



CAMBRIA

ENVIRONMENTAL
PROTECTION

97 OCT -7 PM 0:35

September 30, 1997

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

Re: **Third 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 third quarter 1997 ground water monitoring report for the site referenced above. Presented below are the third quarter 1997 activities, the anticipated fourth quarter 1997 activities, and the current hydrocarbon distribution in ground water.

THIRD QUARTER 1997 ACTIVITIES

Quarterly Ground Water Sampling: On September 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

TECHNOLOGY, INC.

1144 65TH STREET,

SUITE B

OAKLAND,

CA 94608

PH: (510) 420-0700

FAX: (510) 420-9170

Remediation System: Cambria made arrangements for electricity to be supplied to the site with Pacific Gas and Electric (PG&E) in order to power the proposed remediation system. Cambria contracted Sustainable Contracting Services to start construction of the remediation system.

ANTICIPATED FOURTH QUARTER 1997 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 complete construction of the remediation system in mid October with an anticipated start up date of November 15, 1997.

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. A relatively low concentration of 94 ppb TPHg was detected in well MW-7. Hydrocarbons were below detection limits in cross gradient well MW-3 and down gradient wells MW-5 and MW-6.

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.

Walter Cuculic

Walter Cuculic
Staff Engineer

Owen Ratchye

Owen Ratchye P.E.
Project Engineer



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Attachments: A - Analytic Results for Ground Water Sampling

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

EXPLANATION

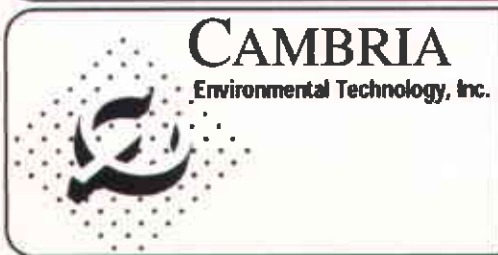
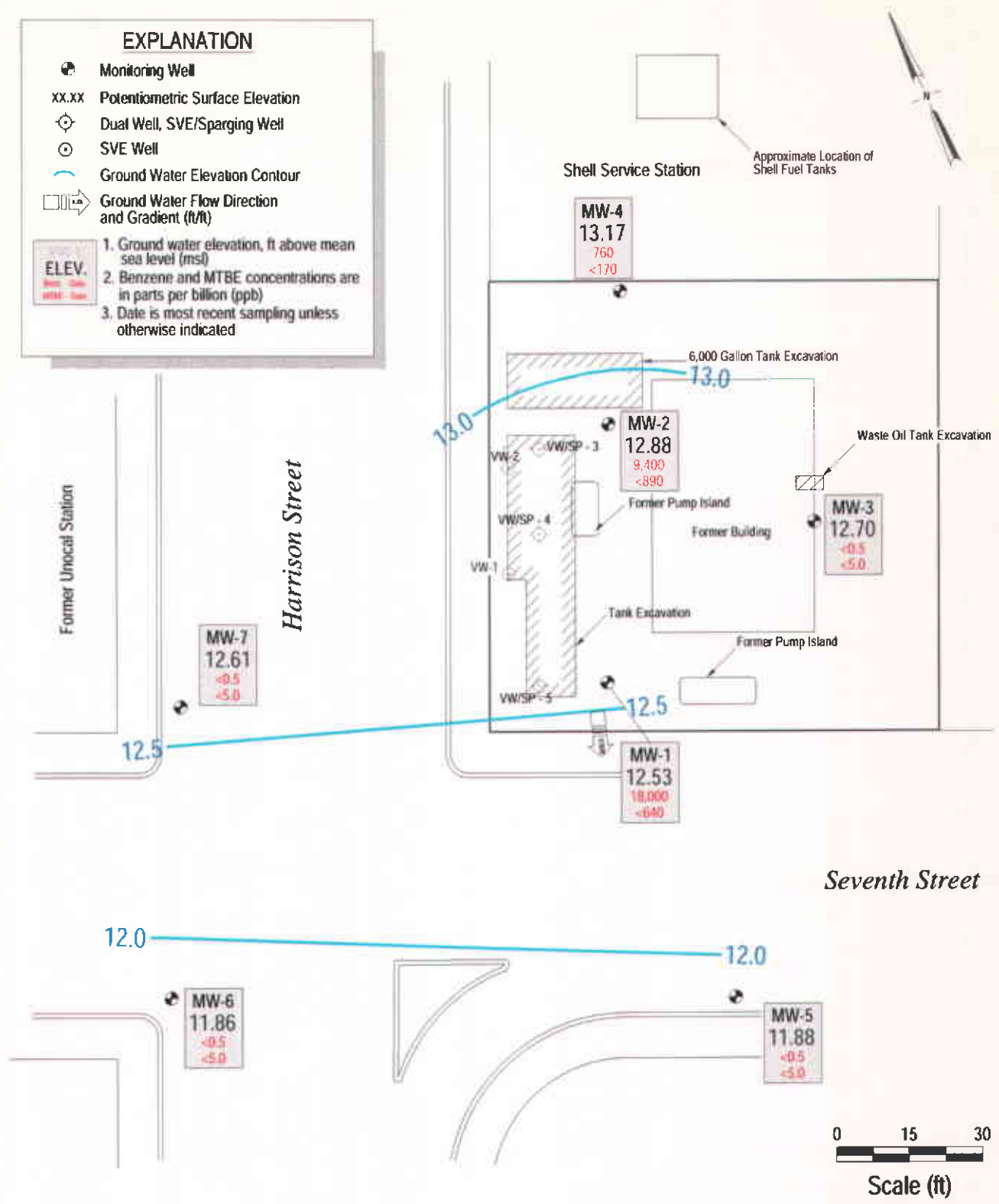
- ⊕ Monitoring Well
- xx.xx Potentiometric Surface Elevation
- ⊕ Dual Well, SVE/Sparging Well
- ⊙ SVE Well
- Ground Water Elevation Contour
- Ground Water Flow Direction and Gradient (ft/ft)

ELEV.

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



Former Arco Station
706 Harrison Street
Oakland, California

F:\PROJECTS\BERRINGHAM\11\FIGURES\COMPILED.DWG

Ground Water Elevation
Contours
June 18, 1997

FIGURE
1

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

Well ID (TOC)	Date Sampled	Depth to Water (ft)	Ground Water Elevation (ft)	TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE ^a	Notes
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
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
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	-	
	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	

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

Well ID (TOC)	Date Sampled	Depth to Water (ft)	Ground Water Elevation (ft)	TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE ^a	Notes
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
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	
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
	9/18/97	17.24	11.86	<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

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

Well ID (TOC)	Date Sampled	Depth to Water (ft)	Ground Water Elevation (ft)	TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE ^a	Notes
Concentrations in parts per billion										

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.
 e = Analytic Laboratory notes that heavier gasoline range compounds are significant.
 f = Analytic Laboratory notes hydrocarbons with no recognizable patterns are present.

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

ATTACHMENT A

Analytic 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: #230-0116-008; BOGIN	Date Sampled: 09/18/97
		Date Received: 09/18/97
	Client Contact: Walter Cuculic	Date Extracted: 09/18/97
	Client P.O:	Date Analyzed: 09/18/97

09/25/97

Dear Walter:

Enclosed are:

- 1). the results of 7 samples from your #230-0116-008; 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,

Edward Hamilton, Lab Director

QC REPORT FOR HYDROCARBON ANALYSES

Date: 09/19/97

Matrix: Water

Analyte	Concentration (mg/L)			Amount Spiked	% Recovery		RPD
	Sample # (80890)	MS	MSD		MS	MSD	
TPH (gas)	0.0	104.3	99.7	100.0	104.3	99.7	4.6
Benzene	0.0	10.8	10.9	10.0	108.0	109.0	0.9
Toluene	0.0	10.8	10.8	10.0	108.0	108.0	0.0
Ethyl Benzene	0.0	10.8	10.9	10.0	108.0	109.0	0.9
Xylenes	0.0	32.8	32.7	30.0	109.3	109.0	0.3
TPH(diesel)	0	144	143	150	96	95	0.4
TRPH (oil & grease)	N/A	N/A	N/A	N/A	N/A	N/A	N/A

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

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

9465 XC209

McCAMPBELL ANALYTICAL

110 2nd AVENUE, # D7

PACHECO, CA 94663

(610) 790-1020

FAX (610) 790-1022

CHAIN OF CUSTODY RECORD

TURN AROUND TIME:

RUSH 24 HOUR 48 HOUR 5 DAY

REPORT TO: WALTER CUCULLI BILL TO:

COMPANY: Cambria Environmental Technology

1144 65th St., Suite C

Oakland, CA 94608

TELE: 510-420-0700 FAX: 420-9170

PROJECT NUMBER: 230-0116-008 PROJECT NAME: BOG-IN

PROJECT LOCATION: 706 Harrison St. SAMPLER SIGNATURE: Walter Cuculli

ANALYSIS REQUEST

UTILER

STX & TH as Gasoline (602/802) & 8023	TH as Diesel (802)	Total Petroleum Oil & Grease (200) EM/200 MP	Total Petroleum Hydrocarbons (418)	EPA 601/801	EPA 802/802	EPA 803/803	EPA 806/806 - PCBs Only	EPA 821/821-824/824	EPA 825/825	CAH - 17 Metals	EPA - Priority Pollutant Metals	LEAD (240/740/252/252)	ORGANIC LEAD	HC	MTBE	EPA Method 8030
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

80918
80919
80920
80921
80922
80923
80924

SAMPLE ID	LOCATION	SAMPLING		# CONTAINERS	TYPE CONTAINERS	MATRIX					METHOD PRESERVED					
		DATE	TIME			WATER	SOIL	AIR	SLUDGE	OTHER	HC	HC2	OTHER			
X MW-1		9/18/97	11:15	3	VOCS	X					X					
X MW-2		" "	12:30	3	VOCS	X					X					
X MW-3		" "	9:30	3	VOCS	X					X					
X MW-4		9/18/97	12:20	3	VOCS	X					X					
(+) MW-5		" "	10:15	3	VOCS	X					X					
(+) MW-6		" "	11:00	3	VOCS	X					X					
(+) MW-7		9/18/97	11:45	3	VOCS	X					X					

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:
RELINQUISHED BY:	DATE	TIME	RECEIVED BY:
RELINQUISHED BY: <u>Walter Cuculli</u>	DATE: <u>9/18</u>	TIME: <u>7:30</u>	RECEIVED BY: <u>[Signature]</u>
	DATE: <u>9/18/97</u>	TIME: <u>7:30</u>	RECEIVED BY: <u>[Signature]</u>

REMARKS:

ICE: GOOD CONDITION HEAD SPACE ABSENT

PRESERVATION APPROPRIATE: CONTAINERS:

VOCS O&G METALS OTHER