File No. 12-99-702-SI

PROPOSED WORK PLAN
FOR PRELIMINARY OFF-SITE
SOIL & GROUNDWATER ASSESSMENT
FOR THE PROPERTY
LOCATED AT 15595 WASHINGTON AVENUE
SAN LORENZO, CALIFORNIA
FEBRUARY 11, 2000

PREPARED FOR:
MR. MEHDI MOHAMMADIAN
CAL GAS
15595 WASHINGTON AVENUE
SAN LORENZO, CALIFORNIA 94580

BY:
ENVIRO SOIL TECH CONSULTANTS
131 TULLY ROAD
SAN JOSE, CALIFORNIA 95111

ENVIRO SOIL TECH CONSULTANTS

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ENVIRO SOIL TECH CONSULTANTS

Environmental & Geotechnical Consultants

131 TULLY ROAD, SAN JOSE, CALIFORNIA 95111

Tel: (408) 297-1500 Fax: (408) 292-2116

February 11, 2000

File No. 12-99-702-SI

Mr. Mehdi Mohammadian
CAL Gas
15595 Washington Avenue
San Lorenzo, California 94580

SUBJECT: PROPOSED WORK PLAN FOR PRELIMINARY OFF-SITE SOIL & GROUNDWATER ASSESSMENT FOR THE PROPERTY
Located at 15595 Washington Avenue, in
San Lorenzo, California

Dear Mr. Mohammadian:

Per your request, enclosed is the proposed work plan for preliminary off-site soil and groundwater assessment for the property located at 15595 Washington Avenue, in San Lorenzo, California (Figure 1).

We will proceed with the work upon your authorization and County approval of the work plan.

Please feel free to contact our office at (408) 297-1500 should you have any questions or need additional information.

Sincerely yours,

ENVIRO SOIL TECH CONSULTANTS

FRANK HAMEDI-FARD
GENERAL MANAGER

LAWRENCE KOO, P. E.
C. E. #34928

PROPOSED WORK PLAN FOR PRELIMINARY OFF-SITE SOIL AND GROUNDWATER ASSESSMENT FOR THE PROPERTY LOCATED AT 15595 WASHINGTON AVENUE SAN LORENZO, CALIFORNIA FEBRUARY 11, 2000

INTRODUCTION:

Enviro Soil Tech Consultants (ESTC), on behalf of Mr. Mehdi Mohammadian of Cal Gas, is submitting this work plan for preliminary off-site soil and groundwater assessment (POSGA) , at the above-referenced site. ESTC prepared the POSGA in response to Alameda County Environmental Health Department's (ACEHD) letter dated November 10, 1999. ACEHD had requested assessment of off-site gasoline plume employing the use of so-called "rapid assessment" tools such as Geoprobe. A brief site description, backgrounds and proposed scope of work are presented below.

SITE DESCRIPTION:

The site is currently a retail gasoline service station owned by Mr. Mohammadian. The site is located on the northwest corner of Washington Avenue and Via Enrico Street in the City of San Lorenzo, Alameda County, California (Figure 1). The site contained one single story building, underground storage tanks located at the center portion of the property and south of the pump islands. There are five monitoring wells (MW-1 to MW-5) located on-site. Figure 2 shows the layout of the building, UST and on-site monitoring wells.

SITE BACKGROUND:

From 1974 to 1983, the site was owned by Calleris who had operated the gasoline service station.

From 1983 to 1986, Texaco owned the site, and during this time the site was not in operation. Texaco removed the existing USTs in 1986, and subsurface contamination was detected in the fuel tank excavation.

In 1986, the site was purchased by Bertram Kubo, who installed three new 10,000 gallon fuel tanks at a new location and reopened as a retail service station.

In 1990, the property was sold to the current owner, Mr. Mehdi Mohammadian, who operates the site as Shell retail service station.

In 1986, soil and groundwater investigation was conducted at the site by Groundwater Technology (GWT) by installing three on-site monitoring wells (MW-1 to MW-3). Hydrocarbon impact to shallow groundwater was detected in these wells. The detail of GWT's subsurface investigation is described in a report dated October 1986.

In July 1998, an additional subsurface investigation was conducted by Toxichem Management Systems, Inc.(TMS), by installing two additional on-site wells (MW-4 and MW-5). TMS's findings showed presence of petroleum hydrocarbons in all wells. The details of this additional assessment is described in their report dated October 16, 1998. Quarterly monitoring of the five on-site wells has been conducted since August 1998. TPHg, BTEX and MTBE were detected in all the wells.

GROUNDWATER DEPTH AND FLOW DIRECTION:

Groundwater is approximately 10.5 feet below ground surface. The direction of groundwater flow at the site is in westerly direction, and topography slopes slightly towards the east.

SOIL LITHOLOGY:

The site is underlain primarily by soft sandy clay to stiff clay.

PROPOSED SCOPE OF WORK:

The objective of this investigation is to define the off-site vertical and lateral extent of petroleum hydrocarbons in soil and groundwater. To meet these objectives, ESTC proposes the following tasks:

UNDERGROUND UTILITY LOCATION:

ESTC will contact Underground Service Alert (USA) to clear proposed boring locations prior to drilling.

SITE HEALTH AND SAFETY PLAN:

ESTC has prepared a site health and safety plan to protect the site workers, and is attached in Appendix "B".

PREMIT(S):

ESTC will obtain soil boring permit(s) from the Alameda County Public Works Agency-Water Resources Section and Encroachment permit from the Alameda County prior to beginning field operations.

SOIL BORINGS:

ESTC plans to drill approximately ten to fifteen borings at approximately 20 to 25 feet interval across the property and on sidewalk using direct push technology (Geoprobe @). The proposed boring locations are shown on Figure 2. Soil samples will be collected at five-foot intervals in order to log the sediments encountered. ESTC will attempt to collect one sample from directly above the groundwater surface (capillary zone) in each boring for chemical analysis. The exact number and location of the soil borings will be determined in the field based on site conditions. All borings will be located off-site of the property as requested by ACEHD. ESTC's standard field procedures for Geoprobe@ sampling are included as attachment A.

GRAB GROUNDWATER SAMPLES:

A grab groundwater sample will be collected from each boring at approximately one foot below the groundwater surface. In addition, the on-site wells will be monitored and sampled for TPHg, BTEX, MTBE by EPA Method 8260B.

CHEMICAL ANALYSES:

Groundwater and the capillary-zone soil samples will be analyzed for Total Petroleum Hydrocarbons as gasoline (TPHg), Benzene, Toluene, Ethylbenzene, Total Xylenes (BTEX) by EPA Methods 8015-Modified and 8020 and Methyl Tertiary Butyl Ether (MTBE) by EPA Method 8260.

REPORTING:

After the analytical results are received, an investigation report will be prepared and will include the following:

- A brief summary of the site background and history.
- Descriptions of the drilling, soil sampling methods and Lithologic logs.
- Tabulated soil and groundwater results.
- A site map showing boring locations.
- Analytical reports and chain-of-custody documentation.
- A description of soil and groundwater disposal methods.
- A discussion of hydrocarbon distribution on-site and off-site.
- A recommendation for any further assessment.

SCHEDULE:

ESTC will perform this investigation soon after receiving soil boring permits and written approval of this work plan. We will submit our investigation report approximately three to four weeks after completion of the field work.

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ATTACHMENT A

STANDARD FILED PROCEDURES FOR GEOPROBE@ SAMPLING

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ATTACHMENT A
STANDARD FIELD PROCEDURES
FOR GEOPROBE@ SAMPLING

DESCRIPTION:

This document describes ESTC's standard field methods for Geoprobe soil and groundwater sampling. These procedures are designed to comply with Federal, State and Local regulatory guidelines. Specific field procedures are summarized below:

OBJECTIVES:

Soil samples are collected to characterize subsurface lithology, assess whether the soils exhibit obvious hydrocarbon or other compound vapor odor or staining, estimate groundwater depth and quality and to submit samples for chemical analysis.

SOIL CLASSIFICATION/LOGGING:

All soil samples are classified according to the Unified Soil Classification System by a trained geologist or engineer working under the supervision of a California Registered Geologist (RG) or Civil Engineer (CE). The following soil properties are noted for each soil sample:

- Principal and secondary grain size category (i.e. sand, silt, clay or gravel).
- Approximate percentage of each grain size category.

- Color.
- Approximate water or separate-phase hydrocarbon saturation percentage.
- Observed odor and/or discoloration.
- Other significant observations (i.e. cementation, presence of marker horizons, mineralogy) and estimated permeability.

SOIL SAMPLING:

Geoprobe soil samples are collected from borings driven using hydraulic push technologies. A minimum of one and one-half feet of the soil column is collected for every five feet of drilled depth. Additional soil samples can be collected near the water table and at lithologic changes. Samples are collected using samplers lined with polyethylene or brass tubes driven into undisturbed sediments at the bottom of the borehole. The ground surface immediately adjacent to the boring is used as a datum to measure sample depth. The horizontal location of each boring is measured in the field relative to a permanent on-site reference using a measuring wheel or tape measure.

Drilling and sampling equipment is steam-cleaned or washed prior to drilling and between borings to prevent cross-contamination. Sampling equipment is washed between samples with trisodium phosphate or an equivalent EPA-approved detergent.

SAMPLE STORAGE, HANDLING AND TRANSPORT:

Sampling tubes chosen for analysis are trimmed off excess soil and capped with aluminum foil, Teflon tape and plastic end caps. Soil samples are labeled and stored at or below 4° C on either crushed or dry ice, depending upon local regulations. Samples are transported under chain-of-custody to a State-certified analytic laboratory.

FIELD SCREENING:

After a soil sample has been collected, soil from the remaining tubing is placed inside a sealed plastic bag and set aside to allow hydrocarbons to volatilize from the soil. After ten to fifteen minutes, a portable GasTech or photoionization detector measures volatile hydrocarbon vapor concentrations in the bag's headspace, extracting the vapor through a slit in the plastic bag. The measurements are used along with the field observations, odors, stratigraphy and groundwater depth to select soil samples for analysis.

GRAB GROUNDWATER SAMPLING:

Groundwater samples are collected from the open borehole using bailers, advancing disposable Tygon tubing into the borehole and extracting groundwater using a diaphragm pump, or using a hydro-punch style sampler with a bailer or tubing. The groundwater samples are decanted into the appropriate containers supplied by the analytic laboratory. Samples are labeled, placed in protective foam sleeves, stored on crushed ice at or below 4°C, and transported under chain-of-custody to the laboratory.

DUPLICATES AND BLANKS:

Blind duplicate water samples are usually collected only for monitoring well sampling programs, at a rate of one blind sample for every 10 wells samples. Laboratory supplied trip blanks accompany samples collected for all sampling programs to check for

cross-contamination caused by sample handling and transport. These trip blanks are analyzed if the internal laboratory quality assurance/quality control (QA/QC) blanks contain the suspected field contaminants. An equipment blank may also be analyzed if non-dedicated sampling equipment is used.

GROUTING:

If the borings are not completed as wells, the borings are filled to the ground surface with cement grout poured or pumped through a tremie pipe.

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A P P E N D I X "A"

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Figure 1

M1

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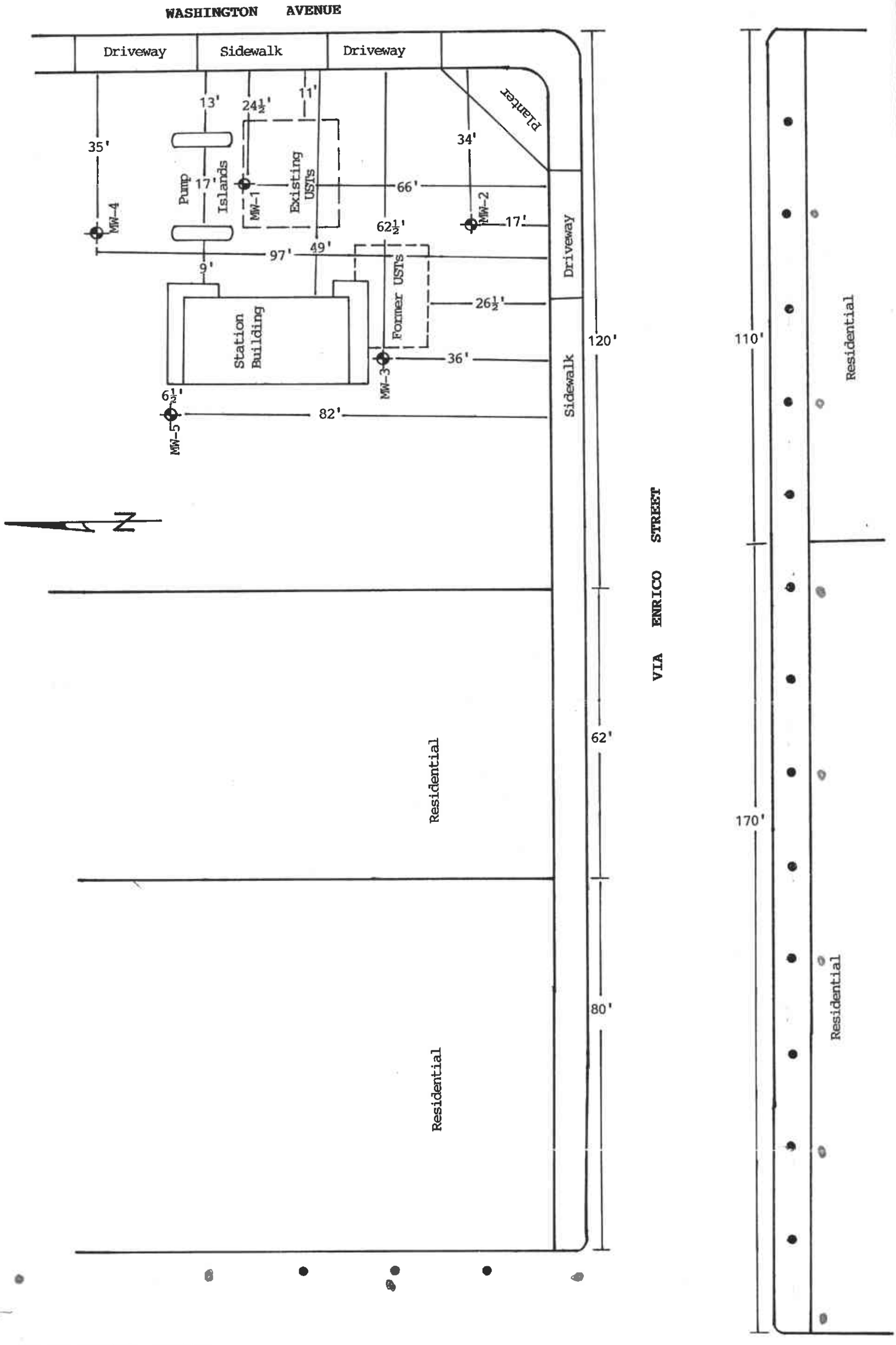

Figure 2

M2

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A P P E N D I X "B"

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HEALTH AND SAFETY PLAN
FOR THE PROPERTY
LOCATED AT 15595 WASHINGTON AVENUE
SAN LORENZO, CALIFORNIA

GENERAL:

This Health and Safety Plan (HSP) contains the minimum requirements for the subject site field work. The field activities include drilling, soil sampling and/or water sampling. All personnel and contractors will be required to strictly adhere with this HSP requirements.

The objective of the HSP plan is describe procedures and actions to protect the worker, as well as unauthorized person, from inhalation and ingestion of and direct skin contact with potentially hazardous materials that may be encountered at the site. The plan describes (1) personnel responsibilities and (2) protective equipment to be used as deemed when working on the site. At a minimum, all personnel working at the site must read and understand the requirements of this HSP. A copy of this HSP will be on-site easily accessible to all staff and government field representatives.

HAZARD ASSESSMENT:

The major contaminants expected to be encountered on the project are gasoline and its hydrocarbon constituents. The anticipated contaminants and their exposure standards are listed in Table 1. It is not anticipated that the potential levels of exposure

will reach the permissible exposure limits (PEL) or threshold limit values (TLV). Inhalation and dermal contact are the potential exposure pathways. Protective clothing will be mandatory for field personnel specified in this Plan. In addition, respiratory protective devices are required to be worn by each person on-site or to be within easy reach should irritating odors be detected or irritation of the respiratory tract occur.

TABLE 1
EXPOSURE LIMITS OF ANTICIPATED CHEMICAL CONTAMINANTS
IN PARTS PER MILLION (ppm)

Contaminant	PEL	EL	ED	CL	TWA	STEL
Benzene*[skin] & [carc]	1	---	---------	---	10	5
Ethylbenzene	100	---	---------	---	100	125
Toluene [skin]	100	200	10 min per 8 hours	500	100	150
Xylene (o, m & p isomers) [skin]	100	200	30 min per 8 hours	300	100	150

PEL - permissible exposure limit: 8 hours, time-weighted average, California Occupational Safety and Health Administration Standard (CAL-OSHA).

EL - excursion limit: maximum concentration of an airborne contaminant to which an employee may be exposed without regard to duration provided the 8 hours time-weighted average for PEL is not exceeded (CAL-OSHA).

ED - excursion duration: maximum time period permitted for an exposure above the excursion limit but not exceeding the ceiling limit (CAL-OSHA).

CL - Ceiling limit: maximum concentration of airborne contaminant which employees may be exposed permitted (CAL-OSHA).

TWA - time-weighted average: 8 hours, [same as threshold limit value (TLV)], American Conference of Governmental Industrial Hygienists (ACGIH).

STEL - Short-term exposure limit: 15 minutes time-weighted average (ACGIH).

[carc] - substance identified as a suspected or confirmed carcinogen.

[skin] - substance may be absorbed into the bloodstream through the skin, mucous membranes or eyes.

* - Federal OSHA Benzene limits given for PEL and STEL; STEL has a 50 minutes duration limit.

A brief description of the physical characteristics, incompatibilities, toxic effects, routes of entry and target organs has been summarized from the NIOSH Pocket Guide to Chemical Hazards for the contaminants anticipated to be encountered. This information is used in on-site safety meetings to alert personnel to the hazards associated with the expected contaminants.

Benzene:

Benzene is a colorless, aromatic liquid. Benzene may create an explosion hazard. Benzene is incompatible with strong oxidizers, chlorine and bromine with iron. Benzene is irritating to the eyes, nose and respiratory system. Prolonged exposure may result in giddiness, headache, nausea, staggering gait, fatigue, bone marrow depression or abdominal pain. Routes of entry include inhalation, absorption, ingestion and skin or eye contact. The target organs are blood, the central nervous system (CNS), skin, bone marrow, eyes and respiratory system. Benzene is carcinogenic.

Ethylbenzene:

Ethylbenzene is a colorless, aromatic liquid. Ethylbenzene may create an explosion hazard. Ethylbenzene is incompatible with strong oxidizers. Ethylbenzene is irritating to the eyes and mucous membranes. Prolonged exposure may result in headache, dermatitis, narcosis or coma. Routes of entry include inhalation, ingestion and skin or eye contact. The target organs are the eyes, upper respiratory system, skin and the CNS.

Toluene:

Toluene is a colorless, aromatic liquid. Toluene may create an explosion hazard. Toluene is incompatible with strong oxidizers. Prolonged exposure may result in fatigue, confusion, euphoria, dizziness, headache, dilation of pupils, lacrimation, insomnia, dermatitis or photophobia. Routes of entry are inhalation, absorption, ingestion and skin or eye contact. The target organs are the CNS, liver, kidneys and skin.

Xylene Isomers:

Xylene is a colorless, aromatic liquid. Xylene may create an explosion hazard. Xylene is incompatible with strong oxidizers. Xylene is irritating to the eyes, nose and throat. Prolonged exposure may result in dizziness, excitement, drowsiness, staggering gait, corneal vacuolization, vomiting, abdominal pain or dermatitis. Routes of entry are inhalation, absorption, ingestion and skin or eye contact. The target organs are the CNS, eyes, gastrointestinal tract, blood, liver, kidneys and skin.

GENERAL PROJECT SAFETY RESPONSIBILITIES:

Key personnel directly involved in the investigation will be responsible for monitoring the implementation of safe work practices and the provisions of this plan are (1) the drilling project supervisor and (2) Enviro Soil Tech Consultants *(ESTC)* project field engineer. These personnel are responsible for knowing the provisions of the plan, communicating plan requirements to workers under their supervision and regulatory agencies inspectors and for enforcing the plan.

The personnel-protective equipment will be selected to prevent field personnel from exposure to fuel hydrocarbons that may be present at the site. To prevent direct skin contact, the following protective clothing will be worn as appropriate while working at the site:

1. Tyvek coveralls.
2. Butyl rubber or disposable vinyl gloves.
3. Hard hat with optional face shield.
4. Steel toe boots.
5. Goggles or safety glasses.

The type of gloves used will be determined by the type of work being performed. Drilling personnel will be required to wear butyl rubber gloves because they may have long duration contact with the subsurface materials. *ESTC* sampling staff will wear disposable gloves when handling any sample. These gloves will be changed between each sample.

Personnel protective equipment shall be put on before entering the immediate work area. The sleeves of the overalls shall be outside of the cuffs of the gloves to facilitate removal of clothing with the least potential contamination of personnel. If at any time protective clothing (coveralls, boots and gloves) become torn, wet or excessively soiled, it will be replaced immediately.

Total organic vapors will be monitored at the site with a portable PID. should the total organic vapor content approach that of the threshold limit value (TLV) for any of the substances listed in Table 1, appropriate safety measures will be implemented under the supervision of the site project engineer. These precautions include, but are not limited to, the following: (1) donning of respirators (with appropriate cartridges) by site personnel, (2) forced ventilation of the site, (3) shutdown of work until such time as appropriate safety measures sufficient to insure the health and safety of site personnel can be implemented.

No eating, drinking or smoking will be allowed in the vicinity of the drilling operations. *ESTC* will designate a separate area on site for eating and drinking. Smoking will not be allowed at the vicinity of the site except in designated areas. No contact lenses will be worn by field personnel.

WORK ZONES AND SECURITY MEASURES:

The project engineer will call Underground Service Alert (USA), and the utilities will be marked before any drilling is conducted on-site, and the borings will be drilled at safe distances from the utilities. The client will also be advised to have a representative

on-site to advise us in selecting locations of borings with respect to utilities or underground structures. Enviro Soil Tech Consultants assumes no responsibility to utilities not so located. The first 5 feet will be hand augered before any drilling equipment is operated.

Each of the areas where the borings will be drilled will be designated as Exclusion Zones. Only essential personnel will be allowed into an Exclusion Zone. When it is practical and local topography allows, approximately 25 to 75 feet of space surrounding those Exclusion Zones will be designated as Contamination Reduction Zones.

Cones, wooden barricades or a suitable alternative will be used to deny public access to these Contamination Reduction Zones. The general public will not be allowed close to the work area under any conditions. If for any reason the safety of a member of the public (e.g. motorist or pedestrian) may be endangered, work will cease until the situation is remedied. Cones and warning signs will be used when necessary to redirect motorists or pedestrians.

LOCATION AND PHONE NUMBERS OF EMERGENCY FACILITIES:

For emergency reasons, the closest facilities addresses and phone numbers are listed below:

City of San Lorenzo Fire Department	911
Fairmont Hospital 15400 Foothill Boulevard, San Leandro, CA	(510) 667-7800

ADDITIONAL CONTINGENCY TELEPHONE NUMBERS:

Poison Control Center. . . . . .(800) 523-2222

Enviro Soil Tech Consultants Administrative Office. . . . . (408) 297-1500

CHEMTREC. . . . . .(800) 424-9300

NOTE: Only call CHEMTREC stands for Chemical Transportation Emergency Center, a public service of the Chemical Manufacturer's Association. CHEMTREC can usually provide hazard information, warnings and guidance when given identification number or the name of the product and the nature of the problem. CHEMTREC can also contact the appropriate experts.

This Site Safety Plan has been reviewed by the project engineer, *ESTC*'s field personnel and all subcontractors.

Amendments or modifications to this Plan may be written on a separate page and attached to this Plan. Any amendments or modifications must be reviewed and approved by the personnel name above.