CAMBRIA
Environmental Technology, Inc.

July 24, 1995

Jennifer Eberle
Alameda County Department of
Environmental Health
UST Local Oversight Program
1131 Harbor Bay Parkway, 2nd Floor
Alameda, CA 94502

Re: **Third Quarter 1995 Monitoring Report**
Douglas Parking
1721 Webster Street
Oakland, California

Dear Ms. Eberle:

This report summarizes the third quarter 1995 ground water monitoring results for the site referenced above (Figure 1). Described below are the third quarter 1995 activities, a discussion of the ground water flow direction and hydrocarbon distribution in ground water.

THIRD QUARTER 1995 ACTIVITIES

On July 11, 1995, Cambria Environmental Technology, Inc. (Cambria) gauged and collected ground water samples from wells MW-1, MW-2, and MW-3. The samples were analyzed for total petroleum hydrocarbons as gasoline (TPHg) and benzene, ethylbenzene, toluene and xylenes (BETX). Analytic results are presented in Attachment A. Cambria's standard field procedures for monitoring wells is included in Attachment B.

Site Well Elevation Survey

Cambria conducted a site well survey to verify top of casing (TOC) elevations of the three wells for establishing the ground water flow direction.

Ground Water Flow Direction

The ground water elevation data suggests that ground water flows in the northeastern direction (Figure 1).

1144 Sixty-Fifth Street Suite C Oakland, CA 94608 Fax (510) 420-9170 Phone (510) 420-0700

CAMBRIA

Hydrocarbon Distribution in Ground Water

While no hydrocarbons were detected in well MW-1, total petroleum hydrocarbons as gasoline (TPHg) were detected at 38 and 12 mg/l in wells MW-2 and MW-3, respectively. Benzene was detected in well MW-2 only, at a concentration of 3.1 mg/l. Low concentrations of toluene, ethyl benzene, and xylenes were detected in wells MW-2 and MW-3 (Table 1). No floating hydrocarbons were observed in the wells.

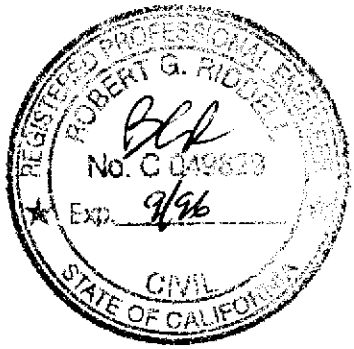
CLOSING

Please call John Espinoza at (510) 420-9177 if you have any questions or comments.

Sincerely,
Cambria Environmental Technology, Inc.

John Espinoza
Staff Engineer

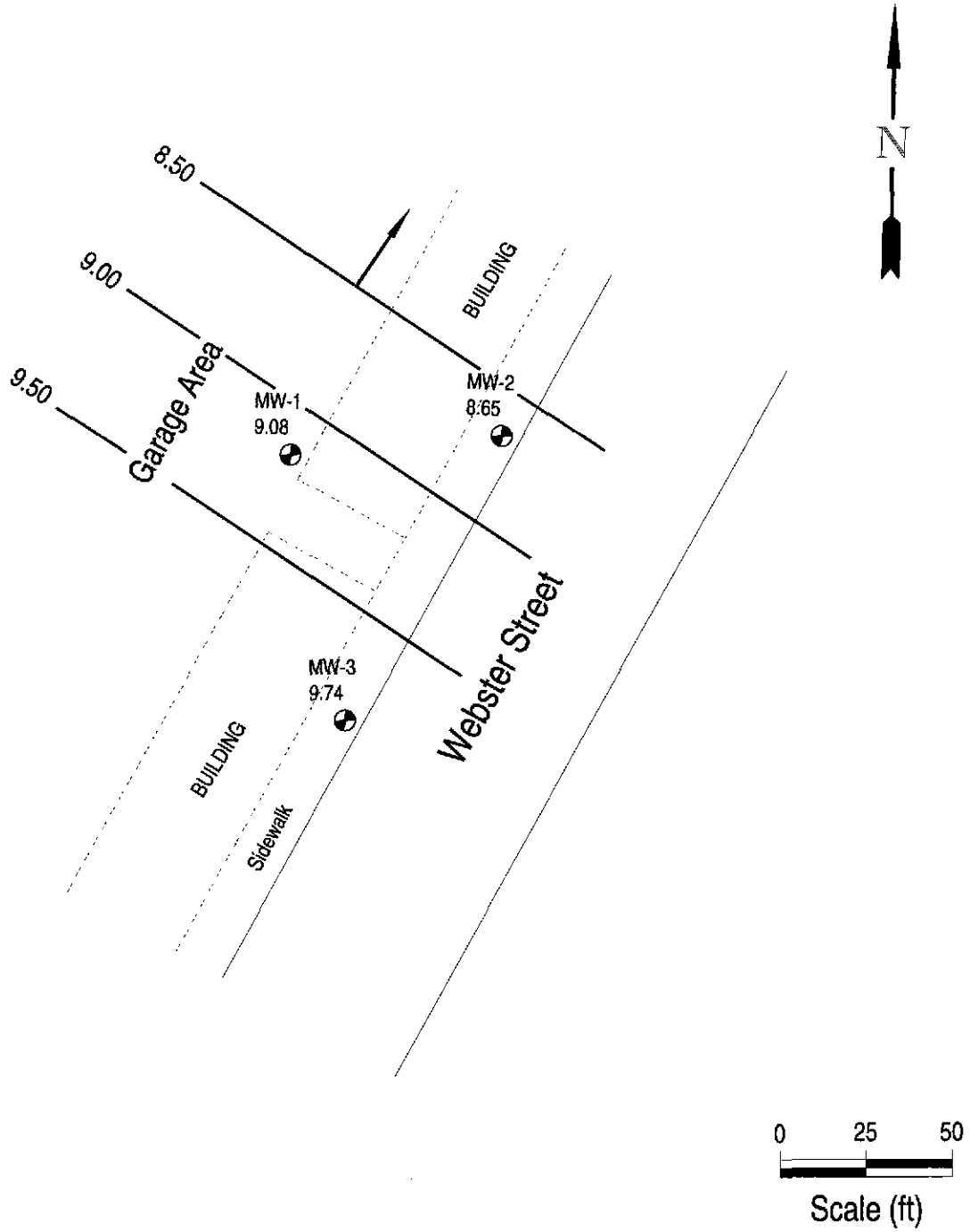
Bob Clark-Riddell, PE
Principal Engineer



D:\PROJECT\MISC\DOUGLAS\QM-3-95.WPD

Attachments: A - Analytic Reports for Ground Water
B - Standard Field Procedures for Monitoring Wells

cc: Mr. Lee Douglas, 1721 Webster Street, Oakland, California 94612



Base map from Piers Environmental Services

CAMBRIA
Environmental Technology, Inc.

EXPLANATION

- Ground Water Monitoring Well
- X.XX Ground Water Elevation
- Ground Water Elevation Contour
- Ground Water Flow Direction

Ground Water Elevation
July 11, 1995

1721 Webster Street
Oakland, California

FIGURE
1

Table 1. Ground Water Elevation and Analytic Data - 1721 Webster Street, Oakland, California

Well ID	Date	Well Elev. (ft)	G W Depth (ft)	G W Elev. (ft)	TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	Notes
					(Concentrations in mg/l)					
Gen Tech/Piers Environmental Data[1]										
MW-1	9-21-94 ~~12/02/94~~	29.25	19.42	9.83	nd	nd	nd	nd	nd	gradient 0.07 East
	2-22-95 ~~03/06/95~~	29.73	20.69	9.04	nd	nd	nd	nd	nd	0.041 East-SE
MW-2	9-94 ~~12/02/94~~	27.10	19.50	7.60	61.3	3	3.9	0.16	4.5	
	2-95 03/06/95	27.10	18.49	8.61	98 ↑	8.4 ↑	16	2	2.6	
MW-3	9-94 12/02/94	29.50	22.15	7.35	394	1.2	nd	1.8	4	
	2-95 ~~03/06/95~~	29.25	20.09	9.16	21 ↓	0.4 ↓	0.15	0.024	0.062	
Cambria Environmental Technology, Inc.										
MW-1	07/11/95	29.73	20.65	9.08 ↑	nd	nd	nd	nd	nd	gradient .007 NE
MW-2	07/11/95	27.10	18.45	8.65	38 ↓	3.1 ↓	7.5	0.94	3.7	a
MW-3	07/11/95	29.73	19.99	9.74 ↑	12 ↓	nd ↓	0.01	0.016	0.099	b,c,d

Notes and Abbreviations

G W = Ground water

TPHg = Total petroleum hydrocarbons as gasoline per Modified EPA Method 8015.

Elev. = Elevation

1 = From Gen Tech and Piers Environmental Quarterly Groundwater Monitoring Reports dated December 2, 1994 and March 6, 1995, respectively.

a - Unmodified or weakly modified gasoline is significant

b - Analytic laboratory reports that heavier gasoline range compounds are significant (possible aged gasoline)

c - Analytic laboratory reports that lighter gasoline range compounds (the most mobile fraction) are significant

d - Analytic laboratory reports that gasoline range compounds having broad chromatographic peaks are significant; possible biologically altered gasoline

ATTACHMENT A

Analytic Reports for Ground Water

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

07/21/95

Dear John:

Enclosed are:

1). the results of **3** samples from your **Douglas Parking** project,

2). a QC report for the above samples

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

4). a bill for analytical services.

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

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

Cambria Environmental Technology	Client Project ID: Douglas Parking	Date Sampled: 07/11/95
1144 65th Street, Suite C		Date Received: 07/13/95
Oakland, CA 94608	Client Contact: John Espinoza	Date Extracted: 07/15/95
	Client P.O:	Date Analyzed: 07/15/95

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline*, with 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)+	Benzene	Toluene	Ethylbenzene	Xylenes	% Rec. Surrogate
54267	MW-1-A	W	ND	ND	ND	ND	ND	107
54268	MW-2-A	W	38,000,a	3100	7500	940	3700	95
54269	MW-3-A	W	12,000,b,c/d	ND	10	16	99	91
Reporting Limit unless otherwise stated; ND means not detected above the reporting limit		W	50 ug/L	0.5	0.5	0.5	0.5	
		S	1.0 mg/kg	0.005	0.005	0.005	0.005	

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

cluttered chromatogram; sample peak coelutes with surrogate peak

+ The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds having broad chromatographic peaks are significant; biologically altered gasoline?; e) TPH pattern that does not appear to be derived from gasoline (?); 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
Tele: 510-798-1620 Fax: 510-798-1622

QC REPORT FOR HYDROCARBON ANALYSES

Date: 07/15/95 Matrix: Water

Analyte	Concentration (ug/L)			Amount Spiked	% Recovery		RPD
	Sample	MS	MSD		MS	MSD	
TPH (gas)	0.0	117.3	107.0	100	117	107	9.2
Benzene	0	10.1	9.7	10	101	97	4.0
Toluene	0	10	9.4	10	100	94	6.2
Ethyl Benzene	0	10.2	9.4	10	102	94	8.2
Xylenes	0	31.3	29.9	30	104	100	4.6
TPH (diesel)	0	160	150	150	106	100	6.0
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

4465 ACX53

McCAMPDELL ANALYTICAL

110 2nd AVENUE, # D7
PACHECO, CA 94553
(510) 798-1620 FAX (510) 798-1622

CHAIN OF CUSTODY RECORD

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

REPORT TO: John Espinoza BILL TO: Cambria

COMPANY: Cambria Environmental

TELE: 510 420 0700 FAX #: 510 420 9170

PROJECT NUMBER: PROJECT NAME: Douglas Parking

PROJECT LOCATION: 1721 Webster 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: HCL	METHOD PRESERVED: HNO3	METHOD PRESERVED: OTHER	ANALYSIS REQUEST: BTEX & TPH as Gasoline (602/8020 & 8015)	ANALYSIS REQUEST: TPH as Diesel (8015)	ANALYSIS REQUEST: Total Petroleum Oil & Grease (5520 E&F/5520 B&F)	ANALYSIS REQUEST: Total Petroleum Hydrocarbons (418.1)	ANALYSIS REQUEST: EPA 601/8010	ANALYSIS REQUEST: EPA 602/8020	ANALYSIS REQUEST: EPA 608/8080	ANALYSIS REQUEST: EPA 608/8080 - PCBs Only	ANALYSIS REQUEST: EPA 624/8240/8260	ANALYSIS REQUEST: EPA 625/8270	ANALYSIS REQUEST: CAM - 17 Metals	ANALYSIS REQUEST: EPA - Priority Pollutant Metals	ANALYSIS REQUEST: LEAD (7240/7421/239.2/6010)	ANALYSIS REQUEST: ORGANIC LEAD	ANALYSIS REQUEST: RCI	OTHER	COMMENTS
+ MW-1 A		7/11				X					X			X																
MW-1 B		7/11																												
MW-1 C																														
+ MW-2 A														X																
MW-2 B																														
MW-2 C																														
+ MW-3 A														X																
MW-3 B																														
MW-3 C																														

one analysis for each: MW-1, MW-2, MW-3

54267
54268
54269

ICE/T ✓
GOOD CONDITION ✓
HEAD SPACE ABSENT ✓
PRESERVATIVE APPROPRIATE ✓
CONTAINERS ✓

RELINQUISHED BY	DATE	TIME	RECEIVED BY
Bob Schultz	7/12	1545	Joy Rebera #634
Joy Rebera #634	7/12	1832	Richard Martinez 6260 7130 7-13-89
Richard Martinez	7/13/89	0945	RECEIVED BY LABORATORY: Heidi Rucca

REMARKS: Please have the results to us by Monday morning, thanks.

ATTACHMENT B

Standard Field Procedures for Monitoring Wells

STANDARD FIELD PROCEDURE FOR MONITORING WELLS

This document presents standard field methods for drilling and sampling soil borings and installing, developing and sampling ground water monitoring wells. These procedures are designed to comply with Federal, State and local regulatory guidelines. Specific field procedures are summarized below.

SOIL BORING AND SAMPLING

Objectives

Soil samples are collected to characterize subsurface lithology, assess whether the soils exhibit obvious hydrocarbon or other compound vapor or staining, and to collect samples for analysis at a State-certified laboratory. All borings are logged using the Unified Soil Classification System by a trained geologist working under the supervision of a California Registered Geologist (RG) or a Certified Engineering Geologist (CEG).

Soil Boring and Sampling

Soil borings are typically drilled using hollow-stem augers or push technologies such as the Geoprobe. Soil samples are collected at least every five ft to characterize the subsurface sediments and for possible chemical analysis. Additional soil samples are collected near the water table and at lithologic changes. Samples are collected using lined split-barrel or equivalent samplers driven into undisturbed sediments at the bottom of the borehole.

Drilling and sampling equipment is steam-cleaned prior to drilling and between borings to prevent cross-contamination. Sampling equipment is washed between samples with trisodium phosphate or an equivalent EPA-approved detergent.

Sample Analysis

Sampling tubes chosen for analysis are trimmed of excess soil and capped with Teflon tape and plastic end caps. Soil samples are labeled and stored at or below 4°C on either crushed or dry ice, depending upon local regulations. Samples are transported under chain-of-custody to a State-certified analytic laboratory.

Field Screening

One of the remaining tubes is partially emptied leaving about one-third of the soil in the tube. The tube is capped with plastic end caps and set aside to allow hydrocarbons to volatilize from the soil. After ten to fifteen minutes, a portable photoionization detector (PID) measures volatile hydrocarbon vapor concentrations in the tube headspace, extracting the vapor through a slit in the cap. PID measurements are used along with the field observations, odors, stratigraphy and ground water depth to select soil samples for analysis.

Water Sampling

Water samples, if they are collected from the boring, are either collected using a driven Hydropunch type sampler or are collected from the open borehole using bailers. The ground water samples are decanted into the appropriate containers supplied by the analytic laboratory. Samples are labeled, placed in protective foam sleeves, stored on crushed ice at or below 4°C, and transported under chain-of-custody to the laboratory. Laboratory-supplied trip blanks accompany the samples and are analyzed to check for cross-contamination. An equipment blank may be analyzed if non-dedicated sampling equipment is used.

Grouting

If the borings are not completed as wells, the borings are filled to the ground surface with cement grout poured or pumped through a tremie pipe.

MONITORING WELL INSTALLATION, DEVELOPMENT AND SAMPLING

Well Construction and Surveying

Ground water monitoring wells are installed to monitor ground water quality and determine the ground water elevation, flow direction and gradient. Well depths and screen lengths are based on ground water depth, occurrence of hydrocarbons or other compounds in the borehole, stratigraphy and State and local regulatory guidelines. Well screens typically extend 10 to 15 ft below and 5 ft above the static water level at the time of drilling. However, the well screen will generally not extend into or through a clay layer that is at least three ft thick.

Well casing and screen are flush-threaded, Schedule 40 PVC. Screen slot size varies according to the sediments screened, but slots are generally 0.010 or 0.020 inches wide. A rinsed and graded sand occupies the annular space between the boring and the well screen to about one to two ft above the well screen. A two ft thick hydrated bentonite seal separates the sand from the overlying sanitary surface seal composed of Portland type I,II cement.

Well-heads are secured by locking well-caps inside traffic-rated vaults finished flush with the ground surface. A stovepipe may be installed between the well-head and the vault cap for additional security.

The well top-of-casing elevation is surveyed with respect to mean sea level and the well is surveyed for horizontal location with respect to an onsite or nearby offsite landmark.

Well Development

Wells are generally developed using a combination of ground water surging and extraction. Surging agitates the ground water and dislodges fine sediments from the sand pack. After about ten minutes of surging, ground water is extracted from the well using bailing, pumping and/or reverse air-lifting through an eductor pipe to remove the sediments from the well. Surging and extraction continue until at least ten well-casing volumes of ground water are extracted and the sediment volume in the ground water is negligible. This

process usually occurs prior to installing the sanitary surface seal to ensure sand pack stabilization. If development occurs after surface seal installation, then development occurs 24 to 72 hours after seal installation to ensure that the Portland cement has set up correctly.

All equipment is steam-cleaned prior to use and air used for air-lifting is filtered to prevent oil entrained in the compressed air from entering the well. Wells that are developed using air-lift evacuation are not sampled until at least 24 hours after they are developed.

Ground Water Sampling

Depending on local regulatory guidelines, three to four well-casing volumes of ground water are purged prior to sampling. Purging continues until ground water pH, conductivity, and temperature have stabilized. Ground water samples are collected using bailers or pumps and are decanted into the appropriate containers supplied by the analytic laboratory. Samples are labeled, placed in protective foam sleeves, stored on crushed ice at or below 4°C, and transported under chain-of-custody to the laboratory. Laboratory-supplied trip blanks accompany the samples and are analyzed to check for cross-contamination. An equipment blank may be analyzed if non-dedicated sampling equipment is used.

were USTs
used until
they were removed?
HP?