



March 20, 1998

Mr. Larry Seto
Alameda County Department of
Environmental Health
UST Local Oversight Program
1131 Harbor Bay Parkway, 2nd Floor
Alameda, CA 94502

Re: **First Quarter 1998 Monitoring Report**
Former Arco Station Service Station
706 Harrison Street
Oakland, California
STID 3749
Cambria #230-0116-008

Dear Mr. Seto:

On behalf of Mr. Bo K. Gin, Cambria Environmental Technology, Inc. (Cambria) is submitting this first quarter 1998 ground water monitoring report for the site referenced above. Presented below are the first quarter 1998 activities, the anticipated second quarter 1998 activities, and the current hydrocarbon distribution in ground water.

FIRST QUARTER 1998 ACTIVITIES

Quarterly Ground Water Sampling: On February 18, 1998 Cambria gauged and sampled all onsite and offsite ground water monitoring wells. **No measurable liquid-phase hydrocarbons (LPH) were detected in any of the wells.** Table 1 summarizes ground water elevation data and analytic results. Figure 1 presents the ground water elevation contours and benzene concentrations. The analytical results of the ground water sampling are included in Attachment A.

Remediation System: Cambria installed a soil-vapor extraction (SVE) and air sparging system and finalized permits with Alameda County Department of Environmental Health and the Bay Area Air Quality Management District. On February 17, 1998, Cambria started the SVE system. However, due to the high ground water elevations submerging the vapor well screened intervals, the system was unable to achieve sufficient vapor flow. Cambria has postponed the startup until the ground water level drops and adequate vapor flow can be achieved.

CAMBRIA
ENVIRONMENTAL
TECHNOLOGY, INC.
1144 65TH STREET,
SUITE B
OAKLAND,
CA 94608
PH: (510) 420-0700
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1131 HARBOR BAY PARKWAY
ALAMEDA, CA 94502

ANTICIPATED SECOND QUARTER 1998 ACTIVITIES

Quarterly Ground Water Sampling: As requested by the Alameda County Department of Environmental Health, Cambria will gauge and collect water samples from each ground water monitoring well, and measure the thickness of any detected LPH. Cambria will tabulate the data and prepare a quarterly monitoring report.

Remediation System: Cambria will start the system once the ground water level drops and adequate vapor flow can be achieved.


HYDROCARBON DISTRIBUTION IN GROUND WATER

As shown on Table 1, the highest hydrocarbon concentrations were detected in ground water samples from onsite wells MW-1 and MW-2, located adjacent to the former underground storage tank locations. The hydrocarbon concentrations were lower in up gradient well MW-4 and appear to originate from the up gradient former service station. Hydrocarbon concentrations were below detection limits in cross gradient well MW-3 and down gradient wells MW-5, MW-6, and MW-7. The current hydrocarbon distribution in ground water is consistent with historic site data and the current benzene distribution in ground water is shown on Figure 1.

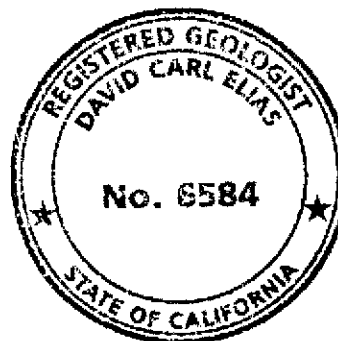
CLOSING

We appreciate the opportunity to provide environmental services on behalf of Mr. Bo K. Gin. Please call myself or David Elias at (510) 420-0700 if you have any questions or comments.

Sincerely,
Cambria Environmental Technology, Inc.


Scott Chenue
Staff Scientist


David Elias, RG
Senior Geologist









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Attachments: A - Analytical Results for Ground Water Sampling

cc: Mr. Bo K. Gin, 288 11th Street, Oakland, CA 94706

EXPLANATION

-  Monitoring Well Location
 -  XX.XX Potentiometric Surface Elevation
 -  Dual Well, SVE/Sparging Well
 -  SVE Well
 -  Ground Water Elevation Contour
 -  Ground Water Flow Direction and Gradient (ft/ft)
- ELEV.**

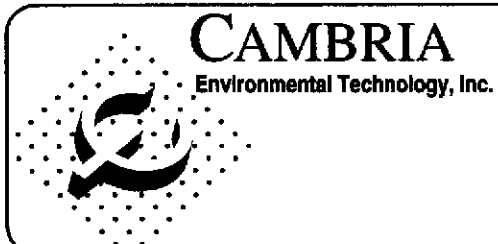
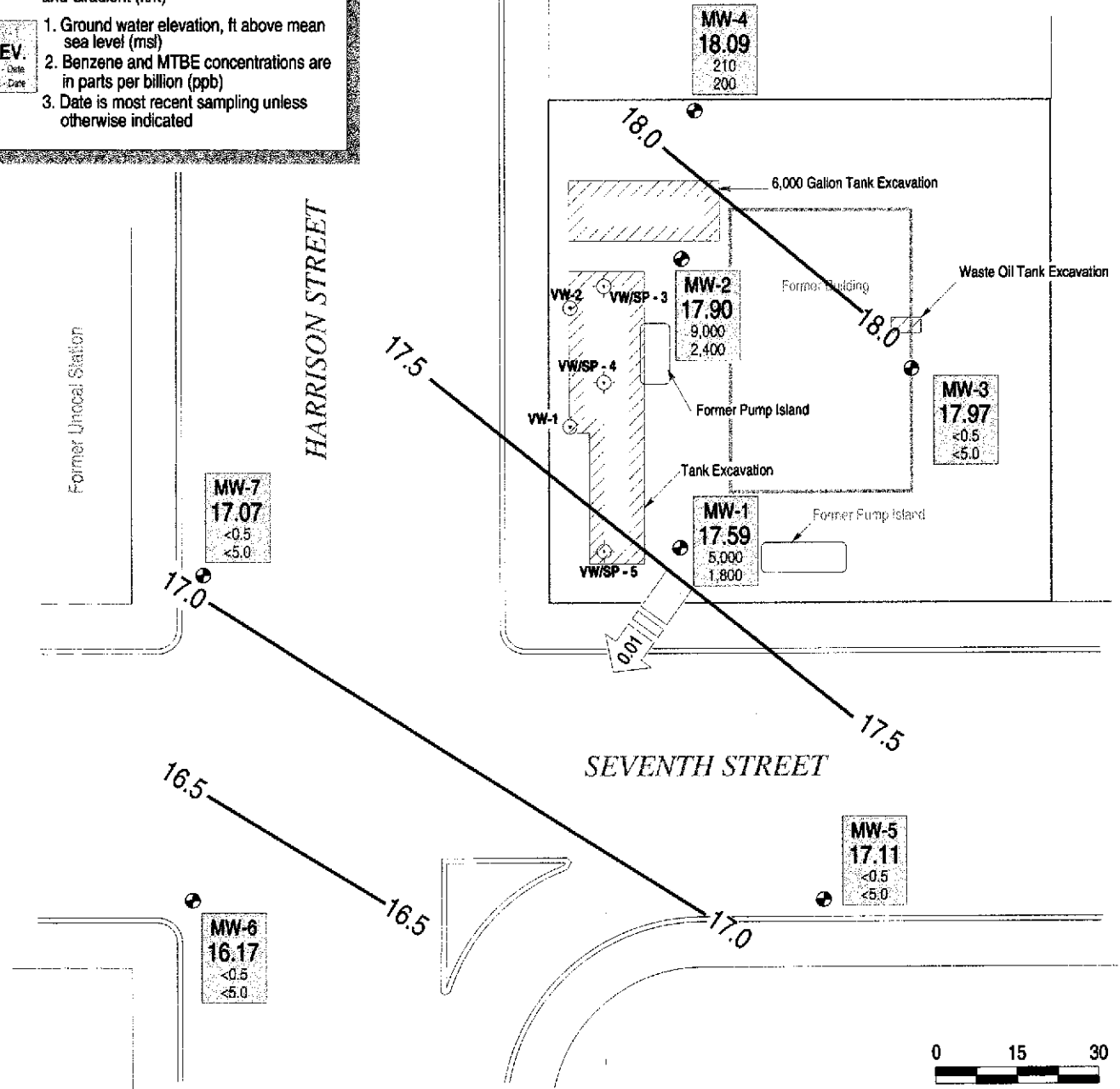
Benz - Date
MTBE - Date

 1. Ground water elevation, ft above mean sea level (msl)
 2. Benzene and MTBE concentrations are in parts per billion (ppb)
 3. Date is most recent sampling unless otherwise indicated



Shell Service Station

Approximate Location of Shell Fuel Tanks



Former Arco Station
706 Harrison Street
Oakland, California

Ground Water Elevation
Contours
February 18, 1998

FIGURE
1

Table 1. Ground Water Analytical Data - Former Arco Station - 706 Harrison Street, Oakland, California

Well ID (FOC)	Date Sampled	Depth to Water (ft)	Ground Water Elevation (ft)	Concentrations in parts per billion (µg/L)						MTBE ^a	Notes
				TPHg	Benzene	Toluene	Ethylbenzene	Xylenes			
MW-1 (29.15)	8/13/93	17.40	11.75	20,000	8,500	640	280	440	-		
	12/14/93	17.27	11.88	17,000	9,200	1,200	4,400	540	-		
	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)	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)	b, odor	
	2/18/98	11.56	17.59	16,000	5,000	750	400	780	1,800	b	
MW-2 (30.51)	8/13/93	17.05	13.46	34,000	6,800	10,000	740	3,900	-		
	12/14/93	18.28	12.23	16,000	3,200	4,200	500	1,700	-		
	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	
MW-3 (29.77)	8/13/93	17.05	12.72	<50	<0.50	<0.50	<0.50	<1.5	-		
	12/14/93	17.70	12.07	<50	<0.50	<0.50	<0.50	<1.5	-		
	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	-		

Table 1. Ground Water Analytical Data - Former Arco Station - 706 Harrison Street, Oakland, California

Well ID (TOC)	Date Sampled	Depth to Water (ft)	Ground Water Elevation (ft)	Concentrations in parts per billion (µg/L)						MTBE ^a	Notes
				TPHg	Benzene	Toluene	Ethylbenzene	Xylenes			
	1/27/97	13.83	15.94	<50	<0.5	<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	<0.5	<5.0	
	9/18/97	17.07	12.70	<50	<0.5	<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	<0.5	<5.0	
	2/18/98	11.80	17.97	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<5.0	
MW-4 (31.18)	12/16/94	18.10	13.08	2,500	32	6.5	4.5	17	-		
	12/29/94	17.95	13.23	-	-	-	-	-	-		
	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)		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)		b
	2/18/98	13.09	18.09	1,700	210	8.0	6.7	16	200		b
MW-5 (28.04)	12/16/94	16.07	11.97	<50	1.1	<0.5	<0.5	2.4	-		
	12/29/94	16.10	11.94	-	-	-	-	-	-		
	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	<0.5	<5.0	
MW-6 (29.10)	12/16/94	17.74	11.36	<50	<0.5	<0.5	<0.5	<0.5	-		
	12/29/94	17.40	11.70	-	-	-	-	-	-		
	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

Table 1. Ground Water Analytical Data - Former Arco Station - 706 Harrison Street, Oakland, California

Well ID (TOC)	Date Sampled	Depth to Water (ft)	Ground Water Elevation (ft)	Concentrations in parts per billion (µg/L)						Notes
				TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE ^a	
	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	
MW-7 (29.67)	12/16/94	17.07	12.60	<50	<0.5	<0.5	<0.5	<0.5	-	
	12/29/94	17.65	12.02	-	-	-	-	-	-	
	7/19/96	16.44	13.23	<50	<0.5	<0.5	<0.5	<0.5	-	
	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	
Trip Blank	2/18/98	-	-	<50	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5

Abbreviations and Analyses:

TPHg = Total petroleum hydrocarbons as gasoline by modified EPA Method 8015
 Benzene, ethylbenzene, toluene and xylenes analyzed by EPA Method 8020.
 MTBE = Methyl tert-butyl ether by EPA Method 8020
 µg/L = Micrograms per liter
 TOC = Top of casing elevation with respect to mean sea level
 Data prior to 12/16/94 provided by previous consultant.

Notes:

a = Result in parentheses indicates MTBE by EPA Method 8260.
 b = Analytical laboratory notes that unmodified or weakly modified gasoline is 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.

ATTACHMENT A

Analytical Results for Ground Water Sampling



McCAMPBELL ANALYTICAL INC.

110 Second Avenue South, #D7, Pacheco, CA 94553
Telephone : 510-798-1620 Fax : 510-798-1622
<http://www.mccampbell.com> E-mail: main@mccampbell.com

Cambria Environmental Technology 1144 65 th Street, Suite C Oakland, CA 94608	Client Project ID: #230-0116; Bo Gin	Date Sampled: 02/18/98
		Date Received: 02/19/98
	Client Contact: John Espinoza	Date Extracted: 02/19/98
	Client P.O:	Date Analyzed: 02/19/98

02/26/98

Dear John:

Enclosed are:

- 1). the results of 8 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,

Edward Hamilton, Lab Director

QC REPORT FOR HYDROCARBON ANALYSES

Date: 02/19/98

Matrix: WATER

Analyte	Concentration (mg/L) Sample (#85900)			Amount Spiked	% Recovery		RPD
	MS	MSD			MS	MSD	
TPH (gas)	0.0	92.6	96.3	100.0	92.6	96.3	3.9
Benzene	0.0	9.3	9.4	10.0	93.0	94.0	1.1
Toluene	0.0	9.7	9.8	10.0	97.0	98.0	1.0
Ethyl Benzene	0.0	9.6	9.8	10.0	96.0	98.0	2.1
Xylenes	0.0	29.2	29.8	30.0	97.3	99.3	2.0
TPH(diesel)	0	150	150	150	100	100	0.2
TRPH (oil & grease)	0	24000	21900	23700	101	92	9.2

$$\% \text{ Rec.} = (\text{MS} - \text{Sample}) / \text{amount spiked} \times 100$$

$$\text{RPD} = (\text{MS} - \text{MSD}) / (\text{MS} + \text{MSD}) \times 2 \times 100$$

QC REPORT FOR HYDROCARBON ANALYSES

Date: 02/20/98

Matrix: WATER

Analyte	Concentration (mg/L)			Amount Spiked	% Recovery		RPD
	Sample (#85927)	MS	MSD		MS	MSD	
TPH (gas)	0.0	91.8	94.2	100.0	91.8	94.2	2.6
Benzene	0.0	9.1	9.7	10.0	91.0	97.0	6.4
Toluene	0.0	9.5	10.1	10.0	95.0	101.0	6.1
Ethyl Benzene	0.0	9.4	10.0	10.0	94.0	100.0	6.2
Xylenes	0.0	28.6	30.2	30.0	95.3	100.7	5.4
TPH(diesel)	0	153	157	150	102	105	2.4
TRPH (oil & grease)	N/A	N/A	N/A	N/A	N/A	N/A	N/A

$$\% \text{ Rec.} = (\text{MS} - \text{Sample}) / \text{amount spiked} \times 100$$

$$\text{RPD} = (\text{MS} - \text{MSD}) / (\text{MS} + \text{MSD}) \times 2 \times 100$$

