STATE OF CALIFORNIA—BUSINESS, TRANSPORTATION AND HOUSING AGENCY GRAY DAVIS, Governor

DEPARTMENT OF TRANSPORTATION
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September 27, 1999

R0397

Mr. Barney M. Chan
Hazardous Materials Specialist
Alameda County Environmental Health Services
Environmental Protection (LOP)
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

Subject: South Oakland Maintenance Station, CA – Site Investigation

Dear Mr Chan:

A draft Hazardous Waste Site Investigation Report for the above referenced site is enclosed. Please respond with any comments you may have regarding this report at your earliest convenience.

If you have any questions or comments, please contact Kathy Gill at (510) 286-6117.

Sincerely,

HARRY Y. YAHATA
District Director

By: Kathy Gill
for
SUBHASH AGARWAL
District Branch Chief
Office of Environmental Engineering

DRAFT

HAZARDOUS WASTE PRELIMINARY SITE INVESTIGATION REPORT
TASK ORDER NUMBER 04-911175-DH
CONTRACT NUMBER 43A0012

SOUTH OAKLAND MAINTENANCE STATION
1112 29th AVENUE
OAKLAND, CALIFORNIA

prepared for

CALIFORNIA DEPARTMENT OF TRANSPORTATION
District 4
111 Grand Avenue
Oakland, California 94623

prepared by

Professional Service Industries, Inc.
1320 West Winton Avenue
Hayward, California 94545
(510) 785-1111

September 24, 1999
575-9G014

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STATEMENT OF LIMITATIONS AND PROFESSIONAL CERTIFICATION

Information provided in this Site Investigation Report, prepared by Professional Service Industries, Inc. (PSI), is intended exclusively for the use of Caltrans for the evaluation of subsurface conditions as it pertains to the subject site. The professional services provided have been performed in accordance with practices generally accepted by other geologists, hydrologists, hydrogeologists, engineers, and environmental scientists practicing in this field. No other warranty, either expressed or implied, is made. As with all subsurface investigations, there is no guarantee that the work conducted identified any or all sources or locations of contamination.

This report is issued with the understanding that Caltrans is responsible for ensuring that the information contained herein is brought to the attention of the appropriate regulatory agency. This report has been reviewed by a geologist who is registered in the State of California and whose signature and license number appear below.

DRAFT

Frank R. Poss, R.E.A.
Senior Hydrogeologist

DRAFT

Timothy R. O'Brien RG/CEG/CHG
Senior Geologist

DRAFT

Scott A. Bowers
Staff Geologist

1.0 INTRODUCTION

Professional Service Industries, Inc. (PSI) has been retained by the California Department of Transportation (Caltrans), under Task Order Number 04-911175-DH and Contract Number 43A0012, to conduct a hazardous waste site assessment of current soil and groundwater conditions at the South Oakland Maintenance Station at 1112 29th Avenue, Oakland, California (subject site; Figure 1). The scope of work for this investigation included:

- Drilling of three soil borings
- Collection of soil and groundwater samples to characterize soil and groundwater;
- Preparation of a report detailing the results of the investigation; and
- Perform a sensitive receptor survey for the property.

1.1 SITE DESCRIPTION AND HISTORY

The site is currently used as a maintenance station by Caltrans. The maintenance station includes offices, a repair shop, a sign shop, and several material storage bins. The entire property covers approximately two acres. The site is paved with asphalt and is relatively flat. The Alameda/Oakland Estuary is approximately 0.5 miles southwest of the site.

One 4,000-gallon diesel underground storage tank (UST) and one 2,000-gallon gasoline UST were removed from the site on March 11, 1997. The tank pit was over-excavated and soil samples were collected. Sidewall and bottom samples collected from the excavation contained concentrations of Total Petroleum Hydrocarbons as Gasoline (TPH-G, [as high as 380 milligrams per kilogram (mg/kg)]), and Total Petroleum Hydrocarbons as Diesel (TPH-D, [as high as 21 mg/kg]). Concentrations of Benzene, Toluene, Ethylbenzene, and Total Xylenes (BTEX), ranged from 0.010 to 48 mg/kg. Methyl Tertiary Butyl Ether (MTBE) concentrations ranged from 0.041 to 9.15 mg/kg. Groundwater samples were not collected (Caltrans, 1999).

On April 6 and 7, 1999, Borings B1 through B6 were drilled at the site. The boring locations are presented in Figure 2. All of the borings were converted to 1.3-centimeter (cm) (0.5-inch) inside diameter temporary groundwater monitoring wells. Soil samples were collected from each boring at depths of 1.52, 3, and 4.56 meters (5, 10, and 15 feet) below ground surface (bgs).

Soil samples were analyzed for TPH-G, TPH-D, and Volatile Organic Compounds (VOCs), by EPA Method 8260. TPH-G was detected in one soil sample (B6-10 [13 mg/kg]). None of the soil samples contained detectable concentrations of TPH-D. MTBE

was the only VOC detected in the soil samples analyzed. MTBE was detected in the sample B5-1.5 meters (0.16 mg/kg). No other soil sample contained a detectable concentration of MTBE (PSI, 1999).

TPH-G was detected in groundwater samples from temporary Wells B3 (520 µg/l) and B4 (520 µg/l). No other groundwater samples contained detectable concentrations of TPH-G. No TPH-D was detected in any of the groundwater samples. Benzene was detected in the water sample from Well WB3 (6.3 µg/l). MTBE was detected in the samples from Well WB5 (6,600 µg/l) and WB6 (24 µg/l). Concentrations of other gasoline related compounds were detected in samples from Wells WB1, WB3, WB4, and WB5. Chloroform was detected in water samples from Wells WB4 (2.4 µg/l) and WB6 (2.7 µg/l). Tetrachloroethene (synonym Perchloroethene [PCE]) was detected in the water sample from Well WB6 (12 µg/l) (PSI, 1999)..

1.2 PROJECT OBJECTIVE

The objective of the project is to delineate the extent of hydrocarbon impacted soil and groundwater at the site. Analytical results from the soil and groundwater investigations were examined with respect to regulatory requirements and guidelines.

2.0 PRE-FIELD ACTIVITIES

Prior to initiation of field activities, PSI marked the drilling locations with white paint and contacted Underground Service Alert a minimum of 48-hours prior to beginning work to locate any potential buried utilities.

A site-specific Health and Safety Plan (HSP) was developed in compliance with 29 CFR 1910.120, under the supervision of a Certified Industrial Hygienist. The HSP was designed to address the potential hazardous materials that may be encountered during field activities at the site and to minimize the exposure to potentially hazardous materials and unsafe working conditions to on-site personnel (PSI, 1999).

3.0 SUBSURFACE INVESTIGATION

3.1 SOIL BORINGS

On August 13, 1999, Borings B7 through B9 were drilled at the site. The boring locations are presented in Figure 2. Borings were drilled using a Geoprobe 5300 drill rig. V&W Drilling of Rio Vista, California provided drilling services.

The borings were advanced using a 0.038 meter (1.5-inch) diameter core sampler fitted with a retractable tip and lined with acetate sleeves. Soil samples were collected from each boring at depths of 1.52, 3, and 4.56 meters (5, 10, and 15 feet) below ground surface (bgs). A 6.1-meter (twenty-foot) depth sample was collected from boring B8. A 6.1-meter and 7.6-meter (25-foot) sample were collected from boring B9.

Soils were logged according to the "Soil and Rock Logging Classification Manual" of the State of California, Department of Transportation. The manual is consistent with the Unified Soil Classification System. Boring logs are presented in Appendix B. Soils observed drilling activities consisted primarily of clay and sand mixtures. Groundwater was encountered approximately 4.7 meters (15.5 feet) below ground surface (bgs).

The soil samples were logged on chain-of-custody records and transported to Centrum Analytical of Redlands, California, a California Department of Health Services certified hazardous materials testing laboratory, following chain-of-custody protocol. The samples were maintained in a cooler with ice or a refrigerator until transported to the analytical laboratory. The analytical results are described in Section 4.

4.0 LABORATORY ANALYSIS PROGRAM

The soil and groundwater samples collected during this investigation were submitted to Centrum Analytical, a State of California Department of Health Services certified hazardous waste laboratory.

4.1 SOIL AND GROUNDWATER

The following analytical methods were used to analyze soil and groundwater samples:

- EPA Method 8015 modified - Total Petroleum Hydrocarbons as Gasoline (TPH-G);
- EPA Method 8015 modified - Total Petroleum Hydrocarbons as Diesel (TPH-D);
- EPA Method 8260 – Volatile Organic Compounds (VOCs)

5 .0 LABORATORY RESULTS

Summaries of the analytical results are presented in Tables 1 and 2. A copy of the laboratory reports and chain-of-custody records are included in Appendix D.

5.1 LABORATORY ANALYTICAL RESULTS - SOIL

The soil analytical results are presented in Table 1. TPH-G was detected in one soil sample (B9-15 [0.54 mg/kg]) from this investigation. None of the soil samples contained detectable concentrations of TPH-D.

MTBE and perchloroethene (PCE) were the only VOCs detected in the soil samples analyzed. MTBE was detected in Samples B7-25 (93 µg/kg) and B8-10 (11 µg/kg). No other soil sample contained a detectable concentration of MTBE. The MTBE found in these soil samples could be related to the release from the former tank pit. The presence of these contaminants indicates that impacted soil contamination extends downgradient from the former tank pit.

5.2 LABORATORY ANALYTICAL RESULTS - GROUNDWATER

Groundwater samples from Borings B7 through B9 were submitted to the laboratory for analysis. The groundwater analytical results are presented in Table 2.

TPH-G was detected in one groundwater sample from Boring B7 (3,800 µg/l). The groundwater sample from Boring B7 also contained TPH-D (0.73 mg/l). No other groundwater samples contained detectable concentrations of TPH-G or TPH-D.

MTBE was detected in the groundwater samples from Borings B7 (5,600 µg/l) and B8 (9.0 µg/l). Concentrations of other gasoline related compounds were not detected in any of the groundwater samples during this investigation.

Chloroform was detected in groundwater samples from Borings B8 (10 µg/l) and B9 (16 µg/l). PCE was not detected in groundwater samples during this investigation.

5.3 COMPARISON OF GROUNDWATER RESULTS WITH REGULATORY CRITERIA

The concentrations of contaminants reported by the analytical laboratory were compared to State of California Primary and Secondary Drinking Water Standards (PDWS and SDWS). The following samples were above their respective PDWS and/or SDWS.

- MTBE concentrations detected in grab groundwater samples WB7 (5,600 µg/l) and WB8 (9.0 µg/l) exceeded the SDWS (5.0 µg/l).
- The chloroform concentrations detected in grab groundwater samples WB8 (10 µg/l) and WB9 (16 µg/l) are below the U.S. Environmental Protection Agency's Drinking Water Standards and Advisories Table level for chloroform (80 µg/l).

6.0 SENSITIVE RECEPTOR SURVEY

The presence of potential conduits were evaluated by researching the presence and construction details of wells, horizontal conduits (utility trenches), off-site sources, and aerial photographs.

6.1 WELL SURVEY

A well survey was performed to identify agricultural, domestic, and industrial wells within a radius of two thousand feet of the site.

Groundwater monitoring wells were not included in the survey because they are constructed in a single aquifer zone under the supervision of professionals familiar with groundwater hydrogeology. PSI contacted Mr. Marlon Magallanes of the Alameda County Public Works Department (ACPWD) for information regarding wells in the vicinity of the subject site. A list of 37 wells within 2,000 feet of the subject property was forwarded to PSI for review (Appendix D). Del Monte Corporation used to occupy the property at 1100 29th Avenue (directly downgradient of the site). The radius search from ACPWD indicates that two industrial wells 873 and 875 feet in depth were on the former Del Monte property. The 875 foot well has been abandoned. The well locations are presented in Figure 3.

6.2 UTILITY TRENCHES

PSI investigated the location and depth of sewer and storm drain trenches within and near the site. Research was conducted in the map room of the Alameda County Public Works Department located in Hayward, California.

A 1984 map (the most current available for review) showing sanitary sewer and storm drain piping was reviewed. A storm drain and sanitary sewer run along 29th Avenue.

No trenches are known to exist in the immediate vicinity of the former USTs. From a telephone conversation with Mr. Mario Millan of the City of Oakland Community Economic and Development Agency, Sewer lines run ten feet below grade. Storm drain lines in the vicinity of the site are buried nine feet below grade (CEDA, 1999).

6.3 ENVIRONMENTAL RECORDS REVIEW

PSI reviewed regulatory records to obtain information on remediation activities at nearby UST sites. The information was used to determine if other sites might be contributing contaminants to the subject site. A copy of the Vista Site Assessment Plus Report is included in Appendix C.

The California LUST list is a compilation of petroleum UST sites that have reported a release. A total of 34 LUST sites were identified within 0.38 miles of the subject property. Seven sites were identified as being upgradient of the maintenance station. All seven of the upgradient LUST sites have a case closed remedial status; they are unlikely to contribute contaminants to the subject site.

6.4 AERIAL PHOTOGRAPH REVIEW

Aerial photographs were reveiwed to provide information on possible historical on-site or off-site sources of contamination. Available aerial photographs, dated 1947, 1957, 1969, 1979, 1990, and 1998, were obtained from Pacific Aerial Surveys. The photographs are discussed below and are included in Appendix E:

Date: March 24, 1947
Scale: 1"= 20,000'

The aerial photograph indicates that the subject site appears to be developed with a small maintenance yard without the office building along 23rd Avenue. The general vicinity to the north appears to be residential, while to the west, east, and south, industrial properties surround the site.

Date: May 3, 1957
Scale: 1"= 12,000'

The subject site and site vicinity appears generally as it does in the 1947 aerial photograph. The office building along 23rd Avenue appears to have been added by this time. Interstate 880 (Nimitz Freeway) has been added by 1957. An elementary school has been added immediately north of interstate 880 along 23rd Avenue.

Date: May 2, 1969
Scale: 1"= 12,000'

The subject site and site vicinity appears generally as it does in the 1957 aerial photograph. The immediate site vicinity appears generally as it does in the 1957 aerial photograph.

Date: September 14, 1979
Scale: 1"= 12,000'

The subject site and site vicinity appears generally as it does in the 1969 aerial photograph. The immediate site vicinity appears generally as it does in the 1969 aerial photograph.

Date: June 12, 1990
Scale: 1"= 12,000'

The subject site and site vicinity appears generally as it does in the 1979 aerial photograph. The immediate site vicinity appears generally as it does in the 1979 aerial photograph.

Date: August 24, 1998
Scale: 1"= 12,000'

The subject site and site vicinity appears generally as it does in the 1990 aerial photograph. The immediate site vicinity appears generally as it does in the 1990 aerial photograph.

There is no indication in the aerial photographs that historical on-site or off-site sources have impacted the subject site.

7.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the information presented in this report, the following conclusions have been reached:

- The groundwater flow direction measured at the site in the previous investigation is east with a hydraulic gradient of 0.053 meter per meter (foot per foot). The measured groundwater flow direction is not consistent with the anticipated flow direction interpreted from a topographic map. This anomaly may be due to nearby groundwater extraction or local hydrogeology.

- TPH-G concentrations were detected in one soil sample [B9-15 (0.54 mg/kg)] at the site.

- TPH-D was detected in one groundwater sample [WB7 (0.73 mg/l)]

- MTBE was detected in grab groundwater samples WB7 (5,600 µg/l) and WB8 (9.0 µg/l). The downgradient extent of MTBE has not been established.

- The sensitive receptor survey revealed the presence of an industrial well located at the former Del Monte facility approximately 150 southwest of the site.

Based on the results presented in this report, PSI recommends the installation of three to four groundwater monitoring wells to confirm MTBE concentrations, to further delinate the extent of groundwater contamination, and to better define site specific groundwater flow direction. Once site characterization is completed a Risk-Based Corrective Action (RBCA) is warranted

REFERENCES

Caltrans, 1999, Task Order # 04-911175-DH, Hazardous Waste Preliminary Site Investigation, prepared for Caltrans, March 4.

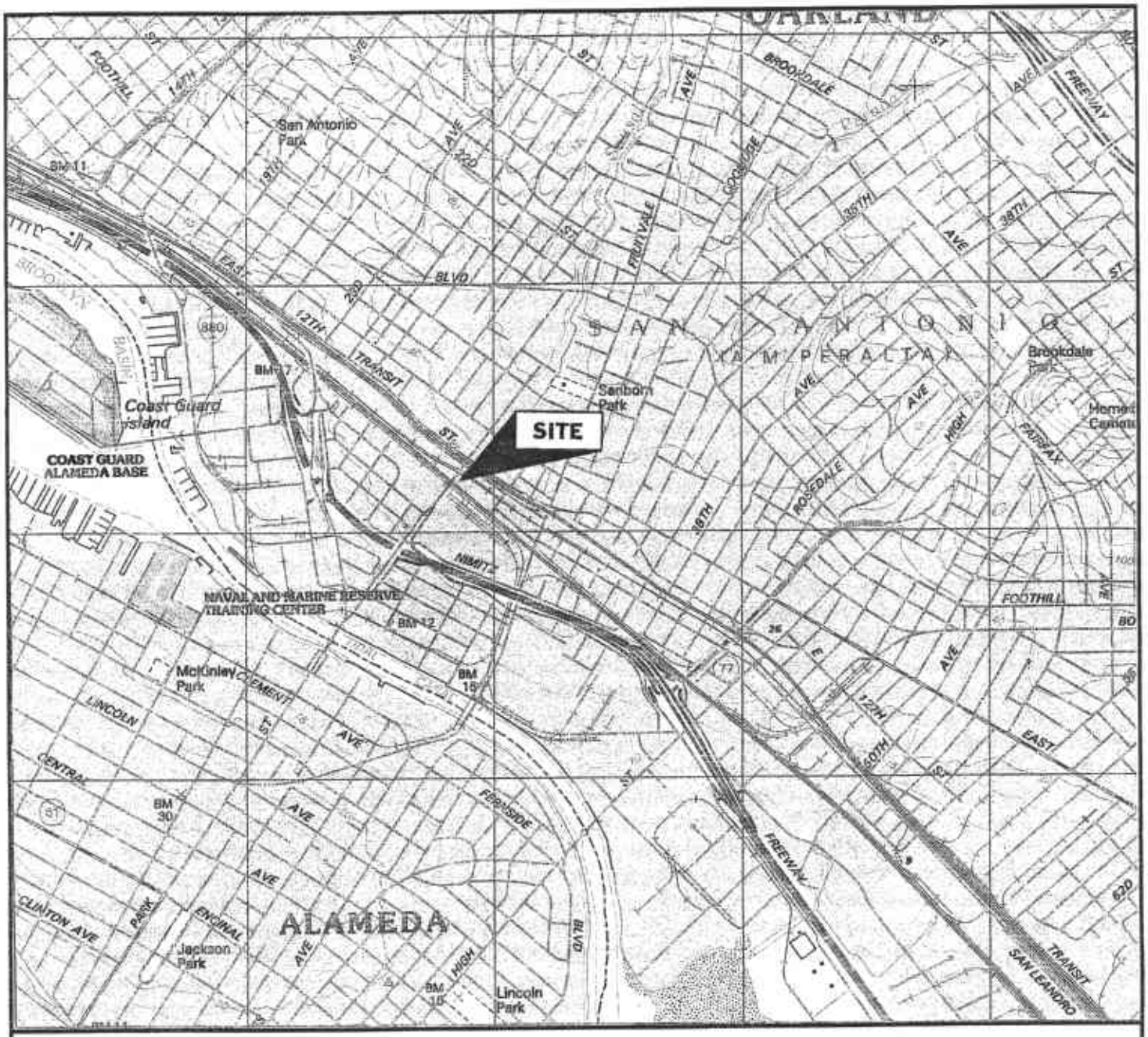
PSI, 1999, Health and Safety Plan, prepared for Caltrans, March 26.

PSI, 1999, Task Order # 04-911175-DH, Hazardous Waste Preliminary Site Investigation, prepared for Caltrans, May 25

PSI, 1997, Hazardous Waste Preliminary Site Investigation Workplan, prepared for Caltrans, March 26.

Norcal, 1999, Geophysical Results for the South Oakland Maintenance Station, prepared for PSI, April 6.

CEDA, 1999, Telephone conversation with Mr. Mario Millan, September 22.

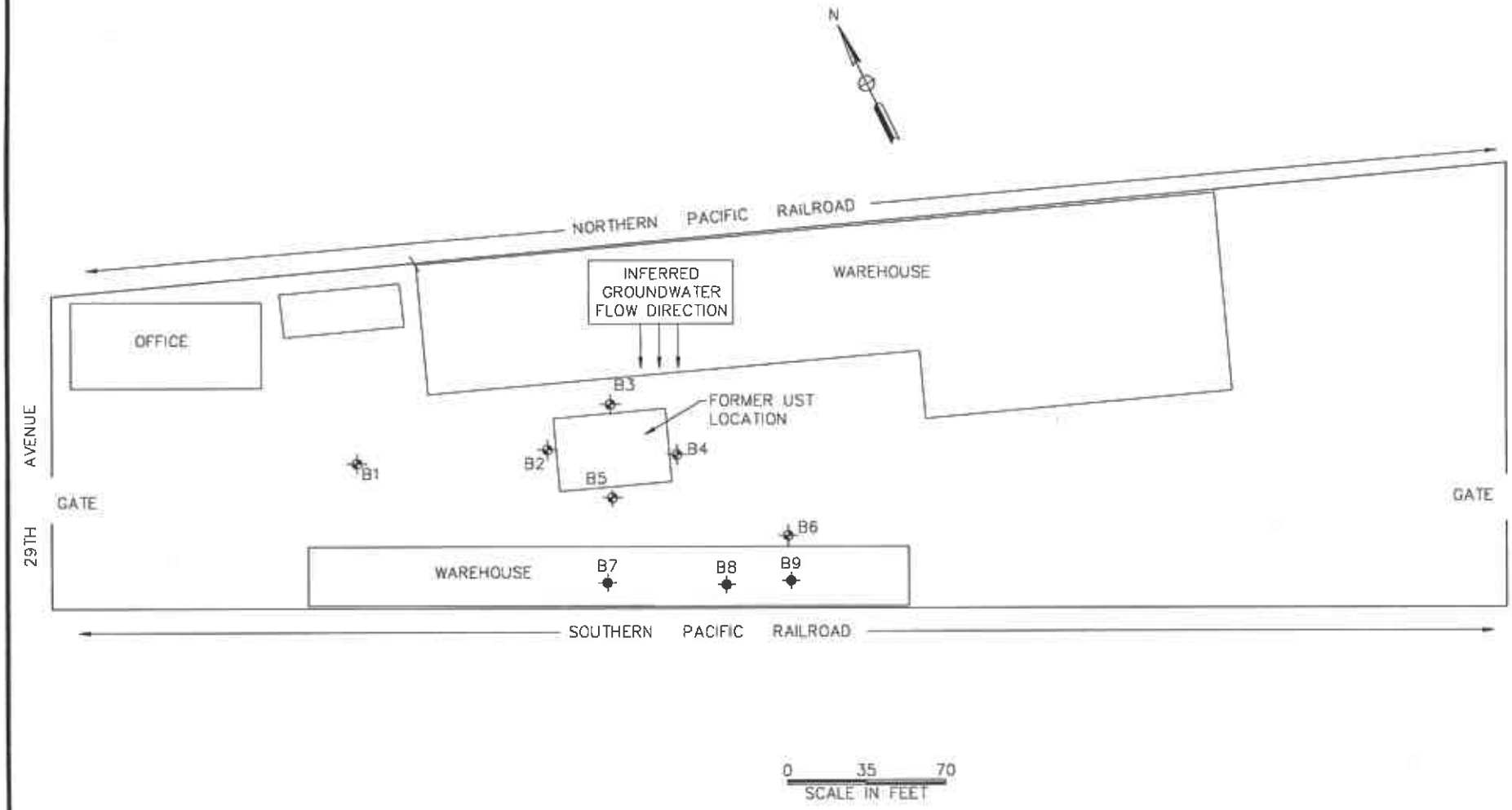


REFERENCE:
U.S.G.S. OAKLAND EAST, CALIFORNIA, 1997

psi ENVIRONMENTAL GEOTECHNICAL CONSTRUCTION
CONSULTING • ENGINEERING • TESTING

SITE LOCATION
CALTRANS MAINTENANCE STATION
1112 29TH AVENUE
OAKLAND, CALIFORNIA
PROJECT NUMBER: 575-9G014

DATE: 3/23/99	CK'D BY:	FIGURE NO.: 1
FILE NO.: 9G014-1		DRAWN BY: S. BOWERS



LEGEND

B2 FORMER SOIL BORING/TEMPORARY WELL LOCATION

B7 SOIL BORING

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SOIL BORING LOCATIONS
CALTRANS MAINTENANCE STATION
1112 29TH AVENUE
OAKLAND, CALIFORNIA
PROJECT NUMBER: 575-9G014

DATE: 7/20/99	CKD BY:	FIGURE NO.: 2
FILE NO: 9G014-2		DRAWN BY: S.BOWERS

NORTH

0 0.05 0.10

SCALE IN MILES

psi ENVIRONMENTAL GEOTECHNICAL CONSTRUCTION
CONSULTING • ENGINEERING • TESTING

PROPERTIES WITH WELLS WITHIN 2,000 FEET
CALTRANS MAINTENANCE STATION
1112 29TH AVENUE
OAKLAND, CALIFORNIA
PROJECT NUMBER: 575-9G014

DATE: 9/20/99	CKD'D BY:	FIGURE NO.: 3
FILE NO.: 9G014-3		DRAWN BY: S. BOWERS

TABLE 1

ANALYTICAL RESULTS FOR SOIL SAMPLES
SOUTH OAKLAND MAINTENANCE STATION
1112 29TH AVENUE
OAKLAND, CALIFORNIA

Sample I.D.	TPH-G mg/kg	TPH-D mg/kg	MTBE µg/kg	VOCs* µg/kg
B1-5	<1.0	<10	<5	ND
B1-10	<1.0	<10	<5	ND
B2-5	<1.0	<10	<5	ND
B2-10	<1.0	<10	<5	ND
B3-5	<1.0	<10	<5	ND
B3-10	<1.0	<10	<5	ND
B4-5	<1.0	<10	<5	ND
B4-10	<1.0	<10	<5	ND
B5-5	<1.0	<10	160	160
B5-10	<1.0	<10	<5	ND
B6-5	<1.0	<10	<5	ND
B6-10	13	<10	<5	ND
B7-5	<0.5	<10	<5	ND
B7-10	<0.5	<10	<5	ND
B7-15	<0.5	<10	<5	ND
B7-20	<0.5	<10	<5	ND
B7-25	<0.5	<10	93	93
B8-5	<0.5	<10	<5	ND
B8-10	<0.5	<10	11	12
B8-15	<0.5	<10	<5	ND
B8-20	<0.5	<10	<5	ND
B9-5	<0.5	<10	<5	1 [1]
B9-10	<0.5	<10	<5	ND
B9-15	0.54	<10	<5	ND

NOTES:

TPH-D = Total Petroleum Hydrocarbons as Diesel by EPA Method 8015M.

TPH-G = Total Petroleum Hydrocarbons as Gasoline by EPA Method 8015M.

MTBE = Methyl Tertiary Butyl Ether

VOCs* reported as the sum of all analytes detected in EPA Method 8260

[1] = concentration contains tetrachloroethene by EPA Method 8260 only.

TABLE 2

ANALYTICAL RESULTS FOR GROUNDWATER SAMPLES
SOUTH OAKLAND MAINTENANCE STATION
1112 29TH AVENUE
OAKLAND, CALIFORNIA

Sample I.D.	TPH-G µg/l	TPH-D mg/l	MTBE µg/l	Benzene µg/l	Toluene µg/l	Ethyl-benzene µg/l	Total Xylenes µg/l	I-PB µg/l	N-propyl-benzene µg/l	Naph-thalene µg/l	1,2,4-TMB µg/l	1,3,5-TMB µg/l	Chloroform µg/l	PCE µg/l
WB1	<500	<10	<1.0	<0.5	<0.5	<0.5	2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
WB2	<500	<10	<1.0	<0.5	<0.5	<0.5	<1.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
WB3	520	<10	<1.0	6.3	2.2	11	40	1.8	5.4	3.5	31.0	12.0	<0.5	<0.5
WB4	520	<10	<1.0	<0.5	<0.5	3.7	7.7	1.3	3.0	2.6	19.0	6.3	2.4	<0.5
WB5	<500	<10	6,600	<0.5	0.6	<0.5	<1.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
WB6	<500	<10	24	<0.5	<0.5	<0.5	<1.5	<0.5	<0.5	<0.5	<0.5	<0.5	2.7	12.0
WB7	3,800	0.73	5,600	<0.5	<0.5	<0.5	<1.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
WB8	<500	<0.42	9.0	<0.5	<0.5	<0.5	<1.5	<0.5	<0.5	<0.5	<0.5	<0.5	10	<0.5
WB9	<500	<0.42	<1.0	<0.5	<0.5	<0.5	<1.5	<0.5	<0.5	<0.5	<0.5	<0.5	16	<0.5

NOTES:

TPH-D = Total Petroleum Hydrocarbons as Diesel by EPA Method 8015M.
TPH-G = Total Petroleum Hydrocarbons as Gasoline by EPA Method 8015M.
MTBE = Methyl Tertiary Butyl Ether
1,2,4 TMB = 1,2,4 Trimethylbenzene
1,3,5 TMB = 1,3,5 Trimethylbenzene
I-PB = iso-Propylbenzene
PCE = Tetrachloroethene (Synonym perchloroethen