

September 20, 1999

Ms. Juliet Shin
Alameda County Department of
Environmental Health
UST Local Oversight Program
1131 Harbor Bay Parkway, 2nd Floor
Alameda, CA 94502

Re: **Third Quarter 1999 Monitoring Report**
Hooshi's Auto Service
1499 MacArthur Blvd.
Oakland, California 94602



Dear Ms. Shin:

On behalf of Ms. Naomi English, Cambria Environmental Technology, Inc. (Cambria) has prepared this report presenting the third quarter 1999 groundwater monitoring results for the site referenced above. Presented below are the third quarter 1999 activities, the current groundwater flow direction, the current hydrocarbon distribution in groundwater, and the anticipated fourth quarter 1999 activities.

THIRD QUARTER 1999 ACTIVITIES

Quarterly Groundwater Sampling: On August 19, 1999 Cambria gauged and sampled all onsite groundwater monitoring wells. The thickness of separate-phase hydrocarbons (SPH), when detected, was measured. The samples were analyzed for total petroleum hydrocarbons as gasoline (TPHg), benzene, toluene, ethylbenzene, and xylenes (BTEX), and methyl tert-butyl ether (MTBE).

Remediation System: Cambria finalized permitting with the City of Oakland and has begun system installation.

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

**Cambria
Environmental
Technology, Inc.**

1144 65th Street
Suite B
Oakland, CA 94608
Tel (510) 420-0700
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September 20, 1999

GROUNDWATER FLOW DIRECTION

Based on the August 19, 1999 depth-to-water measurements, groundwater mounded near the vicinity of the former underground storage tanks, similar to mounding that occurred during the second quarter of 1999 (Figure 1). Table 1 summarizes the groundwater elevation data.

HYDROCARBON DISTRIBUTION IN GROUNDWATER



Up to 0.10 feet of SPHs were measured in wells MW-2 and MW-5. A maximum TPHg concentration of 830 micrograms per liter ($\mu\text{g/L}$) was detected in well MW-1. Benzene and MTBE were detected only in well MW-1, at concentrations of 19 $\mu\text{g/L}$ and 28 $\mu\text{g/L}$, respectively. Table 1 summarizes the groundwater analytical results. The analytical laboratory reports are included as Attachment A. The water sampling field notes are included as Attachment B.

ANTICIPATED FOURTH QUARTER 1999 ACTIVITIES

Quarterly Groundwater Sampling: As requested by the Alameda County Department of Environmental Health, Cambria will gauge and collect groundwater samples from each monitoring well, and measure the thickness of any detected SPH. Samples will be analyzed for TPHg, BTEX, and MTBE. Cambria will tabulate the data, contour groundwater elevations, and prepare a quarterly monitoring report.

Remediation System: Cambria should complete SVE system installation during the fourth quarter of 1999. A SVE start up report and periodic remedial update reports will be presented under separate cover.

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CLOSING

Cambria appreciates the opportunity to provide environmental services to Ms. Naomi English. Please call myself or David Elias at (510) 420-0700 if you have any questions or comments.

Sincerely,
Cambria Environmental Technology, Inc.




Jacquelyn Jones
Staff Geologist


David C. Elias, R.G.
Senior Geologist



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Attachments: A - Analytical Results for Groundwater Sampling
B - Water Sampling Field Notes

cc: Ms. Naomi English, 1545 Scenic View Dr., San Leandro, CA 94577

MAC ARTHUR BLVD.

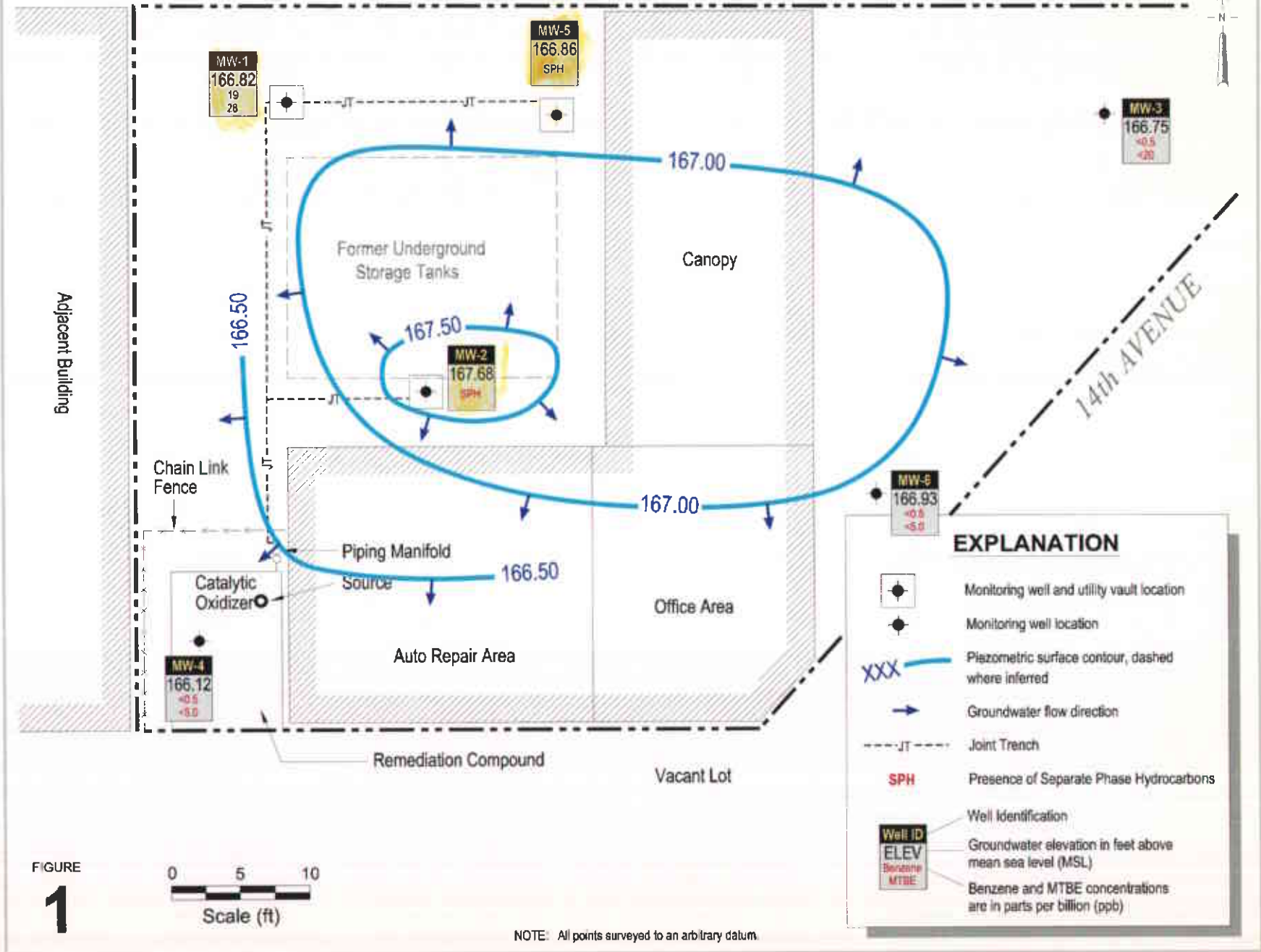
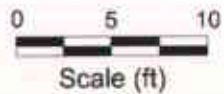


FIGURE 1



NOTE: All points surveyed to an arbitrary datum.

Hooshi's Auto Service
1499 MacArthur Boulevard
Oakland, California



C A M B R I A

**Groundwater Elevation
Contour Map**
August 19, 1999

CAMBRIA

Table 1. Groundwater Elevations and Analytical Data - Hooshi's Auto Service, 1499 MacArthur Boulevard, Oakland, California

Well ID TOC (ft*)	Date	Depth to Groundwater (ft)	Groundwater Elevation (ft**)	Separate Phase Hydrocarbons (ft)	←————— (µg/L) —————→						Notes
					TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	
MW-1 181.00	1/4/93	--	--	--	539	130	12	22	13	--	
	4/22/93	--	--	--	1,130	75	8.0	38	11	--	
	12/27/94	--	--	--	770	22	6.6	14	21	--	
	6/27/96	14.11	166.89	--	3,300	260	34	59	170	80	
	12/10/96	13.71	167.29	--	1,500	84	11	22	32	34	
	5/8/98	13.85	167.15	--	3,200	300	12	62	36	<120	a
	8/17/98	14.11	166.89	--	1,700	160	18	32	27	39	a
	11/4/98	14.28	166.72	--	1,100	11	4.3	3.6	6.5	<50	a
	2/17/99	13.41	167.59	--	320	200	47	72	75	57	a
	5/27/99	14.16	166.84	--	2,500	81	12	29	41	<80	a
	8/19/99	14.18	166.82	--	780	19	<0.5	5.7	4.5	28	a
MW-2 180.45	1/4/93	--	--	--	149,000	21,700	25,000	ND	7,760	--	
	4/22/93	--	--	--	136,300	9,900	15,870	15,300	2,190	--	
	12/27/94	--	--	--	94,000	11,000	18,000	2,700	16,000	--	
	6/27/96	12.61	168.64	1.00	--	--	--	--	--	--	
	12/10/99	11.10	169.55	0.25	--	--	--	--	--	--	
	5/8/98	10.81	169.66	0.03	--	--	--	--	--	--	
	8/17/98	12.16	168.31	0.02	--	--	--	--	--	--	
	11/4/98	12.61	167.86	0.02	--	--	--	--	--	--	
	2/17/99	9.82	170.66	0.04	--	--	--	--	--	--	
	5/27/99	11.07	169.48	0.13	--	--	--	--	--	--	
	8/19/99	12.79	167.68	0.02	--	--	--	--	--	--	
MW-3 179.94	1/4/93	--	--	--	1,610	772	14	11	ND	--	
	4/22/93	--	--	--	3,040	980	34	19	16	--	
	12/27/94	--	--	--	2,600	180	9.0	7.2	13	--	
	6/27/96	13.20	166.74	--	2,000	22	2.9	11	7.4	56	
	12/10/96	13.13	166.81	--	970	<0.5	<0.5	<0.5	<0.5	24	
	5/8/98	13.03	166.91	--	780	3.7	2.1	1.1	2.4	<32	a

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Table 1. Groundwater Elevations and Analytical Data - Hooshi's Auto Service, 1499 MacArthur Boulevard, Oakland, California

Well ID TOC (ft)	Date	Depth to Groundwater (ft)	Groundwater Elevation (ft**)	Separate Phase Hydrocarbons (ft)	TPHg						Notes
					←	Benzene	Toluene	Ethylbenzene	Xylenes	→ MTBE	
	8/17/98	13.22	166.72	--	870	2.8	<0.5	<0.5	3.7	<5.0	b,c
	11/4/98	13.31	166.63	--	770	1.6	4.4	2.0	6.9	<30	c
	2/17/99	12.89	167.05	--	650	6.2	3.4	1.5	2.6	<5.0	b,c
	5/27/99	12.32	167.62	--	570	1.5	1.2	0.72	1.1	<20	a
	8/19/99	13.19	166.75	--	830	<0.5	1.9	<0.5	1.3	<20	c,d
MW-4 180.54	6/27/96	17.03	163.51	--	720	2	0.5	2.5	23	3.2	
	12/10/96	8.50	172.04	--	80	2.4	<0.5	<0.5	6.6	<2.0	
	5/8/98	11.46	169.08	--	<50	0.60	<0.5	<0.5	<0.5	<5.0	
	8/17/98	13.98	166.56	--	<50	<0.5	<0.5	<0.5	0.5	<5.0	
	11/4/98	14.36	166.18	--	96	9.7	8.1	4.8	18	<5.0	a
	2/17/99	8.39	172.15	--	<50	<0.5	<0.5	<0.5	0.5	<5.0	
	5/27/99	12.80	167.74	--	<50	<0.5	1.0	<0.5	2.9	<5.0	
	8/19/99	14.42	166.12	--	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
MW-5 180.23	6/27/96	13.62	166.74	0.16	--	--	--	--	--	--	
	12/10/96	13.26	167.77	1.00	--	--	--	--	--	--	
	5/8/98	13.15	167.11	0.04	--	--	--	--	--	--	
	8/17/98	13.36	166.89	0.02	--	--	--	--	--	--	
	11/4/98	13.52	166.73	0.02	--	--	--	--	--	--	
	2/17/99	13.02	167.23	0.02	--	--	--	--	--	--	
	5/27/99	13.80	166.71	0.35	--	--	--	--	--	--	
	8/19/99	13.45	166.86	0.10	--	--	--	--	--	--	
MW-6 180.03	6/27/96	18.55	161.48	--	ND	ND	ND	ND	ND	--	
	12/10/99	11.79	168.24	--	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	
	5/8/98	11.62	168.41	--	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	8/17/98	12.66	167.37	--	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	11/4/98	13.56	166.47	--	68	3.8	3.7	2.8	11	<5.0	a
	2/17/99	12.91	167.12	--	<50	<0.5	<0.5	<0.5	<0.5	<5.0	

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Table 1. Groundwater Elevations and Analytical Data - Hooshi's Auto Service, 1499 MacArthur Boulevard, Oakland, California

Well ID	Date	Depth to Groundwater (ft)	Groundwater Elevation (ft)**	Separate Phase Hydrocarbons (ft)	TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	Notes
					← (µg/L) →						
	5/27/99	13.03	167.00	--	<50	1.0	1.7	0.82	4.9	<5.0	
	8/19/99	13.10	166.93	--	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
Trip Blank	5/8/98	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	11/4/98	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	5/27/99	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
MCLs	--	--	--	--	NE	1	150	700	1,750	NE	

Abbreviations and Methods:

TPHg = Total petroleum hydrocarbons as gasoline by modified EPA Method 8015

Benzene, toluene, ethylbenzene, 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

SPH = Separate Phase Hydrocarbons

* = elevations surveyed to an arbitrary datum

** = Calculated groundwater elevation corrected for SPH by the relation:

$$\text{Groundwater Elevation} = \text{Well Elevation} - \text{Depth to Water} + (0.8 \times \text{SPH thickness (ft)})$$

Abbreviations and Methods (Cont'd):

MCLs = California primary maximum contaminant levels for drinking water (22 CCR 64444)

NE = MCLs not established

ND = Compound not detected, detection limit unknown

Notes:

a - The analytical laboratory noted that unmodified or weakly modified gasoline is significant.

b - The analytical laboratory noted that lighter than water immiscible sheen is present.

c - The analytical laboratory noted no recognizable pattern.

d - The analytical laboratory noted heavier gasoline range compounds are significant (aged gasoline?).

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ATTACHMENT A

Analytical Results for Groundwater Sampling

McCAMPBELL ANALYTICAL INC.

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

QC REPORT FOR HYDROCARBON ANALYSES

Date: 08/20/99-08/21/99

Matrix: WATER

Analyte	Concentration (ug/L)			Amount Spiked	% Recovery		RPD
	Sample (#17000)	MS	MSD		MS	MSD	
TPH (gas)	0.0	105.5	105.4	100.0	105.5	105.4	0.1
Benzene	0.0	9.4	9.9	10.0	94.0	99.0	5.2
Toluene	0.0	9.6	10.1	10.0	96.0	101.0	5.1
Ethyl Benzene	0.0	9.9	10.4	10.0	99.0	104.0	4.9
Xylenes	0.0	30.0	31.3	30.0	100.0	104.3	4.2
TPH(diesel)	0.0	8104	8063	7500	108	108	0.5
TRPH (oil & grease)	0	24700	26800	23700	104	113	8.2

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

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

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ATTACHMENT B

Water Sampling Field Notes

WELL SAMPLING FORM

Project Name: Hooshi's	Cambria Mgr: DCE	Well ID: MW1
Project Number: 129-0741	Date: 8/19/99	Well Yield: —
Site Address: 1499 MacArthur Boulevard Oakland, California	Sampling Method: Disposable bailer	Well Diameter: 2 " pvc
		Technician(s): JK/EG
Initial Depth to Water: 14.18'	Total Well Depth: 20.05'	Water Column Height: 5.87'
Volume/ft: 0.16	1 Casing Volume: 0.94 gal	3 Casing Volumes: 2.82 gal
Purging Device: disposable bailer	Did Well Dewater?: no	Total Gallons Purged: 3 gal
Start Purge Time: 1026	Stop Purge Time: 1031	Total Time: 5 min

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. °C	pH	Cond. μ S	Comments
1026	1	19.0	7.1	966	
1028	2	18.7	6.9	971	
1031	3	18.6	6.7	1008	

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
MW1	8/19/99	110	4 voa's	HCL	TPHg, BTEX, MTBE	8020 8015

WELL SAMPLING FORM

Project Name: Hooshi's	Cambria Mgr: DCE	Well ID: MW3
Project Number: 129-0741	Date: 8/12/99	Well Yield: —
Site Address: 1499 MacArthur Boulevard Oakland, California	Sampling Method:	Well Diameter: 2 " pvc
	Disposable bailer	Technician(s): W/EG
Initial Depth to Water: 13.19'	Total Well Depth: 21.00'	Water Column Height: -7.81'
Volume/ft: 0.16	1 Casing Volume: 1.25 gal	3 Casing Volumes: 3.75 gal
Purging Device: disposable bailer	Did Well Dewater?: No	Total Gallons Purged: 4 gallons
Start Purge Time: 10:45	Stop Purge Time: 10:51	Total Time: 7 min

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
10:45	1	20.7	9.5	410	Faulty Phosphate
10:46	1	20.1	7.4	728 877	
10:49	2	19.5	6.9	804	
10:50	3	19.3	6.9	780	

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
MW-3	8/12/99	11:20	4 voa's	HCL	TPHg, BTEX, MTBE	8020 8015

WELL SAMPLING FORM



Project Name: Hooshi's	Cambria Mgr: DCE	Well ID: MW4
Project Number: 129-0741	Date: 8/19/99	Well Yield: —
Site Address: 1499 MacArthur Boulevard Oakland, California	Sampling Method: Disposable bailer	Well Diameter: 2 " pvc
		Technician(s): R/EG
Initial Depth to Water: 14.42'	Total Well Depth: 19.98'	Water Column Height: 5.56'
Volume/ft: 0.16	1 Casing Volume: 0.89 gal	3 Casing Volumes: 2.67 gal
Purging Device: disposable bailer	Did Well Dewater?: no	Total Gallons Purged: 3 gal
Start Purge Time: 948	Stop Purge Time: 953	Total Time: 5 min

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. °C	pH	Cond. µS	Comments
948	1	17.7	7.0	822	
950	2	17.3	6.8	775	
953	3	17.1	6.9	845	

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
MW4	8/19/99	1005	4 voa's	HCL	TPHg, BTEX, MTBE	8020 8015

WELL SAMPLING FORM

Project Name: Hooshi's	Cambria Mgr: DCE	Well ID: MW 6
Project Number: 129-0741	Date: 8/19/99	Well Yield: —
Site Address: 1499 MacArthur Boulevard Oakland, California	Sampling Method:	Well Diameter: 2 " pvc
	Disposable bailer	Technician(s): JJ/EG
Initial Depth to Water: 3.10'	Total Well Depth: 22.20'	Water Column Height: 9.10'
Volume/ft: 0.16	1 Casing Volume: 1.46 gal	3 Casing Volumes: 4.37 gal
Purging Device: disposable bailer	Did Well Dewater?: no	Total Gallons Purged: 5 gal
Start Purge Time: 10:26	Stop Purge Time: 10:35	Total Time: 9 min

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
10:26	1	20.3	6.7	125	
10:31	2	19.8	6.5	123	verified GA w/ counter jet
10:35	3	19.4	6.8	128	

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
MW-6	8/19/99	11:00	4 voa's	HCL	TPHg, BTEX, MTBE	8020 8015