ALISTO ENGINEERING GROUP

ENVIRONMENTAL PROTECTION

98 MAY 28 AM 10: 13

May 21, 1998

① Move boring closer to bldg. or do add'l boring

② Send ltr to 1717 Park

③ Contact attny for 1717 - Keith will send 10-210-09-001

④ How will SVs be collected. Use Summa canisters.

Ms. Eva Chu
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway, 2nd Floor
Alameda, California 94502-6577

Subject: Work Plan for Supplemental Site Investigation
Xtra Oil Company Service Station
1701 Park Street
Alameda, California

Dear Ms. Chu:

On behalf of Xtra Oil Company, Alisto Engineering Group is pleased to submit this revised work plan for supplemental site investigation at Xtra Oil Company service station at 1701 Park Street, Alameda, California.

Please call if you have questions or comments.

Sincerely,

ALISTO ENGINEERING GROUP

Brady Nagle
Project Manager

Enclosure

cc: Mr. Ade Fagorala, California Regional Water Quality Control Board
Mr. Keith Simas, Xtra Oil Company

Send approval ltr w/ stipulations, changes once access granted.

1575 TREAT BOULEVARD, SUITE 201 • WALNUT CREEK, CA 94598 • (510) 295-1650 • FAX (510) 295-1823
CONTRACTORS LICENSE NO. A-652544

WORK PLAN
FOR
SUPPLEMENTAL SITE INVESTIGATION

Xtra Oil Company Service Station
1701 Park Street
Alameda, California

Project No. 10-210-09-001

Prepared for:

Xtra Oil Company
2307 Pacific Avenue
Alameda, California

Prepared by:

Alisto Engineering Group
1575 Treat Boulevard, Suite 201
Walnut Creek, California

May 21, 1998

Brady Nagle
Project Manager

Al Sevilla, P.E.
Principal

REVISED WORK PLAN
FOR
SUPPLEMENTAL SITE INVESTIGATION

Xtra Oil Company Service Station
1701 Park Street
Alameda, California

Project No. 10-210-09-001

INTRODUCTION

This work plan presents the proposed scope of work for supplemental site investigation at the Xtra Oil Company service station (doing business as a Shell station) at 1701 Park Street, Alameda, California. This work plan was prepared in response to letters from the Alameda County Health Care Services Agency (ACHCSA) dated January 5, 1998 and April 27, 1998. A site vicinity map is shown in Figure 1.

SITE LOCATION AND PROJECT BACKGROUND

The Xtra Oil Company site at the northeast corner of Park Street and Buena Vista Avenue, Alameda, California is an operating service station with three underground fuel storage tanks, as shown on Figure 2.

In April 1994, one underground diesel storage tank and three underground gasoline storage tanks were removed and replaced with three double-walled storage tanks. One underground storage tank, used to store home-heating oil, was also removed from the adjoining property. Analysis of soil samples collected from the sidewalls of the fuel tank cavity and below the former dispenser islands detected total petroleum hydrocarbons as gasoline (TPH-G) and diesel (TPH-D), as well as benzene, toluene, ethylbenzene, and total xylenes (BTEX). Analysis of a soil sample collected from beneath the former fuel oil tank did not detect TPH-D or BTEX above the reported detection limits (Alisto 1994). The location of the former tanks and dispenser islands is shown on Figure 3.

To assess the nature and extent of petroleum hydrocarbons in the soil and groundwater, three groundwater monitoring wells, MW-1, MW-2, and MW-3, were installed onsite in November 1994 (Alisto 1995a). Subsequently, on April 28, 1997, Monitoring Well MW-4 was installed onsite north of the former underground fuel storage tanks and near the property line. Analysis of soil samples collected during installation of MW-4 detected up to 5300 milligrams per kilogram (mg/kg) TPH-G, 1100 mg/kg benzene, and 15 mg/kg methyl tert butyl ether (MTBE). Additionally, on April 28, 1998, Soil Boring SB-1 was drilled to collect a soil sample for total organic carbon (TOC) analysis, which detected 830 mg/kg TOC (Alisto, 1997c).

Since installation, the monitoring wells have been sampled on a quarterly basis. The groundwater gradient direction as interpreted for each sampling event has ranged from

northeasterly to southeasterly. Liquid-phase petroleum hydrocarbon was observed in MW-2 at a thickness of up to 0.18 foot; weekly product removal has reduced the hydrocarbon thickness to approximately 0.03 foot. Petroleum hydrocarbons have been detected in groundwater samples collected from MW-1, MW-2, and MW-4 at concentrations of up to 100,000 micrograms per liter (ug/l) TPH-G, 22,000 ug/l benzene, and 19,000 ug/l MTBE in the samples from MW-1. Petroleum hydrocarbons have not been detected in samples collected from MW-3 except during the second quarter of 1995 and second and third quarters of 1997 (Alisto 1995b, c, d; 1996a, b, c; 1997a and b; and 1998).

In June 1996, review of subsurface utility records at the City of Alameda Public Works Department revealed the presence of a 10-inch-diameter sanitary sewer along the centerline of Park Street at a depth of approximately 11 feet below grade. There is also a 6-inch-diameter sanitary sewer along the centerlines of Buena Vista Avenue and Eagle Avenue. A copy of the sanitary sewer location map is enclosed as Figure 4.

Since the depth to groundwater at the site varies from 6 to 9 feet below grade, the trench and backfill material for the sanitary sewer pipe in Park Street may be influencing the lateral migration of petroleum hydrocarbons from the site towards Park Street. As such, further assessment of the extent of petroleum hydrocarbon east of the site does not appear warranted at this time.

SCOPE OF WORK

The scope of work to conduct a supplemental site investigation includes: installing two temporary wells and two vapor sampling points at the neighboring property; sampling and analyzing soil, groundwater, and vapor samples; performing Tier 1 risk based corrective action (RBCA) analysis; and preparing a report presenting the findings and conclusions of the investigative activities.

The scope of work has been divided into the following tasks:

Task 1: Collect Groundwater, Soil, and Soil Vapor Samples

To investigate the lateral and vertical extent of soil and groundwater contamination and to collect samples for use in the subsequent risk assessment, soil, grab groundwater, and soil vapor samples will be collected for laboratory analysis.

Soil and grab groundwater samples will be collected at two locations as shown on Figure 2. The soil boring will be drilled to approximately 3 feet below encountered groundwater and soil samples will be collected at approximately 3 and 5 feet below grade. The soil boring will be converted into a temporary well by inserting a perforated temporary casing, and groundwater samples will be collected after purging approximately 5 gallons of water from the temporary well.

Two soil vapor samples will be collected in the immediate vicinity of the two proposed temporary wells using a soil gas vapor probe system. The vapor probe system consists of an approximately 1/2-inch diameter casing with a retractable tip.

The probe will be driven to a depth of approximately 5 feet below grade, the tip retracted to expose the vapor inlet, and a vapor sample collected using Summa canisters.

After sample collection, the soil borings and vapor probes will be backfilled with Portland Type I/II neat cement.

Task 2: Analyze Soil, Grab Groundwater, and Soil Vapor Samples

Samples will be transported to a state-certified laboratory and analyzed for the following:

- TPH-G Environmental Protection Agency (EPA) Methods 5030/8015
- BTEX using EPA Methods 5030/8020
- MTBE using EPA Method 5030/8020
- TPH-D using EPA 8015

Additionally, soil samples collected offsite from below groundwater may be analyzed for total organic carbon and particle size distribution for use in the RBCA analysis.

The samples will be analyzed on a standard 2-week turnaround time.

Task 3: Perform RBCA Tier 1 Analysis

A Tier 1 RBCA analysis will be performed using ASTM E-1739 and U.S. Environmental Protection Agency (USEPA) guidelines to determine if the concentrations of constituents of concern (COC) at the site pose an immediate threat to human health. The RBCA guidelines provide Risk-Based Screen Levels (RBSLs) for groundwater, soil and soil vapor concentrations, and receptor scenarios for the COCs.

As part of the Tier 1 evaluation, an exposure assessment will be performed to identify and evaluate completed pathways that connect the sources of COC and types of releases with human and ecological receptor locations. In order for an exposure pathway to be completed, each of the following required conditions will be assessed:

- A chemical source
- A chemical release and transport mechanism
- An exposure pathway (ingestion, inhalation, or dermal contact)
- An exposure at a receptor point

If the Tier 1 evaluation identifies a risk to human health, a Tier 2 evaluation may be

warranted to develop site-specific cleanup goals for COC for soil and groundwater and exposure pathways identified on the Tier 1 evaluation.

Task 4: Evaluate Data and Prepare Report

On completion of sample analysis and risk assessment, a detailed evaluation of results and available information will be conducted to assess the nature and extent of petroleum hydrocarbons in the subsurface and the risk to human health. A report presenting the results, findings, and conclusions of the above tasks will be submitted to the ACHCSA and RWQCB. Additionally, the report will include recommendations for further RBCA analysis, if warranted. The report will include analytical results, boring logs, field notes, and sampling protocol and documentation.

SITE SAFETY PLAN

All field procedures and activities related to the site investigation will be conducted in accordance with the attached site-specific safety plan. The site safety plan was developed in accordance with the applicable requirements of the California Environmental Protection Agency and the federal and state Occupational Safety and Health Administration.

IMPLEMENTATION SCHEDULE

The proposed additional site characterization will be completed and a report submitted within 75 days after receipt of written approval of the proposed work plan from the appropriate regulatory agencies.

The estimated schedule for completion of the tasks is as follows:

Task/Activity	Days After Work Plan Approval
- Collect samples	25
- Analyze samples	45
- Analyze data	60
- Prepare report	75

REFERENCES

Alisto Engineering Group, 1994. Tank Closure Report, Xtra Oil Company Service Station, 1701 Park Street, Alameda. July.

Alisto Engineering Group, 1995a. Preliminary Site Assessment Report, Xtra Oil Company Service Station, 1701 Park Street, Alameda. January.

Alisto Engineering Group, 1995b, c, and d. Groundwater Monitoring and Sampling Report, Xtra Oil Company Service Station, 1701 Park Street, Alameda. March 24, June 29, and December 4.

Alisto Engineering Group, 1996a, b, and c. Groundwater Monitoring and Sampling Report, Xtra Oil Company Service Station, 1701 Park Street, Alameda. February 7, April 23, and October 29.

Alisto Engineering Group, 1997a and b. Groundwater Monitoring and Sampling Report, Xtra Oil Company Service Station, 1701 Park Street, Alameda. February 3 and November 24.

Alisto Engineering Group, 1997c. Additional Site Investigation Report, Xtra Oil Company Service Station, 1701 Park Street, Alameda. June 27.

Alisto Engineering Group, 1998. Groundwater Monitoring and Sampling Report, Xtra Oil Company Service Station, 1701 Park Street, Alameda. February 11.

SOURCE:
USGS MAP, OAKLAND WEST AND EAST QUADRANGLE,
7.5 MINUTE SERIES. 1959.
PHOTOREVISED 1980.

N

0 1000' 2000'

FIGURE 1

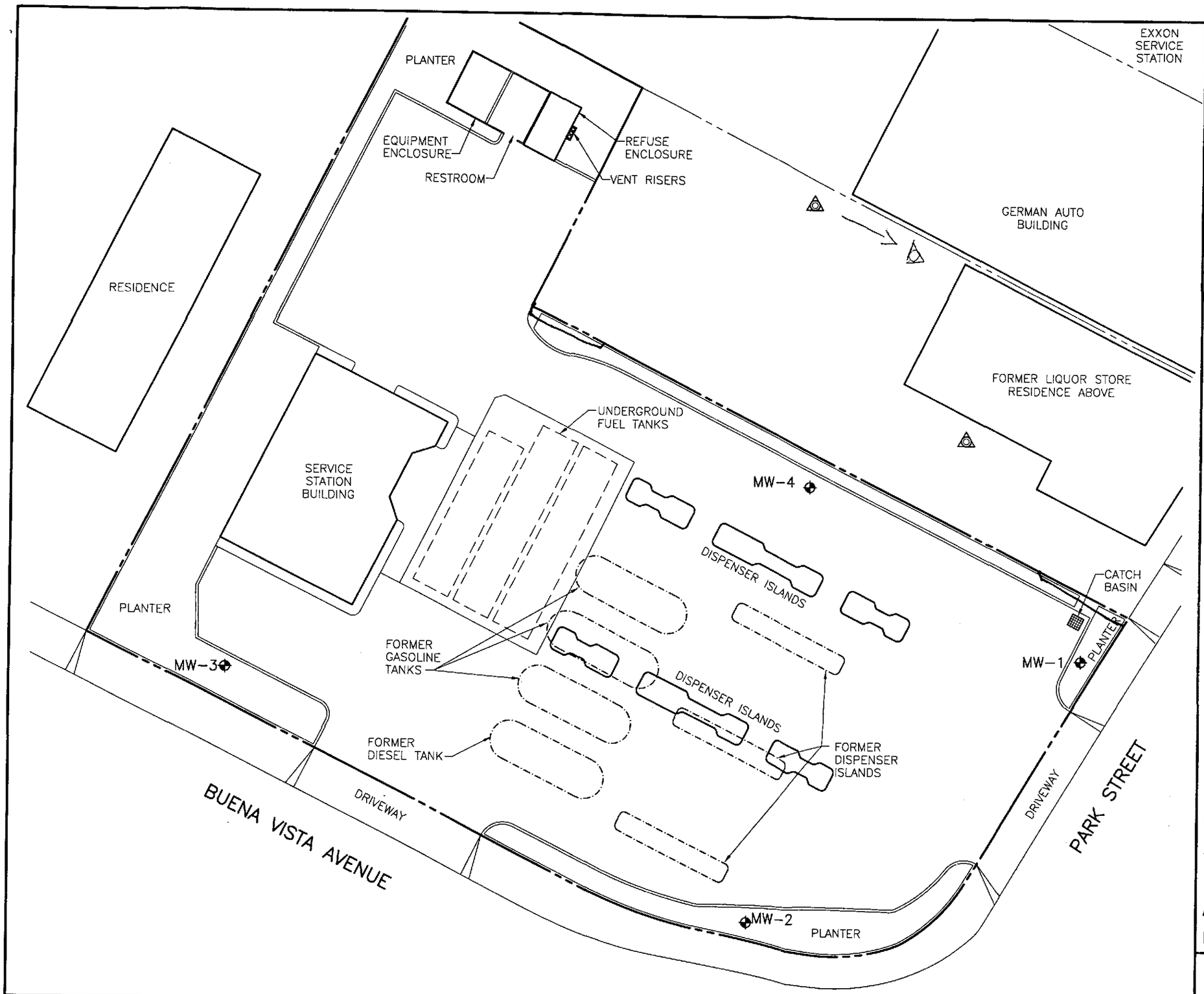
SITE VICINITY MAP

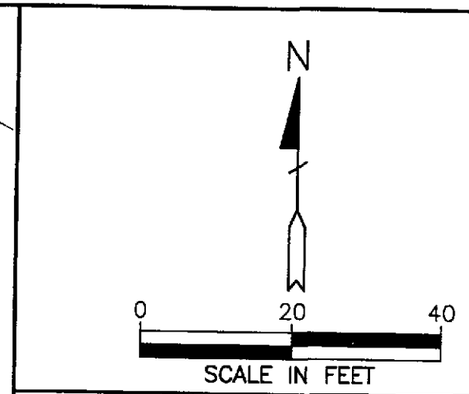
XTRA OIL COMPANY SERVICE STATION
1701 PARK STREET
ALAMEDA, CALIFORNIA

PROJECT NO. 10-210

ALISTO ENGINEERING GROUP
WALNUT CREEK, CALIFORNIA

10210--DWG 8-3-94 RNW 1=1





LEGEND

- EXISTING GROUNDWATER MONITORING WELL
- PROPOSED SOIL, GRAB GROUNDWATER, SOIL VAPOR SAMPLING POINT

FIGURE 2

SITE PLAN

XTRA OIL COMPANY SERVICE STATION
1701 PARK STREET
ALAMEDA, CALIFORNIA

PROJECT NO. 10-210

ALISTO ENGINEERING GROUP
WALNUT CREEK, CALIFORNIA

10210CE-.DWG 5-22-98 RKW 1=20