Prepared For

Mr. Lewis Winchell
Sacramento Stucco Company, Inc.
P.O. Box 1166
Sacramento, CA 95691

3688

GROUNDWATER INVESTIGATION WORKPLAN

FORMER WESTERN STUCCO PRODUCTS

5115 EAST EIGHTH STREET

OAKLAND, CALIFORNIA

July 24, 1997

EBA Project Number 94-484

Prepared By

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Environmental Specialist

Reviewed By

Christine Scheib

Christine Scheib, REA #06901
Senior Environmental Specialist

Reviewed By

Duane Butler

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EBA WASTECHNOLOGIES
Engineers & Environmental Consultants

July 24, 1997

Mr. Lewis Winchell
Sacramento Stucco
P.O. Box 1166
Sacramento, CA 95691

RE: WORK PLAN - GROUNDWATER INVESTIGATION
FORMER WESTERN STUCCO PRODUCTS
5115 EAST EIGHTH STREET,OAKLAND, CALIFORNIA
EBA PROJECT No. 94-484

Dear Mr. Winchell:

EBA Wastechnologies (EBA) is pleased to submit this Work Plan for Subsurface Investigation for the above referenced site. This Work Plan describes proposed investigative work to further evaluate the extent of petroleum hydrocarbon impact from the former underground storage tanks (USTs) that were removed from the site. In a June 16, 1997 letter Mr. Barney Chan of Alameda County Environmental Health Services requested a work plan to perform additional site characterization at the subject site. A copy of this Work Plan is being submitted on your behalf to the Alameda County Health Care Services (ACHCS) and the San Francisco Bay Regional Water Quality Control Board (SFB-RWQCB) for their review and approval. Upon your approval, along with ACHCS and SFB-RWQCB approval, we will proceed with implementation of this Work Plan.

Sincerely,
EBA WASTECHNOLOGIES

Pierre Lescure
Environmental Specialist

PL/mc

cc: Mr. Barney Chan, ACHCS
SFB-RWQCB

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TABLE OF CONTENTS

1.0 INTRODUCTION

It is EBA's understanding that two 8,000-gallon underground storage tanks (USTs) were removed from the subject property in March 1991. Analytical results of soil and groundwater samples collected from the two UST excavations indicated petroleum hydrocarbons as gasoline and diesel were present. The Alameda County Health Care Services (ACHCS) is requiring that further site characterization be conducted at the subject site. It is this request by the ACHCS that has prompted the preparation of this Work Plan. It is EBA's understanding that for this site to be considered for closure as a low risk site additional groundwater characterization is required.

1.1 Statement of Scope of Work

EBA proposes to advance six soil borings to 20 feet below grade surface for the collection of groundwater samples to determine the impact of petroleum hydrocarbons to areal groundwater. The first five boring locations will be in the assumed up and downgradient locations of groundwater flow direction, which is anticipated to be west southwest (Appendix A, Figure 2). Based on field screening, the sixth boring will be located approximately fifteen feet further downgradient of the boring that demonstrates the greatest petroleum hydrocarbon impact. Groundwater samples are to be analyzed by a State-certified laboratory for diesel (TPH-d), gasoline (TPH-g), benzene, toluene, ethyl benzene, xylenes (BTEX) and methyl tert butyl ether (MTBE). The borings will be installed using a hydraulic push drilling device in lieu of a rotary drill rig which will eliminate soil cuttings and be least disruptive to the site.

1.2 Site Location

The project site is located in the City of Oakland,between East Eighth Street to the east and the Southern Pacific Railroad tracks to the west, in Alameda County in California; please refer to Vicinity Map, Figure 1. The site is at an approximate elevation of 10 feet above mean sea level (MSL). San Leandro Bay is located approximately 2,400 feet southwest of the subject site. Land use in this area is predominantly industrial and commercial.

1.3 Site History

The subject site was formerly a stucco products facility where the ingriedients for stucco were stored and mixed. On March 26, 1991 two 8,000-gallon steel USTs were removed from the site under the supervision of Kaprealian Engineering, Inc. (KEI), of Benicia, California. One UST stored diesel fuel and the other UST stored unleaded gasoline. Each UST was removed from a separate excavation. Four holes with a maximum diameter of ½ inch were observed in the gasoline UST. Ms. Cynthia Chapman of the ACHCS was present during the USTs removal and following soil sampling.

Groundwater was encountered in the UST excavations at the time of removal at an approximate depth of nine feet below grade surface (bgs). Due to the groundwater in the UST excavations samples from beneath the former USTs could not be collected. Four sidewall soil samples were collected from the UST excavations approximatly 6 inches above the groundwater level by KEI.

Approximately 4,000 gallons of groundwater was pumped from the UST excavations after the soil sampling was completed. On March 28, 1991 KEI collected a groundwater sample from the gasoline UST excavation. KEI returned to the site on March 29, 1991 and collected a groundwater sample from the diesel UST excavation. Ms. Cynthia Chapman with the ACHCS was present during the groundwater sampling.

The samples were analyzed by Sequoia Analytical Laboratory in Concord, California, for total petroleum hydrocarbons as gasoline (TPH-g), total petroleum hydrocarbons as diesel (TPH-d), benzene, toluene, ethyl benzene and xylenes (BTEX).

Analytical results of the two soil samples collected from the diesel UST excavation detected TPH-g at 120 parts per million (ppm) each and TPH-d at 100 and 21 ppm. The analytical results of the groundwater sample collected from the diesel UST excavation indicated TPH-g at 1,500 parts per billion (ppb), TPH-d at 34,000 ppb and benzene at 240 ppb. Analytical results of the two soil samples collected from the gasoline UST excavation were below laboratory detectable limits for all analytes except xylenes. The analytical results of the groundwater sample collected from the gasoline UST excavation indicated TPH-g at 800 parts per billion (ppb), TPH-d at 13,000 ppb and benzene at 1.8 ppb.

On April 4, 1997, EBA Wastechnologies (EBA) personnel visited the subject site and collected samples from the three onsite soil stockpiles. The samples were analyzed by Legend Analytical Services of Santa Rosa, California, for TPH-g, TPH-d and BTEX. The soil stockpile samples were below detectable levels for TPH-g and BTEX. TPH-d was detected in the soil stockpile samples at concentrations of 290ppm, 92 ppm and 78 ppm. On May 19, 1997 Conti Material Services, Inc., of Stockton, California, disposed of approximately 130 cubic yards of stockpiled soil at Forward Inc. Landfill in Stockton, California.

2.0 GROUNDWATER INVESTIGATION

2.1 Regional Hydrogeologic Setting

The subject site is mapped as being underlain by Holocene alluvium (U.S. Geologic Survey Professional Paper 943 "Flatland Deposits of the San Francisco Bay Region," California, 1979). The subject site is mapped as being situated at the approximate geologic cantact of bay mud and fine grained alluvium. The fine-grained alluvium is defined as typically consisting of unconsolidated, moderately to poorly sorted silt and clay rich in organic material. These materials are assumed to overlie older alluvial fan and stream terrace deposits on the bay margin. The Bay Mud is described as typically consisting of unconsolidated, water-saturated plastic clay and silty clay rich in organic material, which locally contains lenses of well-sorted silt, sand and beds of peat.

Soils at the subject site encountered during UST removal activities appeared to consist primarily of silty clay to the excavated depth of nine feet bgs.

Based on local topography, groundwater flow is believed to be in a southwesterly direction from the Oakland hills to the San Leandro Bay.

2.2 Boring Locations

The proposed boring locations are shown on Figure 2, Appendix A. This investigation is proposing the installation of two borings in anticipated upgradient positions and three borings in downgradient positions of the former USTs. If, based on field screening, the three downgradient borings indicate petroleum hydrocarbon contamination, a sixth boring will be initiated further downgradient of the former USTs.

2.3 Equipment Decontamination

The percussion rods and other tools will be steam cleaned before drilling each boring to minimize the possibility of cross-contamination. The sampling equipment will be cleaned prior to collecting each groundwater sample with a trisodium phosphate solution, a potable water rinse, and deionized water rinse. Equipment and tools will be steam cleaned on-site in a plastic lined containment area. Decontamination water from equipment clean-up will be stored on-site in properly labeled DOT 17H 55-gallon drums.

3.0 SAMPLING PROCEDURES

3.1 Groundwater Sampling

The borings will be continuously advanced to five feet below first encountered groundwater with a truck-mounted hydraulic percussion rig. The geologist will monitor the drilling process with a PID meter for volatile hydrocarbons. The percussion rods will be removed from the boring and slotted PVC well screen casing will be temporarily placed in the boring. Grab groundwater samples will be collected from the borings through the slotted PVC well screen casing with a disposable, bottom-valve, plastic bailer. The sample will be transferred directly into 40 ml glass vials and one liter amber bottles, placed in plastic bags, and put on ice for transport to the analytical laboratory under chain-of-custody procedures. A water level measurement will be taken before sampling to the nearest 0.1 feet. Upon completion of grab groundwater sampling activities, the well screen casing will be removed and the exploratory soil borings will be backfilled using a cement-bentonite slurry or bentonite chips.

A California state-certified laboratory will analyze the groundwater samples using methods approved by the California Regional Water Quality Control Board (CRWQCB) and the Environmental Protection Agency (EPA). The laboratory will analyze the groundwater samples for TPH-g, TPH-d, BETX and MTBE. We anticipate using North State Environmental Laboratories, of South San Francisco, California as our analytical laboratory.

4.0 REPORT

The information collected, analytical results, and EBA's conclusions and recommendations will be summarized in a report to the ACHCS and SFB-RWQCB. The report will include a site map showing features relevant to the investigation, a description of the work performed and graphical boring logs. Summary tables of analytical results will be presented and complete laboratory analytical data will be appended to the report. Report conclusions will address the vertical and lateral extent of contamination. A preliminary evaluation of various corrective-action alternatives or a request for closure will be presented based on the information gathered during our investigation at the site.

5.0 SITE HEALTH AND SAFETY PLAN

Project No.: EB94-484 **Field Activities Date:** August -September, 1997

Client: Sacramento Stucco **Address:** P.O. Box 1166
West Sacramento, CA 95691

Contact Person: Mr. Lewis Winchell **Telephone No.:** (916) 372-7442

Job Location: 5115 East Eighth Street, Oakland, California

Project Description:
- Provide technical assistance for a Subsurface Investigation of former gasoline and diesel underground storage tanks.
  - Installation of up to 6 soil borings.
  - Collection of groundwater samples.

Project Manager: Christine Scheib **Site Health & Safety Manager:** Pierre Lescure

Chemical Hazards:

CHEMICAL NAME	DESCRIPTION	HEALTH & SAFETY STANDARDS	PERSONS EXPOSED* AND POTENTIAL ROUTES OF EXPOSURE	SYMPTOMS OF ACUTE EXPOSURE
Benzene	Carcinogen, aromatic HC	8-hr. TLV=10 ppm PEL=1 ppm	Inhalation, dermal	Headache, dizziness
Toluene	Aromatic HC	8-hr. TLV=100 ppm	Inhalation, dermal	Headache, dizziness
Xylenes	Aromatic HC	8-hr. TLV=100 ppm	Inhalation, dermal	Headache, dizziness
Ethylbenzene	Aromatic HC	8-hr. TLV=100 ppm	Inhalation, dermal	Headache, dizziness
Gasoline	Flammable liquid	8-hr. TLV=300 ppm Flashpt.=-50° F LEL=1.4%, UEL=7.6%	Inhalation, dermal	Headache, dizziness, eye/skin irritation
Diesel	Combustible liquid		Inhalation, dermal	Headache, dizziness, eye/skin irritation

Note: Health and safety standards refer to airborne concentrations to which nearly all workers may be repeatedly exposed daily without harmful effects. The concentrations are time-weighed averages for a normal 8-hour work period.

Physical Hazards: Fire and explosion (primarily gasoline), heavy equipment, noise, overhead and underground utilities.

Personal Protective Equipment Required: First aid kit, hard hat, eye protection, noise protection, chemical-protective gloves, steel-toed rubber boots, respirator with organic vapor cartridge.

5.0 SITE SAFETY PLAN (Continued)

Air Monitoring Strategy (including action levels): Monitor breathing zone with PID meter (ppm scale). If greater than 5 ppm in breathing zone for five minutes or greater than 30 ppm instantaneous, don respirator and/or go upwind of boring. Measure breathing zone concentration of benzene during excavation using detector tube. Don respirator if fuel odor persists or if benzene concentration is detectable in breathing zone. If benzene concentration in breathing zone exceeds 10 ppm, go to area where not detectable (respirator will not offer adequate protection). Record all measurements in field notebook.

Monitor LEL levels in work area. If LEL >10%, stop work, remove sources of heat and ignition, and continue monitoring. If LEL >15%, stop work until LEL <10%.

Site Control Measures: 1) Place used protective gear and decontamination equipment in containers for proper disposal; 2) no smoking within 500 feet of work area; 3) no source of heat or ignition within 500 feet of work area if greater than 10% LEL reading measured; 4) no eating, drinking, or smoking on-site; 5) bring drinking water; 6) decontaminate boots and sampling equipment prior to leaving site; 7) inform workers (including non EBA workers) on-site of elevated HC or benzene readings and document.

Decontamination Procedures (personal and equipment): Decontaminate boots and soil sampling equipment with TSP and water. Wash and rinse sampling equipment with deionized water. Store rinse water in 55-gallon drums (labeled) pending receipt of laboratory results or discharge rinse water into contained stockpile awaiting final disposal or treatment.

Decontaminate heavy equipment by scrapping loose material then wash with steam cleaning unit. Collect and combine loose material and rinsate in stockpile awaiting final disposal or treatment.

Hospital/Clinic: Alameda Hospital **Phone:** 510-523-4357 (Emergency)

Hospital Address: 2070 Clinton Avenue, Alameda, CA (see Hospital Map)

5 SITE SAFETY PLAN (Continued)

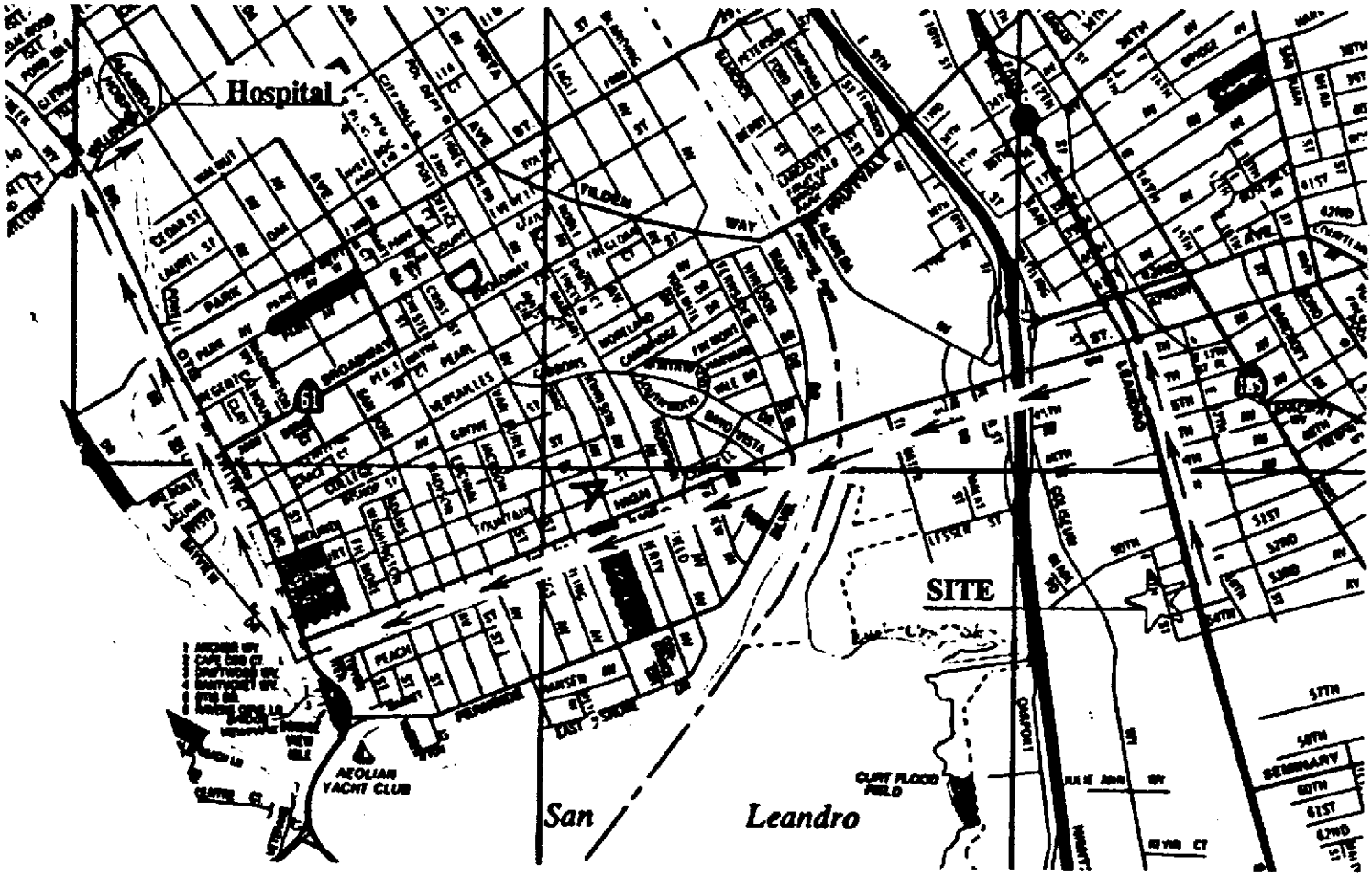
Directions:

1) Go East on 52nd Street, turn left (north) on San Leandro Street.
2) Turn Left (west) on High Street.
3) Turn right (north) on Otis Dr.
4) Turn right (east) on Willow Street, follow signs to emergency room

Paramedic: 911 **Fire/Police Dept.:** 911

Emergency Procedures: Call 911 for fire or serious injury. Proceed to hospital (see map) if necessary for minor injuries. Call Duane Butler (707) 544-0784.

Hospital map



5.0 SITE SAFETY PLAN (Continued)

Prepared by: Pierre Lescure	**Reviewed/Approved by:**
Date: July 24, 1997	**Date:**
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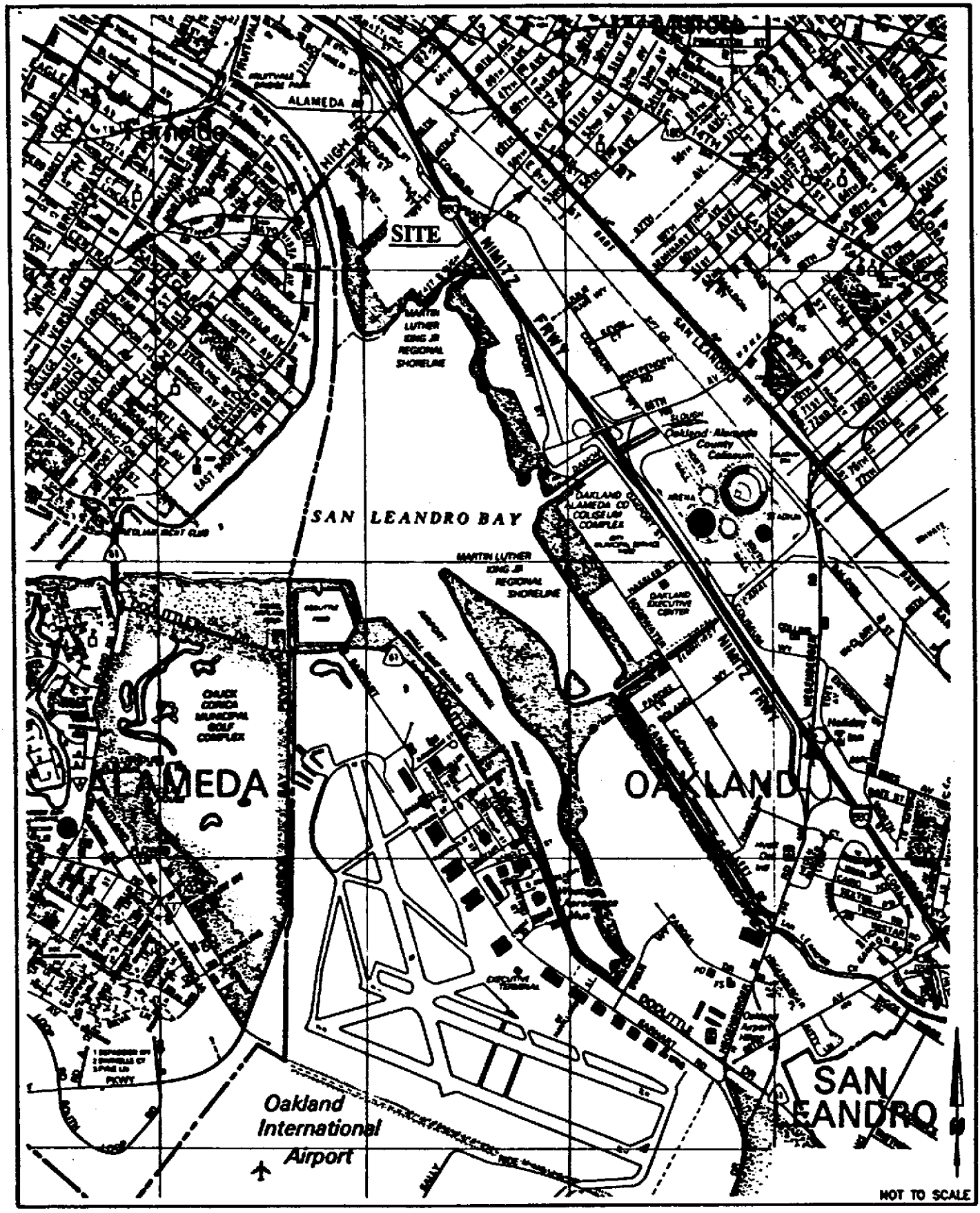

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WESTERN STUCCO PRODUCTS
5115 EAST 8TH STREET
OAKLAND, CALIFORNIA

LOCATION MAP

FIGURE
1

JULY 1997
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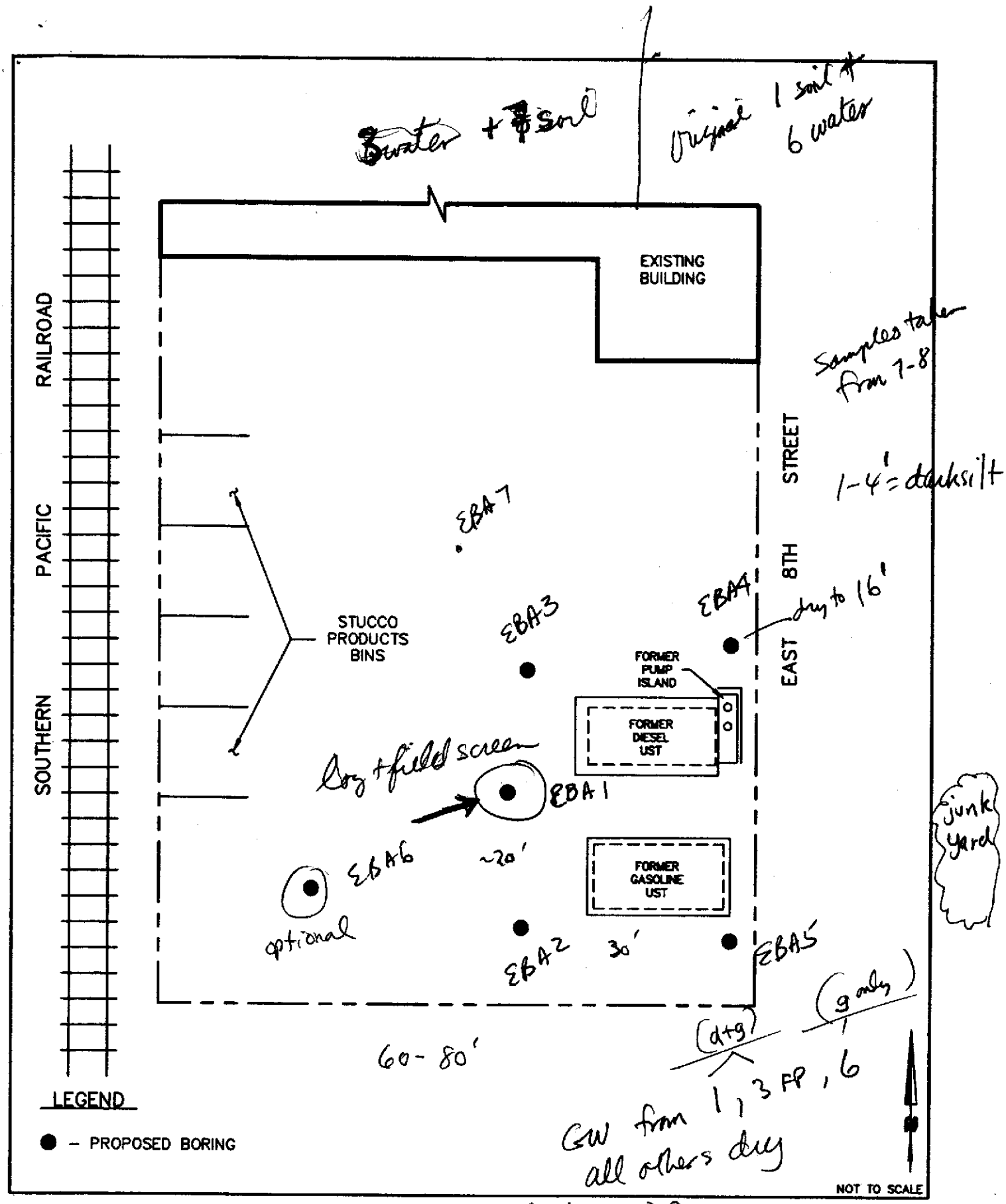

T = 600 ppm PID

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WESTERN STUCCO PRODUCTS
5115 EAST 8TH STREET
OAKLAND, CALIFORNIA

7 soil + 3 Grab GW

SITE PLAN

FIGURE 2

JULY 1997
484SP.DWG