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By Alameda County Environmental Health at 12:30 pm, Mar 18, 2015

March 13, 2015

Mr. Keith Nowell
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

Subject: **Sensitive Receptor Survey**

Site: **76 Station No. 5191/5043**
449 Hegenberger Road
Oakland, California
Fuel Leak Case No. RO0000219

Dear Mr. Nowell;

I declare under penalty of perjury that to the best of my knowledge the information and/or recommendations contained in the attached report is/are true and correct.

If you have any questions or need additional information, please call:

Walter T. Sprague
Pacific Convenience & Fuel
7180 Koll Center Parkway, Suite 100
Pleasanton, California 94566
Tel: (925) 931-5714
Fax: (925) 905-2746
WSprague@pcandf.com

Sincerely,

PACIFIC CONVENIENCE & FUEL

WALTER SPRAGUE
Director of Retail Services

Attachment

Sensitive Receptor Survey

76 Station No. 5191/5043
449 Hegenberger Road
Oakland, CA

Alameda County Health Care Services Agency Fuel Leak Case No. RO0000219

San Francisco Bay, Regional Water Quality Control Board Case No. 01-1601

GeoTracker Global ID No.T0600101476

Antea Group Project No. I42705191

March 13, 2015

Prepared for:
Mr. Keith Nowell
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

Prepared by:
Antea®Group
11050 White Rock Road, Suite 110
Rancho Cordova, CA 95670
+1 800 477 7411

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Certification

Information, conclusions, and recommendations provided by Antea Group in this document regarding the site have been prepared under the supervision of and reviewed by the licensed professional whose signature appears below.

Please contact the undersigned at 800-477-7411 if you have any questions.

PROFESSIONAL GEOLOGIST
DENNIS SHANNON DETTLOFF
No. 7480
STATE OF CALIFORNIA

Dennis S. Dettloff, P.G.
Senior Project Manager
California Registered Professional Geologist No. 7480

Sensitive Receptor Survey

76 Station No. 5191/5043
Oakland, CA

1.0 INTRODUCTION

Antea Group has prepared this *Sensitive Receptor Survey* for the referenced site in Oakland, California (**Figure 1**). The subject site is an operating 76 gasoline station located on the southwestern corner of Hegenberger Road and Edgewater Drive in Oakland, CA. Station facilities include three underground storage tanks (USTs), two dispenser islands, a station building, and a carwash. A total of ten groundwater monitoring wells are located at or near the site (**Figure 2**). Please refer to **Appendix A** for additional site information and for the history of environmental investigations and remedial actions.

The site is currently under the lead regulatory oversight of the Alameda County Health Care Services Agency (ACHCSA). Selected reports and agency correspondence for the site can be found on the State of California Water Resources Control Board's online GeoTracker database (Global I.D. No. T0600101476).

2.0 SITE DESCRIPTION AND LAND USE

Station No. 5191/5043 is an active 76-branded gasoline retail outlet located at the intersection of Hegenberger Road and Edgewater Drive in a commercial area of Oakland, California. The site is bounded to the north by Edgewater Drive; to the east by Hegenberger Road, and to the south and west by a parking lot (**Figure 2**). The closest residential buildings are approximately 830 feet west southwest of the site. Station facilities include a station building, a car wash, six fuel dispensers on two islands under a single canopy, and three fuel underground storage tanks (USTs) (**Figure 2**).

3.0 SENSITIVE RECEPTOR SURVEY

Antea Group conducted a survey to identify any sensitive receptors which have the potential to be affected by a petroleum hydrocarbon release at the site. The survey included a review of well completion reports from the Department of Water Resources (DWR) and from Alameda County Public Works Agency (ACPWA), a web-based search for potential receptors, and a site reconnaissance to confirm receptor location. In addition, East Bay Municipal Utility District (EBMUD) was contacted to determine if they have any water supply wells in the area.

3.1 Well Search

Antea Group contacted the DWR to obtain copies of Well Completion Reports and ACPWA to obtain a copy of their records for wells located within 0.5 miles of the site. The purpose of the search was to identify all water supply,

domestic, municipal, and irrigation wells which have the potential to be affected by a petroleum hydrocarbon release at the site. Antea Group identified three water supply wells in the search area whose locations could be confirmed:

1. W.E. Lyons Construction, Irrigation (980 feet south-southeast of the site)
2. Ratto Bros, Inc., Irrigation (2,570 feet south-southeast of the site)
3. Ratto Brother, Irrigation (1,700 feet south-southeast of the site)

Five additional wells were identified whose location could not be determined which may be water supply wells within 0.5 miles of the site. Two of the water supply wells listed above were identified from the data provided by the DWR, the third well was identified from the data provided by ACPWA. A copy of the well completion reports provided by the DWR for the two irrigation wells is included as **Appendix B**. Well locations are shown on **Figure 2**.

According to EBMUD, they do not operate any water supply wells within a half mile radius of the site.

3.2 Web-Based Receptor Search

Using Google Maps and Google Earth, Antea Group conducted a web-based search to identify any sensitive receptors (schools, churches, day care facilities, elderly care facilities, hospitals, surface water bodies, etc.) within a 0.5 mile radius of the site which have the potential to be affected by a petroleum hydrocarbon release at the site. Antea Group identified the following sensitive receptors during the web-based search (all distances are approximate):

A. Lighthouse Community Charter School (150 feet east)
B. Canal which flows to San Leandro Bay (1,150 feet southwest)
C. ITT Technical Institute (1980 feet north northwest)
D. Paradise Baptist Church (2,060 feet southeast)
E. Brookfield Elementary School and Early Childhood Center(2,170 feet east southeast)
F. Praise God Korean Church and Oikos University (2,170 feet north northwest)
G. Evangelical Lutheran Church (2,700 feet northwest)

Receptor locations within the survey area are shown on **Figure 3**. Based on the above identified receptors distance from the site, location up-gradient or cross-gradient to the site, and the extent of the impacted groundwater plume, they are not anticipated to be affected by a petroleum hydrocarbon release at the site.

3.3 Site Reconnaissance

Antea Group conducted a site reconnaissance on March 5, 2015 to verify any receptors reported during the web-based search, and identify any receptors not reported during the web-based search. Antea Group was able to verify the location of all the receptors reported above (**Section 3.2**). In addition, Antea Group identified the following sensitive receptors during the site reconnaissance.

H. Drainage Ditch (931 feet southeast)
I. Mountain of Fire and Miracle Ministries (1,340 feet north northeast)
J. Alameda Hebron Baptist Church (1,540 feet west northwest)

Based on the distance from the site, location with respect to the site and the prevailing groundwater flow direction, predominately to the southeast and to a lesser extent to the southwest and south (**Figure 4**), the potential sensitive receptors identified above and in **Section 3.2** do not appear and are not anticipated to be affected by soil, soil vapor, or groundwater impact due to a petroleum hydrocarbon release at the site.

4.0 SUMMARY

As part of this *Sensitive Receptor Survey*, Antea Group conducted a well radius search through the DWR, a web-based search, and a site reconnaissance sensitive receptors which have the potential to be affected by a petroleum hydrocarbon release at the site. The results indicate that each of the identified sensitive receptors and wells within a 0.5-mile radius of the site do not appear and are not anticipated to be affected by the soil, soil vapor, or groundwater impacts due to a petroleum hydrocarbon release at the site.

5.0 REMARKS

The descriptions, conclusions, and recommendations contained in this report represent Antea Group's professional opinions based upon the currently available information and are arrived at in accordance with currently acceptable professional standards. For any reports cited that were not generated by Antea Group, the data from those reports is used "as is" and is assumed to be accurate. Antea Group does not guarantee the accuracy of this data for the referenced work performed nor the inferences or conclusions stated in these reports. This report is based upon a specific scope of work requested by the client. The Contract between Antea Group and its client outlines the scope of work, and only those tasks specifically authorized by that contract or outlined in this report were conducted. This report is intended only for the use of Antea Group's Client and anyone else specifically listed on this report. Antea Group will not and cannot be liable for unauthorized reliance by any other third party. Other than as contained in this paragraph, Antea Group makes no express or implied warranty as to the contents of this report.

If you have questions about this report and the site, please contact Dennis Dettloff at 800-477-7411.

Jonathan Fillingame

Jonathan Fillingame
Staff Geologist

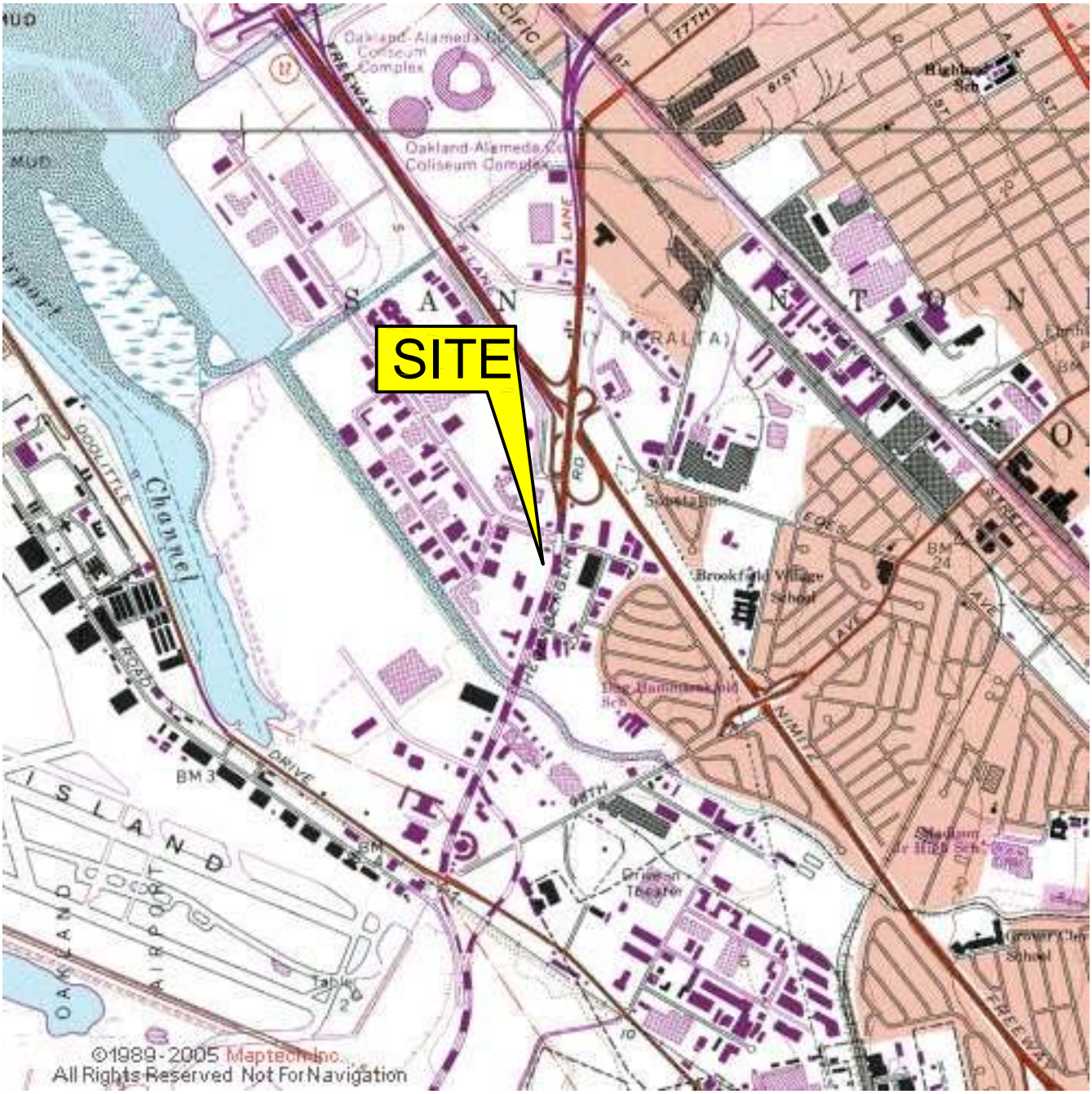
Information, conclusions, and recommendations provided by Antea Group in this document regarding the site have been prepared under the supervision of and reviewed by the licensed professional whose signature appears below.

Reviewed by:

Dennis S. Dettloff Date: 3/13/15

Dennis S. Dettloff, P.G.
Senior Project Manager

Figures



North

0 900 1800 FT

SCALE

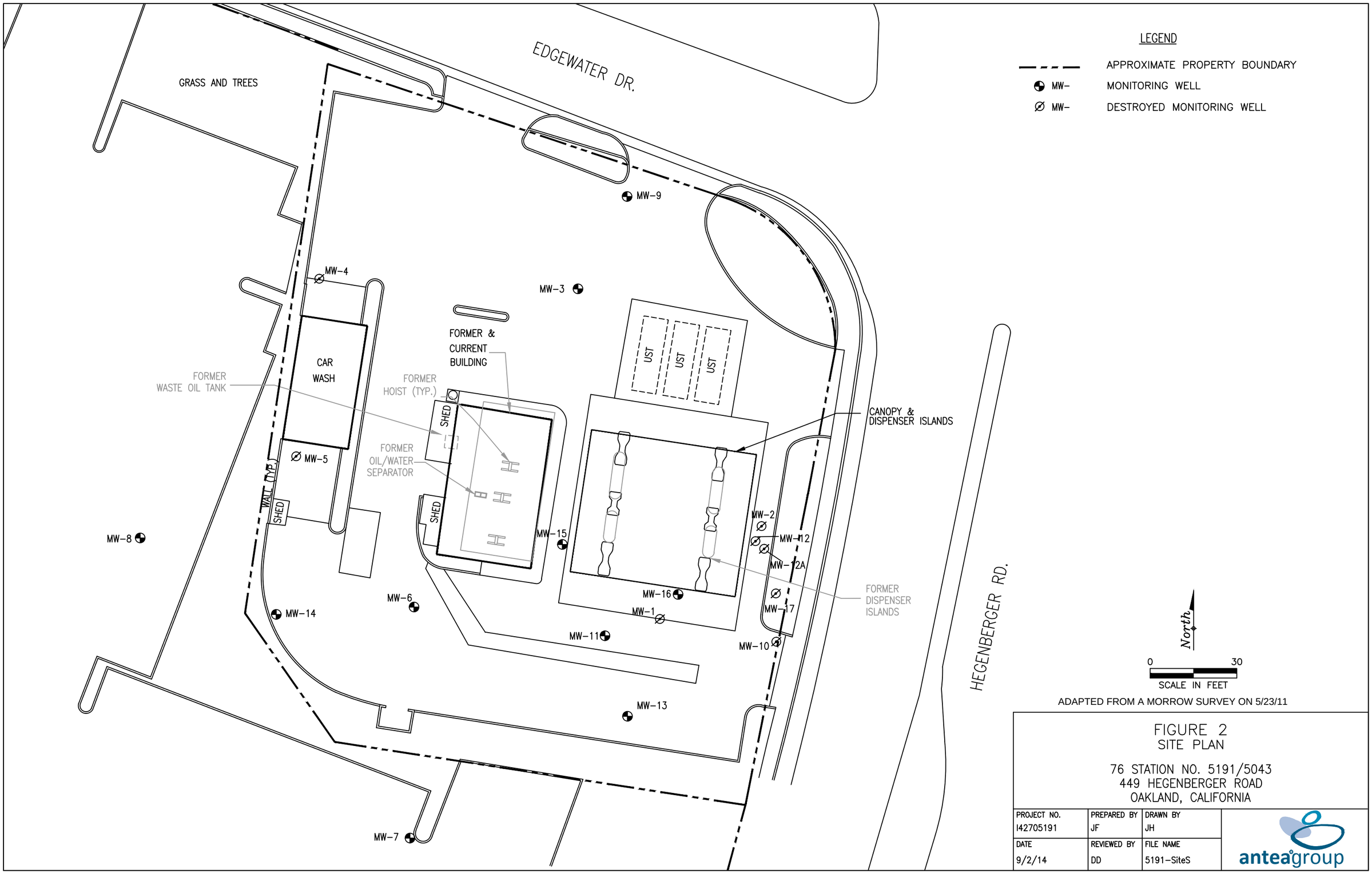
SOURCE: USGS 7.5 MINUTE TOPOGRAPHIC MAP, OAKLAND EAST QUADRANGLE (1973)

FIGURE 1
SITE LOCATION MAP

76 STATION NO. 5191/5043
449 HEGENBERGER ROAD
OAKLAND, CALIFORNIA

PROJECT NO.	PREPARED BY	DRAWN BY
142705191	EW	DR/JH
DATE	REVIEWED BY	FILE NAME
1/31/11	DD	5043-SiteLocator

antea group



ADAPTED FROM A MORROW SURVEY ON 5/23/11

FIGURE 2
SITE PLAN

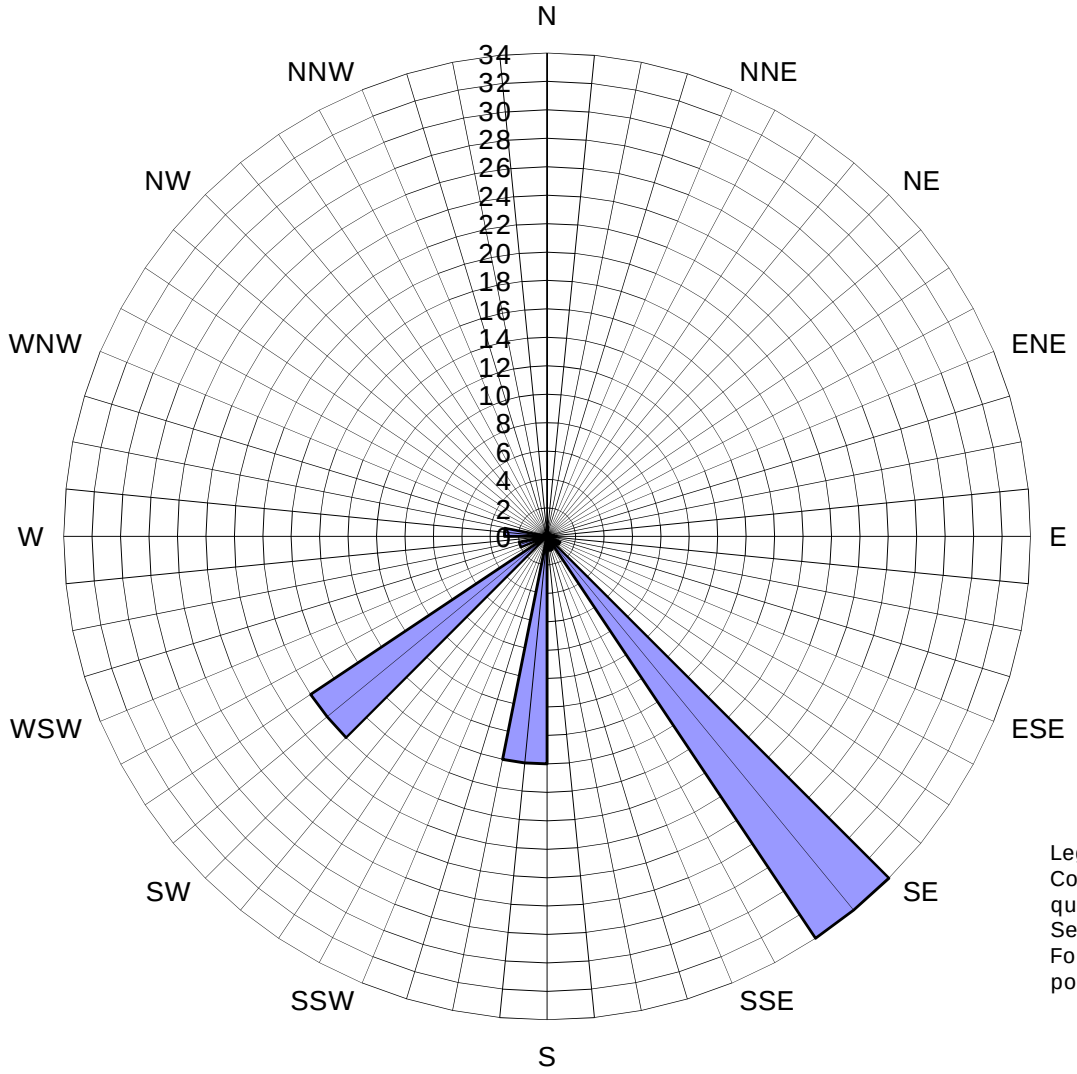
76 STATION NO. 5191/5043
449 HEGENBERGER ROAD
OAKLAND, CALIFORNIA

PROJECT NO.	PREPARED BY	DRAWN BY
142705191	JF	JH
DATE	REVIEWED BY	FILE NAME
9/2/14	DD	5191-SiteS

antea group

Figure 3
Sensitive Receptor Map
76 Station No. 5191/5043
449 Hegenberger Road
Oakland, California

Figure 4
Historical Groundwater Flow Directions
76 Station No. 5191/5043
449 Hegenberger Road
Oakland, California



Legend
Concentric circles represent quarterly montoring events Second Quarter 1992 through Fourth Quarter 2014. 77 data points shown

Groundwater Flow Direction

Appendix A

Previous Investigation and Site History Summary

PREVIOUS INVESTIGATION AND SITE HISTORY SUMMARY

October 1991 - Four soil samples were collected from the product pipe trenches at depths of approximately 3 feet below ground surface (bgs) during a dispenser island modification. The product pipe trenches were subsequently excavated to the groundwater depth at 4 to 4.5 feet bgs.

February 1992 - Three monitoring wells, MW-1 through MW-3, were installed at the site to depths ranging from 13.5 to 15 feet bgs.

August 1992 - Three additional monitoring wells, MW-4 through MW-6, were installed at the site to a depth of 13.5 feet bgs.

September 1994 - One 280-gallon waste-oil UST was removed from the site. The UST was made of steel, and no apparent holes or cracks were observed in the UST. One soil sample was collected from beneath the former UST at a depth of approximately 9 feet bgs. No petroleum hydrocarbons were reported.

January 1995 - Two additional monitoring wells, MW-9 and MW-10, were installed to depths of 13 and 15 feet bgs. In addition, monitoring wells MW-4 and MW-5 were destroyed by over-drilling the wells and backfilling with neat cement.

March 1995 - Two 10,000-gallon gasoline USTs and one 10,000-gallon diesel UST were removed from the site. Groundwater was encountered in the tank cavity at a depth of approximately 8.5 feet bgs. Soil samples contained total petroleum hydrocarbons as diesel (TPHd) and benzene, and TPH as gasoline (TPHg). Approximately 125,000 gallons of groundwater were pumped from the site for remediation and properly disposed off-site. Four fuel dispenser islands and associated product piping were also removed. Based on the results of the confirmation samples, the product dispenser islands were over excavated to approximately 6 feet bgs.

March-April 1995 - During demolition activities of the former station building, soil samples were collected from two excavations, which were subsequently over excavated. Confirmation samples contained petroleum hydrocarbons. An additional area on the south side of the former station building was excavated based on photo-ionization detector (PID) readings. Two monitoring wells, MW-1 and MW-2, were destroyed in order to allow for over excavation activities to extend to an area adjacent to the dispenser islands in the southeastern quadrant of the site. The excavated areas were subsequently backfilled with clean-engineered fill.

April 1997 - Two additional monitoring wells, MW-7 and MW-8, were installed off-site to the south and east on the neighboring property to a depth of 13 feet bgs. In addition, monitoring well MW-3, which was damaged during site renovation activities, was fully drilled out and reconstructed in the same borehole.

October 2003 - Site environmental consulting responsibilities were transferred to TRC.

April 8-9, 2005 - TRC conducted a 24-hour dual phase extraction (DPE) test at the site using monitoring well MW-6. The 24-hour DPE test was only moderately successful at removing vapor-phase petroleum hydrocarbons from the subsurface; therefore, TRC recommended DPE no longer be considered a viable remedial alternative for the site.

October 2007 - Site environmental consulting responsibilities were transferred to Delta Consultants.

December 2009 - Delta advanced two borings, B-4 and B-5, to depths of 20 feet bgs and 32 feet bgs, respectively. Analytical results from the soil and groundwater samples collected from these two borings indicated that the soil and the groundwater were impacted by petroleum hydrocarbons at these locations.

June 2010 – Delta installed two 4-inch diameter monitoring/extraction wells, MW-11 and MW-12, and two 2-inch diameter monitoring wells, MW-12A and MW-13, at the site. Analytical results from the soil and groundwater samples collected from the MW-12 and MW-12A boring locations indicated that the soil and the groundwater were impacted by petroleum hydrocarbons at these locations.

May 2011 – Antea Group (formally Delta Consultants) installed four 2-inch diameter monitoring wells, MW-14 through MW-17, and advanced one soil boring, B-6, at the site. All four monitoring wells were installed with ten feet of screen from 3 feet bgs to 13 feet bgs. Analytical results of soil samples collected during the monitoring well installation reported TPHg concentrations ranging from 1.0 milligrams per kilogram (mg/kg) (MW-14d13) to 2,490 mg/kg (B-6d9), benzene concentrations ranging from 0.67 mg/kg (B-6d21) to 26.4 mg/kg (B-6d9), toluene concentrations ranging from 0.2 mg/kg (MW-14d10) to 73.9 mg/kg (B-6d9), ethylbenzene concentrations ranging from 0.037 mg/kg (MW-14d13) to 58.1 mg/kg (B-6d9), total xylenes concentrations ranging from 0.066 mg/kg (MW-14d13) to 230 mg/kg (B-6d9), methyl tertiary-butyl ether (MTBE) concentrations ranging from 0.015 mg/kg (MW-15d13) to 0.19 mg/kg (MW-15d8), tertiary-butyl alcohol (TBA) concentrations ranging from 0.014 mg/kg (MW-16d8 and B-6d21) to 0.16 mg/kg (MW-15d8), and lead concentrations ranging from 5.5 mg/kg (MW-16d13) to 16.3 mg/kg (MW-17d9). Diesel range organics (DRO) and DRO with silica gel concentrations were reported; however, all of the results did not match the laboratory standard for diesel. Concentrations of DRO ranged from 2.9 mg/kg (MW-17d13) to 258 mg/kg (B-6d14) and DRO with silica gel concentrations ranged from 2.5 mg/kg (MW-17d13) to 250 mg/kg (B-6d14).

March 2012 – Antea Group advanced five soil borings (HPB-1 through HPB-5) at the site. The borings were advanced using direct push technology. The borings were used to obtain a hydraulic profile of the substrate beneath the site. The data obtained during the investigation will be used to determine the best path forward in terms of remediation.

July 2013 – Antea Group advanced ten soil borings (SB-1 through SB-10) at the site. The borings were advanced using direct push technology. The borings were used to delineate petroleum hydrocarbon impacted soil around

monitoring well MW-6. Results of the investigation can be found in the *Site Investigation Report*, dated January 9, 2014.

June 2014 – Antea Group destroyed monitoring wells MW-10, MW-12, MW-12A, and MW-17 by pressure grouting. The wells were destroyed in preparation for on-site soil excavation activities.

September 2014 – Antea Group advanced two (2) cone penetration test (CPT) borings CPT-1 and CPT-2 in preparation for soil excavations on site. Soil and groundwater samples were not collected. Data from the CPT borings was used to help design shoring for excavations. Antea Group advanced three (3) off-site soil borings, SB-13 through SB-15. Soil and grab-groundwater samples were collected from the borings.

SENSITIVE RECEPTORS

April 24, 2006, TRC completed a sensitive receptor survey for the site. According to the Department of Water Resources (DWR) records, three water supply wells are located within one-half mile of the site. The closest well is an irrigation well, reported to be, approximately 1,080 feet southeast of the site. In addition, two surface water bodies were observed within a one-half mile radius of the site. San Leandro Creek is located approximately 1,400 feet southwest of the site and flows into the San Leandro Bay. Elmhurst Creek is located approximately 2,220 feet north of the site and also flows into the San Leandro Bay.

Current Consultant: **Antea Group**

Appendix B

DWR Well Completion Reports

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

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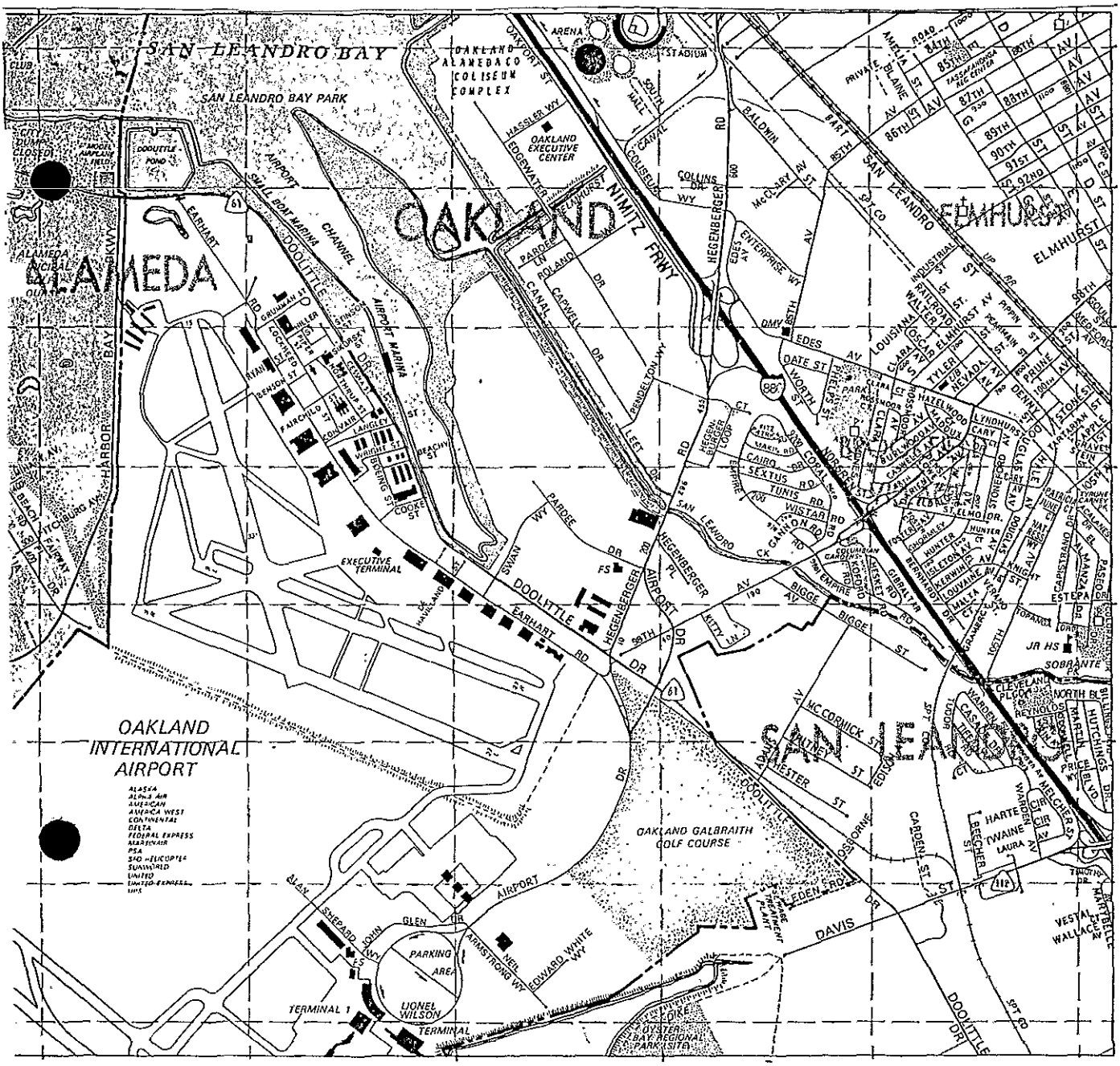
SAN LEANDRO BAY
SAN LEANDRO BAY PARK
OAKLAND ALAMEDA COLISEUM COMPLEX
ARENA
STADIUM
OAKPORT ST
SOUTH HALL
CANAL
COLISEUM
BALDWIN
BART
OAKLAND EXECUTIVE CENTER
HASSLER WY
EDGEWATER DR
NIMITZ FRWY
OAKLAND
ALAMEDA
EARHART
DOOLITTLE POND
CITY DUMP CLOSED
MUNICIPAL AIRPLANE FIELD
ALAMEDA NAVAL AIR STATION
SMALL BOAT MARINA CHANNEL
AIRPORT
DOOLITTLE
AIRPORT MARINA
HARBOR BAY PKWY
GRUMMAN ST
MILLER
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STINSON
DOUGLAS
CESSNA
MARTIN
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LANGLEY
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BEDDING ST
COOKE ST
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BEACH
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EAMES AV
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MARKAIR
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SFO HELICOPTER
SUNWORLD
UNITED
UNITED EXPRESS
UPS
OAKLAND GALBRAITH GOLF COURSE
AIRPORT
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TERMINAL 1
LIONEL WILSON TERMINAL
OYSTER BAY REGIONAL PARK SITE
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EDEN RD
TREATMENT PLANT
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