

HK2, Inc. / SEMCO
General Engineering & Environmental Contractors

SITE HEALTH AND SAFETY PLAN
FOR
UNDERGROUND STORAGE TANK
REMOVAL / CLOSURE

JOB SITE ADDRESS:

660 SAN PABLO AVENUE
ALBANY, CALIFORNIA

PROJECT NUMBER:

96-0300

PREPARED BY:

STANLEY L. KLEMETSON, Ph.D., P.E.
Vice President

November 1996

1751 Leslie Street, San Mateo, CA 94402 (415) 572-8033, (415) 572-9734 Fax
License No. 719103 (A, B, C57, C61-D40, HAZ, ASB) - Hazardous Substances Certification

TABLE OF CONTENTS

Page

1.0 Purpose.....	3
2.0 Scope of Work.....	3
3.0 Personnel Responsibilities.....	3
3.1 HK2 - Project Manager.....	4
3.2 HK2 - Site Safety Officer.....	4
3.3 HK2 - On-Site Personnel.....	4
3.4 Public Agency - Environmental Health.....	4
3.5 Public Agency - Fire Department.....	4
4.0 Site Hazards, Special Precautions.....	4
4.1 Special Precautions.....	4
4.2 Toxicity Considerations, Petroleum Substances.....	5
4.3 Flammability and Combustibility Considerations.....	5
4.4 Physical Hazards.....	6
5.0 Safety	6
5.1 Safety Training	6
5.2 Personnel Protective Equipment	6
5.3 Medical Monitoring	7
5.4 Monitoring Requirements	7
5.5 Safety Equipment	7
5.6 Site Control Measures	7
5.7 Decontamination Procedures	8
6.0 Emergency Response / Contingency Plan	8
6.1 Command and Control	8
6.2 Emergency Procedures	8
6.3 Emergency Agencies with Telephone Numbers	9
7.0 Confined Space Entry	9
8.0 Spill Containment Program	10
9.0 Signature Page	14

APPENDIX

VICINITY MAP

SITE MAP

HOSPITAL ROUTE MAP

SITE HEALTH AND SAFETY PLAN

1.0 PURPOSE

This Health and Safety Plan has been prepared to minimize environmental risk while working at the site and handling the extracted materials. The following plan will be reviewed by all workers and visitors prior to site entry to prepare for potential on-site emergencies and to minimize adverse health risks to workers.

2.0 SCOPE OF WORK

The tanks will be purged of all remaining residues, and these residues will be stored on site in a 55 gallon approved drum until they are hauled away or pumped out for disposal by a certified hazardous materials hauler.

The tanks will be inerted with a minimum of 20 lbs of dry ice per 1,000 gallons of tank capacity. More ice will be added if necessary to displace the oxygen in the tank to a concentration below the OSHA approved lower explosive limit. This will be verified with a Gastech 1314. When the necessary level is obtained the tank will be removed and samples will be collected per the approved work plan.

The project is located at 660 San Pablo Avenue, Albany, California. The location of the tank is shown in the attached Site Map.

3.0 PERSONNEL RESPONSIBILITIES

3.1 HK2 - Project Manager

Manages field operations

Ensures the Work plan is completed on schedule

Briefs the field teams on their specific assignments.

Participate in the preparation of the Site Safety Plan

Serves as a liaison with public officials.

3.2 HK2 - Site Safety Officer

Implements and enforces the Site Safety Plan

Assures that all on-site personnel have received a copy of the site safety plan, have read it, and understands it.

Conducts frequent inspections of site conditions, facilities, equipment, and activities to determine if the Site Safety Plan is adequate and being followed.

Conducts daily "tailgate" meetings to explain the plan of work for the day and to mention potential hazards of the site.

Ensures that protective clothing and equipment are properly stored and maintained.

Knows emergency procedures, evacuation routes, and notifies local emergency services when necessary.

Notifies the Health and Safety Manager of all accidents and injuries that occur on site

3.3 HK2 - On-Site Personnel

Are required to document their full understanding of the Site Safety Plan before starting work by signing that they have read the Site Safety Plan and understand it

Complies with the Site Safety Plan

Notifies the Site Safety Officer of unsafe conditions.

On-Site employees are held responsible to perform only those tasks for which they believe they are qualified and their opinion are safe.

3.4 Public Agency - Environmental Health

Responsible for approval and inspection procedures, including tank removal, sample procurement and integrity of work plan.

3.5 Public Agency - Fire Department

Responsible for inspections relative to safe procedures and conditions of tank prior to removal.

4.0 SITE HAZARDS, SPECIAL PRECAUTIONS

4.1 Special Precautions

During the course of underground storage tank removal, workers could be exposed to petroleum hydrocarbon vapors, liquids or other wastes. The following precautions will be observed by all individuals engaged in tank removal, site investigation, or site remediation activities.

4.2. Toxicity Considerations, Petroleum Substances

All individuals should be aware of appropriate health precautions. When high concentrations of petroleum hydrocarbon vapors are inhaled, symptoms of intoxications may result. These symptoms range from simple dizziness to unconsciousness. Human exposure to benzene concentrations in gasoline vapors in excess of 150 ppm may cause headache, weariness, and loss of appetite. Vapors at high concentrations may cause smarting of the eyes and dermatitis. While benzene appears to be poorly absorbed through skin care will be exercised to minimize exposure to these substances. Use soap and water to remove any petroleum products that contact skin.

The recommended threshold limit values are shown in the table below.

Threshold Limit Values

Substance	OSHA PEL ¹	ACGIH TLV ²	NIOSH REL ³
Benzene	10 ppm	10 ppm	0.1 ppm
Gasoline	300 ppm	300 ppm	-
Heating Oil	Not Applicable	Not Applicable	-

¹ OSHA PEL -- Occupational Safety and Health Administration -- Permissible Exposure Limits.

² ACGIH TLV -- American Conference of Governmental Industrial Hygienists -- Threshold Limit Values.

³ NIOSH REL -- National Institute for Occupational Safety and Health -- Recommended Exposure Limits.

4.3 Flammability and Combustibility Considerations

Flammable and combustible vapors are likely to be present in the work area. Precautions will be taken to eliminate all potential sources of ignition to prevent the discharge of static electricity during venting and to prevent the accumulation of vapors.

4.4 Physical Hazards

During the excavation of underground storage tanks, some physical hazards may be present in the form of large holes, exposed piping, debris piles, and excavation equipment. All workers will be aware of these hazards and take all necessary actions to eliminate accidents. The excavation will be appropriately marked and barricaded. The classes of physical hazards are shown below.

**Slip, trip and fall hazards
Hazards due to heavy equipment
Excessive noise
Heat Stress/Stroke
Electrical**

5.0 SAFETY

5.1 Safety Training

The field personnel have received their 40 hours certificates of training as required by OSHA-SARA agencies, with refresher courses as needed.

Site Safety Plan review meetings are held at the beginning of each project. Tailgate safety meetings are held at the beginning of each work day.

5.2 Personnel Protective Equipment

**Level D (Normal Level of Protection)
Hard hat (required)
Work boots (required)
Safety Glasses (optional)
Hearing Protection (optional)
Protective gloves (optional)**

Action Levels

Half mask dual cartridge respirator with organic vapor cartridges should be available, but, will only be required if airborne concentrations are above action levels. Don respirators if organics in the breathing zone as measured by a PID or OVM exceeds a constant 100 ppm

Level C (Exceeds action level)

Safety Glasses or goggles w/side shields

Hard Hat

Steel Toe Safety Shoes

Half or Full Face Respirator with Organic Vapor Cartridge

Tyvek or poly-Coated Tyvek

5.3 Medical Monitoring

All field personnel must have a physical once each year. The company supplies health insurance to all employees and administers random and mandatory drug and alcohol testing.

5.4 Monitoring Requirements

Air should be monitored every 30 minutes using an organic vapor meter (OVM) or PID while excavating and sampling in contaminated areas. Monitor downwind in the breathing zone. The calibration of the equipment is to be verified with calibration gasses.

5.5 Safety Equipment

As a minimum, the following equipment will be on site:

LEL Meter - Gastech 1314

OVM Meter

OSHA Approved First Aid Kit

40BC Fire Extinguisher

Half Face Respirator with Organic Vapor Cartridges.

Barricades, fences, or construction tape.

5.6 Site Control Measures

Copies of the vicinity map, site layout map, and route to the hospital are provided at the end of this plan. Field personnel are in communication with the office personnel through radio communications.

The on-site safety officer will redirect pedestrian traffic around the work area using temporary fencing, or barricades and warning ribbon. Only authorized personnel will be permitted within 10 ft. of heavy equipment.

5.7 Decontamination Procedures

For PPE

Leave the work area and remove clothing, respirator last. All non-reusable clothing will be disposed of in garbage containers.

Sampling Equipment

All sampling equipment, such as buckets and samplers will be decontaminated after each use by washing in a trisodium phosphate solution followed by tap water rinses. All rinsate used in the decontamination process will be stored on site in steel, DOT-approved drums. Drums will be labeled as to contents, suspected contaminants, date container filled, expected removal date, company name, contact and phone number. Drums will then be sealed and left on-site for subsequent disposal pending analytical results.

6.0 EMERGENCY RESPONSE / CONTINGENCY PLAN

6.1 Command and Control

The on-site safety officer will be responsible for enforcing health and safety procedures issues related to sampling and drilling.

6.2 Emergency Procedures

If an injury occurs, the following action will be taken:

Provide medical attention for the injured person immediately

Notify the Site Safety Officer

Call for medical help. Depending upon the type and severity of the injury, HK2's occupational physician will be notified.

If possible, carefully remove the victim's PPE and begin decontamination procedures.

The injured person's personnel office will be notified.

An incident report will be prepared. The Site Safety Officer will be responsible for its preparation and submittal to the Health and Safety Director and corporate personnel office within 24 hours.

The Site Safety Officer will assume charge during a medical emergency.

Emergency Routes - See attached hospital map.

Emergency contact numbers are shown below.

6.3 Emergency Agencies with Telephone Numbers

Emergency Service	Name/Agency	Telephone
Project Manager	Chuck Kiper	(415) 572-8033 Office (415) 860-8221 Mobile (415) 377-8660 Pager
Client Contact	Bill Oldford	(510) 526-8905
Site Contact	Chuck Kiper	(415) 572-8033
Site Safety Officer	Chuck Kiper	(415) 572-8033
Health & Safety Coordinator	Stanley Klemetson	(415) 572-8033
Ambulance	911	911
Hospital (See Attached Route Map)	Alta Bates Hospital 3001 Colby Street Berkeley, CA	(510) 540-0337
Police	Albany	911
Fire Department	Albany Fire Department	(510) 528-5770
Environmental Health	Alameda County Environmental Health	(510) 567-6700
Emergency Spills	CalEPA	(415) 974-8131
Worker Health and Safety	OSHA	(800) 648-1003
CHEMTREC	CHEMTREC	(800) 424-9300
Utilities	Underground Service Alert	(800) 227-2600

7.0 CONFINED SPACE ENTRY

7.1 Continually monitor entry conditions to ensure that entry is possible. Be aware of the following conditions that might limit entry.

Extreme heat

Air supply limitations

Other conditions that might create a potential hazard for entrants

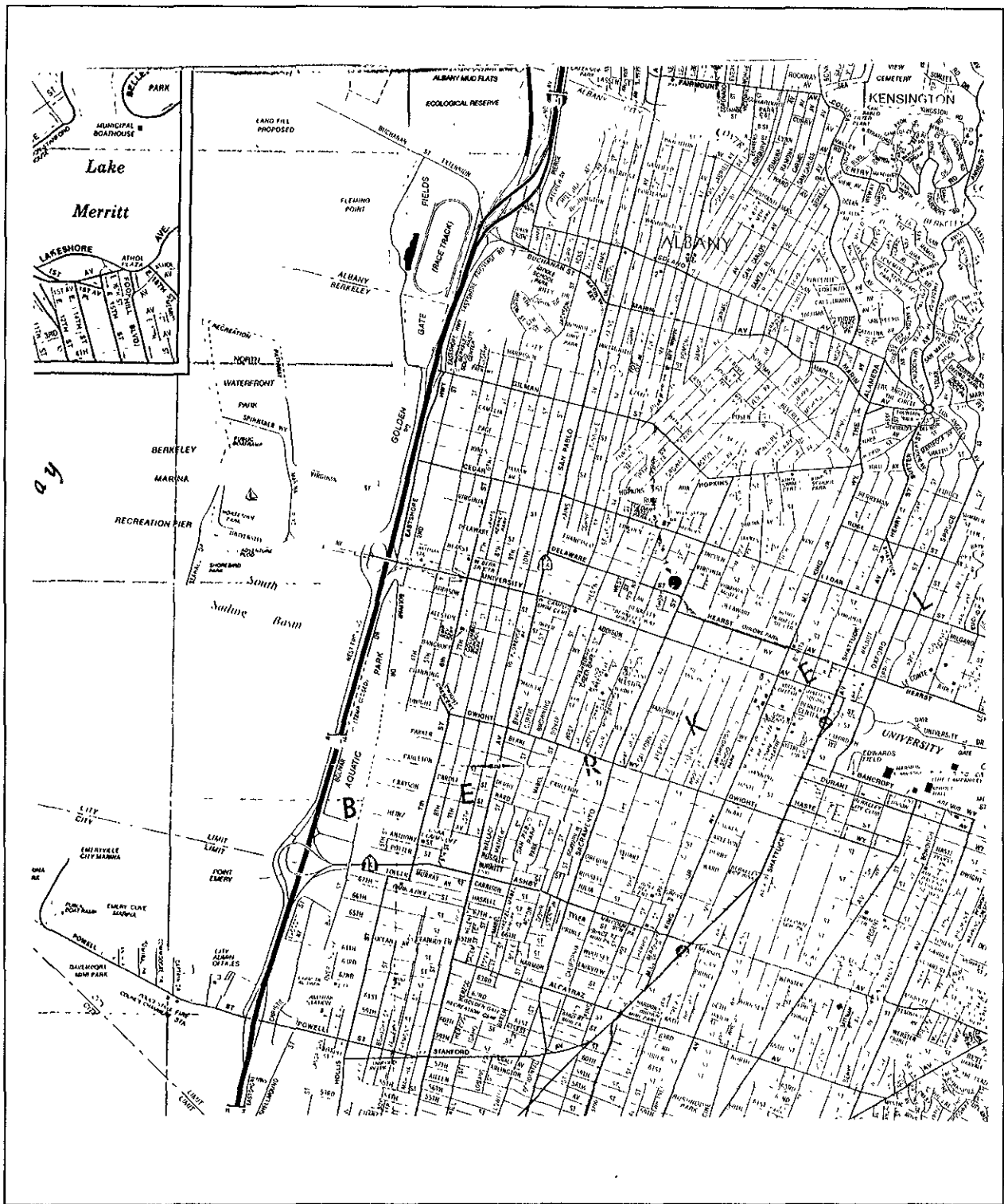
- 7.2 Under no circumstances will entry be permitted into a space if atmospheric tests indicate an atmosphere of >10% or more of the LEL.**
- 7.3 Under no circumstances will be permitted into a space if atmospheric monitoring tests indicate an oxygen enriched atmosphere (i.e. 23.5% oxygen or above).**
- 7.4 Entry into a space with an oxygen deficient atmosphere (19.5% or less will require that all entrants be outfitted with either portable (SCBA) or fixed (air lines) air supply equipment.**
- 7.5 Entry into spaces containing toxics or the potential to contain toxics will require that all entrants be outfitted in appropriate respiratory protection equipment. Appropriate equipment can be identified by consulting the Material Safety Data Sheet (MSDS), chemical profile or specified by the Health and Safety Officer.**
- 7.6 Weather conditions must be considered prior to issuing entry permits. No entry will be permitted during electrical storms.**
- 7.7 All sources of sources of energy (electrical, mechanical, hydraulic, etc.) except pressure relief valves, must be secured in accordance with lockout/tagout procedures.**
- 7.8 All authorized entrants must wear an approved full-body safety harness. If rescue can be performed horizontally, a safety belt with a D-ring may be worn. Lifelines must be attached to harnesses or safety belt unless obstructions such as heating coils are present that would otherwise hinder rescue efforts.**
- 7.9 Periodic atmospheric monitoring will be performed and recorded. Any significant change in atmospheric conditions will cancel the current entry permit. Atmospheric monitoring will include the checks in the following order: Oxygen, LEL, and Toxics, where applicable.**
- 8.0 SPILL CONTAINMENT PROGRAM**
- 8.1 Hazardous substances and contaminated soil, liquids, and other residues shall be handle, transported, label, and disposed of in an environmentally safe manner.**
- 8.2. Unlabeled drums and containers shall be considered to contain hazardous substances and handled accordingly until the contents are positively identified and labeled.**
- 8.3 Salvage drums or containers and suitable quantities of proper absorbent shall be kept available and used in areas where spills, leaks or ruptures may occur.**

- 8.4 Undergound tank shall be emptied by pumping prior to removal to prevent any releases due to rupture or tipping during tank removal.**
- 8.5 All piping should be drained to prevent any releases from cut or broken pipe ends.**
- 8.6 Where major spills may occur a spill containment structure shall be constructed.**
- 8.7 Fire extinguishing equipment shall be on hand and ready for use to control incipient fires.**

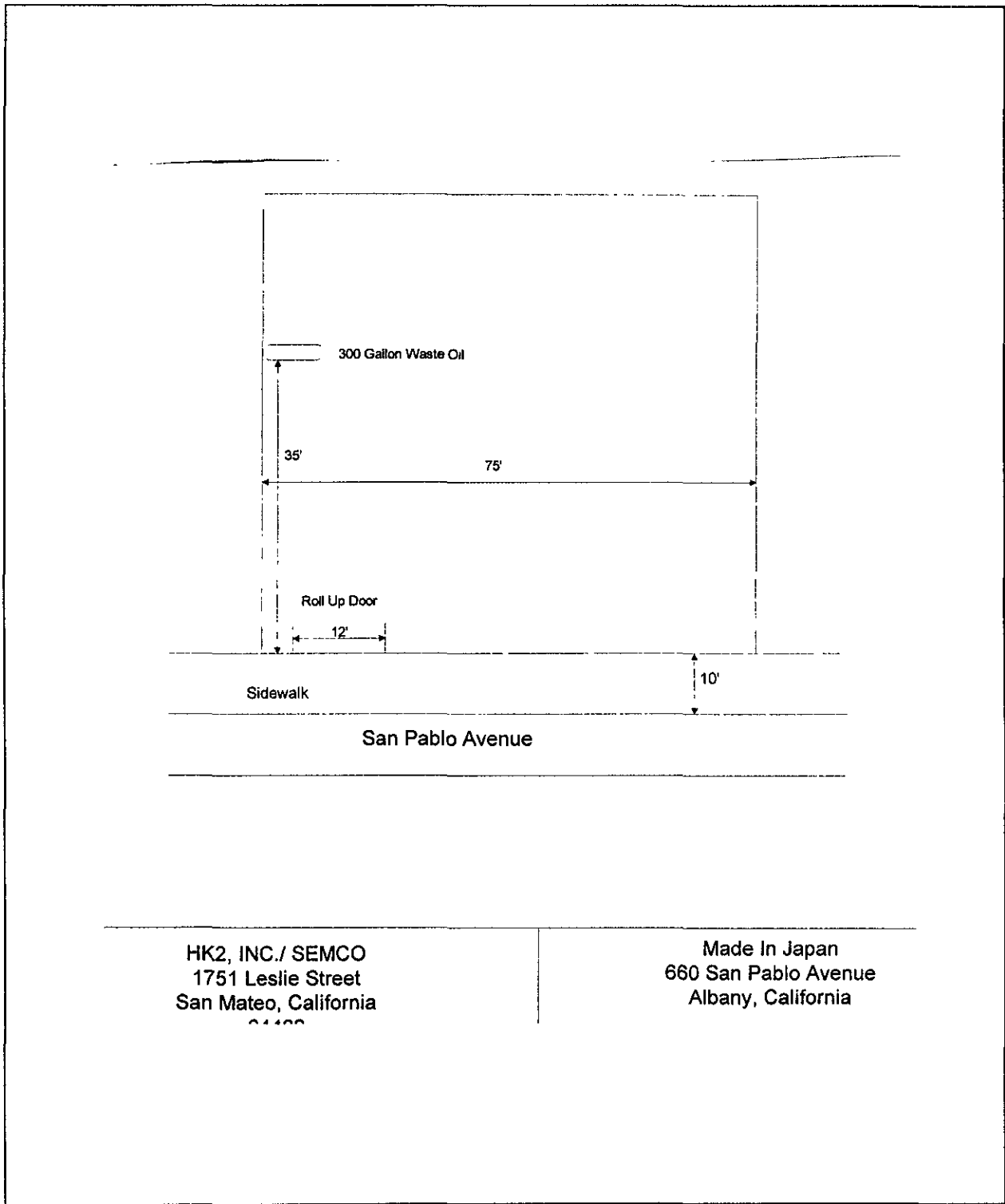
9.0 SIGNATURE PAGE

The following individuals have reviewed the Health and Safety Plan prior to entry to the site.

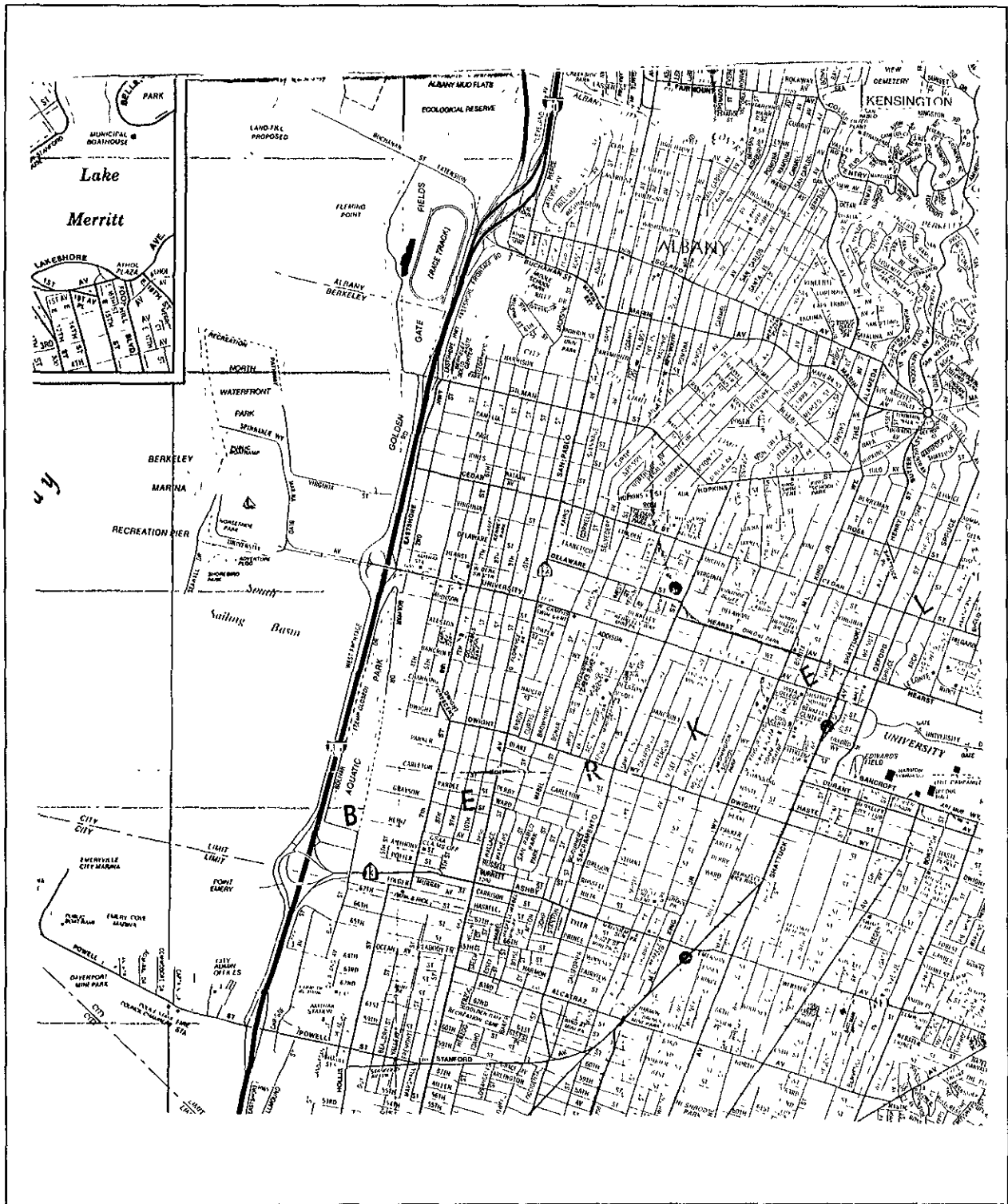
Printed Name	Signature	Date
Printed Name	Signature	Date
Printed Name	Signature	Date
Printed Name	Signature	Date
Printed Name	Signature	Date
Printed Name	Signature	Date
Printed Name	Signature	Date
Printed Name	Signature	Date
Printed Name	Signature	Date
Printed Name	Signature	Date
Printed Name	Signature	Date
Printed Name	Signature	Date
Printed Name	Signature	Date
Printed Name	Signature	Date
Printed Name	Signature	Date



VICINITY MAP



SITE MAP



ROUTE TO HOSPITAL