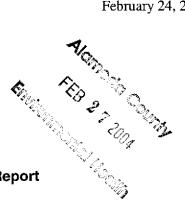
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### CAMBRIA

February 24, 2004

Mr. Barney Chan Alameda County Health Care Services Agency 1131 Harbor Bay Parkway, Suite 250 Alameda, California 94502



Re: Groundwater Monitoring and System Progress Report Fourth Quarter 2003

Former Exxon Service Station 3055 35th Avenue Oakland, California Cambria Project #130-0105



Dear Mr. Chan:

On behalf of Mr. Lynn Worthington of Golden Empire Properties, Cambria Environmental Technology, Inc. (Cambria) has prepared this Groundwater Monitoring and System Progress Report - Fourth Quarter 2003. Presented in the report are the fourth quarter 2003 activities and the anticipated first quarter 2004 activities.

If you have any questions or comments regarding this report, please call me at (510) 420-3327.

Sincerely,

Cambria Environmental Technology, Inc.

Ron Scheele, R.G. Senior Geologist

Attachments: Groundwater Monitoring and System Progress Report - Fourth Quarter 2003

Mr. Lynn Worthington, Golden Empire Properties, Inc. 5942 MacArthur Boulevard, Suite B, Oakland, California 94605

Cambria **Environmental** Technology, Inc.

5900 Hollis Street Emeryville, CA 94608 Tel (510) 420-0700 Fax (510) 420-9170

### **GROUNDWATER MONITORING AND SYSTEM PROGRESS REPORT**

### **FOURTH QUARTER 2003**

Former Exxon Service Station 3055 35th Avenue Oakland, California Cambria Project #130-0105

February 24, 2004

Prepared for:

Mr. Lynn Worthington Golden Empire Properties, Inc. 5942 MacArthur Boulevard, Suite B Oakland, California 94605

Prepared by:

Cambria Environmental Technology, Inc. 5900 Hollis Street, Suite A Emeryville, California 94608

No. 6842

Gretchen M. Hellmann

Project Engineer

Ron Scheele, R.G. Senior Geologist

# GROUNDWATER MONITORING AND SYSTEM PROGRESS REPORT FOURTH QUARTER 2003

Former Exxon Service Station 3055 35th Avenue Oakland, California Cambria Project #130-0105

February 24, 2004

### INTRODUCTION

On behalf of Mr. Lynn Worthington of Golden Empire Properties, Cambria Environmental Technology, Inc. (Cambria) has prepared this *Groundwater Monitoring and System Progress Report* for the above-referenced site (see Figure 1). Presented in the report are the fourth quarter 2003 groundwater monitoring and corrective action activities and the anticipated first quarter 2004 activities.

#### **FOURTH QUARTER 2003 ACTIVITIES**

### **Monitoring Activities**

Field Activities: On December 2, 2003, Cambria conducted quarterly monitoring activities. Cambria gauged and inspected for separate-phase hydrocarbons (SPH) in all monitoring wells (Figure 1). Groundwater samples were collected from wells MW-1 through MW-4. Groundwater monitoring field data sheets are presented in Appendix A. The monitoring data has been submitted to the Geotracker database. See Appendix E for the Geotracker electronic delivery confirmation.

Sample Analyses: Groundwater samples were analyzed for total petroleum hydrocarbons as gasoline (TPHg) and total petroleum hydrocarbons as diesel (TPHd) with silica gel clean-up by modified EPA Method 8015, and benzene, toluene, ethylbenzene and xylenes (BTEX) and methyl tertiary butyl ether (MTBE) by EPA Method 8021B. The laboratory analytical report is presented as Appendix B. The analytical data has been submitted to the Geotracker database. See Appendix E for the Geotracker electronic delivery confirmation.



February 24, 2004

### **Monitoring Results**

Groundwater Flow Direction: Depth-to-water measurements were collected on December 2, 2003 (Figure 1). At the time, the groundwater table was being affected by the operation of the two-phase extraction (TPE) remediation system with groundwater extraction from remediation wells MW-1, MW-2, MW-4, and RW-5. Since 1994, the primary groundwater flow direction has been towards the northwest with a change towards the southwest usually occurring during the fourth and/or second

quarters. Groundwater monitoring data is presented in Table 1.

Hydrocarbon Distribution in Groundwater: During the fourth quarter groundwater monitoring event, the maximum TPHg and benzene concentrations were detected in well MW-3 at 30,000 and 2,900 micrograms per liter (µg/L), respectively. The maximum TPHd concentration was detected in well MW-1 at 9,300 μg/L. The maximum MTBE concentration was detected in well MW-2 at 890 µg/L. Overall, hydrocarbon concentrations decreased in most wells as compared to the previous quarter and all wells continue to exhibit decreasing hydrocarbon concentration trends (see Appendix D for individual well concentration trend graphs). TPHg and benzene concentrations in well MW-2 were detected at historical low levels. Analytical results are summarized in Table 1 and shown on Figure 1.

#### **Corrective Action Activities**

System Design and Modifications: The TPE remediation system consists of a trailer mounted all-electric catalytic oxidizer, a 20-horsepower liquid-ring pump, a 150-gallon moisture knockout with automatic float controls, a 1-horsepower centrifugal transfer pump, a particulate filter, and two 1000-pound carbon vessels connected in series. Ten wells are connected to the remediation system (RW-5 through RW-14) via an underground, 4-inch diameter, PVC trunk line and 1- and 2-inch diameter branch lines. See Figure 1 for the location of the remediation enclosure and wells. Wells RW-5 through RW-14, and MW-1 through MW-4 have 1-inch diameter, flexible, suction hose stingers which are sealed at the wellhead to allow simultaneous extraction of soil vapor and groundwater from the well.

Remediation System Operation and Maintenance Activities: During the fourth quarter, Cambria performed TPE system operation and maintenance (O&M) activities approximately three times per month. During O&M activities, well flow, vacuum, and hydrocarbon concentration measurements were collected from the TPE system (see Tables 2, 3, and 4). During O&M site visits, system parameters were recorded in specialized field forms for future system optimization and agency inspection. System influent and effluent vapor samples were collected and submitted for laboratory



February 24, 2004

analysis on a monthly basis. As per the Bay Area Air Quality Management District (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 October 7, November 17, and December 2, 2003. Due to sample damage during shipping, the effluent vapor was re-sampled on October 13, 2003. System effluent vapor concentrations were below laboratory detection limits indicating that the catalytic oxidizer was achieving proper destruction efficiency and was operating within air permit requirements. Table 2 summarizes TPE system operations and soil vapor analytical results.

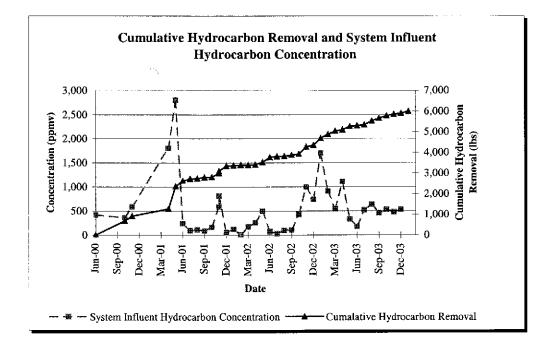
Groundwater treatment system influent and effluent samples were collected on October 2, November 17, and December 2, 2003. System effluent groundwater concentrations for TPHg and BTEX were below laboratory detection limits indicating that no hydrocarbons were discharged to the sanitary sewer system and that the groundwater treatment system was effective at meeting the wastewater discharge permit requirements. On December 2, 2003, East Bay Municipal Utility District's (EBMUD) David McMullen, a wastewater control inspector, performed additional sampling to verify discharge permit compliance. Table 3 summarizes groundwater extraction system parameters and analytical results. The system analytical laboratory reports are included as Attachment C.

Remediation System Performance: From October 7, 2003 through January 6, 2004, the TPE system operated for a total of 1,679 hours. The TPE system automatically shutdown a few times during the quarter due to clogged sediment filters, which caused high water in the knockout tank. System influent vapor concentrations ranged during the quarter from 480 to 530 parts per million by volume (ppmv). Influent hydrocarbon vapor concentrations continued to remain stable due to ongoing optimization efforts to maximize hydrocarbon extraction. Seasonal rainfall contributed to a rise in groundwater levels, which caused a reduction in soil vapor extraction flow rates and an increase in system vacuum levels, compared to the previous quarter. Additional wells were opened and well stinger depths in all wells were adjusted to compensate for seasonal fluctuations in the groundwater table. These optimization efforts included monitoring flow versus vacuum relationships, and system hydrocarbon influent concentrations. Hydrocarbon removal rates for soil vapor extraction increased from 2.1 to 4.9 pounds per day during the quarter but were still less than the previous quarter due to lower system flow rates. As of January 6, 2004, approximately 6,000 pounds of petroleum hydrocarbons have been removed and destroyed by soil vapor extraction (see graph below and Table 2).



Former Exxon Service Station Oakland, California February 24, 2004





From October 2, 2003, to January 6, 2004, approximately 115,570 gallons of groundwater were extracted and treated onsite using granular activated carbon. The groundwater extraction rate ranged from 0.7 to 2.0 gallons per minute and increased throughout the quarter due to increased infiltration of rainwater and a higher groundwater table. Groundwater extraction flow rates were less than the previous quarter due to the closing of several TPE wells. Influent groundwater TPHg concentrations ranged from 220 to 460 µg/L and were similar to the previous quarter. As of January 6, 2004, approximately 1,039,795 gallons of hydrocarbon impacted groundwater have been extracted and treated by aqueous-phase carbon. Approximately 10.7 pounds of hydrocarbons have been removed by the groundwater treatment system.

### **ANTICIPATED FIRST QUARTER 2004 ACTIVITIES**

#### **Monitoring Activities**

During the first quarter, Cambria will gauge the site wells, check the wells for SPH, and collect groundwater samples from all monitoring wells not containing SPH. Groundwater samples will be analyzed for TPHg and TPHd with silica gel clean-up by Modified EPA Method 8015 and BTEX and MTBE by EPA Method 8021B. Cambria will summarize groundwater monitoring activities and results in the Groundwater Monitoring and System Progress Report - First Quarter 2004.

February 24, 2004

#### **Corrective Action Activities**

Cambria will continue to perform TPE operation and maintenance activities approximately three times per month during the first quarter of 2004. The depth of extraction stingers will be adjusted in an effort to maximize hydrocarbon removal and TPE operations may vary between select wells to optimize site cleanup. System influent and effluent vapor and groundwater samples will be collected on a monthly basis, and system operation and performance will be evaluated and optimized.



### **ATTACHMENTS**

Figure 1 - Groundwater Elevation and Analytical Summary Map - December 2, 2003

Table 1 – Groundwater Elevations and Analytical Data

Table 2 – TPE System Performance and Analytical Results - Soil Vapor Extraction

Table 3 – TPE System Performance and Analytical Results - Groundwater Extraction

Table 4 - TPE Well Parameters

Appendix A – Groundwater Monitoring Field Data Sheets

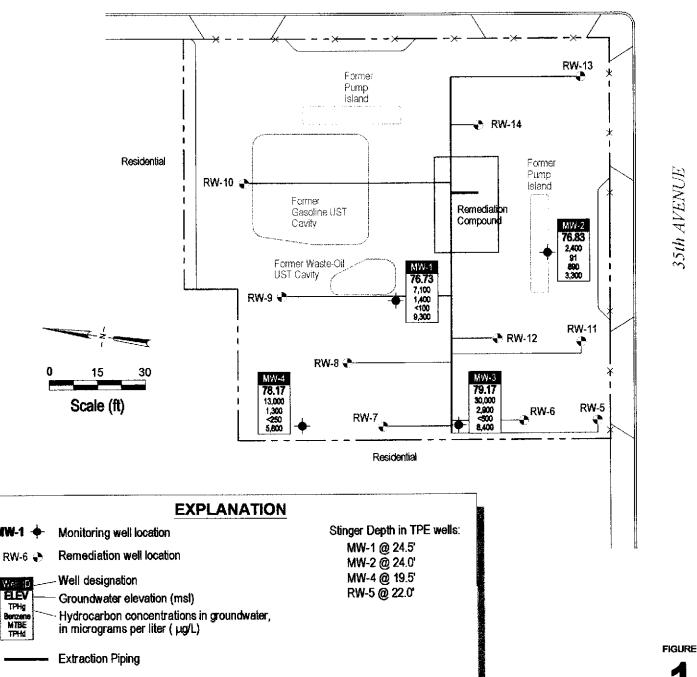
Appendix B – Analytical Results for Groundwater Sampling

Appendix C – Analytical Results for TPE System Operation

Appendix D – TPHg and Benzene Concentration Trend Graphs

Appendix E – Geotracker Electronic Delivery Confirmations

### SCHOOL STREET



Note: TPE remediation system was operating at the time of groundwater monitoring event.

**Former Exxon Station** 

3055 35th Avenue Oakland, California



CAMBRIA

**Groundwater Elevation and Analytical Summary Map** 

December 2, 2003

Well D

TPHg

Benzene MTBE TPHd

Table 1. Groundwater Elevations and Analytical Data - Former Exxon Service Station, 3055 35th Avenue, Oakland, California

Well ID	Date	GW	SPH	GW	TPHg	ТРН	TPHmo	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	DO	TPE System
(TOC)		Depth (ft)	(ft)	Elev. (ft)	<		Concentrati	ons in microg	rams per liter	(μg/L)		>	(mg/L)	Status
MW-1	05/25/94	16.79	Sheen	84.06	120,000	25,000	<50,000	22,000	17,000	2,800	16,000			
100.85	07/19/94	20.77		80.08										
	08/18/94	21.04	Sheen	79.81	925,000			16,500	6,200	1,000	9,400		*	
	11/11/94	15.80		85.05	57,000			14,000	4,400	1,400	6,400			
	02/27/95	15.53		85.32	45,000		***	2,900	2,500	760	4,100			
	05/23/95	15.29		85.56	22,000			9,900	990	790	2,000			
	08/22/95	20.90		79.95	23,000			6,900	340	1,200	1,900			
	11/29/95	22.19		78.66	37,000			9,900	530	1,600	2,900			
	02/21/96	11.69		89.16	33,000	4,300		10,000	480	1,000	1,800	3,300		
	05/21/96	14.62		86.23	36,000	8,500		8,500	1,400	1,300	2,800	1,900		
	08/22/96	22.30		78.55	41,000	6,280		8,600	1,300	1,500	2,900	<200	8.0	
	11/27/96	17.24	Sheen	83.61	38,000	6,100		9,600	950	1,600	3,100	<400	5.6	
	03/20/97	16.65		84.20	33,000	10,000		6,100	560	970	2,200	<400	8.5	
	06/25/97	19.77		81.08	31,000	7,400"		7,400	440	890	1,800	<400	3.7	
	09/)7/97	20.12		80,73	$32,000^{d}$	3,500°		9,100	550	1,000	2,000	<1,000	2.1	
	12/22/97	12.95		87.90	26,000 <sup>d</sup>	5,800°		7,900	370	920	1,500	<790	0.7	
	03/18/98	12.34	Sheen	88.51	30,000 <sup>d</sup>	4,200 <sup>e,f</sup>		7,800	820	840	2,000	<1,100	1.3	
	07/14/98	17.34		83.51	41,000 <sup>d</sup>	8,900 <sup>e,f</sup>		8,200	1,100	1,200	3,000	<200	1.8	
	09/30/98	19.90		80.95	37,000	3,300		11,000	950	1,200	2,800	<20	2.0	
	12/08/98	15.62		85.23	22,000	3,700		3.000	1,200	730	3,100	<900		
	03/29/99	11.98		88.87	36,000 <sup>4</sup>	6,800°		12,000	750	1,300	2,400	950	0.50	
	06/29/99	20.77		80.08	28,000 <sup>d</sup>	3,500°		7,300	420	810	1,700	<1,300	0.10	
	09/28/99	19.68		81.17	13,000 <sup>d</sup>	3,600 <sup>a.f</sup>		3,200	130	320	1,100	<210	0.55	
	12/10/99	17.02		83.83	25,000 <sup>d</sup>	2,900 °.f		5,400	130	620	1,400	<1,000	1.03	
	03/23/00	12.76		88.09	21,000 <sup>d</sup>	3,300 <sup>f</sup>		4,700	140	470	1,100	<350		
	09/07/00	19.45		81.40	40,000 <sup>d.g</sup>	12,000°-E		3,700	1,400	910	4,900	<50	0.17	
	12/05/00	18.60		82.25	26,000°	3,400		7,900	150	580	810	<300	0.35	Not operating
	03/07/01	16.19		84.66	13,000	2,400		2,700	43	69	300	<100	0.49	Not operating
	06/06/01	18.47		82.38	19,000	4,000		4,500	130	270	430	<400	0.39	Not operating
	08/30/01	21.70		79.15	8,800*	1,400 <sup>d</sup>		2,100	45	91	240	<130	0.27	Operating
	12/07/01	26.55		74.30	8,700 <sup>d</sup>	1,400 1,900 <sup>e.f</sup>		1,300	160	38	730	<20	0.59	Operating
	03/11/02	20.53 17.13		83.72	8,700 9,400 <sup>4</sup>	1,400°		2,100	200	74	470	<20	0.39	Operating
	06/10/02	24.10		76.75	9,400 4,200 <sup>d</sup>	900 <sup>e,k</sup>		830	170	110	460	<100		Operating
	09/26/02	20.30		80.55	4,200 7,000 <sup>d</sup>	1,300°,f,k		1,300	190	200	760	<100	0.70	Operating
					7,000 <sup>-</sup> 83.000 <sup>d.</sup> #	•		7,100	1,700	3,900	13,000	<1,000	0.49	Operating
	11/21/02	21.55		79.30		200,000 <sup>e.g</sup>			480			<500	0.49	• •
	01/13/03	14.80		86.05	20,000 <sup>d</sup>	5,300°.f		2,300		300	2,100	<50 <50		Not operating
	04/25/03	20.90		79.95	4,200 <sup>d</sup>	320°		580	81	59	470			Operating
	05/30/03	16.65	•••	84.20							400			Not operating
	09/03/03	24.16		76.69	14,000 <sup>d</sup>	36,000 <sup>c.f</sup>		300	50	33	480	<50		Operating
	12/02/03	24.12	-	76.73	7,100 <sup>d.g</sup>	9,300°,f,g		1,400	230	160	820	<100	_	Operating

Table 1. Groundwater Elevations and Analytical Data - Former Exxon Service Station, 3055 35th Avenue, Oakland, California

Well ID	Date	GW	SPH	GW	ТРНд	TPHd	TPHmo	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	DO	TPE System
(TOC)		Depth (ft)	(ft)	Elev. (fl)	<		- Concentrati	ons in microg	rams per liter	(μg/L)		>	(mg/L)	Status
MW-2	05/25/94	15.65		84.35	61,000	6,900	<5,000	9,900	7,400	960	4,600			
100.00	07/19/94	19.81		80.19										
	08/18/94	20.37		79.63	88,000			10,750	10,500	1,850	9,600			
	11/11/94	15.52		84.48	54,000			5,900	6,700	1,300	7,500			
	02/27/95	14.46	Sheen	85.54	44,000			5,100	5,300	930	6,400			
	05/23/95	14.17		85.83	33,000			8,200	5,600	900	6,600			
	08/22/95	19.80		80.20	38,000			6,400	5,000	1,100	5,600			
	11/29/95	21.05		78.95	46,000			7,100	5,300	1,300	6,000			
	02/21/96	10.53		89.47	59,000			8,000	6,000	1,800	8,900	4,500		
	05/21/96	13.47		86.53	51,000	3,400		8,200	5,200	1,300	6,600	2,400		
	08/22/96	19.12		80.88	37,000	5,700		5,100	3,500	960	4,500	<200	3.0	
	11/27/96	16.61	Sheen	83.39	54,000	10,000		9,800	7,000	1,800	7,900	<2,000	3.1	
	03/20/97	15.39		84.61	27,000	6,100		3,700	2,300	580	2,800	<400	8.1	
	06/25/97	18.62		81.38	42,000	7,800 <sup>b</sup>		7,400	3,800	1,200	5,700	<200	0.9	
	09/17/97	19.05	Sheen	80.95	41,000 <sup>d</sup>	8,900°		5,200	3,400	1,300	5,900	<700	1.2	
	12/22/97	14.09		85.91	47,000 <sup>d</sup>	6,100°		8,500	4,600	1,800	8,400	<1,200	1.2	
	03/18/98	10.83	Sheen	89.17	58,000 <sup>d</sup>	7,000°,ſ		9,300	6,100	1,800	8,200	<1,100	1.1	
	07/14/98	16.07		83.93	42,000 <sup>d</sup>	5,300°.ſ		6,000	3,000	1,000	4,800	<200	1.5	
	09/30/98	18.71		81.29	22,000	2,400		3,600	1,300	720	3,200	<30	1.8	
	12/08/98	14.80		85.20	32,000	3,100		9,200	680	1,100	2,300	<2,000		
	03/29/99	11.81		88.19	28,000 <sup>d</sup>	7,500°,f		4,400	1,600	950	4,100	410	1.86	
	06/29/99	19.54		80.46	$28,000^{d}$	3,300°		3,500	1,100	690	3,100	<1,000	0.41	
	09/28/99	18.61		81.39	15,000 <sup>d</sup>	3,400°.1		1,200	540	230	2,300	<36	1.18	
	12/10/99	16.53		83.47	17,000 <sup>d</sup>	2,500 <sup>e,f</sup>		1,300	780	420	2,700	<40	0.17	
	03/23/00	13.56		86.44	25,000 <sup>d</sup>	3,100 <sup>i</sup>		1,900	1,100	660	3,700	<500		
	09/07/00	18.25		81.75	62,000 <sup>d,g</sup>	32,000 <sup>e,g</sup>		5,300	2,300	1,500	8,400	<100	0.39	
	12/05/00	17.45		82.55	60,000 <sup>d.g</sup>	87,000 <sup>e,f,</sup>		5,100	2,200	1,600	9,000	<200	0.31	Not operation
	03/07/01	15.68		84.32	34,000	3,900		1,200	770	620	4,300	<200	0.44	Not operation
	06/06/01	17.51		82.49	110,000	48,000	***	14,000	9,000	1,900	12,000	<950	0.24	Not operation
	08/30/01	21.00		79.00	43,000* <sup>,h</sup>	15,000 <sup>d,h</sup>		3,100	720	980	5,500	<200		Operating
	12/07/01	24.45		75.55	4,100	750°,ſ		510	88	8.2	580	<20	0.47	Operating
	03/11/02	16.95		83.05	4,700 <sup>d</sup>	590°		1,200	150	30	310	<50	0.24	Operating
	06/10/02	18.59		81.41	14,000 <sup>d</sup>	2,000°		2,600	710	150	2,000	<800		Operating
	09/26/02	20.39		79.61	4,800 <sup>d</sup>	660°		770	200	140	740	<50	0.29	Operating
	11/21/02	18.75		81.25	210,000 <sup>d.g</sup>	350,000°.8		14,000	23,000	4,400	28,000	<1,700	0.43	Operating
	01/13/03	13.60		86.40	32,000 <sup>d.g</sup>	14,000 <sup>e,f.g,k</sup>		4,500	1,600	920	3,600	<1000	0.39	Not operati
	04/25/03	19.05		80.95	3,800 <sup>d</sup>	310°		460	78	72	410	310		Operating
	05/30/03	15.23		84.77										Not operati
	09/03/03	23.57	•	76.43	2,900 <sup>d</sup>	2,300°		240	57	68	380	770	***	Operating
	12/02/03	23.17	_	76.83	2,400 <sup>d.g</sup>	3,300 <sup>e.f,g</sup>		91	20	14	250	890		Operatin

Table 1. Groundwater Elevations and Analytical Data - Former Exxon Service Station, 3055 35th Avenue, Oakland, California

Well ID	Date	GW	SPH	GW	TPHg	TPHd	ТРНто	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	DO	TPE System
(TOC)		Depth (ft)	(ft)	Elev. (ft)	<		Concentrati	ons in microg	rams per liter	(μg/L)		>	(mg/L)	Status
MW-3	05/25/94	13.93	Sheen	82.94	56,000	14,000	<50,000	14,000	14,000	1,300	11,000			
96.87	07/19/94	17.04		79.83			***							
	08/18/94	17.75		79.12	116,000			28,300	26,000	2,400	15,000			
	11/11/94	17.80		79.07	89,000			1,600	1,900	1,900	14,000		***	
	02/27/95	11.86	Sheen	85.01	250,000			22,000	26,000	7,800	21,000		~n=	
	05/23/95	11.60	Sheen	85.27	310,000			18,000	17,000	4,500	2,800			
	08/22/95	17.10	**-	79.77	74,000			14,000	13,000	1,900	11,000			
	11/29/95	16.34		80.53	220,000			25,000	25,000	3,500	19,000			
	02/21/96	7.92	•	88.95	60,000			10,000	7,800	1,500	8,800	3,400		
	05/21/96	10.86	Sheen	86.01	69,000	13,000		17,000	9,400	1,700	9,400	2,600		
	08/22/96	16.50		80.37	94,000	16,000	**-	17,000	15,000	2,100	12,000	330	2.0	
	11/27/96	13.47	Sheen	83.40	82,000	24,000		14,000	13,000	2,400	13,000	<1,000	2.4	
	03/20/97	12.86		84.01	56,000	11,000		9,900	6,900	1,300	8,000	3,500	9.0	
	06/25/97	15.98		80.89	49,000	7,700 <sup>b</sup>		9,700	7,100	1,300	7,000	220	5.8	
	09/17/97	16.34	Sheen	80.53	78,000 <sup>d</sup>	15,000°		11,000	9,900	1,800	10,000	<1,200	0.7	
	12/22/97	10.71	Sheen	86.16	$49,000^{d}$	14,000 <sup>e</sup>		7,300	5,300	1,400	7,500	<1,100	3.1	
	03/18/98	8.41	Sheen	88.46	120,000 <sup>d</sup>	20,000 <sup>e,t</sup>		21,000	19,000	2,600	15,000	<1,600	1.6	
	07/14/98	13.51		83.36	94,000 <sup>d.g</sup>	65,000 <sup>e.f.g</sup>		18,000	14,000	1,900	11,000	<1,400	1.8	
	09/30/98	16.14		80.73	91,000	9,800		17,000	13,000	2,100	12,000	<1300	2.0	
	12/08/98	11.20		85.67	51,000	4,200		8,000	6,800	1,400	7,500	<1,100		
	03/29/99	7.95		88.92	39,000 <sup>d</sup>	4,600°		8,900	4,400	940	4,500	810	0.56	
	06/29/99	16.98		79.89	71,000 <sup>d</sup>	6,900°		12,000	7,300	1,400	8,400	<1,700	0.19	
	09/28/99	15.99		80.88	60,000 <sup>d</sup>	7,800°		9,400	9,200	1,000	9,900	200	0.53	
	12/10/99	13.31		83.56	53,000 <sup>d</sup>	5,300°,f		8,000	6,400	1,100	8,100	<200	0.48	
	03/23/00	8.98		87.89	77,000 <sup>d.g</sup>	11,000 <sup>g,j</sup>		10,000	9,400	1,600	11,000	<430		
	09/07/00	15.61		81.26	100,000 <sup>d.g</sup>	19,000 <sup>c.f.g</sup>		17,000	12,000	1,600	11,000	<500		
	12/05/00	14.80		82.07	110,000 <sup>d.g</sup>	17,000°,g		17,000	11,000	1,900	12,000	<750	0.37	Not operation
	03/07/01	14.27	***	82.60	60,000	13,000		7,000	4,600	900	7,100	<350	0.49	Not operation
	06/06/01	14.88		81.99	43,000	12,000		3,000	1,000	770	5,200	<400	1.71	Not operatin
	08/30/01	12.43		84.44	95.000 <sup>u,h</sup>	190,000 <sup>d,h</sup>		6,900	10,000	2,700	15,000	<250	0.24	Operating
	12/07/01	24.65		72.22	25,000 <sup>d</sup>	3,900 <sup>c.f</sup>		2,500	1,700	64	2,200	<200	0.19	Operating
	03/11/02	14.69		82.18		2,800 <sup>f,e,k</sup>		5,000	2,400	190	1,800	<1,300	0.30	Operating
	06/10/02	22.94		73.93	30,000 <sup>d</sup>	2,800 990 <sup>c,k</sup>		1,800	1,300	96	1,000	<300		Operating
					9,000 <sup>d</sup>				5,400	820	6,600	<500	0.19	Operating
	09/26/02	18.85	0.05	78.02	50,000 <sup>d.g</sup>	130,000°®		3,900					0.19	
	11/21/02	17.85	0.05	79.06	37,000 <sup>d.g</sup>	120,000° s		4,000	660	1,200	5,100	<1,700		Operating
	01/13/03	11.43		85.44	21,000 <sup>d.g</sup>	6,300 <sup>e,f,g,k</sup>		2,400	2,300	390	3,000	<500	0.31	Not operation
	04/25/03	18.30		78.57	12,000 <sup>d</sup>	1,200°		1,800	850	150	1,200	<500		Operating
	05/30/03	13.30		83.57										Not operation
	09/03/03	21.65		75.22	8,100 <sup>d</sup>	3,300°		220	170	66	560	<50		Operating
	12/02/03	17.79	_	79.17	30,000 <sup>d.z</sup>	8,400 <sup>c.f.g</sup>		2,900	2,100	530	3,600	<500		Operating

Table 1. Groundwater Elevations and Analytical Data - Former Exxon Service Station, 3055 35th Avenue, Oakland, California

Well ID	Date	GW	SPH	GW	TPHg	TPHd	TPHmo	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	DO	TPE System
(TOC)		Depth (ft)	(ft)	Elev. (ft)	حزــــــــــــــــــــــــــــــــــــ		- Concentrati	ons in microg	rams per liter	(µg/L)		>	(mg/L)	Status
MW-4	03/20/97	13.75		83.59	47,000	3,100	***	11,000	4,500	1,100	5,200	3,400	8.4	
97.34	06/25/97	16.15		81.19	61,000	5,800 <sup>h</sup>		16,000	6,100	1,500	5,900	780°	1.4	
	09/17/97	17.10		80.24	60,000 <sup>d</sup>	4,400°		17,000	4,900	1,500	5,700	<1,500	1.5	
	12/22/97	9.21		88.13	$43,000^{d}$	3,100°		13,000	3,900	1,100	4,200	<960	3.7	
	03/18/98	9.54		87.80	58,000 <sup>d</sup>	5,500°.r		14,000	4,700	1,400	5,700	<1,200	8.0	
	07/14/98	14.15		83.19	73,000 <sup>d</sup>	2,900 <sup>e,f</sup>		22,000	7,000	1,800	7,300	<200	1.0	
	09/30/98	16.84		80.50	39,000	2,100		12,000	2,700	1,000	3,400	510	1.1	
	12/08/98	13.45		83.89	27,000	1,600		8,900	1,600	730	2,300	<1,500		
	03/29/99	9.10		88.24	48,000 <sup>d</sup>	2,400°,th		15,000	3,000	1,300	5,000	1,300	1.32	
	06/29/99*								***					
	09/28/99	16.58		80.76	$24,000^{d}$	3,200 <sup>c.f</sup>		7,500	1,200	190	2,200	210	14.29	
	12/10/99	13.99		83.35	$47,000^{d}$	3,100°.1		12,000	1,800	1,000	4,400	<100	0.62	
	03/23/00	10.22		87.12	40,000 <sup>d</sup>	3,100°.f		11,000	1,600	910	3,100	690		
	09/07/00	16.40		80.94	43,000 <sup>d</sup>	5,900		10,000	1,100	1,100	3,400	<450	1.04	
	12/05/00	15.55		81.79	69,000 <sup>d.g</sup>	2,600°g		16,000	1,300	1,300	3,400	<200	0.35	Not operating
	03/20/01	14.03		83.31	46,000			13,000	1,000	900	2,800	<350	0.39	Not operating
	06/06/01	15.49		81.85	75,000	5,400		22,000	1,800	1,900	6,400	<1,200	2.22	Not operating
	08/30/01	18.00		79.34	43.000"	3,200 <sup>d</sup>		6,400	630	510	2,600	<200	0.32	Operating
	12/07/01	23.45		73.89	32,000 <sup>d.s</sup>	11,000 <sup>e,f,g</sup>		4,500	740	310	2,300	<200	0.21	Operating
	03/11/02	14.95		82.39	15,000 <sup>d</sup>	1.600°,f,k		3,700	500	92	790	<500	0.30	Operating
	06/10/02	22.30		75.04	9,400 <sup>d</sup>	3,400°		1,400	50	<5.0	690	<200		Operating
	09/26/02	17.93		79.41	21,000 <sup>d</sup>	800°	***	3,300	1,300	450	2,900	<500	0.24	Operating
	11/21/02	17.55		79.79	5,700 <sup>d</sup>	2.400 <sup>e,k</sup>		1,400	290	63	640	550		Operating
	01/13/03	11.75		85.59	35,000 <sup>d,g</sup>	15,000 <sup>e.f.g.k</sup>		5,100	1,500	510	4,500	<800	0.28	Not operating
	04/25/03	19.37		77.97	6,600 <sup>d</sup>	2,200°,f		960	130	100	560	<170		Operating
	05/30/03	13.56		83.78										Not operating
	09/03/03	21.65		75.69	29,000 <sup>d</sup>	27,000 <sup>e.f</sup>		2,200	380	280	2,300	65		Operating
	12/02/03	19.17	***	78.17	13,000 <sup>d</sup>	5,800°,1		1,300	180	120	1,900	<250		Operating
					13,000	2,502					,			
Trip Blank	07/14/98				<50	<50		<0.5	<0.5	<0.5	<0.5	<5.0		
	09/30/98				<50	<50		<0.5	<0.5	< 0.5	<0.5	<5.0		
	12/08/98	**-			<50			<0.5	<0.5	< 0.5	<0.5	<5.0		
	03/29/99			***	<50			<0.5	<0.5	<0.5	<0.5	<5.0		
	06/29/99				<50			<0.5	<0.5	<0.5	<0.5	<5.0		
	03/23/00				<50			<0.5	<0.5	<0.5	<0.5	<5.0		
	09/07/00				<50			<0.5	1.1	<0.5	1.1	<5.0		

### Table 1. Groundwater Elevations and Analytical Data - Former Exxon Service Station, 3055 35th Avenue, Oakland, California

Well ID	Date	GW	SPH	GW	TPHg	TPHd	TPHmo	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	DO	TPE System
(TOC)		Depth (ft)	(fl)	Elev. (fl)	<		Concentrate	ons in microg	rams per liter	(μg/L)		>	(mg/L)	Status
Abbreviations:							Notes:							
TOC = Top of ca	sing elevation	relative to an arb	itrary datum	ı			a = Result l	has an atypical	l pattern for d	iesel analysis				
GW = Groundwa	ter						b = Result	appears to be	a lighter hydr	ocarbon than dies	el			
SPH = Separate-p	hase hydroca	rbons					c = There i	s a >40% diffe	rence betwee	n primary and co	nfirmation an	alysis		
= not observed	I/not analyzed	i					d = Unmod	ified or weak!	y modified g	asoline is signific	ant			
TPHg = Total pet	troleum hydro	carbons as gasolii	ne by modifi	ied EPA Metho	od 8015		e = Gasolir	e range comp	ounds are sig	nificant				
TPHd = Total pet	troleum hydro	carbons as diesel	by modified	EPA Method	8015		f = Diesel r	ange compou	nds are signif	icant; no recogniz	able pattern			
TPHmo = Total p	etroleum hyd	lrocarbons as mot	or oil by mo	dified EPA Me	thod 8015		g = lighter	than water im	miscible shee	n is present				
Benzene, Ethylbe	enzene, Tolue	ne, and Xylenes b	y EPA Metł	od 8020			h = one to	a few isolated	peaks presen					
MTBE - Methyl	Tertiary Buty	I Ether by EPA M	fethod 8020				i = mediu	n boiling poin	t pattern doe:	s not match diesel	(stoddard so	lvent)		
DO = Dissolved	охудеп						j = aged die	sel is signific	ant					
μg/L = Microgram	ms per liter, e	quivalent to parts	per billion ir	water			k = oil rang	e compounds	are significar	nt				
mg/L = Milligran	ns per liter, eq	juivalent to parts p	er million in	1 water			TOC Eleva	tion of Well M	4W-4 survey	ed relative to an a	rbitrary site d	atum by Davi	d Hop,	
* = Well inaccess	sible during si	te visit					Licensed	Surveyor on A	April 19, 1991	7				
							# = abnorm	ally high read	ing due to ad	ded hydrogen per	oxide			

Table 2. TPE System Performance and Analytical Results - Soil Vapor Extraction - Former Exxon Service Station, 3055 35th Street, Oakland, California

<b></b>	1	1 .				<del></del>			1		_			
Date	Hour Meter	System Uptime	System Inlet	System Flow Rate	System Vacuum	System Flow Rate	System Influent HC Conc. 1	System HC C	Effluent	HC Removal Rate <sup>2</sup>		ission ate <sup>2</sup>	TPHg Destruction	Gasoline Cumulative
Date	Readings	1 ' 1				(scfm)			1	(lbs/day)	1	s/day)	Efficiency	Removal 3
	(hrs)	(per interval) (%)	Temp. (degrees F)	(acfm)	("Hg)	(scim)	(ppmv) TPHg	(pp TPHg	Benz	TPHg	TPHg	Benz	(%)	(lbs)
	<u> </u>	(28)	(degrees ir)				l III.g	Trug	Deliz	1111g	1111g	Bellz	(76)	(103)
6/24/00	0		u-			**								0
9/28/00	454	20%	789			175	420	22	0.24	23.6	1.24	0.012	95	446
10/12/00	696	72%	950	1		88	360	<10	<0.15	10.1	<0.28	<0.004	*	684
11/9/00	1251	83%	820			55	590	<10	<0.15	10.5	<0.18	<0.002	*	918
1/23/01	1313	3%												945
3/28/01	0											-		945
4/5/01	194	101%	908	85	6.0	68	1,800	34	0.52	39.2	0.74	0.010	98	1261
5/3/01	863	100%	1000	54	14	29	2,800	<10	<0.15	25.8	<0.09	<0.001	*	2355
6/4/01	1114	33%	820	101	6.5	79	240	<10	<0.15	6.1	<0.25	<0.003	*	2625
7/2/01	1429	47%	804	109	10.0	73	92	26	0.34	2.1	<0.61	<0.007	72	2705
7/10/01	1621	100%	900	150	8.0	110	92	<10	<0.15	3.2	<0.35	<0.005	*	2722
8/2/01	1759	25%	940	79	5.0	65	110	<10	<0.15	2.3	<0.21	<0.003	•	2740
9/7/01	2301	63%	854	141	12.0	84	81	34	0.52	2.2	<0.92	<0.013	58	2793
10/3/01	2470	27%	854	230	9.0	161	160	<10	0.31	8.3	<0.52	<0.015	*	2808

Table 2. TPE System Performance and Analytical Results - Soil Vapor Extraction - Former Exxon Service Station, 3055-35th Street, Oakland, California

Date	Hour Meter Readings (hrs)	System Uptime (per interval) (%)	System Inlet Temp. (degrees F)	System Flow Rate (acfm)	System Vacuum ("Hg)	System Flow Rate (scfm)	System Influent HC Conc. <sup>1</sup> (ppmv) TPHg	нс с	Effluent onc. <sup>1</sup> mv) Benz	HC Removal Rate <sup>2</sup> (Ibs/day) TPHg	R	ission .ate <sup>2</sup> s/day) Benz	TPHg Destruction Efficiency (%)	Gasoline Cumulative Removal <sup>3</sup> (lbs)
11/6/01	3015	67%	955	97	8.5	69	590	31	0.43	13.1	<0.69	<0.009	95	2995
11/14/01	3184	88%	860	69	10.0	46	810	<10	<0.15	11.9	<0.15	<0.002	*	3087
12/6/01	3710	100%	806	53	11.0	33	50	<10	<0.15	0.5	<0.11	<0.001	*	3349
1/7/02	4472	99%	841	42	10.5	27	120	<10	<0.15	1.0	<0.09	<0.001		3366
2/4/02	4938	69%	817	78	10.5	. 51	<5	<10	<0.15	0.1	<0.16	<0.002	*	3386
3/5/02	5396	66%	665	26	10.5	17	170	<10	<0.15	0.9	<0.05	<0.001	*	3388
4/2/02	6068	100%	670	67	12.5	39	260	<10	<0.15	3.3	<0.13	<0.002	*	3413
5/6/02	6886	100%	667	76	10.0	50	500	<10	<0.15	8.1	<0.16	<0.002	*	3524
6/5/02	7608	100%	75]	72	8.5	51	73	<10	<0.15	1.2	<0.16	<0.002	*	3767
7/2/02	8253	100%	736	80	9.0	56	26	<15	<0.15	0.5	<0.27	<0.002	*	3799
8/6/02	7	100%	739	140	13.0	79	97	<10	<0.15	2.5	<0.25	<0.003	*	3815
9/10/02	528	76%	723	150	11.5	92	103	<10	<0.15	3.0	<0.30	<0.004	*	3869
10/2/02	938	100%	723	125	8.5	89	430	<10	<0.15	12.3	<0.29	<0.004	*	3921
11/6/02	1614	100%	658	105	13.5	58	1,000	<10	<0.15	18.5	<0.18	<0.003	*	4269

Table 2. TPE System Performance and Analytical Results - Soil Vapor Extraction - Former Exxon Service Station, 3055 35th Street, Oakland, California

Date	Hour Meter Readings	System Uptime	System Inlet	System Flow Rate	System Vacuum	System Flow Rate	System Influent HC Conc. <sup>1</sup>		Effluent lone. 1	HC Removal Rate <sup>2</sup>		ission ate <sup>2</sup>	TPHg Destruction	Gasoline Cumulative
	(hrs)	(per interval)	Temp.	(acfm)	("Hg)	(scfm)	(ppmv)		nıv)	(lbs/day)		s/day)	Efficiency	Removal <sup>3</sup>
		(%)	(degrees F)				TPHg	TPHg	Renz	TPHg	TPHg	Benz	(%)	(lbs)
12/5/2002	1720	65%	675	115	14.0	61	740	<10	<0.15	14.5	<0,20	<0,003	*	4,350
1/8/2003	2279	69%	675	30	16.0	14	1700	<10	<0.15	7.6	<0.04	<0.001	sk:	4,688
2/4/2003	2896	95%	671	48	18.0	19	910	<10	<0.15	5.6	<0.06	<0.001	*	4,884
3/4/2003	3571	100%	657	47	17.0	20	540	<10	<0.15	3.5	<0.07	<0.001	*	5,041
4/2/2003	3990	60%	705	38	18.0	15	1110	<10	<0.15	5.4	<0.05	<0.001	*	5,102
5/7/2003	4719	87%	700	58	21.5	16	330	<10	<0.15	1.7	<0.05	<0.001	*	5,265
6/2/2003	5200	77%	698	60	18.0	24	178	<10	<0.15	1.4	<0.08	<0.001	*	5,300
7/3/2003	5882	92%	700	77	16.0	36	520	<10	<0.15	6,0	<0.11	<0.002	*	5,339
8/7/2003	6655	92%	667	65	15.0	32	640	<10	<0.15	6,6	<0.10	<0,001	*	5,531
9/3/2003	7130	73%	681	79	14.5	41	460	<10	<0.15	6.0	<0.13	<0.002	*	5,662
10/7/2003	7613	59%	680	37	20.0	. 12	530	<10**	<0.15**	2.1	<0.04	<0.001	*	5,783
11/17/2003	8442	84%	701	51	18.5	19	480	<10	<0.15	3.0	<0.06	<0.001	*	5,855
12/2/2003	8803	100%	815	62	16,0	29	530	<10	<0.15	4.9	<0.09	<0.001	*	5,900
1/6/2004	9292	58%								-	-			6,000

### Table 2. TPE System Performance and Analytical Results - Soil Vapor Extraction - Former Exxon Service Station, 3055 35th Street, Oakland, California

														,
	Hour Meter	System	System	System	System	System	System Influent	System	Effluent	HС	Err	nission	TTHg	Gasoline
Date	Readings	Uptime	Inlet	Flow Rate	Vacuum	Flow Rate	HC Conc.	HC C	onc. 1	Removal Rate 2	F	tate 2	Destruction	Cumulative
	(hrs)	(per interval)	Temp.	(acfm)	("Hg)	(scfm)	(ppmv)	(pp	mv)	(lbs/day)	(lb	s/day)	Efficiency	Removal <sup>3</sup>
		(%)	(degrees F)				TPHg	TPHg	Benz	TPHg	TPHg	Benz	(%)	(lbs)

#### Notes and Abbreviations:

TPHg = Total petroleum hydrocarbons as gasoline

Benz = Benzene

HC Conc. = Hydrocarbon Concentrations

ppmy = Parts per million by volume. Analytical lab results converted from micrograms per liter (µg/l) to ppmy assumes the molecular weight of gasoline to be equal to that of hexane at 1 atmosphere of pressure and 20 degrees Celsius.

The TFE system was modified on August 6, 2002, and the PD blower was replaced with a liquid-ring blower. The previous system hour meter was also replaced at a total reading of 9089 hours. In addition, all previous flow rate measurements were converted from acfm to sofin adjusting the Hydrocarbon Removal Rates and Gasoline Cumulative Removal.

<sup>&</sup>lt;sup>1</sup> TPHg and benzene concentrations based on lab results by Modified EPA Methods 8015 and 8020.

<sup>&</sup>lt;sup>2</sup> 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 (sofm) x 1 lb-mole/386x10<sup>6</sup>ft<sup>2</sup> x molecular weight (86 lb/lb-mole for TPHg, 78 lb/lb-mole for benzene) x 1440 min/day.

<sup>3</sup> 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 lab analytical results.

<sup>\*</sup> As per BAAQMD permit conditions, system destruction efficiency need not be calculated for effluent TPHg concentrations less than 10 ppmv

<sup>\*\*</sup> Effluent sample collected on 10/13/03.

Table 3. TPE System Performance and Analytical Results - Groundwater Extraction - Former Exxon Service Station, 3055 35th Street, Oakland, California

			Total	System							HCs	Total
Date	Hour Meter	Water Meter	Groundwater	Flow Rate							Removed	HCs
	Readings	Readings	Extracted	Per Period	Sample	TPHg	Вепzепе	Toluene	Ethylbenzene	Total Xylenes	Per Period	Removed
	(hrs)	(gallons)	(gallons)	(gpm)	ID.	(μg/L)	(μg/L)	(µg/L)	(μg/L)	(µg/L)	(ibs)	(lbs)
10/20/2000	878	0	0	NC	Inf Eff	<del></del>	<0.5 <0.5	<0.5 <0.5	<0.5 <0.5	<0.5 <0.5		
10/30/2000	1004		50	NC	Inf Eff	 	170 <0.5	140 <0.5	16 <0.5	200 <0.5		 
11/9/2000	1,251		50	NC	Inf Eff	760 <50	120 <0.5	86 <0.5	4,2 <0.5	84 <0.5	NC	NC
12/15/2000	1,267	760a	50	NC							<del></del>	
1/23/2001	1,313	3,790	3,080	1.1	In Mid Eff	3,000 <50 <50	440 <0.5 <0.5	360 <0.5 <0.5	57 <0.5 <0.5	350 <0.5 <0.5	0.02	0.02
3/28/2001	0	3,970	3,210	NC	Replacement C	atox System S	Startup				0.00	0.02
4/13/2001	378	17,366	16,606	0.6	IN EF-1	360 <50	45 <0.5	39 <0.5	5.1 <0.5	43 <0.5	0.34	0.36
6/4/2001	1,114	36,058	35,298	0.4	IN Mid EF	54 <50 <50	<0.5 <0.5 <0.5	0.69 <0.5 <0.5	<0.5 <0.5 <0.5	3.1 <0.5 <0.5	0.06	0.42

Table 3. TPE System Performance and Analytical Results - Groundwater Extraction - Former Exxon Service Station, 3055 35th Street, Oakland, California

			Total	System							HCs	Total
Date	Hour Meter	Water Meter	Groundwater	Flow Rate							Removed	HCs
	Readings	Readings	Extracted	Per Period	Sample	TPHg	Benzene	Toluene	Ethylbenzene	Total Xylenes	Per Period	Removed
	(hrs)	(gallons)	(gallons)	(gpm)	ID	(μg/L)	(µg/L)	(µg/L)	(μg/L)	(μg/L.)	(lbs)	(lbs)
7/2/2001	1.420	20.422	38,673	0.2	IN	<50	2.5	ı	<0.5	5	0.00	0.42
7/2/2001	1,429	39,433	30,073	0.2	Mid	<50 <50	<0.5	<0.5	<0.5	<0.5	0.00	0.42
					EF	<50	<0.5	<0.5	<0.5	<0.5		
9/7/2001	2,301	48,566	47,806	0.2	INF	4,600	24	57	15	140	0.00	0.42
),	2,501	10,000	.,,,,,,	0.2	EFF-1	<50	<0.5	<0.5	<0.5	< 0.5		
					EFF-2					NE. AL.		
11/16/2001	3,184	61,892	61,132	0.3	INF	1100	57	42	6.5	110	0.51	0.93
		,			EFF-1	<50	<0.5	<0.5	<0.5	<0.5		
					EFF-2							
12/6/2001	3,710	80,094	79,334	0.6	INF	410	31	14	3.2	48	0.17	1.10
	i				EFF-1	<50	<0.5	<0.5	<0.5	<0.5	!	
,					EFF-2							
1/7/2002	4,472	132,337	131,577	1.1	INF	120	17	7.7	1.5	13	0.18	1.28
					EFF-1	<50	<0.5	<0.5	<0.5	<0.5		
					EFF-2							
2/4/2002	4,938	164,774	164,014	1.2	INF	140	18	5.1	0.86	12	0.03	1.31
					EFF-1	<50	<0.5	<0.5	<0.5	<0.5		
					EFF-2					**		

Table 3. TPE System Performance and Analytical Results - Groundwater Extraction - Former Exxon Service Station, 3055 35th Street, Oakland, California

			Total	System							HCs	Total
Date	Hour Meter	Water Meter	Groundwater	Flow Rate							Removed	HCs
-	Readings	Readings	Extracted	Per Period	Sample	TPHg	Benzene	Toluene	Ethylbenzene	Total Xylenes	Per Period	Removed
	(hrs)	(gallons)	(gallons)	(gpm)	ID	(µg/L)	(µg/L)	(µg/L)	(μg/L)	(μg/L)	(lbs)	(lbs)
3/5/2002	5,396	208,997	208,237	1.6	INF EFF-1 EFF-2	170 <50 	22 <0.5 	12 <0.5	1.8 <0.5 	24 <0.5 	0.05	1.36
4/2/2002	6,068	263,563	262,803	1.4	INF EFF-1 EFF-2	160 <50 	15 <0.5 	17 <0.5	3.3 <0.5 	20 <0.5 	0.08	1.44
5/6/2002	6,886	306,765	306,005	0.9	INF EFF-1 EFF-2	100 <50 	3.5 <0.5	1.7 <0.5 	1.0 <0.5 	4.0 <0.5 	0.06	1.50
6/5/2002	7,608	340,020	339,260	0.8	INF EFF-1 EFF-2	<50 <50 	2.8 <0.5 	1.4 <0.5 	<0.5 <0.5 	2.5 <0.5 	0.03	1.52
7/2/2002	8,253	361,717	360,957	0.6	INF EFF-1 EFF-2	<50 <50 	1.5 <0.5 	<0.5 <0.5 	<0.5 <0.5 	0.94 <0.5 	0.01	1.53
8/6/2002*	7	383,750	382,990	0.4	INF EFF-1 EFF-2	<50 <50 	1.8 <0.5 	0.92 <0.5 	<0.5 <0.5	2.0 <0.5 	0.01	1.54

Table 3. TPE System Performance and Analytical Results - Groundwater Extraction - Former Exxon Service Station, 3055 35th Street, Oakland, California

			Total	System							HCs	Total
Date	Hour Meter	Water Meter	Groundwater	Flow Rate							Removed	HCs
	Readings	Readings	Extracted	Per Period	Sample	TPHg	Benzene	Toluene	Ethylbenzene	Total Xylenes	Per Period	Removed
	(hrs)	(gallons)	(gallons)	(gpm)	ID	(μg/L)	(μg/L)	(μg/L)	(μg/L)	(μg/L)	(lbs)	(lbs)
9/10/2002	528	392,405	391,645	0.3	INF EFF-1 EFF-2	570 <50 	15 <0.5 	17 <0.5 	2.9 <0.5 	30 <0.5 	0.00	1.55
10/2/2002	938	400,145	399,385	0.3	INF EFF-1 EFF-2	2,300 <50 	230 <0.5 	190 <0.5 	38 <0.5 	280 <0.5 	0.03	1.55
11/6/2002	1,614	419,850	419,090	0.5	INF EFF-1 EFF-2	4,400 <50 	120 <0.5 	150 <0.5 	27 <0.5 	380 <0.5 	0.38	1.93
12/5/2002	1,720	424,899	424,139	0.8	INF EFF-1 EFF-2	8,900 <50 	140 <0.5	200 <0.5 	33 <0.5 	470 <0.5 	0.19	2.11
1/8/2003	2,279	473,395	472,635	1.4	INF EFF-1 EFF-2	3,500 <50 	120 <0.5 	300 <0.5 	48 <0.5 	700 <0.5 	3.60	5.72
2/4/2003	2,896	554,336	553,576	2.2	INF EFF-1 EFF-2	1,100 <50 <50	51 <0.5 <0.5	74 <0.5 <0.5	14 <0.5 <0.5	190 <0.5 <0.5	2.36	8.08

Table 3. TPE System Performance and Analytical Results - Groundwater Extraction - Former Exxon Service Station, 3055 35th Street, Oakland, California

Removed s Per Period (lbs)  0.55	HCs Removed (lbs)
(lbs)	(lbs)
0.55	8.63
0.37	9.00
0.93	9.93
0.16	10.10
0.14	10.24
0.06	10.30
<u> </u>	0.93

Table 3. TPE System Performance and Analytical Results - Groundwater Extraction - Former Exxon Service Station, 3055 35th Street, Oakland, California

			Total	System							HCs	Total
Date	Hour Meter	Water Meter	Groundwater	Flow Rate							Removed	HCs
	Readings (hrs)	Readings (gallons)	Extracted (gallons)	Per Period (gpm)	Sample ID	TPHg (μg/L)	Benzene (µg/L)	Toluene (μg/L)	Ethylbenzene (μg/L)	Total Xylenes (µg/L)	Per Period (lbs)	Removed (lbs)
	(1110)	(garrons)	(54110113)	(56)					0.2		(44.7)	(11-1)
9/3/2003	7,130	914,715	913,955	0.7	INF	310	21	17	2.0	44	0.05	10.35
					EFF-1 EFF-2	69 <50	3.5 <0.5	2.4 <0.5	<0.5 <0.5	7.7 <0.5		
					BFF-2	<b>~30</b>	<b>~0.5</b>	<b>~</b> 0.5	<b>~0.3</b>	~0.3		
10/2/2002	7.404	024.005	024.225	0.5	INF	460	34	25	2.3	64	0.03	10.38
10/2/2003	7,496	924,985	924,225	0.5	EFF-1	460 140	3 <del>4</del> 7.7	5.2	0.59	04 16	0.03	10.38
					EFF-2	<50	<0.5	<0.5	<0.5	<0.5		
											<u></u>	
11/17/2003	8,442	963,324	962,564	0.7	INF	300	21	7.9	2.2	37	0.15	10.53
					EFF-1	<50	<0.5	<0.5	<0.5	0.94		
					EFF-2	<50	<0.5	<0.5	<0.5	<0.5		
10.00.000	0.004	001.240	200 500	0.0	INF	220	3.5		1.6	11	0.05	10.57
12/2/2003	8,804	981,348	980,588	8.0	EFF-1	220 <50	3.5 <0.5	1.4 <0.5	1.6 <0.5	<0.5	0.03	10.57
					EFF-2							
								<u> </u>				
1/6/2004	9,292	1,040,555	1,039,795	2.0	INF						0.11	10.68
				Sewe	r Effluent Disch	narge Limits: (μg/L)	5.0	5.0	5.0	5.0		

#### Notes:

TPHg = Total Petroleum Hydrocarbons as Gasoline

μg/L = micrograms per liter

a = Malfunctioning totalizer replaced 12/15/00 (initial reading at 760 gallons)

\* = TPE system upgrade. Previous system hour meter = 9089

ND = non detect

<n = below noted practical laboratory quantitation limits

Inf = Influent Sample

Eff = Effluent Sample

NC = Not calculated, insufficient data

Table 4. TPE Well Parameters - Former Exxon Service Station, 3055 35th Avenue, Oakland, California

Well ID	Date	Well Status (open/closed)	System/Stinger Vacuum (inches of H2O)	Well Annulus Vacuum (inches of H2O)	Flow Rate (cfm)	Hydrocarbon Vapor Concentration (ppmv)	Stinger Depth (ft below TOC)
MW-1	11/6/2001	open	80				28
,	11/12/2001	open	125				28
	11/14/2001	open	85				28
	11/21/2001	open	95				28
	12/6/2001	open	115				28
	12/19/2001	open	110				25
	1/17/2002	open	130	·			25
	2/4/2002	open	105				28
	2/14/2002	closed			**		
	3/5/2002	closed					
	3/11/2002	closed				••	<del></del>
	3/11/2002		 130				21
		open					21
	4/2/2002	open	130				21
	4/5/2002	open	135	50			22
	4/19/2002	open	130	49			22
	5/6/2002	open	100	42			23.5
	5/21/2002	open	105	49			
	6/19/2002	open	90	42			24
	6/28/2002	ореп	95	47		••	25
	7/10/2002	open	97	41			25
	7/26/2002	closed					
	8/6/2002	open					21.5
	8/26/2002	open	95	47			21.5
	9/16/2002	open	105				21.5
	9/20/2002	open	85	40			21.5
	10/2/2002	open	75	22			21.5
	10/11/2002	open	110	32			21.5
	10/16/2002	open	125	103	5.0	1475	21.5
	10/31/2002	open	150	70			21.5
	11/6/2002	open	155	101			21.5
	11/22/2002	open	145-160	115			21.5
	12/5/2002	open	140	91			21.5
	12/20/2002	open	>150				19.5
	1/8/2003	open	>150	135			19.5
	1/13/2003	closed	>150	140	6.0	80	20
	1/22/2003	closed					
	1/24/2003	closed	<del></del>				
	1/30/2003		>150	150	••		21
	2/4/2003	open open	>150	140			21
	2/12/2003	•	140				21
	3/4/2003	open	150	110		 	21
	3/4/2003	open	>150	150			21
		open				 	21 -
	3/17/2003	open	>150	120			21 -
	3/25/2003	open	>150	130		<del></del>	21
	4/2/2003	open	>150	>150		<del>-</del>	21
	4/11/2003	open	>150	104			
	4/25/2003	open	>150		+-		21.5
	5/7/2003	open	>150	109		<del></del>	20
	5/14/2003	open	>150				20
	5/22/2003	open	135		**		20
	5/30/2003	open	>150	130	5.3	30	21.5
	6/3/2003	open	>150				21.5
	6/13/2003	open	130		**		21.5
	6/23/2003	open	120	64			21.5
	7/3/2003	open	135				21.5

Table 4. TPE Well Parameters - Former Exxon Service Station, 3055 35th Avenue, Oakland, California

Well ID	Date	Well Status (open/closed)	System/Stinger Vacuum (inches of H2O)	Well Annulus Vacuum (inches of H2O)	Flow Rate	Hydrocarbon Vapor Concentration (ppmv)	Stinger Depth (ft below TOC)
>MW-1	7/11/2003	open	125	(menes of 1120)		(pp.m.+)	22.5
>  41 44 - 1	8/7/2003	open	145	70			22.5
	8/15/2003		130	60			22.5
		open					24
	8/26/2003	open	>150	120		•-	24
	10/13/2003	open	>150	>150			24.5
	12/2/2003	open	140				
	12/15/2003	open	>150	150			24.5
	1/6/2004	open	>150	<del></del>		<del></del>	23.5
MW-2	11/6/2001	open	80				27
	11/12/2001	open	125				27
	11/14/2001	open	85				27
	11/21/2001	open	95				27
	12/6/2001	open	115				28
	12/19/2001	closed					••
	1/17/2002	closed				<del></del>	
	2/4/2002	open	105				28
	2/14/2002	closed	103	<del></del>		**	<u></u>
	3/5/2002	closed		<del></del>		**	
	3/11/2002	closed					
	3/25/2002	open	130				21
	4/2/2002	ореп	130	·			21
	4/5/2002	open	135	70			21
	4/19/2002		130	55		~-	22
	5/6/2002	open					
		closed		••			
	5/21/2002	closed					
	6/19/2002	closed				<del></del>	22
	6/28/2002	open	95	52	<del></del>		22
	7/10/2002	open	97	51		<del></del>	
	7/26/2002	open	92	19			25.5
	8/6/2002	open					21.5
	8/26/2002	open	95	35			21.5
	9/16/2002	open	105				21.5
	9/20/2002	open	85	30		••	21/.5
	10/2/2002	open	75	72			21.5
	10/11/2002	open	110	60			21.5
	10/16/2002	open	125	108	8.5	2030	21.5
	10/31/2002	open	150	65		<del></del>	21.5
	11/6/2002	open	155	95			21.5
	11/22/2002	closed					
	12/5/2002	closed					
	12/20/2002	closed					
	1/8/2003	closed					**
	1/13/2003	open	>150	130	5.0	385	19
	1/22/2003	open	>150				19
	1/24/2003	open	>150	140		••	20
	1/30/2003	open	>150	120			20
	2/4/2003	open	>150	75			21
	2/12/2003	open	140				21
	3/4/2003	open	150	93			21
	3/13/2003	open	>150	140			20
	3/17/2003	open	>150				20
	3/25/2003	open	>150	97			19
	4/2/2003	open	>150	130			19
	4/11/2003	open	>150	75			19
	4/25/2003	υρειι	>150	50			20

Table 4. TPE Well Parameters - Former Exxon Service Station, 3055 35th Avenue, Oakland, California

Well ID	Date	Well Status (open/closed)	System/Stinger Vacuum (inches of H2O)	Well Annulus Vacuum (inches of H2O)	Flow Rate	Hydrocarbon Vapor Concentration (ppmv)	Stinger Depth (ft below TOC)
->MW-2	5/7/2003	open	>150	90			19
- 111111 2	5/14/2003	open	>150	**			20
	5/22/2003	open	135				20
	5/30/2003	open	>150	87	5.4	29	20.5
	6/3/2003	open	>150		J. T		20.5
	6/13/2003	•	130	 			20.5
		open	120	62			20.5
	6/23/2003	open					20.3
	7/3/2003	open	135				21.5
	7/11/2003	open	125	, <del></del>			21.5
	8/7/2004	open	145	55			21.5
	8/15/2003	open	130	68		**	
	8/26/2003	open	>150	115	••	**	23
	9/19/2003	open	130				23.5
	10/13/2003	open	>150	>150			23.5
	12/2/2003	open	140				24
	12/15/2003	open	>150	120			24
	1/6/2004	open	>150				23
MW-3	11/6/2001	open	80				25
	11/12/2001	open	125				25
	11/14/2001	open	85			**	25
	11/21/2001	open	95	<b></b>		<del></del>	25
	12/6/2001	open	115				25
	12/19/2001	open	110				25
	1/17/2002	open	130				25
	2/4/2002	open	105				25
	2/14/2002	closed			**		
	3/5/2002	closed					
	3/11/2002	closed					**
	3/25/2002	closed					
	4/2/2002	closed	==				
	4/5/2002	closed			••		
	4/19/2002	closed					
	5/6/2002	open	100	28			20
	5/21/2002	open	105	7		~~	22
	6/19/2002	· · · · · · · · · · · · · · · · · · ·	90	10		<b></b>	24
		open	95	. 10			24
	6/28/2002 7/10/2002	open	93 97				23
		open		6			23
	7/26/2002	open	92	7		<del></del>	23 19
	8/6/2002	open				<del></del>	
	8/26/2002	open	95	44		<del></del>	19
	9/16/2002	open	105			***	19
	9/20/2002	open	85	50			19
	10/2/2002	open	75	29	••		19
	10/11/2002	open	110	25			19
	10/16/2002	open	125	115	17	1286	19
	10/31/2002	open	150	70	-		19
	11/6/2002	open	155	89			19
	11/22/2002	open	145-160	92	•-		19
	12/5/2002	open	140	86		<del>**</del>	19.5
	12/20/2002	open	>150				18
	1/8/2003	open	>150	145			18
	1/13/2003	open	>150	150	5.6	700	17
	1/22/2003	open	>150				17
	1/24/2003	open	>150	>150		w.	17
	1/30/2003	open	>150	>150			17

Table 4. TPE Well Parameters - Former Exxon Service Station, 3055 35th Avenue, Oakland, California

						Hydrocarbon		
			System/Stinger	Well Annulus	Vapor			
		Well Status	Vacuum	Vacuum	Flow Rate	Concentration	Stinger Depth	
Well ID	Date	(open/closed)	(inches of H2O)	(inches of H2O)	(cfm)	(ppmv)	(ft below TOC)	
->MW-3	2/4/2003	open	>150	140			18	
	2/12/2003	open	140				18	
	3/4/2003	open	150	120			18	
	3/13/2003	open	>150	>150			18	
	3/17/2003	open	>150				18	
	3/25/2003	open	>150	145			18	
	4/2/2003	open	>150	>150			18	
	4/11/2003	open	>150	120			18	
	4/25/2003	open	>150	95			19.5	
	5/7/2003	open	>150	110			19.5	
	5/14/2003	open	>150				19.5	
	5/22/2003	open	135				19.5	
	5/30/2003	open	>150	105	10	88	18.3	
	6/3/2003	open	>150	-			18.3	
	6/13/2003	open	130	Broke Words			18.3	
	6/23/2003	· ·	120	65		 	18.3	
	7/3/2003	open					19	
	8/7/2003 8/7/2003	open	135	 6.1			19	
		open	145	64			19 19	
	8/15/2003	open	130	65			22	
	8/26/2003	open	>150	105				
	10/13/2003	closed	>150	>150			22	
	12/2/2003	open	140				22	
	12/15/2003	open	>150	140	•-		22	
	1/6/2004	open		•••			21	
MW-4	11/6/2001	open	80			•-	25	
	11/12/2001	open	125				25	
	11/14/2001	open	85				25	
	11/21/2001	•	95	**			25	
	12/6/2001	open open	115				25 25	
	12/19/2001	open	110				25	
	1/17/2002		130	<u></u>			25	
	2/4/2002	open	105				25	
	2/14/2002	open					2.5	
		closed					<del></del>	
	3/5/2002	closed						
	3/11/2002	closed						
	3/25/2002	closed	<del></del>	<del></del>				
	4/2/2002	closed				<del></del>		
	4/5/2002	closed		**				
	4/19/2002	closed						
	5/6/2002	open	100	26		b-d	20	
	5/21/2002	open	105	31			21	
	6/19/2002	open	90	26			21	
	6/28/2002	closed						
	7/10/2002	closed			**			
	7/26/2002	open	92	14			24.5	
	8/6/2002	open	==				19	
	8/26/2002	open	95	39			19	
	9/16/2002	ореп	105				19	
	9/20/2002	open	85	35			19	
	10/2/2002	open	75	34			19	
	10/11/2002	open	110	31			19	
	10/16/2002	open	125	100	4.7	1780	19	
	10/31/2002	open	150	60			19	
	11/6/2002	open	155	82			19	
	11/22/2002	open	145-160	82		••	19	

Table 4. TPE Well Parameters - Former Exxon Service Station, 3055 35th Avenue, Oakland, California

		Wall Caram	System/Stinger	Well Annulus	Flow D-4	Hydrocarbon Vapor Concentration	Stinger Depth
M D TE	D.4.	Well Status	Vacuum	Vacuum	Flow Rate		(ft below TOC)
Well ID >MW-4	Date 12/5/2002	(open/closed)	(inches of H2O)	(inches of H2O)	(cfm)	(ppmv) 	19.5
>MW-4		open					18
	12/20/2002	ореп	>150				18
	1/8/2003	open	>150	130			17
	1/13/2003	closed	>150	130	6.5	150	
	1/22/2003	closed	>150			M-M	
	1/24/2003	open	>150	130			19
	1/30/2003	open	>150	135			19
	2/4/2003	open	>150	120			19
	2/12/2003	open	140	<del></del>			19
	3/4/2003	open	150	104			19
	3/13/2003	open	>150	. 150			19
	3/17/2003	open	>150				19
	3/25/2003	open	>150	110			19
	4/2/2003	open	>150	150			19
	4/11/2003	open	>150	80	~*		19
	4/25/2003	open	>150	55			19
	5/7/2003	open	>150	95			19
	5/14/2003	open	>150				19
	5/22/2003	open	135				18
	5/30/2003	open	>150	110	4.6	410	18.5
	6/3/2003	open	>150				18.5
	6/13/2003	open	130				18.5
	6/23/2003	open	120	45			18.5
	7/3/2003	open	135				18.5
	7/11/2003	open	125		**	**	19.5
	8/7/2003	open	145	65			19.5
	8/15/2003	open	130	70			19.5
	8/26/2003	open	>150	100			22
	9/19/2003		130			ar.	22
		open	>150	>150			22
	10/13/2003	open	140			 	19.5
	12/2/2003	open					21
	12/15/2003	open	>150	130			20
	1/6/2004	open	>150	•-			20
RW-5	5/24/2000		80				11.64
	10/6/2000	**	100				
	11/29/2000	open	>100			4320	
	3/29/2001	open	54			650	
	4/14/2001	open	100				
	4/26/2001	open	85				15
	5/3/2001		80				15
	5/23/2001	open	10			 	15
	6/4/2001	open	50				15
		open				<del></del>	15
	6/21/2001	open	65 55			<del></del>	15
	7/2/2001	open	55				15 16
	7/16/2001	open	45 25		••		
	8/2/2001	open	35				==
	8/10/2001	open	20				
	8/15/2001	open	20				
	8/27/2001	ореп	65				~*
	9/7/2001	closed					
	9/14/2001	closed					**
	10/3/2001	closed					
	10/8/2001	closed					
	10/22/2001	closed					
	10/29/2001	closed					

Table 4. TPE Well Parameters - Former Exxon Service Station, 3055 35th Avenue, Oakland, California

			System/Stinger	Well Annulus		Hydrocarbon Vapor		
		Well Status	Vacuum	Vacuum	Flow Rate	Concentration	Stinger Depth	
Well ID	Date	(open/closed)	(inches of H2O)	(inches of H2O)	(cfm)	(ppmv)	(ft below TOC)	
>RW-5	11/6/2001	closed						
	11/12/2001	closed						
	11/14/2001	closed						
	11/21/2001	closed		**	**			
	12/6/2001	closed						
	12/19/2001	open	110			**	20	
	1/17/2002	open	130				20	
	2/4/2002	closed		F+				
	2/14/2002	closed						
	3/5/2002	closed						
	3/11/2002	closed				<b></b>		
	3/25/2002	open	130				16	
	4/2/2002	open	130				16	
	4/5/2002	open	135	90			16	
	4/19/2002	open	130	72			18	
	5/6/2002	open	100	43			18	
	5/21/2002	open	105	55			19	
	6/19/2002	open	90	33			19.5	
	6/28/2002	open	95	48			20	
	7/10/2002	closed					P-1	
	7/26/2002	closed				P.F		
	8/6/2002	open	P.T.				19	
	8/26/2002	open	95	27			19	
	9/16/2002	open	105				19	
	9/20/2002	open	85	22			19	
	10/2/2002	open	75	. 32	••		19	
	10/11/2002	open	110	28		<u></u>	19	
	10/16/2002	open	125	38	62	240	19	
	10/31/2002	open	150	44		<b></b>	19	
	11/6/2002	open	155	50			19	
	11/22/2002	open	145-160	26			20	
	12/5/2002	ореп	140	26			20	
	12/20/2002	open	>150				18	
	1/8/2003	open	>150	130		T-	18	
	1/13/2003	open	>150	115	5.5	1750	17	
	1/22/2003	open	>150				17	
	1/24/2003	open	>150	140			17	
	1/30/2003	open	>150	140			17	
	2/4/2003	open	>150	128			18	
	2/12/2003	ореп	140				18	
	3/4/2003	open	150	105			18	
	3/13/2003	open	>150	145			18	
	3/17/2003	open	>150				18	
	3/25/2003	open	>150	90			18	
	4/2/2003	open	>150	125			18	
	4/11/2003	open	>150	102		**	18	
	4/25/2003	open	>150	85		<b>**</b>	19	
	5/7/2003	open	>150	90			19	
	5/14/2003	open	>150				16	
	5/22/2003	open	135				16	
	5/30/2003	open	>150	93	5.7	102	16.8	
	6/3/2003	open	>150				16.8	
	6/13/2003	open	130	·			16.8	
	6/23/2003	open	120	62			16.8	
	7/3/2003	open	135				17	
	7/11/2003	open	125				18	

Table 4. TPE Well Parameters - Former Exxon Service Station, 3055 35th Avenue, Oakland, California

		Well Status	System/Stinger Vacuum	Well Annulus Vacuum	Flow Rate	Hydrocarbon Vapor Concentration	Stinger Depth
Well 1D	Date	(open/closed)	(inches of H2O)	(inches of H2O)	(cfm)	(ppmv)	(ft below TOC)
>RW-5	8/7/2004	open	145	61			18
	8/15/2003	open	130	76			18
	8/26/2003	open	>150	105		with	22
	10/2/2003	closed					
	10/13/2003	open	>150				22
	12/15/2003	open	>150	140			22
	1/6/2004	open	>150				21
RW-6	5/24/2000		80				11.78
	10/6/2000						
	11/29/2000	open	>100			260	••
	3/29/2001	open	54			2050	
	4/14/2001	open	100				20
	4/26/2001	closed					
	5/3/2001	closed					
	5/23/2001	closed	 		••	<b></b>	
	6/4/2001	open	50				15
	6/21/2001	open open	65				15
	7/2/2001	•	55	<del></del>	 		15
	7/16/2001	open	33 45				16
	8/2/2001	open	45 35				
		open					<del></del>
	8/10/2001	open	20	**			<del></del>
	8/15/2001	open	20			**	
	8/27/2001	open	65				
	9/7/2001	closed					
	9/14/2001	closed	<del></del>				
	10/3/2001	closed					
	10/8/2001	closed	**			<del></del>	
	10/22/2001	closed					
	10/29/2001	closed					
	11/6/2001	closed				**	
	11/12/2001	closed			**		**
	11/14/2001	closed					
	11/21/2001	closed					
	12/6/2001	closed					
	12/19/2001	closed	+-				
	1/17/2002	closed					
	2/4/2002	closed					
	2/14/2002	closed					
	3/5/2002	closed					
	3/11/2002	apen	130				16
	3/25/2002	open	130				16
	4/2/2002	open	12				16
	4/5/2002	open	135	85			16
	4/19/2002	open	130	75		••	18
	5/6/2002	closed				<b></b>	
	5/21/2002	closed					
	6/19/2002	closed					
	6/28/2002	closed				<u></u>	
	7/10/2002	open	97	54		<u></u>	20
	7/26/2002	open	92	39			20
	8/6/2002						19
	8/26/2002	open	 95	34			19
		open					19
	9/16/2002	open	105	 45	***		19
	9/20/2002	open	85 75	45 20	~-		19
	10/2/2002	open	75	30			19

Table 4. TPE Well Parameters - Former Exxon Service Station, 3055 35th Avenue, Oakland, California

Well ID	Date	Well Status (open/closed)	System/Stinger Vacuum (inches of H2O)	Well Annulus Vacuum (inches of H2O)	Flow Rate (cfm)	Hydrocarbon Vapor Concentration (ppmv)	Stinger Depth (ft below TOC)
>RW-6	10/11/2002	open	110	(miches or (120)		(рршт)	19
	10/16/2002	open	125	54	34	644	19
	10/31/2002	closed					
	11/6/2002	closed	~~				
	11/22/2002	open	145-160	70			19.5
	12/5/2002	open	140	69			19.5
	12/20/2002	open	>150			 ••	18
	1/8/2003		>150	135		<del></del>	18
	1/13/2003	open	>150	110	4.5	1550	17
	1/22/2003	open	>150				17
	1/24/2003	open	>150	150			17
		open		140			17
	1/30/2003	open	>150				
	2/4/2003	open	>150	125		••	18
	2/12/2003	open	140				18
	3/4/2003	open	150	108			18
	3/13/2003	open	>150	150			18
	3/17/2003	open	>150				18
	3/25/2003	open	>150	110			18
	4/2/2003	open	>150	145			18
	4/11/2003	open	>150	99			18
	4/25/2003	open	>150	85			19
	5/7/2003	open	>150	100			19
	5/14/2003	open	>150		•-	**	19
	5/22/2003	open	135				19
	5/30/2003	open	>150	75	5.2	289	17
	6/3/2003	open	>150				17
	6/13/2003	open	130			·-	17
	6/23/2003	open	120	59		y-e	17
	7/3/2003	open	135				17
	7/11/2003	open	125				18
	8/7/2003	open	145	61			18
	8/15/2003	open	130	66			18
	8/26/2003	open	>150	120			22
	9/19/2003	open	130				21
	10/7/2003	closed	120			••	_,
	12/15/2003	open	>150	150			21
	1/6/2004	open	>150			<del></del>	20
	17072004	орон	- 100		-		20
RW-7	5/24/2000		80				12.5
AL 17 = /	10/6/2000						
	11/29/2000	open	>100			0	
	3/29/2000	open	54			52	
	4/14/2001	· · · · · · · · · · · · · · · · · · ·	100				20
		open					15
	4/26/2001	open	85				15
	5/3/2001	open	80	<del></del>			
	5/23/2001	open	10				15
	6/4/2001	open	50				15
	6/21/2001	open	65				15
	7/2/2001	open	55			**	15
	7/16/2001	open	45		T-1		16
	8/2/2001	open	35			••	
	8/10/2001	open	20				
	8/15/2001	ореп	20				
	8/27/2001	open	65	. <del></del>			
	9/7/2001	closed	-4	·			
	9/14/2001	closed					

Table 4. TPE Well Parameters - Former Exxon Service Station, 3055 35th Avenue, Oakland, California

		Well Status	System/Stinger Vacuum	Well Annulus Vacuum	Flow Rate	Hydrocarbon Vapor Concentration	Stinger Depth	
Well ID	Date	(open/closed)	(inches of H2O)	(inches of H2O)	(cfm)	(ppmv)	(ft below TOC)	
>RW-7	10/3/2001	closed	(menes 01 1120)			(P.P)	**	
	10/8/2001	closed						
	10/22/2001	closed	go oper	***		**		
	10/29/2001	closed						
	11/6/2001	closed						
	11/12/2001	closed		<del></del>				
	11/14/2001	closed					**	
	11/21/2001	closed			**			
	12/6/2001	closed					<del></del>	
	12/19/2001	closed						
	1/17/2002	closed	Broad.					
	2/4/2002	closed				••		
	2/14/2002	closed						
	3/5/2002	closed						
	3/11/2002	closed						
	3/25/2002	closed						
	4/2/2002	closed					==	
	4/5/2002	closed						
	4/19/2002	closed						
	5/6/2002	closed						
	5/21/2002	closed						
	6/19/2002	closed				**		
	6/28/2002	closed						
	7/10/2002	closed						
	7/26/2002	closed						
	8/6/2002	closed	<del></del>					
	8/26/2002	closed						
	9/16/2002	closed						
	9/20/2002	closed						
	10/2/2002	closed	*-					
	10/11/2002	closed						
	10/16/2002	closed	125	19	35	36	19	
	10/31/2002	closed						
	11/6/2002	closed						
	11/22/2002	closed				**		
	12/5/2002	closed						
	12/20/2002	closed	**			<del></del>		
	1/8/2003	closed						
	1/13/2003	closed	>150	135	4.5	25	17	
	1/22/2003	closed						
	1/24/2003	closed						
	1/30/2003	closed				••		
	2/4/2003	closed						
	2/12/2003	closed						
	3/4/2003	closed						
	3/13/2003	closed	<b>*</b> -					
	3/17/2003	closed						
	3/25/2003	closed						
	4/2/2003	closed	•-					
	4/11/2003	closed	**	**				
	4/25/2003	closed						
	5/7/2003	closed						
	5/14/2003	closed						
	5/22/2003	closed					<del></del>	
	5/30/2003	closed						
	6/3/2003	closed				<del></del>		

Table 4. TPE Well Parameters - Former Exxon Service Station, 3055 35th Avenue, Oakland, California

Well ID	Date	Well Status (open/closed)	System/Stinger Vacuum (inches of H2O)	Well Annulus Vacuum (inches of H2O)	Flow Rate (cfm)	Hydrocarbon Vapor Concentration (ppmv)	Stinger Depth (ft below TOC
>RW-7	6/13/2003	closed					
	6/23/2003	closed					
	7/3/2003	closed		·			
	1/6/2004	closed					
RW-8	5/24/2000					<b></b>	
1011 0	10/6/2000						
	11/29/2000	open	>100		<b>-</b> -	44	
	3/29/2001	open	54	-		60	*-
	4/14/2001	open	100			<del></del>	20
	4/26/2001	open	85			***	15
	5/3/2001	open	80				15
	5/23/2001	ореп	10				15
	6/4/2001	·-	50				15
	6/21/2001	open				 	
	7/2/2001	ореп	65 55				 
	7/16/2001	open	33 45				
		open				<del></del>	
	8/2/2001	open	35 20			<del></del>	
	8/10/2001	open	20				
	8/15/2001	open	20				
	8/27/2001	open	65				
	9/7/2001	closed					
	9/14/2001	closed					
	10/3/2001	closed					
	10/8/2001	closed		-			
	10/22/2001	closed			**	~-	
	10/29/2001	closed					
	11/6/2001	closed					
	11/12/2001	closed					
	11/14/2001	closed				••	
	11/21/2001	closed					
	12/6/2001	closed					
	12/19/2001	closed			-		
	1/17/2002	closed	**				
	2/4/2002	closed					
	2/14/2002	closed					
	3/5/2002	closed					
	3/11/2002	closed					18
	3/25/2002	closed	**				
	4/2/2002	closed					
	4/5/2002	closed				••	
	4/19/2002	closed		**			
	5/6/2002	closed					
	5/21/2002	closed					••
	6/19/2002	closed					
	6/28/2002	closed	N-4*			•-	·
	7/10/2002	closed	<del></del>				
	7/26/2002	closed	 	<del></del>	<del></del>		
	8/6/2002	closed	broad .				
	8/26/2002	closed				 	
	8/26/2002 9/16/2002						
	9/10/2002	closed closed					
					••		
	10/2/2002	closed	*-				
	10/11/2002	closed	125	12	20	15	
	10/16/2002	open	125	33	29	15	19

Table 4. TPE Well Parameters - Former Exxon Service Station, 3055 35th Avenue, Oakland, California

Well 1D	Date	Well Status (open/closed)	System/Stinger Vacuum (inches of H2O)	Well Annulus Vacuum (inches of H2O)	Flow Rate (cfm)	Hydrocarbon Vapor Concentration (ppmv)	Stinger Depth (ft below TOC)
>RW-8	11/6/2002	closed					
	11/22/2002	closed				40	·
	12/5/2002	closed			-+		
	12/20/2002	closed					**
	1/8/2003	closed					
	1/13/2003	closed	>150	140	4.0	5	18
	1/22/2003	closed		F-#			
	1/24/2003	closed					
	1/30/2003	closed	<del></del>				
	2/4/2003	closed					<del></del>
	2/12/2003	closed					
	3/4/2003	closed					
	3/13/2003	closed					
	3/17/2003	closed					
	3/25/2003	closed		•-			
	4/2/2003	closed					
	4/11/2003	closed	 	· <u></u>			
		closed					
	4/25/2003		<del></del>				
	5/7/2003	closed			~-		<del></del>
	5/14/2003	closed					
	5/22/2003	closed			 		10.0
	5/30/2003	closed	>150	>150	6.7	5	18.8
	6/3/2003	closed					
	6/13/2003	closed			**		
	6/23/2003	closed					
	7/3/2003	closed		4-4			
	1/6/2004	closed			**		
RW-9	5/24/2000						12.5
	10/6/2000		**				
	11/29/2000		>100			43	
	3/29/2001	open	54			90	
	4/14/2001	open	100				
	4/26/2001	open	85		**		
	5/3/2001	ореп	80			••	
	5/23/2001	open	10				<u></u>
	6/4/2001	open	50		~*		
	6/21/2001	· ·	65				
	7/2/2001	open	55			 	
		open	33 45			<del></del>	
	7/16/2001 8/2/2001	open	45 35				
		open					
	8/10/2001	open	20				
	8/15/2001	open	20				
	8/27/2001	open	65	•			
	9/7/2001	closed	<del></del>				
	9/14/2001	closed					
	10/3/2001	closed					
	10/8/2001	closed					
	10/22/2001	closed					
	10/29/2001	closed					
	11/6/2001	closed					
	11/12/2001	closed				•-	
	11/14/2001	closed					
	11/21/2001	closed					
	12/6/2001	closed					
	12/19/2001	closed					

Table 4. TPE Well Parameters - Former Exxon Service Station, 3055 35th Avenue, Oakland, California

Vell ID	Date	Well Status (open/closed)	System/Stinger Vacuum (inches of H2O)	Well Annulus Vacuum (inches of H2O)	Flow Rate (cfm)	Hydrocarbon Vapor Concentration (ppmv)	Stinger Depth (ft below TOC)
>RW-9	1/17/2002	closed		(			**
	2/4/2002	closed					
	2/14/2002	open	125				20
	3/5/2002	open	115				20
	3/11/2002	closed		·			
	3/25/2002	closed					
	4/2/2002	closed					
	4/5/2002	closed					
	4/19/2002	closed				4+	
	5/6/2002	open	100	38			20
	5/21/2002	open	105	56			20
	6/19/2002	open	90	47	•-		20
	6/28/2002	closed					
	7/10/2002	closed					
	7/26/2002	closed					
			4-				19
	8/6/2002	open					19
	8/26/2002	open	95	15			
	9/16/2002	closed	<del></del>			·	 
	9/20/2002	closed				<del>4-</del>	
	10/2/2002	closed					
	10/11/2002	closed					
	10/16/2002	closed	125	12	56	12	19
	10/31/2002	closed			••		
	11/6/2002	closed					
	11/22/2002	closed					
	12/5/2002	closed	N-M				
	12/20/2002	closed					
	1/8/2003	open	>150	120		••	16
	1/13/2003	open	>150	150	4.0	225	17
	1/22/2003	open	>150				17
	1/24/2003	open	>150	. >150			17
	1/30/2003	open	>150	140			17
	2/4/2003	open	>150	135	***	**	<b>L</b> 7
	2/12/2003	open	140				17
	3/4/2003	open	150	105			17
	3/13/2003	open	>150	>150	<b></b>		18
	3/17/2003	open	>150				18
	3/25/2003	open	>150	120			18
	4/2/2003	open	>150	>150			18
	4/11/2003	open	>150	105		**	18
	4/25/2003	open	>150	85			18
	5/7/2003	open	>150	110			18
	5/14/2003	open	>150			**	18
	5/22/2003	open	135				18
	5/30/2003	open	>150	125	5.3	40	18.5
	6/3/2003	open	>150				18.5
	6/13/2003	open	130				18.5
	6/23/2003	ореп	120	24			18.5
	7/3/2003	open	135				18.5
	7/11/2003		125				19.5
	7/11/2003	open	125				19.3
		closed				<del></del>	20
	12/23/2003 1/6/2004	open open	>150 >150			 	20 19

Table 4. TPE Well Parameters - Former Exxon Service Station, 3055 35th Avenue, Oakland, California

Well ID	Date	Well Status (open/closed)	System/Stinger Vacuum (inches of H2O)	Well Annulus Vacuum (inches of H2O)	Flow Rate (cfm)	Hydrocarbon Vapor Concentration (ppmv)	Stinger Depth (ft below TOC)
RW-10	5/24/2000						
	10/6/2000						
	11/29/2000		>100			>10,000	
	3/29/2001	open	54		••	850	
	4/14/2001	open	100				
	4/26/2001	open	85				
	5/3/2001	open	80	**			
	5/23/2001	open	10				
	6/4/2001	open	50				
	6/21/2001	open	65				
	7/2/2001	open	55				
	7/16/2001	open	45				
	8/2/2001	open	35				
	8/10/2001	open	20				
	8/15/2001	open	20				
	8/27/2001	open	65				
	9/7/2001	closed					
	9/14/2001	closed			<del></del>		
	10/3/2001	closed		·		**	
	10/8/2001	closed				·	
	10/22/2001	closed					
	10/29/2001	closed					
	11/6/2001	closed					
	11/12/2001	closed					••
	11/14/2001	closed					
	11/21/2001	closed	 				
	12/6/2001	closed	 	<del></del>			
	12/0/2001	closed	 				
	1/17/2002	closed					
	2/4/2002	closed					
	2/14/2002	open	125		<u></u>		20
	3/5/2002	•	115				20
	3/11/2002	open			**		20
	3/11/2002	open closed					
	4/2/2002	closed		<u></u>			
	4/5/2002						
	4/19/2002	closed					
		closed	100			<del></del> 	20
	5/6/2002 5/21/2002	open	100 105	31 70			20
	5/21/2002	open	90	70 56		 	20
	6/19/2002 6/28/2002	open closed					
	7/10/2002	closed closed					
	7/26/2002						19
	8/6/2002	open	*-			<del></del>	
	8/26/2002	closed		4 <b>~</b>		<del></del>	
	9/16/2002	closed		·			**
	9/20/2002	closed	<del></del>	4-			
	10/2/2002	closed				~*	
	10/11/2002	closed	105	20	 40	 10	
	10/16/2002	closed	125	38	48	18	19
	10/31/2002	closed					
	11/6/2002	closed					
	11/22/2002	closed					**
	12/5/2002 12/20/2002	closed				**	
		closed					

Table 4. TPE Well Parameters - Former Exxon Service Station, 3055 35th Avenue, Oakland, California

			System/Stinger	Well Annulus		Hydrocarbon Vapor	
		Well Status	Vacuum	Vacuum	Flow Rate	Concentration	Stinger Depth
Well ID	Date	(open/closed)	(inches of H2O)	(inches of H2O)	(cfm)	(ppmv)	(ft below TOC)
>RW-10	1/13/2003	closed	>150	135	3.2	90	17
	1/22/2003	closed					
	1/24/2003	open	>150	>150	<b></b>		16
	1/30/2003	open	>150	>150			16
	2/4/2003	open	>150	>150		***	16
	2/12/2003	open	140				16
	3/4/2003	open	150	139			16
	3/13/2003	open	>150	>150			16
	3/17/2003	open	>150				16
	3/25/2003	open	>150	>150	••		16
	4/2/2003		>150	>150			16
		open					16
	4/11/2003	open	>150	124			16
	4/25/2003	open	>150	85			
	5/7/2003	open	>150	125			16
	5/14/2003	open	>150				16
	5/22/2003	open	135				16
	5/30/2003	open	>150	45	54.5	5	16
	6/3/2003	closed					
	6/13/2003	closed					
	6/23/2003	closed					
	7/3/2003	closed					
	1/6/2004	closed					
RW-11	5/24/2000		80		***		11.65
	10/6/2000		4-				
	11/29/2000		>100	·		2280	
	3/29/2001	open	54			784	
	4/14/2001	open	100			••	
	4/26/2001	open	85				15
	5/3/2001	open	80		<del>-</del> -		15
	5/23/2001	open	10				15
	6/4/2001	open	50	••	_		20
	6/21/2001	open	65				15
	7/2/2001	open	55	·		-	15
	7/16/2001	open	45				16
	8/2/2001	open	35	++			
	8/10/2001	open	20				<u></u>
	8/15/2001	open	20				
	8/27/2001	open	65				
	9/7/2001	closed			-		
	9/14/2001	closed					
	10/3/2001	closed	**				
	10/8/2001	closed			 		
	10/8/2001						
		closed	<del></del>				<del></del>
	10/29/2001	closed	••				<del></del>
	11/6/2001	closed				**	
	11/12/2001	closed				+-	
	11/14/2001	closed		••		-	
	11/21/2001	closed					
	12/6/2001	closed					
	12/19/2001	closed					
	1/17/2002	closed					
	2/4/2002	closed					
	2/14/2002	closed					
	3/5/2002	closed	==				**
	3/11/2002	open					18

Table 4. TPE Well Parameters - Former Exxon Service Station, 3055 35th Avenue, Oakland, California

Well ID	Date	Well Status (open/closed)	System/Stinger Vacuum (inches of H2O)	Well Annulus Vacuum (inches of H2O)	Flow Rate	Hydrocarbon Vapor Concentration (ppmv)	Stinger Depth (ft below TQC)
>RW-11	3/25/2002	closed	(				
	4/2/2002	closed	w.r.				
	4/5/2002	closed				**	
	4/19/2002	closed					
	5/6/2002	closed					
	5/21/2002	closed					
	6/19/2002	closed					
	6/28/2002	closed					••
	7/10/2002	closed					
	7/26/2002	closed					
	8/6/2002	closed					••
	8/26/2002	closed					
	9/16/2002	closed					
	9/20/2002	closed					
	10/2/2002	closed				••	
	10/11/2002	closed	<del></del>				
	10/16/2002	closed	125	86	24	255	19
	10/31/2002	open	150	62			19
	11/6/2002	open	155	45			19
	11/22/2002	open	145-160	77		**	19.5
	12/5/2002	open	140	65			19.5
	12/20/2002	open	>150	**			18
	1/8/2003	open	>150	110			18
	1/13/2003	open	>150	125	7.0	180	16
	1/22/2003	open	>150				17
	1/24/2003	open	>150	155			17
	1/30/2003	open	>150	150			17
	2/4/2003	open	>150	142			17
	2/12/2003	open	140	174			17
	3/4/2003	open	150	106	<u></u>		17
	3/13/2003	•	>150	155			17
	3/17/2003	open	>150				17
	3/25/2003	open	>150	115		 	17
	4/2/2003	open	>150	148	 		17
	4/11/2003	ореп	>150	97	 		17
	4/11/2003	open	>150	90	 		20
		open		90 140			20
	5/7/2003 5/14/2003	open	>150				20
	5/14/2003	open	>150			<u></u>	20
	5/22/2003	open	135 >150	82	 6.5	26	20 17
	5/30/2003	open			0.5		17
	6/3/2003	open	>150				17
	6/13/2003	open	130	 55			17
	6/23/2003	open	120	55			17
	7/3/2003	open	135				17
	7/11/2003	open	145			••	
	8/7/2003	open	145	44			18
	8/15/2004	closed					

Table 4. TPE Well Parameters - Former Exxon Service Station, 3055 35th Avenue, Oakland, California

Well ID	Date	Well Status (open/closed)	System/Stinger Vacuum (inches of H2O)	Well Annulus Vacuum (inches of H2O)	Flow Rate (cfm)	Hydrocarbon Vapor Concentration (ppmv)	Stinger Depth (ft below TOC)
RW-12	5/24/2000					(ppart)	
	10/6/2000		77.6				
	11/29/2000	open	>100			24	
	3/29/2000	open	54			72	
	4/14/2001	ореп	100				
	4/26/2001	open	85				15
	5/3/2001	open	80	••			15
	5/23/2001	open	10				15
	6/4/2001	open	50	·			15
	6/21/2001	open	65				15
	7/2/2001	open	55				15
	7/16/2001	open	45			46	16
	8/2/2001	open	35				
	8/10/2001	-	20				••
	8/15/2001	open open	20				
	8/27/2001	open	65				
	9/7/2001	closed					 
	9/14/2001	closed					
	10/3/2001	closed		<del></del>			
	10/8/2001	closed					
	10/8/2001	closed					
	10/22/2001	closed					
	11/6/2001					 	
	11/0/2001	closed closed					
					-		
	11/14/2001	closed				 	
	11/21/2001	closed					
	12/6/2001	closed					**
	12/19/2001	closed					
	1/17/2002	closed					
	2/4/2002	closed					
	2/14/2002	closed					-
	3/5/2002	closed					
	3/11/2002	closed					
	3/25/2002	open	130				16
	4/2/2002	open	130				16
	4/5/2002	open	135	97			16
	4/19/2002	open	130	75		<del></del>	18
	5/6/2002	closed				<del></del>	
	5/21/2002	closed					
	6/19/2002	closed					20
	6/28/2002	open	95	16			20
	7/10/2002	open	97	5		••	20
	7/26/2002	open	92	5		••	20
	8/6/2002	open					19
	8/26/2002	open	95	6			19
	9/16/2002	open	105				19
	9/20/2002	open	85	6			19
	10/2/2002	open	75	4			19
	10/11/2002	open	110	4			19
	10/16/2002	closed	125	1	20	75	19
	10/31/2002	closed					
	11/6/2002	closed	**		••		
	11/22/2002	closed					
	12/5/2002	closed					
	12/20/2002	closed					
	1/8/2003	closed		••			

Table 4. TPE Well Parameters - Former Exxon Service Station, 3055 35th Avenue, Oakland, California

Well ID Date >RW-12 1/13/2003 1/22/2003 1/24/2003 2/4/2003 2/4/2003 3/4/2003 3/13/2003 3/17/2003 3/17/2003 4/2/2003 4/11/2003 4/2/2003 5/7/2003 5/14/2003 5/30/2003 6/3/2003	Well Status (open/closed)  closed closed open open open open open open open open	Vacuum (inches of H2O)  >150  >150 >150 140 150 >150 >150 >150 >150 >150 >150 >150	Vacuum (inches of H2O)  115 145 135 115 >150 150 >150 74 20 115	Flow Rate (cfm)  4.5	Concentration (ppmv)  20	Stinger Depth (ft below TOC)  17 17 17 17 17 17 17 17 17 17 17 17 17
>RW-12 1/13/2003 1/22/2003 1/24/2003 2/4/2003 2/4/2003 2/12/2003 3/4/2003 3/13/2003 3/17/2003 3/25/2003 4/2/2003 4/2/2003 4/2/2003 5/7/2003 5/14/2003 5/22/2003 5/30/2003	closed closed closed open open open open open open open open	>150 >150 >150 >150 140 150 >150 >150 >150 >150 >150 >150 >150	115   145 135  115 >150  150 >150 74 20		20      	17   17 17 17 17 17 17 17
1/24/2003 1/30/2003 2/4/2003 2/12/2003 3/4/2003 3/13/2003 3/17/2003 3/25/2003 4/2/2003 4/11/2003 4/25/2003 5/7/2003 5/14/2003 5/22/2003 5/30/2003	closed open open open open open open open open	>150 >150 140 150 >150 >150 >150 >150 >150 >150 >150	145 135  115 >150  150 >150 74		     	 17 17 17 17 17 17 17
1/30/2003 2/4/2003 2/12/2003 3/4/2003 3/13/2003 3/17/2003 3/25/2003 4/2/2003 4/11/2003 4/25/2003 5/7/2003 5/14/2003 5/22/2003 5/30/2003	open open open open open open open open	>150 >150 140 150 >150 >150 >150 >150 >150 >150 >150	145 135  115 >150  150 >150 74 20		    	17 17 17 17 17 17 17 17
2/4/2003 2/12/2003 3/4/2003 3/13/2003 3/17/2003 3/25/2003 4/2/2003 4/11/2003 4/25/2003 5/7/2003 5/14/2003 5/22/2003 5/30/2003	open open open open open open open open	>150 140 150 >150 >150 >150 >150 >150 >150 >150	135  115 >150  150 >150 74 20	    	    	17 17 17 17 17 17 17
2/12/2003 3/4/2003 3/13/2003 3/17/2003 3/25/2003 4/2/2003 4/11/2003 4/25/2003 5/7/2003 5/14/2003 5/22/2003 5/30/2003	open open open open open open open open	140 150 >150 >150 >150 >150 >150 >150 >150	115 >150  150 >150 74 20	    	   	17 17 17 17 17 17
3/4/2003 3/13/2003 3/17/2003 3/25/2003 4/2/2003 4/11/2003 4/25/2003 5/7/2003 5/14/2003 5/22/2003 5/30/2003	open open open open open open open open	150 >150 >150 >150 >150 >150 >150 >150 >	115 >150  150 >150 74 20	   	   	17 17 17 17 17
3/13/2003 3/17/2003 3/25/2003 4/2/2003 4/11/2003 4/25/2003 5/7/2003 5/14/2003 5/22/2003 5/30/2003	open open open open open open open open	>150 >150 >150 >150 >150 >150 >150 >150	>150  150 >150 74 20	  	  	17 17 17 17
3/17/2003 3/25/2003 4/2/2003 4/11/2003 4/25/2003 5/7/2003 5/14/2003 5/22/2003 5/30/2003	open open open open open open open open	>150 >150 >150 >150 >150 >150 >150	150 >150 >150 74 20	  	  	17 17 17
3/25/2003 4/2/2003 4/11/2003 4/25/2003 5/7/2003 5/14/2003 5/22/2003 5/30/2003	open open open open open open open	>150 >150 >150 >150 >150 >150	150 >150 74 20	  		17 17
4/2/2003 4/11/2003 4/25/2003 5/7/2003 5/14/2003 5/22/2003 5/30/2003	open open open open open open	>150 >150 >150 >150 >150	>150 74 20	 		17
4/11/2003 4/25/2003 5/7/2003 5/14/2003 5/22/2003 5/30/2003	open open open open open	>150 >150 >150	74 20			
4/25/2003 5/7/2003 5/14/2003 5/22/2003 5/30/2003	open open open open	>150 >150	20			1/
5/7/2003 5/14/2003 5/22/2003 5/30/2003	open open op <del>e</del> n	>150				
5/14/2003 5/22/2003 5/30/2003	open open		115			17
5/22/2003 5/30/2003	open	>150				17
5/30/2003						17
	open	>150				17 17.5
0/3/2003	1 1	>150	10	43	4	
	closed				<del></del>	
6/13/2003	closed					<del></del>
6/23/2003	closed					
7/3/2003	closed					
1/6/2004	closed	***		~~		-
RW-13 5/24/2000		80				12.59
10/6/2000					-UN	
11/29/2000		>100	<del></del>		77	***
3/29/2001	open	54			124	
4/14/2001	open	100				<b></b>
4/26/2001	open	85	•			
5/3/2001	open	80				
5/23/2001	open	10				
6/4/2001	open	50				
6/21/2001	open	65				
7/2/2001	open	55				<b></b>
7/16/2001	open	45				<del></del>
8/2/2001	open	35 20	<del></del>			
8/10/2001 8/15/2001	open	20 20				
8/27/2001 8/27/2001	open	65			<del></del>	
9/7/2001	open closed			 		
9/14/2001	closed					
. 10/3/2001	closed					<u></u>
10/8/2001	closed					
10/22/2001	closed					
10/29/2001	closed					
11/6/2001	closed	 	<del></del>		**	
11/12/2001	closed		**	·-		
11/14/2001	closed					
11/21/2001	closed					
12/6/2001	closed		·		••	
12/19/2001	closed					
1/17/2002	closed					
2/4/2002	closed					
2/14/2002	open	125				20
3/5/2002	open	115				20
3/11/2002	open	-				16

Table 4. TPE Well Parameters - Former Exxon Service Station, 3055 35th Avenue, Oakland, California

Well ID	Date	Well Status	System/Stinger Vacuum (inches of H2O)	Well Annulus Vacuum (inches of H2O)	Flow Rate	Hydrocarbon Vapor Concentration (ppmv)	Stinger Depth (ft below TOC)
->RW-13	3/25/2002	closed				(PJ:)	
	4/2/2002	closed					
	4/5/2002	closed					
	4/19/2002	closed					
	5/6/2002	closed		<b>.</b>		**	
	5/21/2002	closed					
	6/19/2002	closed					
	6/28/2002	closed					
	7/10/2002	closed					
	7/26/2002	closed					
	8/6/2002	closed		·			
	8/26/2002	closed					
	9/16/2002	closed					
	9/20/2002	closed					
	10/2/2002	closed					
	10/11/2002	closed					
	10/16/2002	closed	125	29	41	7	21.5
	10/31/2002	closed				, 	
	11/6/2002	closed					
	11/22/2002	closed					
	12/5/2002	closed					
	12/20/2002	closed					 
	1/8/2003	closed					 
	1/13/2003	closed	>150	110	8.0	2	16
	1/22/2003	closed	~15U		o.u 		
	1/24/2003	closed					_
	1/30/2003	closed					<del></del>
	2/4/2003	closed					
	2/12/2003	closed	**				
	3/4/2003	closed					
	3/13/2003	closed					
	3/17/2003	closed					
	3/25/2003	closed					
	4/2/2003	closed				•-	
	4/11/2003	closed					
	4/25/2003	closed				<del></del>	
	5/7/2003	closed	-				==
	5/14/2003	closed					*-
	5/22/2003	closed					
	5/30/2003	closed					••
	6/3/2003	closed					
	6/13/2003	closed					
	6/23/2003	closed					
	7/3/2003	closed			**		
	1/6/2004	closed					

Table 4. TPE Well Parameters - Former Exxon Service Station, 3055 35th Avenue, Oakland, California

		Well Status	System/Stinger Vacuum	Well Annulus Vacuum	Flow Rate	Hydrocarbon Vapor Concentration	Stinger Depth
Well ID	Date	(open/closed)	(inches of H2O)	(inches of H2O)	(cfm)	(ppmv)	(ft below TOC)
RW-14	5/24/2000		80				12.33
	10/6/2000		100				
	11/29/2000		>100			5830	**
	3/29/2001	open	54			120	
	4/14/2001	open	100				
	4/26/2001	open	85				
	5/3/2001	open	80				
	5/23/2001	open	10		~*	••	
	6/4/2001	open	50				
	6/21/2001	ореп	65				
	7/2/2001	open	55				
	7/16/2001	open	45				
	8/2/2001	open	35				
	8/10/2001	open	20				
	8/15/2001	open	20				
	8/27/2001	ореп	65		w.		
	9/7/2001	closed				<del></del>	
	9/14/2001	closed					
	10/3/2001	closed		 			
	10/8/2001	closed					
	10/22/2001	closed					
	10/22/2001						
		closed					<b></b>
	11/6/2001	closed					
	11/12/2001	closed	**			••	••
	11/14/2001	closed		•-		<del></del>	
	11/21/2001	closed					
	12/6/2001	closed					<del></del>
	12/19/2001	closed					
	1/17/2002	closed					
	2/4/2002	closed					
	2/14/2002	open	125				20
	3/5/2002	open	115				20
	3/11/2002	closed					
	3/25/2002	closed					
	4/2/2002	closed					
	4/5/2002	closed					
	4/19/2002	closed					
	5/6/2002	closed	••				
	5/21/2002	closed					
	6/19/2002	closed					
	6/28/2002	closed					
	7/10/2002	closed	~~	***			
	7/26/2002	closed					
	8/6/2002	closed					
	8/26/2002	closed				••	
	9/16/2002	closed	<del></del>				
	9/20/2002	closed					
	10/2/2002	closed					<del></del>
	10/11/2002	closed					
	10/11/2002		125	80	14	535	19
	10/16/2002	open	150				19
		open		. 18			
	11/6/2002	closed		·			•-
	11/22/2002	closed				**	
	12/5/2002 12/20/2002	closed closed					

Table 4. TPE Well Parameters - Former Exxon Service Station, 3055 35th Avenue, Oakland, California

Well ID	Date	Well Status	System/Stinger Vacuum (inches of H2O)	Well Annulus Vacuum (inches of H2O)	Flow Rate	Hydrocarbon Vapor Concentration (ppmv)	Stinger Depth (ft below TOC)
>RW-14	1/13/2003	closed	>150	90	7.0	35	16
	1/22/2003	closed					
	1/24/2003	closed					
	1/30/2003	closed					
	2/4/2003	closed					
	2/12/2003	closed					
	3/4/2003	closed					
	3/13/2003	closed					
	3/17/2003	closed				••	
	3/25/2003	closed					
	4/2/2003	closed					
	4/11/2003	closed					••
	4/25/2003	closed					
	5/7/2003	closed					
	5/14/2003	closed					
	5/22/2003	closed					
	5/30/2003	open	>150	78	5.5	55	17.5
	6/3/2003	open	>150				17.5
	6/13/2003	open	130				18
	6/23/2003	open	120	58			18
	7/3/2003	open	135				17.5
	7/11/2003	open	125				19
	8/7/2003	open	145	55			19
	8/15/2003	open	130	30			19
	8/26/2003	closed	**				
	12/23/2003	open	>150				20
	1/16/2004	open	>150	==	**		15

Notes:

<sup>-- =</sup> Data not available or not collected



### **APPENDIX A**

Groundwater Monitoring Field Data Sheets

# **Groundwater Monitoring Field Sheet**

Well ID	Time	DTP	DTW	Product Thickness	Amount of Product Removed	Casing Diam.	Comment
MW-1	2:00		24.12				stinger at 24.5ft
MN-2	2:15		23.17				11 11 24.0 f4
Mu-3			17.70				stinger was not pulling upon arrival started purge stinger at 22-oft the Stinger at 19.5ft
MN-4	; ,		19.17				stinger at 19.5ft
							3
							system on upon arriva
		· · · · · · · · · · · · · · · · · · ·					
	-						
						-	

Project Name: Worthing	ton Pro	ject Number/Task: <u>130-0105/34</u>
Project Name: Worthing Measured By:	Dat	e: 12-2-03

Project Name: Worthington	Cambria Mgr: GH	Well ID: MW-	
Project Number: 130-0105	Date: 12-2-03	Well Yield:	
Site Address:	Sampling Method:	Well Diameter: "pvc	
3035 35th Ave. Oakland, CA	Disposable bailer	Technician(s): SG	
Initial Depth to Water: 24.12	Total Well Depth:	Water Column Height:	
Volume/ft: 0.16	1 Casing Volume:	3 Casing Volumes:	
Purging Device:	Did Well Dewater?:	Total Gallons Purged:	
Start Purge Time:	Stop Purge Time:	Total Time:	

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

Well Diam.	Volume/ft (gallons)
2"	0.16
<b>4</b> "	0.65
6"	1.47

Time	Casing Volume	Temp.	рН	Cond.	Comments
15 mir	purge	with sy	stem		
				<u> </u>	

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
MW- I	1202-03	z:08	4 VOAs	HCL	VOCs	8015
			1 AMBER	NONE		8020
	,					

D:\TEMPLATE\FORMS\FIELD\WELLSAMP.WPD NSM 5/31/94

Project Name: Worthington	Cambria Mgr: GH	Well ID: MW-2	
Project Number: 130-0105	Date: 12-2-03	Well Yield:	
Site Address:	Sampling Method:	Well Diameter: "pvc	
3035 35th Ade. Oakland, CA	Disposable bailer	Technician(s): SG	
Initial Depth to Water: 23.17	Total Well Depth:	Water Column Height:	
Volume/ft: 0.16	1 Casing Volume:	3 Casing Volumes:	
Purging Device:	Did Well Dewater?:	Total Gallons Purged:	
Start Purge Time:	Stop Purge Time:	Total Time:	

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

Volume/ft (gallons)
0.16
0.65
1.47

Time	Casing Volume	Temp.	pН	Cond.	Comments
15 min	purge	with sy	stem		
				<u> </u>	

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
MW- 2	122-03	2:18	4 VOAs	HCL	VOCs	8015
			1 AMBER	NONE		8020
	•					

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Project Name: Worthington	Cambria Mgr: GH	Well ID: MW-3	
Project Number: 130-0105	Date: 12-2-03	Well Yield:	
Site Address:	Sampling Method:	Well Diameter: "pvc	
3035 35th Ave. Oakland, CA	Disposable bailer	Technician(s): SG	
Initial Depth to Water: 17.70	Total Well Depth:	Water Column Height:	
Volume/ft: 0.16	1 Casing Volume:	3 Casing Volumes:	
Purging Device:	Did Well Dewater?:	Total Gallons Purged:	
Start Purge Time:	Stop Purge Time:	Total Time:	

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

Well Diam.	Volume/ft (gallons)
2"	0.16
4"	0.65
6"	1.47

Casing Volume	Тетр.	pН	Cond.	Comments
purge	with sy	stem_		
-				
	Volume	Volume	<u> </u>	Volume

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
MW-3	12-2-03	3:08	4 VOAs	HCL	VOCs	8015
			1 AMBER	NONE		8020
		-				

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Project Name: Worthington	Cambria Mgr: GH	Well ID: MW- U	
Project Number: 130-0105	Date: 12-2-03	Well Yield:	
Site Address:	Sampling Method:	Well Diameter: "pvc Technician(s): SG	
3035 35th Ade. Oakland, CA	Disposable bailer		
Initial Depth to Water: 19.17	Total Well Depth:	Water Column Height:	
Volume/ft: 0.16	1 Casing Volume:	3 Casing Volumes:	
Purging Device:	Did Well Dewater?:	Total Gallons Purged:	
Start Purge Time:	Stop Purge Time:	Total Time:	

 Volume
 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	Тетр.	рН	Cond.	Comments
15 mir	purge	with sy	stem		
	-				

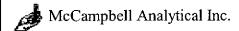
Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
MW-L	1.2-2-03	2:38	4 VOAs	HCL	VOCs	8015
		,	1 AMBER	NONE		8020
	•					

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### **APPENDIX B**

Analytical Results for 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: #130-0105/349;	Date Sampled: 12/02/03
5900 Hollis St, Suite A	Worthington	Date Received: 12/03/03
F 711. CA 04609	Client Contact: Gretchen Hellmann	Date Reported: 12/09/03
Emeryville, CA 94608	Client P.O.:	Date Completed: 12/09/03

WorkOrder: 0312070

December 09, 2003

#### Dear Gretchen:

#### Enclosed are:

- 1). the results of 4 analyzed samples from your #130-0105/349; Worthington 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 Env. Technology	Client Project ID: #130-0105/349;	Date Sampled: 12/02/03
5900 Hollis St, Suite A	Worthington	Date Received: 12/03/03
E	Client Contact: Gretchen Hellmann	Date Extracted: 12/05/03-12/08/03
Emeryville, CA 94608	Client P.O.:	Date Analyzed: 12/05/03-12/08/03

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

Extraction method: SW5030B Analytical methods: SW8021B/8015Cm Work Order: 0312070 Lab ID Client ID Matrix TPH(g) MTBE Benzene Toluene Ethylbenzene Xylenes DF % SS MW-I W ND<100 160 820 10 115 001A 7100,a,h 1400 230 002A MW-2 W 2400,a,h 890 91 20 14 250 10 94.6 003A MW-3 W 30,000,a,h ND<500 2900 2100 530 3600 100 95.6 W 1900 50 100 004A MW-4 13,000,a ND<250 1300 180 120 Reporting Limit for DF =1; W 50 5.0 0.5 0.5 0.5 0.5  $\mu g/L$ 

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

NA

NA

NA

NA

NA

DHS Certification No. 1644

ND means not detected at or

above the reporting limit

Angela Rydelius, Lab Manager

NA

mg/Kg

<sup>#</sup> cluttered chromatogram; sample peak coelutes with surrogate peak.

<sup>+</sup>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 / mineral spirit?); 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) reporting limit raised due to high MTBE content; k) TPH pattern that does not appear to be derived from gasoline (aviation gas), m) no recognizable pattern.

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

Cambria Env. Technology	Client Project ID: #130-0105/349;	Date Sampled: 12/02/03
5900 Hollis St, Suite A	Worthington	Date Received: 12/03/03
Emeryville, CA 94608	Client Contact: Gretchen Hellmann	Date Extracted: 12/03/03
Eliktyviite, CA 54000	Client P.O.:	Date Analyzed: 12/05/03-12/06/03

#### Diesel Range (C10-C23) Extractable Hydrocarbons with Silica Gel Clean-Up\*

Extraction method: SW	_		ical methods: SW8015C	Work Order:	0312070
Lab ID	Client ID	Matrix	TPH(d)	DF	% SS
0312070-001B	MW-1	w	9300,d,b,h	10	114
0312070-002В	MW-2	w	3300, <b>d</b> ,b,h	10	112
0312070-003B	MW-3	w	8400,d,b,h	10	116
0312070-004B	MW-4	W	· 5800,d,b	10	117
					.,,
Reporting L	imit for DF =1;	W	50	u	g/L
ND means n	ot detected at or reporting limit	S	NA		IA

\* water samples are reported in µg/L, wipe samples in µg/wipe, soil/solid/sludge samples in mg/kg, product/oil/non-aqueous liquid samples in mg/L, and all DISTLC / STLC / SPLP / TCLP extracts are reported in µg/L.

# cluttered chromatogram resulting in coeluted surrogate and sample peaks, or; surrogate peak is on elevated baseline, or; surrogate has been diminished by dilution of original extract.

+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 diesel is significant; b) diesel range compounds are significant; no recognizable pattern; c) aged diesel? is significant); d) gasoline range compounds are significant; e) unknown medium boiling point pattern that does not appear to be derived from diesel; f) one to a few isolated peaks present; g) oil range compounds are significant; h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~2 vol. % sediment; k) kerosene/kerosene range; l) bunker oil; m) fuel oil; n) stoddard solvent/mineral spirit.



### QC SUMMARY REPORT FOR SW8021B/8015Cm

Matrix: W

WorkOrder: 0312070

EPA Method: SW80	)21B/8015Cm E	extraction:	SW5030E	3	BatchID:	9547	Spiked Sample ID: 0312071-003A							
	Sample	Sample Spiked MS* MSD* MS-MSD* LCS		LCS	LCSD	LCS-LCSD	Acceptance	Criteria (%)						
	μg/L	μg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	Low	Hìgh				
TPH(btex) <sup>£</sup>	ND	60	94.4	99	4.79	98.5	96.8	1.76	70	130 -				
мтве	13.78	10	111	99.8	4.48	99.7	106	5.86	70	130				
Benzene	ND	10	102	101	0.610	100	103	2.90	70	130				
Toluene	ND	10	104	103	0.627	102	105	2.49	70	130				
Ethylbenzene	ND	10	105	104	1.01	104	105	1.61	70	130				
Xylenes	ND	30	110	107	3.08	107	107	0	70	130				
%SS:	106	100	106	105	1.05	104	106	1.40	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.

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

<sup>\*</sup> 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.

<sup>£</sup> TPH(btex) = sum of BTEX areas from the FID.

<sup>#</sup> cluttered chromatogram; sample peak coelutes with surrogate peak.

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.

### QC SUMMARY REPORT FOR SW8015C

Matrix: W

WorkOrder: 0312070

EPA Method: SW8015C	E	extraction:	SW35100	2	BatchID:	9531	Spiked Sample ID: N/A							
	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(d)	N/A	7500	N/A	N/A	N/A	106	106	0	70	130				
%SS:	N/A	100	N/A	N/A	N/A	109	109	0	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

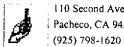
MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% 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.

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.



110 Second Avenue South, #D7 Pacheco, CA 94553-5560

# **CHAIN-OF-CUSTODY RECORD**

Page 1 of 1

WorkOrder: 0312070

Report to:

Matt Meyers"

Cambria Env. Technology

5900 Hollis St, Suite A Emeryville, CA 94608

TEL: FAX: (510) 420-0700

(510) 420-3394

ProjectNo: #130-0105/349; Worthington

PO:

Bill to:

Accounts Payable

Cambria Env. Technology

5900 Hollis St, Ste. A Emeryville, CA 94608 Date Received:

Requested TAT:

12/3/03

5 days

Date Printed:

12/3/03

							Requested Tests (See legend below)								-											
Sample ID	ClientSampID	Matrix	Collection Date	Hold	1	2		3	4	5		6	I	7	8		9	] '	10	11		12	13	<u> </u>	4 15	
0312070-001	MW-1	Water	12/2/03 2:08:00 PM	1 🗆		A		3		T	<u>-</u>		-T		<u> </u>					 T	· T	·	<b></b>	ļ	. ]	.1
0312070-002	MW-2	Water	12/2/03 2:18:00 PM	1 🗀 🗄	Α	<del></del>		3		<del>                                     </del>	Ť		$\top$	~~~										+		-
0312070-003	MW-3	Water	12/2/03 3:08:00 PM		Α	-	E	3		<del>!</del> -	-		+			-		<u> </u>	-	<del> </del>				-		-
0312070-004	MW-4	Water	12/2/03 2:38:00 PM		Α		E	3		İ					<u> </u>   			<u> </u>		ļ						-

#### **Test Legend:**

1	G-MBIEX_W	2 PREDF REPOR
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3 TPH(D)WSG_W	!
8	
13	]

4
9
14

5			 
		: :-	 
	-		 
15 }			

Prepared by: Melissa Valles

#### Comments:

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.

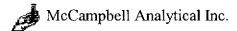


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### **APPENDIX C**

Analytical Results for TPE System Operation



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: #130-0105-350;	Date Sampled: 10/02/03
5900 Hollis St, Suite A	WORTHINGTON	Date Received: 10/06/03
Emeryville, CA 94608	Client Contact: Gretchen Hellmann	Date Reported: 10/14/03
Eneryvine, CA 94000	Client P.O.:	Date Completed: 10/14/03

WorkOrder: 0310075

October 14, 2003

Dear Gretchen:

#### Enclosed are:

- 1). the results of 3 analyzed samples from your #130-0105-350; WORTHINGTON 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

Yours truly

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: #130-0105-350;	Date Sampled: 10/02/03
5900 Hollis St, Suite A	WORTHINGTON	Date Received: 10/06/03
Emeryville, CA 94608	Client Contact: Gretchen Hellmann	Date Extracted: 10/11/03-10/14/03
Lineryvine, Cri 94000	Client P.O.;	Date Analyzed: 10/11/03-10/14/03

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

Extraction n	nethod: SW5030B	_	- (00 01-)	=	methods: SW80211	Work Order: 0310075				
Lab ID	Client ID	Matrix	TPH(g)	МТВЕ	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS
001A	INF	w	460,a		34	25	2.3	64	t	109
002A	EFF-1	w	140,a		7.7	5.2	0.59	16	ı	103
003A	EFF-2	W	ND		ND	ND	ND	ND	l	105
									71111	
	Limit for DF =1;	w	50	5.0	0.5	0.5	0.5	0.5	1 1	μg/L
	not detected at or e reporting limit	S	NA	NA	NA	NA NA	NA NA	NA NA	1	mg/Kg

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

<sup>#</sup> cluttered chromatogram; sample peak coelutes with surrogate peak.

<sup>+</sup>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 / mineral spirit?); 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) reporting limit raised due to high MTBE content; k) TPH pattern that does not appear to be derived from gasoline (aviation gas). m) no recognizable pattern.

### QC SUMMARY REPORT FOR SW8021B/8015Cm

Matrix: W

WorkOrder: 0310075

EPA Method: SW802	21B/8015Cm E	Extraction:	SW50308	3	BatchID:	8819	Spiked Sample ID: 0310074-007A						
	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(btex) <sup>£</sup>	ND	60	104	104	0	104	103	1.56	70	130			
MTBE	ND	10	106	100	5.74	98.9	103	3.67	70	130			
Benzene	ND	10	113	109	3.60	103	104	1.17	70	130			
Toluene	ND	10	113	111	2.27	104	105	0.734	70	130			
Ethylbenzene	ND	10	115	112	2.17	106	106	0	70	130			
Xylenes	ND	30	117	113	2.90	110	107	3.08	70	130			
%SS:	107	100	105	104	1.52	102	104	1.58	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.

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

<sup>\*</sup> 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.

<sup>£</sup> TPH(btex) = sum of BTEX areas from the FID.

<sup>#</sup> cluttered chromatogram; sample peak coelutes with surrogate peak.

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.

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

# **CHAIN-OF-CUSTODY RECORD**

Page 1 of 1

WorkOrder: 0310075

Client:

Cambria Env. Technology 5900 Hollis St, Suite A Emeryville, CA 94608 TEL:

(510) 420-0700

FAX:

ProjectNo:

(510) 420-3394

PO:

#130-0105-350; WORTHINGTON

Date Received:

10/6/03

Date Printed:

10/10/03

							Requested Tests		
Sample ID	ClientSampID	Matrix	Collection Date	Hold	SW8021B/8015Cm	and the second s			
0310075-001	INF	Water	10/2/03 1:00:00		Α				
0310075-002	EFF-1	Water	10/2/03 1:00:00		A				
0310075-003	EFF-2	Water	10/2/03 1:00:00		A			!	

Prepared by: Melissa Valles

Comments:

003 set up 10/10 per note on c.o.c

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.

a310075 nh CHAIN OF CUSTODY RECORD McCAMPBELL ANALYTICAL INC. TURN AROUND TIME: ZXX 110 2nd AVENUE SOUTH, #D7 RUSH 24 HOUR 48 HOUR 5 DAY PACHECO, CA 94553-5560 EDF Required? □Yes Telephone: (925) 798-1620 Fax: (925) 798-1622 Bill To: SAME Report To: Gretchen Hellmann Analysis Request Other Comments Company: Cambria Environmental Technology, Inc. Total Petroleum Oil & Grease (5520 E&F/B&F) 5900 Hollis Street Suite A Emeryville, CA 94608 E-mail:ghellmann@cambria-env.com EPA 625 / 8270 / 8310 Tele: 510 420-3305 Fax: 510 420-9170 BTEX & IPH as Gas (602/8020 + 8015)/ Project #: 130-0105-350 Project Name: WORTHINGTON BTEX ONLY (EPA 602 / 8020) Project Location: 3055 35th Street, Oakland, CA EPA 608 / 8080 PCB's ONLY Lead (7240/7421/239,2/6010) Sampler Signature: (1 EPA 624 / 8240 / 8260 METHOD MATRIX SAMPLING PRESERVED Type Containers PAH'S 'PNA'S by CAM-17 Metals # Containers EPA 60178010 **LUFT 5 Metals** SAMPLE ID LOCATION (Field Point Name) Air Sludge Date Time Water ŐNH Other Other Soil HCI <u>e</u> RCI 1) VF V X System 14/2/03 V XX EFF-1 X System SPTUPIU/1051/1.t V X System WELL DEG THETMET

linguished B Time: Received By: section 5:30 Time Received By Time: 12:30

10/0

Remarks: DO NOT ANALYZE OR REPORT RESULTS FOR MTBE

Only analyze EFF-2 if TPHg or BTEX is detected in EFF-1

Please email results.

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: #130-0105-350;	Date Sampled: 10/07/03
5900 Hollis St, Suite A	WORTHINGTON	Date Received: 10/08/03
Emeryville, CA 94608	Client Contact: Gretchen Hellmann	Date Reported: 10/15/03
Emeryvine, CA 34000	Client P.O.:	Date Completed: 10/15/03

WorkOrder: 0310126

October 15, 2003

#### Dear Gretchen:

#### Enclosed are:

- 1). the results of 1 analyzed sample from your #130-0105-350; WORTHINGTON project,
- 2). a QC report for the above sample
- 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

Yours trul

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: #130-0105-350;	Date Sampled: 10/07/03
5900 Hollis St, Suite A	WORTHINGTON	Date Received: 10/08/03
Emanyilla CA 04608	Client Contact: Gretchen Hellmann	Date Extracted: 10/09/03
Emeryville, CA 94608	Client P.O.:	Date Analyzed: 10/09/03

Extraction n	ethod: SW50301	3		Analytical n	nethods: SW80211	3/8015Cm		Work C	Order: 01	310126
ab ID	Client ID	Matrix	TPH(g)	МТВЕ	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% S
001A	INF	A	530,a	ND<15	11	6.7	0.53	9.1	1	100
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ppm (mg/L)	to ppmv (	(ul/L) conversion	for TPH(g) assur	nes the molecula	r weight of gasol	ine to be equal to	that of hexane.		
Reporting Limit for DF =1; ND means not detected at or	A	10	1.5	0.15	0.15	0.15	0.15	1	uL/L
above the reporting limit	S	NA	NA	NA	NA	NA	NA	1	mg/Kg

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

<sup>+</sup>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 / mineral spirit?); 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) reporting limit raised due to high MTBE content; k) TPH pattern that does not appear to be derived from gasoline (aviation gas). m) no recognizable pattern.



<sup>#</sup> cluttered chromatogram; sample peak coelutes with surrogate peak.

### QC SUMMARY REPORT FOR SW8021B/8015Cm

Matrix: A

WorkOrder: 0310126

EPA Method: SW80	21B/8015Cm E	Extraction:	SW5030E	3	BatchID:	8865	Spiked Sample ID: N/A						
_	Sample	Spiked	MS*	MSD*	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance	Criteria (%)			
	uL/L	uL/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	Low	High			
TPH(btex) <sup>£</sup>	N/A	60	N/A	N/A	N/A	113	110	2.66	70	130			
МТВЕ	N/A	10	N/A	N/A	N/A	103	98.7	4.68	70	130			
Benzene	N/A	10	N/A	N/A	N/A	115	115	0	70	130			
Toluene	N/A	10	N/A	N/A	N/A	109	106	2.74	70	130			
Ethylbenzene	N/A	10	N/A	N/A	N/A	114	114	0	70	130			
Xylenes	N/A	30	N/A	N/A	N/A	103	107	3.17	70	130			
%SS:	N/A	100	N/A	N/A	N/A	108	105	3.31	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.

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

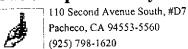
<sup>\*</sup> MS and / or MSD spike recoveries may not be near 100% or the RPDs near 0% if: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) if that specific sample matrix interferes with spike recovery.

<sup>£</sup> TPH(btex) = sum of BTEX areas from the FID.

<sup>#</sup> cluttered chromatogram; sample peak coelutes with surrogate peak.

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.



# **CHAIN-OF-CUSTODY RECORD**

Page 1 of l

WorkOrder: 0310126

Client:

Cambria Env. Technology 5900 Hollis St, Suite A Emeryville, CA 94608 TEL:

PO:

(510) 420-0700

FAX:

(510) 420-3394

ProjectNo:

#130-0105-350; WORTHINGTON

Date Received:

10/8/03

Date Printed:

10/8/03

<del></del>					Requested Tests
Sample ID	ClientSamplD	Matrix	Collection Date	Hold	V8021B/8015C
0310126-001 0310126-002	INF EFF	Air Air	10/7/03 7:00:00 PM 10/7/03 7:00:00 PM		A

Prepared by: Melissa Valles

#### Comments:

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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SAMPLE ID				Containers	Type Containers			ļ					l K	₹   <del>•</del>	enm	en l	EPA 601/8010	.Y (I	EPA 608 / 8080	080	1240	EPA 625 / 8270	A's	CAM-17 Metals	LUFT 5 Metals	742			}					
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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: #130-0105-350;	Date Sampled: 10/13/03
5900 Hollis St, Suite A	WORTHINGTON	Date Received: 10/14/03
Emeryville, CA 94608	Client Contact: Gretchen Hellmann	Date Reported: 10/17/03
Elliciyvine, CA 94008	Client P.O.:	Date Completed: 10/17/03

WorkOrder: 0310215

October 17, 2003

#### Dear Gretchen:

#### Enclosed are:

- 1). the results of 1 analyzed sample from your #130-0105-350; WORTHINGTON project,
- 2). a QC report for the above sample
- 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 Env. Technology	Client Project ID: #130-0105-350;	Date Sampled: 10/13/03				
5900 Hollis St, Suite A	WORTHINGTON	Date Received: 10/14/03				
Emeryville, CA 94608	Client Contact: Gretchen Hellmann	Date Extracted: 10/14/03				
Emeryvine, CA 94000	Client P.O.:	Date Analyzed: 10/14/03				

#### Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with MTBE and BTEX in ppmv\*

Extraction	method: SW5030F	3		Analytical	methods: SW80211	Work Order: 0310215				
Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS
002A	EFF	A	ND	ND	ND	ND	ND	ND	1	101
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ppin (mg/L)	to ppinv i	(uir L) conversion	101 1111(g) assul	nes the molecula	weight of gason	nie to be equal to	mar or nexame.		:
Reporting Limit for DF =1; ND means not detected at or	A	10	1.5	0.15	0.15	0.15	0.15	1	uL/L
above the reporting limit	S	NA	NA	NA	NA	NA	NA	1	mg/Kg

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

<sup>+</sup>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 / mineral spirit?); 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) reporting limit raised due to high MTBE content; k) TPH pattern that does not appear to be derived from gasoline (aviation gas). m) no recognizable pattern.



<sup>#</sup> cluttered chromatogram; sample peak coelutes with surrogate peak.

### QC SUMMARY REPORT FOR SW8021B/8015Cm

Matrix: A

WorkOrder: 0310215

EPA Method: SW80	)21B/8015Cm E	extraction:	SW5030E	3	BatchID:	8932	Spiked Sample ID: N/A					
	Sample	Spiked	MS*	MSD*	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance	Criteria (%)		
	uL/L	uL/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	Low	High		
TPH(btex) <sup>£</sup>	N/A	60	N/A	N/A	N/A	108	111	2.79	70	130		
МТВЕ	N/A	10	N/A	N/A	N/A	109	110	0.362	70	130		
Benzene	N/A	10	N/A	N/A	N/A	106	107	1.38	70	130		
Toluene	N/A	10	N/A	N/A	N/A	97.4	102	4.51	70	130		
Ethylbenzene	N/A	10	N/A	N/A	N/A	108	109	0.533	70	130		
Xylenes	N/A	30	N/A	N/A	N/A	100	99.7	0.334	70	130		
%SS:	N/A	100	N/A	N/A	N/A	102	103	0.934	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.

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

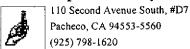
<sup>\*</sup> MS and / or MSD spike recoveries may not be near 100% or the RPDs near 0% if; a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) if that specific sample matrix interferes with spike recovery.

<sup>£</sup> TPH(btex) = sum of BTEX areas from the FID.

<sup>#</sup> cluttered chromatogram; sample peak coelutes with surrogate peak.

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.



# **CHAIN-OF-CUSTODY RECORD**

Page 1 of 1

WorkOrder: 0310215

Client:

Cambria Env. Technology 5900 Hollis St, Suite A Emeryville, CA 94608 TEL:

(510) 420-0700

FAX:

(510) 420-3394

ProjectNo: PO: #130-0105-350; WORTHINGTON

Date Received:

10/14/03

Date Printed:

10/14/03

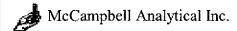
Sample ID	ClientSampID	Matrix	Collection Date	Hold	SW8021B/8015Cm	Request	ted Tests	APAY Property of the second se	
0310215-001 0310215-002	INF EFF	Air Air	10/13/03 9:00:00 10/13/03 9:00:00		A A				

Prepared by: Melissa Valles

#### Comments:

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.													Cl	HA	IN	O	F	CU	ST	O	D١	Y F	REC	OF	RD				
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	lle, CA 940		E-mail:	hellm	nann(/	Deant	oria-e					86		F/B		-					≘	1		i						
Tele: 510 420-3305			Fax: 5					711 7 . 0.0				Z Z	Ì	0 83 1	<u></u>						/ 83						İ			
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	470	SAM	LING		\ \si	М	ATR	XIS		TETH ESER	IOD RVED	BTEX & TPH as Gas (602/8020	TPH as Diesel (8015)	Total Petroleum Oil & Grease (5520 E&E/B&E)	Fotal Petroleum Hydrocarbons (418.1)	BTEX ONLY (EPA 602 / 8020)		EPA 608 / 8080 PCB's ONLY	EPA 624 / 8240 / 8260		y EP	i		Lead (7240/7421/239.2/6010)					:	
SAMPLE ID .		7		ers	Type Containers							38.0	Sel (8	enm	un:	X (E	080	080	240	EPA 625 / 8270	PAH's / PNA's by	CAM-i7 Metafs	slea	7421		.				
(Field Point Name)	OCATION	Date	Time	Containers	Sont			ຍ				Į į	Die	etrol	Focal Petroleum		8 / 8	8/8	8/8	578	N.	Ž	LUFT 5 Metals	7340/				1.		
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Cambria Env. Technology	Client Project ID: #130-0105-350;	Date Sampled: 11/17/03
5900 Hollis St, Suite A	Worthington	Date Received: 11/18/03
Emeryville, CA 94608	Client Contact: Gretchen Hellmann	Date Reported: 12/01/03
Enteryvine, CA 94006	Client P.O.:	Date Completed: 12/01/03

WorkOrder: 0311236

December 01, 2003

#### Dear Gretchen:

#### Enclosed are:

- 1). the results of 3 analyzed samples from your #130-0105-350; Worthington 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

Yours tru

	McCampbell Analytic	al Inc.
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Cambria Env. Technology	· · · · · · · · · · · · · · · · · · ·	Date Sampled: 11/17/03
5900 Hollis St, Suite A	Worthington	Date Received: 11/18/03
Emeryville, CA 94608	Client Contact: Gretchen Hellmann	Date Extracted: 11/19/03-11/27/03
Emeryvine, CA 94000	Client P.O.:	Date Analyzed: 11/19/03-11/27/03

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

Extraction	method: SW5030B			Analytical	methods: SW80211	B/8015Cm		Work	Order: 0	311236
Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS
001A	INF	w	300,a	42	21	7.9	2.2	37	1	104
002A	EFF-1	w	ND	28	ND	ND	ND	0.94	1	101
003A	EEF-2	w	ND	ND	ND	ND	ND	ND	1	108
								·		
										<u></u>
									-	
Reporting	; Limit for DF =1; not detected at or	W	50	5.0	0.5	0.5	0.5	0.5	1	μg/L
	ne reporting limit	S	NA	NA	NA	NA	NA	NA	1	mg/Kg

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

<sup>#</sup> cluttered chromatogram; sample peak coelutes with surrogate peak.

<sup>+</sup>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 / mineral spirit?); 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) reporting limit raised due to high MTBE content; k) TPH pattern that does not appear to be derived from gasoline (aviation gas). m) no recognizable pattern.

McCampbell	Analytical	Inc
	•	

Cambria Env. Technology	Client Project ID: #130-0105-350;	Date Sampled: 11/17/03
5900 Hollis St, Suite A	Worthington	Date Received: 11/18/03
Emeryville, CA 94608	Client Contact: Gretchen Hellmann	Date Extracted: 11/19/03-11/27/03
Energyme, CA 94000	Client P.O.:	Date Analyzed: 11/19/03-11/27/03

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

Extraction me	thod: SW5030B	_	` /	_	methods: SW80211				Order: 0	311236
Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS
001A	INF	w	300,a		21	7.9	2.2	37	1	104
002A	EFF-1	w	ND		ND	ND	ND	0.94	1	101
003A	EEF-2	w	ND	<b>4</b>	ND	ND	ND	ND	1	108
				, , , , , , , , , , , , , , , , , , , ,						
										<u> </u>
							-			
	_									
ND means no	imit for DF =1; of detected at or	W	50	5.0	0.5	0.5	0.5	0.5	1	μg/l
above the	reporting limit	S	NA	NA	NA	NA	NA	NA	1	mg/K

<sup>\*</sup> water and vapor samples and all TCLP & SPLP extracts are reported in ug/L, soil/sludge/solid samples in mg/kg, wipe samples in µg/wipe, product/oil/non-aqueous liquid samples in mg/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 / mineral spirit?); 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) reporting limit raised due to high MTBE content; k) TPH pattern that does not appear to be derived from gasoline (aviation gas). m) no recognizable pattern.

4

### QC SUMMARY REPORT FOR SW8021B/8015Cm

Matrix: W

WorkOrder: 0311236

EPA Method: SW802	1B/8015Cm E	Extraction:	SW5030E	3	BatchID:	le ID: 03112	234-009A			
	Sample	Spiked	MS*	MSD*	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance	e Criteria (%)
	μg/t.	μg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	Low	High
TPH(btex) <sup>£</sup>	ND	60	105	101	3.82	114	104	9.17	70	130
МТВЕ	ND	10	114	106	7.63	112	96.1	15.7	70	130
Benzene	ND	10	111	105	5.51	116	108	7.04	70	130
Toluene	ND	10	99.3	93.5	5.98	110	102	7.33	70	130
Ethylbenzene	ND	10	108	103	4.96	112	109	3.09	70	130
Xylenes	ND	30	96.7	93.3	3.51	100	100	0	70	130
%SS:	98.2	100	107	103	3.56	114	105	8.33	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.

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

<sup>\*</sup> 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.

<sup>£</sup> TPH(btex) = sum of BTEX areas from the FID.

<sup>#</sup> cluttered chromatogram; sample peak coelutes with surrogate peak.

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.

### QC SUMMARY REPORT FOR SW8021B/8015Cm

Matrix: W

WorkOrder: 0311236

EPA Method: SW802	21B/8015Cm E	Extraction:	SW50308	3	BatchID:	9423	s	piked Samp	le ID: 03112	36-003A
	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(btex) <sup>£</sup>	ND	60	94.7	94.6	0.106	99.5	97.3	2.22	70	130
МТВЕ	ND	10	96.6	90.8	6.19	87.9	86.6	1.56	70	130
Benzene	ND	10	97.8	92	6.15	92.7	92.7	0	70	130
Toluene	ND	10	102	96.3	5.99	96.5	96.7	0.222	70	130
Ethylbenzene	ND	10	102	97.1	5.19	99.9	101	1.18	70	130
Xylenes	ND	30	103	100	3.28	100	103	3.28	70	130
%SS:	108	100	105	103	1.91	103	103	0	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.

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

<sup>\*</sup> 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.

<sup>£</sup> TPH(btex) = sum of BTEX areas from the FID.

<sup>#</sup> cluttered chromatogram; sample peak coelutes with surrogate peak.

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.

# McCampbell Analytical Inc.



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

# **CHAIN-OF-CUSTODY RECORD**

Page 1 of 1

WorkOrder: 0311236

Client:

Cambria Env. Technology 5900 Hollis St, Suite A Emeryville, CA 94608 TEL:

(510) 420-0700

FAX: ProjectNo: (510) 420-3394 #130-0105-350; Worthington

Date Received:

11/18/03

PO:

Date Printed: 11/21/03

Sample ID	ClientSampID	Matrix	Collection Date	lold	G-MBTEX_W	Requested Tests	
0311236-001 0311236-002 0311236-003	EFF-1	Water Water	11/17/03		A A A		

Prepared by: Elisa Venegas

Comments:

ONLY ANALYZE EFF-2 IF TPH G OR BTEX IS DETECTED IN EFF-1 EFF-2 SET UP 11/21

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.

03 1123L

#### CHAIN OF CUSTODY RECORD McCAMPBELL ANALYTICAL INC. TURN AROUND TIME: 110 2nd AVENUE SOUTH, #D7 RUSH 24 HOUR 48 HOUR PACHECO, CA 94553-5560 $\square_{\mathrm{Yes}}$ EDF Required? Fax: (925) 798-1622 Telephone: (925) 798-1620 Comments Other Report To: Gretchen Hellmann Bill To: SAME Analysis Request Company: Cambria Environmental Technology, Inc. Fotal Petroleum Oii & Grease (5520 E&F-B&F) 5900 Hollis Street Suite A 8310 Emeryville, CA 94608 E-mail:ghellmann@cambria-env.com Tele: 510 420-3305 Fax: 510 420-9170 PAH's / PNA's by EPA 625 / 8270 / BTEX & FPH as Gas (602/8020 + 8015)/ Project #: 130-0105-350 Project Name: WORTHINGTON EPA 608 / 8080 PCB 's ONLY Project Location: 3055 35th Street, Oakland, CA Lend (7240/7421/239.2/6010) Sempler Signature: METHOD SAMPLING MATRIX PRESERVED Type Containers CAM-17 Metals Containers LUFT 5 Metals SAMPLE ID LOCATION Air Sludge (Field Point Name) Date Time HNO Fe HCI RC V Χ X<sub>i</sub> X Χ THE System 1300 x V Χ $X \vdash X$ System Χ V X $X \mid X$ System Remarks: DO NOT ANALYZE OR REPORT RESULTS FOR MTBE Time. Received By: 14763 5pm Only analyze EFF-2 if TPHg or BTEX is detected in EFF-1 Time: 1115 Please email results. Date Time:

McCampbell Analytic	cal Inc.
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Cambria Env. Technology	Client Project ID: #130-0105-350;	Date Sampled: 11/17/03
5900 Hollis St, Suite A	WORTHINGTON	Date Received: 11/18/03
Emanavilla CA 04608	Client Contact: Gretchen Hellmann	Date Reported: 11/21/03
Emeryville, CA 94608	Client P.O.:	Date Completed: 11/21/03

WorkOrder: 0311230

November 21, 2003

#### Dear Gretchen:

#### Enclosed are:

- 1). the results of 2 analyzed samples from your #130-0105-350; WORTHINGTON 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

Í		McCampbell	Analytical	Inc.
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Cambria Env. Technology	Client Project ID: #130-0105-350;	Date Sampled: 11/17/03
5900 Hollis St, Suite A	WORTHINGTON	Date Received: 11/18/03
E 31 GA 04600	Client Contact: Gretchen Hellmann	Date Extracted: 11/18/03-11/19/03
Emeryville, CA 94608	Client P.O.:	Date Analyzed: 11/18/03-11/19/03

#### Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with MTBE and BTEX in ppmv\*

Extraction r	nethod: SW50301	3		Work Order: 0311						
Lab ID	Client ID	Matrix	TPH(g)	МТВЕ	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS
001A	INF	A	480,a,m	5.3	9.6	4.2	0.44	5.0	4	115
002A	EFF	A	ND	ND	ND	ND	ND	ND	1	107
									<u> </u>	
										<u> </u>
		,								
	AAA 41.4					<u> </u>				

ppm (mg/L)	to ppmv	(ul/L) conversion	for TPH(g) assur	nes the molecula	r weight of gasoli	ne to be equal to	that of hexane.		
Reporting Limit for DF =1; ND means not detected at or	A	10	1.5	0.15	0.15	0.15	0.15	1	uL/L
above the reporting limit	S	NA	NA	NA	NA	NA	NA	1	mg/Kg

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

<sup>+</sup>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 / mineral spirit?); 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) reporting limit raised due to high MTBE content; k) TPH pattern that does not appear to be derived from gasoline (aviation gas). m) no recognizable pattern.



<sup>#</sup> cluttered chromatogram; sample peak coelutes with surrogate peak.

#### QC SUMMARY REPORT FOR SW8021B/8015Cm

Matrix: A

WorkOrder: 0311230

EPA Method: SW80	21B/8015Cm E	xtraction:	SW50308	3	BatchID:	9374	s	piked Sampl	le ID: N/A	
	Sample	Spiked	MS*	MSD*	MS-MSD*	LCS	LCSD	LCS-LCSD	Acceptance	: Criteria (%)
	uL/L	uL/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	Low	High
TPH(btex) <sup>£</sup>	N/A	60	N/A	N/A	N/A	114	104	9.17	70	130
мтве	N/A	10	N/A	N/A	N/A	112	96.1	15.7	70	130
Benzene	N/A	10	N/A	N/A	N/A	116	108	7.04	70	130
Toluene	N/A	10	N/A	N/A	N/A	110	102	7.33	70	130
Ethylbenzene	N/A	10	N/A	N/A	N/A	112	109	3.09	70	130
Xylenes	N/A	30	N/A	N/A	N/A	100	100	0	70	130
%SS:	N/A	100	N/A	N/A	N/A	I14	105	8.33	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.

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

<sup>\*</sup> 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.

<sup>£</sup> TPH(btex) = sum of BTEX areas from the FiD.

<sup>#</sup> cluttered chromatogram; sample peak coelutes with surrogate peak.

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.

#### QC SUMMARY REPORT FOR SW8021B/8015Cm

Matrix: A

WorkOrder: 0311230

EPA Method: SW80	21B/8015Cm <b>E</b>	Extraction:	SW50308	3	BatchID:	9358	s	piked Sampl	le ID: N/A	
·	Sample	Spiked	MS*	M\$D*	MS-MSD*	LCS	LCSD	LCS-LCSD	Acceptance	e Criteria (%)
	úL/L	uL/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	Low	High
TPH(btex) <sup>£</sup>	N/A	60	N/A	N/A	N/A	99	97.6	1.41	70	130
МТВЕ	N/A	10	N/A	N/A	N/A	98.1	105	6.50	70	130
Benzene	N/A	10	N/A	N/A	N/A	102	105	3.47	70	130
Toluene	N/A	10	N/A	N/A	N/A	102	105	3.25	70	130
Ethylbenzene	N/A	10	N/A	N/A	N/A	105	109	3.02	70	130
Xylenes	N/A	30	N/A	N/A	N/A	107	110	3.08	70	130
%SS:	N/A	100	N/A	N/A	N/A	102	106	4.22	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.

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

<sup>\*</sup> 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.

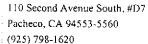
<sup>£</sup> TPH(btex) = sum of BTEX areas from the FID.

<sup>#</sup> cluttered chromatogram; sample peak coelutes with surrogate peak.

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.

# McCampbell Analytical Inc.



# **CHAIN-OF-CUSTODY RECORD**

Page 1 of 1

WorkOrder: 0311230

Client:

Cambria Env. Technology 5900 Hollis St, Suite A Emeryville, CA 94608 TEL:

PO:

(510) 420-0700

FAX: ProjectNo: (510) 420-3394 #130-0105-350; WORTHINGTON

Date Received:

11/18/03

Date Printed:

11/18/03

Sample ID	ClientSampID	Matrix	Collection Date	Hold	G-MBTEX_PPMV	Requested Tests
0311230-001 0311230-002	EFF	Air Air	11/17/03 11/17/03		A	

Prepared by: Melissa Valles

#### Comments:

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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McCampbell A	Analytical	Inc.
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Cambria Env. Technology	Client Project ID: #130-0105-350;	Date Sampled: 12/02/03
5900 Hollis St, Suite A	WORTHINGTON	Date Received: 12/03/03
Emeryville, CA 94608	Client Contact: Gretchen Hellmann	Date Reported: 12/09/03
Euleryvine, CA 94008	Client P.O.:	Date Completed: 12/09/03

WorkOrder: 0312069

December 09, 2003

Dear Gretchen:

#### Enclosed are:

- 1). the results of 2 analyzed samples from your #130-0105-350; WORTHINGTON 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

Yours trul

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#### AcCampbell 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: #130-0105-350; WORTHINGTON	Date Sampled: 12/02/03
5900 Hollis St, Suite A	WORTHINGTON	Date Received: 12/03/03
Emeryville, CA 94608	Client Contact: Gretchen Hellmann	Date Extracted: 12/05/03-12/06/03
	Client P.O.:	Date Analyzed: 12/05/03-12/06/03

	nethod: SW5030B				methods: SW80211				Order: 0	
Lab ID	Client ID	Matrix	TPH(g)	МТВЕ	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% S
001A	INF	w	220,a	<b></b>	3.5	1.4	1.6	11	1	112
002A	EFF-1	w	ND		ND	ND	ND	ND	1	. 105
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;										
	Limit for DF =1; not detected at or	W	50	5.0	0.5	0.5	0.5	0.5	1	μg

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

DHS Certification No. 1644

Angela Rydelius, Lab Manager

<sup>#</sup> cluttered chromatogram; sample peak coelutes with surrogate peak.

<sup>+</sup>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 / mineral spirit?); 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) reporting limit raised due to high MTBE content; k) TPH pattern that does not appear to be derived from gasoline (aviation gas). m) no recognizable pattern.

### QC SUMMARY REPORT FOR SW8021B/8015Cm

Matrix: W

WorkOrder: 0312069

EPA Method: SW80	21B/8015Cm E	extraction:	SW50308	3	BatchID:	9526	S	piked Sampl	le ID: 03120	43-003A
	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(btex) <sup>£</sup>	ND	60	105	109	3.74	107	109	1.62	70	130
MTBE	ND	10	96.5	98.1	1.65	88.8	91.1	2.52	70	130
Benzene	ND	10	114	106	7.57	106	109	2.98	70	130
Toluene	ND	10	111	103	7.05	102	105	2.28	70	130
Ethylbenzene	ND	10	114	108	6.04	107	111	3.68	70	130
Xylenes	ND	30	107	100	6.45	100	103	3.28	70	130
%SS:	105	100	111	102	8.29	103	105	2.08	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.

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

<sup>\*</sup> 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.

<sup>£</sup> TPH(btex) = sum of BTEX areas from the FID.

<sup>#</sup> cluttered chromatogram; sample peak coelutes with surrogate peak.

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.

WorkOrder: 0312069

70

70

70

70

70

130

130

130

130

130

Benzene

Toluene

Xylenes

%SS:

Ethylbenzene

ND

ND

ND

ND

106

10

10

10

30

100

#### QC SUMMARY REPORT FOR SW8021B/8015Cm

Matrix: W

EPA Method: SW80	021B/8015Cm	Extraction:	SW5030E	3	BatchID:	9547	S	piked Sampl	e ID: 03120	71-003A
	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(btex) <sup>£</sup>	ND	60	94.4	99	4.79	98.5	96.8	1.76	70	130
МТВЕ	13.78	10	111	99.8	4.48	99.7	106	5.86	70	130

0.610

0.627

1.01

3.08

1.05

100

102

104

107

104

103

105

105

107

106

2.90

2.49

1.61

0

1.40

101

103

104

107

105

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:
NONE

102

104

105

110

106

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

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

<sup>\*</sup> 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.

<sup>£</sup> TPH(btex) = sum of BTEX areas from the FID.

<sup>#</sup> cluttered chromatogram; sample peak coelutes with surrogate peak.

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.

# McCampbell Analytical Inc.



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

# **CHAIN-OF-CUSTODY RECORD**

Page 1 of 1

WorkOrder: 0312069

Report to:

Matt Meyers"

Cambria Env. Technology 5900 Hollis St, Suite A

Emeryville, CA 94608

TEL:

(510) 420-0700

FAX: (510) 420-3394 ProjectNo: #130-0105-350; WORTHINGTON

PO:

Bill to:

Accounts Payable

Cambria Env. Technology

5900 Hollis St, Ste. A Emeryville, CA 94608 Date Received:

Requested TAT:

12/3/03

5 days

Date Printed:

12/3/03

Sample ID	01:							 		Red	ues	ed 1	ests	s (S	ee le	gen	d be	low)								
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Prepared by: Melissa Valles

#### Comments:

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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	110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
McCampbell Analytical Inc.	Telephone: 925-798-1620 Fax: 925-798-1622
L'and	http://www.mccampbell.com E-mail: main@mccampbell.com

Cambria Env. Technology	Client Project ID: #130-0105-350;	Date Sampled: 12/02/03
5900 Hollis St, Suite A	WORTHINGTON	Date Received: 12/03/03
Emeryville, CA 94608	Client Contact: Gretchen Hellmann	Date Reported: 12/09/03
Emeryvine, CA 94008	Client P.O.:	Date Completed: 12/09/03

WorkOrder: 0312068

December 09, 2003

#### Dear Gretchen:

#### Enclosed are:

- 1). the results of 2 analyzed samples from your #130-0105-350; WORTHINGTON 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	,	Date Sampled: 12/02/03											
5900 Hollis St, Suite A	WORTHINGTON	Date Received: 12/03/03											
Emergillo CA 04609	Client Contact: Gretchen Hellmann	Date Extracted: 12/03/03											
Emeryville, CA 94608	Client P.O.:	Date Analyzed: 12/03/03											

#### Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with MTBE and BTEX in ppmv\*

Extraction r	nethod: SW5030E	3		Analytical t	nethods: SW80211	B/8015Cm		Work (	Order: 0	312068
Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS
001A	INF	А	530,a	ND<10	5.9	2.7	0.61	6.0	1	#
002A	EFF	A	ND	ND	ND	ND	ND	ND	1	97.6
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ppm (mg/L)	to ppmv (	ul/L) conversion	for TPH(g) assu	mes the molecula	r weight of gaso	line to be equal to	that of hexane.		
Reporting Limit for DF =1; ND means not detected at or	A	10	1.5	0.15	0.15	0.15	0.15	1	uL/L
above the reporting limit	S	NA	NA	NA	NA	NA	NA	1	mg/Kg

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

Angela Rydelius, Lab Manager

<sup>#</sup> cluttered chromatogram; sample peak coelutes with surrogate peak.

<sup>+</sup>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 / mineral spirit?); 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) reporting limit raised due to high MTBE content; k) TPH pattern that does not appear to be derived from gasoline (aviation gas). m) no recognizable pattern.

WorkOrder: 0312068

%SS:

### QC SUMMARY REPORT FOR SW8021B/8015Cm

Matrix: A

EPA Method: SW80	021B/8015Cm E	Extraction:	SW5030	3	BatchID:	9526	S	piked Sampl	e ID: N/A	
	Sample	Spiked	MS*	MSD*	MS-MSD*	LCS	LCSD	LCS-LCSD	Acceptance	Criteria (%)
	uL/L	uL/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	Low	High
TPH(biex) <sup>£</sup>	N/A	60	N/A	N/A	N/A	107	109	1.62	70	130
МТВЕ	N/A	10	N/A	N/A	N/A	88.8	91.1	2.52	70	130
Benzene	N/A	10	N/A	N/A	N/A	106	109	2.98	70	130
Toluene	N/A	10	N/A	N/A	N/A	102	105	2.28	70	130
Ethylbenzene	N/A	10	N/A	N/A	N/A	107	111	3.68	70	130
Xylenes	N/A	30	N/A	N/A	N/A	100	103	3.28	70	130

N/A

N/A

103

105

2.08

70

130

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:

N/A

N/A

100

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample, LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

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

<sup>\*</sup> 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.

<sup>£</sup> TPH(btex) = sum of BTEX areas from the FID.

<sup>#</sup> cluttered chromatogram; sample peak coelutes with surrogate peak.

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.

## McCampbell Analytical Inc.



Page 1 of 1

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

WorkOrder: 0312068

Danad	
Report	to:

Matt Meyers"

Cambria Env. Technology 5900 Hollis St, Suite A

Emeryville, CA 94608

(510) 420-0700

ProjectNo: #130-0105-350; WORTHINGTON

FAX: (510) 420-3394

):

PO:

TEL:

Bill to:

Accounts Payable

Cambria Env. Technology

5900 Hollis St, Ste. A Emeryville, CA 94608 Requested TAT:

5 days

Date Received: 12

12/3/03

Date Printed: 12/3/03

				-					Reques	ted Tests	(See le	gend b	elow)					
Sample 1D	ClientSampID	Matrix	Collection Date H	Hold	1 2	3	4	5	6	7	8	9	10	11	12	13	14	15
0312068-001	INF	Air	12/2/03 2:30:00 PM		Α		·	7						Ţ				
0312068-002	EFF	Air	12/2/03 2:30:00 PM		Α											!		

#### Test Legend:

1 G-MBTEX_PPMV	2	3	4	5
6	7	8	9	10
11	12	13	14	15 [

Prepared by: Melissa Valles

#### Comments:

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.

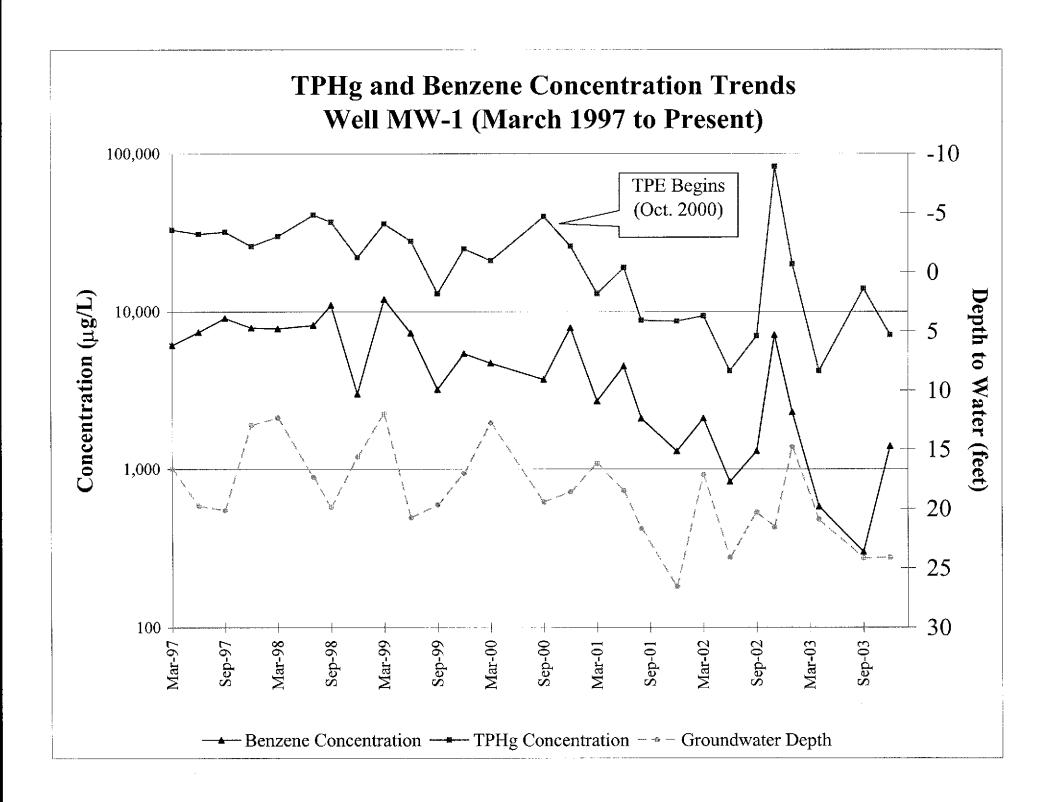
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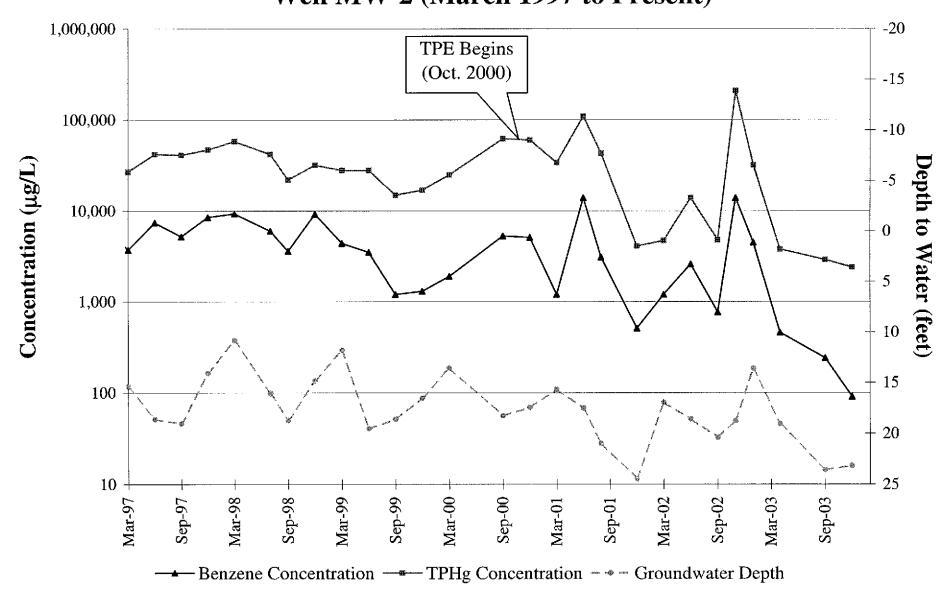


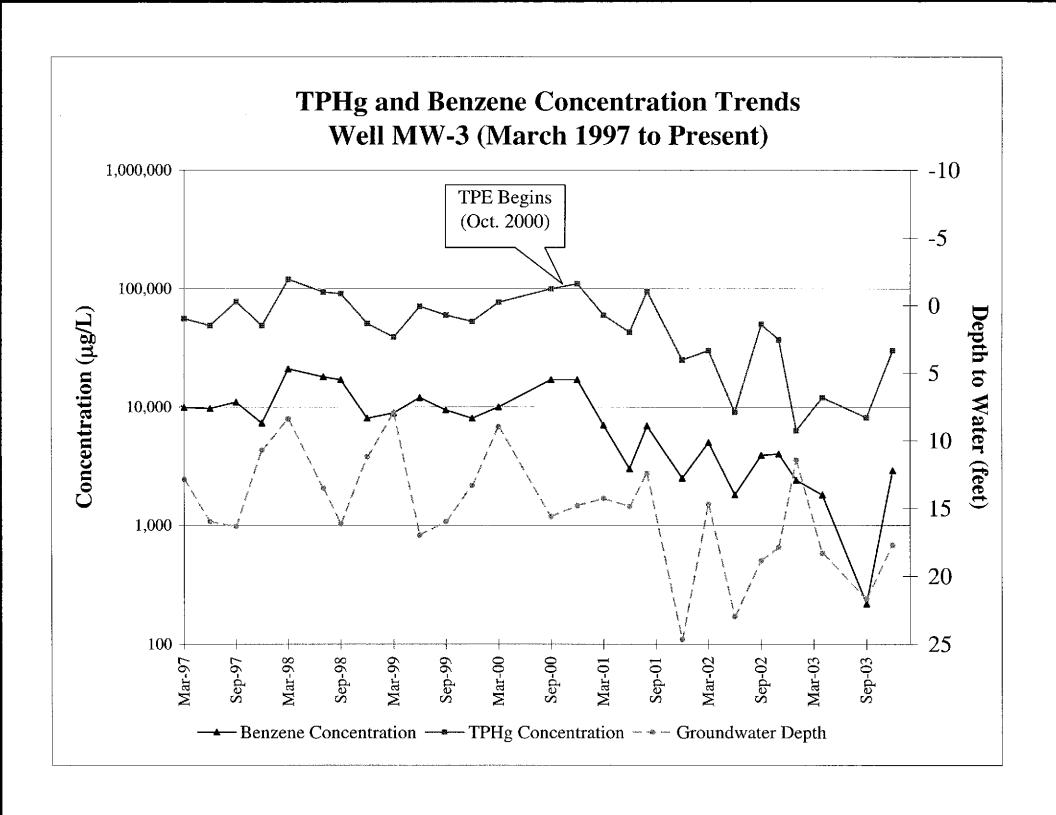
# **APPENDIX D**

TPHg and Benzene Concentration Trend Graphs

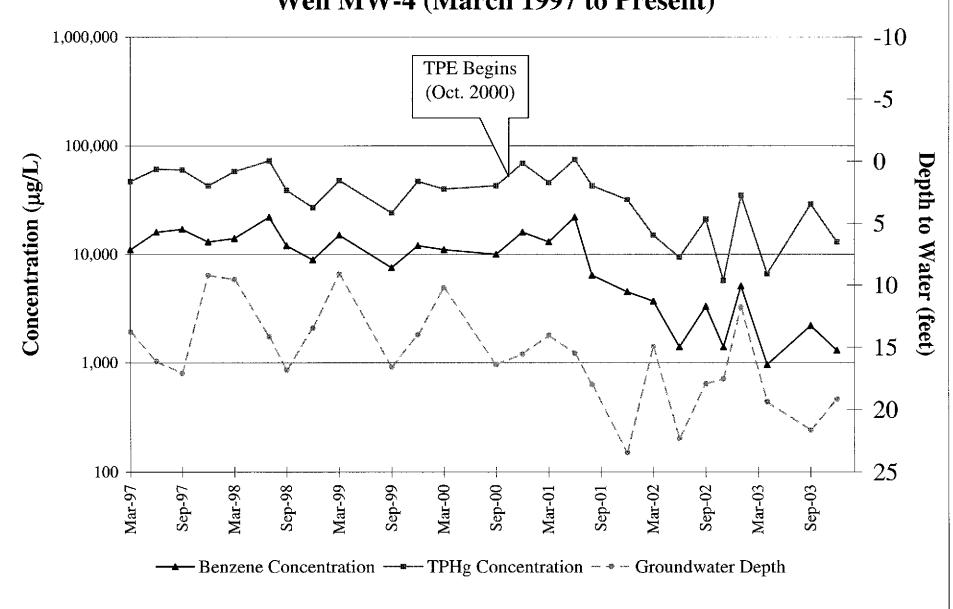














# **APPENDIX E**

Geotracker Electronic Delivery Confirmations

# **AB2886 Electronic Delivery**

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

Your EDF file has been successfully uploaded!

Confirmation Number: 6879990100

**Date/Time of Submittal: 2/5/2004 3:06:36 PM** 

Facility Global ID: T0600100538

Facility Name: EXXON

Submittal Title: 4th Qtr 2003, GW Analytical Data

Submittal Type: GW Monitoring Report

Logged in as CAMBRIA-EM (AUTH\_RP)

CONTACT SITE ADMINISTRATOR.

# **AB2886 Electronic Delivery**

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:

4th Qtr 2003, GW Depth Data for 3035 35th Avenue,

Oakland

Submittal Date/Time: 2/5/2004 3:08:26 PM

**Confirmation** Number:

3053547501

Back to Main Menu

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CONTACT SITE ADMINISTRATOR.