



PORT OF OAKLAND

ENVIRONMENTAL
PROTECTION
95 APR -4 AM 8:15

March 30, 1995

Barney Chan
Alameda County Environmental Health
1131 Harbor Bay Parkway
Alameda, CA 94502

Dear Mr. Chan:

RE: Request for Review of Two Work Plans for Former Oakland Airport UST Site Investigations a) United Airlines Hangar Area, 1100 Airport Drive - MF-23, -24, and b) Economy Parking Lot, 1100 Airport Drive - MF-25, -26

Please find the enclosed work plans that describe the installation of two additional groundwater monitoring wells at each of two former underground storage tank sites. After the subject tanks were removed at these locations, only one well was installed at each site. After the completion of the proposed work, each site will have three wells. The work described in the plans is scheduled for April 10, and 11, 1995. If you have any comments on the procedures contained in the plans, please contact me at 272-1373 before April 10, 1995. Thank you for your assistance in this matter.

Sincerely,

Patricia Murphy
Associate Environmental Scientist

ENVIRONMENTAL
PROTECTION

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WORK PLAN
FOR
SITE INVESTIGATION

Port of Oakland, Oakland International Airport
United Airlines Hangar Area - Economy Parking Lot Site
Oakland, California

Project No. 10-250-02-001

Prepared for:

Port of Oakland
530 Water Street
Oakland, California

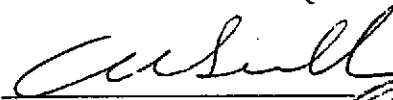
Prepared by:

Alisto Engineering Group
1777 Oakland Boulevard, Suite 200
Walnut Creek, California

March 22, 1995



John DeGeorge
Geologist



Al Sevilla, P. E.
Principal



WORK PLAN FOR SITE INVESTIGATION

Port of Oakland, Oakland International Airport
United Airlines Hangar Area - Economy Parking Lot Site
1100 Airport Drive
Oakland, California

March 22, 1995

INTRODUCTION

The Port of Oakland proposes a site investigation at the United Airlines Hangar Area-Economy Parking Lot Site, Oakland International Airport, 1100 Airport Drive, Oakland, California.

The purpose of this investigation is to assess the nature and extent of hydrocarbons, if any, in the subsurface soil and groundwater at the site. Work will be performed in accordance with the guidelines and requirements of the Alameda County Health Care Services Agency (ACHCSA) and the California Regional Water Quality Control Board, San Francisco Bay Region, and is based on available reports and information. A site vicinity map is shown in Figure 1.

SITE DESCRIPTION AND BACKGROUND

The site is adjacent to the United Airlines hangar within the Economy Parking Lot at the Oakland International Airport. The proposed work will be performed at the former location of two underground storage tanks, MF-25 and MF-26. The tanks are suspected to have been used for the storage of gasoline, diesel, waste oil, and solvents.

The tanks were removed in March 1992 and approximately 700 cubic yards of soil were excavated. Analysis of compliance soil samples for petroleum hydrocarbons, collected after tank removal, detected up to 11000 milligrams per kilogram (mg/kg) total petroleum hydrocarbons as gasoline (TPH-G), 190 mg/kg benzene, 1000 mg/kg total petroleum hydrocarbons as diesel (TPH-D), and 19000 mg/kg total oil and grease (TOG). Soil analysis for volatile organic compounds (VOCs) detected up to 140 mg/kg 1,1,1-Trichloroethane, 30 mg/kg 1,1-Dichloroethane, 450 mg/kg Dichloroethane, and 100 mg/kg Tetrachloroethene. Additionally, semi-volatile organic compounds (SVOCs) were detected including 107 mg/kg Dibenzofuran, and heavy metals including 25 mg/kg chromium, 29 mg/kg nickel, 3.7 mg/kg lead, and 20 mg/kg zinc (Uribe and Associates, 1992).

Analysis of soil samples collected at the limits of the excavation detected up to 0.3 mg/kg TPH-G, 0.02 mg/kg benzene, and 7 mg/kg TPH-D. TOG and VOCs were not detected above reported detection limits in soil samples collected from the limits of the excavation (Uribe and Associates, 1992).

In May 1992, one groundwater monitoring well was installed at the site during a preliminary site investigation. The well, MW-1, was installed in the assumed downgradient direction from tanks MF-25 and MF-26. Analyses of groundwater samples collected from well MW-1 have detected TPH-G, TPH-D, and total petroleum hydrocarbons as jet fuel (TPH-J) up to 70, 5200, and 800 micrograms per liter (Uribe and Associates, 1994).

SCOPE OF WORK

The proposed scope of work for this investigation includes: acquiring well installation permits; locating potential subsurface interferences; installing two groundwater monitoring wells; collecting and analyzing soil and groundwater samples; and preparing a report presenting the findings and conclusions of the investigation. The locations of the proposed monitoring wells are shown in Figure 2.

Task 1: Acquire Permits; Locate Utilities

Before commencement of field activities, well installation permits will be obtained from ACHCSA and the Alameda County Flood Control and Water Conservation District. In addition, underground utilities will be located at the proposed drilling locations.

Task 2: Drill Exploratory Soil Borings and Install Wells

Two soil borings will be drilled at the site to approximately 15 feet below grade using a truck-mounted CME 55 drilling rig, or the equivalent, equipped with 8-inch-diameter hollow-stem augers. During drilling, soil samples will be collected from the borings at 3, 5, 10, and 15 feet below grade, or else at significant changes in stratigraphy. The samples will be collected from a split-spoon sampler lined with stainless steel tubes and logged by a geologist using the Unified Soil Classification System. Each sample will be field screened using a photo-ionization detector to assist in selecting samples for laboratory analysis. The samples will be sealed airtight with Teflon sheeting, plastic caps, and adhesive tape. They will be labeled for identification and placed immediately into an iced cooler for transport to the laboratory.

Each of the soil borings will be converted to a groundwater monitoring well using 2-inch-diameter PVC blank and slotted casing. The filter pack and annular seal will be placed in accordance with the California Department of Water Resources monitoring well construction standard (Bulletin 74-90). The wellheads will be flush-mounted and encased in concrete.

Task 3: Develop, Sample, and Survey Wells

Well development will be performed to: (1) consolidate and stabilize the filter pack; (2) optimize well production; and (3) reduce turbidity of subsequent groundwater samples. The proposed groundwater monitoring wells will be developed during drilling and before installation of the bentonite spacer and neat

cement seal. Development will be accomplished by purging a maximum of 10 saturated well volumes or until the groundwater is relatively free of sediment.

The new groundwater monitoring wells will be sampled a minimum of 72 hours after development. Before sampling the new and existing wells, the water level will be measured and the wells will be inspected for free product or sheen. The wells will then be purged to allow groundwater representative of the aquifer to enter. Purging will be accomplished using a bailer or pump, and will continue until a minimum of 3 and a maximum of 10 saturated well casing volumes have been evacuated and indicator parameters have stabilized. Indicator parameters will be pH, temperature, and specific conductivity. Stabilization of the parameters will be determined when they vary no more than the following values:

- pH - 0.2 units
- Temperature - 0.5 degrees Celsius
- Specific conductivity - 10 percent

After purging the wells, groundwater will be collected using a dedicated, bottom-fill bailer for each sample. The samples will be placed in an iced cooler and transported to a state-certified laboratory for analysis. Purged water from sampling and development, as well as decontamination rinsate, will be stored onsite in DOT-approved 55-gallon drums pending disposal.

To provide additional data for calculation of the hydraulic gradient and groundwater flow direction of the shallow aquifer, the new monitoring wells will be surveyed from the top of the casing to within 0.01 foot accuracy in reference to an established benchmark or a common datum.

Task 4: Analyze Soil and Groundwater Samples

The soil and groundwater samples will be submitted to a state-certified laboratory, and will be analyzed on a standard 2-week turnaround. Selected soil samples will be analyzed for the following constituents:

- TPH-G using Environmental Protection Agency (EPA) Method 8015
- Total extractable petroleum hydrocarbons (TEPH) using EPA Method 8015M to quantify TPH-D, TPH-J, and total petroleum hydrocarbons as motor oil
- VOCs using EPA Method 8240
- SVOCs using EPA Method 8270

Groundwater samples will be analyzed for TPH-G, TEPH, VOCs, and SVOCs, as well as the following constituents:

- Cadmium, chromium, nickel, lead, and zinc using EPA Method 6010
- Total dissolved solids using EPA Method 160.1

Task 5: Evaluate Data and Prepare Report

Following completion of sample analysis, a detailed evaluation of results and available information will be conducted to assess the nature and extent of hydrocarbons in the soil and groundwater. Alisto will include the results of groundwater sampling, which will be conducted following installation of the new wells. A report will be prepared that will include the following:

- Summary of field and analytical data.
- Groundwater gradient and hydrocarbon concentration maps.
- Interpretation of site geologic and hydrogeologic conditions.
- Summary of findings and conclusions.

SITE SAFETY PLAN

Field procedures and activities related to the site investigation will be conducted in accordance with a site-specific safety plan. The site safety plan will be prepared in accordance with applicable requirements of the EPA, the federal and state Occupational Safety and Health Administration, and the Oakland International Airport operations.

IMPLEMENTATION SCHEDULE

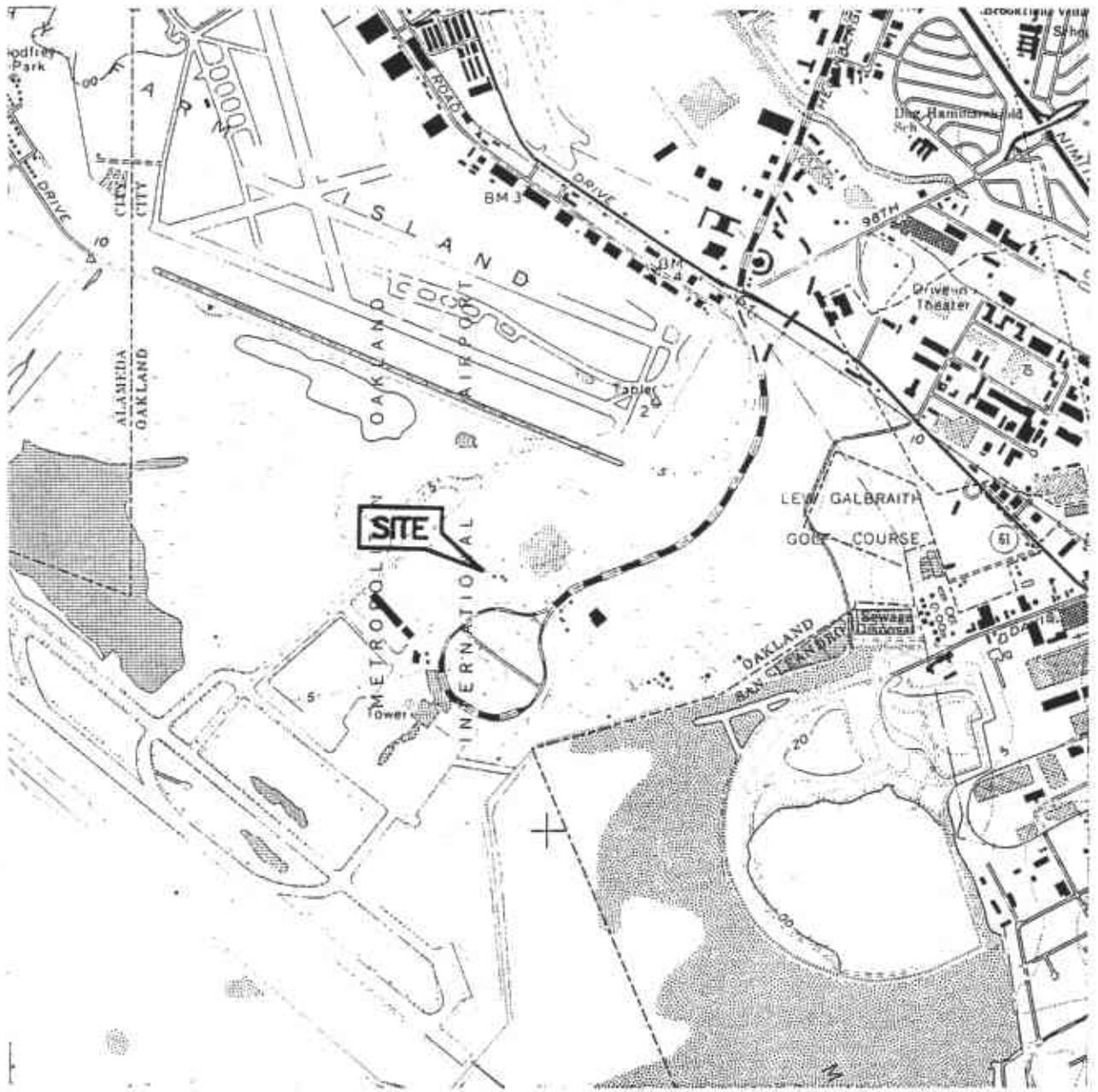
The proposed site investigation will be completed and a report submitted within 75 days after approval of this work plan by the regulatory agencies. Following is the estimated schedule:

<u>Task</u>	<u>Days</u>
1 Acquire permits and locate utilities	15
2 Drill exploratory soil borings and install wells	25
3 Develop, sample, and survey wells	35
4 Analyze soil and groundwater samples	50
5 Evaluate data and prepare report	75

REFERENCES

Uribe and Associates, May 1992, Report of Removal of Inactive Tanks MF-25 and MF-26, 1100 Airport Drive, Oakland. Prepared for the Port of Oakland.

Uribe and Associates, October 1994, Quarterly Groundwater Monitoring Report, United Hangar (Economy Parking Lot Site), 1100 Airport Drive, Oakland, California. Prepared for the Port of Oakland.



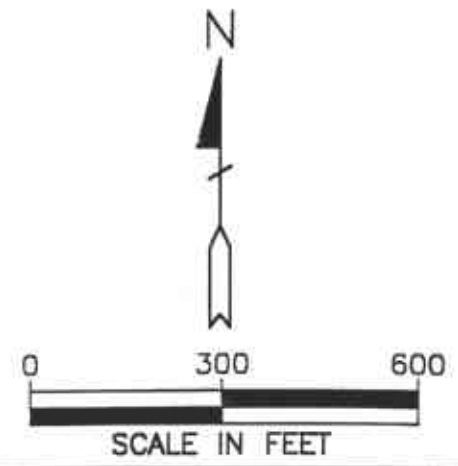
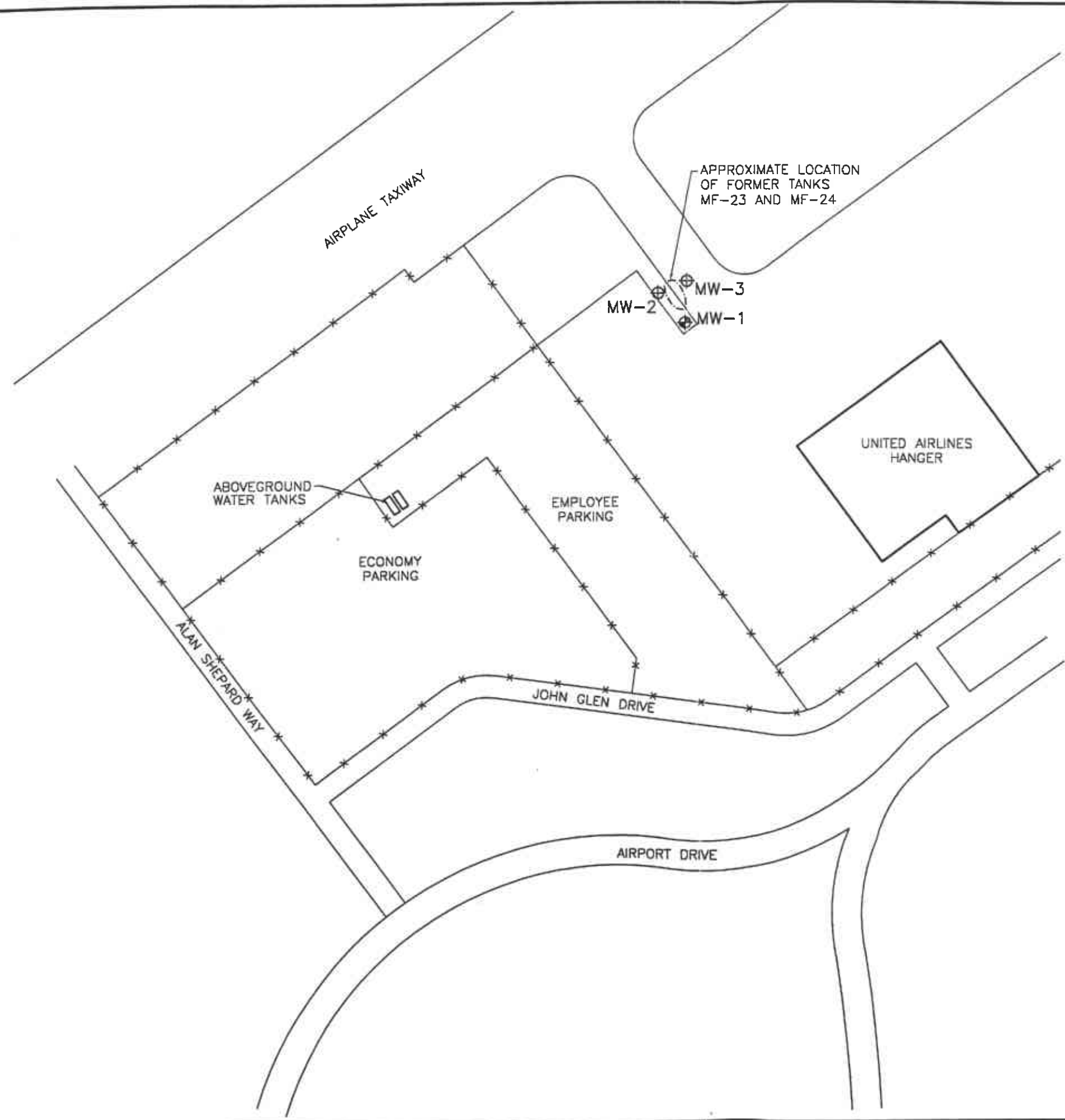
SOURCE:
USGS MAP, SAN LEANDRO QUADRANGLE,
7.5 MINUTE SERIES, 1959,
PHOTOREVISED 1980.



FIGURE 1
SITE VICINITY MAP

PORT OF OAKLAND,
OAKLAND INTERNATIONAL AIRPORT
UNITED AIRLINES HANGAR AREA—
ECONOMY PARKING LOT SITE
1100 AIRPORT DRIVE
OAKLAND, CALIFORNIA
PROJECT NO. 10-250





LEGEND

- ⊕ EXISTING GROUNDWATER MONITORING WELL
- ⊕ PROPOSED GROUNDWATER MONITORING WELL

FIGURE 2

WELL LOCATION MAP

PORT OF OAKLAND,
 OAKLAND INTERNATIONAL AIRPORT
 UNITED AIRLINES HANGAR AREA-
 TAXIWAY SITE
 1100 AIRPORT DRIVE
 OAKLAND, CALIFORNIA

PROJECT NO. 10-251



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