Weiss Associates Environmental and Geologic Services

5500 Shellmound Street, Emeryville, CA 94608-2411 Fax: 510-547-5043 Phone: 510-450-6000

ALCO HAZMAT

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STID # 5276

July 12, 1994

Mr. Brian Oliva
Alameda County Health Care Services Agency
Division of Hazardous Materials
Department of Environmental Health
1131 Harbor Bay Parkway, Second Floor
Alameda, California 94621

Re: Halleck & Sherwin Streets,
southeast corner - Emeryville, CA
WA Job No. 37-217-01

4226 1thalleck
606

Dear Mr. Oliva:

As we discussed on July 8, we would like to know what additional environmental work, if any, the Alameda County Department of Environmental Health (ACDEH) would require before the subject site could be developed. As we discussed earlier, you reviewed data from soil and ground water samples collected at the site in 1990, and indicated that the data would not seem be of concern to the ACDEH, i.e. would not require any environmental investigation or remedial action. However, your opinion was tentative without the site location, since some of the criteria you would use to make such a determination are site-specific.

We have since contacted Southern Pacific, the landowner, and they have allowed us to provide you with their data regarding environmental conditions at the site. The enclosed report details the site's environmental condition, which was prepared in 1990 prior to an earlier potential sale of the property. The planned development would include capping the entire site with either concrete or asphalt, constructing residential units on the northern two-thirds of the site, and constructing a parking lot on the southern third.

As we discussed in our June 30 letter to you, our main question is whether the concentrations of copper and zinc, which were above the TTLC concentrations in a black sandy fill found beneath the site, would require any additional investigation or remedial action. We would appreciate hearing your opinion on this site at your earliest convenience. Please call me at 450-6129 with your comments or any questions you may have. Thank you very much for your assistance.

Sincerely,
Weiss Associates

John W. Duey
Geologist

enclosure

217L1JL4.WP

PES Environmental, Inc.
Engineering & Environmental Services

A Report Prepared for:

Emeryville Warehouse Company
244 Kearny Street, 9th Floor
San Francisco, California 94108

SUBSURFACE ENVIRONMENTAL INVESTIGATION
PHASES II AND III
SOUTHERN PACIFIC PROPERTY
SHERWIN AVENUE AND HALLECK STREET
EMERYVILLE, CALIFORNIA

PES Job No. FF001C

by

James P. Dunn
Senior Geologist

Robert S. Creps, P.E.
Associate Engineer

REGISTERED PROFESSIONAL ENGINEER
ROBERT S. CREPS
No. 45153
EXP. 10/30/94
CIVIL
STATE OF CALIFORNIA

December 19, 1990

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Novato, California 94948

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1.0 INTRODUCTION

This report presents the results of a subsurface environmental investigation of the Southern Pacific property located southeast of the corner of Sherwin Avenue and Halleck Street in Emeryville, California. The vicinity of the project site is shown on Plate 1. This investigation was performed by PES Environmental, Inc. (PES) for Emeryville Warehouse Company (EWC). EWC is evaluating environmental conditions on the property prior to purchasing the site.

1.1 Background Information

The subject property is a vacant and partially paved lot which is used for parking by surrounding businesses. No structures currently exist onsite. The site is generally level and measures approximately 90 by 230 feet. A site plan is attached as Plate 2.

In August, 1990, PES was retained by EWC to conduct a Phase I - Preacquisition Site Assessment (PSA) of the subject property. A copy of the PSA is attached as Appendix A. The PSA included a review of available information regarding former site uses and current and former uses of surrounding properties. A review of government environmental agency files was also performed. The results of the PSA indicated that the property was formerly used as a materials transfer facility by surrounding businesses. Materials transported by railroad cars were unloaded at the site and transferred to trucks for distribution to local businesses. The remnants of four rail sidings are still present on the site. Aerial photos indicate a building, possibly used as a warehouse, was located along Halleck Street. These features are shown on Plate 2.

The PSA also determined that several properties are located nearby that are associated with current or past use, storage or disposal of hazardous materials. Additionally, several sites were identified at which the soil and/or groundwater contamination has been documented. It is believed that groundwater generally flows to the west, towards San Francisco Bay. Groundwater contamination has been identified at several sites upgradient of the subject property. These sites are discussed in Appendix A.

Based on the results of the PSA, it was concluded that a potential for environmental impairment of the subject property exists due to former site uses on offsite sources. Specific onsite occurrences of contaminant release were not identified; however, the heavy industrial activity in the vicinity suggests that hazardous materials or other potential site contaminants may have been handled as part of the materials transfer activities. It was also concluded that the presence of groundwater contamination at nearby upgradient sites could have resulted in migration of contaminated groundwater to the Southern Pacific property.

1.2 Purpose and Scope

This subsurface investigation was conducted in two phases (Phase II and Phase III). The Phase II investigation consisted of a limited evaluation of the uppermost groundwater conditions on the assumed upgradient (eastern) side of the property. The objective of Phase II was to evaluate whether near-surface groundwater contamination from upgradient sites has migrated onto the subject property. The scope consisted of installing one shallow groundwater monitoring well, collecting one groundwater sample, and conducting chemical analysis. The investigation was limited to the near-surface groundwater within the uppermost water-bearing zone. Exploration of deeper groundwater conditions was beyond the scope of the investigation. The Phase II investigation methods are described in Section 2.1.

The objective of the Phase III investigation was to evaluate whether past onsite activities have resulted in near-surface soil and/or groundwater contamination. Phase III consisted of exploration of onsite soils by drilling shallow soil borings, collecting soil samples and conducting chemical analysis. Also during Phase III, additional near-surface groundwater sampling was performed by collecting samples from two soil borings located on the assumed downgradient (western) side of the property. The Phase III methodology is described in Section 2.2 of this report.

Results of the Phase II and III investigations are presented in Section 3.0 of this report. Discussion of the results and recommendations are presented in Section 4.0.

2.0 INVESTIGATION METHODOLOGY

This section describes the procedures employed during the field investigation and the analytical program for chemical analysis of soil and groundwater samples. The Phase II investigative procedures are described in Section 2.1. The Phase III methodology is described in Section 2.2.

Prior to conducting field activities, PES prepared a project-specific health and safety plan in accordance with PES' guidelines for conducting hazardous waste investigations. The purpose of the plan is to identify potential safety and health risks and then develop appropriate procedures to reduce risks to acceptable levels. The plan was developed in accordance with applicable federal guidelines.

Before subsurface explorations were initiated, PES retained the services of California Utility Surveys, of San Mateo, to verify that the boring locations were clear of underground utilities.

2.1 Phase II Investigation

As described in Section 1.2, the Phase II Investigation consisted of drilling a single boring for installation of a groundwater monitoring well (Well J-1). The well was developed and groundwater samples were collected for chemical analysis.

2.1.1 Soil Borings and Soil Sampling

The well boring was drilled on October 11, 1990, using a truck-mounted hollow stem auger drill rig operated by Exceltech of Fremont, California. The borehole was advanced using an 8-inch outside diameter, hollow-stem auger to a depth of 14.5 feet below ground surface (bgs). The location of Boring J-1 is shown on Plate 2. Soil cuttings were collected by a PES geologist for lithologic description. Saturated soils were encountered at 5.5 bgs.

To avoid cross-contamination between sampling locations, all equipment used for drilling and soil sampling was decontaminated prior to each sampling event. Drilling equipment was pre-cleaned with a combination steam/high pressure wash system. Soil sampling equipment used repeatedly in the same boring was decontaminated by washing with a tri-sodium phosphate (TSP) soap and water solution with a potable water rinse. Water used for cleaning was collected and stored in a 55-gallon drum and left on site.

Discrete soil samples were collected during drilling at approximately 2-foot intervals. The samples were collected by driving a 2-inch-diameter split spoon sampler lined with brass tubes through 18 inches of undisturbed soil. The samples were used for lithologic description and screened for the presence of volatile hydrocarbons using a photo-ionization gas analyzer. The soils were logged using the Uniform Soil Classification System (USCS). The presence or absence of soil discoloration, debris fill, odors and other evidence of

potential contamination was also noted. Plate 3 includes a log of Boring J-1 depicting subsurface conditions.

One sample tube from each sample drive was preserved by covering the tube ends with aluminum foil and vinyl caps then sealed with tape. Samples were labeled to designate boring number, depth, time and date of collection, and stored in a cooler for later chemical analysis, if needed.

Soil cuttings generated during drilling are being temporarily stored on-site in a 55-gallon drum. Disposal of this soil can now be arranged.

2.1.2 Monitoring Well Installation

After soil sampling and drilling was completed, the well casing was installed in the borehole through the hollow stem auger. The well casing consisted of 2-inch-diameter PVC with threaded flush-jointed connections. Well screen, with 0.020-inch slots, was placed within the water-bearing zone from 3.5 to 13.5 feet bgs. A sand filter pack, consisting of Monterey No. 2/12 sand, was placed adjacent to the entire screened interval and was extended one foot above the screen. A one foot bentonite pellet seal was placed above the sand pack and hydrated with potable water. Levels of the sand pack and bentonite seal were confirmed by sounding with a weighted tape.

The annular space above the bentonite seal was grouted from the bentonite seal up to ground surface with a neat cement and bentonite grout. The well was completed at grade in a traffic-resistant utility vault with a locking water-tight cap. The well completion details are shown with the lithologic log on Plate 3.

2.1.3 Well Development and Groundwater Sampling

The well was developed by Blaine Tech Services, Inc. (Blaine Tech) on October 12, 1990. Well development included surging to sort the sand pack and pumping to remove fine sand and sediment. Development continued until the discharge water was reasonably free of sediment. A description of the well development procedures is provided in Appendix B.

Groundwater samples were collected by Blaine Tech on October 15, 1990. Approximately three well volumes were evacuated from the well using a Middleburg positive displacement pump. During evacuation, the discharge water was measured for pH, temperature, and electrical conductivity. Following purging, the well was sampled using the Middleburg pump. Samples were placed in appropriate containers, labeled to designate sample number, time and date collected, and analyses requested, and stored in a cool container for transport to the analytical laboratory with chain of custody documentation. Samples collected for metals analyses, including hexavalent chromium, were filtered through a 0.45-micron filter and preserved by acidifying with nitric acid to a pH less than 2.0. Information collected during groundwater sampling and chain of custody records are presented in Appendix C.

Well development and purge water is being temporarily stored on-site in a 55-gallon drum. Arrangements for disposal of this material can now be made.

2.1.4 Analytical Program

Phase II groundwater samples collected from Well J-1 were analyzed by Curtis and Tompkins, Ltd., a state-certified hazardous waste analytical laboratory located in Berkeley, California. The groundwater was analyzed for dissolved concentrations of priority pollutant metals using atomic absorption and inductively coupled plasma atomic emission spectroscopy (ICPAE) methods (EPA Test Methods 6000 and 7000 series). The groundwater was also analyzed for dissolved hexavalent chromium following EPA Test Method 7195.

Samples were also collected and analyzed for total extractable petroleum hydrocarbons (TEH) quantified as kerosine and diesel, following the California Department of Health Services (DOHS) method recommended in the Leaking Underground Fuel Tank (LUFT) Manual, 1989, and total volatile petroleum hydrocarbons (TVH), quantified as gasoline, also following the LUFT methods. The Phase II groundwater sample was also analyzed for benzene, toluene, ethyl benzene and total xylenes following EPA Test Method 5030/8020. Finally, the groundwater was analyzed for purgeable halogenated organics following EPA Test Method 8010. One quality control trip blank sample was provided by the laboratory and analyzed for purgeable halogenated organics.

2.2 Phase III Investigation

The Phase III Investigation included exploration and testing of onsite soils by drilling a total of five shallow soil borings and collecting soil samples. In addition, groundwater samples were collected from two borings for evaluation of groundwater chemical characteristics. The Phase III field activities were performed on November 20, 1990.

2.2.1 Soil Borings and Soil Sampling

Five soil borings (Boring FF-1 through FF-5) were drilled to a depth of 8.5 feet bgs using a Failing 1500 mobile hollow-stem auger drill rig, operated by Weeks Drilling and Pump, Inc. of Sebastopol, California. The locations of the borings are shown on Plate 2.

Soil samples were collected for lithologic description and chemical analysis following procedures described in Section 2.1.1. Soils were logged using the UCSC system. The logs of Borings FF-1 through FF-5 are shown on Plates 4 through 8, respectively. Saturated soil conditions were encountered at depths between 4.5 and 5.5 feet bgs.

Soil samples were preserved for chemical analyses by covering the tube ends with foil and end caps, then sealing the caps with tape. The samples were labelled and placed in a cooled container for transport to the analytical laboratory with chain-of-custody documentation. One

soil sample from each 18-inch sampling drive was submitted to the laboratory for preservation, if needed for analysis. Analyses requests were not made at that time (see Section 2.2.3).

2.2.2 Groundwater Sampling

Groundwater samples (Samples WFF-1 and WFF-2) were collected for chemical analysis from two of the soil borings (Borings FF-1 and FF-2, respectively) during the Phase III investigation. Samples were collected from the hollow-stem auger using a clean stainless steel bailer, poured in appropriate sample containers, labeled and placed in a cooler container for transport to the analytical laboratory under chain of custody documentation. Samples for metals analysis were filtered, upon arrival at the laboratory, through a 0.45 micron filter.

2.2.3 Analytical Program

Phase III soil and groundwater samples were also analyzed by Curtis and Tompkins.

The Phase III soil analytical program was developed, in part, based on the results of field observations made at the time of drilling. The analytical program and sample analysis request was then forwarded to the lab on the afternoon of November 20, 1990, after the field data was evaluated.

Curtis and Tompkins was instructed to analyze four soil samples: one discrete sample and three composite samples. The discrete sample, collected from Boring FF-2 at 6.0 feet bgs (Sample FF-2-6.0), was analyzed for TEH, volatile organic compounds (VOCs) following EPA Test Method 8240, and semivolatile organic compounds (SOCs) following EPA test Method 8270.

The laboratory created and analyzed three soil composite samples (Composites CFF-1, CFF-2 and CFF-3). Composite CFF-1 consisted of three sub-samples collected at a depth of 1.0 foot bgs from Borings FF-2, FF-3 and FF-4. Composite CFF-1 was intended to represent general soil conditions immediately below the asphalt surface covering the site. Composite CFF-2 consisted of subsamples from Boring FF-2 at 2.5 feet bgs, FF-4 at 1.75 feet bgs and FF-5 at 1.75 feet bgs. Composite CFF-2 was composed of three subsamples of poorly graded black sand that was found at a depth of about 1.75 feet bgs in each of these borings (see Section 3.1.1). Composite CFF-3 consisted of three subsamples: Boring FF-1 at 5.5 feet, FF-3 at 6.0 feet, and FF-5 at 6.0 feet. CFF-3 was intended to represent general soil conditions at this depth over the site.

Composite samples CFF-1 and CFF-2 were analyzed for the Title 22, California Code of Regulations, Section 66699 list of 17 metals (Title 22 metals) using atomic absorption and ICPAE methods. Composite sample CFF-3 was analyzed for TEH, VOCs and SOCs.

The Phase III groundwater samples were analyzed for dissolved concentrations of Title 22 metals, TVH, benzene, toluene, ethylbenzene and total xylene, and purgeable organics.

3.0 RESULTS OF INVESTIGATION

3.1 Subsurface Conditions

3.1.1 Soils

Subsurface soils were explored to a depth of 14.5 feet bgs in Boring J-1 and 8.5 feet bgs in the other five borings. In all borings, the surface consisted of about three to five inches of asphaltic concrete, which was underlain by about 6 to 9 inches of aggregate baserock.

Soils consist of gravelly and sandy fill underlain by unconsolidated alluvium, including clays, silts and sands. In general, subsurface soils beneath the pavement section consist of green and black silty or clayey sands. These sands vary in thickness from non-existent in Boring J-1, at the southeastern corner of the site, up to five feet in Boring FF-2 at the northwestern corner of the site. In Borings FF-2, FF-4 and FF-5, a black poorly graded sand, believed to be fill, was found at a depth of 1.75 to 2.0 feet bgs. This black sand was about one foot thick in Borings FF-4 and FF-5 and about four feet thick in Boring FF-2, extending to a depth of six feet bgs in this boring. Clayey soils were generally found below the sands. These consisted of black to green silty and sandy clays, which extended to the bottom of the borings. In Boring J-1, a one foot thick layer of saturated dark brown sand was encountered at a depth of about 5.5 feet bgs.

Only minor amounts of debris fill were encountered during the investigation. This consisted of concrete and wood debris, found in Boring J-1.

In general, no unusual odors were encountered with the exception of Boring FF-2. In this boring, slight hydrocarbon-like odors were detected in a silty clayey soil collected at a depth of about six feet bgs. This soil was sampled (Sample FF-2-6.0) for chemical analysis.

3.1.2 Groundwater

Saturated soil conditions were encountered in all borings at depths between 4.5 and 5.5 feet bgs. Once developed, the water level in Well J-1 was measured at about 4.1 feet bgs.

The primary water bearing units that were encountered included the relatively thin brown sand layer at 5.5 feet bgs in Boring J-1 and the black poorly graded sand found in Boring FF-2, FF-4 and FF-5. These materials likely transmit groundwater relatively freely and therefore form a pathway for movement of near-surface groundwater. The silts and clays found below the sands likely have a low permeability.

As noted in Section 1.2, it is believed that the groundwater flows generally in a western direction, towards San Francisco Bay. However, the flow direction at nearby sites appears to be influenced by the presence of Temescal Creek, located about 1,000 feet north of the site. These other sites are closer to the creek. Based on the distance between the subject site

and the creek, it is assumed that flow at the site is westward. An evaluation of groundwater flow characteristics for this site was beyond the scope of this investigation.

3.2 Chemical Analytical Results

3.2.1 Soils

As described in Section 2.2.3, four soil samples were analyzed: one discrete sample and three soil composites. The results of chemical analytical results for soil samples are summarized in Table 1. Analytical laboratory reports are attached as Appendix D.

Sample FF-2-6.0 was collected from soils in Boring FF-2 which exhibited a slight hydrocarbon odor. No TEH was detected above the method reporting level of 10 milligrams per kilogram (equivalent to parts per million [ppm]). This sample was also analyzed for VOCs. Only toluene was detected, at a concentration of 0.016 ppm.

Composite sample CFF-1 consisted of soil subsamples collected immediately beneath the asphalt concrete pavement and aggregate baserock. The sample was analyzed for Title 22 metals. In general, only low levels of several metals were detected. These levels are likely representative of background soil conditions.

Composite sample CFF-2 consisted of the black poorly graded sands found in Borings FF-2, FF-4 and FF-5. This composite was analyzed for Title 22 metals. Significant levels of two metals were found. Copper was found at 2,600 ppm and zinc at 9,300 ppm. Slightly elevated levels of arsenic (210 ppm), barium (1,100 ppm) and lead (550 ppm) were also detected in the composite.

Composite sample CFF-3 consisted of subsamples collected at the 6.0 foot depth over the site. There was no evidence of contamination noted during the field investigation. This sample was analyzed for TEH and VOCs. No TEH was detected. Only toluene was detected in the VOC scan at a concentration of 0.018 ppm.

3.2.2 Groundwater

A summary of chemical analytical results for groundwater samples collected during Phase 1 from Well J-1 II and grab water samples bailed from Borings FF-1 and FF-2 during Phase III is provided as Table 2. Analytical reports are included in Appendices E and F.

Groundwater collected from Well J-1 was analyzed for dissolved priority pollutant metals, hexavalent chromium, TEH, TVH, benzene, toluene, ethyl benzene, total xylenes and purgeable halocarbons. No detectable levels of these chemical parameters were found.

Grab groundwater samples (Samples WFF-1 and WFF-2) were analyzed for dissolved Title 22 metals, TVH, benzene, toluene, ethyl benzene, total xylenes and purgeable halocarbons.

The black sandy fill contains elevated levels of copper and zinc, and to a lesser degree arsenic, barium and lead. Because the sample was composited from three subsamples, the actual level of these metals present in the sand may vary. The levels of copper (2600 ppm) and zinc (9,300 ppm) found in the composite are significant because these levels exceed the levels at which California Hazardous Waste Control regulations define a hazardous waste. These levels exceed the Total Threshold Limit Concentration (TTLC) for copper (2,500 ppm) and zinc (5,000 ppm). The levels of arsenic and lead also exceed levels which are normally considered acceptable for exposure by sensitive populations in an uncontrolled land use situation.

4.2 Recommendations

The objective of this subsurface environmental investigation was to identify potential environmental concerns that may have resulted from past site uses or the migration of contaminants from adjacent sites. Based on the results of the investigation, two concerns have been identified:

- low-level hydrocarbon contamination in shallow groundwater on the northeastern corner of the site; and
- sandy fill covering the northern portion of the site which contains elevated levels of several state-regulated metals which in some cases exceed state criteria for hazardous waste classification.

The existence of these environmental concerns was identified during the investigation; however, it was beyond the scope of work to define the degree and extent of the contamination, and evaluate remedial alternatives. A focused investigation of these concerns, complying with applicable regulatory guidelines, is recommended prior to developing and implementing a remedial plan.

Based on the type and levels of contaminants found during this investigation, it is not believed that an imminent threat to human health exists under current land use conditions. Because of the limited amount of groundwater data compiled to date, it is not known whether a significant threat to groundwater quality exists. Although a significant health threat does not appear to be present, the contaminants found are regulated by both local and state environmental laws. Therefore, the existence of these materials is significant to the planned purchase of the property.

Prior to completing the purchase transaction, it is recommended that a focused investigation be performed so the site may be adequately characterized and an appropriate remedial response can be initiated to minimize or eliminate your long-term liability risk.

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To Brian Oliva	From John Duey
Co. Alameda County	Co. Weiss Assoc.
Dept. Health Agency	Phone # 450-6129
Fax # (510) 337-9335	Fax # 547 5420

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Table 1. Summary of Analytical Results for Soil Samples,
Phase III Investigation, Southern Pacific Property
Sherwin Avenue and Halleck Street, Emeryville, California
(all results in milligrams per kilogram[1])

Sample ID:	FF-2-6.0[2]	CFF-1[3]	CFF-2[3]	CFF-3[3]
Metals[4]				
Antimony	NA	ND(5)	ND(5)	NA
Arsenic	NA	6	210	NA
Barium	NA	110	1,100	NA
Beryllium	NA	ND(0.5)	ND(0.5)	NA
Cadmium	NA	2	24	NA
Total Chromium	NA	28	52	NA
Cobalt	NA	10	72	NA
Copper	NA	74	2,600	NA
Lead	NA	96	550	NA
Mercury	NA	0.3	ND(0.1)	NA
Molybdenum	NA	ND(0.5)	3.2	NA
Nickel	NA	39	13	NA
Selenium	NA	ND(2.5)	ND(2.5)	NA
Silver	NA	ND(1)	2	NA
Thallium	NA	ND(5)	ND(5)	NA
Vanadium	NA	18	34	NA
Zinc	NA	280	9,300	NA
Organics				
TEH - Gasoline[5]	ND(10)	NA	NA	ND(10)
TEH - Kerosene[5]	ND(10)	NA	NA	ND(10)
TEH - Diesel[5]	ND(10)	NA	NA	ND(10)
Volatile Organics[6]	Toluene-.016	NA	NA	Toluene-.018
Semivolatile Organics[7]	ND	NA	NA	ND

ND - Not detected at or above the stated reporting limit
NA - Not analyzed
[1] Approximately equivalent to parts per million (ppm)
[2] Discrete sample from Boring FF-2 at 6.0' depth
[3] Composite samples:
CFF-1 – From Boring FF-2 at 1.0', FF-3 at 1.0' and FF-4 at 1.0'
CFF-2 – From Boring FF-2 at 2.5', FF-4 at 1.75' and FF-5 at 1.75'
CFF-3 – From Boring FF-1 at 5.5', FF-3 at 6.0' and FF-5 at 6.0'
[4] Metals analyzed by atomic adsorption or ICAP methods (see laboratory report)
[5] Total Extractable Petroleum Hydrocarbons - California DOHS-LUFT Manual, 1989
[6] Volatile Organic Compounds by EPA Test Method 5030/8240. Only detected compounds shown - all others not detected above method reporting limits (see laboratory report).
[7] Semivolatile Organic Compounds by EPA Test Method 3550/8270. Reporting limits vary - see laboratory report

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Table 2. Summary of Analytical Results for Ground-Water Samples, Phase II and III Investigations, Southern Pacific Property, Sherwin Avenue and Halleck Street, Emeryville, California
(all results in micrograms per liter[1])

Sample ID:	Well J-1[2]	WFF-1[3]	WFF-2[3]
Metals[4]			
Antimony	ND(100)	ND(50)	ND(50)
Arsenic	ND(50)	ND(50)	ND(50)
Barium	NA	250	1,800
Beryllium	ND(10)	ND(10)	ND(10)
Cadmium	ND(10)	ND(10)	ND(10)
Total Chromium	ND(10)	ND(10)	ND(10)
Hexavalent Chromium[5]	ND(50)	NA	NA
Cobalt	NA	ND(10)	ND(10)
Copper	ND(20)	ND(10)	20
Lead	ND(50)	ND(50)	ND(50)
Mercury	ND(1)	ND(10)	ND(1)
Molybdenum	NA	10	30
Nickel	ND(10)	20	ND(10)
Selenium	ND(50)	ND(50)	ND(50)
Silver	ND(20)	ND(20)	ND(20)
Thallium	ND(100)	ND(50)	ND(50)
Vanadium	NA	ND(20)	ND(20)
Zinc	ND(10)	50	70
Organics			
TEH - Kerosine[5]	ND(50)	NA	NA
TEH - Diesel[5]	ND(50)	NA	NA
TVH - Gasoline[5]	ND(50)	ND(50)	53
Benxene[8]	ND(0.5)	ND(0.5)	ND(0.5)
Toluene[8]	ND(0.5)	ND(0.5)	ND(0.5)
Ethyl Benzene[8]	ND(0.5)	ND(0.5)	ND(0.5)
Total Xylenes[8]	ND(0.5)	ND(0.5)	ND(0.5)
Purgeable halocarbons[9]	ND(1-2)	ND(1.2)	ND (1-2)

ND - Not detected at or above the stated reporting limit
NA - Not analyzed
[1] Equivalent to parts per billion (ppb)
[2] Sample collected from Phase II ground-water monitoring well
[3] Sample collected from Phase III borehole auger
[4] Metals analyzed by atomic adsorption or ICAP methods (see laboratory report)
[5] Hexavalent Chromium by EPA Test Method 7195
[6] TEH - Total Extractable Petroleum Hydrocarbons - California DOHS-LUFT Manual, 1989
[7] TVH - Total Volatile Petroleum Hydrocarbons - California DOHS-LUFT Manual, 1989
[8] EPA Test Method 5030/8020
[9] EPA Test Method 8010

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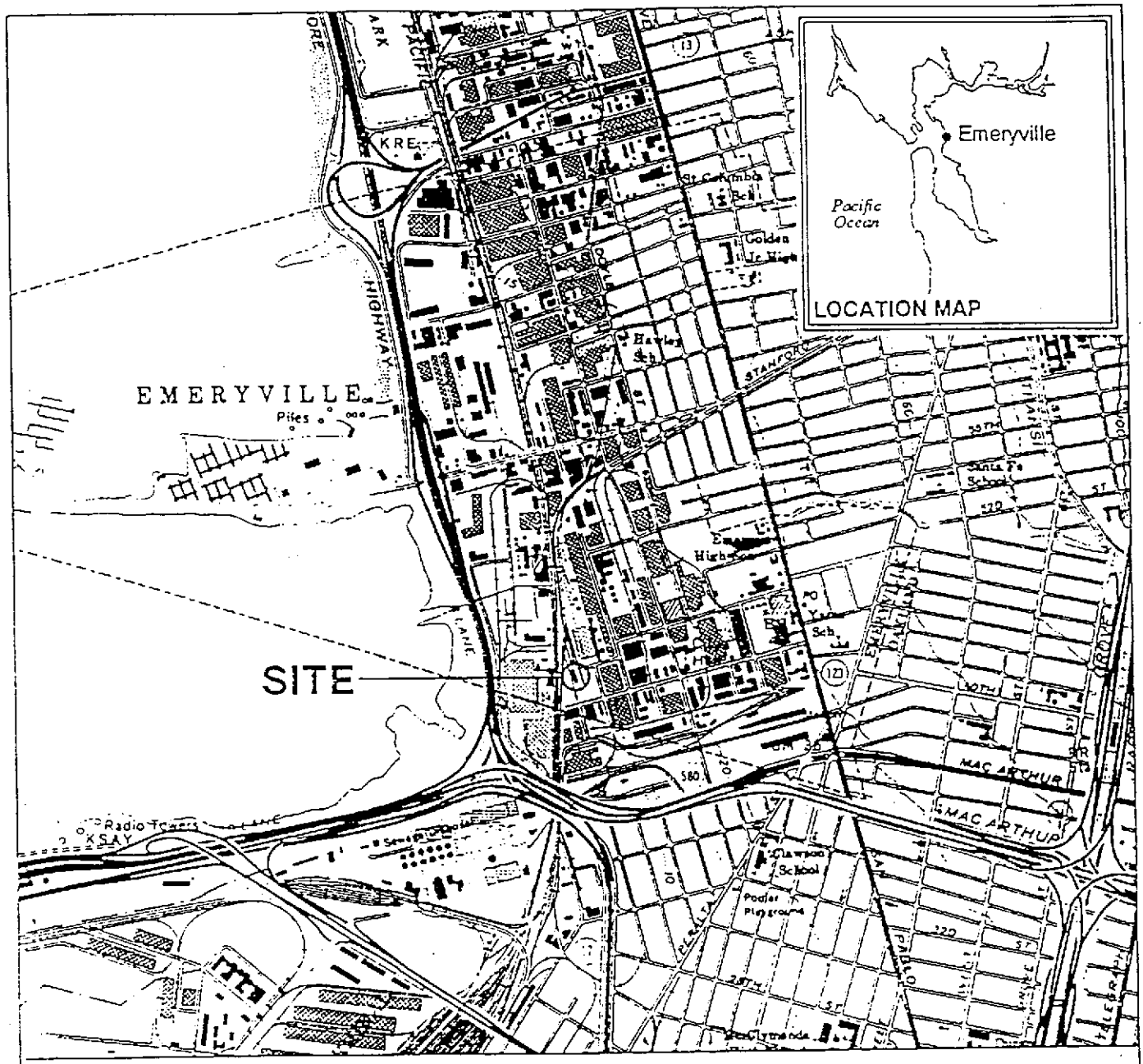


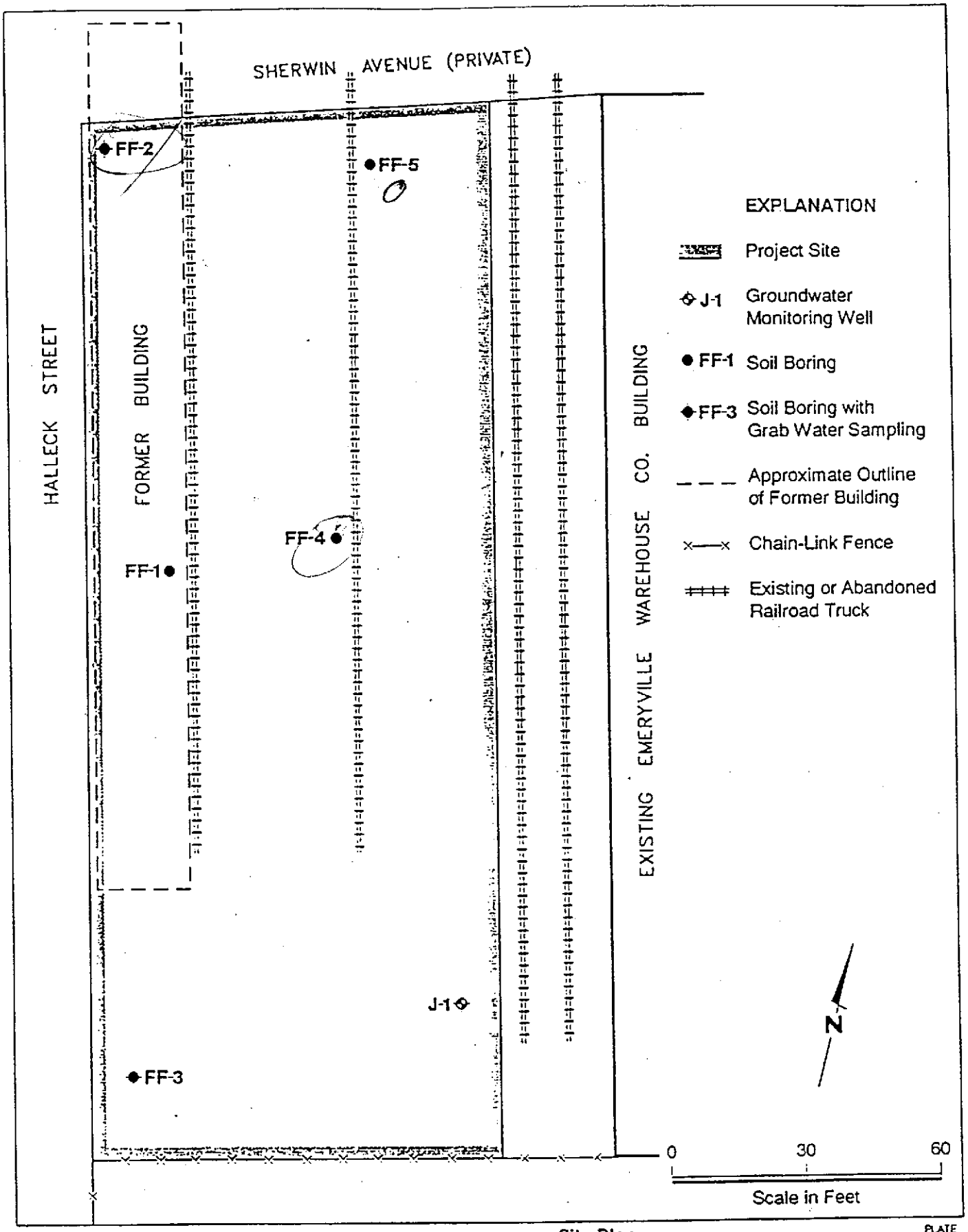
PES Environmental, Inc.
Engineering & Environmental Services

Vicinity Map
Phase II & III Investigations
Sherwin Avenue & Halleck Street
Emeryville, California

PLATE
1

JOB NUMBER	REVIEWED BY	DATE	REVISED DATE	REVISED DATE
FF001C	RSC	12/90		

SF 031947



PES Environmental, Inc.
Engineering & Environmental Services

Site Plan
Phase II & III Investigations
Sherwin Avenue & Halleck Street
Emeryville, California

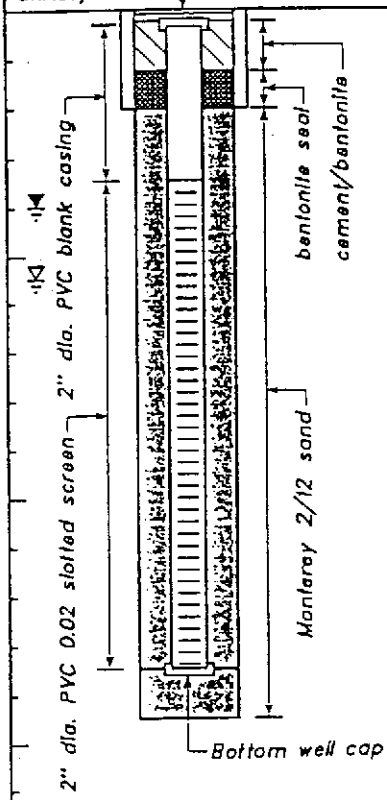
PLATE
2

JOB NUMBER	REVIEWED BY	DATE	REVISED DATE	REVISED DATE
FF001C	RSC	12/90		

SF 031948

PES Environmental, Inc.
Engineering & Environmental Services

LOG OF BORING J-1



BLOWS/6"	DEPTH (FT)	SYMBOLS	MATERIALS DESCRIPTION
			ASPHALT (FILL) ASPHALT DARK GREYISH BROWN WELL GRADED GRAVEL (GW) with sand, dense, moist. 30-35% fine-grained to coarse-grained sand. trace concrete debris (fill)
3 4 7			VERY DARK GREYISH BROWN LEAN CLAY (CL) with sand, soft to medium, moist. 10-20% fine-grained to medium-grained sand. trace fine to medium gravel. trace wood debris at 4.5 feet.
3 4 8	5		DARK BROWN POORLY GRADED SAND (SP) loose, saturated medium-grained to coarse-grained sand. trace fine gravel.
4 5 9			DARK GREYISH BROWN SILT (ML) with sand, very soft, moist to saturated. 15-20% very fine-grained sand. trace gravel.
			LIGHT BLUISH GREY LEAN CLAY (CL) with sand, soft to medium, moist to saturated. 10-15% very fine-grained sand.
8 13 19	10		YELLOWISH GROWN LEAN CLAY (CL) with sand, stiff, moist. 20-25% very fiine-grained to coarse-grained sand. trace gravel.
10 9 15	15		*Bottom of Boring at 14.5 feet*
	20		
	25		
	30		

Fill

CLIENT	Emeryville Warehouse Co.	DIAMETER OF HOLE	8 inches
LOCATION	Sherwin Avenue & Halleck Street Emeryville, California	TOTAL DEPTH OF HOLE	14.5 feet
JOB NUMBER	FF001C	TOP OF CASING ELEVATION	0.3 feet Below Ground Level
GEOLOGIST/ENGINEER	Jim Dunn, Jane Gill	DATE STARTED	10/11/90
DRILL RIG	Mobile B-34	DATE COMPLETED	10/11/90

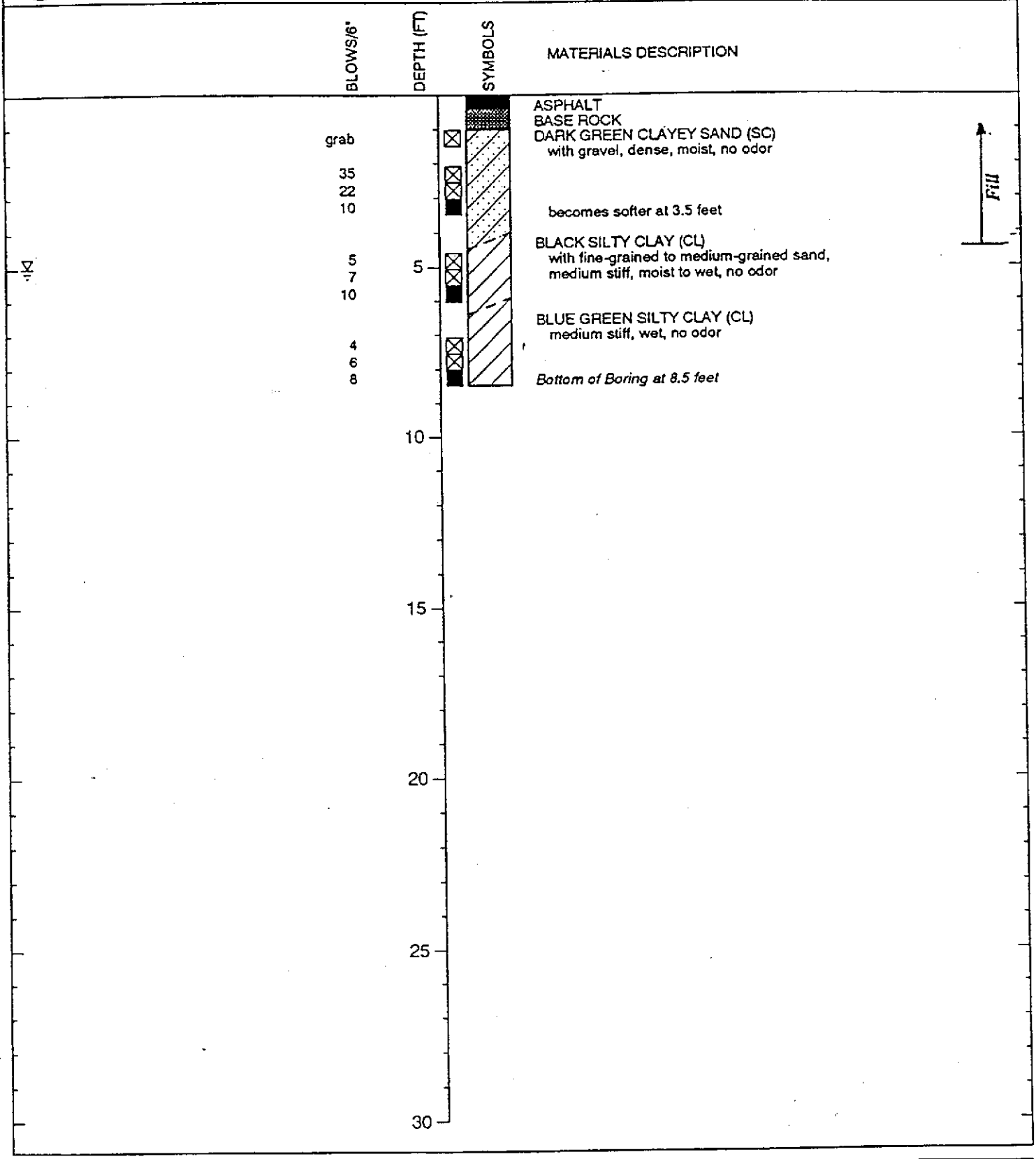
PLATE

3

SF 031949

PES Environmental, Inc.
Engineering & Environmental Services

LOG OF BORING FF-1



CLIENT	Emeryville Warehouse Co.	DIAMETER OF HOLE	8 inches
LOCATION	Sherwin Avenue & Halleck Street Emeryville, California	TOTAL DEPTH OF HOLE	8.5 feet
JOB NUMBER	FF001C	TOP OF CASING ELEVATION	N/A
GEOLOGIST/ENGINEER	Jim Dunn ZSC	DATE STARTED	11/20/90
DRILL RIG	Failing 1500	DATE COMPLETED	11/20/90

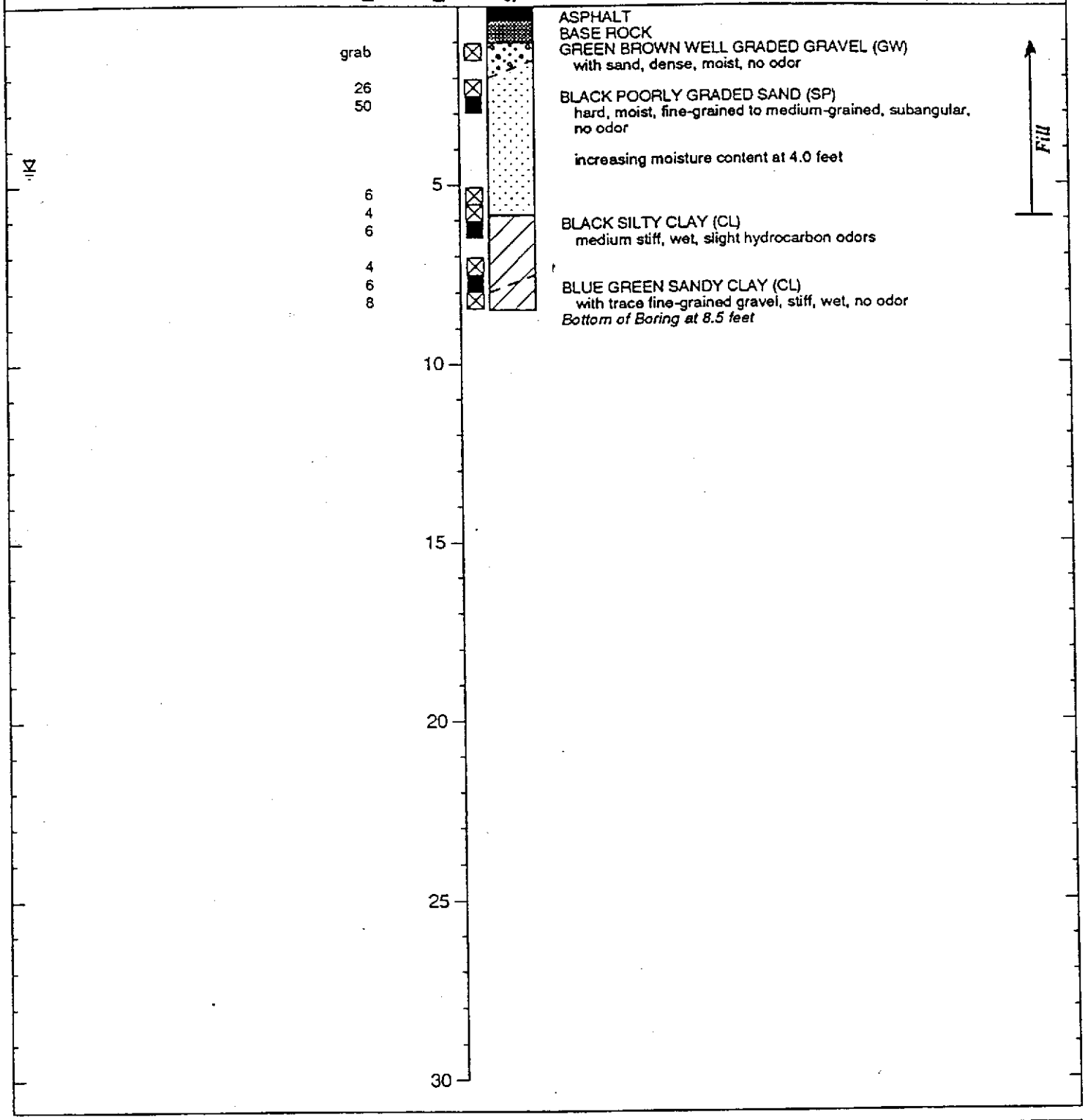
PLATE

4

SF 031950

PES Environmental, Inc.
Engineering & Environmental Services

LOG OF BORING FF-2



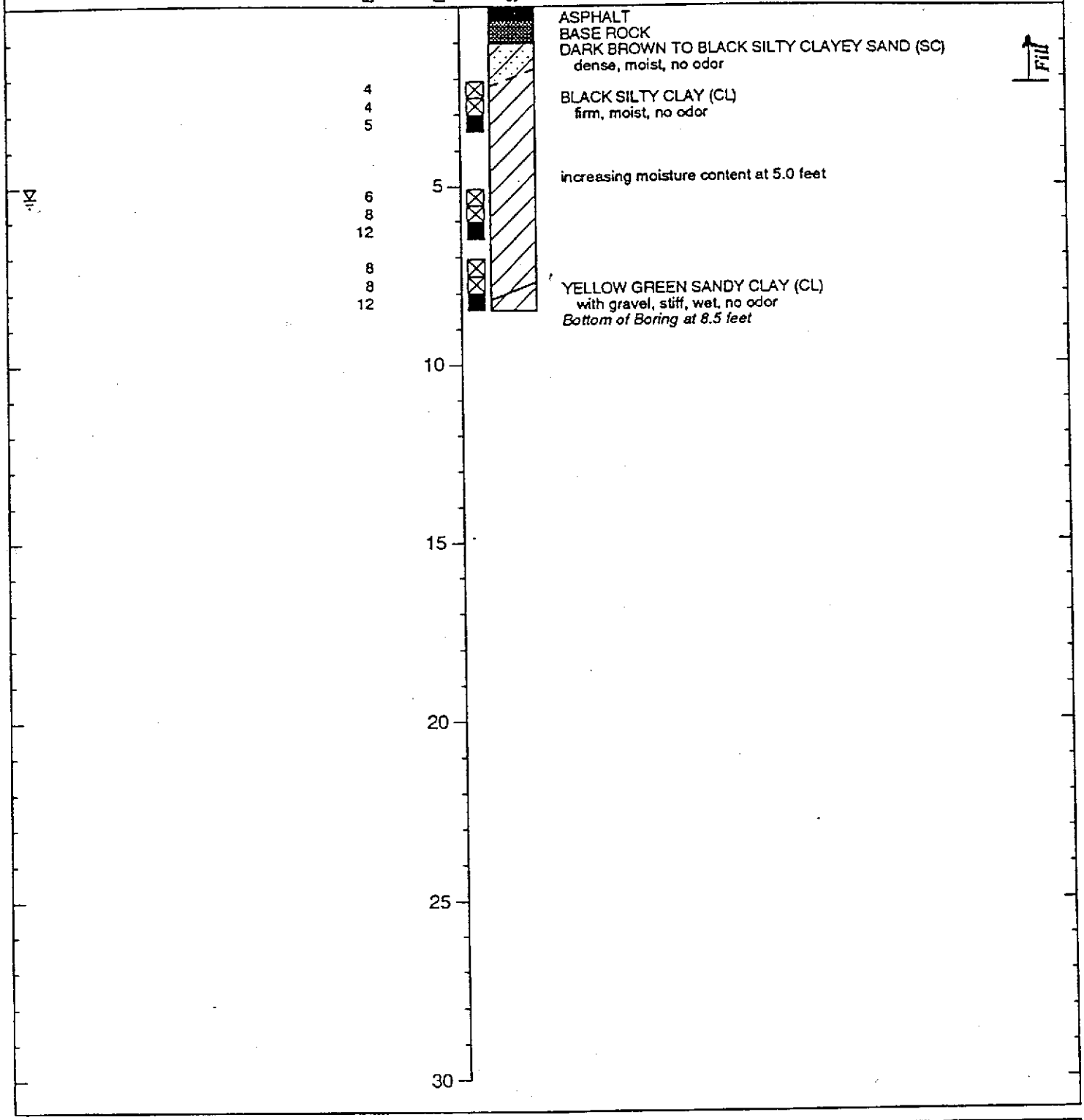
CLIENT	Emeryville Warehouse Co.	DIAMETER OF HOLE	8 inches
LOCATION	Sherwin Avenue & Halleck Street Emeryville, California	TOTAL DEPTH OF HOLE	8.5 feet
JOB NUMBER	FF001C	TOP OF CASING ELEVATION	N/A
GEOLOGIST/ENGINEER	Jim Dunn RSC	DATE STARTED	11/20/90
DRILL RIG	Failing 1500	DATE COMPLETED	11/20/90

PLATE 5

SF 031951

PES Environmental, Inc.
Engineering & Environmental Services

LOG OF BORING FF-3



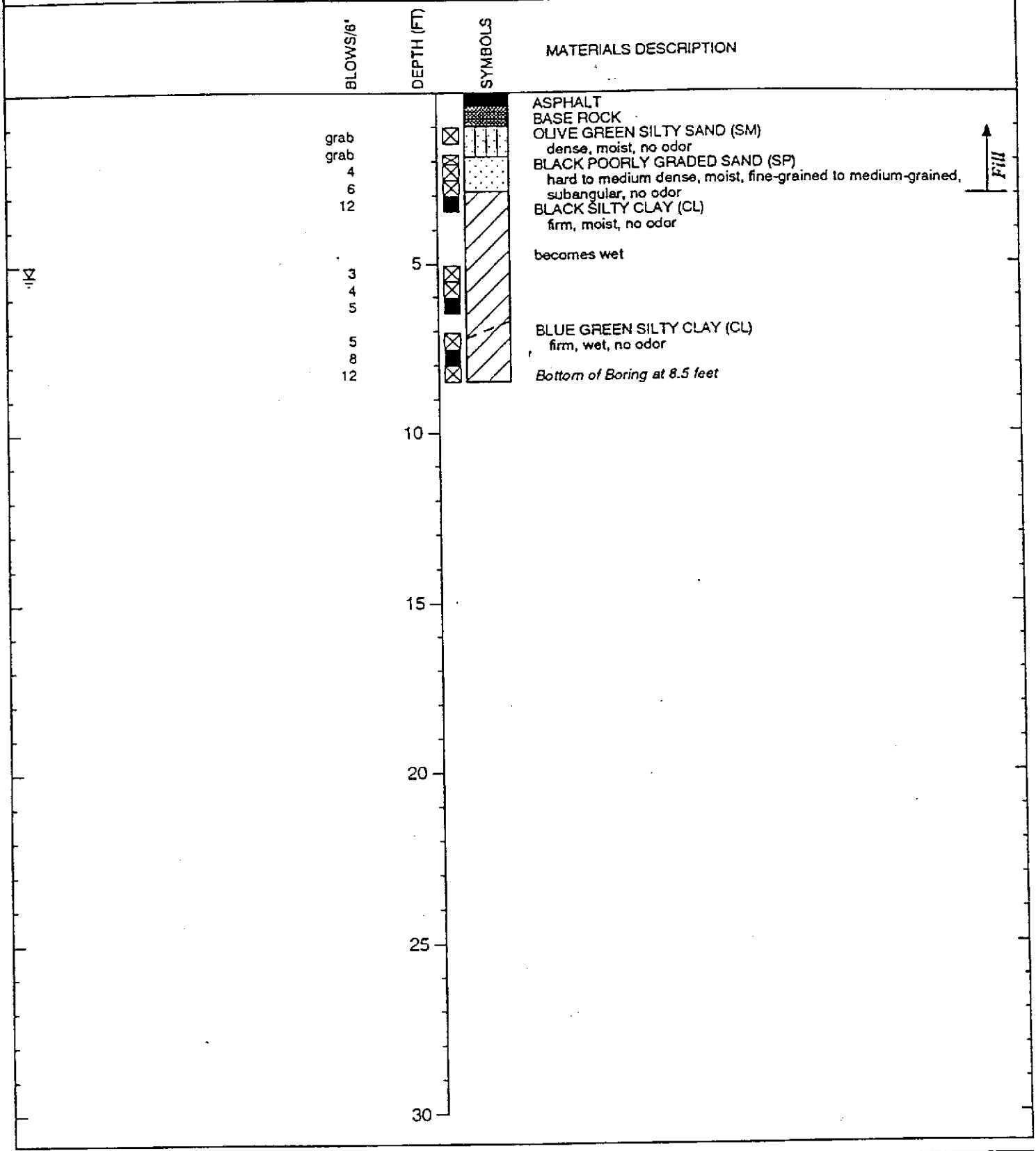
CLIENT	Emeryville Warehouse Co.	DIAMETER OF HOLE	8 inches
LOCATION	Sherwin Avenue & Halleck Street Emeryville, California	TOTAL DEPTH OF HOLE	8.5 feet
JOB NUMBER	FF001C	TOP OF CASING ELEVATION	N/A
GEOLOGIST/ENGINEER	Jim Dunn RSC	DATE STARTED	11/20/90
DRILL RIG	Failing 1500	DATE COMPLETED	11/20/90

PLATE 6

SF 031952

PES Environmental, Inc.
Engineering & Environmental Services

LOG OF BORING FF-4



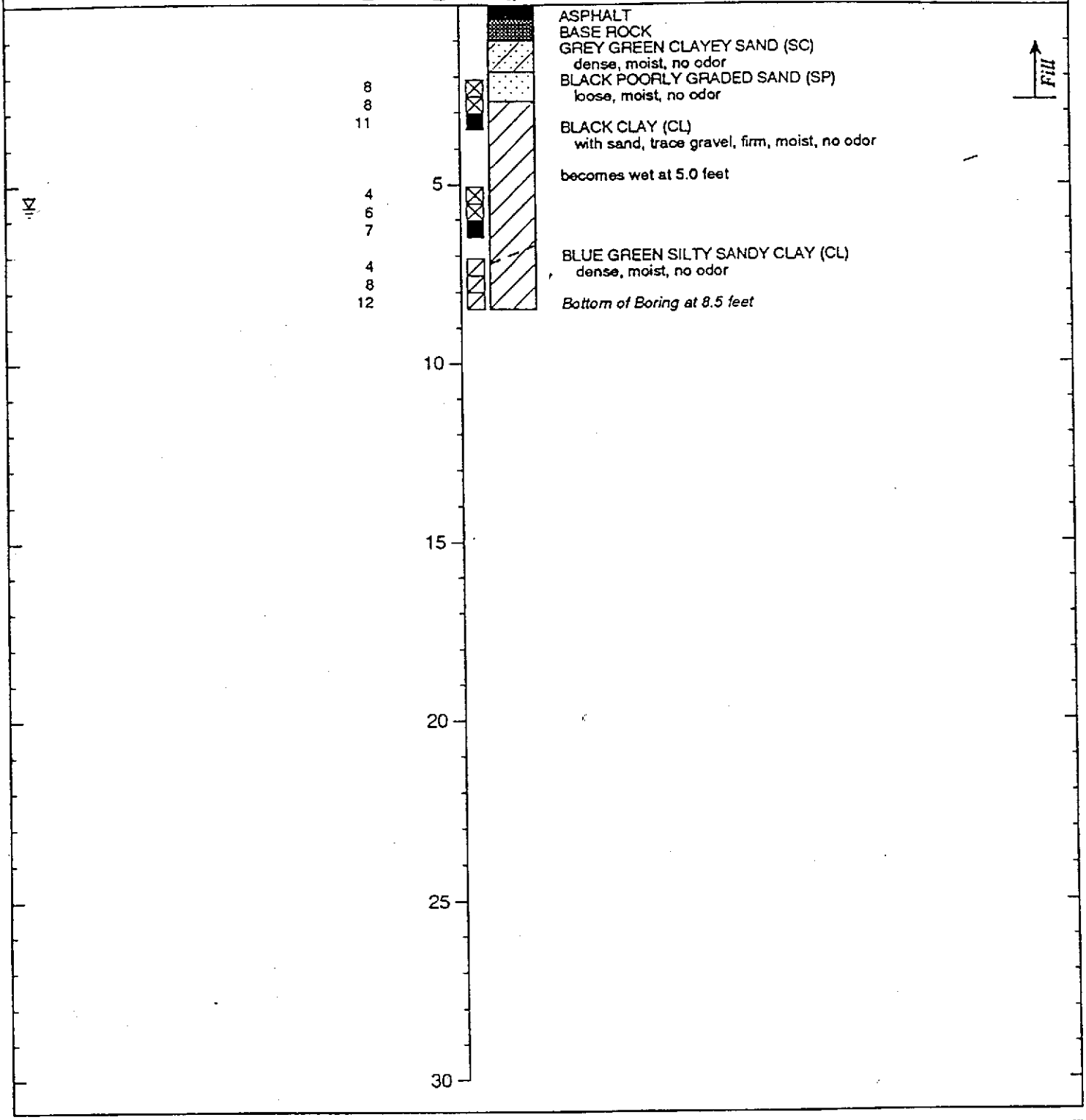
CLIENT	Emeryville Warehouse Co.	DIAMETER OF HOLE	8 inches
LOCATION	Sherwin Avenue & Halleck Street Emeryville, California	TOTAL DEPTH OF HOLE	8.5 feet
JOB NUMBER	FF001C	TOP OF CASING ELEVATION	N/A
GEOLOGIST/ENGINEER	Jim Dunn RSC	DATE STARTED	11/20/90
DRILL RIG	Failing 1500	DATE COMPLETED	11/20/90

PLATE 7

SF 031953

PES Environmental, Inc.
Engineering & Environmental Services

LOG OF BORING FF-5



CLIENT	Emeryville Warehouse Co.	DIAMETER OF HOLE	8 inches
LOCATION	Sherwin Avenue & Halleck Street Emeryville, California	TOTAL DEPTH OF HOLE	8.5 feet
JOB NUMBER	FF001C	TOP OF CASING ELEVATION	N/A
GEOLOGIST/ENGINEER	Jim Dunn RSC	DATE STARTED	11/20/90
DRILL RIG	Failing 1500	DATE COMPLETED	11/20/90

PLATE 8

SF 031954

MAJOR DIVISIONS					TYPICAL NAMES
COARSE-GRAINED SOILS MORE THAN HALF IS COARSER THAN NO. 200 SIEVE	GRAVELS MORE THAN HALF COARSE FRACTION IS LARGER THAN NO. 4 SIEVE SIZE	CLEAN GRAVELS WITH LITTLE OR NO FINES	GW		WELL GRADED GRAVELS WITH OR WITHOUT SAND, LITTLE OR NO FINES
			GP		POORLY GRADED GRAVELS WITH OR WITHOUT SAND, LITTLE OR NO FINES
		GRAVELS WITH OVER 15% FINES	GM		SILTY GRAVELS, SILTY GRAVELS WITH SAND
			GC		CLAYEY GRAVELS, CLAYEY GRAVELS WITH SAND
	SANDS MORE THAN HALF COARSE FRACTION IS LARGER THAN NO. 4 SIEVE SIZE	CLEAN SANDS WITH LITTLE OR NO FINES	SW		WELL GRADED SANDS WITH OR WITHOUT GRAVEL, LITTLE OR NO FINES
			SP		POORLY GRADED SANDS WITH OR WITHOUT GRAVEL, LITTLE OR NO FINES
		SANDS WITH OVER 15% FINES	SM		SILTY SANDS WITH OR WITHOUT GRAVEL
			SC		CLAYEY SANDS WITH OR WITHOUT GRAVEL
FINE-GRAINED SOILS MORE THAN HALF IS FINER THAN NO. 200 SIEVE	SILTS AND CLAYS LIQUID LIMIT 50% OR LESS		ML		INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTS WITH SANDS AND GRAVELS
			CL		INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY CLAYS WITH SANDS AND GRAVELS, LEAN CLAYS
			OL		ORGANIC SILTS OR CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS LIQUID LIMIT GREATER THAN 50%		MH		INORGANIC SILTS, MICACEOUS OR DIATOMACIOUS, FINE SANDY OR SILTY SOILS, ELASTIC SILTS
			CH		INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS
			OH		ORGANIC SILTS OR CLAYS OF MEDIUM TO HIGH PLASTICITY
HIGHLY ORGANIC SOILS			PT		PEAT AND OTHER HIGHLY ORGANIC SOILS

Perm	- Permeability
Consol	- Consolidation
LL	- Liquid Limit (%)
PI	- Plastic Index (%)
G_s	- Specific Gravity
MA	- Particle Size Analysis
2.5 YR 6/2	- Soil Color according to Munsell Soil Color Charts (1975 Edition)
5 GY 5/2	- GSA Rock Color Chart

- No Soil Sample Recoverd
- "Undisturbed" Sample
- Bulk or Classification Sample
- First Encountered Ground Water Level
- Piezometric Ground Water Level

Penetration - Sample drive hammer weight - 140 pounds falling 30 inches. Blows required to drive sampler 6 inches are indicated on the logs

PES Environmental, Inc.
Engineering & Environmental Services

Unified Soil Classification Chart
Phase II & III Investigations
Sherwin Avenue & Halleck Street
Emeryville, California

PLATE
9

JOB NUMBER	REVIEWED BY	DATE	REVISED DATE	REVISED DATE
FF001C	RSC	12/90		

SF 031955

APPENDIX A

PREACQUISITION SITE ASSESSMENT

PES Environmental, Inc.
Engineering & Environmental Services

October 17, 1990

FF001A

Emeryville Warehouse Company
244 Kearny Street, 9th Floor
San Francisco, California 94108

Attention: Donald A. Friend, Esq.

PREACQUISITION SITE ASSESSMENT
SOUTHERN PACIFIC PROPERTY
SHERWIN AVENUE AND HALLECK STREET
EMERYVILLE, CALIFORNIA

Dear Don:

This report presents the results of a Preaquisition Environmental Site Assessment (PSA) conducted by PES Environmental, Inc. (PES) for the Southern Pacific Railroad property located at the southeastern corner of Sherwin Avenue and Halleck Street in Emeryville, California (Plate 1). The PSA has been performed for the Emeryville Warehouse Company, who own an adjacent warehouse and are interested in purchasing the subject property for use as a parking lot. This PSA was completed under contract to the Emeryville Warehouse Company (PES Service Agreement, Reference No. FF001A, dated August 23, 1990), and has been performed in accordance with general industry-wide requirements for commercial real estate transactions.

The PSA has been conducted to assess current and former uses of the subject and surrounding properties and to evaluate whether these uses have resulted in adverse environmental impact to the subject property. The PSA involves completion of an on site and surrounding area inspection, reviewing aerial photographs of the area, conducting owner interviews, reviewing regulatory agency files on documented areas of known environmental problems in the vicinity of the site, and reporting the findings and our conclusions based on the potential for environmental impairment of the subject property.

SF 031958

P.O. Box 1833 • 100 Medical Plaza • Novato, CA 94948 • (415) 898-3531 • FAX (415) 898-2780

RESULTS OF ON-SITE INSPECTION AND SURVEY OF SURROUNDING AREAS

A site visit was conducted by PES personnel on Wednesday, September 19, 1990 to assess current environmental conditions on the subject property and surrounding parcels. The following discussion presents our findings.

On-Site Inspection

The site consists of a parcel of land approximately 20,000 square feet in size. The site, currently used as a parking area, is partially paved and contains several unused railroad siding tracks. Moderate amounts of debris are present on the site. Several isolated areas on the subject property show evidence of surface oil spills.

During the site visit, none of the following were found:

- Ponds, pits, sumps or any other solid waste or liquid waste disposal area;
- Current use or handling of hazardous materials;
- Presence of underground storage tanks; or
- Noxious odors.

Surrounding Area Survey

In concurrence with the property site visit, PES personnel conducted a limited visual survey of properties in the surrounding area to provide a qualitative assessment of the potential for on-site contamination due to off-site sources. The property is located in a commercial/industrial district of Emeryville. The subject property is bounded to the north by Sherwin Avenue and a Sherwin-Williams paint manufacturing facility. To the south, an automobile mechanic shop and a air compressor equipment business are found. Park Avenue is found on south side of these businesses. The Emeryville Warehouse Company's facility is found to the east of the subject property. Halleck Street bounds the west side of the subject property. The Pelco Building is located across Halleck Street. The following sections present the results of the surrounding area survey:

Sherwin-Williams Facility: A survey of the Sherwin-Williams facility visible from public access areas indicate that significant chemical storage occurs on the site as part of normal operations. Drums containing a variety of chemicals, including acids and caustics, were found stored in several areas on the Sherwin-Williams property. The drums storage areas are located approximately 500 feet north of the subject property. No visible evidence of releases were noted during the survey. One area was identified

approximately 1000 feet north of the subject property where monitoring wells have been installed and recent earthwork has been conducted. Access to this area has been controlled by installation of a temporary chain link fence. the location of the Sherwin-Williams facility with drum storage areas and the area where the groundwater monitoring wells have been installed is shown on Plate 2.

Southern Boundary Properties: Examination of the automotive mechanics shop and the air compressor company properties revealed general poor outdoor housekeeping practices, evidence of surface spillage of oils and other materials, distressed vegetation, and possible usage of hydrocarbon solvents and oils was observed. Large amounts of automotive and air compressor parts were observed scattered across the two sites. Surface spills of what appears to be oil were seen in numerous locations on these sites and extend up to the shared property line with the subject site. The location of these sites are shown on Plate 2.

Pelco Distribution Building: A portion of the Pelco Building, located west of the subject property at 4245 Halleck Street (see Plate 2), is currently being used to store chemicals. From open doorways, drums can been seen stacked within the building. A National Fire Protection Association (NFPA) label is present on the exterior wall of the building indicating substances are present on the site which on intense or continued exposure could cause temporary incapacitation or possible residual injury unless prompt medical treatment is given. No evidence of off-site release of chemicals was found during the survey.

Modine Western: Modine Western, located at 1461 Park Avenue, is located at the southwestern corner of Park Avenue and Horton Street, (see Plate 2). During the drive-by survey, two monitoring wells were identified in Horton Avenue adjacent to this property. Drums, containing soil cuttings, were also found in the vicinity of the wells. Based on visual evidence, it appears that an underground tank was removed near the east side of the structure and the wells were installed to monitor groundwater.

National Environmental: As shown on Plate 2, this site, located at 4055 Hubbard Street, is approximately 500 feet south of the subject property. A fuel dispenser for an underground tank was identified on the southern portion of the property adjacent to Halleck Street. The dispenser had been disconnected and recent grading of a near by area suggests removal of an underground tank from this site. Isolated areas of surface soil discoloration was observed across the National Environmental site.

FORMER USES OF PROPERTY AND SURROUNDING AREA

Investigation of former uses of the subject property and surrounding area included gathering information from a variety of sources, including review of aerial photographs and interviews with current property owners. The former uses identified from these sources were evaluated for potential use, handling, and/or storage of hazardous materials which might adversely impact the subject property. Additional information was gathered from published regulatory agency lists which document known environmental problems in the vicinity of the site. The results are presented below.

Review of Aerial Photographs

Aerial photographs of the subject property were reviewed at Pacific Aerial Photographs on August 28, 1990. Photographs from 1949, 1975, and 1990 were reviewed.

Aerial Photograph AV-28-12-32 (September 16, 1949): Inspection of the 1949 photograph showed a long narrow building situated between railroad siding lines on the western side of the subject property. The building appears to have been used as a transfer facility for distribution of materials between railroad cars and roadway vehicles. The area to the north of the site is being used as a railroad siding yard. The Sherwin-Williams facility is limited to the area north of Sherwin Avenue between Hubbard and Horton Streets. The Emeryville Warehouse structure is present to the east of the site as well as the auto mechanics building to the south. The north and south portions of the Pelco Distribution building are present in 1949. The center portion of the building is an open lot used for vehicle parking and storage. A large aboveground tank can be seen next to the southern portion of the building. Judson Steel, to the west, is present and in use. Several properties within a quarter mile of the site have extensive aboveground tank farms. The area appears to be predominantly industrial in use.

Aerial Photograph AV-1193-06-16 (May 19, 1975): By 1975, the structure on the subject property had been removed and it appears that the site is predominantly being used for vehicle parking and materials storage. Sherwin-Williams, to the north, has expanded it's operations to include a large building directly north of the Emeryville Warehouse Company building. A tank farm has been constructed on the north side of the Sherwin-Williams property approximately 1000 feet north of the subject site. This area coincides with the fenced area with monitoring wells identified during the drive-by survey. To the

west, another portion of the Pelco Distribution building has been constructed. The large aboveground tank has been removed by 1975. South of the property at the southwestern corner of Halleck Street and Park Avenue, structures present in the 1949 photo have been removed. Surface soils in this area are highly discolored, particularly along the SP right-of-way.

Aerial Photograph ALA AV-3845 (June 12, 1990): The 1990 photograph reflects current site and surrounding area conditions. No significant changes from currently observed conditions were noted on the photograph.

Current Owner Interviews

The current owner of the property, Southern Pacific, was contacted for information concerning the former uses of the subject property. According to Mr. Ron Mayer, the property was formerly used as a transfer facility by local businesses in the area. Materials transported by railcars were off-loaded at the site and transferred to street vehicle for transport to the local businesses. No information was available concerning former property users or prior owners.

Review of Regulatory Lists

The discussion presented in this section is based on available information provided by government agencies. In addition to reviewing agency lists that contain general information about the sites that have had reported environmental problems, PES personnel reviewed agency files for detailed information on sites that appeared on these lists.

Regional Water Quality Control Board (RWQCB) Fuel Leaks List (September 7, 1990): The Fuel Leaks list for Alameda County provides a list of sites where documented releases have been reported from underground storage tanks. Within a quarter mile radius of the subject site, seven sites were identified on this list, as follows:

- Del Monte Plant No. 35: This site, located at 1250 Park Avenue, has been used for assorted industrial activities including fish processing and medical research. It has been in operation since 1928. Chlorinated solvents were found in subsurface soils and groundwater on this site following removal of four underground tanks in 1988. A subsequent environmental report indicated that the soil contamination was limited to the vicinity of the former tanks.

Information concerning the groundwater contamination was limited to periodic monitoring of groundwater in wells located at the former tank location. The aforementioned report indicated that concentrations of contaminants had decreased substantially since tank removal. No information was available concerning the size of the contaminated groundwater plume or the potential for off-site migration. This site is located approximately 1/4 mile east and potentially upgradient of the subject property. The site is identified as location #1 on Plate 3.

- Pfizer Pigments: The Pfizer Pigments facility is located at 4650 Shellmound Street approximately three-eights of a mile northwest (cross gradient) of the subject property. The Pfizer site is used for the manufacture of paints and paint pigments. Following removal of eleven underground fuel and waste oil tanks in 1987, oil and grease were detected in the soil in the vicinity of the tanks. Groundwater sampled from the excavation contained low concentrations of diesel fuel and solvents. The contaminated soil was excavated and transported off-site for disposal. No action has been taken to address the groundwater contamination. The site is location #2 on Plate 3.

- Unidentified Site at 4543 Horton Street: Soil and groundwater contamination was found at this site following removal of two underground gasoline storage tanks. No further information is available on this property. The site is location #3 on Plate 3 and is approximately one-eighth mile north of the subject property.

- Rifkin Container Corporation: Groundwater contamination was identified after removal of a small underground gasoline storage tank at the site (#4 on Plate 3) in 1988. The site has been capped and groundwater monitoring is currently in progress. The site is located approximately one-eighth mile north of the subject property.

- City of Emeryville (Artist's Cooperative, Shell): This site is located at 1420 45th Street (location #6 on Plate 3). Six underground fuel storage tanks were removed from this site prior to 1987. Testing conducted at the time revealed over 1 percent gasoline in the groundwater. No further information on extent of the groundwater contamination or remedial actions was available. This site is located approximately one-eighth mile northeast and cross-gradient of the subject property.

- Judson Steel: The Judson Steel facility (location #7 on Plate 3) is located on Shellmound Avenue across the SP right-of-way from the subject property. A number of underground fuel storage tanks were removed from this site prior to 1988. Soil and groundwater contamination were identified during tank removal. No record of further investigation or remedial activities were found. This site is downgradient from the subject property.

RWQCB North Bay Toxics List (July 6, 1990): The North Bay Toxics list provides a summary of cases included in the RWQCB Site Management System for Alameda County and includes sites where environmental problems are not limited to leaking underground fuel tanks. There are five sites on this list within approximately one-forth mile of the subject property. One of these sites, the Del Monte Plant No. 35, was discussed in the previous section. The remaining four sites are as follows:

- Pacific Gas and Electric: This site, located at 4525 Hollis Street, was designated as a California State Superfund site in 1987. Soils on this site are contaminated with lead and polychlorinated biphenyls (PCBs). Groundwater was also found to contain these contaminants. Remedial investigation and feasibility studies for this site have been completed and remedial planning is currently being conducted. The site, designated as location #8 on Plate 3, is located approximately one-quarter mile northeast and cross-gradient of the subject property.

- Sherwin-Williams: The Sherwin-Williams facility, located north of the subject property, which was discussed previously was found on the North Bay Toxics list. Solvents and fuels have been identified in the soil and groundwater on this site in the vicinity of the former tank farm. Remedial investigations have determined that the contaminated groundwater plume does not extend south of Sherwin Avenue. This site is location #9 on Plate 3.

- Electro-Coatings: The Electro-Coatings facility (location #10) located at 1421 Park Avenue is a California Superfund site under investigation since 1982. This site is under investigation for disposing of chromium wastes in shallow wells and sumps on the property. Groundwater sampling indicates that elevated levels of total and hexavalent chromium extend off site to the northwest (towards the subject property). As of 1984, the chromium plume had extended to the intersection of Hubbard Street and Park Avenue. No information is available concerning the Electro-Coating site since that time.

- Myers Container: The Myers Container facility at 4500 Shellmound Avenue is located northwest of the subject property across the SP right-of-way (location #11). Periodic significant releases of hazardous materials have occurred on this property due to poor handling practices. Soils on this site are contaminated with a variety of heavy metals and organic compounds. No information was available on groundwater conditions. This site is located downgradient of the subject site.

United States Environmental Protection Agency Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS), (October 10, 1989): The CERCLIS provides information for businesses or other properties that are in the Federal Superfund Program. Under this program, a business or property is identified and a preliminary assessment is performed to assess whether the site shall become a Federal Superfund site. Four sites were found on the CERCLIS list within one quarter of a mile of the subject property including the PG & E, Electro-Coatings, and Myers Containers sites mentioned in the previous section. The fourth site is as follows:

- Chromex (Charles Lowe & Co.): This site is located at 1400 Park Avenue approximately one-eighth of a mile east of the subject property (location #5 on Plate 3). Available information for this site indicated that chromium sludge was dumped into a 12-foot deep pit on the site contaminating soil and groundwater. Chromic acid tanks on the site were also reported to have leaked. No information was available concerning off-site migration of contaminated groundwater. The site is located directly upgradient from the subject property.

Agency Personnel Interviews

During file research associated with the aforementioned sites, agency personnel familiar with the sites were queried for additional information. In addition to agency personnel at the Department of Health Services and the RWQCB, Emeryville Fire department personnel in charge of tracking the use and storage of hazardous materials in the vicinity of the site were contacted.

According to Mr. George Warren, a fire marshall for Emeryville, several sites not included on the RWQCB lists had underground storage tanks or used significant quantities of hazardous materials in the vicinity of the subject property. The locations of these sites are shown on Plate 3 (locations #12-19).

DISCUSSIONS AND RECOMMENDATIONS

Based on the results of the site use history review, a potential for environmental impairment of the subject property exists due to the nature of former property uses. While specific instances were not identified, heavy industrial use in the area would suggest that hazardous materials may have been handled on the property as part of the materials transfer activities.

Additionally, environmental concerns exist on nearby properties that are associated with present or past use, storage, or disposal of hazardous materials on these sites which may affect the subject property. In summary these findings include:

- the presence of two CERCLIS sites within one-eighth of a mile and up-gradient of the property. The latest information available in 1984 indicates that groundwater has been impaired from releases from the Electro-Coating site northwest of the intersection of Hubbard Street and Park Avenue. Based on available data, there is no indication that the migration of contaminated groundwater has been addressed and it is likely that the plume has migrated closer to the subject property.

- Numerous other sites located upgradient from the subject property have been identified where hazardous materials have been or are stored in underground storage tanks. Many of the tanks have been found to have been leaking and remedial actions have not been implemented. There is a possibility that releases from these sites have affected the subject property.

- Poor housekeeping activities by sites adjacent to the subject property suggest the possibility for improper hazardous materials handling and/or disposal. Releases from these properties could migrate onto the subject property.

In conclusion, the results of this PSA indicate that previous activities on the subject site and documented nearby contamination have the potential for causing on-site contamination. Therefore, we recommend that direct environmental sampling be conducted on the subject property at this time. This sampling should be conducted as part of a Phase II preliminary soil and groundwater investigation to evaluate whether subsurface on-site soils have been impacted by past site activities and evaluate whether groundwater contamination plumes arising from upgradient releases have resulted in groundwater degradation on the property.

LIMITATIONS

The PSA activities were conducted in accordance with practices and procedures generally accepted in the consulting engineering field. Information presented in this report does not confirm or deny the presence of subsurface contamination at the property, but indicates that there is a potential that it is present. Our professional judgement to assess the potential of contamination was based on limited data; no warranty is given or implied by this report. A more extensive assessment that would include a surface and/or subsurface investigation and chemical analyses of soil and groundwater samples would provide more definitive information concerning site-specific conditions.

We trust this is the information that you require at this time. If you have any questions, please contact the undersigned.

Yours very truly,

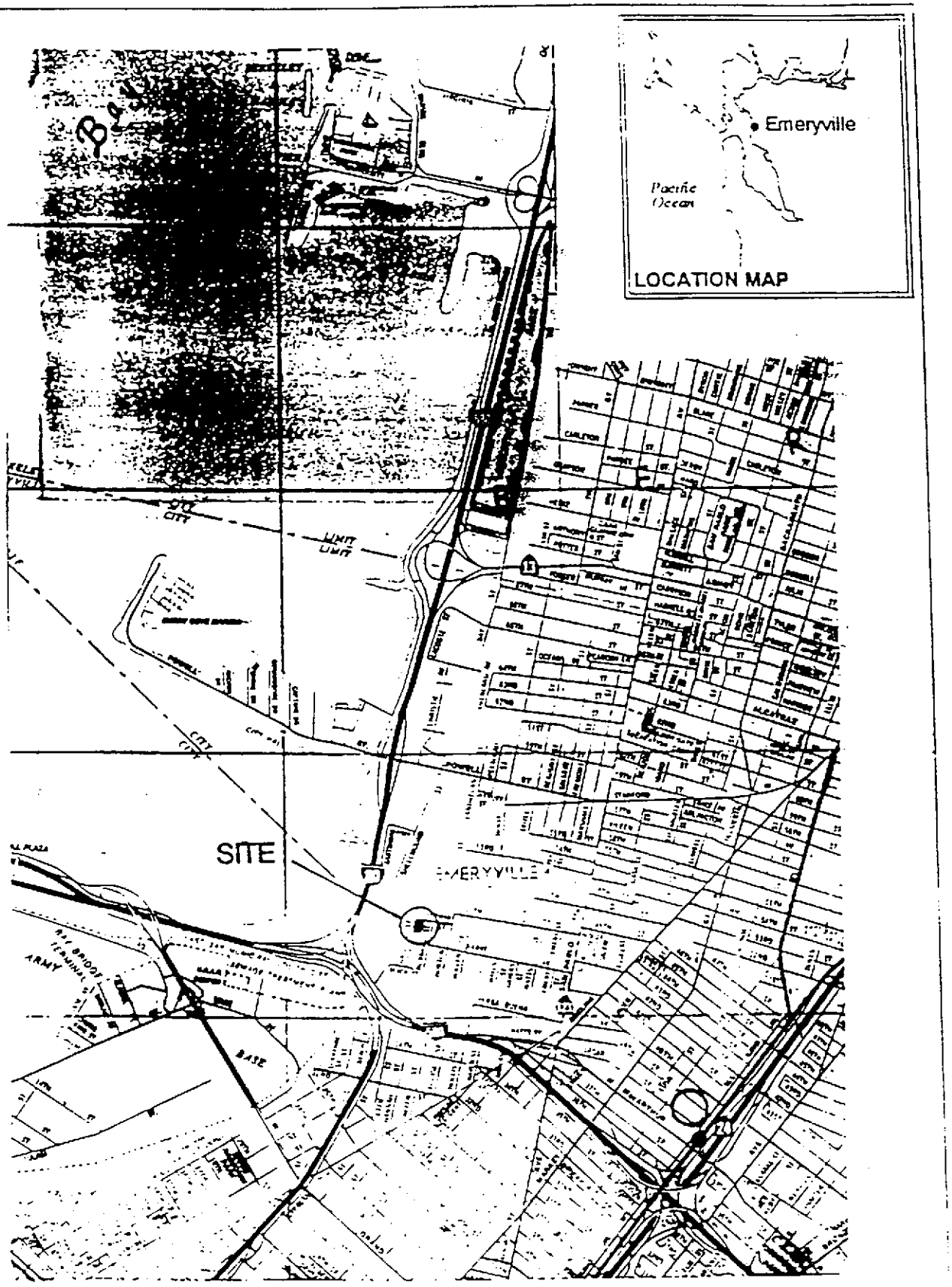
PES ENVIRONMENTAL, INC.

James P. Dunn
Senior Geologist

Robert S. Creps, P.E.
Associate Engineer

Attachments: Plate 1 - Vicinity Map
Plate 2 - Site Location Map
Plate 3 - Agency Identified Sites

FF001-5.ltr



PES Environmental, Inc.
Engineering & Environmental Services

Vicinity Map
Southern Pacific Property
Sherwin Avenue and Halleck Street
Emeryville, California

FIGURE
1

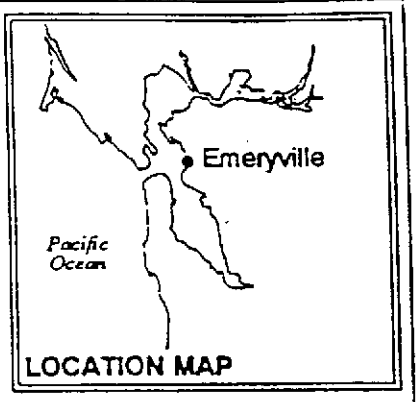
FF001A

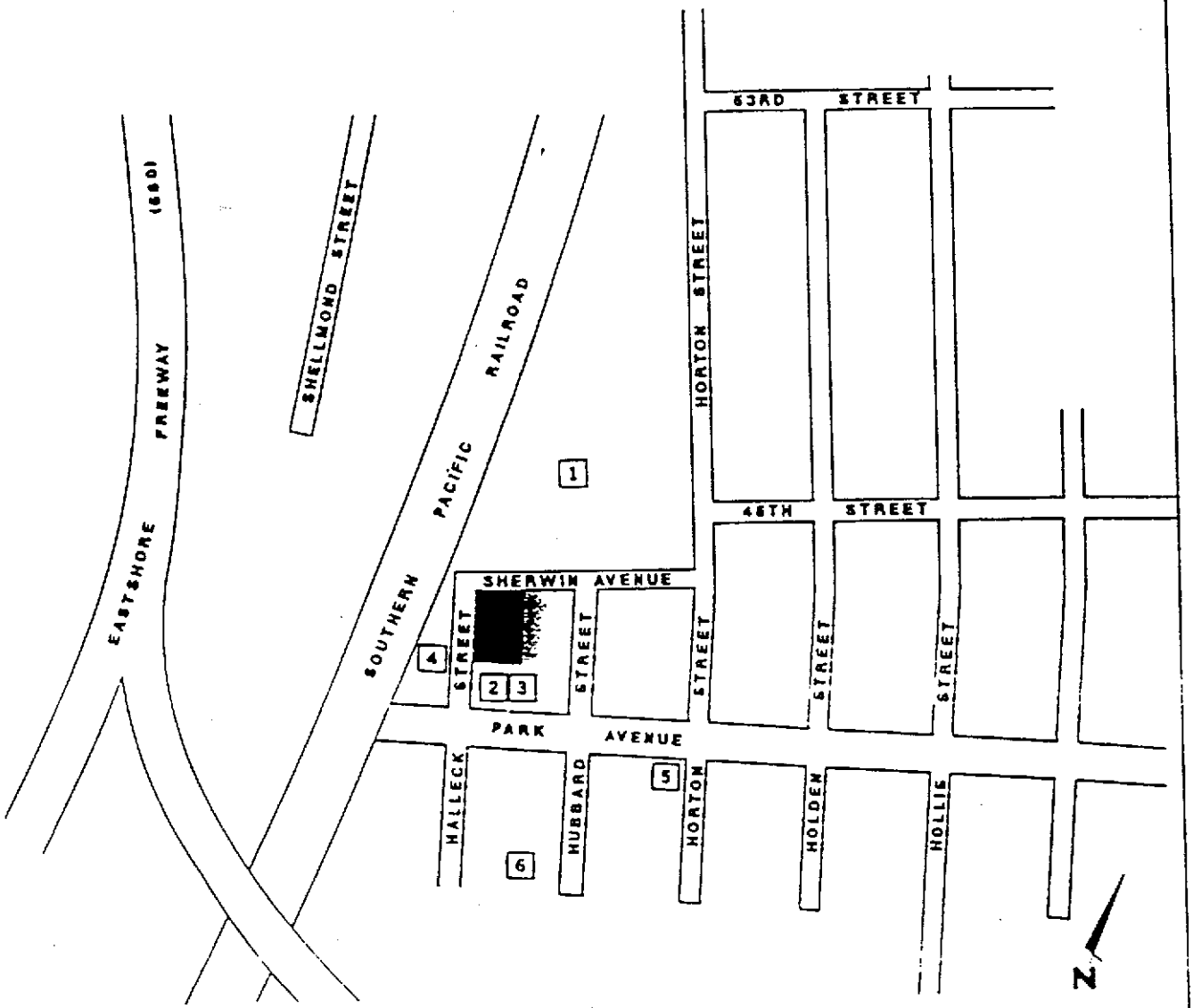
3-90

SF 031968

EXPLANATION

1 - Sherwin Williams Facility Former Tank Farm
2 - Automobile Repair Shop
3 - Air Compressor Repair Shop
4 - Pelco Distribution Building
5 - Modine Western Facility
6 - National Environmental Property





SF 031969

PES Environmental, Inc.
Engineering & Environmental Services

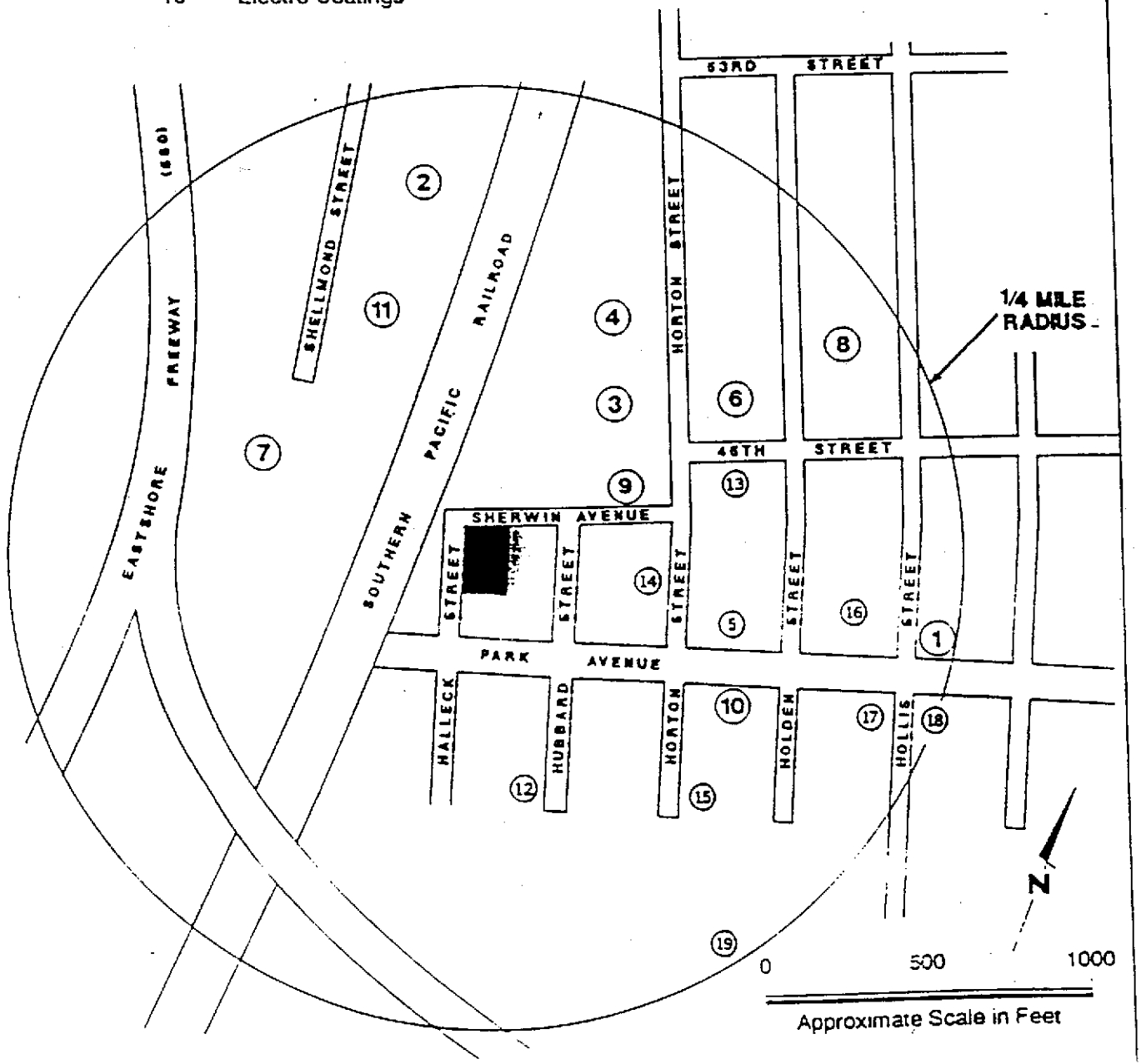
Site Location Map
Southern Pacific Property
Sherwin Avenue and Halleck Street
Emeryville, California

PLATE **2**

JOB NUMBER	REVIEWED BY	DATE	REVISED DATE	REVISED DATE
FF001A		9/90		

EXPLANATION

1 - Del Monte Plant No. 35
2 - Pfizer Pigments
3 - Unknown Property
4 - Rifkin
5 - Chromex (Charles Lowe & Co.)
6 - City of Emeryville
7 - Judson Steel
8 - Pacific Gas and Electric
9 - Sherwin Williams
10 - Electro-Coatings
11 - Myers Container
12 - National Environment
13 - California Plywwod
14 - Pepsi Cola
15 - PALS
16 - Morehouse
17 - Eugenes (former gas
18 - City of Emeryville
19 - Bay Area Warehouse



PES Environmental, Inc.
Engineering & Environmental Services

Agency Identified Sites
Southern Pacific Property
Sherwin Avenue and Halleck Street
Emeryville, California

PLATE 3

JOB NUMBER	REVIEWED BY	DATE	REVISED DATE	REVISED DATE
FF001A		9/90		

SF 031970

APPENDIX B

PHASE II WELL DEVELOPMENT REPORT

BLAINE
TECH SERVICES INC.

1370 TULLY RD., SUITE 505
SAN JOSE, CA 95122
(408) 995-5535

October 23, 1990

PES Environmental
P.O. Box 1833
Novato, CA 94948

Attention: Jane Gill

SITE:
Friend Project
Sherwin & Halleck
Emeryville, California

PROJECT:
Well Development

PROJECT INITIATED ON:
October 12, 1990

WELL DEVELOPMENT REPORT 901012-L-1.DEV

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. The interpretation of results should be performed by representatives of the interested regulatory agencies and those certified professionals who are engaged as paid consultants in the business of providing professional opinions along with recommendations and proposals for further investigative or remedial activities.

As an independent third party, Blaine Tech Services, Inc. routinely performs evacuation and sampling of groundwater wells. In addition, we are frequently asked to provide specialized personnel, instruments and equipment for well development work. Similar standards of care and cleanliness are required in all these activities and our personnel are accustomed to the safety measures that must be taken.

J-1

Well Designation	Well Diameter (inches)	Initial Depth to Water (feet)	Well Depth (feet)	Volume of single case (gallons)
J-1	2	3.81	12.6	1.4

Equipment Used: USGS/Middleburg Pump, Swabb

Data collection during well development:

Date	Time	Gallons Evacuated	pH	Electrical Conductivity (micromhos/cm)	Temp. (F)	Notes
10/12/90	10:32	--	--	--	--	Swabbed.
	10:39	0.5	7.0	900	72.0	Silty brown.
	10:44	4.0	7.1	1000	72.7	Silty brown.
	10:54	8.0	7.3	800	71.5	Brown.
	11:00	12.0	7.4	800	70.8	Brown.
	11:09	16.0	7.3	700	70.7	Brown.
	11:16	20.0	7.4	700	70.6	Medium brown.
	11:24	24.0	7.4	600	70.6	Medium brown.
	11:33	28.0	7.4	600	70.6	Light brown.
	11:40	--	--	--	--	Swabbed.
	11:45	32.0	7.2	700	71.6	Medium brown.
	11:52	36.0	7.2	700	71.2	Medium brown.
	12:00	40.0	7.3	600	71.0	Light brown.
	12:12	44.0	7.4	700	70.9	Light brown.
	12:24	47.0	7.4	600	71.4	Light brown.

Because formations vary in their geologic composition, transmissivity and water production capability, well development cannot be reduced to a set of fixed procedures that can simply be repeated for a set period of time and be expected to produce a complete or satisfactory result. Instead, well development is accomplished by procedures that (1) repair the portion of the native formation that was disrupted by the cutting action of the well drilling tool, and (2) promote the flow of water out of the native formation into the newly installed well (through the filter pack and well screen). Execution of development actions that are not appropriate to the native formation will be inefficient and even deleterious. While trial and error experimentation (guided by field instrument readings) can eventually succeed, the most efficient approach is to have the well development actions specified by the geologist who oversaw the installation of the well. This person will have observed and examined both the cuttings and soil samples produced during the drilling, and then characterized the native materials according to the Unified Soil Classification System as part of logging the well. This information together with the professional knowledge of soil types and their hydraulic characteristics will also have served as the basis for judgments that determined the final construction details of the finished well. Because the same information and judgments are needed to select the processes that can be expected to efficiently develop the well, it is common practice to have the well development specifications set by the same geologist (or geological team) as installed the well.

In addition to specifying the particular well development actions that will be performed, the geologist is also asked to determine the evaluation criteria to be used in evaluating the progress and completeness of the well development work. The most common standard are volumetric, recharge rate, and water clarity (measured as turbidity). Through the use of field instruments and radio communications our personnel can work independently of the project geologist. However, it is often productive to have the geologist on site so as to observe the progress being made as the well is being developed. This is especially true of sites where multiple wells have been installed, because wells even a short distance apart will often display quite different characteristics and the adequacy of development for a particular well may need to be evaluated in light of the hydrologic condition presented by the native formation at that location on the site.

Scope of Requested Services

Blaine Tech Services, Inc. was asked to provide specialized equipment, instruments and personnel for a well development project being overseen by PES Environmental.

Execution of the Recent Work

Our personnel arrived at the site on friday, October 12, 1990 and developed one well in accordance with PES Environmental specifications communicated to us by Ms. Jane Gill. A summary of the well development actions is presented in the tables of field data which follow.

J-1

Well Designation	Well Diameter (inches)	Initial Depth to Water (feet)	Well Depth (feet)	Volume of single case (gallons)
J-1	2	12.6	3.81	1.4

Equipment Used: USGS/Middleburg Pump, Swabb

Data collection during well development:

Date	Time	Gallons Evacuated	pH	Electrical Conductivity (micromhos/cm)	Temp. (F)	Notes
10/12/90	10:32	--	--	--	--	Swabbed.
	10:39	0.5	7.0	900	72.0	Silty brown.
	10:44	4.0	7.1	1000	72.7	Silty brown.
	10:54	8.0	7.3	800	71.5	Brown.
	11:00	12.0	7.4	800	70.8	Brown.
	11:09	16.0	7.3	700	70.7	Brown.
	11:16	20.0	7.4	700	70.6	Medium brown.
	11:24	24.0	7.4	600	70.6	Medium brown.
	11:33	28.0	7.4	600	70.6	Light brown.
	11:40	--	--	--	--	Swabbed.
	11:45	32.0	7.2	700	71.6	Medium brown.
	11:52	36.0	7.2	700	71.2	Medium brown.
	12:00	40.0	7.3	600	71.0	Light brown.
	12:12	44.0	7.4	700	70.9	Light brown.
	12:24	47.0	7.4	600	71.4	Light brown.

STANDARD PROCEDURES

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.

Selection of Development Equipment

Each Blaine Tech Services, Inc. vehicle provided for a well development project will have a wide assortment of development tools including stainless steel surgeblocks and swabs, several types of pumps, and complete instrumentation for determining standard parameters. Special equipment which includes certain type of winches, jetting heads, and drop surging pumps can be provided.

General Policy

Truly difficult conditions which can only be resolved by the application of massive force or large volumes of high pressure air should be addressed by the well drilling contractor. Blaine Tech Services, Inc. has a general policy against the use of tools or techniques which provide enough mechanical advantage to pose a serious risk of damaging the well. The same policy prohibits introducing foreign materials into a well which would be presumed to carry with them contaminants that would also be introduced to the well. In keeping with this policy, our personnel avoid surging with slugs of effluent water, or jetting with unfiltered air unless these actions are specifically requested by a geologist who seems cognizant of the problems and hazards that accompany the action. In a similar vein, our personnel will, whenever possible, avoid development actions that are likely to seal clay formations or promote bridging, and make every attempt to call obvious indications of such conditions to the attention of the project geologist so that a different regimen can be selected.

Effluent Materials

Groundwater well sampling protocols call for the evacuation of a sufficient volume of water from the well to insure that the sample is collected from water that has been newly drawn into the well from the surrounding geologic formation.

Well development routinely generates as much or more effluent water as routine evacuation prior to monitoring. In some cases, very large amounts of water must be removed from the well before a satisfactory level of development has been achieved. The effluent water from these development actions must be contained in suitable containers. Blaine Tech Services, Inc. will place this water in appropriate containers of the client's choice or bring new 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 samples collected from each individual groundwater well. If those individual samples do 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.

Decontamination

All apparatus is brought to the site in clean and serviceable condition. The equipment will be decontaminated after use in each well and before leaving the site. Decontamination consists of complete disassembly of the device to a point where a jet of steam cleaner water can be directed onto all the internal surfaces (including the inside of the Teflon bladders in USGS/Middleburg pumps. Teflon conductor tubing is connected to the steam cleaner water outlet and water is run through the interior of the tubing for several minutes. The devices are then reassembled and actuated for a period of time as an additional measure. Blaine Tech Services, Inc. frequently modifies apparatus to allow complete disassembly and proper cleaning.

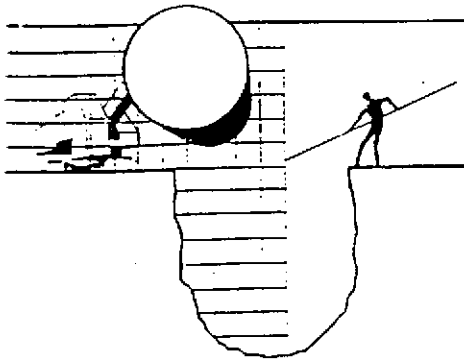
Please call if we can be of any further assistance.

Richard C. Blaine

RCB/jmb

APPENDIX C

PHASE II WELL SAMPLING REPORT



BLAINE TECH SERVICES INC.

1370 TULLY RD., SUITE 505
SAN JOSE, CA 95122
(408) 995-5535

October 24, 1990

PES Environmental
P.O. Box 1833
Novato, CA 94948

Attn: Jane Gill

SITE:
Friend Project,
Sherwin & Halleck
Emeryville, California

PROJECT:
PES Environmental
well installation project

SAMPLING EVENT:
Evacuate and sample one well

DATE:
October 15, 1990

GROUNDWATER SAMPLING REPORT 901015-L-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 is presented in the TABLE OF WELL MONITORING DATA. This data was collected during our inspection, well evacuation, and sample collection. Measurements include the total depth of the well and 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. Recharge performance can be evaluated by comparing the anticipated three, four, or five case volume evacuation gallonage with the volume which could actually be purged.

SF 031981

TABLE OF WELL MONITORING DATA

Well I.D.	J-1 *		
Date Sampled	10/15/90		
Well Diameter (in.)	2		
Total Well Depth (ft.)	12.71		
Depth To Water (ft.)	3.93		
Free Product (in.)	NONE		
Reason If Not Sampled	--		
1 Case Volume (gal.)	1.4		
Did Well Dewater?	NO		
Gallons Actually Evacuated	5.0		
Purging Device	MIDDLEBURG		
Sampling Device	MIDDLEBURG		
Time	09:36	09:54	10:13
Temperature (Fahrenheit)	68.7	70.8	71.1
pH	7.6	7.6	7.4
Conductivity (micromhos/cm)	600	600	600
BTS Chain of Custody	901015-L-1		
BTS Sample I.D.	FF00181		
DHS HMTL Laboratory	CURTIS & THOMPKINS		
Analysis	BTEX, TVH, EPA 601, TEH, HEXAVALENT CHROMR, PRIORITY POLLUTANT METALS **		

* Sample ID FF00182 was a trip blank.

** The sample liquid intended for priority pollutant metals and hexavalent chrome analysis was field filtered prior to placing it in the appropriate sample containers. Nitric acid was not used for the hexavalent chrome analysis.

EQUIPMENT

Selection of Sampling Equipment

The determination of what apparatus is to be used on particular wells may be made by the property owner or the professional consultant directing the performance of the monitoring on the property owner's behalf. If no specific requirement is made known to us, our personnel will select equipment that will accomplish the work in the most efficient manner. Our personnel are equipped with a variety of sampling devices that include USGS/Middleburg pumps, down hole electric submersible pumps, air lift pumps, suction pumps, and bailers made of both Teflon and stainless steel.

SF 031982

Evacuation and Sampling Equipment Mechanics

When equipment is not selected by the client, the apparatus for well evacuation and sample collection is selected by our field personnel based on an evaluation of the field conditions. Four types of devices are commonly available for employment:

Bailers
High Volume Suction Pumps
Electric Submersible Pumps
USGS/Middleburg positive displacement sampling pumps

USGS/Middleburg pumps were selected for the collection of samples at this site.

USGS/Middleburg Positive Displacement Sampling Pumps: USGS/Middleburg positive displacement sampling pumps are EPA approved pumps appropriate for use in wells down to two inches in diameter and depths up to several hundred feet. The pump contains a flexible Teflon bladder which is alternately allowed to fill with well water and then collapsed. Actuation of the pump is accomplished with compressed air supplied by a single hose to one side of the Teflon membrane. Water on the other side of the membrane is squeezed out of the pump and up a Teflon conductor pipe to the surface. Evacuation and sampling are accomplished as a continuum. The rate of water removal is relatively slow and loss of volatiles almost non-existent. There is only positive pressure on the water being sampled and there is no impeller cavitation or suction. The pumps can be placed at any location within the well, can draw water from the very bottom of the well case, and are virtually immune to the erosive effects of silt or lack of water which destroy other types of pumps.

Disadvantages associated with Middleburg pumps include their high cost, low flow rate, temperamental operation, and cleaning requirements which are both elaborate and time consuming.

STANDARD PRACTICES

Evacuation

There are few accepted groundwater sampling protocols that do not call for the evacuation of at least three case volumes of water prior to sample collection, and there are situations where up to ten case volumes of evacuation may be requested. Different professional consultants may specify different levels of evacuation prior to sampling or may request that specific parameters be used to determine when to collect the sample. Our personnel use several standard instruments to record the changes in parameters as the well is evacuated. These instruments are used regardless of whether or not a specific volumetric standard has been called for. As a result, the consultant will always be provided with a record of the pH, EC, and temperature changes that occurred during the evacuation process. Additional information obtained with different types of instruments (such as dissolved oxygen and turbidity meters) can also be collected if requested in advance.

Effluent Materials

Groundwater well sampling protocols call for the evacuation of a sufficient volume of water from the well to insure that the sample is collected from water than has been newly drawn into the well from the surrounding geologic formation. The evacuation of this purge water creates a volume of effluent water which must be contained. Blaine Tech Service, Inc. will place this water in appropriate containers of the client's choice or bring new 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.

Observations and Measurements

Included in the scope of work are routine measurements and investigative procedures which are intended to determine if the wells are suitable for evacuation and sampling. These include measurement (from the top of the well case) of the total depth of the well; the depth to water, and the thickness of any free product zone (FPZ) encountered. The presence of a significant free product zone may interfere with efforts to collect a water sample that accurately reflects the condition of groundwater lying below the FPZ. This interference is caused by adhesion of petroleum to any device being lowered through the FPZ and the likelihood that minute globules of petroleum may break free of the sampling device and be included in the sample. Accordingly, evaluation of analytical results from wells containing any amount of free petroleum should take into account the possibility that positive results have been skewed higher by such an inclusion. The decision to sample or not sample such wells is left to the discretion of our field personnel at the site and the consultant who establishes sampling guidelines based on the need for current information on groundwater conditions at the site.

Sampling Methodology

Samples were obtained by standardized sampling procedures that follow an evacuation and sample collection protocol. The sampling methodology conforms with 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.

Sample Containers

Sample material is collected in specially prepared containers appropriate to the type of analyses intended. Our firm uses new sample containers of the type specified by either EPA or the RWQCB. Often times analytical laboratories wish to supply the sample containers because checks performed on these bottles are often part of a comprehensive laboratory QC program. In cases where the laboratory does not supply sample containers our personnel collect water samples in containers that are appropriate to the type of analytical procedure that the sample is to receive. For example, 40 ml volatile organic analysis vials

(VOAs) are used when analysis for gasoline and similar light volatile compounds is intended. These containers are prepared according to EPA SW 846 and will usually contain a small amount of preservative when the analysis is for TPH as gasoline or EPA 602. Vials intended for EPA 601 analysis and EPA 624 GCMS procedures are not preserved. The closure of volatile organic analysis water sample containers is accomplished with an open headed (syringe accessible) plastic screw cap brought down on top of a Teflon faced septum which is used to seal the sample without headspace.

Water samples intended for semivolatile and nonvolatile analysis such as total oil and grease (TOG) and diesel (TPH HBF) are collected and transported in properly prepared new glass liter bottles. Dark amber glass is used in the manufacture of these bottles to reduce any adverse effect on the sample by sunlight. Antimicrobial preservative may be added to the sample liquid if a prolonged holding time is expected prior to analysis. Closure is accomplished with a heavy plastic screw cap.

Groundwater well samples intended for metals analysis are transported in new plastic bottles and preserved with nitric acid. Our personnel can field filter the sample liquid prior to placing it in the sample container if instructed to perform this procedure.

Sample Handling Procedures

Water samples are collected in any of several appropriate devices such as bailers, Coliwasas, Middleburg sampling pumps etc. which are described in detail only as warranted by their employment at a given site. Sample liquid is decanted into new sample containers in a manner which reduces the loss of volatile constituents and follows the applicable EPA procedures for handling volatile organic and semi-volatile compounds. Only two variations from the EPA methods are generally employed. First, preservative is added to the sample container prior to addition of the sample liquid. We first discovered this method in bottles prepared by Stoner Laboratories in 1982. It was subsequently adopted by many northern California laboratories and environmental consulting firms as a practical means of reducing the time that a liquid is allowed to aerate prior to closure of the sampling container. Second, because tests have shown that the preservative readily mixes with sample liquid, glass stirring rods are not used to agitate the sample/preservative mixture.

Groundwater samples that are to receive metals analyses can be filtered prior to being placed in the plastic sample bottles that contain the nitric acid preservative. The filtration process employs new glass containers which are discarded and laboratory quality disposable filtering containers which are also discarded. A frequently used filtering procedure employs a vacuum pump to draw sample material through a 0.45 micron filter. The 0.45 micron pore size is standard, but the amount of filter available varies with the type of package selected. Filters are selected on the basis of the relative turbidity of the water sample. Samples which are relatively clean can be efficiently filtered with relatively inexpensive filters while very turbid water will require a very large filter with a high tolerance for sediments. One of many such filters our firm uses are the Nalgene Type A filters in which an upper and lower receptacle chamber are affixed to the filter. Sample material is poured into the upper chamber and a vacuum pump attached to the lower chamber. Simple actuation of the vacuum pump induces the flow of water through the filter and into the lower chamber. The sample is then decanted into the laboratory container and the filter assembly discarded.

Following collection, samples are promptly placed in an ice chest containing prefrozen blocks of 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 releasing the samples followed by the time, date and signature of the person accepting custody of the samples).

Hazardous Materials Testing Laboratory

The samples obtained at this site were delivered to Curtis & Tompkins Laboratory in Redwood City, California. Curtis & Tompkins Laboratory is a California Department of Health Services certified Hazardous Materials Testing Laboratory and is listed as DOHS HMTL #159.

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.

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. Decontamination procedures include complete disassembly of the device to a point where a jet of steam cleaner water can be directed onto all the internal surfaces (this applies to the *inside* of the Teflon bladders of USGS/Middleburg pumps). Teflon conductor tubing is connected to the steam cleaner water outlet and water is run through the interior of the tubing for several minutes. The devices are then reassembled and actuated for a period of time as an additional measure. Blaine Tech Services, Inc. frequently modifies apparatus to allow complete disassembly and proper cleaning.

Please call if we can be of any further assistance.

Richard C. Blaine

RCB/jmb

attachments: chain of custody

BLAINE TECH SERVICES INC

1370 TULLY ROAD, SUITE 505
SAN JOSE, CA 95122
(408) 995 5535

CHAIN OF CUSTODY 9010LS-L-1

CLIENT PES

SITE Friend Project
Corner of Shevin & Hollis
Emeryville, CA.

SAMPLE I.D.	MATRIX S = SOIL W = H2O	CONTAINERS TOTAL	C = COMPOSITE ALL CONTAINERS	TEH	Priority Pollutant Metals	Hexavalent Chrome	EPA 601	THM	BTXE
FF-00 1B1	W	7		X	X	X	X	X	X
FF-00 1B2	W	1					X		

CONDUCT ANALYSIS TO DETECT

LAB Curtis & Tompkins DHS #

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

☐ EPA ☐ RWQCB REGION ____
☐ LIA
☐ OTHER

SPECIAL INSTRUCTIONS

Bill to PES Environmental

Hexavalent Chrome - 24 hr. holding time & do not preserve

ADD'L INFORMATION	STATUS	CONDITION	LAB SAMPLE #
	Rec'd		
	"		

RESULTS NEEDED NO LATER THAN

SAMPLING COMPLETED	DATE	TIME
	10/15/90	10:20

SAMPLING PERFORMED BY [signature]

RELEASED BY	DATE	TIME	RECEIVED BY
[signature]	10/15/90	10:56	
RELEASED BY	DATE	TIME	RECEIVED BY
RELEASED BY	DATE	TIME	RECEIVED BY Nancy Arbuckle

DATE 10/15/90 TIME 1200?

SHIPPED VIA	DATE SENT	TIME SENT	COOLER #

SF 031988

APPENDIX D

PHASE III SOIL ANALYTICAL REPORTS

Curtis & Tompkins, Ltd., Analytical Laboratories. Since 1878
2323 Fifth Street, Berkeley, CA 94710, Phone (415) 486-0900

DATE RECEIVED: 11/20/90
DATE REPORTED: 11/27/90

LAB NUMBER: 102337

CLIENT: PES ENVIRONMENTAL

REPORT ON: 1 SOIL SAMPLE AND 3 SOIL COMPOSITES

PROJECT #: FF001B
LOCATION: EMERYVILLE WAREHOUSE COMPANY

RESULTS: SEE ATTACHED

QA/QC Approval

Final Approval

SF 031991

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 102337
CLIENT: PES ENVIRONMENTAL
PROJECT ID: FF001B
LOCATION: EMERYVILLE WAREHOUSE

DATE RECEIVED: 11/20/90
DATE EXTRACTED: 11/21/90
DATE ANALYZED: 11/26/90
DATE REPORTED: 11/27/90

Extractable Petroleum Hydrocarbons in Soils & Wastes
California DOHS Method
LUFT Manual October 1989

LAB ID	SAMPLE ID	GASOLINE RANGE (mg/Kg)	KEROSENE RANGE (mg/Kg)	DIESEL RANGE (mg/Kg)	REPORTING LIMIT (mg/Kg)
102337-7	FF-2-6.0	ND	ND	ND	10
102337-24	CFF-3	ND	ND	ND	10

ND = Not Detected at or above reporting limit.

QA/QC SUMMARY

RPD, %	2
RECOVERY, %	90

SF 031992

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 102337-7
CLIENT: PES ENVIRONMENTAL
PROJECT ID: FF0018
SAMPLE ID: FF-2-6.0

DATE RECEIVED: 11/20/90
DATE ANALYZED: 11/26/90
DATE REPORTED: 11/27/90

EPA METHOD 8240: VOLATILE ORGANICS IN SOILS & WASTES
Extraction Method: EPA 5030 - Purge & Trap

COMPOUND	Result ug/kg	Reporting Limit (ug/kg)
chloromethane	ND	10
bromomethane	ND	10
vinyl chloride	ND	10
chloroethane	ND	10
methylene chloride	ND	5.0
acetone	ND	10
carbon disulfide	ND	5.0
trichlorofluoromethane	ND	5.0
1,1-dichloroethene	ND	5.0
1,1-dichloroethane	ND	5.0
1,2-dichloroethene (total)	ND	5.0
chloroform	ND	5.0
freon 113	ND	5.0
1,2-dichloroethane	ND	5.0
2-butanone	ND	10
1,1,1-trichloroethane	ND	5.0
carbon tetrachloride	ND	5.0
vinyl acetate	ND	10
bromodichloromethane	ND	5.0
1,2-dichloropropane	ND	5.0
cis-1,3-dichloropropene	ND	5.0
trichloroethylene	ND	5.0
dibromochloromethane	ND	5.0
1,1,2-trichloroethane	ND	5.0
benzene	ND	5.0
trans-1,3-dichloropropene	ND	5.0
2-chloroethylvinyl ether	ND	10
bromoform	ND	5.0
2-hexanone	ND	10
4-methyl-2-pentanone	ND	10
1,1,2,2-tetrachloroethane	ND	5.0
tetrachloroethylene	ND	5.0
toluene	16	5.0
chlorobenzene	ND	5.0
ethyl benzene	ND	5.0
styrene	ND	5.0
total xylenes	ND	5.0

ND = Not detected at or above reporting limit

QA/QC SUMMARY: SURROGATE RECOVERIES

1,2-Dichloroethane-d4	107 %
Toluene-d8	99 %
Bromofluorobenzene	105 %

SF 031993

Curtis & Tompkins, Ltd

LABORATORY NUMBER: 102337-24
CLIENT: PES ENVIRONMENTAL
PROJECT ID: FF001B
SAMPLE ID: CFF-3

DATE RECEIVED: 11/20/90
DATE ANALYZED: 11/26/90
DATE REPORTED: 11/27/90

EPA METHOD 8240: VOLATILE ORGANICS IN SOILS & WASTES
Extraction Method: EPA 5030 - Purge & Trap

COMPOUND	Result ug/kg	Reporting Limit (ug/kg)
chloromethane	ND	10
bromomethane	ND	10
vinyl chloride	ND	10
chloroethane	ND	10
methylene chloride	ND	5.0
acetone	ND	10
carbon disulfide	ND	5.0
trichlorofluoromethane	ND	5.0
1,1-dichloroethene	ND	5.0
1,1-dichloroethane	ND	5.0
1,2-dichloroethene (total)	ND	5.0
chloroform	ND	5.0
freon 113	ND	5.0
1,2-dichloroethane	ND	5.0
2-butanone	ND	10
1,1,1-trichloroethane	ND	5.0
carbon tetrachloride	ND	5.0
vinyl acetate	ND	10
bromodichloromethane	ND	5.0
1,2-dichloropropane	ND	5.0
cis-1,3-dichloropropene	ND	5.0
trichloroethylene	ND	5.0
dibromochloromethane	ND	5.0
1,1,2-trichloroethane	ND	5.0
benzene	ND	5.0
trans-1,3-dichloropropene	ND	5.0
2-chloroethylvinyl ether	ND	10
bromoform	ND	5.0
2-hexanone	ND	10
4-methyl-2-pentanone	ND	10
1,1,2,2-tetrachloroethane	ND	5.0
tetrachloroethylene	ND	5.0
toluene	18	5.0
chlorobenzene	ND	5.0
ethyl benzene	ND	5.0
styrene	ND	5.0
total xylenes	ND	5.0

ND = Not detected at or above reporting limit

QA/QC SUMMARY: SURROGATE RECOVERIES

1,2-Dichloroethane-d4	121 %
Toluene-d8	96 %
Bromofluorobenzene	97 %

SF 031994

Curtis & Tompkins, Ltd

LABORATORY NUMBER: 102337-7
CLIENT: PES ENVIRONMENTAL
PROJECT ID : FF001B
SAMPLE ID: FF-2-6.0

DATE RECEIVED: 11/20/90
DATE EXTRACTED: 11/21/90
DATE ANALYZED: 11/21/90
DATE REPORTED: 11/27/90

EPA 8270: Base/Neutral and Acid Extractables in Soils & Wastes
Extraction Method: EPA 3550 Sonication

ACID COMPOUNDS	RESULT ug/kg	REPORTING LIMIT ug/kg
Phenol	ND	330
2-Chlorophenol	ND	330
Benzyl Alcohol	ND	330
2-Methylphenol	ND	330
4-Methylphenol	ND	330
2-Nitrophenol	ND	1650
2,4-Dimethylphenol	ND	330
Benzoic Acid	ND	1650
2,4-Dichlorophenol	ND	1650
4-Chloro-3-methylphenol	ND	330
2,4,6-Trichlorophenol	ND	330
2,4,5-Trichlorophenol	ND	1650
2,4-Dinitrophenol	ND	1650
4-Nitrophenol	ND	1650
4,6-Dinitro-2-methylphenol	ND	1650
Pentachlorophenol	ND	1650
BASE/NEUTRAL COMPOUNDS		
N-Nitrosodimethylamine	ND	330
Aniline	ND	330
Bis(2-chloroethyl)ether	ND	330
1,3-Dichlorobenzene	ND	330
1,4-Dichlorobenzene	ND	330
1,2-Dichlorobenzene	ND	330
Bis(2-chloroisopropyl)ether	ND	330
N-Nitroso-di-n-propylamine	ND	330
Hexachloroethane	ND	330
Nitrobenzene	ND	330
Isophorone	ND	330
Bis(2-chloroethoxy)methane	ND	330
1,2,4-Trichlorobenzene	ND	330
Naphthalene	ND	330
4-Chloroaniline	ND	330
Hexachlorobutadiene	ND	330
2-Methylnaphthalene	ND	330
Hexachlorocyclopentadiene	ND	330
2-Chloronaphthalene	ND	330
2-Nitroaniline	ND	1650

SF 031995

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 102337-7
SAMPLE ID: FF-2-6.0

EPA 8270

BASE/NEUTRAL COMPOUNDS	RESULT ug/kg	REPORTING LIMIT ug/kg
Dimethylphthalate	ND	330
Acenaphthylene	ND	330
2,6-Dinitrotoluene	ND	330
3-Nitroaniline	ND	1650
Acenaphthene	ND	330
Dibenzofuran	ND	330
2,4-Dinitrotoluene	ND	330
Diethylphthalate	ND	330
4-Chlorophenyl-phenylether	ND	330
Fluorene	ND	330
4-Nitroaniline	ND	1650
N-Nitrosodiphenylamine	ND	330
Azobenzene	ND	330
4-Bromophenyl-phenylether	ND	330
Hexachlorobenzene	ND	330
Phenanthrene	ND	330
Anthracene	ND	330
Di-n-butylphthalate	ND	330
Fluoranthene	ND	330
Benzidine	ND	330
Pyrene	ND	330
Butylbenzylphthalate	ND	330
3,3'-Dichlorobenzidine	ND	1650
Benzo (a) anthracene	ND	330
Chrysene	ND	330
Bis (2-ethylhexyl)phthalate	ND	330
Di-n-octylphthalate	ND	330
Benzo (b) fluoranthene	ND	330
Benzo (k) fluoranthene	ND	330
Benzo (a) pyrene	ND	330
Indeno (1,2,3-cd) pyrene	ND	330
Dibenzo (a,h) anthracene	ND	330
Benzo (g,h,i) perylene	ND	330

ND = Not detected at or above reporting limit.

QA/QC SUMMARY: SURROGATE RECOVERIES

2-Fluorophenol	109 %	Nitrobenzene-d5	81 %
Phenol-d6	108 %	2-Fluorobiphenyl	75 %
2,4,6-Tribromophenol	119 %	Terphenyl-d14	58 %

SF 031996

Curtis & Tompkins, Ltd

LABORATORY NUMBER: 102337-24
CLIENT: PES ENVIRONMENTAL
PROJECT ID : FF001B
SAMPLE ID: CFF-3

DATE RECEIVED: 11/20/90
DATE EXTRACTED: 11/21/90
DATE ANALYZED: 11/21/90
DATE REPORTED: 11/27/90

EPA 8270: Base/Neutral and Acid Extractables in Soils & Wastes
Extraction Method: EPA 3550 Sonication

ACID COMPOUNDS	RESULT ug/kg	REPORTING LIMIT ug/kg
Phenol	ND	330
2-Chlorophenol	ND	330
Benzyl Alcohol	ND	330
2-Methylphenol	ND	330
4-Methylphenol	ND	330
2-Nitrophenol	ND	1650
2,4-Dimethylphenol	ND	330
Benzoic Acid	ND	1650
2,4-Dichlorophenol	ND	1650
4-Chloro-3-methylphenol	ND	330
2,4,6-Trichlorophenol	ND	330
2,4,5-Trichlorophenol	ND	1650
2,4-Dinitrophenol	ND	1650
4-Nitrophenol	ND	1650
4,6-Dinitro-2-methylphenol	ND	1650
Pentachlorophenol	ND	1650
BASE/NEUTRAL COMPOUNDS		
N-Nitrosodimethylamine	ND	330
Aniline	ND	330
Bis(2-chloroethyl)ether	ND	330
1,3-Dichlorobenzene	ND	330
1,4-Dichlorobenzene	ND	330
1,2-Dichlorobenzene	ND	330
Bis(2-chloroisopropyl)ether	ND	330
N-Nitroso-di-n-propylamine	ND	330
Hexachloroethane	ND	330
Nitrobenzene	ND	330
Isophorone	ND	330
Bis(2-chloroethoxy)methane	ND	330
1,2,4-Trichlorobenzene	ND	330
Naphthalene	ND	330
4-Chloroaniline	ND	330
Hexachlorobutadiene	ND	330
2-Methylnaphthalene	ND	330
Hexachlorocyclopentadiene	ND	330
2-Chloronaphthalene	ND	330
2-Nitroaniline	ND	1650

SF 031997

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 102337-24 EPA 8270
SAMPLE ID: CFF-3

BASE/NEUTRAL COMPOUNDS	RESULT ug/kg	REPORTING LIMIT ug/kg
Dimethylphthalate	ND	330
Acenaphthylene	ND	330
2,6-Dinitrotoluene	ND	330
3-Nitroaniline	ND	1650
Acenaphthene	ND	330
Dibenzofuran	ND	330
2,4-Dinitrotoluene	ND	330
Diethylphthalate	ND	330
4-Chlorophenyl-phenylether	ND	330
Fluorene	ND	330
4-Nitroaniline	ND	1650
N-Nitrosodiphenylamine	ND	330
Azobenzene	ND	330
4-Bromophenyl-phenylether	ND	330
Hexachlorobenzene	ND	330
Phenanthrene	ND	330
Anthracene	ND	330
Di-n-butylphthalate	ND	330
Fluoranthene	ND	330
Benzidine	ND	330
Pyrene	ND	330
Butylbenzylphthalate	ND	330
3,3'-Dichlorobenzidine	ND	1650
Benzo (a) anthracene	ND	330
Chrysene	ND	330
Bis (2-ethylhexyl)phthalate	ND	330
Di-n-octylphthalate	ND	330
Benzo (b) fluoranthene	ND	330
Benzo (k) fluoranthene	ND	330
Benzo (a) pyrene	ND	330
Indeno (1,2,3-cd) pyrene	ND	330
Dibenzo (a,h) anthracene	ND	330
Benzo (g,h,i) perylene	ND	330

ND = Not detected at or above reporting limit.

QA/QC SUMMARY: SURROGATE RECOVERIES

2-Fluorophenol	107 %	Nitrobenzene-d5	79 %
Phenol-d6	108 %	2-Fluorobiphenyl	72 %
2,4,6-Tribromophenol	107 %	Terphenyl-d14	55 %

SF 031998

Curtis & Tompkins, Ltd

LABORATORY NUMBER: 102337-22
CLIENT: PES ENVIRONMENTAL
PROJECT ID: FF001B
SAMPLE ID: CFF-1

DATE RECEIVED: 11/20/90
DATE ANALYZED: 11/24/90
DATE REPORTED: 11/27/90

Title 26 Metals in Soils & Wastes
Digestion Method: EPA 3050

METAL	RESULT mg/Kg	REPORTING LIMIT mg/Kg	METHOD
Antimony	ND	5	EPA 6010
Arsenic	6.0	2.5	EPA 7060
Barium	110	0.5	EPA 6010
Beryllium	ND	0.5	EPA 6010
Cadmium	2.0	0.5	EPA 6010
Chromium (total)	28	0.5	EPA 6010
Cobalt	10	0.5	EPA 6010
Copper	74	1	EPA 6010
Lead	96	2.5	EPA 6010
Mercury	0.3	0.1	EPA 7471
Molybdenum	ND	0.5	EPA 6010
Nickel	39	0.5	EPA 6010
Selenium	ND	2.5	EPA 6010
Silver	ND	1	EPA 6010
Thallium	ND	5	EPA 6010
Vanadium	18	1	EPA 6010
Zinc	280	0.5	EPA 6010

ND = Not detected at or above reporting limit.

QA/QC SUMMARY

	RPD,%	RECOVERY,%		RPD,%	RECOVERY,%
Antimony	<1	92	Mercury	2	109
Arsenic	5	94	Molybdenum	1	95
Barium	<1	95	Nickel	1	96
Beryllium	1	93	Selenium	4	88
Cadmium	3	90	Silver	5	84
Chromium	<1	96	Thallium	14	92
Cobalt	1	93	Vanadium	<1	92
Copper	1	94	Zinc	2	93
Lead	4	80			

SF 031999

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 102337-23
CLIENT: PES ENVIRONMENTAL
PROJECT ID: FF001B
SAMPLE ID: CFF-2

DATE RECEIVED: 11/20/90
DATE ANALYZED: 11/24/90
DATE REPORTED: 11/27/90

Title 26 Metals in Soils & Wastes
Digestion Method: EPA 3050

METAL	RESULT mg/Kg	REPORTING LIMIT mg/Kg	METHOD
Antimony	ND	5	EPA 7041
Arsenic	210	2.5	EPA 6010
Barium	1,100	0.5	EPA 6010
Beryllium	ND	0.5	EPA 6010
Cadmium	24	5	EPA 6010
Chromium (total)	52	0.5	EPA 6010
Cobalt	72	0.5	EPA 6010
Copper	2,600	1	EPA 6010
Lead	550	25	EPA 6010
Mercury	ND	0.1	EPA 7471
Molybdenum	3.2	0.5	EPA 6010
Nickel	13	5	EPA 6010
Selenium	ND	2.5	EPA 7740
Silver	2	1	EPA 6010
Thallium	ND	5	EPA 7841
Vanadium	34	1	EPA 6010
Zinc	9,300	5	EPA 6010

ND = Not detected at or above reporting limit.

QA/QC SUMMARY

	RPD,%	RECOVERY,%		RPD,%	RECOVERY,%
Antimony	<1	92	Mercury	2	109
Arsenic	5	94	Molybdenum	1	95
Barium	<1	95	Nickel	1	96
Beryllium	1	93	Selenium	4	88
Cadmium	3	90	Silver	5	84
Chromium	<1	96	Thallium	14	92
Cobalt	1	93	Vanadium	<1	92
Copper	1	94	Zinc	2	93
Lead	4	80			

SF 032000

10837

Chain of Custody Form

Curtis & Tompkins, Ltd
2323 Fifth Street
Berkeley, California 94710
(415) 486-0900

Samplers: J. DUNN

Job Description: EMERYVILLE WAREHOUSE CO.

Job Number: FT00818

Client Contact: J. DUNN

Recorder:

	Matrix						Method Preserved							Sample Number	Sampling Date				SAMPLE NOTES	ANALYSIS REQUESTED															
	Water	Soil	Waste	Oil			# Containers	H_2SO_4	HNO_3	Ice	None	Other			Yr	Mo	Dy	Time			EPA 601/8010	EPA 602/8020	EPA 624/8240	EPA 625/8270	Title 22 Metals	EPA PP Metals (#)	TPH Method-	Benzene-Toluene-Xylene(s)	Oil and Grease	EPA 608/8080 Pesticides & PCB's					
1		X					1			X				FF-1-1.0																				
2		X					1			X				FF-1-3.0																				
3		X					1			X				FF-1-5.5																				
4		X					1			X				FF-1-8.0																				
5		X					1			X				FF-2-1.0																				
6		X					1			X				FF-2-2.5																				
7		X					1			X				FF-2-6.0																				
8		X					1			X				FF-2-8.0																				
9		X					1			X				FF-3-1.0																				
10		X					1			X				FF-3-3.6																				
11		X					1			X				FF-3-6.0																				

Laboratory Notes :

Chain of Custody Record

Relinquished by: (signature) Date/Hr	Received by (signature)
Relinquished by: (signature) Date/Hr	Received by (signature)
Relinquished by: (signature) Date/Hr	Received by (signature)
Relinquished by: (signature) Date/Hr	Received by (signature)
Dispatched by: (signature) Date/Hr	Received for Lab by (signature)

SF032001

Chain of Custody Form

Curtis & Tompkins, Ltd
2323 Fifth Street
Berkeley, California 94710
(415) 486-0900

Samplers: J. DUNN

Job Description: Emeryville Warehouse Co.

Job Number: FE001B

Client Contact: J. DUNN/PES

Recorder:

Matrix						# Containers	Method Preserved					Sample Number	Sampling Date				SAMPLE NOTES
Water	Soil	Waste	Oil				H_2SO_4	HNO3	Ice	None	Other		Yr	Mo	Dy	Time	
	4					1			1			FF-3-8.0					
	4					1			1			FF-4-1.0					
	4					1			1			FF-4-3.0					
	4					1			1			FF-4-6.0					
	4					1			1			FF-4-9.5					
	4					1			1			FF-5-1.0					
	4					1			1			FF-5-3.0					
	4					1			1			FF-5-6.0					
	4					1			1			FF-4-1.7.5					
	4					1			1			FF-5-1.7.5					

ANALYSIS REQUESTED

EPA 601/8010	EPA 602/8020	EPA 624/8240	EPA 625/8270	Title 22 Metals	EPA PP Metals (4)	EPA Method-	Benzene-Toluene-Xylene(s)	Oil and Grease	EPA 608/8080 Pesticides & PCB's

Laboratory Notes:

SF 032002

Chain of Custody Record

Relinquished by: (signature) Date/Hr	Received by (signature)
Relinquished by: (signature) Date/Hr	Received by (signature)
Relinquished by: (signature) Date/Hr	Received by (signature)
Relinquished by: (signature) Date/Hr	Received by (signature)
Dispatched by: (signature) Date/Hr	Received for Lab by (signature) 1/30/90 3:20

PES Environmental, Inc.
Engineering & Environmental Services

November 20, 1990

102337

Curtis and Tompkins, Ltd.
2323 Fifth Street
Berkeley, California
486-0532 (FAX)

Attention: Nancy Wilson

Subject: Emeryville Warehouse Company

PES Job Number: FF001BC

Please composite and analyze samples as indicated below on a 1-week turnaround schedule. Need results by midday Tuesday, November 27, 1990.

Composite No.		Sample ID No.	Analysis
22	CFF-1	FF-2-1.0 5 FF-3-1.0 9 FF-4-1.0 13	Title 22 Metals
23	CFF-2	FF-2-2.5 6 FF-4-1.75 20 FF-5-1.75 21	Title 22 Metals
24	CFF-3	FF-1-5.5 FF-1-6.0 3 FF-3-6.0 11 FF-5-6.0 19	EPA 3550/8015 (TEH) EPA 8240 EPA 8270
[illegible]	FF-2-6.0	FF-2-6.0 7	EPA 3550/8015 (TEH) EPA 8240 EPA 8270

Thanks for your assistance on this project.

PACIFIC ENVIRONMENTAL SOLUTIONS, INC.

James P. Dunn
Senior Geologist

FF001B.ltr

SF 032003

APPENDIX E

PHASE II GROUNDWATER ANALYTICAL REPORT

Curtis & Tompkins, Ltd., Analytical Laboratories. Since 1878
2323 Fifth Street, Berkeley, CA 94710. Phone (415) 486-0900

DATE RECEIVED: 10/15/90
DATE REPORTED: 10/25/90

LAB NUMBER: 101929

CLIENT: PES ENVIRONMENTAL

REPORT ON: 2 WATER SAMPLES

PROJECT #: 901015-L-1
LOCATION: SHEWIN & HALLECK, EMERYVILLE

RESULTS: SEE ATTACHED

QA/QC Approval

Final Approval

SF 032006

Curtis & Tompkins Ltd

LABORATORY NUMBER: 101929
CLIENT: PES ENVIRONMENTAL
JOB #: 901015-L-1

DATE RECEIVED: 10/15/90
DATE EXTRACTED: 10/24/90
DATE ANALYZED: 10/24/90
DATE REPORTED: 10/25/90

Extractable Petroleum Hydrocarbons in Aqueous Solutions
California DOHS Method
LUFT Manual October 1989

LAB ID	CLIENT ID	KEROSENE RANGE (ug/L)	DIESEL RANGE (ug/L)	REPORTING LIMIT (ug/L)
101929-1	FF001B1 (Well T-1)	ND	ND	50

ND = Not detected at or above reporting limit.

QA/QC SUMMARY

RPD, %	3
RECOVERY, %	83

SF 032007

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 101929
CLIENT: PES ENVIRONMENTAL
JOB NUMBER: 901015-L-1

DATE RECEIVED: 10/15/90
DATE ANALYZED: 10/16/90
DATE REPORTED: 10/25/90

Total Volatile Hydrocarbons with BTXE in Aqueous Solutions
TVH by California DOHS Method/LUFT Manual October 1989
BTXE by EPA 5030/8020

LAB ID	CLIENT ID	TVH AS GASOLINE (ug/L)	BENZENE (ug/L)	TOLUENE (ug/L)	ETHYL BENZENE (ug/L)	TOTAL XYLENES (ug/L)
101929-1	FF001B1 (Well T-1)	ND(50)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)

ND = Not detected at or above reporting limit; Reporting limit indicated in parentheses.

QA/QC SUMMARY

RPD, %	1
RECOVERY, %	89

SF 032008

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 101929
CLIENT: PES ENVIRONMENTAL
PROJECT #: 901015-L-1

DATE RECEIVED: 10/15/90
DATE ANALYZED: 10/16/90
DATE REPORTED: 10/25/90

ANALYSIS: HEXAVALENT CHROMIUM
ANALYSIS METHOD: EPA 7195

LAB ID	SAMPLE ID	RESULT	UNITS	REPORTING LIMIT
101929-1	FF001B1 (Well J-1)	ND	mg/L	0.05

ND = Not detected at or above reporting limit.

QA/QC SUMMARY

RPD, %	3
RECOVERY, %	97

SF 032009

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 101929-1
CLIENT: PES ENVIRONMENTAL
PROJECT #: 901015-L-1
SAMPLE ID: FF001B1 (Well F-1)

DATE RECEIVED: 10/15/90
DATE ANALYZED: 10/16/90
DATE REPORTED: 10/25/90

EPA Priority Pollutant Metals in Aqueous Solutions

METAL	RESULT mg/L	REPORTING LIMIT mg/L	METHOD
Antimony	ND	0.1	EPA 6010
Arsenic	ND	0.05	EPA 6010
Beryllium	ND	0.01	EPA 6010
Cadmium	ND	0.01	EPA 6010
Chromium (total)	ND	0.01	EPA 6010
Copper	ND	0.02	EPA 6010
Lead	ND	0.05	EPA 6010
Mercury	ND	0.001	EPA 7470
Nickel	ND	0.01	EPA 6010
Selenium	ND	0.05	EPA 7740
Silver	ND	0.02	EPA 6010
Thallium	ND	0.1	EPA 7841
Zinc	ND	0.01	EPA 6010

ND = Not detected at or above reporting limit

QA/QC SUMMARY

	RPD, %	RECOVERY, %		RPD, %	RECOVERY, %
Antimony	1	106	Mercury	8	105
Arsenic	4	103	Nickel	1	111
Beryllium	<1	108	Selenium	1	108
Cadmium	2	103	Silver	13	83
Chromium	<1	109	Thallium	11	104
Copper	1	108	Zinc	1	108
Lead	<1	97			

SF 032010

Curtis & Tompkins Ltd

LABORATORY NUMBER: 101929-1
CLIENT: PES ENVIRONMENTAL
PROJECT #: 901015-L-1
SAMPLE ID: FF001B1 (Dew T-1)

DATE RECEIVED: 10/15/90
DATE ANALYZED: 10/23/90
DATE REPORTED: 10/25/90

EPA 8010
Purgeable Halocarbons in Water

Compound	Result ug/L	Reporting Limit ug/L
chloromethane	ND	2.0
bromomethane	ND	2.0
vinyl chloride	ND	2.0
chloroethane	ND	2.0
methylene chloride	ND	1.0
trichlorofluoromethane	ND	1.0
1,1-dichloroethene	ND	1.0
1,1-dichloroethane	ND	1.0
1,2-dichloroethene (total)	ND	1.0
chloroform	ND	1.0
freon 113	ND	1.0
1,2-dichloroethane	ND	1.0
1,1,1-trichloroethane	ND	1.0
carbon tetrachloride	ND	1.0
bromodichloromethane	ND	1.0
1,2-dichloropropane	ND	1.0
cis-1,3-dichloropropene	ND	1.0
trichloroethylene	ND	1.0
1,1,2-trichloroethane	ND	1.0
trans-1,3-dichloropropene	ND	1.0
dibromochloromethane	ND	1.0
2-chloroethyl vinyl ether	ND	2.0
bromoform	ND	1.0
tetrachloroethene	ND	1.0
1,1,2,2-tetrachloroethane	ND	1.0
chlorobenzene	ND	1.0
1,3-dichlorobenzene	ND	1.0
1,2-dichlorobenzene	ND	1.0
1,4-dichlorobenzene	ND	1.0

ND = Not detected at or above reporting limit.

QA/QC SUMMARY

RPD, %	7
RECOVERY, %	91

SF 032011

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 101929-2
CLIENT: PES ENVIRONMENTAL
PROJECT #: 901015-L-1
SAMPLE ID: FF001B2 (Well J-1 Duplicate)

DATE RECEIVED: 10/15/90
DATE ANALYZED: 10/23/90
DATE REPORTED: 10/25/90

EPA 8010
Purgeable Halocarbons in Water

Compound	Result ug/L	Reporting Limit ug/L
chloromethane	ND	2.0
bromomethane	ND	2.0
vinyl chloride	ND	2.0
chloroethane	ND	2.0
methylene chloride	ND	1.0
trichlorofluoromethane	ND	1.0
1,1-dichloroethene	ND	1.0
1,1-dichloroethane	ND	1.0
1,2-dichloroethene (total)	ND	1.0
chloroform	4.5	1.0
freon 113	ND	1.0
1,2-dichloroethane	ND	1.0
1,1,1-trichloroethane	ND	1.0
carbon tetrachloride	ND	1.0
bromodichloromethane	ND	1.0
1,2-dichloropropane	ND	1.0
cis-1,3-dichloropropene	ND	1.0
trichloroethylene	ND	1.0
1,1,2-trichloroethane	ND	1.0
trans-1,3-dichloropropene	ND	1.0
dibromochloromethane	ND	1.0
2-chloroethyl vinyl ether	ND	2.0
bromoform	ND	1.0
tetrachloroethene	ND	1.0
1,1,2,2-tetrachloroethane	ND	1.0
chlorobenzene	ND	1.0
1,3-dichlorobenzene	ND	1.0
1,2-dichlorobenzene	ND	1.0
1,4-dichlorobenzene	ND	1.0

ND = Not detected at or above reporting limit.

QA/QC SUMMARY

RPD, %	7
RECOVERY, %	91

SF 032012

101929

BLAINE

TECH SERVICES Inc.

1680 ROGERS AVENUE, SUITE 505
SAN JOSE, CA 95112
(408) 995 5535

CHAIN OF CUSTODY

COURIER

SITE

SAMPLED

	MATRIX S = SOIL W = H2O	CONTAINERS TOTAL	C = COMPOSITE ALL CONTAINERS
FF(x)101	S	7	
FF(x)102	W	1	

SF 032013

CONDUCT ANALYSIS TO DETECT

TEH	Vol. Org. Pollutants + MTBE	Hexavalent Chromium	EPA 601	TLHK	LEAD
X	X	X	X	X	X
			X		

LAB

DHS #

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

- ☐ EPA
- ☐ LIA
- ☐ OTHER
- ☐ RWQCB REGION

SPECIAL INSTRUCTIONS

Bill To

Hexavalent Chromium - 24hr

ADDT'L INFORMATION	STATUS	CONDITION	LAB SAMPLE #

SAMPLING COMPLETED	DATE	TIME	SAMPLING PERFORMED BY

RESULTS NEEDED NO LATER THAN

RELEASED BY		DATE	TIME	RECEIVED BY	DATE / TIME
RELEASED BY		DATE	TIME	RECEIVED BY	DATE / TIME
RELEASED BY		DATE	TIME	RECEIVED BY	DATE / TIME
SHIPPED VIA		DATE SENT	TIME SENT	COOLER #	

APPENDIX F

PHASE III GROUNDWATER ANALYTICAL REPORTS

Curtis & Tompkins, Ltd., Analytical Laboratories. Since 1878
2323 Fifth Street, Berkeley, CA 94710. Phone (415) 486-0900

DATE RECEIVED: 11/20/90
DATE REPORTED: 11/27/90

LAB NUMBER: 102333

CLIENT: PES ENVIRONMENTAL

REPORT ON: 2 WATER SAMPLES

PROJECT #: FF001B
LOCATION: EMERYVILLE WAREHOUSE

RESULTS: SEE ATTACHED

QA/QC Approval

Final Approval

SF 032016

LABORATORY NUMBER: 102333
CLIENT: PES ENVIRONMENTAL
PROJECT ID: FF001B
JOB LOCATION: EMERYVILLE WAREHOUSE

DATE RECEIVED: 11/20/90
DATE ANALYZED: 11/21/90
DATE REPORTED: 11/27/90

Total Volatile Hydrocarbons with BTXE in Aqueous Solutions
TVH by California DOHS Method/LUFT Manual October 1989
BTXE by EPA 5030/8020

LAB ID	SAMPLE ID	TVH AS GASOLINE (ug/L)	BENZENE (ug/L)	TOLUENE (ug/L)	ETHYL BENZENE (ug/L)	TOTAL XYLENES (ug/L)
102333-1	WFF-1	ND(50)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)
102333-2	WFF-2	53	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)

ND = Not detected at or above reporting limit; Reporting limit indicated in parentheses.

QA/QC SUMMARY

RPD, %	4
RECOVERY, %	87

SF 032017

Curtis & Tompkins Ltd

LABORATORY NUMBER: 102333-1
CLIENT: PES ENVIRONMENTAL
PROJECT #: FF001B
SAMPLE ID: WFF-1

DATE RECEIVED: 11/20/90
DATE ANALYZED: 11/20/90
DATE REPORTED: 11/27/90

EPA 8010
Purgeable Halocarbons in Water

Compound	Result ug/L	Reporting Limit ug/L
chloromethane	ND	2.0
bromomethane	ND	2.0
vinyl chloride	ND	2.0
chloroethane	ND	2.0
methylene chloride	ND	1.0
trichlorofluoromethane	ND	1.0
1,1-dichloroethene	ND	1.0
1,1-dichloroethane	ND	1.0
1,2-dichloroethene (total)	ND	1.0
chloroform	ND	1.0
freon 113	ND	1.0
1,2-dichloroethane	ND	1.0
1,1,1-trichloroethane	ND	1.0
carbon tetrachloride	ND	1.0
bromodichloromethane	ND	1.0
1,2-dichloropropane	ND	1.0
cis-1,3-dichloropropene	ND	1.0
trichloroethylene	ND	1.0
1,1,2-trichloroethane	ND	1.0
trans-1,3-dichloropropene	ND	1.0
dibromochloromethane	ND	1.0
2-chloroethyl vinyl ether	ND	2.0
bromoform	ND	1.0
tetrachloroethene	ND	1.0
1,1,2,2-tetrachloroethane	ND	1.0
chlorobenzene	ND	1.0
1,3-dichlorobenzene	ND	1.0
1,2-dichlorobenzene	ND	1.0
1,4-dichlorobenzene	ND	1.0

ND = Not detected at or above reporting limit.

QA/QC SUMMARY

RPD, %	7
RECOVERY, %	82

SF 032018

Curtis & Tompkins Ltd

LABORATORY NUMBER: 102333-2
CLIENT: PES ENVIRONMENTAL
PROJECT #: FF001B
SAMPLE ID: WFF-2

DATE RECEIVED: 11/20/90
DATE ANALYZED: 11/20/90
DATE REPORTED: 11/27/90

EPA 8010
Purgeable Halocarbons in Water

Compound	Result ug/L	Reporting Limit ug/L
chloromethane	ND	2.0
bromomethane	ND	2.0
vinyl chloride	ND	2.0
chloroethane	ND	2.0
methylene chloride	ND	1.0
trichlorofluoromethane	ND	1.0
1,1-dichloroethene	ND	1.0
1,1-dichloroethane	ND	1.0
1,2-dichloroethene (total)	ND	1.0
chloroform	ND	1.0
freon 113	ND	1.0
1,2-dichloroethane	ND	1.0
1,1,1-trichloroethane	ND	1.0
carbon tetrachloride	ND	1.0
bromodichloromethane	ND	1.0
1,2-dichloropropane	ND	1.0
cis-1,3-dichloropropene	ND	1.0
trichloroethylene	ND	1.0
1,1,2-trichloroethane	ND	1.0
trans-1,3-dichloropropene	ND	1.0
dibromochloromethane	ND	1.0
2-chloroethyl vinyl ether	ND	2.0
bromoform	ND	1.0
tetrachloroethene	ND	1.0
1,1,2,2-tetrachloroethane	ND	1.0
chlorobenzene	ND	1.0
1,3-dichlorobenzene	ND	1.0
1,2-dichlorobenzene	ND	1.0
1,4-dichlorobenzene	ND	1.0

ND = Not detected at or above reporting limit.

QA/QC SUMMARY

RPD, %	7
RECOVERY, %	82

SF 032019

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 102333-1
CLIENT: PES ENVIRONMENTAL
PROJECT ID: FF001B
SAMPLE ID: WFF-1

DATE RECEIVED: 11/20/90
DATE ANALYZED: 11/26/90
DATE REPORTED: 11/27/90

Title 26 Metals in Aqueous Solutions

METAL	RESULT mg/L	REPORTING LIMIT mg/L	METHOD
Antimony	ND	0.05	EPA 6010
Arsenic	ND	0.05	EPA 6010
Barium	0.25	0.01	EPA 6010
Beryllium	ND	0.01	EPA 6010
Cadmium	ND	0.01	EPA 6010
Chromium (total)	ND	0.01	EPA 6010
Cobalt	ND	0.01	EPA 6010
Copper	ND	0.01	EPA 6010
Lead	ND	0.05	EPA 6010
Mercury	ND	0.001	EPA 7470
Molybdenum	0.01	0.01	EPA 6010
Nickel	0.02	0.01	EPA 6010
Selenium	ND	0.05	EPA 6010
Silver	ND	0.02	EPA 6010
Thallium	ND	0.05	EPA 6010
Vanadium	ND	0.02	EPA 6010
Zinc	0.05	0.01	EPA 6010

ND = Not detected at or above reporting limit.

QA/QC SUMMARY

	RPD,%	RECOVERY,%		RPD,%	RECOVERY,%
Antimony	2	99	Mercury	7	92
Arsenic	2	100	Molybdenum	2	104
Barium	2	102	Nickel	2	102
Beryllium	2	99	Selenium	1	100
Cadmium	2	103	Silver	3	99
Chromium	5	85	Thallium	2	104
Cobalt	2	104	Vanadium	2	104
Copper	1	98	Zinc	2	101
Lead	2	105			

SF 032020

Curtis & Tompkins Ltd.

LABORATORY NUMBER: 102333-2
CLIENT: PES ENVIRONMENTAL
PROJECT ID: FF001B
SAMPLE ID: WFF-2

DATE RECEIVED: 11/20/90
DATE ANALYZED: 11/26/90
DATE REPORTED: 11/27/90

Title 26 Metals in Aqueous Solutions

METAL	RESULT mg/L	REPORTING LIMIT mg/L	METHOD
Antimony	ND	0.05	EPA 6010
Arsenic	ND	0.05	EPA 6010
Barium	1.8	0.01	EPA 6010
Beryllium	ND	0.01	EPA 6010
Cadmium	ND	0.01	EPA 6010
Chromium (total)	ND	0.01	EPA 6010
Cobalt	ND	0.01	EPA 6010
Copper	0.02	0.01	EPA 6010
Lead	ND	0.05	EPA 6010
Mercury	ND	0.001	EPA 7470
Molybdenum	0.03	0.01	EPA 6010
Nickel	ND	0.01	EPA 6010
Selenium	ND	0.05	EPA 6010
Silver	ND	0.02	EPA 6010
Thallium	ND	0.05	EPA 6010
Vanadium	ND	0.02	EPA 6010
Zinc	0.07	0.01	EPA 6010

ND = Not detected at or above reporting limit.

QA/QC SUMMARY

	RPD,%	RECOVERY,%		RPD,%	RECOVERY,%
Antimony	2	99	Mercury	7	92
Arsenic	2	100	Molybdenum	2	104
Barium	2	102	Nickel	2	102
Beryllium	2	99	Selenium	1	100
Cadmium	2	103	Silver	3	99
Chromium	5	85	Thallium	2	104
Cobalt	2	104	Vanadium	2	104
Copper	1	98	Zinc	2	101
Lead	2	105			

SF 032021

Chain of Custody Form

Curtis & Tompkins, Ltd
[illegible] Street
Berkeley, California 94710
(415) [illegible] 0900

Samplers: J. DUNN

Job Description: Emeryville Warehouse Co.

Job Number: FF001B

Client Contact: J. DUNN / PES

Recorder: J. DUNN

Matrix	# Containers	Method Preserved	Sample Number	Sampling Date Yr	Mo	Dy	Time	SAMPLE NOTES
W	4	None	FFF-1	90	11	20		
W	4	None	FFF-2	90	11	20		

ANALYSIS REQUESTED

EPA 601/8010	EPA 602/8020	EPA 624/8240	EPA 625/8270	Title 22 Metals (4	EPA PP Metals (4	EPA Method- TLH/BTXE	Benzene-Toluene-Xylene(s)	Oil and Grease	EPA 608/8080 Pesticides & PCB's
X				X		X			

Laboratory Notes:

1) Filter metals sample and acidify ASAP
2) Drinking Water Detection Limit

Chain of Custody Record

Relinquished by: (Signature) Date/Hr	Received by (Signature)
Relinquished by: (Signature) Date/Hr	Received by (Signature)
Relinquished by: (Signature) Date/Hr	Received by (Signature)
Relinquished by: (Signature) Date/Hr	Received by (Signature)
Dispatched by: (Signature) Date/Hr	Received for Lab by (Signature) 11/21/90

3:20

SF 032022