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S510 3749 LS

August 20, 1997

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

Re: Second Quarter 1997 Monitoring Report

Former Arco Station Service Station 706 Harrison Street Oakland, California STID 3749 Cambria #230-0116-008

Dear Mr. Klettke:

On behalf of Mr. Bo K. Gin, Cambria Environmental Technology, Inc. (Cambria) is submitting this second quarter 1997 ground water monitoring report for the site referenced above. Presented below are the second quarter 1997 activities, the anticipated third quarter 1997 activities, and the current hydrocarbon distribution in ground water.

### SECOND QUARTER 1997 ACTIVITIES

Quarterly Ground Water Sampling: On June 18, 1997, 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.

CAMBRIA

ENVIRONMENTAL

Remediation System: Cambria is currently making arrangements for electricity to be supplied to the site in order to power the proposed remediation system.

TECHNOLOGY, INC.

1144 65TH STREET,

SUITE B

# ANTICIPATED THIRD QUARTER 1997 ACTIVITIES

OAKLAND,

CA 94608

PH: (510) 420-0700

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.

Fax: (510) 420-9170

## **HYDROCARBON DISTRIBUTION IN GROUND WATER**

The current hydrocarbon distribution in ground water is consistent with historic site data. The current benzene distribution in ground water is shown in Figure 1. The onsite hydrocarbon concentrations in ground water are highest in wells MW-1 and MW-2, which are located adjacent to the former underground storage tank locations. Hydrocarbon concentrations are somewhat lower in up gradient well MW-4. Relatively low concentrations of 51 ppb TPHg and 22 ppb benzene in down gradient well MW-6, and 73 ppb TPHg and 0.55 ppb toluene in cross gradient well MW-7 were detected. Hydrocarbons were below detection limits in cross gradient well MW-3 and down gradient well MW-5.

We appreciate the opportunity to provide environmental services on behalf of Mr. Bo K. Gin. Please call if you have any questions or comments.

Sincerely,

Cambria Environmental Technology, Inc.

Maureen D. Feineman

Staff Geologist

David Elias, R.G.

**Project Geologist** 

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Attachments: A - Analytic Results for Ground Water Sampling

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

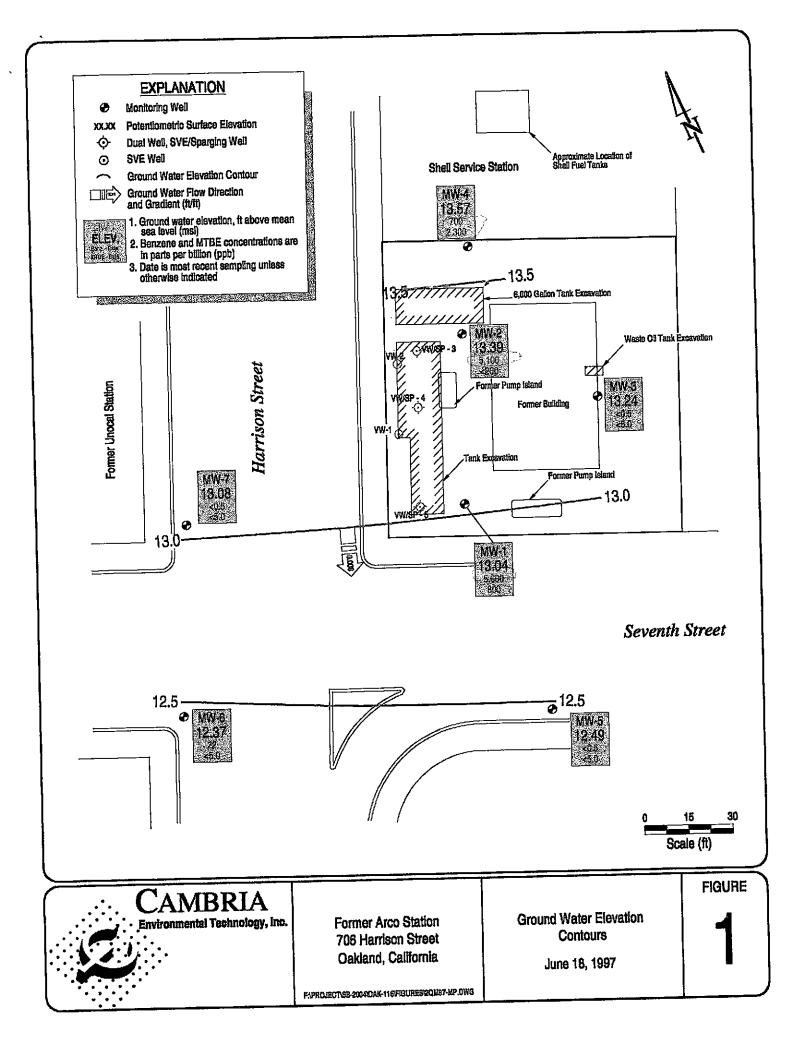


Table 1. Ground Water Analytic Data - Former Arco Station - 706 Harrison Street Oakland, California

Ground Water	TPHg	Benzene	Toluene	94 . Il		\$ 40003 F28	******
			TOTOTO	Ethylbenzene	Xylenes	MTBE <sup>a</sup>	Notes
Elevation			Concentration	ns in parts per billio	n		
(ft)							
	20.000	8,500	640	280	440	•	
11.75	20,000	9,200	1,200	4,400	540	-	
11.88	17,000		530	160	280	•	
12.15	9,500	3,600		-		-	
12.75	-		1 100	330	530		sheen/odor
13.32	17,000	5,200	1,100	790	880	400	b, sheen/odor
15.57	30,000	9,800	1,300	790 <b>510</b>	776	1,200 (800)	b
13.04	19,000	5,600	1,400	210	,,,,		
				740	3,900	_	
13.46	34,000	6,800	10,000	740	1,700	_	
12.23	16,000	3,200	4,200	500		-	
12.41	23,000	2,500	4,200	470	1,800	-	
13.11	-	-	•		-	•	odor
13.79	90,000	7,300	14,000	1,600	7,300	<b>500</b>	b, odor
15.62	63,000	7,100	13,000	1,600	7,100	500	b, 000
13.39	52,000	5,106	10,000	1,400	6,000	<200	, a
12.72	<50	<0.50	<0.50	<0.50	<1.5	-	
12.07	<b>⊴</b> 0	<0.50	<0.50	<0.50	<1.5	-	
		<0.5	<0.5	<0.5	<0.5	-	
	•	-	-	-	••	-	
	<50	<0.5	<0.5	<0.5	<0.5	•	
				<0.5	<0.5	⋖5.0	
CONTRACTOR OF THE PROPERTY OF	Control of the Contro		<0.5	<0.5	40.5	<5.0	
	12.07 12.37 12.97 13.49 15.94	12.37 <50 12.97 - 13.49 <50 15.94 <50	12.37 <50 <0.5 12.97 13.49 <50 <0.5 15.94 <50 <0.5	12.37 <50 <0.5 <0.5 12.97	12.07	12.07	12.07

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

Well ID	Date	Depth to Water	Ground Water	TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE*	Notes
(TOC)	Sampled		Elevation			Concentration	ons in parts per billic	on	_	
		(ft)	(ft)				· · · · · · · · · · · · · · · · · · ·			<del></del>
			****	2 500	32	6.5	4.5	17	-	
MW-4	12/16/94	18.10	13.08	2,500		•	•		-	
(31.18)	12.29/94	17.95	13.23	2 200	520	39	67	60		
	7/19/96	17.38	13.80	3,300		55	100	91	1,100	ь
m	1/27/97	15.25	15.93	4,500	860 700	52	81	76	2,200 (2,300)	b
	6/18/97	17.61	13,57	2,700	7090	-346				
				.50		<0.5	<0.5	2.4		
MW-5	12/16/94	16.07	11.97	<50	1.1	~0.0			•	
(28.04)	12/29/94	16.10	11.94	-	-	<0.5	<0.5	<0.5	•	
	7/19/96	15.49	12.55	<b>&lt;</b> 50	<0.5		<0.5	<0.5	<5.0	
_	1/27/97	13.60	14.44	<50	<0.5	<0.5 <0.5	and the second s	<0.5	45.A	
	6/18/97	15.55	12.49	<b>5</b> 0	<b>40.5</b>	enter				
						.n.e	<0.5	<0.5	-	
MW-6	12/16/94	17.74	11.36	<50	<0.5	<0.5	40.2		-	
(29.10)	12/29/94	17.40	11.70	•	-		- <0.5	<0.5		
	7/19/96	16.60	12.50	<50	<0.5	<0.5		<0.5	<5.0	
	1/27/97	14.88	14.22	<b>⊴</b> 0	<0.5	<0.5	<0.5 d0.5	a).5	<5.0	ė.
	6/18/97	16.73	12,37	51	22	<0.5	99.2	~~		
							-0 ¢	<0.5	_	
MW-7	12/16/94	17.07	12.60	<50	<0.5	<0.5	<0.5	40.3	_	
(29.67)	12/29/94	17.65	12.02	-	-	•	-	<0.5	_	
, ,	7/19/96	16.44	13.23	<50	<0.5	<0.5	<0.5		<5.0	
	1/27/97	15.09	14.58	<b></b>	<0.5	<0.5	<0.5	<0.5		ď
	6/18/97	16.59	13.08	73	<0.5	0.55	d).5	<0.5	€O#	

m 11 1	Ground Water Analytic Data - Former Arco Station - 706 Harrison Street Oakland, California
Table 1.	Ground Water Analytic Data - Former Acco States

17. 11. FD	Dota	Depth to Water	Ground Water	TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE <sup>a</sup>	Notes
Well ID (TOC)	Date Sampled	(ft)	Elevation (ft)			Concentration	ons in parts per billio	n		

### Abbreviations:

TPHg = Total petroleum hydrocarbons as gasoline by modified EPA Method 8015 MTBE = Methyl tert-butyl ether by EPA Method 8020 parts per billion is equivalent to micrograms per liter in water TOC = Top of casing elevation with respect to mean sea level

#### Notes:

- a = Result in parentheses indicates MTBE by EPA Method 8260.
- b = Analytic laboratory notes that unmodified or weakly modified gasoline is significant.
- c = Analytic laboratory notes that lighter gasoline range compounds are significant.
- d = Analytic laboratory notes that isolated peaks are present.

Benzene, ethylbenzene, toluene and xylenes analyzed by EPA Method 8020. Data prior to 12/16/94 provided by previous consultant.

# **C**AMBRIA

## ATTACHMENT A

Analytic Results for Ground Water Sampling

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

Cambria Environmental Technology	Client Project ID: #23-116-8; Bo K.	Date Sampled: 06/18/97
1144 65 <sup>th</sup> Street, Suite C	Gin Property	Date Received: 06/19/97
Oakland, CA 94608	Client Contact: David Elias	Date Extracted: 06/19/97
	Client P.O:	Date Analyzed: 06/19/97

06/26/97

Dear David:

Enclosed are:

- 1). the results of 7 samples from your #23-116-8; Bo K. Gin Property 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

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

Client Project ID: #23-116-8; Bo	Date Sampled: 06/18/97		
K. Gin Property	Date Received: 06/19/97		
Client Contact: David Elias	Date Extracted: 06/19-06/23/97		
Client P.O:	Date Analyzed: 06/19-06/23/97		
	Client Contact: David Elias		

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline\*, with Methyl tert-Butyl Ether\* & BTEX\*

EPA methods 5030, modified 8015, and 8020 or 602; California RWQCB (SF Bay Region) method GCFID(5030) % Recovery Ethylben-**Xylenes** Benzene Toluene TPH(g)+ **MTBE** Client ID Matrix Surrogate Lab ID zene 102 510 770 1400 5600 1200 W 19,000,a 77716 MW-1 104 1400 6000 10,000 5100 ND<200 W 52,000,a MW-2 77717 103 ND ND ND ND ND W ND 77718 MW-3 101 76 52 81 700 2200 W 2700,a MW-4 77719 ND 100 ND ND ND ND ND MW-5 W 77720 103 ND ND ND W 51,c ND 22 MW-6 77721 105 ND ND 0.55 ND ND W 73,f MW-7 77722 0.5 0.5 0.5 Reporting Limit unless 5.0 0.5 50 ug/L W otherwise stated; ND means not detected above 0.005 0.005 0.005 0.05 0.005 S 1.0 mg/kg the reporting limit

<sup>\*</sup> water and vapor samples are reported in ug/L, wipe samples in ug/wipe, soil and sludge samples in mg/kg, and all TCLP and SPLP extracts in ug/L

<sup>\*</sup> 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 (?); f) one to a few isolated peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen is present; i) liquid sample that contains greater than ~5 vol. % sediment; j) no recognizable pattern.

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

17.1		Date Sampled: 06/18/97
Cambria Environmental Technology 1144 65 <sup>th</sup> Street, Suite C	Client Project ID: #23-116-8; Bo K. Gin Property	Date Received: 06/19/97
Oakland, CA 94608	Client Contact: David Elias	Date Extracted: 06/23-06/24/97
	Client P.O:	Date Analyzed: 06/23-06/24/97
	Mothyd tout Dutyl Ethor *	

### Methyl tert-Butyl Ether \*

PA method 82 Lab ID	Client ID	Matrix	MTBE*	% Recovery Surrogate		
77716 MW-1 W			800	109		
77719	MW-4	W	2300	115		
<u></u>						
<u>.                                    </u>						
Reporting Li	mit unless otherwise ans not detected above	w	5.0 ug/L			
tated; ND mea the re	ans not detected above eporting limit	s	50 ug/kg			

<sup>\*</sup> water samples are reported in ug/L, soil and sludge samples in ug/kg, wipe samples in ug/wipe and all TCLP / STLC / SPLP extracts in ug/L.

h) lighter than water immiscible sheen is present; i) liquid sample that contains greater than ~5 vol. % sediment.

### QC REPORT FOR HYDROCARBON ANALYSES

Date: 06/19/97

Matrix: Water

	Concentr	ation	(mg/L)		% Reco	very	
Analyte	Sample  #(77610)	MS	MSD	Amount     Spiked	MS	MSD	RPD
TPH (gas) Benzene Toluene Ethyl Benzene Xylenes	0.0 0.0 0.0 0.0	92.0 8.7 9.1 9.3 28.0	94.8 9.2 9.6 9.8 29.3	100.0 10.0 10.0 10.0 30.0	92.0 87.0 91.0 93.0 93.3	94.8 92.0 96.0 98.0 97.7	3.0 5.6 5.3 5.2 4.5
TPH (diesel)	0	141	141	150	94	94	0.5
TRPH (oil & grease)	N/A	N/A	N/A	N/A	   N/A   	N/A	N/A

% Rec. = (MS - Sample) / amount spiked x 100

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

### QC REPORT FOR HYDROCARBON ANALYSES

Date: 06/23/97-06/24/97 Matrix:

Water

	Concent	ration	(mg/L)		% Reco	very	
Analyte	Sample  #(77799)	MS	MSD	Amount Spiked	MS	MSD	RPD
TPH (gas) Benzene Toluene Ethyl Benzene Xylenes	0.0	110.6 9.5 10.0 10.3 30.5	98.1 9.2 9.9 10.0 29.4	100.0 10.0 10.0 10.0 30.0	110.6 95.0 100.0 103.0	98.1 92.0 99.0 100.0 98.0	12.0 3.2 1.0 3.0 3.7
TPH (diesel)	0	146	146	150	97	97	0.4
TRPH (oil & grease)	N/A	N/A	N/A	N/A	   N/A 	N/A	N/A

% Rec. = (MS - Sample) / amount spiked x 100

RPD = (MS - MSD) / (MS + MSD) x 2 x 100