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CAMBRIA

November 10, 2001

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**
Third Quarter 2001
Former Exxon Service Station
3055 35th Avenue
Oakland, California
Cambria Project #130-0105

NOV 08 2001

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 for the above-referenced site. Presented in the report are the third quarter 2001 activities and the anticipated fourth quarter 2001 activities.

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

Sincerely,
Cambria Environmental Technology, Inc.

Ron Scheele, RG
Senior Geologist

Attachments: Groundwater Monitoring and System Progress Report, Third Quarter 2001

cc: Mr. Lynn Worthington, Golden Empire Properties, Inc. 5942 MacArthur Boulevard, Suite B, Oakland, CA 94605
Mr. Robert Cave, BAAQMD, Permit Services Division, 939 Ellis Street, San Francisco, CA 94109
Ms. Marie Kulka, Source Control Division, EBMUD, 375 11th Street, Oakland, CA 94607

Oakland, CA
San Ramon, CA
Sonoma, CA

Cambria Environmental Technology, Inc.

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Tel (510) 420-0700
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GROUNDWATER MONITORING AND SYSTEM PROGRESS REPORT

THIRD QUARTER 2001

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

November 10, 2001

Prepared for:

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

Prepared by:

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Staff Geologist

Ron Scheele, RG
Senior Geologist

CAMBRIA

GROUNDWATER MONITORING AND SYSTEM PROGRESS REPORT

THIRD QUARTER 2001

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

November 10, 2001

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 third quarter 2001 groundwater monitoring and corrective action activities and the anticipated fourth quarter 2001 activities.

THIRD QUARTER 2001 ACTIVITIES

Monitoring Activities

Field Activities: On August 30, 2001, Cambria conducted quarterly monitoring activities. Cambria gauged and inspected for separate-phase hydrocarbons (SPH) monitoring wells MW-1, MW-2, MW-3 and MW-4 (Figure 1). Groundwater samples were collected from all scheduled wells not containing SPH. Field data sheets are presented in Appendix A.

Sample Analyses: Groundwater samples were analyzed for total petroleum hydrocarbons as gasoline (TPHg) and total petroleum hydrocarbons as diesel (TPHd) by modified EPA Method 8015, and benzene, toluene, ethylbenzene and xylenes (BTEX) and methyl tertiary butyl ether (MTBE) by EPA Method 8020. The groundwater analytical results are summarized in Table 1. The laboratory analytical report is presented as Appendix B.

Monitoring Results

Groundwater Flow Direction: Based on depth-to-water measurements collected during Cambria's August 30, 2001 site visit, groundwater beneath the site flows to the east-northeast at a gradient of 0.127 ft/ft (Figure 1). The groundwater gradient is affected by dual phase extraction (DPE) remediation system and the groundwater contours on Figure 1 do not reflect static groundwater conditions. Since 1994, the primary groundwater flow direction has been toward the northwest with

a change towards the southwest usually occurring during the fourth and/or second quarters. Groundwater elevation data is presented in Table 1.

Hydrocarbon Distribution in Groundwater: Hydrocarbon concentrations detected this quarter have decreased slightly in MW-1, MW-2, and MW-4, and have increased slightly in MW-3 as compared with the previous sampling event. No SPH were detected in any of the wells. The maximum TPHg and TPHd concentrations were detected in well MW-3 at 95,000 and 190,000 micrograms per liter (μg/l), respectively. The maximum benzene concentration was detected in well MW-3 at 6,900 μg/l. MTBE concentrations were below detection limits in all sampled wells. Analytical results are summarized in Table 1.

Corrective Action Activities

System Design: The dual phase extraction (DPE) remediation system consists of a skid mounted all-electric catalytic oxidizer, a 300 cfm positive-displacement blower, a 150-gallon moisture knockout with automatic float controls, a 1 hp centrifugal transfer pump, and two 1000-lb carbon vessels connected in series. Nine wells are connected to the remediation system (RW-5 through RW-13). See Figure 2 for the location of remediation enclosure and wells.

Remediation System Operations and Maintenance Activities: From June 21 to October 3, 2001 Cambria performed dual phase extraction system operation and maintenance activities. During operation and maintenance activities, individual well flow, vacuum, and hydrocarbon concentration measurements were collected from all remediation system wells and from the catalytic oxidizer/blower. During site visits, system operation parameters were also recorded in specialized field forms for future system optimization and agency inspection. As per the Bay Area Air Quality Management (BAAQMD) permit, a catalytic oxidizer operating temperature greater than 600 degrees Fahrenheit was maintained and system operation parameters were continuously measured using a chart recorder. System influent and effluent vapor samples were collected and submitted for laboratory analysis on July 2, July 10, August 2, and September 7, and October 3, 2001. Groundwater treatment system influent and effluent samples were collected on July 2, September 7, 2001. Table 2 summarizes soil vapor extraction system operations and analytical results. Table 3 summarizes groundwater extraction system operations and analytical results. The analytical laboratory reports are included as Attachment C.

Remediation System Performance: The DPE system operated intermittently in July, August, and September. The air proving switch and blower belts were adjusted and replaced, and a hole was repaired in the heat exchanger to correct the low destruction efficiency problems. From July 2 to October 3, 2001, the DPE system ran for 1,041 hours. Influent vapor concentrations ranged from 81 to 160 parts per million by volume (ppmv) and the hydrocarbon recovery rate ranged from 1.6 to 8.3

lbs/day, during the third quarter. Effluent vapor concentrations ranged from below laboratory detection to 34 parts per million by volume (ppmv) due to a hole in the heat exchanger which caused the system to be temporarily outside of permit requirements. The system was shutdown immediately upon determination of the poor destruction efficiency, repairs were made, and additional air samples were collected to confirm that the problem had been corrected.

Groundwater sample results indicated that the groundwater extraction portion of the DPE system was operating within permit requirements. Effluent groundwater concentrations for TPHg and BTEX were below laboratory detection limits during the July 2 and September 7, 2001, indicating that no hydrocarbons were discharged to the sanitary sewer system.

Due to low permeability soil conditions at the site, Cambria began DPE operations on the four groundwater monitoring wells (MW-1 through MW-4) in the third quarter. The reversed groundwater gradient is a result of the groundwater extraction occurring from these monitoring wells.

To date, a total of 2,358 pounds of hydrocarbons have been destroyed by vapor extraction and 0.581 pounds of hydrocarbons have been removed by groundwater extraction.

ANTICIPATED FOURTH QUARTER 2001 ACTIVITIES

Monitoring Activities

Cambria will gauge the site wells, check the wells for SPH, and collect groundwater samples from all wells not containing SPH. Groundwater samples will be analyzed for TPHg and TPHd by Modified EPA Method 8015 and BTEX and MTBE by EPA Method 8020. Cambria will prepare a groundwater monitoring report summarizing the monitoring activities and results.

Corrective Action Activities:

Cambria will continue to perform DPE operation and maintenance activities twice per month during the fourth quarter. The groundwater extraction stingers may from time to time be switched between the monitoring wells and the remediation wells in an effort to help maximize hydrocarbon removal and site cleanup. Soil vapor samples will be collected on a monthly basis, groundwater influent and effluent samples will be collected on an as needed basis, and system operation and performance will be evaluated and submitted to the BAAQMD for the fourth quarter 2001 as part of the groundwater monitoring report. Records will be kept for a period of two years for possible future BAAQMD inspection.

ATTACHMENTS

Figure 1 – Groundwater Elevation Contour Map
Figure 2 – Remediation System Layout

Table 1 – Groundwater Elevation and Analytical Data
Table 2 – DPE System Performance and Analytical Results - Soil Vapor Extraction
Table 3 – DPE System Performance and Analytical Results - Groundwater Extraction

Appendix A – Groundwater Monitoring Field Data Sheets
Appendix B – Analytical Results for Quarterly Groundwater Sampling
Appendix C – Analytical Results for DPE System Operation

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APPENDIX A

Groundwater Monitoring Field Data Sheets

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APPENDIX B

Analytical Results for Quarterly Groundwater Sampling

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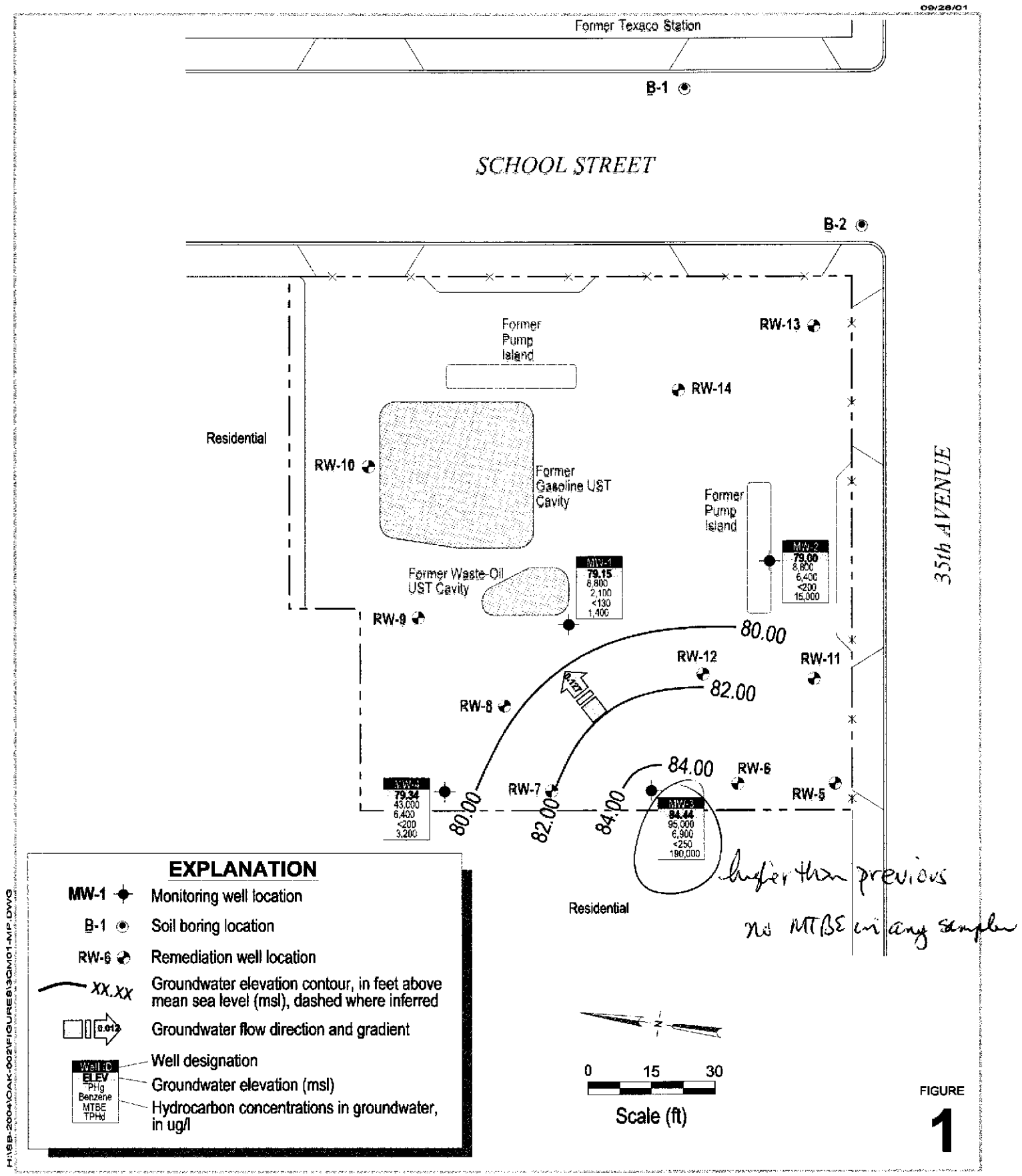
APPENDIX C

Analytical Results for DPE System Operation



higher than previous

no MTBE in any samples

Former Exxon Station

3055 35th Avenue

Oakland, California

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Groundwater Elevation Contour Map

August 30, 2001

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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
(TOC)		Depth (ft)	(ft)	Elev. (ft)	<---------- Concentrations in parts per billion (µg/L) ---------->								(mg/L)
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	6,200	---	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[a]	---	7,400	440	890	1,800	<400	3.7
	09/17/97	20.12	---	80.73	32,000[d]	3,500[e]	---	9,100	550	1,000	2,000	<1,000	2.1
	12/22/97	12.95	---	87.90	26,000[d]	5,800[e]	---	7,900	370	920	1,500	<790	0.7
	03/18/98	12.34	Sheen	88.51	30,000[d]	4,200[e,f]	---	7,800	820	840	2,000	<1,100	1.3
	07/14/98	17.34	---	83.51	41,000[d]	8,900[e,f]	---	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[d]	6,800[e]	---	12,000	750	1,300	2,400	950	0.50
	06/29/99	20.77	---	80.08	28,000[d]	3,500[e]	---	7,300	420	810	1,700	<1,300	0.10
	09/28/99	19.68	---	81.17	13,000[d]	3,600[e,f]	---	3,200	130	320	1,100	<210	0.55
	12/10/99	17.02	---	83.83	25,000[d]	2,900[e,f]	---	5,400	130	620	1,400	<1,000	1.03
	03/23/00	12.76	---	88.09	21,000[d]	3,300[f]	---	4,700	140	470	1,100	<350	---
	09/07/00	19.45	---	81.40	40,000[d,g]	12,000[e,g]	---	3,700	1,400	910	4,900	<50	0.17
	12/05/00	18.60	---	82.25	26,000[a]	3,400[e]	---	7,900	150	580	810	<300	0.35
	03/07/01	16.19	---	84.66	13,000	2,400	---	2,700	43	69	300	<100	0.49
	06/06/01	18.47	---	82.38	19,000	4,000	---	4,500	130	270	430	<400	0.39
	08/30/01	**21.70**	**---**	**79.15**	**8,800[a]**	**1,400[d]**	**---**	**2,100**	**45**	**91**	**240**	**<130**	**0.27**

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

Well ID (TOC)	Date	GW Depth (ft)	SPH (ft)	GW Elev. (ft)	TPHg	TPHd	TPHmo	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	DO (mg/L)
					<---------- Concentrations in parts per billion (µg/L) ---------->								
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[b]	---	7,400	3,800	1,200	5,700	<200	0.9
	09/17/97	19.05	Sheen	80.95	41,000[d]	8,900[e]	---	5,200	3,400	1,300	5,900	<700	1.2
	12/22/97	14.09	---	85.91	47,000[d]	6,100[e]	---	8,500	4,600	1,800	8,400	<1,200	1.2
	03/18/98	10.83	Sheen	89.17	58,000[d]	7,000[e,f]	---	9,300	6,100	1,800	8,200	<1,100	1.1
	07/14/98	16.07	---	83.93	42,000[d]	5,300[e,f]	---	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[d]	7,500[e,f]	---	4,400	1,600	950	4,100	410	1.86
	06/29/99	19.54	---	80.46	28,000[d]	3,300[e]	---	3,500	1,100	690	3,100	<1,000	0.41
	09/28/99	18.61	---	81.39	15,000[d]	3,400[e,f]	---	1,200	540	230	2,300	<36	1.18
	12/10/99	16.53	---	83.47	17,000[d]	2,500[e,f]	---	1,300	780	420	2,700	<40	0.17
	03/23/00	13.56	---	86.44	25,000[d]	3,100[i]	---	1,900	1,100	660	3,700	<500	---
	09/07/00	18.25	---	81.75	62,000[d,g]	32,000[e,g]	---	5,300	2,300	1,500	8,400	<100	0.39
	12/05/00	17.45	---	82.55	60,000[d,g]	87,000[e,f,g]	---	5,100	2,200	1,600	9,000	<200	0.31
	03/07/01	15.68	---	84.32	34,000	3,900	---	1,200	770	620	4,300	<200	0.44
	06/06/01	17.51	---	82.49	110,000	48,000	---	14,000	9,000	1,900	12,000	<950	0.24
	08/30/01	**21.00**	**---**	**79.00**	**43,000[a,h]**	**15,000[d,h]**	**---**	**3,100**	**720**	**980**	**5,500**	**<200**	**---**

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

Well ID (TOC)	Date	GW Depth (ft)	SPH (ft)	GW Elev. (ft)	TPHg	TPHd	TPHmo	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	DO (mg/L)
					<---------- Concentrations in parts per billion (µg/L) ---------->								
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	---	---
	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[b]	---	9,700	7,100	1,300	7,000	220	5.8
	09/17/97	16.34	Sheen	80.53	78,000[d]	15,000[e]	---	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[e]	---	7,300	5,300	1,400	7,500	<1,100	3.1
	03/18/98	8.41	Sheen	88.46	120,000[d]	20,000[e,f]	---	21,000	19,000	2,600	15,000	<1,600	1.6
	07/14/98	13.51	---	83.36	94,000[d,g]	65,000[e,f,g]	---	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[d]	4,600[e]	---	8,900	4,400	940	4,500	810	0.56
	06/29/99	16.98	---	79.89	71,000[d]	6,900[e]	---	12,000	7,300	1,400	8,400	<1,700	0.19
	09/28/99	15.99	---	80.88	60,000[d]	7,800[e]	---	9,400	9,200	1,000	9,900	200	0.53
	12/10/99	13.31	---	83.56	53,000[d]	5,300[e,f]	---	8,000	6,400	1,100	8,100	<200	0.48
	03/23/00	8.98	---	87.89	77,000[d,g]	11,000[g,j]	---	10,000	9,400	1,600	11,000	<430	---
	09/07/00	15.61	---	81.26	100,000[d,g]	19,000[e,f,g]	---	17,000	12,000	1,600	11,000	<500	---
	12/05/00	14.80	---	82.07	110,000[d,g]	17,000[e,g]	---	17,000	11,000	1,900	12,000	<750	0.37
	03/07/01	14.27	---	82.60	60,000	13,000	---	7,000	4,600	900	7,100	<350	0.49
	06/06/01	14.88	---	81.99	43,000	12,000	---	3,000	1,000	770	5,200	<400	1.71
	08/30/01	**12.43**	**---**	**84.44**	**95,000[a,h]**	**190,000[d,h]**	**---**	**6,900**	**10,000**	**2,700**	**15,000**	**<250**	**0.24**

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

Well ID (TOC)	Date	GW Depth (ft)	SPH (ft)	GW Elev. (ft)	TPHg	TPHd	TPHmo	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	DO (mg/L)
					<---------- Concentrations in parts per billion (µg/L) ---------->								
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[b]	---	16,000	6,100	1,500	5,900	780[c]	1.4
	09/17/97	17.10	---	80.24	60,000[d]	4,400[e]	---	17,000	4,900	1,500	5,700	<1,500	1.5
	12/22/97	9.21	---	88.13	43,000[d]	3,100[e]	---	13,000	3,900	1,100	4,200	<960	3.7
	03/18/98	9.54	---	87.80	58,000[d]	5,500[e,f]	---	14,000	4,700	1,400	5,700	<1,200	0.8
	07/14/98	14.15	---	83.19	73,000[d]	2,900[e,f]	---	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[d]	2,400[e,f,h]	---	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[e,f]	---	7,500	1,200	190	2,200	210	14.29[#]
	12/10/99	13.99	---	83.35	47,000[d]	3,100[e,f]	---	12,000	1,800	1,000	4,400	<100	0.62
	03/23/00	10.22	---	87.12	40,000[d]	3,100[e,f]	---	11,000	1,600	910	3,100	690	---
	09/07/00	16.40	---	80.94	43,000[d]	5,900[e]	---	10,000	1,100	1,100	3,400	<450	1.04
	12/05/00	15.55	---	81.79	69,000[d,g]	2,600[e,g]	---	16,000	1,300	1,300	3,400	<200	0.35
	03/20/01	14.03	---	83.31	46,000	---	---	13,000	1,000	900	2,800	<350	0.39
	06/06/01	15.49	---	81.85	75,000	5,400	---	22,000	1,800	1,900	6,400	<1,200	2.22
	08/30/01	**18.00**	**---**	**79.34**	**43,000[a]**	**3,200[d]**	**---**	**6,400**	**630**	**510**	**2,600**	**<200**	**0.32**
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
(TOC)		Depth (ft)	(ft)	Elev. (ft)	<---------- Concentrations in parts per billion (µg/L) ---------->								(mg/L)

Abbreviations:

TOC = Top of casing elevation relative to an aribitrary datum

GW = Groundwater

SPH = Separate-phase hydrocarbons

--- = not observed/not analyzed

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

TPHd = Total petroleum hydrocarbons as diesel by modified EPA Method 8015

TPHmo = Total petroleum hydrocarbons as motor oil by modified EPA Method 8015

Benzene, Ethylbenzene, Toluene, and Xylenes by EPA Method 8020

MTBE = Methyl Tertiary-Butyl Ether by EPA Method 8020

DO = Dissolved oxygen

µg/L = Micrograms per liter, equivalent to parts per billion in water

mg/L = Milligrams per liter, equivalent to parts per million in water

* = Well inaccessible during site visit

Notes:

a = Result has an atypical pattern for diesel analysis

b = Result appears to be a lighter hydrocarbon than diesel

c = There is a >40% difference between primary and confirmation analysis

d = Unmodified or weakly modified gasoline is significant

e = Gasoline range compounds are significant

f = Diesel range compounds are significant; no recognizable pattern

g = lighter than water immiscible sheen is present

h = one to a few isolated peaks present

i = medium boiling point pattern does not match diesel (stoddard solvent)

j = aged diesel? is significant

TOC Elevation of Well MW-4 surveyed relative to an arbitrary site datum by David Hop, Licensed Surveyor on April 19, 1997

= abnormally high reading due to added hydrogen peroxide

Table 2. DPE System Performance and Analytical Results - Soil Vapor Extraction - Golden Empire Properties (Worthington), 3055 35th Street, Oakland, California

Date	Hour Meter Readings (hrs)	System Uptime (per interval) (%)	Total Well Flow Rate (prior to dilution) (scfm)	Total Well HC Conc. (ppmv)	System Inlet Temp. (degree F)	System Flow Rate (after dilution) (scfm)	System Influent HC Conc. [1] (ppmv)	System Effluent HC Conc. [2] (ppmv)		HC Removal Rate [3] (lbs/day)	Emission Rate (lbs/day)		TPHg Destruction Efficiency (%)	Gasoline Cumulative Removal (lbs)
							TPHg	TPHg	Benz	TPHg	TPHg	Benz		
6/24/2000	0	--	--	--	--	--	--	--	--	--	--	--	--	0
9/28/2000	454	20%	175	420	789	175	420	22	0.24	23.6	1.24	0.012	95	0
10/12/2000	696	72%	88	360	950	88	360	<10	<0.15	10.1	<0.28	<0.004	*	238
11/9/2000	1251	83%	55	590	820	55	590	<10	<0.15	10.5	<0.18	<0.002	*	472
1/23/2001	1313	3%	--	--	--	--	--	--	--	--	--	--	*	499
3/28/2001	0	--	Replacement System Startup		--	--	--	--	--	--	--	--	--	499
4/5/2001	194	101%	68	1,800	908	68	1,800	34	0.52	39.2	0.74	0.010	98	499
5/3/2001	863	100%	29	2,800	1000	29	2,800	<10	<0.15	25.8	<0.09	<0.001	*	1909
6/4/2001	1114	33%	79	240	820	79	240	<10	<0.15	6.1	<0.25	<0.003	*	2179
7/2/2001	1429	62%	73	92	804	73	92	26	0.34	2.1	<0.61	<0.007	72	2259
7/10/2001	1621	100%	110	92	900	110	92	<10	<0.15	3.2	<0.35	<0.005	*	2276
8/2/2001	1759	25%	65	110	940	65	110	<10	<0.15	2.3	<0.21	<0.003	*	2295
9/7/2001	2301	63%	60	81	854	60	81	34	0.52	1.6	<0.66	<0.009	58	2347
10/3/2001	2470	27%	161	160	854	161	160	<10	0.31	8.3	<0.52	<0.015	*	2358

Table 2. DPE System Performance and Analytical Results - Soil Vapor Extraction - Golden Empire Properties (Worthington), 3055 35th Street, Oakland, California

Date	Hour Meter Readings (hrs)	System Uptime (per interval) (%)	Total Well Flow Rate (prior to dilution) (scfm)	Total Well HC Conc. (ppmv)	System Inlet Temp. (degree F)	System Flow Rate (after dilution) (scfm)	System Influent HC Conc. [1] (ppmv)	System Effluent HC Conc. [2] (ppmv)		HC Removal Rate [3] (lbs/day)	Emission Rate (lbs/day)		TPHg Destruction Efficiency (%)	Gasoline Cumulative Removal (lbs)
							TPHg	TPHg	Benz	TPHg	TPHg	Benz		

Notes and Abbreviations:

TPHg = Total petroleum hydrocarbons as gasoline
Benz = Benzene
HC Conc. = Hydrocarbon Concentrations
ppmv = Parts per million by volume. Analytical lab results converted from micrograms per liter (ug/l) to ppmv assumes the molecular weight of gasoline to be equal to that of hexane. at 1 atmosphere of pressure and 20 degrees Celsius.

[1] TPHg and benzene concentrations based on lab results by Modified EPA Methods 8015 and 8020.

[2] The hydrocarbon removal/emission rate is based on the Bay Area Air Quality Management's District's (BAAQMD) Procedures for Soil Vapor Extraction where Rate = concentration (ppmv) x flow rate (scfm) x 1 lb-mole/386x$10^6$$ft^3$ x molecular weight (86 lb/lb-mole for TPHg, 78 lb/lb-mole for benzene) x 1440 min/day.

[3] Gasoline 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.

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

Table 3. DPE System Performance and Analytical Results - Groundwater Extraction - Golden Empire Properties (Worthington), 3055 35th Street, Oakland, California

Date	Hour Meter Readings (hrs)	Water Meter Readings (gallons)	Total Groundwater Extracted (gallons)	System Flow Rate Per Period (gpm)	Sample ID	TPHg (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Total Xylenes (ug/L)	HCs Removed Per Period (lbs)	Total HCs Removed (lbs)
10/20/2000	878	0	0	NC	Inf Eff	-- --	<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	--	--	--	--	--	--	--	--
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	0.019	0.019
3/28/2001	0	3,970	3,210	NC	Replacement Catox System Startup			--	--	--	0.005	0.024
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	0.335	0.359
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	0.056	0.415

Table 3. DPE System Performance and Analytical Results - Groundwater Extraction - Golden Empire Properties (Worthington), 3055 35th Street, Oakland, California

Date	Hour Meter Readings (hrs)	Water Meter Readings (gallons)	Total Groundwater Extracted (gallons)	System Flow Rate Per Period (gpm)	Sample ID	TPHg (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Total Xylenes (ug/L)	HCs Removed Per Period (lbs)	Total HCs Removed (lbs)
7/2/2001	1,429	39,433	38,673	0.2	IN Mid EF	<50 <50 <50	2.5 <0.5 <0.5	1 <0.5 <0.5	<0.5 <0.5 <0.5	5 <0.5 <0.5	0.002	0.417
9/7/2001	2,301	48,566	47,806	0.2	INF Mid (EFF-1) EF	4,600 <50 --	24 <0.5 --	57 <0.5 --	15 <0.5 --	140 <0.5 --	0.000	0.417
10/3/2001	2,470	52,849	52,089	0.4	--	--	--	--	--	--	0.164	0.581
					Sewer Effluent Discharge Limits: (ug/L)		5.0	5.0	5.0	5.0		

Notes:

TPHg = Total Petroleum Hydrocarbons as Gasoline
BTEX = Benzene, Toluene, Ethylbenzene, Total Xylenes
MTBE = Methyl tert-butyl ether
ug/l = micrograms per liter
a = Malfunctioning totalizer replaced 12/15/00 (intial reading at 760 gallons)

ND = non detect
<n = below noted practical laboratory quantitation limits
Inf = Influent Sample
Eff = Effluent Sample
NC = Not calculated, insufficient data

APPENDIX A

Groundwater Monitoring Field Data Sheets

CAMP A

WELL DEPTH MEASUREMENTS

Well ID	Time	Product Depth	Water Depth	Product Thickness	Well Depth	Comments
MW-1	12:44		21.70			DO = 0.27 mg/L
MW-2	12:40		21.00		27.50	
MW-3	12:43		21.80			DO = 0.24 mg/L
MW-4	12:42		18.00			DO = 0.32 mg/L

Project Name: Worthington

Project Number: 130-0105

Measured By: [signature]

Date: 8-30-01

CAMBRIA

WELL SAMPLING FORM

Project Name: Worthington	Cambria Mgr: AHS	Well ID: MW- 1
Project Number: 130-0105	Date: 8-30-01	Well Yield: -----
Site Address: 3055 35th Ave Oakland, Ca	Sampling Method: Disposable bailer	Well Diameter: 2" pvc
		Technician(s):
Initial Depth to Water: 21.70	Total Well Depth:	Water Column Height:
Volume/ft:	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
4"	0.65
6"	1.47

Time	Casing Volume	Temp. C	pH	Cond. uS	Comments
	1				
	2				
	3				
		no purge			

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
MW- 1	8-30-01	1:25				
MW-	"			"		

CAMBRIA

WELL SAMPLING FORM

Project Name: Worthington	Cambria Mgr: RAS	Well ID: MW- 2
Project Number: 130-0105	Date: 8-30-01	Well Yield: -----
Site Address: 3055 35th Ave Oakland, Ca	Sampling Method: Disposable bailer	Well Diameter: 2" pvc
		Technician(s): SC
Initial Depth to Water: 21.00	Total Well Depth: 27.50	Water Column Height: 6.50
Volume/ft: 0.65	1 Casing Volume: 4.2	3 Casing Volumes: 12.67
Purging Device: 4" PVC bailer	Did Well Dewater?: no	Total Gallons Purged: 12
Start Purge Time: 12:45	Stop Purge Time: 1:00	Total Time: 15 mins

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

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

Time	Casing Volume	Temp. C	pH	Cond. uS	Comments
12:50	1 4	19.8	7.37	956	
12:55	2 8	19.5	6.98	912	DO= 39mg/L
1:00	3 12	19.6	7.06	892	

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
MW- 2	8/30/01	1:05 pm	4 VOAs 1 Amber	HCl	TPHg BTEX MTBE TPHd	8015/8020
MW-						

CAMBRIA

WELL SAMPLING FORM

Project Name: Northington	Cambria Mgr: RAS	Well ID: MW- 3
Project Number: 130-0105	Date: 8-30-01	Well Yield: -----
Site Address: 3055 35th Ave Oakland, Ca	Sampling Method: Disposable bailer	Well Diameter: 2" pvc
		Technician(s):
Initial Depth to Water: 21.80	Total Well Depth:	Water Column Height:
Volume/ft:	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
4"	0.65
6"	1.47

Time	Casing Volume	Temp. C	pH	Cond. uS	Comments
	1				
	2				
	3				
		NO PURGE			

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
MW- 3	8-30-01	1:55				
MW-						

CAMBRIA

WELL SAMPLING FORM

Project Name: Worthington	Cambria Mgr: RAS	Well ID: MW-4
Project Number: 130-0105	Date: 8-30-01	Well Yield: -----
Site Address: 3055 35th Ave Oakland, Ca	Sampling Method: Disposable bailer	Well Diameter: 2" pvc
		Technician(s):
Initial Depth to Water: 13.00	Total Well Depth:	Water Column Height:
Volume/ft:	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
4"	0.65
6"	1.47

Time	Casing Volume	Temp. C	pH	Cond. uS	Comments
	1				
	2				
	3				
		no purge			

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
MW-4	8-30-01	1:40				
MW-						

APPENDIX B

Analytical Results for Quarterly Groundwater Sampling

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 Environmental Technology 6262 Hollis Street Emeryville, CA 94608	Client Project ID: #130-0105; Worthington	Date Sampled: 08/30/01
		Date Received: 09/06/01
	Client Contact: Ron Scheele	Date Extracted: 09/06/01
	Client P.O:	Date Analyzed: 09/06/01

09/13/01

Dear Ron:

Enclosed are:

1). the results of 4 samples from your **#130-0105; 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.

Yours truly,

Edward Hamilton, Lab Director

McCAMPBELL ANALYTICAL INC.

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

Cambria Environmental Technology	Client Project ID: #130-0105; Worthington	Date Sampled: 08/30/01
6262 Hollis Street		Date Received: 09/06/01
Emeryville, CA 94608	Client Contact: Ron Scheele	Date Extracted: 09/06/01
	Client P.O:	Date Analyzed: 09/06-09/10/01

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline*, with Methyl tert-Butyl Ether* & BTEX*

EPA methods 5030, modified 8015, and 8020 or 602; California RWQCB (SF Bay Region) method GCFID(5030)

Lab ID	Client ID	Matrix	TPH(g)+	MTBE	Benzene	Toluene	Ethyl-benzene	Xylenes	% Recovery Surrogate
76998	MW-1	W	8800,a	ND<130	2100	45	91	240	112
76999	MW-2	W	43,000,a,h	ND<200	3100	720	980	5500	107
77000	MW-3	W	95,000,a,h	ND<250	6900	10,000	2700	15,000	103
77001	MW-4	W	43,000,a	ND<200	6400	630	510	2600	102
Reporting Limit unless otherwise stated; ND means not detected above the reporting limit		W	50 ug/L	5.0	0.5	0.5	0.5	0.5	
		S	1.0 mg/kg	0.05	0.005	0.005	0.005	0.005	

* water and vapor samples are reported in ug/L, wipe samples in ug/wipe, soil and sludge samples in mg/kg, and all TCLP and SPLP extracts in ug/L

cluttered chromatogram; sample peak 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 (?); f) one to a few isolated peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen is present; i) liquid sample that contains greater than ~5 vol. % sediment; j) no recognizable pattern.

DHS Certification No. 1644

Edward Hamilton, Lab Director

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

Cambria Environmental Technology	Client Project ID: #130-0105; Worthington	Date Sampled: 08/30/01
6262 Hollis Street		Date Received: 09/06/01
Emeryville, CA 94608	Client Contact: Ron Scheele	Date Extracted: 09/06/01
	Client P.O:	Date Analyzed: 09/06-09/07/01

Diesel Range (C10-C23) Extractable Hydrocarbons as Diesel *

EPA methods modified 8015, and 3550 or 3510; California RWQCB (SF Bay Region) method GCFID(3550) or GCFID(3510)

Lab ID	Client ID	Matrix	TPH(d)+	% Recovery Surrogate
76998	MW-1	W	1400,d	94
76999	MW-2	W	15,000,d,h	101
77000	MW-3	W	190,000,d,h	101
77001	MW-4	W	3200,d	112
Reporting Limit unless otherwise stated; ND means not detected above the reporting limit		W	50 ug/L	
		S	1.0 mg/kg	

* water and vapor samples are reported in ug/L, wipe samples in ug/wipe, soil and sludge samples in mg/kg, and all TCLP / STLC / SPLP extracts in ug/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) medium boiling point pattern that does not match diesel (?); f) one to a few isolated peaks present; g) oil range compounds are significant; h) lighter than water immiscible sheen is present; i) liquid sample that contains greater than ~5 vol. % sediment.

DHS Certification No. 1644

Edward Hamilton, Lab Director

McCAMPBELL ANALYTICAL INC.
110 2nd Ave. South, #D7, Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
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QC REPORT

EPA 8015m + 8020

Date: 09/06/01 **Matrix:** Water

Compound	Concentration: ug/L				%Recovery		RPD
	Sample	MS	MSD	Amount Spiked	MS	MSD	
SampleID: 90401	Extraction:	EPA 5030			Instrument:	GC-3	
Surrogate1	ND	101.0	102.0	100.00	101	102	1.0
Xylenes	ND	32.2	31.3	30.00	107	104	2.8
Ethylbenzene	ND	10.6	10.3	10.00	106	103	2.9
Toluene	ND	10.5	10.3	10.00	105	103	1.9
Benzene	ND	10.0	9.9	10.00	100	99	1.0
MTBE	ND	10.2	10.2	10.00	102	102	0.0
TPH (gas)	ND	81.8	80.3	100.00	82	80	1.7
SampleID: 90401	Extraction:	EPA 3510			Instrument:	GC-11 B	
Surrogate1	ND	103.0	102.0	100.00	103	102	1.0
TPH (diesel)	ND	8425.0	8625.0	7500.00	112	115	2.3

$$\%\ \text{Recovery} = \frac{(MS - Sample)}{AmountSpiked} \cdot 100$$

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

RPD means Relative Percent Deviation

27604 ZC465

McCAMPBELL ANALYTICAL INC.

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

CHAIN OF CUSTODY RECORD

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

Report To: Ron Scheele Bill To: Cambria Env.
Company: Cambria Environmental Technology
~~1144 65th Street, Suite C~~ 6262 Hollis St
~~Oakland, CA 94608~~ Emeryville, Cc
Tele: ~~(510) 420-0700~~ 510-450-1983 Fax: ~~(510) 420-9170~~ 510-450-8295
Project #: 130-0105 Project Name: Worthington
Project Location: 3055 35th Ave Oakland, Cc
Sampler Signature:

SAMPLE ID	LOCATION	SAMPLING Date	SAMPLING Time	# Containers	Type Containers	MATRIX Water	MATRIX Soil	MATRIX Air	MATRIX Sludge	MATRIX Other	METHOD PRESERVED Ice	METHOD PRESERVED HCl	METHOD PRESERVED HNO3	METHOD PRESERVED Other	BTEX & TPH as Gas (602/8020 + 8015) MTBE	TPH as Diesel (8015)	Total Petroleum Oil & Grease (5520 E&F/B&F)	Total Petroleum Hydrocarbons (418.1)	EPA 601 / 8010	BTEX ONLY (EPA 602 / 8020)	EPA 608 / 8080	EPA 608 / 8080 PCB's ONLY	EPA 624 / 8240 / 8260	EPA 625 / 8270	PAH's / PNA's by EPA 625 / 8270 / 8310	CAM-17 Metals	LUFT 5 Metals	Lead (7240/7421/239.2/6010)	RCI	Other	Comments
MW-1		8-30-01	1:15	5	VOC Amber	X					X	X			X	X															
MW-2		8-30-01	1:05	5	VOC Amber	X					X	X			X	X															
MW-3		8-30-01	1:55	5	VOC Amber	X					X	X			X	X															
MW-4		8-30-01	1:40	5	VOC Amber	X					X	X			X	X															

76998
76999
77000
77001

Relinquished By:	Date:	Time:	Received By:
	9-6-01	6:45	Faxed
Relinquished By:	Date:	Time:	Received By:
			9/6/01
Relinquished By:	Date:	Time:	Received By:

Remarks:

8

SEP-06-2001 06:58 CAMBRIA P.01/01

APPENDIX C

Analytical Results for DPE System Operation

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 Environmental Technology 1144 65th Street, Suite C Oakland, CA 94608	Client Project ID: #130-0105-336; Worth	Date Sampled: 07/02/01
		Date Received: 07/03/01
	Client Contact: Ron Scheele	Date Extracted: 07/03/01
	Client P.O:	Date Analyzed: 07/03/01

07/10/01

Dear Ron:

Enclosed are:

1). the results of **2** samples from your **#130-0105-336; Worth** project,

2). a QC report for the above samples

3). a copy of the chain of custody, and

4). a bill for analytical services.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits. If you have any questions please contact me. McCampbell Analytical Laboratories strives for excellence in quality, service and cost. Thank you for your business and I look forward to working with you again.

Yours truly,

Edward Hamilton, Lab Director

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

Cambria Environmental Technology	Client Project ID: #130-0105-336; Worth	Date Sampled: 07/02/01
1144 65th Street, Suite C		Date Received: 07/03/01
Oakland, CA 94608	Client Contact: Ron Scheele	Date Extracted: 07/03/01
	Client P.O:	Date Analyzed: 07/03/01

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline*, with Methyl tert-Butyl Ether* & BTEX*

EPA methods 5030, modified 8015, and 8020 or 602; California RWQCB (SF Bay Region) method GCFID(5030)

Lab ID	Client ID	Matrix	TPH(g)[+]	MTBE	Benzene	Toluene	Ethylben-zene	Xylenes	% Recovery Surrogate
71712	IN	Air	92,c	ND	1.2	0.73	ND	0.52	117
71713	EF	Air	26,c	ND	0.34	0.17	ND	ND	116
Reporting Limit unless otherwise stated; ND means not detected above the reporting limit		Air	10 uL/L	1.5	0.15	0.15	0.15	0.25	
		S	1.0 mg/kg	0.05	0.005	0.005	0.005	0.005	

[%] ppm (mg/L) to ppmv (uL/L) conversion for TPH(g) assumes the molecular weight of gasoline to be equal to that of hexane.

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

cluttered chromatogram; sample peak 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 (?); f) one to a few isolated peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen is present; i) liquid sample that contains greater than ~5 vol. % sediment; j) no recognizable pattern.

DHS Certification No. 1644

Edward Hamilton, Lab Director

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

QC REPORT

EPA 8015m + 8020

Date: 07/03/01 **Extraction:** EPA 5030 **Matrix:** Air

Compound	Concentration: ug/L				%Recovery		RPD
	Sample	MS	MSD	Amount Spiked	MS	MSD	
SampleID: 70201					Instrument:	GC-7	
Surrogate1	ND	96.0	93.0	100.00	96	93	3.2
Xylenes	ND	33.7	33.1	30.00	112	110	1.8
Ethylbenzene	ND	10.4	10.2	10.00	104	102	1.9
Toluene	ND	10.0	9.8	10.00	100	98	2.0
Benzene	ND	9.3	9.0	10.00	93	90	3.3
MTBE	ND	10.3	11.2	10.00	103	112	8.4
TPH (gas)	ND	120.2	115.2	100.00	120	115	4.2

$$\%\ \text{Recovery} = \frac{(MS - Sample)}{AmountSpiked} \cdot 100$$

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

RPD means Relative Percent Deviation

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McCAMPBELL ANALYTICAL INC.

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

CHAIN OF CUSTODY RECORD

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

Report To: RonScheele Bill To:
Company: Cambria Environmental Technology
1144 65th Street, Suite C
Oakland, CA 94608
Tele: (510) ~~420-0700~~ 450 1983 Fax: (510) ~~420 9170~~ 460 8295
Project #: 130-0105-336 Project Name: Worth
Project Location: Worthington
Sampler Signature:

SAMPLE ID	LOCATION	SAMPLING Date	SAMPLING Time	# Containers	Type Containers	MATRIX Water	MATRIX Soil	MATRIX Air	MATRIX Sludge	MATRIX Other	METHOD PRESERVED Ice	METHOD PRESERVED HCl	METHOD PRESERVED HNO_3	METHOD PRESERVED Other	BTEX & TPH as Gas (602/8020 + 8015) MTBE	TPH as Diesel (8015)	Total Petroleum Oil & Grease (5520 E&F/B&F)	Total Petroleum Hydrocarbons (418.1)	EPA 601 / 8010	BTEX ONLY (EPA 602 / 8020)	EPA 608 / 8080	EPA 608 / 8080 PCB's ONLY	EPA 624 / 8240 / 8260	EPA 625 / 8270	PAH's / PNA's by EPA 625 / 8270 / 8310	CAM-17 Metals	LUFT 5 Metals	Lead (7240/7421/239.2/6010)
IN	Worth	7-2	12:30	1	BAG			X							X													
EF	Worth	7-2	12:00	1	BAG			X							X													

71712
71713

GOOD CONDITION ✓
HEAD SPACE ABSENT ___
PRESERVATION APPROPRIATE CONTAINERS ✓
OTHER

Relinquished By:	Date:	Time:	Received By:
	7/2	3:00	Secured Location
Relinquished By:	Date:	Time:	Received By:
	7/3	11:30	Hm TLC
Relinquished By:	Date:	Time:	Received By:
Hm TLC	7/3	12:13	7/3

Remarks: Report in ppmv. Fax results ASAP.
Reporting limit of 10 ppmv (20 ml injection Vol)

TB.LV

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 Environmental Technology 1144 65th Street, Suite C Oakland, CA 94608	Client Project ID: #130-0105-336; Worth	Date Sampled: 07/02/01
		Date Received: 07/03/01
	Client Contact: Ron Scheele	Date Extracted: 07/03/01
	Client P.O:	Date Analyzed: 07/03/01

07/10/01

Dear Ron:

Enclosed are:

1). the results of **3** samples from your **#130-0105-336; Worth** project,

2). a QC report for the above samples

3). a copy of the chain of custody, and

4). a bill for analytical services.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits. If you have any questions please contact me. McCampbell Analytical Laboratories strives for excellence in quality, service and cost. Thank you for your business and I look forward to working with you again.

Yours truly,

Edward Hamilton, Lab Director

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Telephone : 925-798-1620 Fax : 925-798-1622
http://www.mccampbell.com E-mail: main@mccampbell.com

Cambria Environmental Technology	Client Project ID: #130-0105-336; Worth	Date Sampled: 07/02/01
1144 65th Street, Suite C		Date Received: 07/03/01
Oakland, CA 94608	Client Contact: Ron Scheele	Date Extracted: 07/03-07/10/01
	Client P.O:	Date Analyzed: 07/03-07/10/01

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline*, with Methyl tert-Butyl Ether* & BTEX*

EPA methods 5030, modified 8015, and 8020 or 602; California RWQCB (SF Bay Region) method GCFID(5030)

Lab ID	Client ID	Matrix	TPH(g)+	MTBE	Benzene	Toluene	Ethyl-benzene	Xylenes	% Recovery Surrogate
71714	IN	W	ND	---	2.5	1.4	ND	5.2	101
71715	Mid	W	ND	---	ND	ND	ND	ND	95
71716	EF	W	ND	---	ND	ND	ND	ND	97
Reporting Limit unless otherwise stated; ND means not detected above the reporting limit		W	50 ug/L	5.0	0.5	0.5	0.5	0.5	
		S	1.0 mg/kg	0.05	0.005	0.005	0.005	0.005	

* water and vapor samples are reported in ug/L, wipe samples in ug/wipe, soil and sludge samples in mg/kg, and all TCLP and SPLP extracts in ug/L

cluttered chromatogram; sample peak 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 (?); f) one to a few isolated peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen is present; i) liquid sample that contains greater than ~5 vol. % sediment; j) no recognizable pattern.

DHS Certification No. 1644

Edward Hamilton, Lab Director

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

QC REPORT

EPA 8015m + 8020

Matrix: Water

Date: 07/03/01

Compound	Concentration: ug/L				%Recovery		RPD
	Sample	MS	MSD	Amount Spiked	MS	MSD	
SampleID: 70201	Extraction: EPA 5030				Instrument: GC-7		
Surrogate1	ND	96.0	93.0	100.00	96	93	3.2
Xylenes	ND	33.7	33.1	30.00	112	110	1.8
Ethylbenzene	ND	10.4	10.2	10.00	104	102	1.9
Toluene	ND	10.0	9.8	10.00	100	98	2.0
Benzene	ND	9.3	9.0	10.00	93	90	3.3
MTBE	ND	10.3	11.2	10.00	103	112	8.4
TPH (gas)	ND	120.2	115.2	100.00	120	115	4.2
SampleID: 70201	Extraction: EPA 3510				Instrument: GC-11 B		
Surrogate1	ND	115.0	108.0	100.00	115	108	6.3
TPH (diesel)	ND	7625.0	7925.0	7500.00	102	106	3.9

$$\%\ \text{Recovery} = \frac{(MS - Sample)}{AmountSpiked} \cdot 100$$

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

RPD means Relative Percent Deviation

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McCAMPBELL ANALYTICAL INC.

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

CHAIN OF CUSTODY RECORD

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

Report To: Ron Scheele Bill To:
Company: Cambria Environmental Technology
1144 65th Street, Suite C
Oakland, CA 94608
Tele: (510) ~~420-0700~~ 450 1983 Fax: (510) ~~420-9170~~ 450 8295
Project #: 130-0105-336 Project Name: Worth
Project Location: Worthington
Sampler Signature:

SAMPLE ID	LOCATION	SAMPLING Date	SAMPLING Time	# Containers	Type Containers	MATRIX Water	MATRIX Soil	MATRIX Air	MATRIX Sludge	MATRIX Other	METHOD PRESERVED Ice	METHOD PRESERVED HCl	METHOD PRESERVED HNO_3	METHOD PRESERVED Other	BTEX & TPH as Gas (602/8020 + 8015)/ MTBE	TPH as Diesel (8015)	Total Petroleum Oil & Grease (5520 E&F/B&F)	Total Petroleum Hydrocarbons (418.1)	EPA 601 / 8010	BTEX ONLY (EPA 602 / 8020)	EPA 608 / 8080	EPA 608 / 8080 PCB's ONLY	EPA 624 / 8240 / 8260	EPA 625 / 8270	PAH's / PNA's by EPA 625 / 8270 / 8310	CAM-17 Metals	LUFT 5 Metals	Lead (7240/7421/239.2/6010)	RCI	Other	Comments
(+) IN	Worth	7-2	1100	3	VOA	X						X			X																71714
Mid																															71715
EF																															71716

Relinquished By:	Date:	Time:	Received By:
	7-2	3:00	Secured Location
Relinquished By:	Date:	Time:	Received By:
	7/3	11:30	Hm TLC
Relinquished By:	Date:	Time:	Received By:
Hm TLC	7/3	12:15	

Remarks:

ICE/t° ✓
GOOD CONDITION ✓
HEAD SPACE ABSENT
PRESERVATION APPROPRIATE ✓
CONTAINERS ✓

VOAS	O&G	METALS	OTHER
8			

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 Environmental Technology 6262 Hollis St Emerville, CA 94608	Client Project ID: #130-0105-336; Worthington	Date Sampled: 07/10/01
		Date Received: 07/11/01
	Client Contact: Ron Scheele	Date Extracted: 07/11/01
	Client P.O:	Date Analyzed: 07/11/01

07/18/2001

Dear Ron:

Enclosed are:

1). the results of **2** samples from your **#130-0105-336; 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.

Yours truly,

Edward Hamilton, Lab Director

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

Cambria Environmental Technology	Client Project ID: #130-0105-336; Worthington	Date Sampled: 07/10/01
6262 Hollis St		Date Received: 07/11/01
Emerville, CA 94608	Client Contact: Ron Scheele	Date Extracted: 07/11/01
	Client P.O:	Date Analyzed: 07/11/01

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline*, with Methyl tert-Butyl Ether* & BTEX*

EPA methods 5030, modified 8015, and 8020 or 602; California RWQCB (SF Bay Region) method GCFID(5030)

Lab ID	Client ID	Matrix	TPH(g)[+]	MTBE	Benzene	Toluene	Ethylben-zene	Xylenes	% Recovery Surrogate
72208	IN	Air	92,a	ND	1.0	0.57	ND	0.36	---[#]
72209	EF	Air	ND	ND	ND	ND	ND	ND	107

[%] ppm (mg/L) to ppmv (uL/L) conversion for TPH(g) assumes the molecular weight of gasoline to be equal to that of hexane.

Reporting Limit unless otherwise stated; ND means not detected above the reporting limit		Air	10 uL/L	1.5	0.15	0.15	0.15	0.25	
		S	1.0 mg/kg	0.05	0.005	0.005	0.005	0.005	

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

[#] cluttered chromatogram; sample peak 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 (?); f) one to a few isolated peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen is present; i) liquid sample that contains greater than ~5 vol. % sediment; j) no recognizable pattern.

DHS Certification No. 1644

Edward Hamilton, Lab Director

McCAMPBELL ANALYTICAL INC.
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Telephone : 925-798-1620 Fax : 925-798-1622
http://www.mccampbell.com E-mail: main@mccampbell.com

QC REPORT

EPA 8015m + 8020

Date: 07/11/01 **Extraction:** TTLC **Matrix:** Air

Compound	Concentration: ug/L				%Recovery		RPD
	Sample	MS	MSD	Amount Spiked	MS	MSD	
SampleID: 70201					Instrument:	GC-12	
Surrogate1	ND	106.0	93.0	100.00	106	93	13.1
Xylenes	ND	29.7	28.5	30.00	99	95	4.1
Ethylbenzene	ND	10.0	9.2	10.00	100	92	8.3
Toluene	ND	10.2	9.1	10.00	102	91	11.4
Benzene	ND	10.1	9.0	10.00	101	90	11.5
MTBE	ND	11.1	10.1	10.00	111	101	9.4
TPH (gas)	ND	84.5	84.1	100.00	85	84	0.5

$$\%\ \text{Recovery} = \frac{(MS - Sample)}{AmountSpiked} \cdot 100$$

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

RPD means Relative Percent Deviation

26741 ZC427

McCAMPBELL ANALYTICAL INC.

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

CHAIN OF CUSTODY RECORD

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

Report To: Bill To:

Company: Cambria Environmental Technology

1144 65th Street, Suite C

Oakland, CA 94608

Tele: (510) ~~420-0700~~ 450-1983 Fax: (510) ~~420-9170~~ 450-8295

Project #: 130-0105-336 Project Name: Worthington

Project Location: Worthington

Sampler Signature:

SAMPLE ID	LOCATION	SAMPLING Date	SAMPLING Time	# Containers	Type Containers	MATRIX: Water	Soil	Air	Sludge	Other	METHOD PRESERVED: Ice	HCl	HNO_3	Other
FN	Worth	7-10	2:00	3	BAG			X						
EF	Worth	7-10	2:00	1	BAG			X						

Analysis Request

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

Other: 72208 72209

Comments

ICE/t°
GOOD CONDITION
HEADSPACE ABSENT
PRESERVATION APPROPRIATE
VOAS | O&G | METALS | OTHER

Relinquished By:	Date:	Time:	Received By:
	7-10	3:00	Secured Location
G Bergelove	7/10		G Bergelove
	7/11	1427	Maria Venegas

Remarks: Report in ppmv. Fax results ASAP. Reporting limit of 10ppmv (20ml injection volume.)

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 Environmental Technology 6262 Hollis Street Emeryville, CA 94608	Client Project ID: Worthington	Date Sampled: 08/02/01
		Date Received: 08/03/01
	Client Contact: Ron Scheele	Date Extracted: 08/03/01
	Client P.O:	Date Analyzed: 08/03/01

08/10/01

Dear Ron:

Enclosed are:

1). the results of **2** samples from your **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.

Yours truly,

Edward Hamilton, Lab Director

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

Cambria Environmental Technology	Client Project ID: Worthington	Date Sampled: 08/02/01
6262 Hollis Street		Date Received: 08/03/01
Emeryville, CA 94608	Client Contact: Ron Scheele	Date Extracted: 08/03/01
	Client P.O:	Date Analyzed: 08/03-08/06/01

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline*, with Methyl tert-Butyl Ether* & BTEX*

EPA methods 5030, modified 8015, and 8020 or 602; California RWQCB (SF Bay Region) method GCFID(5030)

Lab ID	Client ID	Matrix	TPH(g)[+]	MTBE	Benzene	Toluene	Ethylben-zene	Xylenes	% Recovery Surrogate
74179	IN	Air	110,a	ND	1.5	0.65	ND	0.41	---[#]
74180	EF	Air	ND	ND	ND	ND	ND	ND	102

[%] ppm (mg/L) to ppmv (uL/L) conversion for TPH(g) assumes the molecular weight of gasoline to be equal to that of hexane.

Reporting Limit unless otherwise stated; ND means not detected above the reporting limit	Air	10 uL/L	1.5	0.15	0.15	0.15	0.25	
	S	1.0 mg/kg	0.05	0.005	0.005	0.005	0.005	

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

[#] cluttered chromatogram; sample peak 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 (?); f) one to a few isolated peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen is present; i) liquid sample that contains greater than ~5 vol. % sediment; j) no recognizable pattern.

DHS Certification No. 1644

Edward Hamilton, Lab Director

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

QC REPORT

EPA 8015m + 8020

Date: 08/03/01 **Extraction:** EPA 5030 **Matrix:** Air

Compound	Concentration: ug/L				%Recovery		RPD
	Sample	MS	MSD	Amount Spiked	MS	MSD	
SampleID: 80201					Instrument:	GC-3	
Surrogate1	ND	100.0	100.0	100.00	100	100	0.0
Xylenes	ND	25.8	27.2	30.00	86	91	5.3
Ethylbenzene	ND	8.5	9.0	10.00	85	90	5.7
Toluene	ND	8.9	8.5	10.00	89	85	4.6
Benzene	ND	9.0	9.7	10.00	90	97	7.5
MTBE	ND	10.0	10.7	10.00	100	107	6.8
TPH (gas)	ND	80.7	81.2	100.00	81	81	0.6

$$\%\ \text{Recovery} = \frac{(MS - Sample)}{AmountSpiked} \cdot 100$$

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

RPD means Relative Percent Deviation

27117 ZC446

CAMBRIA ENVIRONMENTAL TECHNOLOGY, INC.

1144 65th Street, Suite C, Oakland, CA 94608
(510) 450 1885 Fax: (510) 450 8245

CHAIN OF CUSTODY

Cambria Manager: Ron Scheele

Cambria Sampler: Greg Bentley / signature

Site Name: Worthington

Site Address: 35th St, Oakland

ANALYSES: MTBE/BTEX TPHg

LAB:

SAMPLE ID	DATE	TIME	MATRIX	# OF SAMPLES				74179					COMMENTS
IN	8-2-01	5:00P	Air	1	X			74180					Report in ppmv.
EF	8-2-01	5:00P	Air	1	X								Fax results ASAP. Reporting limit of 10ppmv. (20 ml injection)

Relinquished by:	Relinquished by:	Relinquished by:	Relinquished by:
Received by: DE Trimble	Received by:	Received by: Ann Kong	Received by: Ann Kong
Time/Date: 08/07/01 10:15	Time/Date:	Time/Date: 1355	Time/Date: 1355

Received by: 8/7/...

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 Environmental Technology	Client Project ID: #165-1544; OLY-HMB	Date Sampled: 09/05/01
6262 Hollis Street		Date Received: 09/05/01
Emeryville, CA 94608	Client Contact: Ron Scheele	Date Extracted: 09/05/01
	Client P.O:	Date Analyzed: 09/05-09/06/01

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline*, with Methyl tert-Butyl Ether* & BTEX*

EPA methods 5030, modified 8015, and 8020 or 602; California RWQCB (SF Bay Region) method GCFID(5030)

Lab ID	Client ID	Matrix	TPH(g)*	MTBE	Benzene	Toluene	Ethylben-zene	Xylenes	% Recovery Surrogate
76977	IN	Air	1300,a	ND	13	26	4.1	34	---#
76978	EF	Air	ND	ND	ND	ND	ND	0.25	103

* ppm (mg/L) to ppmv (uL/L) conversion for TPH(g) assumes the molecular weight of gasoline to be equal to that of hexane.

Reporting Limit unless otherwise stated; ND means not detected above the reporting limit		Air	10 uL/L	1.5	0.15	0.15	0.15	0.25	
		S	1.0 mg/kg	0.05	0.005	0.005	0.005	0.005	

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

cluttered chromatogram; sample peak 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 (?); f) one to a few isolated peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen is present; i) liquid sample that contains greater than ~5 vol. % sediment; j) no recognizable pattern.

DHS Certification No. 1644

Edward Hamilton, Lab Director

57601ZC464

McCAMPBELL ANALYTICAL INC.

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

CHAIN OF CUSTODY RECORD

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

Report To: Ron Scheele Bill To: Same
Company: Cambria Environmental Technology
6262 Hollis Street
Emeryville, CA 94608
Tele: (510) 450-1983 Fax: (510) 450-8295
Project #: 165-1544 Project Name: OLY-HMB
Project Location: @ Half Moon Bay
Sampler Signature: [signature]

SAMPLE ID	LOCATION	Sampling Date	Sampling Time	# Containers	Type Containers	Matrix: Water	Matrix: Soil	Matrix: Air	Matrix: Sludge	Matrix: Other	Method Preserved: Ice	Method Preserved: HCl	Method Preserved: HNO_3	Method Preserved: Other	BTEX & TPH as Gas (602/8020 + 8015)/ MTBE	TPH as Diesel (8015)	Total Petroleum Oil & Grease (5520 E&F/B&F)	Total Petroleum Hydrocarbons (418.1)	EPA 601 / 8010	BTEX ONLY (EPA 602 / 8020)	EPA 608 / 8080	EPA 608 / 8080 PCB's ONLY	EPA 524 / 8240 / 8260	EPA 525 / 8270	PAH's / PNA's by EPA 625 / 8270 / 8310	CAM-17 Metals	LUFT 5 Metals	Lead (7240/7421/239.2/6010)	RCI	Other	Other	Other	Other	Comments
IN	HMB	9-5	10:30	1	BAG			X							X																			76977
EF	HMB	9-5	10:30	1	BAG			X							X																			76978

Relinquished By:	Date:	Time:	Received By:
[signature]	9-5	1130	secured location
[signature]	9-5	1200	[signature] #269
			[signature] 1285

Remarks: Report in ppmv. Fax results ASAP. Reporting limit of 10 ppmv. (20ml injection vol.)

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 Environmental Technology 6262 Hollis Street Emeryville, CA 94608	Client Project ID: #130-0105-337; Worthington	Date Sampled: 09/07/01
		Date Received: 09/07/01
	Client Contact: Ron Scheele	Date Extracted: 09/07/01
	Client P.O:	Date Analyzed: 09/07/01

09/14/01

Dear Ron:

Enclosed are:

1). the results of **2** samples from your **#130-0105-337; 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.

Yours truly,

Edward Hamilton, Lab Director

McCAMPBELL ANALYTICAL INC.
110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
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http://www.mccampbell.com E-mail: main@mccampbell.com

Cambria Environmental Technology	Client Project ID: #130-0105-337; Worthington	Date Sampled: 09/07/01
6262 Hollis Street		Date Received: 09/07/01
Emeryville, CA 94608	Client Contact: Ron Scheele	Date Extracted: 09/07/01
	Client P.O:	Date Analyzed: 09/07/01

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline*, with Methyl tert-Butyl Ether* & BTEX*

EPA methods 5030, modified 8015, and 8020 or 602; California RWQCB (SF Bay Region) method GCFID(5030)

Lab ID	Client ID	Matrix	TPH(g)[+]	MTBE	Benzene	Toluene	Ethylben-zene	Xylenes	% Recovery Surrogate
77372	INF	Air	81,a	ND	1.2	0.91	0.21	1.3	---[#]
77373	EFF	Air	34,a	ND	0.52	0.78	0.18	0.95	---[#]
Reporting Limit unless otherwise stated; ND means not detected above the reporting limit		Air	10 uL/L	1.5	0.15	0.15	0.15	0.25	
		S	1.0 mg/kg	0.05	0.005	0.005	0.005	0.005	

[%] ppm (mg/L) to ppmv (uL/L) conversion for TPH(g) assumes the molecular weight of gasoline to be equal to that of hexane.

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

[#] cluttered chromatogram; sample peak 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 (?); f) one to a few isolated peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen is present; i) liquid sample that contains greater than ~5 vol. % sediment; j) no recognizable pattern.

DHS Certification No. 1644

Edward Hamilton, Lab Director

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

QC REPORT

EPA 8015m + 8020

Date: 09/07/01-09/08/01 **Extraction:** TTLC **Matrix:** Air

Compound	Concentration: ug/L				%Recovery		RPD
	Sample	MS	MSD	Amount Spiked	MS	MSD	
SampleID: 90401					Instrument:	GC-3	
Surrogate1	ND	107.0	107.0	100.00	107	107	0.0
Xylenes	ND	33.5	33.5	30.00	112	112	0.0
Ethylbenzene	ND	11.0	11.0	10.00	110	110	0.0
Toluene	ND	11.0	11.0	10.00	110	110	0.0
Benzene	ND	11.0	11.0	10.00	110	110	0.0
MTBE	ND	9.6	9.6	10.00	96	96	0.0
TPH (gas)	ND	87.0	85.6	100.00	87	86	1.6

$$\%\ \text{Recovery} = \frac{(MS - Sample)}{AmountSpiked} \cdot 100$$

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

RPD means Relative Percent Deviation

27649ZC468

McCAMPBELL ANALYTICAL INC.

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

Report To: Ron Scheele Bill To: Ron Scheele
Company: Cambria Environmental Technology
6262 Hollis Street
Emeryville, CA 94608
Tele: (510) 450-1983 Fax: (510) 450-8295
Project #: 130-0105-337 Project Name: Worthington
Project Location: 3055 35th St Oakland, CA
Sampler Signature: Ron Scheele

CHAIN OF CUSTODY RECORD

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

SAMPLE ID	LOCATION	SAMPLING Date	SAMPLING Time	# Containers	Type Containers	MATRIX: Water	Soil	Air	Sludge	Other	METHOD PRESERVED: Ice	HCl	HNO_3	Other
INF	Worthington	9/1/01	11:30	1	TB			X						
EFF	"	9/1/01	1	1	TB			X						

Analysis Request

BTEX & TPH as Gas (602/8020 + 8015)	TPH as Diesel (8015)	Total Petroleum Oil & Grease (5520 E&F/B&F)	Total Petroleum Hydrocarbons (418.1)	EPA 601 / 8010	BTEX ONLY (EPA 602 / 8020)	EPA 608 / 8080	EPA 608 / 8080 PCB's ONLY	EPA 624 / 8240 / 8260	EPA 625 / 8270	PAH's / PNA's by EPA 625 / 8270 / 8310	CAM-17 Metals	LUFT 5 Metals	Lead (7240/7421/239.2/6010)	RCI	Other	Comments
X															77372	
X															77373	

HEAD SPACE ABSENT
PRESERVATION APPROPRIATE CONTAINERS

Relinquished By:	Date:	Time:	Received By:
	9/1/01	2pm	Secured Location
Relinquished By:	Date: 9/2	Time: 315	Received By: CruckShaw TLC
Relinquished By: TLC	Date: 9/7	Time: 10:30	Received By: 9/7

Remarks:
PLEASE SUBMIT EDF REPORT as well
Report in ppmv
Reporting limit of 10 ppm (20ml injection volume)
FAX RESULTS ASAP

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 Environmental Technology 6262 Hollis Street Emeryville, CA 94608	Client Project ID: #130-0105-337; Worthington	Date Sampled: 09/07/01
		Date Received: 09/07/01
	Client Contact: Ron Scheele	Date Extracted: 09/07/01
	Client P.O:	Date Analyzed: 09/07/01

09/14/01

Dear Ron:

Enclosed are:

1). the results of **2** samples from your **#130-0105-337; 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.

Yours truly,

Edward Hamilton, Lab Director

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Cambria Environmental Technology	Client Project ID: #130-0105-337; Worthington	Date Sampled: 09/07/01
6262 Hollis Street		Date Received: 09/07/01
Emeryville, CA 94608	Client Contact: Ron Scheele	Date Extracted: 09/10-09/12/01
	Client P.O:	Date Analyzed: 09/10-09/12/01

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline*, with Methyl tert-Butyl Ether* & BTEX*

EPA methods 5030, modified 8015, and 8020 or 602; California RWQCB (SF Bay Region) method GCFID(5030)

Lab ID	Client ID	Matrix	TPH(g)"	MTBE	Benzene	Toluene	Ethyl-benzene	Xylenes	% Recovery Surrogate
77369	INF	W	4600,g,j	ND	24	57	15	140	98
77370	EFF-1	W	ND	ND	ND	ND	ND	ND	104
Reporting Limit unless otherwise stated; ND means not detected above the reporting limit		W	50 ug/L	5.0	0.5	0.5	0.5	0.5	
		S	1.0 mg/kg	0.05	0.005	0.005	0.005	0.005	

* water and vapor samples are reported in ug/L, wipe samples in ug/wipe, soil and sludge samples in mg/kg, and all TCLP and SPLP extracts in ug/L

cluttered chromatogram; sample peak 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 (?); f) one to a few isolated peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen is present; i) liquid sample that contains greater than ~5 vol. % sediment; j) no recognizable pattern.

DHS Certification No. 1644

Edward Hamilton, Lab Director

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http://www.mccampbell.com E-mail: main@mccampbell.com

QC REPORT

EPA 8015m + 8020

Date: 09/12/01 **Extraction:** TTLC **Matrix:** Water

Compound	Concentration: ug/L				%Recovery		RPD
	Sample	MS	MSD	Amount Spiked	MS	MSD	
SampleID: 90401					Instrument:	GC-12	
Surrogate1	ND	99.0	98.0	100.00	99	98	1.0
Xylenes	ND	32.5	34.3	30.00	108	114	5.4
Ethylbenzene	ND	10.8	11.3	10.00	108	113	4.5
Toluene	ND	10.4	10.9	10.00	104	109	4.7
Benzene	ND	9.8	10.2	10.00	98	102	4.0
MTBE	ND	8.8	9.3	10.00	88	93	5.5
TPH (gas)	ND	84.2	83.4	100.00	84	83	1.0

$$\%\ \text{Recovery} = \frac{(MS - Sample)}{AmountSpiked} \cdot 100$$

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

RPD means Relative Percent Deviation

27648 ZC 471

McCAMPBELL ANALYTICAL INC.

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

CHAIN OF CUSTODY RECORD

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

Report To: Ron Scheele Bill To: Ron Scheele
Company: Cambria Environmental Technology
6262 Hollis Street
Emeryville, CA 94608
Tele: (510) 450-1983 Fax: (510) 450-8295
Project #: 130-0105-337 Project Name: Worthington
Project Location: 3055 35th St Oakland, CA
Sampler Signature:

SAMPLE ID	LOCATION	SAMPLING Date	SAMPLING Time	# Containers	Type Containers	MATRIX: Water	Soil	Air	Sludge	Other	METHOD PRESERVED: Ice	HCl	HNO_3	Other
INF	Worthington	9/7/01	11:15 am	3	Vol	X								
EFF-1	"	9/7/01	11 am	3	Vol	X								
EFF-2	"	9/7/01	10:45 am	3	Vol	X								

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

SAMPLE ID	BTEX & TPH as Gas (602/8020 + 8015) MTBE	TPH as Diesel (8015)	Total Petroleum Oil & Grease (5520 E&F/B&F)	Total Petroleum Hydrocarbons (418.1)	EPA 601 / 8010	BTEX ONLY (EPA 602 / 8020)	EPA 608 / 8080	EPA 608 / 8080 PCB's ONLY	EPA 624 / 8240 / 8260	EPA 625 / 8270	PAH's / PNA's by EPA 625 / 8270 / 8310	CAM-17 Metals	LUFT 5 Metals	Lead (7240/7421/239.2/6010)	RCI	Other	Comments
INF	X															77369	
EFF-1	X															77370	
EFF-2	X															77371	

GOOD CONDITION
HEAD SPACE ABSENT
PRESERVATION APPROPRIATE
CONTAINERS

Relinquished By:	Date:	Time:	Received By:
	9/7/01	2pm	Secured Location
Relinquished By:	Date: 9/7/01	Time: 2:15	Received By:
Relinquished By: CSTLC	Date: 9/7	Time: 3:15	Received By: 9/7

Remarks:
PLEASE REPORT IN EDF FORMAT AS WELL
ONLY ANALYZE EFF-2 IF HITS DETECTED IN EFF-1