



STD 435

August 16, 1995

Ms. Susan Hugo
Alameda County Health Care Services Agency
Department of Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502

**RE: WORKPLAN FOR SUPPLEMENTAL SITE INVESTIGATION, 3810 BROADWAY,
OAKLAND, CALIFORNIA**

Dear Ms. Hugo:

Enclosed please find a copy of the Workplan for Supplemental Site Investigation dated August 16, 1995. The workplan has been prepared on behalf of Mr. Gerald Friedkin, owner of the property. Attached please also find a copy of McLaren/Hart's Site Health and Safety Plan for your review as required.

Following your review of the workplan, we would like to schedule a meeting between yourself, Mr. Marvin Katz, consultant for Texaco, and McLaren/Hart representatives. The meeting would be a good opportunity to discuss your comments to the workplan and your views regarding the site.

The first tasks of the field work are tentatively scheduled to be performed the week of August 28, 1995, pending agency approval and site tenant activities.

If you have any questions regarding the scope of work presented in this Workplan, please call me at (510) 748-5628.

Sincerely,

A handwritten signature in cursive script, appearing to read 'Saul Germanas'.

Saul Germanas, RG
Senior Associate Geoscientist

attachments

cc: Mary Haber, Esq.
Douglas A. Gravelle, Texaco Refining and Marketing, Inc.
File: Friedkin-Becker 200

95 AUG 17 AM 11:08
COMMUNICATIONS

07187LS2.RPT

STIP 435

GENERAL INVESTIGATION
ENVIRONMENTAL
ENGINEERING CORPORATION
3810 BROADWAY
OAKLAND, CA 94612

**WORKPLAN FOR
SUPPLEMENTAL SITE
INVESTIGATION
3810 BROADWAY
OAKLAND, CALIFORNIA**

August 16, 1995

Prepared For:

Gerald Friedkin
300 Grand Avenue
Oakland, California

Prepared By:

McLaren/Hart Environmental Engineering
1135 Atlantic Avenue
Alameda, California 94501
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0718TLS2.RPT



ENVIRONMENTAL ENGINEERING CORPORATION



TABLE OF CONTENTS

1.0	INTRODUCTION	1-1
2.0	SITE BACKGROUND	2-1
2.1	Site History	2-1
2.2	Previous Investigation Results	2-2
3.0	SCOPE OF WORK	3-1
3.1	Collection of Soil and Ground Water Samples, Installation of Monitoring Wells	3-1
3.1.2	Soil Boring and Monitoring Well Installation Procedures	3-1
3.2	Well Development	3-4
3.3	Ground Water Sampling	3-5
3.4	Ground Water Analysis	3-7
3.5	Prepare Investigation Report	3-8

LIST OF FIGURES

FIGURE 1	SITE LOCATION MAP
FIGURE 2	SITE MAP
FIGURE 3	TYPICAL MONITORING WELL

1.0 INTRODUCTION

This Workplan details the tasks to be performed by McLaren/Hart at Mr. Gerald Friedkin's property located at 3810 Broadway in Oakland, California (Figure 1). The proposed tasks are designed to provide additional data to:

- verify ground water flow direction; and
- better define the potential extent of petroleum hydrocarbons in soil and ground water.

The proposed scope of work will be evaluated by representatives of the Alameda County Health Care Services Agency Department of Environmental Health (ACDEH); Supplemental Investigation results will be presented to, and reviewed by ACDEH.

2.0 SITE BACKGROUND

Investigations have been previously performed at the subject site; investigation results were provided to McLaren/Hart for evaluation. The reports reviewed formed the basis for our knowledge of the site and included the following:

- *Results of Soil Sampling Following Tank Removal*, Semco, May 29, 1991;
- *Limited Soil and Ground Water Quality Investigation Report*, Kaldveer Associates, November 15, 1991; and
- *Soil and Ground Water Quality Investigation Report*, Kaldveer Associates, February 26, 1992.

The proposed scope of work discussed below is designed to supplement the data previously collected at the site and evaluate whether the Site has been adversely impacted by petroleum hydrocarbons.

2.1 Site History

Texaco owned the site from 1963 to 1985. The property was leased to various retailers who operated a gasoline service station at the site. The property was sold by Texaco in 1985 to parties unknown to McLaren/Hart. In November 1987 the property was purchased by Mr. Gerald Friedkin from the Estate of Melvin Finn.

A total of five underground storage tanks were installed in 1963; four 6,000-gallon underground petroleum storage tanks and one 550-gallon waste oil tank (Figure 2). The four 6,000-gallon underground petroleum storage tanks (assumed to have contained gasoline) were removed from the site in February 1980. Information regarding soil or ground water testing performed following the removal of these four tanks was not available to McLaren/Hart during our review.

The 550-gallon waste oil tank was removed in May, 1991 (Section 2.2).

2.2 Previous Investigation Results

During removal of the 550-gallon waste-oil tank on May 17, 1991, soils containing hydrocarbons were detected and subsequently excavated and removed. Analysis of soil samples collected by Semco, the tank removal subcontractor, indicated that concentrations of total petroleum hydrocarbons as diesel (TPH/D) were present in a sidewall soil sample at 66 parts per million (ppm); concentrations of Oil and Grease (O&G) were also recorded in sidewall soil samples at a maximum concentration of 690 ppm. Additional compounds detected in the sidewall soil samples included: benzene (3 parts per billion (ppb)), xylenes (13 ppb), 1,2-dichlorobenzene (8 ppb), and methylene chloride (39 ppb). Concentrations of total petroleum hydrocarbons as gasoline (TPH/G) were not present in the sidewall soil samples above the laboratory detection limit of 1 ppm. According to Kaldveer Associates, the impacted soil was excavated and disposed of off-site.

Following receipt and review of sidewall soil sample analytical results, the ACDEH requested that one ground water monitoring well be installed in the immediate vicinity of the former waste oil tank excavation. Soil samples collected by Kaldveer Associates during the installation of well MW-1 at 10.5, 15.5, 20.5 and 25.5 feet below grade were analyzed for the presence of O&G, total recoverable petroleum hydrocarbons (TRPH), TPH/G, and benzene, toluene, ethylbenzene and xylenes (BTEX). These analytes were not present above the respective detection limits in the samples collected from MW-1.

Ground water samples were also collected from MW-1 and analyzed for O&G, TRPH, TPH/D, total petroleum hydrocarbons as oil (TPH/O), TPH/G, BTEX, volatile organic compounds (VOCs), semi-volatile organic compounds (semi-VOCs), polychlorinated biphenyls (PCBs), pentachlorophenol (PCP), polynuclear aromatics (PNAs), creosote, and the metals cadmium, chromium, lead, nickel and zinc. Analysis of ground water samples from well MW-1 indicated the presence of O&G at 1 ppm, TPH/O (0.4 ppm), TPH/G (0.3 ppm), TPH/D (1.7 ppm), benzene (4.1 ppb), xylenes (20 ppb), 1,2-dichlorobenzene (0.7 ppb), 1,2-dichloroethane (0.7 ppb), methylene chloride (2 ppb), and low concentrations of the metals nickel and zinc.

The ACDEH required that an additional monitoring well be constructed to better define the lateral extent of contaminants in soil and groundwater. Monitoring well MW-2 was installed by Kaldveo Associates in February 1992, and soil and groundwater samples were collected. Only one soil sample, collected at 30 feet below grade (immediately above first encountered groundwater), was submitted for analysis of O&G, TRPH, TPH/G, and BTEX. These analytes were also not present above their respective detection limits.

Groundwater samples collected from wells MW-1 and newly installed well MW-2 in February 1992 were analyzed for O&G, TRPH, TPH/D, TPH/G, BTEX, VOCs, and soluble and total nickel. Analysis of ground water samples from well MW-1 indicated the presence of TPH/G (0.08 ppm), TPH/D (0.67 ppm), benzene (0.7 ppb), toluene (0.5 ppb), xylenes (2 ppb) and low concentrations of total and soluble nickel and total zinc. Ground water samples from well MW-2 contained O&G (1.0 ppm), TRPH (0.9 ppm), TPH/G (4.0 ppm), benzene (470 ppb), toluene (560 ppb), ethylbenzene (160 ppb), xylenes (540 ppb), 1,2-dichloroethane (2 ppb) and low concentrations of total and soluble nickel.

3.0 SCOPE OF WORK

McLaren/Hart has reviewed the soil and ground water sampling data from previous investigations provided to McLaren/Hart by Gerald Friedkin. Supplemental focused site characterization is required in order to evaluate the extent of gasoline-impacted ground water. The following sections describe in detail our proposed scope of work. The field sampling strategies, methodologies and rationale are discussed below.

3.1 Collection of Soil and Ground Water Samples, Installation of Monitoring Wells

Two ground water monitoring wells are presently located on the site. Installation of six soil borings and subsequent installation of two monitoring wells is recommended. Collection and analysis of one soil sample and grab ground water sample per boring will aid in the definition of the lateral extent of gasoline-range hydrocarbons and determine optimal locations for additional monitoring wells. The new monitoring wells will help establish ground water flow direction, and provide for the periodic evaluation of the extent of gasoline-range hydrocarbons in ground water.

3.1.2 Soil Boring and Monitoring Well Installation Procedures

McLaren/Hart will contact Underground Service Alert (USA) at least 48 hours prior to the initiation of the field activity so that utility companies can mark the locations of the service lines on and in the vicinity of the site. In addition, all drilling locations will be cleared by a utility surveyor subcontractor utilizing geophysical instrumentation.

Well installation permits will be obtained from the Alameda County Flood Control and Water Conservation District, Zone 7, and McLaren/Hart will coordinate the drilling efforts with Gerald Friedkin, site personnel (access and observation) and the ACDEH. McLaren/Hart will make all reasonable efforts to not impact current tenant activities.

All drilling equipment will be steam cleaned prior to entering the site to remove any residual materials. This cleaning process will be repeated between borings, if required, to eliminate the possibility of cross-contamination between sampling events. All sampling equipment will be cleaned using a non-phosphate detergent, tap water rinse, and a final rinse with distilled water.

The six soil borings will be drilled using a small-diameter push-penetrometer sampling rig. Proposed soil boring locations are indicated on Figure 2. The proposed locations of borings B-5 and B-6 may be changed based on preliminary findings of borings B-1 through B-4. Soil samples will be collected continuously for lithologic description and for potential laboratory analysis. Soil samples will be collected by driving a sampler barrel lined with 1-inch diameter by 6-inch long stainless steel sampling tubes into undisturbed soil. The sampling tubes will be capped with Teflon tape and polyethylene end caps, sealed with duct tape, labelled, and placed in a cooler containing ice. The cooler will be transported by courier under chain-of-custody protocol to MBT Environmental Laboratories in Rancho Cordova, California for analysis. MBT Environmental Laboratories is a division of McLaren/Hart, and is licensed by the State of California as a hazardous waste and drinking water laboratory.

Grab ground water samples will be collected by placing a section of slotted 1-inch diameter PVC casing into the borehole, allowing water to enter the borehole over several hours, and then collecting a sample of the water using a stainless-steel bailer. The bailer will be steam cleaned between each sampling location to avoid cross-contamination of the samples. Ground water samples will be collected and placed into 40-milliliter glass vials with Teflon septum, labelled, and placed in a cooler containing ice. The cooler will then be transported by courier to MBT Environmental Laboratories in Rancho Cordova, California for analysis of TPH/G and BTEX. The soil and grab ground water samples will be analyzed utilizing a standard one-week turnaround time.

Following review of the soil and groundwater analytical results, locations for two monitoring wells will be selected. The monitoring wells will be installed using hollow stem auger drilling equipment on a truck-mounted rig and drilled utilizing an 8-inch outside diameter auger to approximately 5 feet into the water bearing zone, which we expect to encounter at approximately 25 to 30 feet below grade. Soil samples will be collected continuously for lithologic description and for potential laboratory analysis. Lithologic descriptions will be performed using the Unified Soil Classification System format. In addition, organic vapor readings will be measured using a photoionization detector. Sample selection for analysis will be determined by visual inspection (e.g. staining), odor and photoionization or flame ionization detector readings. The soil sampling tubes will be immediately sealed with teflon sheeting and plastic end caps, and the end caps secured to the sampling tube with duct tape. The samples will be submitted for analysis as described above.

As required by ACDEH, one soil sample will be submitted for analysis from each soil boring or monitoring well drilled. Unless field observations indicate otherwise, this sample may be taken from just above first encountered ground water.

The exact well design will be determined during drilling, and will be based on the encountered interval of saturated transmissive material. The well design, based upon encountering ground water at approximately 30 feet below grade, will incorporate the following criteria:

- wells will be constructed using 2-inch diameter flush-threaded PVC casing and factory-slotted PVC screen sections;
- the well screen will not exceed 10 feet in length, will cover the first transmissive zone encountered, and extend approximately 5 feet above the saturated zone to allow for water elevation fluctuations;
- a graded sand filter pack will be placed across the screened interval and extend up to 1 foot above the top of the slotted interval;

- the interval below the well screen interval will be filled with granular bentonite;
- a one foot thick bentonite seal or fine sand bridge will be placed above the filter pack;
- the well will be sealed by placing portland cement with 5% bentonite from the seal to surface grade; and
- each well will be completed with a locking cap and a traffic-rated vault box cemented to 1/2-inch above grade.

A section for a typical well is shown in Figure 3.

Soil cuttings generated during drilling, washing fluids, and ground water generated during drilling and sampling will be placed in 55-gallon drums and stored on site.

The two new and the two existing monitoring wells will then be surveyed for location and elevation coordinates by a state-licensed surveyor.

3.2 Well Development

Monitoring well development will begin no sooner than 24 hours following well installation. Also, the two existing monitoring wells will be redeveloped since the last ground water sample collection event was performed several years ago. The wells will be developed by a combination of surging, bailing and pumping.

Surging with a sealed plunger will be performed over the entire screen length, and is performed to increase the hydraulic communication between the well, filter pack and surrounding soils. After surging, the well will be bailed to remove fine-grained sediments, and the well then pumped until at least 10 casing-volumes of water have been recovered or turbidity is measured

at less than 100 NTU. During well development, physical parameters including temperature, electrical conductivity, pH and turbidity will be monitored after each casing-volume has been removed.

If free-phase hydrocarbons (i.e., free product) are encountered in a well, Mr. Friedkin will be immediately notified and available options discussed. These options may include additional purging and bailing of the well until free product is no longer observed, and collecting a ground water sample following standard procedures.

Accurate ground water elevation data is essential to determine gradients, flow direction and predicted chemical migration paths. Depth to ground water will be measured from all wells one week following well development using electronic water level sounding instruments calibrated to 0.01 foot. In combination with accurate well casing elevations, these measurements will allow preparation of accurate water elevation contour maps.

3.3 Ground Water Sampling

The objective of ground water sampling is to obtain a volume of water representative of formation water. Meeting this objective requires the following elements:

- All stagnant water from the casing must be removed so that fresh water from the aquifer is entering the well at the time of sample collection.
- The sample must be extracted from the well with as little disturbance and as little exposure to the atmosphere as possible.
- The sample must not be allowed to come into contact with any materials which may adsorb or leach constituents in solution, or alter the sample in any way.

- Physical parameters which would change with exposure to air during containerization, transport, storage or laboratory analysis and cannot be preserved must be measured at the time of sample collection.
- Portions of the sample must be treated to preserve those parameters which would otherwise be altered in transport to the laboratory.

McLaren/Hart will purge all wells prior to sampling using centrifugal or peristaltic pumps. Disposable polyethylene tubing will be used on the suction side of the pumps with the intake end positioned at the top of the well screen. If the well yield is not sufficient to maintain a water level above the well screen, the intake will be lowered to an appropriate depth within the well to maintain a constant pumping rate.

During the purging process, we will monitor and record electrical conductivity, pH, temperature, and turbidity during the removal of each well casing volume. In high to medium yielding wells, purging will continue until a minimum of three casing-volumes have been removed and until stabilization of the parameters listed above. Parameter stability is defined as follows:

Table 1 "Stability" for Purposes of Well Purging	
Parameter	Value
Turbidity	less than 100 NTU
Electrical Conductivity	less than 5% difference between successive casing volumes
pH	less than 0.15 units difference between successive casing volumes
Temperature	less than 1.0° F difference between successive casing volumes

Low yielding wells are those which are unable to maintain a constant pumping rate, are fully evacuated during the purging process, and are unable to achieve 80% recovery in 30 minutes.

If a low yielding well is encountered, no further purging will be performed and the sample will be collected following at least 50% recovery but before the well fully recovers (i.e. 80%).

After the well has been purged, samples will be collected using a disposable polyethylene bailer. The bailers are equipped with a low flow sample port to facilitate controlled sample collection. Quality control samples will include trip blanks, which will accompany every sample shipment during a sampling event. Since the only equipment entering the monitoring well is disposed of between monitoring wells, no equipment blanks will be collected during the sampling event.

3.4 Ground Water Analysis

Ground water samples will be collected from the two existing and two newly installed monitoring wells in order to enhance the baseline ground water quality information for the site and to determine the extent of the petroleum hydrocarbon plume.

The following analyses have previously been performed on ground water samples collected from both wells:

- ✓ • Oil and Grease by EPA Method 5520C;
- Total Recoverable Petroleum Hydrocarbons by EPA Method 5520F;
- ✓ • Total Petroleum Hydrocarbons as diesel by EPA Method 3510;
- ~ • Total nickel, dissolved nickel and total zinc by EPA Method 6010 ICP;

- Total Petroleum Hydrocarbons as gasoline and benzene, toluene, ethylbenzene and xylenes (BTEX) by EPA Method 5030/8020;
- Volatile organic compounds (VOCs) by EPA Method 8010.

In addition, groundwater samples were collected from well MW-1 and analyzed for PCBs, PCP, PNAs and creosote by EPA Method 8270. None of these compounds were detected.

Review of the historical ground water sampling data shows that the known and suspected materials of concern at the site are gasoline-related petroleum hydrocarbons (including BTEX compounds). The primary materials of concern have been identified; only those materials which have been identified require further investigation. McLaren/Hart proposes that, rather than performing all of the above analyses, only the following limited analyses be performed on ground water:

TPH

- Total Petroleum Hydrocarbons as gasoline (TPHG) and benzene, toluene, ethylbenzene and xylenes (BTEX) by DHS LUFT Methods.

In accordance with relevant requirements, in addition to the ground water samples collected from the monitoring wells, one trip blank quality assurance/quality control sample will accompany the ground water samples collected and also be analyzed for TPHG and BTEX.

All samples will be appropriately labeled and shipped to MBT Environmental Laboratories in Rancho Cordova, California for analysis following chain-of-custody and EPA-recommended sample preservation techniques.

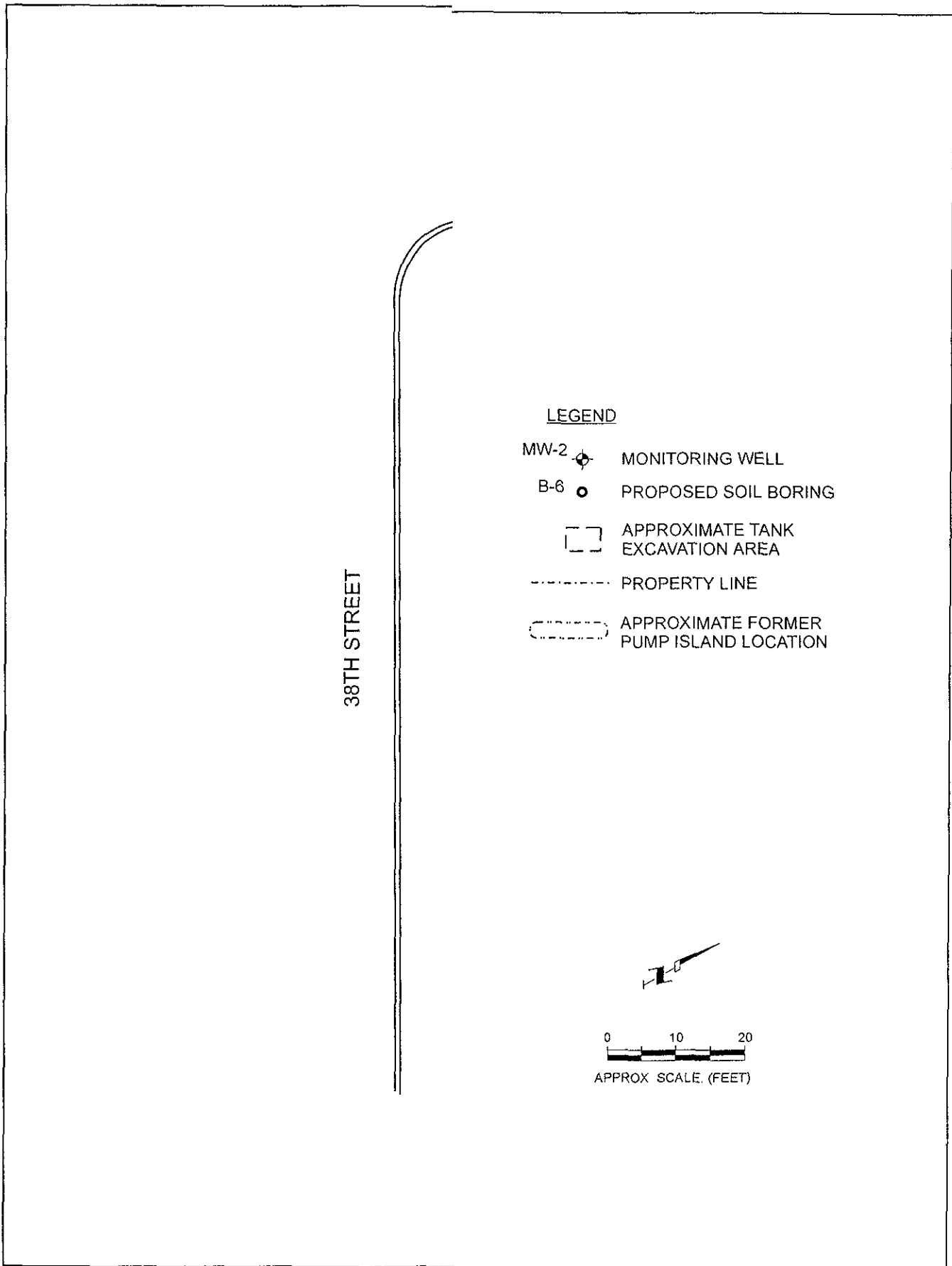
3.5 Prepare Investigation Report

McLaren/Hart will prepare a site investigation report which will contain the results of the additional site investigation and technical evaluation of site characterization data. Following internal review of the report, a final version of the Supplemental Site Investigation report will be submitted to the ACDEH for their review.





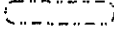
FIGURES

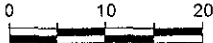


FIGURE 1
 SITE LOCATION MAP
 3810 BROADWAY, OAKLAND, CALIFORNIA



LEGEND

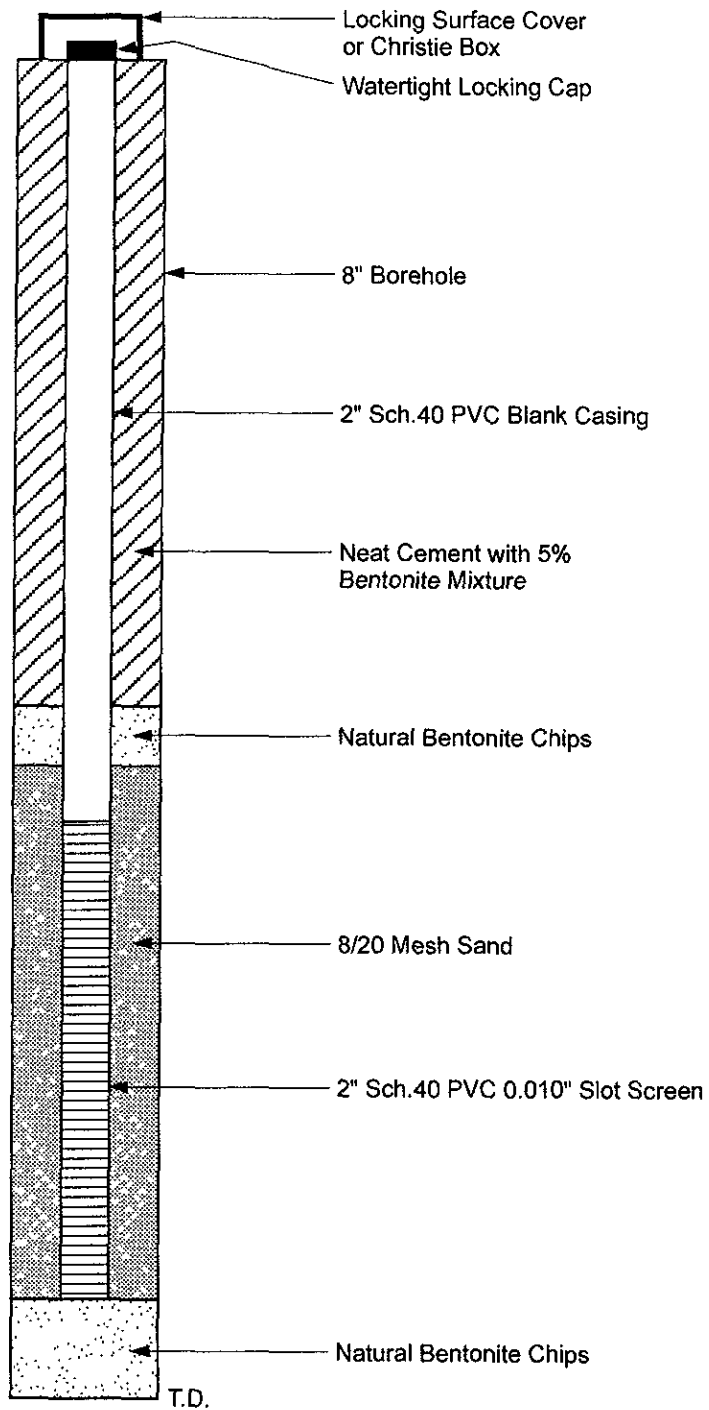
- MW-2  MONITORING WELL
- B-6  PROPOSED SOIL BORING
-  APPROXIMATE TANK EXCAVATION AREA
-  PROPERTY LINE
-  APPROXIMATE FORMER PUMP ISLAND LOCATION



APPROX SCALE. (FEET)



FIGURE 2
SITE MAP
3810 BROADWAY, OAKLAND, CALIFORNIA



NOT TO SCALE

FIGURE 3
 TYPICAL MONITORING WELL

SITE SAFETY AND HEALTH PLAN



Friedkin Site Investigation

HEALTH AND SAFETY PLAN

CLIENT: Gerald Friedkin

SITE NAME: Friedkin/Precision Tune

PROJECT/TASK

ID #: 04.0601879.001.001

ADDRESS: 3810 Broadway
Oakland, CA 94611

PLAN EXPIRATION DATE: November 8, 1995

DATE: August 8, 1995

PROJECT MANAGER:

Saul Germanas

Name

Suller

Signature

8-14-95

Date

HSM:

David Durst

Name

Signature

Date

**FIELD SUPERVISOR/
SITE SAFETY OFFICER:**

Chris Warwick

Name

Warwick

Signature

08-15-95

Date

SUBCONTRACTOR(S):

Precision Sampling

Name

Signature

Date

Gregg Drilling

Name

Signature

Date

Subtronics

Name

Signature

Date

AUG 8 '95 11:42 FR MCLAREN/HART ALAMEDA 518 521 1547 TO RANCHO

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Friedkin Site Investigation

HEALTH AND SAFETY PLAN

CLIENT: Gerald Friedkin

SITE NAME: Friedkin/Precision Tune

PROJECT/TASK

ID #: 04.0601879.001.001

ADDRESS: 3810 Broadway
Oakland, CA 94611

DATE: August 8, 1995

PLAN EXPIRATION DATE: November 8, 1995

Name

PROJECT MANAGER:

Saul Germanas

Name

Signature

Date

HSM:

David Durst

Signature

8-8-95

Date

**FIELD SUPERVISOR/
SITE SAFETY OFFICER:**

Chris Warwick

Name

Signature

Date

SUBCONTRACTOR(S):

Precision Sampling

Name

Signature

Date

Gregg Drilling

Name

Signature

Date

Subtronics

Name

Signature

Date

G:\FORMS\H&S\FORMS\H&SPLAN

Updated: June 28, 1993

DISCLAIMER

This Health and Safety Plan has been written for the use of McLaren/Hart and its employees. It may also be used as a guidance document by properly trained and experienced McLaren/Hart subcontractors. However, McLaren/Hart does not guarantee the health or safety of any person entering this site.

Due to the potentially hazardous nature of this site and the activity occurring thereon, it is not possible to discover, evaluate, and provide protection for all possible hazards which may be encountered. Strict adherence to the health and safety guidelines set forth herein will reduce, but not eliminate, the potential for injury at this site. The health and safety guidelines in this plan were prepared specifically for this site and should not be used on any other site without prior research by trained health and safety specialists.

McLaren/Hart claims or assumes no responsibility for this use by others. The Plan is written for the specific site conditions, purpose, dates, and personnel specified and must be amended if these conditions change.

EXECUTIVE SUMMARY

The activities to be performed under this Health and Safety Plan include drilling soil borings, installing monitoring wells, developing monitoring wells, and collecting soil and groundwater samples.

TABLE OF CONTENTS

	<u>Page</u>
1.0 GENERAL PROJECT AND PERSONNEL INFORMATION	1
1.1 Introduction and Project Identification	1
1.2 Key McLaren/Hart Personnel	1
1.3 Key Phone Numbers	4
1.4 McLaren/Hart Site Personnel	4
1.5 Authorized Subcontractor Site Personnel	5
2.0 SITE INFORMATION	6
2.1 Site Description	6
2.2 Site Map(s)	6
2.3 Background Information	6
2.4 Description of Operable Units (OUs)	7
2.5 Current Site Status	7
3.0 PROJECT WORK PLAN	9
3.1 Purpose of Site Work	9
3.2 Description of Job Tasks	9
3.3 Utility Clearance	9
4.0 TASK-SPECIFIC SAFETY AND HEALTH RISK ANALYSIS	10
4.1 Hazard Analysis	10
4.2 Chemical Hazards	10
4.3 Non-Chemical Hazards	14
5.0 SITE HEALTH AND SAFETY STANDARD OPERATING PROCEDURES	15
5.1 Applicable Maps	15
5.2 Site Security and Exclusion Zones	15
5.3 Personal Protective Equipment (PPE) Requirements	16
5.4 Monitoring Equipment Requirements	21
5.5 Equipment Calibration Requirements	21
5.6 Monitoring Protocols	22
5.7 Decontamination Procedures	23
5.7.1 Heavy Equipment	23
5.7.2 Personnel	23

TABLE OF CONTENTS
(Continued)

	<u>Page</u>
5.7.3 Samples and Sampling Equipment	24
5.7.4 Decon Wastes	24
5.8 Procedures for Waste Handling of Anticipated Wastes	24
5.8.1 Waste Generation	24
5.8.2 Storage and/or Treatment Methods Proposed:	25
5.8.3 Disposal	26
5.9 Site Operating Procedures	26
5.9.1 Initial Site Operating Procedures	26
5.9.2 General Daily Operating Procedures	27
5.9.3 Personnel Operating Procedures	28
5.9.4 Additional Site-Specific Operating Procedures	29
6.0 CONTINGENCY PLAN	30
6.1 Emergency Procedures	30
6.1.1 Incident	30
6.1.2 Injury	31
6.2 Emergency Routes	31

LIST OF TABLES

	<u>Page</u>
TABLE 1-1: Personnel, Responsibilities, and Qualifications	2
TABLE 2-1: Known and/or Probable Contaminants	8
TABLE 4-1: Risk Analysis of Job Tasks	11
TABLE 4-2: Assessment of Chemicals of Concern	12
TABLE 4-3: Non-Chemical Hazards	14
TABLE 5-1: Personal Protective Equipment (PPE) and Monitoring Equipment Requirements	17
TABLE 5-2: Monitoring Protocols and Contaminant Action Levels	20

LIST OF ATTACHMENTS

ATTACHMENT 1	SITE MAP(S)
ATTACHMENT 2	UTILITY CLEARANCE CHECKLIST
ATTACHMENT 3	MAP IDENTIFYING UTILITIES
ATTACHMENT 4	HOSPITAL ROUTE MAP
ATTACHMENT 5	DIRECT-READING INSTRUMENT RECORDINGS
ATTACHMENT 6	INSTRUMENT CALIBRATION LOG
ATTACHMENT 7	EMERGENCY PERSONNEL AND SERVICES
ATTACHMENT 8	TAILGATE SAFETY MEETING FORM
ATTACHMENT 9	CODE OF SAFE PRACTICES
ATTACHMENT 10	PROJECT MANAGER/FIELD SUPERVISOR JOB-SITE SAFETY CHECKLIST

1.0 GENERAL PROJECT AND PERSONNEL INFORMATION

1.1 Introduction and Project Identification

This plan has been prepared in conformance with Title 8 of the California Code of Regulations, Division 1, Chapter 4, Subchapter 7, Section 5192 Hazardous Waste Operations and Emergency Response and 29 CFR 1910.120. It addresses all those activities associated with the scope of work stated below and will be implemented by the Site Safety Officer (SSO) during site work. Compliance with this Health and Safety Plan (HASP) is required of all persons and third parties who enter this site. Assistance in implementing this plan can be obtained from the Site Safety Officer and Project Manager, and/or the Health and Safety Manager (HSM). The content of this HASP may change or undergo revision based upon additional information made available to health and safety (H&S) personnel, monitoring results or changes in the technical scope of work. Any changes proposed must be reviewed by H&S staff and are subject to approval by the HSM and Project Manager.

SITE NAME: Friedkin/Precision Tune TASK NO.: 04.0601879.001.001

SCHEDULED DATES OF SITE WORK: August 28-30, 1995

SCOPE OF WORK: Drill six soil borings, install two monitoring wells, develop wells, collect soil and groundwater samples.

1.2 Key McLaren/Hart Personnel

The McLaren/Hart personnel designated as the project manager and Site Safety Officer are as indicated with telephone numbers:

Principal-In-Charge	<u>Clifton Davenport</u>	<u>(510) 748-5654</u>
Project Manager	<u>Saul Germanas</u>	<u>(510) 748-5682</u>
Site Safety Officer	<u>Chris Warwick</u>	<u>(510) 748-5634</u>
Health and Safety Manager	<u>David Durst</u>	<u>(916) 638-3696</u>

See Table 1-1 and Section 1.4 for a complete list of personnel, their responsibilities, and training requirements.

TABLE 1-1

PERSONNEL, QUALIFICATIONS, AND RESPONSIBILITIES

TITLE	GENERAL DESCRIPTION	SPECIFIC RESPONSIBILITIES	REQUIRED TRAINING
Project Manager: <u>Saul Germanas</u>	<ul style="list-style-type: none"> • Reports to upper-level management. • Has authority to direct response operations. • Assumes total control over site activities. 	<ul style="list-style-type: none"> • Prepares and organizes the background review of the job at hand, the Work Plan, the Site Safety Plan, and the field team. • Obtains permission for site access and coordinates activities with appropriate officials. • Ensures that the work plan is completed and on schedule. • Briefs the field teams on their specific assignments. • Uses the Site Safety and Health Officer to ensure that safety and health requirements are met. • Prepares the final report and support files on the response activities. • Serves as the liaison with public officials. 	<ul style="list-style-type: none"> • 40-hr. Hazardous Wastes Training including an 8-hr. Supervisor course and 8-hr. annual updates (29 CFR 1910.120).

TABLE 1-1

PERSONNEL, QUALIFICATIONS, AND RESPONSIBILITIES
(Continued)

TITLE	GENERAL DESCRIPTION	SPECIFIC RESPONSIBILITIES	REQUIRED TRAINING
<p>Site Safety Officer (SSO)/ Alternate Site Safety Officer (Alt. SSO):</p> <p><u>SSO: Chris Warwick</u> <u>Alt. SSO: Nathan King</u></p>	<ul style="list-style-type: none"> • Advises the Project Team Leader on all aspects of health and safety on-site. • Recommends stopping work if any operation threatens worker or public health and/or safety. 	<ul style="list-style-type: none"> • Coordinates safety and health program activities with the Scientific Advisor. • Monitors the work parties for signs of stress, such as cold exposure, heat stress and fatigue. • Monitors on-site hazards and conditions. • Participates in preparation of and implements the Site Safety Plan. • Ensures that protective clothing and equipment are properly stored and maintained. • Knows emergency procedures, evacuation routes, and the telephone numbers of the ambulance, local hospital, poison control center, fire department, and police department. • Notifies, when necessary, local public emergency officials. • Coordinates emergency medical care. 	<ul style="list-style-type: none"> • 40-hr. Hazardous Wastes Training including 8-hr. annual updates (29 CFR 1910.120) • Respirator use training • Medical surveillance participant
<p>Public Information Officer:</p> <p><u>Clifton Davenport</u></p>	<ul style="list-style-type: none"> • Reports to upper-level management. 	<ul style="list-style-type: none"> • Release information to the news media and the public concerning site activities. 	<p>Not applicable</p>

TABLE 1-1

PERSONNEL, QUALIFICATIONS, AND RESPONSIBILITIES
(Continued)

TITLE	GENERAL DESCRIPTION	SPECIFIC RESPONSIBILITIES	REQUIRED TRAINING
Security Officer: <u>Chris Warwick</u>	<ul style="list-style-type: none"> • Advises Field Operations Leader. • Manages site security. 	<ul style="list-style-type: none"> • Controls entry and exit at the Access Control Points. 	<ul style="list-style-type: none"> • 40-hr. Hazardous Wastes Training including 8-hr. annual updates (29 CFR 1910.120) • Respirator use training • Medical surveillance participant
Field Supervisor: <u>Chris Warwick</u>	<ul style="list-style-type: none"> • Responsible for field team operations and safety. • Reports to Project Manager. 	<ul style="list-style-type: none"> • Manages field operations. • Executes the <i>Work Plan and schedule</i>. • Enforces safety procedures. • Coordinates with the Site Safety Officer in determining protection level. • Enforces site control. • Documents <i>field activities and sample collection</i>. • Serves as liaison with public officials. 	<ul style="list-style-type: none"> • 40-hr. Hazardous Wastes Training including 8-hr. annual updates (29 CFR 1910.120) • Respirator use training • Medical surveillance participant

TABLE 1-1

PERSONNEL, QUALIFICATIONS, AND RESPONSIBILITIES
(Continued)

TITLE	GENERAL DESCRIPTION	SPECIFIC RESPONSIBILITIES	REQUIRED TRAINING
<p>Team Members:</p> <p><u>Saul Germanas</u></p> <p><u>Clif Davenport</u></p> <p><u>Chris Warwick</u></p> <p><u>Nathan King</u></p> <p><u>Chris Giuntoli</u></p> <p><u>Steve Carson</u></p> <p><u>Michael Stephenson</u></p>	<ul style="list-style-type: none"> • Report to Field Team Leader. • Contains at least two people. • For drilling purposes, Team Members consist of a McLaren/Hart geologist, a drilling foreman, and helpers. 	<ul style="list-style-type: none"> • Safely completes the on-site tasks required to fulfill the Work Plan. • Complies with Site Safety Plan. • Notifies the Site Safety Officer or supervisor of unsafe conditions. 	<ul style="list-style-type: none"> • 40-hr. Hazardous Wastes Training including 8-hr. annual updates (29 CFR 1910.120) • Respirator use training • Medical surveillance participant

1.3 Key Phone Numbers

The following briefly lists key phone numbers for emergency and non-emergency contacts. A more complete list is provided in Attachment 7.

EMERGENCY AND NON-EMERGENCY CONTACTS		
Agency/Contact	Name	Contact Phone
Emergency Services	Local Fire/Police Dept.	911
Local Hospital	Kaiser Hospital	428-5000
National Response Center	HAZMAT	(800) 424-8802
Poison Control Center	Poison Control Center	(800) 523-2222
Regional Health & Safety Manager	David Durst	(916) 638-3696
Principal-in-Charge	Clifton Davenport	(510) 521-5200
Project Manager	Saul Germanas	(510) 521-5200
Health & Safety Manager	David Durst	(916) 638-3696
Field Supervisor	Chris Warwick	(510) 521-5200
Client Contact	Gerald Friedkin	(510) 465-7500
Site Contact	None	
Subcontractor	Gregg Drilling	(510) 313-5800
Subcontractor	Precision Sampling	(415) 456-9875
Subcontractor	Subtronics	(510) 686-3747

1.4 McLaren/Hart Site Personnel

Personnel authorized to enter the **Friedkin/Precision Tune** site while operations are being conducted must be approved by the Project Manager. McLaren/Hart's field staff will comply with the medical examination requirements as specified by OSHA 29 CFR 1910.120, 8 CCR 5192 and/or other applicable regulations and review and this HASP. All personnel must utilize the buddy system or trained escort, and check in with the Field Supervisor at the Command Post.

Name	McLaren/Hart Staff Training Summary						
	40-hr. Haz-woper	8-hr. Haz-woper	8-hr. Super/ Mgr.	CPR	First Aid	BBP	IIPP
1. Saul Germanas	11/18/89	10/13/94	06/23/92	06/09/95	06/09/95	06/09/95	---
2. Chris Warwick	10/25/91	10/13/94	---	4/27/94	04/27/94	04/27/94	10/13/94
3. Steve Carson	3/10/95	---	---	3/10/95	3/10/95	3/10/95	---
4. Michael Stephenson	3/10/95	---	---	3/10/95	3/10/95	3/10/95	---
5. Chris Giuntoli	10/14/88	4/13/95	---	4/28/94	4/27/94	4/27/94	4/13/95
6. Clif Davenport	11/21/85	4/13/95	8/9/91	---	---	---	---
7. Nathan King	01/13/95	---	---	1/13/95	1/13/95	1/13/95	---

1.5 Authorized Subcontractor Site Personnel

Subcontractor personnel authorized to enter the Friedkin/Precision Tune site while operations are being conducted must be approved by the Project Manager. Authorization will involve completion of appropriate training courses and medical examination requirements as required by OSHA 29 CFR 1910.120, 8 CCR 5192 and/or other applicable regulations and review of this HASP. All personnel must utilize the buddy system or trained escort, and check in with the Field Supervisor at the Command Post.

Subcontractor Personnel Authorized to Perform Work On-site:

Name	Subcontractor Training Summary							Training Verified (Project Manager/ Field Supervisor Initials)
	40-hr. Haz-woper	8-hr. Haz-woper	8-hr. Super/ Mgr.	CPR	First Aid	BBP	IIPP	
1.								
2.								
3.								
4.								
5.								
6.								

2.0 SITE INFORMATION

2.1 Site Description

The site is an active automotive repair and tune-up facility consisting of one building on a paved lot. The site had formerly been the location of a service station which utilized five underground storage tanks (UST's). Four of the UST's contained gasoline and one of the UST's contained waste oil.

2.2 Site Map(s)

See Attachment 1 for site maps and general directions to the site.

2.3 Background Information

Initial Site Entry:

All four gasoline UST's were removed in 1980; the waste oil UST was removed in 1991.

Information Obtained:

Information regarding soil or groundwater testing performed following the removal of the four gasoline UST's was not available to McLaren/Hart.

During the removal of the 550-gallon waste oil UST, soils containing hydrocarbons were detected and removed. Analysis of soil samples collected from the excavation indicated the presence of total petroleum hydrocarbons as diesel (TPH-D) soil and grease, and various volatile organic carbons (VOCs).

Groundwater samples collected from monitoring wells MW-1 and MW-2 (Attachment 1) indicated the presence of soil and grease, total petroleum hydrocarbons as oil, gas, and diesel, various VOCs, and low concentrations of the metals nickel and zinc.

2.4 Description of Operable Units (OUs)

The operable unit concept is useful for co-located facilities that have different contaminants, large sites, and sites having complex contamination from multiple sources. For remedial investigation and risk assessment purposes, it may be useful to divide a site into operable units based upon consideration of:

- the location of high priority stations,
- the chemicals of concern,
- the potential environmental transport pathways, and
- the potential future uses of the land.

Is the "operable unit" concept applicable to this site? No, since site is small with similar contaminants and sources.

See Table 2-1 for known and/or probable contaminants.

2.5 Current Site Status

- Site status:

<u> </u>	Abandoned
<u> X </u>	Occupied
- Previous McLaren/Hart work on site? No
- Adjoining McLaren/Hart work sites? No
- Hazards anticipated from adjacent sites or adjacent work which is not covered by this plan? None
- Is this site subject to regulatory agency oversight? Alameda County Health Care Services Agency-Environmental Health Division (ACDEH)

TABLE 2-1

KNOWN AND/OR PROBABLE CONTAMINANTS*

CONTAMINANT	SOURCE OF CONTAMINATION	SOURCE OF SAMPLE	MAXIMUM CONCENTRATION	AREAS OF LOW CONCENTRATION
Benzene	Possibly 4 gasoline UST's	MW-2	470 ppb	Unknown
Toluene	Possibly 4 gasoline UST's	MW-2	560 ppb	Unknown
Ethylbenzene	Possibly 4 gasoline UST's	MW-2	160 ppb	Unknown
Xylenes	Possibly 4 gasoline UST's	MW-2	540 ppb	Unknown
Oil & Grease	Waste oil UST	Excavation	630 ppb	Unknown
TPH-D (Diesel)	Waste oil UST	Excavation	66 ppb	Unknown
TPH-O (Oil)	Waste oil UST	MW-1	0.4 ppb	Unknown

* Source of data: Previous reports by others
 Date of sampling: May 1991 → February 1992

3.0 PROJECT WORK PLAN

3.1 Purpose of Site Work

1. To verify groundwater flow direction.
2. To better define the potential extent of petroleum hydrocarbons in soil and groundwater.

3.2 Description of Job Tasks

On-site tasks in order of execution:

- 1.* Utility clearance
- 2.* Installation of six soil borings
- 3.* Installation of two monitoring wells
4. Development of two monitoring wells
5. Collection of groundwater samples from four monitoring wells
6. Equipment decon

* Tasks to be performed by subcontractor(s).

Are any off-site tasks planned? No

3.3 Utility Clearance

- To be performed by: Subtronics
- Date to be performed: Not yet determined (approx. late August 1995)
- Utility clearance methods proposed: Visual, magnetometer, pipe locator
- The Utilities Clearance Checklist Form (Attachment 2) must be completed and returned to the Project Manager for review and signature, with copies forwarded to the Health and Safety Manager and project file.
- Map identifying utilities (Attachment 3) must be completed and returned to the Project Manager, Health and Safety Manager, and the project file.

4.0 TASK-SPECIFIC SAFETY AND HEALTH RISK ANALYSIS

4.1 Hazard Analysis

Potential exposure pathways, chemical hazards, and physical hazards are all involved in an analysis of risk. See Table 4-1 for a risk analysis of each of the tasks to be performed. Overall, the physical and chemical hazards are as summarized below:

Physical hazards are associated with:

Vehicular traffic; drill rig and equipment; lifting sampling and development equipment; slips, trips, and falls; biological hazards.

Chemical hazards are associated with:

Inhalation or dermal exposure to chemicals through soil and groundwater.

THE OVERALL PROJECT HAZARD RATING IS LOW/MODERATE.

4.2 Chemical Hazards

Chemical contaminants listed in Table 2-1 may or may not present health hazards to field personnel. The concentration of the contaminant, extent of area contaminated, and the likelihood of exposure all must be considered. Additionally, personal protective equipment minimizes exposures substantially.

The primary chemicals of concern are benzene, 1,2-DCA and methylene chloride due to their potential for exposure, level of contamination (benzene) and because of possible carcinogenic properties.

In order to prevent inhalation of potentially hazardous levels of contaminants, air monitoring will be conducted with a direct reading instrument to screen for organic vapors. The potential for dermal and eye contact will be controlled through the use of gloves and safety glasses.

An assessment of the chemicals of concern, including exposure limits, odor thresholds, and health effects, is presented in Table 4-2.

TABLE 4-1

RISK ANALYSIS OF JOB TASKS

JOB TASKS SCHEDULED ^a	MEDIA OF CONCERN	POTENTIAL EXPOSURE PATHWAYS ^b	PHYSICAL HAZARDS ^c	CHEMICAL HAZARDS/ POTENTIAL CHEMICALS OF CONCERN
1. Utility clearance	--	--	S, U	None
2. Soil borings	Soil/Water	INH (V)/Dermal	U, H, S, N	TPH, O&G, BTEX
3. Monitoring wells	Soil/Water	INH (V)/Dermal	U, H, S	TPH, O&G, BTEX
4. Well development	Water	INH (V)/Dermal	S	TPH, O&G, BTEX
5. Well sampling	Water	INH (V)/Dermal	S	TPH, O&G, BTEX
6. Equipment decon	Soil/Water	INH (V)/Dermal	S	TPH, O&G, BTEX

^a JOB TASKS:

See Section 3.2 for a complete description of job tasks

^b EXPOSURE PATHWAY:

- Inh = Inhalation
- (P) = Particulate Inhalation
- (V) = Vapor Inhalation
- Derm = Dermal
- Ing = Ingestion

^c PHYSICAL HAZARDS:

- U = Utilities
- H = Heavy Machines
- S = General Safety; slip, trip, fall
- CSE = Confined Space Entry
- N = Noise
- O = Overhead Hazards
- I = Illumination Limited
- E = Explosivity
- HS = Heat Stress

TABLE 4-2

ASSESSMENT OF CHEMICALS OF CONCERN

CHEMICAL NAME (OR CLASS)	PEL/TLV*	OTHER PERTINENT LIMITS ^b (Specify)	WARNING PROPERTIES	POTENTIAL ^c ROUTES OF EXPOSURE	ACUTE HEALTH EFFECTS	CHRONIC HEALTH EFFECTS
Benzene	1/10 (0.1) ppm [SKIN]	STEL = 5 ppm TLV-STEL = 0.3 ppm	Sweet solventy odor - 1.5 ppm	Inhalation; Dermal; Ingestion	Eye, skin and respiratory irritation; CNS depression; headache; nausea.	Confirmed human carcinogen; leukemia; dermatitis.
Toluene	100/50 ppm	STEL = 150 ppm C = 500 ppm [SKIN]	Rubbery, mothball odor - 2 ppm	Inhalation; Dermal; Ingestion	Eye, skin and respiratory irritation; CNS depression	Possible liver, kidney and CNS damage; dermatitis.
Xylene	100/100 ppm	STEL = 150 ppm C = 300 ppm	Sweet odor - 0.1 ppm	Inhalation; Dermal; Ingestion	Eye, skin and respiratory irritation; CNS depression	Possible liver and kidney damage; dermatitis; damage to CNS.
Ethylbenzene	100/100 ppm	STEL = 125 ppm	Aromatic odor - 2 ppm	Inhalation; Dermal; Ingestion	Eye, skin and respiratory irritation; CNS depression	Dermatitis; possible CNS damage.
O&G						
TPH-D						
TPH-O						
Gasoline (total petroleum hydrocarbons)	300/300 ppm	STEL = 500 ppm	None cited	Inhalation; Dermal; Ingestion	Eye, skin and respiratory irritant; CNS depression	Possible liver and kidney damage; dermatitis

SEE THE FOLLOWING PAGE FOR FOOTNOTES.

* OSHA Permissible Exposure Limit (PEL)/American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Value (TLV). Both values represent time-weighted average concentrations for an 8-hr. workday.

b Other Pertinent Limits:

STEL = ACGIH or OSHA 15-minute Short-term Exposure Limit
Ceiling = OSHA's maximum exposure concentration for which an employee shall not be exposed during any period without respiratory protection.
LEL = Lower explosive limit in air. % by volume
IDLH = Immediately Dangerous to Life and Health, the concentration at which one could be exposed for 30 minutes without experiencing escape-impairing or irreversible health effects.

c "Dermal" - Indicates localized effects at point of exposure (e.g., dermatitis).
"[Skin]" - Indicates the potential for exposure due to skin absorption as well as by inhalation of vapors.

d Carcinogen

Yes

U.S. EPA Classification A or B1

A = Confirmed human carcinogen (sufficient evidence of carcinogenicity in humans)
B1 = Probably human carcinogen (sufficient animal evidence with limited human evidence)

Suspect:

U.S. EPA Classification B2

B2 = Probably human carcinogen (sufficient animal evidence with inadequate or lack of human data)

Experimental:

U.S. EPA Classification C

C = Possible human carcinogen (limited evidence of carcinogenicity in animals and inadequate or lack of human data)

No:

U.S. EPA Classification D or E

D = Not classified (inadequate or no evidence)
E = Evidence of noncarcinogenicity

4.3 Non-Chemical Hazards

The following table provides a checklist that is useful in identifying specific non-chemical hazards for the job tasks described in Section 3.2:

**TABLE 4-3
NON-CHEMICAL HAZARDS**

	NO	YES	IDENTIFY TASKS
Electrical hazard			
Overhead power lines		✓	2,3
Underground cable/power lines		✓	1,2,3
Gas lines/Water lines		✓	1,2,3
Equipment hazards			
Drilling		✓	2,3
Excavation	✓		
Machinery		✓	2,3
Heat exposure	✓		
Cold exposure	✓		
Oxygen deficiency	✓		
Confined spaces	✓		
Noise		✓	2,3
Ionizing	✓		
Non-ionizing radiation	✓		
Lasers	✓		
Infrared	✓		
Ultraviolet	✓		
Fire	✓		
Safety			
Holes/ditches	✓		
Steep grades/Uneven terrain	✓		
Slippery surfaces		✓	2,3
Unstable surfaces	✓		
Elevated work surfaces	✓		
Explosive Atmosphere	✓		
Shoring/Scaffolding	✓		
Other:			

5.0 SITE HEALTH AND SAFETY STANDARD OPERATING PROCEDURES

5.1 Applicable Maps

Site Map(s) -- See Attachment 1

Utilities Map -- See Attachment 3

Hospital Route Map -- See Attachment 4

5.2 Site Security and Exclusion Zones

- Work Area Access: Public Driveway Entrances
- Work Area Security: McLaren/Hart Site Security Officer
- Work Site Definition:
 - Area: (1) within a 30-ft. radius of a drill rig plus additional areas within barricades, cones and/or caution tape; or (2) within a 10-ft. radius of a hand augering location or groundwater monitoring well if drilling/boring equipment is not co-located.
- Work Site Perimeter Identification Method: With cones and/or caution tape, as mentioned above.
- On-site Command Post: McLaren/Hart vehicle
- Site Work Zone Requirements:
 - Exclusion Zone: Work site definition zone, as explained above
 - Contamination Reduction Zone: Area between exclusion zone & McLaren/Hart truck; area to be at least 30 feet by 30 feet
 - Support Zone: McLaren/Hart truck
- Communication:
 - Contact of off-site office personnel by on-site personnel:
by 2-way radio;
 - Contact of on-site personnel by off-site office personnel:
by 2-way radio and pager; pager # (510) 448-5099

- Confined Space Entry? NO

- * If yes, employ buddy system such that one person acts as a standby employee and does not enter the confined space. A third person must be within earshot. See additional protocols in Section 5.9.4 if confined space entry to occur.

5.3 Personal Protective Equipment (PPE) Requirements

All tasks require Level D protection unless direct reading instruments and/or colorimetric tubes indicate otherwise. See Table 5-1 for specifics.

TABLE 5-1

PERSONAL PROTECTIVE EQUIPMENT (PPE) AND MONITORING EQUIPMENT REQUIREMENTS

JOB TASKS*	PPE†							LEVEL OF PROTECTION	LEVEL IF UPGRADE	ADDITIONAL PPE FOR UPGRADE‡	MONITORING EQUIPMENT§
	SUIT	GLOVES	FEET	HEAD	EYE	EAR	RESPIRATOR				
1. Utility clearance	STD	(Work)	Steel	(HH)	Safety	---	---	D	C	---	---
2. Soil borings	STD	NS	Steel	HH	Safety	Plugs	---	D	C	OV PE Tyvek	PID/CT
3. Monitoring wells	STD	NS	Steel	HH	Safety	Plugs	---	D	C	OV PE Tyvek	PID/CT
4. Well development	STD	NS	Steel	(HH)	Safety	---	---	D	C	OV PE Tyvek	PID/CT
5. Well sampling	STD	NS	Steel	(HH)	Safety	---	---	D	C	OV PE Tyvek	PID/CT
6. Equipment decon	STD/PE Tyvek	NS	Steel	(HH)	Safety/shield	---	---	D	C	OV PE Tyvek	None

Note: Protective equipment assigned in this table may be upgraded or downgraded at any time by the site industrial hygienist, HSM, or qualified site safety officer (SSO) based upon site conditions and air monitoring results.
SEE THE FOLLOWING PAGE FOR FOOTNOTES.

^a **JOB TASKS SCHEDULED:** See Section 3-2 for complete identification of tasks.

^b **PERSONAL PROTECTIVE EQUIPMENT (PPE):**

Note: If upgrade is necessary (consult Table 5-2 for monitoring action levels), all discretionary suit and glove PPE become mandatory.

Suit:	Std	=	Standard work clothes
	Tyvek	=	DuPont spun polyethylene suit (usually white)
	Tyvek*	=	Wear if contact with low moisture contaminated soils is anticipated or encountered
	PE Tyvek	=	Polyethylene-coated Tyvek (usually yellow)
	PE Tyvek*	=	Wear if contact with wet soil or water is anticipated or encountered
Gloves:	Work	=	work gloves (canvas, leather)
	(Work)	=	optional use of work gloves
	NS	=	Nitrile-Solvex gloves <u>or</u> neoprene-latex gloves
	NS*	=	Wear if contact with wet soil or water is anticipated or encountered
	N	=	Nitrile (thick) gloves
V	=	Vinyl gloves may be used briefly for soil texturing purposes	
Feet:	Steel	=	Steel-toed boots
	Steel ⁺	=	Steel-toed plus (+) PVC (polyvinyl chloride) booties <u>or</u> the use of Neoprene or Butyl Rubber boots if contact with contaminated soils and/or water is anticipated or encountered
	Steel ⁺⁺	=	Mandatory use of PVC booties, Neoprene boots, or Butyl Rubber boots
Head:	HH	=	Hard Hat
	(HH)	=	wear hard hat if contact with overhead hazards anticipated or if near drill rig
Eye:	Safety	=	Safety glasses or goggles
	Shield	=	Safety face shield or goggles
Ear:	plugs	=	ear plugs or muffs
	(plugs)	=	wear ear plugs or muffs <u>if</u> near drill rig or boring equipment generating high noise
Respirator:	OV	=	organic vapor cartridges on air purifying respirator
	Dust	=	dust pre-filter covers on OV cartridges
	HEPA	=	High-Efficiency Particulate Air cartridges on air purifying respirators
	OV + HEPA	=	combination organic vapor and HEPA cartridges

^c **LEVELS OF PROTECTION:**

- Level A Self-contained breathing apparatus (SCBA), totally encapsulating suit, two-way radio communications
- Level B SCBA or supplied air respirator (SAR) with an escape bottle, chemically resistant PPE, two-way radio communications
- Level C Full or half-face air-purifying respirator (APR), chemically resistant clothing
- Level D No respiratory protection. Coveralls, safety glasses, hard hat, steel-toed boots, and gloves specified under Level C are required if contact with hazardous materials is probable

- 4
- MONITORING EQUIPMENT:**
- PID = Photoionization detector (Colorimetric tube follow-up may be specified in Table 5-2).
 - LEL = Combustible gas (lower explosive limit = LEL)/oxygen combination meter
 - CT = Specific colorimetric tube (see Table 5-2).
 - CO = Carbon monoxide monitoring if gas- or diesel-powered motors
 - SLM = Sound Level Meter

TABLE 5-2

MONITORING PROTOCOLS AND CONTAMINANT ACTION LEVELS

CONTAMINANT/ ATMOSPHERIC CONDITION	MONITORING EQUIPMENT	MONITORING PROTOCOL	BREATHING ZONE* ACTION LEVEL CONCENTRATIONS	
			MONITORED LEVEL** FOR MANDATORY RESPIRATOR USE	MONITORED LEVEL*** FOR MANDATORY WORK STOPPAGES
Organic Vapors	PID/FID	Before and periodically during all tasks, except utility clearance	10 ppm	25 ppm
Benzene	Draeger 0.5/c prt #8101841 range = 0.5-10 ppm u = 20	Monitor if breathing zone levels are sustained for 1-2 min. at 3 ppm	0.5 ppm	1.0 ppm

Special Instructions:

- * Monitoring performed at operator's breathing zone. Monitor at the source first; if the source concentration is near or above the action level concentration, monitor in the breathing zone (approximately one-half to one foot from the operator's face).
- ** Monitored levels will require the use of an approved respirator system (APR, Supplied Air) as specified in Table 5-1.
- *** Call the Project Manager and Health and Safety Manager for consultation.

5.4 Monitoring Equipment Requirements

Monitoring is to be conducted by the Site Safety Officer (SSO) or his/her designee. The results shall be interpreted by the Site Safety Officer together with the Health and Safety Manager. **All HASP documentation, including monitoring results, calibration logs, tailgate safety meeting forms, utility clearance and utility maps, and Project Manager/Field Supervisor Job-Site Safety Checklists, are to be forwarded to the Project Manager for review and signature on a regular basis (recommended weekly). Once reviewed by the PM, HASP forms should then be distributed to the HSM and to the project file.**

Monitoring is designed to assess exposure to employees during site activities and to determine if Personal Protective Equipment (PPE) is required and/or adequate to assure protection. Because investigation and remediation activities at hazardous waste sites are of an inconsistent nature, it is not possible to assign a practicing monitoring protocol which excludes or is not directly dependent upon professional judgement to determine when monitoring is required to assess exposure.

Thus, the following generic protocol must be followed at a minimum and should be modified to be more conservative (e.g., require more monitoring) if deemed necessary by the SSO or HSM. Under no conditions will the required monitoring frequency decrease.

At a minimum, exposures to suspected chemicals of contamination, as defined in this plan, should be monitored *prior to and during each task/activity*. Additional characterization monitoring shall begin immediately if the operation destabilizes, the environment changes, or the potential for exposure is otherwise affected. Monitoring should continue on a continuous basis until the operation is stable and the SSO or HSM feels that the monitoring is sufficient to adequately assess and characterize exposure during that operation.

Equipment calibration and use requirements are specified in Sections 5.5 and 5.6. The monitoring equipment specified for each job task is summarized in Table 5-1; monitoring protocols and contaminant action levels are specified in Table 5-2.

5.5 Equipment Calibration Requirements

The following summarizes calibration requirements for the equipment specified for at least some of the specified job tasks. See Section 5.4 for task-specific monitoring protocols.

<u>Instrument*</u>	<u>Calibration Check Frequency</u>
PID/FID	Beginning of workday
Colorimetric Tubes	Test pump prior to each day's use
<u>Benzene</u>	

* Not all job tasks may require monitoring. See Table 5-2 for specific protocols.

5.6 Monitoring Protocols

Task-specific instrument monitoring protocols and contaminant action levels are outlined in Table 5-2. The use of action levels and the basis for the selection of monitoring equipment is as explained below:

Action levels determine:

- (1) the field team's selection of personal protective equipment, and
- (2) the field team's ability to remain and work within the exclusion (work) zone.

The selection of the specified monitoring equipment is based on:

- (1) the nature of the contaminants;
- (2) the concentrations of the contaminants;
- (3) the likelihood of the contaminants entering the air in significant levels;
- (4) the probable duration of exposure; and
- (5) the relative sensitivity of the monitoring equipment to the specific contaminants.

Protocol Summary:

All tasks except the initial utility clearance require monitoring with a flame ionizing detector (FID) or a photoionization detection (PID) instrument prior to and during execution of tasks. If a PID or FID reading of 10 ppm is detected, respirator with organic vapor cartridges will be donned. Work will stop at 25 ppm and the Project Manager and Health and Safety Manager will be contacted.

If a PID or FID breathing zone reading of ≥ 3 ppm is detected, a benzene Draeger tube will be utilized to check the breathing zone levels of benzene. If the benzene level is 0.5 ppm or greater, a respirator equipped with organic vapor cartridges will be donned. Work will stop if a benzene level of 1 ppm is reached and the Project Manager and Health and Safety Manager will be contacted.

All direct-reading instrument results will be recorded **directly** on the Direct-Reading Instrument Report (Attachment 5).

5.7 Decontamination Procedures

Depending on the specific job task, decontamination may include personnel themselves, sampling equipment, and/or heavy equipment. The specified level of protection for a task (A, B, C, or D) does not in itself define the extent of personal protection or equipment decontamination. For instance, Level C without dermal hazards will require less decontamination than Level C with dermal hazards. And, heavy equipment will always require decontamination to prevent cross-contamination of samples and/or facilities. The following sections summarize general decontamination protocols.

5.7.1 Heavy Equipment

Heavy equipment will be decontaminated prior to personnel decontamination. Drillers will steam clean their augers after use preferably at locations near the individual drilling operations. Contaminant systems will be set-up for collection of decon fluids and materials. Berms and wind barriers will be set up, if appropriate.

Vehicles that become contaminated with suspect soil will be cleaned prior to leaving the site. The wheel wells, tires, sides of vehicles, etc. will be high-pressure washed at a location to be determined by the SSO.

5.7.2 Personnel

Use steps and procedures outlined below as guidelines for personnel decontamination:

- Brush loose soil from body;
- Boot removal (where appropriate);
- Suit removal (where appropriate);
- Respirator/hard hat removal (where appropriate);
- Respirator wash (where appropriate);
- Glove removal;
- Field wash hands

5.7.3 Samples and Sampling Equipment

The same decontamination line will be used for sampling equipment decon as is used for personnel decon. At a minimum the following is performed:

- Hand augers and buckets will be washed in TSP solution or equivalent and rinsed in distilled water.
- Sampling equipment will be brushed clean and rinsed with distilled water or other appropriate cleaning material.
- Samples will be dry-wiped prior to packaging.

5.7.4 Decon Wastes

- Spent decon solutions may be required to be drummed and disposed of as hazardous waste and/or solvent solutions may be required to be segregated from water rinses.
- Decontamination shall be performed in a manner that minimizes the amount of waste generated.

5.8 Procedures for Waste Handling of Anticipated Wastes

5.8.1 Waste Generation

Anticipated: Yes No

Types: Liquid Solid Sludge Gas

Quantity:

Expected Volume of solid	2 x 55 gallon drums	<i>(include units)</i>
Expected Volume of liquid	<250 gallons	

Characteristics:

Corrosive Ignitable Radioactive Volatile

Toxic Reactive Unknown Carcinogenic

Other (specify): _____

Known Non-Hazardous: Yes No

Known Hazardous Waste or
Extremely Hazardous Waste: Yes _____ No X

Potentially Hazardous Waste or
Extremely Hazardous Waste: Yes _____ No X

Waste Requires Analysis: Yes X No _____

Specify Type: TPH, BTEX

5.8.2 Storage and/or Treatment Methods Proposed:

- This project will ___ will not X generate hazardous wastes.
- These wastes will be (1) temporarily stored* in the following manner(s) and stored within secondary containment:

Open head 55-gallon drum _____
Closed head 55-gallon drum X _____
Overpack drum _____
Baker tanks _____
Lined waste bins _____
Other _____

and/or (2) treated on-site _____

Neutralization _____ Aeration _____
Physical Change _____ Chemical _____
Bioremediation _____ Change _____

Is a permit required to treat? Yes _____ No _____

* See following page for footnote.

* **NOTE:** Temporary storage of hazardous waste without a permit is limited to 90 days. Label all temporary storage containers with:

- (1) "Contents under Analysis"
- (2) The composition of the waste (soil, drilling, cuttings, etc.)
- (3) The nature of known contaminants and their hazardous properties; (e.g., soil contaminated with gasoline - inhalation and dermal hazard);
- (4) The name and address of the site;
- (5) The date of accumulation; and,
- (6) A phone contact for questions (*the appropriate McLaren/Hart office*)

* **NOTE:** Remind client to conduct weekly inspections of all hazardous waste drums.

5.8.3 Disposal

- If extremely hazardous waste is identified, an Extremely Hazardous Waste Disposal Permit is required.
- Hazardous waste must be accompanied with a signed manifest.

5.9 Site Operating Procedures

5.9.1 Initial Site Operating Procedures

- Locate nearest available telephone. Indicate location on Site Map (Attachment 1).
- Determine wind direction, establish hotline, and set up decontamination facilities. Note wind direction and location of decontamination facilities on site map (Attachment 1).
- Post Site Map (Attachment 1) Confirm and post emergency telephone numbers and route to hospital.
- Designate at least one vehicle for emergency use.

- If toilet facilities are not located within a 5-minute walk from the decontamination facilities, either provide a chemical toilet and hand washing facilities or have a vehicle available (not the emergency vehicle) for transport to nearby facilities.
- Prior to working on-site, inspect the site for hazards (i.e. chemicals, spiders, electrical hazards).
- Conduct or review utility clearance prior to start of work, if appropriate.

5.9.2 General Daily Operating Procedures

- Document any procedural changes made from that specified in the HASP and ensure these procedural change descriptions/explanations are forwarded to the PM and project file.
- Hold daily Tailgate Safety Meetings prior to work start. Use Attachment 8 to document initial Tailgate Safety Meetings at the beginning of a project and/or when commencing new job tasks in new areas.
- Use monitoring instruments and follow designated action levels specified in Sections 5.4 and 5.5 and Table 5-2.
- Use personal protective equipment (PPE) as specified in Section 5.3 and Table 5-1.
- Try to remain upwind of operation.
- Vent wells from an upwind position.
- No work will be conducted without adequate natural light or without appropriate supervision.
- Dust control measures may be needed on roads that cross the exclusion zone.
- Spoils from excavation work should be placed so as not to be in the expected paths of travel.
- Drilling cuttings should be kept shoveled up and drummed, out of the way of workers. Liquids generated during drilling should be contained out of the way to limit the amount of mud created around the rig.
- Care should be taken to limit the extent that a piece of equipment comes into contact with contamination (e.g., on backhoes, limit contact to the arm and bucket).
- A work/rest regime will be initiated when ambient temperatures and protective clothing create a potential heat stress situation.

- Heat Stress Recommended Work/Rest Regime

If ambient temperatures exceed 75°F, the following work/rest regime is recommended.

<u>Temperature</u>	<u>Work</u>	<u>Rest</u>
75 - 80	90 min.	15 min.
80 - 85	60 min.	15 min.*
85 - 90	45 min.	15 min.*
90 - 95	30 min.	15 min.*

*Rest in a shaded area.

At least 8 ounces of cool water, Gatorade, or diluted fruit juice must be consumed at each rest break. Guidelines assume light to moderate work and may need to be modified further based on the level of PPE worn.

5.9.3 Personnel Operating Procedures

- Do not walk through areas of obvious or known contamination.
- Do not handle or touch contaminated materials directly.
- Make sure all PPE has no cuts or tears prior to donning.
- Inspect the integrity of the PPE regularly.
- Fasten all closures on suits, covering with tape if necessary.
- Take particular care to protect any existing skin injuries.
- Stay upwind of airborne contaminants.
- Do not carry cigarettes, gum, etc. into contaminated areas.
- Refer to Site Safety Officer for specific concerns for each individual site task. Do not climb over/under drums, or other obstacles and always employ the buddy system.
- Practice contamination avoidance, on- and off-site. Activities should be planned ahead of time.
- Apply immediate first aid to any and all cuts, scratches, abrasions, etc.
- Report all accidents, no matter how minor, to the SSO.

- Be alerted to your own physical condition. Watch your buddy for signs of fatigue, exposure, etc.

5.9.4 Additional Site-Specific Operating Procedures

None

6.0 CONTINGENCY PLAN

The nature of work at contaminated or potentially contaminated work sites makes emergencies a continual possibility. Although emergencies are unlikely and occur infrequently, a contingency plan is required to assure timely and appropriate response actions. The contingency plan is reviewed at tailgate safety meetings.

Tailgate Safety Meetings are required in order to fulfill regulatory provisions for training employees on site-specific hazards as a means of minimizing work-place injuries and illnesses. Prior to commencing work on a site, a Tailgate Safety Meeting (see Attachment 8) will be conducted to review site-specific hazards and protocols.

The following sections outline emergency procedures and routes.

6.1 Emergency Procedures

6.1.1 Incident

If an emergency incident occurs, take the following action:

- Step 1: Size-up the situation based on the available information.
- Step 2: As necessary, request assistance from outside sources and/or allocate personnel and equipment resources for response.
- Step 3: Notify the Site Safety Officer and/or Field Supervisor.
- Step 4: As appropriate, evacuate site personnel and nearby public and contain hazards.
- Step 5: Consult the posted emergency phone list and contact key project personnel.
- Step 6: Prepare an incident report. Forward incident report to Project Manager/Health and Safety Manager within 24 hours.

6.1.2 Injury

If an injury occurs, take the following action:

- Step 1: Assess the severity of the injury and perform life-saving first aid/CPR as necessary (and able) to stabilize the injured person.
- Step 2: Get medical attention for the injured person immediately. (Call 911 or consult Emergency Personnel and Services Phone List [Attachment 7] which must be posted at the site).
- Step 3: Notify the Site Safety Officer and Field Supervisor immediately. The Site Safety Officer will assume charge during a medical emergency.
- Step 4: Depending on the type and severity of the injury, notify the Corporate Consulting Physician or the occupational physician for the injured person.
- Step 5: Notify the injured person's personnel office, including the Regional Manager, Project Manager, and Health and Safety Manager.
- Step 6: Prepare an accident report. The Site Safety Officer is responsible for its preparation and submittal to the Health and Safety Manager (HSM) and Corporate Health and Safety (CHSD Fax No. (412) 787-8210) office within 24 hours.

6.1.3 Site-Specific Procedure

None

6.2 Emergency Routes

See Hospital Route Map - Attachment 4 (**TO BE POSTED**)

ATTACHMENT 1

SITE MAP(S)

Directions to site from Alameda Office:

Through Posey Tube to 7th Street; Left on 7th Street; Right on Broadway; go under 580
overpass; site is at Northeastern corner of intersection of Broadway and 38th Street

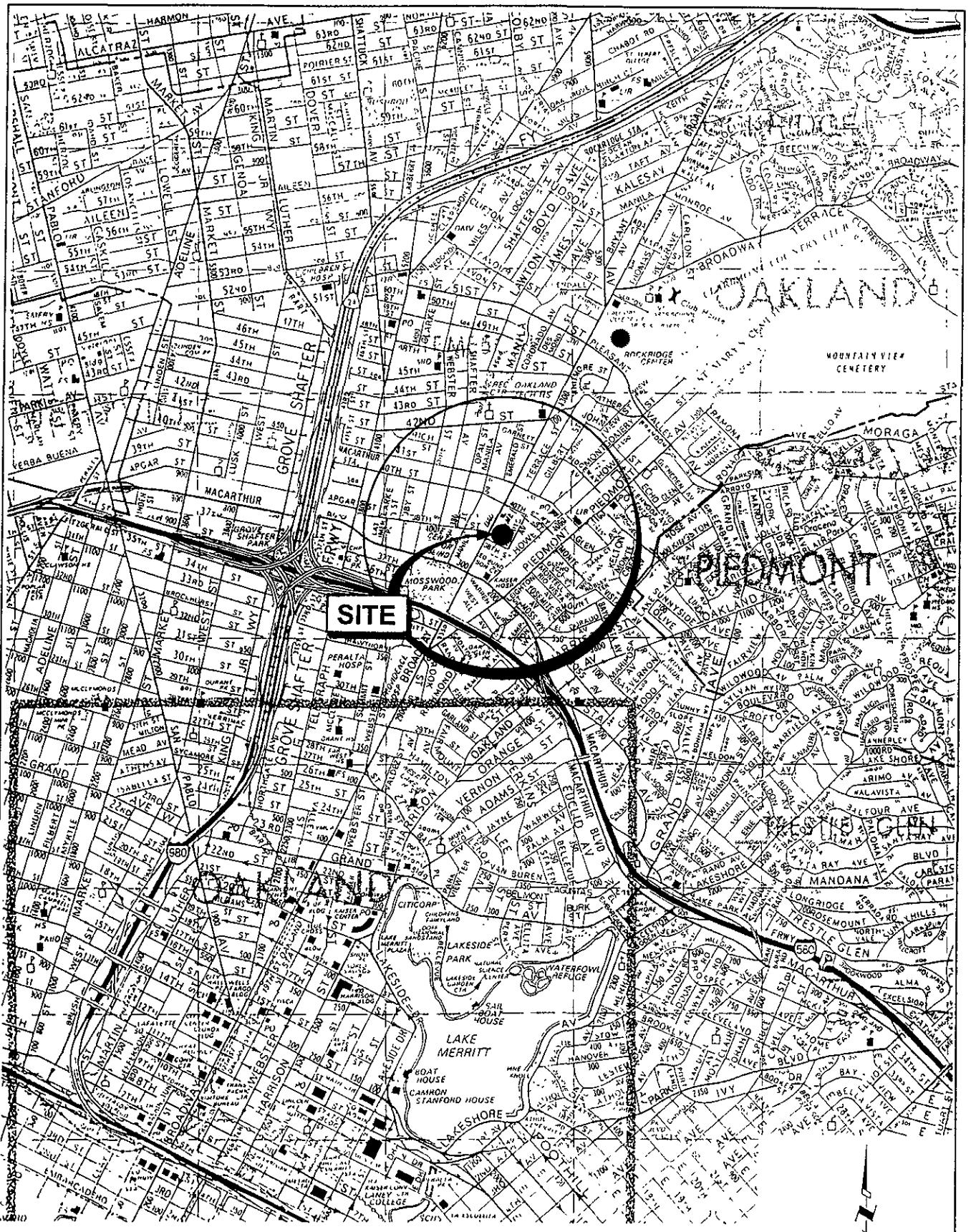


FIGURE 1
 SITE LOCATION MAP
 3810 BROADWAY, OAKLAND, CALIFORNIA

ATTACHMENT 2

UTILITY CLEARANCE CHECKLIST

[NOTE: Will be provided if drilling/coring is performed during the time period that this plan is in effect.]



**McLarenTM
Hart**

USA Contact Date: _____

1-800-642-2444

USA Ticket Number: _____

UTILITY CLEARANCE CHECKLIST

Task Number: _____

Facility Contact: _____

Task Descriptions
(well drilling, trenching): _____

Project Location: _____

Project Start Date: _____

Clearance Request Date: _____

McLaren/Hart Project Manager: _____

Drilling/Construction Supervisor: _____

FACILITY DRAWINGS INSPECTION (INITIALS and DATE)		FIELD VERIFICATION (INITIALS and DATE)	
A. _____	Water Main	A. _____	Water Main
B. _____	Sanitary Sewer	B. _____	Sanitary Sewer
C. _____	Storm Drain	C. _____	Storm Drain
D. _____	Telephone	D. _____	Telephone
E. _____	Electrical	E. _____	Electrical
F. _____	Gas Lines	F. _____	Gas Lines
G. _____	Steam Lines	G. _____	Steam Lines
H. _____	Liquid Fuel	H. _____	Liquid Fuel
I. _____	Compressed Air	I. _____	Compressed Air
J. _____	Overhead Lines	J. _____	Overhead Lines
K. _____	Other	K. _____	Other

Clearance Engineer (signature and date): _____

Supervising Engineer Verification (after utility clearance)
(signature and date): _____

Distribution:

Project Manager Signature/Date

Clearance Engineer

Health and Safety Manager

File

ATTACHMENT 3

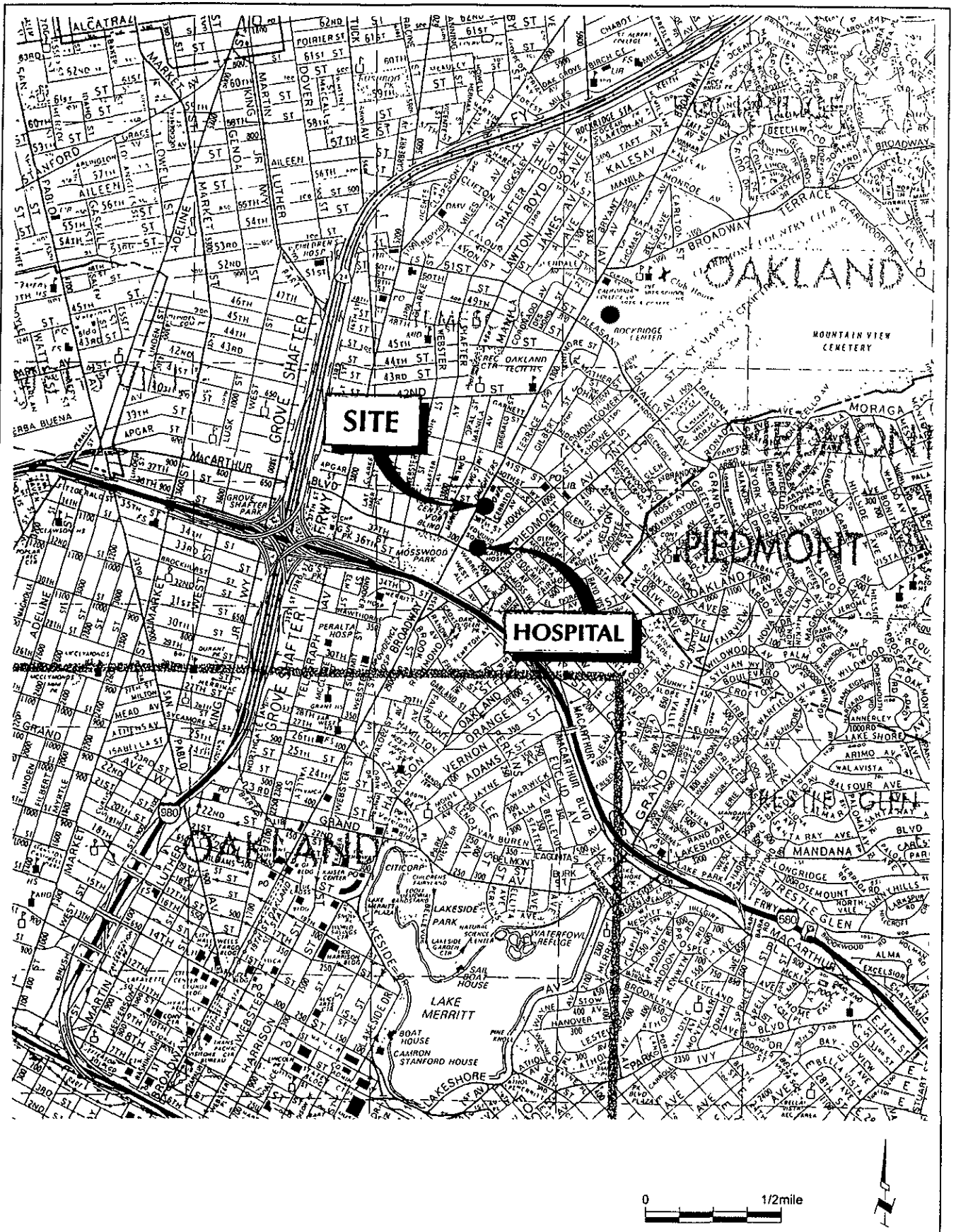
MAP IDENTIFYING UTILITIES

[NOTE:Map identifying utilities will be attached if drilling/coring is performed during the time period that this plan is in effect.]

ATTACHMENT 4
HOSPITAL ROUTE MAP

Directions to the hospital from the job site:

Left (south) on Broadway; next crossroad is MacArthur; Left onto MacArthur; hospital is immediately on left.



MAP SOURCE THOMAS BROTHERS MAPS, ALAMEDA & CONTRA COSTA CO. CA, 1991

APPROX. SCALE (MILE)



FIGURE 1
 HOSPITAL ROUTE MAP
 FRIEDKIN PROPERTY
 3810 BROADWAY, OAKLAND, CA

ATTACHMENT 5
DIRECT-READING INSTRUMENT RECORDINGS



**McClaren
Hart**

ENVIRONMENTAL ENGINEERING CORPORATION

DIRECT READING AIR MONITORING LOG

DATE: _____

PROJECT NAME _____

PROJECT NO.: _____

Time	Location	Activity	Instrument	Substance/ Agent	Concentration	Initials

Weather Conditions: _____ Wind Speed: _____ Wind Dir.: _____ Temp.: _____

Comments: _____

Copy to Health and Safety Manager and project file.
 H&S Manager Review _____ Date _____

ATTACHMENT 6
INSTRUMENT CALIBRATION LOG

INSTRUMENT CALIBRATION LOG

Client Name and Site:	Project Manager:	Task Number:
Calibration Event:		
Person Calibrating:		Date:
Instrument Type:	Calibration Gas:	
Model:	Calibration Gas Concentration (ppm):	
Serial #:	Reading (ppm):	
Calibrator Model:	Adjusted Reading (If Necessary):	
Comments:		
Person Calibrating:		Date:
Instrument Type:	Calibration Gas:	
Model:	Calibration Gas Concentration (ppm):	
Serial #:	Reading (ppm):	
Calibrator Model:	Adjusted Reading (If Necessary):	
Comments:		
Person Calibrating:		Date:
Instrument Type:	Calibration Gas:	
Model:	Calibration Gas Concentration (ppm):	
Serial #:	Reading (ppm):	
Calibrator Model:	Adjusted Reading (If Necessary):	
Comments:		
Person Calibrating:		Date:
Instrument Type:	Calibration Gas:	
Model:	Calibration Gas Concentration (ppm):	
Serial #:	Reading (ppm):	
Calibrator Model:	Adjusted Reading (If Necessary):	
Comments:		
Person Calibrating:		Date:
Instrument Type:	Calibration Gas:	
Model:	Calibration Gas Concentration (ppm):	
Serial #:	Reading (ppm):	
Calibrator Model:	Adjusted Reading (If Necessary):	
Comments:		

NOTE: Return to HSM Upon Completion of Site Work.

ATTACHMENT 7
EMERGENCY PERSONNEL AND SERVICES

**McLAREN/HART ENVIRONMENTAL ENGINEERING
EMERGENCY PERSONNEL AND SERVICES
(To be Posted)**

TITLE	NAME	PHONE NUMBER
<i>EMERGENCY</i>		
Police	Emergency Service	911 or _____
Fire	Emergency Service	911 or _____
Local Hospital	Kaiser	(510) 596-1000
Local Ambulance/Rescue	Emergency Service	911
Poison Control Center	UCSF General Hospital	800 523-2222
National Response Center	HAZMAT	(800) 424-8802
<i>PROJECT/BUSINESS</i>		
Regional Health & Safety Manager	David Durst	(916) 638-3696
Principal-in-Charge	Clifton Davenport	(510) 521-5200
Project Manager	Saul Germanas	(510) 521-5200
Health & Safety Manager	David Durst	(916) 638-3696
Field Supervisor	Chris Warwick	(510) 521-5200
Client Contact	Gerald Friedkin	(510) 465-7500
Site Contact	None	
Subcontractor	Gregg Drilling	(510) 313-5800
Subcontractor	Precision Sampling	(415) 456-9875
Subcontractor	Subtronics	(510) 686-3747

Site Location: (for directing response teams) Precision Tune, 3810 Broadway, Oakland, CA, corner of Broadway and 38th Street.

ATTACHMENT 8
TAILGATE SAFETY MEETING FORM



**McClaren
Hart**

ENVIRONMENTAL ENGINEERING CORPORATION

TAILGATE SAFETY MEETING

DATE _____ TIME _____ PROJECT NO. _____

SITE LOCATION _____

TYPE OF TRAINING

_____ Technical Transfer/H&S Meeting _____ Tailgate Safety Meeting
_____ HASP Reading/Review _____ Other: _____

TRAINING PRESENTED BY: _____

TOPICS COVERED: _____

ATTENDEES

NAME PRINT

SIGNATURE

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

SITE SUPERVISOR: _____ DATE: _____

(Copy to Health and Safety Manager and project file.)
H&S Manager Review _____ Date _____

ATTACHMENT 9

**McLAREN/HART ILLNESS AND INJURY PREVENTION PROGRAM
CODE OF SAFE PRACTICES**

**McLAREN/HART ILLNESS AND INJURY PREVENTION PROGRAM
CODE OF SAFE PRACTICES**

1. All workers shall follow these safe practice rules, render every possible aid to safe operations, and report all unsafe conditions or practices to the job supervisor.
2. Job supervisors shall insist on workers observing and obeying every rule, regulation, and order as is necessary to the safe conduct of the work, and shall take such action as is necessary to obtain observance.
3. All workers shall be given frequent accident prevention instructions. Instructions shall be given at least every 10 working days.
4. Anyone known to be under the influence of drugs or intoxicating substances which impair the worker's ability to safely perform the assigned duties shall not be allowed on the job while in that condition.
5. Horseplay, scuffling, and other acts which tend to have an adverse influence on the safety or well-being of the workers shall be prohibited.
6. Work shall be well planned and supervised to prevent injuries in the handling of materials and working with equipment.
7. No one shall knowingly be permitted or required to work while the worker's ability or alertness is so impaired by fatigue, illness, or other causes that it might unnecessarily expose the employee or others to injury.
8. Workers shall not enter manholes, underground vaults, chambers, tanks, silos, or other similar places that receive little ventilation, unless it has been determined that it is safe to enter.
9. Workers shall be instructed to ensure that all guards and other protective devices are in proper places and adjusted, and shall report deficiencies promptly to the job supervisor.
10. Crowding or pushing when boarding or leaving any vehicle or other conveyances shall be prohibited.
11. Workers shall not handle or tamper with any electrical equipment, machinery, or air or water lines in a manner not within the scope of their duties, unless they have received instructions from their job supervisor.
12. All injuries shall be reported promptly to the job supervisor so that arrangements can be made for medical or first aid treatment.

McLAREN/HART ILLNESS AND INJURY PREVENTION PROGRAM
CODE OF SAFE PRACTICES
(Continued)

13. When lifting heavy objects, the large muscles of the legs instead of the small muscles of the back shall be used.
14. Inappropriate footwear or shoes with thin or badly worn soles shall not be worn.
15. Materials, tools, or other objects shall not be thrown from buildings or structures until proper precautions are taken to protect others from the falling objects.
16. Workers shall cleanse thoroughly after handling hazardous substances, and follow special instructions from authorized sources.
17. Work shall be so arranged that workers are able to face ladders and use both hands while climbing.
18. No burning, welding, or other source of ignition shall be applied to any enclosed tank or vessel, even if there are some openings, until it has first been determined that no possibility of explosion exists, and authority for work is obtained from the job supervisor.
19. Any damage to scaffolds, false work, or other supporting structures shall be immediately reported to the job supervisor and repaired before use.

USE OF TOOLS AND EQUIPMENT

20. All tools and equipment shall be maintained in good condition.
21. Damaged tools or equipment shall be removed from service and tagged "DEFECTIVE."
22. Only appropriate tools shall be used for the job.
23. Wrenches shall not be altered by the addition of handle-extensions or "cheaters."
24. Files shall be equipped with handles and not used to punch or pry.
25. A screwdriver shall not be used as a chisel.
26. Wheelbarrows shall not be used with handles in an upright position.
27. Portable electric tools shall not be lifted or lowered by means of the power cord. Ropes shall be used.

McLAREN/HART ILLNESS AND INJURY PREVENTION PROGRAM
CODE OF SAFE PRACTICES
(Continued)

28. Electric cords shall not be exposed to damage from vehicles.
29. In locations where the use of a portable power tool is difficult, the tool shall be supported by means of a rope or similar support of adequate strength.

MACHINERY AND VEHICLES

30. Only authorized persons shall operate machinery or equipment.
31. Loose or frayed clothing, or long hair, dangling ties, finger rings, etc. shall not be worn around moving machinery or other sources of entanglement.
32. Machinery shall not be serviced, repaired, or adjusted while in operation, nor shall oiling of moving parts be attempted, except on equipment that is designed or fitted with safeguards to protect the person performing the work.
33. Where appropriate, lock-out procedures shall be used.
34. Workers shall not work under vehicles supported by jacks or chain hoists, without protective blocking that will prevent injury if jacks or hoists should fail.
35. Air hoses shall not be disconnected at compressors until the hose line has been bled.
36. All excavations shall be visually inspected before backfilling, to ensure that it is safe to backfill.
37. Excavation equipment shall not be operated near tops of cuts, banks, and cliffs if workers are working below.
38. Tractors, bulldozers, and scrapers shall not operate where the possibility of overturning in dangerous areas exists, like edges of deep fills.
39. When loading in an area where there is a possibility of dangerous slides or movement of material, the wheels or treads of loading equipment, other than that riding on rails, should be turned in the direction which will facilitate escape in case of danger, except in a situation where this position of the wheels or treads would cause a greater operational hazard.

ATTACHMENT 10

**PROJECT MANAGER/FIELD SUPERVISOR
JOB SITE SAFETY CHECKLIST**

PROJECT MANAGER/FIELD SUPERVISOR JOBSITE SAFETY CHECKLIST

Client Name _____

Site Name _____

Project Number _____

Date of Inspection _____

Project Manager/Site Supervisor _____

Auditor _____

A. Adequate at time of inspection.
B. Need immediate attention.
C. Item not applicable.
N/A. No items in section applicable.

Check one of the following:

Check one of the following:

- | | A | B | C |
|--|--------------------------|--------------------------|--------------------------|
| A. Posters & Records N/A | <input type="checkbox"/> | | |
| 1. OSHA poster displayed? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Site supervisor holding weekly meetings - recording? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Emergency medical numbers posted? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. Copy of OSHA regulation on jobsite? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. Have utility contacts been made/recorded? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 6. Are safety "tail-gate" meetings daily? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 7. Blank accident report forms available? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 8. Are MSDSs available? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| B. Housekeeping & Sanitation N/A | <input type="checkbox"/> | | |
| 9. General housekeeping of jobsite? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 10. Passageways and walkways clear? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 11. Nails removed from lumber? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 12. Materials of all types properly stockpiled? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 13. Is an area provided for waste and trash and is it removed regularly? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 14. Adequate lighting in passageways, stairways, and work areas? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 15. Toilet facilities adequate and clean? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 16. Sanitary supply of drinking water? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 17. Disposable drinking cups and refuse container available? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 18. Means provided for sanitizing personal protective equipment? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| C. Fire Protection N/A | <input type="checkbox"/> | | |
| 19. Are "No Smoking" or "Flammable" signs posted at all storage and fueling locations? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 20. Clear access provided to all fire fighting equipment/are inspections recorded? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 21. Location of all fire fighting equipment prominently marked? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 22. Are flammable liquids stored in approved containers? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 23. Fire extinguishers adequate size? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 24. Large fuel tanks properly diked and separated? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| D. First Aid N/A | <input type="checkbox"/> | | |
| 25. Is an individual size first aid kit available? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 26. First aid kits well stocked? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 27. Trained first-aiders on jobsite? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

- | | A | B | C |
|---|--------------------------|--------------------------|--------------------------|
| E. Electrical N/A | <input type="checkbox"/> | | |
| 28. Distribution boxes covered or marked? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 29. GFI's in use or positive grounding been tested? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 30. Temporary lighting electrically protected? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| F. Tools N/A | <input type="checkbox"/> | | |
| 31. Damaged or broken tagged out of service? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 32. Proper storage space provided? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 33. Operating guards on all power tools? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 34. Persons using power actuated tools trained? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 35. Are guards provided on grinders? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 36. Airhose couplers secured or safety valve in? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 37. Tools being properly used? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 38. Correct personal protection being used? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 39. Extension cords tested for assured ground? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| G. Structures N/A | <input type="checkbox"/> | | |
| 40. Floors opening covered or guardrailed? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 41. Standard guardrail on scaffolds, bridge decks, floors of buildings, work platforms, and walkways? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 42. Work areas clear of debris, snow, ice, and grease? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 43. Stairways provided with handrails? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 44. Ladders properly constructed? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 45. Side rails of ladders extend 36" above landing? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 46. Scaffolds properly anchored, braced, and plumb? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 47. Protection provided over vertical rebars working above? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 48. Safety belts in use when guardrails are? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 49. Employees clear of swinging crane loads? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 50. Tag lines used on suspended crane loads? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 51. Gas cylinders separated, secured upright, and capped if not in use? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 52. Safety lines in use on suspended scaffolds? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 53. Heating devices properly ventilated? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| H. Drill Rigs N/A | <input type="checkbox"/> | | |
| 54. Rig at least 20 feet from power lines? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 55. Rig inspected daily? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 56. Rig "kill" switch operational? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 57. PPE worn? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 58. Work area free of debris? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 58. Hand tools in good condition? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 59. Wire rope inspected and in good condition? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

A. Adequate at time of inspection.
B. Need immediate attention.

C. Item not applicable.
N/A Not items in section applicable.

Check one of the following:

Check one of the following:

Traffic Control

N/A

- 1. Advance signing at approaches to work area?
- 2. Correct message on signs?
- 3. Flag persons properly dressed and equipped?
- 4. Flag persons performing properly?

A	B	C
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Welding & Cutting

N/A

- 5. Using right type of eye protection?
- 6. Gauges, valves, torches, and lines in good condition and free of oil and grease?
- 7. Cylinders not in use capped?
- 8. Cylinders in use or storage secured upright?
- 9. Anti-flashback valves at torch?
- 10. Stored oxygen separated from acetylene by 20 feet?
- 11. Fire extinguisher near welding or cutting operations?
- 12. Adequate ventilation provided?
- 13. Grounding for arc welding machine?
- 14. All parts of arc welding outfits properly insulated?

A	B	C
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Heavy Equipment

N/A

- 15. Operators wearing hard hats?
- 16. Hearing protection being used?
- 17. Dust control?
- 18. Haul road adequate and maintained?
- 19. Equipment speeds excessive for safety?
- 20. Horns and back-up alarms functioning?
- 21. Clearing cabs on machines when clearing?
- 22. Engines shut-down when refueling or lubricating?
- 23. Seat belts on machines with ROPS?
- 24. Steps and hand holds adequate and safe conditions?
- 25. Adequate lighting of haul roads at night?
- 26. Parked or unattended equipment have blade lowered to the ground?
- 27. No hitchhikers riding on equipment?
- 28. Full fire extinguisher near refueling truck?
- 29. Dump man prominently located?
- 30. Overhead guard on fork lift truck?
- 31. Vehicles with restricted rear visibility equipped with operating back-up alarms?

A	B	C
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Cranes

N/A

- 32. Power line distance from machines?
- 33. Annual inspection?
- 34. Cables in safe condition?
- 35. Rear swing protection and pinch point guarding?
- 36. Exposed gears, shaft, and belts guarded?
- 37. Fire extinguisher, boom angle indicator, load capacity chart and hand signal poster in crane?
- 38. Signs and/or flags on cranes in transit?
- 39. Operator making daily inspections and test?

A	B	C
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Trenching & Excavations

N/A

- 40. Trench side shored, layed back or boxed?
- 41. Utilities contacted and located before digging?
- 42. Ladder in trench?
- 43. Stop logs placed where necessary along top of excavated material stockpiled at least 2 feet from the edge of the trench?

A	B	C
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<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- 104. Laser warning signs in place?
- 105. Adequate ventilation in pipe?
- 106. Traffic control adequate?
- 107. Sides of excavation for building shored or protected?
- 108. Oxygen level tested in manholes, trenches, confined space greater than 5 feet deep?
- 109. Public protected from exposure to open excavation?

A	B	C
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Miscellaneous

N/A

- 110. Procedures established to handle toxic and carcinogenic materials?
- 111. Fall protection being used on steel erection?
- 112. Walls properly braced (concrete and block construction)?
- 113. Guards in place and used on wood-working machines?
- 114. Explosives being used, transported, and stored in compliance with regulations?
- 115. Belts, pulleys, shafts, gears, and chains guarded on all machinery and equipment?
- 116. Masonry saws grounded and personal protective equipment being used?

A	B	C
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Confined Spaces

N/A

- 117. Supervisor has inspected site for confined spaces?
- 118. Confined space entry permit is utilized?
- 119. Atmosphere is monitored for O₂/LEL and toxic gases?
- 120. Personnel have been trained in confined space entry?
- 121. Does standby personnel have CPR training?

A	B	C
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Hazardous Waste Operations

N/A

- 122. SSHP available on-site and current?
- 123. Project staff have 40-hr/8-hr Hazwoper Training?
- 124. Subcontractors provided proof of appropriate training?
- 125. Respirators worn per Action Level Table Criteria?
- 126. Is PPE worn as required?
- 127. Are hardhats being worn?
- 128. Is instrumentation calibrated prior to use?
- 129. Is direct reading instrument data recorded on form provided for this purpose?
- 130. Is personnel/equipment decontamination performed?
- 131. Are MSDS's available for hazardous materials?
- 132. If toxic fumes, vapors, dusts present, is ventilation adequate?
- 133. Is hospital route map posted on site?
- 134. Is first aid kit available on site?

A	B	C
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* This checklist does not include hazards on every site but is intended to remind you of the most common hazards.

Unsafe acts and/or practices observed.

, the undersigned supervisor, have reviewed the indicated hazards and will take the necessary action to immediately correct them.

Signature of Project Supervisor

Date

Signature of Project Manager

Date

Project Manager Distribution:

- H&S Manager
- Project File
- Other _____