

C A M B R I A

ENVIRONMENTAL  
PROTECTION

98 OCT -2 PM 3:05

September 25, 1998

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



Re: **Third Quarter 1998 Monitoring Report**

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

Dear Mr. Seto:

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

**THIRD QUARTER 1998 ACTIVITIES**

**Quarterly Ground Water Sampling:** On August 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 analytical results. Figure 1 presents the ground water elevation contours and benzene and Methyl tert-butyl ether (MTBE) concentrations. The analytical results of the ground water sampling are included in Attachment A and water sampling field sheets are included in Attachment B.

**Remediation System:** **Cambria operated a soil-vapor extraction (SVE) and air sparging system, during the entire third quarter.**

Oakland, CA  
Sonoma, CA  
Portland, OR  
Seattle, WA

**Cambria  
Environmental  
Technology, Inc.**

1144 65th Street  
Suite B  
Oakland, CA 94608  
Tel (510) 420-0700  
Fax (510) 420-9170

**ANTICIPATED FOURTH QUARTER 1998 ACTIVITIES**

*Quarterly Ground Water Sampling:* As requested by the Alameda County Department of Environmental Health (ACDEH), 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 continue to operate the system.

**HYDROCARBON DISTRIBUTION IN GROUND WATER**

The highest hydrocarbon concentrations detected in ground water samples from onsite wells were collected from MW-1 and MW-2, located adjacent to the former underground storage tank locations. Maximum concentrations of 64,000 parts per billion (ppb) total petroleum hydrocarbons as gasoline (TPHg) and 6,000 ppb benzene were detected in monitoring well MW-2. These concentrations have decreased from second quarter concentrations of 110,000 ppb TPHg and 9,500 ppb benzene. Hydrocarbon concentrations increased 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 and MTBE distribution in ground water is shown on Figure 1.

Mr. Larry Seto  
September 25, 1998

**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.**



John Riggi  
Staff Geologist



David Elias, RG  
Senior Geologist









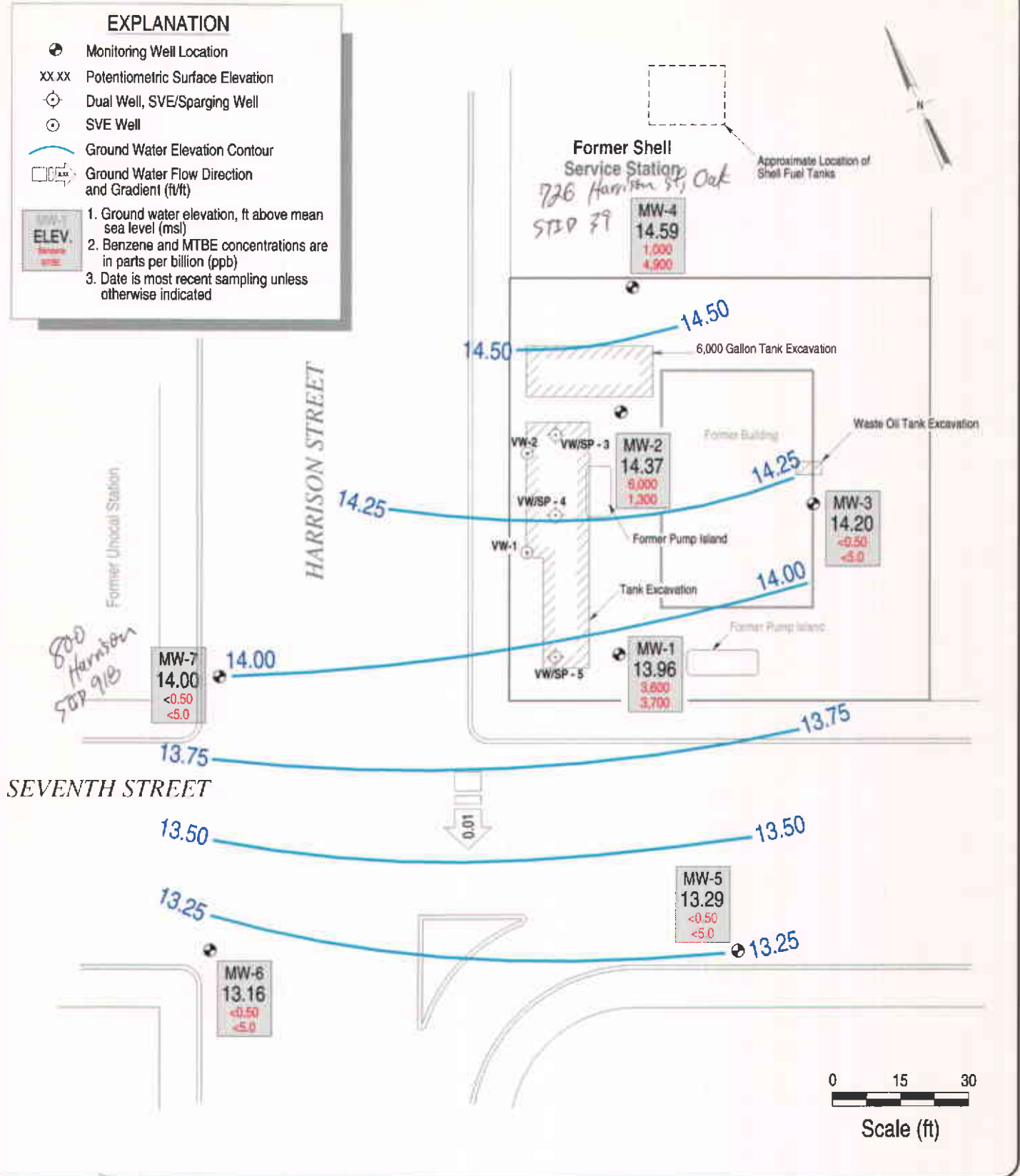
H:\ASB-2004\Oakl-116 - Bo Gin\QM\QM-3-98.WPD

Attachments: A - Analytical Results for Ground Water Sampling  
B - Water Sampling Field Sheets

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

**EXPLANATION**

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

Ground Water Elevation  
Contours  
August 18, 1998

FIGURE  
**1**

K:\88-2004\04-11\FIGURE3\0411.MXD

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

Well ID <i>TOC</i>	Date Sampled	Depth to Water (ft)	Ground Water Elevation (ft)	Concentrations in parts per billion (µg/L)						Notes
				TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE <sup>a</sup>	
MW-1 <i>29.15</i>	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)	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
	<b>8/18/98</b>	<b>15.19</b>	<b>13.96</b>	<b>12,000</b>	<b>3,600</b>	<b>1,300</b>	<b>300</b>	<b>570</b>	<b>5,100(3,700)</b>	<b>a, b</b>
	MW-2 <i>30.51</i>	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
5/12/98		14.45	16.06	110,000	9,500	21,000	2,500	12,000	<1,200	b
<b>8/18/98</b>		<b>16.14</b>	<b>14.37</b>	<b>64,000</b>	<b>6,000</b>	<b>13,000</b>	<b>1,700</b>	<b>7,800</b>	<b>2,000(1,300)</b>	<b>a, b</b>

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

Well ID <i>TOC</i>	Date Sampled	Depth to Water (ft)	Ground Water Elevation (ft)	Concentrations in parts per billion (µg/L)						MTBE <sup>a</sup>	Notes
				TPHg	Benzene	Toluene	Ethylbenzene	Xylenes			
MW-3 <i>29.77</i>	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		
	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			
	<b>8/18/98</b>	<b>15.57</b>	<b>14.20</b>	<b>&lt;50</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;5.0</b>		
MW-4 <i>31.18</i>	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)	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	8.0	6.7	16	200	b	
	5/12/98	14.78	16.40	2,100	300	15	36	34	920	b, c	
	<b>8/18/98</b>	<b>16.59</b>	<b>14.59</b>	<b>4,700</b>	<b>1,000</b>	<b>130</b>	<b>110</b>	<b>150</b>	<b>5,200(4,900)</b>	<b>a, b</b>	
MW-5 <i>28.04</i>	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		

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

Well ID <i>TOC</i>	Date Sampled	Depth to Water (ft)	Ground Water Elevation (ft)	Concentrations in parts per billion (µg/L)						Notes
				TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE <sup>a</sup>	
	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	
	<b>8/18/98</b>	<b>14.75</b>	<b>13.29</b>	<b>&lt;50</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;5.0</b>	
MW-6	12/16/94	17.74	11.36	<50	<0.5	<0.5	<0.5	<0.5	-	
29.10	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	
	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	
	<b>8/18/98</b>	<b>15.94</b>	<b>13.16</b>	<b>&lt;50</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;5.0</b>	
MW-7	12/16/94	17.07	12.60	<50	<0.5	<0.5	<0.5	<0.5	-	
29.67	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	
	5/12/98	14.81	14.86	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	<b>8/18/98</b>	<b>15.67</b>	<b>14.00</b>	<b>&lt;50</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;5.0</b>	

**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)	TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE <sup>a</sup>	Notes
-----Concentrations in parts per billion (µg/L)-----										

**Abbreviations and Analyses:**

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

**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.  
 Data prior to 12/16/94 provided by previous consultant.



**ATTACHMENT A**  
Analytical Results for Ground Water Sampling





McCAMPBELL ANALYTICAL INC.

110 Second 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 Environmental Technology 1144 65 <sup>th</sup> Street, Suite C Oakland, CA 94608	Client Project ID: #230-0116; Bo Gin	Date Sampled: 08/18/98
	Client Contact: John Riggi	Date Received: 08/19/98
	Client P.O:	Date Extracted: 08/24/98
		Date Analyzed: 08/24/98

**Methyl tert-Butyl Ether \***

EPA method 8260 modified

Lab ID	Client ID	Matrix	MTBE*	% Recovery Surrogate
93740	MW-1	W	3700	101
93741	MW-2	W	1300	103
93743	MW-4	W	4900	102
Reporting Limit unless otherwise stated; ND means not detected above the reporting limit	W		5.0 ug/L	
	S		50 ug/kg	

\* 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: 08/19/98-08/20/98

Matrix: WATER

Analyte	Concentration (mg/L)			Amount Spiked	% Recovery		
	Sample (#93743)	MS	MSD		MS	MSD	RPD
TPH (gas)	0.0	109.1	112.6	100.0	109.1	112.6	3.1
Benzene	0.0	10.2	10.3	10.0	102.0	103.0	1.0
Toluene	0.0	10.8	10.9	10.0	108.0	109.0	0.9
Ethyl Benzene	0.0	10.5	10.7	10.0	105.0	107.0	1.9
Xylenes	0.0	31.4	31.7	30.0	104.7	105.7	1.0
TPH(diesel)	0.0	169	174	150	113	116	2.8
TRPH (oil & grease)	0	24700	25200	23700	104	106	2.0

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

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

McCAMPBELL ANALYTICAL INC.

110 2nd Avenue South, #D7, Pacheco, CA 94553  
 Tele: 925-798-1620 Fax: 925-798-1622

QC REPORT FOR VOCs (EPA 8240/8260 )

Date: 08/24/98-08/25/98

Matrix: WATER

Analyte	Concentration (ug/kg, u Sample (#93890)			Amount Spiked	% Recovery		RPD
	MS	MSD			MS	MSD	
1,1-Dichloroethe	0	83	88	100	83	88	6.8
Trichloroethene	0	79	76	100	79	76	4.0
EDE	0	91	95	100	91	95	3.8
Chlorobenzene	0	90	96	100	90	96	5.9
Benzene	0	90	94	100	90	94	5.1
Toluene	0	87	91	100	87	91	4.3

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

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

12100 xc 310.doc

McCAMBELL ANALYTICAL INC.

110 2<sup>ND</sup> AVENUE SOUTH, #D7  
PACHECO, CA 94553

Telephone: (925) 798-1620

Fax: (925) 798-1622

CHAIN OF CUSTODY RECORD

TURN AROUND TIME

RUSH  24 HOUR  48 HOUR  5 DAY

Report To: John Riggi Bill To: RN SCHEELE

Company: Cambria Environmental Technology  
1144 65<sup>th</sup> Street, Suite C  
Oakland, CA 94608

Tele: (510) 420-0700 Fax: (510) 420-9170

Project #: 230-0116 Project Name: ROGIN

Project Location: 706 Franklin St Oakland CA

Sampler Signature: [Signature]

Analysis Request

Other

Comments

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

SAMPLE ID	LOCATION	SAMPLING		# Containers	Type Containers	MATRIX					METHOD PRESERVED							
		Date	Time			Water	Soil	Air	Sludge	Other	Ice	HCl	HNO <sub>3</sub>	Other				
+ MW-1		8/18/92	1300	4	WA	X												
+ MW-2			1235	4		X												
+ MW-3			1200	4		X												
+ MW-4			1215	4		X												
+ MW-5			1140	4		X												
+ MW-6			1105	4		X												
+ MW-7			1035	4		X												

93740  
93741  
93742  
93743  
93744  
93745  
93746

Relinquished By: <u>[Signature]</u>	Date: <u>8-19</u>	Time: <u>8:59</u>	Received By: <u>[Signature]</u>
Relinquished By: <u>[Signature]</u>	Date: <u>8-19</u>	Time: <u>10:50</u>	Received By: <u>Uma A. Butler</u>
Relinquished By:	Date:	Time:	Received By:

Remarks:

ICE  GOOD CONDITION  HEAD SPACE ABSENT

PRESERVATION APPROPRIATE CONTAINERS

VOAB  O&G  METALS  OTHER

**ATTACHMENT B**  
Field Sheets for Water Sampling

**ATTACHMENT B**  
Field Sheets for Water Sampling



DAILY FIELD REPORT

Project Name: <b>BOGIN</b>	Cambria Mgr: <b>DE</b>	Field Person: <b>JR</b>
Project Number: <b>230-0116</b>	Date: <b>8/12/98</b> <i>Thurs</i>	Site Address:
General Tasks: <b>QM 3098</b>		<b>706 HARRISON OAKLAND</b>

Weather: *Partly Cloudy*

Time	Activity/Comments	Code	Hours
730 -	MOB		
820	- Arrive onsite. set up decm. gauge with MW-1 → MW-7		
1025	Change Decm - Begin Degrading & Sampling. With MW-5, 6, 7 involved. Street control at heavy intersections.		
	All equipment was properly decontaminated prior to each sampling event.		
	Added caps to MW-5, MW-6		
	Added lock to MW-5, MW-6 & MW-7		
	MW-5, MW-6 & MW-7 need to be retapped. bolts are loose & stripped.		
	- Drum - 1 almost full - 1 empty. Labeled Drum.		
100	Leave Site		
1007	DEMOS / paperwork / CAC's		
140	truck release 11 miles		

WELL SAMPLING FORM

Project Name: <i>Bogin</i>	Cambria Mgr: <i>DE</i>	Well ID: <i>MW-1</i>
Project Number: <i>230-0116</i>	Date: <i>9/10/98</i>	Well Yield:
Site Address: <i>706 Harrison St - Oakland CA</i>	Sampling Method: <i>dry bailer</i>	Well Diameter: <i>2" PVC</i>
		Technician(s): <i>SR</i>
Initial Depth to Water: <i>15.19</i>	Total Well Depth: <i>25.82</i>	Water Column Height: <i>10.63</i>
Volume/ft: <i>0.16</i>	1 Casing Volume: <i>1.70</i>	Casing Volumes: <i>5.10</i>
Purging Device: <i>Sub pump</i>	Did Well Dewater?: <i>No</i>	Total Gallons Purged: <i>5.10</i>
Start Purge Time: <i>1245</i>	Stop Purge Time: <i>1255</i>	Total Time: <i>10 min</i>

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.	pH	Cond.	Comments
<i>1245</i>	<i>1</i>	<i>17.6</i>	<i>7.7</i>	<i>551</i>	<i>Strong</i>
<i>1250</i>	<i>2</i>	<i>17.7</i>	<i>7.6</i>	<i>598</i>	<i>Open</i>
<i>1255</i>	<i>3</i>	<i>17.7</i>	<i>7.6</i>	<i>438</i>	
					<i>-open H<sub>2</sub>O</i>
					<i>Will Vent</i>
					<i>OK</i>

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
<i>MW-1</i>	<i>9/10/98</i>	<i>1300</i>	<i>4 Vol's</i>	<i>GL</i>	<i>TH, BTEX, MTBE</i>	<i>8020/8260</i>

WELL SAMPLING FORM

Project Name: <i>BODIN</i>	Cambria Mgr: <i>DE</i>	Well ID: <i>MW-2</i>
Project Number:	Date: <i>8/19/99</i>	Well Yield: <i>/</i>
Site Address: <i>26 HAMMON Oakland CA</i>	Sampling Method: <i>drop boiler</i>	Well Diameter: <i>2" pvc</i>
		Technician(s): <i>JA</i>
Initial Depth to Water: <i>16.14</i>	Total Well Depth: <i>25.55</i>	Water Column Height: <i>9.41</i>
Volume/ft: <i>0.16</i>	1 Casing Volume: <i>1.51</i>	4 Casing Volumes: <i>4.53</i>
Purging Device: <i>Sub-sump</i>	Did Well Dewater?: <i>No</i>	Total Gallons Purged: <i>4.53</i>
Start Purge Time: <i>1200</i>	Stop Purge Time: <i>1225</i>	Total Time: <i>1230</i>

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.	pH	Cond.	Comments
<i>1220</i>	<i>1</i>	<i>17.0</i>	<i>7.6</i>	<i>154</i>	<i>Well Vent</i>
<i>1225</i>	<i>2</i>	<i>17.9</i>	<i>7.7</i>	<i>183</i>	<i>OK.</i>
<i>1230</i>	<i>3</i>	<i>17.0</i>	<i>7.5</i>	<i>368</i>	<i>- ODR</i>

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
<i>MW-2</i>	<i>8/19/99</i>	<i>1235</i>	<i>4 VOA'S</i>	<i>4HCL</i>	<i>TPH, BTEX, MTBE</i>	<i>8020-8260</i> <i>MTBE</i>

WELL SAMPLING FORM

Project Name: <i>BOGIN</i>	Cambria Mgr: <i>DE</i>	Well ID: <i>MW-3</i>
Project Number: <i>230-0116</i>	Date: <i>8/13/98</i>	Well Yield: <i>/</i>
Site Address: <i>706 AMMISIN Oakland CA</i>	Sampling Method: <i>dry hole</i>	Well Diameter: <i>2" PVC</i>
		Technician(s): <i>JL</i>
Initial Depth to Water: <i>15.57</i>	Total Well Depth: <i>27.77</i>	Water Column Height: <i>12.20</i>
Volume/ft: <i>0.16</i>	1 Casing Volume: <i>1.95</i>	# Casing Volumes: <i>5.85</i>
Purging Device: <i>Wholer</i>	Did Well Dewater?: <i>No</i>	Total Gallons Purged: <i>5.85</i>
Start Purge Time: <i>1150</i>	Stop Purge Time: <i>1156</i>	Total Time: <i>6mi</i>

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.	pH	Cond.	Comments
<i>1150</i>	<i>1</i>	<i>14.9</i>	<i>6.2</i>	<i>184</i>	
<i>1153</i>	<i>2</i>	<i>15.8</i>	<i>6.8</i>	<i>162</i>	<i>Well</i>
<i>1156</i>	<i>3</i>	<i>16.4</i>	<i>7.0</i>	<i>113</i>	<i>WATER O.K.</i>

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
<i>MW-3</i>	<i>8/13/98</i>	<i>1200</i>	<i>4 VOA's</i>	<i>HCl</i>	<i>THY BTEX MTBE</i>	<i>8020-<del>8020</del></i>

WELL SAMPLING FORM

Project Name: <i>BRAIN</i>	Cambria Mgr: <i>DE</i>	Well ID: <i>MW-4</i>
Project Number: <i>230-0116</i>	Date: <i>8/18/98</i>	Well Yield: <i>—</i>
Site Address: <i>706 HANFORD OAKLAND CA</i>	Sampling Method: <i>disp bailer</i>	Well Diameter: <i>2" pvc</i>
		Technician(s): <i>JR</i>
Initial Depth to Water: <i>16.59</i>	Total Well Depth: <i>29.12</i>	Water Column Height: <i>12.53</i>
Volume/ft: <i>0.16</i>	1 Casing Volume: <i>2.00</i>	<del>3</del> Casing Volumes: <i>6.00</i>
Purging Device: <i>Sub pump</i>	Did Well Dewater?: <i>No</i>	Total Gallons Purged: <i>6.00</i>
Start Purge Time: <i>1205</i>	Stop Purge Time: <i>1210</i>	Total Time: <i>1212</i>

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.	pH	Cond.	Comments
<i>1205</i>	<i>1</i>	<i>16.4</i>	<i>7.8</i>	<i>265</i>	
<i>1210</i>	<i>2</i>	<i>16.8</i>	<i>7.6</i>	<i>213</i>	<i>Well in</i>
<i>1212</i>	<i>3</i>	<i>17.3</i>	<i>7.3</i>	<i>542</i>	<i>good shape</i>

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
<i>MW-4</i>	<i>8/18/98</i>	<i>1215</i>	<i>4 LBA'S</i>	<i>MTZ</i>	<i>THY, BTEX, MTBE</i>	<i>8020 / 8260</i>

WELL SAMPLING FORM

Project Name: <i>BOGIN</i>	Cambria Mgr: <i>DE</i>	Well ID: <i>MW-5</i>
Project Number: <i>230-0116</i>	Date: <i>8/18/99</i>	Well Yield: _____
Site Address: <i>706 Harrison St Oakland Ct</i>	Sampling Method: <i>Disp Bailer</i>	Well Diameter: <i>2" pipe</i>
		Technician(s): <i>DR</i>
Initial Depth to Water: <i>14.75</i>	Total Well Depth: <i>29.13</i>	Water Column Height: <i>113.38</i>
Volume/ft: <i>0.16</i>	1 Casing Volume: <i>2.17</i>	4 Casing Volumes: <i>6.42</i>
Purging Device: <i>Whaler</i>	Did Well Dewater?: <i>No</i>	Total Gallons Purged: <i>6.5</i>
Start Purge Time: <i>1120</i>	Stop Purge Time: <i>1135</i>	Total Time: <i>15min</i>

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.	pH	Cond.	Comments
<i>1120</i>	<i>1</i>	<i>16.8</i>	<i>8.5</i>	<i>482</i>	
<i>1125</i>	<i>2</i>	<i>23.8</i>	<i>7.7</i>	<i>257</i>	<i>clean H<sub>2</sub>O</i>
<i>1135</i>	<i>3</i>	<i>24.4</i>	<i>7.2</i>	<i>280</i>	
					<i>- replaced MW cap w/ new cone</i>
					<i>&amp; Motor lock #4</i>
					<i>- 2 screens OK</i>
					<i>1 broken in taken?</i>

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
<i>MW-5</i>	<i>8/18/99</i>	<i>1140</i>	<i>4 LBA's</i>	<i>HCL</i>	<i>TPH, BTEX, MTBE</i>	<i>8020</i>

WELL SAMPLING FORM

Project Name: <i>BEGIN</i>	Cambria Mgr: <i>DE</i>	Well ID: <i>MW-6</i>
Project Number: <i>230-0116</i>	Date: <i>8/12/99</i>	Well Yield: <i>/</i>
Site Address: <i>706 Hansen St Oakland CA.</i>	Sampling Method: <i>drop hole</i>	Well Diameter: <i>2" PVC</i>
		Technician(s): <i>JR</i>
Initial Depth to Water: <i>15.94</i>	Total Well Depth: <i>26.10</i>	Water Column Height: <i>10.16</i>
Volume/ft: <i>0.16</i>	1 Casing Volume: <i>1.63</i>	3 Casing Volumes: <i>4.89</i>
Purging Device: <i>sub pump</i>	Did Well Dewater?: <i>N</i>	Total Gallons Purged: <i>4.89</i>
Start Purge Time: <i>1050</i>	Stop Purge Time: <i>1100</i>	Total Time: <i>10 min</i>

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.	pH	Cond.	Comments
<i>1050</i>	<i>1</i>	<i>19.7</i>	<i>4.2</i>	<i>116</i>	
<i>1055</i>	<i>2</i>	<i>20.4</i>	<i>9.1</i>	<i>337</i>	
<i>1100</i>	<i>3</i>	<i>18.2</i>	<i>9.7</i>	<i>391</i>	<i>- well seems all secure</i>
					<i>- added new 2" cap w/ Det alarm lock</i>
					<i>Well secure but needs replacing both.</i>

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
<i>MW-6</i>	<i>8/12/99</i>	<i>1105</i>	<i>4/10A's</i>	<i>HCL</i>	<i>TPH, BTEX, MTBE</i>	<i>8020</i>

WELL SAMPLING FORM

Project Name: <i>BOGIN</i>	Cambria Mgr: <i>DE</i>	Well ID: <i>MW-7</i>
Project Number: <i>230-0116</i>	Date: <i>8/19/99</i>	Well Yield: <i>—</i>
Site Address: <i>706 Harrison St Oakland CA</i>	Sampling Method: <i>drop bucket</i>	Well Diameter: <i>2" PC</i>
		Technician(s): <i>JR</i>
Initial Depth to Water: <i>15.67</i>	Total Well Depth: <i>28.80</i>	Water Column Height: <i>13.13</i>
Volume/ft: <i>0.16</i>	1 Casing Volume: <i>2.10</i>	<sup>3</sup> # Casing Volumes: <i>6.3</i>
Purging Device: <i>Whaler</i>	Did Well Dewater?: <i>No</i>	Total Gallons Purged: <i>6.3</i>
Start Purge Time: <i>1015</i>	Stop Purge Time: <i>1025</i>	Total Time: <i>10min</i>

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.	pH	Cond.	Comments
<i>1015</i>	<i>1</i>	<i>19.2</i>	<i>7.6</i>	<i>096</i>	<i>dist H<sub>2</sub>O</i>
<i>1020</i>	<i>2</i>	<i>19.5</i>	<i>7.3</i>	<i>581</i>	<i>slight color</i>
<i>1025</i>	<i>3</i>	<i>19.7</i>	<i>6.9</i>	<i>301</i>	
					<i>- Well vault</i>
					<i>All screens</i>
					<i>strip - lid loose</i>
					<i>Added 1 #4</i>
					<i>Master Lock</i>
					<i>&amp; tried to secure well lid.</i>

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
<i>MW-7</i>	<i>8/19/99</i>	<i>1035</i>	<i>4 VOA'S</i>	<i>#2L</i>		