RO 484

CAMBRIA

Alameda County
OCT 24 2002
Environmental Health

October 16, 2002

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

Re: **Third Quarter 2002 Monitoring Report**
Former ARCO Service Station (Bo Gin)
706 Harrison Street
Oakland, California
STID 3749
Cambria Project #230-0116

Dear Mr. Chan:

On behalf of Mr. Bo K. Gin, Cambria Environmental Technology, Inc. (Cambria) is submitting this third quarter 2002 groundwater monitoring report for the above-referenced site. Presented in the report are the third quarter 2002 activities and results and the anticipated fourth quarter 2002 activities.

If you have any questions or comments regarding this report, please call me at (510) 450-1983.

Sincerely,
Cambria Environmental Technology, Inc.

Ron Scheele, RG
Senior Geologist

Attachments: Third Quarter 2002 Monitoring Report

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

Oakland, CA
San Ramon, CA
Sonoma, CA

Cambria Environmental Technology, Inc.

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

CAMBRIA

THIRD QUARTER 2002 MONITORING REPORT

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

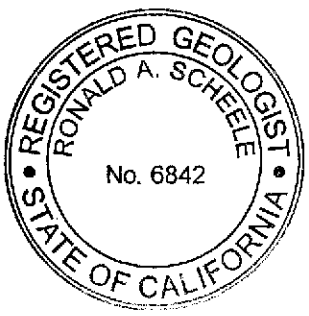
October 16, 2002

Prepared for:

Mr. Bo K. Gin
288 11th Street
Oakland, California 94706

Prepared by:

Cambria Environmental Technology, Inc.
6262 Hollis Street
Emeryville, California 94102



Matthew A. Meyers
Staff Geologist

Ron Scheele, RG
Senior Geologist

CAMBRIA

THIRD QUARTER 2002 MONITORING REPORT

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

October 16, 2002

INTRODUCTION

On behalf of Mr. Bo K. Gin, Cambria Environmental Technology, Inc. (Cambria) is submitting this third quarter 2002 groundwater monitoring report for the above-referenced site. Presented below are the third quarter 2002 activities and results and the anticipated fourth quarter 2002 activities.

THIRD QUARTER 2002 ACTIVITIES

Monitoring Activities

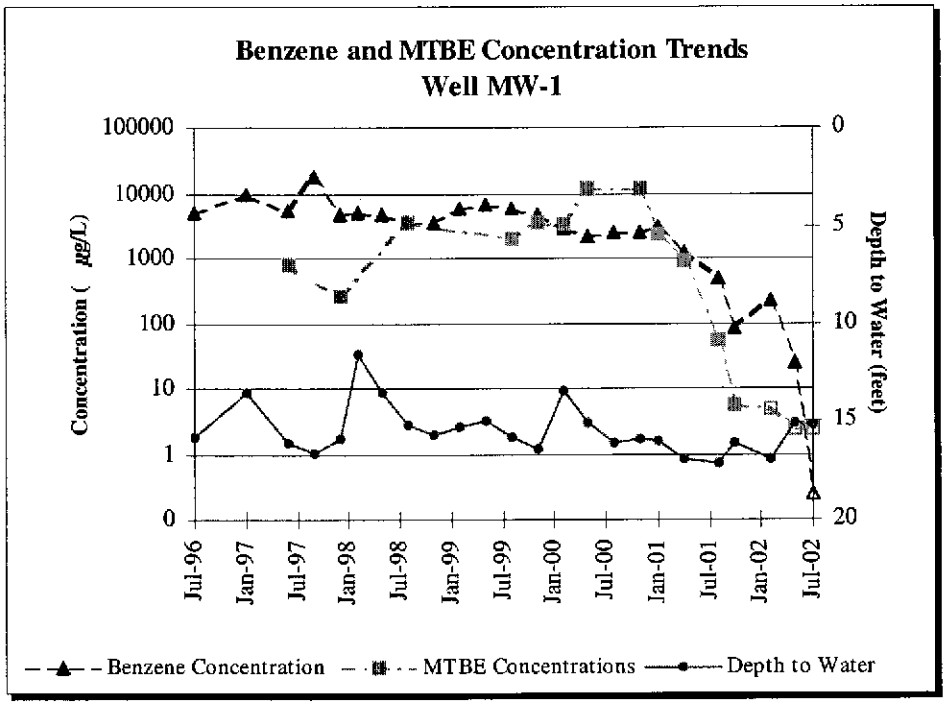
Field Activities: On July 8, 2002, Cambria conducted quarterly monitoring and sampling activities. Cambria gauged groundwater levels in monitoring wells MW-1 through MW-7 (see Figure 1). Groundwater samples were collected from wells MW-1 through MW-7 according to the sampling schedule. Field Data Sheets are presented as Attachment A.

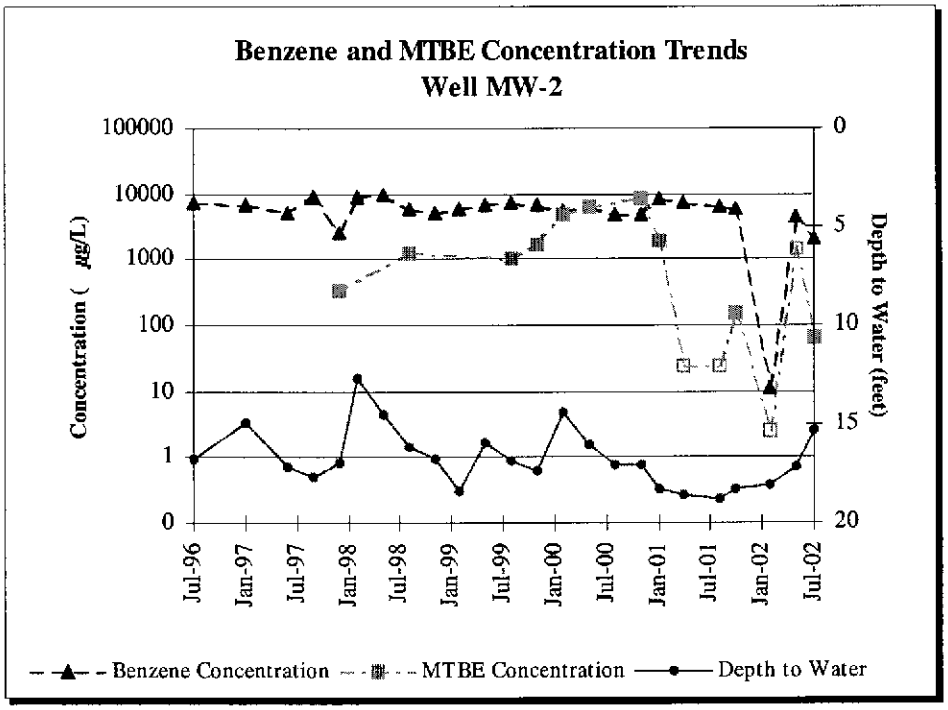
Sample Analyses: Groundwater samples were analyzed for total petroleum hydrocarbons as gasoline (TPHg) by modified EPA Method 8015; benzene, toluene, ethylbenzene, and xylenes (BTEX), and methyl tertiary butyl ether (MTBE) by EPA Method 8021B. As requested by Alameda County Health Care Services Agency (ACHCSA), groundwater samples were also analyzed for the following six gasoline additives: diisopropyl ether (DIPE), ethyl tert-butyl ether (ETBE), MTBE, tert-amyl methyl ether (TAME), t-butyl alcohol (TBA), 1,2-dibromoethane (EDB), and 1,2-dichloroethane (EDC) by EPA Method 8260B. The laboratory analytical report is included as Attachment B. Groundwater analytical results are shown on Tables 1 and 2 and summarized on Figure 1.

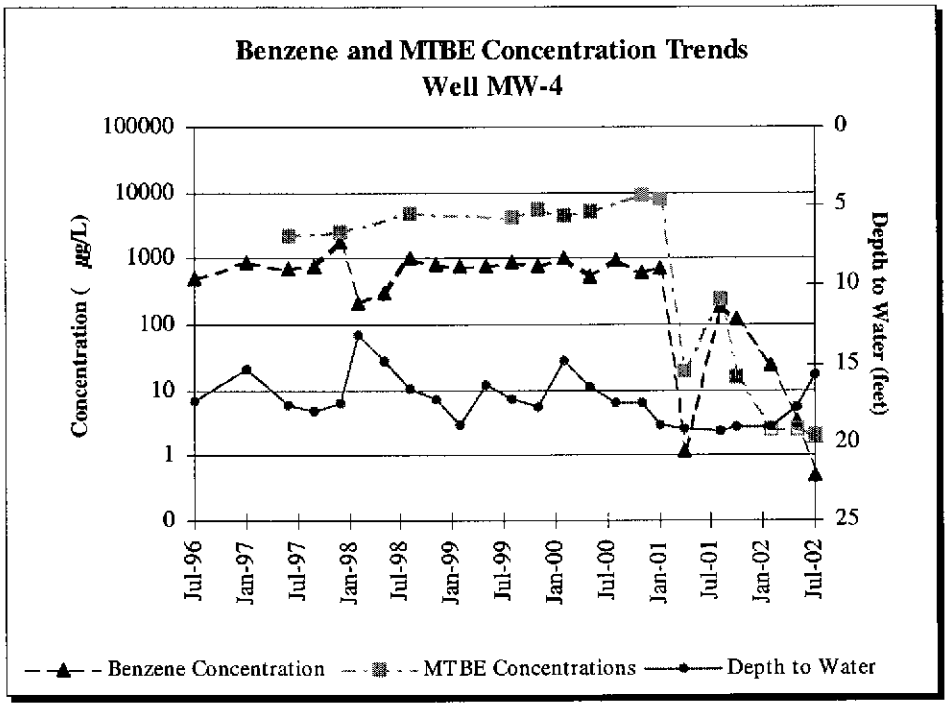
Monitoring Results

Groundwater Flow Direction: On July 8, 2002, groundwater flowed primarily towards the southwest. Based on depth-to-water measurements collected during Cambria's July 8, 2002 site visit, groundwater in the eastern portion of the site flows toward the southwest at a gradient of 0.032 ft/ft (Figure 1).

Hydrocarbon Distribution in Groundwater: Hydrocarbon concentrations were detected in two of the seven wells analyzed this quarter. Hydrocarbon concentrations were less in all wells as compared to the previous quarter. The maximum hydrocarbon concentrations were detected well MW-2; TPHg, benzene, and MTBE concentrations were 42,000, 2,100, and 65 micrograms per liter (µg/L), respectively. Benzene and MTBE concentrations trends continued to decrease in monitoring wells MW-1, MW-2, and MW-4 as shown in the graphs below and in Attachment C. Please note that MTBE has been below laboratory detection limits in MW-1 the last three sampling events as indicated by the unshaded boxes.




Benzene and MTBE Concentration Trends
Well MW-2
Concentration (µg/L)
100000
10000
1000
100
10
1
0
Depth to Water (feet)
0
5
10
15
20
Jul-96
Jan-97
Jul-97
Jan-98
Jul-98
Jan-99
Jul-99
Jan-00
Jul-00
Jan-01
Jul-01
Jan-02
Jul-02
Benzene Concentration
MTBE Concentration
Depth to Water


Benzene and MTBE Concentration Trends
Well MW-4
Concentration (µg/L)
100000
10000
1000
100
10
1
0
Depth to Water (feet)
0
5
10
15
20
25
Jul-96
Jan-97
Jul-97
Jan-98
Jul-98
Jan-99
Jul-99
Jan-00
Jul-00
Jan-01
Jul-01
Jan-02
Jul-02
Benzene Concentration
MTBE Concentrations
Depth to Water

As requested by the ACHCSA's letter dated April 15, 2002, the analysis of groundwater samples for the oxygenated volatile organics TAME, ETBE, DIPE, TBA, EDB, and EDC was performed on samples from wells MW-1, MW-2, and MW-4. DIPE and EDC were detected in groundwater samples collected from MW-2 and MW-4. Maximum DIPE and EDC concentrations of 5.2 and 46 µg/L, respectively, were detected in well MW-2. TBA was also detected in a groundwater sample collected from well MW-4 at 21 µg/L. No other oxygenated volatile organics were detected. The oxygenated volatile organics laboratory analytical results are tabulated in Table 2.

Corrective Action Activities

Cambria operated the air sparging system throughout the third quarter to enhance the natural attentuation of the remaining hydrocarbons. Air was injected into air sparge wells SP-3, SP-4, and SP-5 at a rate of approximately 2 to 4 cfm and at pressures ranging from 4 to 10 psi.

ANTICIPATED FOURTH QUARTER 2002 ACTIVITIES

Monitoring Activities

Cambria will gauge all wells, check the wells for SPH, and collect groundwater samples from scheduled wells that do not contain SPH. Groundwater samples will be analyzed for TPHg by Modified EPA Method 8015, BTEX and MTBE by EPA Method 8020, and DIPE, ETBE, DIPE, TBA, EDB, and EDC by EPA Method 8260. 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

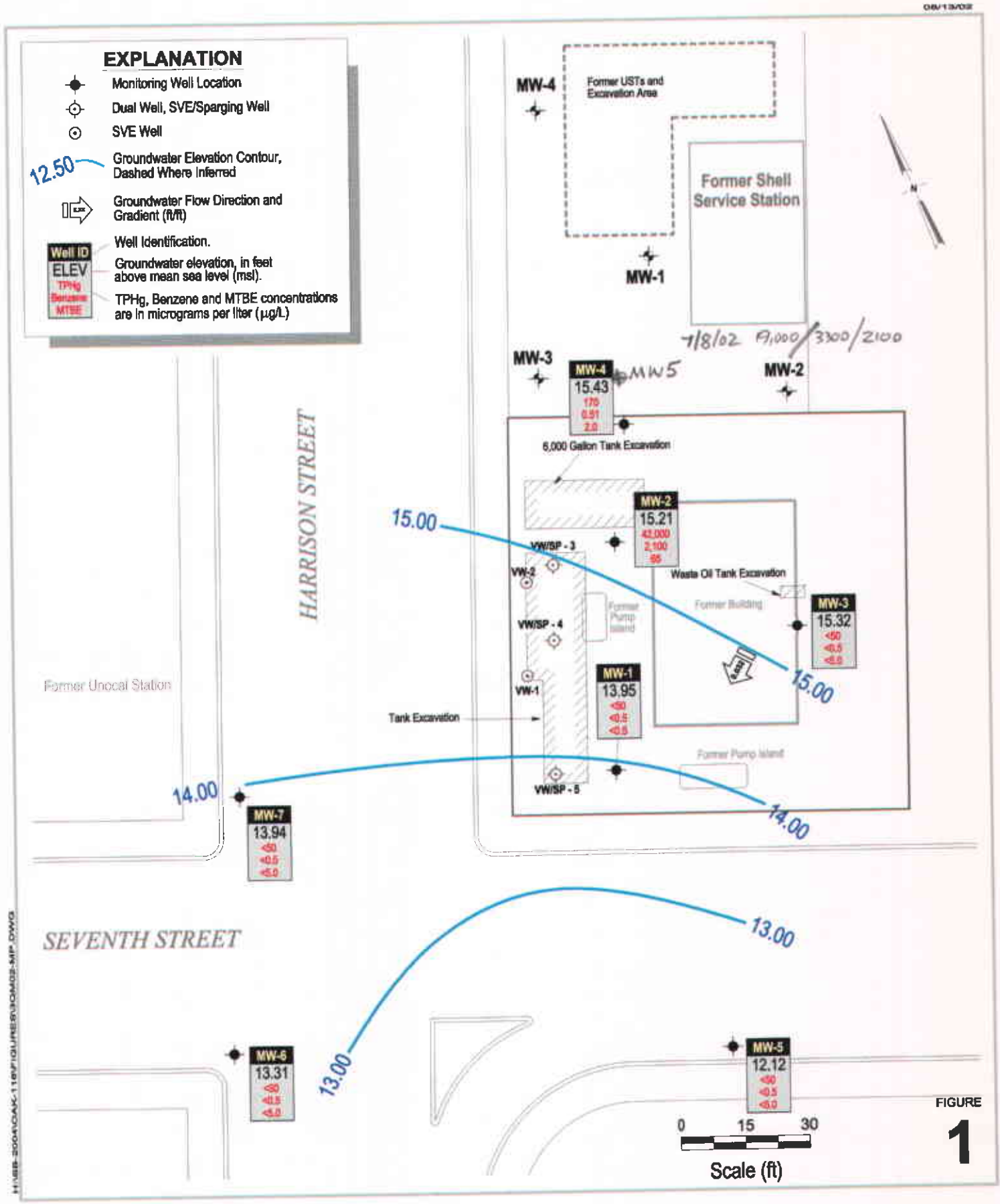
Cambria plans to continue operation of the air sparging system during the fourth quarter 2002 while remediation is performed at the upgradient service station site.

ATTACHMENTS

Figure 1 – Groundwater Elevation Contour Map

Table 1 – Groundwater Elevations and Analytical Data
Table 2 – Oxygenated Volatile Organics Analytical Water Sampling Results

Attachment A – Groundwater Monitoring Field Data Sheets
Attachment B – Laboratory Analytical Report
Attachment C – Benzene and MTBE Concentration Graphs
Attachment D – Electronic Delivery Confirmations



Former Arco Station

706 Harrison Street

Oakland, California

CAMBRIA

Groundwater Elevation Contour Map

July 8, 2002

CAMBRIA

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

Well ID TOC Elevation 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-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**	

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

Well ID TOC Elevation 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	-	-	
30.51	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**

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

Well ID TOC Elevation 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-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	-	-	
Bi-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**	-	

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

Well ID TOC Elevation 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-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**

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

Well ID TOC Elevation 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	-	-	
28.04	12/29/94	16.10	11.94	-	-	-	-	-	-	-	
Bi-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**	-	

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

Well ID TOC Elevation 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-6	12/16/94	17.74	11.36	-	-	-	-	-	-	-	
29.10	12/29/94	17.40	11.70	-	-	-	-	-	-	-	
Bi-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**	**-**	

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

Well ID TOC Elevation 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-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	-	-	-	-	-	-	-	
Bi-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**	**-**	
Trip Blank	11/9/00	-	-	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	

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

Well ID TOC Elevation 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

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 tertiary butyl ether by EPA Method 8020 and/or 8260.

µg/L = Micrograms per liter

TOC = Top of casing elevation with respect to mean sea level

- = not sampled

Notes

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.

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

Table 2
Oxygenated Volatile Organics Analytical Water Sampling Results

July 8, 2002

Former ARCO Station
706 Harrison Street, Oakland, California

Well ID	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	TBA (µg/L)	EDB (µg/L)	EDC (µg/L)
MW-1	<0.5	<0.5	<0.5	<5.0	<0.5	<0.5
MW-2	**5.2**	<5.0	<5.0	<50	<5.0	**46**
MW-4	**3.1**	<0.5	<0.5	**21**	<0.5	**1.7**

Notes

All samples analyzed by EPA Method 8260B.
µg/L = micrograms per liter
DIPE = Diisopropyl ether
ETBE = Ethyl tert-butyl ether
TAME = tert-Amyl methyl ether
TBA = t-Butyl alcohol
EDB = 1,2-Dibromoethane
1,2-DCA = 1,2-Dichloroethane
< = analyte not detected above reporting limit to the right

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ATTACHMENT A

Groundwater Monitoring Field Data Sheets

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WELL DEPTH MEASUREMENTS

Well ID	Time	Product Depth	Water Depth	Product Thickness	Well Depth	Comments
MW-1	10:30		15.20		24.20	
MW-2	10:35		15.30		25.50	
MW-3	10:20		14.45		27.55	
MW-4	10:25		15.75		25.40	
MW-5	10:10		15.92		27.80	
MW-6	10:00		15.79		25.85	
MW-7	10:05		15.73		27.50	

Project Name: Bo Gin

Project Number: 230-0116

Measured By: L. Hill

Date: 07-08-02

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WELL SAMPLING FORM

Project Name: Bo Gin	Cambria Mgr: **RAS**	Well ID: MW-1
Project Number: 230-0116	Date:07/08/02	Well Yield:
Site Address: 706 Harrison St. Oakland, Ca.	Sampling Method: **Disposable bailer**	Well Diameter: **2 " pvc** Technician(s): SG
Initial Depth to Water: 15.20	Total Well Depth: 24.30	Water Column Height: 9.00
Volume/ft: 0.16	1 Casing Volume: 1.44	3 Casing Volumes: 4.32
Purging Device: **disposable bailer**	Did Well Dewater?: no	Total Gallons Purged: 4
Start Purge Time: 14:10	Stop Purge Time: 14:24	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.	pH	Cond.	Comments
14:15	1.5	19.7	7.13	1022	
14:20	3	19.5	7.15	980	
14:25	4	19.7	7.15	1015	

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
MW-1	**07/08/02**	14:30	**6VOAs**	**HCL**	**TPHg BTEX MTBE TAME ETBE DIPE EDB EDC**	**8260**

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NSM 5/31/94

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WELL SAMPLING FORM

Project Name: Bo Gin	Cambria Mgr: **RAS**	Well ID: MW-2
Project Number: 230-0116	Date:07/08/02	Well Yield:
Site Address: 706 Harrison St. Oakland, Ca.	Sampling Method: **Disposable bailer**	Well Diameter: **2 " pvc** Technician(s): SG
Initial Depth to Water: 15.30	Total Well Depth: 25.50	Water Column Height: 10.20
Volume/ft: 0.16	1 Casing Volume: 1.63	3 Casing Volumes: 4.89
Purging Device: **disposable bailer**	Did Well Dewater?: no	Total Gallons Purged: 5
Start Purge Time: 14:40	Stop Purge Time: 14:54	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.	pH	Cond.	Comments
14:45	1.5	19.9	7.21	850	
14:50	3	19.9	7.23	1275	
14:55	5	19.8	7.20	1293	

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
MW-2	**07/08/02**	15:00	**6VOAs**	**HCL**	**TPHg BTEX MTBE TAME ETBE DIPE EDB EDC**	**8260**

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WELL SAMPLING FORM

Project Name: Bo Gin	Cambria Mgr: **RAS**	Well ID: MW-3
Project Number: 230-0116	Date:07/08/02	Well Yield:
Site Address: 706 Harrison St. Oakland, Ca.	Sampling Method: **Disposable bailer**	Well Diameter: **2 " pvc** Technician(s): SG
Initial Depth to Water: 14.45	Total Well Depth: 27.55	Water Column Height: 13.10
Volume/ft: 0.16	1 Casing Volume: 2.09	3 Casing Volumes: 6.27
Purging Device: **disposable bailer**	Did Well Dewater?: no	Total Gallons Purged: 6
Start Purge Time: 13:10	Stop Purge Time: 13:24	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.	pH	Cond.	Comments
13:15	2	19.7	7.24	1875	
13:20	4	19.7	7.30	1295	
13:25	6	19.7	7.32	1317	

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
MW-3	**07/08/02**	13:30	**4VOAs**	**HCL**	**TPHg BTEX MTBE**	**8260**

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WELL SAMPLING FORM

Project Name: Bo Gin	Cambria Mgr: **RAS**	Well ID: MW-4
Project Number: 230-0116	Date:07/08/02	Well Yield:
Site Address: 706 Harrison St. Oakland, Ca.	Sampling Method: **Disposable bailer**	Well Diameter: **2 " pvc** Technician(s): SG
Initial Depth to Water: 15.75	Total Well Depth: 25.40	Water Column Height: 9.65
Volume/ft: 0.16	1 Casing Volume: 1.54	3 Casing Volumes: 4.63
Purging Device: **disposable bailer**	Did Well Dewater?: no	Total Gallons Purged: 5
Start Purge Time: 13:40	Stop Purge Time: 13:54	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.	pH	Cond.	Comments
13:45	1.5	19.5	7.15	1730	
13:50	3	19.8	7.20	2139	
13:55	5	19.7	7.22	2050	

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
MW-4	**07/08/02**	14:00	**6VOAs**	**HCL**	**TPHg BTEX MTBE TAME ETBE DIPE EDB EDC**	**8260**

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WELL SAMPLING FORM

Project Name: Bo Gin	Cambria Mgr: **RAS**	Well ID: MW-5
Project Number: 230-0116	Date:07/08/02	Well Yield:
Site Address: 706 Harrison St. Oakland, Ca.	Sampling Method: **Disposable bailer**	Well Diameter: **2 " pvc** Technician(s): SG
Initial Depth to Water: 15.92	Total Well Depth: 27.80	Water Column Height: 11.88
Volume/ft: 0.16	1 Casing Volume: 1.90	3 Casing Volumes: 5.70
Purging Device: **disposable bailer**	Did Well Dewater?: no	Total Gallons Purged: 6
Start Purge Time: 11:00	Stop Purge Time: 11:14	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.	pH	Cond.	Comments
11:05	2	19.5	7.29	1275	
11:10	4	19.7	7.11	1590	
11:15	6	19.8	7.24	1584	

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
MW-5	**07/08/02**	11:20	**4VOAs**	**HCL**	**TPHg BTEX MTBE**	**8260**

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WELL SAMPLING FORM

Project Name: Bo Gin	Cambria Mgr: **RAS**	Well ID: MW-6
Project Number: 230-0116	Date:07/08/02	Well Yield:
Site Address: 706 Harrison St. Oakland, Ca.	Sampling Method: **Disposable bailer**	Well Diameter: **2 " pvc** Technician(s): SG
Initial Depth to Water: 15.79	Total Well Depth: 25.85	Water Column Height: 10.06
Volume/ft: 0.16	1 Casing Volume: 1.60	3 Casing Volumes: 4.82
Purging Device: **disposable bailer**	Did Well Dewater?: no	Total Gallons Purged: 5
Start Purge Time: 11:50	Stop Purge Time: 12.04	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.	pH	Cond.	Comments
11:55	1.5	19.8	7.13	924	
12:00	3	19.9	7.15	1270	
12:05	5	19.9	7.18	1282	

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
MW-6	**07/08/02**	12:10	**4VOAs**	**HCL**	**TPHg BTEX MTBE**	**8260**

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WELL SAMPLING FORM

Project Name: Bo Gin	Cambria Mgr: **RAS**	Well ID: MW-7
Project Number: 230-0116	Date:07/08/02	Well Yield:
Site Address: 706 Harrison St. Oakland, Ca.	Sampling Method: **Disposable bailer**	Well Diameter: **2 " pvc** Technician(s): SG
Initial Depth to Water: 15.73	Total Well Depth: 27.50	Water Column Height: 11.77
Volume/ft: 0.16	1 Casing Volume: 1.88	3 Casing Volumes: 5.64
Purging Device: **disposable bailer**	Did Well Dewater?: no	Total Gallons Purged: 6
Start Purge Time: 12:25	Stop Purge Time: 12:39	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.	pH	Cond.	Comments
12:30	2	19.9	7.05	1418	
12:35	4	19.7	7.18	1120	
12:40	6	19.8	7.13	1190	

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
MW-7	**07/08/02**	12:50	**4VOAs**	**HCL**	**TPHg BTEX MTBE**	**8260**

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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

Cambria Env. Technology	Client Project ID: #230-0116; Bo Gin	Date Sampled: 07/08/02
6262 Hollis St.		Date Received: 07/10/02
Emeryville, CA 94608	Client Contact: Ron Scheele	Date Reported: 07/16/02
	Client P.O.:	Date Completed: 07/16/02

July 16, 2002

Dear Ron:

Enclosed are:

1). the results of 7 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

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	Client Project ID: #230-0116; Bo Gin	Date Sampled: 07/08/02
6262 Hollis St.		Date Received: 07/10/02
Emeryville, CA 94608	Client Contact: Ron Scheele	Date Extracted: 07/13/02-07/16/02
	Client P.O.:	Date Analyzed: 07/13/02-07/16/02

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

Extraction method: SW5030B Analytical methods: SW8021B/8015Cm Work Order: 0207128

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS
001A	MW-1	W	ND	ND	ND	ND	ND	ND	1	99.4
002A	MW-2	W	42,000,a	ND<1000	2100	6500	2200	8800	100	100
003A	MW-3	W	ND	ND	ND	ND	ND	ND	1	100
004A	MW-4	W	170,m	ND	0.51	0.62	1.6	1.2	1	103
005A	MW-5	W	ND	ND	ND	ND	ND	ND	1	102
006A	MW-6	W	ND	ND	ND	ND	ND	ND	1	99.1
007A	MW-7	W	ND	ND	ND	ND	ND	ND	1	100
Reporting Limit for DF =1; ND means not detected at or above the reporting limit		W	50	5.0	0.5	0.5	0.5	0.5	ug/L	
		S	1.0	0.05	0.005	0.005	0.005	0.005	mg/Kg	

*water and vapor samples are reported in ug/L, soil and sludge samples in mg/kg, wipe samples in ug/wipe, and TCLP extracts in ug/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); 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) sample diluted 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

Edward Hamilton, Lab Director

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	Client Project ID: #230-0116; Bo Gin	Date Sampled: 07/08/02
6262 Hollis St.		Date Received: 07/10/02
Emeryville, CA 94608	Client Contact: Ron Scheele	Date Extracted: 07/13/02
	Client P.O.:	Date Analyzed: 07/13/02

Oxygenated Volatile Organics + EDB and 1,2-DCA by P&T and GC/MS*

Extraction Method: SW5030B | Analytical Method: SW8260B | Work Order: 0207128

Lab ID	0207128-001B	0207128-002B	0207128-004B		Reporting Limit for DF =1	
Client ID	MW-1	MW-2	MW-4			
Matrix	W	W	W			
DF	1	10	1		S	W
Compound	**Concentration**				ug/kg	µg/L
Diisopropyl ether (DIPE)	ND	5.2	3.1		NA	0.5
Ethyl tert-butyl ether (ETBE)	ND	ND<5.0	ND		NA	0.5
Methyl-t-butyl ether (MTBE)	ND	65	2.0		NA	0.5
tert-Amyl methyl ether (TAME)	ND	ND<5.0	ND		NA	0.5
t-Butyl alcohol (TBA)	ND	ND<50	21		NA	5.0
1,2-Dibromoethane (EDB)	ND	ND<5.0	ND		NA	0.5
1,2-Dichloroethane (1,2-DCA)	ND	46	1.7		NA	0.5
Surrogate Recoveries (%)						
%SS:	98.1	126	99.0			
Comments						

* water and vapor samples and all TCLP & SPLP extracts are reported in ug/L, soil/sludge/solid samples in ug/kg, wipe samples in ug/wipe, product/oil/non-aqueous liquid samples in mg/L.

ND means not detected above the reporting limit; N/A means analyte not applicable to this analysis.

surrogate diluted out of range or surrogate coelutes with another peak.

h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~2 vol. % sediment; j) sample diluted due to high organic content.

DHS Certification No. 1644

Edward Hamilton, Lab Director

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QC SUMMARY REPORT FOR SW8021B/8015Cm

Matrix: W WorkOrder: 0207128

EPA Method: SW8021B/8015Cm Extraction: SW5030B BatchID: 2862 Spiked Sample ID: 0207113-005A

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	87.9	85.9	2.30	99.6	99.9	0.300	80	120
MTBE	ND	10	90	89	1.13	92.2	98.4	6.57	80	120
Benzene	ND	10	84.9	86.4	1.75	105	106	0.577	80	120
Toluene	ND	10	89.8	91.7	2.11	111	112	1.05	80	120
Ethylbenzene	ND	10	90.3	90.9	0.632	108	108	0.284	80	120
Xylenes	ND	30	86	86	0	103	107	3.17	80	120
%SS:	99.1	100	97.9	98.5	0.555	109	108	1.51	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 * (MS-Sample) / (Amount Spiked); RPD = 100 * (MS – MSD) / (MS + 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.

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QC SUMMARY REPORT FOR SW8260B

Matrix: W WorkOrder: 0207128

EPA Method: SW8260B	Extraction: SW5030B	BatchID: 2860	Spiked Sample ID: 0207118-001B

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
Diisopropyl ether (DIPE)	98.36	10	NR	NR	NR	121	125	3.11	70	130
Ethyl tert-butyl ether (ETBE)	ND	10	122	119	1.82	116	118	2.48	70	130
Methyl-t-butyl ether (MTBE)	ND	10	116	116	0.474	108	116	6.47	70	130
tert-Amyl methyl ether (TAME)	ND	10	123	127	2.68	119	124	3.93	70	130
%SS:	118	100	121	120	0.778	115	115	0.207	70	130

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 * (MS-Sample) / (Amount Spiked); RPD = 100 * (MS – MSD) / (MS + 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.

CE 7E

0207128

McCAMPBELL ANALYTICAL INC.

110 2nd AVENUE SOUTH, #D7
PACHECO, CA 94553
Telephone: (925) 798-1620 Fax: (925) 798-1622

Report To: Ron Scheels Bill To: Cambria Env. Tech
Company: Cambria Environmental Technology
6262 Hollis Street
Emeryville, CA 94608
Tele: (510) 450-1983 Fax: (510) 450-8295
Project #: 230-0116 Project Name: 80 Gin
Project Location: 706 Harrison St. Oakland, Ca
Sampler Signature: S. Hall

CHAIN OF CUSTODY RECORD

TURN AROUND TIME ☐ RUSH ☐ 24 HOUR ☐ 48 HOUR ☑ 5 DAY

SAMPLE ID	LOCATION	SAMPLING Date	SAMPLING Time	# Containers	Type Containers	MATRIX: Water	Soil	Air	Sludge	Other	METHOD PRESERVED: Ice	HCl	HNO_3	Other
+ MW-1		7-8-02	14:30	6	VOA	X					X	X		
+ MW-2		7-8-02	15:00	6	VOA	X					X	X		
+ MW-3		7-8-02	13:30	4	VOA	X					X	X		
+ MW-4		7-8-02	14:00	6	VOA	X					X	X		
+ MW-5		7-8-02	11:20	4	VOA	X					X	X		
+ MW-6		7-8-02	12:10	4	VOA	X					X	X		
+ MW-7		7-8-02	12:50	4	VOA	X					X	X		

HEAD SPACE ABSENT ✓ | PRESERVATION APPROPRIATE ✓ | CONTAINERS ✓ | VOAS | O&G | METALS | OTHER

Relinquished By:	Date:	Time:	Received By:
S. Hall	7-10-02	4:30	Secure location
Matt Meyers	7/10/02	11:50	Harold Mahn 240
Harold Mahn 240	7/10/02	3:35	07/10/02 L:SV

Analysis Request	Other	Comments
BTEX & TPH as Gas (602/8020 + 8015) MTBE	TAME, ETBE, DIPE, TBA, EDB via 8260 Confirm MTBE by 8260	
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		
X	X	
X	X	
X		
X	X	
X		
X		
X		

Remarks:
Report results in EDF format

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

CHAIN-OF-CUSTODY RECORD

WorkOrder: 0207128

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

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

10-Jul-02

Sample ID	ClientSampID	Matrix	Collection Date	Bottle	Requested Tests <>	8021B/8015	SW8260B
0207128-001	MW-1	Water	7/8/02 2:30:00 PM		A	A	B
0207128-002	MW-2	Water	7/8/02 3:00:00 PM			A	B
0207128-003	MW-3	Water	7/8/02 3:30:00 PM			A	
0207128-004	MW-4	Water	7/8/02 2:00:00 PM			A	B
0207128-005	MW-5	Water	7/8/02 11:20:00 AM			A	
0207128-006	MW-6	Water	7/8/02 12:10:00 PM			A	
0207128-007	MW-7	Water	7/8/02 12:50:00 PM			A	

Comments:

	Date/Time		Date/Time
Relinquished by:		**Received by:**	
Relinquished by:		**Received by:**	
Relinquished by:		**Received by:**	

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.

Bottle Type: L-Liter V-Voa S-Soil Jar O-Orbo T-Tedlar B-Brass P-Plastic OT-Other

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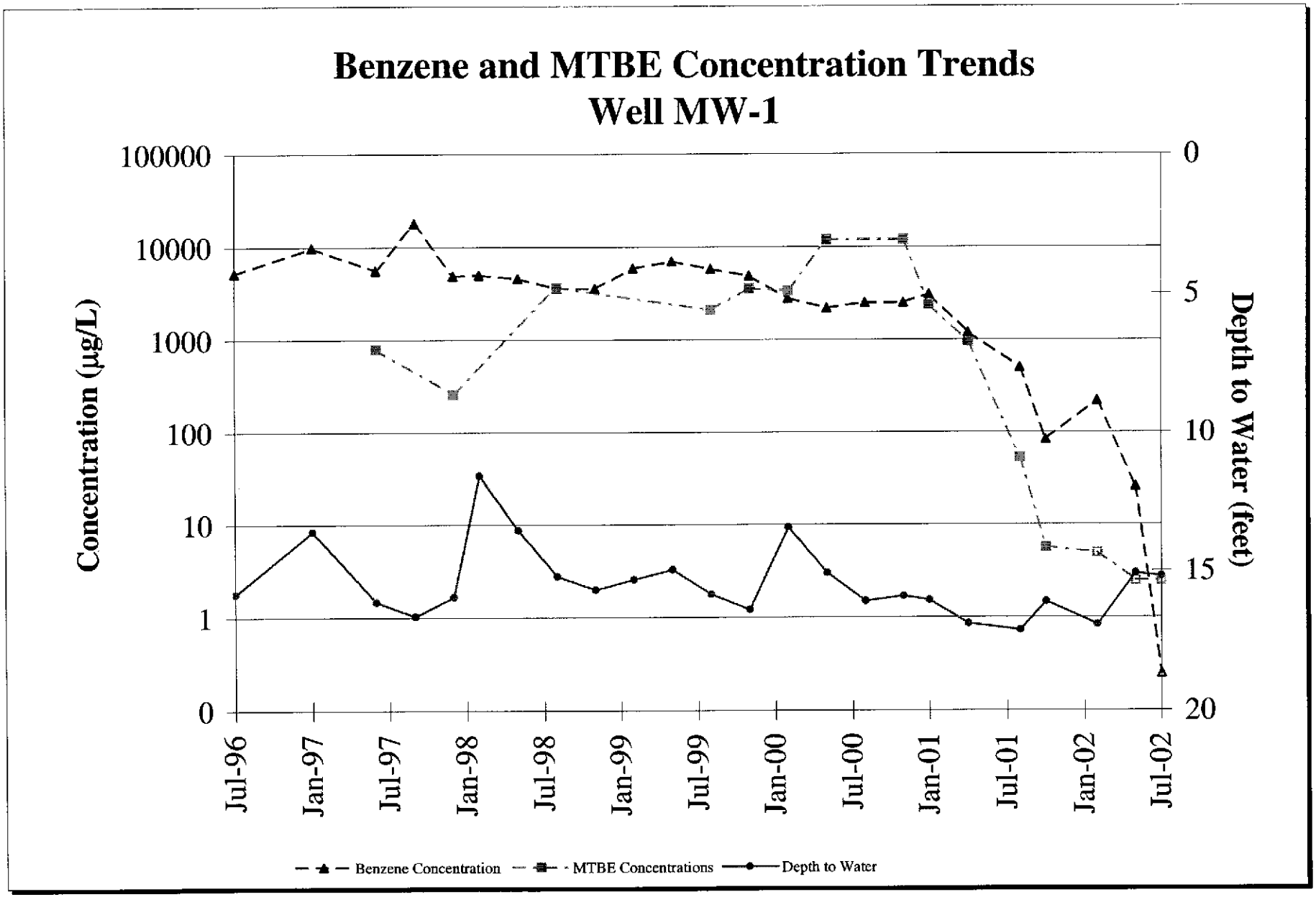
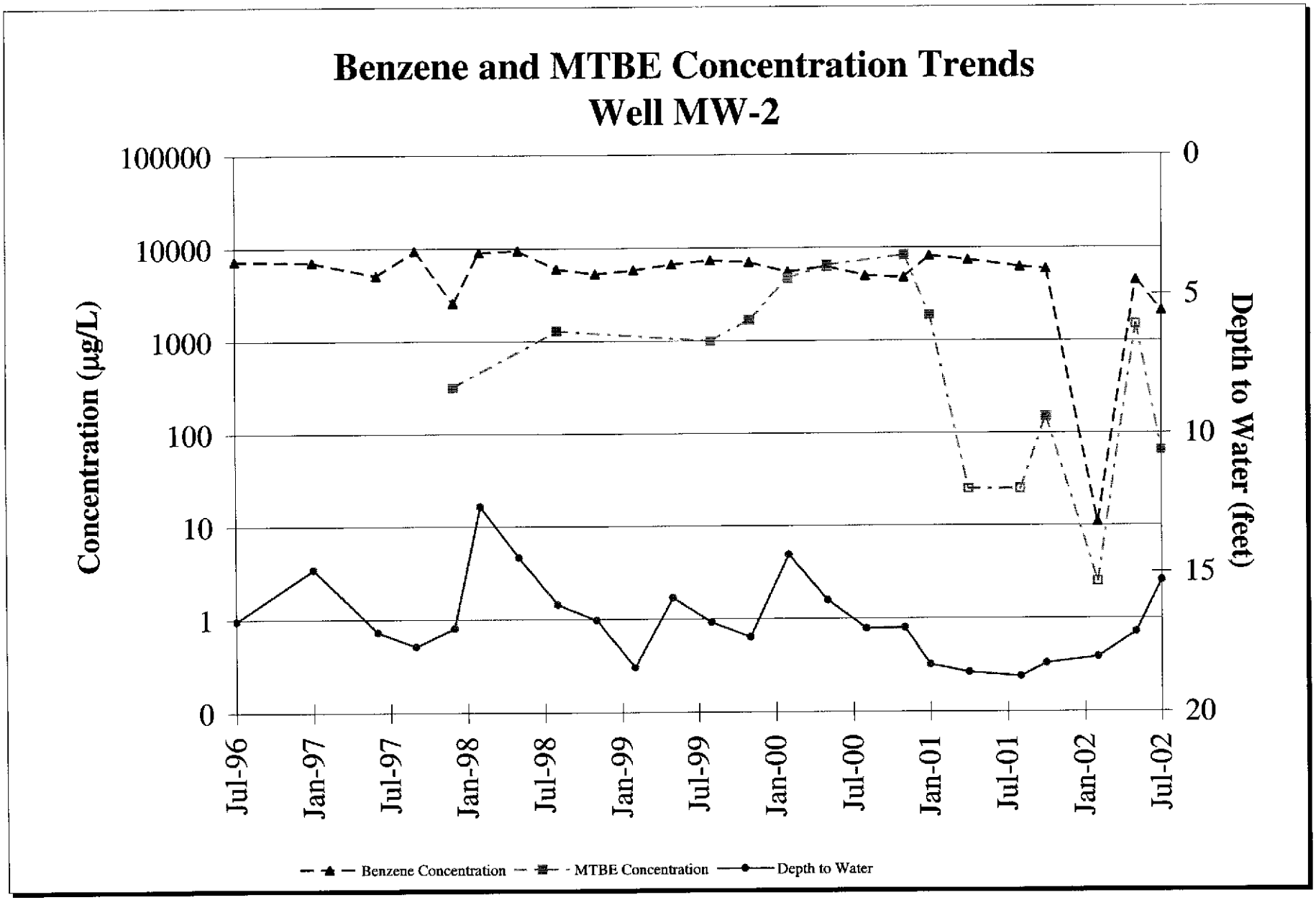
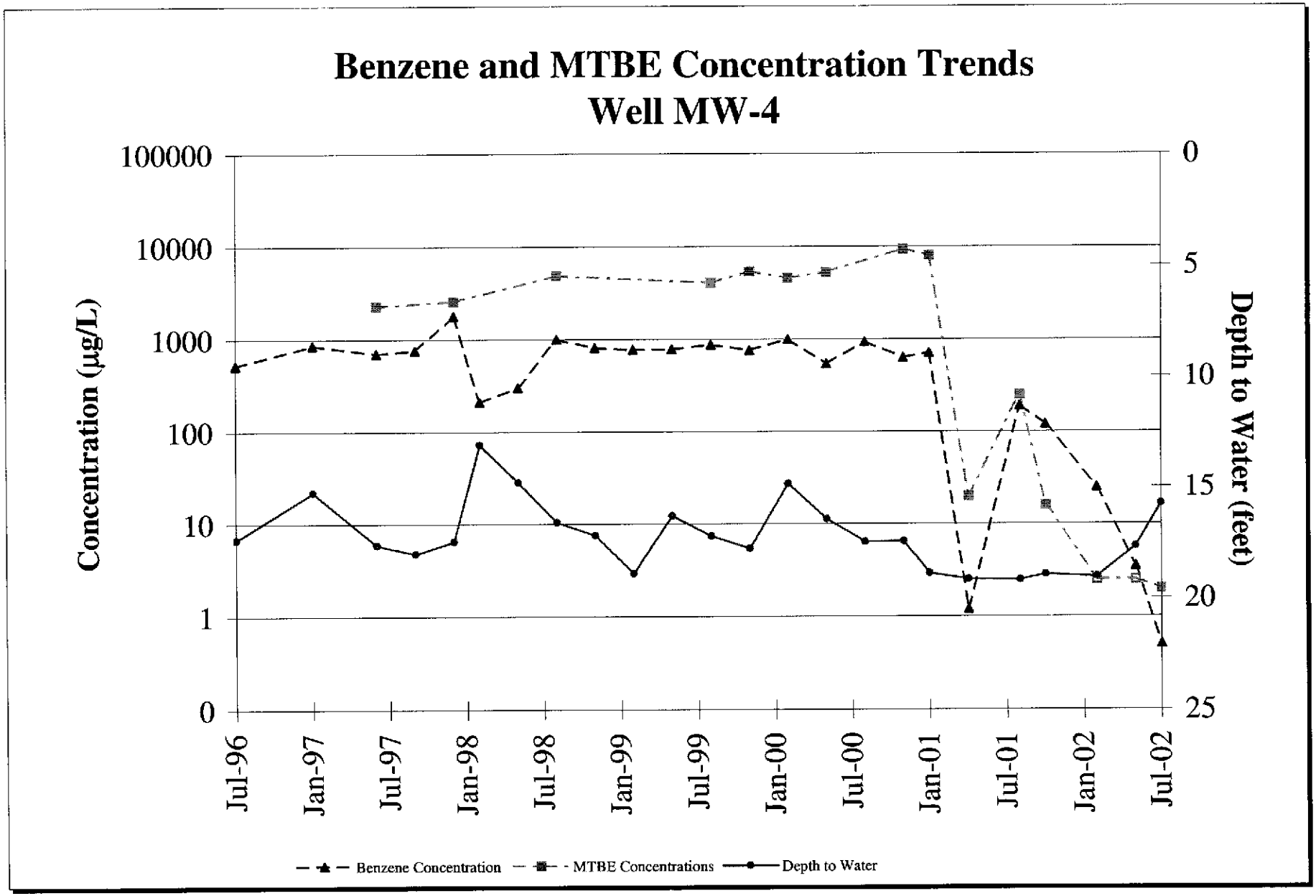
ATTACHMENT C

Benzene and MTBE Concentration Graphs


Benzene and MTBE Concentration Trends
Well MW-1
Concentration (µg/L)
100000
10000
1000
100
10
1
0
Depth to Water (feet)
0
5
10
15
20
Jul-96
Jan-97
Jul-97
Jan-98
Jul-98
Jan-99
Jul-99
Jan-00
Jul-00
Jan-01
Jul-01
Jan-02
Jul-02
Benzene Concentration
MTBE Concentrations
Depth to Water


Benzene and MTBE Concentration Trends
Well MW-2
Concentration (µg/L)
100000
10000
1000
100
10
1
0
Depth to Water (feet)
0
5
10
15
20
Jul-96
Jan-97
Jul-97
Jan-98
Jul-98
Jan-99
Jul-99
Jan-00
Jul-00
Jan-01
Jul-01
Jan-02
Jul-02
Benzene Concentration
MTBE Concentration
Depth to Water


Benzene and MTBE Concentration Trends
Well MW-4
Concentration (µg/L)
100000
10000
1000
100
10
1
0
Depth to Water (feet)
0
5
10
15
20
25
Jul-96
Jan-97
Jul-97
Jan-98
Jul-98
Jan-99
Jul-99
Jan-00
Jul-00
Jan-01
Jul-01
Jan-02
Jul-02
Benzene Concentration
MTBE Concentrations
Depth to Water

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ATTACHMENT D

Electronic Delivery Confirmations

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Confirmation Number: 5498428225
Date/Time of Submittal: 10/15/2002 4:14:04 PM
Facility Global ID: T0600100985
Facility Name: OAKLAND AUTO PARTS
Submittal Title: 3rd Qtr 2002 Analytical Results
Submittal Type: GW Monitoring Report

Logged in as CAMBRIA-EM (AUTH_RP) CONTACT SITE ADMINISTRATOR.

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UPLOADING A GEO_WELL FILE

Processing is complete. No errors were found!
Your file has been successfully submitted!

Submittal Title:	**3rd Qtr 2002 Groundwater Elevation Data**
Submittal Date/Time:	**10/15/2002 4:15:27 PM**
Confirmation Number:	**9614994645**

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Submittal Report For OAKLAND AUTO PARTS:

page 1 of 1

Title	Type	Submitted	Submittal Status	Confirmation #	
GEO_MAP	GEO_MAP	6/7/2002	**AWAITING APPROVAL**	2503308951	Delete Submittal
Hooshi's Auto Service 2nd Qtr Groundwater data	GEO_WELL	7/26/2002	**DELETED: 10/15/2002 4:16:21 PM**	6093327164	
Bo Gin 2nd Qtr 2002, GW Sampling Results	GWM_R	7/26/2002	**AWAITING APPROVAL**	8613677740	Delete Submittal
Bo Gin, 2nd Qtr 2002, Depth to GW	GEO_WELL	7/26/2002	**AWAITING APPROVAL**	1936787247	Delete Submittal
Bo Gin Site Well Elevation Data	GEO_Z	7/26/2002	**AWAITING APPROVAL**	7155567765	Delete Submittal
3rd Qtr 2002 Analytical Results	GWM_R	10/15/2002	**AWAITING APPROVAL**	5498428225	Delete Submittal
3rd Qtr 2002 Groundwater Elevation Data	GEO_WELL	10/15/2002	**AWAITING APPROVAL**	9614994645	Delete Submittal

Logged in as CAMBRIA-EM (AUTH_RP)

CONTACT SITE ADMINISTRATOR.