CAMBRIA

510
515

April 8, 1998

Madhulla Logan
Alameda County Department of Environmental Health
Local Oversight Program
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502

Re: **Fourth Quarter 1998 Monitoring Report**
Former Exxon Service Station
3055 35th Avenue
Oakland, California
Cambria Project #130-0105-108

- Need downgradient wells. additional

Dear Ms. Logan:

On behalf of Mr. Lynn Worthington of Golden Empire Properties, Cambria Environmental Technology, Inc., (Cambria) is presenting the first quarter 1998 ground water monitoring results for the above-referenced site. Presented below are the first quarter 1998 activities and the anticipated second quarter 1998 activities.

FIRST QUARTER 1998 ACTIVITIES

Ground Water Monitoring: On March 18, 1998, Cambria collected ground water samples from wells MW-1, MW-2, MW-3, and MW-4 (Figure 1). The samples were analyzed for total petroleum hydrocarbons as gasoline (TPHg), total petroleum hydrocarbons as diesel (TPHd), benzene, toluene, ethylbenzene and xylenes (BTEX), and methyl tert-butyl ether (MTBE). Cambria also gauged the site wells, measured dissolved oxygen (DO) concentrations, and inspected the wells for separate-phase hydrocarbons (SPH).

No SPH or MTBE were detected in any of the monitoring wells. Ground water elevation and analytical data are presented in Table 1. Ground water elevation contours and inferred ground water flow direction are shown in Figure 1.

ANTICIPATED SECOND QUARTER 1998 ACTIVITIES

Ground Water Monitoring: Cambria will gauge the site wells, measure DO concentrations, check the wells for SPH, and collect water samples from the wells. Cambria will tabulate the data and prepare a quarterly monitoring report.

CAMBRIA
ENVIRONMENTAL
TECHNOLOGY, INC.
1144 65TH STREET,
SUITE B
OAKLAND,
CA 94608
PH: (510) 420-0700
FAX: (510) 420-9170

Other Activities: In response to the December 18, 1997, meeting with the ACDEH, Cambria is preparing a Corrective Action Plan (CAP) for this site.

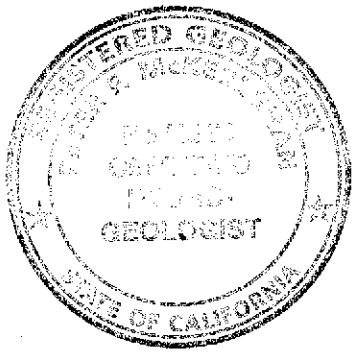
CLOSING

We appreciate the opportunity to work with you on this project. Please call if you have any questions or comments.

Sincerely,
Cambria Environmental Technology, Inc.

Scott Chenue
Staff Scientist

Peter F. McKereghan, C.H.G.
Principal Hydrogeologist



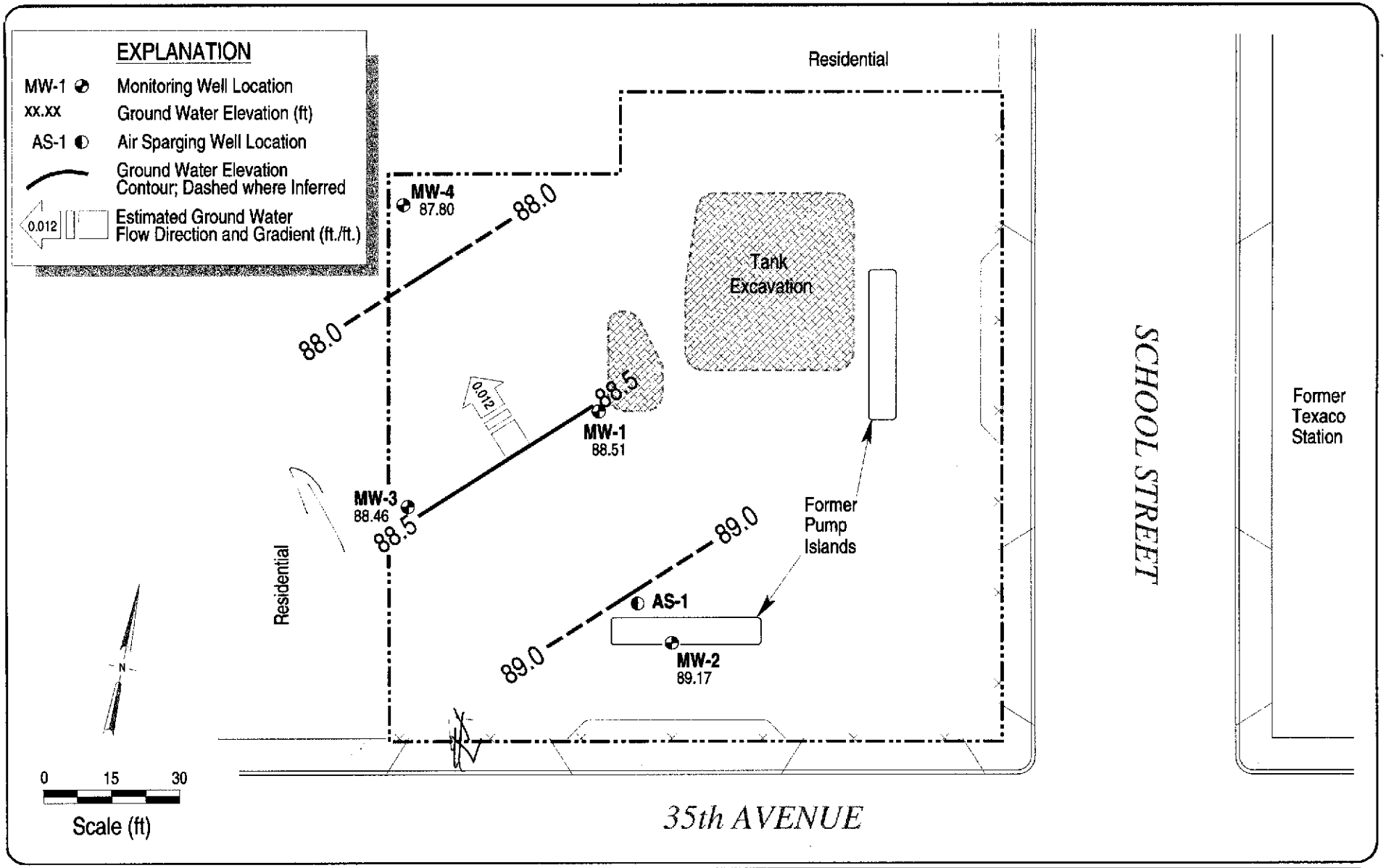
Figures: 1 - Ground Water Elevation Contours

Tables: 1 - Ground Water Elevation and Analytical Data

Attachments: A - Analytical Report for Ground Water Sampling

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

H:\SB-2004\OAKL-002\qm\Qm-1-98.wpd



CAMBRIA
Environmental Technology, Inc.

3055 35th Avenue
Oakland, California

Ground Water Elevation Contours
March 18, 1998

FIGURE
1

H:\SB-2004\OAKL-002\FIGURES\1QM98-MP.DWG

03/26/98

Table 1. Ground Water Elevation and Analytic Data - Former Exxon Service Station, 3055 35th Avenue, Oakland, California

Well ID (quarters sampled)	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-1	05/25/94	16.79	Sheen	84.06	120,000	25,000	<50,000	22,000	17,000	2,800	16,000	---	---
(all)	07/19/94	20.77	---	80.08	---	---	---	---	---	---	---	---	---
TOC = 100.85	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
MW-2	05/25/94	15.65	---	84.35	61,000	6,900	<5,000	9,900	7,400	960	4,600	---	---
(all)	07/19/94	19.81	---	80.19	---	---	---	---	---	---	---	---	---
TOC = 100.00	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

Table 1. Ground Water Elevation and Analytic Data - Former Exxon Service Station, 3055 35th Avenue, Oakland, California

Well ID (quarters sampled)	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	---	---
(all)	07/19/94	17.04	---	79.83	---	---	---	---	---	---	---	---	---
TOC = 96.87	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
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
(all)	06/25/97	16.15	---	81.19	61,000	5,800[b]	---	16,000	6,100	1,500	5,900	780[e]	1.4
TOC = 97.34	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

Table 1. Ground Water Elevation and Analytic 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
(quarters sampled)		Depth (ft)	(ft)	Elev. (ft)	← Concentrations in parts per billion (µg/L) →								(mg/L)

Abbreviations:

TOC = Top of casing elevation with respect to an onsite benchmark
GW = Ground water
SPH = Separate-phase hydrocarbons
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, which is equivalent to parts per billion in water
mg/L = Milligrams per liter, which is equivalent to parts per million in water

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

ATTACHMENT A

Analytical Report for Ground Water Sampling

McCAMPBELL ANALYTICAL INC.
110 Second Avenue South, #D7, Pacheco, CA 94553
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; Worthington	Date Sampled: 03/18/98
		Date Received: 03/19/98
	Client Contact: Scott Chenue	Date Extracted: 03/19/98
	Client P.O:	Date Analyzed: 03/19/98

03/26/98

Dear Scott:

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 Second Avenue South, #D7, Pacheco, CA 94553
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: 03/18/98
1144 65th Street, Suite C		Date Received: 03/19/98
Oakland, CA 94608	Client Contact: Scott Chenue	Date Extracted: 03/19/98
	Client P.O:	Date Analyzed: 03/19/98

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
86931	MW-3	W	120,000,a,h	ND<1600	21,000	19,000	2600	15,000	105
86932	MW-2	W	58,000,a,h	ND<1100	9300	6100	1800	8200	98
86933	MW-1	W	30,000,a	ND<1100	7800	820	840	2000	99
86934	MW-4	W	58,000,a	ND<1200	14,000	4700	1400	5700	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 Second Avenue South, #D7, Pacheco, CA 94553
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; Worthington	Date Sampled: 03/18/98
		Date Received: 03/19/98
	Client Contact: Scott Chenue	Date Extracted: 03/19/98
	Client P.O:	Date Analyzed: 03/20/98

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
86931	MW-3	W	20,000,d,b,h	109
86932	MW-2	W	7000,d,b,h	109
86933	MW-1	W	4200,d,b	105
86934	MW-4	W	5500,d,b	106
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 Avenue South, #D7, Pacheco, CA 94553
Tele: 510-798-1620 Fax: 510-798-1622

QC REPORT FOR HYDROCARBON ANALYSES

Date: 03/19/98 Matrix: WATER

Analyte	Concentration (mg/L) Sample (#86872)	MS	MSD	Amount Spiked	% Recovery MS	MSD	RPD
TPH (gas)	0.0	96.3	100.4	100.0	96.3	100.4	4.2
Benzene	0.0	9.9	10.2	10.0	99.0	102.0	3.0
Toluene	0.0	10.0	10.4	10.0	100.0	104.0	3.9
Ethyl Benzene	0.0	10.1	10.6	10.0	101.0	106.0	4.8
Xylenes	0.0	30.3	31.8	30.0	101.0	106.0	4.8
TPH(diesel)	0	153	149	150	102	99	2.8
TRPH (oil & grease)	N/A	N/A	N/A	N/A	N/A	N/A	N/A

% Rec. = (MS - Sample) / amount spiked x 100

RPD = (MS - MSD) / (MS + MSD) x 2 x 100

McCAMPBELL ANALYTICAL INC.
110 2nd Avenue South, #D7, Pacheco, CA 94553
Tele: 510-798-1620 Fax: 510-798-1622

QC REPORT FOR HYDROCARBON ANALYSES

Date: 03/20/98 Matrix: WATER

Analyte	Concentration (mg/L) Sample (#86940)	MS	MSD	Amount Spiked	% Recovery MS	MSD	RPD
TPH (gas)	0.0	98.5	100.3	100.0	98.5	100.3	1.8
Benzene	0.0	9.9	9.9	10.0	99.0	99.0	0.0
Toluene	0.0	10.0	10.0	10.0	100.0	100.0	0.0
Ethyl Benzene	0.0	10.2	10.2	10.0	102.0	102.0	0.0
Xylenes	0.0	30.8	31.0	30.0	102.7	103.3	0.6
TPH(diesel)	0	142	142	150	95	95	0.0
TRPH (oil & grease)	0	23000	24100	23700	97	102	4.7

% Rec. = (MS - Sample) / amount spiked x 100

RPD = (MS - MSD) / (MS + MSD) x 2 x 100

10736xc260.doc

McCAMBELL ANALYTICAL INC.
110 2nd AVENUE SOUTH, #D7
PACHECO, CA 94553
Telephone: (510) 798-1620 Fax: (510) 798-1622

CHAIN OF CUSTODY RECORD

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

Report To: Scott Chenne Bill To: Scott Chenne
Company: Cambria Environmental Technology
1144 65th Street, Suite C
Oakland, CA 94608
Tele: (510) 420-0700 Fax: (510) 420-9170
Project #: 130-0105 Project Name: WORTHINGTON
Project Location: 3055 35th Ave
Sampler Signature: [signature]

	SAMPLE ID	LOCATION	SAMPLING Date	SAMPLING Time	# Containers	Type Containers	MATRIX Water	Soil	Air	Sludge	Other	METHOD PRESERVED Ice	HCl	HNO_3	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-3		3/18/98		VOA	3	✓					✓				✓	✓																		86931
(+)	MW-2		↓		↓	↓	✓					✓				✓	✓																		86932
+	MW-1		↓		↓	↓	✓					✓				✓	✓																		86933
+	MW-4		↓		↓	↓	✓					✓				✓	✓																		86934

Relinquished By:	Date:	Time:	Received By:
[signature]	3/18/98	9:15	[signature] 8/9
[signature]	3-19	10:30	[signature]

Remarks:
ICE/t° ✓
GOOD CONDITION ✓
HEAD SPACE ABSENT ✓

	VOAS	O&G	METALS	OTHER
PRESERVATION	✓			

APPROPRIATE CONTAINERS ✓