17	12.01	160	1.2	1.3	<0.5	12	22	20	b
	8/14/01	19.20	11.98	1,700	190	11	35	13	300	250	b
	10/22/01	18.95	12.23	1,100	120	3.7	29	7.9	<25	16	a
	2/1/02	19.05	12.13	2,600	25	43	21	280	<5.0	-	a
	5/10/02	17.69	13.49	490	3.5	2.0	2.1	2.2	<5.0	-	a
	7/8/02	15.75	15.43	170	0.51	0.62	1.6	1.2	<5.0	2.0	m
	10/2/02	16.30	14.88	240	1.7	2.0	2.2	0.88	<5.0	-	a
	1/23/03	17.74	13.44	<50	0.52	4.1	<0.5	1.9	<5.0	-	

# CAMBRIA

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

Well ID <i>TOC</i> Monitoring Frequency	Date Sampled	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-5	12/16/94	16.07	11.97	<50	1.1	<0.5	<0.5	2.4	-	-	
<i>28.04</i>	12/29/94	16.10	11.94	-	-	-	-	-	-	-	
Semi-annually	7/19/96	15.49	12.55	<50	<0.5	<0.5	<0.5	<0.5	-	-	
	1/27/97	13.60	14.44	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	6/18/97	15.55	12.49	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	9/18/97	16.16	11.88	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	12/10/97	15.41	12.63	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	2/18/98	10.93	17.11	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	5/12/98	13.25	14.79	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	8/18/98	14.75	13.29	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	11/24/98	15.15	12.89	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	2/4/99	14.61	13.43	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	5/18/99	14.15	13.89	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	8/27/99	15.43	12.61	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	11/18/99	15.97	12.07	-	-	-	-	-	-	-	
	2/29/00	13.16	14.88	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	5/25/00	14.72	13.32	-	-	-	-	-	-	-	
	8/9/00	15.68	12.36	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	11/9/00	15.39	12.65	-	-	-	-	-	-	-	
	1/29/01	15.97	12.07	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	4/16/01	16.24	11.80	-	-	-	-	-	-	-	
	8/14/01	17.39	10.65	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	10/22/01	15.90	12.14	-	-	-	-	-	-	-	
	2/1/02	16.55	11.49	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	5/10/02	15.12	12.92	-	-	-	-	-	-	-	
	7/8/02	15.92	12.12	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	10/2/02	16.42	11.62	-	-	-	-	-	-	-	
	1/23/03	14.90	13.14	<50	20	<0.5	<0.5	<0.5	<5.0	-	

# CAMBRIA

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

Well ID <i>TOC</i> Monitoring Frequency	Date Sampled	Depth to Water (ft)	Groundwater Elevation (ft-msl)	TPHg ( $\mu\text{g/L}$ )	Benzene ( $\mu\text{g/L}$ )	Toluene ( $\mu\text{g/L}$ )	Ethylbenzene ( $\mu\text{g/L}$ )	Xylenes ( $\mu\text{g/L}$ )	MTBE (8020) ( $\mu\text{g/L}$ )	MTBE (8260) ( $\mu\text{g/L}$ )	Notes
MW-6	12/16/94	17.74	11.36	-	-	-	-	-	-	-	
<i>29/10</i>	12/29/94	17.40	11.70	-	-	-	-	-	-	-	
Semi-annually	7/19/96	16.60	12.50	<50	<0.5	<0.5	<0.5	<0.5	-	-	
	1/27/97	14.88	14.22	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	6/18/97	16.73	12.37	51	22	<0.5	<0.5	<0.5	<5.0	-	c
	9/18/97	17.24	11.86	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	12/10/97	16.56	12.54	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	2/18/98	12.93	16.17	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	5/12/98	14.35	14.75	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	8/18/98	15.94	13.16	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	11/24/98	16.46	12.64	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	2/4/99	18.25	10.85	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	5/18/99	15.73	13.37	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	8/27/99	15.64	13.46	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	11/18/99	17.04	12.06	-	-	-	-	-	-	-	
	2/29/00	14.55	14.55	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	5/25/00	15.86	13.24	-	-	-	-	-	-	-	
	8/9/00	16.80	12.30	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	11/9/00	16.60	12.50	-	-	-	-	-	-	-	
	1/29/01	17.00	12.10	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	4/16/01	17.15	11.95	-	-	-	-	-	-	-	
	8/14/01	17.30	11.80	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	10/22/01	17.13	11.97	-	-	-	-	-	-	-	
	2/1/02	16.57	12.53	70	37	<0.5	<0.5	<0.5	<5.0	-	a
	5/10/02	15.25	13.85	-	-	-	-	-	-	-	
	7/8/02	15.79	13.31	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	10/2/02	16.38	12.72	-	-	-	-	-	-	-	
	1/23/03	16.03	13.07	<50	21	<0.5	<0.5	<0.5	<5.0	-	

# CAMBRIA

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

Well ID TOC Monitoring Frequency	Date Sampled	Depth to Water (ft)	Groundwater Elevation (ft-msl)	TPHg ( $\mu\text{g/L}$ )	Benzene ( $\mu\text{g/L}$ )	Toluene ( $\mu\text{g/L}$ )	Ethylbenzene ( $\mu\text{g/L}$ )	Xylenes ( $\mu\text{g/L}$ )	MTBE (8020) ( $\mu\text{g/L}$ )	MTBE (8260) ( $\mu\text{g/L}$ )	Notes
MW-7	12/16/94	17.07	12.60	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
29.67	12/29/94	17.65	12.02	-	-	-	-	-	-	-	
Semi-annually	7/19/96	16.44	13.23	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	1/27/97	15.09	14.58	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	6/18/97	16.59	13.08	73	<0.5	0.55	<0.5	<0.5	<5.0	-	d
	9/18/97	17.06	12.61	94	<0.5	<0.5	<0.5	<0.5	<5.0	-	e, f
	12/10/97	16.58	13.09	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	2/18/98	12.60	17.07	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	5/12/98	14.81	14.86	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	8/18/98	15.67	14.00	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	11/24/98	16.30	13.37	200	<0.5	<0.5	<0.5	<0.5	<5.0	-	d
	2/4/99	15.99	13.68	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	5/18/99	15.42	14.25	200	<0.5	<0.5	<0.5	<0.5	<5.0	-	d
	8/27/99	16.35	13.32	140	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	11/18/99	16.81	12.86	--	--	--	--	--	--	-	
	2/29/00	14.16	15.51	100	<0.5	<0.5	<0.5	<0.5	<5.0	-	f
	5/25/00	15.54	14.13	--	--	--	--	--	--	-	
	8/9/00	16.56	13.11	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	11/9/00	16.45	13.22	-	-	-	-	-	-	-	
	1/29/01	16.92	12.75	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	4/16/01	17.03	12.64	-	-	-	-	-	-	-	
	8/14/01	17.27	12.40	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	10/22/01	16.95	12.72	-	-	-	-	-	-	-	
	2/1/02	16.14	13.53	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	5/10/02	15.30	14.37	-	-	-	-	-	-	-	
	7/8/02	15.73	13.94	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	10/2/02	16.24	13.43	-	-	-	-	-	-	-	
	1/23/03	15.70	13.97	<50	23	<0.5	<0.5	<0.5	<5.0	-	
VW-3	3/6/03	--	--	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	i
-	3/25/03	--	--	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	i
VW-4	3/6/03	--	--	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
--	3/25/03	--	--	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
Trip Blank	11/9/00	-	-	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	

# CAMBRIA

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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	Groundwater Elevation	TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE (8020)	MTBE (8260)	Notes
Monitoring Frequency	Date Sampled	(ft)	(ft-msl)	( $\mu\text{g/L}$ )							
<b>Abbreviations and Analyses:</b>											
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.											
$\mu\text{g/L}$ = Micrograms per liter											
TOC = Top of casing elevation with respect to mean sea level											
- = not sampled											
Data prior to 12/16/94 provided by previous consultant.											
<b>Notes</b>											
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.											
e = Analytical laboratory notes that heavier gasoline range compounds are significant.											
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.											

C A M B R I A



**ATTACHMENT A**

Groundwater Monitoring Field Data Sheets

CAMBRIA

## WELL DEPTH MEASUREMENTS

Project Name: Bo Gió

Project Number: 236-011b

Measured By: S. Mili

Date: 1-23-03

## WELL SAMPLING FORM

Project Name: Bo Gin	Cambria Mgr: RAS	Well ID: MW-#
Project Number: 230-0116	Date: 1-23-03	Well Yield:
Site Address: 706 Harrison St. Oakland, Ca	Sampling Method: Disposable Baile	Well Diameter: 20 pvc
		Technician(s): SG
Initial Depth to Water: 15.09	Total Well Depth: 24.20	Water Column Height: 9.11
Volume/ft: 0.16	1 Casing Volume: 1.45	3 Casing Volumes: 4.37
Purging Device: Disposable baile	Did Well Dewater?: NO	Total Gallons Purged: 4
Start Purge Time: 12:30	Stop Purge Time: 1:44	Total Time: 14 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
12:35	1.5	19.1	7.09	742	
12:40	3	18.7	7.13	920	
12:45	4	18.5	7.15	984	

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

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
MW-#	1-23-03	12:50	BVOA	HCl	TPM, BTEX MTBE	80/S/8020

## WELL SAMPLING FORM

Project Name: Bo Gin	Cambria Mgr: RAS	Well ID: MW-2
Project Number: 230-0116	Date: 1-23-03	Well Yield:
Site Address: 706 Harrison St. Oakland, Ca	Sampling Method:	Well Diameter: 20 pvc
	Disposable Baile	Technician(s): SA
Initial Depth to Water: 17.51	Total Well Depth: 25.50	Water Column Height: 7.99
Volume/ft: 0.16	1 Casing Volume: 1.27	3 Casing Volumes: 3.83
Purging Device: disposable baile	Did Well Dewater?: NO	Total Gallons Purged: 4
Start Purge Time: 1:20	Stop Purge Time: 1:24	Total Time: 14 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
1:15	1.5	18.9	7.28	620	
1:20	3	18.9	7.15	645	
1:25	4	18.8	7.17	718	

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

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
MW-2	1-23-03	1:30	Bvoa	HCl	TPM, BTEX MTBE	80/S/8020

## WELL SAMPLING FORM

Project Name: Bo Gin	Cambria Mgr: RAS	Well ID: MN-3
Project Number: 230-0116	Date: 1-23-03	Well Yield:
Site Address: 706 Harrison St. Oakland, Ca	Sampling Method:	Well Diameter: 20 pvc
	Disposable Baile	Technician(s): SA
Initial Depth to Water: 15.48	Total Well Depth: 27.55	Water Column Height: 12.07
Volume/ft: 0.16	1 Casing Volume: 1.93	3 Casing Volumes: 5.79
Purging Device: disposable baile	Did Well Dewater?: no	Total Gallons Purged: 6
Start Purge Time: 2:10	Stop Purge Time: 2:24	Total Time: 14 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
2:15	2	18.4	7.44	847	
2:20	4	18.7	7.25	1024	
2:25	6	18.8	7.21	1070	

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

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
MN-3	1-23-03	2:30	Bvoa	HCl	TPM, BTEX MTBE	80/S/8020

## WELL SAMPLING FORM

Project Name: Bo Gin	Cambria Mgr: RAS	Well ID: MN-4
Project Number: 230-0116	Date: 1-23-03	Well Yield:
Site Address: 706 Harrison St. Oakland, Ca	Sampling Method:	Well Diameter: 2" pvc
	Disposable Builer	Technician(s): SA
Initial Depth to Water: 17.74	Total Well Depth: 25.40	Water Column Height: 7.66
Volume/ft: 0.16	1 Casing Volume: 1.22	3 Casing Volumes: 3.66
Purging Device: disposable builer	Did Well Dewater?: no	Total Gallons Purged: 4
Start Purge Time: 1:40	Stop Purge Time: 1:54	Total Time: 14 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
1:45	1.5	19.3	7.18	1112	
1:50	3	18.8	7.15	1195	
1:55	4	18.5	7.11	1242	

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

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
MN-4	1-23-03	2:00	BVOA	HCl	TPH <sub>3</sub> , BTEX, MTBE	80/S/8020

## WELL SAMPLING FORM

Project Name: Bo Gin	Cambria Mgr: RAS	Well ID: MN-5
Project Number: 230-0116	Date: 1-23-03	Well Yield:
Site Address: 706 Harrison St. Oakland, Ca	Sampling Method:	Well Diameter: 2" pvc
	Disposable Baile	Technician(s): SA
Initial Depth to Water: 14.90	Total Well Depth: 27.80	Water Column Height: 12.9
Volume/ft: 0.16	1 Casing Volume: 2.06	3 Casing Volumes: 6.18
Purging Device: disposable baile	Did Well Dewater?: no	Total Gallons Purged: 6
Start Purge Time: 2:40	Stop Purge Time: 2:54	Total Time: 14mins

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
2:45	2	19.1	7.05	614	
2:50	4	19.2	7.08	570	
2:55	6	19.2	7.10	595	

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

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
MN-5	1-23-03	3:00	BVOA	HCl	TPM, BTEX MTBE	80/S/8020

## WELL SAMPLING FORM

Project Name: Bo Gin	Cambria Mgr: RAS	Well ID: MN-6
Project Number: 230-0116	Date: 1-23-03	Well Yield:
Site Address: 706 Harrison St. Oakland, Ca	Sampling Method:	Well Diameter: 2" pvc
	Disposable Baile	Technician(s): SA
Initial Depth to Water: 16.0 3	Total Well Depth: 25.85	Water Column Height: 9.82
Volume/ft: 0.16	1 Casing Volume: 1.57	3 Casing Volumes: 4.71
Purging Device: disposable baile	Did Well Dewater?: no	Total Gallons Purged: 5
Start Purge Time: 3:10	Stop Purge Time: 3:24	Total Time: 14mins

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
3:15	1.5	18.9	7.28	1095	
3:20	3	18.8	7.35	872	
3:25	5	18.9	7.31	740	

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

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
MN-6	1-23-03	3:30	BVOA	HCl	TPH <sub>9</sub> , BTEX, MTBE	8015/8020

## WELL SAMPLING FORM

Project Name: Bo Gin	Cambria Mgr: RAS	Well ID: MW-7
Project Number: 230-0116	Date: 1-23-03	Well Yield:
Site Address: 706 Harrison St. Oakland, Ca	Sampling Method:	Well Diameter: 20 pvc
	Disposable Bailex	Technician(s): SA
Initial Depth to Water: 15.70	Total Well Depth: 27.50	Water Column Height: 11.80
Volume/ft: 0.16	1 Casing Volume: 1.88	3 Casing Volumes: 5.66
Purging Device: disposable bailex	Did Well Dewater?: 10	Total Gallons Purged: 6
Start Purge Time: 3:40	Stop Purge Time: 3:54	Total Time: 14 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
3:45	2	18.7	7.29	1271	
3:50	4	18.8	7.30	1495	
3:55	6	18.9	7.34	1520	

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

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
MW-7	1-23-03	4:00	Bvoa	HCl	TPM, BTEX MTBE	80/5/8020

C A M B R I A



**ATTACHMENT B**

Laboratory Analytical Report



McCampbell Analytical Inc.

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

Cambria Env. Technology  6262 Hollis St.  Emeryville, CA 94608	Client Project ID: #230-0116; BoGin	Date Sampled: 01/23/03
		Date Received: 01/24/03
	Client Contact: Ron Scheele	Date Reported: 01/29/03
	Client P.O.:	Date Completed: 01/29/03

**WorkOrder: 0301312**

January 29, 2003

Dear Ron:

Enclosed are:

- 1). the results of 7 analyzed samples from your **#230-0116; 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. McCampbell 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



McCampbell Analytical Inc.

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

Cambria Env. Technology 6262 Hollis St. Emeryville, CA 94608	Client Project ID: #230-0116; BoGin	Date Sampled: 01/23/03
		Date Received: 01/24/03
	Client Contact: Ron Scheele	Date Extracted: 01/24/03-01/27/03
	Client P.O.:	Date Analyzed: 01/24/03-01/27/03

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

Extraction method: SW5030B

Analytical methods: SW8021B/8015Cm

Work Order: 0301312

\*water and vapor samples are reported in µg/L, soil and sludge samples in mg/kg, wipe samples in µg/wipe, and TCLP extracts in µg/L.

# cluttered chromatogram; sample peak coelutes with surrogate peak.

+The following descriptions of the TPH chromatogram are cursory in nature and McCampbell 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.



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## QC SUMMARY REPORT FOR SW8021B/8015Cm

Matrix: W

WorkOrder: 0301312

EPA Method: SW8021B/8015Cm		Extraction: SW5030B		BatchID: 5715		Spiked Sample ID: 0301312-001A				
Compound	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(gas)	ND	60	107	110	2.63	111	111	0.303	80	120
MTBE	ND	10	106	103	2.61	94.7	96	1.33	80	120
Benzene	ND	10	111	112	1.37	110	110	0.375	80	120
Toluene	ND	10	107	109	1.81	110	109	0.430	80	120
Ethylbenzene	ND	10	104	107	2.21	108	107	0.733	80	120
Xylenes	ND	30	100	107	6.45	110	110	0	80	120
%SS:	97.2	100	94	94.8	0.897	94.5	95.8	1.39	80	120

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.

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.

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

\* 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.

**McCAMPBELL ANALYTICAL INC.**

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

**CHAIN-OF-CUSTODY RECORD**

Page 1 of 1

WorkOrder: 0301312

**Client:**

Cambria Env. Technology  
6262 Hollis St.  
Emeryville, CA 94608

TEL: (510) 450-1983  
FAX: (510) 450-8295  
ProjectNo: #230-0116; BoGin  
PO:

Date Received: 1/24/03  
Date Printed: 1/24/03

Sample ID	ClientSampID	Matrix	Collection Date	Hold	Requested Tests						
					8021B/8015						
0301312-001	MW-1	Water	1/23/03 12:50:00 PM		A						
0301312-002	MW-2	Water	1/23/03 1:30:00 PM		A						
0301312-003	MW-3	Water	1/23/03 2:30:00 PM		A						
0301312-004	MW-4	Water	1/23/03 2:00:00 PM		A						
0301312-005	MW-5	Water	1/23/03 3:00:00 PM		A						
0301312-006	MW-6	Water	1/23/03 3:30:00 PM		A						
0301312-007	MW-7	Water	1/23/03 4:00:00 PM		A						

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.

0301312

## McCAMPBELL ANALYTICAL INC.

110 2<sup>nd</sup> 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 DAYEDF Required?  Yes  No

Report To: Ron Scheels Bill To: Cambria Env. Tech  
 Company: Cambria Environmental Technology Inc.  
 6262 Hollis Street  
 Emeryville, CA 94608 E-mail:  
 Tele: 510-450-1983 Fax: 510-450-8295  
 Project #: 230-0116 Project Name: BoGin  
 Project Location: 706 Harrison St. Oakland, Ca  
 Sampler Signature: S. Mall

SAMPLE ID (Field Point Name)	LOCATION	SAMPLING		# Containers	MATRIX		METHOD PRESERVED	Analysis Request		Other	Comments		
		Date	Time		Type	Containers		Water	Soil	Air	Sludge	Other	
MW-1		1-23-03	12:50	3	VOC	X					X X		BTEX & TPH as Gas (602/8020 + 8015)/MTBE
MW-2		1-23-03	1:30	3	VOC	X					X X		TPH as Diesel (8015)
MW-3		1-23-03	2:30	3	VOC	X					X X		Total Petroleum Oil & Grease (5520 E&F/B&F)
MW-4		1-23-03	2:00	3	VOC	X					X X		Total Petroleum Hydrocarbons (418.1)
MW-5		1-23-03	3:00	3	VOC	X					X X		EPA 601 / 8010
MW-6		1-23-03	3:30	3	VOC	X					X X		BTEX ONLY (EPA 602 / 8020)
MW-7		1-23-03	4:00	3	VOC	X					X X		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 (7240/7421/239/26010)
													RCI

Relinquished By: *J. Mall* Date: 1-24-03 Time: Received By:

Secure location

Remarks:

ICP:  GOOD CONDITION  APPROPRIATE CONTAINERS  DECHLORINATED IN LAB  PRESERVED IN LAB

VOC	OAG	METALS	OTHER
-----	-----	--------	-------

Relinquished By: *J. Mall* Date: 1-24-03 Time: Received By:

TOMM 240

Relinquished By: *Harold 240* Date: 1-24-03 Time: Received By:

Mama Thomas

Confirm all MTBE kits  
w/EPA method 8260



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<http://www.mccampbell.com> E-mail: [main@mccampbell.com](mailto:main@mccampbell.com)

Cambria Env. Technology  5900 Hollis St, Suite A  Emeryville, CA 94608	Client Project ID: #230-0116; Bo Gin	Date Sampled: 03/06/03
		Date Received: 03/07/03
	Client Contact: Matt Meyers	Date Reported: 03/11/03
	Client P.O.:	Date Completed: 03/11/03

**WorkOrder: 0303098**

March 11, 2003

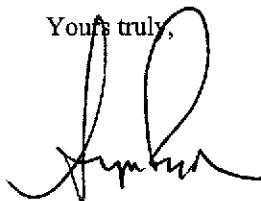
Dear Matt:

Enclosed are:

- 1). the results of 2 analyzed samples from your #230-0116; Bo Gin 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. McCampbell Analytical Laboratories strives for excellence in quality, service and cost. Thank you for your business and I look forward to working with you again.

Your truly,  


Angela Rydelius, Lab Manager



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<http://www.mccampbell.com> E-mail: main@mccampbell.com

Cambria Env. Technology 5900 Hollis St, Suite A Emeryville, CA 94608	Client Project ID: #230-0116; Bo Gin	Date Sampled: 03/06/03
		Date Received: 03/07/03
	Client Contact: Matt Meyers	Date Extracted: 03/11/03
	Client P.O.:	Date Analyzed: 03/11/03

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

Extraction method: SW5030B

Analytical methods: SW8021B/8015Cm

Work Order: 0303098

\*water and vapor samples are reported in µg/L, soil and sludge samples in mg/kg, wipe samples in µg/wipe, and TCLP extracts in µg/L.

# cluttered chromatogram; sample peak coelutes with surrogate peak.

+The following descriptions of the TPH chromatogram are cursory in nature and McCampbell 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

三

**Angela Rydelius, Lab Manager**



McCampbell Analytical Inc.

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 Telephone : 925-798-1620 Fax : 925-798-1622  
<http://www.mccampbell.com> E-mail: main@mccampbell.com

## QC SUMMARY REPORT FOR SW8021B/8015Cm

Matrix: W

WorkOrder: 0303098

EPA Method: SW8021B/8015Cm		Extraction: SW5030B		BatchID: 6096		Spiked Sample ID: 0303098-001A				
Compound	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(gas)	ND	60	115	106	8.84	109	114	4.64	80	120
MTBE	ND	10	88.5	86.9	1.81	90	86.7	3.65	80	120
Benzene	ND	10	115	115	0.322	96.7	95.4	1.32	80	120
Toluene	ND	10	111	110	0.940	91.2	90.9	0.410	80	120
Ethylbenzene	ND	10	116	118	1.72	93.3	91.5	1.97	80	120
Xylenes	ND	30	120	117	2.82	91.7	88	4.08	80	120
%SS:	110	100	109	109	0.695	101	95.5	5.33	80	120

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.

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.

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

\* 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.

**McCAMPBELL ANALYTICAL INC.**

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

**CHAIN-OF-CUSTODY RECORD**

Page 1 of 1

WorkOrder: 0303098

**Client:**

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

TEL: (510) 450-1983  
FAX: (510) 450-8295  
ProjectNo: #230-0116; Bo Gin  
PO:

Date Received: 3/7/03  
Date Printed: 3/7/03

Sample ID	Client SampID	Matrix	Collection Date	Hold	Requested Tests		
					<>	8021B/8015	
0303098-001	VW-4	Water	3/6/03 1:50:00 PM		A	A	
0303098-002	VW-3	Water	3/6/03 2:00:00 PM			A	

Prepared by: Melissa Valles

**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.

0303098

## McCAMPBELL ANALYTICAL INC.

110 2<sup>nd</sup> 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 Meyers Bill To: SAME										Analysis Request										Other		Comments								
Company: Cambria Environmental Technology, Inc.		Sampling										Matrix																		
SAMPLE ID (Field Point Name)	LOCATION	Date	Time	# Containers	Type	Containers	Water	Soil	Air	Sludge	Other	Ice	HCl	HNO <sub>3</sub>	Other	BTEX & TPH as Gas (602/8020 + 801.5)/MTBE	TPH as Diesel (801.5)	Total Petroleum Oil & Grease (5520 E&F/B&F)	Total Petroleum Hydrocarbons (418.1)	BPA 601 / 801.0	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 / 831.0	CAM-17 Metals	LUFT 5 Metals	Lead (7240/7421/239.2/601.0)	RCI
		VW-4	Well	3/6/03	1:50p	4	V	X					X X				X													
VW-3	Well	3/6/03	2:00p	4	V	X					X X				X															
ICPA* <input checked="" type="checkbox"/> APPROPRIATE CONTAINERS <input checked="" type="checkbox"/> PRESERVED IN LAB										TOXIC * OAO METALS OTHER																				
RELINQUISHED BY: <i>Matt Meyers</i>										RECEIVED BY: <i>Secure Location</i>										Remarks: Analyze MTBE by EPA 8260. If there's a hit for mtbe by 6/20 Please email results.										
RELINQUISHED BY: <i>Matt Meyers</i>										RECEIVED BY: <i>Matt Meyers</i>																				
RELINQUISHED BY: <i>Matt Meyers</i>										RECEIVED BY: <i>Matt Meyers</i>																				

 McCampbell Analytical Inc.	110 2nd Avenue South, #D7, Pacheco, CA 94553-5560 Telephone : 925-798-1620 Fax : 925-798-1622 <a href="http://www.mccampbell.com">http://www.mccampbell.com</a> E-mail: matin@mccampbell.com
--------------------------------------------------------------------------------------------------------------	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Cambria Env. Technology  5900 Hollis St, Suite A  Emeryville, CA 94608	Client Project ID: #230-0116; Bo Gin	Date Sampled: 03/25/03
		Date Received: 03/26/03
	Client Contact: Matt Meyers	Date Reported: 04/01/03
	Client P.O.:	Date Completed: 04/01/03

**WorkOrder: 0303452**

April 01, 2003

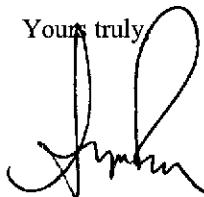
Dear Matt:

Enclosed are:

- 1). the results of 2 analyzed samples from your #230-0116; Bo Gin 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. McCampbell 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



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<http://www.mccampbell.com> E-mail: main@mccampbell.com

Cambria Env. Technology 5900 Hollis St, Suite A Emeryville, CA 94608	Client Project ID: #230-0116; Bo Gin	Date Sampled: 03/25/03
		Date Received: 03/26/03
	Client Contact: Matt Meyers	Date Extracted: 03/28/03
	Client P.O.:	Date Analyzed: 03/28/03

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

Extraction method: SW5030B

Analytical methods: SW8021B/8015Cm

Work Order: 0303452

\*water and vapor samples are reported in µg/L, soil and sludge samples in mg/kg, wipe samples in µg/wipe, and TCLP extracts in µg/L.

# cluttered chromatogram; sample peak coelutes with surrogate peak.

+The following descriptions of the TPH chromatogram are cursory in nature and McCampbell 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



McCampbell Analytical Inc.

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

## QC SUMMARY REPORT FOR SW8021B/8015Cm

Matrix: W

WorkOrder: 0303452

EPA Method: SW8021B/8015Cm		Extraction: SW5030B		BatchID: 6331		Spiked Sample ID: N/A					
Compound	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(gas)	N/A	60	N/A	N/A	N/A	94.9	94.8	0.0628	80	120	
MTBE	N/A	10	N/A	N/A	N/A	99	113	12.9	80	120	
Benzene	N/A	10	N/A	N/A	N/A	115	119	3.09	80	120	
Toluene	N/A	10	N/A	N/A	N/A	112	116	2.66	80	120	
Ethylbenzene	N/A	10	N/A	N/A	N/A	116	118	2.37	80	120	
Xylenes	N/A	30	N/A	N/A	N/A	113	117	2.90	80	120	
%SS:	N/A	100	N/A	N/A	N/A	91.5	91.8	0.356	80	120	
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.

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.

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

\* 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.



McCampbell Analytical Inc.

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 Telephone : 925-798-1620 Fax : 925-798-1622  
<http://www.mccampbell.com> E-mail: main@mccampbell.com

## QC SUMMARY REPORT FOR SW8021B/8015Cm

Matrix: W

WorkOrder: 0303452

EPA Method: SW8021B/8015Cm		Extraction: SW5030B		BatchID: 6333		Spiked Sample ID: N/A			
Compound	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(gas)	N/A	60	N/A	N/A	N/A	110	111	0.564	80      120
MTBE	N/A	10	N/A	N/A	N/A	94.9	94.4	0.525	80      120
Benzene	N/A	10	N/A	N/A	N/A	102	96.1	6.38	80      120
Toluene	N/A	10	N/A	N/A	N/A	97.5	90.8	7.12	80      120
Ethylbenzene	N/A	10	N/A	N/A	N/A	96	90.3	6.10	80      120
Xylenes	N/A	30	N/A	N/A	N/A	89	84	5.78	80      120
%SS:	N/A	100	N/A	N/A	N/A	87.9	83.3	5.30	80      120
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.

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.

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

\* 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.

**McCAMPBELL ANALYTICAL INC.**

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

**CHAIN-OF-CUSTODY RECORD**

Page 1 of 1

WorkOrder: 0303452

**Client:**

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

TEL: (510) 450-1983  
FAX: (510) 450-8295  
ProjectNo: #230-0116; Bo Gin  
PO:

Date Received: 3/26/03  
Date Printed: 3/26/03

Sample ID	ClientSampID	Matrix	Collection Date	Hold	<>	Requested Tests	
						8021B	8015
0303452-001	VW-3	Water	3/25/03 2:00:00 PM			A	A
0303452-002	VW-4	Water	3/25/03 2:15:00 PM			A	

**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.



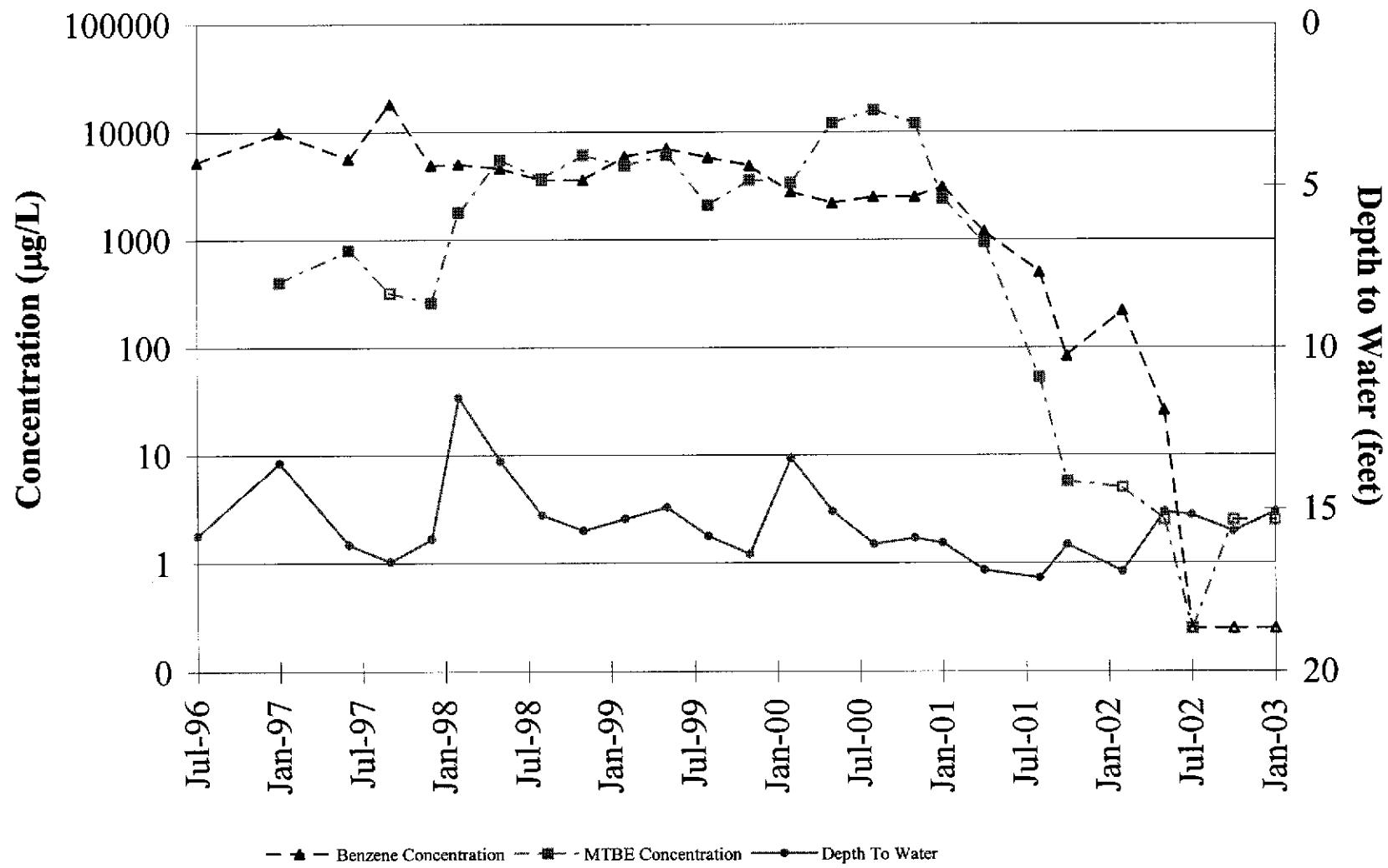
C A M B R I A



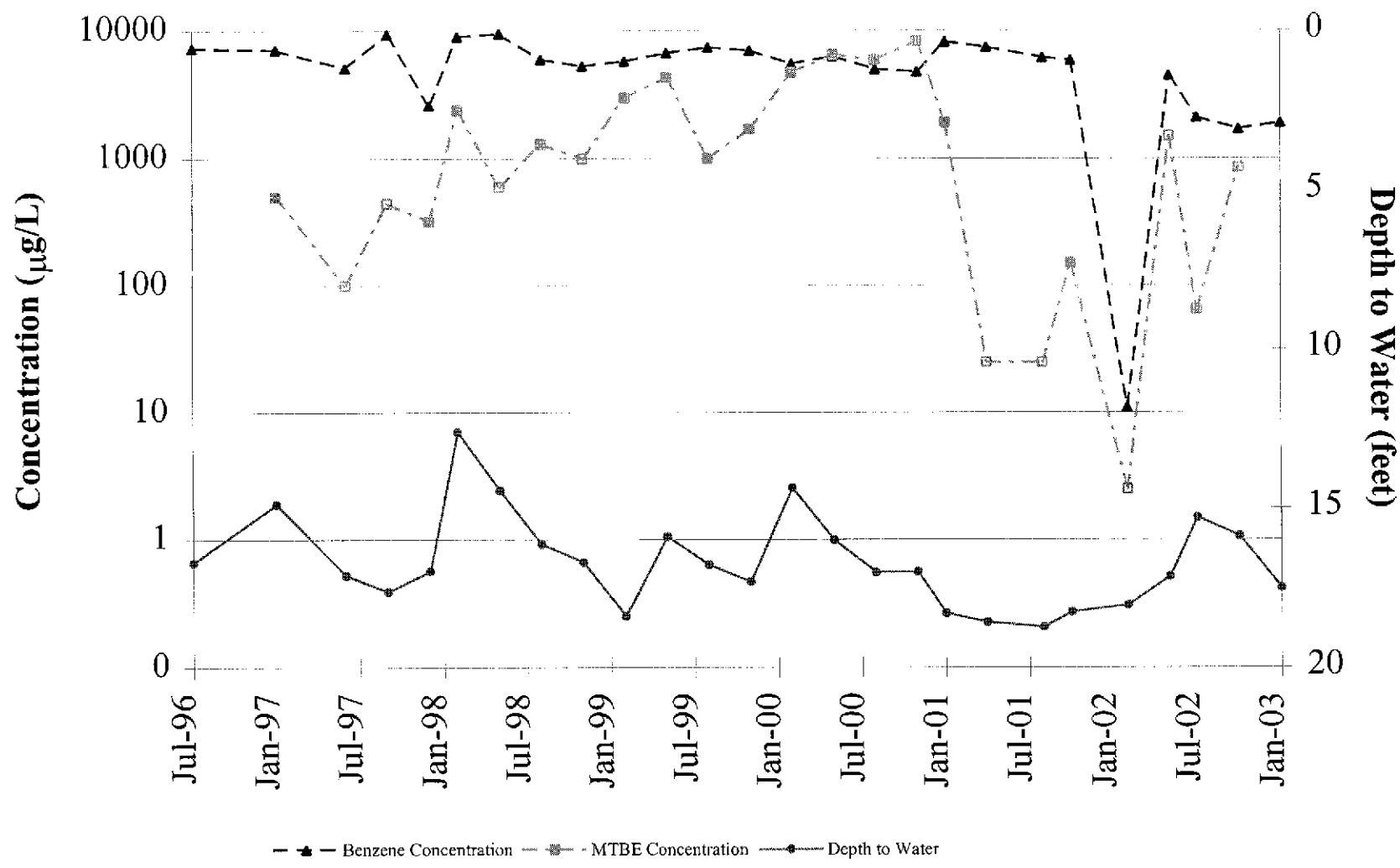
**ATTACHMENT C**

Benzene and MTBE Concentration Graphs

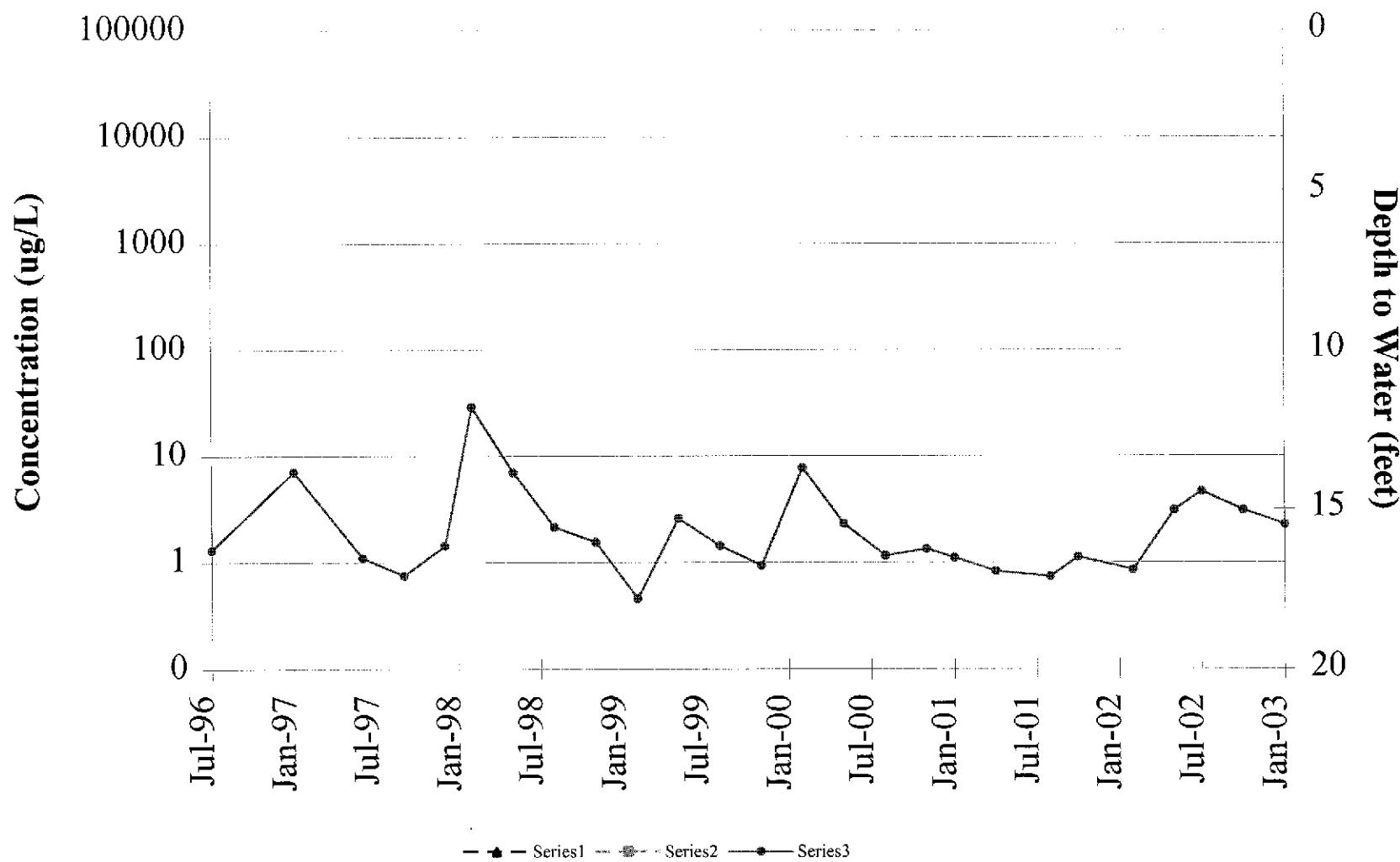
## Benzene and MTBE Concentration Trends Well MW-1



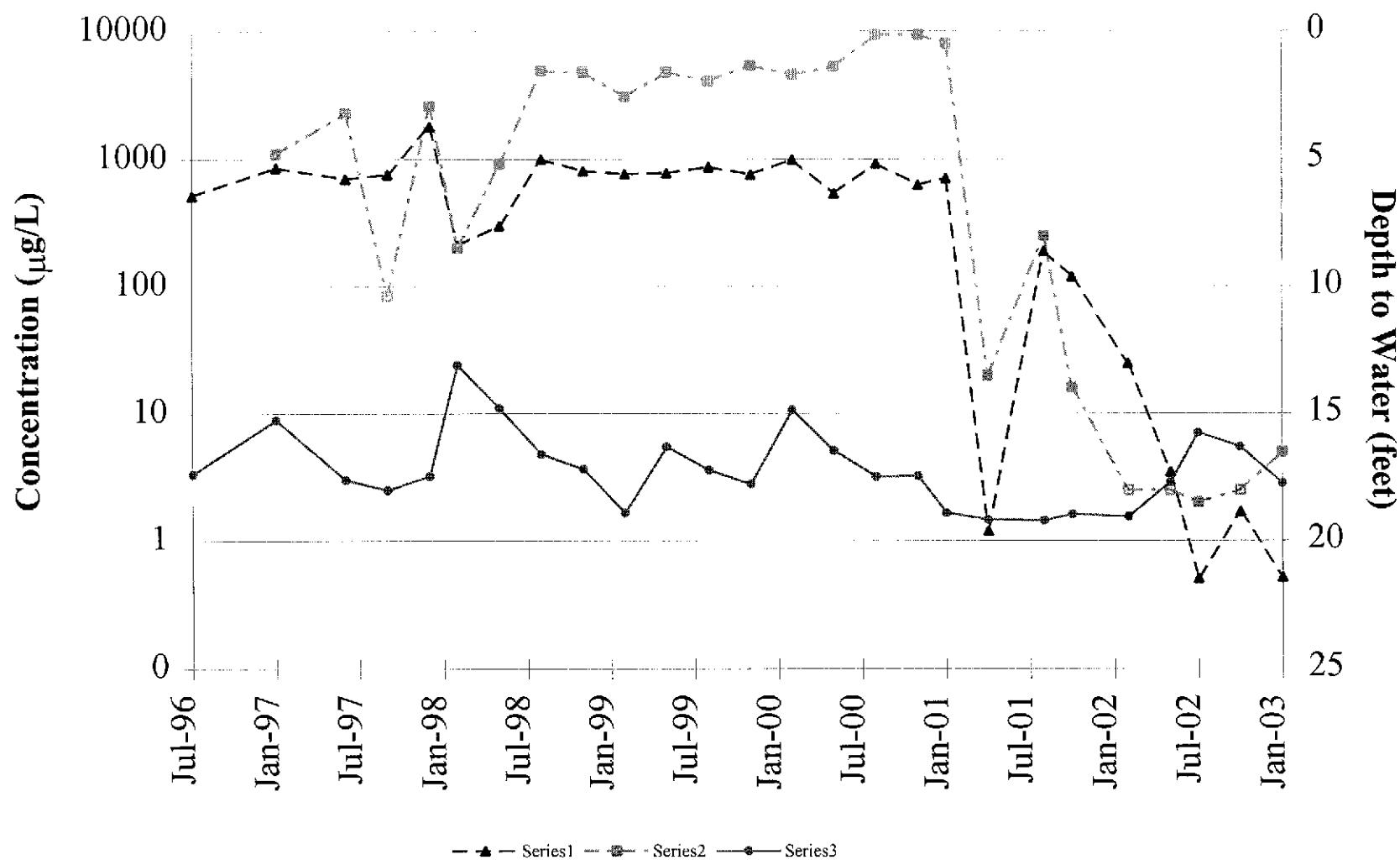
## Benzene and MTBE Concentration Trends Well MW-2



## Benzene and MTBE Concentration Trends Well MW-3



## Benzene and MTBE Concentration Trends Well MW-4



C A M B R I A



**ATTACHMENT D**

Electronic Delivery Confirmations

## AB2886 Electronic Delivery

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**Facility Name:** OAKLAND AUTO PARTS

**Submittal Title:** 1st Qtr 2003 Groundwater Sampling Results

**Submittal Type:** GW Monitoring Report

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