

9207110321

December 15, 1992

9-038

Ms. Juliet Shin - Hazardous Materials Specialist  
Alameda County Department of Environmental Health  
80 Swan Way, Room 200  
Oakland, CA 94621

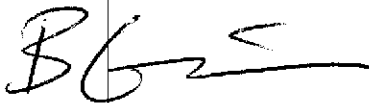
Re: BP Oil Station No. 11104., 1716 Webster Street, Alameda, CA

Dear Juliet,

On behalf of BP Oil Company, Hydro-Environmental Technologies, Inc. (HETI) is pleased to present a workplan for additional subsurface investigation at the above-referenced site. Following your review and approval, HETI will commence field work as soon as possible.

If you have any questions or require additional information, please feel free to call at (510) 521-2684.

Sincerely,  
HYDRO-ENVIRONMENTAL TECHNOLOGIES, INC.



Brian Gwinn  
Project Manager

enclosures

cc: Mr. Scott Hooton, BP Oil Company, 16400 Southcenter Pkwy, Suite 301  
Tukwila, WA 98188

**WORK PLAN FOR ADDITIONAL SUBSURFACE INVESTIGATION**

**BP Oil Facility No. 11104  
1716 Webster Street  
Alameda, California**

Prepared for:

**BP Oil Company  
16400 Southcenter Parkway, Suite 301  
Tukwila, WA 98188**

Prepared by:

**Hydro-Environmental Technologies, Inc.  
2363 Mariner Square Drive, Suite 243  
Alameda, CA 94501  
HETI Job. No. 9-038**

**December 15, 1992**

TABLE OF CONTENTS

1.0 INTRODUCTION .....1  
    1.1 Background.....1  
    1.2 Proposed Scope of Work.....1  
2.0 PROPOSED WORK PLAN .....2  
    2.1 Soil Boring .....2  
    2.2 Well Installation, Development and Survey.....3  
    2.3 Ground Water Gauging, Sampling, and Analysis .....4  
    2.4 Reporting.....4  
    2.5 Schedule .....5

FIGURES:

- Figure 1 - Site Location Map
- Figure 2 - Proposed Well Location Map

**CERTIFICATION**

This report was prepared under the supervision of a registered professional engineer. All statements, conclusions and recommendations are based solely upon field observations and analytical analyses performed by a state-certified laboratory related to work performed by Hydro-Environmental Technologies, Inc.

It is possible that variations in soil or groundwater conditions exist beyond the points explored in this investigation. Also, site conditions are subject to change at some time in the future due variations in rainfall, temperature, regional water usage, or other factors.

The service performed by Hydro-Environmental Technologies, Inc. has been conducted in a manner consistent with the level of care and skill ordinarily exercised by members of our profession currently practicing under similar conditions in the area of the site. No other warranty, expressed or implied, is made.

Hydro-Environmental Technologies, Inc. includes in this report chemical analytical data from a state-certified laboratory. These analyses are performed according to procedures suggested by the U.S. EPA and the State of California. Hydro-Environmental Technologies, Inc. is not responsible for laboratory errors in procedure or result reporting.

Please note that contamination of soil and groundwater must be reported to the appropriate agencies in a timely manner.

**HYDRO-ENVIRONMENTAL TECHNOLOGIES, INC.**

Prepared by:

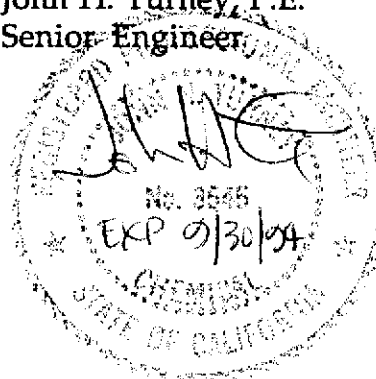


Brian M. Gwinn  
Project Manager

Reviewed by:



John H. Turney, P.E.  
Senior Engineer



## 1.0 INTRODUCTION

### 1.1 Background

The site is located at 1716 Webster Street in Alameda, California (Figure 1) and is currently owned and operated by BP Oil Company (BP). In September 1990, Kapraelian Engineering, Inc. (KEI) supervised the removal of product delivery lines and existing dispenser islands. KEI collected soil samples from the side walls of the excavation and one ground water sample from the excavation. Laboratory analysis of the samples indicated that petroleum hydrocarbons were present in the subsurface soils and ground water.

At the request of the Alameda County Department of Environmental Health (ACDEH), KEI supervised additional soil excavation in the vicinity of the dispenser islands to remove hydrocarbon impacted soils. The extent of the adsorbed hydrocarbons in subsurface soils was not completely delineated by additional excavation and soil sampling. Details of line removal and soil sampling are presented in KEI's report dated October 16, 1990.

BP retained Hydro-Environmental Technologies, Inc. (HETI) to initiate a subsurface investigation at the site in June 1992. ~~HETI installed three two-inch diameter monitoring wells, designated MW-1, MW-2 and MW-3, in July 1992. Soils encountered during drilling consisted primarily of sand to silty sand and ground water was encountered and stabilized at depths ranging between six to seven feet below grade.~~ Ground water movement was calculated to be toward the northeast. Total low to medium boiling point hydrocarbons (TPHg) and benzene, toluene, ethylbenzene and xylenes (BTEX) were detected in the soil sample collected from a depth of six feet below grade in boring MW-1. Neither TPHg nor BTEX constituents were detected in concentrations exceeding the method detection limit in soil samples collected from borings MW-2 and MW-3. ~~TPHg and benzene were also detected in the ground water sample collected from MW-1 at concentrations of 34,000 parts per billion (ppb) and 7,000 ppb respectively.~~ Neither TPHg nor BTEX constituents were detected in concentrations exceeding the method detection limit in water samples collected from MW-2 and MW-3. The results of this phase of investigation were presented in HETI's Phase I Report dated August 21, 1992.

### 1.2 Proposed Scope of Work

In order to further evaluate the presence of hydrocarbons in subsurface soils and ground water in the vicinity of the site, ~~HETI proposes to install two off-site monitoring wells. One well will be located downgradient from the site in Buena Vista Avenue, and one well will be located upgradient from the site in~~

~~along the sidewalk of Webster Street or on private property (pending access).  
Proposed well locations are shown on Figure 2.~~

The dissolved hydrocarbon plume appears to be centered in the vicinity of the underground gasoline storage tank complex. ~~The dissolved hydrocarbon plume is delineated cross-gradient, to the south, by the locations of wells MW-2 and MW-3 and cross-gradient to the north, by the location of well B-6 on Chevron station property across Buena Vista Avenue from the site. Water samples collected from well B-6 in September 1991 did not contain TPHg nor BTEX constituents exceeding the method detection limit.~~

The dissolved hydrocarbon plume should be considered delineated if water samples collected from the proposed off-site upgradient and downgradient monitoring wells do not contain concentrations of dissolved concentrations of TPHg and BTEX exceeding the method detection limit.

All drilling, well construction, soil and water sampling will be performed in accordance with HETI's standard protocols which are consistent with ACDEH and Regional Water Quality Control Board - San Francisco Bay Region (RWQCB) guidelines.

## 2.0 PROPOSED WORK PLAN

### 2.1 Soil Boring

HETI will supervise the installation of two off-site soil borings in the locations shown on Figure 2, the Proposed Well Location Map. A drill rig equipped with hollow stem augers, 8-3/4 inches in diameter, will be utilized to drill the borings in order to collect soil samples. ~~A California modified split spoon, lined with brass tubes and driven into subsurface soils via an automatic hammer, will be utilized to collect a soil sample at a depth five feet below grade from each boring.~~

The soil samples will be covered with teflon tape and plastic end caps to be placed in a cooler for transport to the analytical laboratory. ~~The soil samples will be analyzed for TPHg and BTEX by EPA Methods 8015 (DHS modified) and 8020. Soil sample analysis will be performed by PACE Laboratories, a DHS-certified laboratory, located in Novato, California.~~

A portion of the soil sample will also be retained for visual description and screened for the presence of organic vapors. The soil samples will be classified according to the Unified Soil Classification System and screened with an Organic Vapor Meter (OVM) model 580B.

The borings will be advanced ten feet into ground water and terminated at that depth. ~~The anticipated maximum depth of the boring is 17 feet below grade.~~

Prior to commencement of drilling, HETI will obtain well installation permits from the Alameda County Flood Control and Water Conservation District - Zone Seven and an encroachment permit from the City of Alameda. If a well is installed in the sidewalk of Webster St., an encroachment permit from Caltrans will also be obtained. HETI will conduct a Health and Safety briefing, with drilling personnel in attendance, prior to the start of drilling. All field personnel on-site during drilling will be required to review and sign the Health and Safety Plan. Augers will be steam cleaned at the end of drilling and auger rinseate will be stored on-site in labeled 55-gallon drums. Soil generated from drilling activities will also be stored on-site in labeled 55-gallon drums. Auger rinseate and soil generated during drilling activities will be transported for off-site disposal.

## 2.2 Well Installation, Development and Survey

A monitoring well will be installed in each borehole. Schedule 40, flush joint threaded, 2-inch diameter PVC well materials will be used to construct each well. ~~Machine-slotted well screen will be extended from the bottom of the borehole to approximately five feet below grade and blank well casing will be coupled to the screen and extended to the surface.~~ The annular space around the screen will be filled with a clean, uniform sandpack to a depth of approximately four feet below grade. Hydrated bentonite will be placed above the sandpack to a depth of three feet below grade and the remaining annular space around the blank casing will be grouted to the surface.

The top of each well casing will be capped and locked with an expansion plug and traffic rated road boxes will be cemented in place over the wellheads. The dimensions of well construction described above are only approximations and may vary based on field observations made during drilling.

The wells will be developed utilizing a combination of surging and bailing. Development will proceed until the ground water being removed is relatively free of turbidity. The purpose of well development is to remove fine sediments from the well and to increase the hydraulic connection between the sandpack and the water bearing zone.

HETI personnel will survey the elevation each wellhead to the nearest one hundredth of a foot, relative to a ~~temporary benchmark~~ and existing wells at the site, corrected for mean sea level. The point surveyed at each wellhead will be the top of the well casing (north side). Survey data will be used, in combination with gauging data, to determine direction of ground water flow.

An effort will be made to gain access to wells on the Chevron site for the purposes of surveying in order to determine the direction of ground water in the vicinity of both sites more accurately.

### **2.3 Ground Water Gauging, Sampling, and Analysis**

After monitoring well installation and development, a ground water sample will be collected from each well. Prior to sampling, the depth to water in each existing well at the site will be gauged to the nearest one hundredth of a foot using an electronic oil/water interface probe. The newly installed wells will be purged until pH, temperature and conductivity of the purge water stabilizes. After the wells have recovered to at least 80% of static level, a ground water sample will be collected using a disposable teflon bailer.

The water samples will be transferred to 40 ml glass VOA vials, preserved with a drop of HCl, and covered with a teflon septum screw caps. The water samples will be placed in a cooler for transport to the analytical laboratory. The water samples will be analyzed for TPHg and BTEX using EPA Methods 8015 (DHS-modified) and 8020. Water sample analysis will be performed by Pace Laboratories.

Water generated during well development and sampling will be stored on site in labeled 55-gallon drums until transported for off-site disposal.

### **2.4 Reporting**

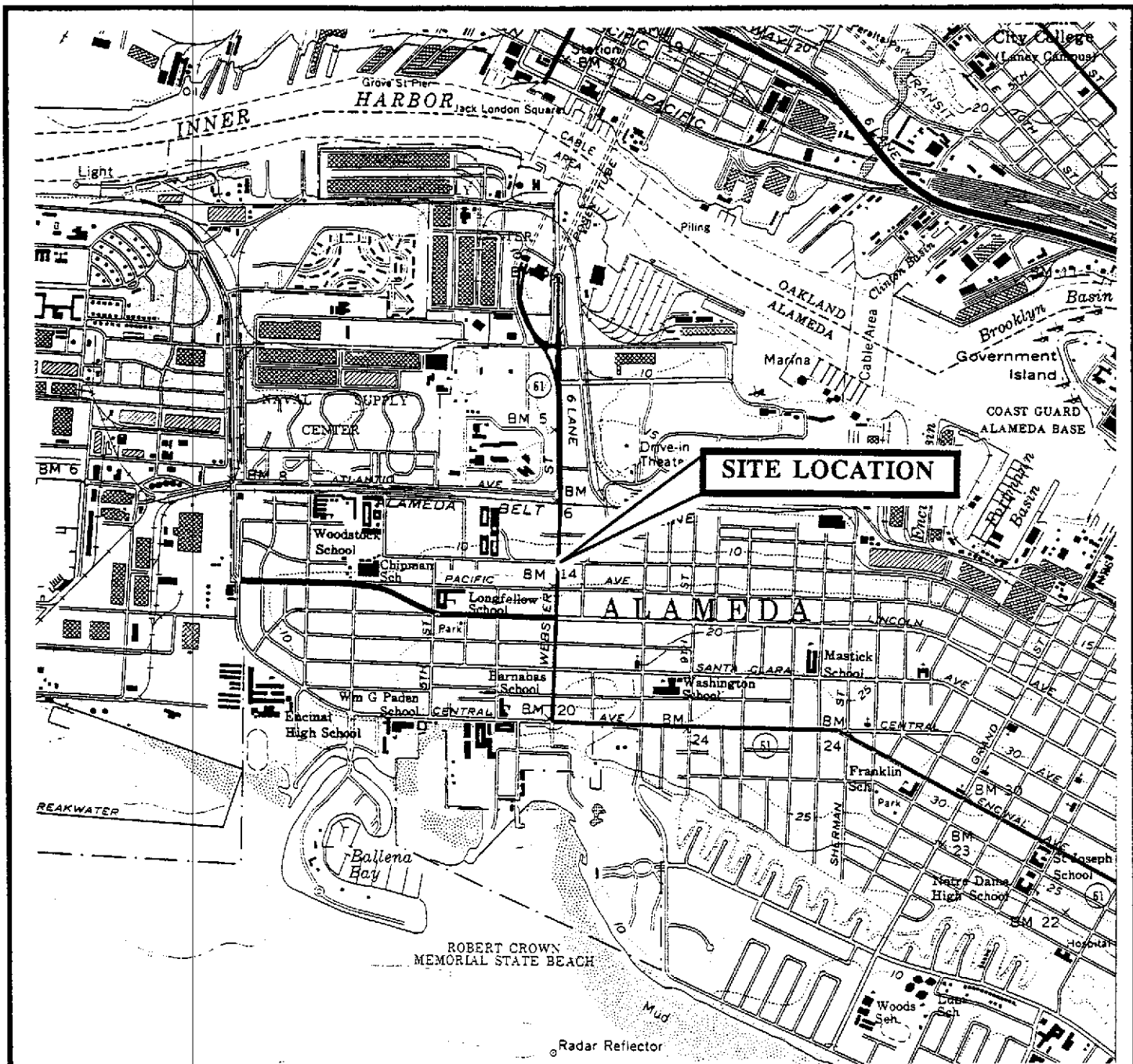
The results of the subsurface investigation will be presented in a Phase II Subsurface Investigation Report. The report will include detailed description of all field work and interpretation of cumulative soil and water sample analytical results as they relate to subsurface conditions at the site. Boring logs, well construction detail, and maps showing ground water elevation contours and dissolved hydrocarbon distribution will be also be included in the report.

### **2.5 Schedule**

This field work will be completed within two weeks following the approval of this workplan by the ACDEH and procurement of off-site drilling access. A report documenting the results of this investigation will be prepared six to eight weeks following the completion of field activities.

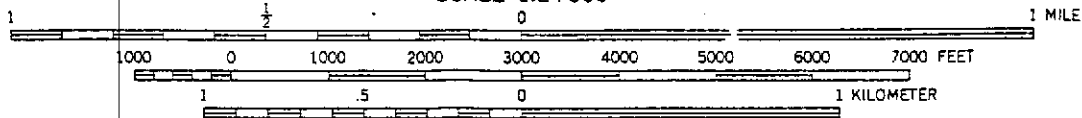


# FIGURES



Source:  
USGS 7.5' Quadrangle  
Oakland, East

SCALE 1:24 000



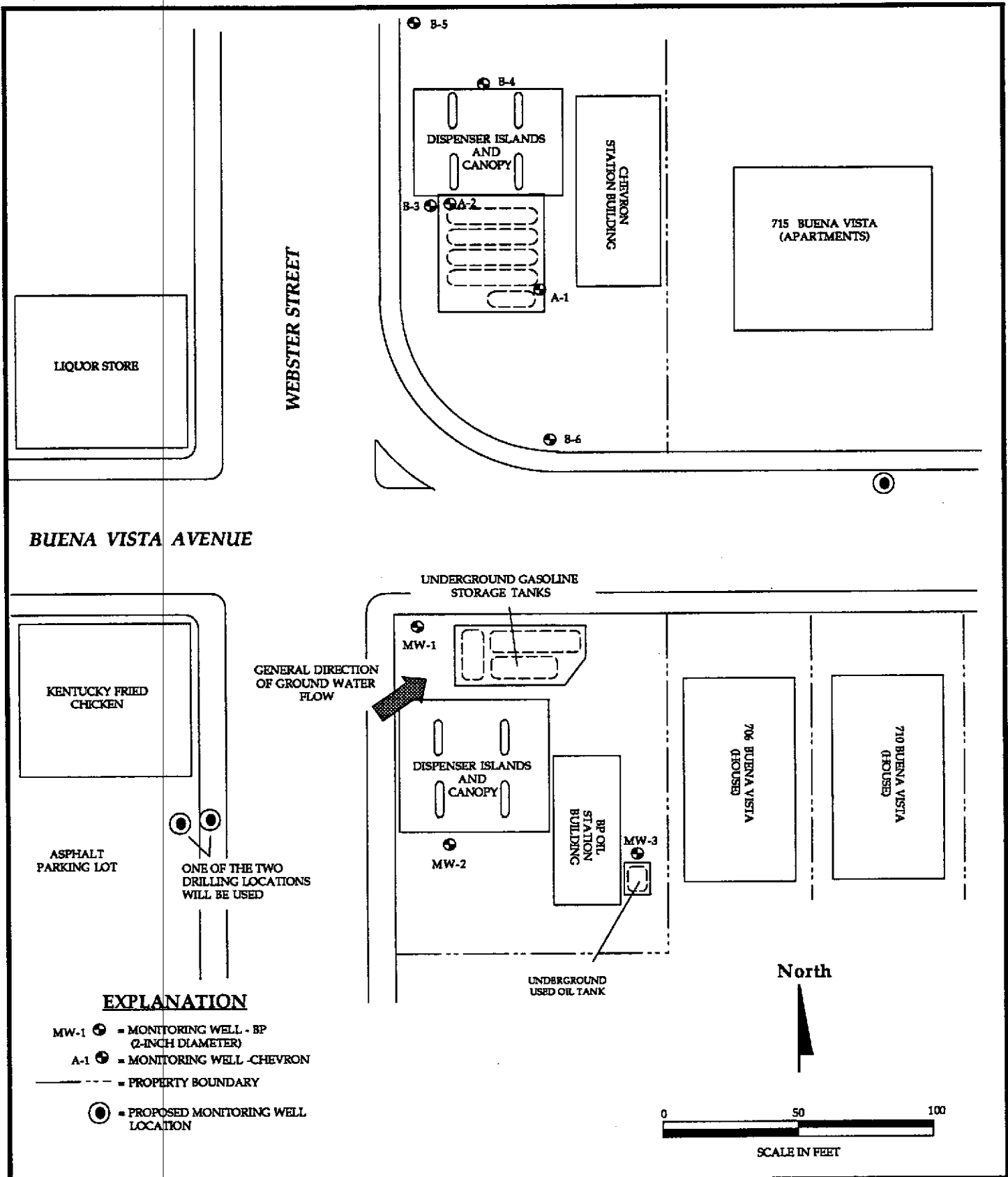
North



**HYDR**  
**ENVIR**   
**MENTAL**  
**TECHN**   
**LOGIES, INC.** 

**SITE LOCATION MAP**  
BP Oil Facility No. 11104  
1716 Webster Street  
Alameda, California

Job No.  
9-038  
Figure  
**1**



**EXPLANATION**

- MW-1 ● = MONITORING WELL - BP (2-INCH DIAMETER)
- A-1 ● = MONITORING WELL - CHEVRON
- = PROPERTY BOUNDARY
- = PROPOSED MONITORING WELL LOCATION

**HYDR**  
**ENVIR** **MENTAL**  
**TECHN** **LOGIES, INC.**

**PROPOSED WELL LOCATION MAP**

BP Oil Facility No. 11104  
 1716 Webster Street  
 Alameda, California

Job No.  
 9-038  
 Figure  
 2