FIRST
QUARTERLY STATUS REPORT

PACO PUMPS INC.
9201 SAN LEANDRO STREET
OAKLAND, CALIFORNIA

February 24, 1993

Report Prepared for:

PACO Pumps, Inc.
9201 San Leandro Street
Oakland, California 94603-1237

FIRST QUARTERLY STATUS REPORT
PACO PUMPS, INC.
9201 SAN LEANDRO STREET
OAKLAND, CALIFORNIA

Jonas & Associates Inc. Job Number: PCO-220-02

Prepared by:

Mr. Mark Jonas
Principal Hydrogeologist

Technical Review by:

Dr. Jeff Sullivan, P.E., R.G.
California Registered Geologist #4942

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October 1 through December 31, 1992

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Prepared for:

PACO Pumps, Inc.
Oakland, California

Prepared by:

Jonas and Associates Inc.
Concord, California
(510) 676-8554

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October 1 through December 31, 1992

PACO PUMPS INC.
9201 SAN LEANDRO STREET
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PACO PUMPS INC.
9201 SAN LEANDRO STREET
OAKLAND, CALIFORNIA

Jonas and Associates Inc. has been retained by PACO Pumps Inc. to perform an environmental site characterization of its property located at 9201 San Leandro Street, in Oakland, California 94603-1237. The results of an initial site characterization study for the facility was presented in the October 16, 1992, "Site Characterization Report and Work Plan - PACO Pumps Inc., 9201 San Leandro Street, Oakland, California". The October 16, 1992 document also provided a Work Plan for the work presented in this "First Quarterly Status Report". The Site Characterization Report and Work Plan was approved by Alameda County Health Care Services on October 20, 1992.

PACO Pumps' environmental representative for this project is Mr. Scott Liddicoat {(510) 559-9107}. The lead agency for this project is the Alameda County Health Care Services Agency, Department of Environmental Health, Hazardous Division (Alameda County Health Services). The address of Alameda County Health Services is 80 Swan Way, Room 200, Oakland, California 94621. The agency representative for the project is Ms. Eva Chu {(510) 271-4530}.

As defined in the October 16, 1992 Site Characterization Report and Work Plan, the recent field investigation at the site includes three tasks. One of the tasks is the collection and analysis of selected soil samples from depths of ≤ 1.5 feet. In this report, these are identified as shallow soil samples. A second task is the collection of soil samples from various depths in four boreholes associated with the construction of the monitoring wells. The third task, associated with the recent field effort, is the installation and groundwater sampling of four monitoring wells.

Sampling location B19 is behind the former welding shop and adjacent to the cyclone fence and property of Saint Vincent DePaul. Previous soil sampling collected from a depth range of ≤ 1.5 feet at the location identified 21 mg/kg of selenium in the soil. The origin of selenium at this concentration is unknown. To define a hazardous waste in selenium-bearing soil, the Total Threshold Limit Concentration (TTLC) is 100 mg/kg and the Soluble Limit Threshold Concentration (STLC) is 1.0 mg/L. On November 9, 1992, soil sample B19-2-0.5'&1.5' was collected and then analyzed using the Waste Extraction Test (WET) method and the leachate tested for soluble selenium. WET soluble selenium was found at a concentration of 0.18 mg/L, well below the STLC for selenium.

At an eastern corner of the facility, sampling location B26 is near the truck entrance and adjacent to the fenceline with Saint Vincent DePaul. An April 13, 1992 soil sample collected ≤ 1.5 feet at location B26 was found to contain 760 mg/kg of copper and 170 mg/kg of lead. The source of these apparently elevated concentrations is unknown. But the samples

are below the TTLC for copper of 2,500 mg/kg and lead of 1,000 mg/kg. On November 9, 1992, a second composite soil sample, B26-2-0.5'&1.5', was collected from ≤ 1.5 feet deep. Using the WET method, the leachate was then tested for soluble copper and lead to compare the results with STLC values. WET soluble copper was found at a concentration of 24 mg/L, just below the STLC for of copper 25 mg/L. In the sample, WET soluble lead was detected at a concentration of 20 mg/L, above the STLC for lead of 5 mg/L. Further characterization and possibly remediation may be necessary at this location.

At each of the four monitoring well locations, soil samples were collected from various depths from the pilot boring for each well. In the general area of monitoring well location 9MW1, from previous samples collected ≤ 1.5 feet deep on October 1, 1991 and April 9, 1992, possibly elevated concentrations of lead (85.4 mg/kg), nickel (348 mg/kg), and chromium (57.8 mg/kg) were detected. In addition, PCB 1260 was previously detected at concentrations of 0.400 mg/kg and 0.670 mg/kg in shallow soils ≤ 1.5 feet deep, along with concentrations of Total Extractable Petroleum Hydrocarbons (TEPH) as -diesel (120 mg/kg) and -motor oil (410 mg/kg). From pilot boring B-9MW1, drilled on November 9, 1992, a shallow soil sample was collected from ≤ 1.5 feet deep and analyzed for WET soluble lead, nickel, total chromium, and chromium VI. This sample was found to contain WET soluble lead at 4.2 mg/L, WET soluble nickel at 0.59 mg/L, and WET soluble total chromium at 1.0 mg/L. No WET soluble chromium VI was detected. These concentrations are all below their respective STLC hazardous waste regulatory values. In pilot boring B-9MW1, three other depths were sampled: 4.5' to 5', 9.5' to 10', and 14.5' to 15'. Each of these samples were analyzed for PCB and TEPH as -diesel, -kerosene, and -motor oil. PCB was detected at a concentration of 0.29 mg/kg, from a depth range of 4.5' to 5'. PCB was not detected in the two deeper samples. Of the Total Extractable Petroleum Hydrocarbons, only the soil from a depth range of 4.5' to 5' detected any concentration: 530 mg/kg of TEPH as motor oil. Apparently, concentrations of PCB and TEPHs are present at a depth of 5 feet, but not at 10 and 15 feet below the surface at the location of 9MW1.

After monitoring well 9MW1 was installed, screened from 5¼ to 20¼ feet, a groundwater sample was collected and then analyzed for TEPH as -diesel, -kerosene, and -motor oil, along with PCB and seventeen metals. The results found no TEPH or PCB detected in the underlying groundwater. Four metals were detected: barium at 0.18 mg/L, beryllium at 0.002 mg/L, copper at 0.007 mg/L, and selenium at 0.021 mg/L. Of these concentrations only selenium exceeded the drinking water Maximum Contaminant Level (MCL). The federal MCL for selenium is 0.05 mg/L. The state of California MCL for selenium is 0.01 mg/L. Therefore, for the twenty-one analytes tested for in the groundwater sample from 9MW1, only selenium is apparently present above a drinking water standard. The source of the selenium is unknown, but trace concentrations of selenium can be found in sea water and soils impacted by sea water. On November 15, 1992, groundwater in monitoring well 9MW1 was measured at 9.74' below the surface level.

Monitoring well 9MW2 is located adjacent to the former welding shop and the property boundary fenceline. This is in a general location where several 55-gallon drums, in apparent disarray, were present on the property of Saint Vincent DePaul. Previous soil

sample B18 collected from ≤ 1.5 feet deep at location 9MW2, detected TEPH as -motor oil at 7,800 mg/kg and -kerosene at 8,000 mg/kg, along with benzene at 0.005 mg/kg, ethyl benzene at 0.088 mg/kg, toluene at 0.049 mg/kg and total xylenes at 1.20 mg/kg (BTEX). The previous soil sample was not analyzed for Total Petroleum Hydrocarbons as gasoline. From pilot boring B-9MW2, four depth ranges were sampled for laboratory analysis: 0'-0.5'&1'-1.5'(composite), 4.5' to 5', 9.5' to 10', and 14.5' to 15'. For these four sampling depths, no TPH as gasoline, benzene, or toluene were detected, but the detection limit for benzene for sampling depths 0'-0.5'&1'-1.5' was elevated because of significant concentrations of hydrocarbons in the kerosene/mineral spirit range. Ethyl benzene and total xylenes were detected in the three upper samples, but concentrations decreased significantly with depth: ethyl benzene and total xylenes were detected at concentrations of 1.90 mg/kg and 9.6 mg/kg at ≤ 1.5 feet deep, and only 0.011 mg/kg and 0.020 mg/kg at a depth of 10 feet. For the samples analyzed at location 9MW2/B18, no TEPH as diesel was detected. But TEPH as -kerosene and -motor oil were detected down to a depth of 10 feet. No TEPH as -diesel, -kerosene, and -motor oil, along with TPH as gasoline, or BTEX were detected from the sample collected from a depth of 14.5 feet to 15 feet.

Groundwater collected from monitoring well 9MW2 on November 16, 1992 was analyzed for TPH as gasoline, BTEX, TEPH as -diesel, -kerosene, and -motor oil, and volatile organics. Of the analyzed petroleum hydrocarbon suites, only TEPH as -kerosene and -motor oil were detected, at concentrations of 0.590 mg/L and 9.5 mg/L, respectively. No TPH as gasoline or BTEX were detected. The only Method 624 volatile organic detected was chloroform, but only at a concentration of 0.0026 mg/L. As previously stated, both TEPH as -kerosene (14 & 7.5 mg/kg) and -motor oil (310 & 230 mg/kg) were detected in soils sampled to a depth of 10 feet. Monitoring well 9MW2 was installed on November 3, 1992 and screened from 5¼ to 20¼ feet. On November 16, 1992, groundwater in monitoring well 9MW2 was measure at a depth of 10.45 feet. In groundwater, TEPH as -kerosene was detected at 0.590 mg/L and -motor oil at 9.5 mg/L. Detected concentrations at this location may require addition characterization and possibly remediation.

In the location of a former outside rack storage area, an excavation was performed in an attempt to find a reported underground storage tank (UST). This activity was documented in the October 16, 1992 Site Characterization Report and Work Plan. No UST was found, but significant concentrations of TPH as gasoline and BTEX were detected, which required excavation. After removing approximately 250 cubic yards of soil, TPH as gasoline and BTEX still remained in the ground. Specifically, excavation wall sample B11-6' contained TPH as gasoline at 13 mg/kg and benzene at 0.670 mg/kg. To characterize the vertical extent of TPH as gasoline and BTEX, soil samples were collected in early November, 1992 from depths of 4.5' to 5', 9.5' to 10', 14.5' to 15', 19.5' to 20', 24.5' to 25', and 29.5' to 30', at the location of monitoring well 9MW3. Significant concentrations of TPH as gasoline and BTEX were detected at depths of 5 and 10 feet, and also at 25 and 30 feet. The highest concentrations were detected from the 10 foot depth, with TPH as gasoline at 250 mg/kg, benzene at 3.7 mg/kg, toluene at 11.0 mg/kg, ethyl benzene at 2.2 mg/kg, and total xylenes at 6.4 mg/kg. No benzene, ethyl benzene, or TPH as gasoline were detected from sampling

depths of 15 feet and 20 feet. It is unknown why there is a bimodal distribution of sampling results with depth.

Monitoring well 9MW3, installed on November 4, 1992, was sampled on November 16, 1992 and then analyzed for TPH as gasoline, BTEX, and TEPH as -diesel, -kerosene, and -motor oil. No TEPHs were detected. But, TPH as gasoline was detected at 40.0 mg/L, benzene at 2.90 mg/L, toluene at 6.7 mg/L, ethyl benzene at 0.550 mg/L, and total xylenes at 1.70 mg/L. Additional characterization and remediation may probably be necessary associated with these and earlier findings. On November 16, 1992, groundwater was measured in monitoring well 9MW3 at a depth of 10.64 feet.

The proposed monitoring well 9MW4 was in a general location of a suspected UST, currently below the floor of the large warehouse on the property. As reported by a PACO Pumps employee, the UST was adjacent to the northern corner of a previous steel building which had been demolished to build the current warehouse. In their proposal, the engineering contractor to build the warehouse was to remove the underground storage tank. To determine if nearby soil was potentially impacted by the UST, vertical soil samples were collected from depths of 0 to 0.5', 4.5' to 5', 9.5' to 10', 14.5' to 15', and 19.5' to 20', from the pilot boring for monitoring well 9MW4. Each sampling location was analyzed for TEPH as -diesel, -kerosene, and -motor oil, along with TPH as gasoline, and BTEX. Significant concentrations of TPH as gasoline, along with benzene, ethyl benzene, and total xylenes were detected at depths of 0.5 feet, 5 feet, and 10 feet. Toluene was detected at depths of 5 feet and 10 feet. Concentrations of the analytes were not detected from a depth of 15 feet. BTEX were detected at the sampling depth of 20 feet. Most of the highest concentrations were detected at a depth of 10 feet, with TPH as gasoline at 32 mg/kg, benzene at 0.34 mg/kg, toluene at 0.76 mg/kg, ethyl benzene at 0.91 mg/kg, and total xylenes at 4.2 mg/kg.

Groundwater from monitoring well 9MW4, sampled on November 16, 1992, was analyzed for TPH as gasoline, BTEX, and TEPH as -diesel, -kerosene, and -motor oil. No TEPHs were detected. But TPH as gasoline was detected at 0.560 mg/L, along with benzene at 0.066 mg/L, toluene at 0.073 mg/L, ethyl benzene at 0.016 mg/L, and total xylenes at 0.140 mg/L. At this location, additional characterization and remediation may be required. Groundwater was measured at 9.41 feet below the floor surface.

In summary, the November 1992 soil samples and the first round of groundwater samples indicate that various locations contained apparently elevated concentrations of chemicals in soil and groundwater. After evaluating the results from a second round of groundwater samples, to be collected in early March 1993, it is recommended that representatives of PACO Pumps and Jonas and Associates meet with the local agency representative to discuss the need for additional characterization and possible remediation.

FIRST QUARTERLY STATUS REPORT

October 1 through December 31, 1992

PACO PUMPS INC.
9201 SAN LEANDRO STREET
OAKLAND, CALIFORNIA

1.0 INTRODUCTION

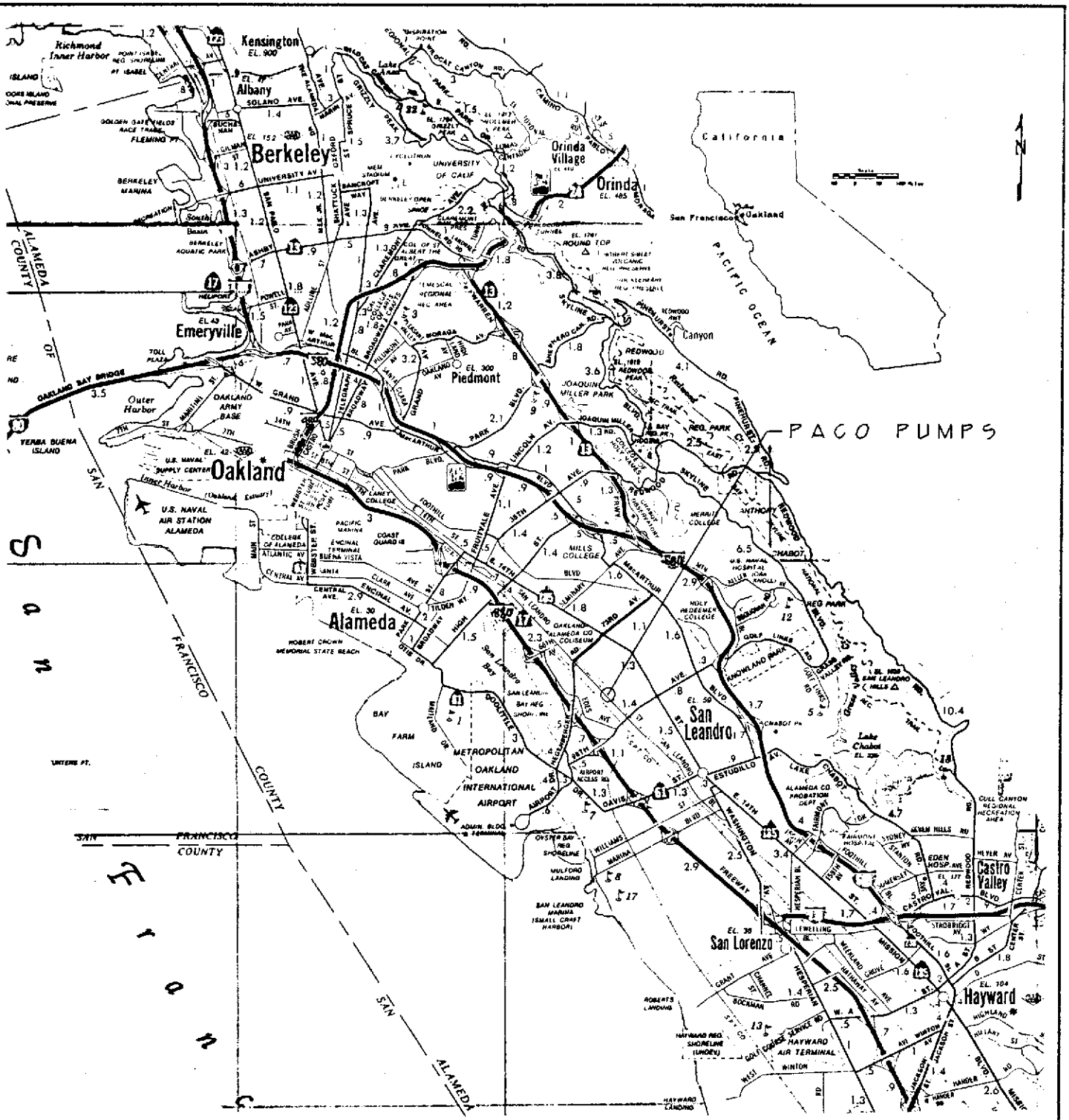
Jonas and Associates Inc. has been retained by PACO Pumps Inc. to perform an environmental site characterization of its property located at 9201 San Leandro Street, in Oakland, California 94603-1237. The results of an initial site characterization study for the facility was presented in the October 16, 1992, "Site Characterization Report and Work Plan - PACO Pumps Inc., 845 92nd Avenue, Oakland, California". The October 16, 1992 document also provided a Work Plan for the work presented in this "First Quarterly Status Report". The Site Characterization Report and Work Plan was approved by Alameda County Health Care Services on October 20, 1992.

PACO Pumps' environmental representative for this project is Mr. Scott Liddicoat {(510) 559-9107}. The lead agency for this project is the Alameda County Health Care Services Agency, Department of Environmental Health, Hazardous Division (Alameda County Health Services). The address of Alameda County Health Services is 80 Swan Way, Room 200, Oakland, California 94621. The agency representative is Ms. Eva Chu {(510) 271-4530}.

The regional location of the property is presented in Figure 1-1. The facility is located in Township 2 South, Range 3 West, Section 22, Mount Diablo Baseline and Meridian. The land is essentially flat. A general map of the facility is presented in Figure 1-2.

Prior to May 1992, PACO Pumps had an active facility at their 9201 San Leandro Street location. The facility contained a manufacturing, engineering, and storage building, a purchasing and data processing building, a warehouse, a welding shop, employee parking, and outside storage. Currently, the equipment used for manufacturing activities, along with parts and products, have been removed from the facility. However, the buildings still remain. The facility is largely bound by a Cyclone fence and gates. The Environmental Protection Agency identification number for PACO Pumps' 9201 San Leandro Street facility is CAD088772629.

This First Quarterly Status Report presents the results of the environmental investigations defined in the October 16, 1992 Site Characterization Report and Work Plan. Field work for this phase of the project was performed during November 1992. A total of twenty-one soil samples were collected and four groundwater monitoring wells were installed and sampled. This document presents the rationale for various field efforts, the methods and procedures used for sampling and well installation, along with analytical methods, results, a discussion of the findings, conclusions, and recommendations.



Regional Location

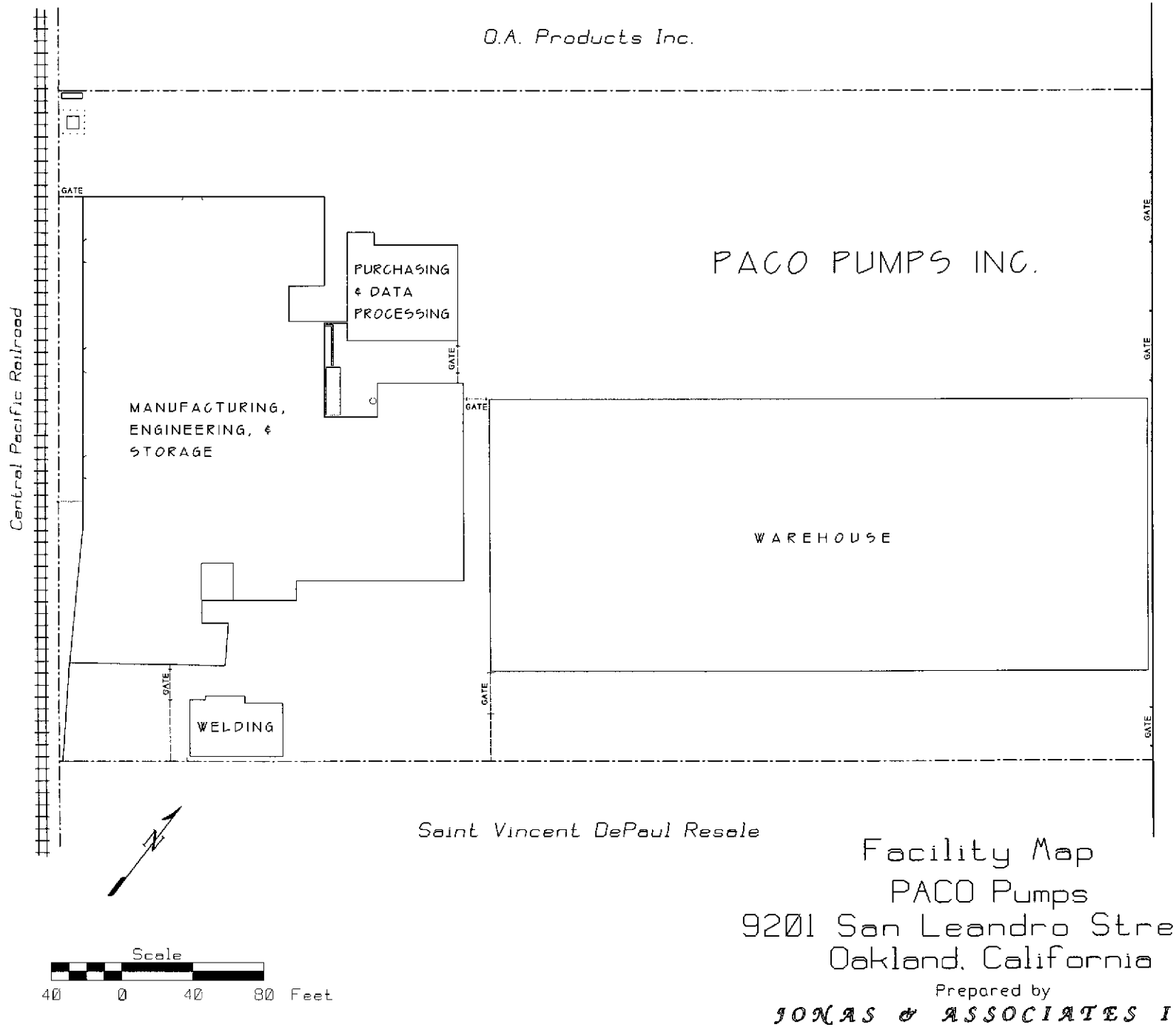
PACO PUMPS

Oakland, California

Prepared by

JONAS AND ASSOCIATES INC.

Drawn by	Checked by	Approved by	Date	Scale	Figure	Drawing Number
M.J.			10-11-1991	as shown	Figure 1-1	PC0217-10/91-1-1



Facility Map
PACO Pumps
9201 San Leandro Street
Oakland, California

Prepared by
JONAS & ASSOCIATES INC.

By May 1992, PACO Pumps' manufacturing activities at this facility had ceased.

Date: 5-29-1992 Locations Approx.	Figure 1-2	Drawing Number PC0220-5/92:F1-2

Drawn by M.J. 5-29-1992

Drawing Number PC0220-5/92:F1-2

Figure 1-2

Data collected during the first quarter of 1993 will be presented in a March/April 1993, "Second Quarterly Status Report", covering the period from January 1 through March 31, 1993. Work to be performed will include a second round of sampling of the four monitoring wells.

1.1 Project Objectives and Scope of Report

Project Objectives

The primary objective of this phase of the project is to sample and analyze soil and groundwater as defined in the October 16, 1992 Site Characterization Report and Work Plan. Specific objectives of the work performed are as follows:

1/ Install and sample a groundwater monitoring well and determine if selected contaminants exist in groundwater immediately downgradient of an excavation in an area of a suspected underground storage tank;

2/ Install and sample a groundwater monitoring well underneath the current warehouse and determine if selected contaminants exist in groundwater immediately downgradient from an area where a suspected underground storage tank may have been present;

3/ Install and sample two groundwater monitoring wells and determine if selected contaminants exist in groundwater underlying areas with previously detected elevated concentrations in soil;

4/ From the soil borings associated with the monitoring wells, collect and analyze soil samples from selected horizons to provide a vertical profile of selected constituents, if they are detected; and

5/ Collect selected soil samples in areas where previous soil samples in mg/kg contained metal concentrations exceeding ten times the Soluble Threshold Limit Concentrations (STLCs) and have them analyzed using the Waste Extraction Test (WET) method.

Assuming a westerly groundwater gradient, these project objectives were fulfilled by the work performed in the period ending December 31, 1992.

Scope of Report

Since this First Quarterly Status Report is an attachment to the October 16, 1992 Site Characterization Report and Work Plan for the facility, it does not contain an overview of the facility history; physical settings; the results of the October 1991 and April 1992 sampling events; the June through August 1992 excavation and sampling associated

with a suspected underground storage tank; and the statistical analysis of metals. These topics are presented and discussed in the October 16, 1992 document. This First Quarterly Status Report presents the results of implementing the scope of work presented in the October 16, 1992 Site Characterization Report and Work Plan, through to the end of 1992.

This First Quarterly Status Report is presented in four sections and five appendices. Section 1: Introduction, provides an overview of the project, project objectives, and the scope of the report. Section 2: Sampling of Soil, presents the rationale for sampling of soil ≤ 1.5 feet deep and for the monitoring well borehole samples. Also presented in Section 2 are sampling methods and procedures, the analytical results from soil sampling, and a discussion of the results. Section 3: Installation and Sampling of Groundwater Monitoring Wells, provides the rationale for the installation of the monitoring wells, along with their construction and sampling. Analytical results for the groundwater samples are also presented in Section 3, along with a discussion of groundwater results. Section 4: Conclusions and Recommendations, provides general conclusions and proposed recommendations.

Summary tables of sampling results, chain-of-custody records, raw laboratory data, permits and drilling logs, and pictures of various field activities are presented in Appendices A through E.

2.0 SAMPLING OF SOIL

The fourth quarter of 1992 field investigation at PACO Pumps 9201 San Leandro Street facility included three tasks. The scope of work for these tasks is defined in the October 16, 1992 Site Characterization Report and Work Plan. One of the tasks is the collection of shallow soil samples from depths of ≤ 1.5 feet and then WET leachate analyses for selected metals. The second task is the collection and analysis of soil samples from boreholes associated with four monitoring wells. The third task associated with the recent field effort was the installation and sampling of four groundwater monitoring wells. For the soil sampling tasks, this section of the report presents rationale, sampling procedures, and soil sampling results. The third task, associated with monitoring well installation and groundwater sampling, is presented in Section 3 of this report.

2.1 Previous Results and Rationale for Recent Soil Sampling

Summary of Previous Results

The rationale for soil sampling presented in this First Quarterly Status Report is based upon the results presented in the October 16, 1992 Site Characterization Report and Work Plan and the suspected locations of two underground storage tanks. A total of twenty-five soil samples, collected from depths ≤ 1.5 feet deep, were documented in the October 1992 report. These samples were collected in October 1991 or April 1992. Most of the samples were analyzed for volatile organics; metals; and Total Extractable

Petroleum Hydrocarbons as -diesel, -motor oil, and -kerosene. Selected soil samples were also analyzed for Total Petroleum Hydrocarbons as gasoline; benzene, toluene, ethyl benzene, and total xylenes; base/neutral/acid extractables; and chlorinated pesticides. Of all the petroleum hydrocarbons and organics analyzed in shallow soil samples, only the following were detected: Total Extractable Petroleum Hydrocarbons as -diesel (≤ 120 mg/kg), -motor oil (≤ 7,800 mg/kg), and -kerosene (≤ 8,000 mg/kg); PCB 1260 (≤ 0.670 mg/kg); and benzene (0.005 mg/kg), toluene (≤ 0.049 mg/kg), ethyl benzene (0.088 mg/kg), and total xylenes (1.20 mg/kg). Fifteen metals were also detected, with most in a range probably representing natural conditions. The following Table 2-1 presents the soil sample results in mg/kg which exceeded ten times the STLCs. The ten times the STLC value is not a promulgated standard, but only a rule of thumb used by some regulatory agencies to indicate that further sampling and analysis using the WET method may be warranted.

Table 2-1
Previous Soil Samples Which Exceeded 10 X STLC
PACO PUMPS - 9201 San Leandro Street, Oakland, California

Sample I.D.	Analyte and Concentration > 10 X STLC
B6-0.5	Lead: 85.4 mg/kg
B7-0.5	Chromium[1]: 57.8 mg/kg Nickel: 348. mg/kg
B13-0.5&1.5	Lead: 61 mg/kg
B16-0.5&1.5	Lead: 100 mg/kg
B19-0.5&1.5	Selenium: 21 mg/kg
B20-0.5&1.5	Lead: 52 mg/kg
B22-0.5&1.5	Copper: 350 mg/kg Lead: 76 mg/kg
B26-0.5&1.5	Copper: 760 mg/kg Lead: 170 mg/kg

note: 1/ Exceeds Cr (VI), but not Cr (III). The actual speciation of this sample is unknown.

On the following page, Table 2-2 provides summaries of previously soil samples collected from depths of ≤ 1.5 feet which contained detectable concentrations of organic chemicals or petroleum hydrocarbons.

The rationale for fourth quarter of 1992 soil sampling also were based on the suspected location of two underground storage tanks. One suspected UST location is currently below the flooring of the large warehouse. Apparently, no previous soil samples were collected at this location. In a proposal submitted by the engineering firm responsible for building the warehouse, it was stated that they would apparently be removing the UST prior to construction of the building. It is currently unknown if the UST was removed.

Table 2-2
Previously Detected Organic Chemicals and Petroleum Hydrocarbons
PACO PUMPS - 9201 San Leandro Street
Oakland, California

Sample I.D. and Sampling Area	Analysis for Organics	Detected Organics
BFW	Volatile Organics (624) TEPH-D,K,MO (3510/8015)	TEPH-Diesel: 0.310 mg/l TEPH-Motor Oil: 1.6 mg/l
B6-0.5	Volatile Organics (8240) Base/Neutrals/Acid Extractables (8270) Chlorinated Pesticides (8080) TPH-G/TEPH-D (5030/3550/8015) BTEX (8020)	PCB 1260: 0.400 mg/kg
B7-0.5	Volatile Organics (8240) Base/Neutrals/Acid Extractables (8270) Chlorinated Pesticides (8080) TPH-G/TEPH-D (5030/3550/8015) BTEX (8020)	PCB 1260: 0.670 mg/kg
B8-0.5&1.5	Volatile Organics (8240) TEPH-D,K,MO (3550/8015)	TEPH-Diesel: 22 mg/kg TEPH-Motor Oil: 110 mg/kg
B9-0.5&1.5	Volatile Organics (8240) TEPH-D,K,MO (3550/8015)	TEPH-Motor Oil: 660 mg/kg
B10-0.5&1.5	Volatile Organics (8240) TEPH-D,K,MO (3550/8015)	TEPH-Diesel: 27 mg/kg TEPH-Motor Oil: 63 mg/kg
B11-0.5&1.5	Volatile Organics (8240) TEPH-D,K,MO (3550/8015)	TEPH-Diesel: 120 mg/kg TEPH-Motor Oil: 410 mg/kg
B13-0.5&1.5	Volatile Organics (8240) TEPH-D,K,MO (3550/8015)	TEPH-Diesel: 55 mg/kg TEPH-Motor Oil: 98 mg/kg
B14-0.5&1.5	Volatile Organics (8240) TEPH-D,K,MO (3550/8015)	TEPH-Motor Oil: 21 mg/kg
B16-0.5&1.5	Volatile Organics (8240) TEPH-D,K,MO (3550/8015)	Toluene: 0.008 mg/kg TEPH-Diesel: 45 mg/kg TEPH-Motor Oil: 190 mg/kg
B17-0.5&1.5	Volatile Organics (8240) TEPH-D,K,MO (3550/8015)	TEPH-Kerosene: 290 mg/kg TEPH-Motor Oil: 520 mg/kg
B18-0.5&1.5	Volatile Organics (8240) TEPH-D,K,MO (3550/8015)	Benzene: 0.005 mg/kg Ethyl Benzene: 0.088 mg/kg Toluene: 0.049 mg/kg Total Xylenes: 1.20 mg/kg TEPH-Kerosene: 8000 mg/kg TEPH-Motor Oil: 7800
B19-0.5&1.5	Volatile Organics (8240) TEPH-D,K,MO (3550/8015)	TEPH-Kerosene: 27 mg/kg TEPH-Motor Oil: 170 mg/kg
B20-0.5&1.5	Volatile Organics (8240) TEPH-D,K,MO (3550/8015)	TEPH-Diesel: 15 mg/kg TEPH-Motor Oil: 120 mg/kg
B22-0.5&1.5	Volatile Organics (8240) TEPH-D,K,MO (3550/8015)	TEPH-Motor Oil: 29 mg/kg
B23-0.5&1.5	Volatile Organics (8240) TEPH-D,K,MO (3550/8015)	TEPH-Motor Oil: 430 mg/kg
B25-0.5&1.5	Volatile Organics (8240) TEPH-D,K,MO (3550/8015)	TEPH-Diesel: 49 mg/kg TEPH-Motor Oil: 210 mg/kg
B26-0.5&1.5	Volatile Organics (8240) TEPH-D,K,MO (3550/8015)	TEPH-Diesel: 12 mg/kg TEPH-Motor Oil: 57 mg/kg

notes: TPH-G = Total Petroleum Hydrocarbons as Gasoline;
TEPH-D,K,MO = Total Extractable Petroleum Hydrocarbons as Diesel, Kerosene, & Motor Oil
TPH-G/TEPH-D = Total Petroleum Hydrocarbons as Gasoline & Total Extractable Petroleum Hydrocarbons as Diesel
BTEX = Benzene, Toluene, Ethyl Benzene, Total Xylenes

During late-June through mid-August of 1992, a phased excavation was performed at another suspected location of an UST near a former outside rack storage area. No UST was found, but concentrations of TPH as gasoline and BTEX were significant enough to require continued excavation. The excavation activities associated with the suspected UST are presented in the October 16, 1992 Site Characterization Report and Work Plan. Currently, the excavation is filled with pea-sized gravels and surfaced with asphalt. Chemical concentrations still exist in the ground, as identified in excavation wall samples. Specifically, in excavation wall sample B11-6', TPH as gasoline was detected at 13 mg/kg, benzene at 0.670 mg/kg, toluene at 0.0076 mg/kg, ethyl benzene at 0.160 mg/kg, and total xylenes at 0.10 mg/kg. These results warranted vertical borehole sampling and analysis adjacent to the former excavation and the construction and sampling of a monitoring well.

Figure 2-1 presents selected sampling results associated with previous sampling events at the facility.

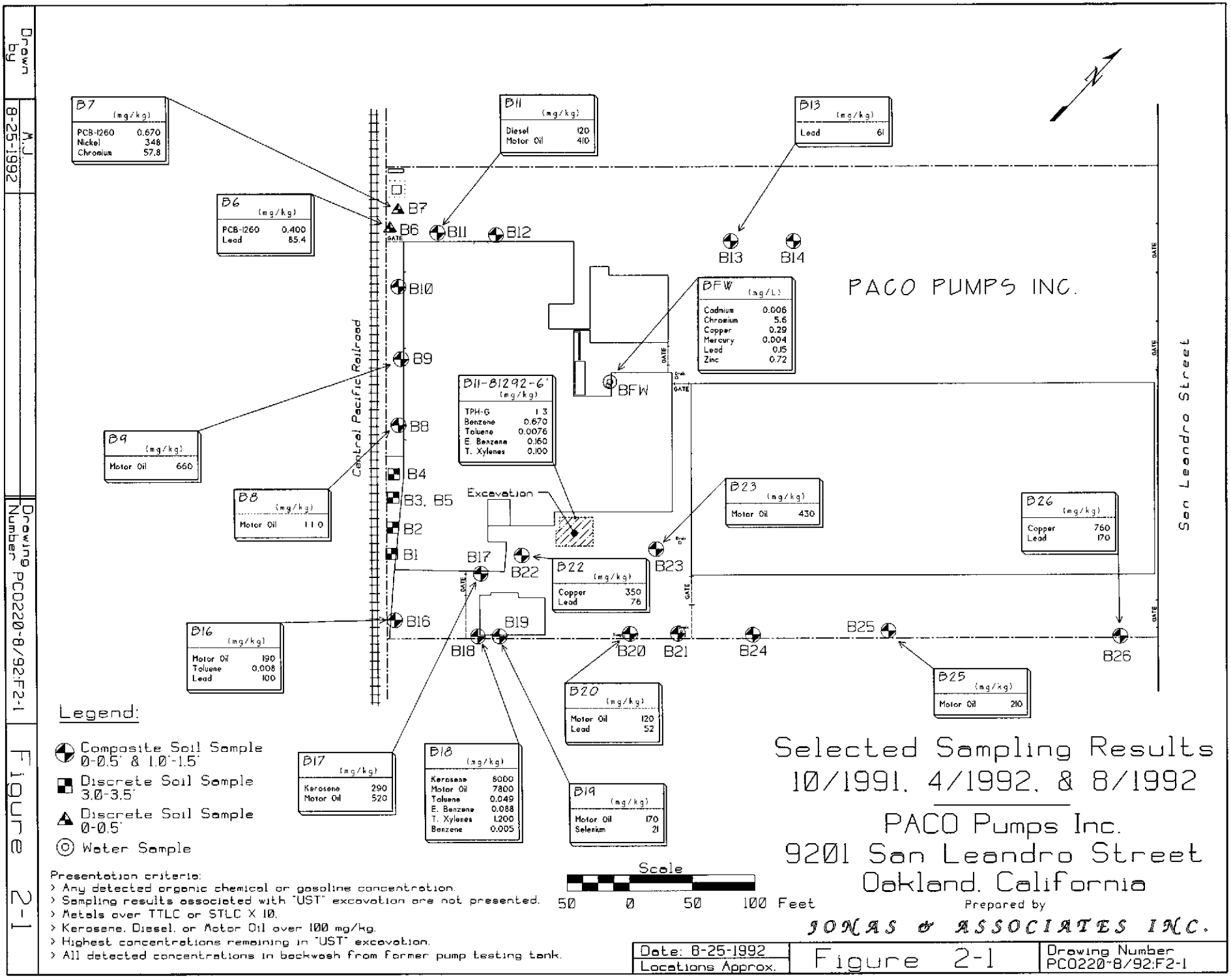
Rationale for Recent Soil Samples

The rationale for soil sampling during the fourth quarter of 1992 were based upon the finding of elevated concentrations of chemicals in previous samples and the suspected locations of two underground storage tanks. Leachate analysis for selected metals using the WET method was performed at locations with possibly elevated concentrations of nickel, chromium, copper, and selenium, and at locations containing the two highest concentrations of lead. These locations include B6, B7, B19, and B26.

In addition, in selected areas if elevated concentrations of petroleum hydrocarbons were previously detected, a deeper soil boring was performed to determine its vertical extent. Because of previous findings in shallow soil samples, various soil samples from boring B-9MW1 were analyzed for PCB, TEPH as -diesel, -kerosene, and -motor oil, along with WET method analysis for selected metals. Borehole sampling location B-9MW2 is located where a previous sample detected elevated concentrations of TEPH as -kerosene and -motor oil, and BTEX. Soil samples were collected every five feet, down to a depth of fifteen feet in boring B-9MW2.

Because of detecting elevated concentrations of TPH as gasoline and BTEX in the excavation associated with a suspected UST, adjacent borehole sampling was performed down to a depth of thirty feet associated with monitoring well 9MW3. Collected at five foot intervals, these soil samples were analyzed for TPH as gasoline and BTEX. For the suspected UST location under the large warehouse, soil samples were collected down to a depth of twenty feet in boring B-MW4. These samples were then analyzed for TPH as gasoline, TEPH as -diesel, -kerosene, and -motor oil, and BTEX.

Table 2-3 presents a summary of sampling rationale used to select locations and analysis of samples collected in the fourth quarter of 1992.



Selected Sampling Results 10/1991, 4/1992, & 8/1992

PACO Pumps Inc.
9201 San Leandro Street
Oakland, California

Prepared by
JONAS & ASSOCIATES INC.

Drawn by M.J. 8-25-1992

Drawing Number PC0220-8/92:F2-1

Figure 2-1

Date: 8-25-1992
Locations Approx.

Figure 2-1

Drawing Number PC0220-8/92:F2-1

Table 2-3 Jonas & Associates Inc.

Rationale for November 1992 Soil Samples
PACO PUMPS - 9201 San Leandro Street
Oakland, California

November 1992 Sample I.D. & Analysis	Sampling Rationale	Location
B19-2-0.5'&1.5': WET soluble Selenium	Previous sample B19-0.5&1.5 detected selenium at 21 mg/kg, the highest concentration of selenium detected at the facility. The TTLC and STLC for selenium is 100 mg/kg and 1.0 mg/L, respectively. Sample B19-0.5&1.5 did not exceed the TTLC for selenium. But the concentration in mg/kg was over ten times the STLC. A soil sample collected from location B19 will analyze selenium in leachate using the Waste Extraction Test method.	B19
B26-2-0.5'&1.5': WET soluble Lead Copper	Results of previous sample B26-0.5&1.5 detected copper at 760 mg/kg and lead at 170 mg/kg. These are the highest copper and lead results found in the previous round of samples. But the results are below their respective TTLCs. The TTLCs for copper and lead are 2,500 mg/kg and 1,000 mg/kg, respectively. But the STLCs for copper and lead are 25 mg/L and 5.0 mg/L, respectively. Therefore, the copper and lead results of B26-0.5&1.5 in mg/kg are over ten times the STLC. This location would be resampled and analyzed for WET soluble copper and lead.	B26
B-MW1-0.5'&1.5': WET soluble Lead Nickel Total Chromium Chromium VI	Previous sample B6-0.5 contained lead at 85.4 mg/kg. This was the second highest concentration of lead of the previous samples collected. This lead concentration, in mg/kg, was below the TTLC but above ten times the STLC. In previous sample B7-0.5, nickel and chromium were detected at 348 mg/kg and 57.8 mg/kg, respectively. The TTLC for nickel is 2,000 mg/kg. But with an STLC for nickel of 20 mg/L, the concentration in mg/kg exceeds ten times the STLC. Chromium was detected at a concentration, in mg/kg, below the TTLC, and below the STLC for chromium III but not for chromium VI. The TTLC and STLC for chromium III are 2,500 mg/kg and 560 mg/L, respectively. The TTLC and STLC for chromium VI are 500 mg/kg and 5 mg/L, respectively. Resampling at this location would extract leachate from the sample using the WET method. The leachate would then be analyzed for WET soluble lead, nickel, total chromium, and chromium VI.	B6 & B7
B-MW1-5',B-MW1-10', B-MW1-15': PCBs	Previous samples B6-0.5 and B7-0.5 detected PCB-1260 at concentrations of 0.400 mg/kg and 0.670 mg/kg. Three samples collected from different depths from the 9MW1 borehole would be analyzed for PCBs to determine if PCBs have migrated deeper.	
B-MW1-5',B-MW1-10', B-MW1-15': TEPH as diesel, kerosene, motor oil	Previous sample B11-0.5&1.5 detected TEPH as diesel and motor oil at concentrations of 120 mg/kg and 410 mg/kg, respectively. These concentrations are above a subjective regulatory threshold of 100 mg/kg. To determine the depth of these constituents, three samples would be collected from different depths from the borehole for monitoring well 9MW1 and then analyzed for TEPH as diesel, kerosene, and motor oil.	B11
B-MW2-0.5&1.5: TPH gasoline. ---------- B-MW2-5',B-MW2-10', B-MW2-15': TEPH as diesel, kerosene, motor oil; BTEX; TPH gasoline.	Previous sample B18-0.5&1.5 detected kerosene at 8,000 mg/kg and motor oil at 7,800 mg/kg. The sample also detected benzene at 0.005 mg/kg, toluene at 0.049 mg/kg, ethyl benzene at 0.088 mg/kg, and total xylenes at 1.20 mg/kg. To determine the depth of these constituents, three samples would be collected from different depths from the borehole for monitoring well 9MW2 and then analyzed for BTEX and TEPH as diesel, kerosene, and motor oil. Because the previous sample was not analyzed for TPH as gasoline, gasoline would be analyzed for from four different depths in the borehole for 9MW2.	B18
B-MW3-5',B-MW3-10', B-MW3-15',B-MW3-20', PB-MW3-25', PB-MW3-30': TPH gasoline; BTEX	Previous, at a location of a suspected underground storage tank, TPH gasoline and BTEX were detected in soil. After removing approximately 250 cubic yards of soil, TPH gasoline and BTEX still remain in the soil. Specifically, excavation wall sample B11 contains TPH gasoline at 13 mg/kg and benzene at 0.670. Six soil samples would be collected from depths in borehole 9MW3 to determine the vertical extent of TPH gasoline and BTEX.	Suspected UST previously below outside storage area
B-MW4-0.5',B-MW4-5', B-MW4-10',B-MW4-15', B-MW4-20': TEPH as diesel, kerosene, motor oil; TPH gasoline; BTEX	A previous employee identified the general location of a suspected UST. A warehouse is currently present at the suspected location. No previous soil samples were collected and no excavation of this area has been performed. To determine if soil may have been impacted in this area, four soil samples would be collected from depths with the borehole for monitoring well 9MW4.	Suspected UST below warehouse.

2.2 November 1992 Sampling and Analysis of Soils

During the fourth quarter of 1992, a total of twenty-one discrete and composite soil samples were collected. Nineteen of the samples were collected from the pilot borings associated with the four monitoring wells. The other two soil samples were collected from locations B19 and B26.

2.2.1 November 1992 Soil Samples

During the November 1992 sampling effort, eleven borehole samples from boreholes B-9MW1, B-9MW2, and B-9MW4 were analyzed for TEPH as -diesel, -kerosene, and -motor oil. Three samples were collected down to a depth of fifteen feet from boring B-9MW1 and analyzed for TEPH to determine if these constituents were present at depth. From borehole B-9MW2, three soil samples were also collected down to a depth of fifteen feet to determine the depth of TEPH concentrations previously detected at depths $\leq$ 1.5 feet. Five soil samples were collected from borehole B-9MW4 to determine if TEPH was present adjacent to a suspected UST location underneath the current warehouse. TEPH were not analyzed in the samples collected from borehole B-9MW3, because earlier excavation samples did not detect these constituents.

Total Petroleum Hydrocarbons as gasoline and also BTEX were analyzed in samples collected in borehole B-9MW2, B-9MW3, and B-9MW4 in November 1992. In the area of boreholes B-9MW2 and B-9MW3, previous samples detected concentrations of BTEX. A previous sample collected from the area of B-9MW2 was not analyzed for TPH as gasoline, but earlier elevated concentrations of BTEX warranted this analysis. Borehole B-9MW3 is adjacent to an earlier excavation where significant concentrations of TPH as gasoline were previously detected. Because previous samples were not apparently collected in the suspected UST location under the current warehouse, borehole B-9MW4 was analyzed for TPH as gasoline and BTEX.

Previous samples at B6-0.5' and B7-0.5', collected in October 1991, detected elevated concentrations of PCB in samples collected from a depth of $\leq$ 0.5 feet. To determine if PCB is present at depth, three vertical soil samples were tested from borehole B-9MW1.

Because of potentially elevated concentrations of selenium, copper, lead, nickel, and chromium detected in previous samples, three locations were selected for further analysis using the WET method. None of these previous samples exceeded TTLC values. To coincide with earlier samples, these more recent samples were also collected from depths $\leq$ 1.5 feet. These samples, collected in November 1992, are identified as B19-2-0.5'&1.5', B26-2-0.5'&1.5', and B-MW1-0.5'&1.5'. By using the WET method and then analyzing the leachate for selected soluble metals, the results can be compared with their respective STLC values. If soils are excavated, then WET leachate for soils exceeding an STLC can be used to identify the soil as a hazardous waste. Soil sample B19-2-0.5'&1.5' was analyzed for WET soluble selenium. The STLC for selenium is 1.0

mg/L. Sample B26-2-0.5'&1.5' was analyzed for WET soluble copper and lead. The STLC for copper and lead is 25 mg/L and 5.0 mg/L, respectively. Pilot boring sample B-MW1-0.5'&1.5' was analyzed for WET soluble lead, nickel, total chromium, and chromium VI. The STLC for nickel is 20 mg/L, chromium III (Total Cr - Cr VI = Cr III) is 560 mg/L, and chromium VI is 5.0 mg/L.

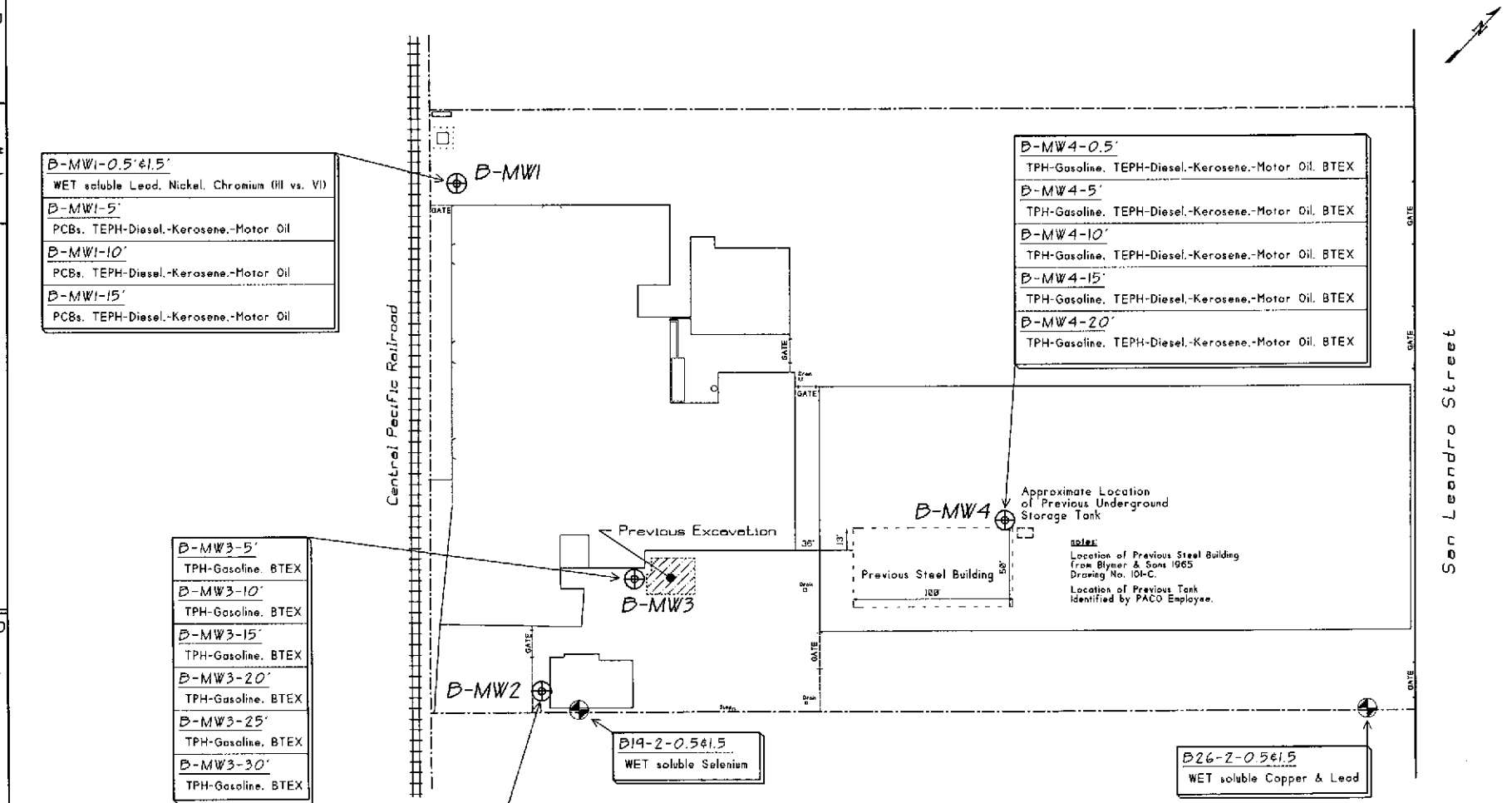
Table 2-4 identifies the recent soil samples and laboratory analyses performed by Chromalab and reported in this First Quarterly Status Report. Figure 2-2 presents the analyses performed for the soil samples collected in November 1992.

Table 2-4
Laboratory Analysis of November 1992 Soil Samples
PACO PUMPS - 9201 San Leandro Street
Oakland, California

Analysis	Sample I.D.
Total Extractable Petroleum Hydrocarbons as Diesel, Kerosene, & Motor Oil (3550/8015)	B-MW1-5', B-MW1-10', B-MW1-15', B-MW2-5', B-MW2-10', B-MW2-15', B-MW4-0.5', B-MW4-5', B-MW4-10', B-MW4-15', B-MW4-20'
Total Petroleum Hydrocarbons as Gasoline (5030/8015) Benzene, Toluene, Ethyl Benzene, Xylenes (8020)	B-MW2-0.5'&1.5', B-MW2-5', B-MW2-10', B-MW2-15', B-MW3-5', B-MW3-10', B-MW3-15', B-MW3-20', PB-MW3-25', PB-MW3-30', B-MW4-0.5', B-MW4-5', B-MW4-10', B-MW4-15', B-MW4-20'
PCBs (8080 mod.)	B-MW1-5', B-MW1-10', B-MW1-15'
WET soluble Lead (WET/3010/7420)	B-MW1-0.5'&1.5', B26-2-0.5'&1.5'
WET soluble Nickel (WET/6010)	B-MW1-0.5'&1.5'
WET soluble Total Chromium (WET/6010)	B-MW1-0.5'&1.5'
WET soluble Chromium VI (WET/7196)	B-MW1-0.5'&1.5'
WET soluble Selenium (WET/6010)	B19-2-0.5'&1.5'
WET soluble Copper (WET/6010)	B26-2-0.5'&1.5'

2.2.2 Standard Sampling Procedures and Protocols

Prior to sampling, the sampling equipment was cleaned and decontaminated. At each sampling location, a soil sample was collected in a brass sleeve driven into the soil with a drive sampler and then extracted. Either a hand-held drive sampler was used or a modified-California split spoon sampler was used associated with a drill rig. The sleeve was then removed from the sampler, labeled and placed inside a chilled cooler. The ice chest contained chilled ice packs to maintain a cold temperature for the samples. Upon completion of shallow sampling using a hand-held drive sampler and auger, each borehole was filled with the soil generated in the process. Pilot borings associated with the drilling rig were either used for installation of a monitoring well or tremied with concrete.



Drawn by: M.J.
11-10-1992

Drawing Number PC0220-11/92:F2-2

Figure 2-2

Legend:

- ⊕ Monitoring Well / Boring
- ⊕ Composite Soil Sample 0-0.5' & 1.0'-1.5'

WET = Waste Extraction Test
TPH = Total Petroleum Hydrocarbons
TEPH = Total Extractable Petroleum Hydrocarbons

B-MW3-4.5 = Discrete Soil Sample from 4' to 4.5' Collected from Boring for Monitoring Well 3
B-MW2-0.5&1.5 = Composite Sample from 0 to 0.5' & 1' to 1.5' Collected from Boring for Monitoring Well 2
B26-2-0.5&1.5' = Second Composite Soil Sample from 0 to 0.5' & 1 to 1.5' at B26

Scale
50 0 50 100 Feet

November 1992
Soil Samples and Analyses

PACO Pumps Inc.
9201 San Leandro Street
Oakland, California

Prepared by
JONAS & ASSOCIATES INC.

Date: 11-10-1992 Locations Approx.	Figure 2-2	Drawing Number PC0220-11/92:F2-2

Each sample was identified on the chain-of-custody record prepared by Jonas and Associates. The samples were transferred to Chromalab, Inc., a California-Certified laboratory (#1094) located in San Ramon, California. At the time it was delivered, a laboratory representative signed the chain-of-custody form and provided a copy to Jonas and Associates. Eventually, all the signed originals of the chain-of-custody records were returned to Jonas and Associates and copies are presented in Appendix B.

Locating Sampling Points

Boreholes were located using a hand-held tape measure to reference to fence lines and buildings. This technique provides approximate sampling locations for the figures presented in this document. However, this procedure does not reach the level of accuracy performed by a licensed land surveyor. Sample locations were either staked or identified as the location of a current monitoring well or adjacent pilot boring and, if necessary, they can be surveyed by a professional surveyor at a later date.

Decontamination

Prior to any sampling, the sampling equipment was decontaminated. Drilling equipment was steam-cleaned with pressurized hot water. At the site, the decontamination of equipment took place in the general area near the sampling location. Non-disposable equipment was decontaminated according to the following procedures:

- Dry manual scrub;
- Manual scrub with distilled water and an appropriate soap solution;
- Distilled water rinse;
- Dilute nitric acid rinse;
- Distilled water rinse; and
- Air dry.

Distilled water was supplied by a pressurized spray unit. All decontamination was performed on a rubberized drop cloth. Rubber gloves were used during decontamination procedures and sampling.

Field Logbook

A project field logbook was used to document the following:

- Date and time of log entries;
- Field conditions (weather, terrain, hazards, etc.);
- Personnel present during field operations;
- Field measurements;
- Sample numbers, time, and depth;

- Any unusual sample characterization; and
- Other general considerations.

Chain-of-Custody Record

A chain-of-custody record accompanied samples when they were shipped to the laboratory. The chain-of-custody record documents the transfer of samples from one party to another. Information noted on the form is as follows:

- Project number;
- Sample identification number;
- Date and time of sampling;
- Type of sample; and
- Type of analysis to be performed.

2.3 Soil Analytical Results and Discussion

This section of the report presents the results of laboratory analyses by Chromalab, followed by a discussion of the results of the November 1992 soil sampling effort.

2.3.1 Recent Soil Sampling Results

For the recent sampling effort, a total of twenty-one samples were analyzed by Chromalab. Three of the samples were composites collected from depths 0' to 0.5' and 1' to 1.5'. Chromalab composited samples B19-2-0.5'&1.5', B26-2-0.5'&1.5', and B-MW2-0.5'&1.5' under laboratory conditions. The remaining eighteen soil samples were collected as discrete samples from the pilot borings associated with the four monitoring wells.

Summary tables of the analytical results are presented in Appendix A. Appendix B presents the signed chain-of-custody records. Appendix C provides the laboratory data sheets, provided by Chromalab Inc. Table 2-5 and Figure 2-3 present the concentrations of detected chemicals found in soils.

2.3.2 Discussion of Soil Sample Results

The following discussion of the results of the November 1992 soil sampling should be considered as an attachment to the October 16, 1992 Site Characterization Report and Work Plan for the facility.

B19 Shallow Soil Sample

Sampling location B19 is behind the former welding shop and adjacent to the cyclone fence and property of Saint Vincent DePaul. Previous soil samples collected from a

Table 2-5
Detected Chemicals in November 1992 Soil Samples
PACO PUMPS - 9201 San Leandro Street
Oakland, California

Sample I.D.	Analysis for Organics	Detected
B19-2-0.5'&1.5'	WET soluble Selenium	WET soluble Selenium: 0.18 mg/L
B26-2-0.5'&1.5'	WET soluble Copper WET soluble Lead	WET soluble Copper: 24 mg/L WET soluble Lead 20 mg/L
B-MW1-0.5'&1.5'	WET soluble Lead WET soluble Nickel WET soluble Total Chromium WET soluble Chromium VI	WET soluble Lead: 4.2 mg/L WET soluble Nickel: 0.59 mg/L WET soluble Total Chromium: 1.0 mg/L
B-MW1-5'	TEPH-D,K,MO PCBs	TEPH as Motor Oil: 530 mg/kg PCBs: 0.29 mg/kg
B-MW1-10'	TEPH-D,K,MO PCBs	none detected
B-MW1-15'	TEPH-D,K,MO PCBs	none detected
B-MW2-0.5'&1.5'	TPH-Gasoline BTEX	Ethyl Benzene: 1.90 mg/kg Total Xylenes: 9.60 mg/kg
B-MW2-5'	TEPH-D,K,MO TPH-Gasoline BTEX	TEPH as Kerosene: 14 mg/kg TEPH as Motor Oil: 310 mg/kg Ethyl Benzene: 0.025 mg/kg Total Xylenes: 0.041 mg/kg
B-MW2-10'	TEPH-D,K,MO TPH-Gasoline BTEX	TEPH as Kerosene: 7.5 mg/kg TEPH as Motor Oil: 230 mg/kg Ethyl Benzene: 0.011 mg/kg Total Xylenes: 0.020 mg/kg
B-MW2-15'	TEPH-D,K,MO TPH-Gasoline BTEX	none detected
B-MW3-5'	TPH-Gasoline BTEX	TPH as Gasoline: 9.5 mg/kg Benzene: 1.90 mg/kg Toluene: 0.0095 mg/kg Ethyl Benzene: 0.240 mg/kg Total Xylenes: 0.110 mg/kg
B-MW3-10'	TPH-Gasoline BTEX	TPH as Gasoline: 250 mg/kg Benzene: 3.70 mg/kg Toluene: 11.0 mg/kg Ethyl Benzene: 2.20 mg/kg Total Xylenes: 6.40 mg/kg
B-MW3-15'	TPH-Gasoline BTEX	Toluene: 0.0054 mg/kg Total Xylenes: 0.028 mg/kg
B-MW3-20'	TPH-Gasoline BTEX	Toluene: 0.010 mg/kg Total Xylenes: 0.012 mg/kg
PB-MW3-25'	TPH-Gasoline BTEX	TPH as Gasoline: 1.2 mg/kg Benzene: 0.031 mg/kg Toluene: 0.065 mg/kg Ethyl Benzene: 0.0078 mg/kg Total Xylenes: 0.023 mg/kg
PB-MW3-30'	TPH-Gasoline BTEX	TPH as Gasoline: 10 mg/kg Benzene: 0.20 mg/kg Toluene: 0.30 mg/kg Ethyl Benzene: 0.039 mg/kg Total Xylenes: 0.110 mg/kg

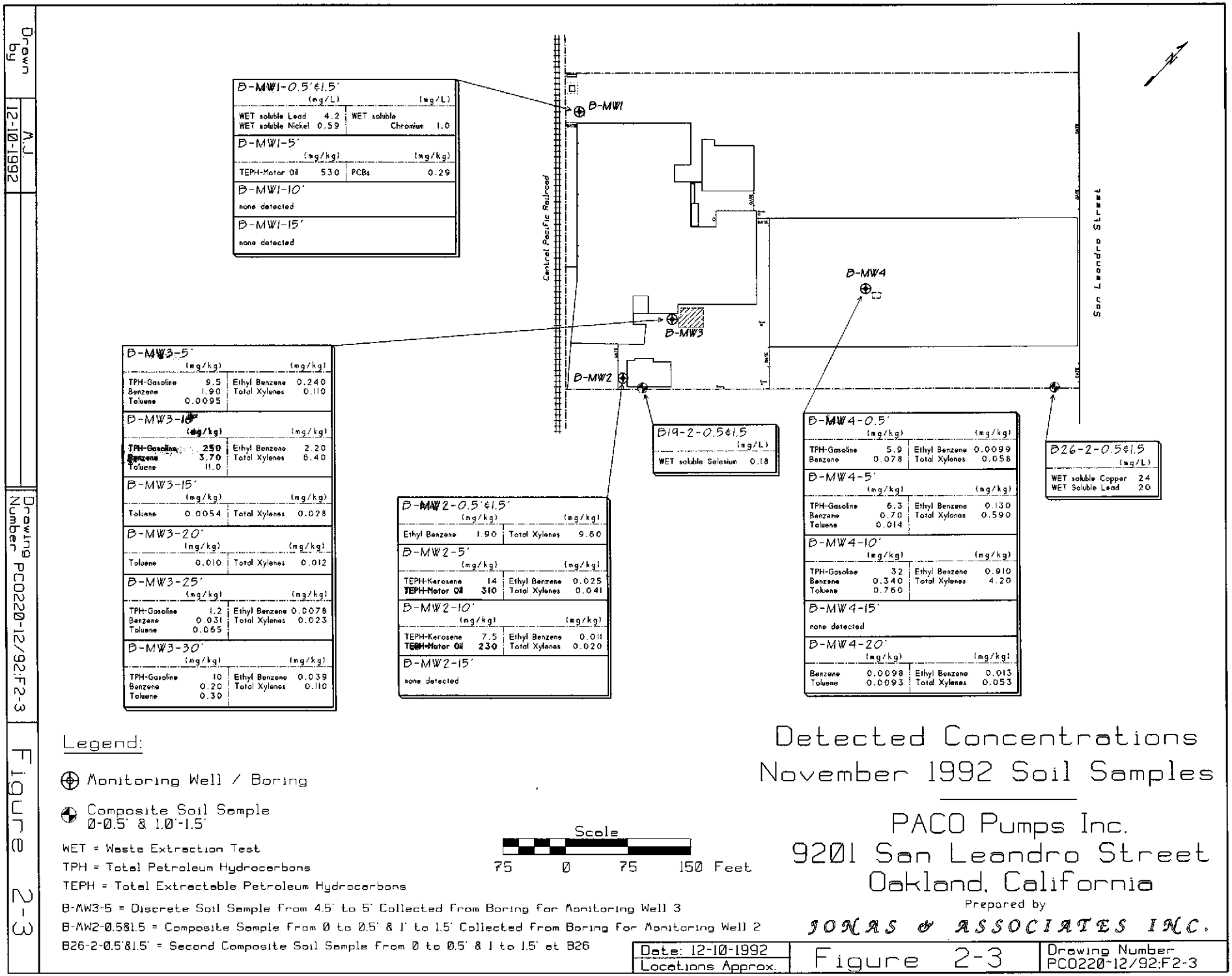
Table 2-5con't
Detected Chemicals in November 1992 Soil Samples
PACO PUMPS - 9201 San Leandro Street
Oakland, California

Sample I.D.	Analysis for Organics	Detected
B-MW4-0.5'	TEPH-D,K,MO TPH-Gasoline BTEX	TPH as Gasoline: 5.9 mg/kg Benzene: 0.078 mg/kg Ethyl Benzene: 0.0099 mg/kg Total Xylenes: 0.058 mg/kg
B-MW4-5'	TEPH-D,K,MO TPH-Gasoline BTEX	TPH as Gasoline: 6.3 mg/kg Benzene: 0.70 mg/kg Toluene: 0.014 mg/kg Ethyl Benzene: 0.130 mg/kg Total Xylenes: 0.590 mg/kg
B-MW4-10'	TEPH-D,K,MO TPH-Gasoline BTEX	TPH as Gasoline: 32 mg/kg Benzene: 0.340 mg/kg Toluene: 0.760 mg/kg Ethyl Benzene: 0.910 mg/kg Total Xylenes: 4.20 mg/kg
B-MW4-15'	TEPH-D,K,MO TPH-Gasoline BTEX	none detected
B-MW4-20'	TEPH-D,K,MO TPH-Gasoline BTEX	Benzene: 0.0098 mg/kg Toluene: 0.0093 mg/kg Ethyl Benzene: 0.013 mg/kg Total Xylenes: 0.053 mg/kg

depth range of ≤ 1.5 feet at the location (B19) identified 21 mg/kg of selenium in the soil. The origin of selenium at this concentration is unknown. To define a hazardous waste in selenium-bearing soil, the Total Threshold Limit Concentration (TTLC) is 100 mg/kg and the Soluble Limit Threshold Concentration (STLC) is 1.0 mg/L. On November 9, 1992, soil sample B19-2-0.5'&1.5' was collected and then analyzed using Waste Extraction Test (WET) method and the leachate tested for soluble selenium. WET soluble selenium was found at a concentration of 0.18 mg/L, well below the STLC for selenium.

B26 Shallow Soil Sample

At an eastern corner of the facility, sampling location B26 is near the truck entrance and adjacent to the fenceline with Saint Vincent DePaul. An April 13, 1992 soil sample collected from ≤ 1.5 feet at location B26 was found to contain 760 mg/kg of copper and 170 mg/kg of lead. The source of these apparently elevated concentrations is unknown. But the samples are below the TTLC for copper of 2,500 mg/kg and lead of 1,000 mg/kg. On November 9, 1992, a second composite soil sample, B26-2-0.5'&1.5', was collected from ≤ 1.5 feet deep. Using the WET method, the leachate was then tested for soluble copper and lead to compare the results with STLC values. WET soluble copper was found at a concentration of 24 mg/L, just below the STLC for copper of 25 mg/L. In the sample, WET soluble lead was detected at a concentration of 20 mg/L, above the STLC for lead of 5 mg/L.


B-MW1-0.5'&1.5'
(mg/L)
WET soluble Lead 4.2
WET soluble Nickel 0.59
(mg/L)
WET soluble Chromium 1.0
B-MW1-5'
(mg/kg)
TEPH-Motor Oil 530
(mg/kg)
PCBs 0.29
B-MW1-10'
none detected
B-MW1-15'
none detected
B-MW1
B-MW2
B-MW3
B-MW4
Central Pacific Railroad
San Leandro Street
B-MW3-5'
(mg/kg)
TPH-Gasoline 9.5
Benzene 1.90
Toluene 0.0095
(mg/kg)
Ethyl Benzene 0.240
Total Xylenes 0.110
B-MW3-10'
(mg/kg)
TPH-Gasoline 250
Benzene 3.70
Toluene 11.0
(mg/kg)
Ethyl Benzene 2.20
Total Xylenes 6.40
B-MW3-15'
(mg/kg)
Toluene 0.0054
(mg/kg)
Total Xylenes 0.028
B-MW3-20'
(mg/kg)
Toluene 0.010
(mg/kg)
Total Xylenes 0.012
B-MW3-25'
(mg/kg)
TPH-Gasoline 1.2
Benzene 0.031
Toluene 0.065
(mg/kg)
Ethyl Benzene 0.0078
Total Xylenes 0.023
B-MW3-30'
(mg/kg)
TPH-Gasoline 10
Benzene 0.20
Toluene 0.30
(mg/kg)
Ethyl Benzene 0.039
Total Xylenes 0.110
B-MW2-0.5'&1.5'
(mg/kg)
Ethyl Benzene 1.90
(mg/kg)
Total Xylenes 9.60
B-MW2-5'
(mg/kg)
TEPH-Kerosene 14
TEPH-Motor Oil 310
(mg/kg)
Ethyl Benzene 0.025
Total Xylenes 0.041
B-MW2-10'
(mg/kg)
TEPH-Kerosene 7.5
TEPH-Motor Oil 230
(mg/kg)
Ethyl Benzene 0.011
Total Xylenes 0.020
B-MW2-15'
none detected
B19-2-0.5&1.5
(mg/L)
WET soluble Selenium 0.18
B-MW4-0.5'
(mg/kg)
TPH-Gasoline 5.9
Benzene 0.078
(mg/kg)
Ethyl Benzene 0.0099
Total Xylenes 0.058
B-MW4-5'
(mg/kg)
TPH-Gasoline 6.3
Benzene 0.70
Toluene 0.014
(mg/kg)
Ethyl Benzene 0.130
Total Xylenes 0.590
B-MW4-10'
(mg/kg)
TPH-Gasoline 32
Benzene 0.340
Toluene 0.760
(mg/kg)
Ethyl Benzene 0.910
Total Xylenes 4.20
B-MW4-15'
none detected
B-MW4-20'
(mg/kg)
Benzene 0.0098
Toluene 0.0093
(mg/kg)
Ethyl Benzene 0.013
Total Xylenes 0.053
B26-2-0.5&1.5
(mg/L)
WET soluble Copper 24
WET Soluble Lead 20
Legend:
Monitoring Well / Boring
Composite Soil Sample
0-0.5' & 1.0'-1.5'
WET = Waste Extraction Test
TPH = Total Petroleum Hydrocarbons
TEPH = Total Extractable Petroleum Hydrocarbons
B-MW3-5 = Discrete Soil Sample From 4.5' to 5' Collected from Boring for Monitoring Well 3
B-MW2-0.5&1.5 = Composite Sample From 0 to 0.5' & 1' to 1.5' Collected from Boring for Monitoring Well 2
B26-2-0.5'&1.5' = Second Composite Soil Sample From 0 to 0.5' & 1 to 1.5' at B26
Scale
75 0 75 150 Feet
Detected Concentrations
November 1992 Soil Samples
PACO Pumps Inc.
9201 San Leandro Street
Oakland, California
Prepared by
JONAS & ASSOCIATES INC.
Date: 12-10-1992
Locations Approx.
Figure 2-3
Drawing Number
PC0220-12/92:F2-3
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M.J.
12-10-1992
Drawing Number PC0220-12/92:F2-3
Figure 2-3

9MW1 Borehole Soil Samples

In a general area around the borehole for monitoring well 9MW1, from previous samples collected ≤ 1.5 feet deep on October 1, 1991 and April 9, 1992, possibly elevated concentrations of lead (85.4 mg/kg), nickel (348 mg/kg), and chromium (57.8 mg/kg) were detected. In addition, PCB 1260 was previously detected at concentrations of 0.400 mg/kg and 0.670 mg/kg in shallow soils ≤ 1.5 feet deep, along with concentrations of Total Extractable Petroleum Hydrocarbons (TEPH) as -diesel (120 mg/kg) and -motor oil (410 mg/kg). From pilot boring B-9MW1, drilled on November 9, 1992, a shallow soil sample was collected from ≤ 1.5 feet deep and then analyzed for WET soluble -lead, -nickel, -total chromium, and -chromium VI. This sample was found to contain WET soluble lead at 4.2 mg/L, WET soluble nickel at 0.59 mg/L, and WET soluble total chromium at 1.0 mg/L. No WET soluble chromium VI was detected. These concentrations are all below their respective STLC hazardous waste regulatory values. In pilot boring B-9MW1, three other depths were sampled: 4.5' to 5', 9.5' to 10', and 14.5' to 15'. Each of these samples were analyzed for PCB and TEPH as -diesel, -kerosene, and -motor oil. PCB was detected at a concentration of 0.29 mg/kg, from a depth range of 4.5' to 5'. PCB was not detected in the two deeper samples. Of the Total Extractable Petroleum Hydrocarbons, only the soil from a depth range of 4.5' to 5' detected any concentration: 530 mg/kg of TEPH as motor oil. Apparently, concentrations of PCB and TEPHs are present at a depth of 5 feet, but not at 10 and 15 feet below the surface at the location of monitoring well 9MW1.

9MW2 Borehole Soil Samples

The borehole for monitoring well 9MW2 is located adjacent to the former welding shop and the property boundary fenceline. This is in a general location where several 55-gallon drums, in apparent disarray, were present on the property of Saint Vincent DePaul. Previous soil sample B18 collected from ≤ 1.5 feet deep at location 9MW2, detected TEPH as -motor oil at 7,800 mg/kg and -kerosene at 8,000 mg/kg, along with benzene at 0.005 mg/kg, ethyl benzene at 0.088 mg/kg, toluene at 0.049 mg/kg and total xylenes at 1.20 mg/kg (BTEX). The previous soil sample was not analyzed for Total Petroleum Hydrocarbons as gasoline. From pilot boring B-9MW2, four depth ranges were sampled for laboratory analysis: 0'-0.5'&1-1.5'(composite), 4.5' to 5', 9.5' to 10', and 14.5' to 15'. For these four sampling depths, no TPH as gasoline, benzene, or toluene were detected, but the detection limit for benzene for sampling depths 0'-0.5'&1'-1.5' was elevated because of significant concentrations of hydrocarbons in the kerosene/mineral spirit range. Ethyl benzene and total xylenes were detected in the three upper samples, but concentrations decreased significantly with depth: ethyl benzene and total xylenes were detected at concentrations of 1.90 mg/kg and 9.6 mg/kg at ≤ 1.5 feet deep, and only 0.011 mg/kg and 0.020 mg/kg at a depth of 10 feet. For the samples analyzed at location 9MW2/B18, no TEPH as diesel was detected. But TEPH as -kerosene and -motor oil were detected down to a depth of 10 feet. At a depth of 10 feet, TEPH as kerosene was detected at 7.5 mg/kg and TEPH as motor oil was detected at

230 mg/kg. No TEPH as -diesel, -kerosene, and -motor oil, along with TPH as gasoline, or BTEX were detected from the sample collected from a depth of 14.5 feet to 15 feet.

9MW3 Borehole Soil Samples

In the location of a former outside rack storage area, an excavation was performed in an attempt to find a reported underground storage tank (UST). This activity was documented in the October 16, 1992 Site Characterization Report and Work Plan. No UST was found, but significant concentrations of TPH as gasoline and BTEX were detected, which required excavation. After removing approximately 250 cubic yards of soil, TPH as gasoline and BTEX still remained in the ground. Specifically, excavation wall sample B11-6' contained TPH as gasoline at 13 mg/kg and benzene at 0.670 mg/kg. To characterize the vertical extent of TPH as gasoline and BTEX, soil samples were collected in early November 1992 from depths of 4.5' to 5', 9.5' to 10', 14.5' to 15', 19.5' to 20', 24.5' to 25', and 29.5' to 30', at the location of monitoring well 9MW3. Significant concentrations of TPH as gasoline and BTEX were detected at depths of 5 and 10 feet, and also at 25 and 30 feet. The highest concentrations were detected from the 10 foot depth, with TPH as gasoline at 250 mg/kg, benzene at 3.7 mg/kg, toluene at 11.0 mg/kg, ethyl benzene at 2.2 mg/kg, and total xylenes at 6.4 mg/kg. No TPH as gasoline, or benzene and ethyl benzene were detected from sampling depths of 15 feet and 20 feet. It is unknown why there is a bimodal distribution of sampling results with depth.

9MW4 Borehole Soil Samples

The proposed monitoring well 9MW4 was in a general location of a suspected UST, currently below the floor of the large warehouse on the property. As reported by a PACO Pumps employee, the UST was adjacent to the northern corner of a previous steel building which had been demolished to build the current warehouse. In their proposal, the engineering contractor hired to build the warehouse was to remove the underground storage tank. To determine if nearby soil was potentially impacted by the UST, vertical soil samples were collected from the borehole for monitoring well 9MW4 from depths of 0 to 0.5', 4.5' to 5', 9.5' to 10', 14.5' to 15', and 19.5' to 20'. Each sampling location was analyzed for TEPH as -diesel, -kerosene, and -motor oil, along with TPH as gasoline, and BTEX. Significant concentrations of TPH as gasoline, along with benzene, ethyl benzene, and total xylenes were detected at depths of 0.5 feet, 5 feet, and 10 feet. Toluene was also detected at depths of 5 feet and 10 feet. Concentrations of the analytes were not detected from a depth of 15 feet. BTEX were detected at the sampling depth of 20 feet. Most of the highest concentrations were detected at a depth of 10 feet, with TPH as gasoline at 32 mg/kg, benzene at 0.34 mg/kg, toluene at 0.76 mg/kg, ethyl benzene at 0.91 mg/kg, and total xylenes at 4.2 mg/kg.

3.0 INSTALLATION AND SAMPLING OF GROUNDWATER MONITORING WELLS

To characterize the groundwater quality in selected areas, four four-inch diameter monitoring wells were installed at PACO Pumps facility. These wells are located in areas where potentially elevated concentrations were detected in shallow soils or associated with possibly two underground storage tanks. These monitoring wells are identified as 9MW1, 9MW2, 9MW3 and 9MW4. Monitoring well 9MW1 is located at the western corner of the facility across the fence from the Southern Pacific Railroad tracks. Monitoring well 9MW2 is located adjacent to the former welding shop and the fenceline shared with Saint Vincent DePaul. Monitoring well 9MW3 is adjacent to an excavation probably associated with a previous underground storage tank. Monitoring well 9MW4 is located inside the large warehouse at a suspected location where an underground storage tank may have been present. The locations of the four monitoring wells and the analyses performed for this first round of sampling are identified in Figure 3-1.

The total depth of the each monitoring well casing and sand pack is approximately 21 feet. For each well, the screen was placed from approximately 5¼ to 20¼ feet below surface level (BSL). All four monitoring wells were completed between November 3 and November 9, 1992. Prior to purging and sampling each well between November 15 and 16, 1992, the following depth of groundwater levels were measured: 9MW1 at 9.74'; 9MW2 at 10.45'; 9MW3 at 10.64'; and 9MW4 at 9.41'.

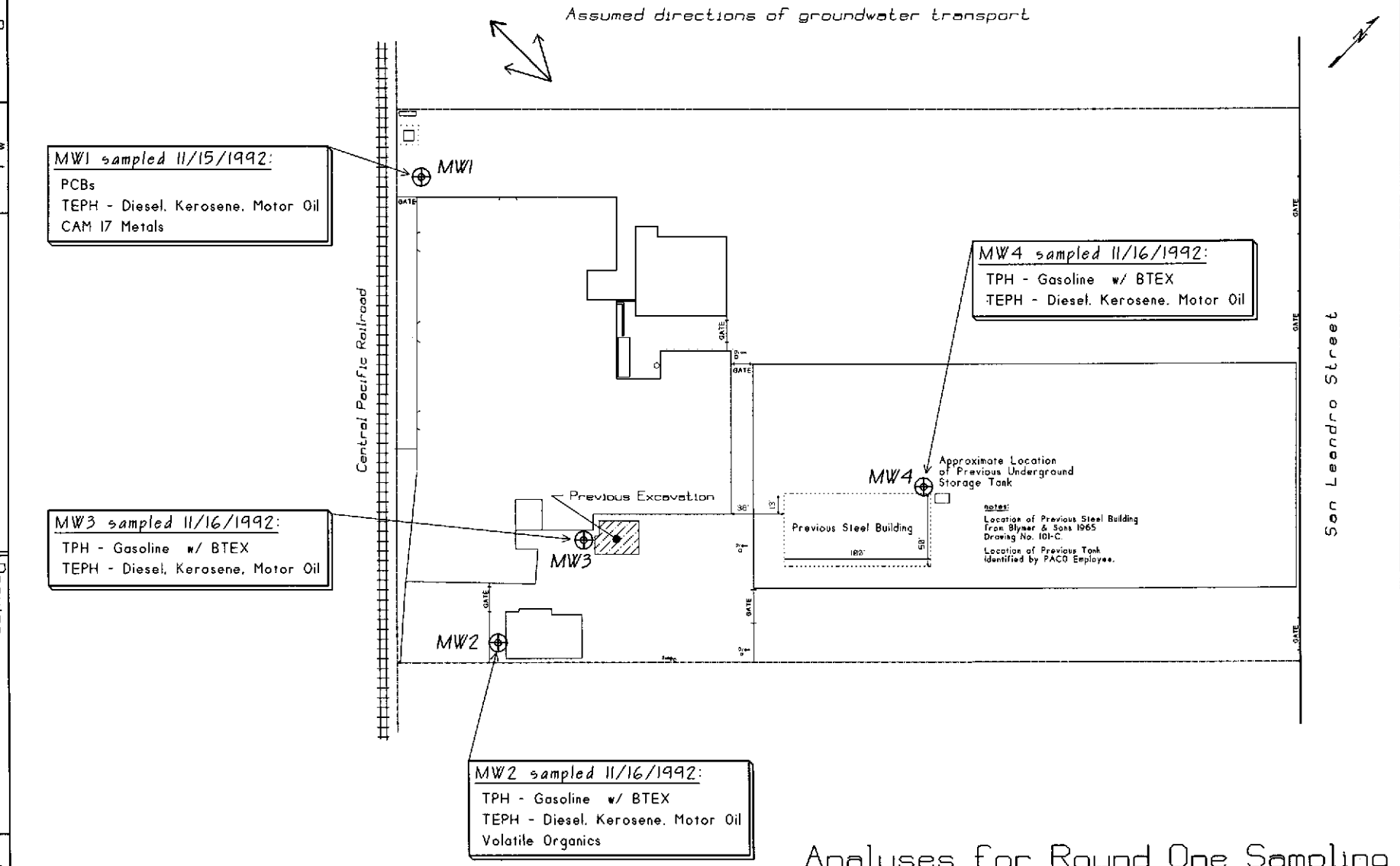
Summary tables of the analytical results are presented in Appendix A. The chain-of-custody record for the monitoring well samples are presented in Appendix B. Appendix C provides the laboratory sheets from Chromalab analytical laboratory. Required permits and drilling logs for the two monitoring wells are presented in Appendix D. Pictures of field activities performed at PACO Pumps are provided in Appendix E.

3.1 Rationale for Monitoring Wells and Samples

As presented in the October 16, 1992 Site Characterization Report and Work Plan, Jonas and Associates Inc. proposed the installation of four monitoring wells. These monitoring wells are identified as 9MW1, 9MW2, 9MW3, and 9MW4. As required by the Alameda County Health Care Services Agency, these wells shall be monitored quarterly to assess groundwater quality and groundwater levels under various seasonal conditions.

Data from monitoring wells may possibly be used to determine if groundwater has been impacted from potentially elevated concentrations detected in shallow soil samples, from previously reported underground storage tanks, and from regional facilities in the location of PACO Pumps. After the wells are surveyed, they can also be used to determine the maximum groundwater flow direction and potentiometric gradient.

Table 3-1 provides summaries of the various rationale for the placement and sampling of each of the four wells.



Drawn by M.J.
12-15-1992

Drawing Number PC0220-12/92:F3-1

Figure 3-1

Analyses for Round One Sampling of Monitoring Wells

PACO Pumps Inc.
9201 San Leandro Street
Oakland, California

Prepared by

JONAS & ASSOCIATES INC.

Legend:

⊕ Monitoring Well

Scale

50 0 50 100 Feet

TPH = Total Petroleum Hydrocarbons
TEPH = Total Extractable Petroleum Hydrocarbons
BTEX = Benzene, Toluene, Ethyl Benzene, Total Xylenes
PCBs = Polychlorinated biphenyls

Date: 12-15-1992	Figure 3-1	Drawing Number
Locations Approx.		PC0220-12/92:F3-1

Table 3-1
Rationale for Monitoring Wells and Round One Groundwater Samples
PACO PUMPS - 9201 San Leandro Street
Oakland, California

Monitoring Well	Rationale for Placement of Monitoring Well and Round One Sampling
9MW1	Monitoring well 9MW1 is located in an area near previous soil samples B6-0.5, B7-0.5, and B11-0.5&1.5. Soil sample B6-0.5 contained lead at 85.4 mg/kg, the second highest concentration of lead found in previous samples. In soil sample B7-0.5 nickel and chromium were detected at the highest concentrations found at the site, at levels of 348 mg/kg and 57.8 mg/kg, respectively. Samples B6-0.5 and B7-0.5 contained PCB-1260 at concentrations of 0.40 mg/kg and 0.67 mg/kg, respectively. Previous soil sample B11-0.5&1.5 detected TEPH as diesel and motor oil at concentrations of 120 mg/kg and 410 mg/kg, respectively. In addition, 9MW1 may be downgradient from the previous pump testing tank. Backwash associated with the pumping tank was sampled and found to contain TEPH as diesel (0.310 mg/L), TEPH as motor oil (1.6 mg/L) and some metals. » After monitoring well 9MW1 was installed, it was sampled and analyzed for PCBs; TEPH as diesel, kerosene, and motor oil; and CAM 17 metals.
9MW2	Monitoring well 9MW2 is located adjacent to previous soil sample B18-0.5&1.5, which detected elevated concentrations of TEPH as kerosene (8000 mg/kg), TEPH as motor oil (7800 mg/kg), benzene (0.088 mg/kg), toluene (0.049 mg/kg), ethyl benzene (0.088 mg/kg), and total xylenes (1.20 mg/kg). The previous soil sample was not originally analyzed for TPH as gasoline. In addition, monitoring well 9MW2 is also located adjacent to the fenceline with Saint Vincent DePaul and the well may be downgradient from this neighboring facility where contaminates have been found in the soil. » After monitoring well 9MW2 was installed, it was sampled and analyzed for TPH as gasoline; TEPH as diesel, kerosene, and motor oil; and volatile organics.
9MW3	The location of monitoring well 9MW3 is located immediately adjacent to the previous excavation associated with the attempt to find an underground storage tank. The area was previously excavated from June through August of 1992 and no underground storage tank was found, but elevated concentrations of TPH as gasoline and BTEX were found in soil samples. » After monitoring well 9MW3 was installed, it was sampled and analyzed for TPH as gasoline; BTEX; and TEPH as diesel, kerosene, and motor oil.
9MW4	The location of monitoring well 9MW4 is to determine if there is an impact to underlying groundwater from a previous underground storage tank, which was said to be located in an area currently underneath the floor of the warehouse. The use of the UST was said to be for pumping gasoline. » After monitoring well 9MW4 was installed, it was sampled and analyzed for TPH as gasoline; BTEX; and TEPH as diesel, kerosene, and motor oil.

3.2 Construction of Monitoring Wells

Prior to mobilizing the drilling rig at the facility, a Zone 7 Water Agency "Drilling Permit Application" was submitted on October 26, 1992 and was approved on October 29, 1992 for the four proposed monitoring wells. The Zone 7 Water Agency is located at 5997 Parkside Drive, in Pleasanton, California 94588. Its telephone number is (510) 484-2600 and our contact for this agency is Mr. Wyman Hong. Copies of the approved drilling permits and completed Department of Water Resources Water Well Drillers Reports for the monitoring wells are presented in Appendix D.

In an attempt to determine if any underground utilities are present in the location of the four proposed monitoring wells, a utilities switch-board was notified after calling 1(800) 642-2444. This switch-board operator routinely contacts various utilities to determine if drilling activities would be in the vicinity of known underground facilities. But the switch-board informed Jonas and Associates that they are not responsible for identifying the locations of subsurface utilities inside of the property fence line. Only one well was outside the property fence line: monitoring well 9MW1. For all the four proposed locations, employees at the facility were interviewed to determine if anyone knew of underground utilities in the location of the proposed wells. None of the employees that were interviewed knew of underground utilities in the proposed locations for monitoring wells 9MW2, 9MW3, and 9MW4. Utility representatives did come out to mark the locations of underground utilities in the general area of the proposed monitoring well 9MW1. Prior to any borings, the drilling team was notified to drill carefully and if questionable subsurface structures were encountered to stop drilling. During drilling activities during November 1992, no underground utilities were encountered.

Well Drilling

The monitoring wells were drilled using a hollow-stem auger. The drilling equipment was steam-cleaned prior to drilling. The drilling was conducted by Advance Drilling Co. (ADC), Inc., whose address is 12340 South Saratoga-Sunnyvale Road, Unit 4, in Saratoga, California 95070. Their telephone number is (408) 446-9023. Our contact is Mr. Henry Sabbagh. ADC's drilling license number is C-57 #607458.

ADC used a CME-75 drilling rig to drill the boreholes for the installation of the monitoring wells. Hollow-stem auger drilling is performed with the use of a spiral scroll auger with a hollow central shaft. A bit is attached at the bottom of the lower auger flight. Cuttings created by the bit are removed by the scroll as the stem of the auger is turned. The cuttings are collected in 55-gallon drums and set aside for appropriate disposal. The auger used at PACO Pumps had an outer diameter of 8.5-inches.

After setting up the rig at the location of each monitoring well, the exclusion zone was defined with barriers and caution tape. A Thermo Environmental Instruments - Organic Vapor Meter (OVM) model 580B was used for air monitoring. Prior to usage, the OVM was calibrated at Environmental Instruments, in Concord, California. Between seven to nine air monitoring locations were defined. One location was at the borehole, at a height of approximately three feet. The other air monitoring locations were at the boundary of and beyond the exclusion zone. In addition, the OVM was used to measure approximate vapor levels in soil sample bags. OVM measurements were recorded in the field log book for the project.

Well Construction

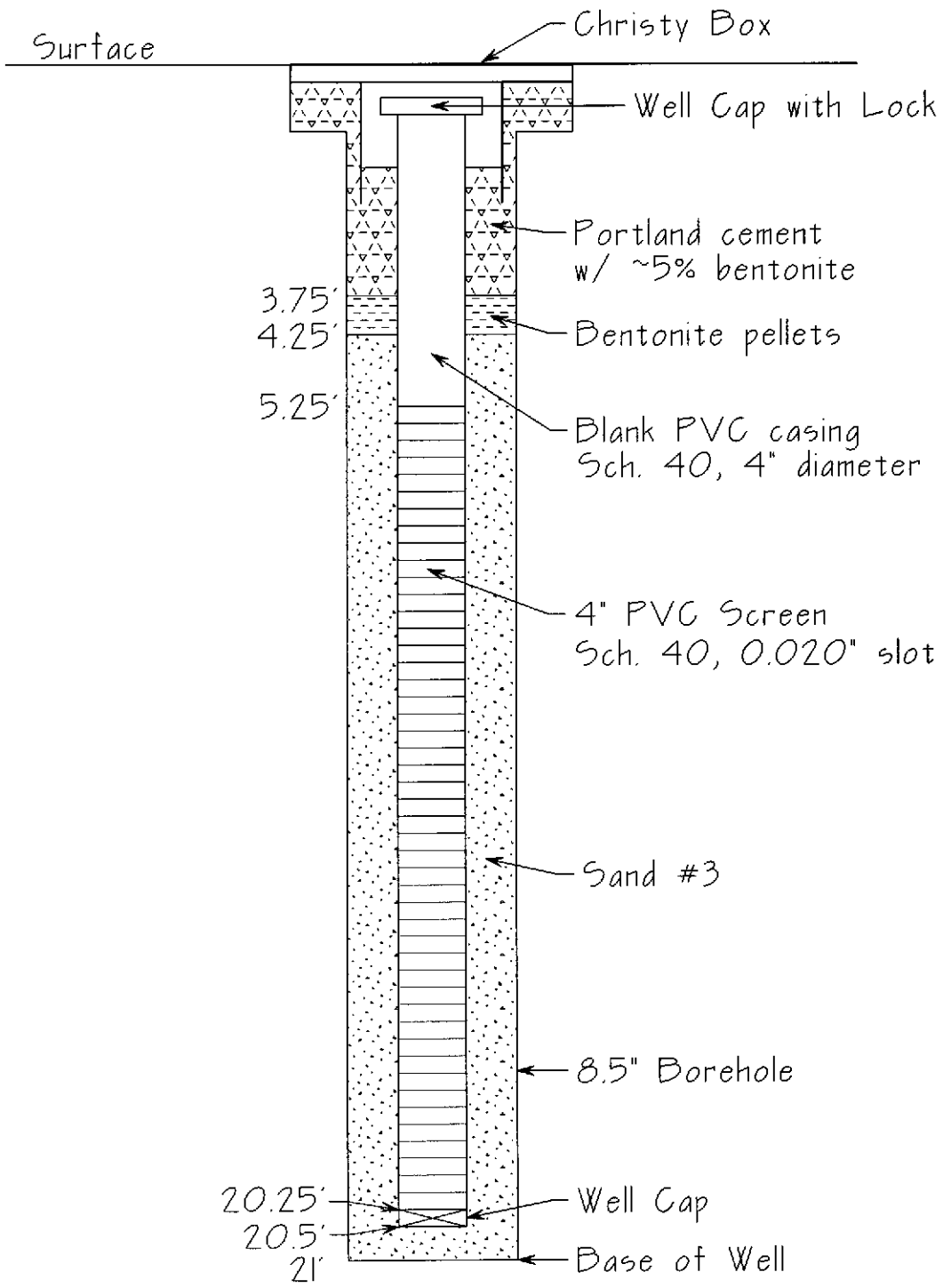
The construction details for groundwater monitoring wells are essentially the same. After completing each borehole to a depth of 21 feet BSL, #3 sand was placed in the hole at an approximate range in depth of 20½ to 21 feet. A weighted measuring tape was used to measure the approximate depths of the various materials placed into the borehole. Prior to placing the four-inch diameter schedule 40 PVC screen and casing blank into the hole, they were removed from their protective packing material and screwed together. At the bottom was a three-inch cap, which was screwed to 15 feet of screen, with a diameter of 4-inches and a screen slot size of 0.02-inches. Above the screen was attached five feet of schedule 40 PVC blank. The cap, screen, and blank was centered in the hole and placed on the #3 sand at the base of each borehole.

In each well, the well cap was placed at an approximate depth range of 20¼ to 20½ feet BSL. Attached to the well cap, the screen was set at an approximate depth range of 5¼ to 20¼ feet BSL. The depth range for the PVC blank riser was approximately ¼ foot to 5¼ feet BSL. All joints were flush threaded and no solvents or cements were used on the PVC. After placing the cap, screen, and riser into the hole, #3 sand was placed in the outer annular space as a filter pack up to a depth of approximately 4¼ feet and down to approximately 21 feet BSL. From an approximate depth range of 3¾ to 4¼ feet, a bentonite seal was placed into the hole with one-half inch pellets. Portland Cement with approximately 5% bentonite was used to finish the seal from approximately 3¾ feet to just below the surface. A christy-box was installed in Portland Cement, with the top at the same elevations as the surrounding land. The wells were then locked and the top of the christy-box was bolted down. Because of relatively shallow groundwater, the Zone 7 Water Agency allowed a sanitary seal less than five feet deep. A schematic diagram of the well construction is provided in Figure 3-2. The following summary Table 3-2 presents approximate depths used to construct each well.

Table 3-2
Well Construction Details
PACO PUMPS - 9201 San Leandro Street
Oakland, California

Well Number	Date Completed	Casing Diameter	~Depth in feet BSL					Borehole Diameter
			Screen	Sand Pack	Bentonite Seal	Portland Cement	Borehole	
9MW1	11/4/1992	4"	5¼ - 20¼	4¼ - 21	3¾ - 4¼	¼ - 3¾[1]	21	8.5"
9MW2	11/3/1992	4"	5¼ - 20¼	4¼ - 21	3¾ - 4¼	¼ - 3¾[1]	21	8.5"
9MW3	11/4/1992	4"	5¼ - 20¼	4¼ - 21	3¾ - 4¼	¼ - 3¾[1]	21	8.5"
9MW4	11/9/1992	4"	5¼ - 20¼	4¼ - 21	3¾ - 4¼	¼ - 3¾[1]	21	8.5"

note: 1) Portland Cement mixed with ~5% bentonite for plasticity.



Construction Diagram for
Monitoring Well

Prepared by
JONAS & ASSOCIATES INC.

Date: 11-16-1992	Figure 3-2	Drawing Number PC0220-11/92:F3-2

Not to Scale

Drawn by M.J. 11-16-1992

Drawing Number PC0220-11/92:F3-2

Figure 3-2

During well construction, contamination of the borehole and well with the construction materials was prevented to the extent practicable. The following procedures were followed to help in preventing contamination:

» Drilling augers were steam-cleaned prior to usage;
» All screens and casings were assumed to be procured clean from the fabricators;
» The filter-pack material was transferred directly from the bag. Spilled material was not taken from the ground and placed into the boring; and
» No solvents or glues were used to connect the PVC cap, screen lengths and blank.

As stated earlier, during monitoring well construction activities air quality was monitored with an OVM model 580B. Results of the air quality monitoring were recorded in the field log book.

Well Development

The monitoring wells were developed by pumping water from inside the well casing with the help of either a down-hole or above-ground pump. Approximately three to five well volumes were removed from the well. A single well volume is approximately six gallons. Compared with the turbidity of the groundwater during the initial extraction of the well, the extracted water was significantly less turbid in time. All of the development water was placed into dated and labeled 55-gallon drums for temporary storage. Prior to groundwater sampling of each monitoring well on November 15 and 16, 1992, approximately three to five well volumes were removed with a down-hole pump. This purging activity further developed each monitoring well. During development and purging activities, each monitoring well appeared to adequately recover.

Waste Handling Procedures

During the installation of the groundwater monitoring wells and purging of well water, drill cuttings, clays, and liquid waste were produced. These liquid and solid wastes were temporarily stored in separate 55-gallon drums approved by the Department of Transportation. Each drum was labeled with the following information:

» Source of waste;
» Date drummed;
» Type of waste; and
» Initials of person labeling the drum.

Material collected in the drums are currently being characterized and will be properly disposed of in March 1993. Hazardous wastes will be manifested and transported off-site by a licensed hauler to a licensed treatment/storage/disposal facility. In addition, materials that had become contaminated during sampling or other field activities were drummed for proper disposal. This type of waste was primarily paper towels and gloves.

3.3 Standard Groundwater Sampling Protocols

Standard procedures and protocols for groundwater sampling is presented in this section of the report. Many of these procedures were previously presented in the October 16, 1992 Site Characterization Report and Work Plan for PACO Pumps facility. In addition, other standard protocols are provided in Section 2.3.3, under Standard Sampling Procedures and Protocols. The standard protocols presented in this section, along with relevant portions of Section 2.2.2, were followed during the sampling of the four monitoring wells.

After developing each monitoring well and allowing the groundwater level to equilibrate after several days, a clear bailer was placed into the well to measure any floating product. After assessing whether any free product is present, the wells were then purged using a submersible pump or a bailer. At least three saturated well volumes of water were removed. During the purging of the well, field measurements including temperature, pH, and conductivity were collected and recorded in a field log book.

After adequately purging the standing water from the wells, they were sampled with a clean bailer. For this first quarter sampling, a duplicate sample was collected. Glass vials were used which are specifically designed to prevent the loss of volatile constituents from the sample. The glass vials were carefully filled and checked after filling to ensure that no head space (air) exists in sample containers. The presence of air in the head space could result in volatilization of constituents and result in a potential bias of the sampling results. The groundwater sample for analysis of TPH as gasoline and BETX are collected in 40 ml glass vials. TEPH samples were collected in one liter amber bottles. The bottles were labeled before filling to prevent misidentification.

After each bottle was filled, the sample was placed in an ice chest with ice packs to maintain cool conditions during storage and transport of the samples. The bottles were packed in a manner to avoid damage to sample containers. Field Chain-of-Custody records, completed at the time of sample collection, accompanied the samples with the cooler for transport to an appropriate laboratory for analysis.

3.4 Groundwater Sampling, Analysis and Results

Groundwater Sampling

On November 15, 1992 at approximately 11:20 AM, prior to purging the well, the depth to groundwater in monitoring well 9MW1 was measured at 9.74 feet BSL. The water level was measured with an electronic water level indicator on a stretch resistent measuring tape. After measuring the depth to groundwater, a clear bailer was placed into the well to collect a water sample for visual observations. No petroleum products were identified floating on groundwater in monitoring well 9MW1. After assessing for the presence of floating product, approximately 30 gallons of groundwater was removed from the well. Monitoring well 9MW1 appeared to recover well. A well volume was calculated at approximately six gallons. Temperature, pH, and electric conductivity were

recorded after each five gallons of purging. These parameters appeared to stabilize and were recorded in the field log book for the project. Purged water was collected in dated and labeled 55-gallon drums for temporary storage. After purging the well, groundwater samples were collected with a clean bailer. Groundwater samples were labeled and promptly placed into a chilled ice chest for transport to the analytical laboratory. For this first quarterly round of sampling, the groundwater samples from monitoring well 9MW1 collected on November 15, 1992 were identified as GW9-MW1-Q1. Three liters of sample was collected for analysis for PCB and TEPH as -diesel, -kerosene, and -motor oil. One 250 ml bottle with HNO_3 as preservative was used to collect the sample for the CAM 17 metals.

On November 16, 1992 at 8:30 AM, prior to purging, the water level in monitoring well 9MW2 was measured at 10.45 feet BSL. A clean, clear bailer was then used to collect a sample from the surface of the groundwater. No floating products were identified. The well was then purged of thirty-five gallons of well water. During completion of the purging activities the temperature, pH, and electric conductivity appeared to stabilize. The well also appeared to recover well. At 10:10 AM, six bottles were collected for the laboratory analysis: two liters for TEPHs; two VOAs with HCL for Method 624 volatile organics; and two VOAs with HCL for TPH as gasoline and BTEX. The samples collected on November 16, 1992 from monitoring well 9MW2 are identified as GW9-MW2-Q1.

On November 16, 1992 at 11:30 AM, the water level in monitoring well 9MW3 was measured at 10.64 feet BSL. No floating petroleum products were identified. After approximately thirty gallons were purged from the well, a groundwater sample was collected at 1:55 PM. A total of four bottles were collected: 2 liters for TEPHs; and 2 VOAs with HCL for the TPH as gasoline and BTEX. For this event the samples were identified as GW9-MW3-Q1.

Also on November 16, 1992 at 2:30 PM, the groundwater level in monitoring well 9MW4 was measured at 9.41 feet BSL. After not identifying any floating products, the well was purged of approximately thirty-five gallons. At 3:25 PM, eight bottles for laboratory analysis were collected: 4 liters for TEPHs; and 4 VOAs with HCL for the TPH as gasoline and BTEX. Two sets of groundwater samples were collected from this well: one set identified as GW9-MW4-Q1 and a duplicate identified as GW9-MW41-Q1 for quality control.

Laboratory Analysis

Groundwater samples collected from each monitoring well were analyzed for different suites of chemicals. The selection of the various analytical suites was based on some of the chemicals previously found in locations near each monitoring well or suspected chemicals possibly associated with underground storage tanks. The analysis of the groundwater samples were performed by Chromalab Inc, an analytical laboratory located in San Ramon, California. Table 3-3 presents the analytical methods used for

the groundwater samples and the sample identification numbers. The previous Figure 3-1 presents the laboratory methods used to analyze round one groundwater samples.

Table 3-3
Laboratory Analysis of Round One Groundwater Samples
PACO PUMPS - 9201 San Leandro Street
Oakland, California

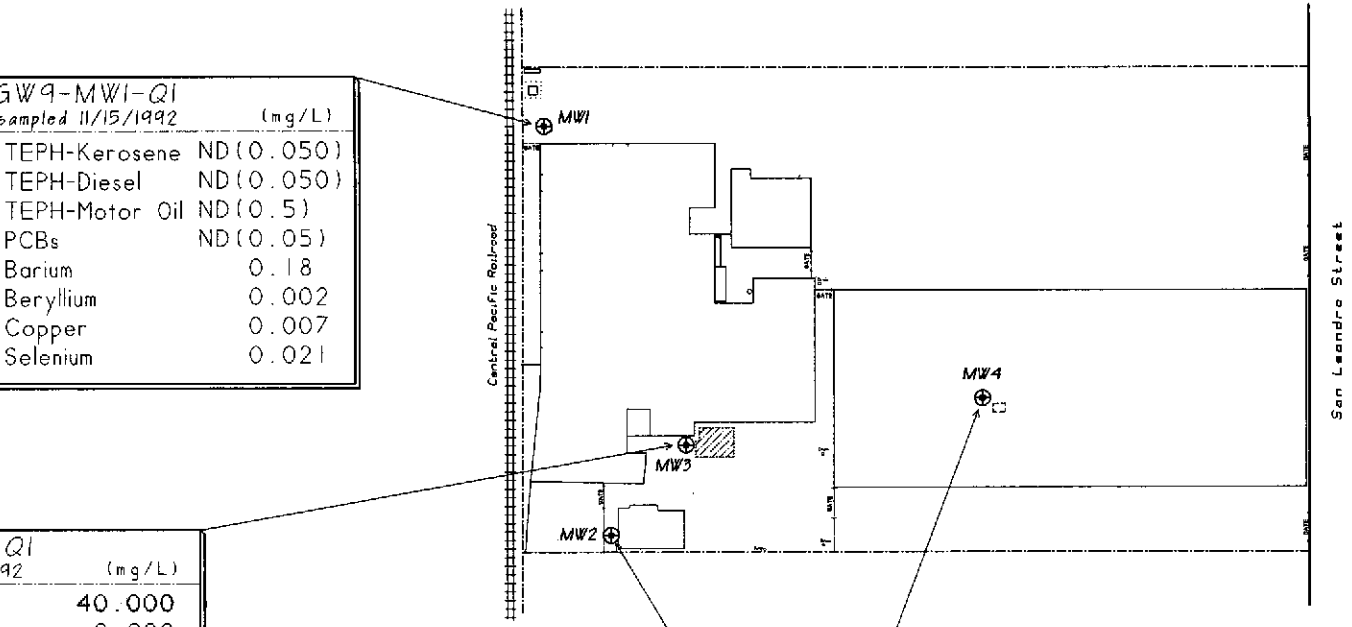
Analysis	Sample I.D.
Total Petroleum Hydrocarbons as Gasoline (5030/8015) Benzene,Toluene,Ethyl Benzene,Total Xylenes (602)	GW9-MW2-Q1, GW9-MW3-Q1, GW9-MW4-Q1, GW9-MW41-Q1 (duplicate)
Total Extractable Petroleum Hydrocarbons as Diesel, Kerosene, & Motor Oil (3510/8015)	GW9-MW1-Q1, GW9-MW2-Q1, GW9-MW3-Q1, GW9-MW4-Q1, GW9-MW41-Q1 (duplicate)
PCBs (608 modified)	GW9-MW1-Q1
CAM 17 Metals	GW9-MW1-Q1
Volatile Organics (624)	GW9-MW2-Q1

Groundwater Sampling Results

The results of analyzing groundwater samples collected from monitoring wells 9MW1, 9MW2, 9MW3, and 9MW4 are presented in Appendix A. Copies of the Chain-of-Custody records and the raw laboratory data are presented in Appendices B and C, respectively. A summary of the detected analytes in the groundwater samples is presented in the Table 3-4. Figure 3-3 graphically presents the analytical results.

Table 3-4
Round One Groundwater Sampling Results
PACO PUMPS - 9201 San Leandro Street
Oakland, California

Sample I.D.	Analysis	Detected
GW9-MW1-Q1	TEPH as Diesel, Kerosene, Motor Oil (3510/8015); PCBs (8080 modified); CAM 17 Metals	Barium: 0.18 mg/L Beryllium: 0.002 mg/L Copper: 0.007 mg/L Selenium: 0.021 mg/L
GW9-MW2-Q1	TPH as Gasoline (5030/8015); BTEX (602); TEPH as Diesel, Kerosene, Motor Oil (3510/8015); Volatile Organics (624)	TEPH as Kerosene: 0.590 mg/L TEPH as Motor Oil: 9.5 mg/L Chloroform: 0.0026 mg/L
GW9-MW3-Q1	TPH as Gasoline (5030/8015); BTEX (602); TEPH as Diesel, Kerosene, Motor Oil (3510/8015)	TPH as Gasoline: 40.0 mg/L Benzene: 2.90 mg/L Toluene: 6.70 mg/L Ethyl Benzene: 0.550 mg/L Total Xylenes: 1.70 mg/L
GW9-MW4-Q1	TPH as Gasoline (5030/8015); BTEX (602); TEPH as Diesel, Kerosene, Motor Oil (3510/8015)	TPH as Gasoline: 0.560 mg/L Benzene: 0.066 mg/L Toluene: 0.073 mg/L Ethyl Benzene: 0.016 mg/L Total Xylenes: 0.140 mg/L
GW9-MW41-Q1 (duplicate)	TPH as Gasoline (5030/8015); BTEX (602); TEPH as Diesel, Kerosene, Motor Oil (3510/8015)	TPH as Gasoline: 0.520 mg/L Benzene: 0.063 mg/L Toluene: 0.067 mg/L Ethyl Benzene: 0.015 mg/L Total Xylenes: 0.130 mg/L



GW9-MW1-Q1 sampled 11/15/1992	(mg/L)
TEPH-Kerosene	ND(0.050)
TEPH-Diesel	ND(0.050)
TEPH-Motor Oil	ND(0.5)
PCBs	ND(0.05)
Barium	0.18
Beryllium	0.002
Copper	0.007
Selenium	0.021

GW9-MW3-Q1 sampled 11/16/1992	(mg/L)
TPH-Gasoline	**40.000**
Benzene	**2.900**
Toluene	6.700
Ethyl Benzene	0.550
Total Xylenes	1.700
TEPH-Kerosene	ND(0.050)
TEPH-Diesel	ND(0.050)
TEPH-Motor Oil	ND(0.5)

GW9-MW2-Q1 sampled 11/16/1992	(mg/L)
TPH-Gasoline	ND(0.050)
Benzene	ND(0.0005)
Toluene	ND(0.0005)
Ethyl Benzene	ND(0.0005)
Total Xylenes	ND(0.0015)
TEPH-Kerosene	0.590
TEPH-Diesel	ND(0.050)
TEPH-Motor Oil	**9.5**
1,1-Dichloroethane	0.0026

GW9-MW4-Q1 sampled 11/16/1992	(mg/L)
TPH-Gasoline	**0.560**
Benzene	**0.066**
Toluene	0.073
Ethyl Benzene	0.016
Total Xylenes	0.140
TEPH-Kerosene	ND(0.050)
TEPH-Diesel	ND(0.050)
TEPH-Motor Oil	ND(0.5)

Results of Round One Sampling of Monitoring Wells

PACO Pumps Inc.
9201 San Leandro Street
Oakland, California

Prepared by

JONAS & ASSOCIATES INC.

Legend:

⊕ Monitoring Well

Scale

75 0 75 150 Feet

TPH = Total Petroleum Hydrocarbons

TEPH = Total Extractable Petroleum Hydrocarbons

PCBs = Polychlorinated biphenyls

ND(0.050) = Not Detected above the laboratory detection limit in parentheses.

Date: 12-10-1992	Figure 3-3	Drawing Number PCO220-12/92:F3-3
Locations Approx.		

Drawn by N.J 12-10-1992

Drawing Number PCO220-12/92:F3-3

Figure 3-3

3.5 Discussion of Groundwater Results

Following is a discussion of round one results from sampling monitoring wells 9MW1, 9MW2, 9MW3, and 9MW4.

Results of Sampling Monitoring Well 9MW1

After monitoring well 9MW1 was installed on November 4, 1992, a groundwater sample was collected on November 15, 1992 and then analyzed for TEPH as -diesel, -kerosene, and -motor oil, along with PCB and seventeen metals. The results found no TEPH or PCB detected in the underlying groundwater. Four metals were detected: barium at 0.18 mg/L, beryllium at 0.002 mg/L, copper at 0.007 mg/L, and selenium at 0.021 mg/L. Of these concentrations only selenium exceed the drinking water Maximum Contaminant Level (MCL). The federal MCL for selenium is 0.05 mg/L. The state of California MCL for selenium is 0.01 mg/L. Therefore, for the twenty-one analytes tested for in the groundwater sample from 9MW1, only selenium is apparently present above a drinking water standard. The source of the selenium is unknown, but trace concentrations of selenium can be found in sea water and soils impacted by sea water. On November 15, 1992, groundwater in monitoring well 9MW1 was measured at 9.74' below the surface level.

Results of Sampling Monitoring Well 9MW2

Monitoring well 9MW2 is located adjacent to the former welding shop and the property boundary fenceline with Saint Vincent DePaul. Groundwater collected from monitoring well 9MW2 on November 16, 1992 was analyzed for TPH as gasoline, BTEX, TEPH as -diesel, -kerosene, and -motor oil, and volatile organics. Of the analyzed petroleum hydrocarbons suites, only TEPH as -kerosene and -motor oil were detected, at concentrations of 0.590 mg/L and 9.5 mg/L, respectively. No TPH as gasoline or BTEX were detected. The only Method 624 volatile organic detected was chloroform, but only at a concentration of 0.0026 mg/L. Monitoring well 9MW2 was installed on November 3, 1992 and is screened from 5¼ to 20¼ feet, like the other three wells. On November 16, 1992, groundwater in monitoring well 9MW2 was measured at a depth of 10.45 feet.

Results of Sampling Monitoring Well 9MW3

In the location a former outside rack storage area, an excavation was performed in an attempt to find a reported underground storage tank (UST). Monitoring well 9MW3 is located adjacent to this previous excavation. Monitoring well 9MW3 installed on November 4, 1992, was sampled on November 16, 1992. The samples were then analyzed for TPH as gasoline, BTEX, and TEPH as -diesel, -kerosene, and -motor oil. No TEPHs were detected. But, TPH as gasoline was detected at 40.0 mg/L, benzene at 2.90 mg/L, toluene at 6.7 mg/L, ethyl benzene at 0.550 mg/L, and total xylenes at 1.70 mg/L. Additional characterization and remediation may probably be necessary at this location.

On November 16, 1992, groundwater was measured in monitoring well 9MW3 at a depth of 10.64 feet.

Results of Sampling Monitoring Well 9MW4

Monitoring well 9MW4 is in a general location of a suspected underground storage tank, currently below the floor of the large warehouse on the property. It is currently unknown if the tank has been previously removed. Groundwater from monitoring well 9MW4, sampled on November 16, 1992, was analyzed for TPH as gasoline, BTEX, and TEPH as -diesel, -kerosene, and -motor oil. No TEPHs were detected. But TPH as gasoline was detected at 0.560 mg/L, along with benzene at 0.066 mg/L, toluene at 0.073 mg/L, ethyl benzene at 0.016 mg/L, and total xylenes at 0.140 mg/L. At this location, additional characterization and possibly remediation may be required. Groundwater was measured at 9.41 feet below the floor surface.

Comment on Monitoring Well Results

The groundwater sampling results presented in this section of the report only present the first quarter of sampling. It is recommended that prior to determining the next course of action, a second round of groundwater samples be collected and analyzed. It is anticipated that the second round of groundwater samples will be collected in early March, 1993. Conclusions associated with the first two rounds of groundwater sampling will be presented in the Second Quarterly Status Report, which will cover activities performed between January 1 and March 31, 1993

4.0 CONCLUSIONS AND RECOMMENDATIONS

The following conclusions are based on the results of recent soil sampling. These conclusions are followed by recommendations. Various conclusions associated with the first round of groundwater sampling of monitoring wells shall be held until the results of a second round of sampling are available.

4.1 Conclusions

The conclusions presented below are associated with the findings from soil samples collected during the fourth quarter of 1992:

- Leachate analysis using the Waste Extraction Test method for soil sample B19-2-0.5'&1.5' detected soluble selenium at a concentration of 0.18 mg/L, well below the STLC for selenium of 1.0 mg/L. Therefore, with respect to selenium the soil at location B19 would not be considered a hazardous waste if it were to be excavated.

- Waste Extraction Test leachate analysis of soil sample B26-2-0.5'&1.5' detected soluble copper at 24 mg/L and lead at 20 mg/L. The STLC for copper is 25 mg/L. The STLC for lead is 5.0 mg/L. Therefore, if soil from this location were to be excavated it would be considered a hazardous waste, assuming the results are representative.

- The shallow soil sampling results for sample B-MW1-0.5'&1.5', detected WET soluble lead at 4.2 mg/L, WET soluble nickel at 0.59 mg/L, and WET soluble total chromium at 1.0 mg/L. No chromium VI was detected. All of these results are below their respective STLCs.

- From the borehole for monitoring well 9MW1, TEPH as motor oil was detected from a sample collected at a depth of five feet at an elevated concentration of 530 mg/kg. PCB was also detected in this sample at a concentration of 0.29 mg/kg. No TEPHs or PCBs were detected from the ten foot and fifteen foot sampling depths.

- Apparently elevated concentrations of TEPH as motor oil was detected in the borehole for monitoring well 9MW2 down to a depth of ten feet. In the sample collected at five feet of borehole depth, TEPH as motor oil was detected at 310 mg/kg. At ten feet of depth, TEPH as motor oil was detected at 230 mg/kg. Lower levels of TEPH as kerosene, ethyl benzene, and total xylenes were also detected at the five and ten foot horizon. No TEPH, TPH as gasoline, or BTEX were detected at fifteen feet in depth.

- Apparently elevated concentrations of TPH as gasoline and BTEX in soil were detected at various depths adjacent to a previous excavation probably associated with a former underground storage tank, at the location of monitoring well 9MW3. At ten feet of depth, TPH as gasoline was detected at 250 mg/kg and benzene at 3.70 mg/kg. At thirty feet in depth, TPH as gasoline was detected at 10 mg/kg and benzene at 0.20 mg/kg.

- Apparently elevated concentration of TPH as gasoline and BTEX were detected at various depth in the borehole for monitoring well 9MW4, located adjacent to a suspected location where an underground storage tank may have been present under the large warehouse. At ten feet of depth, TPH as gasoline was detected at 32 mg/kg and benzene at 0.340 mg/kg.

4.2 Recommendations

The requirements for this project will be determined through conversations between representatives of Alameda County Health Care Services Agency, PACO Pumps Inc., and Jonas and Associates Inc. The first two recommendations provide issues for discussions.

- Additional soil and possibly groundwater characterization may be necessary for the lead detected at location B26.

- Additional characterization and possibly remediation may be necessary associated with the finding in soil samples collected from the boreholes for monitoring wells.

- Recommendations associated with the finding of chemical in each of the four monitoring wells shall be made after the results of the second round of groundwater sampling are available.

- The locations of the monitoring wells should be surveyed by a professional land surveyor.

Appendix A

Summary Tables of Laboratory Results

Table A/S1

NOVEMBER 1992 TEPH & PCB SOIL RESULTS
PACO PUMPS - 9201 SAN LEANDRO STREET

Sample I.D.	Sampling Date	Depth (feet)	Matrix	Lab	TEPH-Diesel (3550/8015) (mg/kg)	TEPH-Kerosene (3550/8015) (mg/kg)	TEPH-Motor Oil (3550/8015) (mg/kg)	PCBs (8080 mod.) (mg/kg)
B-MW1-5'	11/4/92	4.5' to 5'	soil	CrLab	ND(1.0)	ND(1.0)	530	0.29
B-MW1-10'	11/4/92	9.5' to 10'	soil	CrLab	ND(1.0)	ND(1.0)	ND(10.0)	ND(0.1)
B-MW1-15'	11/4/92	14.5' to 15'	soil	CrLab	ND(1.0)	ND(1.0)	ND(10.0)	ND(0.1)
B-MW2-5'	11/3/92	4.5' to 5'	soil	CrLab	ND(1.0)	14	310	
B-MW2-10'	11/3/92	9.5' to 10'	soil	CrLab	ND(1.0)	7.5	230	
B-MW2-15'	11/3/92	14.5' to 15'	soil	CrLab	ND(1.0)	ND(1.0)	ND(10.0)	
B-MW4-0.5'	11/9/92	0' to 0.5'	soil	CrLab	ND(1.0)	ND(1.0)	ND(10.0)	
B-MW4-5'	11/9/92	4.5' to 5'	soil	CrLab	ND(1.0)	ND(1.0)	ND(10.0)	
B-MW4-10'	11/9/92	9.5' to 10'	soil	CrLab	ND(1.0)	ND(1.0)	ND(10.0)	
B-MW4-15'	11/9/92	14.5' to 15'	soil	CrLab	ND(1.0)	ND(1.0)	ND(10.0)	
B-MW4-20'	11/9/92	19.5' to 20'	soil	CrLab	ND(1.0)	ND(1.0)	ND(10.0)	

notes: TEPH: Total Extractable Petroleum Hydrocarbons
CrLab: Chromalab, Inc. (San Ramon, California)
ND(0.004) = Not Detected above the laboratory detection limit in parentheses.
9.5' to 10': discrete soil sample collected from the depth range presented.

Table A/S2

NOVEMBER 1992 TPH-GASOLINE & BTEX SOIL RESULTS
PACO PUMPS - 9201 SAN LEANDRO STREET

Sample I.D.	Sampling Date	Depth (feet)	Matrix	Lab	TPH-Gasoline (5030/8015) (mg/kg)	Benzene (8020) (mg/kg)	Toluene (8020) (mg/kg)	Ethyl Benzene (8020) (mg/kg)	Total Xylenes (8020) (mg/kg)
B-MW2-0.5&1.5	11/3/92	0-0.5'&1-1.5'	soil	CrLab	ND(1.0)	ND(0.20)	ND(0.20)	1.90	9.60
B-MW2-5'	11/3/92	4.5' to 5'	soil	CrLab	ND(1.0)	ND(0.005)	ND(0.005)	0.025	0.041
B-MW2-10'	11/3/92	9.5' to 10'	soil	CrLab	ND(1.0)	ND(0.005)	ND(0.005)	0.011	0.020
B-MW2-15'	11/3/92	14.5' to 15'	soil	CrLab	ND(1.0)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
B-MW3-5'	11/4/92	4.5' to 5'	soil	CrLab	9.5	1.90	0.0095	0.240	0.110
B-MW3-10'	11/4/92	9.5' to 10'	soil	CrLab	250	3.70	11.00	2.20	6.40
B-MW3-15'	11/4/92	14.5' to 15'	soil	CrLab	ND(1.0)	ND(0.005)	0.0054	ND(0.005)	0.028
B-MW3-20'	11/4/92	19.5' to 20'	soil	CrLab	ND(1.0)	ND(0.005)	0.010	ND(0.005)	0.012
B-MW3-25'	11/4/92	24.5' to 25'	soil	CrLab	1.2	0.031	0.065	0.0078	0.023
B-MW3-30'	11/4/92	29.5' to 30'	soil	CrLab	10	0.200	0.300	0.039	0.110
B-MW4-0.5'	11/9/92	0' to 0.5'	soil	CrLab	5.9	0.078	ND(0.005)	0.0099	0.058
B-MW4-5'	11/9/92	4.5' to 5'	soil	CrLab	6.3	0.700	0.014	0.130	0.590
B-MW4-10'	11/9/92	9.5' to 10'	soil	CrLab	32	0.340	0.760	0.910	4.200
B-MW4-15'	11/9/92	14.5' to 15'	soil	CrLab	ND(1.0)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
B-MW4-20'	11/9/92	19.5' to 20'	soil	CrLab	ND(1.0)	0.0098	0.0093	0.013	0.053

notes: TPH: Total Petroleum Hydrocarbons
BTEX: Benzene, Toluene, Ethyl Benzene, Total Xylenes
CrLab: Chromalab, Inc. (San Ramon, California)
ND(0.1) = Not Detected above the laboratory detection limit in parentheses.

Table A/S3

NOVEMBER 1992 WET SOLUBLE METAL SOIL RESULTS
PACO PUMPS - 9201 SAN LEANDRO STREET

Sample I.D.	Sampling Date	Depth (feet)	Matrix	Lab	WET Soluble Nickel (6010) (mg/L)	WET Soluble Total Chromium (6010) (mg/L)	WET Soluble Chromium VI (7196) (mg/L)
B-MW1-0.5&1.5	11/4/92	0-0.5'&1-1.5'	soil	CrLab	0.59	1.0	ND(0.01)

Sample I.D.	Sampling Date	Depth (feet)	Matrix	Lab	WET Soluble Lead (7420) (mg/L)	WET Soluble Selenium (6010) (mg/L)	WET Soluble Copper (6010) (mg/L)
B-MW1-0.5&1.5	11/4/92	0-0.5'&1-1.5'	soil	CrLab	4.2	-	-
B19-2-0.5&1.5	11/9/92	0-0.5'&1-1.5'	soil	CrLab	-	0.18	-
B26-2-0.5&1.5	11/9/92	0-0.5'&1-1.5'	soil	CrLab	20	-	24

notes: WET/STLC: Waste Extraction Test / Soluble Threshold Limit Concentration
» STLC for Nickel is 20 mg/L; STLC for Chromium III is 560 mg/L (Cr III = Total Cr - Cr VI); STLC for Chromium VI is 5 mg/L; STLC for Lead is 5.0 mg/L; STLC for Selenium is 1.0 mg/L; STLC for Copper is 25 mg/L
CrLab: Chromalab, Inc. (San Ramon, California)
ND(0.01) = Not Detected above the laboratory detection limit in parentheses.

Table A/GW1

NOVEMBER 1992 TEPH & PCB GROUNDWATER RESULTS
PACO PUMPS - 9201 SAN LEANDRO STREET

Sample I.D.	Sampling Date	Depth (feet)	Matrix	Lab	TEPH-Diesel (3510/8015) (mg/L)	TEPH-Kerosene (3510/8015) (mg/L)	TEPH-Motor Oil (3510/8015) (mg/L)	PCBs (608 mod.) (mg/L)
GW9-MW1-Q1	11/15/92	~ 5'-20'$_{screen}$	water	CrLab	ND(0.050)	ND(0.0050)	ND(0.050)	ND(0.05)
GW9-MW2-Q1	11/16/92	~ 5'-20'$_{screen}$	water	CrLab	ND(0.050)	0.590	9.5	-
GW9-MW3-Q1	11/16/92	~ 5'-20'$_{screen}$	water	CrLab	ND(0.050)	ND(0.050)	ND(0.050)	-
GW9-MW4-Q1	11/16/92	~ 5'-20'$_{screen}$	water	CrLab	ND(0.050)	ND(0.050)	ND(0.050)	-
GW9-MW41-Q1	11/16/92	~ 5'-20'$_{screen}$	water	CrLab	ND(0.050)	ND(0.050)	ND(0.050)	-

notes: TEPH: Total Extractable Petroleum Hydrocarbons
CrLab: Chromalab, Inc. (San Ramon, California)
ND(0.004) = Not Detected above the laboratory detection limit in parentheses.
9.5' to 10': discrete soil sample collected from the depth range presented.

Table A/GW2

NOVEMBER 1992 TPH-GASOLINE & BTEX GROUNDWATER RESULTS
PACO PUMPS - 9201 SAN LEANDRO STREET

Sample I.D.	Sampling Date	Depth (feet)	Matrix	Lab	TPH-Gasoline (5030/8015) (mg/L)	Benzene (602) (mg/L)	Toluene (602) (mg/L)	Ethyl Benzene (602) (mg/L)	Total Xylenes (602) (mg/L)
GW9-MW2-Q1	11/16/92	~5'-20'$_{screen}$	water	CrLab	ND(0.050)	ND(0.0005)	ND(0.0005)	ND(0.0005)	ND(0.0015)
GW9-MW3-Q1	11/16/92	~5'-20'$_{screen}$	water	CrLab	40.00	2.90	6.70	0.550	1.70
GW9-MW4-Q1	11/16/92	~5'-20'$_{screen}$	water	CrLab	0.560	0.066	0.073	0.016	0.130
GW9-MW41-Q1	11/16/92	~5'-20'$_{screen}$	water	CrLab	0.520	0.063	0.067	0.015	0.140

notes: TPH: Total Petroleum Hydrocarbons
BTEX: Benzene, Toluene, Ethyl Benzene, Total Xylenes
CrLab: Chromalab, Inc. (San Ramon, California)
ND(0.1) = Not Detected above the laboratory detection limit in parentheses.

Table A/GW3

NOVEMBER 1992 CAM 17 METALS GROUNDWATER RESULTS
PACO PUMPS - 9201 SAN LEANDRO STREET
{milligrams chemical per liter liquid}

Sample I.D.	Sampling Date	Depth (feet)	Matrix	Lab	Ag Silver	As Arsenic	Ba Barium	Be Beryllium	Cd Cadmium	Co Cobalt	Cr Chromium	Cu Copper	Hg Mercury	Mo Molybdenum	Ni Nickel
GW9-MW1-Q1	11/15/92	~5'-20'$_{screen}$	Water	CrLab	ND(0.005)	ND(0.005)	0.18	0.002	ND(0.001)	ND(0.01)	ND(0.01)	0.007	ND(0.001)	ND(0.005)	ND(0.020)

Sample I.D.	Sampling Date	Depth (feet)	Matrix	Lab	Pb Lead	Sb Antimony	Se Selenium	Tl Thallium	V Vanadium	Zn Zinc
GW9-MW1-Q1	11/15/92	~5'-20'$_{screen}$	Water	CrLab	ND(0.010)	ND(0.020)	0.021	ND(0.01)	ND(0.01)	ND(0.005)

notes: CrLab: Chromalab Inc.
ND(0.25) = Not Detected above the laboratory detection limit in parentheses.

NOVEMBER 1992 VOLATILE ORGANIC GROUNDWATER RESULTS
PACO PUMPS - 9201 SAN LEANDRO STREET
{milligrams chemical per liter liquid}

Sample I.D.	Sampling Date	Depth (feet)	Matrix	Lab	Acetone	Benzene	Bromodichloro-methane	Bromoform	Bromo-methane	Carbon Tetrachloride	Chloro-benzene	Chloro-ethane	2-Chloroethyl Vinyl Ether	Chloroform	Chloro-methane
GW9-MW1-Q1	11/15/92	~5'-20'$_{screen}$	Water	CrLab	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)

Sample I.D.	Sampling Date	Depth (feet)	Matrix	Lab	Dibromo-chloromethane	1,2-Dichloro-benzene	1,3-Dichloro-benzene	1,4-Dichloro-benzene	1,1-Dichloro-ethane	1,2-Dichloro-ethane	1,1-Dichloro-ethene	trans 1,2-Dichloroethene	cis 1,2-Dichloroethene	1,2-Dichloro-propane	cis-1,3-Di-chloropropene
GW9-MW1-Q1	11/15/92	~5'-20'$_{screen}$	Water	CrLab	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	0.0026	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)

Sample I.D.	Sampling Date	Depth (feet)	Matrix	Lab	trans-1,3-Di-chloropropene	Ethyl-Benzene	Methyl Ethyl Ketone	Methyl Isobutyl Ketone	Methylene Chloride	1,1,2,2-Tetra-chloroethane	Tetra-chloroethene	Toluene	1,1,1-Tri-chloroethane	1,1,2-Tri-chloroethane	Tri-chloroethene
GW9-MW1-Q1	11/15/92	~5'-20'$_{screen}$	Water	CrLab	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)

Sample I.D.	Sampling Date	Depth (feet)	Matrix	Lab	Trichlorofluoro-methane	Vinyl Chloride	Total Xylenes
GW9-MW1-Q1	11/15/92	~5'-20'$_{screen}$	Water	CrLab	ND(0.002)	ND(0.002)	ND(0.002)

notes: CrLab: Chromalab Inc.
ND(0.002) = Not Detected above the laboratory detection limit in parentheses.

CHROMALAB, INC.

2239 Ome
511

CHROMALAB FILE # 110202B
ORDER # 8398

Chain of Custody

11/4/92 PAGE 1 OF 2

PROJ. MGR. M. Jonas
COMPANY JONAS & ASSOCIATES INC.
ADDRESS 1056 Dale Place
Concord, California 94518

SAMPLERS (SIGNATURE) (PHONE NO.)

Jonas & Associates Inc. (510) 676-8554

SAMPLE ID.	DATE	TIME	MATRIX	LAB ID.	TPH - Gasoline (EPA 5030, 8015)	TPH - Gasoline (5030, 8015) w/BTeX (EPA 602,8020)	TPH - Diesel, Ker., M.O. (EPA 3510/3550, 8015)	PURGEABLE AROMATICS BTEX (EPA 602, 8020)	PURGEABLE HALOCARBONS (EPA 601, 8010)	VOLATILE ORGANICS (EPA 624, 8240, 524.2)	BASE/NEUTRALS, ACIDS (EPA 625/627, 8270, 525)	TOTAL OIL & GREASE (EPA 5520 E&F)	PESTICIDES/PCB (EPA 608, 8080)	PHENOLS (EPA 604, 8040)	TOTAL RECOVERABLE HYDROCARBONS (EPA 418.1)	PCBs (8080 mod.)	METALS: Cd, Cr, Pb, Zn, Ni	CAM METALS (17)	PRIORITY POLLUTANT METALS (13)	EXTRACTION (TCLP & STLC)	STLC Lead	STLC Nickel	STLC Cr (Total)	STLC Cr VI	NUMBER OF CONTAINERS
B-MW1-0.5' B-MW1-1.5' comp.	11/4	1540	soil																	X	X	X	X	X	2
B-MW1-5'	11/4	1545	soil				X									X									1
B-MW1-10'	11/4	1615	soil				X									X									1
B-MW1-15'	11/4	1630	soil				X									X									1
B-MW2-0.5' B-MW2-1.5' comp.	11/3	1250	soil			X																			x2
B-MW2-5'	11/3	1300	soil			X	X																		1
B-MW2-10'	11/3	1315	soil			X	X																		1
B-MW2-15'	11/3	1325	soil			X	X																		1

PROJECT INFORMATION

PROJECT NAME: 9201 PACO Pumps
PROJECT NUMBER: PCO-220-02-REM
SHIPPING ID. NO.
VIA: hand-to-hand

SAMPLE RECEIPT

TOTAL NO. OF CONTAINERS	
CHAIN OF CUSTODY SEALS	
REC'D GOOD CONDITION/COLD	
CONFORMS TO RECORD	
LAB NO.	

SPECIAL INSTRUCTIONS/COMMENTS:
comp. = composite
Please call before disposing of samples.

RELINQUISHED BY 1.	RELINQUISHED BY 2.	RELINQUISHED BY 3.
(SIGNATURE) (TIME) 9:20	(SIGNATURE) (TIME)	(SIGNATURE) (TIME)
Romena Jonas 11/5/92	(PRINTED NAME) (DATE)	(PRINTED NAME) (DATE)
(PRINTED NAME) (DATE)	(COMPANY)	(COMPANY)
Jonas & Associates Inc.		
(COMPANY)		

RECEIVED BY 1.	RECEIVED BY 2.	RECEIVED BY (LABORATORY) 3.
(SIGNATURE) (TIME)	(SIGNATURE) (TIME)	Mary Cappelli 9:17
(PRINTED NAME) (DATE)	(PRINTED NAME) (DATE)	(SIGNATURE) (TIME)
(COMPANY)	(COMPANY)	MARY CAPPELLI 11/5/92
		(PRINTED NAME) (DATE)
		Chromalab, Inc.
		(LAB)

CHROMALAB, INC.

2239 Omega Road, #1 • San Ramon, California 94583
510/831-1788 • Facsimile 510/831-8798

Chain of Custody

DATE 11/4/92 PAGE 2 OF 2

PROJ. MGR. M. Jonas
COMPANY JONAS & ASSOCIATES INC.
ADDRESS 1056 Dale Place
Concord, California 94518

SAMPLERS (SIGNATURE) (PHONE NO.)
Jonas & Associates Inc. (510) 676-8554

SAMPLE ID.	DATE	TIME	MATRIX	LAB ID.	TPH - Gasoline (EPA 5030, 8015)	TPH - Gasoline (5030, 8015) w/BTeX (EPA 602,8020)	TPH - Diesel (EPA 3510/3550, 8015)	PURGEABLE AROMATICS BTEX (EPA 602, 8020)	PURGEABLE HALOCARBONS (EPA 601, 8010)	VOLATILE ORGANICS (EPA 624, 8240, 524.2)	BASE/NEUTRALS, ACIDS (EPA 625/627, 8270, 525)	TOTAL OIL & GREASE (EPA 5520 E&F)	PESTICIDES/PCB (EPA 608, 8080)	PHENOLS (EPA 604, 8040)	TOTAL RECOVERABLE HYDROCARBONS (EPA 418.1)		METALS: Cd, Cr, Pb, Zn, Ni	CAM METALS (17)	PRIORITY POLLUTANT METALS (13)	EXTRACTION (TCLP, STLC)					NUMBER OF CONTAINERS
B-MW3-5'	11/4	0915	soil			X																			1
B-MW3-10'	11/4	0930	soil			X																			1
B-MW3-15'	11/4	0945	soil			X																			1
B-MW3-20'	11/4	1000	soil			X																			1
PB-MW3-25'	11/3	1035	soil			X																			1
PB-MW3-30'	11/3	1050	soil			X																			1

PROJECT INFORMATION

PROJECT NAME: 9201 PACO Pumps
PROJECT NUMBER: PCO-220-02-REM
SHIPPING ID. NO.
VIA: hand-to-hand

SAMPLE RECEIPT

TOTAL NO. OF CONTAINERS	
CHAIN OF CUSTODY SEALS	
REC'D GOOD CONDITION/COLD	
CONFORMS TO RECORD	
LAB NO.	

SPECIAL INSTRUCTIONS/COMMENTS:
Please call before disposing of samples.

RELINQUISHED BY 1.	RELINQUISHED BY 2.	RELINQUISHED BY 3.
Romena Jonas 920 (SIGNATURE) (TIME)	(SIGNATURE) (TIME)	(SIGNATURE) (TIME)
Romena Jonas 11/5/92 (PRINTED NAME) (DATE)	(PRINTED NAME) (DATE)	(PRINTED NAME) (DATE)
Jonas & Associates Inc. (COMPANY)	(COMPANY)	(COMPANY)
RECEIVED BY 1.	**RECEIVED BY 2.**	**RECEIVED BY (LABORATORY) 3.**
(SIGNATURE) (TIME)	(SIGNATURE) (TIME)	(SIGNATURE) (TIME)
(PRINTED NAME) (DATE)	(PRINTED NAME) (DATE)	(PRINTED NAME) (DATE)
(COMPANY)	(COMPANY)	Chromalab, Inc. (LAB)

CHROMALAB, INC.

2239 Ome
51(

CHROMALAB FILE # 1192104
ORDER # 8499

Chain of Custody

DATE 11/9/1992 PAGE 1 OF 1

PROJ. MGR. M. Jonas
COMPANY JONAS & ASSOCIATES INC.
ADDRESS 1056 Dale Place
Concord, California 94518

SAMPLERS (SIGNATURE) (PHONE NO.)
Jonas & Associates Inc. (510) 676-8554

ANALYSIS REPORT

SAMPLE ID.	DATE	TIME	MATRIX	LAB ID.	TPH - Gasoline (EPA 5030, 8015)	TPH - Gasoline (5030, 8015) w/BTeX (EPA 602,8020)	TPH - Diesel, Ker., M.O. (EPA 3510/3550, 8015)	PURGEABLE AROMATICS BTEX (EPA 602, 8020)	PURGEABLE HALOCARBONS (EPA 601, 8010)	VOLATILE ORGANICS (EPA 624, 8240, 524.2)	BASE/NEUTRALS, ACIDS (EPA 625/627, 8270, 525)	TOTAL OIL & GREASE (EPA 5520 E&F)	PESTICIDES/PCB (EPA 608, 8080)	PHENOLS (EPA 604, 8040)	TOTAL RECOVERABLE HYDROCARBONS (EPA 418.1)		METALS: Cd, Cr, Pb, Zn, Ni	CAM METALS (17)	PRIORITY POLLUTANT METALS (13)	EXTRACTION (TCLP, STLC)	STLC Selenium	STLC Copper	STLC Lead		NUMBER OF CONTAINERS
B-MW4-0.5'	1992 11/9	1010	soil			X	X	X																	1
B-MW4-5'	11/9	1030	soil			X	X	X																	1
B-MW4-10'	11/9	1045	soil			X	X	X																	1
B-MW4-15'	11/9	1105	soil			X	X	X																	1
B-MW4-20'	11/9	1130	soil			X	X	X																	1
B19-2-0.5']comp. B19-2-1.5']	11/9	1525 1530	soil																			X			2
B26-2-0.5']comp. B26-2-1.5']	11/9	1310 1310	soil																				X	X	2

PROJECT INFORMATION

PROJECT NAME: 9201 PACO Pumps
PROJECT NUMBER: PCO-220-02-REM
SHIPPING ID NO:
VIA: hand-to-hand

SAMPLE RECEIPT

TOTAL NO. OF CONTAINERS	
CHAIN OF CUSTODY SEALS	
REC'D GOOD CONDITION/COLD	
CONFORMS TO RECORD	
LAB NO.	

SPECIAL INSTRUCTIONS/COMMENTS:

comp. = composite

Please call before disposing of samples.

RELINQUISHED BY 1.	RELINQUISHED BY 2.	RELINQUISHED BY 3.
Mark Jonas 1340 (SIGNATURE) (TIME)	(SIGNATURE) (TIME)	(SIGNATURE) (TIME)
Mark Jonas 11/12/92 (PRINTED NAME) (DATE)	(PRINTED NAME) (DATE)	(PRINTED NAME) (DATE)
Jonas & Associates Inc. (COMPANY)	(COMPANY)	(COMPANY)
RECEIVED BY 1.	**RECEIVED BY 2.**	**RECEIVED BY (LABORATORY) 3.**
(SIGNATURE) (TIME)	(SIGNATURE) (TIME)	13:40 (SIGNATURE) (TIME)
~~Mark E. Jonas~~ (PRINTED NAME) (DATE)	(PRINTED NAME) (DATE)	(PRINTED NAME) (DATE)
(COMPANY)	(COMPANY)	Chromalab, Inc. (LAB)

CHROMALAB, INC.

2239 Ome
511

CHROMALAB FILE # 1192132
ORDER # 8532

Chain of Custody

DATE 11/16/92 PAGE 1 OF 1

PROJ. MGR. Mark L. Jonas
COMPANY JONAS & ASSOCIATES INC.
ADDRESS 1056 Dale Place
Concord, California 94518
SAMPLERS (SIGNATURE) (PHONE NO.)
Jonas & Associates Inc. (510) 676-8554

SAMPLE ID.	DATE	TIME	MATRIX	LAB ID.	TPH - Gasoline (EPA 5030, 8015)	TPH - Gasoline (5030, 8015) w/BTeX (EPA 602/8020)	TPH - Diesel (EPA 3510/3550, 8015)	PURGEABLE AROMATICS BTEX (EPA 602, 8020)	PURGEABLE HALOCARBONS (EPA 601, 8010)	VOLATILE ORGANICS (EPA 624, 8240, 524.2)	BASE/NEUTRALS, ACIDS (EPA 625/627, 8270, 525)	TOTAL OIL & GREASE (EPA 5520 E&F)	PESTICIDES/PCB (EPA 608, 8080) PCBs	PHENOLS (EPA 604, 8040)	TOTAL RECOVERABLE HYDROCARBONS (EPA 418.1)	TEPH-Diesel,Kero., Motor O.(3510/8020	METALS: Cd, Cr, Pb, Zn, Ni	CAM METALS (17)	PRIORITY POLLUTANT METALS (13)	EXTRACTION (TCLP, STLC)					NUMBER OF CONTAINERS
GW9-MW1-Q1	11/15/92	1230	water										X			X		X							4
GW9-MW2-Q1	11/16/92	1010	water			X				X						X									6
GW9-MW3-Q1	11/16/92	1355	water			X										X									4
GW9-MW4-Q1	11/16/92	1525	water			X										X									4
GW9-MW41-Q1	11/16/92	1425	water			X										X									4

PROJECT INFORMATION

PROJECT NAME: 9201 PACO Pumps
PROJECT NUMBER: PCO-220-02-REM
SHIPPING ID NO.
VIA: hand-to-hand

SAMPLE RECEIPT

TOTAL NO. OF CONTAINERS	
CHAIN OF CUSTODY SEALS	
REC'D GOOD CONDITION/COLD	
CONFORMS TO RECORD	
LAB NO.	

SPECIAL INSTRUCTIONS/COMMENTS:

RELINQUISHED BY 1.	RELINQUISHED BY 2	RELINQUISHED BY 3
Mark Jonas 1635 (SIGNATURE) (TIME)	(SIGNATURE) (TIME)	(SIGNATURE) (TIME)
Mark Jonas 11/16/92 (PRINTED NAME) (DATE)	(PRINTED NAME) (DATE)	(PRINTED NAME) (DATE)
Jonas & Associates Inc. (COMPANY)	(COMPANY)	(COMPANY)
RECEIVED BY 1.	**RECEIVED BY 2.**	**RECEIVED BY (LABORATORY) 3.**
(SIGNATURE) (TIME)	(SIGNATURE) (TIME)	Gary Cook 16:40 (SIGNATURE) (TIME)
(PRINTED NAME) (DATE)	(PRINTED NAME) (DATE)	Gary Cook 11/16/92 (PRINTED NAME) (DATE)
(COMPANY)	(COMPANY)	Chromalab, Inc. (LAB)

CHROMALAB, INC.

Environmental Laboratory (1094)

5 DAYS TURNAROUND

November 13, 1992 ChromaLab File No.: 1192028

JONAS & ASSOCIATES, INC.

Attn: Mark Jonas

RE: Six soil samples for TEPH analysis

Project Name: 9201 PACO Pumps
Project Number: PCO-220-02-REM
Date Sampled: Nov. 3-4, 1992 Date Submitted: Nov. 5, 1992
Date Extracted: Nov. 10, 1992 Date Analyzed: Nov. 10, 1992

RESULTS:

Sample I.D.	Kerosene (mg/Kg)	Diesel (mg/Kg)	Motor Oil (mg/Kg)
B-MW1-5'	N.D.	N.D.	530
B-MW1-10'	N.D.	N.D.	N.D.
B-MW1-15'	N.D.	N.D.	N.D.
B-MW2-5'	14	N.D.	310
B-MW2-10'	7.5	N.D.	230
B-MW2-15'	N.D.	N.D.	N.D.
BLANK	N.D.	N.D.	N.D.
SPIKE RECOVERY	----	104%	----
DUP SPIKE RECOVERY	----	101%	----
DETECTION LIMIT	1.0	1.0	10.0
METHOD OF ANALYSIS	3550/8015	3550/8015	3550/8015

ChromaLab, Inc.

Billy Thach
Analytical Chemist

Eric Tam
Laboratory Director

cc

2239 Omega Road,#1 • San Ramon, California 94583
(510) 831-1788 • Facsimile (510) 831-8798
Federal ID #68-0140157

CHROMALAB, INC.

Environmental Laboratory (1094)

5 DAYS TURNAROUND

November 12, 1992 ChromaLab File No.:1192028

Jonas & Associates, Inc.

Attn: Mark Jonas

RE: Three soil samples for PCB analysis

Project Name: 9201 PACO Pumps
Project Number: PCO-220-02-REM
Date Sampled: Nov. 04, 1992
Date Submitted: Nov. 05, 1992
Date Analyzed: Nov. 12, 1992

RESULTS:

SAMPLE I.D.	PCB (mg/kg)
B-MW1-5'	0.29
B-MW1-10'	N.D.
B-MW1-15'	N.D.

*PCB found: AROCHLOR 1254

BLANK	N.D.
SPIKE RECOVERY	102%
DUPLICATE SPIKE RECOVERY	100%
DETECTION LIMIT	0.1
METHOD OF ANALYSIS	8080

ChromaLab, Inc.

Yiu Tam
Analytical Chemist

Eric Tam
Laboratory Director

2239 Omega Road, #1 • San Ramon, California 94583
510/831-1788 • Facsimile 510/831-8798
Federal ID #68-0140157

CHROMALAB, INC.

Environmental Laboratory (1094)

5 DAYS TURNAROUND

November 11, 1992 ChromaLab File No.: 1192028

JONAS & ASSOCIATES, INC.

Attn: Mark Jonas

RE: One soil sample for STLC Chromium, Lead and Nickel analyses

Project Name: 9201 PACO PUMPS
Project Number: PCO-220-02-REM
Date Sampled: Nov. 4, 1992 Date Submitted: Nov. 5, 1992
Date Analyzed: Nov. 10, 1992

RESULTS:

Sample I.D.	Chromium (mg/L)	Lead (mg/L)	Nickel (mg/L)	Hex Chrome (mg/L)
B-MW1-0.5'/B-MW1-1.55'	1.0	4.2	0.59	N.D.
BLANK	N.D.	N.D.	N.D.	N.D.
DETECTION LIMIT	0.1	0.10	0.2	0.01
METHOD OF ANALYSIS	WET/ 3010/ 6010	WET/ 3010/ 6010	WET/ 3010/ 6010	WET/ 3010/ 7195

ChromaLab, Inc.

Jack Kelly
Analytical Chemist

Eric Tam
Laboratory Director

cc

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Federal ID #68-0140157

CHROMALAB, INC.

Environmental Laboratory (1094)

5 DAYS TURNAROUND

November 13, 1992 ChromaLab File No.: 1192028

JONAS & ASSOCIATES, INC.

Attn: Mark Jonas

RE: Ten soil samples for Gasoline and BTEX analysis

Project Name: 9201 PACO Pumps
Project Number: PCO-220-02-REM
Date Sampled: Nov. 3-4, 1992 Date Submitted: Nov. 5, 1992
Date Analyzed: Nov. 11, 1992

RESULTS:

Sample I.D.	Gasoline (mg/Kg)	Benzene (µg/Kg)	Toluene (µg/Kg)	Ethyl Benzene (µg/Kg)	Total Xylenes (µg/Kg)
B-MW2-0.5′ & 1.5′	N.D.*	N.D.**	N.D.**	1900	9600
B-MW2-5′	N.D.*	N.D.	N.D.	25	41
B-MW2-10′	N.D.*	N.D.	N.D.	11	20
B-MW2-15′	N.D.	N.D.	N.D.	N.D.	N.D.
B-MW3-5′	9.5	1900	9.5	240	110
B-MW3-10′	250	3700	11000	2200	6400
B-MW3-15′	N.D.	N.D.	5.4	N.D.	28
B-MW3-20′	N.D.	N.D.	10	N.D.	12
PB-MW3-25′	1.2	31	65	7.8	23
PB-MW3-30′	10	200	300	39	110
BLANK	N.D.	N.D.	N.D.	N.D.	N.D.
SPIKE RECOVERY	85%	91%	97%	98%	103%
DUP SPIKE RECOVERY	----	93%	96%	91%	93%
DETECTION LIMIT	1.0	5.0	5.0	5.0	5.0
METHOD OF ANALYSIS	5030/8015	8020	8020	8020	8020

* Unknown hydrocarbon in kerosene/mineral spirit range.
**Detection Limit = 200 µg/Kg due to dilution needed.

ChromaLab, Inc.

Billy Thach
Analytical Chemist

Eric Tam
Laboratory Director

cc

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(510) 831-1788 • Facsimile (510) 831-8798
Federal ID #68-0140157

CHROMALAB, INC.

Environmental Laboratory (1094)

5 DAYS TURNAROUND

November 20, 1992 ChromaLab File No.: 1192104

JONAS & ASSOCIATES, INC.

Attn: M. Jonas

RE: Five soil samples for BTEX analysis

Project Name: 9201 PACO Pumps
Project Number: PCO-220-02-REM
Date Sampled: Nov. 9, 1992 Date Submitted: Nov. 12, 1992
Date Analyzed: Nov. 18, 1992

RESULTS:

Sample I.D.	Gasoline (mg/Kg)	Benzene (µg/Kg)	Toluene (µg/Kg)	Ethyl Benzene (µg/Kg)	Total Xylenes (µg/Kg)
B-MW4-0.5'	5.9	78	N.D.	9.9	58
B-MW4-5'	6.3	700	14	130	590
B-MW4-10'	32	340	760	910	4200
B-MW4-15'	N.D.	N.D.	N.D.	N.D.	N.D.
B-MW4-20'	N.D.	9.8	9.3	13	53
BLANK	N.D.	N.D.	N.D.	N.D.	N.D.
SPIKE RECOVERY	86%	86%	91%	93%	90%
DUP SPIKE RECOVERY	----	84%	91%	89%	90%
DETECTION LIMIT	1.0	5.0	5.0	5.0	5.0
METHOD OF ANALYSIS	5030/8015	8020	8020	8020	8020

ChromaLab, Inc.

Billy Thach
Analytical Chemist

Eric Tam
Laboratory Director

cc

2239 Omega Road, #1 • San Ramon, California 94583
(510) 831-1788 • Facsimile (510) 831-8798
Federal ID #68-0140157

CHROMALAB, INC.

Environmental Laboratory (1094)

5 DAYS TURNAROUND

November 20, 1992 ChromaLab File No.: 1192104

JONAS & ASSOCIATES, INC.

Attn: M. Jonas

RE: Five soil samples for TEPH analysis

Project Name: 9201 PACO Pumps
Project Number: PCO-220-02-REM
Date Sampled: Nov. 9, 1992 Date Submitted: Nov. 12, 1992
Date Extracted: Nov. 18, 1992 Date Analyzed: Nov. 18, 1992

RESULTS:

Sample I.D.	Diesel (mg/Kg)	Kerosene (mg/Kg)	Motor Oil (mg/Kg)
B-MW4-0.5'	N.D.	N.D.	N.D.
B-MW4-5'	N.D.	N.D.	N.D.
B-MW4-10'	N.D.	N.D.	N.D.
B-MW4-15'	N.D.	N.D.	N.D.
B-MW4-20'	N.D.	N.D.	N.D.
BLANK	N.D.	N.D.	N.D.
SPIKE RECOVERY	88%	----	----
DUP SPIKE RECOVERY	97%	----	----
DETECTION LIMIT	1.0	1.0	10.0
METHOD OF ANALYSIS	3550/8015	3550/8015	3550/8015

ChromaLab Inc.,

Yiu Tam
Analytical Chemist

Eric Tam
Laboratory Director

cc

2239 Omega Road,#1 • San Ramon, California 94583
(510) 831-1788 • Facsimile (510) 831-8798
Federal ID #68-0140157

CHROMALAB, INC.

Environmental Laboratory (1094)

5 DAYS TURNAROUND

November 16, 1992 ChromaLab File No.: 1192104

JONAS & ASSOCIATES, INC.

Attn: M. Jonas

RE: One soil sample for STLC Copper, Lead and Selenium analysis

Project Name: 9201 PACO Pumps
Project Number: PCO-220-02-REM
Date Sampled: Nov. 9, 1992 Date Submitted: Nov. 12, 1992
Date Analyzed: Nov. 16, 1992

RESULTS:

Sample I.D.	Copper (mg/L)	Lead (mg/L)	Selenium (mg/L)
B19-2-0.5' & B19-2-1.5'	----	----	0.18
B26-2-0.5' & B26-2-1.5'	24	20	----
BLANK	N.D.	N.D.	N.D.
DETECTION LIMIT	0.05	0.10	0.1
METHOD OF ANALYSIS	3010/6010	3010/6010	3010/6010

ChromaLab, Inc.

Jack Kelly
Analytical Chemist

Refaat Mankarious
Inorganic Supervisor

cc

2239 Omega Road,#1 • San Ramon, California 94583
(510) 831-1788 • Facsimile (510) 831-8798
Federal ID #68-0140157

CHROMALAB, INC.

Environmental Laboratory (1094)

5 DAYS TURNAROUND

November 24, 1992 ChromaLab File No.: 1192132

JONAS & ASSOCIATES, INC.

Attn: Mark L. Jonas

RE: Four water samples for Gasoline and BTEX analysis

Project Name: 9201 PACO PUMPS
Project Number: PCO-220-02-REM
Date Sampled: Nov. 16, 1992 Date Submitted: Nov. 16, 1992
Date Analyzed: Nov. 20, 1992

RESULTS:

Sample I.D.	Gasoline (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl Benzene (µg/L)	Total Xylenes (µg/L)
GW9-MW2-Q1	N.D.	N.D.	N.D.	N.D.	N.D.
GW9-MW3-Q1	40000	2900	6700	550	1700
GW9-MW41-Q1	520	63	67	15	130
GW9-MW4-Q1	560	66	73	16	140
BLANK	N.D.	N.D.	N.D.	N.D.	N.D.
SPIKE RECOVERY	91%	95%	95%	95%	93%
DUP SPIKE RECOVERY	----	94%	97%	94%	92%
DETECTION LIMIT	50	0.5	0.5	0.5	1.5
METHOD OF ANALYSIS	5030/8015	602	602	602	602

ChromaLab, Inc.

Billy Thach
Analytical Chemist

Eric Tam
Laboratory Director

cc

2239 Omega Road,#1 • San Ramon, California 94583
(510) 831-1788 • Facsimile (510) 831-8798
Federal ID #68-0140157

CHROMALAB, INC.

Environmental Laboratory (1094)

5 DAYS TURNAROUND

November 23, 1992 ChromaLab File No.: 1192132

JONAS & ASSOCIATES, INC.

Attn: Mark L. Jonas

RE: Five water samples for TEPH analysis

Project Name: 9201 PACO PUMPS
Project Number: PCO-220-02-REM
Date Sampled: Nov. 15-16, 1992 Date Submitted: Nov. 16, 1992
Date Extracted: Nov. 18, 1992 Date Analyzed: Nov. 18, 1992

RESULTS:

Sample I.D.	Kerosene (µg/L)	Diesel (µg/L)	Motor Oil (mg/L)
GW9-MW1-Q1	N.D.	N.D.	N.D.
GW9-MW2-Q1	590	N.D.	9.5
GW9-MW3-Q1	N.D.	N.D.	N.D.
GW9-MW4-Q1	N.D.	N.D.	N.D.
GW9-MW41-Q1	N.D.	N.D.	N.D.
BLANK	N.D.	N.D.	N.D.
SPIKE RECOVERY	----	109%	----
DUP SPIKE RECOVERY	----	105%	----
DETECTION LIMIT	50.0	50.0	0.5
METHOD OF ANALYSIS	3510/8015	3510/8015	3510/8015

ChromaLab Inc.,

Yiu Tam
Analytical Chemist

Eric Tam
Laboratory Director

cc

2239 Omega Road,#1 • San Ramon, California 94583
(510) 831-1788 • Facsimile (510) 831-8798
Federal ID #68-0140157

CHROMALAB, INC.

Environmental Laboratory (1094)

5 DAYS TURNAROUND

November 24, 1992 — ChromaLab File # 1192132

JONAS & ASSOCIATES, INC. — Attn: Mark L. Jonas

Project Name: 9201 PACO PUMPS — Project No: PCO-220-02-REM
Date Sampled: Nov. 15-16, 1992 — Method of Analysis: EPA 624
Date Submitted: Nov. 16, 1992 — Matrix: Water
Date of Analysis: Nov. 20, 1992 — Reporting Limit: 2.0 µg/L
Sample I.D.: GW9-MW2-Q1 — Dilution Factor: None

COMPOUND NAME	µg/L	Spike Recovery
CHLOROMETHANE	N.D.	---
VINYL CHLORIDE	N.D.	---
BROMOMETHANE	N.D.	---
CHLOROETHANE	N.D.	---
TRICHLOROFLUOROMETHANE	N.D.	---
1,1-DICHLOROETHENE	N.D.	118% 120%
METHYLENE CHLORIDE	N.D.	---
1,2-DICHLOROETHENE (TRANS)	N.D.	---
1,2-DICHLOROETHENE (CIS)	N.D.	---
1,1-DICHLOROETHANE	2.6	---
CHLOROFORM	N.D.	---
1,1,1-TRICHLOROETHANE	N.D.	---
CARBON TETRACHLORIDE	N.D.	---
1,2-DICHLOROETHANE	N.D.	---
BENZENE	N.D.	---
TRICHLOROETHENE	N.D.	104% 107%
1,2-DICHLOROPROPANE	N.D.	---
BROMODICHLOROMETHANE	N.D.	---
2-CHLOROETHYLVINYLETHER	N.D.	---
TRANS-1,3-DICHLOROPROPENE	N.D.	---
TOLUENE	N.D.	---
CIS-1,3-DICHLOROPROPENE	N.D.	---
1,1,2-TRICHLOROETHANE	N.D.	---
TETRACHLOROETHENE	N.D.	101% 101%
DIBROMOCHLOROMETHANE	N.D.	---
CHLOROBENZENE	N.D.	---
ETHYL BENZENE	N.D.	---
BROMOFORM	N.D.	---
1,1,2,2-TETRACHLOROETHANE	N.D.	102% 121%
1,3-DICHLOROBENZENE	N.D.	---
1,4-DICHLOROBENZENE	N.D.	---
1,2-DICHLOROBENZENE	N.D.	---
TOTAL XYLENES	N.D.	---
ACETONE	N.D.	---
METHYL ETHYL KETONE	N.D.	---
METHYL ISOBUTYL KETONE	N.D.	---

ChromaLab, Inc.

Mary Cappelli
Analytical Chemist

Eric Tam
Lab Director

2239 Omega Road, #1 • San Ramon, California 94583
(510) 831-1788 • Facsimile (510) 831-8798
Federal ID #68-0140157

CHROMALAB, INC.

Environmental Laboratory (1094)

5 DAYS TURNAROUND

November 21, 1992 ChromaLab File No.:1192132

Jonas & Associates, Inc.

Attn: Mark Jonas

RE: One water sample for PCB analysis.

Project Name: 9201 PACO Pumps
Project No.: PCO-220-02-REM
Date Sampled: Nov. 15, 1992
Date Submitted: Nov. 16, 1992
Date Analyzed: Nov. 20, 1992

RESULTS:

SAMPLE I.D.	PCB (mg/L)
MW-1	N.D.

BLANK	N.D.
SPIKE RECOVERY	98%
DUPLICATE SPIKE RECOVERY	103%
DETECTION LIMIT	0.05
METHOD OF ANALYSIS	608

ChromaLab, Inc.

Yiu Tam
Analytical Chemist

Eric Tam
Laboratory Director

2239 Omega Road,#1 • San Ramon, California 94583
(510) 831-1788 • Facsimile (510) 831-8798
Federal ID #68-0140157

CHROMALAB, INC.

Environmental Laboratory (1094)

5 DAYS TURNAROUND

November 23, 1992 ChromaLab File No.: 1192132

JONAS & ASSOCIATES, INC.

Attn: Mark L. Jonas

RE: One water sample for Total CAM 17 Metals analyses (CA Title 22)

Project Name: 9201 PACO PUMPS
Project Number: PCO-220-02-REM
Date Sampled: Nov. 15-16, 1992 Date Submitted: Nov. 16, 1992
Date Analyzed: Nov. 18, 1992

RESULTS: Sample I.D.: GW9-MW1-Q1

Metals	Concentration (mg/L)	Detection Limit (mg/L)
Antimony (Sb)	N.D.	0.020
Arsenic (As)	N.D.	0.005
Barium (Ba)	0.18	0.005
Beryllium (Be)	0.002	0.001
Cadmium (Cd)	N.D.	0.001
Cobalt (Co)	N.D.	0.01
Chromium (Cr)	N.D.	0.01
Copper (Cu)	0.007	0.005
Lead (Pb)	N.D.	0.010
Mercury (Hg)	N.D.	0.001
Molybdenum (Mo)	N.D.	0.005
Nickel (Ni)	N.D.	0.020
Selenium (Se)	0.021	0.01
Silver (Ag)	N.D.	0.005
Thallium (Tl)	N.D.	0.01
Vanadium (V)	N.D.	0.01
Zinc (Zn)	N.D.	0.005

Method of Analysis: 3010/6010/7470

ChromaLab, Inc.

Jack Kelly
Analytical Chemist

Refaat Mankarious
Inorganic Supervisor

cc

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ZONE 7 WATER AGENCY

5997 PARKSIDE DRIVE PLEASANTON, CALIFORNIA 94588 VOICE (510) 484-2600
FAX (510) 462-3914

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

OCATION OF PROJECT PACO PUMPS
9201 San Leandro Street (near 92nd Ave.)
Oakland, California 94603

IENT
ame PACO PUMPS INC. 845-92nd Avenue
ddress ~~P.O. Box 12924~~ Phone (510) 521-8780 (Scott Liddicoat)
ty Oakland, California Zip 94604-2924

PLICANT
ame Jonas and Associates Inc.
attn: Mark L. Jonas
ddress 1056 Dale Place Phone (510) 676-8554
ty Concord, California Zip 94518

PE OF PROJECT
ell Construction
Cathodic Protection
Water Supply
Monitoring x 4 xx
Geotechnical Investigation
General
Contamination
Well Destruction

ROPOSED WATER SUPPLY WELL USE
omestic Industrial Other
unicipal Irrigation not a water supply well, possibly used for remediation if it is necessary.

RILLING METHOD:
d Rotary Air Rotary Auger xx
ble Other

RILLER'S LICENSE NO. C-57 #607458

ELL PROJECTS
Drill Hole Diameter 8.5 in. Maximum
Casing Diameter 4 in. Depth 20-30 ft.
Surface Seal Depth 4 ft. Number 4

EOTECHNICAL PROJECTS
Number of Borings Maximum
Hole Diameter in. Depth ft.

TIMATED STARTING DATE 11/3/1992
TIMATED COMPLETION DATE 11/5/1992

ereby agree to comply with all requirements of this permit and Alameda unty Ordinance No. 73-68.

PLICANT'S GNATURE Mark Jonas Date 10/26/92
Mark L. Jonas (J&A)

FOR OFFICE USE

PERMIT NUMBER 92543
LOCATION NUMBER

PERMIT CONDITIONS
Circled Permit Requirements Apply

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

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

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

D. CATHODIC. Fill hole above anode zone with concrete placed by tremie.

E. WELL DESTRUCTION. See attached.

Approved Wyman Hong Date 29 Oct 92
Wyman Hong

31092

CONFIDENTIAL

STATE OF CALIFORNIA-DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

CONFIDENTIAL

STATE OF CALIFORNIA-DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

CONFIDENTIAL

STATE OF CALIFORNIA-DWR
WELL COMPLETION REPORT
(WELL LOGS)

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CONFIDENTIAL

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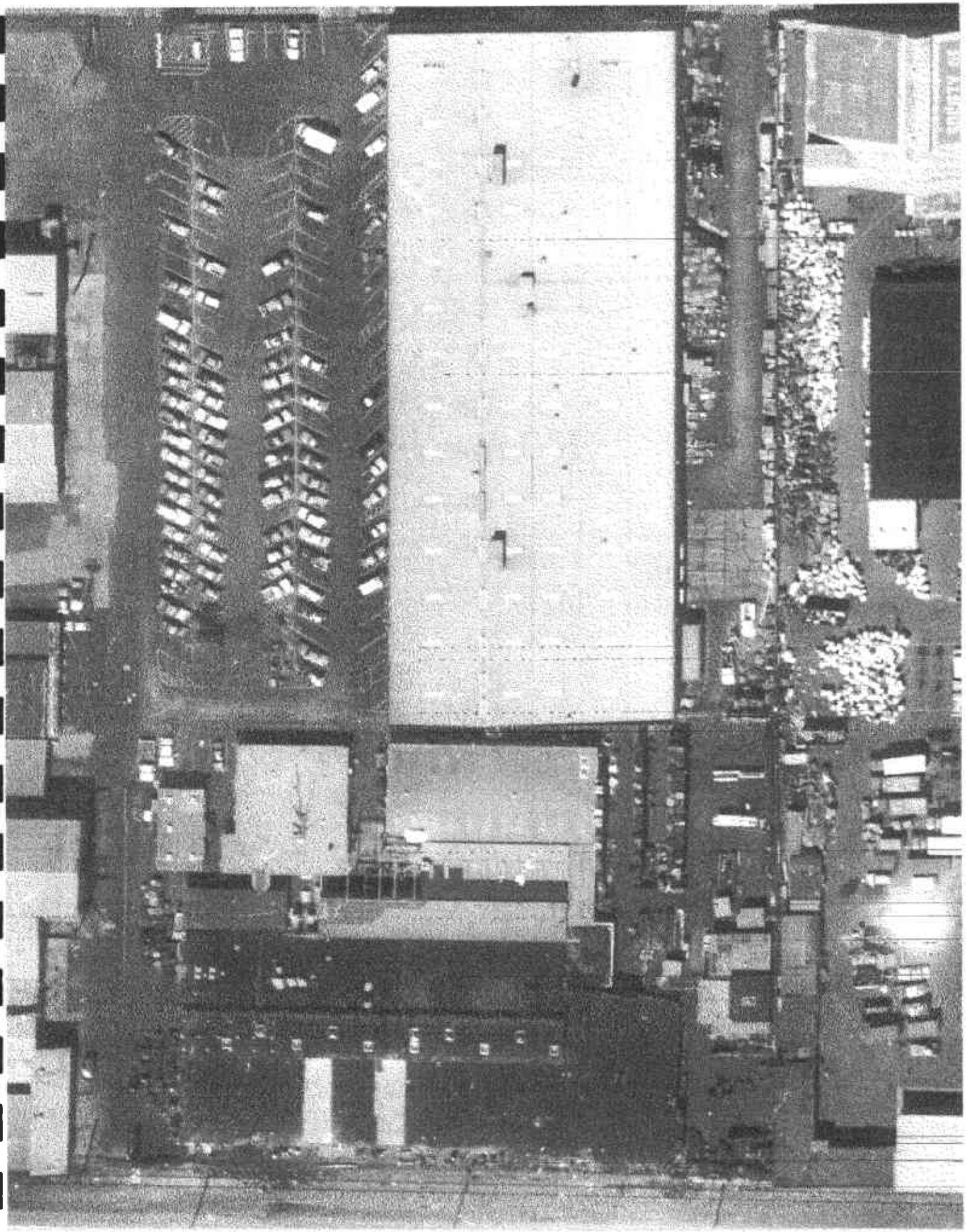
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

CONFIDENTIAL

STATE OF CALIFORNIA-DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

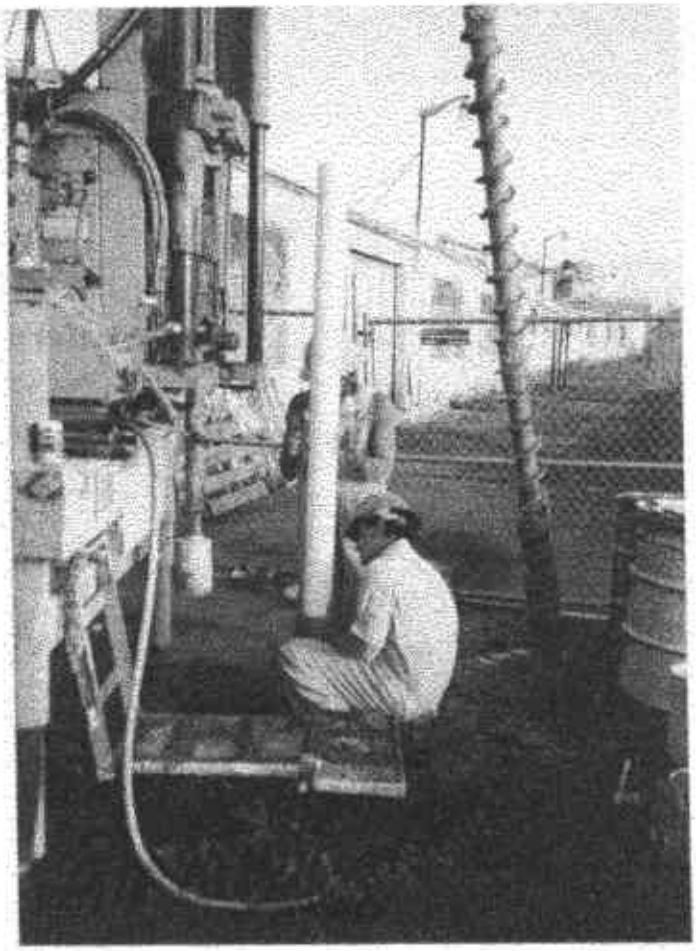


Picture 1: June 12, 1990 aerial photograph of PACO Pumps facility at 9201 San Leandro Street, Oakland, California. Pacific Aerial Survey photograph AV-3845-12-37.

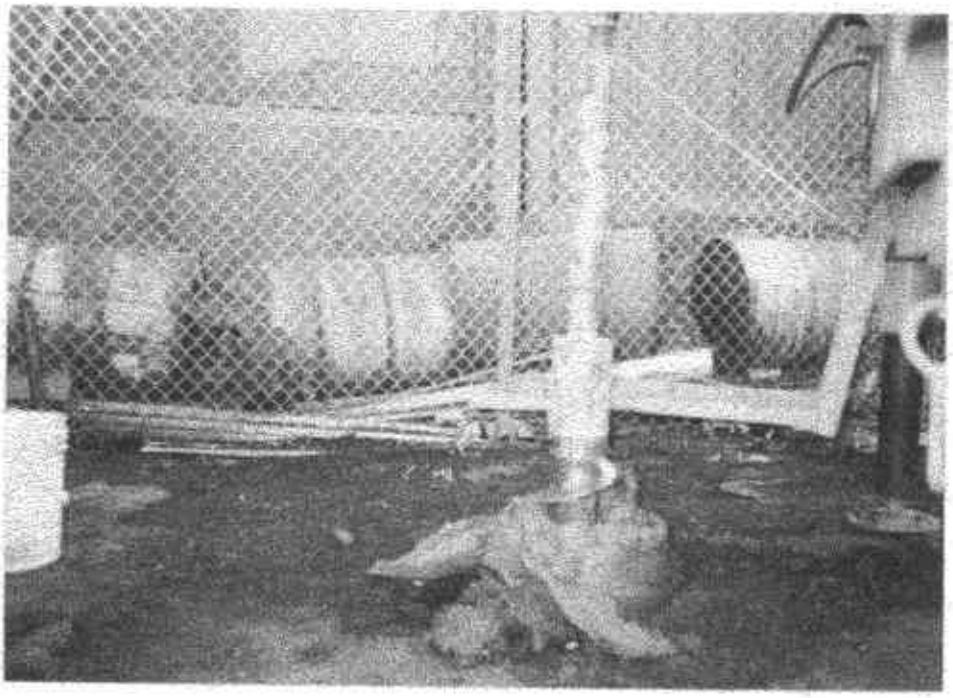
Picture 2: November 4, 1992
Advance Drilling Company
CME-75 rig drilling monitoring
well 9MW1.

Picture 3: November 4, 1992
Approval to drill markings
from utility inspectors at
the proposed location of
monitoring well 9MW1.

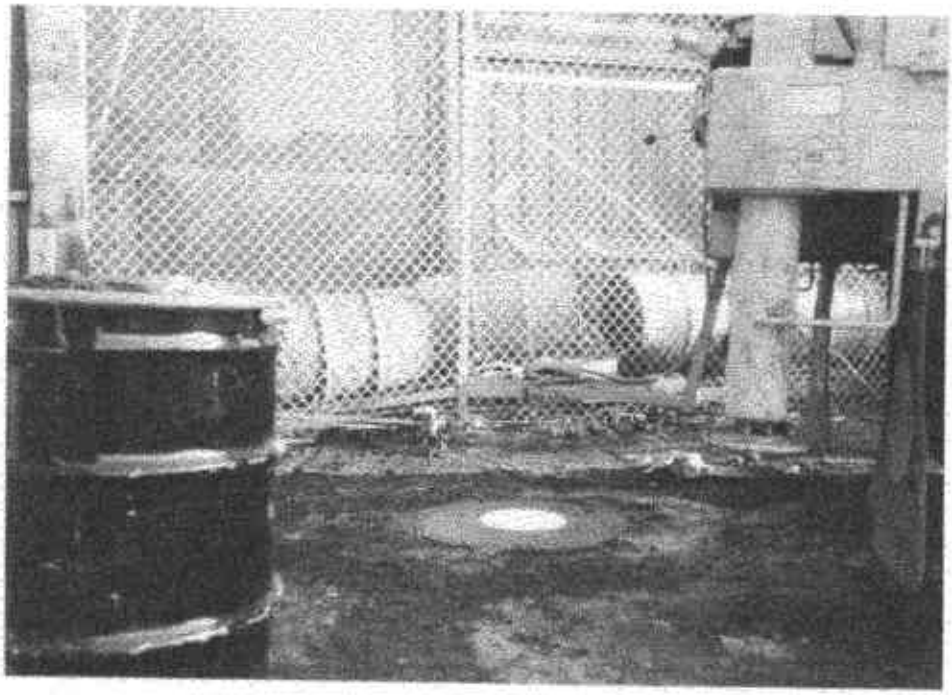
Picture 4: November 4, 1992
Advance Drilling Company augering borehole for monitoring well 9MW1. Drums for cuttings in background.



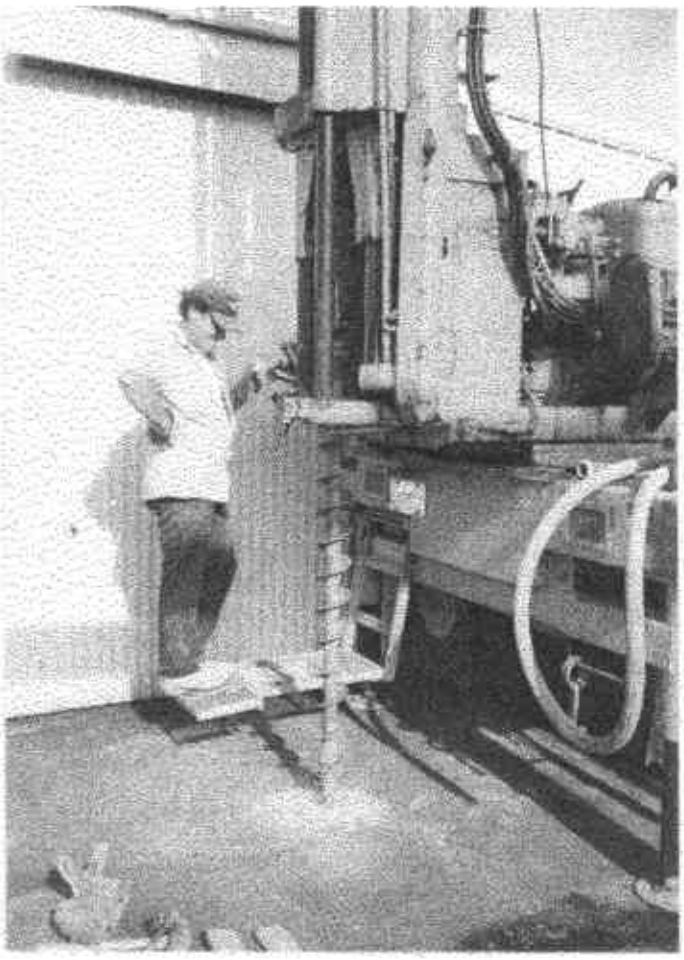
Picture 5: November 4, 1992
Installing 4" PVC casing for monitoring well 9MW1.



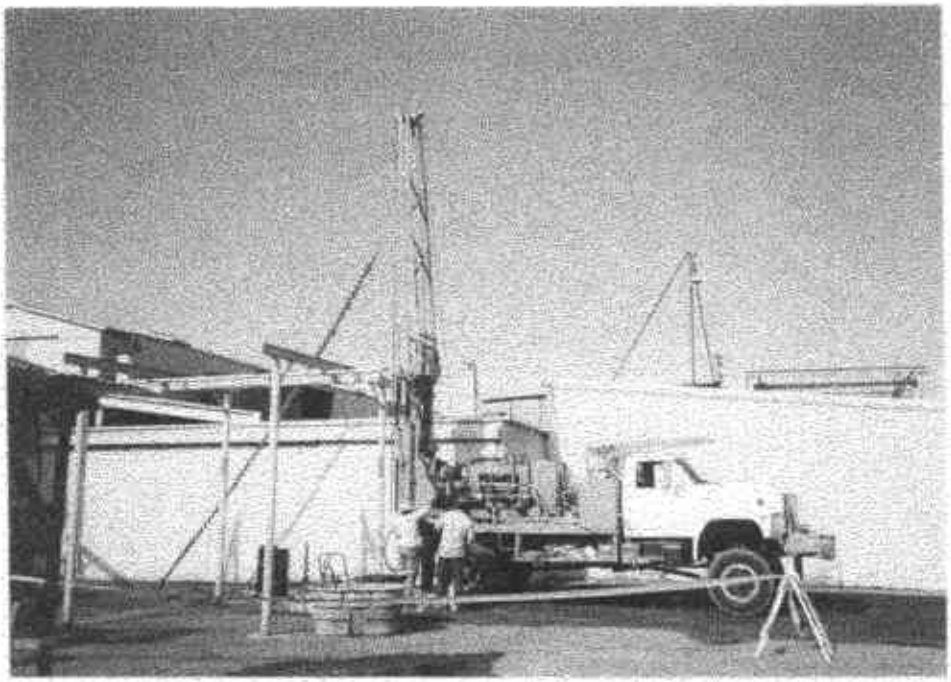
Picture 6: November 3, 1992
Augering borehole for monitoring well 9MW2. Behind the fence are drums on Saint Vincent DePaul's property.



Picture 7: November 3, 1992
White well cap on christy box at monitoring well 9MW2. Black drum in foreground for cuttings. Saint Vincent DePaul's drums in background.



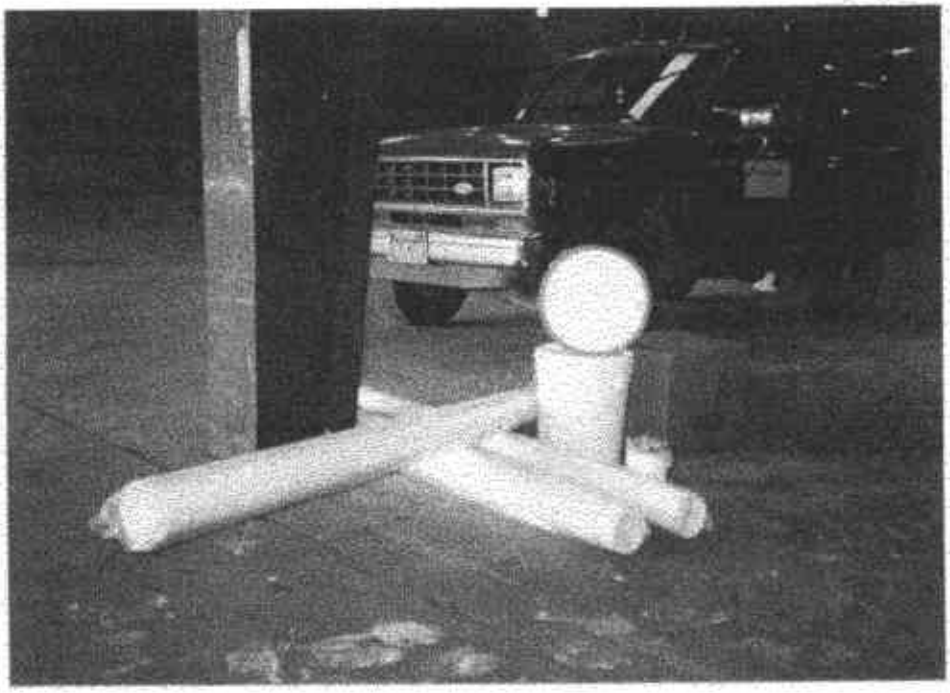
Picture 8: November 3, 1992
Drilling pilot boring PB-MW3 adjacent to the eventual location of monitoring well 9MW3.



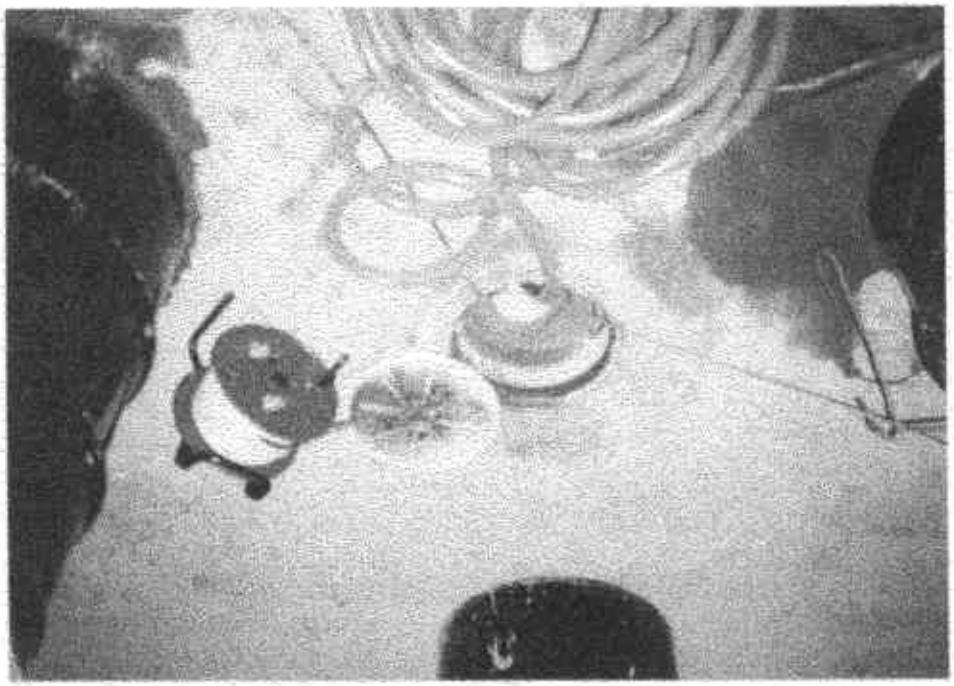
Picture 9: November 3, 1992
Drilling rig at location of pilot boring PB-MW3 and monitoring well 9MW3.

Picture 10:November 9, 1992
Coring through the floor of the warehouse prior to drilling the borehole for monitoring well 9MW4.

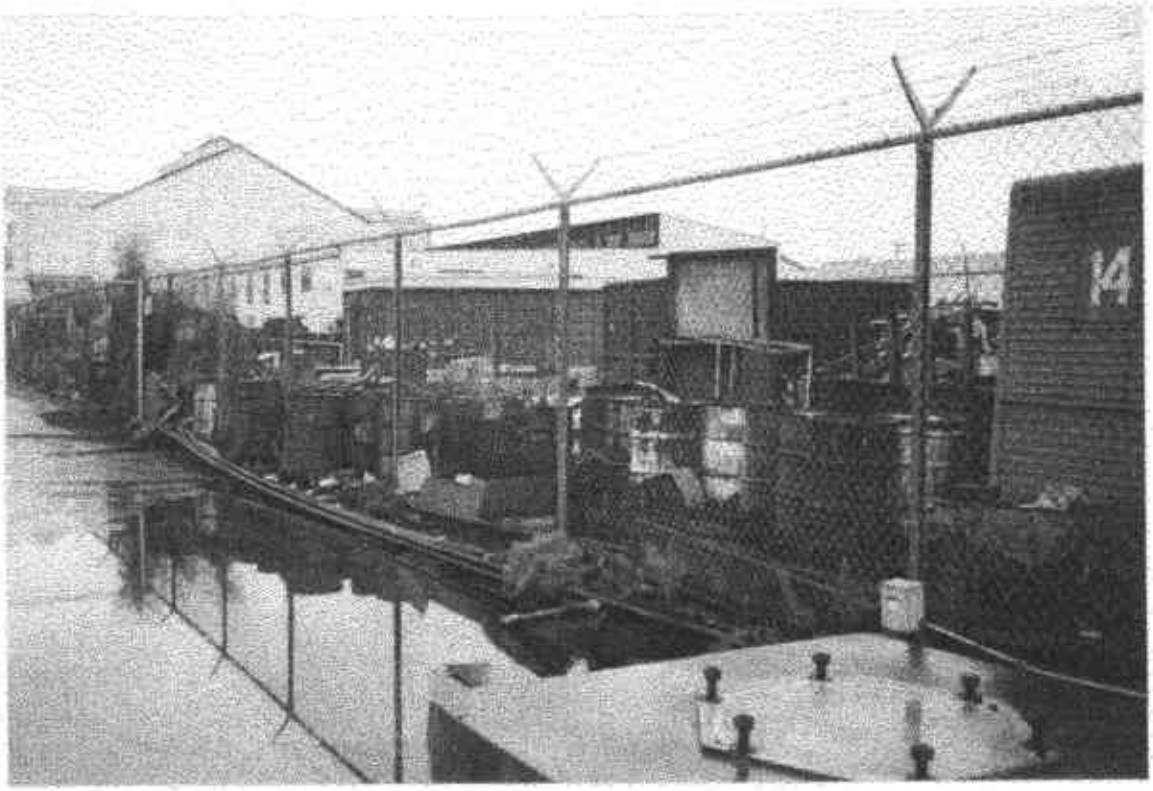
Picture 11:November 9, 1992
Drilling borehole for monitoring well 9MW4.



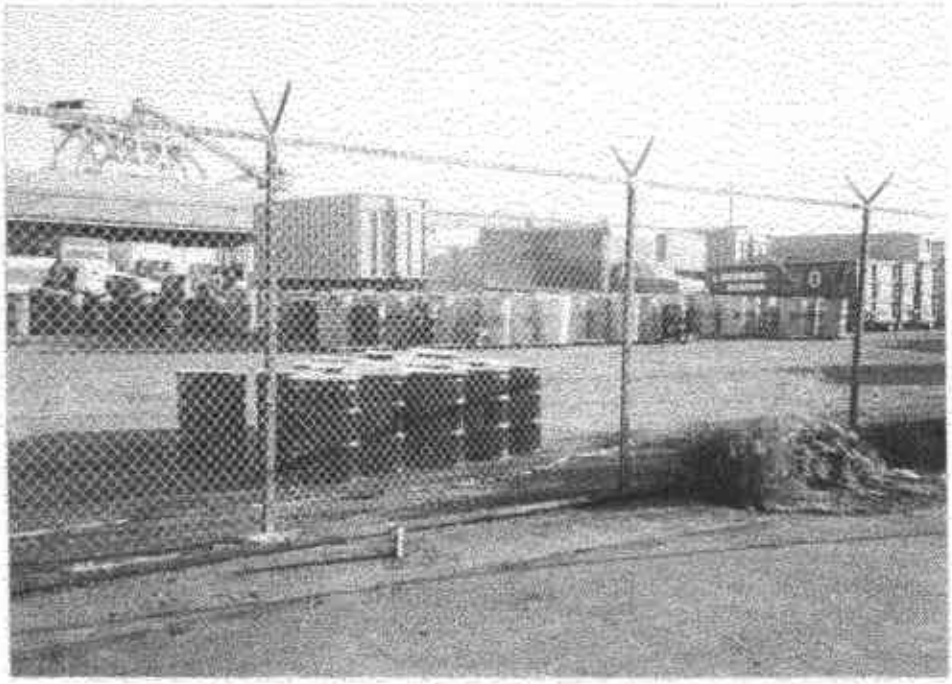
Picture 12:November 9, 1992
Some of the materials used for the construction of monitoring well 9MW4.



Picture 13:November 16, 1992
Developing monitoring well 9MW4.



Picture 14:
June 29, 1992
Ponded water after rain showers. The drums behind the fence are on the property of Saint Vincent DePaul.



Picture 15:November 3, 1992
Fence separating PACO Pumps in foreground and Saint Vincent DePaul in background.