PES Environmental, Inc.
Engineering & Environmental Services

April 24, 1996

241.0102.013

Ms. Susan L. Hugo
Senior Hazardous Materials Specialist
Alameda County Department of Environmental Health
1131 Harbor Bay Parkway
Alameda, California 94501

TRANSMITTAL
QUARTERLY MONITORING REPORT
FOURTH QUARTER 1995
POWELL STREET PLAZA
AND SHELLMOUND III SITES
EMERYVILLE, CALIFORNIA

Dear Ms. Hugo:

Enclosed is one copy of the above titled report prepared by PES Environmental, Inc. for the former partners of Eastshore Partners (Eastshore) for the Powell Street Plaza and Shellmound III sites, Emeryville, California,. This Quarterly report presents results of quarterly groundwater sampling and groundwater elevation monitoring activities for the fourth quarter of 1995 at the Powell Street Plaza and Shellmound III sites.

Yours very truly,

PES ENVIRONMENTAL, INC.

John D. Skalbeck, H.G.
Associate Hydrogeologist

Enclosure: Quarterly Monitoring Report

cc: see Distribution List

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PES Environmental, Inc.
Engineering & Environmental Services

A Report Prepared for:

Mr. Thomas Gram
5800 Shellmound, Suite 210
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QUARTERLY MONITORING REPORT
FOURTH QUARTER 1995
POWELL STREET PLAZA
AND SHELLMOUND III SITES
EMERYVILLE, CALIFORNIA

APRIL 24, 1996

By:

Elizabeth A. Large
Staff Geologist

John D. Skalbeck, H.G.
Associate Hydrogeologist

241.0102.005

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1.0 INTRODUCTION

This report presents data collected by PES Environmental, Inc. (PES) during groundwater monitoring at Powell Street Plaza and the adjacent Shellmound III properties in Emeryville, California during the fourth quarter of 1995. Monitoring during this quarter was performed on November 29, 1995. The purpose of the monitoring is to evaluate the degree and extent of petroleum hydrocarbons in groundwater at the subject sites. This monitoring was conducted on behalf of the former partners of Eastshore Partners pursuant to a June 4, 1993 letter to Aetna Real Estate Associates, L.P. (the current Powell Street Plaza property owner) from the Alameda County Department of Environmental Health (ACDEH).

The scope of monitoring activities was established in subsequent conversations with Ms. Susan Hugo of ACDEH and Mr. Rich Hiett of the California Regional Water Quality Control Board - San Francisco Bay Region (RWQCB). The current monitoring schedule was outlined initially in a June 29, 1994 letter to Ms. Hugo with a modification to the sampling schedule documented in an October 24, 1994 letter to Ms. Hugo.

2.0 QUARTERLY STATUS REPORT

Soils from the excavation and relocation of an East Bay Municipal Utility District (EBMUD) sanitary sewer (referred to as the North Interceptor), as well as heavy equipment and construction materials, were stored on the Powell Street Plaza and Shellmound III sites during the quarter. The well casing of monitoring well MG-7 has been extended 36 inches (3.04 feet) above its previous reference elevation by a stove-pipe protected extension. Monitoring wells MW-18, MG-1, MG-2, MG-3, and MG-4 were covered by soil stockpiles or were inaccessible during sampling due to heavy equipment or materials blocking access to the wells. Monitoring well MW-10 was damaged by road excavation, and monitoring well PZ-1 was torn up and appeared to be damaged beyond repair. Monitoring wells MW-4, MW-5, MW-7, MW-15, and MW-16 were abandoned during the North Interceptor relocation activities in accordance with Alameda County Flood Control District - Zone 7 well destruction permit conditions. Locations of the monitoring wells are shown on Plate 1.

3.0 QUARTERLY GROUNDWATER SAMPLING

Quarterly groundwater sampling was conducted by Blaine Tech Services, Inc. (Blaine Tech) under PES' observation on November 29, 1995. Groundwater samples were collected from monitoring wells MW-1, MW-2, MW-11, MW-12, MW-19, and MG-7 in accordance with the monitoring well sampling schedule approved by ACDEH. Monitoring wells PZ-1, MG-2, and MG-4 were scheduled to be sampled, but were inaccessible as described above. Monitoring well identification and corresponding sample numbers are presented on Table 1.

Groundwater samples were collected from each well after removing approximately three well volumes of water using a stainless steel bailer or an electric submersible pump. During

purging, the discharge water was monitored for pH, temperature, electrical conductivity and turbidity. The samples were collected from the wells using a new disposable plastic (high-density polyethylene) bailer at each well and decanted into the appropriate laboratory containers. The sample containers were then labeled and immediately placed in a chilled, thermally-insulated cooler for delivery under chain-of-custody protocol to American Environmental Network (AEN), a State-certified laboratory in Pleasant Hill, California. AEN received the samples on November 29, 1995.

AEN analyzed the samples using EPA Test Method 8015 (modified) for total petroleum hydrocarbons quantified as gasoline (TPHg), diesel (TPHd), and motor oil (TPHmo) and using EPA Test Method 8020 for benzene, toluene, ethylbenzene, and total xylenes (BTEX). Laboratory chemical analyses results for dissolved hydrocarbon compounds in groundwater, including results from previous sampling rounds, are listed in Table 2.

The laboratory reports and chain-of-custody records are attached as Appendix A. Sampling methods and field parameter measurements are described in the Blaine Tech sampling report in Appendix B.

4.0 WATER-LEVEL AND PRODUCT THICKNESS MEASUREMENTS

Water levels and product thickness (where present) in the monitoring wells were measured on November 29, 1995 by PES prior to well purging and sampling. Measurements were recorded to the nearest 0.01 foot using an electronic, dual-interface sounding probe. Depth-to-water measurements were converted to water-level elevations referenced to mean sea level (MSL) and corrected for displacement by free product. To prevent cross-contamination between wells, the portion of the sounding probe submerged in the well was cleaned with an alconox/deionized water solution and double-rinsed with deionized water between well measurements. Water-level elevations and product thickness measurements are listed in Table 3 and illustrated on Plates 2 and 3, respectively.

5.0 SUMMARY OF RESULTS

This section presents a summary of groundwater chemistry and water-level elevation data collected during the November 29, 1995 sampling event.

5.1 Groundwater Chemistry

TPHd was detected in groundwater samples collected from wells MW-1, MW-2, MW-11, MW-12, MW-19, and MG-7. Concentrations of TPHd ranged from 0.2 parts per million (ppm) to 4.5 ppm. TPHg was detected in the groundwater sample collected from well MW-2 at a concentration of 0.1 ppm. TPHmo was detected in groundwater samples collected from wells MW-2 and MW-11 at a concentration of 0.4 ppm in both wells.

Benzene was detected in the groundwater sample collected from well MW-2 at a concentration of 0.001 ppm. Toluene, ethylbenzene, and total xylenes were not detected in any of the groundwater samples at or above their laboratory reporting limits.

5.2 Water-Level and Product Thickness Measurements

The November 29, 1995 water-level elevations at the Powell Street Plaza and Shellmound III properties ranged from 0.25 to 4.13 feet mean sea level (MSL). The November 29, 1995 water-level elevations at the Powell Street Plaza property ranged from 0.15 feet higher (MW-8) to 1.99 feet lower (MW-11) than water-level elevations measured on August 23, 1995. The November 29, 1995 water-level elevation for MG-7 on the Shellmound III property was 0.43 feet higher than the August 23, 1995 water-level elevations. The generally lower water-level elevations observed at the Powell Street Plaza and Shellmound III properties on November 29, 1995 correlate with the relatively dry fall season.

Well MW-8 continues to show a trend of uncharacteristically low water-level elevations with respect to surrounding wells. This may be due to its proximity to utility corridors with permeable backfill located within Shellmound Street. Well MW-11 shows an uncharacteristically low November 29, 1995 water-level elevation compared to its historical water-level elevations. The groundwater mound in the vicinity of Wells MW-13 and MW-14 still persists, but is slightly less pronounced in the November 29, 1995 water-level elevations compared to the August 23, 1995 water-level elevations. The primary direction of groundwater flow across the two sites is southwest toward Temescal Creek at an approximate gradient range of 0.005 to 0.011 feet per foot.

The presence of free product was more evident in November 1995 than in August 1995, which corresponds with the generally lower water-level elevations measured on the sites. Product was measured in Wells MW-13 and MW-14 with thicknesses of 0.61 and 0.18 feet, respectively.

6.0 QUALITY ASSURANCE/QUALITY CONTROL (QA/QC)

Chemical data obtained from water sample analyses were validated according to accuracy, precision, and completeness criteria. Three types of control samples: spikes, duplicates, and blanks, were used in the QA/QC program to evaluate the chemical data.

Data accuracy was assessed by evaluating results of analyses of a laboratory spike sample and a laboratory spike duplicate. The results of spike and spike duplicate analyses are presented in the laboratory report in Appendix A. The recoveries (the percentage difference between the spike concentration and the measured concentration) and differences (from duplicate analyses) were within project goals.

The evaluation procedure for blanks includes a qualitative review of the chemical analysis data reported by the laboratory. TPHg, TPHd, TPHmo and BTEX were not detected in the

internal blanks prepared by the laboratory. One field blank (Sample Number 95480000) was submitted to the laboratory for analysis. TPHg, TPHd, TPHmo and BTEX were not detected in the field blank.

Internal laboratory blank, spike and duplicate data were within the laboratory QA/QC limits. No petroleum hydrocarbons or hydrocarbon constituents were detected in the internal blanks. The data is therefore considered to be representative and acceptable.

TABLES

TABLE 1

Summary of Wells Sampled
November 29, 1995

Powell Street Plaza and Shellmound III Sites
Emeryville, California

Well ID	Sample Number	Status of Wells Not Sampled
MW-1	95480001	
MW-2	95480002	
MW-3	NS	Historical free-product.
MW-4	NS	Abandoned by permit.
MW-5	NS	Abandoned by permit.
MW-6	NS	Eliminated from sampling schedule.
MW-7	NS	Abandoned by permit.
MW-8	NS	Eliminated from sampling schedule.
MW-9	NS	Eliminated from sampling schedule.
MW-10	NS	Eliminated from sampling schedule.
MW-11	95480011	
MW-12	95480012	
MW-13	NS	Free-product present.
MW-14	NS	Free-product present.
MW-15	NS	Abandoned by permit.
MW-16	NS	Abandoned by permit.
MW-18	NS	Eliminated from sampling schedule.
MW-19	95480019	
MG-1	NS	Inaccessible.
MG-2	NS	Inaccessible.
MG-3	NS	Inaccessible.
MG-4	NS	Inaccessible.
MG-7	95480107	
PZ-1	NS	Eliminated from sampling schedule.
Field Blank	95480000	

Note:

NS: Not sampled

TABLE 2
Results of Chemical Analyses of Groundwater Samples
Powell Street Plaza and Shellmound III Sites
Emeryville, California

Well Number	Date Sampled	EPA Test Method	(concentrations expressed in parts per million) TPH as Gasoline	TPH as Diesel	TPH as Motor Oil	Benzene	Toluene	Ethyl-benzene	Total Xylenes	Comments
MW-1	3/14/88	8015	NT	<1	NT	NT	NT	NT	NT	
	3/25/91	8015/8020	<0.050	<0.050	NT	<0.0003	<0.0003	<0.0003	<0.0003	
	11/10/93	8260	<0.050	<0.050	NT	0.0013	0.0018	<0.0005	0.0020	
	2/23/94	8260	<0.050	<0.050	NT	<0.0005	<0.0005	<0.0005	<0.0005	
	6/2/94	8260	<0.050	<0.050	NT	<0.0005	<0.0005	<0.0005	<0.0005	
	11/29/94	8015/8020	<0.05	0.3	0.2	<0.0005	<0.0005	<0.0005	<0.002	
	3/3/95	8015/8020	<0.05	0.69	<0.2	<0.0005	<0.0005	<0.0005	<0.002	
	5/25/95	8015/8020	<0.05	0.4	0.3	<0.0005	<0.0005	<0.0005	<0.002	
	8/23/95	8015/8020	<0.05	0.5	0.6	<0.0005	<0.0005	<0.0005	<0.002	
	11/29/95	8015/8020	<0.05	0.2	<0.2	<0.0005	<0.0005	<0.0005	<0.002	
MW-2	3/14/88	8015	NT	0.05	NT	NT	NT	NT	NT	
	3/25/91	8015/8020	0.053	<0.050	NT	0.0006	<0.0003	<0.0003	<0.0003	
	11/10/93	8260	<0.050	<0.050	NT	<0.0005	<0.0005	<0.0005	<0.0005	
	2/23/94	8260	<0.050	<0.050	NT	<0.0005	<0.0005	<0.0005	<0.0005	
	6/2/94	8260	<0.050	<0.050	NT	<0.0005	<0.0005	<0.0005	<0.0005	
	8/30/94	8260	<0.050	0.200	NT	0.0006	<0.0005	<0.0005	<0.0005	
	11/29/94	8015/8020	0.07	3.9	0.9	0.0009	<0.0005	<0.0005	<0.002	
	3/3/95	8015/8020	0.08	3.9	0.2	0.0007	<0.0005	<0.0005	<0.002	
	5/25/95	8015/8020	0.05	2.4	0.2	0.0007	<0.0005	<0.0005	<0.002	
	8/23/95	8015/8020	0.06	4.1	0.8	0.0007	<0.0005	<0.0005	<0.002	
	11/29/95	8015/8020	0.1	4.5	0.4	0.001	<0.0005	<0.0005	<0.002	
MW-3	3/14/88	8015	NT	0.15	NT	NT	NT	NT	NT	
	3/25/91	NS	NS	NS	NT	NS	NS	NS	NS	Free product
	11/10/93	NS	NS	NS	NT	NS	NS	NS	NS	Free product (0.23 ft)
	2/23/94	8260	<0.050	11.000	NT	0.0007	<0.0005	<0.0005	<0.0005	
	6/2/94	8260	NS	NS	NS	NS	NS	NS	NS	Well cover jammed
	8/30/94	8260	<0.050	1.300	NT	0.0013	<0.0005	<0.0005	0.0006	
	11/29/94	NS	NS	NS	NS	NS	NS	NS	NS	
	3/3/95	NS	NS	NS	NS	NS	NS	NS	NS	

TABLE 2
Results of Chemical Analyses of Groundwater Samples
Powell Street Plaza and Shellmound III Sites
Emeryville, California

Well Number	Date Sampled	EPA Test Method	(concentrations expressed in parts per million) TPH as Gasoline	TPH as Diesel	TPH as Motor Oil	Benzene	Toluene	Ethyl-benzene	Total Xylenes	Comments
MW-3	5/25/95	NS	NS	NS	NS	NS	NS	NS	NS	
(cont.)	8/23/95	NS	NS	NS	NS	NS	NS	NS	NS	Free product (Trace: <0.01 ft)
	11/29/95	NS	NS	NS	NS	NS	NS	NS	NS	
MW-4	3/14/88	8015	NT	1.2	NT	NT	NT	NT	NT	
	3/25/91	8015/8020	1.300	2.500	NT	0.7100	0.0030	0.0020	0.0060	
	11/10/93	8260	0.800	34.000	NT	0.4400	0.0030	<0.0020	<0.0020	Free product (0.02 ft)
	2/23/94	8260	0.560	18.000	NT	0.4500	0.0025	<0.0005	0.0020	
	6/2/94	8260	<0.500	13.000	NT	0.760	<0.005	<0.005	<0.005	
	8/30/94	8260	1.400	<0.050	NT	0.470	<0.0005	<0.0005	<0.0005	
	11/29/94	8015/8020	3.5	14	1.5	0.500	0.004	0.0007	0.003	
	3/3/95	8015/8020	3.1	11	0.7	0.610	0.004	0.001	0.004	
	5/25/95	NS	NS	NS	NS	NS	NS	NS	NS	Well buried under soil stockpile
	8/23/95	NS	NS	NS	NS	NS	NS	NS	NS	Well abandoned
MW-5	3/14/88	8015	NT	<1	NT	NT	NT	NT	NT	
	11/10/93	8260	<0.050	6.800	NT	<0.0005	<0.0005	<0.0005	<0.0005	
	2/23/94	8260	<0.050	7.100	NT	<0.0005	<0.0005	<0.0005	<0.0005	
	6/2/94	8260	<0.500	8.100	NT	<0.005	<0.005	<0.005	<0.005	
	8/30/94	8260	<0.050	1.400	NT	<0.0005	<0.0005	<0.0005	<0.0005	0.0005 - 1,2-DCA
	11/29/94	8015/8020	2.1	4.3	1.1	0.0006	0.0006	<0.0005	<0.002	
	3/3/95	8015/8020	0.6	5.3	0.2	<0.0005	<0.0005	<0.0005	<0.002	
	5/25/95	8015/8020	0.06	5.2	0.8	<0.0005	<0.0005	<0.0005	<0.002	
	8/23/95	NS	NS	NS	NS	NS	NS	NS	NS	Well abandoned
MW-6	3/14/88	8015	NT	<0.05	NT	NT	NT	NT	NT	
	11/10/93	8260	<0.050	<0.050	NT	<0.0005	<0.0005	<0.0005	<0.0005	
	2/23/94	8260	<0.050	<0.050	NT	<0.0005	<0.0005	<0.0005	<0.0005	
	6/2/94	8260	<0.050	<0.050	NT	<0.0005	<0.0005	<0.0005	<0.0005	
	11/29/94	NS	NS	NS	NS	NS	NS	NS	NS	
	3/3/95	NS	NS	NS	NS	NS	NS	NS	NS	
	5/25/95	NS	NS	NS	NS	NS	NS	NS	NS	

TABLE 2
Results of Chemical Analyses of Groundwater Samples
Powell Street Plaza and Shellmound III Sites
Emeryville, California

Well Number	Date Sampled	EPA Test Method	(concentrations expressed in parts per million) TPH as Gasoline	TPH as Diesel	TPH as Motor Oil	Benzene	Toluene	Ethyl-benzene	Total Xylenes	Comments
MW-6	8/23/95	NS	NS	NS	NS	NS	NS	NS	NS	
cont	11/29/95	NS	NS	NS	NS	NS	NS	NS	NS	
MW-7	3/10/88	NS	NS	NS	NS	NS	NS	NS	NS	Free product (1.32 ft)
	11/10/93	NS	NS	NS	NS	NS	NS	NS	NS	Free product (0.22 ft)
	2/23/94	NS	NS	NS	NS	NS	NS	NS	NS	Free product (0.02 ft)
	6/2/94	NS	NS	NS	NS	NS	NS	NS	NS	Free product (0.01 ft)
	11/29/94	NS	NS	NS	NS	NS	NS	NS	NS	Free product (Trace: <0.01 ft)
	3/3/95	NS	NS	NS	NS	NS	NS	NS	NS	Free product (Trace: <0.01 ft)
	5/25/95	NS	NS	NS	NS	NS	NS	NS	NS	Well not accessible
	8/23/95	NS	NS	NS	NS	NS	NS	NS	NS	Well abandoned
MW-8	3/14/88	8015	NT	<0.05	NT	NT	NT	NT	NT	
	11/10/93	8260	<0.050	<0.050	NT	<0.0005	<0.0005	<0.0005	<0.0005	
	2/23/94	8260	<0.050	<0.050	NT	<0.0005	<0.0005	<0.0005	<0.0005	
	6/2/94	8260	<0.050	0.190	NT	<0.0005	<0.0005	<0.0005	<0.0005	
	9/6/94	8260	<0.050	<0.050	NT	<0.0005	<0.0005	<0.0005	<0.0005	
	11/29/94	NS	NS	NS	NS	NS	NS	NS	NS	
	3/3/95	NS	NS	NS	NS	NS	NS	NS	NS	
	5/25/95	NS	NS	NS	NS	NS	NS	NS	NS	
	8/23/95	NS	NS	NS	NS	NS	NS	NS	NS	
	11/29/95	NS	NS	NS	NS	NS	NS	NS	NS	
MW-9	3/14/88	8015	NT	<1	NT	NT	NT	NT	NT	
	11/10/93	8260	<0.050	<0.050	NT	<0.0005	<0.0005	<0.0005	<0.0005	
	2/23/94	8260	<0.050	<0.050	NT	<0.0005	<0.0005	<0.0005	<0.0005	
	6/2/94	8260	<0.050	<0.050	NT	<0.0005	<0.0005	<0.0005	<0.0005	
	11/29/94	NS	NS	NS	NS	NS	NS	NS	NS	
	3/3/95	NS	NS	NS	NS	NS	NS	NS	NS	
	5/25/95	NS	NS	NS	NS	NS	NS	NS	NS	
	8/23/95	NS	NS	NS	NS	NS	NS	NS	NS	
	11/29/95	NS	NS	NS	NS	NS	NS	NS	NS	

TABLE 2
Results of Chemical Analyses of Groundwater Samples
Powell Street Plaza and Shellmound III Sites
Emeryville, California

Well Number	Date Sampled	EPA Test Method	(concentrations expressed in parts per million) TPH as Gasoline	TPH as Diesel	TPH as Motor Oil	Benzene	Toluene	Ethyl-benzene	Total Xylenes	Comments
MW-10	3/14/88	8015	NT	<1.0	NT	NT	NT	NT	NT	
	11/10/93	8260	<0.050	<0.050	NT	<0.0005	<0.0005	<0.0005	<0.0005	
	2/23/94	8260	<0.050	<0.050	NT	<0.0005	<0.0005	<0.0005	<0.0005	
	6/2/94	8260	<0.050	<0.050	NT	<0.0005	<0.0005	<0.0005	<0.0005	
	11/29/94	NS	NS	NS	NS	NS	NS	NS	NS	
	3/3/95	NS	NS	NS	NS	NS	NS	NS	NS	
	5/25/95	NS	NS	NS	NS	NS	NS	NS	NS	
	8/23/95	NS	NS	NS	NS	NS	NS	NS	NS	
	11/29/95	NS	NS	NS	NS	NS	NS	NS	NS	
MW-11	3/14/88	NS	NS	NS	NS	NS	NS	NS	NS	Well was dry
	11/10/93	8260	<0.050	<0.050	NT	0.0008	<0.0005	<0.0005	<0.0005	
	2/23/94	8260	<0.050	<0.050	NT	0.0008	<0.0005	<0.0005	<0.0005	
	6/2/94	8260	<0.050	<0.050	NT	0.0021	<0.0005	<0.0005	<0.0005	
	8/30/94	8260	<0.050	<0.050	NT	0.0028	<0.0005	<0.0005	<0.0005	
	11/29/94	8015/8020	0.07	2.0	0.8	0.002	<0.0005	<0.0005	<0.002	
	3/3/95	8015/8020	0.06	3.7	0.2	0.005	<0.0005	<0.0005	<0.002	
	5/25/95	8015/8020	0.09	2.5	0.6	0.011	<0.0005	<0.0005	<0.002	
	8/23/95	8015/8020	<0.05	3.3	0.5	0.001	<0.0005	<0.0005	<0.002	
	11/29/95	8015/8020	<0.05	2.8	0.4	<0.0005	<0.0005	<0.0005	<0.002	
MW-12	3/14/88	8015	NT	0.05	NT	NT	NT	NT	NT	
	11/10/93	8260	<0.050	<0.050	NT	<0.0005	<0.0005	<0.0005	<0.0005	
	2/23/94	8260	<0.050	<0.050	NT	<0.0005	<0.0005	<0.0005	<0.0005	
	6/2/94	8260	<0.050	<0.050	NT	<0.0005	<0.0005	<0.0005	<0.0005	
	9/6/94	8260	<0.050	<0.050	NT	<0.0005	<0.0005	<0.0005	<0.0005	
	11/29/94	8015/8020	<0.05	0.3	<0.2	<0.0005	<0.0005	<0.0005	<0.002	
	3/3/95	8015/8020	<0.05	0.3	<0.2	<0.0005	<0.0005	<0.0005	<0.002	
	5/25/95	8015/8020	<0.05	0.66	0.4	<0.0005	<0.0005	<0.0005	<0.002	
	8/23/95	8015/8020	<0.05	0.6	0.2	<0.0005	<0.0005	<0.0005	<0.002	
	11/29/95	8015/8020	<0.05	0.4	<0.2	<0.0005	<0.0005	<0.0005	<0.002	

TABLE 2
Results of Chemical Analyses of Groundwater Samples
Powell Street Plaza and Shellmound III Sites
Emeryville, California

Well Number	Date Sampled	EPA Test Method	(concentrations expressed in parts per million) TPH as Gasoline	TPH as Diesel	TPH as Motor Oil	Benzene	Toluene	Ethyl-benzene	Total Xylenes	Comments
MW-13	3/14/88	8015/8020	NT	1.7	NT	<0.0005	<0.0005	<0.0005	<0.0005	
	11/10/93	NS	NS	NS	NS	NS	NS	NS	NS	Free product (1.06 ft)
	2/23/94	NS	NS	NS	NS	NS	NS	NS	NS	Free product (Trace: <0.01 ft)
	6/2/94	NS	NS	NS	NS	NS	NS	NS	NS	Free product (Trace: <0.01 ft)
	11/29/94	NS	NS	NS	NS	NS	NS	NS	NS	Free product (Trace: <0.01 ft)
	3/3/95	NS	NS	NS	NS	NS	NS	NS	NS	
	5/25/95	NS	NS	NS	NS	NS	NS	NS	NS	Free product (0.01 ft)
	8/23/95	NS	NS	NS	NS	NS	NS	NS	NS	Free product (0.27 ft)
	11/29/95	NS	NS	NS	NS	NS	NS	NS	NS	Free product (0.61 ft.)
MW-14	3/14/88	8015	NT	<1	NT	NT	NT	NT	NT	
	11/10/93	NS	NS	NS	NS	NS	NS	NS	NS	Free product (0.27 ft)
	2/23/94	NS	NS	NS	NS	NS	NS	NS	NS	Free product (Trace: <0.01 ft)
	6/2/94	NS	NS	NS	NS	NS	NS	NS	NS	Free product (Trace: <0.01 ft)
	11/29/94	NS	NS	NS	NS	NS	NS	NS	NS	Free product (Trace: <0.01 ft)
	3/3/95	NS	NS	NS	NS	NS	NS	NS	NS	Free product (Trace: <0.01 ft)
	5/25/95	NS	NS	NS	NS	NS	NS	NS	NS	
	8/23/95	NS	NS	NS	NS	NS	NS	NS	NS	
	11/29/95	NS	NS	NS	NS	NS	NS	NS	NS	Free product (0.18 ft)
MW-15	3/14/88	8015/8020	NT	1.8	NT	<0.0005	<0.0005	<0.0005	<0.0005	
	11/10/93	NS	NS	NS	NS	NS	NS	NS	NS	Free product (0.15 ft)
	2/23/94	NS	NS	NS	NS	NS	NS	NS	NS	Free product (Trace: <0.01 ft)
	6/2/94	NS	NS	NS	NS	NS	NS	NS	NS	Free product (Trace: <0.01 ft)
	11/29/94	NS	NS	NS	NS	NS	NS	NS	NS	Free product (Trace: <0.01 ft)
	3/3/95	NS	NS	NS	NS	NS	NS	NS	NS	Free product (Trace: <0.01 ft)
	5/25/95	NS	NS	NS	NS	NS	NS	NS	NS	Well not accessible
	8/23/95	NS	NS	NS	NS	NS	NS	NS	NS	Well abandoned
MW-16	3/14/88	8015	NT	<0.05	NT	NT	NT	NT	NT	
	4/21/89	8015	NT	<1.0	NT	0.0009	0.0026	0.0004	0.0041	
	3/25/91	8015/8020	<0.050	<0.050	NT	<0.0003	<0.0003	<0.0003	0.0003	

TABLE 2
Results of Chemical Analyses of Groundwater Samples
Powell Street Plaza and Shellmound III Sites
Emeryville, California

Well Number	Date Sampled	EPA Test Method	(concentrations expressed in parts per million) TPH as Gasoline	TPH as Diesel	TPH as Motor Oil	Benzene	Toluene	Ethyl-benzene	Total Xylenes	Comments
MW-16	5/20/92	8015/8020	<0.050	0.140	NT	<0.0003	<0.0003	<0.0003	<0.0003	Non-standard diesel pattern
cont	11/10/93	8260	<0.050	<0.050	NT	<0.0005	<0.0005	<0.0005	<0.0005	
	2/23/94	8260	<0.050	<0.050	NT	<0.0005	<0.0005	<0.0005	<0.0005	
	6/2/94	8260	<0.050	<0.050	NT	<0.0005	<0.0005	<0.0005	<0.0005	
	11/29/94	NS	NS	NS	NS	NS	NS	NS	NS	
	3/3/95	8015/8020	<0.05	0.5	<0.2	<0.0005	<0.0005	<0.0005	<0.002	
	5/25/95	NS	NS	NS	NS	NS	NS	NS	NS	
	8/23/95	NS	NS	NS	NS	NS	NS	NS	NS	Well abandoned
MW-18	3/14/88	8015	NT	<0.05	NT	NT	NT	NT	NT	
	5/20/92	8015/8020	<0.050	<0.050	NT	<0.0003	<0.0003	<0.0003	<0.0003	
	11/10/93	8260	<0.050	<0.050	NT	<0.0005	<0.0005	<0.0005	<0.0005	
	2/23/94	NS	NS	NS	NS	NS	NS	NS	NS	Well area flooded
	6/2/94	8260	<0.050	<0.050	NT	<0.0005	<0.0005	<0.0005	<0.0005	
	11/29/94	NS	NS	NS	NS	NS	NS	NS	NS	Well area flooded, almost under water
	3/3/95	NS	NS	NS	NS	NS	NS	NS	NS	Well area flooded
	5/25/95	NS	NS	NS	NS	NS	NS	NS	NS	Well buried under soil stockpile
	8/23/95	NS	NS	NS	NS	NS	NS	NS	NS	
	11/29/95	NS	NS	NS	NS	NS	NS	NS	NS	
MW-19	10/6/94	8015/8020	<0.05	<0.05	0.4	<0.0005	<0.0005	<0.0005	<0.002	
	10/31/94	8015/8020	<0.05	0.2	<0.2	<0.0005	<0.0005	<0.0005	<0.002	
	11/29/94	8015/8020	0.07	<0.05	0.5	0.002	0.005	0.0009	0.005	
	3/3/95	8015/8020	<0.05	0.3	<0.2	<0.0005	<0.0005	<0.0005	<0.002	
	5/25/95	8015/8020	<0.05	0.4	0.4	<0.0005	<0.0005	<0.0005	<0.002	
	8/23/95	8015/8020	<0.05	<0.05	0.5	<0.0005	<0.0005	<0.0005	<0.002	
	11/29/95	8015/8020	<0.05	0.2	<0.2	<0.0005	<0.0005	<0.0005	<0.002	
MG-1	4/21/89	NS	NS	NS	NS	NS	NS	NS	NS	Free product
	3/25/91	NS	NS	NS	NS	NS	NS	NS	NS	Free product
	5/21/92	NS	NS	NS	NS	NS	NS	NS	NS	Free product (0.03 ft)
	11/10/93	NS	NS	NS	NS	NS	NS	NS	NS	Free product (0.36 ft)

TABLE 2
Results of Chemical Analyses of Groundwater Samples
Powell Street Plaza and Shellmound III Sites
Emeryville, California

Well Number	Date Sampled	EPA Test Method	(concentrations expressed in parts per million) TPH as Gasoline	TPH as Diesel	TPH as Motor Oil	Benzene	Toluene	Ethyl-benzene	Total Xylenes	Comments
MG-1	2/23/94	NS	NS	NS	NS	NS	NS	NS	NS	Free product (Trace: <0.01 ft)
cont	6/2/94	NS	NS	NS	NS	NS	NS	NS	NS	Free product (0.09 ft)
	11/29/94	NS	NS	NS	NS	NS	NS	NS	NS	Free product (Trace: <0.01 ft)
	3/3/95	NS	NS	NS	NS	NS	NS	NS	NS	Free product (Trace: <0.01 ft)
	5/25/95	NS	NS	NS	NS	NS	NS	NS	NS	Well buried under soil stockpile
	8/23/95	NS	NS	NS	NS	NS	NS	NS	NS	Free product (0.49 ft)
	11/29/95	NS	NS	NS	NS	NS	NS	NS	NS	
MG-2	4/21/89	8015	NT	<1.0	NT	0.09	0.0027	<0.0003	0.0017	
	3/25/91	8015/8020	<0.050	<0.050	NT	0.0010	<0.0003	<0.0003	<0.0003	
	5/21/92	8015	0.210	1.400	NT	0.0820	0.0018	0.0006	0.0014	
	11/10/93	8260	0.050	0.540	NT	0.0160	0.0009	<0.0005	<0.0005	
	2/23/94	8260	<0.050	3.300	NT	0.0033	<0.0005	<0.0005	<0.0005	
	6/2/94	8260	0.490	<0.050	NT	0.016	0.0009	<0.0005	<0.0005	
	8/30/94	8260	<0.050	0.875	NT	0.0078	0.0006	<0.0005	0.0006	
	11/29/94	8015/8020	0.3	3.2	0.9	0.015	0.001	<0.0005	<0.002	
	3/3/95	8015/8020	0.8	3.1	0.7	0.002	<0.0005	<0.0005	<0.002	
	5/25/95	8015/8020	0.8	3.9	0.4	0.098	0.003	<0.0005	<0.002	
	8/23/95	NS	NS	NS	NS	NS	NS	NS	NS	Well covered by equipment
	11/29/95	NS	NS	NS	NS	NS	NS	NS	NS	
MG-3	4/21/89	8015	NT	<1.0	NT	0.1	0.0023	<0.0003	0.0089	
	3/25/91	8015/8020	0.610	2.600	NT	0.0750	0.0008	0.0004	0.0020	
	5/21/92	NS	NS	NS	NS	NS	NS	NS	NS	Free product (0.85 ft)
	11/10/93	NS	NS	NS	NS	NS	NS	NS	NS	Free product (0.47 ft)
	2/23/94	8260	NS	NS	NS	NS	NS	NS	NS	Free product (0.02 ft)
	6/2/94	8260	NS	NS	NS	NS	NS	NS	NS	Free product (0.08 ft)
	11/29/94	NS	NS	NS	NS	NS	NS	NS	NS	Free product (Trace: <0.01 ft)
	3/3/95	NS	NS	NS	NS	NS	NS	NS	NS	Free product (Trace: <0.01 ft)
	5/25/95	8015/8020	12	130	<10	0.014	0.0007	0.001	0.003	
	8/23/95	NS	NS	NS	NS	NS	NS	NS	NS	
	11/29/95	NS	NS	NS	NS	NS	NS	NS	NS	

TABLE 2
Results of Chemical Analyses of Groundwater Samples
Powell Street Plaza and Shellmound III Sites
Emeryville, California

Well Number	Date Sampled	EPA Test Method	(concentrations expressed in parts per million) TPH as Gasoline	TPH as Diesel	TPH as Motor Oil	Benzene	Toluene	Ethyl-benzene	Total Xylenes	Comments
MG-4	4/21/89	8015	NT	<1.0	NT	0.0003	<0.0003	<0.0003	0.0013	
	3/25/91	8015/8020	<0.050	<0.050	NT	0.0004	<0.0003	<0.0003	0.0005	
	5/20/92	8015/8020	<0.050	<0.050	NT	<0.0003	<0.0003	<0.0003	<0.0003	
	11/10/93	8260	<0.050	<0.050	NT	<0.0005	<0.0005	<0.0005	<0.0005	
	2/23/94	8260	<0.050	<0.050	NT	<0.0005	<0.0005	<0.0005	<0.0005	
	6/2/94	8260	<0.050	<0.050	NT	<0.0005	<0.0005	<0.0005	<0.0005	
	9/6/94	8260	<0.050	<0.050	NT	<0.0005	<0.0005	<0.0005	<0.0005	0.0007 - 1,2-DCA
	11/29/94	8015/8020	<0.05	4.8	0.6	<0.0005	<0.0005	<0.0005	<0.002	
	3/3/95	8015/8020	0.05	9.9	0.9	<0.0005	<0.0005	<0.0005	<0.002	
	5/25/95	8015/8020	<0.05	10	1	0.0007	<0.0005	<0.0005	<0.002	
	8/23/95	NS	NS	NS	NS	NS	NS	NS	NS	Well buried under soil stockpile
	11/29/95	NS	NS	NS	NS	NS	NS	NS	NS	
MG-7	3/25/91	8015/8020	<0.050	<0.050	NT	0.0005	<0.0003	<0.0003	<0.0003	
	5/20/92	8015/8020	<0.050	0.060	NT	<0.0003	<0.0003	<0.0003	<0.0003	Non-standard diesel pattern
	11/10/93	8260	<0.050	<0.050	NT	<0.0005	<0.0005	<0.0005	<0.0005	
	2/23/94	8260	<0.050	<0.050	NT	<0.0005	<0.0005	<0.0005	<0.0005	
	6/2/94	8260	<0.050	<0.050	NT	<0.0005	<0.0005	<0.0005	<0.0005	
	8/30/94	8260	<0.050	<0.050	NT	<0.0005	<0.0005	<0.0005	<0.0005	0.0007 - 1,2-DCA
	11/29/94	8015/8020	<0.05	2.6	0.4	<0.0005	<0.0005	<0.0005	<0.002	
	3/3/95	NS	NS	NS	NS	NS	NS	NS	NS	Well buried under soil stockpile
	5/25/95	8015/8020	<0.05	1.7	0.4	0.0007	<0.0005	<0.0005	<0.002	
	8/23/95	8015/8020	0.1	2.8	<0.2	0.0008	<0.0005	<0.0005	<0.002	
	11/29/95	8015/8020	*<0.05*	*0.97*	*<0.2*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.002*	New casing.
PZ-1	3/25/91	8015/8020	0.320	0.340	NT	0.0004	<0.0003	<0.0003	0.0010	
	5/21/92	8015/8020	0.120	0.600	NT	0.0018	0.0003	0.0003	0.0012	
	11/10/93	8260	<0.050	<0.050	NT	0.0015	<0.0005	<0.0005	<0.0005	0.450 - TPH as light petroleum distillate
	2/23/94	8260	<0.050	<0.050	NT	0.0009	<0.0005	<0.0005	<0.0005	0.200 - TPH as stoddard solvent
	6/2/94	8260	<0.050	<0.050	NT	0.0016	<0.0005	<0.0005	<0.0005	2.400 - TPH as light petroleum distillate
	11/29/94	8015/8020	0.2	1.4	1.7	0.0007	<0.0005	<0.0005	<0.002	

TABLE 2
Results of Chemical Analyses of Groundwater Samples
Powell Street Plaza and Shellmound III Sites
Emeryville, California

Well Number	Date Sampled	EPA Test Method	(concentrations expressed in parts per million) TPH as Gasoline	TPH as Diesel	TPH as Motor Oil	Benzene	Toluene	Ethyl-benzene	Total Xylenes	Comments
PZ-1	3/3/95	8015/8020	2.0	3.7	0.8	0.0006	<0.0005	<0.0005	<0.002	
cont	5/25/95	8015/8020	0.6	3.7	0.6	0.002	<0.0005	<0.0005	<0.002	
	8/23/95	8015/8020	0.2	5.4	1.5	0.0007	<0.0005	<0.0005	<0.002	
	11/29/95	NS	NS	NS	NS	NS	NS	NS	NS	

Notes:
NT = Not tested for indicated test parameter
NS = Not sampled for indicated test parameter
TPH = Total petroleum hydrocarbons
1,2-DCA = 1,2-Dichloroethane

TABLE 3

Water-Level Elevations and Product Thickness Measurements

Powell Street Plaza and Shellmound III Sites
Emeryville, California

Well Number	Measurement Date	Top of Casing (feet MSL)	Depth to Product (feet)	Depth to Water (feet)	Product Thickness (feet)	Water-Level Elevation (feet MSL)	Corrected W-L Elevation (feet MSL)
MW-1	11/29/95	8.72	NP	5.96		2.76	
MW-2	11/29/95	9.83	NP	7.39		2.44	
MW-3	11/29/95	10.86	NP	8.78		2.08	
MW-4	---	---	---	---	---	---	---
MW-5	---	---	---	---	---	---	---
MW-6	11/29/95	11.42	NP	8.13		3.29	
MW-7	---	---	---	---	---	---	---
MW-8	11/29/95	7.48	NP	5.61		1.87	
MW-9	11/29/95	7.50	NP	3.74		3.76	
MW-10	11/29/95	7.38	NM	NM		NM	
MW-11	11/29/95	11.89	NP	11.07		0.82	
MW-12	11/29/95	9.42	NP	6.99		2.43	
MW-13	11/29/95	10.83	6.61	7.22	0.61	3.61	4.13
MW-14	11/29/95	11.74	7.64	7.82	0.18	3.92	4.07
MW-15	---	---	---	---	---	---	---
MW-16	---	---	---	---	---	---	---
MW-18	11/29/95	6.21	NM	NM		NM	
MW-19	11/29/95	9.94	NP	7.16		2.78	
MG-1	11/29/95	11.82	NM	NM		NM	
MG-2	11/29/95	10.83	NM	NM		NM	
MG-3	11/29/95	9.76	NM	NM		NM	
MG-4	11/29/95	7.38	NM	NM		NM	
MG-7	11/29/95	13.10	NP	12.85		0.25	
PZ-1	11/29/95	7.99	NM	NM		NM	

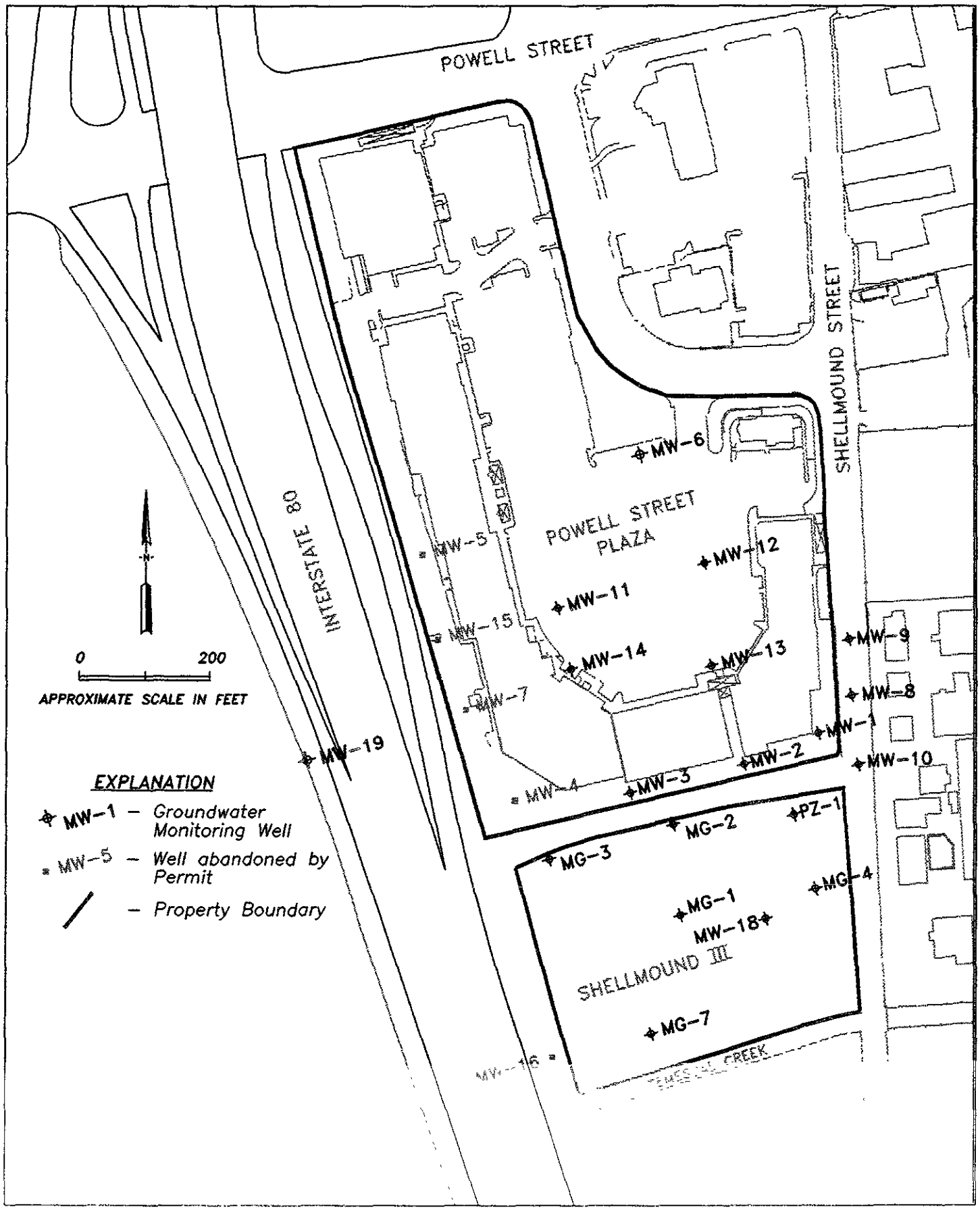
Notes:

Revised top of casing elevations based on December 27, 1994 and January 4, 1995 Kier & Wright survey.
NP = No free product observed
Trace = Slight residue on interface probe or other indication of free-product. Product thickness is less than 0.01 foot.
NM = Not measured
W-L = Water-Level
Corrected Water-Level Elevations were calculated as follows:

Water-Level Elevation = Top of Casing - Depth to Water + 0.85 x Product Thickness

Shaded wells have been abandoned.

ILLUSTRATIONS

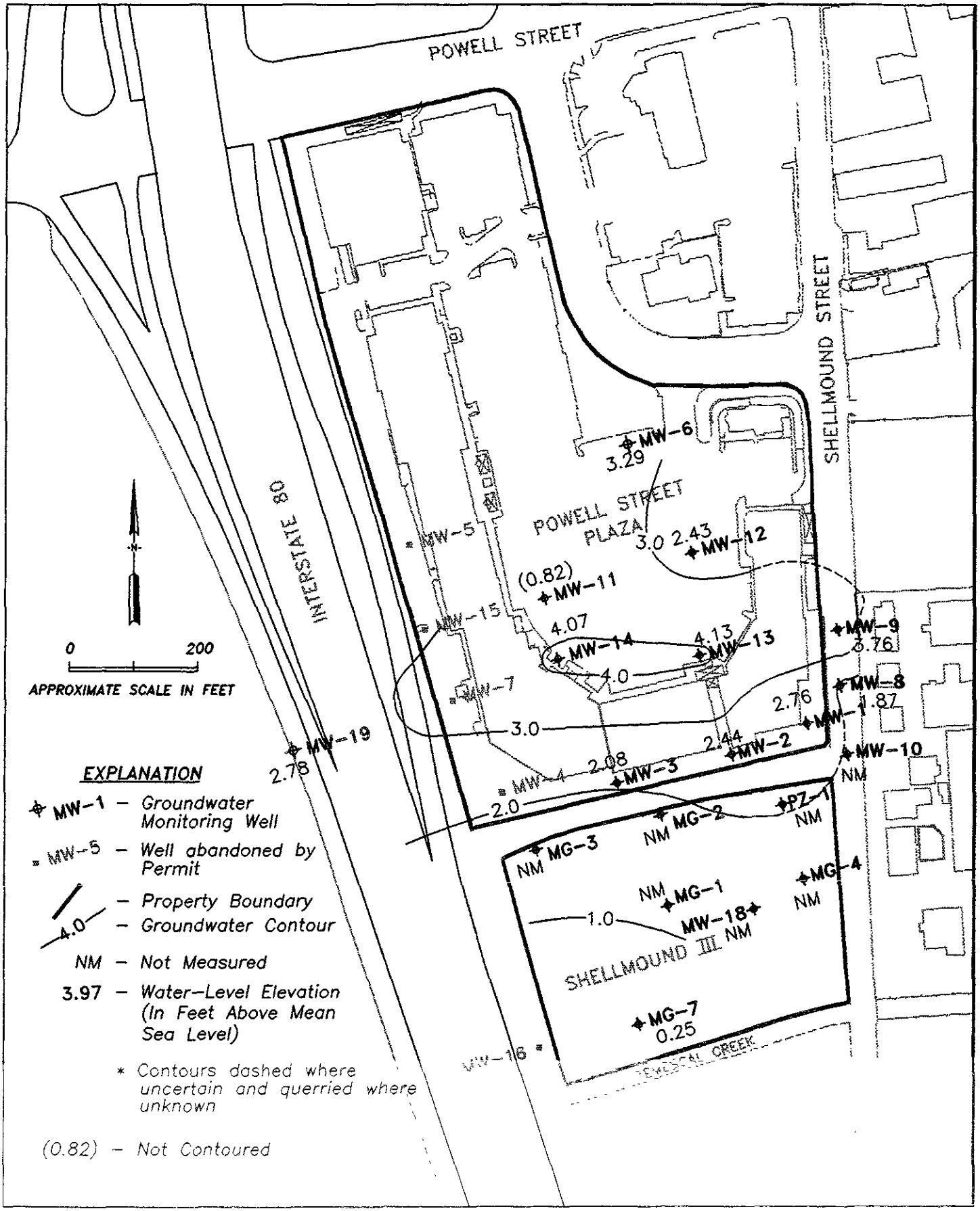


PES Environmental, Inc.
Engineering & Environmental Services

Site Plan
Powell Street Plaza and
Shellmound III Sites
Emeryville, California

PLATE
1

241.0102.005	020050_3	4/96
JOB NUMBER	DWG NUMBER	DATE

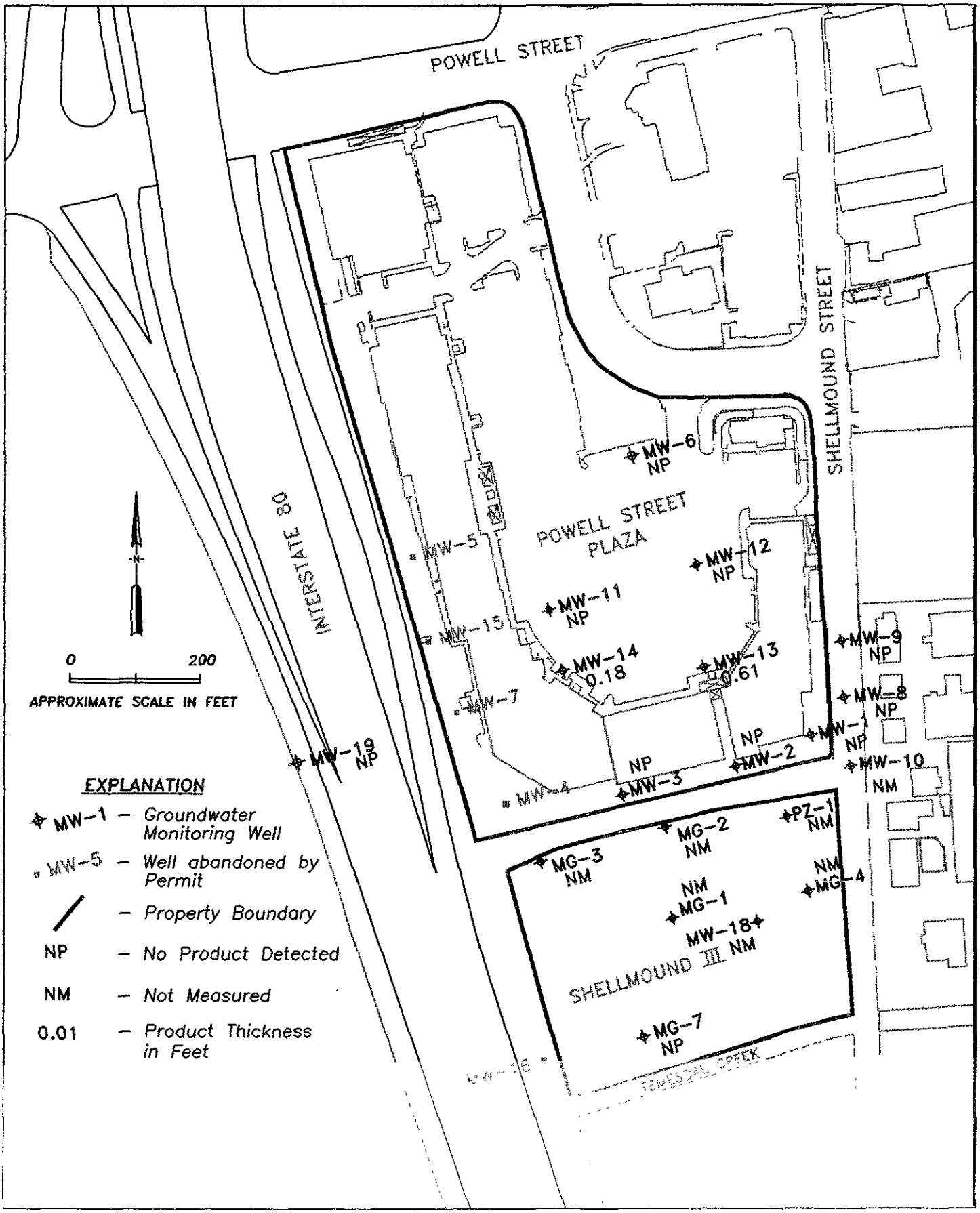


PES Environmental, Inc.
Engineering & Environmental Services

Water-Level Elevations on November 29, 1995
Powell Street Plaza and
Shellmound III Sites
Emeryville, California

PLATE
2

241.0102.005	020050_3	4/96
JOB NUMBER	DWG NUMBER	DATE



PES Environmental, Inc.
Engineering & Environmental Services

Free-Phase Product Thickness on Nov. 29, 1995
Powell Street Plaza and
Shellmound III Sites
Emeryville, California

PLATE 3

241.0102.005	020050_3	4/96
JOB NUMBER	DWG NUMBER	DATE

APPENDIX A

LABORATORY REPORT SHEETS
AND
CHAIN OF CUSTODY RECORDS
GROUNDWATER SAMPLES

American Environmental Network

Certificate of Analysis

DOHS Certification: 1172 AIHA Accreditation: 11134

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

ATTN: JOHN SKALBECK
CLIENT PROJ. ID: 241.0102.005
CLIENT PROJ. NAME: POWELL ST.
C.O.C. NUMBER: 951129-K1

REPORT DATE: 12/21/95

DATE(S) SAMPLED: 11/29/95

DATE RECEIVED: 11/29/95

AEN WORK ORDER: 9511467

PROJECT SUMMARY:

On November 29, 1995, this laboratory received 7 water sample(s).

Client requested sample(s) be analyzed for organic 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

PES ENVIRONMENTAL, INC.

SAMPLE ID: 95480001
AEN LAB NO: 9511467-01
AEN WORK ORDER: 9511467
CLIENT PROJ. ID: 241.0102.005

DATE SAMPLED: 11/29/95
DATE RECEIVED: 11/29/95
REPORT DATE: 12/21/95

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
BTEX & Gasoline HCs	EPA 8020				
Benzene	71-43-2	ND	0.5	ug/L	12/05/95
Toluene	108-88-3	ND	0.5	ug/L	12/05/95
Ethylbenzene	100-41-4	ND	0.5	ug/L	12/05/95
Xylenes, Total	1330-20-7	ND	2	ug/L	12/05/95
Purgeable HCs as Gasoline	5030/GCFID	ND	0.05	mg/L	12/05/95
#Extraction for TPH	EPA 3510	-		Extrn Date	12/12/95
TPH as Diesel	GC-FID	0.2 *	0.05	mg/L	12/15/95
TPH as Oil	GC-FID	ND	0.2	mg/L	12/15/95

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

PES ENVIRONMENTAL, INC.

SAMPLE ID: 95480002
AEN LAB NO: 9511467-02
AEN WORK ORDER: 9511467
CLIENT PROJ. ID: 241.0102.005

DATE SAMPLED: 11/29/95
DATE RECEIVED: 11/29/95
REPORT DATE: 12/21/95

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
BTEX & Gasoline HCs	**EPA 8020**				
Benzene	71-43-2	1 *	0.5	ug/L	12/05/95
Toluene	108-88-3	ND	0.5	ug/L	12/05/95
Ethylbenzene	100-41-4	ND	0.5	ug/L	12/05/95
Xylenes, Total	1330-20-7	ND	2	ug/L	12/05/95
Purgeable HCs as Gasoline	5030/GCFID	0.1 *	0.05	mg/L	12/05/95
#Extraction for TPH	**EPA 3510**	-		Extrn Date	12/07/95
TPH as Diesel	**GC-FID**	4.5 *	0.05	mg/L	12/11/95
TPH as Oil	**GC-FID**	0.4 *	0.2	mg/L	12/11/95

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

PES ENVIRONMENTAL, INC.

SAMPLE ID: 95480011
AEN LAB NO: 9511467-03
AEN WORK ORDER: 9511467
CLIENT PROJ. ID: 241.0102.005

DATE SAMPLED: 11/29/95
DATE RECEIVED: 11/29/95
REPORT DATE: 12/21/95

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
BTEX & Gasoline HCs	EPA 8020				
Benzene	71-43-2	ND	0.5	ug/L	12/05/95
Toluene	108-88-3	ND	0.5	ug/L	12/05/95
Ethylbenzene	100-41-4	ND	0.5	ug/L	12/05/95
Xylenes, Total	1330-20-7	ND	2	ug/L	12/05/95
Purgeable HCs as Gasoline	5030/GCFID	ND	0.05	mg/L	12/05/95
#Extraction for TPH	EPA 3510	-		Extrn Date	12/07/95
TPH as Diesel	GC-FID	2.8 *	0.05	mg/L	12/11/95
TPH as Oil	GC-FID	0.4 *	0.2	mg/L	12/11/95

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

PES ENVIRONMENTAL, INC.

SAMPLE ID: 95480012
AEN LAB NO: 9511467-04
AEN WORK ORDER: 9511467
CLIENT PROJ. ID: 241.0102.005

DATE SAMPLED: 11/29/95
DATE RECEIVED: 11/29/95
REPORT DATE: 12/21/95

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
BTEX & Gasoline HCs	EPA 8020				
Benzene	71-43-2	ND	0.5	ug/L	12/05/95
Toluene	108-88-3	ND	0.5	ug/L	12/05/95
Ethylbenzene	100-41-4	ND	0.5	ug/L	12/05/95
Xylenes, Total	1330-20-7	ND	2	ug/L	12/05/95
Purgeable HCs as Gasoline	5030/GCFID	ND	0.05	mg/L	12/05/95
#Extraction for TPH	EPA 3510	-		Extrn Date	12/07/95
TPH as Diesel	GC-FID	0.4 *	0.05	mg/L	12/11/95
TPH as Oil	GC-FID	ND	0.2	mg/L	12/11/95

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

PES ENVIRONMENTAL, INC.

SAMPLE ID: 95480019
AEN LAB NO: 9511467-05
AEN WORK ORDER: 9511467
CLIENT PROJ. ID: 241.0102.005

DATE SAMPLED: 11/29/95
DATE RECEIVED: 11/29/95
REPORT DATE: 12/21/95

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
BTEX & Gasoline HCs	**EPA 8020**				
Benzene	71-43-2	ND	0.5	ug/L	12/05/95
Toluene	108-88-3	ND	0.5	ug/L	12/05/95
Ethylbenzene	100-41-4	ND	0.5	ug/L	12/05/95
Xylenes, Total	1330-20-7	ND	2	ug/L	12/05/95
Purgeable HCs as Gasoline	5030/GCFID	ND	0.05	mg/L	12/05/95
#Extraction for TPH	**EPA 3510**	-		Extrn Date	12/09/95
TPH as Diesel	**GC-FID**	0.2 *	0.05	mg/L	12/11/95
TPH as Oil	**GC-FID**	ND	0.2	mg/L	12/11/95

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

PES ENVIRONMENTAL, INC.

SAMPLE ID: 95480107
AEN LAB NO: 9511467-06
AEN WORK ORDER: 9511467
CLIENT PROJ. ID: 241.0102.005

DATE SAMPLED: 11/29/95
DATE RECEIVED: 11/29/95
REPORT DATE: 12/21/95

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
BTEX & Gasoline HCs	EPA 8020				
Benzene	71-43-2	ND	0.5	ug/L	12/05/95
Toluene	108-88-3	ND	0.5	ug/L	12/05/95
Ethylbenzene	100-41-4	ND	0.5	ug/L	12/05/95
Xylenes, Total	1330-20-7	ND	2	ug/L	12/05/95
Purgeable HCs as Gasoline	5030/GCFID	ND	0.05	mg/L	12/05/95
#Extraction for TPH	EPA 3510	-		Extrn Date	12/09/95
TPH as Diesel	GC-FID	0.97 *	0.05	mg/L	12/11/95
TPH as Oil	GC-FID	ND	0.2	mg/L	12/11/95

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

PES ENVIRONMENTAL, INC.

SAMPLE ID: 95480000
AEN LAB NO: 9511467-07
AEN WORK ORDER: 9511467
CLIENT PROJ. ID: 241.0102.005

DATE SAMPLED: 11/29/95
DATE RECEIVED: 11/29/95
REPORT DATE: 12/21/95

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
BTEX & Gasoline HCs	EPA 8020				
Benzene	71-43-2	ND	0.5	ug/L	12/05/95
Toluene	108-88-3	ND	0.5	ug/L	12/05/95
Ethylbenzene	100-41-4	ND	0.5	ug/L	12/05/95
Xylenes, Total	1330-20-7	ND	2	ug/L	12/05/95
Purgeable HCs as Gasoline	5030/GCFID	ND	0.05	mg/L	12/05/95
#Extraction for TPH	EPA 3510	-		Extrn Date	12/09/95
TPH as Diesel	GC-FID	ND	0.05	mg/L	12/11/95
TPH as Oil	GC-FID	ND	0.2	mg/L	12/11/95

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

AEN (CALIFORNIA)
QUALITY CONTROL REPORT

AEN JOB NUMBER: 9511467

CLIENT PROJECT ID: 241.0102.005

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: 9511467
DATE EXTRACTED: 12/07/95;12/09/95;12/12/95
INSTRUMENT: C
MATRIX: WATER

Surrogate Standard Recovery Summary

Date Analyzed	Client Id.	Lab Id.	Percent Recovery n-Pentacosane
12/15/95	95480001	01	92
12/11/95	95480002	02	95
12/11/95	95480011	03	93
12/11/95	95480012	04	104
12/11/95	95480019	05	96
12/11/95	95480107	06	95
12/11/95	95480000	07	98
QC Limits:			59-118

DATE EXTRACTED: 12/07/95
DATE ANALYZED: 12/09/95
SAMPLE SPIKED: DI WATER
INSTRUMENT: C

Method Spike Recovery Summary

Analyte	Spike Added (mg/L)	Average Percent Recovery	RPD	QC Limits Percent Recovery	QC Limits RPD
Diesel	2.03	79	4	58-107	15

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

QUALITY CONTROL DATA

METHOD: EPA 8020, 5030 GCFID

AEN JOB NO: 9511467
INSTRUMENT: H
MATRIX: WATER

Surrogate Standard Recovery Summary

Date Analyzed	Client Id.	Lab Id.	Percent Recovery Fluorobenzene
12/05/95	95480001	01	98
12/05/95	95480002	02	96
12/05/95	95480011	03	99
12/05/95	95480012	04	97
12/05/95	95480019	05	97
12/05/95	95480107	06	98
12/05/95	95480000	07	97
QC Limits:			70-130

DATE ANALYZED: 12/05/95
SAMPLE SPIKED: 9511467-07
INSTRUMENT: H

Matrix Spike Recovery Summary

Analyte	Spike Added (ug/L)	Average Percent Recovery	RPD	QC Limits Percent Recovery	QC Limits RPD
Benzene	46.4	93	2	85-109	17
Toluene	109	98	4	87-111	16
Hydrocarbons as Gasoline	1000	114	4	66-117	19

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

*** END OF REPORT ***

BLAINE TECH SERVICES INC

985 TIMOTHY DRIVE
SAN JOSE, CA 95133
(408) 995-5535
FAX (408) 293-8773

CHAIN OF CUSTODY 95129-KI

CLIENT PES

SITE Powell St. Plaza
Emeryville

C = COMPOSITE ALL CONTAINERS

CONDUCT ANALYSIS TO DETECT

LAB HEN DHS #

ALL ANALYSES MUST MEET SPECIFICATIONS AND DETECTION LIMITS SET BY CALIFORNIA DHS AND

☐ EPA ☐ RWQCB REGION ____
☐ LIA
☐ OTHER

SPECIAL INSTRUCTIONS
MW1(9548001) to be Analyzed Only IF MW2(9548002) has a "hit" John Skalbick 241.0102.005

SAMPLE I.D.		MATRIX S = SOIL W = H2O	CONTAINERS TOTAL		TPH Gas, BTEX	TPH Diesel	TPH Motor Oil		ADD'L INFORMATION	STATUS	CONDITION	LAB SAMPLE #
95480001	1315	W	5	01 A-E	X	X	X		Hold pending 02	/ off hold 12/11		
95480002	930			02 A-E	X	X	X					
95480011	1150			03 A-E	X	X	X		**1/3 liters obtained for Simple			
95480012	1220			04 A-E	X	X	X					
95480019	1040			05 A-E	X	X	X					
95480107	1125			06 A-E	X	X	X					
95480000	1330	↓	↓	07 A-E	X	X	X					

SAMPLING COMPLETED DATE 11/28/95 TIME

SAMPLING PERFORMED BY

RESULTS NEEDED NO LATER THAN

RELEASED BY	DATE	TIME	RECEIVED BY	DATE	TIME
	11/29/95			11-29-95	2:10pm
	11/29/95	2:25		11-27-95	14:25
	11/29/95	18:35		11-29-95	1935

SHIPPED VIA

DATE SENT

TIME SENT

COOLER #

APPENDIX B

GROUNDWATER SAMPLING REPORT

BLAINE TECH SERVICES, INC.

DEPTH TO WATER AND DEPTH TO FREE PRODUCT FIELD DATA SHEET

PES ENVIRONMENTAL, INC.

BLAINE
TECH SERVICES INC.

985 TIMOTHY DRIVE
SAN JOSE, CA 95133
(408) 995-5535
FAX (408) 293-8773

December 13, 1995

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

Attention: Bryan Smith

SITE:
Shellmound 3
Powell Street Plaza
Shellmound & Christie
Emeryville, California

DATE:
November 29, 1995

Water Level Report 951129-K-1

Personnel from our office were present at the site on Wednesday, November 29, 1995 to obtain water levels and conduct a sheen and odor check. Please note that we are reporting only the water levels, not elevations.

Well designation	Well diameter	Depth to surface	Well depth	Sheen/Odor	Survey to: Top of Casing or Top of Box
MG-7	2"	12.85'	17.42'	NONE	TOC
MW-1	4"	5.96'	13.57'	NONE	TOC
MW-2	4"	7.39'	14.07'	NONE	TOC
MW-3	4"	8.78'	12.72'	NONE	TOC
MW-6	2"	8.13'	14.07'	NONE	TOC
MW-8	2"	5.61'	11.98'	NONE	TOC
MW-9	2"	3.74'	12.12'	NONE	TOC

Well designation	Well diameter	Depth to surface	Well depth	Sheen/Odor	Survey to: Top of Casing or Top of Box
MW-11	2"	11.07'	12.65'	NONE	TOC
MW-12	2"	6.99'	11.45'	NONE	TOC
MW-19	2"	7.16'	14.66'	NONE	TOC

Richard C. Blaine

RCB/lp

BLAINE
TECH SERVICES INC.

985 TIMOTHY DRIVE
SAN JOSE, CA 9513
(408) 995-553
FAX (408) 293-877

December 11, 1995

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

ATTN: Bryan Smith

Site:
Shellmound 3
Powell Street Plaza
Shellmound & Christie
Emeryville, California

Date:
November 29, 1995

GROUNDWATER SAMPLING REPORT 951129-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 electric submersible pumps and bailers.

Samples were collected using bailers.

Electric Submersible Pumps: Electric submersible pumps are appropriate for the high volume evacuation of wells of any depth provided the well diameter is large enough to admit the pump. Four inch and three inch diameter wells will readily accept electric submersible pumps, while two inch wells do not. In operation, the pump is lowered into the well with a pipe train above it. A checkvalve immediately above the pump and below the first section of pipe prevents water that has entered the pipe from flowing back into the well. Electricity is provided to the pump via an electrical cable and the action of the pump is to push water up out of the well.

Electric submersible pumps are often used as well evacuation devices, which are then supplanted with a more specialized sample collection device (such as a bailer) at the time of sampling. An alternative is to use the pump for both evacuation and sampling. When a bailer is used to collect the sample, interpretation of results by the consultant should allow for variations attributable to near surface contamination entering the bailer. When the electric submersible is, itself, used for sample collection it should be operated with the output restricted to a point where the loss of volatiles becomes indistinguishable from the level obtained with true sampling pumps. It should be noted that when the pump is used for both evacuation and sample collection that it is possible to perform these operations as an uninterrupted continuum. This contrasts with the variations in elapsed time between evacuation and sample collection that occur when field personnel cease one mode of operation and must bring other apparatus into use.

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/lp

attachments: table of well monitoring data
chain of custody

BLAINE TECH SERVICES INC

985 TIMOTHY DRIVE
SAN JOSE, CA 95133
(408) 995-5535
FAX (408) 293-8773

CHAIN OF CUSTODY 951129-1K1

CLIENT PES

SITE Powell St Plaza
Emeryville

CONDUCT ANALYSIS TO DETECT

LAB AEN DHS #

ALL ANALYSES MUST MEET SPECIFICATIONS AND DETECTION LIMITS SET BY CALIFORNIA DHS AND

☐ EPA ☐ RWQCB REGION ____
☐ LIA
☐ OTHER

SPECIAL INSTRUCTIONS
MW-1 (95480001) to be analyzed Only if MW2 (95480002) has a "hit"

SAMPLE I.D.		MATRIX S = SOIL W = H2O	CONTAINERS TOTAL	VOA Amber Liter	C = COMPOSITE ALL CONTAINERS	TPH/BTEX	TPH Diesel	TPH Motor Oil	ADD'L INFORMATION	STATUS	CONDITION	LAB SAMPLE #
95480001	1345	W	5			X	X	X				
95480002	930					X	X	X				
95480011	1150					X	X	X	1/3 liters obtained for Sample			
95480012	1320					X	X	X				
95480107	1125					X	X	X				
95480019	1040					X	X	X				
95480000	1230	↓	↓			X	X	X				

SAMPLING COMPLETED	DATE	TIME	SAMPLING PERFORMED BY	RESULTS NEEDED NO LATER THAN
	11/29/95			As Contracted

RELEASED BY	DATE	TIME	RECEIVED BY	DATE	TIME
	11/29/95	1410		11/29/95	2:10pm
RELEASED BY	DATE	TIME	RECEIVED BY	DATE	TIME
RELEASED BY	DATE	TIME	RECEIVED BY	DATE	TIME

SHIPPED VIA	DATE SENT	TIME SENT	COOLER #

TABLE OF WELL MONITORING DATA

Well I.D.	MW-1		MW-2			MW-11		MW-12	
Date Sampled	11/29/95		11/29/95			11/29/95		11/29/95	
Well Diameter (in.)	4		4			2		2	
Total Well Depth (ft.)	13.57		14.07			12.65		11.45	
Depth To Water (ft.)	5.96		7.39			11.07		6.99	
Free Product (in.)	NONE		NONE			NONE		NONE	
Reason If Not Sampled	--		--			--		--	
1 Case Volume (gal.)	4.9		4.3			0.25		0.7	
Did Well Dewater?	YES @ 7.0 GALS.		NO			YES @ 0.4 GALS.		YES @ 1.0 GALS.	
Gallons Actually Evacuated	7.0		15.0			0.4		1.0	
Purging Device	ELECTRIC SUBMERSIBLE		ELECTRIC SUBMERSIBLE			ELECTRIC SUBMERSIBLE		BAILER	
Sampling Device	BAILER		BAILER			BAILER		BAILER	
Time	08:32	13:10	09:21	09:23	09:25	08:05	11:45	07:54	12:17
Temperature (Fahrenheit)	69.2	68.8	72.0	72.4	72.4	70.4	70.8	68.0	69.6
pH	6.8	6.9	7.6	7.4	7.4	7.0	7.0	7.0	7.4
Conductivity (micromhos/cm)	4400	4000	6400	7200	7400	2200	2000	2000	2400
Nephelometric Turbidity Units	29.3	>200	11.5	3.4	1.3	6.3	11.1	120.1	70.8
BTS Chain of Custody	951129-K-1		951129-K-1			951129-K-1		951129-K-1	
BTS Sample I.D.	95480001		95480002			95480011		95480012	
DHS HMTL Laboratory	AEN		AEN			AEN		AEN	
Analysis	TPH (GAS), BTEX, TPH (DIESEL) & TPH (MOTOR OIL)		TPH (GAS), BTEX, TPH (DIESEL) & TPH (MOTOR OIL)			TPH (GAS), BTEX, TPH (DIESEL) & TPH (MOTOR OIL)		TPH (GAS), BTEX, TPH (DIESEL) & TPH (MOTOR OIL)	

TABLE OF WELL MONITORING DATA

Well I.D.	MW-19			MG-7		
Date Sampled	11/29/95			11/29/95		
Well Diameter (in.)	2			2		
Total Well Depth (ft.)	14.66			17.42		
Depth To Water (ft.)	7.16			12.85		
Free Product (in.)	NONE			NONE		
Reason If Not Sampled	--			--		
1 Case Volume (gal.)	1.2			0.7		
Did Well Dewater?	NO			NO		
Gallons Actually Evacuated	4.0			2.5		
Purging Device	BAILER			BAILER		
Sampling Device	BAILER			BAILER		
Time	10:23	10:26	10:29	11:09	11:11	11:13
Temperature (Fahrenheit)	70.0	69.6	70.4	68.4	68.6	68.8
pH	7.2	7.4	7.4	7.6	7.6	7.6
Conductivity (micromhos/cm)	15000	16000	1600	18000	20000	21000
Nephelometric Turbidity Units	70.4	70.8	90.8	105.1	89.8	62.2
BTS Chain of Custody	951129-K-1			951129-K-1		
BTS Sample I.D.	95480019			95480107		
DHS HMTL Laboratory	AEN			AEN		
Analysis	TPH (GAS), BTEX, TPH (DIESEL) & TPH (MOTOR OIL)			TPH (GAS), BTEX, TPH (DIESEL) & TPH (MOTOR OIL)		

PES Environmental, Inc.
Engineering & Environmental Services

Water-Level Elevation and Free-Product Thickness Field Data Sheet
Powell Street Plaza and Shellmound III Sites

Recorded by: BJS Date: 11-29-95

Well Number	Time	Top of Casing (feet MSL)	Depth to Product (feet)		Depth to Water (feet)		Notes
MW-1	9:25	8.72	NP	NP	5.96		
MW-2	9:10	9.83	NP	NP	7.39		
MW-3	9:35	10.86	NP	NP	8.78		
~~MW-4~~		~~11.58~~					
~~MW-5~~		~~11.16~~					
MW-6	12:10	11.42	NP	NP	8.13		
~~MW-7~~		~~11.84~~					
MW-8	9:45	7.48	NP	NP	5.61		
MW-9	10:00	7.50	NP	NP	3.74		
~~MW-10~~		~~7.38~~					
MW-11	8:00	11.89	NP	NP	11.07		
MW-12	7:45	9.42	NP	NP	6.99		
MW-13	12:05	10.83	6.61	6.61	7.22		
MW-14	11:45	11.74	7.64	~~7.64~~	7.82		
~~MW-15~~		~~11.86~~					
~~MW-16~~		~~10.82~~					
~~MW-18~~		~~6.21~~					
MW-19	10:20	9.94	NP	NP	7.16		
~~MG-1~~		~~11.82~~					
~~MG-2~~		~~10.83~~					
~~MG-3~~		~~9.76~~					
~~MG-4~~		~~7.38~~					
MG-7	11:00	10.06	NP	NP	12.85		BTO new casing.
~~PZ-1~~		~~7.99~~					

Notes:

Revised top of casing elevations based on December 27, 1994 and January 4, 1995 Kier & Wright surveying.

NP = No free product observed

Trace = Slight residue on interface probe or other indication of free-product Product thickness is less than 0.01 feet.

W-L = Water-Level

DISTRIBUTION

QUARTERLY MONITORING REPORT
FOURTH QUARTER 1995
POWELL STREET PLAZA
AND SHELLMOUND III SITES
EMERYVILLE, CALIFORNIA

APRIL 24, 1996

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QUARTERLY MONITORING REPORT
FOURTH QUARTER 1995
POWELL STREET PLAZA
AND SHELLMOUND III SITES
EMERYVILLE, CALIFORNIA

APRIL 24, 1996

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QUALITY CONTROL REVIEWER

Robert S. Creps, P.E.
Principal Engineer