



July 16, 1996

Mr. Lee Douglas  
Douglas Parking Company  
1721 Webster Street  
Oakland, California 94612

Re: **Subsurface Investigation Report**  
1721 Webster Street  
Oakland, CA 94612  
STID 4070

Dear Mr. Douglas:

Cambria Environmental Technology, Inc. (Cambria) is pleased to submit this subsurface investigation report for the above referenced site. The objective of this subsurface investigation was to determine the limits of hydrocarbons in ground water down gradient of the site. The site history, scope of work for this investigation, hydrocarbon distribution in soil, hydrocarbon distribution in ground water and our conclusions are summarized below.

## SITE HISTORY

**Site Location:** The site is located on 1721 Webster Street between 17th and 19th Streets in downtown Oakland, California (Figure 1). The site is located approximately five miles east of the San Francisco Bay and one half-mile west of Lake Merritt. The site is currently being utilized as a parking garage and is surrounded by other commercially-zoned parcels.

**1992 Tank Removal:** On August 3 and 6, 1992, Parker Environmental Services of Pittsburg, California removed one 1,000-gallon and two 500-gallon gasoline underground storage tanks (USTs). Up to 1,500 parts per million (ppm) total petroleum hydrocarbons as gasoline (TPHg) and up to 12 ppm benzene were detected in tank excavation and sidewall samples.

**1994 Subsurface Investigation:** On July 8 and September 8, 1994, Gen Tech/Piers Environmental, Inc. (Gen Tech) of San Jose, California drilled six exploratory borings (EB-1 through EB-6) and installed three ground water monitoring wells (MW-1 through MW-3). Up to 650 ppm TPHg and 0.2 ppm benzene were detected at 20 ft depth in soil near the former USTs. Up to 350,000 parts per billion (ppb) TPHg and 10,000 ppb benzene were detected near and immediately down-gradient of the former USTs.

**Quarterly Monitoring:** Both Gen Tech and Cambria have performed quarterly monitoring at the site since the well installation in the summer and fall of 1994. Up to 394,000 ppb TPHg and 8,400 ppb benzene have been detected in site wells MW-3 and MW-2, respectively. No TPHg or benzene, toluene, ethylbenzene and xylenes (BTEX) have ever been detected in MW-1.

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

## SCOPE OF WORK

Consistent with Alameda County Department of Environmental Health (ACDEH) requests, Cambria performed the following scope of work:

- Secured excavation and drilling permits, coordinated an underground utility survey in the Webster Street Right of Way, arranged for lane closure and mobilized to the site;
- Drilled seven soil borings to approximately 21 ft depth (two ft below the water table), and collected soil samples and one grab ground water sample from each boring;
- Analyzed one soil sample from each boring for TPHg and BTEX;
- Analyzed one grab ground water sample from each of the borings for TPHg and BTEX;
- Reviewed the results of the soil and grab water sampling and, based on the boring results, determined that two additional wells were needed to define the down gradient extent of hydrocarbons in ground water;
- Secured an encroachment permit and an additional excavation permit to install the two wells;
- Remobilized to the site and installed one ground water monitoring well down gradient and one well cross gradient of the former gasoline USTs;
- Developed, gauged and sampled the two new wells, and gauged and sampled the three existing wells;
- Surveyed the top of casing elevation of the two new wells with respect to a local benchmark;
- Analyzed one water sample from each new well and the three existing monitoring wells for TPHg and BTEX;
- Disposed of ten 55-gallon drums containing soil cuttings, steam clean rinseate and purge water from previous and current investigations; and
- Prepared this report for submittal to the ACDEH.

### Soil Borings and Well Installation

The results of Cambria's February and May 1996 subsurface investigation are summarized below. Analytic results for soil and ground water are presented in Tables 1, 2 and 3. A copy of the soil boring and well installation permit is presented in Attachment A. Boring logs and well construction diagrams are presented in Attachment B and analytic reports are presented in Attachment C. The well elevation survey data is presented in Attachment D. Non-Hazardous Transport Forms are presented in Attachment E. Cambria's Standard Field Procedures describing our sampling methods is presented in Attachment F.

Soil Borings and Grab Water Samples

- Drilling Dates:** February 22 and 23, 1996.
- Personnel Present:** Staff Engineer John Espinoza directed the field sampling efforts, working under the supervision of Professional Engineer No.49629 Robert Clark-Riddell.
- Permit:** Alameda County Zone 7 drilling permit 96100 required for the soil borings is presented in Attachment A.
- Drilling Methods:** Geoprobe for all borings.
- Number of Borings:** Seven (SB-A through SB-G) (Figure 2).
- Boring Depths:** Approximately 22 ft below grade (Attachment B).
- Sediment Lithology:** The site is primarily underlain by silt and sand to a maximum depth explored of 31.5 ft (Attachment B).
- Soil Analyses:** Selected soil samples were analyzed for:
- TPHg by modified EPA Method 8015, and
  - BTEX by EPA Method 8020.
- Grab Water Analyses:** Grab water samples were collected from each boring using a peristaltic pump and were analyzed for:
- TPHg by modified EPA Method 8015, and
  - BTEX by EPA Method 8020.

Well Installation

After reviewing analytic soil and grab ground water data, Cambria installed monitoring wells MW-4 and MW-5 cross- and down-gradient, respectively, of the former USTs (Figure 2). These well locations were selected based on an estimated plume dimension and on the locations of buried utilities and overhead obstructions in Webster Street.

- Drilling Date:** May 3, 1996.
- Personnel Present:** Staff Engineer John Espinoza directed the well installation, working under the supervision of Professional Engineer No.49629 Robert Clark-Riddell.
- Permit:** Alameda County Zone 7 drilling permit 96100 required for the well installation is presented in Attachment A.

- Drilling Method:** 8-inch hollow stem augers.
- Boring/Well Depth:** Monitoring well MW-4 (SB-H) and MW-5 (SB-I) were installed to depths of 26.5 and 31.5 ft, respectively.
- Well Materials:** Both wells were constructed using two-inch diameter, 0.010-inch slotted Schedule 40 PVC well screen and Schedule 40 PVC well casing.
- Screened Interval:** Ground water stabilized at 20 ft depth in boring SB-H (MW-4) and 15 ft depth in SB-I (MW-5). Well MW-4 was screened from 15 to 30 ft below grade and MW-5 was screened from 10 to 25 ft below grade (Attachment B).
- Development Method:** Each well was developed using surge block agitation and purged using a disposable bailer.
- Well Elevation Survey:** The top of casing elevation of wells MW-4 and MW-5 were surveyed relative to mean sea level by California licensed surveyor L. Wade Hammond # 6163 on May 16, 1996 (Attachment D).
- Ground Water Analyses:** As required by the ACDEH, a ground water sample was collected from each newly installed well and existing wells and analyzed for:
- TPHg by modified Method 8015, and
  - BTEX by EPA Method 8020.

**Soil and Water Disposal**

220 gal.

On June 7, 1996, ten 55-gallon drums containing steam clean rinseate, purge water and soil cuttings generated during previous and current subsurface investigations, were transported by Integrated Wastestream Management, Inc. of Milpitas, California and disposed of at McKittrick Waste Treatment located in McKittrick, California. Non-Hazardous Transport Forms are included in Attachment E.

## HYDROCARBON DISTRIBUTION IN SOIL

Cambria collected soil samples from the capillary-fringe in each of the seven borings (SB-A through SB-G) drilled during the initial investigation phase. Capillary-fringe and saturated zone samples were also collected from each of the two soil borings (SB-H and SB-I) drilled for the well installation. As presented in Table 1, TPHg at 580 ppm and 660 ppm, respectively, were detected at 20.5 ft depth in SB-B and SB-D which are located cross and down gradient of the former USTs. ~~No benzene was detected in any of the samples.~~

## HYDROCARBON DISTRIBUTION IN GROUND WATER

TPHg at 63,000 ppb and benzene at 7,400 ppb were detected in the water sample from monitoring well MW-2. TPHg at 20,000 ppb were detected in the grab water sample collected from boring SB-B which is located cross-gradient of the former USTs. As shown in Figure 3, benzene at 550 ppb was detected in the grab water sample collected from soil boring SB-D which is located down-gradient of the former USTs. Based on aqueous-phase hydrocarbon concentrations in the downgradient borings and wells, it appears that aqueous-phase hydrocarbons extend off site to the northeast.

1750 Webster  
On March 19, 1993, Applied Geosciences, Inc. (AGI) collected grab water samples (HP-1 and HP-2) on the parcel located directly across the street from the referenced site. As indicated in an AGI report dated April 1, 1993, and as shown in Figure 3, up to 18,000 ppb benzene was detected in one of the grab water samples. On May 18, 1993, AGI also collected and analyzed saturated soil samples in the area near the grab water samples, but did not detect TPHg or benzene at 20 ft depth. Although analytic soil data indicates ~~no soil contamination near the grab water sample area, and despite the fact that the grab water data is three years old, the high hydrocarbon concentrations in the grab water samples indicate the possible presence of an off site plume that could be contributing hydrocarbons to the subsurface beneath Webster Street.~~

## CONCLUSIONS

Since quarterly monitoring data indicates that hydrocarbon concentrations in ground water decreased at the site after the USTs were removed, and since site soils are relatively permeable, natural bioattenuation is probably occurring at the site and quarterly monitoring should continue to monitor this natural process. Therefore, we recommend implementing a quarterly ground water sampling program at the site in most or all site wells for one year and then reviewing the status of the site to determine the appropriate remedial strategy.

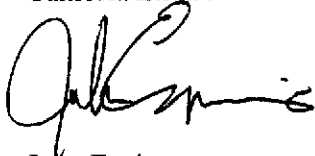
Mr. Lee Douglas  
July 16, 1996

CAMBRIA

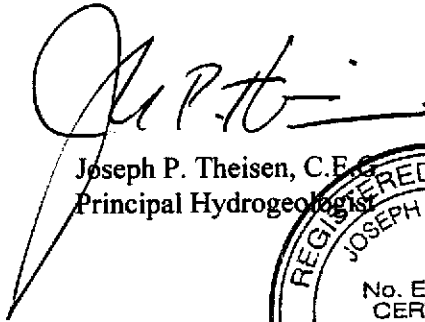
**CLOSING**

Cambria is pleased to continue providing the Douglas Parking Company with environmental consulting services. Please call if we can be of service or if you have any questions regarding this report.

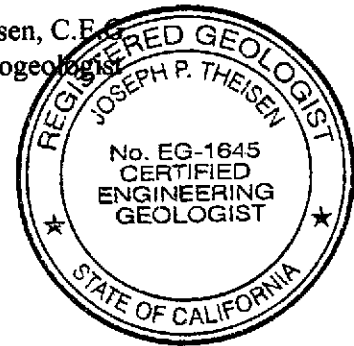
Sincerely,  
Cambria Environmental Technology, Inc.



John Espinoza  
Staff Engineer



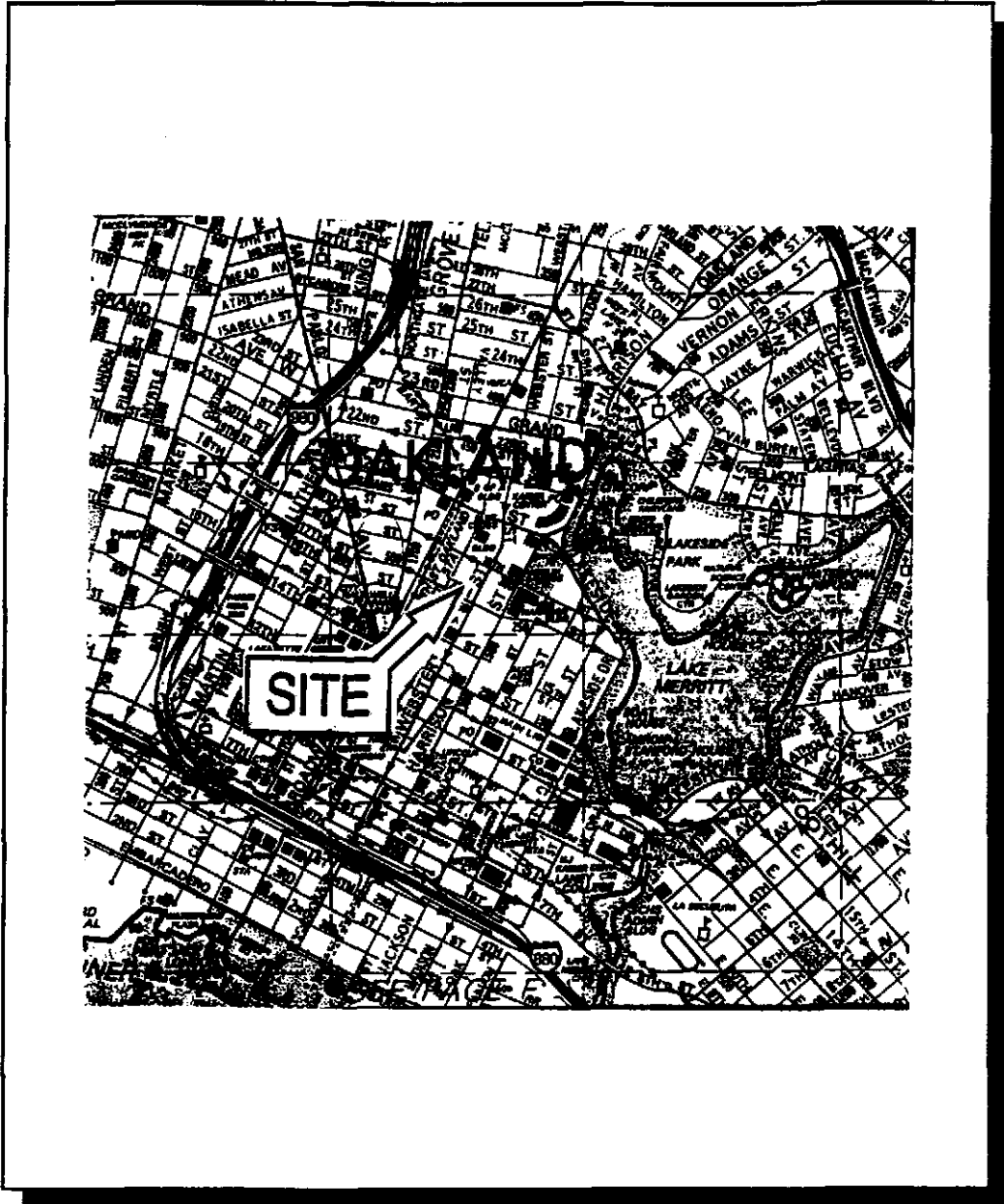
Joseph P. Theisen, C.E.G.  
Principal Hydrogeologist



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- Attachments:
- A - Drilling Permit
  - B - Boring Logs and Well Construction Diagrams
  - C - Analytic Reports for Soil and Ground Water
  - D - Well Elevation Survey
  - E - Non-Hazardous Transport Forms
  - F - Standard Field Procedures

cc: Ms. Jennifer Eberle, ACDEH, 1131 Harbor Bay Parkway, 2nd Floor, Alameda, CA 94502



**CAMBRIA**  
Environmental Technology, Inc.

Site Location Map  
Douglas Parking Company  
1721 Webster Street  
Oakland, California

FIGURE

1

**Table 1. Soil Analytic Data - Douglas Parking Company, 1721 Webster Street, Oakland, California**

Boring/Well ID	Date	Sample Depth (ft)	TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	Notes
(concentrations in mg/kg)								
SB-A	02/22/96	19.5	nd ✓	nd ✓	0.007	nd	nd	
SB-B	02/22/96	20.5	880 ✓	nd ✓	1.3	1.8	4.2	b,d
SB-C	02/22/96	19.5	1.4 ✓	nd ✓	0.013	0.027	0.12	b,d
SB-D	02/22/96	20.5	660 ✓	nd ✓	2.3	nd	5.2	d
SB-E	02/23/96	20.5	nd ✓	nd ✓	0.009	nd	nd	
SB-F	02/23/96	20.0	nd ✓	nd ✓	0.006	nd	nd	
SB-G	02/23/96	20.0	nd ✓	nd ✓	0.009	nd	nd	
SB-H	05/03/96	20.5 ✓	1.2 ✓	nd ✓	0.006	0.025	0.038	b,d
(MW-4)	05/03/96	31.0 ✓	nd ✓	nd ✓	nd	nd	nd	
SB-I	05/03/96	15.5 ✓	nd ✓	nd ✓	nd	nd	nd	
(MW-5)	05/03/96	26.0 ✓	nd ✓	nd ✓	nd	nd	nd	

**Notes and Abbreviations**

- 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
- e - One to a few isolated peaks present

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



**Table 2. Grab Water Analytic Data - Douglas Parking Company, 1721 Webster Street, Oakland, California**

Boring ID	Date	Sample/G W Depth (ft)	TPHg	Benzene	Toluene (concentrations in ug/l)	Ethylbenzene	Xylenes	Notes
SB-A	02/22/96	~20	16,000 ✓	38 ✓	16	180	620	
SB-B	02/22/96	~20	20,000 ✓	100 ✓	29	320	590	a
SB-C	02/22/96	~20	1,200 ✓	130 ✓	100	68	230	b,d
SB-D	02/22/96	~20	7,400 ✓	550 ✓	110	160	89	a
SB-E	02/23/96	~20	16,000 ✓	31 ✓	160	390	1,400	a
SB-F	02/23/96	~20	nd ✓	nd ✓	1.4	nd	2.3	
SB-G	02/23/96	~15	5,200 ✓	1.3 ✓	nd	0.70	nd	e

**Notes and Abbreviations**

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

e - One to a few isolated peaks present

G W = Ground water

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

**Table 3. Ground Water Elevation and Analytic Data - Douglas Parking Company, 1721 Webster Street, Oakland, California**

Well ID	Date	Well Elev. (ft)	G W Depth (ft)	G W Elev. (ft)	TPHg	(Concentrations in ug/l)				Notes
						Benzene	Toluene	Ethylbenzene	Xylenes	
MW-1	12/02/94	29.25	19.42	9.83	nd	nd	nd	nd	nd	1
	03/06/95	29.73	20.69	9.04	nd	nd	nd	nd	nd	1
	07/11/95	29.81	20.65	9.16	nd	nd	nd	nd	nd	
	05/10/96	29.81	20.80	9.01	nd	nd	nd	nd	nd	
MW-2	12/02/94	27.10	19.50	7.60	61,300	3,000	3,900	160	4,500	1
	03/06/95	27.10	18.49	8.61	98,000	8,400	16,000	2,000	2,600	1
	07/11/95	27.40	18.45	8.95	38,000	3,100	7,500	940	3,700	a
	05/10/96	27.40	18.55	8.64	nd	nd	6,000	1,500	6,000	a
MW-3	12/02/94	29.50	22.15	7.35	394,000	1,200	nd	1,800	4,000	1
	03/06/95	29.25	20.09	9.16	21,000	400	150	24	62	1
	07/11/95	29.56	19.99	9.57	12,000	nd	10	16	99	b,c,d
	05/10/96	29.56	20.24	9.32	nd	nd	7.8	15	84	b,d
MW-4	05/10/96	25.29	16.98	8.31	nd	nd	1,200	720	3,100	
MW-5	05/10/96	21.97	14.60	7.37	nd	nd	nd	nd	nd	

**Notes and Abbreviations**

G W = Ground water

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

Elev. = Elevation

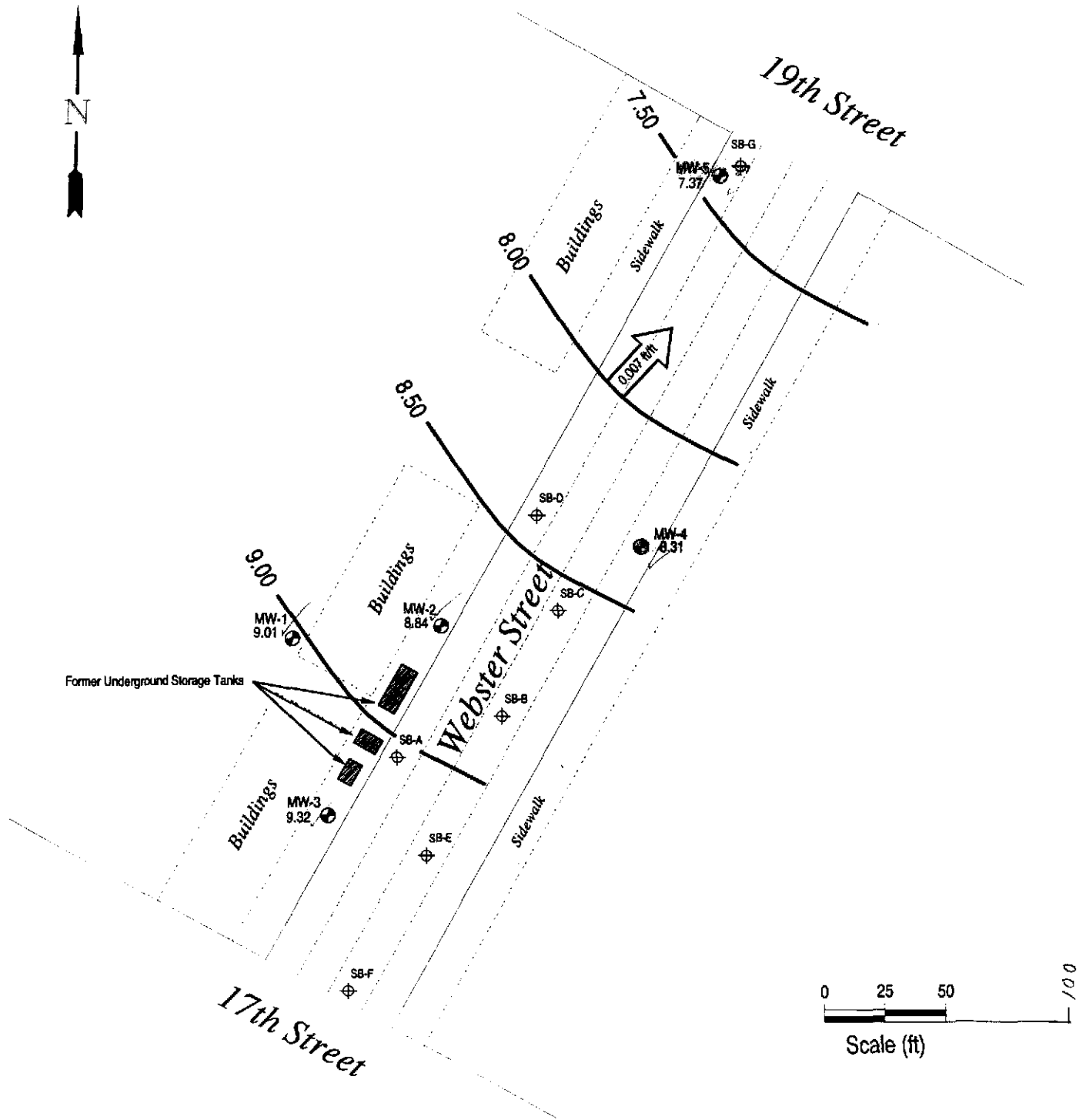
1 = Data prior to 7/11/95 from Gen Tech and Piers Environmental Quarterly Groundwater Monitoring Reports dated December 2, 1994 and March 6, 1995, respectively.

a - Unmodified or weakly modified gasoline is significant

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

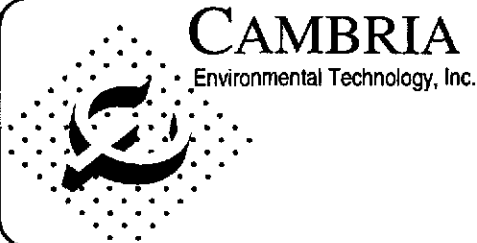
c - Analytic laboratory reports that lighter gasoline range compounds (the most mobile fraction) are significant

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







5-10-96

Base map from Piers Environmental Services



**EXPLANATION**

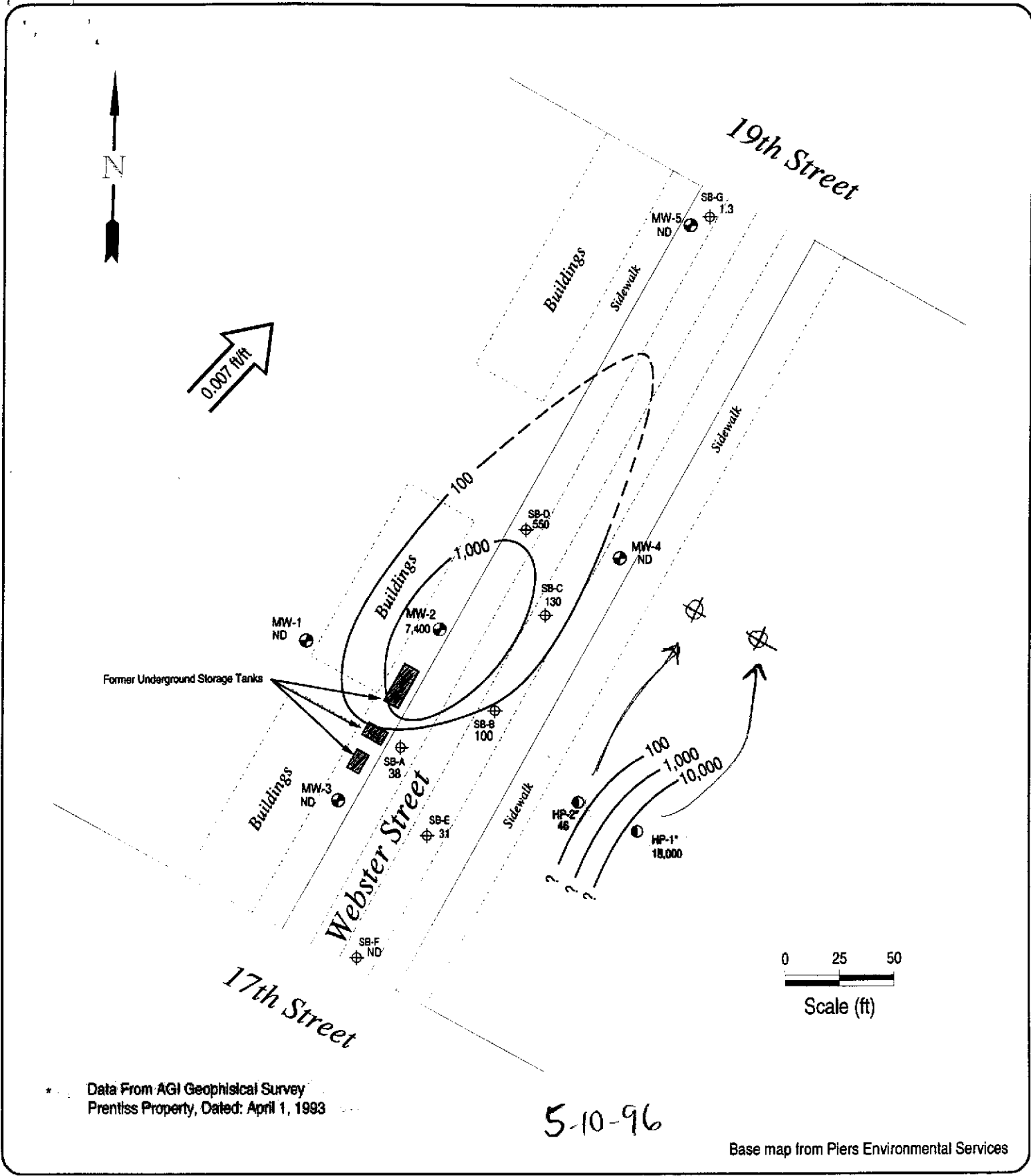
-  Ground Water Monitoring Well
-  Boring Location
-  x.xx Ground Water Elevation Contour Line (ft)
-   $\frac{0.007 \text{ ft}}{\text{ft}}$  Ground Water Flow Direction and Gradient (ft/ft)

Monitoring Well and Boring Locations and Ground Water Flow Direction  
1721 Webster Street  
Oakland, California

D:\PROJECT\MISC\DOUGLAS\GW-ELEV.DWG

FIGURE

2



\* Data From AGI Geophysical Survey  
Prentiss Property, Dated: April 1, 1993

5-10-96

Base map from Piers Environmental Services



EXPLANATION	
	Ground Water Monitoring Well
	Boring Location
	Benzene Concentration Contour (ppb)
	Ground Water Flow Direction and Gradient (ft/ft)

**Benzene Concentrations in Ground Water**  
1721 Webster Street  
Oakland, California  
D:\PROJECT\MISC\DOUGLAS\BENZ.DWG

FIGURE  
**3**



# ZONE 7 WATER AGENCY

5997 PARKSIDE DRIVE

PLEASANTON, CALIFORNIA 94588

VOICE (510) 484-2600

FAX (510) 462-3914

## DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

FOR OFFICE USE

LOCATION OF PROJECT 1721 WEASTEL ST  
OAKLAND, CA

PERMIT NUMBER 96100  
LOCATION NUMBER \_\_\_\_\_

### CLIENT

Name DOUGLAS PARKING  
Address 1721 WEASTEL ST Voice 510-444-7412  
City OAKLAND Zip 94612

### PERMIT CONDITIONS

Circled Permit Requirements Apply

### APPLICANT

Name CAMBRIA ENV. TECH., INC  
Address 1144 65th ST. #2 Voice 510-420-0700  
City OAKLAND CA Zip 94603

### A. GENERAL

1. A permit application should be submitted so as to arrive at the Zone 7 office five days prior to proposed starting date.
2. Submit to Zone 7 within 60 days after completion of permitted work the original Department of Water Resources Water Well Drillers Report or equivalent for well Projects, or drilling logs and location sketch for geotechnical projects.
3. Permit is void if project not begun within 90 days of approval date.

### B. WATER WELLS, INCLUDING PIEZOMETERS

1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

### C. GEOTECHNICAL. Bedfill bore hole with compacted cuttings or heavy bentonite and upper two feet with compacted material. In areas of known or suspected contamination, tremied cement grout shall be used in place of compacted cuttings.

- D. CATHODIC. Fill hole above anode zone with concrete placed by tremie.
- E. WELL DESTRUCTION. See attached.

### TYPE OF PROJECT

Well Construction	Geotechnical Investigation
Cathodic Protection _____	General _____
Water Supply _____	Contamination <u>X</u>
Monitoring <u>X</u>	Well Destruction _____

### PROPOSED WATER SUPPLY WELL USE

Domestic _____	Industrial _____	Other _____
Municipal _____	Irrigation _____	

### DRILLING METHOD:

Mud Rotary \_\_\_\_\_ Air Rotary \_\_\_\_\_ Auger X  
Cable \_\_\_\_\_ Other \_\_\_\_\_

DRILLER'S LICENSE NO. C57-582696; C57-705927  
(WELLS) (BORINGS)

### WELL PROJECTS

Drill Hole Diameter	<u>8</u> in.	Maximum	
Casing Diameter	<u>2</u> in.	Depth	<u>50</u> ft.
Surface Seal Depth	_____ ft.	Number	<u>2</u>

### GEOTECHNICAL PROJECTS

Number of Borings	<u>5</u>	Maximum	
Hole Diameter	<u>2</u> in.	Depth	<u>30</u> ft.

ESTIMATED STARTING DATE 2/15/96  
ESTIMATED COMPLETION DATE 3/15/96

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

Approved Wyman Hong Date 14 Feb 96  
Wyman Hong

APPLICANT'S SIGNATURE [Signature] Date 2/2/96

**Attachment B**

**Boring Logs and Well Construction Diagrams**

**BORING LOG**

Boring ID

**SB-A**

Client: **Douglas Parking Company**

Location **1721 Webster Street**


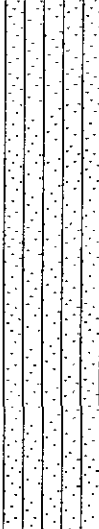
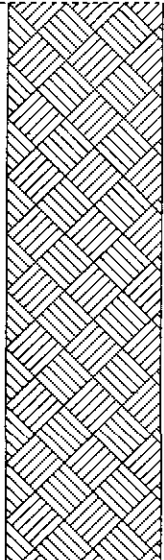
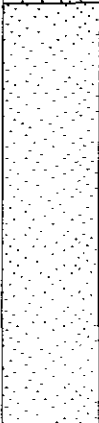
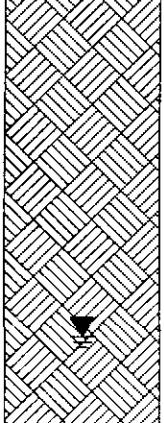
Project No: **58-197**

Phase

Task **02**

Surface Elev. **NA ft,**

Page **1** of **1**

Depth Feet	Blow Count	Sample Interval	Lithologic Description	TPHg (ppm)	Graphic Log	Boring Completion Graphics	Depth Feet	Additional Comments
0	Ground Surface						0	
			<b>ASPHALT</b>					
5			<b>Silty SAND: (SM);</b> grey to brown; damp to moist; 30% silt, 70% fine to medium grained sand; moderate estimated permeability				5	
10							10	
15			<b>SAND: (SP);</b> grey to brown; moist; 10% silt, 90% medium grained sand; high estimated permeability				15	
20				nd			20	
25							25	
30							30	
								Bottom of boring

Driller **Vironex**

Drilling Started **2/22/96**

Notes: **Webster Street in #4 lane**

Logged By **JME**

Drilling Completed **2/22/96**

**near site entrance**

Water-Bearing Zones **NA**

Grout Type **Portland Type I/II**

**BORING LOG**

Boring ID

**SB-B**

Client: **Douglas Parking Company**

Location **1721 Webster Street**

Project No: **58-197**

Phase

Task **02**

Surface Elev. **NA ft.**

Page **1** of **1**

Depth Feet	Blow Count	Sample Interval	Lithologic Description	TPHg (ppm)	Graphic Log	Boring Completion Graphics	Depth Feet	Additional Comments
0	Ground Surface		<b>ASPHALT</b>				0	
5			<b>Silty SAND; (SM); brown; damp; 30% silt, 70% fine to medium grained sand; moderate estimated permeability</b>				5	
10			moist				10	
15			<b>SAND; (SP); brown; damp; 10% silt, 90% medium grained sand; high estimated permeability</b>				15	
20			grey; wet	580.00			20	
								Bottom of boring
25							25	
30							30	

Driller <b>Vironex</b>	Drilling Started <b>2/22/96</b>	Notes: <b>Webster Street in #2 lane</b>
Logged By <b>JME</b>	Drilling Completed <b>2/22/96</b>	<b>near site entrance</b>
Water-Bearing Zones <b>NA</b>	Grout Type <b>Portland Type I/II</b>	

BOR 58197 5/21/96



**BORING LOG**

Boring ID **SB-C**

Client: **Douglas Parking Company**

Location **1721 Webster Street**

Project No: **58-197**

Phase

Task **02**

Surface Elev. **NA ft,**

Page **1** of **1**

Depth Feet	Blow Count	Sample Interval	Lithologic Description	TPH <sub>g</sub> (ppm)	Graphic Log	Boring Completion Graphics	Depth Feet	Additional Comments
0	Ground Surface		<b>ASPHALT</b>				0	
5			<b>Silty SAND: (SM);</b> brown; moist; 30% silt, 70% fine to medium grained sand; moderate estimated permeability				5	
10			wet				10	
15			<b>SAND: (SP);</b> brown; moist; 10% silt, 90% medium grained sand; high estimated permeability				15	
20			grey; wet	1.40			20	
25							25	
30							30	Bottom of boring

Driller **Vironex**

Drilling Started **2/22/96**

Notes: **Webster Street in #4 lane,**

Logged By **JME**

Drilling Completed **2/22/96**

**34' northeast of MW-2**

Water-Bearing Zones **NA**

Grout Type **Portland Type I/II**

**BORING LOG**

Boring ID

**SB-D**

Client: **Douglas Parking Company**

Location **1721 Webster Street**

Project No: **58-197**

Phase

Task **02**

Surface Elev. **NA ft,**

Page **1** of **1**

Depth Feet	Blow Count	Sample Interval	Lithologic Description	TPHg (ppm)	Graphic Log	Boring Completion Graphics	Depth Feet	Additional Comments
0	Ground Surface		<b>ASPHALT</b>				0	
5			<b>Silty SAND; (SM); brown; damp; 30% silt, 70% fine to medium grained sand; moderate estimated permeability</b>				5	
10							10	
15			<b>SAND; (SP); brown; damp; 10% silt, 90% medium grained sand; high estimated permeability</b>				15	
20			grey; wet	660.00			20	
								Bottom of boring
25							25	
30							30	

Driller <b>Vironex</b>	Drilling Started <b>2/22/96</b>	Notes: <b>Webster Street in #4 lane,</b>
Logged By <b>JME</b>	Drilling Completed <b>2/22/96</b>	<b>62' northeast of MW-2</b>
Water-Bearing Zones <b>NA</b>	Grout Type <b>Portland Type I/II</b>	

BOR 58197 5/21/96

**BORING LOG**

Boring ID

**SB-E**

Client: **Douglas Parking Company**

Location **1721 Webster Street**

Project No: **58-197**

Phase

Task **02**

Surface Elev. **NA ft.**

Page **1** of **1**

Depth Feet	Blow Count	Sample Interval	Lithologic Description	TPHg (ppm)	Graphic Log	Boring Completion Graphics	Depth Feet	Additional Comments
0	Ground Surface		<b>ASPHALT</b>				0	
5			<b>Silty SAND: (SM);</b> brown; damp; 30% silt, 70% fine to medium grained sand; moderate estimated permeability				5	
10							10	
15			<b>SAND: (SP);</b> brown; damp; 10% silt, 90% medium grained sand; high estimated permeability				15	
20			grey; wet	nd			20	
25							25	Bottom of boring
30							30	

Driller **Vironex**

Drilling Started **2/23/96**

Notes: **Webster Street in #4 lane,**

Logged By **JME**

Drilling Completed **2/23/96**

**62' northeast of MW-2**

Water-Bearing Zones **NA**

Grout Type **Portland Type I/II**

**BORING LOG**

Boring ID

**SB-F**

Client: **Douglas Parking Company**

Location **1721 Webster Street**

Project No: **58-197**

Phase

Task **02**

Surface Elev. **NA ft.**

Page **1** of **1**

Depth Feet	Blow Count	Sample Interval	Lithologic Description	TPHg (ppm)	Graphic Log	Boring Completion Graphics	Depth Feet	Additional Comments
0	Ground Surface		<b>ASPHALT</b>				0	
5			<b>Silty SAND; (SM);</b> brown; moist; 30% silt, 70% fine to medium grained sand; moderate estimated permeability				5	
10							10	
15			<b>SAND; (SP);</b> brown; moist; 10% silt, 90% medium grained sand; high estimated permeability				15	
20			wet	nd			20	
25							25	Bottom of boring
30							30	

Driller **Vironex**

Drilling Started **2/23/96**

Notes: **Webster Street in #2 lane**

Logged By **JME**

Drilling Completed **2/23/96**

**near 17th Street crosswalk**

Water-Bearing Zones **NA**

Grout Type **Portland Type I/II**

**BORING LOG**

Boring ID

**SB-G**

Client: **Douglas Parking Company**

Location **1721 Webster Street**

Project No: **58-197**

Phase

Task **02**

Surface Elev. **NA ft.**

Page **1** of **1**

Depth Feet	Blow Count	Sample Interval	Lithologic Description	TPHg (ppm)	Graphic Log	Boring Completion Graphics	Depth Feet	Additional Comments
0	Ground Surface		<b>ASPHALT</b>				0	
5			<b>Silty SAND; (SM); brown; damp; 20% silt, 80% fine to medium grained sand; moderate to high estimated permeability</b>				5	
10			<b>SAND; (SP); brown; moist; 10% silt, 90% medium grained sand; high estimated permeability</b>				10	
15			wet				15	
20			wet	nd			20	
25							25	
30							30	Bottom of boring

Driller <b>Vironex</b>	Drilling Started <b>2/23/96</b>	Notes: <b>Webster Street in #4 lane</b>
Logged By <b>JME</b>	Drilling Completed <b>2/23/96</b>	<b>near 19th Street crosswalk</b>
Water-Bearing Zones <b>NA</b>	Grout Type <b>Portland Type I/II</b>	

BOR 58197 5/21/96

**DRILLING LOG**

Client: **Douglas Parking Company**

Project No: **58-197**

Phase

Task02

Well ID **MW-4**

Boring ID

**SB-H**

Location **1721 Webster Street**

Surface Elev. **25.64 ft,**

Page 1 of 1

Depth (feet)	Blow Count	Sample Interval	Lithologic Description	TPHg (ppm)	Graphic Log	Well Construction Graphics	Depth (feet)	Well Construction Details
0	Ground Surface						0	T.O.C. Elev. 25.29
5			<b>ASPHALT</b> <b>CONCRETE</b> <b>FILL; (ML);</b> light brown; damp; 10% clay, 60% silt, 30% fine to medium grained sand; low plasticity; low estimated permeability				5	
10	2 4 11		<b>Silty SAND; (SM);</b> brown; medium dense; damp; 30% silt, 70% fine to medium grained sand; moderate estimated permeability				10	
15	6 15		<b>SAND; (SP);</b> brown; medium dense; damp; 5% silt, 95% medium grained sand; high estimated permeability				15	
20	12 24		grey; wet	1			20	
25	3 6		loose				25	
30	6 12 10		<b>Clayey SILT; (ML);</b> grey; very stiff; wet; 20% clay; 50% silt, 30% medium grained sand; medium plasticity; low estimated permeability	nd			30	
35							35	Bottom of well

Driller **SES, Inc.**  
 Logged By **JME**  
 Drilling Started **5/3/96**  
 Drilling Completed **5/3/96**  
 Construction Completed **5/3/96**  
 Development Completed **5/6/96**  
 Water Bearing Zones **NA**

Development Yield **010**  
 Well Casing **0.39 gpm/Dia. 0' to 15'**  
 Casing Type **Schedule 40 PVC**  
 Well Screen **2" Dia. 15' to 30'**  
 Screen Type **Schedule 40 PVC**  
 Slot Size **0.010"**  
 Drilling Mud **NA**  
 Grout Type **Portland Type I/II**

Bentonite Seal **8'to 9'**  
 Sand Pack **Monterey Sand**  
 Sand Pack Type **#2/16**  
 Static Water Level **16.98** ft Depth  
 Date **5/10/96**  
 Notes: **Webster Street in #1 lane**  
**62' northeast of MW-2**

**DRILLING LOG**

Client: **Douglas Parking Company**

Project No: **58-197**

Phase

Task02

Well ID **MW-5**

Boring ID

**SB-1**

Location **1721 Webster Street**

Surface Elev. **22.22 ft.**

Page **1** of **1**

Depth (feet)	Blow Count	Sample Interval	Lithologic Description	TPHg (ppm)	Graphic Log	Well Construction Graphics	Depth (feet)	Well Construction Details
0	Ground Surface						0	T.O.C. Elev. 21.97
0 - 5			<b>ASPHALT</b> <b>CONCRETE</b>  <b>FILL:</b> (ML); light brown; damp; 10% clay, 60% silt, 30% fine to medium grained sand; low plasticity; low estimated permeability				0 - 5	
5 - 10			<b>SAND:</b> (SP); brown; very dense; damp; 5% silt, 95% fine to medium grained sand; high estimated permeability				5 - 10	
10 - 15	6 26 26						10 - 15	
15 - 20	8 26 28		moist to wet	nd			15 - 20	
20 - 25	3 4 4						20 - 25	
25 - 30	6 10 18		<b>Clayey SILT:</b> (ML); grey to brown; medium stiff; wet; 20% clay; 50% silt, 30% medium grained sand; medium plasticity; low estimated permeability	nd			25 - 30	Bottom of well

Driller <b>SES, Inc.</b>	Development Yield <b>010</b>	Bentonite Seal <b>8'to 9'</b>
Logged By <b>JME</b>	Well Casing <b>0.52 gpm/Dia. 0' to 10'</b>	Sand Pack <b>Monterey Sand</b>
Drilling Started <b>5/3/96</b>	Casing Type <b>Schedule 40 PVC</b>	Sand Pack Type <b>#2/16</b>
Drilling Completed <b>5/3/96</b>	Well Screen <b>2" Dia. 10' to 25'</b>	Static Water Level <b>14.60</b> ft Depth
Construction Completed <b>5/3/96</b>	Screen Type <b>Schedule 40 PVC</b>	Date <b>5/10/96</b>
Development Completed <b>5/6/96</b>	Slot Size <b>0.010"</b>	Notes: <b>Webster Street in #4 lane near 19th Street crosswalk</b>
Water Bearing Zones <b>NA</b>	Drilling Mud <b>NA</b>	
	Grout Type <b>Portland Type I/II</b>	

WELL 58197 6/27/96

**Attachment C**

**Analytic Reports for Soil and Ground Water**



McCAMPBELL ANALYTICAL INC.

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

03/04/96

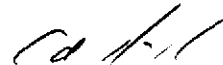
Dear John:

Enclosed are:

- 1). the results of 14 samples from your # 58-197; 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

Cambria Environmental Technology 1144 65th Street, Suite C Oakland, CA 94608	Client Project ID: # 58-197; Douglas Parking ✓	Date Sampled: 02/22-02/23/96
	Client Contact: John Espinoza	Date Received: 02/23/96
	Client P.O:	Date Extracted: 02/24/96
		Date Analyzed: 02/24/96

**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) <sup>+</sup>	Benzene	Toluene	Ethylben- zene	Xylenes	% Rec. Surrogate
61792	SB-A	W	16,000,a ✓	38 ✓	16	180	620	108
61793	SB-B	W	20,000,a ✓	100 ✓	29	320	590	---#
61794	SB-C	W	1200,b,d ✓	130 ✓	100	68	230	97
61795	SB-D	W	7400,a ✓	550 ✓	110	160	89	105
61796	SB-E	W	16,000,a ✓	31 ✓	160	390	1400	103
61797	SB-F	W	ND ✓	ND ✓	1.4	ND	2.3	99
61798	SB-G	W	5200,f ✓	1.3 ✓	ND	0.70	ND	97
61799	SB-D @ 20.5	S	660,d ✓	ND < 0.2 ✓	2.3	ND < 0.2	5.2	98
61800	SB-A @ 19.5	S	ND ✓	ND ✓	0.007	ND	ND	109
61801	SB-B @ 20.5	S	580,b,d ✓	ND < 0.3 ✓	1.3	1.8	4.2	105
61802	SB-C @ 19.5	S	1.4,b,d ✓	ND ✓	0.013	0.027	0.12	106
61803	SB-E @ 20.5	S	ND ✓	ND ✓	0.009	ND	ND	104
61804	SB-F @ 20	S	ND ✓	ND ✓	0.006	ND	ND	107
61805	SB-G @ 20	S	ND ✓	ND ✓	0.009	ND	ND	107
Reporting Limit unless other- wise stated; ND means not de- tected 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.

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: 02/24/96

Matrix: Soil

Analyte	Concentration (mg/kg) Sample (#61109)			Amount Spiked	% Recovery		RPD
	MS	MSD	MSD		MS	MSD	
TPH (gas)	0.000	1.829	1.884	2.03	90	93	2.9
Benzene	0.000	0.162	0.158	0.2	81	79	2.5
Toluene	0.000	0.182	0.180	0.2	91	90	1.1
Ethylbenzene	0.000	0.182	0.178	0.2	91	89	2.2
Xylenes	0.000	0.536	0.528	0.6	89	88	1.5
TPH (diesel)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
TRPH (oil and grease)	N/A	N/A	N/A	N/A	N/A	N/A	N/A

$$\% \text{ Rec.} = (\text{MS} - \text{Sample}) / \text{amount spiked} \times 100$$

$$\text{RPD} = (\text{MS} - \text{MSD}) / (\text{MS} + \text{MSD}) \times 2 \times 100$$

## QC REPORT FOR HYDROCARBON ANALYSES

Date: 02/24/96

Matrix: Water

Analyte	Concentration (ug/L) Sample (#61498)			Amount Spiked	% Recovery		
	MS	MSD			MS	MSD	RPD
TPH (gas)	0.0	96.2	104.6	100.0	96.2	104.6	8.4
Benzene	0.0	9.8	10.2	10.0	98.0	102.0	4.0
Toluene	0.0	10.2	10.6	10.0	102.0	106.0	3.8
Ethyl Benzene	0.0	10.2	10.7	10.0	102.0	107.0	4.8
Xylenes	0.0	31.1	32.8	30.0	103.7	109.3	5.3
TPH (diesel)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
TRPH (oil & grease)	0	21400	22000	23700	90	93	2.8

$$\% \text{ Rec.} = (\text{MS} - \text{Sample}) / \text{amount spiked} \times 100$$

$$\text{RPD} = (\text{MS} - \text{MSD}) / (\text{MS} + \text{MSD}) \times 2 \times 100$$







McCAMPBELL ANALYTICAL INC.

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

05/13/96

Dear John:

Enclosed are:

- 1). the results of 4 samples from your # 58-197-3; 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



Cambria Environmental Technology 1144 65th Street, Suite C Oakland, CA 94608	Client Project ID: # 58-197-3; Douglas Parking	Date Sampled: 05/03/96
	Client Contact: John Espinoza	Date Received: 05/06/96
	Client P.O:	Date Extracted: 05/06/96
		Date Analyzed: 05/06/96

**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) <sup>+</sup>	Benzene	Toluene	Ethylben- zene	Xylenes	% Rec. Surrogate
64793	MW-4-20.5	S	1.2,b,d	ND	0.006	0.025	0.038	102
64795	MW-4-31	S	ND	ND	ND	ND	ND	101
64797	MW-5-15.5	S	ND	ND	ND	ND	ND	99
64799	MW-5-26	S	ND	ND	ND	ND	ND	104
Reporting Limit unless other- wise stated; ND means not de- tected above the reporting limit	W	50 ug/L	0.5	0.5	0.5	0.5	0.5	
	S	1.0 mg/kg	0.005	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.

## QC REPORT FOR HYDROCARBON ANALYSES

Date: 05/06/96

Matrix: Soil

Analyte	Concentration (mg/kg) Sample (#63142)			Amount Spiked	% Recovery		
	MS	MSD			MS	MSD	RPD
TPH (gas)	0.000	1.939	1.852	2.03	96	91	4.6
Benzene	0.000	0.194	0.182	0.2	97	91	6.4
Toluene	0.000	0.206	0.192	0.2	103	96	7.0
Ethylbenzene	0.000	0.216	0.200	0.2	108	100	7.7
Xylenes	0.000	0.644	0.600	0.6	107	100	7.1
TPH (diesel)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
TRPH (oil and grease)	N/A	N/A	N/A	N/A	N/A	N/A	N/A

$$\% \text{ Rec.} = (\text{MS} - \text{Sample}) / \text{amount spiked} \times 100$$

$$\text{RPD} = (\text{MS} - \text{MSD}) / (\text{MS} + \text{MSD}) \times 2 \times 100$$

6326 ACX110

# McCAMPBELL ANALYTICAL

110 2nd AVENUE, # D7

PACHECO, CA 94663

(610) 700-1020

FAX (610) 700-1028

# CHAIN OF CUSTODY RECORD

TURN AROUND TIME:  RUSH  24 HOUR  48 HOUR  5 DAY

REPORT TO: JOHN ESPINOSA BILL TO: CAMBRIA ENV. RES.

COMPANY: CAMBRIA

1144 65th ST SUITE C

OAKLAND CA 94608

TELE: 510-420-9177 FAX #: 510-420-9170

PROJECT NUMBER: 58-197-3 PROJECT NAME: DOUGLAS PARKING

PROJECT LOCATION: 1721 WEBSTER OAKLAND CA SAMPLER SIGNATURE: *John*

## ANALYSIS REQUEST

## UTILER

METHOD	ANALYSIS REQUEST	UTILER	COMMENTS
TPH as Benz (8000)			
TPH as Total (8000)			
Total Petroleum Oil & Grease (8000) CAP/8000 BAP			
Total Petroleum Hydrocarbons (418.0)			
EPA 602/8000			
EPA 602/8000			
EPA 602/8000			
EPA 608/8000 - PCBs Only			
EPA 621/8241/8250			
EPA 625/8270			
CM - 17 Metals			
EPA - Priority Pollutant Metals			
LEAD (7240/7427/829.2/8000)			
ORGANIC LEAD			
RE			

SAMPLE ID	LOCATION	SAMPLING		# CONTAINERS	TYPE CONTAINERS	MATRIX					METHOD PRESERVED						
		DATE	TIME			WATER	SOIL	AIR	SLUDGE	OTHER	HCL	NO <sub>2</sub>	OTHER				
MW-4-15.5		5/3/96		1	0.255	X											
MW-4-20.5																	
MW-4-25.5																	
MW-4-31																	
MW-5-11'																	
MW-5-15.5																	
MW-5-21																	
MW-5-26																	

COMMENTS

HOLD

HOLD

HOLD

HOLD

RELINQUISHED BY: <i>[Signature]</i>	DATE: 5/16/96	TIME: 1059	RECEIVED BY: D. Louie 743
RELINQUISHED BY: <i>[Signature]</i>	DATE: 5/6/96	TIME: 1234	RECEIVED BY: <i>[Signature]</i>
RELINQUISHED BY:	DATE:	TIME:	RECEIVED BY LABORATORY:

## REMARKS:

ICE/  GOOD CONDITION  HEAD SPACE ABSENT

PRESERVATIVE APPROPRIATE  CONTAINERS

VOAS | ORG | METALS | OTHER

McCAMPBELL ANALYTICAL INC.

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

05/20/96

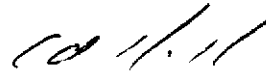
Dear John:

Enclosed are:

- 1). the results of 5 samples from your # 58-197; 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

## QC REPORT FOR HYDROCARBON ANALYSES

Date: 05/14/96

Matrix: Water

Analyte	Concentration (ug/L) Sample (#65079)			Amount Spiked	% Recovery		
	MS	MSD			MS	MSD	RPD
TPH (gas)	0.0	106.6	104.1	100.0	106.6	104.1	2.4
Benzene	0.0	10.5	10.5	10.0	105.0	105.0	0.0
Toluene	0.0	10.4	10.4	10.0	104.0	104.0	0.0
Ethyl Benzene	0.0	10.2	10.3	10.0	102.0	103.0	1.0
Xylenes	0.0	30.4	30.7	30.0	101.3	102.3	1.0
TPH (diesel)	0	157	153	150	104	102	2.6
TRPH (oil & grease)	N/A	N/A	N/A	N/A	N/A	N/A	N/A

$$\% \text{ Rec.} = (\text{MS} - \text{Sample}) / \text{amount spiked} \times 100$$

$$\text{RPD} = (\text{MS} - \text{MSD}) / (\text{MS} + \text{MSD}) \times 2 \times 100$$

6361 ACK III

**McCAMPBELL ANALYTICAL**

110 2nd AVENUE, # D7  
PACHECO, CA 94653

(610) 700-1620

FAX (610) 700-1622

**CHAIN OF CUSTODY RECORD**

TURN AROUND TIME:

RUSH  24 HOUR  48 HOUR  5 DAY

REPORT TO: JOHN ESPINOSA BILL TO: CAMPANA

COMPANY: CAMPANA ENV. TEST INC

1144 65th ST SUITE C

OAKLAND CA 94608

TELE: 510-420-9177 FAX #: 510-420-9170

PROJECT NUMBER: 68-197 PROJECT NAME: OWENS PARKWAY

PROJECT LOCATION: 1721 WESTERN SAMPLER SIGNATURE: *[Signature]*

**ANALYSIS REQUEST**

**OTHER**

STEX & TPH as Gasoline (602/603 & 801.5)	
TPH as Diesel (803)	
Total Petroleum Oil & Grease (5520 2MP/5520 2MP)	
Total Petroleum Hydrocarbons (18.D)	
EPA 602/603	
EPA 602/602	
EPA 608/608	
EPA 608/608 - PCBs Only	
EPA 624/624/624/624	
EPA 625/6276	
CAH - 17 METALS	
EPA - Priority Pollutant Metals	
LEAD (7240/7242/239.2/6010)	
ORGANIC LEAD	
PCB	

**COMMENTS**

64991  
64992  
64993  
64994  
64995

SAMPLE ID	LOCATION	SAMPLING		# CONTAINERS	TYPE CONTAINERS	MATRIX					METHOD PRESERVED			
		DATE	TIME			WATER	SOIL	AIR	SLUDGE	OTHER	HCL	HNO <sub>3</sub>	OTHER	
MW-1		5/10/96	1530	3	Vials	X						X		
MW-2			1600											
MW-3			1620											
MW-4			1700											
MW-5			1730											

RELINQUISHED BY: <i>[Signature]</i>	DATE: 5/13/96	TIME: 10:28	RECEIVED BY: <i>[Signature]</i> #601
RELINQUISHED BY: <i>[Signature]</i> #601	DATE: 5/13/96	TIME: 11:35 AM	RECEIVED BY: <i>[Signature]</i>
RELINQUISHED BY:	DATE:	TIME:	RECEIVED BY LABORATORY:

**REMARKS:**

ICE/T   
 GOOD CONDITION   
 HEAD SPACE ABSENT   
 PRESERVATIVE APPROPRIATE   
 CONTAINERS

**L. WADE HAMMOND**  
*Land Surveyor*  
6310 THORNTON AVENUE  
NEWARK, CA 94560  
Tel: 510-796-2624      FAX 510-790-2650

May 16, 1996

**Cambria Environmental Technology, Inc.**

**Attn: John Espinoza**

**1144 65th St. Suite C**

**Oakland, CA 94608**

**Tel:510-420-0700 Fax:510-420-9170**

**Subject: 1721 Webster St., Oakland**

**Dear Mr. Espinoza:**

**I have completed the well elevation survey at the above site.**

**The results are as follows:**

<u>Well</u>	<u>Top PVC Casing Elevation</u>	<u>Rim Elevation</u>
MW-4	25.29	25.64
MW-5	21.97	22.22

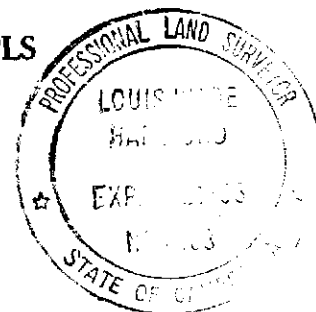
**Benchmark: City of Oakland #3893 - Cut Square at the mid point of the return at  
the southwest corner of 17th and Harrison st.**

**Elevation: 29.25      City of Oakland 1929 NGVD**

Very truly,



**L. Wade Hammond    PLS**





**Attachment E**

Non-Hazardous Transport Forms

TF NUMBER: \_\_\_\_\_

### NON-HAZARDOUS WASTE TRANSPORT FORM

#### GENERATOR INFORMATION

NAME: DOUGLAS PARKING CO.

ADDRESS: 1721 WEBSTER ST.

CITY STATE ZIP: OAKLAND, CA PHONE #: 510-444-7412

DESCRIPTION OF JOB: WASTE GENERATED DURING A DEALING, EXCAVATION OR SITE INVESTIGATION (WORKING EVENT)

THE GENERATOR CERTIFIES THAT THIS JOB AS DESCRIBED IS NON-HAZARDOUS

→ JOHN ESPINOSA AGENT FOR DOUGLAS PARKING 6/15/96  
 Print Name Signature Date

#### SITE INFORMATION

	Responsible Party	IWM JOB#	ADDRESS	Cu Yards
1	<u>DOUGLAS PARKING</u>		<u>1721 WEBSTER ST. OAKLAND, CA</u>	
2				
3				
4				
5				
6				
7				
8				
9				
10				

TOTAL CU. YARDS:

#### TRANSPORTER INFORMATION

Bill to IWM, Inc. Acct # \_\_\_\_\_

NAME: IWM, Inc.

ADDRESS: 950 Ames Avenue

CITY STATE ZIP: Milpitas, CA 95035 PHONE #: 408-942-8955

TRUCK ID #: \_\_\_\_\_

Lee Heckman 06/07/96  
 Print Name Signature Date

#### TSD FACILITY INFORMATION

NAME: McKittrick Waste Treatment Site

ADDRESS: 56533 Highway 58W

CITY STATE ZIP: McKittrick CA 93251 PHONE #: 805-762-7366

RELEASE #: 696-580-PB [Signature] 6-7-96  
 Print Name Signature Date

TF NUMBER MK060796

### NON-HAZARDOUS WATER TRANSPORT FORM

#### GENERATOR INFORMATION

NAME: DOUGLAS PARKING CO

ADDRESS: 1721 WEBSTER ST

CITY, STATE, ZIP: OAKLAND, CA PHONE #: 510-444-7412

INSTALLATION OF WATER MONITORING WELL PURGE - DRINK WATER

I CERTIFY THAT THIS MATERIAL IS A LIQUID, EXEMPT FROM RCRA PER 40 CFR 261.4(b)(1), AND DOES NOT MEET THE CRITERIA OF HAZARDOUS WASTE AS DESCRIBED IN 26 CFR ARTICLE 261.11 OR ANY OTHER APPLICABLE STATE LAW. HAS BEEN PROPERLY DESCRIBED, CLASSIFIED AND PACKAGED AND IS IN PROPER CONTAINERS FOR TRANSPORTATION ACCORDING TO APPLICABLE REGULATIONS.

→ JOHN ESPINOZA <sup>Agent for Douglas Parking</sup>  
 GENERATOR/AUTHORIZED AGENT  6/5/96  
 SIGNATURE & DATE

#### SITE INFORMATION

Site Operator	Address	Gals.
DOUGLAS PARKING CO.	1721 WEBSTER ST OAKLAND, CA	220
TOTAL GALLONS:		220

#### TRANSPORTER INFORMATION

NAME: IWM, Inc.

ADDRESS: 950 Ames Avenue

CITY, STATE, ZIP: Milpitas, CA 95035 PHONE #: (408) 942-8955


TRUCK ID #: \_\_\_\_\_ Lee Heckman 06/07/96  
 (Typed or printed full name & signature) (Date)

#### RECEIVING FACILITY

NAME: McKittrick WTS/ IWM, Inc.

ADDRESS: 56533 Hwy 58W

CITY, STATE, ZIP: McKittrick, CA 93251 PHONE #: 805/762-7366

APPROVAL #: 496-345-PS  6-7-96  
 (Typed or printed full name & signature) (Date)

**Attachment F**

**Standard Field Procedures**

## 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 BORINGS

#### 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.