



HEALTH & SAFETY PLAN

for the

**Former John's Mobil Gas Station
3635 13th Street
Oakland, CA 94602**

prepared by

**Aqua Science Engineers, Inc.
2411 Old Crow Canyon Road, #4
San Ramon, California 94583
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Williamson H & S - November 19, 1992

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AQUA SCIENCE ENGINEERS, INC.
HEALTH & SAFETY PLAN
for the
FORMER JOHN'S MOBIL JOBSITE

A. GENERAL DESCRIPTION

Site: 3635 13TH STREET, OAKLAND, CA 94602

Work Scope: AQUA SCIENCE ENGINEERS REMOVE AND DISPOSE OF THREE UNDERGROUND STORAGE TANKS; 1- 500 GALLON GASOLINE, 1 - 1000 GALLON GASOLINE, 1 - 500 GALLON WASTE OIL.

SAFETY POLICY:

This Health and Safety Plan is written specifically for the above-referenced jobsite. All persons on site will follow OSHA safe operating practices as outlined in 29 CFR 1910 and 1926, as well as established guidelines from their respective companies or organizations.

Plan Prepared by: David Allen Date: 11/17/92

Plan Approved by: David Schultz Date: 11/19/92

Proposed Start Date: November 23, 1992

Background Review Done? Complete:11/16/92
Preliminary:

Overall Hazard Level: Serious: Low: XXX
 Moderate: Unknown:

Project Organization:
A.S.E. Safety Officer: Dave Allen
Other A.S.E Personnel: Steve DeHope

B. SITE/WASTE CHARACTERISTICS

Waste Type(s): Solid: XXX Sludge: Liquid: XXX Gas:

Characteristics: HYDROCARBON RESIDUALS, TOXIC

Site Parameter:

A MINIMUM BOUNDARY OF THREE FEET SURROUNDING THE TANK EXCAVATION IS TO BE MAINTAINED IN AS MUCH AS IS POSSIBLE.

C. HAZARD EVALUATION

CHEMICAL HAZARDS

Potential chemical hazards include skin and eye contact or inhalation exposure to potentially toxic concentrations of hydrocarbon vapors. The potential toxic compounds that may exist at the site are listed below, with descriptions of specific health effects of each. The list includes the primary potential toxic constituents of gasoline and waste oil known to be on site. Exposure levels and symptoms are taken from the NIOSH Pocket Guide to Chemical Hazards.

1. BENZENE

- a. Colorless, clear, highly flammable liquid with characteristic odor.
- b. High exposure levels may cause acute restlessness, convulsions, depression, respiratory failure. BENZENE IS A SUSPECTED CARCINOGEN.
- c. Permissible exposure level (PEL) for a time weighted average (TWA) over an eight hour period is 1.0 ppm.

2. TOLUENE

- a. Colorless liquid with a benzene-like odor.
- b. High exposure levels may cause fatigue, euphoria, confusion, dizziness. TOLUENE IS LESS TOXIC THEN BENZENE.
- c. PEL for a ten hour TWA is 100 ppm.

3. XYLENE

- a. Colorless, flammable liquid with aromatic odors.
- b. high exposure levels may case dizziness, drowsiness, narcosis.
- c. PEL for a ten hour TWA is 100 ppm.

4. ETHYLBENZENE

- a. Clear, colorless, highly flammable liquid with characteristic odor.
- b. High exposure levels may cause irritation to skin, nose and throat, dizziness, constriction in chest, loss of consciousness, respiratory failure.
- c. PEL for an eight hour TWA is 100 ppm.

5. LEAD

(Lead Arsenate)

- a. Odorless, colorless solid with properties that vary depending upon specific compounds.
- b. High exposure levels may cause nausea, diarrhea, inflamed mucous membranes, abdominal pains, weakness. LEAD IS A SUSPECTED CARCINOGEN.
- c. PEL for an eight hour TWA is .05 milligrams per cubic meter (airborne).

**ALL SUBSTANCES AS THEY EXIST ON SITE ARE EXPECTED TO BE STABLE.
PHYSICAL HAZARDS**

Under no circumstances will anyone climb on any soil piles. Personnel shall maintain the maximum distance possible from the excavation while performing their activities. Other on-site hazards include physical injuries due to the proximity of workers to engine-driven heavy equipment and tools. Heavy equipment used during excavation may include backhoes, excavators, compressors, jackhammers, and whackers. Only trained personnel will operate machines, tools and equipment; all will be kept clean and in good repair. Minimum safety apparel required around heavy equipment will include a hardhat, steel-toed boots and hearing conservation devices. **ALL WORK WILL BE PERFORMED IN ACCORDANCE WITH OSHA GUIDELINES.**

Inspections of the excavation, the adjacent areas, and protective systems are to be made by a qualified person while personnel are on site. Attention will be made to note if any evidence of potential cave-in exists.

1. **USE SAFETY EQUIPMENT, MASK RESPIRATORS WITH NIOSH APPROVED C-21 CARTRIDGES FOR ORGANIC VAPORS, AS NECESSARY.**
2. **HAVE AT LEAST ONE DRY CHEMICAL MODEL PA-200 A-B-C FIRE EXTINGUISHER PRESENT.**

LEVEL OF PROTECTION

A contamination Reduction Zone (CRZ) will be maintained and adjusted as work proceeds and moves around the site. The workers on site will wear level 'D' protective clothing. (This protection level may be upgraded after on-site conclusions of data are completed). **THE LEVEL OF PROTECTION FOR PERSONNEL WORKING IN THE AREA WILL BE UPGRADED IF; the organic vapor levels in the operator's breathing zone exceeds 5 ppm above background levels continuously for more than five minutes. This will be monitored by use of a hand-held Organic Vapor Meter (Gastech 1314 Oxygen/ppm Concentration Meter (PID) calibrated with Hexane).** In this event, personnel protective equipment will include full face respirators with double-cartridge filters for organic vapors and particulates, in addition to hardhat, steel-toed boots and coveralls. If work proceeds in an environment where vapor concentrations exceed 200 ppm, a self contained breathing apparatus or airline respirator will be utilized by the personnel.

Levels of Protective Clothing are defined on the following pages as described in the "EPA Standard Operating Safety Guidelines":

LEVEL A PROTECTION

Components:

- 1.) Pressure-demand, supplied air respirator that is MSHA and NIOSH approved. Respirators may be pressure demand, self contained breathing apparatus (SCBA), or pressure demand, airline respirator with an escape bottle for atmospheres with an extreme IDLH.
- 2.) Fully encapsulating chemical resistant suit.
- 3.) Inner, chemical resistant gloves.
- 4.) Disposable gloves and boot covers, worn over the fully encapsulating suit.
- 5.) 2-way radio communications is highly recommended.

LEVEL B PROTECTION

Components:

- 1.) Pressure-demand, supplied air respirator that is MSHA and NIOSH approved. Respirators may be pressure demand, self contained breathing apparatus (SCBA), or pressure demand, airline respirator with an escape bottle for atmospheres with an extreme IDLH.
- 2.) Chemical resistant clothing which includes overalls and long sleeved jacket or, hooded one or two piece chemical splash suit or disposable chemical resistant one piece suit..
- 3.) Outer chemical resistant gloves.
- 4.) Inner chemical resistant gloves.
- 5.) Chemical resistant, steel toed and shank boots.
- 6.) Disposable chemical resistant boot covers.
- 7.) Hardhat.
- 8.) 2-way radio communications is highly recommended.

LEVEL C PROTECTION

Components:

- 1.) Air purifying respirator, full face, with twin cartridge or cannister equipped filters, that are MSHA and NIOSH approved.
- 2.) Chemical resistant clothing which includes coveralls or, hooded one-piece or two-piece chemical splash suit or chemical resistant hood and apron; disposable chemical resistant coveralls.
- 3.) Outer chemical resistant gloves.
- 4.) Inner chemical resistant gloves.
- 5.) Chemical resistant, steel toed and shank boots.
- 6.) Disposable chemical resistant boot covers.
- 7.) Hardhat.

LEVEL D PROTECTION

Components:

- 1.) Coveralls.
- 2.) Gloves.
- 3.) Leather boots, shoes or chemical resistant, with steel toe and shank.
- 4.) Safety glasses or chemical splash goggles.
- 5.) Hardhat or face shield.

SITE ENTRY PROCEDURES

Any personnel entering the site will observe all conditions set forth by the owners/operators of the property, including vehicle travel speeds, restricted areas and conduct. Eating, drinking, smoking and other practices which increase the probability of hand-to-mouth transfer of contamination is prohibited in the work zone. All field personnel will be instructed to thoroughly wash their hands and face upon leaving the work area for breaks or cessation of day's activities.

DECONTAMINATION PROCEDURES

If required, equipment and personnel decontamination areas will be designated by the Project Manager at the start of the project. To prevent the transfer of contamination from the work site into clean areas, all tools will be cleaned adequately prior to final removal from the work zone. Disposable protective clothing such as Tyvek coveralls, latex gloves, boot covers, etc. will be changed on a daily basis or at the discretion of the Project Manager on site. All disposable protective clothing will be put into plastic bags and disposed of in a proper manner. All respirator cartridges will be discarded and replaced with fresh units on a daily basis, disposal will be in the same manner as the protective clothing. Soil will be stockpiled in an area designated by the Project Manager, to be handled as agreed upon in the scope of work contract with the client.

In the event of a medical emergency, the injured party will be taken through decontamination procedures, if possible. However, the procedures may be omitted when it may aggravate or cause further harm to the injured party. member of the work team will accompany the injured party to the medical facility to advise on matters concerning chemical exposure. The injured person will not transport themselves to the medical facility!

Personnel Protection Level will be Level 'D'. Protective clothing levels may be upgraded in the event that on site conclusions determine a greater than anticipated danger to personnel.

Site Entry: BARRICADES, CONES, OR BANNER GUARD MAY BE ERECTED TO CONTROL FOOT TRAFFIC AWAY FROM THE WORK ACTIVITY.

Decontamination-

Personnel and Equipment: IF REQUIRED, PERSONNEL AND EQUIPMENT WILL BE DECONTAMINATED A PER USEPA STANDARD OPERATING SAFETY GUIDELINES. A SMALLER MODIFIED DECONTAMINATION LINE MAY BE USED DUE TO SPACE RESTRICTIONS.

Work Limitations (time, weather):

NONE ARE ANTICIPATED, HOWEVER, PERSONNEL WORKING ON SITE MAY EXPERIENCE ELEVATED TEMPERATURES DURING THE WORK DAY. IN THE EVENT THAT AMBIENT TEMPERATURES REACH OR EXCEED 80 DEGREES FAHRENHEIT, THE FOLLOWING GUIDELINES ARE RECOMMENDED.

1. Periods of work should be reduced to no less than one hour time frames and separated by breaks intended to reduce personnel stress due to reduced natural ventilation from wearing protective clothing.

2. All personnel wearing level C protective clothing or greater, will be subject to medical monitoring of body temperature after work periods, by the following guidelines;

a. Heart Rate (HR) should be measured by counting the radial pulse rate for 30 seconds and doubling count for the correct pulse rate. This should be done as early as possible in the resting period. The HR at the beginning of the rest period should not exceed 110 beats per minute.

If the HR is higher, the next work period should be shortened by 10 minutes, while the length of the rest period remains the same. If the HR is 100 beats per minute at the beginning of the next rest period, the following work period should be shortened by an additional 10 minutes.

b. Body temperatures should be measured orally with a clinical thermometer as soon as possible in each resting period. Oral Temperatures (OT) should not exceed 99 degrees Fahrenheit. If it does, the next work period should be reduced by 10 minutes while the length of the resting period remains the same. If the OT exceeds 99 degrees Fahrenheit at the beginning of the next work period, the following work period should be reduced by an additional 10 minutes. OT should be

measured at the end of each rest period to ensure that the body's temperature has dropped below 99 degrees Fahrenheit.

Body Water Loss (BWL) from sweating, could result in dehydration and further complications and stress on personnel working in protective clothing under adverse weather conditions. It is strongly recommended that plenty of stress relief beverages be available on site to replace body fluids. Commercial drink mixes that provide electrolyte balancing solutions or water are adequate for replacing body fluids.

Alternate methods of heat stress reduction can be made available such as,

- Portable showers or hose-down facilities,
- Shelter cover to protect against direct sunlight,
- Rotating teams of personnel wearing protective clothing,
- Performing extremely arduous tasks early in the workday.

EMERGENCY INFORMATION

In the event of an injury or suspected chemical exposure, the first responsibility of the Project Manager will be to prevent any further injury. This objective will normally require an immediate stop to work until the situation is remedied. The Project Manager may order the evacuation of the work party. Other primary responsibilities in the event of an accident will be the first aid and decontamination of the injured team member(s). The injured party will be moved to a designated safe area and initial first aid will be rendered.

Employees are asked to make every effort and take personnel responsibility to prevent accidents involving machinery or any other aspect of the job, either by individual action or by notifying the Project Manager immediately of any unsafe condition that may exist.

In the event of an unexpected hazardous material discovery on site, the following actions will be taken by any employee involved;

1. The person having uncovered the unexpected material will notify the Project Manager and other workers of the danger. The site will be cleared of personnel if deemed necessary by the Project Manager. If site evacuation is required, appropriate local agencies such as the Fire Department or Health Department will be notified as well.
2. Immediate action will be taken to contain the hazardous material, provided the workers involved are properly attired with adequate protective clothing to avoid exposure.

3. Proper containment procedures will be determined for the hazardous material encountered prior to cleanup commencing. All personnel involved in the containment effort will be properly protected to prevent exposure. Backup personnel will be similarly protected while monitoring the work being done for any additional dangers.

4. The container(s) will be staged on site, away from the major activity areas and in such a way that if loss of containment occurs, the material will be withheld from further spread by a secondary containment berm or vessel.

5. The owner or agent controller of the property will be notified promptly of the incident and will be apprised as to the options available for proper disposal.

EXPOSURE SYMPTOMS AND FIRST AID

<u>EXPOSURE ROUTE</u>	<u>SYMPTOMS</u>	<u>FIRST AID</u>
Skin	Dermatitis, itching redness, swelling	Wash immediately with soap and water contact ambulance if evacuation is needed.
Eyes	Irritation, watering	Flush with water, transport directly to emergency room, if necessary.
Inhalation	Vertigo, tremors	Move person to fresh air, cover source of exposure.
Ingestion	Nausea, vomiting	Call Poison Control Center, DO NOT <u>INDUCE VOMITING</u> , transport to medical facility.

Local Resources:

HEALTH AND SAFETY CONTACT FOR ASE:

David Allen
Office: (510) 820-9391
Police | : 911
Fire |

POISON CONTROL: SF (415) 476-6600
SJ (800) 798-0720

ROUTE TO NEAREST HOSPITAL

Exit site Southwest (toward 580).
LEFT on 31st Street

HOSPITAL IS ON THE RIGHT SIDE (see attached Hospital Location Map)

Hospital: HIGHLAND HOSPITAL
1411 EAST 31ST STREET, OAKLAND, CA 94602

(510) 437-4557

AQUA SCIENCE ENGINEERS INC.

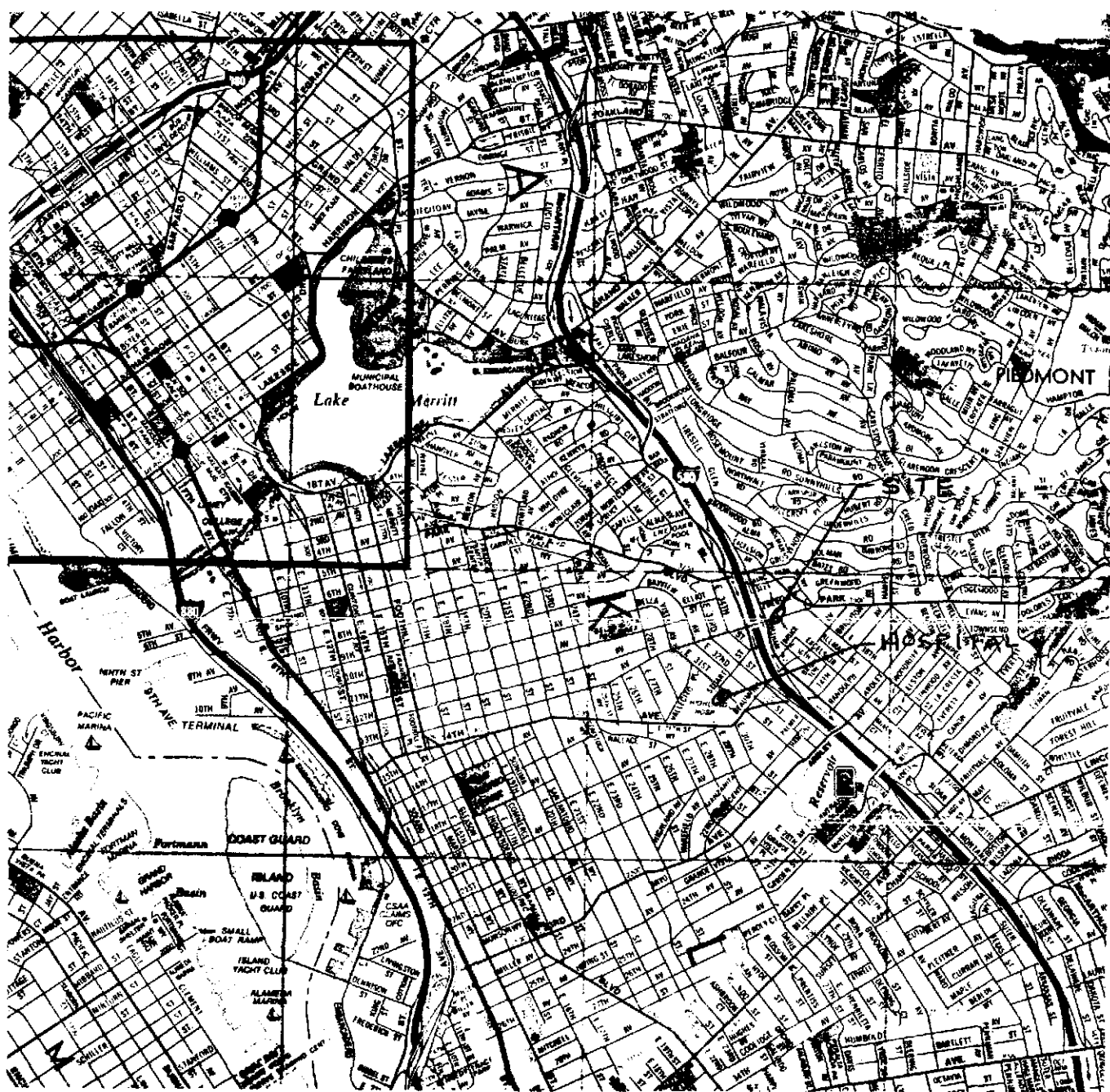
HAZARDOUS MATERIALS SITE SAFETY PLAN

The below signed personnel have read this plan, understand it's contents and agree to follow the guidelines set forth;

EMPLOYEE NAME (print)

SIGNATURE

DATE



HOSPITAL LOCATION MAP

**FORMER JOHN'S MOBIL GAS STATION
3635 13TH STREET
OAKLAND, CALIFORNIA**

Aqua Science Engineers

Figure 2