



March 23, 1992

Mr. Britt Johnson
Alameda County Hazardous Materials Division
80 Swan Way
Oakland, California

30-0491

Subject: Transmittal of Work Plan for Supplemental Site Investigation
Exxon RAS #7-0236, 6630 East 14th Street, Oakland, California

Dear Mr. Johnson:

On behalf of Exxon Company U.S.A., Alton Geoscience is pleased to submit this proposed work plan for Supplemental Site Investigation at Exxon RAS #7-0236, 6630 East 14th Street, Oakland, California.

This work plan was prepared in response to the concerns of Exxon Company, U.S.A., and local regulatory agencies regarding the presence of hydrocarbons in the subsurface soil and/or ground water at this site.

Please call if you have any questions regarding this project.

Sincerely,

ALTON GEOSCIENCE

John De George
Staff Geologist

Scott J. Thompson
Supervisor, Geology

jdg/sbt
cc w/attachments:

Mr. Eddy So, Regional Water Quality Control Board, Oakland, California
Mr. William Y. Wang, Exxon Company, U.S.A.

Bob Logan R.G. No. 5088
Peter Lange R.G. No. 5089

WORK PLAN
SUPPLEMENTAL SITE INVESTIGATION

Exxon Company, U.S.A.
RAS #7-0236
6630 East 14th Street
Oakland, California

Prepared By:

Alton Geoscience
5870 Stoneridge Drive, Suite 6
Pleasanton, California

March 23, 1992

WORK PLAN FOR SUPPLEMENTAL SITE INVESTIGATION

**Exxon Company U.S.A.
RAS #7-0236
6630 East 14th Street
Oakland, California
March 23, 1992**

INTRODUCTION

The following is a proposed work plan to conduct Phase II Supplemental Site Investigation activities at Exxon Company, U.S.A., RAS #7-0236, 6630 East 14th Street, Oakland, California.

The purpose of additional work at the site is to further assess the extent of hydrocarbons in the soil and ground water based on findings from the Preliminary Site Investigation Report (Alton Geoscience, April 25, 1991). Field work entails the installation of four additional ground water monitoring wells; two onsite and two offsite.

PROJECT BACKGROUND

On March 13, 1991, Alton Geoscience supervised the drilling of three exploratory borings, completed as ground water monitoring wells (MW-1, MW-2, and MW-3). Analysis of soil samples collected from the borings indicated total petroleum hydrocarbons as gasoline (TPH-G) at concentrations up to 98 parts per million (ppm). Ground water samples collected from the monitoring wells contained TPH-G at concentrations up to 3,100 parts per billion (ppb) and total petroleum hydrocarbons as diesel (TPH-D) up to 160 ppb. Depth to ground water onsite is approximately 7 to 9 feet below grade and the general ground water gradient direction is southwest at 0.03 ft/ft.

SCOPE OF WORK

The scope of work will be conducted in accordance with applicable regulations and guidelines of the Alameda County Department of Health Services (ACDHS) and the California Regional Water Quality Control Board, San Francisco Bay Region (RWQCB). The scope of work has been divided into the following tasks.

- Task 1 - Acquire Permits
- Task 2 - Drill Exploratory Soil Borings
- Task 3 - Install Onsite Ground Water Monitoring Wells
- Task 4 - Install Offsite Ground Water Monitoring Wells
- Task 5 - Develop, Sample, and Survey Wells
- Task 6 - Analyze Soil and Ground Water Samples
- Task 7 - Analyze Data and Laboratory Results
- Task 8 - Prepare Report

Task 1: Acquire Permits

Required permits have been obtained and field activities coordinated with the appropriate agencies. Well construction permits were obtained from the Alameda County Water District (ACWD) and encroachment permits from the City of Oakland. This task includes locating underground and aboveground utilities that may be encountered during drilling activities.

Task 2: Drill Exploratory Soil Borings

To assess the lateral and vertical extent of soil/ground water contamination, four exploratory soil borings will be drilled utilizing a truck-mounted CME 75 drilling rig using 8-inch-diameter or 10-inch-diameter hollow-stem augers with continuous coring capability.

Monitoring well locations have been determined following a site visit, utility search, and review of the Preliminary Site Investigation Report. The approximate locations of the proposed borings are shown on the attached site plan.

Soil samples will be collected continuously for one boring and at 5-foot intervals for the remaining borings, using a split-spoon sampler lined with stainless steel tubes. Soil samples will be screened using a field instrument, such as a photoionization detector, to aid in determining which soil samples will be analyzed by a California certified laboratory. At minimum, the soil samples obtained from the capillary fringe will be submitted for chemical analysis. However, if noticeable contamination is encountered during drilling, additional soil samples will also be analyzed. The samples recovered for chemical analysis will be sealed with Teflon tape and plastic caps, placed immediately into an iced cooler, and delivered to the laboratory following proper chain-of-custody procedures. Soil samples will also be collected from the saturated zone for analysis of physical properties to estimate aquifer characteristics. These will be archived by Alton Geoscience for any future physical analysis.

Task 3: Install Onsite Ground Water Monitoring Wells

Each soil boring onsite will be converted to a ground water monitoring well screened approximately 15 feet below and 5 feet above ground water to accommodate seasonal fluctuations. If adsorbed-phase hydrocarbons are detected in soil above the water table, the screened section will be extended through the affected interval for possible future vapor extraction remediation.

One well will be constructed using 4-inch-diameter casing and the other will be constructed using 2-inch-diameter casing. Both wells will extend to a depth of approximately 25 feet below grade. The casing will be clean, flush-threaded, Schedule 40 PVC pipe with 0.020-inch slots. After installation of the appropriate filter pack, a maximum 1-foot-thick bentonite spacer will be placed on top of the filter pack. The remainder of the annulus will be grouted with neat cement. The top of each well will be secured with watertight locking caps and utility boxes finished flush with the ground surface.

Task 4: Install Offsite Ground Water Monitoring Wells

Each soil boring offsite will be converted to a 2-inch-diameter ground water monitoring well using the same construction protocol established in the preceding Task 3.

Task 5: Develop, Sample, and Survey Wells

The proposed wells will be developed, and all existing and proposed wells will be sampled in accordance with the regulations and guidelines of the appropriate regulatory agencies. Prior to sampling, water level measurements at each well will be recorded, and the presence of free product or sheen, if any, will be examined.

While purging the wells, pH, temperature, and conductivity readings will be taken. Once these readings have stabilized (within 5 percent of the previous readings), indicating that the water inside the casing is representative of the water in the aquifer, the samples will be collected in appropriate sterile containers. The samples will be placed in an iced cooler and transported to a California certified laboratory following proper chain-of-custody procedures.

To determine the hydraulic gradient and apparent ground water gradient direction of the shallow aquifer at the site, each well will be surveyed from the top of casing to 0.01 foot accuracy in reference to an established benchmark or common datum.

Task 6: Analyze Soil and Ground Water Samples

Selected soil and ground water samples will be analyzed for the following organic hydrocarbons on a standard 2-week turnaround time:

- ▶ TPH-G and TPH-D using EPA Method 8015 (modified)
- ▶ Benzene, toluene, ethylbenzene, and xylenes (BTEX) using EPA Methods 602/8020

Task 7: Analyze Data and Laboratory Results

Upon completion of the sample analysis, a detailed evaluation of results and available information will be conducted to further assess the extent of subsurface contamination.

Task 8: Prepare Report

A report presenting the findings and results of the site investigation activities, including conclusions and recommendations, will be prepared and submitted to the appropriate regulatory agencies.

IMPLEMENTATION SCHEDULE

The proposed scope of work will be completed within 45 working days after work plan approval. The schedule for completion of major activities or tasks is as follows:

<u>Tasks/Activity</u>	<u>Estimated Working Days After Work Plan Approval</u>
- Drilling of Borings/Well Installation	5
- Well Development, Sampling, and Surveying	15
- Analysis of Soil and Ground Water Samples	25
- Analysis of Data and Laboratory Results	35
- Report Preparation and Submittal	45

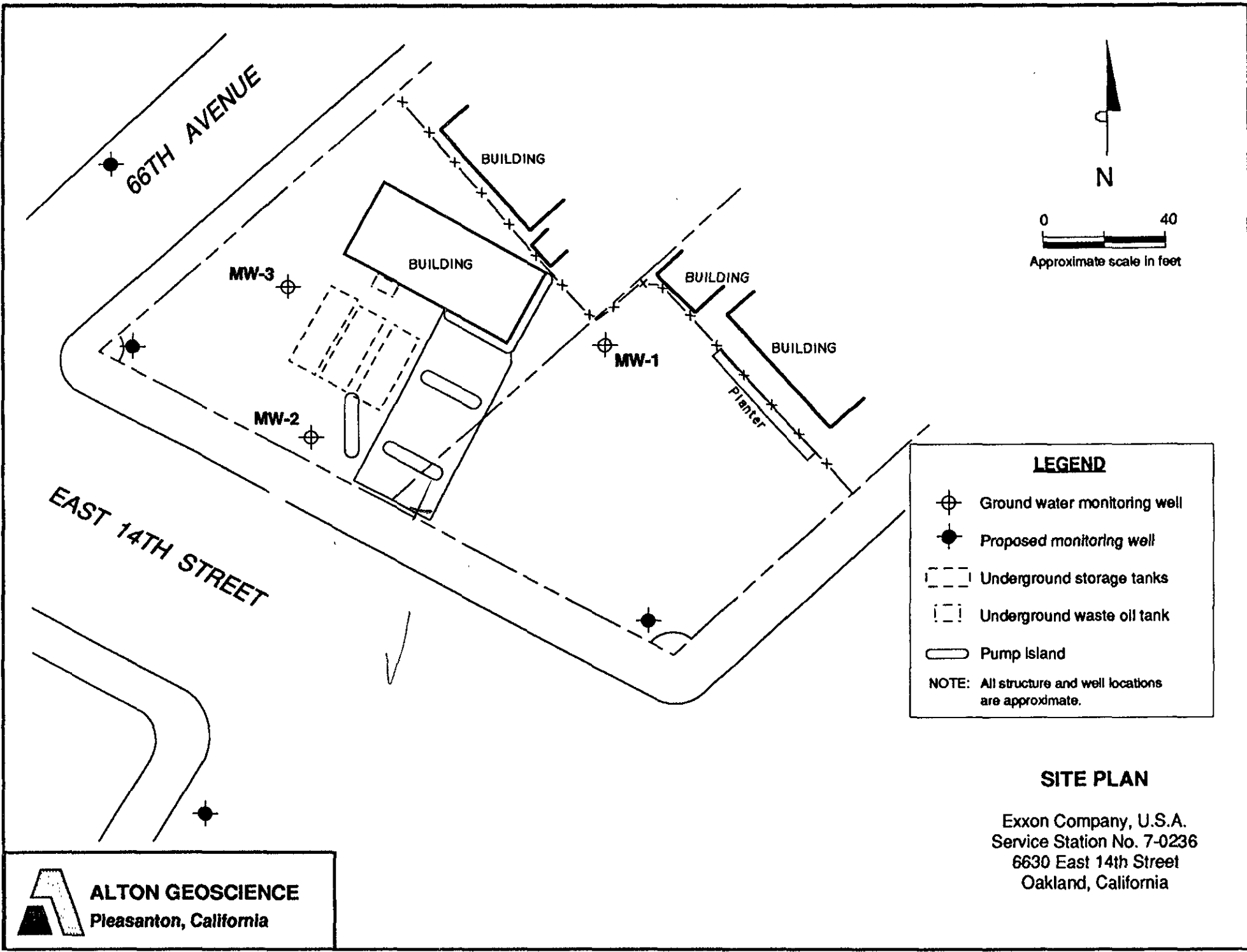
ALTON GEOSCIENCE



John De George
Staff Geologist



Scott J. Thompson
Supervisor, Geology



LEGEND

- Ground water monitoring well
- Proposed monitoring well
- Underground storage tanks
- Underground waste oil tank
- Pump island

NOTE: All structure and well locations are approximate.

SITE PLAN

Exxon Company, U.S.A.
Service Station No. 7-0236
6630 East 14th Street
Oakland, California

ALTON GEOSCIENCE
Pleasanton, California