Armer / Norman & Associates
General and Engineering Contractors
State Contractors License No. 256896 ✓
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TRANSMITTAL

TO **ALAMEDA CO. ENVIRONMENTAL HEALTH**
SUSAN HUGO

DATE 4/29/96

FROM: **ALAN EDWARDS**

REGARDING: **CHEVRON #9-1740, 6550 MORAGA AVE., OAKLAND**

TRANSMITTED: [**X**] AS REQUESTED [**X**] FOR YOUR USE

[ ] FOR REVIEW & COMMENT [ ] FOR YOUR APPROVAL

DESCRIPTION:

SITE SPECIFIC HEALTH & SAFETY PLAN

1) H&S officer (designated) -
2) Site map - route to Hospital

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1561 Third Ave., Walnut Creek, CA 94596 (510) 937-8501 Fax: (510) 937-1938

HEALTH & SAFETY PLAN

for

CHEVRON, U.S.A.

6550 MORAGA BLVD.

OAKLAND, CALIFORNIA

APRIL 9, 1996

prepared by

ARMER/NORMAN & ASSOCIATES
1561 Third Avenue
Walnut Creek, California

HEALTH AND SAFETY PLAN

Armer/Norman and Associates' Health and Safety Program is designed to meet the requirements of 20 CRF 1910.120.

The objective of this Health and Safety Plan is to establish health and safety guidelines for the removal of underground storage tanks (UST) located at 6550 Moraga Ave.,Oakland, Calif. The project will consist of removal of four 10,000 gallon UST & their appurtenant piping. The installation of three 12,000 gallon double walled fiberglass tanks and the necessary piping for a complete service station, per the plans and specifications, will follow.

General information pertaining to the site is provided in Table 1.

TABLE 1

GENERAL INFORMATION
HEALTH AND SAFETY PLAN

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Site/Hazard Overview

Apparent Hazard:	LOW
Type of Facility:	GASOLINE SERVICE STATION
Status of Facility:	CLOSED FOR RE-MODEL
Waste Types:	LIQUID & SLUDGE
Waste Characteristics:	VOLATILE
Hazard Type:	VAPORS, CONTACT

CHARACTERIZATION OF WASTE PRODUCTS

The compound of concern on site is gasoline. Constituents of gasoline contain trace concentrations of volatile aromatic hydrocarbons. A summary of the health effects is given in Appendix I.

SITE SAFETY WORK PLAN

GENERAL

-Operations that will be conducted on the site include the removal of four underground fuel tanks and their related piping, the collection of soil samples after the tanks and piping have been removed and general site cleanup. Following this, three 12K UST will be installed and piped per CUSA specifications.

The Site Safety Officer, will assess the hazard of inhalation of vapors or particulate matter according to meteorological conditions and the phase of site operations, and will determine when and in what areas of the site personnel will be required to wear respirators.

On site personnel are trained to be aware of the potential for heat stress during the site operations. The combination of overexertion, protective clothing, and high ambient temperatures could cause heat stress which can lead to dehydration if body liquids and minerals are not replaced. Rest periods and replacement of body fluids by potable drinking water and electrolyte containing beverages are required to prevent heat stress during site operations.

HEALTH AND SAFETY RESPONSIBILITIES FOR KEY PERSONNEL

The Project Manager and the Site Safety Officer will be responsible for planning and coordinating all activities on site and will ensure that a Tailgate Safety Meeting form, completed and signed by an Armer/Norman & Associates Officer, is obtained before work begins. They will also ensure that the Tailgate Safety Meeting form is signed daily be each employee on site and that the Health and Safety Plan is reviewed before work begins by all site operations personnel.

The Site Safety Officer will be responsible for implementing all facets of the Health and Safety Plan during site operations, including briefing all participants in the Health and Safety Plan requirements, ensuring that all necessary permits are on site, enforcing the use of hearing protection where required, establishing the exclusion zone, and determining actions to be taken in case of an emergency on site. The Site Safety Officer will bring all real or potential health and safety problems to the attention of the Project Manager .

The Project Manager, in consultation with the Site Safety Officer, will be responsible for determining all site-specific health and safety decisions and will oversee their implementation.

WORKER TRAINING REQUIREMENTS

As required by 29 CFR 1910.120, all site operations personnel shall provide evidence of health and safety training prior to entering the site. Evidence is generally demonstrated by a Certificate of Training. In addition, no visitors will be allowed inside the exclusion zone if compliance with 29 CFR 1910.120 cannot be demonstrated.

MEDICAL SURVEILLANCE REQUIREMENTS

As required by 29 CFR 1910.120, all site operations personnel shall participate in a medical surveillance (Occupational Health) monitoring program. Documentation will be required from all site operations personnel to demonstrate this compliance.

DOCUMENTATION

Compliance with the Health and Safety Plan review requirement will be documented on a sigh-off sheet during the safety briefing attendance meetings which will be scheduled at the beginning of field operations and which will be reviewed at the beginning of each day during the conduct of site operations. A sign-off sheet is presented in Appendix IV.

This meeting, also known as the Tailgate Safety Meeting, will be conducted by the Project Manager or the Site Operations Supervisor. This meeting must be attended by all Armer/Norman & Associates employees and subcontractors working on the project that day. It is strongly recommended that all non-employees at the site also attend.

GENERAL SAFETY REQUIREMENTS

The following general safety requirements shall be followed by all site operations personnel, or qualified visitors, working and/or entering the site during the conduct of the site operations.

- No site operations personnel or visitors will be allowed on site without the prior knowledge and consent of the Site Safety Officer.

- There will be no activities conducted on site without sufficient backup personnel. At a minimum, two persons must be present on the site during the conduct of the site operations. A trained Site Officer, as required by 20 CFR 1910.120, must be present on site at all times during the conduct of site operations.

- All site operations personnel shall immediately bring to the attention of the Site Safety Officer or Project Manager any unsafe condition or practice associated with the site operations activities that they are unable to correct themselves.

- There will be no smoking, eating, chewing gum, drinking or tobacco consumption inside the Exclusion Zone.

- Site operations personnel must avoid unnecessary contamination, including walking through known or suspected "hot spots" or contaminated puddles, kneeling or sitting on the ground, leaning against potentially contaminated barrels or equipment.

- Respiratory devices will not be worn with beards, long sideburns, or under any other conditions that prevent a proper seal while the respirator is being worn.

  Contact lenses will not be worn with respirators in use.

- All excavations will be done in accordance with the CAL/OSHA Excavation and Trenching Safety requirements.

EXCLUSION ZONE

An Exclusion Zone will be established immediately around the soil excavation area and clearly marked (as needed).

The following activities will be conducted in the Exclusion Zone:

- Equipment staging
- UST excavation and removal
- Soil sampling
- Groundwater sampling and monitoring

PERSONNEL PROTECTION EQUIPMENT

The level of protection will be Level D with upgrade to Level C if appropriate. Level C includes the following equipment:

- Hard hat
- Nitrile (green) gloves
- Disposable Tyvek coveralls over work clothes
- Disposable PVC booties over steel toed safety boots
- NIOSH-approved full face respirator (or half-face with goggles) equipped with high-efficiency combination cartridges for toxic particulates, organic vapors, and acid glasses
- Earplugs or earmuffs (while working on or around operating equipment)

Level D includes the following equipment:

- Hard hat
- Routine work clothes
- Steel toed safety boots
- Protective eye wear
- Nitrile (green) gloves (when handling soil, during testing, sampling, shoveling, etc.)
- Earplugs or earmuffs (while working on or around operating equipment)

DECONTAMINATION

Decontamination consists of contamination-reduction phases and personal hygiene for site operations. The following decontamination procedures will be used:

- Maximize the use of disposable clothing for personal protection (latex surgical gloves, Tyvek coveralls and PVC booties).

- Remove disposable PVC booties, Tyvek coveralls, outer gloves and inner gloves and dispose of them in a clean unused garbage bag(s).

- Remove respirator, remove cartridges and discard them. Return respirator to storeroom at the end of the job. All respirators will be properly washed, sanitized, tagged and stored.

- The garbage bag(s) holding disposable items from the site operations will be placed in securely covered, clearly marked 55-gallon steel drums and placed in an area of the site at the direction of the Site Engineer. Final disposition will be in accordance with site remedial action.

- Wash hands and face with soap immediately upon exiting the Exclusion Zone.

- After departing the site, site operations personnel should shower as soon as possible.

- After departing the site, fabric work clothes and undergarments should be washed as soon as possible using routine wash method.

- Each piece of equipment (tools and all vehicles taken inside the exclusion zone) must be decontaminated before it leaves the operation site. This must be done in an area designated for equipment decontamination. Large items of equipment, such as backhoes, vehicles and trucks, should be subjected to decontamination by high pressure water washes or steam. A special solution, such as Liquid-Nox, a 1% to 2% TSP solution, or Bola Degreaser, may have to be used on sampling equipment or heavily soiled items. All wash and rinse water must be contained (on Visqueen for large equipment, in 5-gallon buckets for tools), collected, and disposed of as required.

- For decontamination of personnel involved in an accident, refer to the Emergency Procedures section of this document .

PHYSICAL HAZARDS

The physical hazards associated with operating heavy equipment are as follows:

- Moving machine parts
- Heavy Equipment
- Noise
- Exposure to contaminated particulate matter while moving excavated soil
- Possible contact with gas or power lines during excavating.

All personnel operating the heavy equipment must be very familiar with the equipment's operating procedures and the safety precautions to be taken. They must know how to shut the equipment off in case of an emergency.

Noise levels for heavy equipment operators may be expected to exceed 85 decibels on the A-weighted scale. Therefore, heavy equipment operators will wear disposable earplugs or earmuffs with a Noise Reduction Rating (NRR) of at least 25 decibels. A hearing conservation program, in conformance with OSHA requirements, will be in effect throughout the duration of the project.

Care will be used when moving excavated soil to avoid creating dust. An air purifying respirator may be required while performing any operation where sufficient dust may be generated.

The Project Manager shall investigate all excavation areas for gas and power lines before digging. This includes contacting the Underground Service Alert organization at **(800) 642-2444.** No excavation will occur in any area where such lines are found.

EMERGENCY INFORMATION

A description of local resources available in case of emergency is presented on Table 2.

EMERGENCY PROCEDURES

If an injury should occur on the site and involves exposure to gross contamination, the local emergency contacts (Table 2) will be notified of the incident and of the potential contaminants involved. Before being transported to the medical care facility, the victim will undergo a gross wash down using clear water after removal of all contaminated clothing. This will reduce the chance of spreading contaminants to the emergency vehicle and local hospital.

If an accident should occur on site which results in a minor injury (e.g., cuts or bruises,) a first aid kit and portable eye wash unit will be available for treatment.

If an accident should occur on site which results in a major trauma (e.g., fractured bones or severe lacerations), the local emergency telephone number (911) will be used to contact emergency services. The victim will not be transported in any vehicle other than a fully-equipped emergency vehicle.

SAFETY EQUIPMENT CHECKLIST

A Safety Equipment Checklist is presented on Table 3.

TABLE 2

EMERGENCY INFORMATION
LOCAL RESOURCES

HEALTH AND SAFETY PLAN

CHEVRON U.S.A.

6550 MORAGA AVENUE

OAKLAND, CALIF.

Ambulance:	911
Hospital Emergency Room:	KAISER PERMANENTE 280 WEST MACARTHUR BL. OAKLAND, CALIF. The route to the hospital is: Proceed in a Southerly direction on Mountain Bl. to the North on-ramp of the Warren Freeway. Proceed in a Northerly direction to the Broadway West turnoff (Oakland). Proceed West on Broadway to MacArthur. Turn Left on MacArthur. The Hospital is on the corner to your left.
Local Police:	911
Local Fire Department:	911

Armer/Norman & Associates 24-Hour Emergency 510/820-4658

TABLE 3

SAFETY EQUIPMENT CHECKLIST

HEALTH AND SAFETY PLAN

CHEVRON, U.S.A.

6550 MORAGA BL.

OAKLAND, CALIF.

PERSONAL PROTECTION

Full face respirator
Half-face respirator
High efficiency combination cartridges for toxic particulate, organic vapors, and acid gasses
Safety boots-Industrial grade work boots with steel toe
Tyvek coveralls
Safety glasses
Goggles
Hard hat
PVC rain gear
Nitrile (green) gloves
Latex gloves
PVC booties

MONITORING AND SURVEILLANCE

MicroTip

MISCELLANEOUS

First aid kit
Drinking water
Eye wash kit
Fire extinguisher
Ear plugs or earmuffs

PERSONAL DECONTAMINATION EQUIP

Clear water
5--gallon plastic buckets
Liquid-Nox
Hand soap
Plastic garbage bags
Paper hand towels

NOTE: All items except Micro Tip will be brought to the site in duplicate.

APPENDIX I

HEALTH EFFECTS OF WASTE PRODUCTS

GASOLINE

Gasoline is a variable complex mixture of components, principally hydrocarbons, blended to performance, rather than chemical, specifications.

VARIABILITY AMONG INDIVIDUALS

Health studies have shown that many petroleum hydrocarbons and synthetic lubricants pose potential human health risks which may vary from person to person. As a precaution, exposure to liquids, vapors, mists or fumes should be minimized.

EFFECTS OF OVEREXPOSURE (Signs and symptoms of exposure)

High vapor concentrations (greater than approximately 1000 ppm) are irritating to the eyes and the respiratory tract, may cause headaches and dizziness, are anesthetic, may cause unconsciousness, and may have other central nervous system effects including death.
Prolonged or repeated liquid contact with the skin will dry and defat the skin, leading to possible irritation and dermatitis.

NATURE OF HAZARD AND TOXICITY INFORMATION

Prolonged or repeated skin contact with this product tends to remove skin oils possibly leading to irritation and dermatitis; however, based on human experience and available toxicological data, this product is judged to be neither a "corrosive" nor an "irritant" by OSHA criteria.
Product contacting the eyes may cause eye irritation.

This product may contain up to a maximum of 4.9 weight percent benzene, CAS No. 71-43-2, as a natural constituent of various gasoline components. Benzene can cause anemia and other blood diseases, including leukemia, after prolonged or repeated exposures at high concentrations(e.g. 50-500 ppm). It has also caused fetal defects in tests on laboratory animals. Recommended DEL for benzene is 5 ppm for an 8 hour period, or 250 ppm-minutes over a 5 to 30 minutes period.

Contains light hydrocarbon components. Lifetime studies by the American Petroleum Institute have shown that kidney damage and kidney cancer can occur in male rats after prolonged inhalation exposures at elevated concentrations of total gasoline. Kidneys of mice and female rats were unaffected. The implication of these data for humans has not been determined, particularly since most human exposures are to light components, not to total gasoline. Certain components, such as normal hexane, may also affect the nervous system at high concentrations (e.g. 1000 - 1500 ppm).

Typically, n-hexane represents 1 to 3% of gasoline. May contain a combined concentration of toluene, CAS No. 108-88-3, and xylene, CAS No. 1330-20-7, ranging from approximately 5 to 50%.

Product has a low order of acute oral and dermal toxicity, but minute amounts aspirated into the lungs during ingestion or vomiting may cause mild to severe pulmonary injury and possibly death.

This product is judged to have an acute oral greater than 5 g/kg of body weight, and an acute dermal LD50 greater than 3.16 g/kg of body weight.

PRE-EXISTING MEDICAL CONDITIONS WHICH MAY BE AGGRAVATED BY EXPOSURE

Benzene - Individuals with liver disease may be more susceptible to toxic effects.

Hexane - Individuals with neurological disease should avoid exposure

Petroleum solvents/Petroleum Hydrocarbons - Skin contact may aggravate an existing dermatitis.

PROTECTIVE GLOVES

Use chemical-resistant gloves, if needed, to avoid prolonged or repeated skin contact.

EYE PROTECTION

Use splash goggles or face shield when eye contact may occur.

OTHER PROTECTIVE EQUIPMENT

Use chemical-resistant apron or other impervious clothing, if needed, to avoid contaminating regular clothing which could result in prolonged or repeated skin contact.

APPENDIX II

CONFIRMATORY SOIL AND WATER SAMPLES

The type and number of samples to be collected will depend on whether or not water is present in the excavation, and whether obviously contaminated areas are detected in locations other than those proposed.

If water is not present in the tank excavation, only soil samples will be collected. Samples will be collected from beneath the base of the excavation a maximum of 3 feet into the underlying soil. Two soil samples will be collected, one at each end of each tank as it was formerly positioned in the excavation. One soil sample will also be collected beneath every 20 feet of UST related pipes removed.

If water is present in the tank excavation, both soil and water samples will be collected as described previously, except that they will be collected from the excavation wall at the soil/groundwater interface at each end of the tank. A single water sample will be collected from the excavation. Before sampling, the presence of floating product will be determined. The excavation will be carefully purged of all standing water by pumping and allowed to refill before sample collection. All purged water will be stored separately on site pending the receipt of analytical results which will indicate final disposition: either transport and disposal as a hazardous waste, or disposal into the storm drain system. If the purge water is determined to be a hazardous waste, it will be transported by a State of California licensed hazardous waste hauler under a hazardous waste manifest to a TSD facility for disposal.

Soil samples will be collected in 3- to 6-inch long brass liners using a drive-tube type sampler which will be driven into the ground using a rubber mallet. The sampler will be sufficiently driven into the soil profile so as to allow no headspace in the brass liner. Following retrieval, both ends of the brass liner will be covered with Teflon, securely capped with polyethylene end caps, labeled, and placed in an ice chest containing Blue Ice and kept at 40C for transportation to the analytical laboratory for chemical analysis.

If soil samples cannot be safely collected from the excavation, soil samples will be collected using the backhoe. Immediately upon removal of the tank, a backhoe bucket of native soil from each sample location will be taken. After filling the backhoe shovel from the desired location in the bottom of the excavation, a large solid chunk of soil will be chosen for sample collection. Using a hand trowel, approximately 6 inches of soil will be rapidly scraped away from the surface of the soil. Soil samples will then be collected as previously described.

Water samples will be collected using a disposable bottom-entry polyethylene bailer. The collected sample will be transferred into a 40-milliliter VOA vial with as little aeration as possible, and allowing no headspace in the vial. A Teflon septum inside the vial's cap will be used to seal the vial. The collected sample will be labeled and placed in an ice chest maintained at 40C for transport to the analytical laboratory for chemical analyses.

All samples collected will be labeled with the sample identifier, location, sampler's name, time and date of sample collection, and analyses requested using a black indelible marking pen. All samples collected will be recorded on a Sample Management/Chain-of-Custody form which will track the sample from time of collection to delivery at the analytical laboratory. All information recorded on the Sample Management/Chain-of-Custody form will be entered in ink.

Before and after each subsequent soil and/or groundwater sampling event, all sampling equipment will be cleaned. Cleaning will consist of removing solid material from the sampling equipment using clear water and plastic bristle brush, washing the sampling equipment in a mixture of clear water and Liquid-Nox or Alconox (the use of phosphate based detergents will not be allowed), rinsing the sampling equipment in clear water, rinsing with de ionized water, and allowed to air dry.