



BP OIL

BP Oil Company
16400 Southcenter Parkway, Suite 301
Tukwila, Washington 98188
(206) 575-4077

2007-11-13 11:50:50

October 7, 1992

Ms. Juliet Shin
Alameda County Dept. of Environmental Health - Haz. Mat. Division
80 Swan Way, Room 200,
Oakland, CA 94621

RE: BP OIL FACILITY #11104
1716 Webster Street
Oakland, CA
Alameda

Dear Ms. Shin:

Attached please find our PHASE I REPORT for the above referenced facility.

Please call me at (206) 394-5243 with questions regarding this submission.

Respectfully,

Peter J. DeSantis
Environmental Resources Management

PJD:vlm ERM11104

cc: Mr. Rich Hiett, Regional Water Quality Control Board - San Francisco Bay Region, 2101 Webster Street, Suite 500, Oakland, CA 94621

Mr. Markus Niebanck, Hydro-Environmental Technologies, Inc.
2363 Mariner Square Drive, Suite 243, Alameda, CA

David Baker, Mobil Oil Corp, 3225 Gallows Road, Fairfax, VA
22037

Site file

PHASE I REPORT

**BP Oil Company Service Station 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**

August 21, 1992

TABLE OF CONTENTS

1.0 INTRODUCTION1
 1.1 Purpose.....1
 1.2 Background1
2.0 FIELD ACTIVITIES.....2
 2.1 Soil Boring Installation and Soil Sampling.....2
 2.2 Monitoring Well Installation, Development and Survey3
 2.3 Ground Water Gauging, Sampling and Analysis.....3
3.0 RESULTS AND DISCUSSION.....4
 3.1 Site Stratigraphy.....4
 3.2 Soil Sample Analytical Results.....4
 3.3 Monitoring Well Installation and Construction.....5
 3.4 Ground Water Gauging and Analytical Results.....5
4.0 SUMMARY.....6
5.0 CONCLUSIONS7

TABLES

- Table 1: Soil Samples - Summary of Analytical Results
- Table 2: Water Samples - Summary of Analytical Results

FIGURES

- Figure 1: Site Location Map
- Figure 2: Site Plan
- Figure 3: Ground Water Contour Map
- Figure 4: TPHg Isoconcentration Map
- Figure 5: Benzene Isoconcentration Map

APPENDIX A

Health and Safety Plan

APPENDIX B

Boring Log Legend

Boring Logs/Well Construction Diagrams: MW-1, MW-2 and MW-3

APPENDIX C

Site Survey Data

Ground Water Gauging Data Sheet

Field Data Sheets

APPENDIX D

Chains-of-Custody

Laboratory Report: Sequoia Analytical - soil

Laboratory Report: Sequoia Analytical - water

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 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 report was prepared in accordance with accepted professional standards technical procedures as certified below.

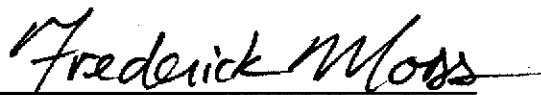
HYDRO-ENVIRONMENTAL TECHNOLOGIES, INC.

Prepared by:

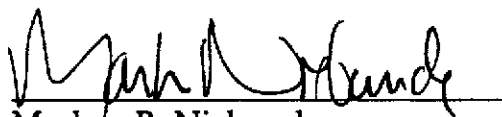
Reviewed by:



Brian M. Gwinn
Project Manager



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



Markus B. Niebanck
Western Manager



1.0 INTRODUCTION

1.1 Purpose

The purpose of this report is to present the results of Hydro-Environmental Technologies, Inc.'s (HETI's) investigative work to evaluate the presence of hydrocarbons in the subsurface at BP Oil Company (BP) service station No. 11104, located at 1716 Webster Street in Alameda, California (the site). A Site Location Map is attached as Figure 1. The service station is currently active.

This report describes the results of on-site monitoring well installation, and collection and analysis of soil and ground water samples. A description of field activities is presented in chronological order, followed by a presentation and discussion of the results of each of the activities.

1.2 Background

In September 1990, BP retained Kaprealian Engineering, Inc. (KEI) to supervise the removal of the existing product delivery lines and the 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 excavation of hydrocarbon impacted soil in the vicinity of the dispenser islands. The extent of the adsorbed hydrocarbons in subsurface soils was not completely delineated by additional excavation and soil sampling. Details of dispenser/line removal and soil sampling are presented in in KEI's report dated October 16, 1990.

Unleaded gasoline (regular, plus and super) is the only fuel presently stored and dispensed at the site. Used oil is also stored on-site, until transported for off-site disposal.

BP retained HETI to continue the environmental investigation at the site. Three monitoring wells were installed on-site to evaluate the lateral extent of hydrocarbons in soils and ground water. Activities performed by HETI during this phase of investigation (and described in this report) included the installation, development and survey of three on-site monitoring wells, and the collection of soil and ground water samples for laboratory analysis.

2.0 FIELD ACTIVITIES

2.1 Soil Boring Installation and Soil Sampling

HETI conducted a safety briefing on-site with Kvilhaug Drilling personnel, prior to the start of drilling on July 8, 1992. At the end of the briefing, all personnel reviewed and signed the Field Crew Health and Safety Plan; a copy is attached in Appendix A. All drilling and soil sampling was performed according to HETI protocol and consistent with ACDEH and Regional Water Quality Control Board (RWQCB) recommended guidelines and procedures. Well installation permits were obtained from the Alameda County Flood Control and Water Conservation District - Zone 7 prior to drilling.

Kvilhaug Drilling of Concord, California, used a Mobile B-61 hollow-stem auger drill rig to drill three on-site soil borings, designated MW-1, MW-2, and MW-3, in locations shown on Figure 2, the Site Plan. HETI originally proposed to install one monitoring well to the east of the underground gasoline storage tanks in the northeast portion of the station property. However, Ms. Juliet Shin, of the ACDEH, requested that a well be installed south of the dispenser islands to address hydrocarbons detected in soil samples collected during the product line removal in September 1990. With BP's authorization, the proposed well location to the east of the underground storage tanks was subsequently relocated to the south of the dispenser islands. The other proposed well locations remained the same as noted in HETI's Workplan dated June 24, 1992.

A California-modified split-spoon sampler, lined with brass tubes, was used to collect soil samples at depth of 6 feet below grade from all of the borings. The brass tubes were covered with teflon tape and plastic end caps. The soil samples were then labeled, documented on a chain-of-custody, and placed in a cooler for transport to the analytical laboratory.

Soil samples collected from all borings were analyzed for total low to medium boiling point petroleum hydrocarbons (TPHg) and benzene, toluene, ethylbenzene, and total xylenes (BTEX) by EPA Methods 8015 (DHS-modified) and 8020. Soil samples collected from the boring (MW-3) drilled near the used oil tank were also analyzed for total high boiling point petroleum hydrocarbons (TPHd) by EPA Method 8015 (DHS-modified), halogenated volatile organics (HVO) by EPA Method 8010, total oil and grease (TOG) by Standard Method 5520 E&F, and cadmium, chromium, total lead, nickel, and zinc (Cd, Cr, Pb, Ni, Zn) by EPA Method 6010. Soil sample analysis was performed by Chromolab, Inc., a state DHS-certified laboratory, located in San Ramon, California.

Portions of each soil sample were also retained for visual description by a HETI geologist, using the United Soil Classification System, and for volatile headspace analysis using an Organic Vapor Meter 580B (OVM). Complete soil sample descriptions and OVM readings are presented on the Boring Logs in Appendix B. Soil cuttings generated during drilling were stored on-site and later transported for off-site disposal by a licensed waste hauler.

2.2 Monitoring Well Installation, Development and Survey

HETI installed monitoring wells in borings MW-1, MW-2, and MW-3 on July 8, 1992. The monitoring wells were designated the same as the respective borings. The wells were installed near potential on-site hydrocarbon sources. Well MW-1 was installed immediately north of the dispenser islands and west of the underground gasoline storage tanks. Well MW-2 was installed south of the existing dispenser islands. Well MW-3 was installed near the used oil tank behind the station building. Well locations are shown on Figure 2.

All wells were constructed of two-inch diameter PVC well materials. Each well was constructed according to standard HETI, ACDEH and RWQCB protocols. Monitoring well construction details are presented on the Boring Logs in Appendix B.

After installation, each well was developed by a combination of surging and bailing. The wells were developed in order to remove fine-grained sediments from the sandpack, and to increase the hydraulic connection with the aquifer. Following development, the location and elevation of the top-of-casing of each well was surveyed relative to an existing benchmark, corrected for mean sea level. Survey data is presented on the field data sheets in Appendix C.

2.3 Ground Water Gauging, Sampling and Analysis

On July 21, 1992, HETI gauged each monitoring well for depth to water and thickness of any separate-phase petroleum with an interface probe. No separate-phase petroleum was detected in any of the wells. Prior to sampling, each well was purged of a minimum of three well volumes or until dry. Purge water was stored on-site in labeled 55-gallon drums. Well purging information is presented on the Field Data Sheets in Appendix C.

Following recovery of water levels in the wells to at least 70% of their original levels, a ground water sample was collected from each well. Samples were then

labeled, documented on a chain-of-custody, and stored in a cooler for transport to the analytical laboratory. All sampling was conducted in accordance with HETI standard operating procedure, and using methods consistent with ACDEH and RWQCB guidelines.

Ground water samples collected from all wells were analyzed for TPHg and BTEX by EPA Methods 8015 (DHS-modified) and 8020. Water samples collected from MW-3, the well near the used oil tank, were also analyzed for Cd, Cr, Pb, Ni and Zn using EPA Method 6010. Water sample analysis was performed by Chromolab, Inc.

3.0 RESULTS AND DISCUSSION

3.1 Site Stratigraphy

Sediments encountered during the drilling of borings MW-1, MW-2 and MW-3 consisted of fill for the first few feet, which was underlain by predominantly silty sand to 17 feet below grade, the maximum depth explored in all of the borings. Ground water was initially encountered in unconfined conditions and stabilized at a depth of approximately 8.5 feet below grade in all of the borings.

Organic vapor meter (OVM) readings from soil samples collected for headspace analysis ranged from 0 parts per million (ppm) to 769 ppm. OVM readings for specific soil samples, along with complete sample descriptions, are presented on the Boring Logs in Appendix B. Organic vapor meter readings displayed by the OVM are not a quantitative determination of true hydrocarbon concentrations in the soil samples, but they are useful for determining the relative magnitude of hydrocarbon concentrations.

3.2 Soil Sample Analytical Results

TPHg and BTEX were detected only in the soil sample collected from boring MW-1. TPHg was detected at a concentration of 3,200 ppm in the soil sample collected at 6 feet below grade. Benzene was not detected in concentrations exceeding the detection limit of 0.5 ppm. The detection limit was increased from 0.005 ppm to 0.5 ppm due to the dilution factor needed to properly analyze the soil sample collected from MW-1.

Neither TPHg nor BTEX were detected in concentrations exceeding the method detection limit in any of the soil samples collected from borings MW-2 and MW-3.

Neither TPHd, HVO, nor TOG were detected in the soil sample collected from boring MW-3 in concentrations exceeding the method limit.

Cadmium, chromium, lead, nickel and zinc were detected at concentrations of 2.0 ppm, 25 ppm, 2.5 ppm, 22 ppm and 29 ppm, respectively, in the soil sample collected from boring MW-3.

The concentrations of metals detected in soil samples collected from boring MW-3 appear to be native background levels. U. S. Geological Survey Professional Paper Number 1270 presents background concentrations of metals in native soils across the U. S. Background levels of chromium, lead, nickel and zinc in native San Francisco Bay Area soils are typically greater than 100 ppm, 130 ppm, 30 ppm, and 120 ppm, respectively. Concentrations of chromium, lead, nickel, and zinc detected in the soil sample collected from boring MW-3 are below expected native concentrations and, therefore, should be considered background levels. Native concentrations were not presented for cadmium.

Soil sample analytical results are summarized in Table 1. A copy of the laboratory report is attached in Appendix D.

3.3 Monitoring Well Installation and Construction

HETI installed monitoring wells in borings MW-1, MW-2 and MW-3 on July 8, 1992. Monitoring wells MW-1, MW-2 and MW-3 were constructed identically with two-inch diameter PVC well materials. Machine-slotted 0.020-inch schedule 40 PVC well screen was extended from the bottom of each boring, 17 feet below grade, to 7 feet below grade. Solid well casing was coupled to the well screen and extended to the surface in the borings. The annulus around each well screen was filled with a clean, uniform sand from the bottom of each boring to a depth of 6 feet below grade. A one-foot thick seal of bentonite pellets was placed above the sand pack from a depth of 6 feet to 5 feet below grade and hydrated with steam-distilled water. The remainder of each borehole was grouted to the surface, and traffic-rated road boxes were cemented in place flush with the surface. All monitoring wells were constructed according to standard HETI protocol, and consistent with all ACDEH and RWQCB guidelines. Well construction diagrams are provided on the Boring Logs in Appendix B.

3.4 Ground Water Gauging and Analytical Results

After well installation and development, ground water samples were collected on July 21, 1992. Depth to ground water in each of the wells ranged from approximately

5.9 feet to 7.1 feet below grade, according to the well gauging conducted prior to sampling. The depth to water measurements and wellhead elevation data were used to calculate ground water elevation contours. These contours are shown on Figure 3, the Ground Water Contour Map. The ground water flow is toward the north-northeast at a gradient of 0.005 ft/ft (0.5%).

TPHg and BTEX were detected in the water sample collected from MW-1. Benzene was the only hydrocarbon compound detected in the water sample collected from MW-3. TPHg was detected in a concentration of 34,000 parts per billion (ppb) in the water sample collected from MW-1. Benzene was detected in concentrations ranging from 0.95 ppb in the water sample collected from MW-3 to 7,000 ppb in the water sample collected from well MW-1. Neither TPHg nor BTEX were detected in concentrations exceeding the method detection limit in the water sample collected from MW-2.

The water sample collected from MW-3, the well nearest the used oil tank was not analyzed for TPHd, TOG, or HVO because these compounds were not detected in concentrations exceeding the method limit in the soil sample collected from that boring.

Zinc was detected at a concentration of 10 ppb in the water sample collected from MW-3. Neither cadmium, chromium, lead nor nickel were detected in concentrations exceeding the method detection limit in the sample collected from MW-3. The concentration of zinc detected in the water sample collected from MW-3 is the result of native metals in subsurface soils leaching into the ground water. The zinc concentrations in ground water are, therefore, background levels also.

Ground water sample analytical results are summarized in Table 2, and are represented graphically on the TPHg (Figure 4) and Benzene (Figure 5) Isoconcentration Maps, respectively. A copy of the water sample analytical report and chain-of-custody is included in Appendix D.

4.0 SUMMARY

A summary of field activities and results from this phase of investigation is presented below:

1. Three on-site monitoring wells (MW-1, MW-2 and MW-3) were installed, developed and surveyed during the period from July 8 through July 21, 1992. Monitoring wells were installed in locations near potential on-site hydrocarbon sources. Sediments encountered during drilling consisted predominantly of silty sand. TPHg and BTEX were detected in the soil sample collected from MW-

1. Neither TPHg nor BTEX were detected in soil samples collected from borings MW-2 and MW-3. Neither TPHd, TOG nor HVO were detected in the soil sample collected from MW-3. Cadmium, chromium, total lead, nickel and zinc were detected in the soil sample collected from boring MW-3 at concentrations below expected native levels.
2. Ground water samples were collected from monitoring wells MW-1, MW-2 and MW-3 on July 21, 1992. TPHg and BTEX were detected in the water sample collected from MW-1. Benzene was the only hydrocarbon compound detected in the water sample collected from MW-3. Neither TPHg nor BTEX were detected in the water sample collected from MW-2. Background concentrations of zinc were detected in the water sample collected from MW-3. Neither cadmium, chromium, lead, nor nickel were detected in the water sample collected from MW-3.
3. Direction of ground water flow beneath the site is north-northeast at a gradient of 0.5%.

5.0 CONCLUSIONS

Based upon the information summarized above, HETI concludes the following:

1. Volatile hydrocarbons are present in subsurface soils in the vicinity of well MW-1. The extent of hydrocarbon impacted soil has been delineated to the south of the underground gasoline storage tanks and dispenser islands.
2. The dissolved hydrocarbon plume appears to be centered in the vicinity of MW-1. The horizontal extent of the dissolved hydrocarbon plume has been delineated to the south of the underground gasoline storage tanks and dispenser islands.

TABLES

Table 1
SOIL SAMPLES

SUMMARY OF ANALYTICAL RESULTS

BP Oil Facility No. 11104
Alameda, California
Sampling Date: July 8, 1992

MW-No.- Depth (in feet)	TPHd	TPHg	B	T	E	X	HVO	TOG	Cd	Cr	Pb	Ni	Zn
MW-1-6'	NT	3,200	ND	2.0	8.1	3.9	NT	NT	NT	NT	NT	NT	NT
MW-2-6'	NT	ND	ND	ND	ND	ND	NT	NT	NT	NT	NT	NT	NT
MW-3-6'	ND	ND	ND	ND	ND	ND	ND	ND	2.0	25	4.2	22	29

All concentrations in ppm (mg/l)

TPHd = Total petroleum hydrocarbons as diesel by EPA Method 8015 (DHS modified)
 TPHg = Total petroleum hydrocarbons as gasoline by EPA Method 8015 (DHS modified)
 B = Benzene T = Toluene
 E = Ethylbenzene X = Total Xylenes
 BTEX analysis by EPA Method 8020
 HVO = Halogenated volatile organics as detected by EPA Method 8010
 TOG = Total oil and grease by Standard Method 5520 E&F
 Cadmium (Cd) Chromium (Cr), lead (Pb), nickel (Ni), and zinc (Zn) by EPA Method 6010

NT = Not analyzed for
 ND = Not detected in concentrations exceeding the laboratory method detection limit

Table 2
WATER SAMPLES

SUMMARY OF ANALYTICAL RESULTS

BP Oil Facility No. 11104
Alameda, California
Sampling Date: July 21, 1992

MW-No.	TPHg	B	T	E	X	Cd	Cr	Pb	Ni	Zn
MW-1	34,000	7,000	1,700	2,500	6,900	NT	NT	NT	NT	NT
MW-2	ND	ND	ND	ND	ND	NT	NT	NT	NT	NT
MW-3	ND	0.95	ND	ND	ND	ND	ND	ND	ND	10

All concentrations in ppb ($\mu\text{g/l}$)

TPHg = Total petroleum hydrocarbons as gasoline by EPA Method 8015 (DHS modified)

B = Benzene

T = Toluene

E = Ethylbenzene

X = Total Xylenes

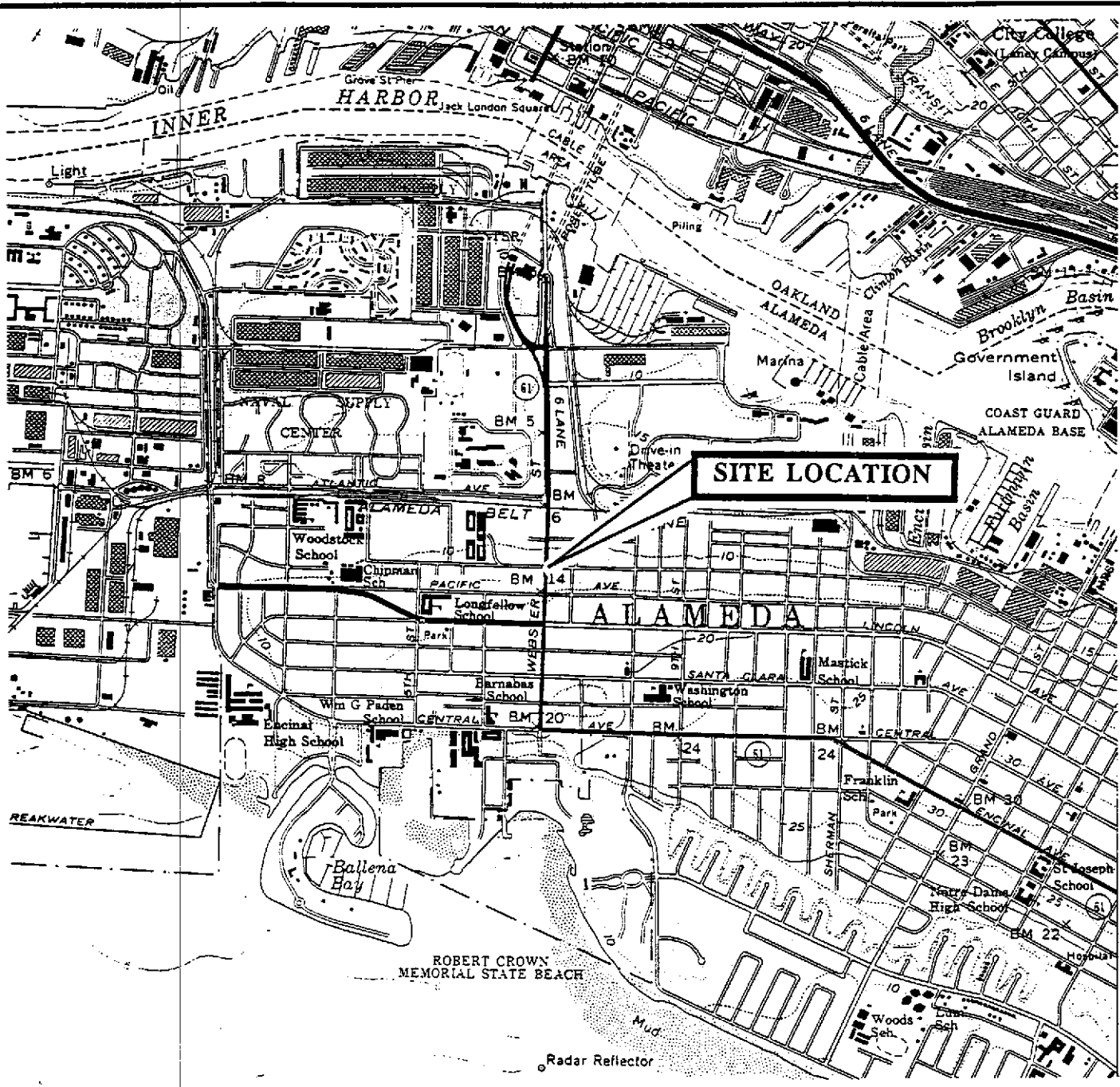
BTEX analysis by EPA Method 8020

Cadmium (Cd) Chromium (Cr), lead (Pb), nickel (Ni), and zinc (Zn) by EPA Method 6010

NT = Not analyzed for

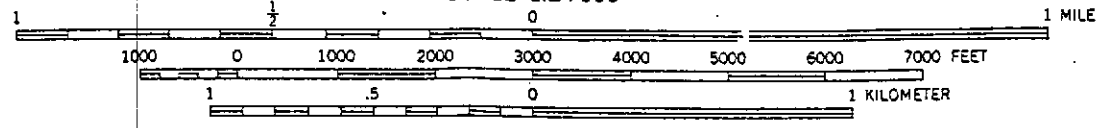
ND = Not detected in concentrations exceeding the laboratory method detection limit

FIGURES



Source:
 USGS 7.5' Quadrangle
 Oakland, East

SCALE 1:24 000



North



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

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

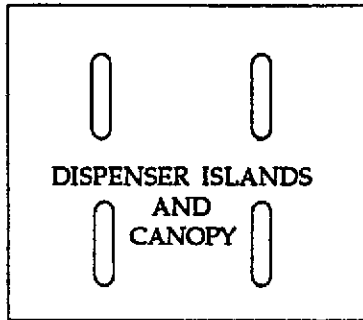
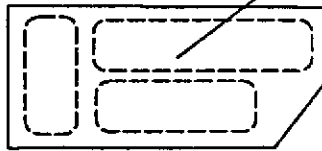
Job No.
 9-038
 Figure
1

BUENA VISTA AVENUE

**UNDERGROUND
GASOLINE STORAGE
TANKS**

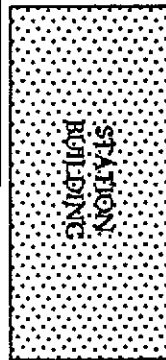
WEBSTER STREET

MW-1



**DISPENSER ISLANDS
AND
CANOPY**

MW-2



**STATION
BUILDING**

MW-3



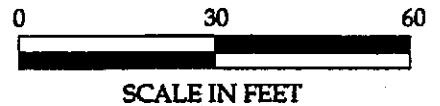
**UNDERGROUND
USED OIL TANK**

North



EXPLANATION

- MW-1 = MONITORING WELL (2-INCH DIAMETER)
- = PROPERTY BOUNDARY



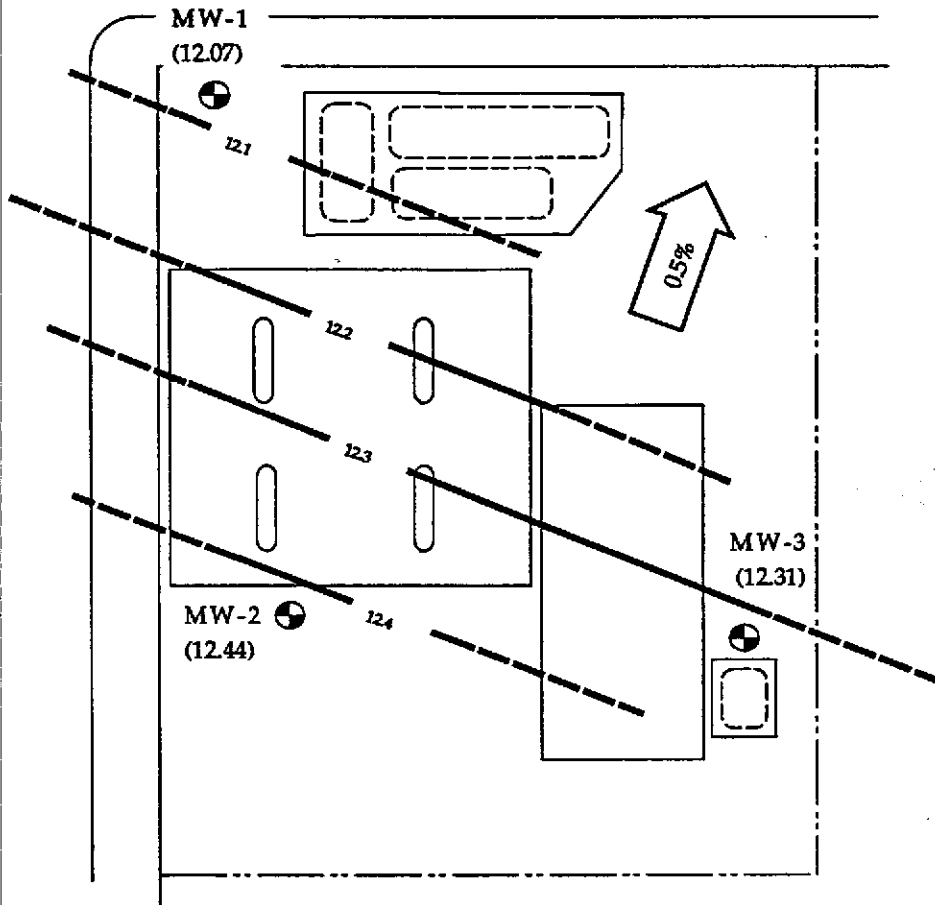
HYDR
ENVIR  **MENTAL**
TECHN  **LOGIES, INC.**

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


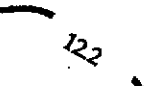

Job No.
9-038
Figure
2

BUENA VISTA AVENUE

WEBSTER STREET



EXPLANATION

- MW-1  - MONITORING WELL (2-INCH DIAMETER)
- (12.07) - GROUND WATER ELEVATION IN DESIGNATED WELL (IN FEET)
-  122 - ESTIMATED GROUND WATER ELEVATION CONTOUR (IN FEET) - BASED ON PROJECT DATUM - DASHED WHERE INFERRED
-  0.5% - GENERAL DIRECTION OF GROUND WATER FLOW WITH LOCAL GRADIENT

BASED ON DATA COLLECTED ON 7/21/92

North



SCALE IN FEET

HYDR
ENVIR 
TECHN  **LOGIES, INC.**

**GROUND WATER CONTOUR
MAP**

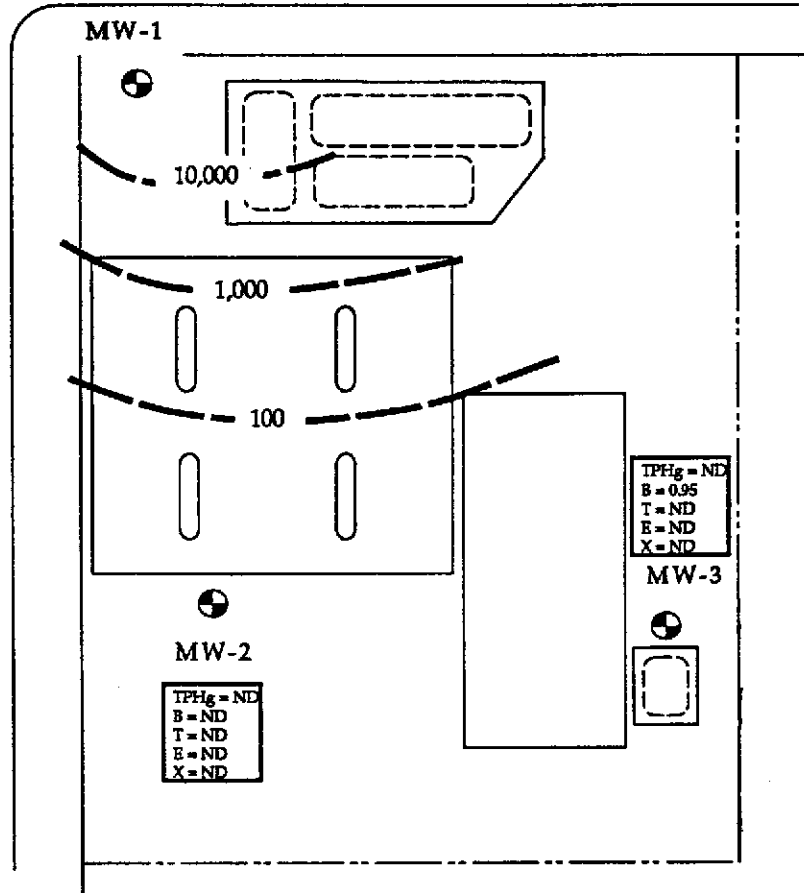
BP Oil Facility No. 11104
1716 Webster Street
Alameda, California

Job No.
9-038
Figure
3

BUENA VISTA AVENUE

WEBSTER STREET

TPHg = 34,000
 B = 7,000
 T = 1,700
 E = 2,500
 X = 6,900



TPHg = ND
 B = 0.95
 T = ND
 E = ND
 X = ND

TPHg = ND
 B = ND
 T = ND
 E = ND
 X = ND

EXPLANATION

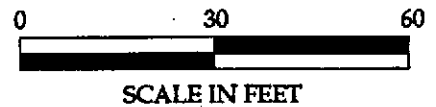
MW-1 = MONITORING WELL (2-INCH DIAMETER)

- CONCENTRATIONS OF TOTAL LOW TO MEDIUM BOILING POINT PETROLEUM HYDROCARBONS (TPHg), BENZENE (B), TOLUENE (T), ETHYLBENZENE (E), AND TOTAL XYLENES (X) DISSOLVED IN SAMPLE FROM DESIGNATED WELL - IN PPB (ND = NON DETECTABLE)

- ESTIMATED LIMIT OF DESIGNATED GASOLINE CONCENTRATION DISSOLVED IN GROUND WATER - IN PPB

BASED ON DATA COLLECTED ON 7/21/92

North



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

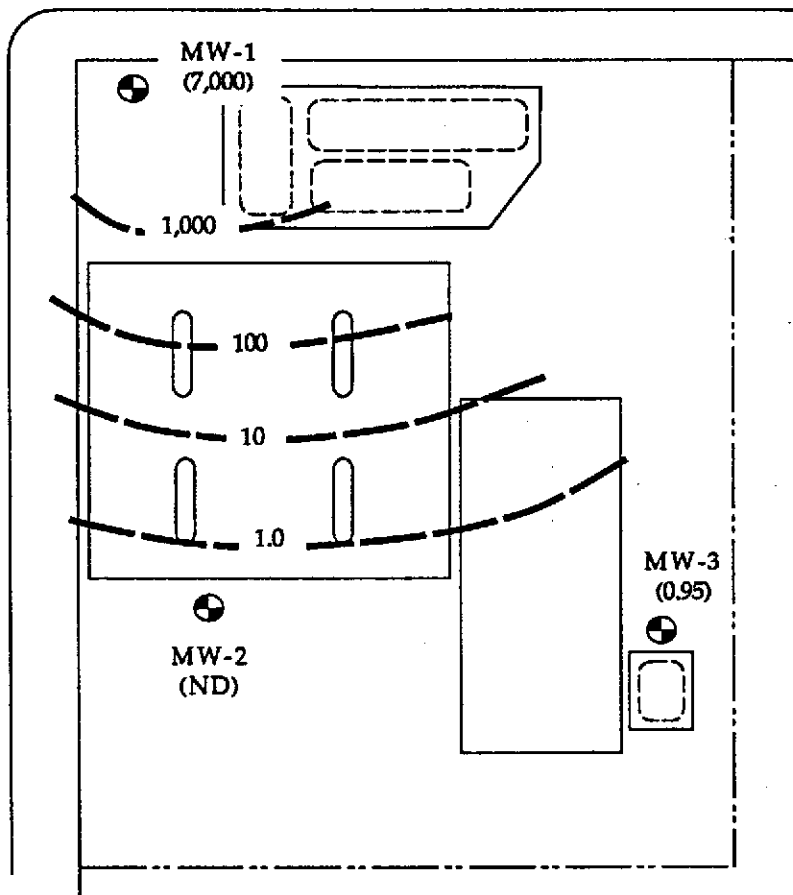
TPHg ISOCONCENTRATION MAP

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



Job No.
 9-038
 Figure
4

BUENA VISTA AVENUE

WEBSTER STREET

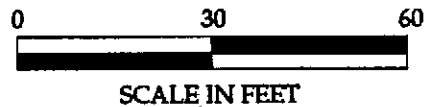


EXPLANATION

- MW-1  - MONITORING WELL
2-INCH DIAMETER
- (7,000) - CONCENTRATION OF BENZENE DISSOLVED IN
SAMPLE FROM DESIGNATED WELL - IN PPB
(ND - NON DETECTABLE)
-  100 - ESTIMATED LIMIT OF DESIGNATED BENZENE CONCENTRATION
DISSOLVED IN GROUND WATER - IN PPB

BASED ON DATA COLLECTED 7/21/92

North



HYDR
ENVIR 
TECHN  **LOGIES, INC.**

**BENZENE ISOCONCENTRATION
MAP**

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

Job No.
9-038
Figure
5

APPENDIX A

**HEALTH AND SAFETY PLAN
FOR
DRILLING AND SAMPLING ACTIVITIES**

**AT
BP OIL STATION NO. 11104
1716 WEBSTER STREET
ALAMEDA, CALIFORNIA**

PREPARED BY

**HYDRO-ENVIRONMENTAL TECHNOLOGIES, INC.
2363 MARINER SQUARE DRIVE
ALAMEDA, CALIFORNIA**

JULY 1992

TABLE OF CONTENTS

1.0 IMPORTANT LOCATIONS AND TELEPHONE NUMBERS.....1
2.0 SITE DESCRIPTION1
3.0 SCOPE OF SERVICES1
4.0 ON-SITE ORGANIZATION2
5.0 ON-SITE CONTROL2
6.0 HAZARD EVALUATION2
 6.1 Chemical Hazard2
 6.2 Physical Hazards4
7.0 REQUIRED PROTECTION.....4
8.0 AIR MONITORING5

FIGURES:

Figure 1 - Site Location Map

Figure 2 - Hospital Location Map

Figure 3 - Site Plan

1.0 IMPORTANT LOCATIONS AND TELEPHONE NUMBERS

- ALAMEDA HOSPITAL
2070 Clinton Av., Alameda, CA

Go southeast on Buena Vista Av., turn right on Willow St., turn right on Clinton Av., hospital is immediately on the left (refer to Figure 2).

Telephone (510) 523-4357

- Police Department - 911
Fire Department - 911

2.0 SITE DESCRIPTION

Company Name: BP Oil Company, Tukwila, WA

Site Location: 1716 Webster Street, Alameda, CA
(Figure 1)

Property Owner: BP Oil Company
Cleveland, OH

Contact Person: Tony Ramirez (510) 521-2684
Hydro-Environmental Technologies, Inc. (HETI)

Hazards: Traffic, noise, hydrocarbon exposure and utilities (obstruction) during the process of drilling, excavating and construction of facilities

3.0 SCOPE OF SERVICES

- Work planned at this site includes installing three monitoring wells to a total depth of 17 feet below grade and water sample collection from the wells.

4.0 ONSITE ORGANIZATION

Site Safety Officer: Tony Ramirez

Field Leader: Tony Ramirez

Contractor Chris Pruner
Representative: Kvihaug Well Drilling
1109 Landini Lane
Concord, CA
License # C57482390

5.0 ON-SITE CONTROL

Mr. Ramirez (geologist) will monitor all field activities. A safe work zone has been established for drilling activities. Monitoring of ambient hydrocarbon vapor concentrations will be conducted by HETL. Traffic safety devices will be utilized as needed.

6.0 HAZARD EVALUATION

6.1 Chemical Hazard

According to laboratory analysis of soil samples collected from this site previously, the possible contaminants to be encountered during drilling are petroleum hydrocarbons as gasoline, benzene, toluene, ethylbenzene, and xylene.

Inhalation and skin absorption present the main exposure hazards. Based on laboratory analysis of the soil, we do not anticipate the potential levels of exposure will exceed permissible exposure limits (PEL) or threshold limit value (TLV) limits set by the Occupational Safety and Health Administration (OSHA).

Following are short descriptions of each contaminant suspected of being present on-site:

- *Gasoline*

Gasoline is a clear, aromatic, volatile liquid. It is a mixture of aliphatic hydrocarbons and has:

- Flash point = 50°F
- Lower exposure limit = 1.3%
- TLV in the air = 300 ppm
- OSHA 8-hour time weighted average (TWA) PEL = 300 ppm
- OSHA short-term exposure limit (STEL) 15 minute = 500 ppm

- *Benzene*

This is a carcinogenic (cancer causing) substance. Benzene is a common constituent of gasoline and other petroleum product materials. It is a clear, colorless liquid and has:

- Flash point = 12°F
- TLV = 1 ppm
- OSHA PEL = 1 ppm
- STEL (15 minute) = 5 ppm

- *Ethylbenzene*

- Flash point = 59°F
- OSHA 8-hour TWA = 100 ppm
- OSHA STEL = 125 ppm

- *Toluene*

This material is a flammable, colorless liquid and has:

- Flash point = 40°F
- TLV in the air = 100 ppm
- STEL = 150 ppm
- OSHA PEL (8-hour TWA) = 100 ppm
- OSHA STEL = 150 ppm

- *Xylene*

This clear liquid has:

- Flash point = 100°F
- TLV in the air = 100 ppm
- OSHA PEL (8-hour TWA) = 100 ppm
- OSHA STEL = 150 ppm

6.2 Physical Hazards

Because the anticipated work is to be performed as a "normal" working day, all aspects of safety concerning drilling will be adhered to; Safety requirements such as but not limited to:

- Driller will examine all wires/cables daily
- Drilling equipment will be maintained in safe operating condition
- Drilling equipment will meet state safety requirements
- Driller will block/chock rig as required
- All personnel and visitors in the work area will have completed 40 hours of OSHA training or have current 8 hours of a refresher course

The main physical hazards during construction are:

- Dust
- Noise
- Vehicular traffic
- Bodily injury due to equipment operation
- Strain: lifting, slipping, tripping, falling, or moving equipment
- Underground utility lines

All personnel in the work area will know the location of:

- first aid kit
- fire extinguisher
- telephone

7.0 REQUIRED PROTECTION

At a minimum, Level D of protection will be worn in the work zone. That is, field personnel and visitors are required to wear the following clothing and equipment:

- Hard hat (ANSI Z89.1)
- Safety glasses (ANSI Z87.0)
- Safety shoes (steel toe) (ANSI Z41.0)
- Gloves (nitrile)
- Hearing protection

8.0 AIR MONITORING

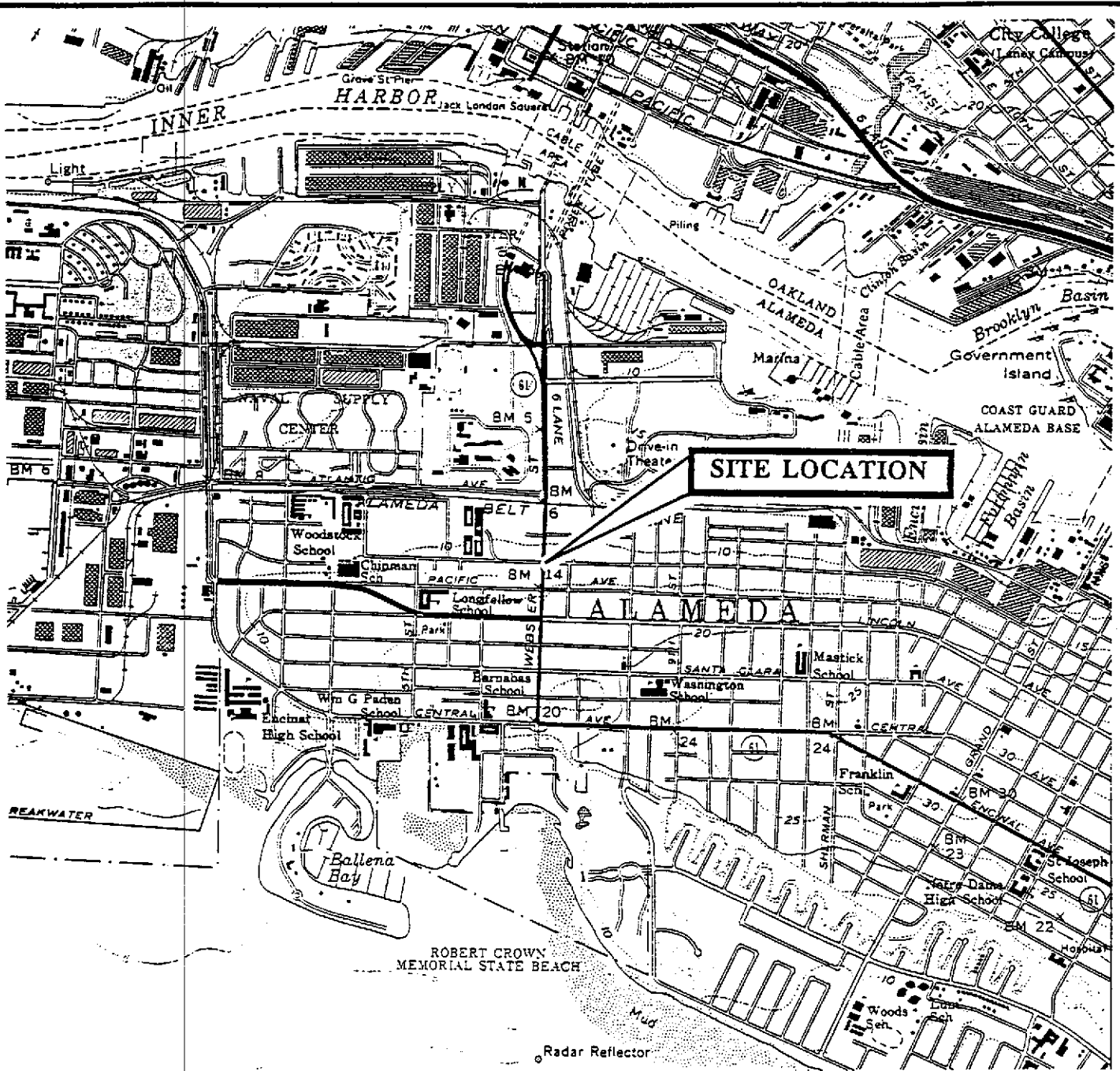
An Organic Vapor Meter Model 580B (OVM) will be used to monitor the air space within a 2 foot radius of the auger bit, downwind and upwind of the drill rig at a height of 5 feet every hour . If hydrocarbon odors within this area become detectable with the OVM at a concentration of 10 parts per million (ppm) of total organic compounds, the personnel assigned to the project will upgrade their personal protection with half face respirators with organic vapor cartridges.

No hand to mouth transfer is to occur within the work zone. Workers are required to wash hands and face with soap thoroughly after work or before meals.

This plan was prepared by Brian Gwinn
Brian Gwinn - Project Manager

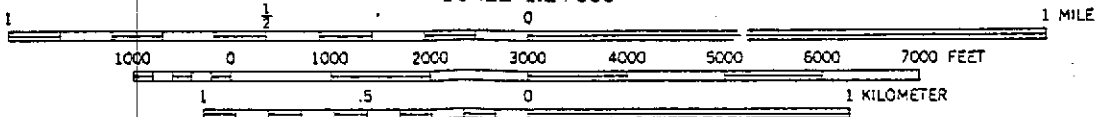
I have read and understand this document and will abide by the provisions herein:

- | | |
|------------------------|---------------------|
| (1) <u>[Signature]</u> | Date: <u>7/8/92</u> |
| (2) <u>[Signature]</u> | Date: <u>7/8/92</u> |
| (3) <u>[Signature]</u> | Date: <u>7/8/92</u> |
| (4) <u>[Signature]</u> | Date: <u>7/8/92</u> |
| (5) _____ | Date: _____ |
| (6) _____ | Date: _____ |
| (7) _____ | Date: _____ |
| (8) _____ | Date: _____ |



Source:
USGS 7.5' Quadrangle
Oakland, East

SCALE 1:24,000



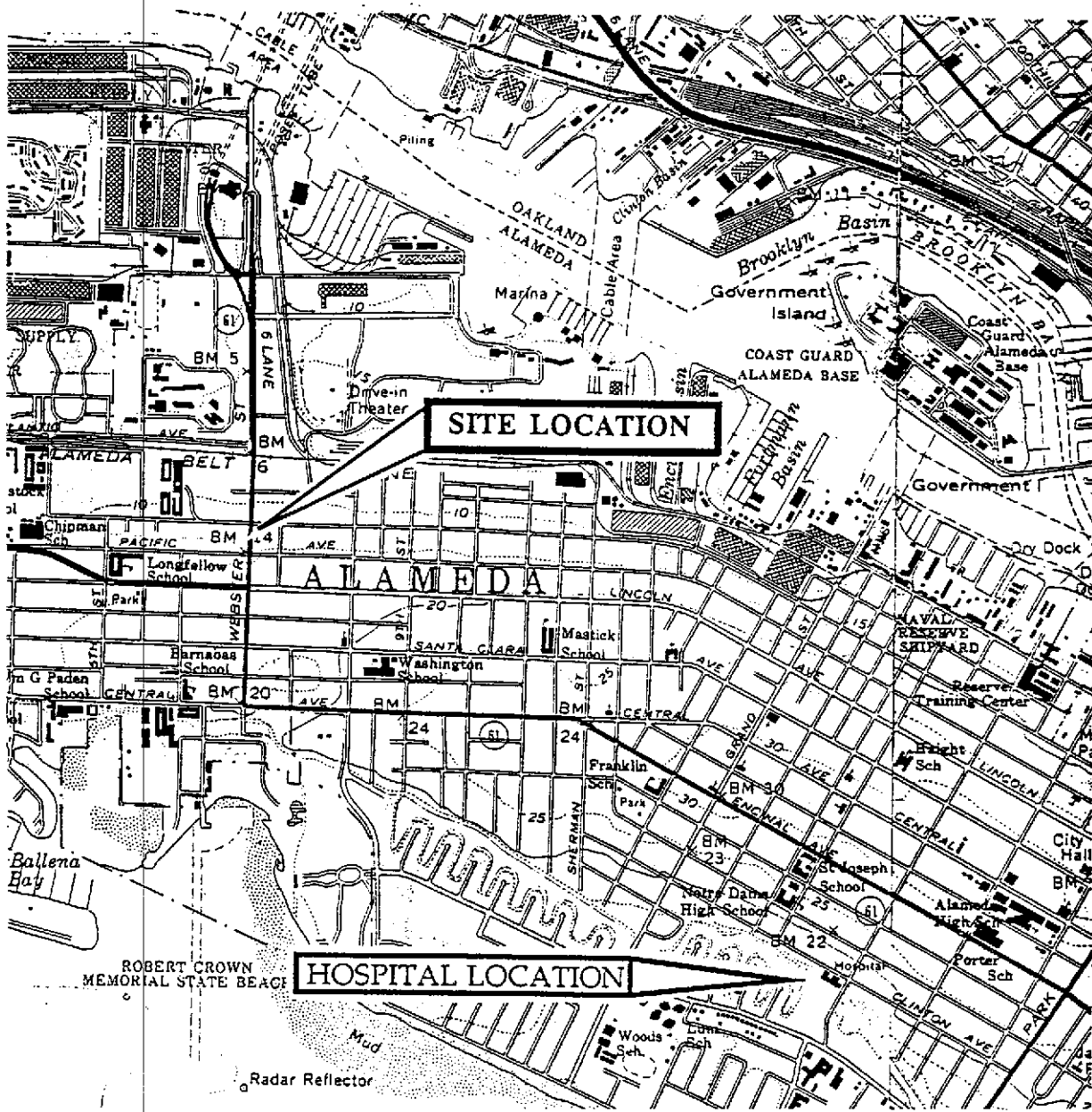
North



HYDR
ENVIR^{MENTAL}
TECHN^{OLOGIES, INC.}

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

Job No.
9-038
Figure
1



North



Source:
USGS 7.5' Quadrangle
Oakland, East and West

HYDR
ENVIR MENTAL
TECHN LOGIES, INC.

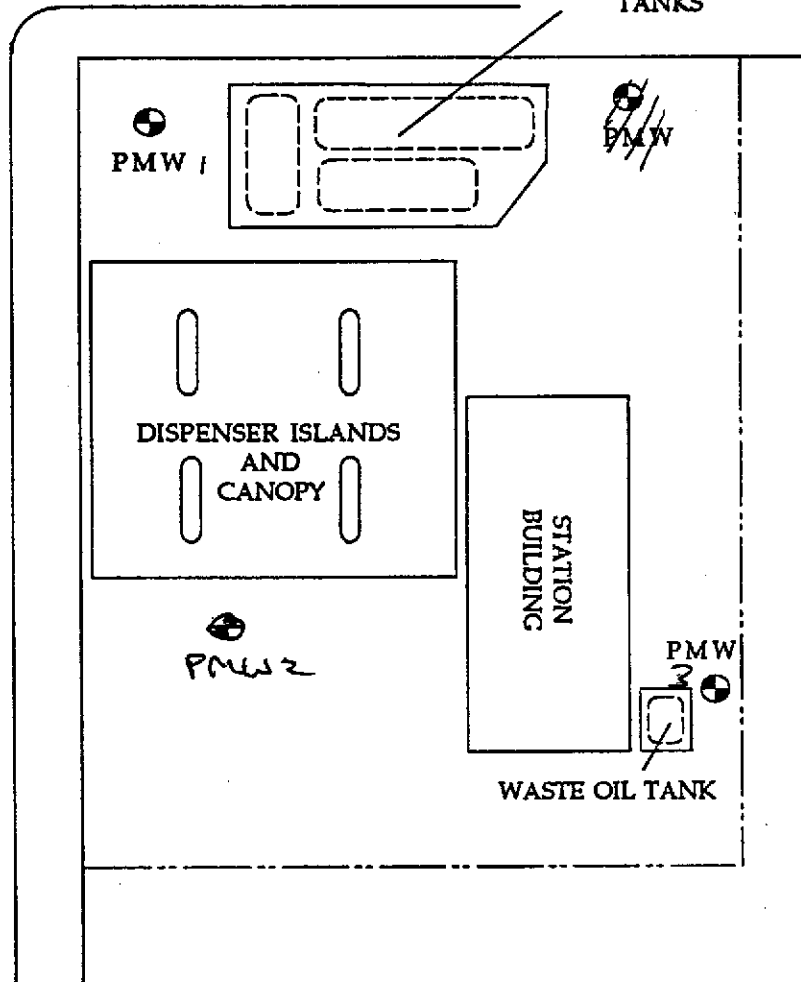
HOSPITAL LOCATION MAP
BP Oil Facility No. 11104
1716 Webster Street
Alameda, California

Job No.
9-038
Figure
2

BUENA VISTA AVENUE

UNDERGROUND
GASOLINE STORAGE
TANKS

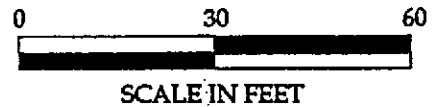
WEBSTER STREET



EXPLANATION

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

North



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

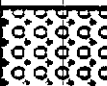
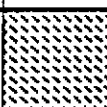






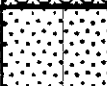

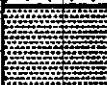
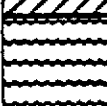


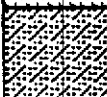
PROPOSED WELL LOCATION MAP
BP Oil Facility No. 11104
1716 Webster Street
Alameda, California


Job No.
9-038
Figure
3

APPENDIX B



UNIFIED SOIL CLASSIFICATION SYSTEM

(ASTM D-1586)

MAJOR DIVISIONS	LTR	DESCRIPTION	MAJOR DIVISIONS	LTR	DESCRIPTION	
COARSE GRAINED SOILS	GRAVEL AND GRAVELLY SOILS	 GW	FINE GRAINED SOILS	SILTS AND CLAYS LL-20	 ML	
		 GP			 CL	
		 GM			 OL	
		 GC			 MH	
	SAND AND SANDY SOILS	 SW		SILTS AND CLAYS LL>20	 CH	
		 SP			 OH	
		 SM			HIGHLY ORGANIC SOILS	 Pt
		 SC				

Retained for Analysis  Sample Interval

SANDS & GRAVELS	BLOWS/FT*	SILTS & CLAYS	BLOWS/FT*
VERY LOOSE	0 - 4	SOFT	0 - 4
LOOSE	4 - 10	FIRM	4 - 8
MED. DENSE	10 - 30	STIFF	8 - 16
DENSE	30 - 50	VERY STIFF	16 - 32
VERY DENSE	OVER 50	HARD	OVER 32

 Approximate stabilized water level
 Approximate first encountered water level

NOTE: Blow count represents the number of blows of a 140-lb hammer falling 30 inches per blow required to drive a sampler through the last 12 inches of an 18-inch penetration.

* Blows per foot using a standard penetrometer

No warranty is provided as to the continuity of soil strata between borings. Logs represent the soil section observed at the boring location on the date of drilling only.

NR = No Recovery
 NT = Not Tested
 NFWE = No Free Water Encountered
 PHO = Petroleum Hydrocarbon Odor

S = Sampler sank into medium under the weight of the hammer (no blow count)
 P = Sampler was pushed into medium by drilling rig (no blow count)

SITE/LOCATION 1716 Webster Street, Alameda, CA		BEGUN 7/8/92	BORING DIAMETER 8 Inches	ANGLE/BEARING 90 Degrees	BORING NO MW-1
DRILLING CONTRACTOR Kvilhaug Drilling		COMPLETED 7/8/92	FIRST ENCOUNTERED WATER DEPTH 8.5 Feet		
OPERATOR Rodney Furlow		LOGGED BY T. Ramirez	STATIC WATER DEPTH/DATE 8.5 Feet		
DRILL MAKE & MODEL B-61		SAMPLING METHOD California modified split spoon			BOTTOM OF BORING 17 Feet
WELL MATERIAL 2" SCH 40 PVC	SLOT SIZE 0.020"	FILTER PACK #2/12	WELL SEAL Neat cement over bentonite		WELL NO. MW-1

BLWS/ FOOT	FIELD HEAD- SPACE *	DEPTH	SAMPLE	WATER LEVEL	WELL CONSTR.	GRAPHIC LOG	MATERIAL CLASSIFICATION & PHYSICAL DESCRIPTION
		1					ASPHALT
		2					SAND (SP), olive brown, medium density, poorly graded, sub-rounded to sub-angular fine sand, < 5% silt content, moist.
		3					
		4					
28	769	5					
		6					
		7					SAND (SP), brown with some thin bluish-grey lenses, medium density, moderate grading, sub-angular fine to medium sand, 5% silt content, saturated.
		8					
		9					
52	91	10					
		11					Silty SAND (SM), brown, medium density, moderate grading, sub-rounded to sub-angular fine sand, 15% silt content, saturated
		12					
		13					
		14					
		15					
		16					
		17					
		18					
		19					
		20					
		21					
		22					
		23					
		24					
		25					
		26					
		27					
		28					
		29					
		30					

**HYDR-
ENVIRONMENTAL
TECHNOLOGIES, INC.**

**SOIL BORING LOG
AND
WELL CONSTRUCTION MW-1**

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

PLATE
B-2

JOB NO.
9-038

DATE:

APPROVED BY: Frederick G. Moss, PE No. 35162

SITE/LOCATION 1716 Webster Street, Alameda, CA		BEGUN 7/8/92	BORING DIAMETER 8 Inches	ANGLE/BEARING 90 Degrees	BORING NO MW-2
DRILLING CONTRACTOR Kvilhaug Drilling		COMPLETED 7/8/92	FIRST ENCOUNTERED WATER DEPTH 8.5 Feet		
OPERATOR Rodney Furlow		LOGGED BY T. Ramirez	STATIC WATER DEPTH/DATE 8.5 Feet		
DRILL MAKE & MODEL B-61		SAMPLING METHOD California modified split spoon			BOTTOM OF BORING 17 Feet
WELL MATERIAL 2" SCH 40 PVC		SLOT SIZE 0.020"	FILTER PACK #2/12	WELL SEAL Neat cement over bentonite	
					WELL NO. MW-2

BLOWS/ FOOT	FIELD HEAD- SPACE *	DEPTH	SAMPLE	WATER LEVEL	WELL CONSTR.	GRAPHIC LOG	MATERIAL CLASSIFICATION & PHYSICAL DESCRIPTION
		1					ASPHALT
		2					Silty SAND (SM), brown, medium density, moderately sorted, sub-angular fine sand, 15% silt content, moist.
		3					
		4					
		5					
33	0.0	6					
		7					Silty SAND (SM), brown, dense, moderately sorted, sub-angular fine sand, 20% silt content, saturated.
		8					
		9					
		10					Silty SAND (SM), same as above.
64	0.0	11					
		12					
		13					
		14					
		15					
		16					
		17					
		18					
		19					
		20					
		21					
		22					
		23					
		24					
		25					
		26					
		27					
		28					
		29					
		30					

**HYDR-
ENVIRONMENTAL
TECHNOLOGIES, INC.**

**SOIL BORING LOG
AND
WELL CONSTRUCTION MW-2**

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

PLATE
B-3

JOB NO.
9-038

DATE:

APPROVED BY: Frederick G. Moss, PE No. 35162

SITE/LOCATION 1716 Webster Street, Alameda, CA		BEGUN 7/8/92	BORING DIAMETER 8 Inches	ANGLE/BEARING 90 Degrees	BORING NO MW-3
DRILLING CONTRACTOR Kvilhaug Drilling		COMPLETED 7/8/92	FIRST ENCOUNTERED WATER DEPTH 8.5 Feet		
OPERATOR Rodney Furlow		LOGGED BY T. Ramirez	STATIC WATER DEPTH/DATE 8.5 Feet		
DRILL MAKE & MODEL B-61		SAMPLING METHOD California modified split spoon			BOTTOM OF BORING 17 Feet
WELL MATERIAL 2" SCH 40 PVC	SLOT SIZE 0.020"	FILTER PACK #2/12	WELL SEAL Neat cement over bentonite		WELL NO. MW-3

BLOWS/ FOOT	FIELD HEAD- SPACE *	DEPTH	SAMPLE	WATER LEVEL	WELL CONSTR.	GRAPHIC LOG	MATERIAL CLASSIFICATION & PHYSICAL DESCRIPTION
		1					ASPHALT
		2					SAND (SW), light brown, loose, poorly graded, sub-rounded to sub-angular fine sand, 5 to 10% silt content, moist.
		3					
		4					
8	6.0	5					
		6					
		7					Silty SAND (SM), brown, medium density, moderate grading, sub-rounded to sub-angular fine sand, 15% silt content, saturated.
		8					
		9		▽			
		10					Silty SAND (SM), brown, dense, moderate grading, sub-rounded to sub-angular fine sand, 15% silt content, saturated.
70	1.4	11					
		12					
		13					
		14					
		15					
		16					
		17					
		18					
		19					
		20					
		21					
		22					
		23					
		24					
		25					
		26					
		27					
		28					
		29					
		30					

**HYDR-
ENVIRONMENTAL
TECHNOLOGIES, INC.**

**SOIL BORING LOG
AND
WELL CONSTRUCTION MW-3**

PLATE
B-4

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

JOB NO.
9-038

DATE:

APPROVED BY: Frederick G. Moss, PE No. 35162

APPENDIX C

PURGED/SAMPLED BY: TR/HT

DATE: 7/21/92

GAUGING DATA:

Depth to bottom: 17.00 ft.

Depth to water: 5.91 ft.

Saturated Thickness: 11.09 ft.

Conversion	
diam.	gals/ft.
<u>2 in.</u>	<u>x 0.16</u>
4 in.	x 0.65
6 in.	x 1.44

Well casing volume 1.774 gallons

volumes to purge x 10 vols.

*Total volume to purge = 17.74 gallons

* unless chemical parameters stabilize earlier

PURGING DATA:

Purge method: PVC bailer Submersible pump/ Suction lift pump/ _____
(circle one)

DRY

Time	Volume (gallons)	Temp. (°F)	Conductivity (mS/cm)	pH
12:51	0	—	—	—
12:54	5	72.7	1.42	7.51
12:58	10	73.5	1.43	7.41
1:02	15	72.7	1.33	7.36

Color: olive green

Turbidity: Very high

Recharge: fast

SPP — ft.

SAMPLING DATA:

Sampling method: Dedicated bailer / _____

Sample for: (circle)

- IPHg/BTEX
- METALS
- TOC
- 8010
- IPHd
- O-Pb
- TEL
- 8020
- TPH no
- Total Pb
- EDB
- 8240
- 601
- 602
- Nitrates
- 8260
- 8270
- Other: _____

HYDR ENVIRONMENTAL TECHNOLOGIES, INC.

MONITORING WELL PURGE/SAMPLE SHEET

WELL # MW-1

LOCATION Webster St., Alameda

JOB NO.

9-038

PURGED/SAMPLED BY: TR/HH DATE: 7/21/92

GAUGING DATA:

Depth to bottom: 17.00 ft.
 Depth to water: 6.44 ft.
 Saturated Thickness: 10.56 ft.

Conversion	
diam.	gals/ft.
<u>2 in.</u>	<u>x 0.16</u>
4 in.	x 0.65
6 in.	x 1.44

Well casing volume 1.689 gallons
 # volumes to purge x 10 vols.
 *Total volume to purge = 16.89 gallons
 * unless chemical parameters stabilize earlier

PURGING DATA:

Purge method (PVC bailer/ Submersible pump/ Suction lift pump/ _____)
 (circle one)

DRY

Time	Volume (gallons)	Temp. (°F)	Conductivity (mS/cm)	pH
12:20	0	—	—	—
12:24	5	71.5	1.13	7.90
12:26	7	72.8	1.10	7.85

Color: tan Turbidity: very high
 Recharge: poor SPP ft.

SAMPLING DATA:

Sampling method: (Dedicated bailer) / _____

- Sample for: (circle)
- IPHg/BTEX
 - METALS
 - TOC
 - 8010
 - IPHA
 - O-Pb
 - TEL
 - 8020
 - TPH no
 - Total Pb
 - EDB
 - 8240
 - 601
 - 602
 - Nitrates
 - 8260
 - 8270
- Other: _____



MONITORING WELL PURGE/SAMPLE SHEET
 WELL # MW-2
 LOCATION Webster St. Alameda

JOB NO. 9-038

PURGED/SAMPLED BY: TR/HH DATE: 7/21/92

GAUGING DATA:

Depth to bottom: 17.00 ft.
 Depth to water: 7.07 ft.
 Saturated Thickness: 9.93 ft.

Conversion	
diam.	gals/ft.
<u>2 in.</u>	<u>x 0.16</u>
4 in.	x 0.65
6 in.	x 1.44

Well casing volume 1.588 gallons
 # volumes to purge x 10 vols.
 *Total volume to purge = 15.88 gallons
 * unless chemical parameters stabilize earlier

PURGING DATA:

Purge method: PVC bailer/ Submersible pump/ Suction lift pump/ _____
 (circle one)

DRY

Time	Volume (gallons)	Temp. (°F)	Conductivity (mS/cm)	pH
11:55	0	—	—	—
11:58	5	75.1	1.03	8.33
12:01	10	70.2	0.85	8.29
12:04	12.5	68.8	0.74	8.22

Color: tan Turbidity: very high
 Recharge: poor SPP — ft.

SAMPLING DATA:

Sampling method: Dedicated bailer / _____

Sample for: (circle)

- TPHg/BTEX
- METALS
- TOC 8010
- TPHd
- OPs
- TEL 8020
- TPH mo
- Total Pb
- EDB 8240
- 601
- 602
- Nitrates 8260 8270
- Other: _____



MONITORING WELL PURGE/SAMPLE SHEET
 WELL # MW-3
 LOCATION Webster St., Alameda

JOB NO. 9-038

APPENDIX D

File:

-9-038

- Analytical Data

CHROMALAB, INC.

5 DAYS TURNAROUND

Environmental Laboratory (1094)

July 15, 1992

ChromaLab File No.: 0792066

HYDRO-ENVIRONMENTAL

Attn: Brian Gwinn

RE: Three soil samples for Gas/BTEX, Diesel and Oil & Grease analyses

Project Name: BP ALAMEDA

Project Number: 9-038

Date Sampled: July 8, 1992

Date Submitted: July 8, 1992

Date Extracted: July 13, 1992

Date Analyzed: July 14-15, 1992

RESULTS:

Sample I.D.	Gasoline (mg/Kg)	Diesel (mg/Kg)	Benzene (µg/Kg)	Toluene (µg/Kg)	Ethyl Benzene (µg/Kg)	Total Xylenes (µg/Kg)	Oil & Grease (mg/Kg)
MW-1	3200	----	N.D.*	2000	8100	3900	----
MW-2	N.D.	----	N.D.	N.D.	N.D.	N.D.	----
MW-3	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
BLANK	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
SPIKE REC.	94%	81%	95%	98%	96%	96%	----
DUP SPIKE REC	----	84%	97%	99%	97%	97%	----
DET. LIMIT	1.0	1.0	5.0	5.0	5.0	5.0	10
METHOD OF ANALYSIS	5030/ 8015	3550/ 8015	8020	8020	8020	8020	5520 E/F

*Detection limit = 500 µg/Kg due to dilution needed.

ChromaLab, Inc.

Mary Cappelli
Analytical Chemist

Eric Tam
Laboratory Director

CHROMALAB, INC.

5 DAYS TURNAROUND

Environmental Laboratory (1094)

July 15, 1992

ChromaLab File # 0792066 C

Client: HYDRO ENVIRONMENTAL
Attn: Brian Gwinn
Date Sampled: Jul. 3, 1992
Date of Analysis: Jul. 15, 1992

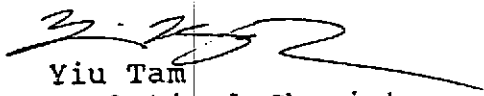
Date Submitted: Jul. 8, 1992

Project Name: BP-Alameda
Project Number: 9-038
Sample I.D.: MW-3
Method of Analysis: EPA 8010

Detection Limit: 5.0 µg/kg

COMPOUND NAME	µg/kg	Spike Recovery	
CHLOROMETHANE	N.D.	---	---
VINYL CHLORIDE	N.D.	---	---
BROMOMETHANE	N.D.	---	---
CHLOROETHANE	N.D.	---	---
TRICHLOROFLUOROMETHANE	N.D.	---	---
1,1-DICHLOROETHENE	N.D.	94%	97%
METHYLENE CHLORIDE	N.D.	---	---
1,2-DICHLOROETHENE (TRANS)	N.D.	---	---
1,2-DICHLOROETHENE (CIS)	N.D.	---	---
1,1-DICHLOROETHANE	N.D.	---	---
CHLOROFORM	N.D.	---	---
1,1,1-TRICHLOROETHANE	N.D.	---	---
CARBON TETRACHLORIDE	N.D.	---	---
1,2-DICHLOROETHANE	N.D.	---	---
TRICHLOROETHENE	N.D.	101%	89%
1,2-DICHLOROPROPANE	N.D.	---	---
BROMODICHLOROMETHANE	N.D.	---	---
2-CHLOROETHYLVINYLETHER	N.D.	---	---
TRANS-1,3-DICHLOROPROPENE	N.D.	---	---
CIS-1,3-DICHLOROPROPENE	N.D.	---	---
1,1,2-TRICHLOROETHANE	N.D.	---	---
TETRACHLOROETHENE	N.D.	85%	94%
DIBROMOCHLOROMETHANE	N.D.	---	---
CHLOROBENZENE	N.D.	---	---
BROMOFORM	N.D.	---	---
1,1,2,2-TETRACHLOROETHANE	N.D.	105%	96%
1,3-DICHLOROBENZENE	N.D.	---	---
1,4-DICHLOROBENZENE	N.D.	---	---
1,2-DICHLOROBENZENE	N.D.	---	---

ChromaLab, Inc.


Yiu Tam
Analytical Chemist


Eric Tam
Lab Director

CHROMALAB, INC.

5 DAYS TURNAROUND

Environmental Laboratory (1094)

July 20, 1992

ChromaLab File # 0792066

Hydro-Environmental

Attn: Brian Bwinn

Re: One soil sample for five metals analyses

Project Name: BP Alameda

Project Number: 9-038

Date Sampled: July 08, 1992
Date Analyzed: July 15, 1992

Date Submitted: July 08, 1992

Results:

SAMPLE I.D.	CADMIUM (mg/kg)	CHROMIUM (mg/kg)	LEAD (mg/kg)	ZINC (mg/kg)	NICKEL (mg/kg)
MW-1	2.0	25	4.2	22	29
BLANK	N.D.	N.D.	N.D.	N.D.	N.D.
DETECTION LIMIT	0.05	0.50	0.50	0.50	0.50
METHOD OF ANALYSIS	6010	6010	6010	6010	6010

ChromaLab, Inc.



Yiu Tam
Analytical Chemist



Eric Tam
Laboratory Director

CHROMALAB, INC.

2239 Omega Road, #1 • San Ramon, California 94583
510/831-1788 • Facsimile 510/831-8798

DATE 7/8/92 PAGE 1 OF 1

PROJECT INFORMATION					ANALYSIS REPORT														NUMBER OF CONTAINERS			
PROJ. MGR.	COMPANY	ADDRESS	SAMPLERS (SIGNATURE)	(PHONE NO.)	TPH - Gasoline (EPA 5030, 8015)	TPH - Gasoline (5030, 8015) w/BTEX (EPA 602, 8020)	TPH - Diesel (EPA 3510/3550, 8015)	PURGEABLE AROMATICS BTEX (EPA 602, 8020)	PURGEABLE HALOCARBONS (EPA 601, 8010)	VOLATILE ORGANICS (EPA 624, 8240, 524.2)	BASE/NEUTRALS, ACIDS (EPA 625/627, 8270, 525)	TOTAL OIL & GREASE (EPA 5520 E&F)	PESTICIDES/PCB (EPA 608, 8080)	PHENOLS (EPA 604, 8040)	TOTAL RECOVERABLE HYDROCARBONS (EPA 418.1)	METALS: Cd, Cr, Zn, Ni	CAM METALS (17)	PRIORITY POLLUTANT METALS (13)		EXTRACTION (TCLP, STLC)		
SAMPLE ID.	DATE	TIME	MATRIX	LAB ID.																		
MW-1	7/8/92	9:40am	soil		X	X																1
MW-2	7/8/92		soil			X																1
MW-3	7/8/92		soil			X	X	X	X	X						X	X					1

PROJECT INFORMATION		SAMPLE RECEIPT		RELINQUISHED BY 1.		RELINQUISHED BY 2.		RELINQUISHED BY 3.	
PROJECT NAME: <u>BP Alameda</u>	TOTAL NO. OF CONTAINERS <u>3</u>	CHAIN OF CUSTODY SEALS		<u>[Signature]</u> 3pm (SIGNATURE) (TIME)		<u>[Signature]</u> (SIGNATURE) (TIME)		<u>[Signature]</u> (SIGNATURE) (TIME)	
PROJECT NUMBER: <u>9-038</u>	REC'D GOOD CONDITION/COLD	CONFORMS TO RECORD		<u>Tony Ramirez</u> 7/8/92 (PRINTED NAME) (DATE)		<u>[Signature]</u> (PRINTED NAME) (DATE)		<u>Henry Hurkyns</u> 7/8/92 (PRINTED NAME) (DATE)	
SHIPPING ID. NO.	LAB NO.			<u>HETI</u> (COMPANY)		<u>[Signature]</u> (COMPANY)		<u>HETI</u> 17:15 (COMPANY) (DATE)	
VIA:	SPECIAL INSTRUCTIONS/COMMENTS:		RECEIVED BY 1.		RECEIVED BY 2.		RECEIVED BY (LABORATORY) 3.		
			<u>[Signature]</u> 3pm (SIGNATURE) (TIME)		<u>[Signature]</u> (SIGNATURE) (TIME)		<u>[Signature]</u> 17:15 (SIGNATURE) (TIME)		
			<u>Henry Hurkyns</u> 7/8/92 (PRINTED NAME) (DATE)		<u>[Signature]</u> (PRINTED NAME) (DATE)		<u>[Signature]</u> 7.8.92 (PRINTED NAME) (DATE)		
			<u>HETI</u> (COMPANY)		<u>[Signature]</u> (COMPANY)		<u>[Signature]</u> (LAB)		

CHROMALAB, INC.

5 DAYS TURNAROUND

Environmental Laboratory (1094)

July 29, 1992

ChromaLab File No.: 0792216

HYDRO-ENVIRONMENTAL

Attn: Brian Gwinn

RE: Three water samples for Gasoline/BTEX analysis

Project Name: BP/WEBSTER

Project Number: 9-038

Date Sampled: July 21, 1992

Date Submitted: July 22, 1992

Date Analyzed: July 28, 1992

RESULTS:

Sample I.D.	Gasoline ($\mu\text{g/L}$)	Benzene ($\mu\text{g/L}$)	Toluene ($\mu\text{g/L}$)	Ethyl Benzene ($\mu\text{g/L}$)	Total Xylenes ($\mu\text{g/L}$)
MW-1	34000	7000	1700	2500	6900
MW-2	N.D.	N.D.	N.D.	N.D.	N.D.
MW-3	N.D.	0.95	N.D.	N.D.	N.D.
BLANK	N.D.	N.D.	N.D.	N.D.	N.D.
SPIKE RECOVERY	99%	101%	106%	109%	108%
DUP. SPIKE RECOVERY	----	98%	106%	110%	109%
DETECTION LIMIT	50	0.5	0.5	0.5	0.5
METHOD OF ANALYSIS	5030/8015	602	602	602	602

ChromaLab, Inc.

Mary Cappelli

Mary Cappelli
Analytical Chemist

Eric Tam

Eric Tam
Laboratory Director

CHROMALAB, INC.

5 DAYS TURNAROUND

Environmental Laboratory (1094)

July 30, 1992

ChromaLab File No.: 0792216

HYDRO-ENVIRONMENTAL

Attn: Brian Gwinn

RE: One filtered water sample for Cadmium, Chromium, Lead,
Nickel and Zinc analyses

Project Name: BP/WEBSTER

Project Number: 9-038

Date Sampled: July 21, 1992

Date Submitted: July 22, 1992

Date Extracted: July 28, 1992

Date Analyzed: July 29, 1992

RESULTS:

Sample I.D.	Cadmium (mg/L)	Chromium (mg/L)	Lead (mg/L)	Nickel (mg/L)	Zinc (mg/L)
MW-3	N.D.	N.D.	N.D.	N.D.	0.01
BLANK	N.D.	N.D.	N.D.	N.D.	N.D.
SPIKED RECOVERY	100%	98%	93%	98%	104%
DUP SPIKED RECOVERY	98%	103%	95%	96%	96%
DETECTION LIMIT	0.001	0.01	0.01	0.01	0.005
METHOD OF ANALYSIS	3005/6010				

ChromaLab, Inc.

Refaat A. Mankarious
Refaat A. Mankarious
Analytical Chemist


Eric Tam
Laboratory Director

