

Ro-245

**geo - logic** *geotechnical and environmental consulting services*

1140 - 5th Avenue, Crockett, CA 94525

(510) 787-6867 - Fax (510) 787-1457

GL-97-110.R20

Paradiso Job No. 1120-02

September 12, 2002

Ms. eva chu  
Alameda County Department of Environmental Health  
1131 Harbor Bay Parkway, 2<sup>nd</sup> Floor  
Alameda, CA

Alameda County  
SEP 17 2002  
Environmental Health

RE: September 2002 Groundwater Sampling Report  
And Report of Soil Vapor Sampling  
Former Berkeley Farms Truck Repair Shop and Yard  
4575 San Pablo Avenue, Emeryville, California

Dear Ms chu:

This report presents the results of the September, 2002 monitoring and sampling of the well MW1A at the subject site, as requested in your letter to the Harmon Management Company and to Berkeley Farms dated September 3, 2002. This report also documents the recent soil vapor sampling, which was proposed in Geo-Logic's August 2002 work plan entitled "Work Plan/Proposal, Assessment of Residual Hydrocarbon Vapor in soil. This work was completed in accordance with the conditions outlined in your letter.

SITE DESCRIPTION AND BACKGROUND

The subject site is located on the western side of San Pablo Avenue between 45th and 47th Streets in Emeryville, California, and formerly contained a service station facility at the southern portion of the property. Until 1998, the site operated as a truck repair shop and yard for Berkeley Farms. A Site Plan (Figure 1) is attached to this report.

Geo-Logic's previous work at the site includes sampling during overexcavation of a waste oil tank at the northern end of the property. This work is summarized in Geo-Logic's reports (GL-97-110.R1 and GL-97-110.R2), both dated February 10, 1998.

Following this work, installation of three monitoring wells was proposed (workplan/proposal GL-98-110, dated November 15, 1997). The wells were installed in February, 1998. This work, including the results of the first quarter of monitoring and sampling, was documented in Geo-Logic's report (GL-97-110.R3) dated March 7, 1998.

On September 7, 2002, five soil vapor samples were collected at depths of approximately two feet below grade, at the locations shown on Figure 2. Although four samples were proposed, five were actually completed. The soil vapor sample point proposed for the planter box on the eastern side of the building could not be completed as this particular planter has a cement bottom at approximately one foot below grade. An additional sample was obtained near the northwestern corner of the building (SVP-5). An additional sample was also collected near the southwestern corner of the building (SVP2).

The sampling was completed using an AMS Gas Vapor Probe System provided by Environmental Instruments of Concord, California. At each location, a 5/8 inch diameter probe was advanced by using a slide hammer. The probe was advanced to approximately two feet below grade. The probe was then removed from the hole using a jack. At that point, a sampling rod with a retractable tip, which was fitted with small diameter teflon tubing plumbed directly to a vacuum pump with a sampling port, was inserted into the borehole. Following insertion of the sampling rod assembly and placement of the retractable tip to the desired sampling depth, the tubing was connected to the hand-operated vacuum pump. After purging sufficient air to completely displace the volume of air in the tubing between the sampling point and the pump outlet, a tedlar bag was filled. The probe tool and retractable tip were decontaminated between each sample point by triple rinsing with non-phosphate soap and deionized water.

The tedlar bags were labeled and stored in a cooler, on ice, for delivery to a state-certified laboratory. Properly executed Chain of Custody documentation accompanied the samples.

Well MW1A was also monitored and sampled on September 7, 2002. Prior to sampling, the well was checked for depth to water, and the presence of free product and sheen. No free product or sheen was noted in the well. Monitoring data collected this quarter is summarized in Table 1. Water samples were then collected by the use of a clean Teflon bailer. The samples were decanted into clean VOA vials and/or one-liter amber bottles, as appropriate, which were then sealed with Teflon-lined screw caps, labeled, and stored in a cooler, on ice, until delivery to a state-certified laboratory.

## HYDROLOGY

On September 7, 2002, the measured depth to ground water in monitoring well MW1A was 9.23 feet below the top of the well casing. The historical groundwater flow direction, based on quarterly monitoring from February 1998 through December, 2001, is to the west.

## ANALYTICAL RESULTS

Water samples from well MW1A, and the soil vapor samples, were analyzed at McCampbell Analytical, Inc., in Pacheco, California. The samples were accompanied by properly executed Chain of Custody documentation. The water samples was analyzed for TPH as gasoline and TPH as diesel by EPA method 8015, and benzene, toluene, ethylbenzene, and xylenes (BTEX) and methyl tertiary butyl ether (MTBE) by EPA method 8020. The soil vapor samples were analyzed for TPH as diesel by EPA method 8015, and benzene, toluene, ethylbenzene, and xylenes (BTEX) and methyl tertiary butyl ether (MTBE) by EPA method 8021B. According to the laboratory, there is no analytical technique for measuring TPH as diesel in vapor samples.

The concentrations of TPH as gasoline, benzene, and TPH as diesel detected in the ground water sample collected from MW1A, and the locations of the five soil vapor samples, are shown on the attached Figure 1. The results of the water analyses are summarized in Table 2. The results of the soil vapor analyses are summarized in Table 3. Copies of the laboratory analyses and the Chain of Custody documentation are attached to this report.

## DISCUSSION AND RECOMMENDATIONS

The analytical results of the water sample collected from MW1A are consistent with the previous analytical results, which show significant changes in contaminant levels during seasonal changes in water levels.

The analytical results of the soil vapor samples were non-detectable for TPH as gasoline, BTEX, and MTBE at all of the soil sampling locations. In addition to the vapor barrier, it is likely that the dense, fine-grained soils would also inhibit or retard any vertical migration of soil vapors. At each sampling location, advancing of the soil vapor probe and then the sampling tool to the desired sample depth (two feet) required extensive hammering, and jacking for removal. Based on these findings, it does not appear that the potential health risks due to volatilization of hydrocarbons to indoor or outdoor air is of significant environmental concern.

## LIMITATIONS

Environmental changes, either naturally occurring or artificially induced, may cause changes in ground water levels and flow paths, thereby changing the extent and concentration of any contaminants. Our studies assume that the field and laboratory data are reasonably representative of the site as a whole, and assume that subsurface conditions are reasonably conducive to interpolation and extrapolation.

The results of this work are based on the data obtained from the field and laboratory analyses obtained from a state-certified laboratory. We have analyzed these data using what we believe to be currently applicable engineering techniques and principles in the Northern California region. We make no warranty, either expressed or implied, regarding the above, including laboratory analyses, except that our services have been performed in accordance with generally accepted professional principles and practices existing for such work.

If you have any questions regarding this report, please do not hesitate to call me at (510) 787-6867.

Sincerely,

Geo-Logic

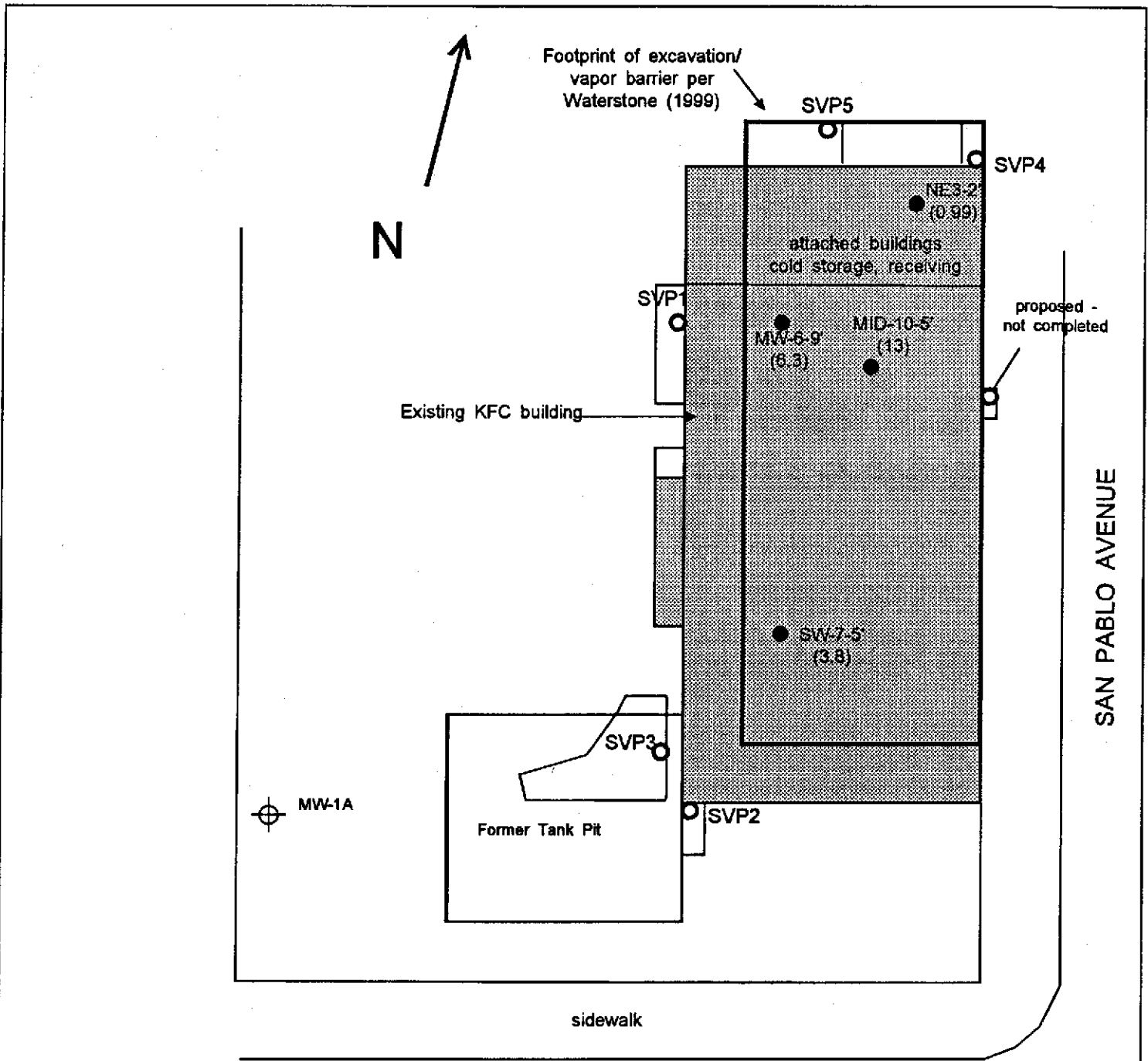


Joel G. Greger, C.E.G.  
Certified Engineering Geologist



License No. EG 1633  
Exp. Date 8/31/2004

Attachments:      Tables 1 through 3  
                            Figure 1  
                            Laboratory Analyses and  
                            Chain of Custody documentation



**LEGEND**

- ⊕ Monitoring well
- Sample No. - depth (benzene in ppm)
- Soil vapor sample

APPROXIMATE  
SCALE  
0 20  
1" = 20'

Former Berkeley Farms Truck Shop & Yard  
4575 San Pablo Avenue  
Emeryville, California

Figure No:

1

Date: September 9, 2002

Drawn By: JG/Geo-Logic

**Site Plan showing Soil Vapor Sample Points**

TABLE 1-SUMMARY OF GROUND WATER MONITORING AND PURGING DATA

Well #	Ground Water Elevation (feet)	Depth to Water (feet)α	Total Well Depth (feet)*	Product Thickness (feet)	Sheen	Water Purged (gallons)
<b>(Monitored and Sampled on December 6, 2001) Sep 7, 2002</b>						
MW1A	32.78	9.23	16.89	0	No	0
<b>(Monitored and Sampled on December 6, 2001)</b>						
MW1A	31.09	10.92	16.90	0	No	0
MW2	32.55	8.23	16.50	0	No	0
MW3	33.39	7.69	16.56	0	No	0
<b>(Monitored and Sampled on September 17, 2001)</b>						
MW1A	31.09	10.92	16.90	0	No	0
MW2	32.55	8.23	16.50	0	No	0
MW3	33.39	7.69	16.56	0	No	0
<b>(Monitored and Sampled on June 15, 2001)</b>						
MW1A	31.50	9.28	16.90	0	No	0
MW2	32.73	8.35	16.51	0	No	0
MW3	34.37	7.64	16.56	0	No	0
<b>(Monitored and Sampled on March 13, 2001)</b>						
MW1A	35.54	6.47	16.91	0	No	0
MW2	34.54	6.24	16.51	0	No	0
MW3	35.87	5.21	16.56	0	No	0
<b>(Monitored and Sampled on December 13, 2000)</b>						
MW1A	32.68	9.33	16.92	0	No	0
MW2	32.56	8.22	16.52	0	No	0
MW3	33.67	7.41	16.56	0	No	0
<b>(Monitored and Sampled on September 19, 2000)</b>						
MW1A	32.10	9.91	16.92	0	No	0
MW2	32.04	8.74	16.53	0	No	0
MW3	32.89	8.19	16.57	0	No	0
<b>(Monitored and Sampled on June 6, 2000)</b>						
MW1A	33.59	8.42	16.93	0	No	0
MW2	32.46	8.32	16.53	0	No	0
MW3	33.93	7.15	16.58	0	No	0
<b>(Monitored and Sampled on March 6, 2000)</b>						
MW1A	36.46	5.55	16.93	0	No	0
MW2	35.77	5.01	16.54	0	No	8
MW3	37.49	3.59	16.58	0	No	8
<b>(Monitored and Sampled on December 8, 1999)</b>						
MW1A	32.95	9.06	16.93	0	No	8
MW2	31.87	8.91	16.55	0	No	8
MW3	32.57	8.51	16.58	0	No	8
<b>(Monitored and Sampled on September 6, 1999)</b>						
MW1A	32.92	9.88	16.94	0	No	8
MW2	32.16	8.62	16.55	0	No	8
MW3	32.88	8.20	16.59	0	No	8

**TABLE 1 - (Continued)**  
**SUMMARY OF GROUND WATER MONITORING AND PURGING DATA**

<b>(Monitored and Sampled on <u>June 7, 1999</u>)</b>						
MW1						(Well inaccessible, damaged)
MW2	32.65	8.13	16.55	0	No	8
MW3	33.57	7.51	16.61	0	No	8
<b>(Monitored and Sampled on <u>March 4, 1999</u>)</b>						
MW1						(Well inaccessible, damaged)
MW2	35.28	5.5	16.56	0	No	8
MW3	35.85	5.23	16.60	0	No	8
<b>(Monitored and Sampled on <u>November 17, 1998</u>)</b>						
MW1	32.95	9.06	16.59	0	No	7
MW2	31.73	9.05	16.55	0	No	7
MW3	33.09	7.99	16.61	0	No	7
<b>(Monitored and Sampled on <u>August 21, 1998</u>)</b>						
MW1	35.51	7.84	16.60	0	No	7
MW2	34.17	8.61	16.56	0	No	7
MW3	35.42	6.27	16.61	0	No	
<b>(Monitored and Sampled on <u>June 3, 1998</u>)</b>						
MW1	35.51	6.50	16.60	0	No	8
MW2	34.17	6.61	16.57	0	No	8
MW3	35.42	5.66	16.62	0	No	8
<b>(Monitored and Sampled on <u>February 27, 1998</u>)</b>						
MW1	37.51	4.50	16.61	0	No	8
MW2	35.61	5.17	16.58	0	No	8
MW3	37.28	3.80	16.63	0	No	8
<b>(Monitored and Developed on <u>February 24, 1998</u>)</b>						
MW1	37.57	4.44	16.59	0	No	24
MW2	35.69	5.09	16.58	0	No	21
MW3	37.38	3.70	16.62	0	No	25

<u>Well #</u>	<u>Top of Casing Elevation* (feet)</u>
MW1A	42.01
MW2	40.78
MW3	41.08

∅ Depth to water and total well depth measurements are taken from the top of the well casings.

\* The elevation of the tops of the well casings have been surveyed relative to City of Oakland Benchmark No. 241.

TABLE 2

SUMMARY OF LABORATORY ANALYSES-WATER

Date	Sample Number	TPH as Diesel	TPH as Gasoline	Benzene	Toluene	Ethyl benzene	Xylenes
9/7/02	MW1A	85	61	0.72	1.1	<0.25	<0.25
12/7/01	MW1A	180	820	84	7.7	8.4	26
9/17/01	MW1A	180	820	84	7.7	8.4	26
6/15/01	MW1A	94	350	15	3.5	<0.5	<0.5
3/13/01	MW1A	1,600	15,000	980	37	820	2,100
12/13/00	MW1A	250	1,400	96	12	<2.0	10
9/19/00	MW1A	<50	<50	<0.5	<0.5	<0.5	<0.5
6/6/00	MW1A	630	2,400	270	9.5	79	27
3/6/00	MW1A	2,100	13,000	560	<20	640	1,200
12/8/99	MW1A	310	1,200	93	1.8	48	53
9/6/99	MW1A	<5.0	<5.0	<0.5	<0.5	<0.5	<0.5
8/6/99	MW1A	<5.0	<5.0	<0.5	<0.5	<0.5	<0.5
6/7/99	MW1		(Well inaccessible, damaged)				
3/4/99	MW1		(Well inaccessible, damaged)				
11/17/98	MW1	88,000	29,000	2,300	3,000	3,600	3,100
8/21/98	MW1+	96,000	38,000	1,700	1,000	2,400	3,300
6/2/98	MW1	105,000	34,000	1,900	1,600	2,400	3,500
2/27/98	MW1	81,000	27,000	2,200	910	1,700	2,700
12/7/01	MW2	<50	<50	<0.5	<0.5	<0.5	<0.5
9/17/01	MW2	<50	<50	<0.5	<0.5	<0.5	<0.5
6/15/01	MW2	<50	<50	<0.5	<0.5	<0.5	<0.5
3/13/01	MW2	<50	<50	<0.5	<0.5	<0.5	<0.5
12/13/00	MW2	<50	<50	<0.5	<0.5	<0.5	<0.5
9/19/00	MW2	330	2,000	210	8.7	5.5	6.0
6/6/00	MW2	<50	<50	<0.5	<0.5	<0.5	<0.5
3/6/00	MW2	<50	<5.0	<0.5	<0.5	<0.5	<0.5
12/8/99	MW2	<50	<5.0	<0.5	<0.5	<0.5	<0.5
9/6/99	MW2	<5.0	<5.0	<0.5	<0.5	<0.5	<0.5
6/7/99	MW2	<5.0	<5.0	<0.5	<0.5	<0.5	<0.5
3/4/99	MW2	<5.0	<5.0	<0.5	<0.5	<0.5	<0.5
11/17/98	MW2	4,300	260	190	420	470	600
8/21/98	MW2+	1,900	<5.0	<0.5	<0.5	220	400
6/2/98	MW2	7,600	60	220	510	800	1,100
2/27/98	MW2	14,000	<5.0	<0.5	120	460	730



TABLE 2

SUMMARY OF LABORATORY ANALYSES-WATER (continued)

<u>Sample</u> <u>Date</u>	<u>Number</u>	<u>TPH as</u> <u>Diesel</u>	<u>TPH as</u> <u>Gasoline</u>	<u>Benzene</u>	<u>Toluene</u>	<u>Ethyl</u> <u>benzene</u>	<u>Xylenes</u>
12/7/01	MW3	<50	<50	<0.5	<0.5	<0.5	<0.5
9/17/01	MW3	<50	<50	<0.5	<0.5	<0.5	<0.5
6/15/01	MW3	<50	<50	<0.5	<0.5	<0.5	<0.5
3/13/01	MW3	<50	<50	<0.5	<0.5	<0.5	<0.5
12/13/00	MW3	<50	<50	<0.5	<0.5	<0.5	<0.5
9/19/00	MW3	<50	<50	<0.5	<0.5	<0.5	<0.5
6/6/00	MW3	<50	<50	<0.5	<0.5	<0.5	<0.5
3/6/00	MW3	<50	<5.0	<0.5	<0.5	<0.5	<0.5
12/8/99	MW3	<50	<5.0	<0.5	<0.5	<0.5	<0.5
9/6/99	MW3	<5.0	<5.0	<0.5	<0.5	<0.5	<0.5
6/7/99	MW3	<5.0	<5.0	<0.5	<0.5	<0.5	<0.5
3/4/99	MW3	<5.0	<5.0	<0.5	<0.5	<0.5	<0.5
11/17/98	MW3	<5.0	<5.0	<0.5	<0.5	<0.5	<0.5
8/21/98	MW3+	<5.0	<5.0	<0.5	<0.5	<0.5	<0.5
6/2/98	MW3	<5.0	<5.0	<0.5	<0.5	<0.5	<0.5
2/27/98	MW3	--	<5.0	<0.5	<0.5	<0.5	<0.

TABLE 2

## SUMMARY OF LABORATORY ANALYSES-WATER(continued)

Date	Sample Number	TPH as Motor Oil	MTBE	TOTAL LEAD
9/7/02	MW1A	--	43	--
12/7/01	MW1A	--	120	--
9/17/01	MW1A	--	120	--
6/15/01	MW1A	--	84	--
3/13/01	MW1A	--	320	--
12/13/00	MW1A	--	170	--
9/19/00	MW1A	--	13	--
6/6/00	MW1A	--	210	--
3/6/00	MW1A	320	<400	--
12/8/99	MW1A	--	140	--
9/6/99	MW1A	--	<0.5	--
8/6/99	MW1A	--	<0.5	--
6/7/99	MW1	(Well inaccessible, damaged)		
3/4/99	MW1	(Well inaccessible, damaged)		
11/17/98	MW1	--	<0.5	--
6/2/98	MW1*	80,000	<0.5	<5.0
2/27/98	MW1	--	<0.5	--
12/7/01	MW2	<250	<5.0	--
9/17/01	MW2	<250	<5.0	--
6/15/01	MW2	<250	<5.0	--
3/13/01	MW2	<250	<5.0	--
12/13/00	MW2	<250	<5.0	--
9/19/00	MW2	<250	180	--
6/6/00	MW2	<250	<5.0	--
3/6/00	MW2	<250	<5.0	--
12/8/99	MW2	<250	<5.0	--
9/6/99	MW2	47	<0.5	--
6/7/99	MW2	<0.5	<0.5	--
3/4/99	MW2	<0.5	<0.5	--
11/17/98	MW2	<0.5	<0.5	--
6/2/98	MW2*	3,800	<0.5	<5.0
2/27/98	MW2	20,000**	<0.5	--

TABLE 2

SUMMARY OF LABORATORY ANALYSES-WATER(continued)

<u>Sample Date</u>	<u>Number</u>	<u>TPH as Motor Oil</u>	<u>MTBE</u>	<u>TOTAL LEAD</u>
12/7/01	MW3	--	8.4	--
9/17/01	MW3	--	8.4	--
6/15/01	MW3	--	6.7	--
3/13/01	MW3	--	11	--
12/13/00	MW3	--	9.3	--
9/19/00	MW3	--	<5.0	--
6/6/00	MW3	--	21	--
3/6/00	MW3	<250	24/21++	--
12/8/99	MW3	--	18	--
9/6/99	MW3	--	<0.5	--
6/7/99	MW3	--	<0.5	--
3/4/99	MW3	--	<0.5	--
11/17/98	MW3	--	<0.5	--
6/2/98	MW3*	<5.0	<0.5	<5.0
2/27/98	MW3	--	--	--

-- Analyses not performed.

+ Cadmium, chromium, lead, nickel, and zinc were nondetectable, except for 0.078 mg/l of nickel detected in MW1.

++ 21 ppb by EPA Method 8260.

\* All EPA Method 8010 constituents were nondetectable.

\*\* 20,000 ppb of Total Recoverable Petroleum Hydrocarbons by EPA Method 418.1. Results are in micrograms per liter (µg/L), unless otherwise indicated.

TABLE 3  
 SOIL VAPOR ANALYTICAL RESULTS  
 Former Berkeley Farms Truck Shop  
 4575 San Pablo Avenue, Emeryville, CA

(samples collected 9/7/02)

Sample/ Depth (feet)	TPH-g (ppb)	Benzene (ppb)	Ethylbenzene (ppb)	Toluene (ppb)	Xylenes (ppb)	MTBE (ppb)
SVP1 (2')	ND	ND	ND	ND	ND	ND
SVP2 (2')	ND	ND	ND	ND	ND	ND
SVP3 (2')	ND	ND	ND	ND	ND	ND
SVP4 (2')	ND	ND	ND	ND	ND	ND
SVP5 (2')	ND	ND	ND	ND	ND	ND
Det. Limit	25	0.25	0.25	0.25	0.25	2.5

**EXPLANATION:**

ppb = parts per billion

**ANALYTICAL METHODS:**

TPHg = Total Petroleum Hydrocarbons as gasoline by EPA Method 8015-Modified.

BTEX = Benzene, Toluene, Ethylbenzene, and Xylenes according to EPA Method 8021B.

MTBE according to EPA Method 8021B.





SLC

0209099

**McCAMPBELL ANALYTICAL INC.**  
 110 2<sup>ND</sup> AVENUE SOUTH, #D7  
 PACHECO, CA 94553-5560  
 Telephone: (925) 798-1620 Fax: (925) 798-1622

Report To: *Jack Greger* Bill To: *Paradise Mechanical*  
 Company: *Dev Logit* *P.O. B. 1836*  
*1140 5th Ave* *2600 Williams St*  
*Crockett CA 94525* *San Leandro CA*  
 Tele: ( ) *510 7876000* Fax: ( ) *510 7871457*  
 Project #: Project Name: *4575 San Pablo Ave. Emergency site*  
 Project Location: *4575 San Pablo Ave. Emergency site*  
 Sampler Signature:

**CHAIN OF CUSTODY RECORD**  
 TURN AROUND TIME  RUSH  24 HR  48 HR  72 HR  5 DAY

SAMPLE ID	LOCATION	SAMPLING		# Containers	Type Containers	MATRIX					METHOD PRESERVED										
		Date	Time			Water	Soil	Air	Sludge	Other	Ice	HCl	HNO <sub>3</sub>	Other							
SVP1	4575 San Pablo	9/1/02	9 AM	1	bag																
SVP2																					
SVP3																					
SVP4																					
SVP5																					
MW1A			NAM	4	1.5 L	X															

Analysis Request	Other	Comments
BTEX & PHH as Gas (602/8021 - 8015) MTBE TPH as Diesel (8015) Total Petroleum Oil & Grease (520) EAP/B&F Total Petroleum Hydrocarbons (H&C) EPA 601 / 8010 BTEX ONLY (EPA 807 / 8010) EPA 606 / 8080 EPA 808 / 8080 PCB'S ONLY EPA 624 / 8240 / 8200 EPA 825 / 8270 PAH'S / PNA'S BY EPA 625 / 8270 / 8310 CAME-17 Metals LEAD 5 Metals Lead (7240/7321/219 2/6010) RC1 pH TSS Specific Conductivity		

ICE/C  PRESERVATION   
 GOOD CONDITION  APPROPRIATE  
 HEAD SPACE ABSENT  CONTAINERS  
 DECONTAMINATED IN LAB  PRESERVED IN LAB

Relinquished By: *[Signature]* Date: *9/1/02* Time: *8 AM* Received By: *[Signature]*  
 Relinquished By: Date: Time: Received By:  
 Relinquished By: Date: Time: Received By:

ICE/C  PRESERVATION   
 GOOD CONDITION  APPROPRIATE  
 HEAD SPACE ABSENT  CONTAINERS