

ALAMEDA COUNTY
HEALTH CARE SERVICES



AGENCY
DAVID J. KEARS, Agency Director

ENVIRONMENTAL HEALTH SERVICES

1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577
(510) 567-6700
(510) 337-9335 (FAX)

October 13, 1999
StID # 5538

REMEDIAL ACTION COMPLETION CERTIFICATION

Diane Heinz
Port of Oakland
530 Water Street, 2nd Floor
Oakland, CA 94607

RE: 1755 Embarcadero, Oakland, CA 94606

Dear Ms. Heinz:

This letter confirms the completion of site investigations and remedial action for the 10,000-gallon diesel fuel underground storage tank (UST), 2,000-gallon gasoline UST, and the 10,000-gallon fuel oil UST removed from the above described location. Thank you for your cooperation throughout this investigation. Your willingness and promptness in responding to our inquiries concerning the former underground tanks is greatly appreciated.

Based upon the available information and with provisions that the information provided to this agency was accurate and representative of site conditions, no further action related to the underground tank release is required.

This notice is issued pursuant to a regulation contained in Title 23, Division 3, Chapter 16, Section 2721 (e) of the California Code of Regulations.

Please contact Juliet Shin at (510) 567-6763 if you have any questions regarding this matter.

Sincerely,


Mee Ling Tung
Director, Environmental Health

c: J. Shin, Hazardous Materials Division-files
Chuck Headlee, RWQCB
Mr. Dave Deaner, SWRCB Cleanup Fund
Mr. Leroy Griffin, City of Oakland OES, 1605 Martin Luther
King Jr. Way, Oakland CA 94612

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October 13, 1999

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Port of Oakland
530 Water Street, 2nd Floor
Oakland, CA 94607

STID: 5538
Re: 1755 Embarcadero, Oakland, CA 94606

Dear Ms. Heinz,

This letter transmits the enclosed underground storage tank (UST) case closure letter in accordance with Chapter 6.75 (Article 4, Section 25299.37[h]) of the California Health and Safety Code. The State Water Resources Control Board (SWRCB) has required since March 1, 1997 that this agency use this case closure letter for all UST leak sites. We are also transmitting to you the enclosed case closure summary. These documents confirm the completion of the investigation and cleanup of the reported release at this site.

SITE INVESTIGATION AND CLEANUP SUMMARY

Please be advised that the following conditions exist at the site:

- Low levels of TPHd and TPHmo remain in the groundwater at the site at approximately 170ppb and 320ppb.

If you have any questions, please contact the undersigned at (510) 567-6763.

Sincerely,

Juliet Shin, R.G.
Hazardous Materials Specialist

Enclosures:

1. Case Closure Letter
2. Case Closure Summary

Cc: Ariu Levi, Chief

fb#01-1193

Felix
OK to close

CASE CLOSURE SUMMARY
Leaking Underground Fuel Storage Tank Program

I. AGENCY INFORMATION

Date: April 27, 1999

Agency name: **Alameda County-HazMat**
City/State/Zip: **Alameda, CA 94502**
Responsible staff person: **Juliet Shin**

Address: **1131 Harbor Bay Pkwy**
Phone: **(510) 567-6700**
Title: **Hazardous Materials Spec.**

II. CASE INFORMATION

Site facility name: **Port of Oakland**
Site facility address: **1755 Embarcadero, Oakland, CA 94606**
RB LUSTIS Case No: **N/A** Local Case No./LOP Case No.: **5538**
URF filing date: **02/10/89** SWEEPS No: **N/A**

CALIFORNIA REGIONAL WATER

JUN 25 1999

QUALITY CONTROL BOARD

<u>Responsible Parties:</u>	<u>Addresses:</u>	<u>Phone Numbers:</u>
Port of Oakland Contact: Diane Heinz	530 Water Street, 2 nd Flr. Oakland, CA 94607	(510) 272-1467

<u>Tank No:</u>	<u>Size in gal.:</u>	<u>Contents:</u>	<u>Closed in-place or removed?:</u>	<u>Date:</u>
1	10,000	diesel	removed	01/18/89
2	2,000	gasoline	removed	01/18/89
3	10,000	fuel oil	removed	07/03/90

III. RELEASE AND SITE CHARACTERIZATION INFORMATION

Cause and type of release: **Unknown**
Site characterization complete? **YES**
Date approved by oversight agency: **April 27, 1999**
Monitoring Wells installed? **YES** Number: **A total of two permanent monitoring wells**
Proper screened interval? **YES**
Highest GW depth below ground surface: **4-feet bgs in boring TW-2 on 08/24/95** Lowest depth:
7.96-feet bgs in Well MW-1 on 3/13/97
Flow direction: **Westerly**
Most sensitive current use: **Alameda Estuary**
Are drinking water wells affected? **No** Aquifer name: **Not Applicable**

Is surface water affected? **Possibly, but at levels that are below human health- and ecologically-protective threshold values**

Nearest affected SW name: **Alameda Estuary**

Off-site beneficial use impacts (addresses/locations):

Report(s) on file? **YES** Where is report(s) filed? **Alameda County** **Oakland Fire Dept**
1131 Harbor Bay Pkwy **and** **505 14th St, Ste 510**
Alameda, CA 94502 **Oakland, CA 94612**

Treatment and Disposal of Affected Material:

<u>Material</u>	<u>Amount (include units)</u>	<u>Action (Treatment or Disposal w/destination)</u>	<u>Date</u>
-Tank	10,000-gallon	H & H Ship Service Co. Inc. 220 China Basin San Francisco	01/18/89
-Tank	2,000-gallon	(Same as Above)	01/18/89
-Tank	10,000-gallon	(Same as Above)	07/03/90
-Hazardous Waste Liquid	7,500 gallons	(Same as Above)	07/03/90
-Waste Containing lead and epoxy	4,700 lbs	Envirosafe Services of Idaho Idaho 83624	Btwn 04/24/90 & 05/29/90
-Contaminated Soil	7,200 lbs	(Same as Above)	Btwn 04/24/90 & 05/29/90
-Waste Asphalt	400 lbs	(Same as Above)	04/24/90
-Contaminated Soil	4 cubic yards	(Same as Above)	06/28/90
-Aerated Soil	300 cubic yards	Metropolitan Oakland Int'l Airport (behind the Federal Express Bldg)	08/06/90
-Excavated Soils	90 cubic yards	Contra Costa Sanitary Landfill Richmond, CA	07/25/90
-Bioremediated Soil	84 cubic yards	Undeveloped Port of Oakland Property on Hassler and Oakport Streets in Oakland	08/22/90

Maximum Documented Contaminant Concentrations - - Before and After Cleanup

Contaminant	Soil (ppm)		Water (ppb)	
	Before	After	Before ³	After
TPH (Gas)	60 ¹	ND	500	ND
TPH (Diesel)	1,700 ¹	ND	23,000 ⁷	170
Kerosene	3,700 ⁴	ND	NA	
Oil & Grease	850 ⁴	ND	30,000 ⁶	
TPHmo	30 ⁸		420 ⁸	320
Benzene	0.47 ²	ND	8	ND
Toluene	ND	ND	3	ND
Ethylbenzene	0.63 ²	ND	1	ND
Total Xylenes	0.38 ²	ND	4	ND
MTBE	NA		ND	ND
PNA ^s *:			ND ⁷	ND
Pentachlorophenol	26	ND ⁵	"	"
Benzo(a)anthracene	10		"	"
Benzo(a)pyrene	26		"	"
Benzo(a)fluoranthene#	23		"	"
Indeno(1,2,3-cd)pyrene	23		"	"
Dibenzo(a,h)anthracene	9.5		"	"
Metals ^A				
Chromium	Refer to "Note"		171 ⁷	ND
Lead	"		1290 ⁷	ND
Arsenic	"		15 ⁹	ND
Copper	"		11.5 ⁹	ND
Chlorinated Hydrocarbons (Method 8010)			ND ⁷	

NOTE: Soil samples LKS-1a, LKS-1b, LKS-2a, LKS-2b, LKS-3a, LKS-3b, LKS-7a, LKS-7b, LKS-8a, LKS-8b, and CS-2, collected from the Shoreline Area, were analyzed for Cadmium, Chromium, Lead, Nickel, and Zinc. Only the lead concentrations in sample LKS-1a and LKS-7a were of concern because they exceeded ten times the Soluble Threshold Limit Concentration (STLC). However, when the Wet Test or solubility test was conducted on these samples they did not exceed the STLC value of 5ppm for lead.

NA=Not Analyzed

1-Soil samples collected from the March 1989 overexcavation of the former 2,000-gallon gasoline UST

2-Soil samples collected from beneath the former 2,000-gallon gasoline UST during the January 89 tank removal

3-Groundwater sample WS-1 collected from the tank excavation on 3/3/89.

4- Sample W.O., collected from the ramp leading up to the loading dock of the on-site building at about three-feet below ground surface

5-Overexcavation sample results collected on August 15, 1989

6-Water sample, W1, collected from the 10,000-gallon fuel tank pit in July 1990. It appears that the later analysis for TPHmo, kerosene, and TPHg covered the same carbon range as the original Oil & Grease analysis.

7-Water sample collected from Well TW-1 in August 1995.

8-Samples collected from MW-1 in 8/96.

9-Samples collected from MW-1 and MW-2 and filtered through a 0.45-micron filter.

A-Only those metal concentrations that exceeded ten times the applicable STLCs were listed. The chromium and lead concentrations provided in the table were the result of total metals analyses as opposed to dissolved analyses.

*-PolyNuclear Aromatic Hydrocarbons (PNAs) that initially exceeded threshold values provided in the U.S. EPA's Preliminary Remediation Goals (PRGs), identified in Sample CS-2 in the Shoreline Area. All PNA concentrations were excavated to below PRG threshold values except for benzo(a)pyrene, whose remaining concentration was only 0.44ppm.

#-PNA that exceeded the PRGs in sample LKS-19 collected from the Shoreline Area.

Comments (Depth of Remediation, etc.):

See Section VII, Additional Comments, etc...

IV. CLOSURE

Does completed corrective action protect existing beneficial uses per the Regional Board Basin Plan? **YES**

Does completed corrective action protect potential beneficial uses per the Regional Board Basin Plan? **YES**

Does corrective action protect public health for current land use? **YES**

Site management requirements: **A site safety plan must be prepared for construction workers in the event excavation/trenching is proposed in the vicinity of residual soil and groundwater contamination.**

Should corrective action be reviewed if land use changes? **NO**

Monitoring wells Decommissioned: **Not Applicable**

List enforcement actions taken: **None**

V. LOCAL AGENCY REPRESENTATIVE DATA

Name: **Juliet Shin**

Title: **Haz Mat Specialist**


Signature: 

Date: *06/04/99*

Reviewed by

Name: **Eva Chu**

Title: **Haz Mat Specialist**

Signature: 

Date: *5/23/99*

Name: **Thomas Peacock**

Title: **Supervisor**

Signature: 

Date: *5-6-99*

VI. RWQCB NOTIFICATION

Date Submitted to RB: *6/10/99*

RB Response: *Concur*

RWQCB Staff Name: **Chuck Headlee**

Title: **EG**

Signature: 

Date: *6/11/99*

VII. ADDITIONAL COMMENTS, DATA, ETC.

The site is located on the east side of the Brooklyn Basin of the Alameda Estuary, on the southwest side of Embarcadero, and is located within 100 feet from the Estuary so the site can be categorized as a

"Saltwater Ecological Protection Zone" (refer to Figures 1 & 2). The site was formerly a tidal marsh, until a sea wall was built and filled with dredge spoils beginning in the early 1900s. Groundwater in the area fluctuates with the varying tides. Investigations were initiated at the site in 1989 because the Port had identified this site as a possible future location of a public shoreline trail. The lithology of the site appears to be clay to clayey sand to approximately 12 feet below ground surface (bgs), which is interpreted as fill, and lean clay from 12-feet bgs to the maximum depths of the borings, 17.5-feet bgs, which appears to be Bay Mud.

One 10,000-gallon diesel underground storage tank (UST) and one 2,000-gallon gasoline UST were removed from the site on January 18, 1989 (refer to Figure 3). The diesel UST was installed at the site in 1975. It is unknown when the gasoline UST was installed at the site. The tanks were operated by the Damasco Bakery, occupants of the site since the 1970s through 1982. Soil surrounding the tanks was composed of various backfill materials, mainly silty-clayey sand. Water was encountered at the bottom of the diesel tank excavation at ~10-feet bgs. There was a limited fine sheen floating on the water.

Two soil samples were collected two-feet below each end of each of the two USTs, and two soil samples were collected 1.5 feet below the diesel UST piping. It appears that a series of groundwater samples were collected from the UST excavations on 1/18/89, 02/21/89, and 03/03/89. All the soil and water samples were analyzed for Total Petroleum Hydrocarbons as Diesel (TPHD), TPH as gasoline (TPHG), and benzene, toluene, ethylbenzene, and total xylenes (BTEX). Up to 990 parts per million (ppm) TPHD and 30ppm TPHG were identified in the soil samples and up to 8 parts per billion (ppb) of benzene was identified in the groundwater samples (refer to Table 1 for analytical results).

It appears that soils excavated from the diesel UST pit were placed back into the pit. The soil sample from this excavated soil identified 28ppm TPH as diesel and no BTEX. A total of **300 cubic yards** of soil was excavated from the former gasoline tank pit. The excavation measured 50-feet by 35-feet and 5-feet deep. Four soil samples were collected from the excavation walls, EM-1E; EM-2S; EM-3W; and EM-4N (refer to Figure). Additionally, sample W.O. was collected from the ramp leading up to the loading dock of the on-site building at about 3-feet bgs. These samples were analyzed for TPHG, TPHD, kerosene, BTEX, and Oil & Grease. Based on the fact that 1,700 ppm diesel was identified in sample EM-1E, and 3,700ppm of kerosene were identified in Sample W.O., an additional **174 cubic yards** of soil was excavated from the ramp area (refer to Table 2 for analytical results). Three verification soil samples were subsequently collected: EM-5; EM-6; and EM-7. These three samples were only analyzed for TPHG, TPHD, and kerosene. No contaminants were detected above detection limits. The excavated soil from the gasoline tank pit area was aerated.

In March 1989, based on a site reconnaissance to locate possible sources of contamination on site, five borings, E1 through E5, were drilled at the site (refer to attached Figure 5). Two soil samples were collected from each boring at depths ranging from 4- to 8-feet bgs. Additionally, one water sample, W-1, was collected from the sump inside the warehouse. These samples were analyzed for gasoline, kerosene, diesel, and Semi-Volatile Organic Compounds (SVOCs) using Method 8270. No contaminants were identified above detection limits.

Between February and September 1989, a total of 19 soil samples were collected from the Boat Ramp and Shoreline Areas. Two soil samples (S-1a and S-1b) were collected from a depth of one- to two-feet bgs from the **Boat Ramp** on February 21, 1989 (refer to Figure 6). Samples were analyzed for TPH (Method 8015), volatile organic compounds (Method 8240), and semi-volatile organic compounds

(Method 8270). Analysis results identified Pentachlorophenol at 26ppm, which exceeded the threshold value of 7.9ppm for industrial sites given in the U.S. Environmental Protection Agency's Preliminary Remedial Goals (PRGs), and the TTLC Hazardous Waste threshold value of 17ppm given in Title 22 California Code of Regulations. Consequently, five additional soil samples (LKS-4a; LKS-4b; LKS-5; LKS-6a; and LKS-6b) were collected from three locations at depths ranging from two- to six-feet bgs to delineate the extent of contamination. These samples were analyzed for PNAs and TPH. Pentachlorophenol was not identified in any of these samples. Only pyrene at 0.39ppm and diesel at 36ppm and 48ppm were identified, which are all below the current threshold values (refer to Table 3 for analytical results). The source of the pentachlorophenol may have been from treated wood used for construction of the facility. Based on the results of soil samples, approximately **1.5 cubic yards** of soil was excavated and placed into **five 55-gallon drums** for off-site disposal. These drums were hauled off site on April 24, 1990 by North State Environmental of South San Francisco, and disposed of at Envirosafe Services of Idaho, a Class I Hazardous Waste Disposal Facility. The dimensions of the excavated area were 3-feet long by 4-feet wide by 2-feet deep. Following excavation, one soil sample, CS-1, was collected from inside the excavation at a depth of approximately 2-feet bgs, and analyzed for SVOCs. Only 0.73 ppm bis(2-ethylhexyl)phthalate was identified, which is below threshold values.

Shoreline Area – Ten soil samples (LKS-1a; LKS-1b; LKS-2a; LKS-2b; LKS-3a; LKS-3b; LKS-7a; LKS-7b; LKS-8a; and LKS-8b) were collected from five locations in the Shoreline Area (refer to Figure 6 and Table 4). These samples were collected from depths ranging from 2- to 6-feet bgs, and were analyzed for heavy metals; TPH (Method 8015), and SVOCs (Method 8270). The total concentrations of lead in samples LKS-1a and LKS-7a exceeded ten times the STLC. Therefore, a WET test was conducted for these samples, and the results did not exceed the STLC for lead of 5ppm.

During sample collection at LKS-2, a 6- to 12-inch lense of dark-colored soil was observed at a depth of approximately 5-feet bgs. Sample LKS-2b identified benzo(b)fluoranthene, benzo(a)pyrene, indeno (1,2,3-cd)pyrene, and dibenzo(a,h)anthracene exceeding PRG levels. Approximately **1.4 cubic yards** of discolored soil was removed and placed into **five 55-gallon drums** for off-site disposal. These drums were hauled off site on May 29, 1990 by North State Environmental of South San Francisco, and disposed of at Envirosafe Services of Idaho, a Class I Hazardous Waste Disposal Facility. One confirmation soil sample, CS-2, was collected and identified a total of 172.2ppm PNAs. Out of this total, the following PNA constituents exceeded the PRG threshold values: benzo(a)anthracene @ 10ppm; benzo(k)fluoranthene @ 28ppm; benzo(a)pyrene @ 26ppm; indeno(1,2,3-cd)pyrene @ 23ppm; dibenzo(a,h)anthracene @ 9.5ppm.

In August through December 1989, 12 additional soil samples were collected from nine soil borings located in the vicinity of the previously identified PNA contamination (LKS-9A; LKS-9B; LKS-12A; LKS-12B; LKS-14, LKS-16; LKS-17a; LKS-17b; LKS-19; LKS-20; LKS-21; LKS-22) (refer to Figure 7 and Table 5). Additionally, Sample LKS-23 was collected from the asphalt concrete rip-rap present in the intertidal zone in the vicinity of borings. Soil samples were collected from depths ranging from 1.5- to 5.0-feet bgs. These samples were analyzed only for PNAs (Refer to Figure and Table of Sample Results). The analytical data showed that PNA compounds were present in a localized band of black-stained soil located at a depth between 2.5 and 5.0 feet bgs. Samples LKS-14 and LKS-19 identified PNAs exceeding PRG threshold values. After additional excavation around former samples LKS-19 and CS-2 was conducted, confirmatory sidewall soil samples LKS-26 through LKS-33 were collected from these two separate areas (refer to Figure 8 and Table 6).

Due to the fact that there were no threshold values given for PNAs in 1990, the Port decided on a cleanup level of 10ppm based on California Department of Health Services' cleanup criterion at other sites in the region. On May 8, 1990, approximately 24 cubic yards of PNA-contaminated soils were excavated from two locations along the Shoreline Area where PNA contamination was previously identified (Refer to Figure 8). About 18 cubic yards were removed from Excavation 1, and about 6 cubic yards was removed from Excavation 2. This soil was disposed of at Envirosafe Services of Idaho, a Class I Hazardous Waste Facility.

In reference to the fate of other excavated soils from the area, it appears that the 300 cubic yards of soil excavated from the former gas tank pit was aerated on an adjacent property for five months, and after a series of samples collected from this soil did not identify any contaminants above detection limits, this soil was transported to Metropolitan Oakland International Airport. The 174 cubic yards of soil excavated from the ramp area was determined to be nonhazardous per Title 26 CCR. On July 25, 1990, 90 cubic yards of this soil was disposed of at West Contra Costa County Sanitary Landfill in Richmond, CA. On August 22, 1990, the remaining 84 cubic yards of this soil was hauled to a bioremediation site owned by the Port. Upon completion of the bioremediation, four confirmatory soil samples were collected, and these samples did not contain oil & grease above the detection limit of 50ppm. This soil was then transported to an undeveloped property located at Hassler and Oakport streets in Oakland.

One 10,000-gallon fuel oil tank was removed from the site on July 03, 1990 (refer to Figures 9 & 10). Six soil samples were collected from the tank pit excavation and adjacent trench excavation, and two soil samples were collected from the stockpiled soil (Soil samples S1 through S8). Additionally, one water sample, W1, was collected from the pit. All soil and groundwater samples were analyzed for diesel, oil & grease, and BTEX. Analysis of the water sample identified 30,000ppb oil & grease, 0.8ppb toluene, and 4 ppb total xylenes. Analysis of the soil samples identified up to 80ppm diesel, 140ppm oil & grease, 0.03ppm ethylbenzene, and 0.045ppm total xylenes. The tank was hauled to H & H Ship Service Company in San Francisco.

On August 24, 1995, four temporary wells (TW-1 through TW-4) were emplaced and sampled at the site (refer to Figures 10 and Table 7). Wells TW-1 and TW-2 were installed downgradient of the former 10,000-gallon fuel oil tank removed in July 1990. Wells TW-3 and TW-4 were installed downgradient of the former 2,000-gallon gasoline UST and the former 10,000-gallon diesel UST (refer to attached boring logs).

Groundwater samples collected from TW-1 and TW-2 were analyzed for TPHG, TPHD, BTEX, five heavy metals, VOCs, and SVOCs. Up to 23,000ppb TPHD, 0.84ppb benzene, 1,290ppb lead, 171ppb chromium, was identified. Groundwater samples collected from TW-3 and TW-4 were analyzed for TPHG, TPHD, and BTEX. Up to 590ppb TPHD was identified. Concentrations of lead and chromium in groundwater exceeded PRGs and MCLs. Concentrations of cadmium, chromium, lead, nickel, and zinc exceeded the NPDES discharge limits to salt water.

Wells MW-1 and MW-2 were installed at the site on August 15, 1996. Two soil samples, one from 2.5-foot bgs and the other from immediately above the water table at about 7-foot bgs, were collected from each of the two well locations. Soil and groundwater samples were analyzed for TPHd, TPHmo (with silica gel cleanup), TPHg, BTEX and MTBE, and dissolved arsenic, beryllium, cadmium, chromium, copper, lead, mercury, nickel, thallium, and zinc using a 0.45-micron filter. Soil analysis identified

concentrations of lead and chromium exceeding ten times STLCs at 86.4ppm and 53.1ppm. No other metal concentrations exceeded ten times STLCs. Additionally, soil analysis identified up to 30ppm TPHmo. No other contaminants were identified in the soil samples (refer to Tables 8 & 9 and Figure 10 and attached boring logs).

These two wells were monitored for four quarters, between 8/21/96 and 6/27/97. In the last monitoring event, MW-1 identified 170ppb diesel and 320ppb motor oil. No metals were identified in the last two quarterly monitoring events (refer to Tables 10 & 11).

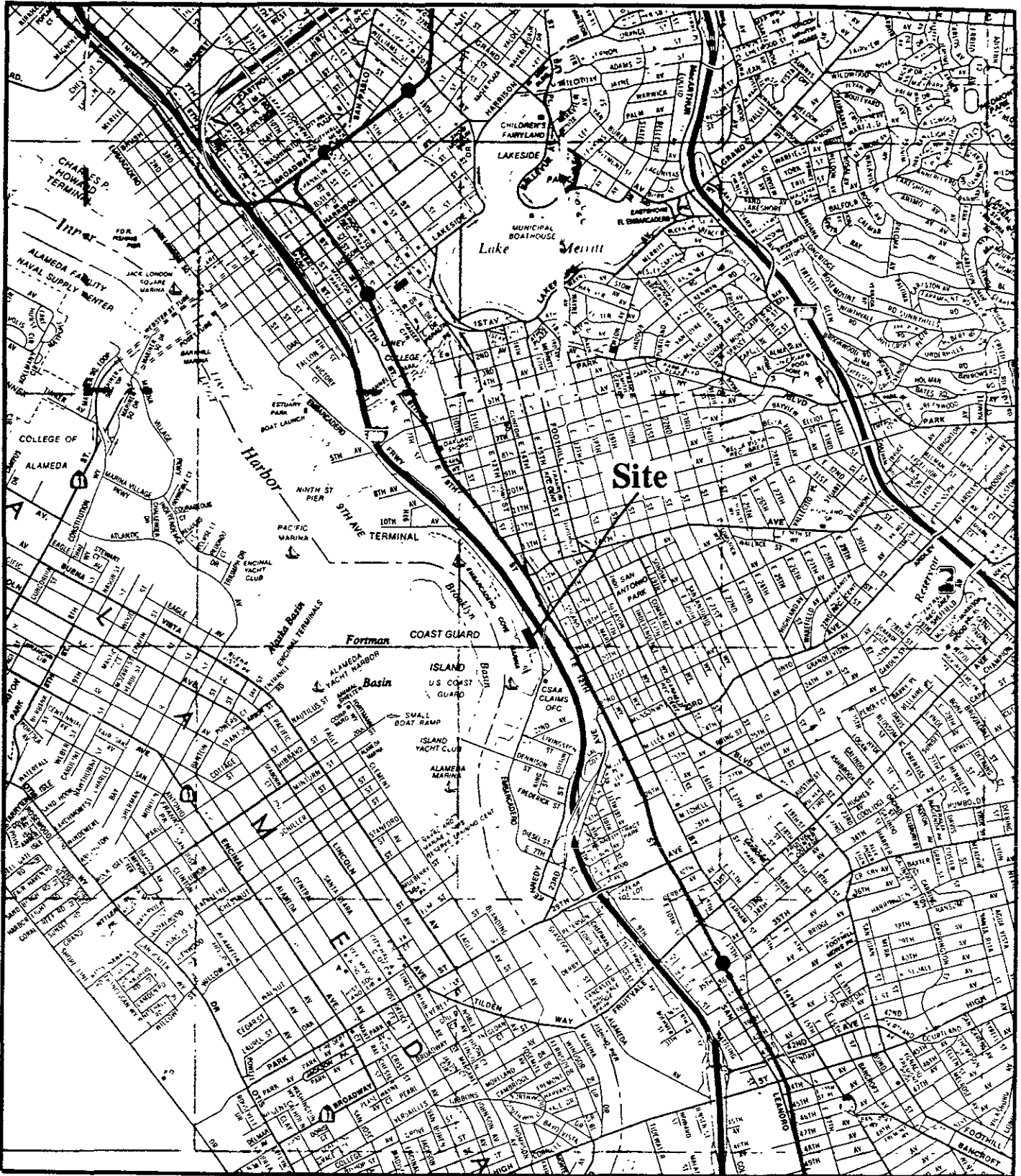
This office is recommending closure for this site based on the following rationale:

- The residual contamination remaining at the site are low to NonDetect and appear to be within the range of concentrations listed as protective of human health and the environment per the recommended threshold values provided in the San Francisco International Airport Studies. Residual soil concentrations include 36ppm of TPHD identified in LKS-4a, 48ppm TPHD identified in LKS-4b, 30ppm TPHD identified in LKS-3a, and 80ppm TPHD and 140ppm Total Oil & Grease associated with the former 10,000-gallon fuel oil tank. Concentrations of PNAs in soil were remediated/excavated to below 10ppm. Additionally, these residual soil contaminants do not appear to be leaching into groundwater at concentrations that pose a threat to human health or the environment;
- The groundwater concentrations of TPH identified within all four quarterly monitoring events were below the current recommended threshold values associated with the San Francisco International Airport Studies for sites located in the Saltwater Ecological Protection Zone (i.e., areas within 100 feet from marine surface waters)(refer to Table 12).
- The bulk of soil contaminated with PNAs exceeding the Preliminary Remediation Goals (PRGs), established by the U.S. EPA, were excavated and removed from the site. The only remaining soil with PNA concentrations exceeding PRGs appears to be in the location of former sample LKS-14. This sample identified one PNA constituent, benzo(a)pyrene, at 0.44ppm, which exceeded the PRG threshold value of 0.26ppm by only an incremental amount.

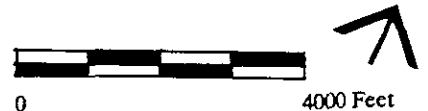
FIGURES

REGIONAL LOCATION

Figure 1



1755 Embarcadero
Oakland, California



BASELINE

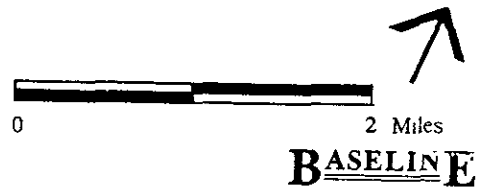
TANK LOCATIONS

Figure 2



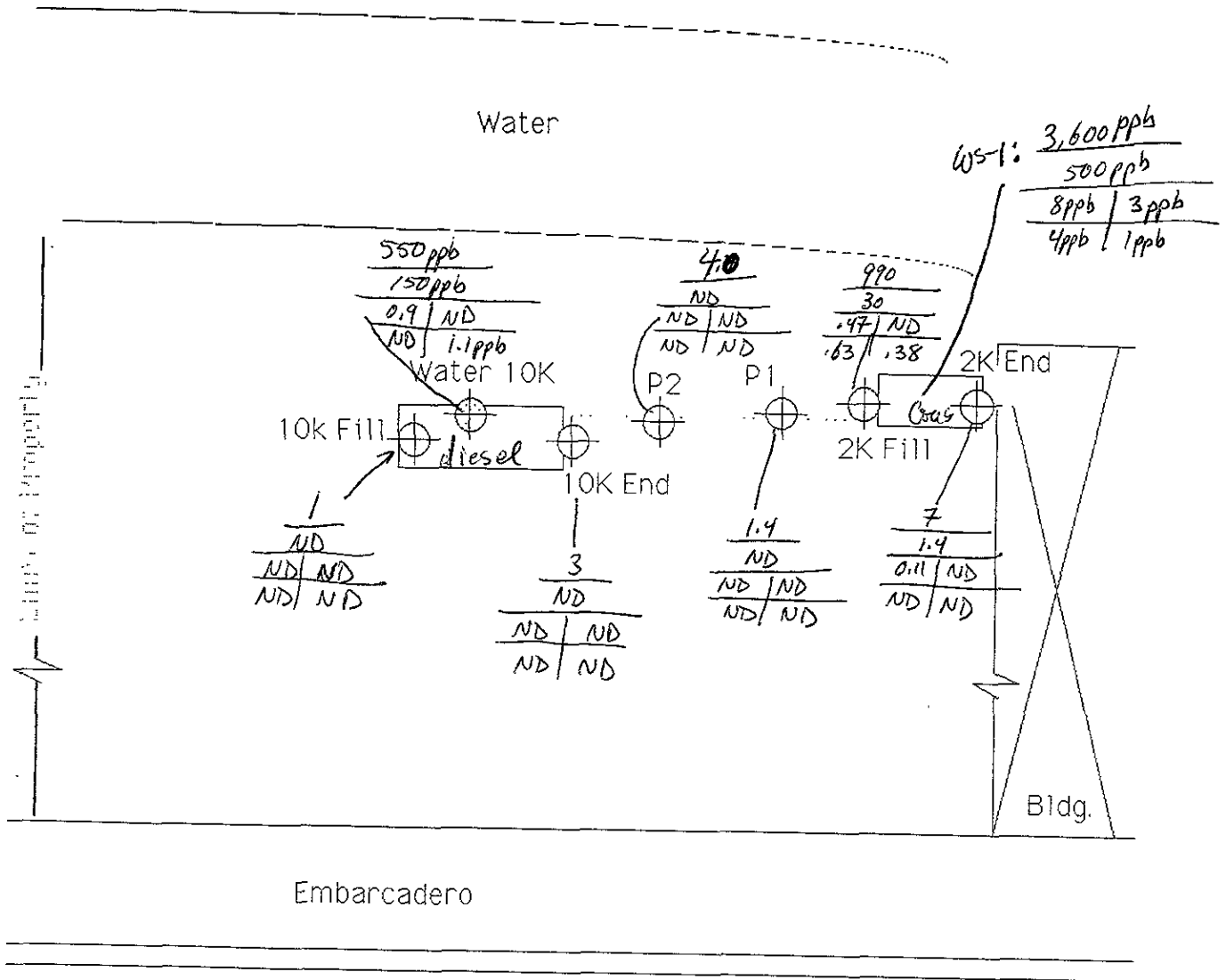
Source: 1977 Aerial (Pacific Aerial Survey)

**1755 Embarcadero
Oakland, California**



+ water sample
 - Soil samples analyzed for High boiling pt. hydrocarbons (EPA 3550/8015); 8015/8020 - Low-Med. hydrocarbons + BTEX

FIGURE 3



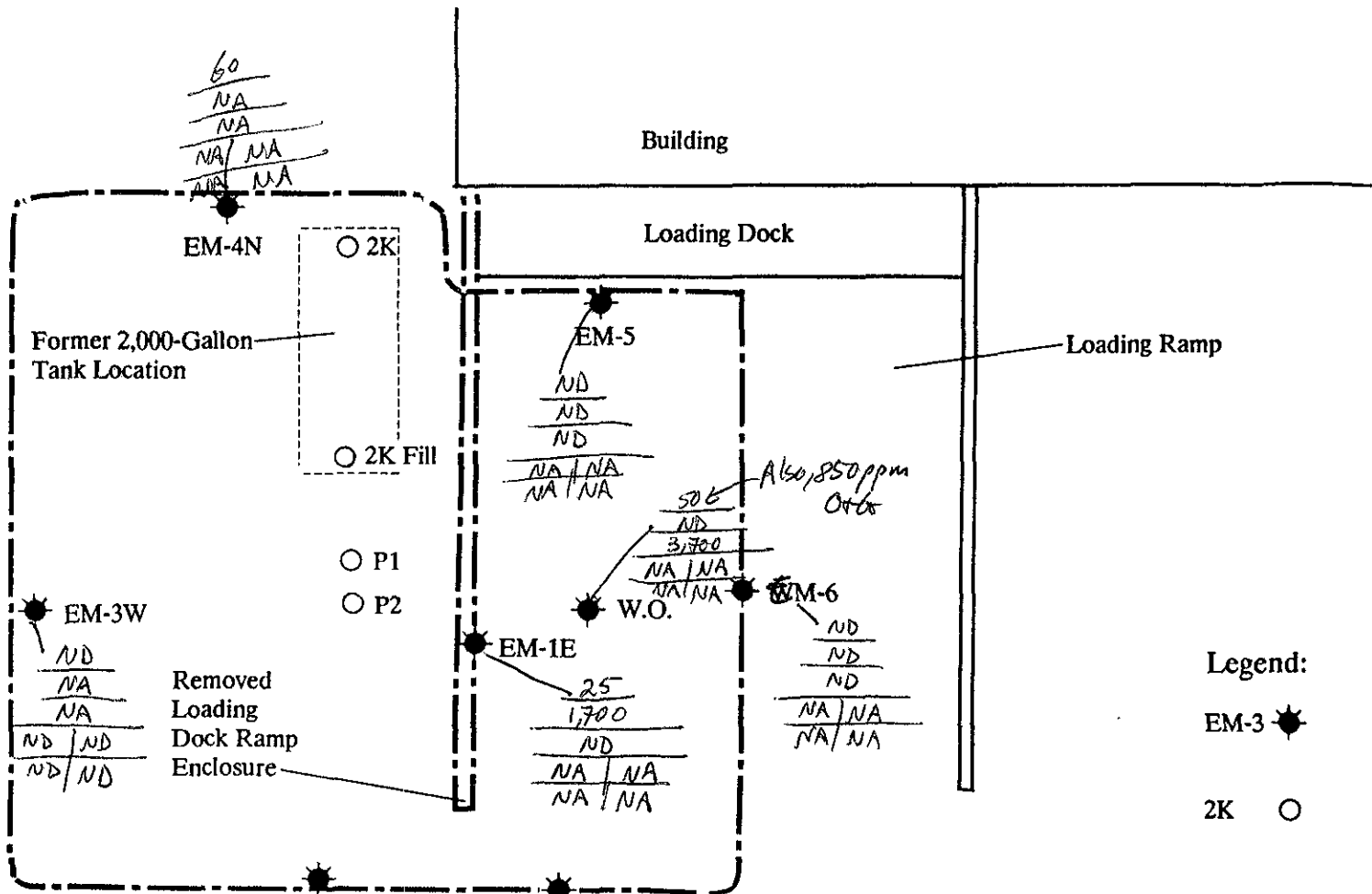
DWG not to scale
 Location of soil/water sampling

High B.P. (ppm)
 Med. B.P.
 Benzene / toluene
 ethylbenz / Xylenes

ACCUTITE ENGINEERING	FOR JBN COMPANY 7365 Carnelian, Suite 230 Rancho Cucamonga, California
	DATE 3 FEB 89 SHEET 1 of 1
Site: Port of Oakland 1755 Embarcadero Oakland, California	

SOIL SAMPLING LOCATION

Figure 4



- Legend:**
- EM-3 Sampling Locations (BASELINE)
 - 2K Sampling Locations (ACCUTITE)

60
NA
NA
NA/NA
NA/NA

EM-4N 2K

Former 2,000-Gallon Tank Location

2K

Building

Loading Dock

Loading Ramp

EM-5

ND
ND
ND
NA/NA
NA/NA

Also, 850 ppm Oils

506
ND
3,700
NA/NA
NA/NA

W.O.

EM-6

ND
ND
ND
NA/NA
NA/NA

EM-3W

ND
NA
NA
ND/ND
ND/ND

Removed Loading Dock Ramp Enclosure

P1
 P2

EM-1E

25
1,700
ND
NA/NA
NA/NA

EM-25

ND
ND
ND
NA/NA
NA/NA

EM-7

Gas
Diesel
Kerosene
B/T
E/X

Soil Samples (ppm) at 5'±6' bgs.

2,000-Gallon Tank Area
1755 Embarcadero
Oakland, California

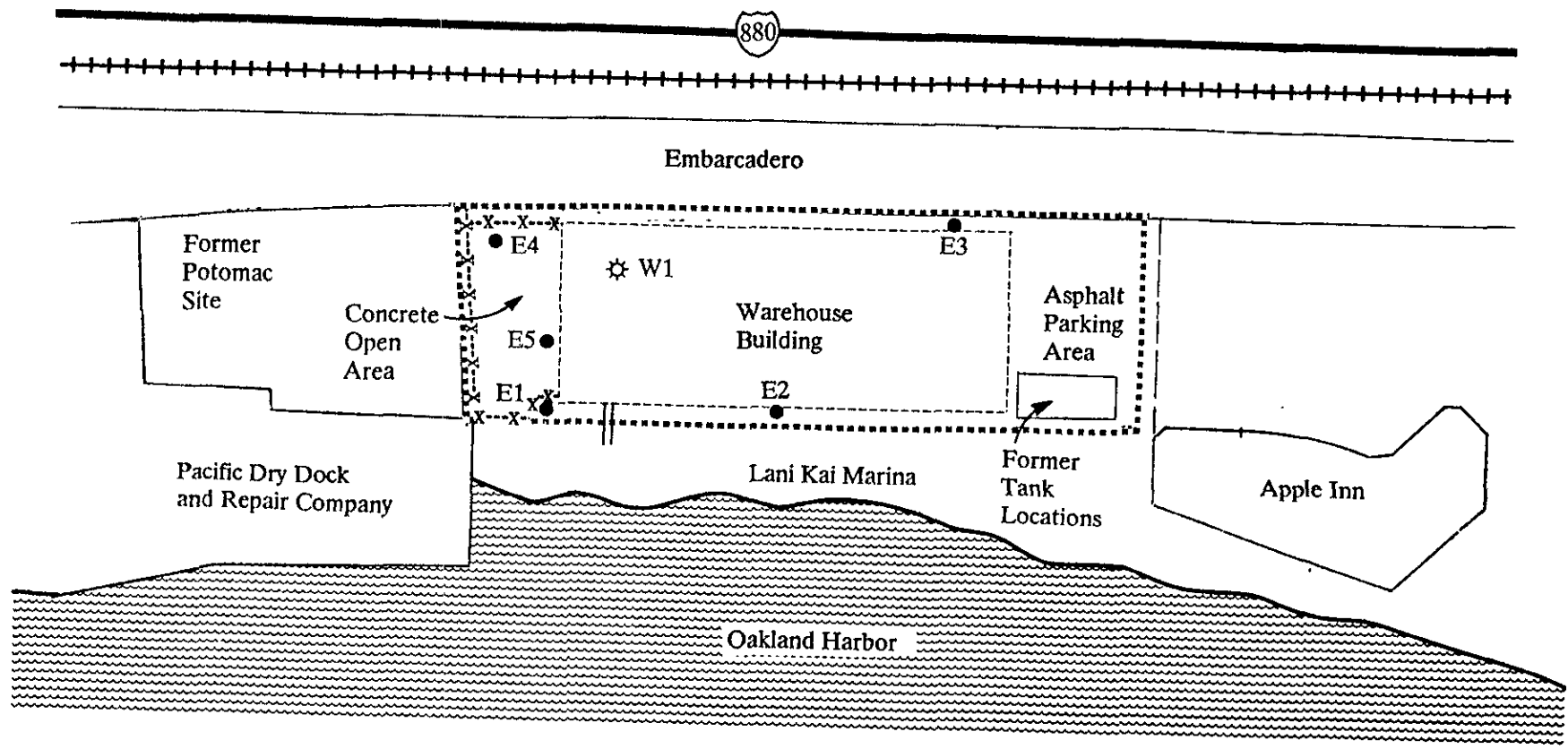
NA - Not Analyzed

FIGURE 4

Not to Scale
BASELINE

SITE PLAN

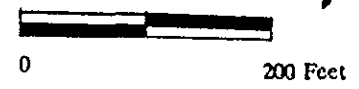
~~Figure 5~~



- 3 -

Legend:

- Site Area
- X-X-X-X-X-X-X-X-X-X- Fence
- + + + + + Railroad Tracks
- ==== Pipe Discharge from Building to Harbor
- Soil Sample Locations
- ⊛ Liquid Sample Location

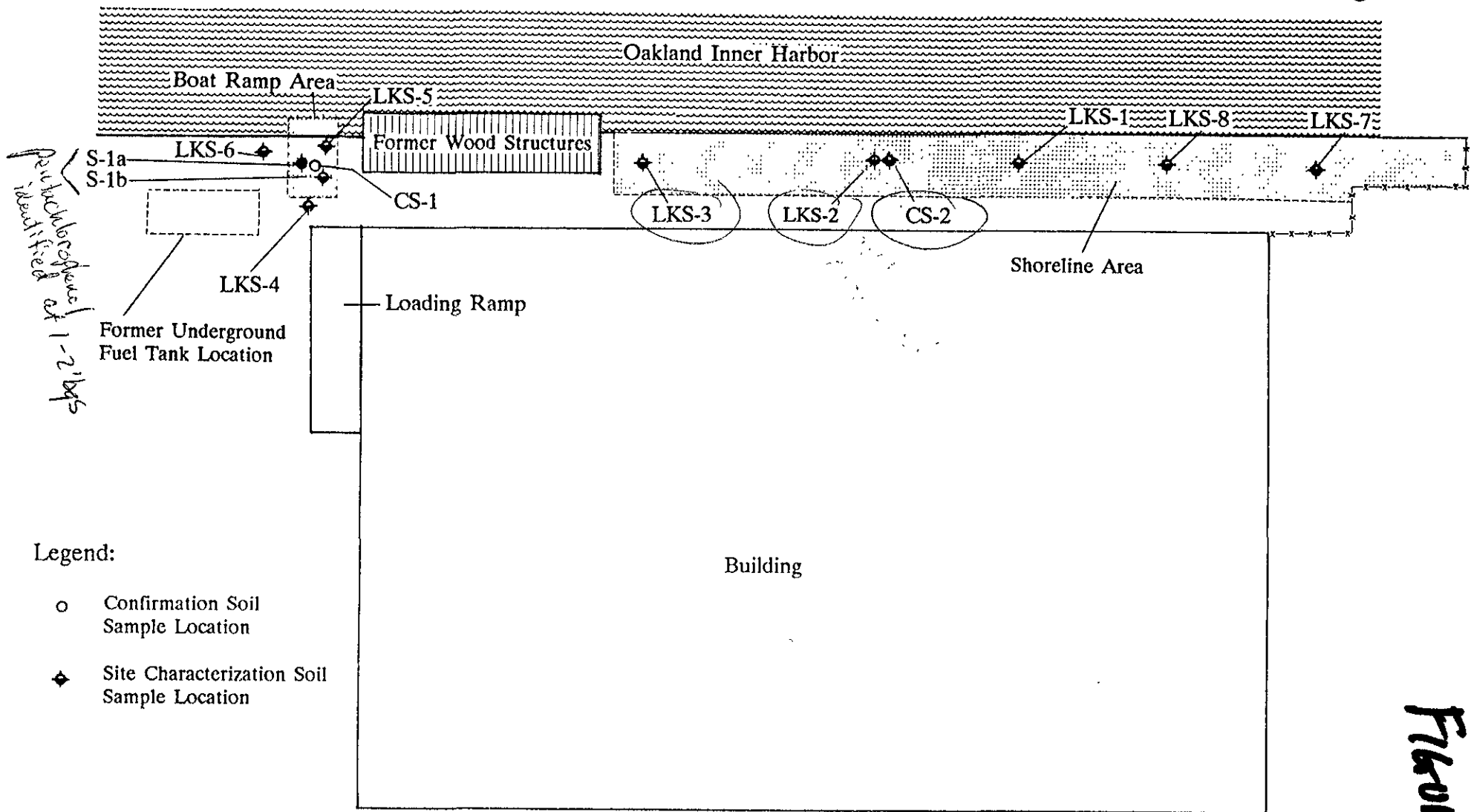


1755 Embarcadero
Oakland, California

BASELINE

FIGURE 5

~~Figure 6~~

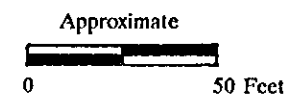


Legend:

- Confirmation Soil Sample Location
- ◆ Site Characterization Soil Sample Location

1755 Embarcadero
Oakland, California

Embarcadero



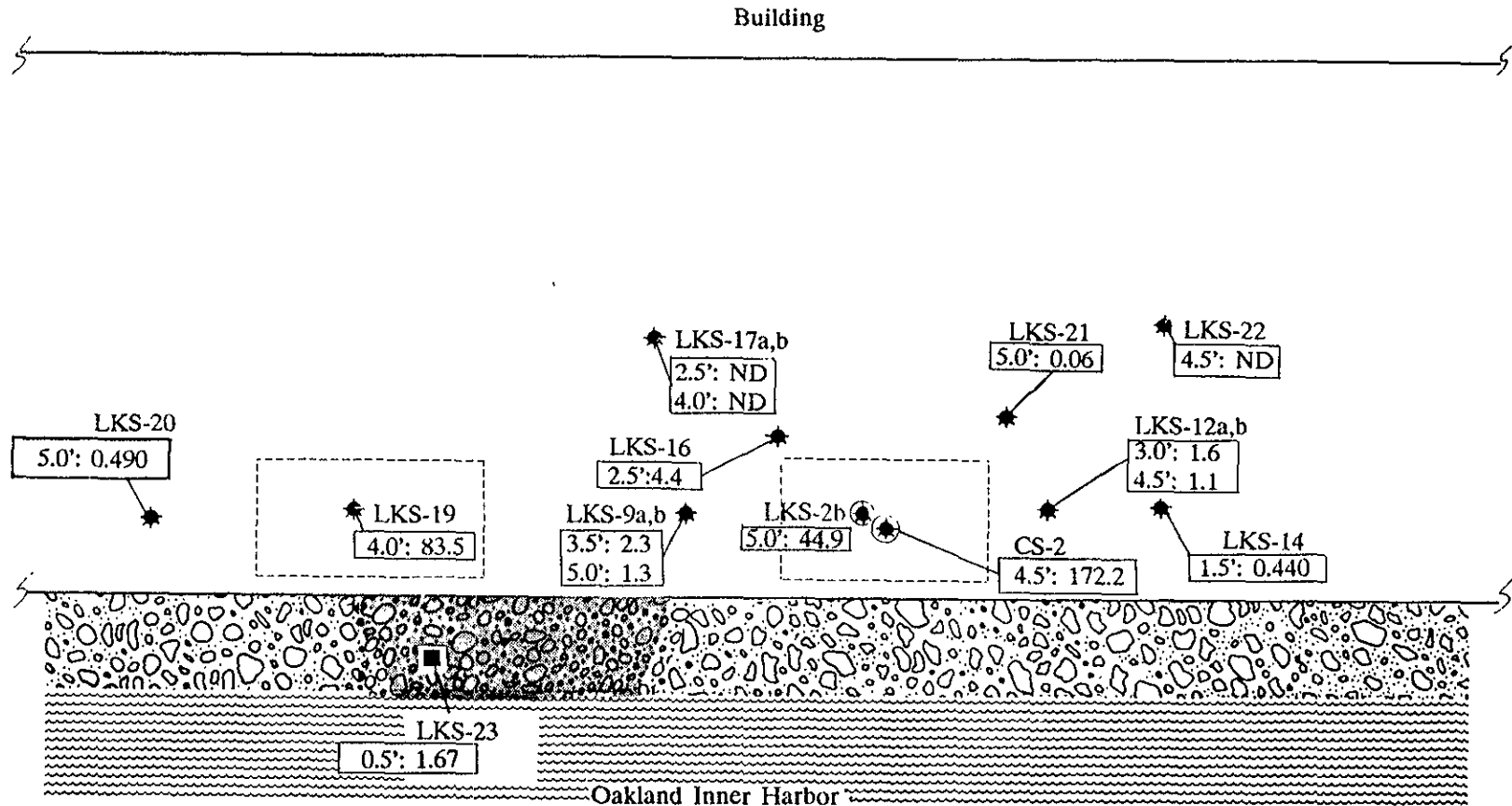
BASELINE

FIGURE 6

PNA CONCENTRATIONS IN SOIL

Former Lani Kai Marina

Figure 2



Legend:

- Grab Sample Location (12-12-89)
- ★ Soil Sample Locations (12-12-89)
- ▨ Asphalt Rip-Rap
- ▭ Areas to be Excavated
- ▨ Concrete Rip-Rap
- ⊙ Soil Sample Locations (8-15-89 and 9-19-89)
- ND Compound Not Identified Above Laboratory Detection Limit

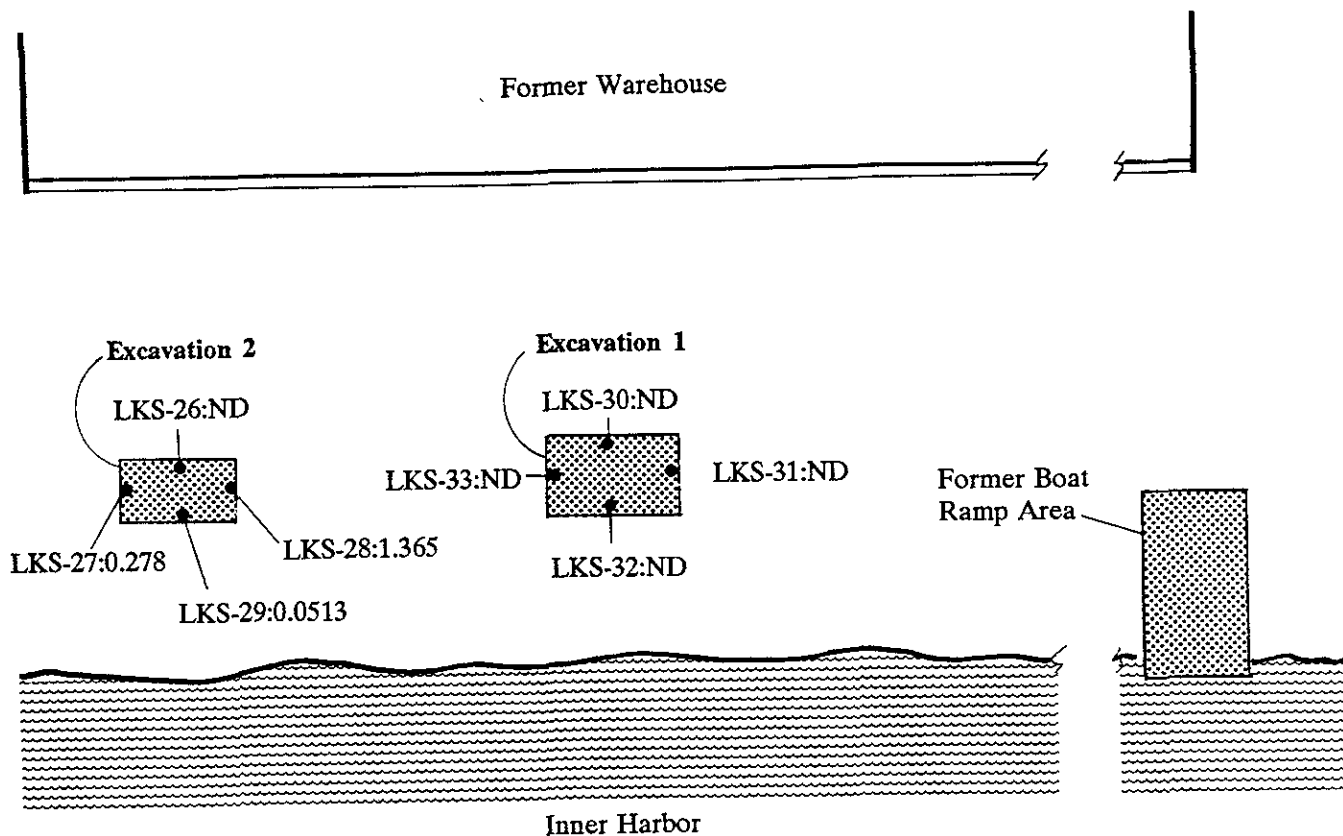
4.0': 38
 Total Concentration of PNAs in mg/kg
 Depth in feet below Ground Surface



1755 Embarcadero, Oakland, California
 12 December 1989

FIGURE 2

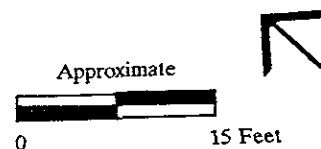
SITE PLAN SHORELINE AND BOAT RAMP AREAS



Legend

- LKS-28:1.365 Verification Sample Location (Samples Collected on 8 May 1990)
- └── Total Concentration of PNAs in mg/kg
- └── Soil Sample ID Number
- ND Compound Not Identified Above Laboratory Detection Limit

**Former Lani Kai Marina
1755 Embarcadero
Oakland, California**



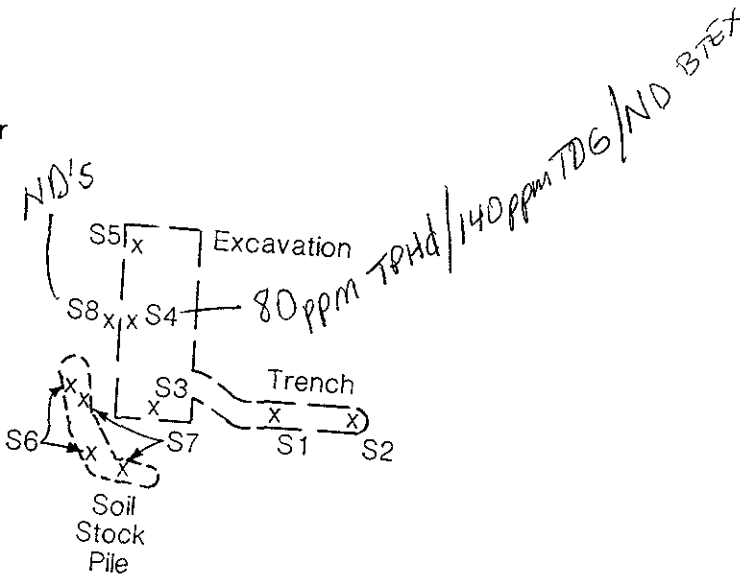
BASELINE

FIGURE 9

Embarcadero

Concrete

Transformer



Oakland Harbor

- 10,000-gallon fuel oil tank

Site Map

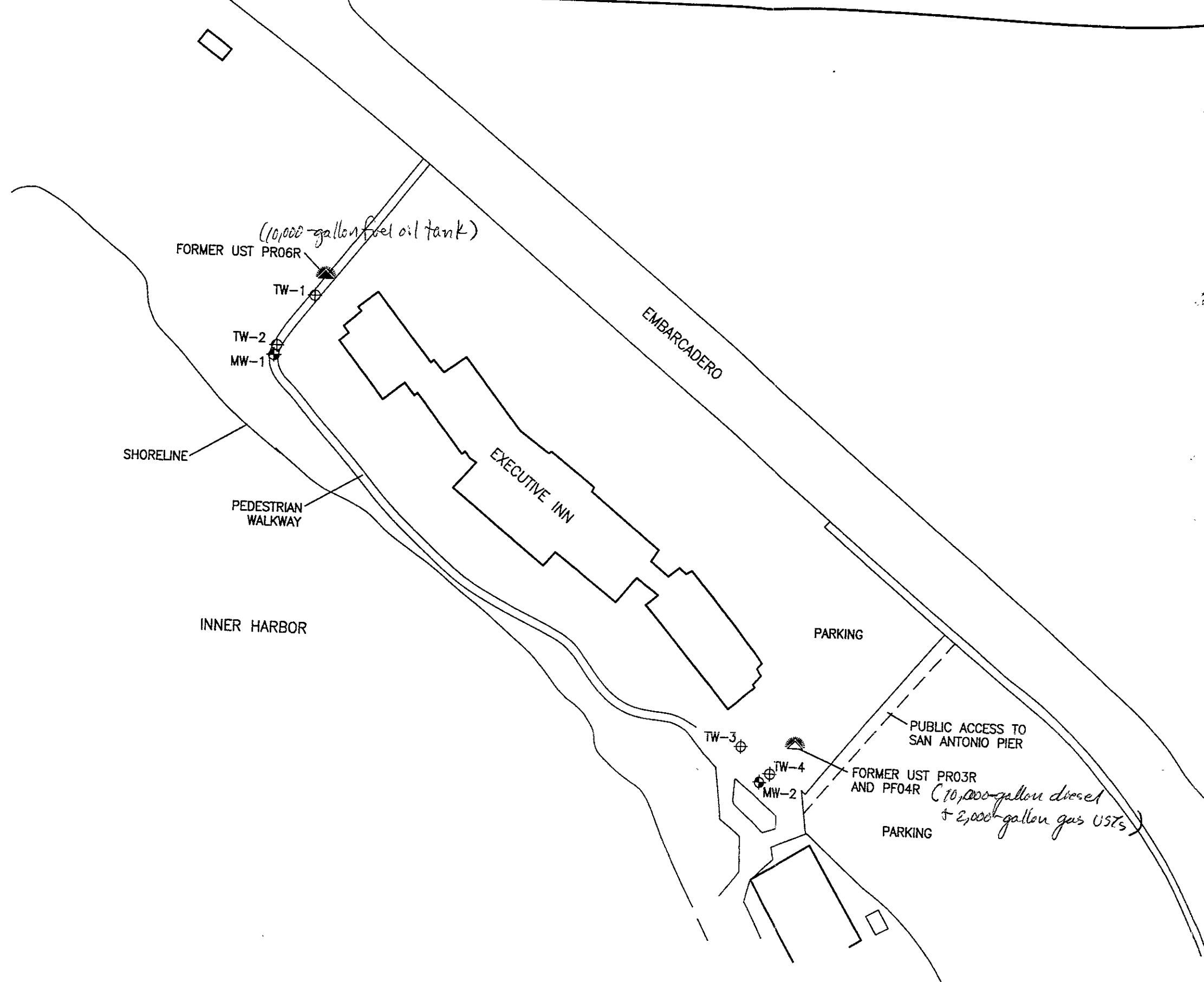
J. B. Norton Company

Project #4012-9001



RIEDEL ENVIRONMENTAL SERVICES, INC. Richmond, California

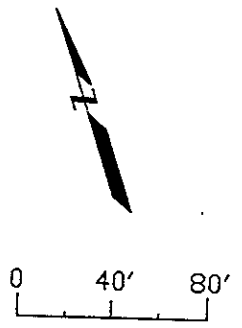





EXPLANATION

TW-2 ⊕ TEMPORARY GROUNDWATER MONITORING WELL (DESTROYED)

MW-1 ⊕ GROUNDWATER MONITORING WELL



SITE PLAN		
Port of Oakland 1755 Embarcadero Oakland, California		
 GEOMATRIX	Project No. 3328.03	Scale No. ●

Base map adapted from Alisto Engineering Group, October 1995.

TABLES

TABLE 1
SUMMARY OF ANALYTICAL RESULTS
TANK REMOVAL ACTIVITIES
(mg/L or mg/kg)

Location	Date	Depth (feet)	Diesel	Gas	B	T	X	E
<u>10,000-gallon Tank</u>								
<u>Soil</u>								
10K Fill	1/18	10	1.0	ND	ND	ND	ND	ND
10K End	1/18	10	3.0	ND	ND	ND	ND	ND
ST1, ST2 Composite ^{1,4}	2/17	NA	28	ND	ND	ND	ND	ND
<u>Water</u>								
10K	1/18	NA	0.55	0.15	0.0009	ND	0.0011	ND
W-1 ¹	2/21	NA	ND	-	ND	ND	ND	ND
<u>2,000-gallon Tank</u>								
<u>Soil</u>								
2K Fill	1/18	10	990	30	0.47	ND	0.38	0.63
2K End	1/18	10	7.0	1.4	0.11	ND	ND	ND
<u>Water</u>								
WS-1	3/3	NA	3.6 ³	0.50	0.008	0.003	0.004	0.001
<u>Other</u>								
Port O-P1 ²	1/18	1.5	1.4	ND	ND	ND	ND	ND
Port O-P2 ²	1/18	1.5	4.0	ND	ND	ND	ND	ND

- ¹ Samples collected by BASELINE.
² Samples collected at locations shown on Figure 3.
³ TPH identified as "Other" in the C6 to C24 range.
⁴ Samples composited from pile of excavated material.

Notes:

BTXE = Benzene, toluene, xylenes, and ethylbenzenes.
- = Not analyzed for.
ND = Not detected above detection limits.
NA = Not applicable.
All samples collected by Accutite except where noted.
Sampling methods are described in Appendix G.
For sampling locations, refer to Figure 3.
Laboratory reports for Accutite samples are included in Appendix A.
The reports for BASELINE samples are included in Appendices B and C.

TABLE 2
VERIFICATION SOIL SAMPLING RESULTS
SOIL REMEDIATION, 2,000-GALLON TANK
(mg/kg)

Location	Depth (feet)	Gasoline	Diesel	Kerosene	B	T	X	E	Oil & Grease
EM-1E	5	25	1,700 ¹	ND	-	-	-	-	-
EM-2S	5	ND	ND	ND	-	-	-	-	-
EM-3W	5	ND	-	-	ND	ND	ND	ND	-
EM-4W	5	60	-	-	-	-	-	-	-
EM-5	6	Trace	ND	ND	-	-	-	-	-
EM-6	6	ND	ND	ND	-	-	-	-	-
EM-7	6	ND	ND	ND	-	-	-	-	-
W.O.	3	50	ND	3,700 ²	-	-	-	-	850

¹ Compounds identified as being within the C6-C14 boiling point range.

² Compounds identified as being within the C6-C24 boiling point range.

Notes:

For sampling locations refer to Figure 3.

Laboratory reports are included in Appendix F.

BTXE = Benzene, toluene, xylenes, and ethylbenzenes.

- = Not analyzed for.

Sampling methods are described in Appendix G.

TABLE 3

SUMMARY OF ANALYTICAL RESULTS
BOAT RAMP AREA SOIL SAMPLING
1755 Embarcadero, Oakland, California
(in mg/kg)

Sample ID	TPH-Diesel ¹	Pentachloro-phenol ²	Total PNAs ²	Volatile Organic Compounds ³
S-1a, b ⁴	63.0	26.0	3.6	ND
LKS-4a ⁵	36.0	ND	ND	--
LKS-4b	48.0	ND	0.39	--
LKS-5	ND	ND	ND	--
LKS-6a	ND	ND	ND	--
LKS-6b	ND	ND	ND	--
CS-1 ⁶	--	ND	ND	--

- ¹ Soil samples analyzed for total volatile and extractable petroleum hydrocarbons (TPH) using modified EPA Method 8015; only compounds in the diesel range were identified.
- ² Soil samples analyzed for semi-volatile organic compounds using EPA Method 8270.
- ³ Soil samples analyzed for volatile organic compounds using EPA Method 8240.
- ⁴ Soil samples S-1a and S-1b were collected on 21 February 1989.
- ⁵ Soil samples 4a through 6b were collected on 15 August 1989.
- ⁶ Soil sample CS-1 was collected as a confirmation sample after remedial actions conducted on 20 September 1989.

Notes: ND = No compounds identified above the laboratory detection limit.

-- = Sample not analyzed for the specified analyte.

Soil sample locations are shown on Figure 2; laboratory reports and chain-of-custody forms are attached.

Only those compounds identified above laboratory detection limits are included in this table.

TABLE 4

SUMMARY OF ANALYTICAL RESULTS
SHORELINE AREA SOIL SAMPLING
1755 Embarcadero, Oakland, California
August 1989
(mg/kg or mg/L)

Sample ID	Depth (ft)	TPH-Diesel ¹	Cd ² (total)	Cr ² (total)	Pb ² (total)	<i>STL</i> Pb ³ (soluble)	Ni ² (total)	Zn ² (total)	PNAs ⁴ (total)
LKS-1a	2.0	--	2.0	13	62	2.2	23	140	--
LKS-1b	5.0	--	--	--	--	ok	--	--	--
LKS-2a	2.0	--	1.1	23	15	--	29	28	--
LKS-2b	5.0	32.0	--	--	--	--	--	--	44.9
LKS-3a	2.5	30.0	4.1	13	32	--	83	160	--
LKS-3b	5.0	--	--	--	--	--	--	--	--
LKS-7a	2.0	--	2.4	34	150	2.0	37	180	--
LKS-7b	5.0	--	--	--	--	--	--	--	--
LKS-8a	2.5	--	2.4	17	40	--	35	98	--
LKS-8b	5.0	--	--	--	--	--	--	--	--
CS-2 ⁵	5.0	--	--	--	--	--	--	--	172.2
STLC ⁶			1.0	560	5.0	5.0	20	250	
TTL ⁶			100	2,500	1,000	1,000	2,000	5,000	

¹ Total petroleum volatile and extractable hydrocarbon compounds (TPH) were analyzed using modified EPA method 8015; only compounds in the diesel range were identified.

² Metals were analyzed using EPA Method 6010.

³ Soluble lead was analyzed using EPA Method 7420 with waste extraction test (WET) procedure, CCR Title 26, Section 66700.

⁴ Polynuclear aromatic hydrocarbon compounds were analyzed using EPA Method 8270.

⁵ Sample CS-2 was collected during follow-up exploratory excavation activities conducted 20 September 1989 in same location as sample LKS-2b.

⁶ STL⁶ = Soluble threshold limit concentration. TTL⁶ = Total threshold limit concentration, CCR Title 26.

Notes: -- = Sample not analyzed for the specified analyte.

Only those compounds identified above laboratory detection limits are included in this table.

Soil sample locations are shown on Figure 2; laboratory reports and chain-of-custody reports are attached.

TABLE 5

PNA CONCENTRATIONS IN SOIL
FORMER LANI KAI MARINA
1755 Embarcadero, Oakland, California
August, September, and December 1989
(mg/kg)

PRGs for industrial soil

C = Carcinogen

Handwritten annotations above the table header:
 0.76 ppm (C) above Dibenzo (a,h) anthracene
 2.6 ppm (C) above Benzo (b) fluoranthene
 2.6 ppm (C) above Benzo (k) fluoranthene
 2.6 ppm (C) above Benzo (ghi) perylene
 2.6 ppm (C) above Benzo (a) anthracene
 0.26 ppm (C) above Benzo (a) pyrene
 300 ppm above Fluorene
 27,000 ppm above Fluoranthene
 20,000 ppm above Pyrene
 24 ppm above Chrysene
 26 ppm (C) above Indeno (1,2,3-cd) pyrene

Sample I.D.	Depth (ft)	Dibenzo (a,h) anthracene	Benzo (b) fluoranthene	Benzo (k) fluoranthene	Benzo (ghi) perylene	Benzo (a) anthracene	Benzo (a) pyrene	Fluorene	Fluoranthene	Pyrene	Chrysene	Indeno (1,2,3-cd) pyrene	Phenanthrene	Total
LKS-9A	3.5	--	0.480	1.2	0.630	--	--	--	--	--	--	--	--	2.3
LKS-9B	5.0	--	--	1.3	--	--	--	--	--	--	--	--	--	1.3
LKS-12A	3.0	--	--	--	--	1.6	--	--	--	--	--	--	--	1.6
LKS-12B	4.5	--	--	--	--	1.1	--	--	--	--	--	--	--	1.1
LKS-14	1.5	--	--	--	--	--	0.440	--	--	--	--	--	--	0.44
LKS-16	2.5	--	--	4.4	--	--	--	--	--	--	--	--	--	4.4
LKS-17a	2.5	--	--	--	--	--	--	--	--	--	--	--	--	--
LKS-17b	4.0	--	--	--	--	--	--	--	--	--	--	--	--	--
LKS-19	4.0	3.4	23.0	--	7.2	7.3	10.0	0.370	5.5	7.7	8.0	11.0	--	83.5
LKS-20	5.0	--	--	0.280	--	--	--	0.210	--	--	--	--	--	0.490
LKS-21	5.0	--	--	--	--	--	--	--	--	--	--	0.060	--	0.060
LKS-22	4.5	--	--	--	--	--	--	--	--	--	--	--	--	--
LKS-23 ²	(Surface)	--	--	0.470	1.2	--	--	--	--	--	--	--	--	1.67
LKS-2b ³	5.0	1.4	6.8	5.9	4.2	3.2	6.8	--	3.0	3.2	5.2	4.4	0.820	44.92
CS-2 ⁴	4.5	9.5	28.0	21.0	21.0	10.0	26.0	--	6.0	8.4	18.0	23.0	1.3	172.20

¹ -- = Compound was not identified above laboratory detection limit.
² Sample 23 was collected from broken asphalt rip rap along shore.
³ Sample LKS-2b was collected by BASELINE 15 August 1989.
⁴ Sample CS-2 was collected by BASELINE 19 September 1989.

Notes:
 Soil samples LKS-9 through LKS-23 were collected by BASELINE Environmental Consulting 12 December 1989.
 All samples were analyzed by EPA Method 8100.
 Only those compounds identified above the laboratory detection limit are presented.
 Laboratory reports and chain-of-custody forms are included in Attachment C.
 Sampling locations are shown on Figure 2.

TABLE 6

ANALYTICAL RESULTS, *IN SITU* VERIFICATION SOIL SAMPLES Shoreline Area, Former Lani Kai Marina, 1755 Embarcadero Oakland, California

(mg/kg)

Soil Sample I.D.	Depth (feet)	Total PNAs ¹
LKS-26	4.0	ND
LKS-27	4.5	0.278
LKS-28	4.5	1.365
LKS-29	5.0	0.513
LKS-30	5.0	ND
LKS-31	4.5	ND
LKS-32	4.5	ND
LKS-33	4.5	ND

¹ Polynuclear aromatic hydrocarbons (PNAs) were analyzed by EPA Method 8270.

Notes: ND = Analyte not identified above laboratory detection limit of 0.05 mg/kg.
Soil sample locations are shown in Figure 2.
Laboratory reports and chain-of-custody forms are included as Attachment C.

Soil samples LKS-34 and LKS-35 were collected on 8 May 1990 in the stockpiled soils for waste profiling purposes. The samples were analyzed discretely for PNAs (10.12 mg/kg and 3.02 mg/kg, respectively). The samples also were composited at Curtis and Tompkins and analyzed for soluble lead (3.7 mg/L), pH (8.3 S.U.), PCBs (0.12 mg/kg), and RCRA metals (Attachment C).

TABLE 7

SUMMARY OF RESULTS OF GRAB GROUNDWATER SAMPLING
FORMER UNDERGROUND STORAGE TANKS PF03R, PF04R, AND PF06R
PORT OF OAKLAND
1755 EMBARCADERO
OAKLAND, CALIFORNIA

ALISTO PROJECT NUMBER 10-283

SAMPLE ID COLLECTION DATE CONCENTRATION	<i>Basin Plans & NPDES</i>	<u>MCLs</u>	TW-1 08/24/95 ug/l	<u>PRGs</u> <i>Tap Water</i>	TW-2 08/24/95 ug/l	TW-3 08/24/95 ug/l	TW-4 08/24/95 ug/l
TPH-G	<i>ppb</i>		ND<50		ND<50	ND<50	ND<50
TPH-D (as quantified by TEPH)			23000		920 (a)	460 (b) (c)	590 (d) (e)
Benzene			0.84		ND<0.5	ND<0.5	ND<0.5
Toluene			1.9		0.91	ND<0.5	ND<0.5
Ethylbenzene			0.93		0.59	ND<0.5	ND<0.5
Total xylenes	<i>Acute Chronic</i>		3.9		1.7	ND<1.0	ND<1.0
Cadmium	<i>43 9.3</i>	<i>5ppb</i>	10.2	<i>18ppb</i>	ND<5	—	—
Chromium	<i>1100 50</i>	<i>50ppb</i>	171	<i>180ppb</i>	31.5	—	—
Lead	<i>220 8.5</i>	<i>50ppb</i>	1290	<i>4ppb</i>	253	—	—
Nickel	<i>75 8.3</i>	<i>100ppb</i>	256	<i>730ppb</i>	ND<30	—	—
Zinc	<i>95 86</i>	<i>5ppb 500ppb</i>	2210	<i>1100ppb</i>	260	—	—
Halogenated Volatile Organics (601)			ND (f)		ND (f)	—	—
Semi-volatile Organics (8270)			ND (f)		ND (f)	—	—
LAB			PACE		PACE	PACE	PACE

ABBREVIATIONS:

TPH-G	Total petroleum hydrocarbons as gasoline
TPH-D	Total petroleum hydrocarbons as diesel
TEPH	Total extractable petroleum hydrocarbons
ug/l	Micrograms per liter
mg/l	Milligrams per liter
ND	Not detected above reported detection limit
PACE	Pace Inc.
—	Not analyzed/available

NOTE:

- (a) Sample also contains motor oil at 2.5 mg/l. Although hydrocarbons overlap in the diesel range, the pattern does not match that of diesel.
- (b) Sample may also contain lighter compounds such as kerosene or mineral spirits, partially within the diesel range.
- (c) Sample also contains motor oil at 8 ppm.
- (d) Sample may also contain lighter hydrocarbons within the diesel range.
- (e) Sample also contains motor oil at 45 ppm.
- (f) Not detected above any of the reported detection limits. See laboratory report.

TABLE 9

8/29/96

SOIL ANALYTICAL RESULTS¹
 EXECUTIVE INN
 1755 Embarcadero
 Port of Oakland, California

Boring	Sample Depth (feet bgs)	Constituent ² (mg/kg)																	
		As	Be	Cd	Cr	Cu	Pb	Hg	Ni	Tl	Zn	TPHg	TPHd	TPHmo	B	T	E	X	MTBE
MW-1	2.5	2.22 ✓	0.454 ✓	<0.49 ✓	52.5 ✓	39.7 ✓	86.4 ✓	0.0878 ✓	39.9 ✓	37.1 ✓	136 ✓	<0.2 ✓	<5 ✓	28 ✓	<0.001 ✓	<0.001 ✓	<0.001 ✓	<0.002 ✓	<0.005 ✓
	7.0	3.52 ✓	0.439 ✓	<0.417 ✓	52.4 ✓	25.4 ✓	26.3 ✓	0.0549 ✓	57.5 ✓	31.5 ✓	57.5 ✓	<0.2 ✓	<5 ✓	30 ✓	<0.001 ✓	<0.001 ✓	<0.001 ✓	<0.002 ✓	<0.005 ✓
MW-2	2.5	1.95 ✓	0.397 ✓	<0.472 ✓	53.1 ✓	17.2 ✓	8.8 ✓	0.229 ✓	90.6 ✓	24.9 ✓	36.4 ✓	<0.2 ✓	<5 ✓	<10 ✓	<0.001 ✓	<0.001 ✓	<0.001 ✓	<0.002 ✓	<0.005 ✓
	7.0	2.28 ✓	0.529 ✓	<0.373 ✓	93 ✓	88.7 ✓	8.17 ✓	0.37 ✓	166 ✓	44.4 ✓	110 ✓	<0.2 ✓	<5 ✓	<10 ✓	<0.001 ✓	<0.001 ✓	<0.001 ✓	<0.002 ✓	<0.005 ✓

over 10 times STLC

Notes:

- ¹ Soil samples were collected by Geomatrix Consultants, Inc., and analyzed by Pace Analytical of Petaluma, California, for metals by EPA Methods 6010, 7060, and 7471 for TPHg, TPHd, and TPHmo by Modified EPA Method 8015 and for BTEX and MTBE by EPA Method 8020.
- ²
 - As = arsenic
 - Hg = mercury
 - TPHmo = total petroleum hydrocarbons as motor oil
 - Be = beryllium
 - Ni = nickel
 - B = benzene
 - Cd = cadmium
 - Tl = thallium
 - T = toluene
 - Cr = chromium
 - Zn = zinc
 - E = ethylbenzene
 - Cu = copper
 - TPHg = total petroleum hydrocarbons as gasoline
 - X = xylene (total)
 - Pb = lead
 - TPHd = total petroleum hydrocarbons as diesel
 - MTBE = methyl-tert-butyl ether

9/14/96

TABLE 8
~~TABLE 2~~

GROUNDWATER ANALYTICAL RESULTS¹
EXECUTIVE INN
1755 Embarcadero
Port of Oakland, California

100% according to lab results

Sample I.D.	Constituent ² (mg/l)																		
	As	Be	Cd	Cr	Cu	Pb	Hg	Ni	Tl	Zn	TPHg	TPHd	TPHmo	B	T	E	X	MTBE	TDS
MW-1	0.0169	<0.001	<0.005	0.0739	0.0852	0.157	0.00073	0.125	0.104	0.197	<0.05	0.14	0.42	<0.0005	<0.0005	<0.0005	<0.001	<0.005	3980
MW-1F ³	0.0149	<0.001	<0.005	<0.007	<0.01	0.0137	<0.0002	<0.03	<0.1	<0.1	--	--	--	--	--	--	--	--	--
MW-2	0.00676	<0.001	<0.005	0.00864	<0.01	0.0556	<0.0002	<0.03	<0.1	<0.1	<0.05	<0.05	<0.25	<0.0005	<0.0005	<0.0005	<0.001	<0.005	2320
MW-2F ³	0.00722	<0.001	<0.005	<0.007	0.0115	<0.005	<0.0002	<0.03	<0.1	<0.1	--	--	--	--	--	--	--	--	--
Acute	69		43	1100	2.9	220	2.1	75		95									
Chronic	36		9.3	50	2.9	8.5	0.25	8.3		86									

NPDES (ppb) Subwater

Notes:

- Groundwater samples were collected by Geomatrix Consultants, Inc., and analyzed by Pace Analytical of Petaluma, California, for metals by EPA Methods 6010, 7060, 7421, and 7470 for TPHg, TPHd, and TPHmo by Modified EPA Method 8015, for BTEX and MTBE by EPA Method 8020, and for TDS by EPA Method 160.1.
- As = arsenic
Be = beryllium
Cd = cadmium
Cr = chromium
Cu = copper
Pb = lead
Hg = mercury
Ni = nickel
Tl = thallium
Zn = zinc
TPHg = total petroleum hydrocarbons as gasoline
TPHd = total petroleum hydrocarbons as diesel
TPHmo = total petroleum hydrocarbons as motor oil
B = benzene
T = toluene
E = ethylbenzene
X = xylene (total)
MTBE = methyl-tert-butyl ether
TDS = total dissolved solids
-- = not analyzed
- Sample was filtered through a 0.45-micron filter in the field and was analyzed for dissolved metals only.

reanalyzed them. these are correct

LO.05

Embarcadero Bay

*Pb ⇒ 56 ppb - 4-day average
140 ppb - 1-hour average*

*As ⇒ 36 ppb - 4-day average
69 ppb - 1-hr average*

Cu ⇒ 2.9 ppb - 1-hr average

TABLE 10

GROUNDWATER ANALYTICAL RESULTS¹ EXECUTIVE INN 1755 Embarcadero Oakland, California

Concentrations are in micrograms per liter (µg/l)

Well I.D. ¹	Date	Total Petroleum Hydrocarbons			Benzene	Toluene	Ethyl-benzene	Xylenes	MTBE	Metals ²		
		Gasoline	Diesel	Motor Oil						Cu	Cr	Pb
MW-1	8/21/96	<50	140 ³	420 ³	<0.5	<0.5	<0.5	<1	<5	<10	<7	13.7
	12/20/96 ⁴	--	260 ³	400 ³	<0.5	<0.5	<0.5	<1	--	--	<7	5.4
	3/13/97	--	230 ³	400 ³	<0.5	<0.5	<0.5	<1	--	--	--	<5
	6/27/97	--	170 ^{3,5}	320 ^{3,5}	<0.5	<0.5	<0.5	<1	--	--	--	<5
MW-2	8/21/96	<50	<50	<250	<0.5	<0.5	<0.5	<1	<5	11.5	<7	<5
	12/20/96	<50	120 ⁶	<250	<0.5	<0.5	<0.5	<1	--	<10	--	--
	3/13/97	<50	<50	<250	<0.5	<0.5	<0.5	<1	--	<10	--	--
	6/27/97	<50	<50	<250	<0.5	<0.5	<0.5	<1	--	<10	--	--

S.F. Title Notes: 3,700 314 Site Specific

¹ All groundwater samples were collected by Geomatrix Consultants, Inc. (Geomatrix), and analyzed by Pace Analytical Services, Inc., of Petaluma, California. Total petroleum hydrocarbons were analyzed using EPA Method 8015. Benzene, toluene, ethylbenzene, and xylenes (BTEX) and methyl-tert-butyl ether (MTBE) were analyzed using EPA Method 8020. Copper (Cu) and chromium (Cr) were analyzed using EPA Method 6010. Lead was analyzed using EPA Method 7421.

² Samples were filtered through a 0.45-micron filter in the field.

³ Review of the chromatograms by Geomatrix indicates that the detections are not representative of dissolved hydrocarbons in the groundwater.

⁴ Although not required, MW-1 was tested for hexavalent chromium (<10 µg/l) and polynuclear aromatic hydrocarbons using EPA Method 8270 (all constituents <10 µg/l).

⁵ Double silica gel cleanup was performed by Pace.

⁶ Pace noted that chromatographic pattern matches known laboratory contaminant.

-- = Not analyzed

TABLE 11
~~TABLE 1~~

WATER-LEVEL ELEVATIONS
EXECUTIVE INN
1755 Embarcadero
Oakland, California

Well I.D. ¹	Date	Measuring Point Elevation (feet, MSL) ²	Depth Below Measuring Point (feet)	Water-Level Elevation (feet, MSL)
MW-1	8/21/96	8.17	7.40	0.77
	12/20/96	8.17	5.56	2.61
	3/13/97	8.17	7.96	0.21
	6/27/97	8.17	5.44	2.73
MW-2	8/21/96	8.24	6.40	1.84
	12/20/96	8.24	6.00	2.24
	3/13/97	8.24	6.68	1.56
	6/27/97	8.24	7.08	1.16

Notes:

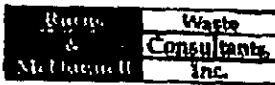
¹ Well locations are shown on Figure 2.

² Monitoring wells were surveyed to mean sea level (MSL) by the Port of Oakland on 21 August 1996.

Apr. 20. 1999 8:42AM BURNS&MCDONNELL WCI

Memorandum

No. 7821 P. 2/2

TABLE 12

Juliett Shin
337-9335

Date: April 20, 1999

To: Randy Lee
Lynn SuerFrom: Steve Meek *SM*

Re: Recommended SEPZ Standards for TPH

There has been a considerable amount of activity and correspondence since we last submitted a full set of recommendations for TPH groundwater standards in the SEPZ. In order to clarify the CTG's position and our understanding of the current status of the proposed standards, here are our recommendations for TPH as diesel, jet fuel, and Stoddard solvent along with your previously proposed standard for gasoline.

TPH-diesel	0.64 mg/L	(similarity to jet fuel)	640 ppb
TPH-gasoline	3.7 mg/L	(IC25/10 - sea urchin)	3,700 ppb
TPH-jet fuel	0.64 mg/L	(IC25 - mysid)	640 ppb
TPH-Stoddard solv.	0.68 mg/L	(EC25/10 - sea urchin)	680 ppb

Please note that this is a revision to our memo on the same subject dated April 8, 1999. I have adjusted the diesel value to match jet fuel in order to be consistent with the recommendation in your letter of July 16, 1998. I have also included in parentheses the basis for each recommendation. If you have any questions on these proposed standards, please call me at 816-822-3491.

BORING LOGS



ALISTO ENGINEERING GROUP
WALNUT CREEK, CALIFORNIA

LOG OF BORING TW-1

Page 1 of 1

SEE SITE PLAN

ALISTO PROJECT NO: 10-283-01 DATE DRILLED: 08/24/95
 CLIENT: Part of Oakland
 LOCATION: 1755 Embarcadero, Oakland, California
 DRILLING METHOD: Hollow-stem auger (4")
 DRILLING COMPANY: Soils Exploration Srv. CASING ELEVATION: N/A
 LOGGED BY: T.M. APPROVED BY: Al Sevilla

BLOWS/6 IN.	PTD VALUES	WELL DIAGRAM	DEPTH feet	SAMPLES	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION
							3" asphalt
6,5,5						CL	gravelly CLAY: olive gray, damp, stiff; abundant shell fragments; angular gravel to 1" diameter.
12,10,8			5				No recovery at 5 feet; concrete in shoe.
1,1,1			10			ML	sandy SILT: tan, wet, very soft; very fine- to coarse-grained sand to approximately 30%; minor angular gravel to 1/4" diameter; organics present. Railroad tie splinter on auger at 9 feet.
			15				Boring terminated at 11.5 feet. <u>Temporary Well Construction prior to grouting hole:</u> * 10 feet of 2" Sch. 40 PVC, 0.020" slot
			20				
			25				
			30				



ALISTO ENGINEERING GROUP
WALNUT CREEK, CALIFORNIA

LOG OF BORING TW-2

Page 1 of 1

SEE SITE PLAN	ALISTO PROJECT NO: 10-283-01	DATE DRILLED: 08/24/95
	CLIENT: Part of Oakland	
	LOCATION: 1755 Embarcadero, Oakland, California	
	DRILLING METHOD: Hollow-stem auger (4")	
	DRILLING COMPANY: Soils Exploration Srv.	CASING ELEVATION: N/A
LOGGED BY: T.M.		APPROVED BY: Al Sevilla

BLOWS/6 IN.	PTD VALUES	WELL DIAGRAM	DEPTH feet	SAMPLES	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION
4,4,2			5			CL	2-3" asphalt
50/3"			10				
			15				<p>Boring terminated at 11.5 feet.</p> <p><u>Temporary Well Construction prior to grouting hole:</u> * 10 feet of 2" Sch. 40 PVC, 0.020" slot</p>
			20				
			25				
			30				



ALISTO ENGINEERING GROUP
WALNUT CREEK, CALIFORNIA

LOG OF BORING TW-3

Page 1 of 1

SEE SITE PLAN

ALISTO PROJECT NO: 10-283-01 DATE DRILLED: 08/24/95
 CLIENT: Port of Oakland
 LOCATION: 1755 Embarcadero, Oakland, California
 DRILLING METHOD: Hollow-stem auger (4")
 DRILLING COMPANY: Soils Exploration Srv. CASING ELEVATION: N/A
 LOGGED BY: T.M. APPROVED BY: Al Sevilla

BLOWS/6 IN.	PTD VALUES	WELL DIAGRAM	DEPTH feet	SAMPLES	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	
							3" asphalt; 3' roadbase	
2,2,4			5				Pea gravel from 3 to 7 feet.	
				10			CL	silty CLAY: light tan; minor very fine-grained sand.
5,5,7								Boring terminated at 11.5 feet. <u>Temporary Well Construction prior to grouting hole:</u> x 10 feet of 2" Sch. 40 PVC, 0.020" slot



SEE SITE PLAN

ALISTO PROJECT NO: 10-283-01 DATE DRILLED: 08/24/95
 CLIENT: Port of Oakland
 LOCATION: 1755 Embarcadero, Oakland, California
 DRILLING METHOD: Hollow-stem auger (4")
 DRILLING COMPANY: Soils Exploration Srv. CASING ELEVATION: N/A
 LOGGED BY: T.M. APPROVED BY: Al Sevilla

BLOWS/6 IN.	PTD VALUES	WELL DIAGRAM	DEPTH feet	SAMPLES	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION
							3" asphalt; 2' roadbase
5,7,9			5			CL	gravelly CLAY: gray brown, damp, stiff; minor very fine- to very coarse-grained sand; angular gravel to 1/2"-diameter.
1,1,1			10				silty CLAY: dark gray.
1,3,3			15				Same: at 15 feet, black.
			20				Boring terminated at 17 feet. <u>Temporary Well Construction prior to grouting hole:</u> * 17 feet of 2" Sch. 40 PVC, 0.020" slot
			25				
			30				

PROJECT: EXECUTIVE INN
 1755 Embarcadero
 Oakland, California

Log of Well No. MW-1

BORING LOCATION: North of building

DRILLING CONTRACTOR: HEW

DRILLING METHOD: Hollow stem auger

DRILLING EQUIPMENT: CME 75

SAMPLING METHOD: Continuously cored system
 California modified split spoon

HAMMER WEIGHT: 145 pounds DROP: 18 inches

ELEVATION AND DATUM: ---

DATE STARTED: 8/15/96 DATE FINISHED: 8/15/96

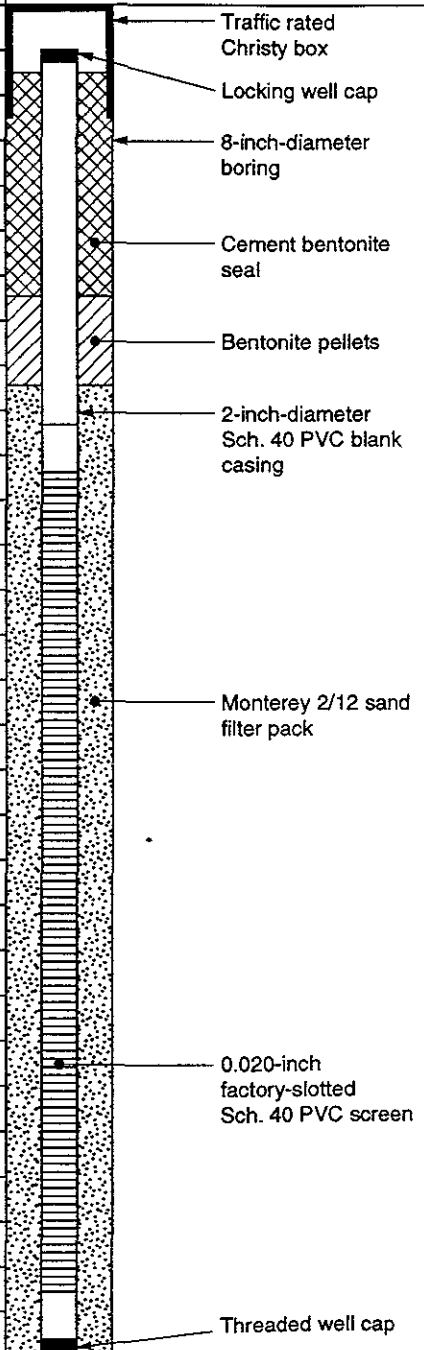
TOTAL DEPTH: 15 feet SCREEN INTERVAL: 5.25 - 14.25 feet

DEPTH TO FIRST WATER: 6.0 feet COMPL. --- CASING: ---

LOGGED BY: J. Patterson/J. Carolan

RESPONSIBLE PROFESSIONAL: S. Goodin REG. NO. R.G. 3743

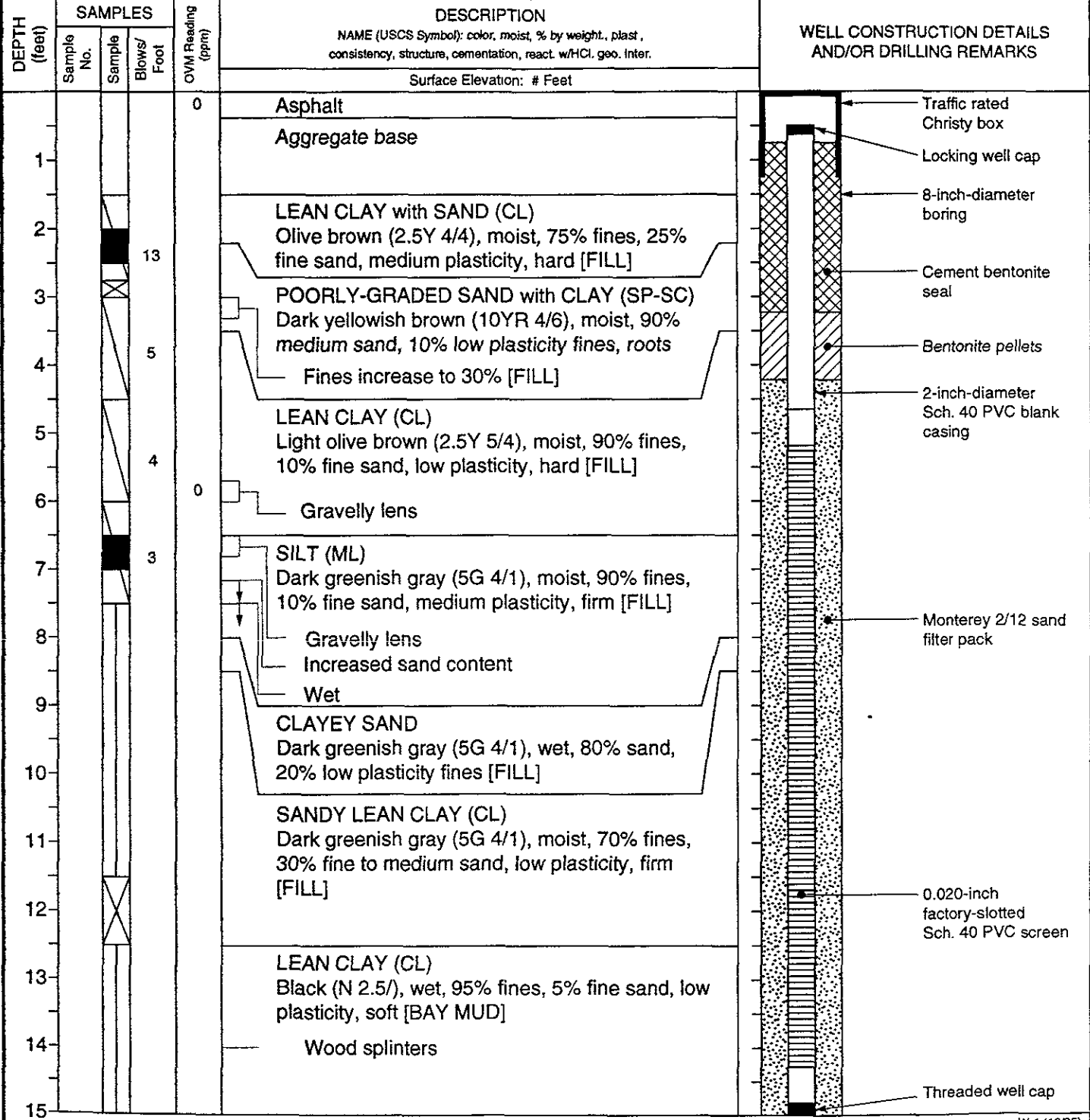
DEPTH (feet)	SAMPLES			OVM Reading (ppm)	DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast., consistency, structure, cementation, react. w/HCl geo. inter. Surface Elevation: # Feet	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
	Sample No.	Sample	Blows/Foot			
0					Asphalt	
0.5					Aggregate base	
1.5					LEAN CLAY (CL) Very dark grayish brown (10YR 3/2), moist, 90% fines, 10% fine to medium sand, low plasticity, hard [FILL]	
2.5			14		Increased sand and gravel	
3.5					Asphalt	
4.5			12			
5.5						
6.5			7			
7.5					LEAN CLAY with SAND (ML) Dark greenish gray (5G 4/1), wet, 75% fines, 25% fine sand, low plasticity, hard [FILL]	
8.5			5		Wood fragments	
9.5						
10.5						
11.5						
12.5						
13.5					LEAN CLAY (CL) Dark greenish gray (5GY 4/1), wet, 95% fines, 5% fine sand, low plasticity, soft [BAY MUD]	
14.5			3			
15					Bottom of boring at 15 feet bgs.	



PROJECT: EXECUTIVE INN
 1755 Embarcadero
 Oakland, California

Log of Well No. MW-2

BORING LOCATION: South of building		ELEVATION AND DATUM: ---	
DRILLING CONTRACTOR: HEW		DATE STARTED: 8/15/96	DATE FINISHED: 8/15/96
DRILLING METHOD: Hollow stem auger		TOTAL DEPTH: 17.5 feet	SCREEN INTERVAL: 5.25 - 14.25 feet
DRILLING EQUIPMENT: CME 75		DEPTH TO FIRST WATER: 7.5 feet	COMPL. CASING: ---
SAMPLING METHOD: Continuously cored system California modified split spoon		LOGGED BY: J. Patterson/J. Carolan	
HAMMER WEIGHT: 145 pounds	DROP: 18 inches	RESPONSIBLE PROFESSIONAL: S. Goodin	REG. NO. R.G. 3743



3328.03 003

W-1 (12/95)