



May 30, 1996

131.0200.001

Ms. Lynn Tolin
Christie Avenue Partners - J.S.
5800 Shellmound, Suite 210
Emeryville, California 94608

**QUARTERLY GROUNDWATER MONITORING REPORT
APRIL 1996 SAMPLING EVENT
EMERY BAY MARKETPLACE
EMERYVILLE, CALIFORNIA**

Dear Ms. Tolin:

This letter report presents data collected by PES Environmental, Inc. (PES) during the April 1996 quarterly groundwater monitoring conducted at the Emery Bay Marketplace site, located in Emeryville, California (Plate 1). PES has been retained by Christie Avenue Partners - J.S. to conduct quarterly groundwater monitoring at the subject site. The current groundwater monitoring program consists of measuring product thickness, if any, and depth to groundwater in 17 onsite and off-site monitoring wells on a quarterly basis, and purging and sampling six of the monitoring wells (Wells W-7, W-13, W-14, W-19, W-20 and W-24). Plate 2 shows the location of monitoring wells at the site.

The purpose of the groundwater monitoring program at this site is to: (1) evaluate the presence of hydrocarbons in groundwater; (2) monitor potential migration of dissolved-phase hydrocarbons; and (3) monitor seasonal water level variations at the subject property. The monitoring is performed in accordance with Alameda County Department of Environmental Health (ACDEH) requirements and the approved work plan for this site entitled *Work Plan for Groundwater Monitoring and Free Product Removal at the Emery Bay Marketplace, Emeryville, California*, prepared by McLaren Hart and dated July 6, 1990.

BACKGROUND

Beginning in the early 1980's, environmental activities at this site consisted of removal of underground fuel storage tanks (USTs) and hydrocarbon contaminated soils, performing soil borings, and installing groundwater monitoring wells. As a result of these activities, fuel oil found in onsite soils and groundwater was attributed to leaking USTs and/or piping associated

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with an asphalt refinery formerly located at the site. Additionally, free floating product was observed in onsite groundwater monitoring wells.

Twenty-four monitoring wells have been installed at this site during the course of prior environmental investigations. Seven of these wells have been abandoned and 17 onsite and off-site wells currently remain. McLaren Hart began quarterly groundwater monitoring activities at the subject site in July 1990. The present sampling is the twelfth since PES began performing quarterly groundwater monitoring in July 1993.

GROUNDWATER ELEVATIONS

Water-level Measurement Procedures

Prior to sampling on April 11, 1996, groundwater levels in the monitoring wells were measured to a precision of 0.01 foot using an electronic water-level indicator/interface probe.

Prior to each measurement, the portion of the water-level indicator that was submerged in the well was cleaned with a mild detergent solution and rinsed with de-ionized water. The presence of free-phase product was evaluated and, if present, was measured to a precision of 0.01 foot using an interface probe.

Results

Two of the 17 wells scheduled for water level measurements were inaccessible during quarterly monitoring activities and therefore measurements were not obtained for these wells. Wells W-4 and W-16 were inaccessible due to grading related to construction activities along the adjacent railroad property. Water levels for the remaining 15 wells were measured on April 11, 1996. These levels were then converted to water-level elevations referenced to mean sea level (MSL).

A groundwater elevation map constructed from the data is presented on Plate 3. An historical summary of groundwater elevations and product levels for wells at the site is presented in Table 1, and a report summarizing the water level measurement procedures is presented in Appendix A.

Water levels in all measured wells have generally increased relative to the January 1996 sampling event. Water levels increased in thirteen of the onsite monitoring wells, decreased in two onsite wells, and remained the same as the January 1996 measurement in one onsite well. Based on measured water levels on April 11, 1996, groundwater at the site flows in a southwesterly direction with an approximate gradient of 0.04 to 0.07. These measurements show no significant changes from historical groundwater flow direction and gradient.

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Consistent with historical monitoring results, a free-phase floating product layer 0.77 feet thick was found in Well W-5. However, no free-phase product was observed in Well W-19. No free-phase product or sheen were found in the remaining wells.

GROUNDWATER SAMPLING AND ANALYTICAL TESTING

Sampling Protocol

Groundwater samples were collected on April 11, 1996 by Blaine Tech Services, Inc. (Blaine Tech). Blaine Tech collected samples from W-7, W-13, W-14, W-19, W-20, and W-24. A minimum of three well volumes were purged prior to sampling using a clean teflon bailer. Purge water was contained and collected in a 55-gallon drum to be stored onsite prior to obtaining analytical results and subsequent disposal. During purging activities, the discharge water was measured for pH, temperature, electrical conductivity and turbidity. Groundwater samples were collected with a clean teflon bailer and decanted into clean 1-liter glass bottles preserved with hydrochloric acid.

Samples were immediately labeled to designate sample number, time and date collected, and analyses requested, and stored in a chilled, thermally insulated cooler for transport to the analytical laboratory for chemical analyses. The information collected during groundwater sampling activities and the chain of custody record is included in a groundwater sampling report prepared by Blaine Tech and presented in Appendix A.

Analytical Program

All groundwater samples collected during this quarterly monitoring event were analyzed by American Environmental Network (AEN), a State-certified laboratory located in Pleasant Hill, California. Samples were analyzed for total petroleum hydrocarbons quantified as diesel (TPH-diesel) and as motor oil (TPH-oil) by EPA Test Method 8015 (modified).

Analytical Results

Sample analytical results from the recent groundwater monitoring event indicate that TPH-diesel was detected all of the six wells sampled, at concentrations ranging from 0.29 milligrams per liter (mg/l) in W-24 to 16 mg/l in W-7. TPH-oil was detected in three of the six wells sampled, at concentrations ranging from 0.5 mg/l in W-19 and W-20, and 1.5 mg/l in W-7. Concentrations of TPH-diesel have varied in the wells sampled, decreasing significantly in W-7 and W-19, and moderately increasing in W-13, W-14, W-20, and W-24 since the last monitoring event. TPH-oil concentrations have increased only in W-20, and have decreased in W-7 and W-19. TPH-oil was not detected in Wells W-13, W-14, and W-24.

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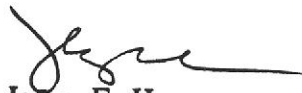
Analytical results, including historical monitoring data for the previous sampling events, are presented in Table 2. The laboratory report and chain of custody records are provided in Appendix B. The distribution of hydrocarbons in groundwater at the site on April 11, 1996 is presented on Plate 4.

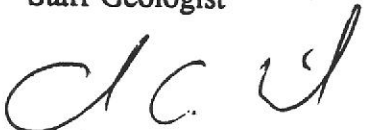
SUMMARY

Groundwater elevations have generally increased since the January 1996 sampling event; however, the groundwater flow direction and gradient have remained approximately the same. Consistent with historical monitoring results, free-phase product was found on the groundwater in Well W-5. Reported concentrations of TPH-diesel have varied in the sampled wells since the January 1996 monitoring activities. However, TPH-oil was detected above the reported detection levels only in three of the six wells sampled.

Yours very truly,

PES ENVIRONMENTAL, INC.


Jenny F. Han
Staff Geologist


Andrew A. Briefer, P. E.
Associate Engineer



Attachments: Table 1	Summary of Groundwater Elevations
Table 2	Summary of Petroleum Hydrocarbon Analytical Results for Groundwater Samples
Plate 1	Site Location Map
Plate 2	Well Location Map
Plate 3	Groundwater Elevation Contours on April 11, 1996
Plate 4	Dissolved Hydrocarbons in Groundwater on April 11, 1996
Appendix A	Water Level and Groundwater Sampling Report
Appendix B	Analytical Laboratory Report

cc: Ms. Susan Hugo - Alameda County Department of Environmental Health

**Table 1. Summary of Groundwater Elevations
Through April 1996
Emery Bay Marketplace
Emeryville, California**

Well Number	Date	Measured by	Top of Casing (feet MSL)	Depth to Water (feet)	Potentiometric Surface Elevations (feet MSL)	Product Thickness (feet)
W-1	07-Aug-81	WCC	11.47	4.30	6.20 (2)	
	10-Sep-81	WCC		4.40	6.10 (2)	
	06-May-87	WCC		6.00	6.08 (2)	
	20-Aug-89	MH		5.60	5.87	
	11-Oct-89	MH		5.63	5.84	
	22-Feb-90	MH		4.92	6.55	
	28-Feb-90	MH		5.02	6.45	
	09-Apr-90	MH		5.44	6.03	
	07-Jun-90	MH		5.37	6.10	
	25-Jul-90	MH		5.26	6.21	
	03-Oct-90	MH		5.43	6.04	
	03-Jan-91	MH		5.69	5.78	
	03-Apr-91	MH		4.74	6.73	
	25-Oct-91	MH		5.22	6.25	
	15-Jan-92	MH		4.88	6.59	
	23-Apr-92	MH		4.98	6.49	
	21-Jul-92	MH		5.16	6.31	
	22-Oct-92	MH		5.79	5.68	
	26-Jan-93	MH		4.82	6.65	
	29-Apr-93	MH		6.01	5.46	
	22-Jul-93	PES		6.05	5.42	
	07-Oct-93	PES		6.15	5.32	
	06-Jan-94	PES		5.50	5.97	
	05-Apr-94	PES		5.87	5.60	
	08-Jul-94	PES		5.86	5.61	
	04-Oct-94	PES		5.94	5.53	
	11-Jan-95	PES		4.93	6.54	
06-Apr-95	PES	5.02	6.45			
13-Jul-95	PES	5.52	5.95			
11-Oct-95	PES	6.25	5.22			
08-Jan-96	PES	5.47	6.00			
11-Apr-96	PES	5.30	6.17			
W-4	07-Aug-81	WCC	9.96	4.30	6.20 (2)	
	10-Sep-81	WCC		4.40	6.10 (2)	
	18-Jan-82	WCC		2.50	8.00 (2)	
	27-Mar-85	WCC		NA	8.65	
	20-Aug-89	MH		3.95	6.01	
	11-Oct-89	MH		3.87	6.09	
	22-Feb-90	MH		2.00	7.96	
	28-Feb-90	MH		2.39	7.57	

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W-4 Cont	09-Apr-90	MH		3.17	6.79	
	07-Jun-90	MH		2.73	7.23	
	25-Jul-90	MH		3.71	6.25	
	03-Oct-90	MH		4.18	5.78	
	03-Jan-91	MH		3.64	6.32	
	03-Apr-91	MH		1.45	8.51	
	25-Oct-91	MH		4.29	5.67	
	15-Jan-92	MH		2.56	7.40	
	23-Apr-92	MH		2.80	7.16	
	21-Jul-92	MH		4.03	5.93	
	22-Oct-92	MH		4.50	5.46	
	26-Jan-93	MH		1.52	8.44	
	29-Apr-93	MH		3.02	6.94	
	22-Jul-93	PES		3.86	6.10	
	07-Oct-93	PES		NM	NM	
	06-Jan-94	PES		NM	NM	
	05-Apr-94	PES		NM	NM	
	08-Jul-94	PES		NM	NM	
	4-Oct-94	PES		NM	NM	
	11-Jan-95	PES		NM	NM	
	06-Apr-95	PES		NM	NM	
	13-Jul-95	PES		NM	NM	
	11-Oct-95	PES		NM	NM	
	08-Jan-96	PES		NM	NM	
	11-Apr-06	PES		NM	NM	
	W-5	07-Aug-81	WCC	11.41	4.70	7.50 (2)
10-Sep-81		WCC	4.90		7.30 (2)	NA
18-Jan-82		WCC	2.50		9.60 (2)	NA
27-Mar-85		WCC		NA	9.28	NA
11-Oct-89		MH		4.43	7.58	0.71
22-Feb-90		MH		3.80	8.36	0.88
28-Feb-90		MH		4.43	8.38	1.65
09-Apr-90		MH		4.73	8.23	1.82
07-Jun-90		MH		4.30	8.64	1.80
25-Jul-90		MH		5.10	8.11	2.12
03-Oct-90		MH		4.90	7.45	1.11
03-Jan-91		MH		4.77	7.36	0.85
03-Apr-91		MH		2.42	9.02	0.03
25-Oct-91		MH		5.47	6.94	1.18
15-Jan-92		MH		3.21	8.88	0.80

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W-5 Cont	23-Apr-92	MH		3.13	8.28	1.41
	21-Jul-92	MH		3.55	9.14	1.50
	22-Oct-92	MH		4.28	8.36	1.45
	26-Jan-93	MH		3.28	9.18	1.24
	29-Apr-93	MH		2.60	8.81	NP
	22-Jul-93	PES		5.78	7.48	2.18
	07-Oct-93	PES		4.46	7.35	0.48
	06-Jan-94	PES		5.38	7.02	1.17
	05-Apr-94	PES		4.62	7.86	1.26
	08-Jul-94	PES		4.95	7.79	1.57
	04-Oct-94	PES		5.20	7.35	1.34
	11-Jan-95	PES		2.65	9.53	0.90
	06-Apr-95	PES		3.12	9.07	0.92
	13-Jul-95	PES		5.01	6.53	0.15
	11-Oct-95	PES		4.97	8.06	1.90
	08-Jan-96	PES		4.59	7.82	1.18
	11-Apr-96	PES		4.07	7.99	0.77
	W-7	06-May-87	WCC	9.05	3.00	6.88 (2)
20-Aug-89		MH		3.59	5.46	
11-Oct-89		MH		3.08	5.97	
22-Feb-90		MH		1.75	7.30	
28-Feb-90		MH		1.31	7.74	
09-Apr-90		MH		2.42	6.63	
07-Jun-90		MH		1.21	7.84	
25-Jul-90		MH		2.76	6.29	
03-Oct-90		MH		3.22	5.83	
03-Jan-91		MH		3.17	5.88	
03-Apr-91		MH		1.18	7.87	
25-Oct-91		MH		3.47	5.59	
15-Jan-92		MH		3.88	5.17	
23-Apr-92		MH		3.20	5.85	
21-Jul-92		MH		3.65	5.40	
22-Oct-92		MH		4.58	4.77	
26-Jan-93		MH		1.12	7.93	
29-Apr-93		MH		2.90	6.15	
22-Jul-93		PES		4.26	4.79	
07-Oct-93		PES		5.48	3.57	
06-Jan-94		PES		5.10	3.95	
05-Apr-94	PES		5.94	3.11		
08-Jul-94	PES		5.74	3.31		

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Well Number	Date	Measured by	Top of Casing (feet MSL)	Depth to Water (feet)	Potentiometric Surface Elevations (feet MSL)	Product Thickness (feet)
W-7 Cont	04-Oct-94	PES		5.83	3.22	
	11-Jan-95	PES		5.44	3.61	
	06-Apr-95	PES		5.79	3.26	
	13-Jul-95	PES		3.75	5.3	
	11-Oct-95	PES		6.08	2.97	
	08-Jan-96	PES		5.95	3.10	
	11-Apr-96	PES		5.94	3.11	
W-8	06-May-87	WCC	10.43	5.50	6.88 (2)	
	20-Aug-89	MH		3.59	6.84	
	22-Feb-90	MH		1.50	8.93	
	28-Feb-90	MH		1.78	8.65	
	09-Apr-90	MH		3.12	7.31	
	07-Jun-90	MH		2.90	7.53	
	27-Jul-90	MH		3.33	7.10	
	03-Oct-90	MH		3.65	6.78	
	03-Jan-91	MH		3.46	6.97	
	03-Apr-91	MH		1.47	8.96	
	25-Oct-91	MH		3.54	6.89	
	15-Jan-92	MH		2.98	7.45	
	24-Apr-92	MH		3.01	7.42	
	21-Jul-92	MH		3.41	7.02	
	22-Oct-92	MH		4.23	6.20	
	26-Jan-93	MH		NM	NM	
	29-Apr-93	MH		2.29	8.14	
	22-Jul-93	PES		3.17	7.26	
	07-Oct-93	PES		NM	NM	
	06-Jan-94	PES		2.69	7.74	
	05-Apr-94	PES		2.78	7.65	
	08-Jul-94	PES		3.26	7.17	
	04-Oct-94	PES		3.62	6.81	
11-Jan-95	PES		2.69	7.74		
06-Apr-95	PES		2.42	8.01		
13-Jul-95	PES		3.20	7.23		
11-Oct-95	PES		3.78	6.65		
08-Jan-96	PES		2.57	7.86		
11-Apr-96	PES		2.51	7.92		
W-13	20-Aug-89	MH	8.15	4.64	3.51	
	11-Oct-89	MH		4.60	3.55	
	22-Feb-90	MH		3.85	4.30	

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W-13 Cont	28-Feb-90	MH		4.18	3.97	
	09-Apr-90	MH		4.31	3.84	
	07-Jun-90	MH		3.93	4.22	
	25-Jul-90	MH		4.40	3.75	
	03-Oct-90	MH		4.67	3.48	
	03-Jan-91	MH		4.43	3.72	
	03-Apr-91	MH		3.64	4.51	
	25-Oct-91	MH		4.54	3.72	
	15-Jan-92	MH		3.82	4.33	
	23-Apr-92	MH		4.12	4.03	
	21-Jul-92	MH		4.44	3.71	
	22-Oct-92	MH		4.42	3.73	
	26-Jan-93	MH		3.10	5.05	
	29-Apr-93	MH		4.04	4.11	
	22-Jul-93	PES		4.30	3.85	
	07-Oct-93	PES		4.32	3.83	
	06-Jan-94	PES		4.07	4.08	
	05-Apr-94	PES		4.20	3.95	
	08-Jul-94	PES		3.94	4.21	
	04-Oct-94	PES		4.37	3.78	
11-Jan-95	PES		2.73	5.42		
06-Apr-95	PES		3.60	4.55		
13-Jul-95	PES		3.56	4.59		
11-Oct-95	PES		4.28	3.87		
08-Jan-96	PES		3.80	4.35		
11-Apr-96	PES		3.80	4.35		
W-14	20-Aug-89	MH	7.97	5.02	2.95	
	22-Feb-90	MH		4.19	3.78	
	28-Feb-90	MH		4.46	3.51	
	09-Apr-90	MH		4.36	3.61	
	07-Jun-90	MH		5.29	2.68	
	25-Jul-90	MH		4.83	3.14	
	03-Oct-90	MH		5.09	2.88	
	03-Jan-91	MH		4.32	3.65	
	03-Apr-91	MH		4.31	3.66	
	25-Oct-91	MH		4.41	3.56	
	15-Jan-92	MH		4.18	3.79	
	23-Apr-92	MH		4.93	3.04	
21-Jul-92	MH		4.57	3.40		
22-Oct-92	MH		5.28	2.69		

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W-14	26-Jan-93	MH		3.94	4.03	
Cont	29-Apr-93	MH		4.59	3.38	
	22-Jul-93	PES		5.30	2.67	
	07-Oct-93	PES		5.18	2.79	
	06-Jan-94	PES		5.09	2.88	
	05-Apr-94	PES		5.39	2.58	
	08-Jul-94	PES		5.37	2.60	
	04-Oct-94	PES		4.97	3.00	
	11-Jan-95	PES		4.66	3.31	
	06-Apr-95	PES		4.13	3.84	
	13-Jul-95	PES		4.36	3.61	
	11-Oct-95	PES		5.33	2.64	
	08-Jan-96	PES		4.33	3.64	
	11-Apr-96	PES		5.19	2.78	
W-15	20-Aug-89	MH	11.53	3.43	8.10	
	11-Oct-89	MH		4.26	7.27	
	22-Feb-90	MH		2.58	8.95	
	28-Feb-90	MH		2.53	9.00	
	09-Apr-90	MH		2.48	9.05	
	07-Jun-90	MH		4.54	6.99	
	25-Jul-90	MH		4.00	7.53	
	03-Oct-90	MH		3.46	8.07	
	03-Jan-91	MH		2.97	8.56	
	03-Apr-91	MH		3.05	8.48	
	25-Oct-91	MH		2.88	8.65	
	15-Jan-92	MH		3.54	7.99	
	23-Apr-92	MH		2.78	8.75	
	21-Jul-92	MH		2.67	8.86	
	22-Oct-92	MH		2.65	8.88	
	26-Jan-93	MH		2.47	9.06	
	29-Apr-93	MH		2.56	8.97	
	29-Apr-93	PES		3.38	8.15	
	07-Oct-93	PES		3.88	7.65	
	06-Jan-94	PES		3.03	8.50	
	05-Apr-94	PES		3.03	8.50	
	08-Jul-94	PES		2.89	8.64	
	04-Oct-94	PES		2.90	8.63	
	11-Jan-95	PES		2.84	8.69	
	06-Apr-95	PES		2.62	8.91	
	13-Jul-95	PES		2.67	8.86	

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W-15 Cont	11-Oct-95	PES		3.13	8.40	
	08-Jan-96	PES		2.81	8.72	
	11-Apr-96	PES		2.57	8.96	
W-16	11-Oct-89	MH	10.94	4.81	6.19	0.07
	22-Feb-90	MH		3.92	7.02	NP
	28-Feb-90	MH		3.88	7.06	NP
	09-Apr-90	MH		7.81	3.13	NP
	07-Jun-90	MH		6.19	4.75	NP
	27-Jul-90	MH		4.44	6.50	NP
	03-Oct-90	MH		4.38	6.58	0.02
	03-Jan-91	MH		4.67	6.29	0.02
	03-Apr-91	MH		3.50	7.46	0.02
	25-Oct-91	MH		4.64	6.30	NP
	15-Jan-92	MH		4.11	6.83	NP
	23-Apr-92	MH		3.89	7.05	NP
	21-Jul-92	MH		4.28	6.66	NP
	22-Oct-92	MH		NM	NM	NM
	26-Jan-93	MH		2.47	8.47	NP
	22-Jul-93	PES		NM	NM	NM
	07-Oct-93	PES		NM	NM	NM
	06-Jan-94	PES		NM	NM	NM
	05-Apr-94	PES		NM	NM	NM
	08-Jul-94	PES		NM	NM	NM
	04-Oct-94	PES		NM	NM	NM
	11-Jan-95	PES		NM	NM	NM
	06-Apr-95	PES		NM	NM	NM
13-Jul-95	PES		NM	NM	NM	
11-Oct-95	PES		NM	NM	NM	
08-Jan-96	PES		NM	NM	NM	
11-Apr-96	PES		NM	NM	NM	
W-17	11-Oct-89	MH	12.14	9.12	3.02	
	22-Feb-90	MH		5.42	6.72	
	28-Feb-90	MH		5.35	6.79	
	09-Apr-90	MH		5.72	6.42	
	07-Jun-90	MH		NM	NM	
	26-Jul-90	MH		5.59	6.55	
	03-Oct-90	MH		5.72	6.42	
	03-Jan-91	MH		6.28	5.86	
	03-Apr-91	MH		4.69	7.45	

**Table 1. Summary of Groundwater Elevations
Through April 1996**
Emery Bay Marketplace
Emeryville, California

Well Number	Date	Measured by	Top of Casing (feet MSL)	Depth to Water (feet)	Potentiometric Surface Elevations (feet MSL)	Product Thickness (feet)
W-17 Cont	25-Oct-91	MH		6.00	6.14	
	15-Jan-92	MH		5.57	6.57	
	23-Apr-92	MH		5.17	6.97	
	21-Jul-92	MH		5.54	6.60	
	22-Oct-92	MH		6.10	6.04	
	26-Jan-93	MH		4.45	7.69	
	29-Apr-93	MH		5.25	6.89	
	22-Jul-93	PES		NM	NM	
	07-Oct-93	PES		NM	NM	
	06-Jan-94	PES		5.88	6.26	
	05-Apr-94	PES		5.28	6.86	
	08-Jul-94	PES		5.35	6.79	
	04-Oct-94	PES		6.77	5.37	
	11-Jan-95	PES		NM	NM	
	06-Apr-95	PES		2.64	9.50	
	13-Jul-95	PES		5.29	6.85	
	11-Oct-95	PES		5.82	6.32	
	08-Jan-96	PES		5.45	6.69	
	11-Apr-96	PES		5.03	7.11	
	W-18	11-Oct-89	MH	11.34	5.52	5.82
22-Feb-90		MH		4.42	6.92	
28-Feb-90		MH		4.77	6.57	
09-Apr-90		MH		5.24	6.10	
07-Jun-90		MH		4.28	7.06	
25-Jul-90		MH		4.98	6.36	
03-Oct-90		MH		5.44	5.90	
03-Jan-91		MH		5.84	5.50	
03-Apr-91		MH		4.94	6.40	
25-Oct-91		MH		5.55	5.79	
15-Jan-92		MH		5.24	6.10	
23-Apr-92		MH		4.81	6.53	
21-Jul-92		MH		5.01	6.33	
22-Oct-92		MH		5.55	5.79	
26-Jan-93		MH		4.72	6.62	
29-Apr-93		MH		4.68	6.66	
22-Jul-93		PES		5.07	6.27	
07-Oct-93		PES		5.48	5.86	
06-Jan-94		PES		5.49	5.85	
05-Apr-94		PES		5.25	6.09	
08-Jul-94	PES		4.98	6.36		

Table 1. Summary of Groundwater Elevations
Through April 1996
Emery Bay Marketplace
Emeryville, California

Well Number	Date	Measured by	Top of Casing (feet MSL)	Depth to Water (feet)	Potentiometric Surface Elevations (feet MSL)	Product Thickness (feet)
W-18 Cont	04-Oct-94	PES		5.28	6.06	
	11-Jan-95	PES		4.55	6.79	
	06-Apr-95	PES		4.02	7.32	
	13-Jul-95	PES		4.95	6.39	
	11-Oct-95	PES		5.30	6.04	
	08-Jan-96	PES		5.18	6.16	
	11-Apr-96	PES		4.80	6.54	
W-19	09-Apr-90	MH	10.27	5.11	5.16	
	07-Jun-90	MH		4.77	5.50	
	25-Jul-90	MH		4.93	5.34	
	03-Oct-90	MH		4.95	5.32	
	03-Jan-91	MH		5.95	4.32	
	03-Apr-91	MH		5.39	4.88	
	25-Oct-91	MH		5.47	4.80	
	15-Jan-92	MH		5.18	5.09	
	23-Apr-92	MH		5.34	4.93	
	21-Jul-92	MH		5.08	5.19	
	22-Oct-92	MH		5.31	4.96	
	26-Jan-93	MH		4.82	5.45	
	29-Apr-93	MH		5.09	5.18	
	22-Jul-93	PES		5.04	5.24	0.01
	07-Oct-93	PES		5.09	5.18	NP
	06-Jan-94	PES		5.13	5.14	NP
	05-Apr-94	PES		4.92	5.35	NP
	08-Jul-94	PES		5.01	5.26	
	04-Oct-94	PES		5.03	5.27	0.03
	11-Jan-95	PES		4.79	5.48	NP
06-Apr-95	PES		4.92	5.38	0.03	
13-Jul-95	PES		4.99	5.30	0.02	
11-Oct-95	PES		5.11	5.19	0.04	
08-Jan-96	PES		5.05	5.22	NP	
11-Apr-96	PES		4.95	5.32	NP	
W-20	09-Apr-90	MH	6.82	4.08	2.74	
	07-Jun-90	MH		3.79	3.03	
	25-Jul-90	MH		4.00	2.82	
	03-Oct-90	MH		4.03	2.79	
	03-Jan-91	MH		4.12	2.70	
	03-Apr-91	MH		3.84	2.98	
	25-Oct-91	MH		4.07	2.75	

**Table 1. Summary of Groundwater Elevations
Through April 1996**
Emery Bay Marketplace
Emeryville, California

Well Number	Date	Measured by	Top of Casing (feet MSL)	Depth to Water (feet)	Potentiometric Surface Elevations (feet MSL)	Product Thickness (feet)
W-20 Cont	15-Jan-92	MH		3.75	3.07	
	23-Apr-92	MH		4.08	2.74	
	21-Jul-92	MH		4.02	2.80	
	22-Oct-92	MH		4.07	2.75	
	26-Jan-93	MH		3.30	3.52	
	29-Apr-93	MH		4.00	2.82	
	22-Jul-93	PES		3.84	2.98	
	07-Oct-93	PES		3.79	3.03	
	06-Jan-94	PES		3.84	2.98	
	05-Apr-94	PES		3.90	2.92	
	08-Jul-94	PES		3.63	3.19	
	06-Oct-94	PES		3.76	3.06	
	11-Jan-95	PES		2.76	4.06	
	06-Apr-95	PES		3.56	3.26	
	13-Jul-95	PES		3.09	3.73	
	11-Oct-95	PES		3.71	3.11	
	08-Jan-96	PES		3.70	3.12	
11-Apr-96	PES		3.73	3.09		
W-21	09-Apr-90	MH	9.48	5.21	4.27	
	07-Jun-90	MH		4.84	4.64	
	25-Jul-90	MH		5.05	4.43	
	03-Oct-90	MH		5.18	4.30	
	03-Jan-91	MH		5.47	4.01	
	03-Apr-91	MH		4.80	4.68	
	25-Oct-91	MH		5.04	4.44	
	15-Jan-92	MH		4.95	4.53	
	23-Apr-92	MH		5.17	4.31	
	21-Jul-92	MH		5.07	4.41	
	22-Oct-92	MH		5.28	4.20	
	26-Jan-93	MH		4.46	5.02	
	29-Apr-93	MH		5.39	4.09	
	22-Jul-93	PES		5.32	4.16	
	07-Oct-93	PES		5.38	4.10	
	06-Jan-94	PES		5.30	4.18	
	05-Apr-94	PES		5.18	4.30	
08-Jul-94	PES		5.18	4.30		
04-Oct-94	PES		5.08	4.40		
11-Jan-95	PES		4.73	4.75		
06-Apr-95	PES		4.92	4.56		

**Table 1. Summary of Groundwater Elevations
Through April 1996**
Emery Bay Marketplace
Emeryville, California

Well Number	Date	Measured by	Top of Casing (feet MSL)	Depth to Water (feet)	Potentiometric Surface Elevations (feet MSL)	Product Thickness (feet)
W-21 Cont	13-Jul-95	PES		5.11	4.37	
	11-Oct-95	PES		5.31	4.17	
	08-Jan-96	PES		5.06	4.42	
	11-Apr-96	PES		5.15	4.33	
W-22	09-Apr-90	MH	11.67	7.50	4.17	
	07-Jun-90	MH		7.36	4.31	
	25-Jul-90	MH		7.49	4.18	
	03-Oct-90	MH		7.68	3.99	
	03-Jan-91	MH		7.88	3.79	
	03-Apr-91	MH		7.64	4.03	
	25-Oct-91	MH		6.69	4.98	
	15-Jan-92	MH		7.61	4.06	
	23-Apr-92	MH		7.21	4.46	
	21-Jul-92	MH		7.69	3.98	
	22-Oct-92	MH		7.82	3.85	
	26-Jan-93	MH		7.40	4.27	
	29-Apr-93	MH		7.71	3.96	
	22-Jul-93	PES		7.76	3.91	
	07-Oct-93	PES		7.35	4.32	
	06-Jan-94	PES		7.04	4.63	
	05-Apr-94	PES		NM	NM	
	08-Jul-94	PES		6.43	5.24	
	04-Oct-94	PES		6.66	5.01	
	11-Jan-95	PES		4.67	7.00	
06-Apr-95	PES		6.16	5.51		
13-Jul-95	PES		6.29	5.38		
11-Oct-95	PES		6.59	5.08		
08-Jan-96	PES		6.47	5.20		
11-Apr-96	PES		6.23	5.44		
W-23	09-Apr-90	MH	9.16	1.51	7.65	
	07-Jun-90	MH		1.78	7.38	
	27-Jul-90	MH		2.63	6.53	
	03-Oct-90	MH		3.20	5.96	
	03-Jan-91	MH		2.36	6.80	
	03-Apr-91	MH		0.60	8.56	
	25-Oct-91	MH		2.36	6.80	
	15-Jan-92	MH		1.62	7.54	
	23-Apr-92	MH		1.18	7.98	

**Table 1. Summary of Groundwater Elevations
Through April 1996**
Emery Bay Marketplace
Emeryville, California

Well Number	Date	Measured by	Top of Casing (feet MSL)	Depth to Water (feet)	Potentiometric Surface Elevations (feet MSL)	Product Thickness (feet)
W-23 Cont	21-Jul-92	MH		2.17	6.99	
	22-Oct-92	MH		2.76	6.40	
	26-Jan-93	MH		0.39	8.77	
	29-Apr-93	MH		0.97	8.19	
	22-Jul-93	PES		1.87	7.29	
	07-Oct-93	PES		2.86	6.30	
	06-Jan-94	PES		1.88	7.28	
	05-Apr-94	PES		1.30	7.86	
	08-Jul-94	PES		1.77	7.39	
	04-Oct-94	PES		2.39	6.77	
	11-Jan-95	PES		0.49	8.67	
	06-Apr-95	PES		0.86	8.30	
	13-Jul-95	PES		1.38	7.78	
	11-Oct-95	PES		2.32	6.84	
	08-Jan-96	PES		1.54	7.62	
11-Apr-96	PES		1.13	8.03		
W-24	07-Jun-90	MH	8.72	4.75	3.97	
	25-Jul-90	MH		5.02	3.70	
	03-Oct-90	MH		5.00	3.72	
	03-Jan-91	MH		5.25	3.47	
	03-Apr-91	MH		4.56	4.16	
	25-Oct-91	MH		5.09	3.63	
	15-Jan-92	MH		4.82	3.90	
	23-Apr-92	MH		4.94	3.78	
	21-Jul-92	MH		5.00	3.72	
	22-Oct-92	MH		5.13	3.59	
	26-Jan-93	MH		3.38	5.34	
	29-Apr-93	MH		4.98	3.74	
	22-Jul-93	PES		5.02	3.70	
	07-Oct-93	PES		4.46	4.26	
	06-Jan-94	PES		4.83	3.89	
	05-Apr-94	PES		4.85	3.87	
	08-Jul-94	PES		4.54	4.18	
	04-Oct-94	PES		4.69	4.03	
	11-Jan-95	PES		2.63	6.09	
	06-Apr-95	PES		4.44	4.28	
13-Jul-95	PES		4.04	4.68		
11-Oct-95	PES		4.78	3.94		
08-Jan-96	PES		4.62	4.10		
11-Apr-96	PES		4.49	4.23		

**Table 1. Summary of Groundwater Elevations
Through April 1996
Emery Bay Marketplace
Emeryville, California**

Well Number	Date	Measured by	Top of Casing (feet MSL)	Depth to Water (feet)	Potentiometric Surface Elevations (feet MSL)	Product Thickness (feet)
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NOTES:

- (1) Well W-1 is located on the Nielson property.
 - (2) Groundwater elevation taken from earlier reports does not agree with calculated elevation using current top of casing elevation.
- feet MSL = Feet above Mean Sea Level.
 NA = Data not available.
 NM = Not measured.
 NP = Product not present or insufficient amount present to perform measurements.
 WCC = Woodward Clyde Consultants
 MH = McLaren Hart
 PES = PES Environmental, Inc.

**Table 2. Summary of Petroleum Hydrocarbon
Analytical Results for Groundwater Samples
Through April 1996
Emery Bay Marketplace
Emeryville, California**

Concentrations expressed in milligrams per liter [mg/L] - equivalent to parts per million [ppm]

Well Number	Sample Date	Sampled by	TPH as Diesel	TPH as Motor Oil
W-1	14-Apr-87	WCC	NA	<5
	28-Feb-90	MH	<0.5	NA
	11-Apr-90	MH	<0.1	0.57
W-4	01-Mar-90	MH	<0.5	NA
	10-Apr-90	MH	<0.1	<0.25
W-5	27-Sep-89	MH	20	NA
	25-Oct-91	MH	NA	NA
W-7	26-Sep-89	MH	1.1	NA
	28-Feb-90	MH	<0.5	NA
	11-Apr-90	MH	5.6	7.5
	30-Jul-90	MH	2.6	2.0
	04-Oct-90	MH	5.0	6.0
	04-Jan-91	MH	4.0	12
	03-Apr-91	MH	<1.0	3.2
	25-Oct-91	MH	1.4 (3)	2.3
	16-Jan-92	MH	1.6	3.6
	24-Apr-92	MH	3.3	4.9
	23-Jul-92	MH	2.6	4.0
	23-Oct-92	MH	3.8	4.2
	27-Jan-93	MH	<0.5	8.0 (1)
	29-Apr-93	MH	1.6	1.7(1)
	22-Jul-93	PES	1.50	1.50
	07-Oct-93	PES	2.90	2.90
	06-Jan-94	PES	<0.05	0.11
	05-Apr-94	PES	2.90	1.70
	08-Jul-94	PES	8.4	38
	04-Oct-94	PES	20	76
11-Jan-95	PES	17	<0.2	
06-Apr-95	PES	25	4	
13-Jul-95	PES	55	13	
11-Oct-95	PES	66	11	
08-Jan-96	PES	46	9	
11-Apr-96	PES	16	1.5	
W-8	17-Apr-87	WCC	10(2)	NA
	26-Sep-89	MH	7.1	NA
	01-Mar-90	MH	4.5	NA
	18-Apr-90	MH	5.3	NA

**Table 2. Summary of Petroleum Hydrocarbon
Analytical Results for Groundwater Samples
Through April 1996**

Emery Bay Marketplace
Emeryville, California

Concentrations expressed in milligrams per liter [mg/L] - equivalent to parts per million [ppm]

Well Number	Sample Date	Sampled by	TPH as Diesel	TPH as Motor Oil
W-13	28-Feb-90	MH	<0.5	NA
	12-Apr-90	MH	<0.5	NA
	27-Jul-90	MH	<0.5	<1
	04-Oct-90	MH	<0.5	<1
	03-Jan-91	MH	<0.5	<1
	04-Apr-91	MH	<0.5	<1
	25-Oct-91	MH	<0.5	<1
	16-Jan-92	MH	<0.5	<0.5
	24-Apr-92	MH	<0.5	<0.5
	22-Jul-92	MH	<0.5	<0.5
	23-Oct-92	MH	<0.5	<0.5
	27-Jan-93	MH	<0.05	0.11(1)
	29-Apr-93	MH	<0.5	0.12(1)
	22-Jul-93	PES	<0.05	0.25
	07-Oct-93	PES	<0.05	0.35
	06-Jan-94	PES	<0.05	<0.10
	05-Apr-94	PES	<0.05	<0.10
	08-Jul-94	PES	<0.05	0.5
	04-Oct-94	PES (4)	0.3	<0.2
	11-Jan-95	PES (4)	0.5	<0.2
	06-Apr-95	PES (4)	0.3	<0.2
	13-Jul-95	PES (4)	0.3	<0.2
	11-Oct-95	PES	0.4	<0.2
	08-Jan-96	PES	<0.05	0.8
	11-Apr-96	PES	0.38	<0.2
	W-14	28-Feb-90	MH	<0.5
11-Apr-90		MH	<0.1	<0.25
30-Jul-90		MH	<0.6	<1
04-Oct-90		MH	<0.5	<1
04-Jan-91		MH	<0.5	<1
04-Apr-91		MH	<0.5	<1
25-Oct-91		MH	<0.5	<1
16-Jan-92		MH	<0.5	<0.5
24-Apr-92		MH	<0.5	<0.5
22-Jul-92		MH	<0.5	<0.5
23-Oct-92		MH	<0.5	<0.5
27-Jan-93		MH	<0.05	0.13
29-Apr-93		MH	<0.05	0.15
22-Jul-93		PES	<0.05	0.16
07-Oct-93		PES	<0.05	0.34
06-Jan-94		PES	<0.05	0.15
05-Apr-94	PES	<0.05	<0.10	

**Table 2. Summary of Petroleum Hydrocarbon
Analytical Results for Groundwater Samples
Through April 1996
Emery Bay Marketplace
Emeryville, California**

Concentrations expressed in milligrams per liter [mg/L] - equivalent to parts per million [ppm]

Well Number	Sample Date	Sampled by	TPH as Diesel	TPH as Motor Oil
W-14 Cont	08-Jul-94	PES	<0.05	0.3
	04-Oct-94	PES (4)	0.4	<0.2
	11-Jan-95	PES (4)	0.3	<0.2
	06-Apr-95	PES (4)	0.3	<0.2
	13-Jul-95	PES (4)	0.2	<0.2
	11-Oct-95	PES	0.4	<0.2
	08-Jan-96	PES	<0.05	0.8
	11-Apr-96	PES	0.31	<0.2
W-15	25-Sep-89	MH	1.2	NA
	13-Apr-90	MH	1.5	NA
W-16	27-Sep-89	MH	4.7	NA
	28-Feb-90	MH	22	NA
	13-Apr-90	MH	9.0	NA
W-17	25-Sep-89	MH	0.7	NA
	13-Apr-90	MH	1.6	NA
W-18	26-Sep-89	MH	3.1	NA
	13-Apr-90	MH	5.1	NA
W-19	12-Apr-90	MH	1.1	NA
	16-Apr-90	MH	<0.5	NA
	27-Jul-90	MH	<1	8.0
	03-Oct-90	MH	<0.5	3.0
	03-Jan-91	MH	<0.5	<1
	03-Apr-91	MH	<2.5	8.4
	25-Oct-91	MH	<0.5	34
	17-Jan-92	MH	<10.0	29
	23-Apr-92	MH	<2.0	7.1
	23-Jul-92	MH	<0.1	7.3
	22-Oct-92	MH	<10	28
	26-Jan-93	MH	0.79	35
	29-Apr-93	MH	<0.05	8.2
	22-Jul-93	PES	<0.50	20.00
	07-Oct-93	PES	0.45	2.00
	06-Jan-94	PES	0.50	7.10
	05-Apr-94	PES	<0.20	2.70
	08-Jul-94	PES	3.4	2.5
	04-Oct-94	PES	13	11
	11-Jan-95	PES	7.2	<0.2
06-Apr-95	PES	NS (5)	NS (5)	

**Table 2. Summary of Petroleum Hydrocarbon
Analytical Results for Groundwater Samples
Through April 1996**

Emery Bay Marketplace
Emeryville, California

Concentrations expressed in milligrams per liter [mg/L] - equivalent to parts per million [ppm]

Well Number	Sample Date	Sampled by	TPH as Diesel	TPH as Motor Oil
W-19 Cont	13-Jul-95	PES	5.1	1
	11-Oct-95	PES	6.5	1
	08-Jan-96	PES	11	6
	11-Apr-96	PES	3.6	0.5
W-20	12-Apr-90	MH	<0.5	NA
	16-Apr-90	MH	<0.5	NA
	30-Jul-90	MH	<0.5	<1
	03-Oct-90	MH	<0.5	<1
	04-Jan-91	MH	<0.5	<1
	04-Apr-91	MH	<0.5	2.3
	25-Oct-91	MH	<0.5	<1
	17-Jan-92	MH	<0.5	<0.5
	24-Apr-92	MH	<0.5	<0.5
	22-Jul-92	MH	<0.5	<0.5
	22-Oct-92	MH	<0.5	<0.5
	27-Jan-93	MH	<0.10	0.42 (1)
	29-Apr-93	MH	<0.05	0.38(1)
	22-Jul-93	PES	<0.05	1.90
	07-Oct-93	PES	<0.05	0.12
	06-Jan-94	PES	<0.05	0.17
	05-Apr-94	PES	<0.05	<0.10
	08-Jul-94	PES	<0.05	<0.20
	06-Oct-94	PES	<0.05	<0.2
	11-Jan-95	PES	1.4	<0.2
06-Apr-95	PES	2.0	<0.2	
13-Jul-95	PES	0.1	<0.2	
11-Oct-95	PES	0.1	<0.2	
08-Jan-96	PES	1.4	0.2	
11-Apr-96	PES	2.1	0.5	
W-21	12-Apr-90	MH	1.4	NA
	18-Apr-90	MH	1.7	NA
W-22	12-Apr-90	MH	<0.5	NA
	18-Apr-90	MH	<0.5	NA
W-23	12-Apr-90	MH	2.9	NA
	18-Apr-90	MH	3.6	NA
W-24	07-Jun-90	MH	<0.5	NA
	27-Jul-90	MH	<0.5	<1
	03-Oct-90	MH	<0.5	<1

**Table 2. Summary of Petroleum Hydrocarbon
Analytical Results for Groundwater Samples
Through April 1996**

Emery Bay Marketplace
Emeryville, California

Concentrations expressed in milligrams per liter [mg/L] - equivalent to parts per million [ppm]

Well Number	Sample Date	Sampled by	TPH as Diesel	TPH as Motor Oil
W-24 Cont	03-Jan-91	MH	<0.5	<1
	03-Apr-91	MH	<0.5	1.1
	25-Oct-91	MH	<0.5	<1
	17-Jan-92	MH	<0.5	<0.5
	24-Apr-92	MH	<0.5	<0.5
	23-Jul-92	MH	<0.5	<0.5
	22-Oct-92	MH	<0.5	<0.5
	26-Jan-93	MH	<0.05	0.20 (1)
	29-Apr-93	MH	<0.05	0.14 (1)
	22-Jul-93	PES	<0.05	0.42
	07-Oct-93	PES	<0.05	0.45
	06-Jan-94	PES	<0.05	<0.10
	05-Apr-94	PES	<0.05	<0.10
	08-Jul-94	PES	0.06	<0.20
	04-Oct-94	PES	0.5	<0.2
	11-Jan-95	PES	0.5	<0.2
	06-Apr-95	PES	0.3	<0.2
	13-Jul-95	PES	0.2	<0.2
	11-Oct-95	PES	0.4	<0.2
	08-Jan-96	PES	0.2	<0.2
11-Apr-96	PES	0.29	<0.2	

Notes:

- (1) = TPH quantified as motor oil although chromatogram pattern not typical of motor oil.
 (2) = Semiquantified results include gasoline, diesel, and some oil and grease in Well W-8.
 (3) = TPH quantified as diesel although chromatograph pattern not typical of diesel.
 (4) = Well not sampled due to the presence of free-phase product on the surface of the water column.
 < 0.5 = Not detected above indicated detection limit.

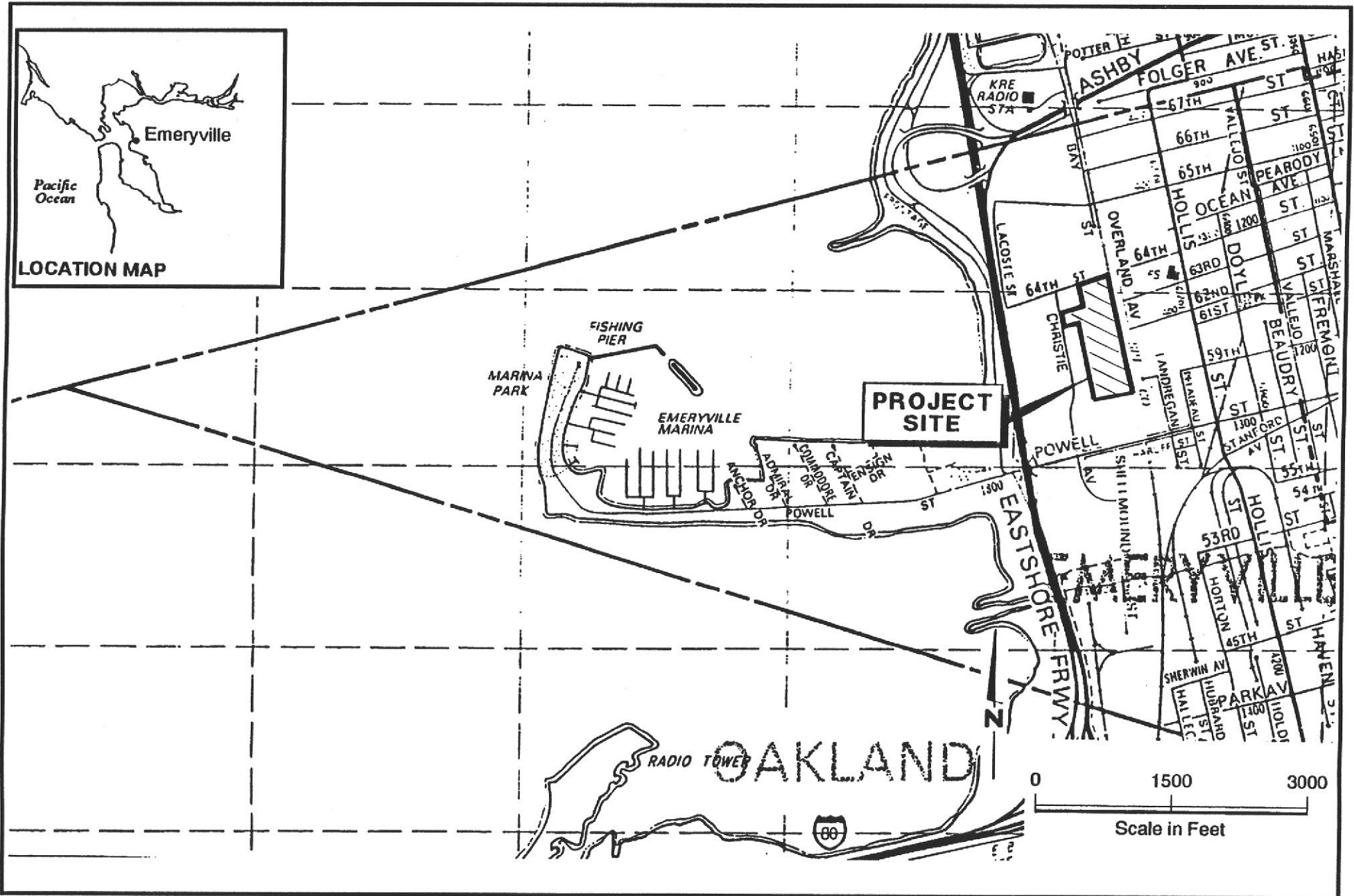
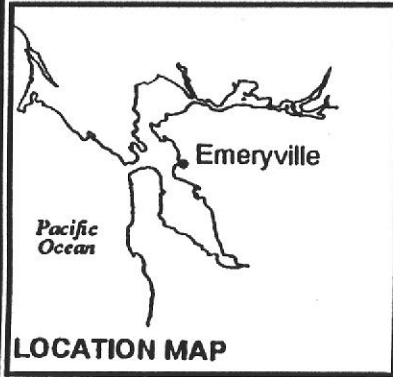
TPH = Total petroleum hydrocarbons

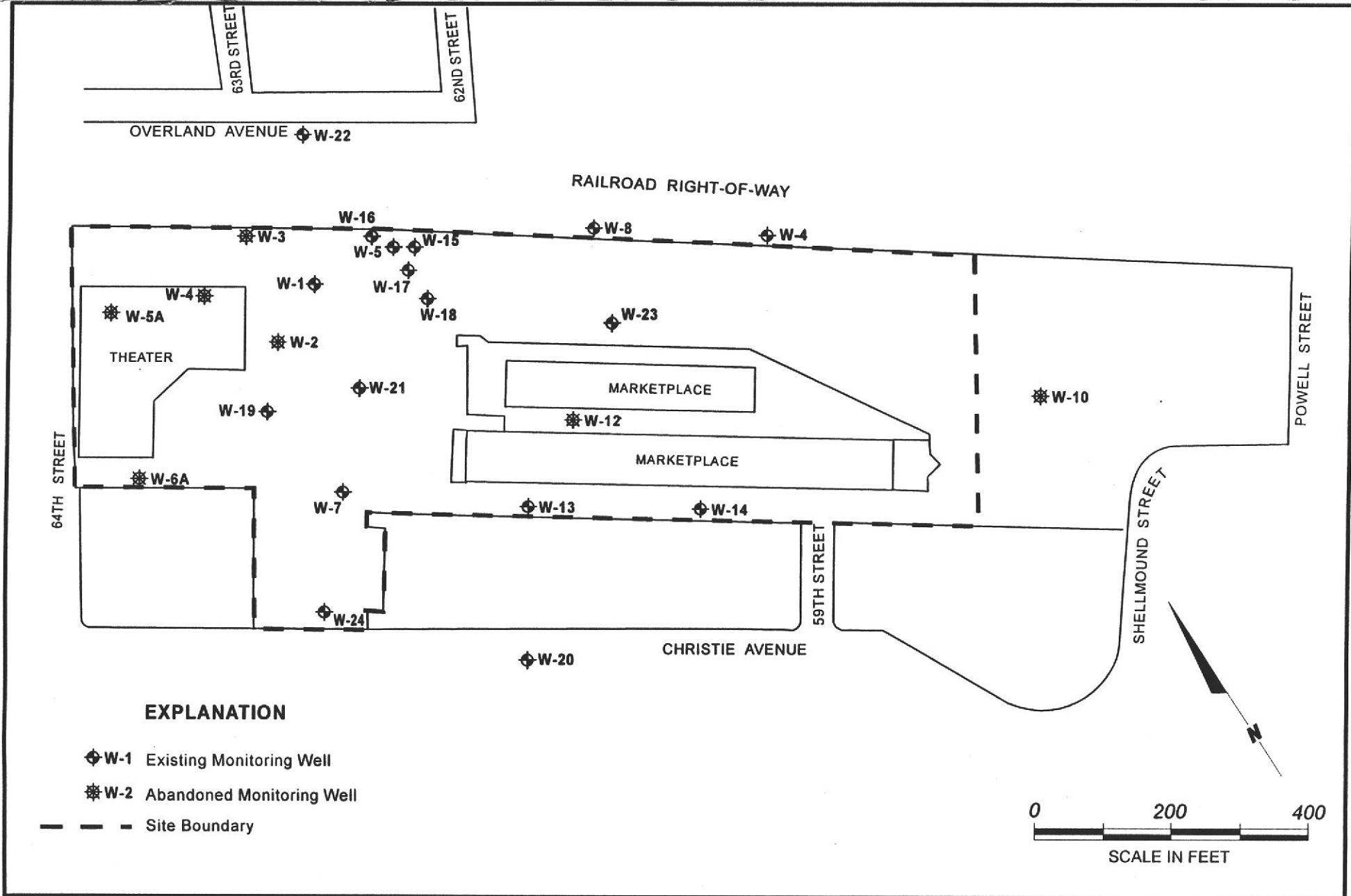
NA = Not Analyzed

WCC = Woodward Clyde Consultants

MH = McLaren Hart

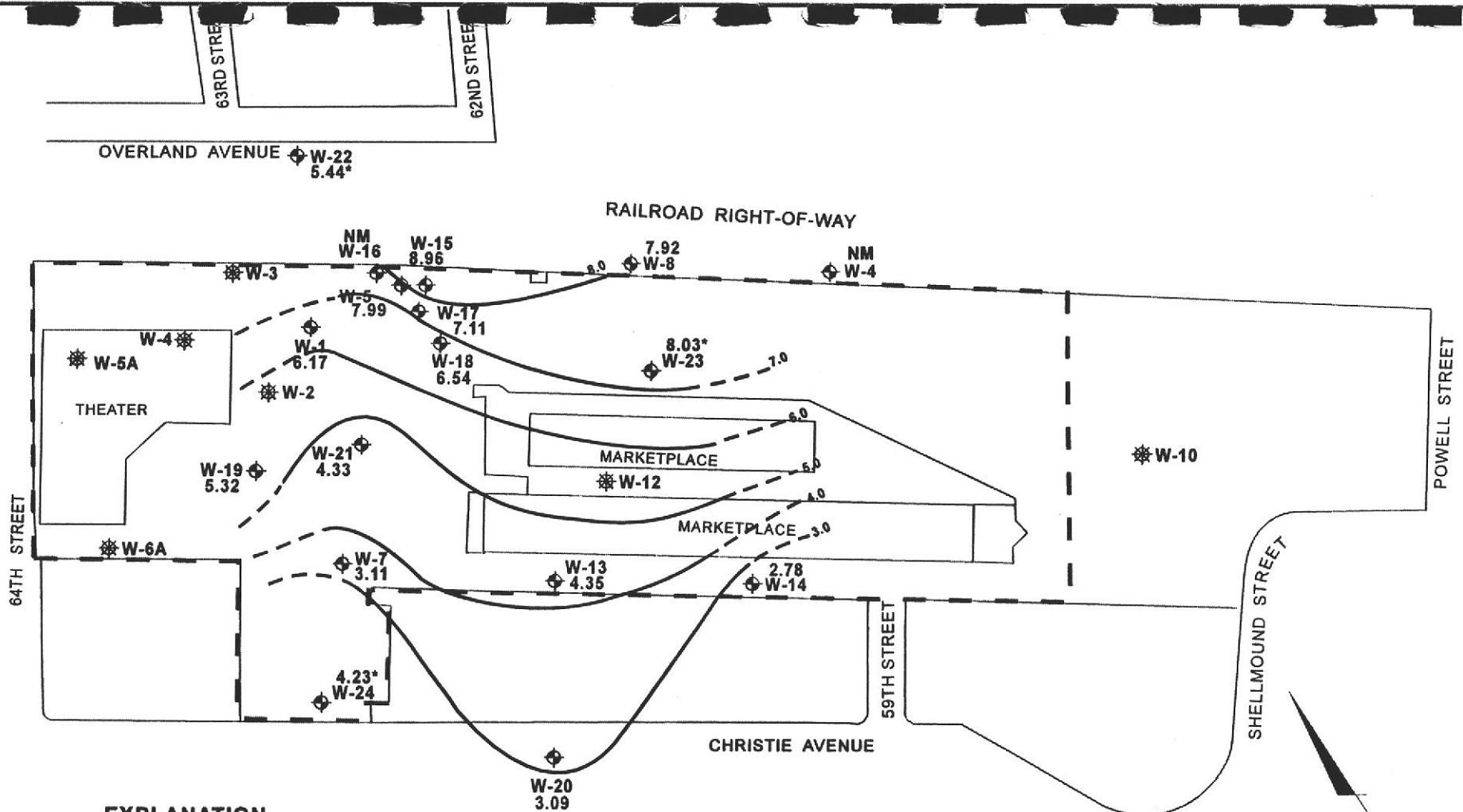
PES = PES Environmental, Inc.





EXPLANATION

- ◆ W-1 Existing Monitoring Well
- ✱ W-2 Abandoned Monitoring Well
- - - Site Boundary

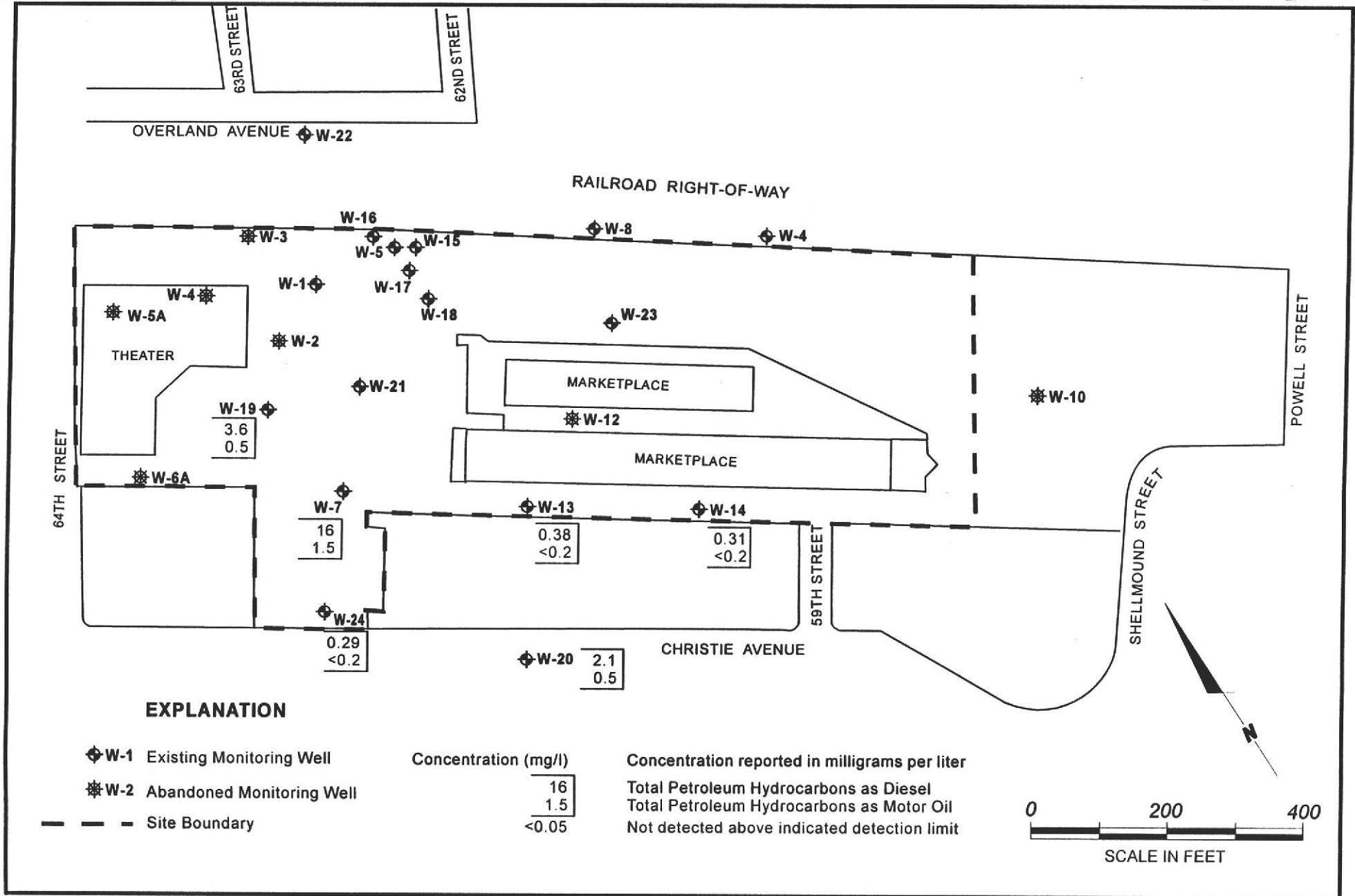


EXPLANATION

- ◆ W-1 Existing Monitoring Well
- ✱ W-2 Abandoned Monitoring Well
- 6.17 Groundwater Elevation in feet above Mean Sea Level on January 8, 1996
- NM Not Measured
- * Well not used in determining contours
- - - Site Boundary

— 4.0 Groundwater Elevation Contour





APPENDIX A
WATER LEVEL AND GROUNDWATER SAMPLING REPORT

APR 22 1996
April 22, 1996

PES Environmental, Inc.
1682 Novato Blvd., Suite 100
Novato, CA 94947

ATTN: Jenny Han

Site:
Emery Bay Market Place
Christie Street
Emeryville, California

Date:
April 11, 1996

GROUNDWATER SAMPLING REPORT 960411-K-1

Blaine Tech Services, Inc. performs specialized environmental sampling and documentation as an independent third party. In order to avoid compromising the objectivity necessary for the proper and disinterested performance of this work, Blaine Tech Services, Inc. does not participate in the interpretation of analytical results, or become involved with the marketing or installation of remedial systems.

This report deals with the groundwater well sampling performed by our firm in response to your request. Data collected in the course of our work at the site are presented in the TABLE OF WELL MONITORING DATA. This information was collected during our inspection, well evacuation and sample collection. Measurements include the total depth of the well and the depth to water. Water surfaces were further inspected for the presence of immiscibles. A series of electrical conductivity, pH, and temperature readings were obtained during well evacuation and at the time of sample collection.

STANDARD PRACTICES

Evacuation and Sampling Equipment

As shown in the TABLE OF WELL MONITORING DATA, the wells at this site were evacuated according to a protocol requirement for the removal of three case volumes of water, before sampling. The wells were evacuated using bailers.

Samples were collected using bailers.

Bailers: A bailer, in its simplest form, is a hollow tube which has been fitted with a check valve at the lower end. The device can be lowered into a well by means of a cord. When the bailer enters the water, the check valve opens and liquid flows into the interior of the bailer. The bottom check valve prevents water from escaping when the bailer is drawn up and out of the well.

Two types of bailers are used in groundwater wells at sites where fuel hydrocarbons are of concern. The first type of bailer is made of a clear material such as acrylic plastic and is used to obtain a sample of the surface and the near surface liquids, in order to detect the presence of visible or measurable fuel hydrocarbon floating on the surface. The second type of bailer is made of Teflon or stainless steel, and is used as an evacuation and/or sampling device.

Bailers are inexpensive and relatively easy to clean. Because they are manually operated, variations in operator technique may have a greater influence than would be found with more automated sampling equipment. Also, where fuel hydrocarbons are involved, the bailer may include near surface contaminants that are not representative of water deeper in the well.

Decontamination

All apparatus is brought to the site in clean and serviceable condition. The equipment is decontaminated after each use and before leaving the site.

Effluent Materials

The evacuation process creates a volume of effluent water which must be contained. Blaine Tech Services, Inc. will place this water in appropriate containers of the client's choice or bring new 55 gallon DOT 17 E drums to the site, which are appropriate for the containment of the effluent materials. The determination of how to properly dispose of the effluent water must usually await the results of laboratory analyses of the sample collected from the groundwater

well. If that sample does not establish whether or not the effluent water is contaminated, or if effluent from more than one source has been combined in the same container, it may be necessary to conduct additional analyses on the effluent material.

Sampling Methodology

Samples were obtained by standardized sampling procedures that follow an evacuation and sample collection protocol. The sampling methodology conforms to both State and Regional Water Quality Control Board standards and specifically adheres to EPA requirements for apparatus, sample containers and sample handling as specified in publication SW 846 and T.E.G.D. which is published separately.

Sample Containers

Sample containers are supplied by the laboratory performing the analyses.

Sample Handling Procedures

Following collection, samples are promptly placed in an ice chest containing deionized ice or an inert ice substitute such as Blue Ice or Super Ice. The samples are maintained in either an ice chest or a refrigerator until delivered into the custody of the laboratory.

Sample Designations

All sample containers are identified with both a sampling event number and a discrete sample identification number. Please note that the sampling event number is the number that appears on our chain of custody. It is roughly equivalent to a job number, but applies only to work done on a particular day of the year rather than spanning several days, as jobs and projects often do.

Chain of Custody

Samples are continuously maintained in an appropriate cooled container while in our custody and until delivered to the laboratory under our standard chain of custody. If the samples are taken charge of by a different party (such as another person from our office, a courier, etc.) prior to being delivered to the laboratory, appropriate release and acceptance records are made on the chain of custody (time, date and signature of person accepting custody of the samples).

Hazardous Materials Testing Laboratory

The samples obtained at this site were delivered to American Environmental Network in Pleasant Hill, California. AEN is certified by the California Department of Health Services as a Hazardous Materials Testing Laboratory, and is listed as DOHS HMTL #1172.

Personnel

All Blaine Tech Services, Inc. personnel receive 29 CFR 1910.120(e)(2) training as soon after being hired as is practical. In addition, many of our personnel have additional certifications that include specialized training in level B supplied air apparatus and the supervision of employees working on hazardous materials sites. Employees are not sent to a site unless we are confident they can adhere to any site safety provisions in force at the site and unless we know that they can follow the written provisions of an SSP and the verbal directions of an SSO.

In general, employees sent to a site to perform groundwater well sampling will assume an OSHA level D (wet) environment exists unless otherwise informed. The use of gloves and double glove protocols protects both our employees and the integrity of the samples being collected. Additional protective gear and procedures for higher OSHA levels of protection are available.

Please call if we can be of any further assistance.


Richard C. Blaine

RCB/mc

attachments: table of well monitoring data
chain of custody

TABLE OF WELL MONITORING DATA

Well I.D.	W-1	W-4	W-5	W-7
Date Sampled	4/11/96	4/11/96	4/11/96	4/1196
Well Diameter (in.)	2	2	2	2
Total Well Depth (ft.)	10.53	--	--	12.48
Depth To Water (ft.)	5.30	--	4.07	5.94
Free Product (ft.)	NONE	NONE	YES @ 3.30	NONE
Reason If Not Sampled	GAUGE ONLY	INACCESSIBLE	--	--
1 Case Volume (gal.)				1.0
Did Well Dewater?				YES @ 2.0 GALS.
Gallons Actually Evacuated				
Purging Device				BAILER
Sampling Device				BAILER
Time				10:40 10:43 13:02
Temperature (Fahrenheit)				72.4 72.2 68.8
pH				6.6 8.6 6.6
Conductivity (micromhos/cm)				4000 4200 5000
BTS Chain of Custody				960411-K-1
BTS Sample I.D.				W-7
DOHS HMTL Laboratory				AEN
Analysis				TPH (DIESEL) AND TPH (MOTOR OIL)

TABLE OF WELL MONITORING DATA

Well I.D.	W-8	W-13	W-14	W-15
Date Sampled	4/11/96	4/11/96	4/11/96	4/11/96
Well Diameter (in.)	2	2	2	2
Total Well Depth (ft.)	11.78	9.98	9.86	20.02
Depth To Water (ft.)	2.51	3.80	5.19	2.57
Free Product (ft.)	NONE	NONE	NONE	NONE
Reason If Not Sampled	GAUGE ONLY	--	--	GAUGE ONLY
1 Case Volume (gal.)		1.0	0.75	
Did Well Dewater?		YES @ 1.5 GALS.	YES @ 1.0 GALS.	
Gallons Actually Evacuated				
Purging Device		BAILER	BAILER	
Sampling Device		BAILER	BAILER	
Time		9:33 12:40	9:23 12:35	
Temperature (Fahrenheit)		72.6 63.6	76.8 65.2	
pH		7.4 7.8	7.0 7.6	
Conductivity (micromhos/cm)		1200 880	2200 1400	
BTS Chain of Custody		960411-K-1	960411-K-1	
BTS Sample I.D.		W-13	W-14	
DOHS HMTL Laboratory		AEN	AEN	
Analysis		TPH (DIESEL) AND TPH (MOTOR OIL)	TPH (DIESEL) AND TPH (MOTOR OIL)	

TABLE OF WELL MONITORING DATA

Well I.D.	W-16	W-17	W-18	W-19
Date Sampled	4/11/96	4/11/96	4/11/96	4/11/96
Well Diameter (in.)	2	2	2	2
Total Well Depth (ft.)	--	24.72	19.97	13.55
Depth To Water (ft.)	--	5.03	4.80	4.95
Free Product (ft.)	NONE	NONE	NONE	NONE
Reason If Not Sampled	INACCESSIBLE	GAUGE ONLY	GAUGE ONLY	--
1 Case Volume (gal.)				1.4
Did Well Dewater?				NO
Gallons Actually Evacuated				4.5
Purging Device				BAILER
Sampling Device				BAILER
Time				10:52 10:55 10:58
Temperature (Fahrenheit)				70.2 72.0 71.4
pH				6.8 6.9 6.9
Conductivity (micromhos/cm)				3800 3000 2900
BTS Chain of Custody				960411-K-1
BTS Sample I.D.				W-19
DOHS HMTL Laboratory				AEN
Analysis				TPH (DIESEL) AND TPH (MOTOR OIL)

TABLE OF WELL MONITORING DATA

Well I.D.	W-20	W-21	W-22	W-23
Date Sampled	4/11/96	4/11/96	4/11/96	4/11/96
Well Diameter (in.)	2	2	2	2
Total Well Depth (ft.)	16.80	12.16	14.98	8.95
Depth To Water (ft.)	3.73	5.15	6.23	1.13
Free Product (ft.)	NONE	NONE	NONE	NONE
Reason If Not Sampled	--	GAUGE ONLY	GAUGE ONLY	GAUGE ONLY
1 Case Volume (gal.)	2.1			
Did Well Dewater?	NO			
Gallons Actually Evacuated	6.5			
Purging Device	BAILER			
Sampling Device	BAILER			
Time	9:50	9:53	9:55	
Temperature (Fahrenheit)	70.6	70.0	70.6	
pH	6.9	6.9	7.0	
Conductivity (micromhos/cm)	7800	8800	8800	
BTS Chain of Custody	960411-K-1			
BTS Sample I.D.	W-20			
DOHS HMTL Laboratory	AEN			
Analysis	TPH (DIESEL) AND TPH (MOTOR OIL)			

TABLE OF WELL MONITORING DATA

Well I.D.	W-24		
Date Sampled	4/11/96		
Well Diameter (in.)	2		
Total Well Depth (ft.)	10.90		
Depth To Water (ft.)	4.49		
Free Product (ft.)	NONE		
Reason If Not Sampled	--		
1 Case Volume (gal.)	1.0		
Did Well Dewater?	NO		
Gallons Actually Evacuated	3.0		
Purging Device	BAILER		
Sampling Device	BAILER		
Time	10:22	10:24	10:26
Temperature (Fahrenheit)	69.6	69.0	69.2
pH	7.2	7.2	7.2
Conductivity (micromhos/cm)	1800	1400	1200
BTS Chain of Custody	960411-K-1		
BTS Sample I.D.	W-24		
DOHS HMTL Laboratory	AEN		
Analysis	TPH (DIESEL) AND TPH (MOTOR OIL)		

APPENDIX B
ANALYTICAL LABORATORY REPORT

American Environmental Network

Certificate of Analysis

DOHS Certification: 1172

AIHA Accreditation: 11134

DELIVERED APR 29 1996

PAGE 1

PES ENVIRONMENTAL, INC.
1682 NOVATO BLVD.
SUITE 100
NOVATO, CA 94947

ATTN: JENNY HAN
CLIENT PROJ. ID: 960-111-K1
CLIENT PROJ. NAME: EMERY BAY MRKT

REPORT DATE: 04/24/96

DATE(S) SAMPLED: 04/11/96

DATE RECEIVED: 04/12/96

AEN WORK ORDER: 9604181

PROJECT SUMMARY:

On April 12, 1996, this laboratory received 6 water sample(s).

Client requested sample(s) be analyzed for chemical parameters. Results of analysis are summarized on the following page(s). Please see quality control report for a summary of QC data pertaining to this project.

Samples will be stored for 30 days after completion of analysis, then disposed of in accordance with State and Federal regulations. Samples may be archived by prior arrangement.

If you have any questions, please contact Client Services at (510) 930-9090.


Larry Klein
Laboratory Director

cc: Kent Brown (Blaine Tech Services)

PES ENVIRONMENTAL, INC.

SAMPLE ID: W-7
AEN LAB NO: 9604181-01
AEN WORK ORDER: 9604181
CLIENT PROJ. ID: 960-111-K1

DATE SAMPLED: 04/11/96
DATE RECEIVED: 04/12/96
REPORT DATE: 04/24/96

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
#Extraction for TPH	EPA 3510	-		Extrn Date	04/16/96
TPH as Diesel	GC-FID	16 *	0.2 mg/L		04/18/96
TPH as Oil	GC-FID	1.5 *	1 mg/L		04/18/96

Reporting limits for Diesel elevated due to high levels of target compounds. Sample run at dilution.

ND = Not detected at or above the reporting limit
* = Value at or above reporting limit

PES ENVIRONMENTAL, INC.

SAMPLE ID: W-13
AEN LAB NO: 9604181-02
AEN WORK ORDER: 9604181
CLIENT PROJ. ID: 960-111-K1

DATE SAMPLED: 04/11/96
DATE RECEIVED: 04/12/96
REPORT DATE: 04/24/96

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
#Extraction for TPH	EPA 3510	-		Extrn Date	04/18/96
TPH as Diesel	GC-FID	0.38 *	0.05 mg/L		04/19/96
TPH as Oil	GC-FID	ND	0.2 mg/L		04/19/96

ND = Not detected at or above the reporting limit
* = Value at or above reporting limit

PES ENVIRONMENTAL, INC.

SAMPLE ID: W-14
AEN LAB NO: 9604181-03
AEN WORK ORDER: 9604181
CLIENT PROJ. ID: 960-111-K1

DATE SAMPLED: 04/11/96
DATE RECEIVED: 04/12/96
REPORT DATE: 04/24/96

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
#Extraction for TPH	EPA 3510	-		Extrn Date	04/18/96
TPH as Diesel	GC-FID	0.31 *	0.05 mg/L		04/19/96
TPH as Oil	GC-FID	ND	0.2 mg/L		04/19/96

ND = Not detected at or above the reporting limit
* = Value at or above reporting limit

PES ENVIRONMENTAL, INC.

SAMPLE ID: W-19
AEN LAB NO: 9604181-04
AEN WORK ORDER: 9604181
CLIENT PROJ. ID: 960-111-K1

DATE SAMPLED: 04/11/96
DATE RECEIVED: 04/12/96
REPORT DATE: 04/24/96

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
#Extraction for TPH	EPA 3510	-		Extrn Date	04/18/96
TPH as Diesel	GC-FID	3.6 *	0.05 mg/L		04/19/96
TPH as Oil	GC-FID	0.5 *	0.2 mg/L		04/19/96

ND = Not detected at or above the reporting limit
* = Value at or above reporting limit

PES ENVIRONMENTAL, INC.

SAMPLE ID: W-20
 AEN LAB NO: 9604181-05
 AEN WORK ORDER: 9604181
 CLIENT PROJ. ID: 960-111-K1

DATE SAMPLED: 04/11/96
 DATE RECEIVED: 04/12/96
 REPORT DATE: 04/24/96

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
#Extraction for TPH	EPA 3510	-		Extrn Date	04/18/96
TPH as Diesel	GC-FID	2.1 *	0.05 mg/L		04/19/96
TPH as Oil	GC-FID	0.5 *	0.2 mg/L		04/19/96

ND = Not detected at or above the reporting limit
 * = Value at or above reporting limit

PES ENVIRONMENTAL, INC.

SAMPLE ID: W-24
AEN LAB NO: 9604181-06
AEN WORK ORDER: 9604181
CLIENT PROJ. ID: 960-111-K1

DATE SAMPLED: 04/11/96
DATE RECEIVED: 04/12/96
REPORT DATE: 04/24/96

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
#Extraction for TPH	EPA 3510	-		Extrn Date	04/18/96
TPH as Diesel	GC-FID	0.29 *	0.05 mg/L		04/19/96
TPH as Oil	GC-FID	ND	0.2 mg/L		04/19/96

ND = Not detected at or above the reporting limit
* = Value at or above reporting limit

AEN (CALIFORNIA)
QUALITY CONTROL REPORT

AEN JOB NUMBER: 9604181

CLIENT PROJECT ID: 960-111-K1

Quality Control and Project Summary

All laboratory quality control parameters were found to be within established limits.

Definitions

Laboratory Control Sample (LCS)/Method Spike(s): Control samples of known composition. LCS and Method Spike data are used to validate batch analytical results.

Matrix Spike(s): Aliquot of a sample (aqueous or solid) with added quantities of specific compounds and subjected to the entire analytical procedure. Matrix spike and matrix spike duplicate QC data are advisory.

Method Blank: An analytical control consisting of all reagents, internal standards, and surrogate standards carried through the entire analytical process. Used to monitor laboratory background and reagent contamination.

Not Detected (ND): Not detected at or above the reporting limit.

Relative Percent Difference (RPD): An indication of method precision based on duplicate analysis.

Reporting Limit (RL): The lowest concentration routinely determined during laboratory operations. The RL is generally 1 to 10 times the Method Detection Limit (MDL). Reporting limits are matrix, method, and analyte dependent and take into account any dilutions performed as part of the analysis.

Surrogates: Organic compounds which are similar to analytes of interest in chemical behavior, but are not found in environmental samples. Surrogates are added to all blanks, calibration and check standards, samples, and spiked samples. Surrogate recovery is monitored as an indication of acceptable sample preparation and instrumental performance.

D: Surrogates diluted out.

#: Indicates result outside of established laboratory QC limits.

QUALITY CONTROL DATA

METHOD: EPA 3510 GCFID

AEN JOB NO: 9604181
 DATE EXTRACTED: 04/16/96; 04/18/96
 INSTRUMENT: A
 MATRIX: WATER

Surrogate Standard Recovery Summary

Date Analyzed	Client Id.	Lab Id.	Percent Recovery n-Pentacosane
04/18/96	W-7	01	71
04/19/96	W-13	02	97
04/19/96	W-14	03	97
04/19/96	W-19	04	92
04/19/96	W-20	05	94
04/19/96	W-24	06	96
QC Limits:			59-118

DATE EXTRACTED: 04/15/96
 DATE ANALYZED: 04/15/96
 SAMPLE SPIKED: 9603343-21
 INSTRUMENT: A

Matrix Spike Recovery Summary

Analyte	Spike Added (mg/L)	Average Percent Recovery	RPD	QC Limits	
				Percent Recovery	RPD
Diesel	4.00	93	2	58-107	15

Daily method blanks for all associated analytical runs showed no contamination at or above the reporting limit.

*** END OF REPORT ***

