

June 24, 1992

9-038

Mr. Brian Oliva - Hazardous Materials Specialist,
Alameda County Department of Environmental Health,
80 Swan Way, Room 200
Oakland, CA 94621

Subject: BP Oil Station # 11104, 1716 Webster Street, Alameda, CA

Dear Mr. Oliva:

Enclosed is a copy of a report titled "Workplan for Subsurface Investigation" prepared by Hydro-Environmental Technologies, Inc. for the subject site. Please review this report prior to our scheduled meeting with BP Oil Company on Friday June 26, 1992.

If you have any questions, please contact me at (510) 521-2684.

Sincerely,
HYDRO-ENVIRONMENTAL TECHNOLOGIES, INC.



Frederick G. Moss,
Senior Engineer

cc: Peter J. DeSantis, BP Oil Company

enclosures

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WORKPLAN FOR SUBSURFACE INVESTIGATION

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

Prepared for:

**BP Oil Company
2868 Prospect Park Drive, Suite 360
Rancho Cordova, CA 95670**

Prepared by:

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

June 24, 1992

CERTIFICATION

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

Site conditions are subject to change with time; therefore, our conclusions result only from the interpretation of present conditions and available site information. This workplan was prepared in accordance with accepted professional standards technical procedures as certified below.

HYDRO-ENVIRONMENTAL TECHNOLOGIES, INC.

Prepared by:

Reviewed by:

Brian M. Gwinn for

Brian M. Gwinn
Project Geologist

Frederick G. Moss

Frederick G. Moss, P.E. No. 35162
Senior Engineer



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FIGURES:

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

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.

1.2 Proposed Scope of Work

In order to evaluate the presence of hydrocarbons in subsurface soils and ground water in the immediate vicinity of the potential sources at the site, HETI proposes to install three on site monitoring wells. 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 WORKPLAN

2.1 Soil Boring

HETI will supervise the installation of three borings on site in 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 (ground water is anticipated to be present at a depth of 7 feet below grade).

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. All soil samples will be analyzed for:

- Total petroleum hydrocarbons as gasoline (TPHg), benzene, toluene, ethylbenzene, and total xylenes (BTEX) by EPA Methods 8015 (DHS-modified) and 8020

In addition, the soil sample collected from the boring near the waste oil tank will be analyzed for:

- Total petroleum hydrocarbons as diesel (TPHd) by EPA Method 8015 (DHS-modified)
- Total oil and grease (TOG) by Standard Method 5520 D&F
- Halogenated volatile organics (HVO) by EPA Method 8010
- Cadmium, chromium, nickel, and zinc (Cd, Cr, Ni, Zn) by EPA Method 6000 series
- Organic lead (O-Pb) by methods described in the California LUFT Manual (revision).

Soil sample analysis will be performed by PACE Laboratories, a DHS-certified laboratory, located in Novato, California. The borings will be advanced ten feet into ground water and terminated at that depth. The anticipated maximum depth of the borings is 17 feet below grade.

A portion of each 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.

Prior to commencement of drilling, HETI will obtain well installation permits from the Alameda County Flood Control and Water Conservation District - Zone Seven. 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 between each borehole to prevent cross contamination. Soil generated from drilling activities will be contained in labeled 55-gallon drums, until transported for off site disposal by a licensed waste hauler.

2.2 Well Installation, Development and Survey

Monitoring wells 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 each 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 the well casings 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 of each wellhead to the nearest one hundredth of a foot, relative to a temporary benchmark 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.

2.3 Ground Water Gauging, Sampling, and Analysis

After monitoring well installation and development, ground water samples will be collected from the three wells. Prior to sampling, the depth to water in each well will be gauged to the nearest one hundredth of a foot using an electronic oil/water interface probe. The wells will be purged until pH, temperature and conductivity of the purge water stabilizes. After the wells have recovered to at least 70% of static level, ground water samples will be collected using dedicated teflon bailers.

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. All water samples will be analyzed for TPHg and BTEX using EPA Methods 8015 (DHS-modified) and 8020. The water sample collected from the monitoring well near the waste oil tank will be analyzed additionally for petroleum

compounds detected in the soil sample collected during drilling. Water sample analysis will be performed by Pace Laboratories.

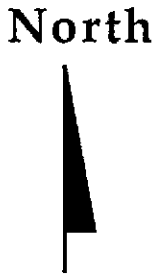
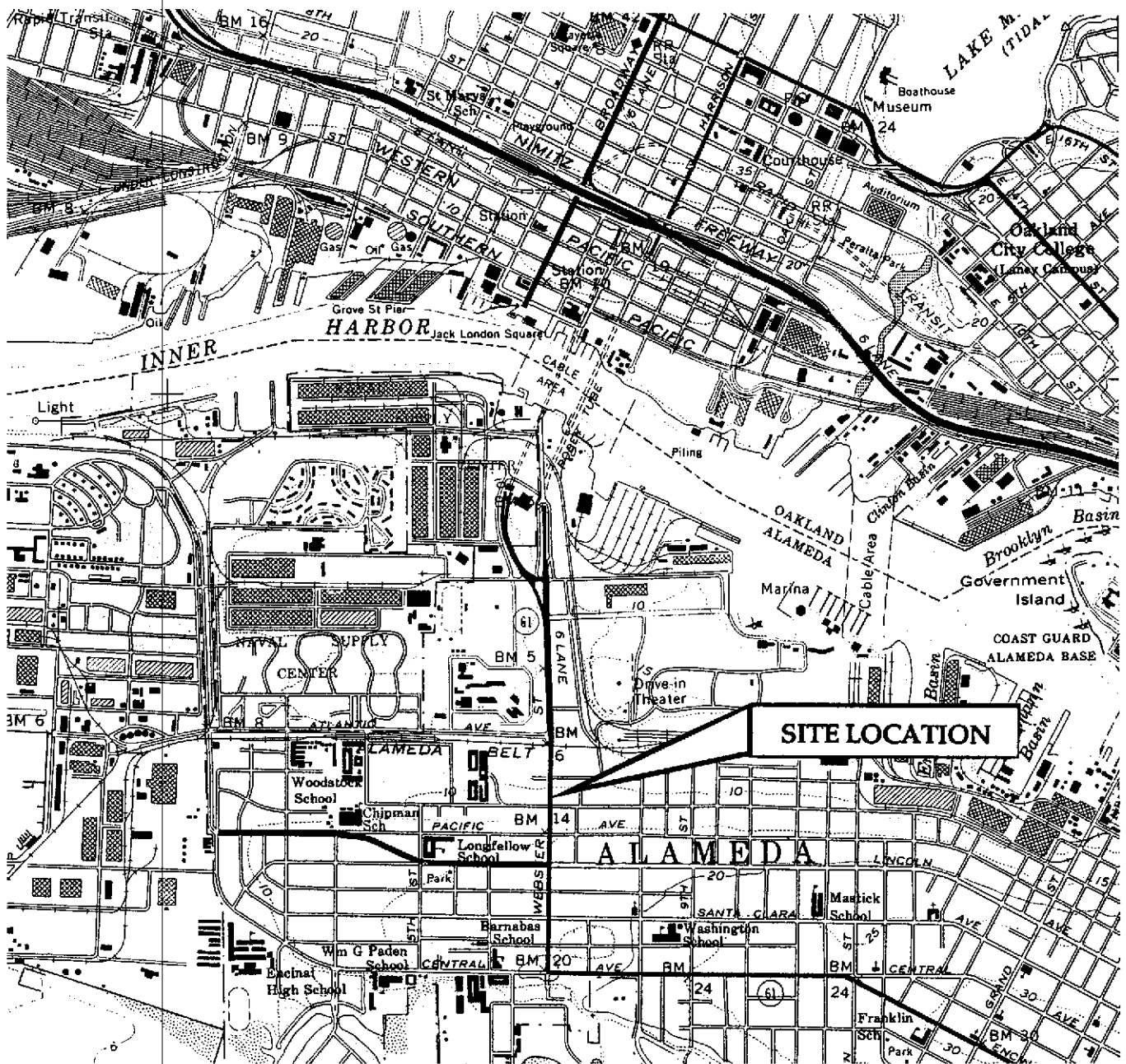
Water generated during well development and sampling will be stored on site in labeled 55-gallon drums until transported for off site disposal by a licensed waste hauler.

2.4 Reporting

The results of the subsurface investigation will be presented in a Phase I Subsurface Investigation Report. The report will include detailed description of all field work and interpretation of 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 work will be completed within two weeks following the approval of this workplan by the ACDEH. The report documenting site conditions will be completed within six to eight weeks.



Source:
USGS 7.5' Quadrangle
Oakland, East

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

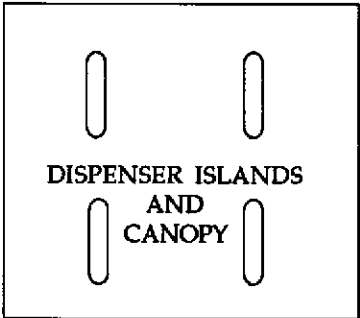
BUENA VISTA AVENUE

WEBSTER STREET

UNDERGROUND
GASOLINE STORAGE
TANKS

PMW

PMW



DISPENSER ISLANDS
AND
CANOPY



STATION
BUILDING

UNDERGROUND
WASTE OIL TANK



PMW

North



EXPLANATION

PMW  = PROPOSED MONITORING WELL LOCATION
(2-INCH DIAMETER)



SCALE IN FEET

HYDR 
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TECHN  **LOGIES, INC.**

PROPOSED WELL LOCATION MAP
BP Oil Facility No. 11104
1716 Webster Street
Alameda, California

Job No.
9-038
Figure
2