

# PIEDMONT ENVIRONMENTAL & ENGINEERING GROUP

ALCO  
HAZMAT

December 16, 1993  
94 MAR -8 PH 3:18

Mr. Thomas Peacock  
Alameda County Health Services Agency  
Department of Environmental Health  
80 Swan Way, Room 200  
Oakland, California 94621

**SUBJECT: WORK PLAN FOR PHASE II ENVIRONMENTAL ASSESSMENT  
DOUGLAS PARKING GARAGE  
1721 WEBSTER STREET, OAKLAND, CA. 94612**

Dear Mr. Peacock:

Enclosed please find our work plan to perform a Phase II Environmental Site Assessment at the Douglas Parking Garage, 1721 Webster Street, Oakland, California. Background site information is based on data supplied to Piedmont Environmental & Engineering Group (PE & EG) by the Alameda County Department of Health (ACDOH).

## INTRODUCTION

The site is located in a commercial district in downtown Oakland. The Douglas Parking Garage consists of one single-floor concrete block building with glass skylights. The site structure covers the entire property with the exception of the sidewalk.

## STATEMENT OF PROBLEM

In August 1992, three (one 1,000-gallon and two 500-gallon) underground storage tanks, two pumps, and associated pipelines formerly containing gasoline were removed from the site by Barnaby & Brinker and soil samples were taken by Parker Environmental Services. Seven soil samples (T-1 to T-7) were collected from beneath the USTs and four soil samples (SW-1 to SW-4) were collected from the sidewalls of the excavation to the south at depths ranging from 7 to 14 feet below grade (fbg). Nine of 11 total soil samples from the tank excavations contained >100 parts per million (ppm) total petroleum hydrocarbons at gasoline (TPH-G) with a maximum of 1,500 ppm at T-4 and SW-2 in the southern excavation. Six soil samples (L-1 to L-6) were collected directly beneath the former pipeline and pump locations extending within the site structure at depths ranging from 1.5 to 2 fbg. Soil samples from these locations contained a maximum TPH-G concentration of 8.2 ppm at L-5 beneath a former pump. After soil sampling was completed, these excavations were backfilled, compacted, and resurfaced with concrete. There was no overexcavation beyond the aforementioned sampling points.

Due to hydrocarbon occurrence in onsite soil below the former USTs, it is possible that ground water has also been affected. The potential for migration of hydrocarbons from offsite sources to offsite properties is also of concern. A potential upgradient source of hydrocarbons in ground water is Toothman Development at 1736 Franklin Street which reported a fuel leak. At 1750 Webster Street, across the street from the subject site, is a potential downgradient recipient of hydrocarbons in ground water. During an environmental investigation by Applied Geoscience, hydropunch ground water samples collected at 20 fbg and 24 fbg revealed TPH-G concentrations of 42,000 and 200,000 parts per billion (ppb) respectively.

## **GROUND WATER**

According to other environmental studies within a one-quarter-mile radius, groundwater flow direction in this area is generally to the west-northwest toward Lake Merritt. Ground water depth beneath the site is unknown but based on the Applied Geoscience study across the street to the northwest, is estimated at approximately 20 fbg.

## **OBJECTIVE**

The objective of the work outlined in this workplan is to perform site characterization activities to assess if unauthorized releases on- and/or offsite have affected the soil and/or ground water beneath the subject site.

## **SCOPE OF WORK**

The following scope of work is intended to assess the occurrence of regulated substances in soil and/or ground water beneath the subject site. This scope of work for the following work plan is based on information obtained by the PE & EG.

### **Task 1: Records Search, Area Reconnaissance, and Site Visit**

#### **1.1 Perform Records Search**

A records search was performed at the Alameda County Department of Health (ACDOH). Information on the disposition of the former onsite USTs and the results of UST removal were collected and reviewed. Reports of investigations and history of adjoining and nearby properties were reviewed to aid in the determination of ground water quality, depth, and flow direction necessary for optimum monitoring well placement.

#### **1.2 Site and Area Reconnaissance**

A preliminary site visit to the Douglas Parking Garage and area reconnaissance to adjacent and nearby properties was performed to observe current conditions and document the presence of monitoring wells, storage tanks, and other features relevant to the objectives of this investigation. Results of the site visit and records search was used to assess the potential for on-and offsite contamination as well as contaminant migration onto and

from the subject site. Figure 1 depicts approximate monitoring well locations that were selected with the given knowledge of the site.

## **Task 2: Drilling and Monitoring Well Installation**

### **2.1 Develop Work and Health and Safety Plans**

Prior to drilling activities, PE & EG will prepare and submit Work and Health and Safety Plans to applicable regulatory agencies for approval. The work plan will present scope of work, soil boring and monitoring well locations, and field procedures. The Work and Health and Safety Plans will be submitted to Douglas Parking for approval prior to agency release.

The Health and Safety Plan is an integral part of field operating procedures, based on understanding potentially hazardous materials that may be present. It is intended to minimize exposure of unsafe materials and conditions to PE & EG personnel and subcontractors during field work. The Health and Safety Plan lists safety procedures for work to be performed, onsite safety officers, and preferred medical emergency locations.

### **2.2 Obtain Boring/Monitoring Well Permits**

PE & EG will obtain monitoring well construction and encroachment permits and coordinate field activities with applicable agencies.

### **2.3 Field Work Preparation and Utility Research**

An underground utilities survey will be performed to verify the location of underground utilities and potential interferences prior to drilling.

### **2.4 Install Soil Borings/Monitoring Wells**

PE & EG proposes to construct three soil borings/monitoring wells (to an estimated depth of 30 fbg) to assess the concentration and extent (if any) of subsurface contaminants. During the course of the field investigation, monitoring well depth may be adjusted. Monitoring wells will be located to investigate the potential for onsite migration of contaminants from offsite sources and offsite migration from onsite sources.

The exploratory soil borings/monitoring wells will be drilled using a truck-mounted hollow-stem auger drill rig equipped with eight-inch inner diameter augers. During drilling, soil samples will be collected using a modified California split-spoon sampler lined with brass or stainless steel tubes for laboratory analysis. During drilling soil lithology will be described, and field measurements of volatile organic compounds will be recorded by organic

vapor meter or photoionization detector (PID). Soil samples will be collected continuously at one well installation and at 5-foot intervals at the other two. Soil samples will be collected from the capillary fringe. Between monitoring well installations, all drilling tools will be steam cleaned.

All soil samples collected from the three soil borings/monitoring wells will be submitted to a qualified laboratory. Drill cuttings generated from the investigation will be contained in Department of Transportation approved (DOT-17H rated) 55-gallon drums and temporarily stored onsite, pending laboratory analysis to determine proper disposal. Procedures for drilling, logging, and soil sampling will be in accordance with the applicable procedures and regulatory guidelines.

Three soil borings will be converted to ground water monitoring wells to assess ground water quality. The monitoring wells will be constructed using four-inch diameter, 0.020-inch slotted, PVC well casing. The monitoring wells will be completed to a depth of approximately 10 feet below the top of the saturated zone. The screened interval will extend approximately 5 feet above the encountered saturated zone to allow for seasonal fluctuations. A sand filter pack will be installed to approximately 2 feet above the screened interval. Approximately two feet of bentonite will be placed above the sand filter pack and the remaining annulus filled with neat cement. The top of the wells will be secured with water-tight locking caps and 12-inch diameter utility boxes, finished approximately flush with the ground surface.

#### 2.5 Monitoring Well Development, Sampling, and Surveying

Monitoring wells will be properly developed according to standard regulatory protocol. The wells will be developed during construction using surge and pump methods designed to remove fine-grained materials, increase hydraulic communication between the formation and the well, and compact the filter pack. A minimum of 72-hours after development, fluid levels in all wells will be monitored, and then purged until pH, specific conductance and temperature have stabilized. Ground water samples will then be collected in accordance with standard protocols and appropriate regulatory requirements. Purged water will be stored onsite in DOT-17E rated 55-gallon drums, pending laboratory analysis to determine proper disposal.

Monitoring wells will be surveyed to a state or local benchmark if available, or an arbitrary datum established for ground water gradient magnitude and direction determination. Vertical elevations will be measured to 0.01 foot accuracy.

### Task 3: Laboratory Analysis of Soil and Ground Water Samples

Soil and ground water samples collected during investigations will be submitted to a qualified laboratory. Chain-of-custody procedures will be used documenting sample handling and transportation. Selected soil samples and

ground water samples will be analyzed for total petroleum hydrocarbons as gasoline (TPH-G) and benzene, toluene, ethylbenzene, and total xylenes (BTEX), in accordance with EPA Methods 8015 and 8020. Samples will be analyzed with a standard two-week turnaround time.

#### Task 4: Reporting

##### 4.1 Data Analysis/Interpretation

Data collected during soil boring and monitoring well installation will be analyzed for chemical and physical parameters to determine existing conditions and to develop a proposed scope of work, for future activities, if necessary.

##### 4.2 Report Preparation

Following completion of field investigations and laboratory analyses, a site characterization report will be submitted to Douglas Parking. Upon approval, duplicate site characterization reports will be sent to the ACDOH and the Regional Water Quality Control Board as required.

#### Task 5: Project Management

PE & EG will perform project management activities including: monitoring of budgetary controls, quality assurance/quality control, and customer/regulatory correspondence.

#### SCHEDULE

We are prepared to commence work immediately following receipt of written authorization to proceed. Completion of work is estimated within ~~six to eight weeks of receipt of an approved work plan.~~

Please call if you have any questions.

Sincerely,

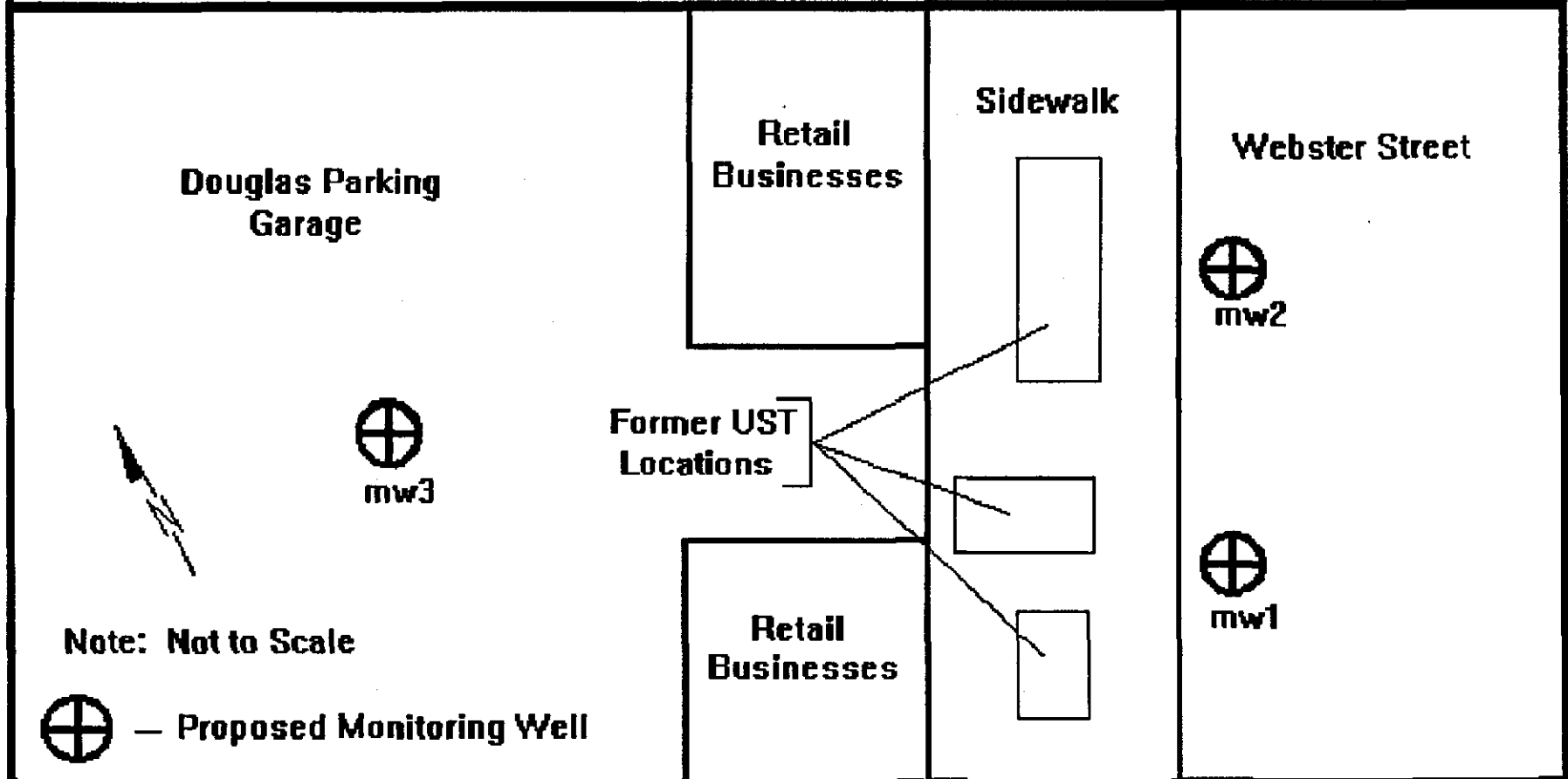
PIEDMONT ENVIRONMENTAL & ENGINEERING GROUP



Harry H. Shin, P.E.  
President

Enclosure

**Figure 1: Proposed Monitoring Well Locations**



**Note: Not to Scale**

 — Proposed Monitoring Well

**Piedmont Environmental & Engineering Group**



**2936 Seriana Way  
Union City, CA 94587**

**Douglas Parking  
1721 Webster Street  
Oakland, California**

## HEALTH AND SAFETY PLAN

### SITE DESCRIPTION

The Douglas Parking Garage, hereafter known as the site, is located at 1721 Webster Street in a commercial district in downtown Oakland, California. The site structure covers the entire property, with the exception of the sidewalk, and consists of one single-floor concrete block building with glass skylights. This site is used primarily for parking automobiles. Presently, there are no known hazardous wastes stored on this site.

### BACKGROUND INFORMATION

In August 1992, three (one 1,000-gallon and two 500-gallon) underground storage tanks, two pumps, and associated pipelines formerly containing gasoline were removed from the site by Barnaby & Brinker and soil samples were taken by Parker Environmental Services. Seven soil samples (T-1 to T-7) were collected from beneath the USTs and four soil samples (SW-1 to SW-4) were collected from the sidewalls of the excavation to the south at depths ranging from 7 to 14 feet below grade (fbg). Nine of 11 total soil samples from the tank excavations contained >100 parts per million (ppm) total petroleum hydrocarbons at gasoline (TPH-G) with a maximum of 1,500 ppm at T-4 and SW-2 in the southern excavation. Six soil samples (L-1 to L-6) were collected directly beneath the former pipeline and pump locations extending within the site structure at depths ranging from 1.5 to 2 fbg. Soil samples from these locations contained a maximum TPH-G concentration of 8.2 ppm at L-5 beneath a former pump. After soil sampling was completed, these excavations were backfilled, compacted, and resurfaced with concrete. There was no overexcavation beyond the aforementioned sampling points.

Due to hydrocarbon occurrence in onsite soil below the former USTs, it is possible that ground water has also been affected. The potential for migration of hydrocarbons from offsite sources to offsite properties is also of concern. A potential upgradient source of hydrocarbons in ground water is Toothman Development at 1736 Franklin Street which reported a fuel leak. At 1750 Webster Street, across the street from the subject site, is a potential downgradient recipient of hydrocarbons in ground water. During an environmental investigation by Applied Geoscience, hydropunch ground water samples collected at 20 fbg and 24 fbg revealed TPH-G concentrations of 42,000 and 200,000 parts per billion (ppb) respectively.

## POTENTIAL HAZARDS

### Hazardous Substances Suspected to be Currently Onsite:

<u>Substance</u>	<u>Phase</u>	<u>TWA (ppm)</u>	<u>Characteristics</u>
Gasoline	Liq/Vapor	None Estab'd	Distinctive Odor Major hazardous components: BTEX
Benzene	Liq/Vapor	1	Distinctive odor. The maximum acceptable peak concentration for an 8-hour shift is 5 ppm sustained for 15 minutes.
Toluene	Liq/Vapor	100	Distinctive odor.
Ethylbenzene	Liq/Vapor	100	Distinctive odor.
Xylene	Liq/Vapor	100	Distinctive odor.

### Potential Breathing Zone Hazards:

Former gasoline leak may release volatile components, such as BTEX mentioned above, into the breathing zone. The breathing zone will be continuously monitored by onsite personnel with a photoionization or a flame ionization detector (PID or FID).

### Potential Physical Hazards:

Workers will be working around heavy equipment and moving machinery and will be subject to manual lifting, sharp objects, and potential trip, slip, and fall hazards. This work may be performed in the winter, subjecting workers to potential cold stress.

## PERSONAL PROTECTIVE EQUIPMENT (PPE) AND PROTECTION LEVEL CRITERIA

The work at this site will be performed in Level D protection with a provision for a Level C upgrade if necessary. These levels of protection are designated as follows:

### Level D:

PPE: Coveralls (insulated if winter), gloves, steel-toed boots, hard hat and safety glasses

Criteria: Less than 1 ppm sustained ( $\geq 15$  minutes) organic vapor reading (above background levels) on a PID or FID in the breathing zone.

### Level C:

PPE: Full-face, air-purifying, canister-equipped respirator (MSHA/NIOSH approved), coveralls (insulated if winter), gloves, steel-toed boots and hard hat.



Criteria:  $\geq 1$  ppm and  $\leq 5$  ppm ( $\geq 15$  minutes) sustained organic vapor reading (above background levels) on a PID or FID in the breathing zone.

The maximum concentration for work in Level C protection will be determined by the air-purifying capabilities for the target potential contaminants at this site. If sustained PID or FID readings reach or exceed this concentration, any open holes will be backfilled. If the readings persist following backfilling operations, the work area will be evacuated and the proper authorities contacted.

#### MEDICAL MONITORING

All onsite personnel are required to have full physical exams, including extensive blood tests, on a yearly basis (minimum) or at a greater frequency if deemed necessary.

#### ONSITE PERSONNEL

Project Manager: Harry Shin

Site Safety Officer: Harry Shin

Contractors: Piedmont Environmental-Subcontractor Oversight  
West Hazmat Drilling (Subcontractor)

#### WORK AREA AND DESIGNATED ZONES

Access to the work area will be restricted by "caution" tape and cones in order that no unauthorized person or vehicle enters this area within 15 feet. This area will be designated as the Exclusion Zone.

#### EMERGENCY FIRST AID FOR SUBSTANCES PRESENT

<u>Substance</u>	<u>Exposure Symptoms</u>	<u>First Aid</u>
Gasoline (Includes BTEX compounds)	Contact with liquid form can cause eye and skin irritation. Inhalation of vapors causes dizziness or nausea. Chronic effects may include liver and kidney damage.	Call for medical aid. Liquid contact: Rinse exposed area with fresh water. Vapor Inhalation: Move personnel to an area outside the work zone for fresh air.

An upwind location will be designated by the Site Safety Officer during the tailgate health and safety meeting prior to the commencement of work in the morning. This location is subject to change during the day, depending on local wind currents and only as determined by the Site Safety Officer.

## FIRST AID EQUIPMENT ONSITE

First Aid Kit - Located in site building adjacent to work area.

Fire Extinguisher - Located same as above.

Emergency Eye Wash - Located same as above.

## ONSITE EMERGENCY PROCEDURES:

1. Personal injury or illness: Administer first aid and call ambulance if necessary.
2. Fire or Explosion: Turn off all motorized equipment, evacuate work area, meet at designated upwind location, and .
3. Earthquake: Turn off all motorized equipment, evacuate working area, and meet at designated upwind location.
4. Hazardous Material Spill or Release: Turn off all motorized equipment, evacuate work area to the designated upwind location, and call Emergency Spill Response.
5. Personal Protective Equipment (PPE) Failure: If any site worker experiences a failure or alteration of his/her PPE that affects the protection factor, that person shall immediately leave the Exclusion Zone. This person will not be permitted to reenter the Exclusion Zone until their PPE has been repaired or replaced.
6. Other Equipment Failure: If any other equipment onsite fails to operate properly, the Project Manager and the Site Safety Officer shall be notified immediately to determine if this affects continued onsite operations. If this failure affects the safety of onsite personnel if operation of this equipment is continued, all work in the Exclusion Zone with this equipment shall cease immediately until the appropriate actions are taken to rectify the situation.

## EMERGENCY PHONE NUMBERS

Fire: 911

Police: 911

Ambulance: 911

Local Hospital:

Emergency Spill Response:

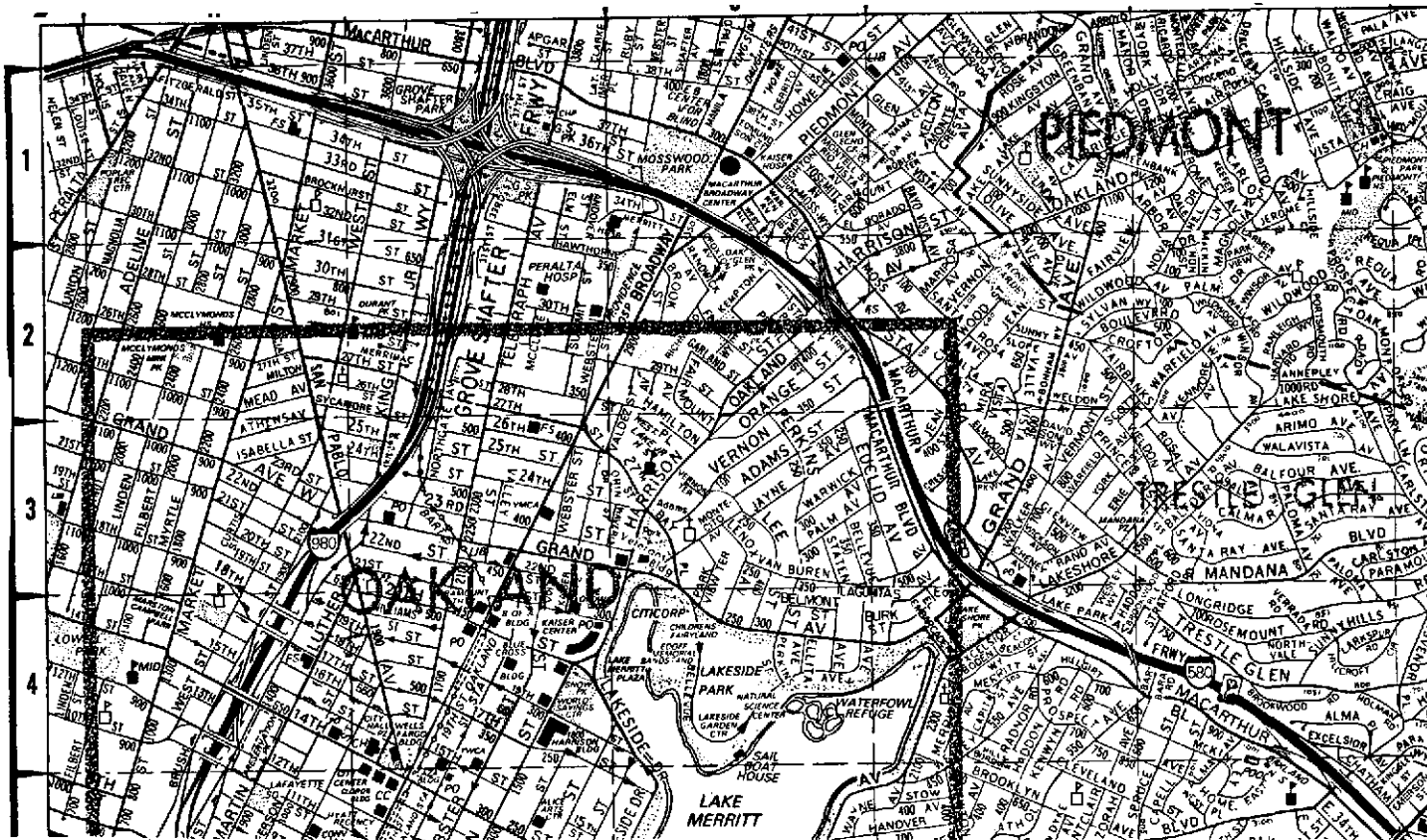
Poison Control Center: (415) 666-2845

Project Manager: Harry Shin - (510) 429-0199

Contractors: Piedmont Environmental - (510) 429-0199  
West Hazmat - (510) 782-8770



**Figure 1: Hospital Route**



**Piedmont Environmental & Engineering Group**



**2936 Seriana Way  
Union City, CA 94587**

**Douglas Parking  
1721 Webster Street  
Oakland, California**