

**PIERS**



**Environmental  
Services, Inc.**

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Alameda County Health Care Services  
Department of Environmental Health  
1131 Harbor Bay Parkway, Second Floor  
Alameda, CA 94502

November 27, 2000

Attn: Mr. Barney Chan; Haz Mat. Specialist for : DiSalvo Trucking  
4919 Tidewater Ave., Oakland

Re: **Investigative Workplan**

Dear Mr. Chan,

This Workplan has been prepared by PIERS Environmental Services, (PIERS) to address requirements by the Alameda County Department of Environmental Health (ACDEH) for the performance of a groundwater investigation at a Underground Storage Tank (UST) site, 4919 Tidewater Ave., Oakland, California.

The purpose of this investigation is to further determine the horizontal extent of hydrocarbons in soil and groundwater. This report first reviews the known site history, describes the site vicinity, and presents existing chemical data. Then, recommendation for further investigation are given including on-site soil and groundwater sampling.

### **1.2 Site Location**

The site is located in a light industrial district of Oakland, California on property at 4919 Tidewater Ave.(Figure 1).

### **1.3 Previous Subsurface Work at Site**

Previous subsurface work at the site includes soil excavation and bio remediation, groundwater disposal, soil borings and sampling, monitor well construction and sampling. Description and chemical results from all work conducted to date are given in reports by Geo Environmental Technology (GTE) of San Jose dated April, 1989, June 1989 and February 1991 and in reports by Gen-Tech Environmental, Inc., (GTE) dated May 1994 and November 1994.

## **2.0 SITE DESCRIPTION**

### **2.1 Site Description and Hydrogeologic Setting**

The site is located on the west side of Tidewater Ave.. A 8000 square foot metal building is located on the northwest portion of the approximate one acre parcel. The majority of the remaining property is paved with asphalt.

The site is located at the fringe of the San Francisco Bay on soil that appears to have been imported to fill the location to approximately four feet above the mean high tide elevation. The imported fill caps the entire site and contains sands, gravels, concrete and asphalt. Native silty clay, silt, clayey sand and peat underlie this fill.

## 2.2 Vicinity Map

A vicinity map is given in Figure 1 which includes the location of any known hydraulic influences. The San Francisco Bay lies approximately 100 feet southeast of the site. A site map is given in Figure 2 which includes information on adjacent streets, site building locations, locations of existing wells, past soil borings and former tanks.

## 2.3 Existing Analytical Results

In April of 1994, three monitoring wells were installed at the site by Gen-Tech Environmental (GTE) of San Jose CA.. Eleven soil borings were also advanced at the same time by GTE. Groundwater grab samples were recovered from each boring and tested for TPH/g, TPH/d and BTEX.

In August of 1995, one monitoring well and two soil borings were installed at the site by Environmental restoration Services (ERS) of Menlo Park, CA..

### 2.3.2 Depth to Groundwater

Depth to groundwater based on the monitor well sampling is approximately two feet below ground surface.

### 2.3.3 Soil Profile

The boring logs for the monitor wells show predominantly import sands and gravels underlain with peat.

## 2.4 Waste Removal

Three fuel tanks, one waste oil tank and approximately 40,000 gallons of hydrocarbon impacted groundwater have been removed from the site. No documentation exists for the disposal of soils, wash water, or groundwater from monitor well construction. Groundwater and wash-water generated by the shallow soil borings was placed in 55-gallon drums. Soils generated by borings are presently stored on-site in a 55-gallon drums.

## **3.0 RECOMMENDATIONS FOR ADDITIONAL INVESTIGATION**

Based on historical analytical data from well samplings, PIERS believes that levels of gasoline and BTEX found in the groundwater at the site do not need to be investigated. PIERS therefore will analyze soil and groundwater samples for TPH/diesel. ✓

Based on the hydrogeology of the site vicinity, PIERS believes that the vertical distribution of groundwater containing hydrocarbons does not require investigation beyond the bay mud aquatard (approximately 6 feet bgs.).

In addition, PIERS believes that the extent of any soil contamination on the site is due to the migration of the hydrocarbon on the shallow groundwater as it moves through the imported sand and gravel fill material. Since the extent of soil contamination has not been defined, the investigative scope of work will be comprised of soil sampling, at the soil groundwater interface, at on-site locations.

Since the lateral extent of groundwater contamination at the site has not been defined, the investigative scope of work will also be comprised of groundwater sampling at on-site locations.

Investigation findings will help to determine a remedial action design. This design will be described in the investigative report to be submitted before December 31, 2000.

### 3.1 Reconnaissance Boring Installation, Soil and Groundwater Sampling

Approximately twenty borings will be constructed to determine the presence of hydrocarbons in the soil and groundwater around the entire property. As such, the planned borings SB-1 through SB-20 are shown in Figure 2. Additional soil borings may be installed as needed based on field observations/conditions of the proposed borings. Choice of locations of any additional borings will be made by the field engineer.

Prior to mobilization of the drilling equipment on-site, and prior to leaving the site, all associated equipment and well installation equipment will be thoroughly cleaned to removed all soil, oil, grease, mud, tar, etc. The cleaning process will consist of TSP cleaning of the drilling equipment and a clean water final rinse. Before drilling each boring, all drill stems, bits, and other down-hole equipment will be cleaned.

#### 3.1.1 Soil Boring Procedure

The borings will be advanced using a small diameter push rig (Geo-Probe or equivalent) to a depth of approximately eight feet. All of the soil recovered from the boring will be logged under the supervision of a registered civil engineer. Visual and olfactory observations of petroleum hydrocarbons will be made and recorded on the boring log.

#### 3.1.2 Soil Sampling Procedures

Soil samples will be recovered from each boring at the groundwater interface. Each sample will be cut from the continuous core container at the desired sample depth. The container will then be sealed with Teflon sheet and plastic caps. The soil samples will be immediately stored on ice.

*extract also passed through silica gel*

#### 3.1.3 Groundwater Grab Sampling Procedures

After completion of drilling, each boring will be allowed to recharge with groundwater. Then, a new, disposable bailer will be inserted into the boring for recovery of a groundwater grab sample. The groundwater will be emptied into sample containers obtained directly from the analytical laboratory. An effort will be made to minimize exposure of the sample to air. The groundwater samples will be immediately stored on ice.

Care shall be taken to collect all excess water resulting from the sampling and cleaning procedures. The excess water will be contained in a pre-labeled 55-gallon drum on-site pending receipt of laboratory analyses.

The borings will be backfilled immediately after completion of the sampling with a cement grout mixture containing approximately 3% bentonite.

*GW - filter (GHEM) / silica gel cleanup prior to analysis*

### 3.1.4 Laboratory Analyses

The following analyses will be performed by a on-site lab operated by Mobile Chem Labs (MCL) of Lafayette, CA, on the soil an groundwater samples obtained from the borings:

✓  
cert.

TPH-diesel (EPA Method 8015M)

### 3.2 Reporting

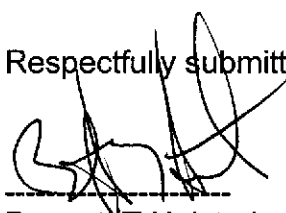
A report will be prepared which documents the investigation including boring logs, sampling field notes, chains of custody, and laboratory reports. The report will include recommendations on interim remedial actions including aquifer excavation and disposal, groundwater extraction system design or enhanced bio-degradation through oxygen injection. The report will be submitted to the client.

### 4.0 SITE SAFETY PLAN

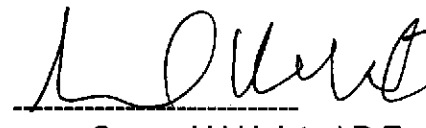
A site safety plan will be prepared by the consultant prior to initiation of the field activities. The site safety plan will comply with all federal and state regulations for worker safety and hazardous material handling, transport, and disposal. The site safety plan will consider possible worker exposure during drilling and sampling operations in accordance with applicable OSHA standards.

If you have any questions regarding these comments or scope of work, or wish to add to or alter the scope of this investigation, please do not hesitate to call Ben Halsted at 408-559-1248 so I may resubmit any revisions.

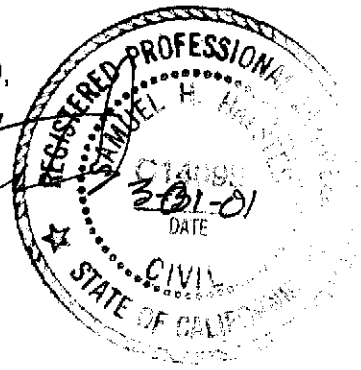
Respectfully submitted this 27th day of November, 2000,



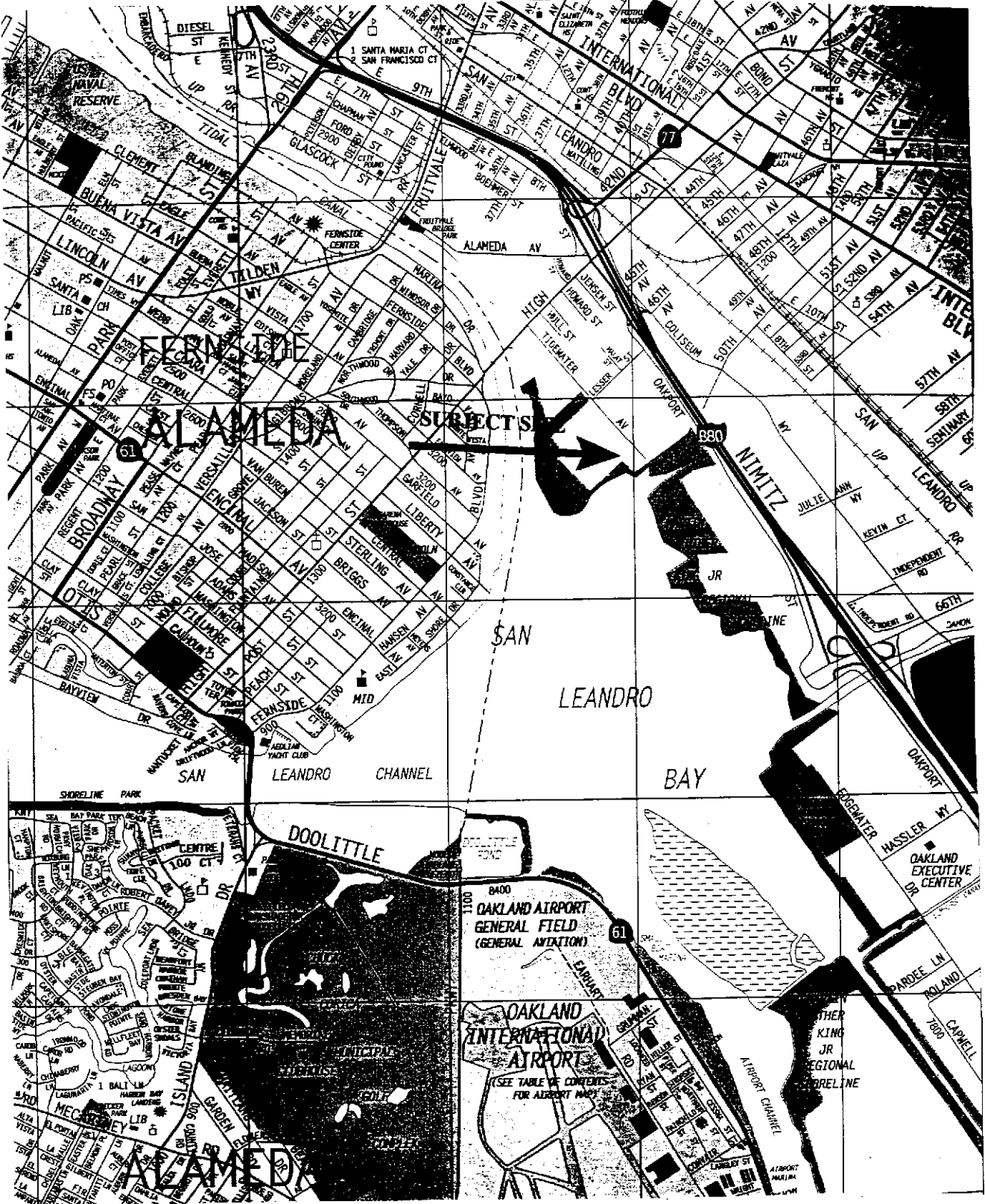
Bennett T Halsted  
Project Manager



Samuel H Halsted P.E.  
CE 14095



# FIGURES



# VICINITY MAP

4919 Tidewater Ave., Oakland, CA

DATE 11/15/00

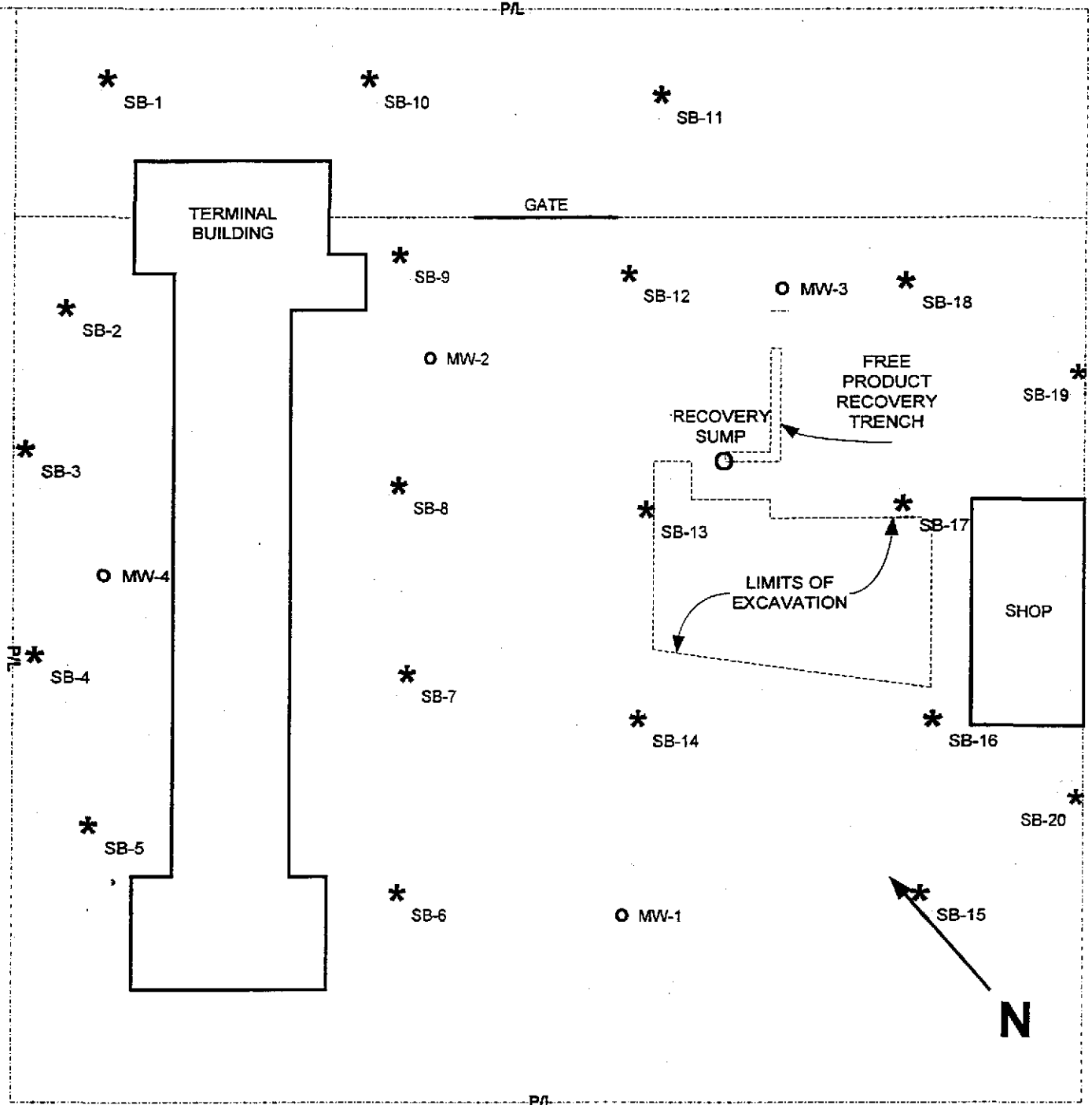
SCALE: NTS

BY:

**PIERS Environmental Services Inc.**  
 1330 S. Bascom Ave., # F, San Jose, CA 95128

**FIGURE 1**

TIDEWATER AVENUE



\* PROPOSED BORING LOCATIONS

<b>SITE PLAN</b>		
<b>4919 Tidewater Ave., Oakland, CA</b>		
DATE	11/15/00	SCALE: NTS
		BY:
<i>PIERS Environmental Services Inc.</i>		<b>FIGURE 2</b>
1330 S. Bascom Ave., # F, San Jose, CA 95128		