


PACIFIC
ENVIRONMENTAL
GROUP, INC.

AN  COMPANY

ENVIRONMENTAL
PROTECTION

99 FEB 24 PM 3:42

January 25, 1999
Project 360-014.2B

Mr. Dennis Buran
Glascock Street Properties
425 Market Street
Oakland, California 94607

Re: Work Plan for Additional Remediation in Response to
Alameda County Health Care Services Agency letter dated January 8, 1999
Former Dorr-Oliver Site
2901 Glascock Street, Oakland, California

Dear Mr. Buran:

Pacific Environmental Group, Inc. (PEG) has prepared this work plan in response to a letter dated January 8, 1999, from Mr. Barney Chan of the Alameda County Health Care Services Agency (ACHCSA). In his letter, Mr. Chan rejected PEG's conclusions in the *Third Quarter 1998 - Quarterly Report* (PEG, November 23, 1998) that no further remedial action is needed, and requested that a work plan for further remedial action at the above referenced site be submitted. PEG has developed this work plan in response to Mr. Chan's request. The following sections discuss the site background, groundwater cleanup goals, proposed scope of work for additional remediation, and evidence of an upgradient source.

Site Background

The subject site is located in an industrial area of Oakland, California. The site, approximately 2 acres in area, is almost completely occupied by a warehouse (Figure 1). The south edge of the warehouse is bounded by the Oakland Estuary, the north side is bounded by Glascock Street, and the west side is bounded by a small open lot associated with the warehouse. In February 1993, two underground storage tanks (USTs) were removed from building; one 4,000 gallon UST near the center of the building and one 20,000 gallon UST at the northeastern corner of the building (Figure 1). In addition, approximately 200 cubic yards of hydrocarbon-impacted soil were removed.

Several investigations were subsequently performed at the site by W. A. Craig, Inc. During those investigations 7 groundwater monitoring wells, approximately 18 soil borings, and 2 test pits were installed. PEG performed an additional investigation in 1995 which involved the installation of one groundwater monitoring well and 14 soil borings.

The primary findings from the investigations were the presence of elevated concentrations of petroleum hydrocarbons, primarily total extractable petroleum hydrocarbons quantified as diesel (TEPH-d), in isolated small patches of near surface soils, and dissolved petroleum hydrocarbon (primarily TEPH-d) in groundwater extending from the area of the former tanks, southward to the downgradient edge of the property. In addition, elevated concentrations of PCBs were found in the ramp area on the western side of the building and to a lesser extent in the southwestern corner of the building.

During the third and fourth quarters of 1996, remedial excavations were performed in three areas inside the warehouse and one area outside to address near surface soils containing elevated concentrations of TEPH-d. In addition, the excavation outside the warehouse also addressed elevated concentrations of PCBs in near surface soils. Confirmation samples collected from the excavation areas demonstrated compliance with the soil cleanup goals established in PEG's February 29, 1996 remedial work plan approved by the ACHCSA.

The remedial work plan also proposed recovery of separate phase hydrocarbons (if present) through bioslurping, and enhanced bioremediation to address residual dissolved petroleum hydrocarbons. Since separate phase hydrocarbons have not been present at the site, bioslurping has not been performed. However, Oxygen Release Compound (ORC[®]) devices were utilized in Wells MW-1, MW-2, and MW-6 to enhance biodegradation of residual dissolved petroleum hydrocarbons in groundwater at the site. Groundwater monitoring at the site has been ongoing on a quarterly basis.

Groundwater Cleanup Goal

267 ppm soils

In consultation with the Cal/EPA San Francisco Regional Water Quality Control Board (RWQCB), the ACHCSA recommended a clean-up goal of 314 micrograms per liter ($\mu\text{g/L}$) for diesel range hydrocarbons at this site. Based on recent groundwater monitoring results, three of the seven monitoring wells at the site have analytical results for diesel range hydrocarbons which exceed the clean-up goal recommended by the ACHCSA and the RWQCB. PEG has developed the following proposed additional remedial action to address the ACHCSA and RWQCB concerns about residual petroleum hydrocarbons at the site in proximity to the estuary.

Proposal for Additional Remedial Action

To further enhance bioremediation of residual hydrocarbons, PEG proposes to install a number of borings and backfill them with an ORC® slurry. A total of 15 borings are proposed, in the locations shown on Figure 1. These borings would be completed to about 20 feet below ground surface (total depth) using direct-push boring technology. The bottom ten feet of each boring would be backfilled with an ORC® slurry containing approximately 16 pounds of ORC® powder and 5 gallons water. The upper ten feet of each boring would be sealed with cement grout. The exact locations of these wells may be modified from the layout shown on Figure 1 based on field constraints within the warehouse. The amount of ORC® powder and water in the slurry at each location may also be modified based on more current groundwater analytical data received after this work plan is submitted. PEG also proposes to resume addition of ORC® to Well MW-1 and MW-2. PEG recommends that groundwater monitoring and sampling for the site continue on the current schedule.

Satd zone
10'
16# ORC
up 10' =
grout
15 borings

Upgradient Release

PEG has received preliminary groundwater monitoring results for the samples collected during the fourth quarter of 1998 which indicate a release upgradient of the site which threatens to impact groundwater quality at the site. A groundwater sample collected from Well MW-7, located upgradient of the site in the intersection of Peterson and Glascock Streets, was reported to contain 150 µg/L methyl tert-butyl ether (MtBE).

verified?

MtBE is a gasoline additive which is being used in California to make reformulated gasoline which meets stricter emission standards. MtBE is known to migrate downgradient more rapidly than other constituents of gasoline, and is not as readily biodegradable as petroleum hydrocarbons. MtBE is often seen on the leading edge of a release from gasoline USTs, and may be an indicator that other constituents of concern are also migrating toward Well MW-7. While a firm regulatory standard has not yet been established, the State of California has proposed a public health goal for MtBE at 14 µg/L.

Since the upgradient concentration of MtBE is over ten times the proposed public health goal, PEG is concerned about the potential for MtBE impacting the Former Dorr-Oliver Site and the Oakland Estuary. The remedial approach proposed by this work plan does not address MtBE or other constituents of concern which may be migrating toward the site, nor is it appropriate for Glascock Street Properties to bear the burden of remediating a release from an off-site, upgradient source. PEG recommends the ACHCSA be made aware of these conditions and urged to take appropriate action to

prevent further migration of MtBE and related compounds toward the Former Dorr-Oliver Site and the Estuary.

Distribution

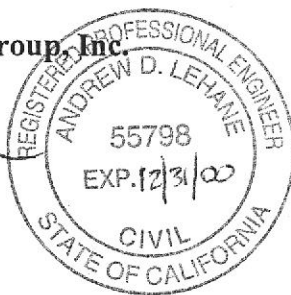
A copy of this work plan should be submitted to Mr. Barney Chan of the ACHCSA for review and approval prior to implementation. Please feel free to contact me at (408) 441-7500 should you have any questions or comments regarding this letter.

Sincerely,

Pacific Environmental Group, Inc.



Andrew Lehane
Project Engineer
RCE 55798



Attachments: Figure 1 - Conceptual Remediation Plan

cc: Mr. Barney Chan, ACHCSA
Mr. Richard Croop, Glascock Street Properties

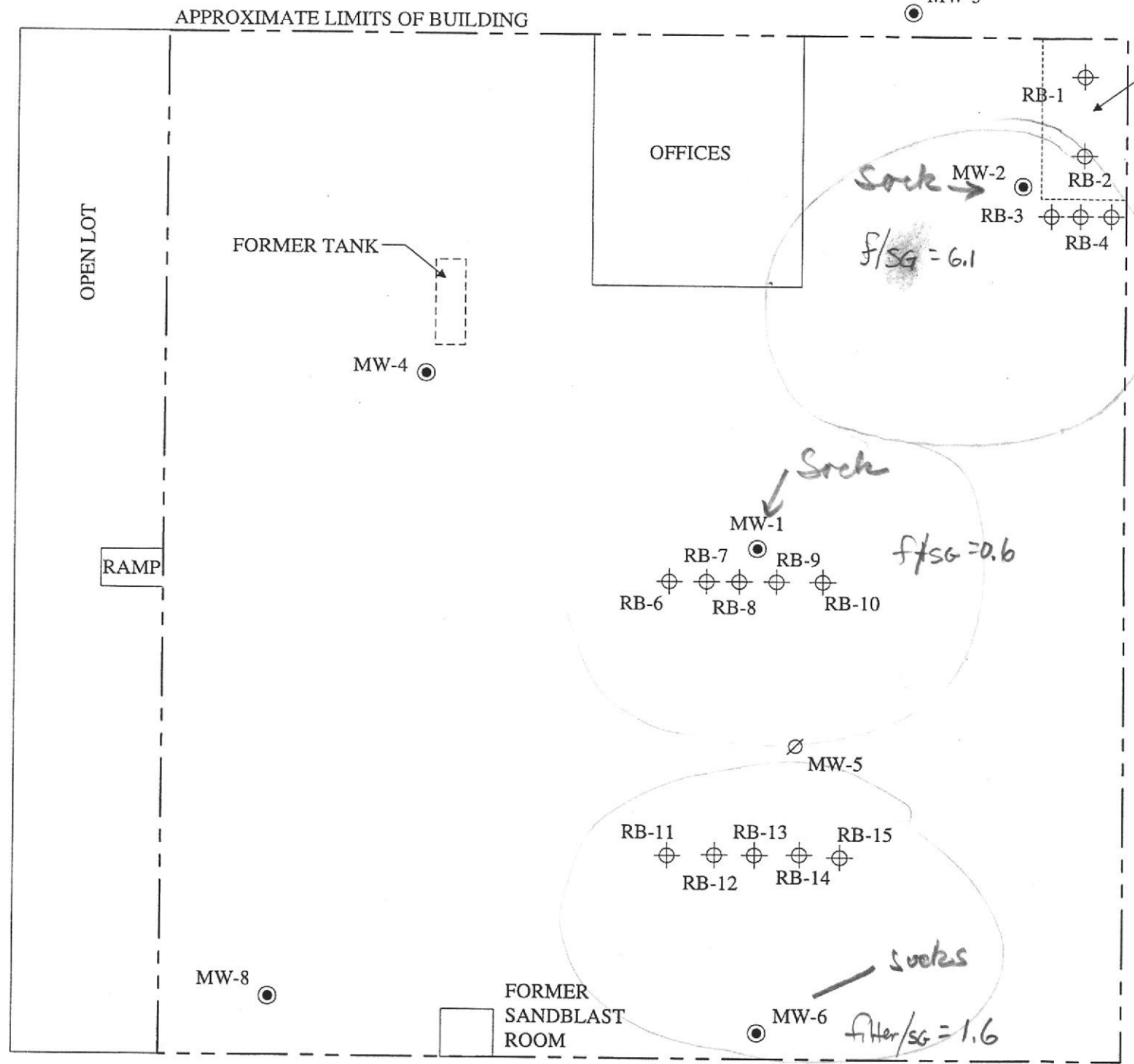


GLASCOCK STREET

PETERSON STREET

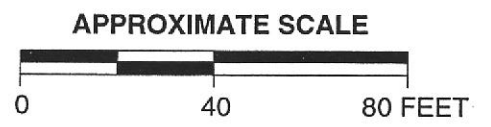
Estimate quantity of RC needed:


$$\begin{aligned} \text{Approx plume vol} &= 80 \times 240 \times 10 = 192,000 \text{ ft}^3 \\ 192,000 \text{ ft}^3 \times .35 \times 28.3 \frac{\text{lb}}{\text{ft}^3} &= 190,176 \text{ lb} \times 2.8 \text{ mg/l} \times 10^{-3} \times \frac{1}{454} = 11.7 \text{ lb} \\ 11.7 \times 8 \times 3 \times 10 &= 2814 \# \\ 15 \times 16 &= 240 \# \end{aligned}$$



- LEGEND**
- MW-1 ● GROUNDWATER MONITORING WELL LOCATION AND DESIGNATION
 - MW-5 ∅ DESTROYED GROUNDWATER MONITORING WELL LOCATION AND DESIGNATION
 - RB-1 ⊕ PROPOSED REMEDIATION BORING LOCATION AND DESIGNATION

• Prior to closure need to remove sock from MW-6 & sample



 PACIFIC ENVIRONMENTAL GROUP, INC.	TITLE: <h3 style="text-align: center;">CONCEPTUAL REMEDIATION PLAN</h3>		
	PREPARED FOR: <p style="text-align: center;">FORMER DORR-OLIVER SITE 2901 Glascock Street Oakland, California</p>		
DATE: 2/10/99	PROJECT: 360-014.2B	FIGURE: 1	