GROUNDWATER MONITORING AND SYSTEM PROGRESS REPORT

SECOND QUARTER 2002

1432 Harrison Street
Oakland, California
Cambria Project #540-0188

July 30, 2002

Prepared for:

Mr. Mark Borsuk 1626 Vallejo St. San Francisco, CA 94123-5116

Prepared by:

Cambria Environmental Technology, Inc. 6262 Hollis Street Emeryville, California 94608 No. 6842

No. 6842

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Oakland, CA San Ramon, CA

Sonoma, CA

Cambria Environmental Technology, Inc.

Matthew A. Meyers Staff Geologist Ron Scheele, RG Senior Geologist

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

C A M B R I AGROUNDWATER MONITORING AND SYSTEM PROGRESS REPORT

SECOND QUARTER 2002

1432 Harrison Street
Oakland, California
Cambria Project #540-0188-037

July 30, 2002

INTRODUCTION



On behalf of Mr. Mark Borsuk, Cambria Environmental Technology, Inc. (Cambria) is submitting this groundwater monitoring and system progress report for the above-referenced site (see Figure 1). Presented in this report are the second quarter 2002 groundwater monitoring and remediation activities and the anticipated third quarter 2002 activities.

SECOND QUARTER 2002 ACTIVITIES AND RESULTS

Monitoring Activities

Field Activities: On June 10, 2002, Cambria conducted quarterly monitoring activities. Cambria gauged and inspected for separate-phase hydrocarbons (SPH) in wells MW-1 through MW-6 (see Figure 1). Groundwater samples were collected from all wells not containing SPH. Please note that a groundwater sample was collected from MW-1 because no SPH was present after the well was purged. Field Data Sheets are presented as Appendix A. Groundwater elevations are shown on Figure 1 and Table 1. The groundwater monitoring results have been submitted to the State's "Geotracker Database." The electronic delivery confirmations are presented in Appendix D.

Sample Analyses: Groundwater samples were analyzed for total petroleum hydrocarbons as gasoline (TPHg) by modified EPA Method 8015, and benzene, toluene, ethylbenzene, and xylenes (BTEX), and methyl tertiary butyl ether (MTBE) by EPA Method 8021B by McCampbell Analytical, Inc. of Pacheco, California. Any samples containing MTBE were further analyzed for MTBE using EPA Method 8260. Analytical results for the second quarter are included as Appendix B. Hydrocarbon concentrations are shown on Figure 1 and Table 1. Analytical results have been submitted to the State's "Geotracker Database." The electronic delivery confirmations are presented in Appendix D.

Monitoring Results

Groundwater Flow Direction: Based on depth-to-water measurements collected during Cambria's June 10, 2002 site visit, groundwater flow beneath the site is mounded. On the south side of the former USTs, groundwater flows towards the south-southwest at a gradient of 0.018, while on the

Second Quarter 2002 Monitoring Report 1432 Harrison Street Oakland, California July 30, 2002

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north side of the former USTs, groundwater flows toward the north-northeast at a gradient of 0.017 feet/feet (Figure 1). This is consistent with historical groundwater flow rates and directions.

Hydrocarbon Distribution in Groundwater: Hydrocarbon concentrations have decreased in wells MW-4 and MW-5, increased in wells MW-1 and MW-2, and remained the same in other wells compared with previous sampling events. The maximum TPHg and benzene concentrations were detected in well MW-1 at 210,000 and 30,000 micrograms per liter (μg/L), respectively. A decreasing hydrocarbon concentration trend is beginning to develop in well MW-2, located northwest of remediation wells VES-4/AS-4. No MTBE concentrations were detected above laboratory detection limits in any of the wells at the site.



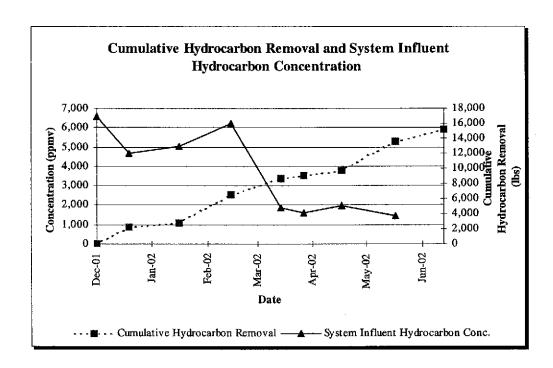
Corrective Action Activities

System Design: The soil vapor extraction (SVE) and air sparging (AS) remediation system consists of a trailer mounted all-electric catalytic oxidizer with heat exchanger, a 10-hp positive-displacement blower, an oil-less air sparge blower, and an auto dialer connected to a phone line to provide remote notification of system operations. Four coaxial remediation wells (VES-1/AS-1, VES-2/AS-2, VES-3/AS-3, VES-4/AS-4) are individually connected to a central manifold in the remediation system enclosure. See Figure 2 for the location of remediation enclosure and wells.

system Operations and Maintenance Activities: During the second quarter, Cambria performed system operation and maintenance of the SVE system approximately two times per month. Individual well flow, vacuum, and hydrocarbon concentration measurements were collected from all SVE wells and from the catalytic oxidizer/blower (See Tables 2 and 3). During site visits, system operation parameters were also recorded in specialized field forms for future system optimization and agency inspection. As per the Bay Area Air Quality Management (BAAQMD) permit, a catalytic oxidizer operating temperature greater than 600 degrees Fahrenheit was maintained, and system operation parameters were continuously measured using a chart recorder. System influent and effluent vapor samples were collected and submitted for laboratory analysis on April 2 and 15, May 6, and June 5, 2002. Air samples were collected twice in April to confirm hydrocarbon removal rates following the closing of the manual air dilution valve. Table 2 summarizes soil vapor extraction system operations and analytical results. The analytical laboratory reports from system vapor sampling are included as Attachment C.



SVE System Performance: From April 2 to July 2, 2002, the SVE system operated continuously except for a week in late April and a week in early May. The system was off during these periods due to electrical shutdowns by vandals. During system startup in December 2001, the SVE system operated with the manual dilution valve open approximately 90%. The air dilution valve was slowly closed during the first and second quarters to correspond with the decreasing well vapor concentrations. In closing the air dilution valve, problems were encountered with the ability of the SVE system to operate with less airflow. A new air proving pressure switch supplied by the equipment vendor was installed on April 15, 2002 to correct this problem and allow the dilution valve to be closed completely. Monthly well vapor hydrocarbon concentrations ranged from 3,800 to 5,100 ppmv and were approximately 10,000 ppmv lower than the previous quarter (See Table 2). Overall well vapor hydrocarbon concentrations exhibit a decreasing trend. Hydrocarbon removal rates ranged from 14 to 37 lbs/day. The increased removal rate calculated on April 15, 2002, may be attributed to air sparging operations (see section below). Vapor sample lab results indicated that the catalytic oxidizer was achieving proper destruction efficiency and was operating within permit requirements. To date, a total of 5,941 pounds of hydrocarbons have been destroyed by soil vapor extraction activities (see graph below and Table 2).



AS System Performance: Air sparging (AS) operations were suspended temporarily during the later part of the first quarter due to the presence of SPH in well MW-1. On April 15, 2002, Cambria reinitiated air sparging due to the reduction of SPH in MW-1 and overall decreasing well vapor

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concentrations. Approximately 0.25 gallons of SPH was bailed from MW-1 during the second quarter resulting in no measurable SPH thickness on June 5, 2002. During the quarter, air was injected at a pressure of 5 to 8 psi and at a low air flow rate of 1 to 2 cfm into air sparge wells (AS-2, AS-3, and AS-4). Air sparging was not performed on AS-1 because the well appeared to be plugged. The AS system was setup to cycle on and off every 30 minutes and to operate only between the hours of 7 am to 6 pm to reduce system noise from the air sparge blower during the evening and early morning hours.



ANTICIPATED THIRD QUARTER 2002 ACTIVITIES

Groundwater Sampling: Cambria will gauge all wells, check the wells for SPH, and collect groundwater samples from wells MW-1, MW-2, MW-4, and MW-5. Groundwater samples will be analyzed for TPHg by Modified EPA Method 8015 and BTEX and MTBE by EPA Method 8021B. Any samples containing MTBE will be confirmed by EPA Method 8260. Cambria will prepare a quarterly Groundwater Monitoring and System Progress Report and submit groundwater monitoring and sampling results to the State's "Geotracker Database." Included in the report will be a summary of the groundwater monitoring activities and sampling results.

Sampling Frequency Reduction: Cambria will reduce the sampling frequency of wells MW-3 and MW-6 to an annual basis, beginning in the third quarter. No hydrocarbon concentrations have been detected in these wells during the last 6 sampling events. The wells are scheduled for annual sampling during the first quarter of 2003.

Remediation System: Cambria will continue to perform operation and maintenance of the SVE/AS system during the third quarter of 2002. Cambria will also evaluate the performance of the remediation system and combine the results in a quarterly Groundwater Monitoring and System Progress Report. Included in the report will be tables summarizing the concentration, flow, and vacuum of system and individual wells, along with the analytical results.

Cambria will perform system operation, maintenance, and optimization activities twice per month during the third quarter of 2002. Optimization activities may include vacuum and flow adjustments to soil vapor extraction wells and pressure and flow adjustments to air sparging wells as hydrocarbon concentrations change in the individual wells. System influent and effluent samples will be collected on a monthly basis along with Horiba gas analyzer readings from the individual wells. System operation records will be kept for a period of two years for possible future BAAQMD inspection.

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APPENDIXES

Figure 1 - Groundwater Elevation and Analytical Summary

Figure 2 – Soil Vapor Extraction/Air Sparging System

Table 1 - Groundwater Elevations and Analytical Data

Table 2 - SVE System Performance and Soil Vapor Analytical Results

Table 3 – SVE System Parameters

Appendix A – Groundwater Monitoring Field Data Sheets

Appendix B - Analytical Results for Quarterly Groundwater Sampling

Appendix C – Analytical Results for SVE System Operation

Appendix D - Electronic Delivery Confirmation



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MARK BORSUK Attorney at Law (415) 922-4740 / FAX 922-1485 mark@borsuk.com / www.borsuk.com 1626 Vallejo Street San Francisco, CA 94123-5116

August 6, 2002

Mr. Thomas Peacock Supervising HMS, LOP ACHCSA 1131 Harbor Bay Parkway Alameda, CA 94501 (510) 567-6700 / FAX 337-9335 tpeacock@co.alameda.ca.us

SUBJECT: IIQ02 Monitoring & SVE System Progress Report 1432 Harrison Street, Oakland, CA 94612 SITE ID 498

Dear Mr. Peacock:

Attached is the IIQ02 Groundwater Monitoring and SVE Systems Progress Report for the above site. If you have a question, please contact me.

Sincerely yours,

Mark Borsuk

Mr. Mark Borsuk 1626 Vallejo St. San Francisco, CA 94123-5116

Re: Groundwater Monitoring and System Progress Report

Second Quarter 2002

1432 Harrison Street Oakland, California Cambria Project #540-0188



Dear Mr. Borsuk:

As you requested, Cambria Environmental Technology, Inc. (Cambria) is submitting this groundwater monitoring and system progress report for the above-referenced site. Presented in the report are the second quarter 2002 activities and results and the anticipated third quarter 2002 activities. Attached are two additional copies for submittal to ACHCSA and BAAQMD regulatory agencies.

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

Ran Schul

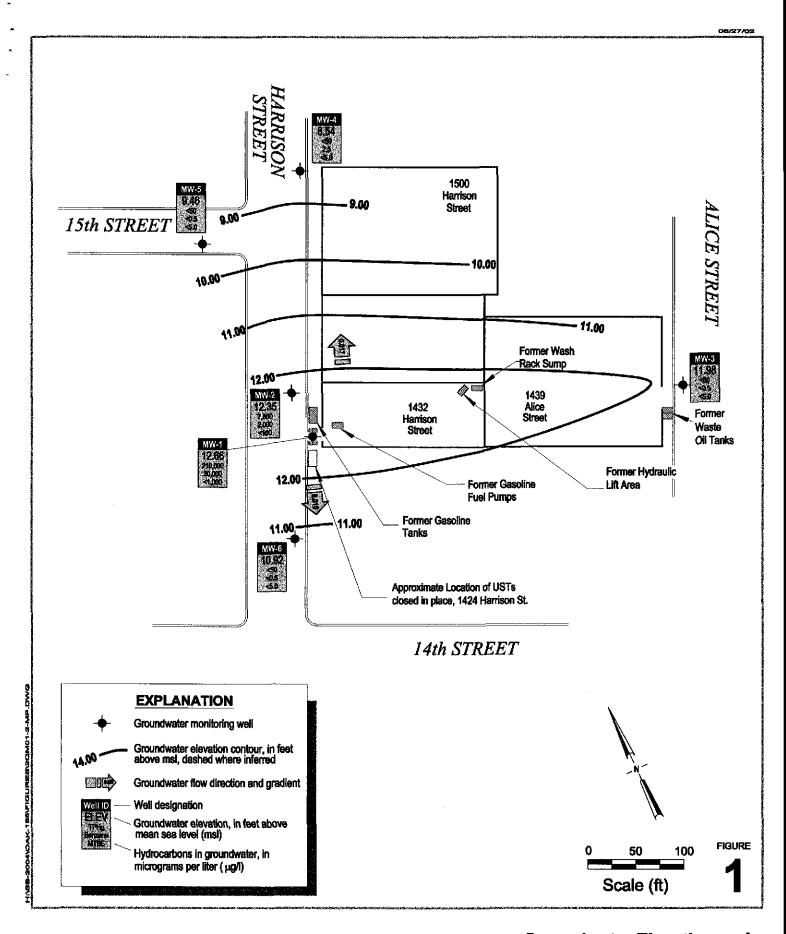
Senior Geologist

Attachments: Groundwater Monitoring and System Progress Report, Second Quarter 2002

Oakland, CA San Ramon, CA Sonoma, CA

Cambria Environmental Technology, Inc.

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1432 Harrison Street



Borsuk Properties

1432 Harrison Street Oakland, California

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Soil Vapor Extraction /

HARRISON STREET

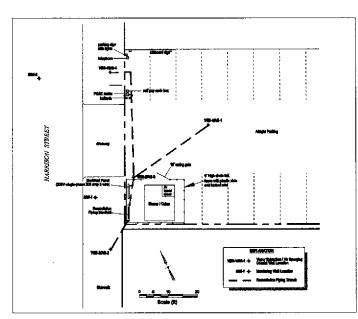
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(208V-single-phase 200 am

MW-1 →

Re Piping

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FIGURE

08/05/02

Air Sparge System (As-Built)

Table 1. Groundwater Elevations and Analytical Data - 1432 Harrison St., Oakland, CA.

Well ID	Date	Top of Casing Elevation	Depth to Groundwater	Groundwater Elevation	ТРНд	Benzene	Toluene	Ethylbenzene	Xylenes	мтве	Notes
TOC (ft)		(ft)	(ft)	(ft)			<u> </u> (μg	/L)			
MW-1	8/1/94			_	170,000	35,000	51,000	2,400	13,000		
	12/21/94	34.95	19.53	15.42	180,000	41,000	64,000	3,100	100,000		
	3/13/95	34.95	18.66	16.29	150,000	31,000	45,000	2,500	17,000		
	6/27/95	34.95	18.20	16.75	71,000	17,000	18,000	1,600	7,700		
	7/7/ 9 5	34.95	18.35	16.60	71,000	17,000	18,000	1,600	7,700		-
	9/28/95	34.95	18.20	16.75	110,000	27,000	34,000	1,700	14,000		
	12/20/95	34.95	19.96	14.99	120,000	33,000	43,000	2,300	15,000		
	3/26/96	34.95	19.27	15.68	140,000	29,000	36,000	1,900	13,000	<200*	đ
	6/20/96	34.95	18.64	16.31	110,000	30,000	38,000	2,200	13,000	<200*	
	9/26/96	34.95	19.35	15.60	170,000	28,000	40,000	2,200	15,000	ND**	_
	10/28/96	34.95	19.58	15.37		_		-			-
	12/12/96	34.95	19.68	15.27	110,000	36,000	47,000	2,500	16,000	ND*	
	3/31/97	34.95	18.80	16.15	160,000	24,000	39,000	1,900	13,000	ND*	
	6/27/97	34.95	19.26	15.69	130,000	25,000	36,000	2,000	14,000	ND*	
	9/9/97	34.95	19.70	15.25	99,000	22,000	27,000	1,600	13,000	270*	
	12/18/97	34.95	19.25	15.70	160,000	30,000	44,000	2,200	15,000	ND***	
	3/12/98	34.95	17.52	17.43	190,000	20,000	49,000	2,500	18,000	ND***	
	6/22/98	34.95	18.63	16.32	90,000	19,000	40,000	2,100	16,000	_	
	9/18/98	34.95	18.60	16.35	190,000	29,000	48,000	2,400	17,000		
	12/23/98	34.95	19.18	15.77	140,000	24,000	44,000	2,000	8,200		
	3/29/99	34.95	18.52	16.43	181,000	22,200	40,100	1,844	12,200		
	6/23/99	34.95	18.60	16.35	80,000	20,000	33,000	1,600	11,000	-	_
	9/24/99	34.95	19.05	15.90	117,000	15,100	20,700	1,550	11,800		
	12/23/99	34.95	19.95	15.00	186,000	25,900	39,000	1,990	12,400		
	3/21/00	34.95	18.48	16.47	210,000	35,000	42,000	2,200	13,000	<3,000	a
	7/3/00	34.95	18.95	16.00	200,000	33,000	46,000	2,200	15,000	<200*	а
	9/7/00	34.95	19.45	15.50	Free Product pres	ent (Sheen). No sam	ıple taken.				
	12/5/00	34.95	19.90	15.05	220,000	42,000	57,000	2,700	17,000	<200	a
	3/6/01	34.95	18.20	16.75	180,000	27,000	39,000	2,000	13,000	<1200 (<20)	a,l
	6/8/01	34.95	20.14	14.81	170,000	28,000	40,000	1,900	13,000	<200	á
	8/27/01	34.95	21.19	13.76	130,000	24,000	33,000	1,600	11,000	<350	а
	10/25/01	34.95	21.74	13.21	160,000	22,000	28,000	1,500	10,000	<350	a
	3/1/02	34.95	21.39	13.85x		ent (thickness of 0.4					
	6/10/02	34.95	22.30	12.66x	210,000	30,000	51,000	3,100	22,000	<1,000*	а

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Table 1. Groundwater Elevations and Analytical Data - 1432 Harrison St., Oakland, CA.

Well ID	Date	Top of Casing Elevation	Depth to Groundwater	Groundwater Elevation	TPHg	Benzene	Toluene	Éthylbenzene	Xylenes	мтве	Notes
TOC (ft)		(ft)	(ft)	(ft)	_ <		(μg	/L) ———		>	
MW-2	8/1/94				120.000	26 000	25.000	2 000	12.000		
(V) VV - Z	-	25.10		 15.27	130,000	28,000	35,000	3,000	12,000		-
	12/21/94	35.18	19.91	15.27	200	140,000	200,000	3,500	22,000		
	3/13/95	35.18	19.15	16.03	500	9,200	23,000	7,000	36,000	~~	
	6/27/95	35.18	18.74	16.44	120,000	23,000	30,000	2,700	13,000		-
	7/7/95	35.18	18.80	16.38	120,000	23,000	30,000	2,700	13,000	••	
	9/28/95	35.18	19.30	15.88	110,000	23,000	29,000	2,500	11,000		
	12/20/95	35.18	20.24	14.94	83,000	980	1,800	2,200	10,000		
	3/26/96	35.18	19.69	15.49	150,000	23,000	32,000	2,800	12,000	<200*	đ
	6/20/96	35.18	19.20	15.98	94,000	15,000	23,000	2,400	12,000	<200*	
	9/26/96	35.18	19.80	15.38	150,000	20,000	29,000	2,800	12,000	ND**	
	10/28/96	35.18	20.18	15.00			~-		_	_	
	12/12/96	35.18	20.17	15.01	58,000	3,100	11,000	1,700	8,100	220*	-
	3/31/97	35.18	19.67	15.51	38,000	6,000	7,900	690	3,300	ND*	_
	6/27/97	35.18	19.68	15.50	62,000	13,000	16,000	1,300	6,000	ND*	
	9/9/97	35.18	20.20	14.98	81,000	16,000	18,000	1,800	8,600	ND***	
	12/18/97	35.18	19.80	15.38	110,000	18,000	26,000	2,200	9,500	ND***	_
	3/12/98	35.18	18.07	17.11	120,000	16,000	26,000	2,200	9,400	ND***	
	6/22/98	35.18	18.29	16.89	38,000	9,800	9,500	1,500	6,000		
	9/18/98	35.18	19.09	16.09	68,000	12,000	16,000	1,400	5,900		_
	12/23/98	35.18	19.67	15.51	180,000	16,000	22,000	2,200	8,300	-	
	3/29/99	35.18	18.97	16.21	16,600	1,380	1,920	373	1,840		
	6/23/99	35.18	18.25	16.93	41,000	10,000	9,400	1,100	5,000		_
	9/24/99	35.18	19.60	15.58	40,600	4,880	3,490	1,090	4,560	-	
	12/23/99	35.18	20.21	14.97	61,900	6,710	9,320	1,150	5,360	_	
	3/21/00	35.18	18.93	16.25	98,000	14,000	21,000	1,600	6,900	<1600	
	7/3/00	35.18	19.38	15.80	140,000	18,000		2,600		<200*	a
	9/7/00	35.18	19.33	15.35	· · · · · · · · · · · · · · · · · · ·		33,000	•	11,000	<100***	a
					110,000	17,000	21,000	2,200	9,700		a,l
	12/5/00	35.18	20.30	14.88	130,000	19,000	28,000	2,500	11,000	<200	2
	3/6/01	35.18	19.57	15.61	32,000	3,400	3,400	580	2,500	<200	a
	6/8/01	35.18	20.59	14.59	72,000	9,400	9,200	1,300	5,800	<200	а
	8/27/01	35.18	21.79	13.39	110,000	17,000	28,000	2,600	11,000	<950	a
	10/25/01	35.18	22.05	13.13	110,000	15,000	18,000	2,000	8,700	<350	a
	3/1/02	35.18	21.80	13.38	3,100	370	180	62	330	<5.0*	a
	6/10/02	35.18	22.83	12.35	7,800	2,000	1,100	76	570	<100*	a

Table 1. Groundwater Elevations and Analytical Data - 1432 Harrison St., Oakland, CA.

Well ID	Date	Top of Casing Elevation	Depth to Groundwater	Groundwater Elevation	ТРНд	Benzene	Toluene	Ethylbenzene	Xylenes	мтве	Notes
TOC (ft)		(ft)	(ft)	(ft)			———— (μg	/L)		<u> </u>	
	014 (0.4				50	0.5	26	A.F	2.0		
MW-3	8/1/94				<50	<0.5	<0.5	<0.5	<2.0	**	-
	12/21/94	33.97	18.82	15.15	<50	<0.5	<0.5	<0.5	<0.5	_	e
	3/13/95	33.97	17.86	16.11	<50	<0.5	<0.5	<0.5	<0.5		f,g
	7/7/95	33.97	18.25	15.72					-	_	h
	9/28/95	33.97	18.00	15.97				-	-		-
	12/20/95	33.97	18.74	15.23							
	3/26/96	33.97	18.25	15.72				_	_	_	
	6/20/96	33.97	18.35	15.62			-	-		••	
	9/26/96	33.97	19.12	14.85							-
	10/28/96	33.97	19.11	14.86				-			
	12/12/96	33.97	18.61	15.36							
	3/31/97	33.97	18.35	15.62							_
	6/27/97	33.97	18.81	15.16		-		-		-	~-
	9/9/97	33.97	19.18	14.79						-	
	12/18/97	33.97	18.64	15.33					_	_	_
	3/12/98	33.97	17.56	16.41		-			_	_	
	6/22/98	33.97	18.64	15.33		-	~~		_		~~
	9/18/98	33.97	18.33	15.64	**	_	••				
	12/23/98	33.97	18.60	15.37		_					
	3/29/99	33.97	17.85	16.12	_						_
	6/23/99	33.97	18.67	15.30			-				_
	9/24/99	33.97	18.64	15.33			_	_			
	12/23/99	33.97	19.32	14.65							
	3/21/00	33.97	17.89	16.08							
	7/3/00	33.97	18.40	15.57	NAME:						
	9/7/00	33.97	18.75	15.22	_				••		
	12/5/00	33.97	19.03	14.94	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	3/6/01	33.97	18.12	15.85	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	6/8/01	33.97	20.02	13.95	<50	<0.5	<0.5	<0.5	<0.5	<5.0	_
	8/27/01	33.97	21.09	12.88	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	10/25/01	33.97	21.29	12.68	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-
	3/1/02	33.97	21.14	12.83	<50	<0.5	<0.5	<0.5	<0.5	<5.0*	-
	6/10/02	33.97	21.99	11.98	<50	< 0.5	< 0.5	<0.5	< 0.5	<5.0*	

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Table 1. Groundwater Elevations and Analytical Data - 1432 Harrison St., Oakland, CA.

Well ID	Date	Top of Casing Elevation	Depth to Groundwater	Groundwater Elevation	TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	Notes
TOC (ft)		(ft)	(ft)	(ft)	_		<u>με</u>	/L)			
MW-4	10/28/96	30.77	19.32	11.45	10,000	3,900	420	400	360	<200*	
	12/12/96	30.77	19.42	11.35	11,000	4,200	410	420	260	32*	_
	3/31/97	30.77	18.67	12.10	ND	ND	ND	ND	ND	ND*	
	6/27/97	30.77	19.08	11.69	160	49	1.2	ND	5.9	ND*	_
	9/9/97	30.77	19.33	11.44	7,400	5,000	410	230	470	33*	
	12/18/97	30.77	19.17	11.60	710	170	8.0	ND	39	ND***	
	3/12/98	30.77	17.68	13.09	1,300	410	21	ND	57	ND***	_
	6/22/98	30.77	17.63	13.14	ND	ND	ND	ND	ND		
	9/18/98	30.77	18.58	12.19	ND	42	1.6	ND	4.8		
	12/23/98	30.77	19.01	11.76	1,900	1,000	76	50	120		-
	3/29/99	30.77	18.35	12.42	ND	ND	ND	ND	ND		
	6/23/99	30.77	17.58	13.19	ND	ND	ND	ND	ND	-	
	9/24/99	30.77	19.05	11.72	9,150	3,270	131	34	537	-	-
	12/23/99	30.77	19.41	11.36	12,200	5,360	275	424	592		
	3/21/00	30.77	18.42	12.35	45,000	16,000	1,100	1,400	1,900	1400* (<35)***	a,l
	7/3/00	30.77	18.82	11.95	33,000	10,000	720	840	1,800	<200*	3
	9/7/00	30.77	19.21	11.56	26,000	8,800	800	740	1,500	<50***	a,l,m
	12/5/00	30.77	19.60	11.17	41,000	11,000	840	930	1,900	<200	a
	3/6/01	30.77	18.24	12.53	1,100	400	5.7	<0.5	20	<5.0	a
	6/8/01	30.77	20.91	9.86	92	19	<0.5	<0.5	1	<5.0	a
	8/27/01	30.77	21.63	9.14	49,000	17,000	1700	1,700	3,200	<260	a
				9.07	57,000	16,000	1,500	1,600	2,600	<300	a
	10/25/01	30.77	21.70		•	,		· ·	•		
	3/1/02	30.77	21.53	9.24	400	140	2.3	<0.5	12	<5.0*	a
	6/10/02	30.77	22.23	8.54	<50	2.5	<0.5	< 0.5	<0.5	<5.0*	

Table 1. Groundwater Elevations and Analytical Data - 1432 Harrison St., Oakland, CA.

Well ID	Date	Top of Casing Elevation	Depth to Groundwater	Groundwater Elevation	TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	мтве	Notes
TOC (ft)		(ft)	(ft)	(ft)			 (μg	/L) ———		 >	
	100000	21.61	10.00	11.72	00	4.0	0.6	<0.50	<0.50	16*	
MW-5	10/28/96	31.61	19.88	11.73	90	4.0	0.6				
	12/12/96	31.61	20.09	11.52	230	5.6	0.9	ND	0.9	3.6*	
	3/31/97	31.61	19.24	12.37	90	3.1	ND	ND	ND	ND*	
	6/27/97	31.61	19.16	12.45	ND	ND	ND	ND	ND	ND*	-
	9/9/97	31.61	19.93	11.68	ND	ND	ND	ND	ND	ND*	
	12/18/97	31.61	19.77	11.84	ND	ND	ND	ND	ND	ND***	_
	3/12/98	31.61	19.77	11.84	79	2.3	ND	0.8	ND	ND*	••
	6/22/98	31.61	18.08	13.53	ND	ND	ND	ND	ND	-	
	9/18/98	31.61	19.12	12.49	ND	ND	ND	ND	ND	~-	
	12/23/98	31.61	19.60	12.01	ND	0.8	0.9	ND	ND		
	3/29/99	31.61	18.88	12.73	ND	ND	ND	ND	ND		
	6/23/99	31.61	18.05	13.56	ND	ND	ND	ND	ND		
	9/24/99	31.61	19.61	12.00	ND	ND	ND	ND	ND		
	12/23/99	31.61	20.01	11.60	ND	ND	ND	ND	ND		
	3/21/00	31.61	19.05	12.56	140	<0.5	<0.5	<0.5	< 0.5	<5.0	k
	7/3/00	31.61	19.40	12.21	85	8.1	3.1	1.6	7.8	<5.0*	а
	9/7/00	31.61	19.62	11.99	<50	<0.5	<0.5	<0.5	<0.5	<5.0*	
	12/5/00	31.61	20.25	11.36	<50	<0.5	<0.5	<0.5	<0.5	<5.0	_
	3/6/01	31.61	19.07	12.54	91	5.5	<0.5	<0.5	<0.5	<5.0	_
	6/8/01	31.61	20.77	10.84	290	22.0	0.8	<0.5	<0.5	<5.0	а
	8/27/01	31.61	21.33	10.28	660	24.0	2.2	1.3	4.0	<25	a
	10/25/01	31.61	21.62	9.99	55	3.5	<0.5	<0.5	<0.5	<5.0	a
					200	1.9	0.69	<0.5	<0.5	<5.0*	
	3/1/02 6/10/02	31.61 31.61	21.49 22.1 5	10.12 9.46	< 50	<0.5	< 0. 5	<0.5	<0.5 < 0.5	<5.0*	а

Table 1. Groundwater Elevations and Analytical Data - 1432 Harrison St., Oakland, CA.

Well ID	Date	Top of Casing Elevation	Depth to Groundwater	Groundwater Elevation	TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	МТВЕ	Notes
TOC (ft)		(ft)	(ft)	(ft)	←		<u></u> (µg	/L) —			
	40.000.00		40.00	10.00	40	. 0.50	0.50	.0.50	<0.50	<2.0*	
MW-6	10/28/96	32.89	20.02	12.87	<50	<0.50	<0.50	<0.50			
	12/12/96	32.89	20.18	12.71	ND	ND	ND	ND	ND	ND*	
	3/31/97	32.89	19.81	13.08		_	-				
	6/27/97	32.89	19.76	13.13	**	••					-
	9/9/97	32.89	20.06	12.83	ND	ND	ND	ND	ND	ND*	
	12/18/97	32.89	19.90	12.99	ND	ND	ND	ND	ND		
	3/12/98	32.89	18.00	14.89	ND	ND	ND	ND	ND	ND*	-
	6/22/98	32.89	18.43	14.46	ND	ND	ND	ND	ND		
	9/18/98	32.89	19.10	13.79	ND	ND	ND	ND	ND		_
	12/23/98	32.89	19.61	13.28	ND	ND	ND	ND	ND		_
	3/29/99	32.89	18.92	13.97	ND	ND	ND	ND	ND		
	6/23/99	32.89	18.41	14.48	ND	ND	ND	ND	ND		_
	9/24/99	32.89	19.61	13.28	ND	ND	ND	ND	ND		_
	12/23/99	32.89	20.30	12.59	ND	ND	ND	ND	ND		-
	3/21/00	32.89	18.97	13.92	<50	<0.5	<0.5	< 0.5	<0.5	<5.0	
	7/3/00	32.89	19.46	13.43	59	5.1	2.3	1.1	5.3	<5.0*	a
	9/7/00	32.89	19.95	12.94	<50	<0.5	<0.5	<0.5	< 0.5	<5.0*	
	12/5/00	32.89	20.50	12.39	<50	<0.5	<0.5	< 0.5	< 0.5	<5.0	
	3/6/01	32.89	19.54	13.35	<50	<0.5	<0.5	< 0.5	< 0.5	<5.0	
	6/8/01	32.89	20.92	11.97	<50	<0.5	<0.5	<0.5	<0.5	<5.1	
	8/27/01	32.89	21.37	11.52	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	10/25/01	32.89	21,59	11.30	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	3/1/02	32.89	21.33	11.56	<50	<0.5	<0.5	<0.5	<0.5	<5.0*	
	6/10/02	32.89	21.97	10.92	<50	<0.5	<0.5	<0.5	<0.5	<5.0*	

Table 1. Groundwater Elevations and Analytical Data - 1432 Harrison St., Oakland, CA.

Well ID TOC (ft)	Date	Top of Casing Elevation (ft)	Depth to Groundwater (ft)	Groundwater Elevation (ft)	ТРНg ≪	Benzene	Toluene ——— (με	Ethylbenzene	Xylenes	мтве	Notes
Trip Blank	3/21/00 9/7/00			 	<50 <50	<0.5 <0.5	<0.5 <0.5	<0.5 <0.5	<0.5 <0.5	<5.0 <5.0	<u> </u>

Abbreviations

TPHg = Total petroleum hydrocarbons as gasoline by EPA method Modified 8015. Benzene, toluene, ethylbenzene, xylenes by EPA method 8020.

-- = Not Sampled/Not Analyzed

<n = Not detected in sample above n µg/L..

ND = Not detected at minimum quantitation limit. See laboratory reports.

 μ g/L = micrograms per liter

MTBE = Methyl tert-butyl ether

* = MTBE by EPA Method 8020

** = MTBE by EPA Method 8240

*** = MTBE by EPA Method 8260

VOCs = volatile organic compounds

x = Groundwater elevation adjusted for free product by the relation:

Groundwater Elevation = Well Elevation - Depth to Water + (0.7 x free product thickness)

Notes

- a = Unmodified or weakly modified gasoline is significant.
- b = Lighter than water immiscible sheen is present.
- c = Liquid sample that contains greater than ~5 vol. % sediment.
- d = MTBE result confirmed by secondary column or GC/MS analysis.
- e = Sample analyzed for purgeable hydrocarbons by EPA method 8010, no purgeable halocarbons were detected.
- f = Sample analyzed for VOCs by EPA method 8240, no non-BTEX compounds were detected.
- g = Sample analyzed for Total Petroleum Hydrocarbons as motor oil (TPHmo) by EPA method Modified 8015, no TPHmo was detected.
- h = Analytic sampling discontinued. Approved by Alameda County Department of Environmental Health.
- i = Lighter than gasoline range compounds are significant.
- j = Gasoline range compounds having broad chromatographic peaks are significant.
- k = No recognizable pattern.
- l = Sample diluted due to high organic content.
- m= Liquid sample that contains greather than 5 vol. % sediment.

Table 2. SVE System - Performance and Soil Vapor Analytical Results - Borsuk Site - 1432 Harrison St - Oakland, California

Date	Hour Meter Readings (hrs)	System Uptime (%)	System Flow Rate (prior to dilution) (cfm)	Total Well HC Conc. (prior to dilution) (ppmv)	System Inlet Temp. (degrees F)	System Flow Rate (after dilution) (cfm)	Total System Influent HC Conc. (ppmv) TPHg	Effi HC C (pp TPHg		HC Removal Rate ² (lbs/day) TPHg	Ra	ssion nte ² (day) Benz	TPHg Destruction Efficiency ³ (%)	Gasoline Cumulative Removal ⁴ (lbs)
12/20/2001	13.0			17,000	825	170	920	<10	<0.15	50.18	<0.545	<0.007	3	0
1/7/2002	443.8	100%		12,000	1017	105	1,400	<10	<0.15	47.16	<0.337	<0.005	_3	901
2/4/2002	576.2	20%		13,000	916	150	1,100	<10	<0.15	52.94	<0.481	<0.007	3	1161
3/5/2002	1268.2	99%		16,000	1020	135	1,000	<10	<0.15	43.31	<0.433	<0.006	3	2687
4/2/2002	1939.9	100%		4,800	715	114	390	<10	<0.15	14.26	<0.366	<0.005	_3	3899
4/15/2002	2253.2	100%	27.5	4,200	709	30	*	28	<0.15	37.06	0.27	<0.001	99.3	4086
5/6/2002	2655.2	80%	12.5	5,100	735	35	*	14	<0.15	20.45	0.16	<0.002	99.7	4706
6/5/2002	3373.2	100%	18.8	3,800	652	22.5	*	14	<0.15	22.92	0.10	<0.001	99.6	5318
7/2/2002	4024.9	101%												5941

Table 2. SVE System - Performance and Soil Vapor Analytical Results - Borsuk Site - 1432 Harrison St - Oakland, California

<u> </u>														
	Hour Meter	System	System	Total Well	System	System	Total System Influent	Eff1	uent	HC	Emi	ission	TPHg	Gasoline
Date	Readings	Uptime	Flow Rate	HC Conc.	Inlet	Flow Rate	HC Conc. 1	HC C	onc. 1	Removal Rate 2	R	ate ²	Destruction	Cumulative
	(brs)	(%)	(prior to dilution)	(prior to dilution)	Temp.	(after dilution)	(ppmv)	(pp:	mv)	(lbs/day)	(lbs	/day)	Efficiency ³	Removal ⁴
	(LLS)	(,~)	(cfm)	(ppmv)	(degrees F)	(cfm)	TPHg	TPHg	Benz	TPHg	TPHg	Benz	(%)	(lbs)

Notes and Abbreviations:

TPHg = Total petroleum hydrocarbons as gasoline

Benz = Benzene

HC Conc. = Hydrocarbon Concentrations

ppmv = Parts per million by volume. Analytical lab results converted from micrograms per liter (ug/l) to ppmv assumes the molecular weight of gasoline to be equal to that of hexane.

at 1 atmosphere of pressure and 20 degrees Celsius.

scfm = standard cubic feet per minute

¹ TPHg and benzene concentrations based on Horiba gas analyzer measurements and/or lab results by Modified EPA Methods 8015 and 8020.

Laboratory analytic results for TPHg and benzene are converted from ug/l to ppmv using conversion rates of 0.28 for TPHg and 0.308 for benzene.

² The hydrocarbon removal/emission rate is based on the Bay Area Air Quality Management's District's (BAAQMD) Procedures for Soil Vapor Extraction where

Rate = concentration (ppmv) x flow rate (cfm) x 1 lb-mole/386x10⁶ft³ x molecular weight (86 lb/lb-mole for TPHg, 78 lb/lb-mole for benzene) x 1440 min/day.

As per BAAQMD Permit, destruction efficiency requirements are waived if system TPHg effluent concentration is <10.

⁴ Gasoline Cumulative Removal = The previous removal rates multiplied by the interval days of operation plus the previous total removal amount.

The total TPHg removal is based on analytic results and/or field measurements.

IR:\SB-2004\Oakl-188-Borsuk\O&M\SVE System Table

^{* =} Total System Influent Hydrocarbon Concentrations based on Total Well Hydrocarbon Concentrations collected at the well manifold because manual air dilution valve is closed

Table 3. SVE System Parameters - Borsuk Site, 1432 Harrison Street, Oakland, California

				*Hydrocarbon Vapo	r
		Well Vacuum		Concentration	Status
Well ID	Date	(inches of H ₂ O)	Flow Rate (cfm)	(ppmv)	(open/closed)
VES-1	12/13/01			36,000	open
	12/20/01	25	6.5	43,000	open
	12/27/01	48	12.4	41,000	open
	1/7/02	100	20.5	>10,000	open
	2/8/02	140	27.0	>10,000	open
	3/5/02	34	6.3	>10,000	open
	4/2/02	83	13.5	10070	open
	4/15/02	101	28.2	10070	open
	5/22/02	80	22.5	9980	open
	6/5/02	77	22.1	11110	open
	6/21/02	81	H2O	7810	open
	7/2/02	82	25	10400	open
VES-2	12/13/01		••	40,000	open
	12/20/01	25	6.0	42,500	open
	12/27/01	48	12.1	35,000	open
	1/7/02	100	21.5	>10,000	open
	2/8/02	140	25.1	>10,000	open
	3/5/02	34	7.6	>10,000	open
	4/2/02	83	13.2		open
	4/15/02	102	24.1	1347	open
	5/22/02	81	26.1	1888	open
	6/5/02	79	20.7	2090	open
	6/21/02	82	47	1820	open
	7/2/02	81	28.9	5210	open
VES-3	12/13/01			38,000	open
120-5	12/20/01	25	7.0	41,500	open
	12/27/01	48	12.0	61,000	open
			22.5	>10,000	open
	1/7/02	100	26.5	>10,000	open
	2/8/02	140			
	3/5/02	47	7.5	>10,000	open
	4/2/02	84	11.1	 4260	open
	4/15/02	102	24.8		open
	5/22/02	85	16.5	7090	open
	6/5/02	85	14.7	5290	open
	6/21/02	80	25.5	3450	open
	7/2/02	82	32.2	4820	open

VES-4	12/13/01			35,000	open
	12/20/01	25	4.9	46,500	open
	12/27/01	48	12.2	53,000	open
	1/7/02	100	23.0	>10,000	open
	2/8/02	140	28.1	>10,000	open
	3/5/02	47	9.3	>10,000	open
	4/2/02	84	11.5		open
	4/15/02	102	22.5	5350	open
	5/22/02	80	21.7	570	open
	6/5/02	80	18	4490	open
	6/21/02	81	41.5	2580	open
	7/2/02	81	38	9690	open

Notes:

^{* =} Hydrocarbon concentrations are measured using a Horiba MEXA-554 gas analyzer. Concentration readings above 10,000 ppmv are above the instrument calibration and are not reliable.

^{-- =} Data not available or not collected

H2O = unable to get reading due to the presence of water



APPENDIX A

Groundwater Monitoring Field Data Sheets

WELL DEPTH MEASUREMENTS

Well ID	Time	Product Depth	Water Depth	Product Thickness	Well Depth	Comments
MW-1	կ:/5	22.28	22.30		25.05	
MM-5	4: 10		22.83		2540	
MN-3	3:50		2199		23.90	
MAU	4:00		22.23		24.50	
MN-5	3:55		22.15		28.34	
MW6	4:05	-	21.47		28.00	
	٠.					
				,		
<u> </u>						
					···	

Project Name:	Borsuk		Project Number:	540-0188	1
Measured By:	J. 22		Date:	6-10-02	, 1

Project Name: Busuk	Cambria Mgr: RAS	Well ID: MW-6
Project Number: 5 40 - 0138	Date: 6-10-02	Well Yield:
Site Address:	Sampling Method:	Well Diameter: 2 pvc
Oakland, (a	disposable baile,	Technician(s):
Initial Depth to Water: 214 7	Total Well Depth: 28.00	Water Column Height: 603
Volume/ft: 0.16	1 Casing Volume: 0.96	3 Casing Volumes: 2.89
Purging Device: disposable baile	Did Well Dewater?:	Total Gallons Purged: 3
Start Purge Time: 4:15	Stop Purge Time: 4:24	Total Time: Smins

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)	рН	Cond. (uS)	Comments
نر: 20	· !	16.9	27.05	320	
4:22	2	163	7.07	651	
4:25	3	ICA	7.11	619	
	<u></u>				**

Fe =	m	g/L	ORP =	m\	DO =	mg/L
Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
MU-6	6-10-02	4:30	hvoa	HL	TPMS BTEX MITE	

Project Name: Bossuk	Cambria Mgr: RAS	Well ID: MW-S
Project Number: 540 -0188	Date: 6-10-04	Well Yield:
Site Address:	Sampling Method:	Well Diameter: 3 pvc
1432 Hallison St. Cakland, Ca	disposable baile,	Technician(s):
Initial Depth to Water: 22.15	Total Well Depth: 28.34	Water Column Height: 6.19
Volume/ft: Ø.16	1 Casing Volume: 0.99	3 Casing Volumes: 2-97
Purging Device: disposable baile	Did Well Dewater?:	Total Gallons Purged:
Start Purge Time: 5:10	Stop Purge Time: 5:24	Total Time: 14ming

 Diam.
 Volume/ft (gallons)

 2"
 0.16

 4"
 0.65

 6"
 1.47

Time	Casing Volume	Temp. (°C)	рН	Cond. (uS)	Comments
5:15 5:20 5:25		16.9	7.19	3170	
5: 20	Z	16.8	7.25	1015	
5: 25	3	16.7	7.29	1071	
					<u> </u>
					· · · · · · · · · · · · · · · · · · ·
· · · · · · · · · · · · · · · · · · ·					

Fe =	m	g/L	ORP =	m ^v	V DO =	mg/L
Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
MW- 5	6-10-0 Z	5:30	Luos	MICH	tpns biëx misé	

Project Name: Rocsult Cambria Mgr: RAS		Well ID: MW-4	
Project Number: 54 b-0188	Date: 6-10-0 2	Well Yield:	
Site Address:	Sampling Method:	Well Diameter: 2 1 pvc	
1432 Harrison St.	disposable bailes	Technician(s):	
Initial Depth to Water: 22.23	Total Well Depth: 24-50	Water Column Height: 2.27	
Volume/ft: 0.16	1 Casing Volume: O. 36	3 Casing Volumes: 1:08	
Purging Device: Lisposable baile	Did Well Dewater?:	Total Gallons Purged: /	
Start Purge Time: 4:40	Stop Purge Time: 4:54	Total Time: Tumins	

 Well Diam.
 Volume/ft (gallons)

 1 Casing Volume = Water column height x Volume/ ft.
 2" 0.16

 4" 0.65

 6" 1.47

Time	Casing Volume	Temp. (°C)	pН	Cond. (uS)	Comments
4:45	8.23	169	7.11	725	
4:50	0.75	16.8	7.05	9/3	
4:55	1.00	16.9	7.09	970	, , , , , , , , , , , , , , , , , , ,
		- 	1		

Fe =	m	g/L	ORP =	m ^v	DO =	mg/L
Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
MW-N	6-10-0 2	- 5. 10 0	U N OG	Mc \	tiphis betamine	
_						

Project Name: Borsul	Cambria Mgr: RAS	Well ID: MU-3
Project Number: 540-0188	Date: 6-/0-02	Well Yield:
Site Address:	Sampling Method:	Well Diameter: 2 1 pvc
Oukland, Ca	disposable baile,	Technician(s):
Initial Depth to Water: 21-49	Total Well Depth: 23. 90	Water Column Height: 1.4)
Volume/ft: 0.16	1 Casing Volume: 0. 30	3 Casing Volumes: 0.40
Purging Device: disposable bails	Did Well Dewater?:	Total Gallons Purged: 1.0
Start Purge Time: 6:40	Stop Purge Time: 6:54	Total Time:

I Casing Volume = Water column height x Volume/ ft.

Well Diam.	Yolume/ft (galions)
2"	0.16
4 ⁱⁱ	0.65
6"	1.47

Time	Casing Volume	Temp. (°C)	pН	Cond. (uS)	Comments
6: 45	.25	16.9	7.24	1029	
6:50	.75	169	7.15	740	
6 :55	1.00	16.9	7./3	792	

Fe =	m	ıg/L	ORP =	mV	DO =	mg/L					
Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method					
MW-3	b10-0 2	4.00	hvoa	HCI	TPMS BEEX MISE						

Project Name: Bossuk	Cambria Mgr: RAS	Well ID: MW-2							
Project Number: 545-0188	Date: 6-10-0 2	Well Yield:							
Site Address:	Sampling Method:	Well Diameter: 2 [] pvc							
1432 Harrison St Ookland, C4	disposable baile,	Technician(s):							
Initial Depth to Water: 22.83	Total Well Depth: 25.40	Water Column Height: 2.57							
Volume/ft: 0.16	1 Casing Volume: o.u.	3 Casing Volumes: 1.23							
Purging Device: disposable baile	Did Well Dewater?:	Total Gallons Purged: 1.5							
Start Purge Time: 5:40	Stop Purge Time: 9:54	Total Time:							

 Well Diam.
 Volume/ft (gallons)

 1 Casing Volume = Water column height x Volume/ft.
 2" 0.16

 4" 0.65
 6" 1.47

Casing Volume	Temp. (°C)	pН	Cond. (uS)	Comments
. 5	17.1	7.19	520	
o	16.9	7.05	891	
1.5	16.9	7.09	859	
	• 5 1.0	Volume (°C) . 5 17.1	Volume (°C) -5 7.1 7.19	Volume (°C) (uS) • 5 17.1 7.19 520 1.0 16.9 7.05 891

Fe =	m	g/L	ORP =	m ^V	D	O =	mg/L						
Sample ID	Date	Time	Container Type	Preservative	An	alytes	Analytic Method						
MW-2	6-10-02	6:00	hvon	MU	tphy B	tex mise							
		:											

Project Name: Borsuk	Cambria Mgr: RB S	Well ID: MU-1
Project Number: 540-0188	Date: 6-10-02	Well Yield:
Site Address:	Sampling Method:	Well Diameter: 40 pvc
1432 Massison St Oukland, Ca	Aisposible bailer	Technician(s):
Initial Depth to Water: 22.30	Total Well Depth: 25.0 5	Water Column Height: 2.75
Volume/ft: 0.65	1 Casing Volume: 1.78	3 Casing Volumes: 5.36
Purging Device: disposable buils	Did Well Dewater?:	Total Gallons Purged:
Start Purge Time: 6:10	Stop Purge Time: 6:24	Total Time:

1 Casing Volume = Water column height x Volume/ ft.

Well Diam.	Volume/ft (gallons)
2"	0.16
4"	0.65
≲ #	1 47

Time	Casing Volume	Temp.	рН	Cond. (uS)	Comments
6:15	3	16.9	7.53	2157	
6:20	ч	17.4	7.40	2931	
6:25	6	17.5	7.41	2870	
				<u> </u>	

$\mathbf{Fe} =$	m	g/L	ORP =	m\	DO =	mg/L						
Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method						
MW-1	6-10-02	6:30	UVOA	HCI	TPHS BTEX MTKE							
												

Sep-5-0
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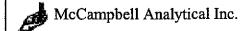
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Report To: Ron	Schaele	D-1020		Dill T	·	ax	(92	2) 7:	98-1	622	_			<u> </u>						·			_		RI	JSH	[]	24 I	HO	UR	48	HO	JR	5 D	ΑY
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Emery	ille, CA 9460	08											-	l		188				ļ				_			ļ		5	4	!		ĺ		
Tele: (510) 450-	1983			Fax: (510) 4	150-	8201	5						Ę		83	=							1 E			i		1:		į				
Project #: Sub	- 0188-0.	37		Projec	t Man	14.	1							ROISY WITHE		220	• 1 • • • • • • • • • • • • • • • • • • •							Įè			l			, k					
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Project Location: Sampler Signature	<u> </u>	للبك												120%		rea	arthu	<u> </u>	780		ž			53	ł	i	8	ļ	9	ď					
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SAMPLE ID	LOCATION	1		Containers	Type Containers	,		ĺ						.#i	TPH as Diesel (8015)	CCCC		EPA 601 / 8010	7	EPA 608 / 8080	080	EPA 624 / 8240 / 8260	El'A 625 / 8270	PAH's / PNA's by	CAM-17 Metals	품	47	ļ			į ·] [
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APPENDIX B

Analytical Results for Quarterly Groundwater Sampling



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: 540-0188-037; Borsuk	Date Sampled: 06/10/02
6262 Hollis St.		Date Received: 06/12/02
Emanyilla CA 04609	Client Contact: Ron Scheele	Date Reported: 06/18/02
Emeryville, CA 94608	Client P.O.:	Date Completed: 06/18/02

June 18, 2002

Dear Ron:

Enclosed are:

- 1). the results of 6 samples from your 540-0188-037; Borsuk 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.

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: 540-0188-037; Borsuk	Date Sampled: 06/10/02
6262 Hollis St.		Date Received: 06/12/02
Emeryville, CA 94608	Client Contact: Ron Scheele	Date Extracted: 06/16/02-06/18/02
Emeryvine, CA 94008	Client P.O.:	Date Analyzed: 06/16/02-06/18/02

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

Analytical methods: SW8021B/8015Cm Extraction method: SW5030B Work Order: 0206199 TPH(g) Ethylbenzene Xylenes DF % SS Lab ID Client ID Matrix MTBE Benzene Toluene 22,000 200 104 001A MW-1 W 210,000,a ND<1000 30,000 51,000 3100 570 20 100 002A MW-2 W 7800,a ND<100 2000 1100 76 ND ND 104 003A MW-3 w ND ND ND 1 ND 004A MW-4 W ND ND ND ND ND 103 2.5 005A W ND ND ND ND ND 102 MW-5 ND ND ND 1 103 006A MW-6 W ND ND ND ND Reporting Limit for DF =1; W 50 5.0 0.5 0.5 0.5 0.5 ug/L ND means not detected at or S 1.0 0.05 0.005 0.005 0.005 0.005 mg/Kg above the reporting limit

*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.

DF = dilution factor.

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) no recognizable pattern; k) TPH pattern that does not appear to be derived from gasoline (aviation gas).



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QC SUMMARY REPORT FOR SW8021B/8015Cm

BatchID: 2411

Matrix: W

WorkOrder: 0206199

EPA Method: SW802	21B/8015Cm E	xtraction:	SW5030E	3	Ext. Date:	6/12/02	Spiked Sample ID: 0206179-011A										
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	98	98.1	0.144	101	102	0.82	80	120							
МТВЕ	ND	10	90.9	111	20.0	91.7	93.2	1.6	80	120							
Benzene	ND	10	96.9	107	10.1	105	106	0.16	80	120							
Toluene	ND	10	102	113	10.6	107	108	0.20	80	120							
Ethylbenzene	ND	10	101	111	9.32	110	110	0.011	80	120							
Xylenes	ND	30	103	110	6.25	107	110	3.1	80	120							
%SS	101	10	101	104	2.61	101	99.2	2.1	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, or analyte concentration in sample exceeds spike amount.

[%] 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 their RPDs near 0% if: a) the sample is inhomogeneous AND contains significant concentrations of analyze relative to the amount spiked, or b) if that specific sample matrix interferes with spike recovery.

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

QC SUMMARY REPORT FOR SW8021B/8015Cm

BatchID: 2420

Matrix: W

WorkOrder: 0206199

EPA Method: SW802	21B/8015Cm E	xtraction:	SW5030E	3	Ext. Date:	6/12/02	s	Spiked Sample ID: 0206199-003A									
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	108	108	0.0685	99.2	103	4.1	80	120							
МТВЕ	ND	10	90.7	91.5	0.864	94.9	93.1	1.9	80	120							
Benzene	ND	10	96.1	103	6.88	83.8	104	22	80	120							
Toluene	ND	10	100	106	5.81	89.4	107	18	80	120 -							
Ethylbenzene	ND	10	100	106	6.09	80.2	108	30	80	120							
Xylenes	ND	30	99.7	110	9.86	100	110	9.5	80	120							
%SS	99.7	10	99.7	100	0.743	95.2	99.4	4.3	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

7

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, or analyte concentration in sample exceeds spike amount.

% 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 their RPDs near 0% if: a) the sample is inhomogeneous AND contains significant concentrations of analyze relative to the amount spiked, or b) if that specific sample matrix interferes with spike recovery.

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McCAMPBELL ANALYTICAL INC. 110 2 ^M AVENUE SOUTH, #137 PACHECO, CA 94553 Telephone: (925) 798-1620 Fax: (925) 708-1622										CHAIN OF CUSTODY RECORD TURN AROUND TIME CONTROL TURN 48 HOUR 5 DAY																								
Report To: Ron Scheels Bill To: Cambria Friv. Tech. Company: Cambria Environmental Technology										Analysis Request Other Co												Com.												
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			PLING		٤ ا	i	MAT	RIX		ME PRES	THO	D (CIN)	Gas (602/8020	[5]	Oil & G	ydrocai		A 602 / 8020)		OS,E	260		EPA 62			39 2/60	! :	MIRE						
SAMPLE ID	LOCATION	Date	Time	# Containers	Type Containers	Water	Soil	Shuge	Other	Ice HC1			DTEX & TPH as Ga	TPH as Diesel (8015)	Total Petrolcum O	Total Petroleum Hydrocarbons (418.1)	EPA 601 / 8010	BTEX ONLY (EPA	EPA 608 / 8080	EPA 608 / 8080 PCB's ONLY	EPA 624 / 8240 / 8260	El'A 625 / 8270	PAH's / PNA's by EPA 625 / 8270 / 8310	CAM-17 Metals	LUFT 5 Metals	Lead (7240/7421/239 2/6010)	7.	Carelien all	.			, -¥		
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110 Second Avenue South, #D7 Pacheco, CA 94553-5560 (925) 798-1620

CHAIN-OF-CUSTODY RECORD

Page 1 of

12-Jun-02

WorkOrder: 0206199

Client:

Cambria Env. Technology

6262 Hollis St.

Emeryville, CA 94608

TEL:

(510) 450-1983

FAX: ProjectNo:

(510) 450-8295

PO:

540-0188-037; B

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Sample ID	ClientSampID	Matrix	Collection Date	Bottle	276 199 AM	8021B/8015	Requested Tests	AS THE CONTROL OF THE
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0206199-004	MW-4	Water	6/10/02	+		Α !		:
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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



APPENDIX C

Analytical Results for SVE System Operation



Cambria Environmental Technology	Client Project ID: #540-0188-44;	Date Sampled: 04/02/02
6262 Hollis Street	Borsuk	Date Received: 04/03/02
Emeryville, CA 94608	Client Contact: Ron Scheele	Date Extracted: 04/03/02
	Client P.O:	Date Analyzed: 04/03/02

04/10/02

Dear Ron:

Enclosed are:

- 1). the results of 3 samples from your #540-0188-44; Borsuk 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.

Edward Hamilton, Lab Director

 Cambria E	nvironmenta	l Technol	ogy): #540-018	8-44;	Date Samp	oled: 04/02	/02
6262 Holl	is Street			Borsu	k			Date Rece	ived: 04/03	3/02
Emeryville	e, CA 94608			Client	Contact: I	Ron Scheele	•	Date Extra	cted: 04/0	4/02
:				Client	P.O:			Date Analy	yzed: 04/04	4/02
Gasoline EPA method	Range (C6- s 5030, modified	C12) Vol	atile 8020 c	Hydro or 602; C	arbons as	Gasoline*	, with Me	thyl tert-Bu	ityl Ether	* & BTEX*
Lab ID	Client ID	Matrix		H(g) ⁺	МТВЕ	Benzene	Toluene	Ethylben- zene	Xylenes	% Recovery Surrogate
0204059- 001	INF	Air	48	00,a	ND<15	40	94	13	110	#
0204059- 002	MID	Air	39	90,a	ND<7	2.3	6.3	0.79	7.7	#
0204059- 003	EFF	Air	1	4D	ND	ND	0.16	ND	0.61	104
			_							
				*						
% ррп	n (mg/L) to ppm	v (uL/L) co	nversio	n for TPI	H(g) assumes	the molecular	weight of ga	soline to be eq	ual to that of	hexane.
				· · · · · · · · · · · · · · · · · · ·				-		
						5.11.5	-			
				.,		·	-	· · · · · · · · ·		
	Limit unless stated: ND	Air	10	uL/L	1.5	0.15	0.15	0.15	0.25	
means not de	etected above ting limit	S	1.01	ng/kg	0.05	0.005	0.005	0.005	0.005	

^{*} water and air samples are reported in uL/L(ppmv), wipe samples in ug/wipe, soil and sludge samples in mg/kg, and all TCLP and SPLP extracts in ug/L

The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds having broad chromatographic peaks are significant; biologically altered gasoline?; e) TPH pattern that does not appear to be derived from gasoline (?); f) one to a few isolated peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen is present; i) liquid sample that contains greater than ~5 vol. % sediment; j) no recognizable pattern.



cluttered chromatogram; sample peak coelutes with surrogate peak

110 2nd Ave. South, #D7, Pacheco, CA 94553-5560
Telephone: 925-798-1620 Fax: 925-798-1622
http://www.mccampbell.com E-mail: main@mccampbell.com

QC REPORT

EPA 8015m + 8020

Date: 04/04/02	Extraction	: EPA	5030		Matrix:	Air	
		%Rec	overy				
Compound	Sample	MS MSD		Amount Spiked	MS	MSD	RPD
SampleID: 40402		-	<u>-</u>		Instrumer	<u>nt</u> GC	-12
Surrogate1	ND	97.0	93.0	100.00	97	93	4.2
Xylenes	ND	32.5	32.6	30.00	108	109	0.3
Ethylbenzene	ND	10.6	10.5	10.00	106	105	0.9
Toluene	ND	10.4	10.3	10.00	104	103	1.0
Benzene	ND	10.5	10.3	10.00	105	103	1.9
MTBE	ND	10.2	10.2	10.00	102	102	0.0
TPH (gas)	ND	93.2	93,7	100.00	93	94	0.6

% Re covery =
$$\frac{(MS-Sample)}{AmountSpiked} \cdot 100$$

RPD= $\frac{(MS-MSD)}{(MS+MSD)} \cdot 2\cdot 100$

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TO W

CHAIN-OF-CUSTODY RECORD

Page 1 of

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

WorkOrder: 0204059

Client:

Cambria Env. Technology

6262 Hollis St.

Emeryville, CA 94608

TEL:

FAX:

ProjectNo: #540-0188-44; B

PO:

03-Apr-02

						F	Requested Tes	its	
Sample ID	ClientSampID	Matrix	Collection Date	Bottle	8021B/8015				
						 			 ·
0204059-001	INF	Air	4/2/02		Α	<u> </u>	<u></u>		_
0204059-002	MID	Air	4/2/02		Α				
0204059-003	EFF	Air	4/2/02	T	A	 Ţ		}	

Comments: Report in ppmv; 10 ppmv limit 20ml injection volume

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

NOTICE: Solid samples are discarded after 60 days and Non-Solid samples are discarded after 30 days 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

Cambria Environmental Technology	Client Project ID: #540-0188-44;	Date Sampled: 04/15/02
6262 Hollis Street	Borsuk	Date Received: 04/16/02
Emeryville, CA 94608	Client Contact: Ron Scheele	Date Extracted: 04/16/02
	Client P.O:	Date Analyzed: 04/16/02

04/23/02

Dear Ron:

Enclosed are:

- 1). the results of 2 samples from your #540-0188-44 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.

Edward Hamilton, Lab Director

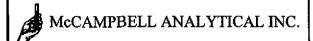
Cambria E	Environmental	Technolog	y Client	Project ID); #540-018	8-44;	Date Samp	led: 04/15/	02
6262 Holl		, .	Borsu	-			Date Recei	ived: 04/16	/02
Emeryvill	e, CA 94608		Client	Contact: F	Ron Scheele	•	Date Extra	cted: 04/16	5/02
			Client	P.O:			Date Analy	yzed: 04/16	5/02
	Range (C6-C								* & BTEX*
Lab ID	Client ID	Matrix	TPH(g) ⁺	MTBE	Benzene	Toluene	Ethylben- zene	Xylenes	% Recovery Surrogate
0204273 -001	INF	Air	4200,a	ND<40	24	48	3.8	56	#
0204273 -002	EFF	Air	28,a	ND	ND	0.29	ND	1.5	107
			_						
* рр	m (mg/L) to ppm	v (uL/L) conv	ersion for TF	'H(g) assumes	s the molecula	r weight of g	asoline to be ed	qual to that of	hexane.
otherwise	Limit unless e stated; ND	Air	10 uL/L	1.5	0.15	0.15	0.15	0.25	
7	detected above orting limit	S	1.0 mg/kg	0.05	0.005	0.005	0.005	0.005	

^{*} water and air samples are reported in uL/L(ppmv), wipe samples in ug/wipe, soil and sludge samples in mg/kg, and all TCLP and SPLP extracts in ug/L

^{*}The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds having broad chromatographic peaks are significant; biologically altered gasoline?; e) TPH pattern that does not appear to be derived from gasoline (?); f) one to a few isolated peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen is present; i) liquid sample that contains greater than ~5 vol. % sediment; j) no recognizable pattern.



^{*} cluttered chromatogram; sample peak coelutes with surrogate peak



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

QC REPORT

EPA 8015m + 8020

Date: 04/16/02

Extraction: EPA 5030

Matrix: Air

Duto: 04/10/02	Exa dollo:	men iv.	All					
		%Rec						
Compound	Sample	MS	MSD	Amount Spiked	MS	MSD	RPD	
SampleID: 41502					Instrumer	<u>ıt</u> G	C-3	
Surrogate1	ND	101.0	101.0	100.00	101	101	0.0	
Xylenes	ND	32.2	32.5	30.00	107	108	0.9	
Ethylbenzene	ND	10.9	11.0	10.00	109	110	0.9	
Toluene	ND	10.6	10.7	10.00	106	107	0.9	
Benzene	ND	10.2	10.4	10.00	102	104	1.9	
МТВЕ	ND	9.6	9.3	10.00	96	93	3.2	
TPH (gas)	ND	84.9	86.0	100.00	85	86	1.2	

$$\% \text{ Re covery} = \frac{\left(MS - Sample \right)}{AmountSpiked} \cdot 100$$

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

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

WorkOrder: 0204273

Client:

Cambria Env. Technology 6262 Hollis St.

Emeryville, CA 94608

TEL:

(510) 450-1983

FAX:

(510) 450-8295

ProjectNo:

PO:

16-Apr-02

															•		
Sample ID	0 11 1 0									Requested Te	its					 	_
Sample ID	ClientSampID	Matrix	Collection Date	Bottle	8021B/8015	ess.	A4 %	sådtrar	responsible to the		chambs a	SMen' come?	- AMPLIAN	7.7878	20474 x 5	 And samples	
													* *				
0204273-001	INF.	Air	4/15/02 3:30:00 PM		Α												
0204273-002	EFF	Air	4/15/02 3:30:00 PM		A			·· ·								 	

Comments:

Date/Time	Date/Time
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Remiquished 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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	ne: (925) 798	-1620				ax.	(925)	798	1622	į .						•			A.	· T	/	_	•		- ISH	1			R 4			ЛR	5 D	ÀΥ
Report To: Ron Se			F	Bill T	ò: 4	٩M	E							· · · · · ·		,		Án	aly:	sis F	i car	ıest						T	Oth		77		nme	
Company: Cambri	a Environme	ntal Tech	nology	·										Ī .	-	<u> </u>				7		T	T		<u> </u>	Γ	Ť	⇈		T	7			400
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Tele: (510) 450-19					510) 4			·				[SOLSY MATBE		₩	8.1)							2			İ]							
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Sampler Signature	- James		 	i .		نبه		· · · · · · · · · · · · · · · · · · ·			:		Cas-(602/8020 .			Hydrocarbons:(418.1)		602 / 8020)		EPA 508 / S080 PCB's ONLY			A 6.			(7240/7421/239.2/6010)		1	وق]		-	
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N.F. Channel att. Ameterstant Toll	110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
McCampbell Analytical Inc.	Telephone: 925-798-1620 Fax: 925-798-1622
	http://www.mccampbell.com E-mail: main@mccampbell.com

Cambria Env. Technology	Client Project ID: #540-0188-44; Borsuk	Date Sampled:	05/06/02
6262 Hollis St.		Date Received:	05/07/02
Emeryville, CA 94608	Client Contact: Ron Scheele	Date Reported:	05/13/02
274000	Client P.O.;	Date Completed:	05/13/02

May 13, 2002

Dear Ron:

Enclosed are:

- 1). the results of 2 samples from your #540-0188-44; Borsuk 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.

Angela Rydelius, Lab Manager

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	Environmenta	l Technolog			: #540-018	8-44;	Date Sampled: 05/06/02						
6262 Hol	lis Street		Borsu	k			Date Recei	ived: 05/07	7/02				
Emeryvil	le, CA 94608		Client	Contact: I	Ron Scheel	e	Date Extracted: 05/07/02						
			Client	P.O:			Date Analy	yzed: 05/0	7/02				
Gasolin	e Range (C6-	C12) Volat	ile Hydro	carbons as	Gasoline*	, with Me	thyl tert-Bu	tyl Ether	* & BTEX*				
EPA metho	ds 5030, modifie	d 8015, and 80	20 or 602; C	alifornia RW	QCB (SF Bay	Region) me	thod GCFID(50	030)					
Lab ID	Client ID	Matrix	TPH(g) ⁺	мтве	Benzene	Toluene	Ethylben- zene	Xylenes	% Recovery Surrogate				
0205084 -001	INF	Air	5100,a	ND<30	31	56	4.3	65	#				
0205084 -002	EFF	Air	14,a	ND	ND	ND	ND	0.42	112				
* рр	m (mg/L) to ppm	v (uL/L) conv	ersion for TP	H(g) assumes	the molecula	r weight of g	asoline to be e	qual to that o	f hexane.				
							-						
	· · · · · · · · · · · · · · · · · · ·		·										
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	g Limit unless se stated; ND	Air	10 uL/L	1.5	0.15	0.15	0.15	0.25					
	detected above orting limit	S	1.0 mg/kg	0.05	0.005	0.005	0.005	0.005					

The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds having broad chromatographic peaks are significant; biologically altered gasoline?; e) TPH pattern that does not appear to be derived from gasoline (?); f) one to a few isolated peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen is present; i) liquid sample that contains greater than ~5 vol. % sediment; j) no recognizable pattern.



^{*} water and air samples are reported in uL/L(ppmv), wipe samples in ug/wipe, soil and sludge samples in mg/kg, and all TCLP and SPLP extracts in ug/L

^{*} cluttered chromatogram; sample peak coclutes with surrogate peak



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

QC REPORT

EPA 8015m + 8020

Date: 05/07/02	Extraction	i: EPA (5030		Matrix:	Water/A	ir
		Concen	ration:	ug/L	%Rec		
Compound	Sample	Sample MS MSD An				MSD	RPD
SampleID: 50702					Instrume	nt GC	-12
Surrogate1	ND	102.0	101.0	100.00	102	101	1.0
Xylenes	ND	29.9	30.0	30.00	100	100	0.3
Ethylbenzene	ND	11.0	10.0	10.00	110	100	9.5
Toluene	ND	10.0	10.0	10.00	100	100	0.0
Benzene	ND	10.0	10.0	10.00	100	100	0.0
MTBE	ND	9.0	9.1	10.00	90	91	1.1
TPH (gas)	ND	95.3	97.2	100.00	95	97	2.0

% Re covery =
$$\frac{(MS-Sample)}{AmountSpiked} \cdot 100$$

$$RPD = \frac{(MS - MSD)}{(MS + MSD)} \cdot 2.100$$

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

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

WorkOrder: 0205084

Client:

Cambria Env. Technology

6262 Hollis St.

Emeryville, CA 94608

TEL:

(510) 450-1983

FAX:

(510) 450-8295

ProjectNo:

#540-0188-44; B

PO:

07-May-02

							Requested To	ests		
Sample ID	ClientSampID	Matrix	Collection Date	Bottle	8021B/8015				<u>L</u>	
				•						
0205084-001	INF	Аіг	5/6/02 4:00:00 PM		Α					
0205084-002	EFF	Air	5/6/02 4:00:00 PM		Α					

Comments:

Date/T	me 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.

McCAMPBELL ANALYTICAL INC. CHAIN OF CUSTODY RECORD. 110 2" AVENUE SOUTH #D2 TURN AROUND TIME PACHECO, CA 94553 . **D**. Telephone: (925) 798-1620 Fax: (925) 798-1622 RUSH 24 HOUR 48 HOUR 5 DAY Report To: Ron Scheele Bill To: SAME Analysis Request Other Comments Company: Cambria Environmental Technology 6262 Hollis Street Emeryville, CA 94608 Tele: (510) 450-1983 Fax: (510) 450-8295 Project #540-0188-44 Project Name: Porsok Project Location: 14-32 HATERISONS ST CAKLAND CA Sampler Signature: METHOD' SÁMPLING MATRIX PRESERVED SAMPLE ID LOCATION Date Line. INF EFF 0 Relinquished By: Time: 1-20 Réceivell By: Remarks: REPORT IN PPMV; 10 ppmv limit 20 ml injection volume PLEASE FAX PESULTS Refinquished B Roccived By: SINGV Relinquished By Received By

Cambria Env. Technology	Client Project ID: #540-0188-44; Borsuk	Date Sampled: 06/05/02
6262 Hollis St.		Date Received: 06/06/02
Emeryville, CA 94608	Client Contact: Ron Scheele	Date Reported: 06/13/02
Emery vine, CA 94000	Client P.O.:	Date Completed: 06/13/02

June 13, 2002

Dear Ron:

Enclosed are:

- 1). the results of 2 samples from your #540-0188-44; Borsuk 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.

Angela Rydelius, Lab Manager

	McCampbell Analytical	Inc
--	-----------------------	-----

Cambria Env. Technology	Client Project ID: #540-0188-44; Borsuk	Date Sampled: 06/05/02
6262 Hollis St.		Date Received: 06/06/02
Emeryville, CA 94608	Client Contact: Ron Scheele	Date Extracted: 06/06/02-06/07/02
interface, one of the control of the	Client P.O.:	Date Analyzed: 06/06/02-06/07/02

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

Extraction method: SW5030B Analytical methods: SW8021B/8015Cm Work Order: 0206083

Lab ID	Client ID	Client ID Matrix TPH(g) MTBE Benzene		Toluene	Ethylbenzene	Xylenes	DF	% SS			
001A	· INF	A	3800,a	ND<30	31	60	6.1	80	5	#	
002A	EFF	A	14,a	ND	ND	ND	ND	0.30	0.5	112	
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% ppm (mg/L)	to ppmv		on for TPH(g) ass	umes the molecu	ılar weight of gas	oline to be equal	to that of hexan	е.	
Reporting Limit for DF =1; ND means not detected at or above the reporting limit	A	10	1.5	0.15	0.15	0.15	0.25	1	uL/L
	S	NA	NA	NA	NA	NA	NA	1	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.

⁺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 voi. % 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.



[#] cluttered chromatogram; sample peak coelutes with surrogate peak.

QC SUMMARY REPORT FOR SW8021B/8015Cm

BatchID: 2314

Matrix: A

WorkOrder: 0206083

EPA Method: SW8021	B/8015Cm E	xtraction:	SW5030B	•	Ext. Date:	6/06/02	S	piked Sampl	e ID: N/A	
EPA Mediod. CVVCC.	Sample	Spiked	MS*	MSD*	MS-MSD*	LCS	LCSD	LCS-LCSD	Acceptance	Criteria (%
Compound	uL/L	uL/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	Low	High
TPH(gas)	N/A	60	N/A	N/A	N/A	115	109	5.0	80	120
MTBE	N/A	10	N/A	N/A	N/A	110	91.3	18	80	120
Benzene	N/A	10	N/A	N/A	N/A	95.4	96.8	1.5	80	120
Toluene	N/A	10	N/A	N/A	N/A	98.2	101	2.3	80	120
	N/A	10	N/A	N/A	N/A	99.2	101	1.5	80	120
Ethylbenzene	N/A	30	N/A	N/A	N/A	100	103	3.3	80	120
Xylenes %SS	N/A	10	N/A	N/A	N/A	100	100	0.15	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, or analyte concentration in sample exceeds spike amount.

% Recovery = 100 * (MS-Sample) / (Amount Spiked); RPD = 100 * (MS - MSD) / (MS + MSD) * 2.

^{*} MS and / or MSD splke recoveries may not be near 100% or their RPDs near 0% if: a) the sample is inhomogeneous AND contains significant concentrations of analyze relative to the amount splked, or b) if that specific sample matrix interferes with splke recovery.

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

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

WorkOrder: 0206083

Client:

Cambria Env. Technology

6262 Hollis St.

Emeryville, CA 94608

TEL:

(510) 450-1983

FAX:

(510) 450-8295

ProjectNo:

#540-0188-44; B

PO:

06-Jun-02

						 F	equested Tes	ts	
Sample ID	ClientSampID	Matrix	Collection Date	Bottle	8021B/8015				
0206083-001	INF	Air	6/5/02 12:00:00 PM		Α				
0206083-002	EFF	Air	6/5/02 12:00:00 PM		Α	 			

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.

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Tele: (510) 450-1983 Fax: (510) 450-8295 Project #: 540-0188-44 Project Name: BORSOK							3		20 E	8	1					7 83		-		j	j									
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APPENDIX D

Electronic Delivery Confirmation

Main Menu | View/Add Facilities | Upload EDD | Check EDD

UPLOADING A GEO_MAP FILE

YOUR IMAGE UPLOAD WAS SUCCESSFUL!

Facility Name:

A BACHARACH TR & B

BORSUK

Global ID:

T0600100682

Submittal Type:

GEO_MAP

Submittal Date/Time: 7/15/2002 1:07:20 PM

Confirmation

9040174186

Number:

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Confirmation Number: 6608408391

Date/Time of Submittal: 7/16/2002 11:27:03 AM

Facility Global ID: T0600100682

Facility Name: A BACHARACH TR & B BORSUK

Submittal Title: 2nd Qtr 2002 Analytical Groundwater Data

Submittal Type: GW Monitoring Report

Logged in as CAMBRIA-EM (AUTH_RP)

Main Menu | View/Add Facilities | Upload EDD | Check EDD

UPLOADING A GEO_WELL FILE

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

Submittal Title:

Borsuk, 2nd Qtr 2002, Groundwater

Depths

Submittal Date/Time: 8/5/2002 5:02:09 PM

Confirmation

Number:

4646427750

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Main Menu | View/Add Facilities | Upload EDD | Check EDD

UPLOADING A GEO_Z FILE

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

Submittal Title:

Borsuk, Well Elevation

Submittal Date/Time: 8/5/2002 4:59:52 PM

Confirmation

9670200943

Number:

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