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LETTER OF TRANSMITTAL

Date: December 27, 1993

To: Scott Seery
Alameda County Health Agency
Department of Enviromental Health
80 Swan Way #200
Oakland, CA. 94621

From: Terry Kinn
Project: 2241-008
Project No:

WE ARE TRANSMITTING:

- ☐ Fax only
- ☐ Fax with copy to follow
- ☐ Herewith
- ☐ Under separate cover
- ☐ In accordance with your request

ACTION:

- ☒ For Approval
- ☐ For Distribution by You
- ☐ For Your Information
- ☐ For Your Record
- ☒ Review and Respond
- ☐ As Indicated on Each Submittal
- ☐ As Requested
- ☐ Rejected - Resubmit
- ☐ Amend and Resubmit
- ☐ Make Correction Noted
- ☐ No Exception Taken
- ☐

Number of Copies	DESCRIPTION OF ITEMS OR REMARKS
1	Workplan for Nike Military Site

REMARKS:
Please review our workplan, if you have any questions or comments please give me a call at 748-6459. If I do not hear from you, I will follow up with a phone call in a few weeks to check on the status of this project. Thanks TK.

Copies to:

WESTERN REGIONAL OFFICE · TECHNICAL SERVICES GROUP
1255 HARBOR BAY PARKWAY, SUITE 100 · ALAMEDA, CALIFORNIA 94501
TELEPHONE: (510) 748-6444 · FAX: (510) 748-6441

Versar INC.

December 20, 1993

Mr. Scott Seery
Hazardous Materials Specialist
Alameda County Health Care Services Agency
UST Local Oversight Program
80 Swan Way, Room 200
Oakland, California 94621

Subject: WORKPLAN TO CONDUCT A SUBSURFACE INVESTIGATION AT THE NIKE MILITARY SITE AT 2892 FAIRMONT DRIVE, SAN LEANDRO, CALIFORNIA; Versar Project Number 2241-008

Dear Mr. Seery:

This workplan has been prepared on behalf of the County of Alameda General Services Agency (hereinafter referred to as the County) to present the scope of work to conduct a subsurface investigation at the former Nike Military Site (hereinafter referred to as the site) at 2892 Fairmont Drive in San Leandro, California (see Figure 1). The information presented in this workplan is based on available information obtained from the County. The scope of work was developed to further characterize the lateral and vertical extent of petroleum hydrocarbon constituents in the subsurface surrounding the former location of an underground storage tank recently removed from the site. All field work will be conducted in general accordance with applicable guidelines set forth in the Tri-Regional Board Staff Recommendations for the Preliminary Evaluation and Investigation of Underground Storage Tank Sites. A site specific Health and Safety Plan for this project is also presented in Attachment 1.

INTRODUCTION/BACKGROUND

The site, presently owned by the County, is an abandoned military property situated atop Mount Chabot at an approximate elevation of 800 feet above mean sea level. On October 27, 1993, Environmental Science & Engineering, Inc. removed a 6,000 gallon underground storage tank (UST), and associated piping from the property. The UST was formerly used to store and dispense diesel fuel to an on-site generator. Upon exposure of the UST it was discovered that the tank was strapped to a concrete footing located at the base of the excavation. The concrete footing was left in the open excavation following the tank removal. Laboratory analysis of soil samples collected from each end of the footing indicated that total petroleum hydrocarbons as diesel (TPH/D) were present in the soil at the eastern end of the UST excavation at a concentration of 3,300 milligrams per kilogram (mg/kg). In addition, laboratory analysis of one of the samples collected from the excavated soils stockpiled on the site indicated that TPH/D were present at a concentration of 140 mg/kg.

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Due to the physiographic setting of the site it is not anticipated that groundwater will encountered during this investigation.

OBJECTIVE

The objective of the work summarized in this workplan is to assess the extent of petroleum hydrocarbons in the subsurface surrounding the former UST location in order to delineate the limits of additional soil excavation to be conducted by the County.

APPROACH

The approach that will be used to meet the stated objective will consist of removing the concrete footing from the excavation, backfilling the excavation, drilling soil borings and collecting soil samples for chemical analysis.

SCOPE OF WORK

The scope of work developed within the approach includes the following tasks:

Task 1 - Preparation of a Site Specific Health and Safety Plan

A site-specific health and safety plan (HSP) has been prepared in compliance with federal, California OSHA, and Alameda County Department of Environmental Health requirements (see Attachment 1). The HSP was developed for the specific conditions at the site to ensure safe work practices are followed by all personnel and to minimize the risk of exposure to potentially hazardous materials at the site.

Task 2 - Field Investigation

The field investigation will consist of two subtasks. The initial subtask will involve the breakup and removal of a concrete footing, presently located at the bottom of the open excavation. In order to safely and adequately position the drill rig in the desired sampling locations, the excavation will subsequently be backfilled. The second subtask will involve advancing soil borings through the backfilled excavation, as well as adjacent to the excavation, to collect soil samples from native soils surrounding the former UST location.

2.1 - Excavation Backfilling

In order to obtain soil samples from native soils beneath the excavation, the existing concrete footing will be broken apart using a hydraulic hammer attached to a backhoe tractor. The broken pieces of concrete will be removed and stockpiled on-site. The excavation will then be temporarily backfilled with the exisiting stockpiled soils and additional surrounding surface soils. Compaction of the backfill material will only be conducted to the degree necessary to allow locating a drill rig over the excavation.

2.2 - Soil Borings

Following completion of backfilling procedures, it is estimated that up to six soil borings will be drilled to depths ranging from 35 to 50 feet below ground surface (bgs), or until refusal is encountered using a truck-mounted drill rig equipped with hollow-stem augers. It is anticipated that three of the soil borings will be located over or directly adjacent to the backfilled excavation. The remaining borings will be located within 15 to 25 feet of the perimeter of the eastern and southern portions of the excavation (see Figure 2). Final location and placement of the soil borings will be adjusted in the field based on the observed conditions encountered in the field. Soil samples will be collected at 5 foot intervals beginning at 5 feet bgs and at observed lithologic changes. Collection of soil samples will be accomplished using a California-modified split-spoon sampler lined with stainless steel or brass sample tubes. Upon retrieval of the sampler at each sample depth, the lowest sample tube will be removed and covered with foil, capped, labeled for identification purposes, and placed in an insulated chest with ice pending shipment to a California-certified hazardous waste laboratory for chemical analysis. The second sample tube at each sample depth will be retained to screen for the presence of organic vapors using an organic vapor monitor (OVM). In order to minimize the chances for cross-contamination, all downhole sampling equipment will be washed between each sampling event in a laboratory-grade detergent solution, followed by two tapwater rinses and a final rinse with deionized water. In addition, the augers and associated drilling equipment will be washed with a hot-pressure washer between boreholes. The soil borings will be logged under the direction of a California-state registered geologist. A log of each boring will be generated by the on-site geologist to record the types of soils observed and conditions encountered during drilling. Upon completion, the soil borings will be backfilled to surface grade with a cement-bentonite grout. All excess soil cuttings will be stockplied on plastic and equipment rinsate water stored in labeled 55-gallon DOT-approved drums.

Task 3.0 - Laboratory Analytical Program

Soil samples collected during the field investigation will be submitted for analysis to a state-certified hazardous waste laboratory. The collection, handling and transport of the samples will be documented using chain-of-custody procedures, including the use of chain-of-custody forms.

a minimum of

It is anticipated that two soil samples from each soil boring will be selected for laboratory analysis based on the observed field conditions and the OVM screening. As such, 12 soil samples will be analyzed for total petroleum hydrocarbons as diesel (TPH/D) in accordance with Environmental Protection Agency (EPA) Method 8015, modified. In addition, two samples will also be analyzed for BTEX in accordance with EPA Method No. 8020. The BTEX analysis is proposed as confirmation analysis for the previous data generated during the original UST removal.

?

Task 4.0 - Reporting

A draft report, including a description of the conditions encountered during field activities, logs of borings, laboratory results and a discussion of the results with recommendations for any remedial alternatives, and site figures will be submitted to the County for review. Upon receipt of comments, the report will be finalized for submittal to the Alameda County Health Care Services Agency, UST Local Oversight Program.

If you have any questions, or desire any clarification of this workplan, or wish to arrange a meeting to discuss this project, please contact me at (510) 748-6459.

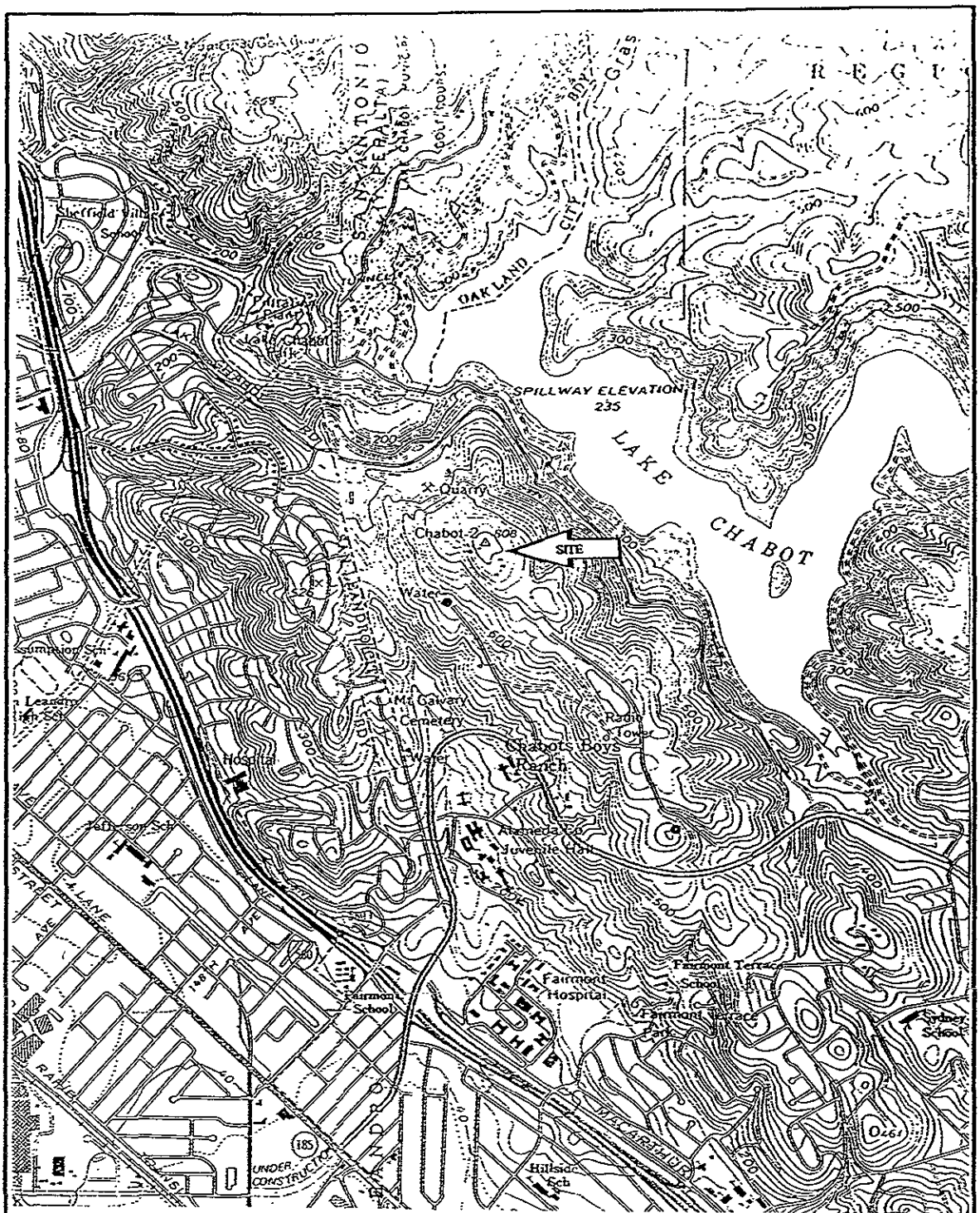
Sincerely,
Versar, Inc.

Terrence Kinn
Project Manager

cc: Peter Kinney
Alameda County General Services Agency

Versar INC.

FIGURES



Note: base map from USGS Hayward and San Leandro, CA quadrangles,7.5 minute series.

Versar INC. ENVIRONMENTAL RISK MANAGEMENT	**AREA MAP** Site Location Nike Military Site San Leandro, California	Versar Project: 2241-008	N	**FIGURE** 1 Not To Scale

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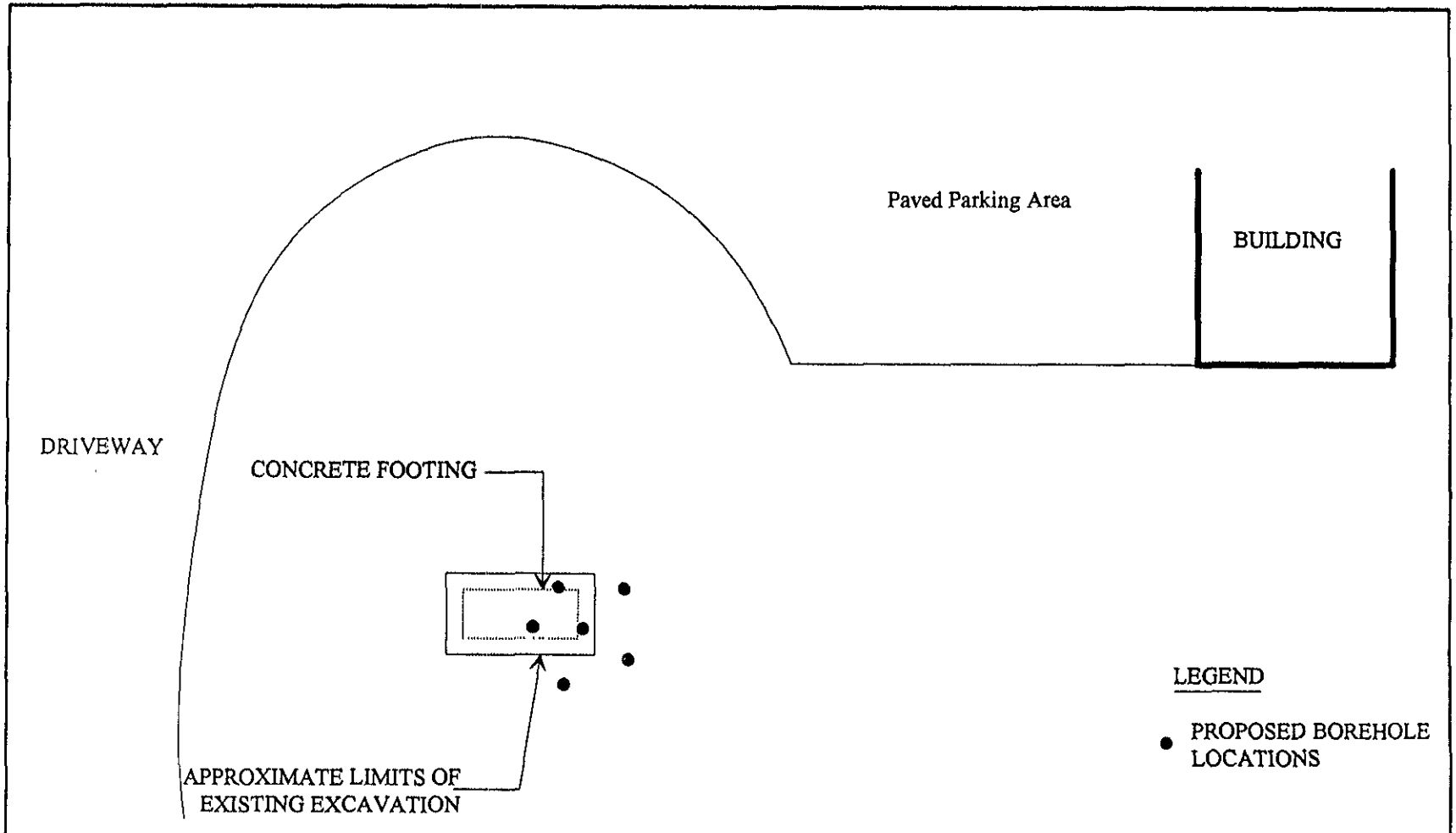

Versar INC. ENVIRONMENTAL RISK MANAGEMENT	**Site Plan**	Alameda Co., GSA - Nike Site 2892 Fairmont Drive San Leandro, CA	Versar Project No. 2241-008 December 1993 F:\GRAPHICS\SANIKE.DRW - MCB	N	**FIGURE** **2** Not To Scale

Versar INC.

ATTACHMENT 1
HEALTH AND SAFETY PLAN

Versar INC.

HEALTH AND SAFETY PLAN

FOR

FORMER NIKE MILITARY SITE
2892 FAIRMONT DRIVE
SAN LEANDRO, CALIFORNIA

Prepared for:

Alameda County
General Services Agency
4400 MacArthur Boulevard
Oakland, California

Prepared by:

Versar Inc. - San Francisco
1255 Harbor Bay Parkway, Suite 100
Alameda, California

Versar Project No. 2241-008

Versar INC.

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Versar INC.

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Versar INC.

1.0 INTRODUCTION

1.1 Background

Alameda County General Services Agency has retained Versar, Inc. to conduct a soils investigation in the vicinity of a former underground storage tank (UST) located at the former Nike Military Site in the City of San Leandro, California. On October 27, 1993, a 6,000-gallon capacity UST, used to store diesel fuel, was removed by Environmental Science & Engineering, Inc. Following the removal, the excavation was left open. Currently, an approximate 18-inch thick concrete pad remains at the bottom of the open excavation.

1.2 Site Characterization

Client Name: Alameda County General Services Agency

Location of Site: Former Nike Military Site
2892 Fairmont Drive
San Leandro, California

Client Contact Person(s):

Name: Mr. Peter Kinney

Topography of the area surrounding the site:

Hilly __X__ Flat ____ Hummocky ____ Marshy ____
Mountainous ____ Other ____

Area affected:

Urban ____ Rural __X__ Residential ____ Industrial____ Commercial ____
Other ____

Types of bodies of water bordering the site, if any:

Stream ____ River ____ Pond ____ Lake ____ Bay ____
Ocean ____ Other ____ None __X__

Are the services being provided as a consequence of orders from local, state, or federal officials?

Yes _____ No __X___

1.3 Purpose

The primary purpose of the site safety plan is to provide Versar, Inc. field personnel and subcontractors with an understanding of the potential chemical and physical hazards that exist or may arise while the tasks of this project are being performed. Secondarily, the information contained herein will define the safety precautions necessary to respond to such hazards should they occur.

1.4 Objective

The primary objective is to ensure the well-being of all field personnel and the community surrounding the site. In order to accomplish this, project staff and approved subcontractors shall acknowledge and adhere to the policies and procedures established herein. Accordingly, all personnel assigned to this project shall read this site safety plan and sign the Agreement Statement in Section 8.1 to certify that they have read, understood, and agreed to abide by its provisions.

1.5 Hazard Determination

Serious ____ Moderate ____ Low __X__ Unknown ____

1.6 Level of Protection

__X_ Modified level D

The minimum acceptable level of protection at this site is a Modified Level D, as described in the 5.0 Section titled "Health and Safety Requirements."

1.7 Amendments

Any change in the scope of this project and/or site conditions must be amended in writing in the 8.2 Section titled Health and Safety Plan Amendment Sheet and approved by the Health and Safety Manager.

Proposed time frame for site work: December, 1993

2.0 PROJECT PERSONNEL

Versar, Inc. will oversee and act accordingly during all phases of the project. The following management structure will be instituted for the purpose of successfully and safely completing this project.

2.1 Project Manager: Robert W. White

The Project Manager will be responsible for implementing the project and obtaining any necessary personnel or resources for the completion of the project. Specific duties will include:

- providing authority and resources to ensure that the Site Safety Officer is able to implement and manage safety procedures
- preparing reports and recommendations about the project to clients and affected Versar, Inc. personnel
- ensuring that all persons allowed to enter the site (i.e. EPA, contractors, state officials, visitors) are made aware of the potential hazards associated with the substances known or suspected to be on site and are knowledgeable as to the on-site copy of the specific site safety plan
- ensuring that the Site Safety Officer is aware of all of the provisions of this site safety plan and is instructing all personnel on site about the site practices and emergency procedures defined in the plan
- ensuring that the Site Safety Officer is making an effort to monitor the site safety and has designated a Field Team Leader to assist with the responsibility when necessary.

2.2 Health and Safety Manager: Terrence Kinn

The Health and Safety Manager (HSM) shall be responsible for the overall coordination and oversight of the site safety plan. Specific duties will include:

- approving the selection of the types of personal protective equipment (PPE) to be used on site for specific tasks
- monitoring the compliance activities and the documentation processes undertaken by the Site Safety Officer
- evaluating weather conditions and chemical hazard information and making recommendations to the Project Manager about any modifications to work plans or personal protection levels in order to maintain personal safety

- coordinating upgrading or downgrading of PPE with Site Safety Officer, as necessary, due to changes in exposure levels, monitoring results, weather, other site conditions

- approving all field personnel working on site, taking into consideration their level of safety training, their physical capacity, and their eligibility to wear the protective equipment necessary for their assigned tasks (i.e. respirator fit testing results)

- overseeing the air-monitoring procedures as they are carried out by site personnel for compliance with all company health and safety policies

2.3 Site Safety Officer: Aimee M. Chow

The Site Safety Officer (SSO) shall be responsible for the implementation of the site safety plan on site. Specific duties will include:

- monitoring the compliance of field personnel for the routing and proper use of the PPE that has been designated for each task

- routinely inspecting PPE and clothing to ensure that it is in good condition and is being stored and maintained properly

- stopping work on the site or changing work assignments or procedures if any operation threatens the health and safety of workers or the public

- monitoring personnel who enter and exit the site and all controlled access points

- reporting any signs of fatigue, work-related stress, or chemical exposures to the Project Manager and/or Health and Safety Manager within 24 hours

- dismissing field personnel from the site if their actions or negligence endangers themselves, co-workers, or the public and reporting the same to the Project Manager and/or Health and Safety Manager within 24 hours

- reporting accidents or violations of the site safety plan to the Project Manager and/or Health and Safety Manager within 24 hours

- knowing emergency procedures, evacuation routes, and the telephone numbers of the ambulance, local hospital, poison control center, fire and police departments

- ensuring that all project-related personnel have signed the personnel agreement and acknowledgements form contained in this site safety plan

- coordinating upgrading and downgrading of PPE with the Health and Safety Manager, as necessary, due to changes in exposure levels, monitoring results, weather, and other site conditions.

- performing air monitoring with approved instruments in accordance with requirements stated in this Health and Safety Plan.

2.4 Field Team Leader: Aimee M. Chow

In the event that the Project Manager and the Site Safety Officer are not on the site, the Field Team Leader will assume all responsibility for enforcing safety procedures.

2.5 Field Personnel

All field personnel shall be responsible for acting in compliance with all safety procedures outlined in this site safety plan. Any hazardous work situations or procedures should be reported to the Site Safety officer so that corrective steps can be taken. The Health and Safety Manager and/or Site Safety Officer has the authority to halt any operation that does not follow the provisions of this Health and Safety Plan.

2.6 Field Prework Meeting

Prior to commencement of field activities, the SSO or HSM will stage a field meeting with all field personnel to discuss the anticipated hazard issues, monitoring activities, action levels and evacuation procedures. In addition, the route to the hospital will be reviewed and the Health and Safety Plan will be signed by all field personnel present.

3.0 EMERGENCIES

In the event of an accident or emergency situation, immediate action must be taken by the first person to recognize the event. First aid ad mobile telephone equipment are located on site inside the Versar, Inc. vehicle. Immediately after emergency procedures are implemented, notify (1) the Site Safety Officer and (2) the Project Manager and the Health and Safety Manager about the situation.

3.1 Emergency Telephone Numbers

Immediate Emergencies:

Local Police:	911
Fire:	911
Ambulance:	911
Medical:	911

Medical Emergency:

Fairmont Hospital
Urgent Care 24-Hour
15400 Foothill Boulevard
San Leandro, California
(510) 667-7878

Directions to Fairmont Hospital:

From the site, turn right (southwest) onto Fairmont Drive and proceed approximately 1.5 miles to Foothill Boulevard. Turn left (southeast) onto Foothill Boulevard, proceed approximately .25 mile, paralleling Interstate 580. At the first left, turn left into the Hospital complex. Stay to the right and follow the signs to the urgent care unit (see Figure 1).

Environmental Emergency:

Versar, Inc.	(415) 748-6444
Regional EPA office	(415) 974-8131
National Response Center	(800) 424-8802
Poison Control	(800) 523-2222

3.2 Encountering Hazardous Situations (requiring evacuation)

Personnel encountering a hazardous situation shall **instruct others on site to evacuate the vicinity IMMEDIATELY** and call the (1) Site Safety Officer, (2) the Project Manager, and (3) the Health and Safety Manager for instructions.

The site must not be re-entered until the situation has been corrected (i.e. appropriate back-up help, monitoring equipment, personal protective equipment is at the site).

Usual Procedures for Injury

A. Call for ambulance/medical assistance if necessary. Notify the receiving hospital of the nature of the physical injury or chemical overexposure. If a telephone is not available, transport the person to the nearest hospital.

B. Send/take this site safety plan to the medical facility with the injured person.

C. If the injury is minor, proceed to administer first aid.

D. Notify the Site Safety Officer, Project Manager, and Health and Safety Manager of all accidents, incidents, or near miss situations.

3.3 Emergency Treatment

When transporting an injured person to a hospital, bring this site safety plan to assist medical personnel with diagnosis and treatment. In all cases of chemical overexposure, follow standard procedures as outlined below for poison management, first aid, and if applicable, cardiopulmonary resuscitation. Four different routes of exposure and their respective first aid/poison management procedures are outlined below:

A. Ingestion:

IMMEDIATELY transport the person to the nearest medical facility, or call the poison control center at **911 or 1-800-523-2222**

B. Inhalation/Confined Space:

DO NOT ENTER A CONFINED SPACE TO RESCUE A PERSON WHO HAS BEEN OVERCOME UNLESS PROPERLY EQUIPPED AND A STANDBY PERSON IS PRESENT.

C. Inhalation/ Other:

Move the person from the containment environment. Initiate CPR, if necessary. Call, or have someone call, for medical assistance. When applicable, refer to Material Safety Data Sheet for additional specific information. If necessary, transport the victim to the nearest hospital as soon as possible.

D. Skin Contact:

IMMEDIATELY wash off skin with a large amount of water. Remove any contaminated clothing and rewash skin. Transport person to a medical facility, if necessary.

E. Eyes:

Hold eyelids open and rinse the eyes IMMEDIATELY with copious amounts of water for 15 minutes. If possible, have the person remove his/her contact lenses (if worn). Never permit the eyes to be rubbed. Transport the person to a hospital as soon as possible.

4.0 CHEMICALS OF CONCERN

Health Effects

Diesel fuel is a complex combination of petroleum hydrocarbons produced by the distillation of crude oil. It is primarily composed of aliphatic hydrocarbons with carbon chains in the C9 to C20 range and boiling points in the range of 325^0 to 675^0 farenheit. It is light amber in color with a petroleum hydrocarbon-like odor and is insoluble in water.

Diesel vapors are heavier than air. Due to its low volatility, exposure to diesel fuel by inhalation is unlikely. Under conditions where such exposure may occur, eye, nose, and throat irritations, headache, nausea, drowsiness and dizziness are potential symptoms. Diesel is a skin irritant, but has not been shown to have any carcinogenic effects on humans.

However, repeated exposure to similary refined processed petroleum-based materials has been shown to cause skin cancer in laboratory animals. There are no established exposure limits for diesel.

Aromatic compounds, such as benzene, are often present as trace constituents in mixtures of aliphatic hydrocarbons and may significantly increase the toxicity of these substances.

Benzene can enter the body through inhalation, ingestion, and skin contact. Studies have noted that chronic exposure to benzene vapor can produce neurotoxic and hemopoietic (blood system) effects. Other effects can include headache, dizziness, nausea, convulsions, coma, and possible death if exposure is not reversed. The most significant chronic effect of benzene is bone marrow toxicity. Although the cause-effect relationship is not fully understood, it is believed that there might be a strong association between chronic exposures to benzene and the development of leukemia. Permissible exposure limit (PEL) for benzene by OSHA Standard is a time weighted average (TWA) of 1 part per million (ppm).

5.0 HEALTH AND SAFETY REQUIREMENTS

5.1 Work Zone Access

Access within a 30-foot radius of any on-site operation is prohibited to all but Versar, Inc. field personnel and subcontractors. Standard work practices, such as performing field activities in the upwind position, will be observed whenever possible. Personal protective equipment indicated in Section 5.4 will be worn by all onsite field personnel, including the subcontractor's personnel.

Exclusion Zones

Since the site is private property secured by locked gates a formal exclusion zone is not expected to be required. Unauthorized personnel will not be permitted near the work zone area.

Decontamination Zone

A formal decontamination zone is not expected to be required. However, should one need to be established, it would be sited in the upwind direction from the work zone area. Decontamination procedures are covered in Section 5.5. All site personnel will be required to follow the procedures.

Support Zones

No formal requirements will be necessary for the support zone area, although the general practice of locating the zone in the upwind direction will be followed.

5.2 Air/Gas/Vapor Monitoring Procedures

The potential exposure hazards to safety and health at this site include:

1) Exposure to chemical vapors - through inhalation

2) Exposure to chemical contamination - through skin contact and ingestion

Ongoing air monitoring during project tasks will be conducted throughout the course of the field investigation to provide data for ensuring that vapor concentrations are within acceptable ranges, and to provide adequate criteria for evaluating respiratory and dermal protection.

- If PID/FID readings exceed 100 units in the ambient air, an air purifying respirator with organic cartridges must be worn by all site workers within any area where monitoring results exceed 100 units.

- If PID/FID readings exceed 750 units, Level B protection will be required. Personnel must stop work operations, leave the site immediately and contact the Site Safety Officer or the Health and Safety Manager for further instructions.

- Respirator cartridges will be changed once per day as a minimum. This can be accomplished at the end of the work day during respirator decontamination. If odor breakthrough is detected while wearing the respirator or breathing becomes difficult, change cartridges immediately.

5.3 Action Levels / Level of Personal Protection Equipment (PPE)

Air monitoring instrument	LEVEL D	LEVEL C	LEVEL B
	< 100 units	100-750 units	> 750 units

5.4 Personal Protective Equipment

Modified Level D is the minimum acceptable level for this site. Modified Level D provides minimal dermal protection. Respiratory protection is optional unless air monitoring data indicates otherwise.

Modified Level D includes:

- coveralls/work uniform
- Tyvek (optional)
- Nitrile butyl-rubber or Viton gloves (optional)
- boots/shoes, leather or chemical resistant, with steel shank and approved toe protection
- approved safety glasses or chemical splash goggles if the potential for splash exists
- hard hat
- reflective traffic vest (if traffic, construction, or other related activities are present)
- hearing protection (as appropriate)

B. Additional equipment upgrade:

1. Protocols for upgrading

   Once air monitoring data are complete and results are tabulated on the initial site entry, the Site Safety Officer and/or Health and Safety Manager will determine if changes in PPE are needed.

2. Upgraded equipment

   a. Respirators

      Respirators with organic vapor cartridges shall be worn by all personnel if ionization detector readings exceed 100 units.

   b. Other

      Tyvek suits and appropriate gloves shall be worn if potential for dermal exposure exists while performing job tasks.

C. First Aid Equipment

Vehicles used for site work will be equipped with a first aid kit and safety equipment including:

- cones and flags
- barricades
- fire extinguisher
- water, suitable for drinking
- portable eye wash
- appropriate emergency bandage material

5.5 Decontamination Procedures

All operations conducted at this site have the potential to contaminate field equipment and personal protective equipment (PPE). To prevent the transfer of any contamination to vehicles, administrative areas, and other personnel, the following procedures must be followed:

1. Whenever possible, field equipment should be decontaminated with a solution of Alconox or Green Soap and thoroughly rinsed with water prior to leaving the site. This must be done outside a 5 foot radius of any work area or the hot zone.

2. Disposable PPE (for example, Tyvek suits, respirator cartridges) must be bagged and disposed of at the site.

Personal Decontamination

Level D: Segregated Equipment Drop

- wash/rinse outer boot (as appropriate)
- wash/rinse chemical resistant outer glove, then remove as appropriate
- remove and throw out inner disposable gloves in designated, lined receptacles

Level C: Segregated Equipment Drop

- wash/rinse outer boots
- wash/rinse chemical resistant outer gloves, then remove tape and gloves
- remove chemical resistant suit (remove by rolling down suit from the inside)
- remove outer boots
- remove first pair(s) of disposable gloves

- remove respirator, hard hat/faceshield and properly dispose of cartridges; wash respirator
- remove last pair of disposable gloves

Level B: Segregated Equipment Drop

- wash/rinse outer boots
- wash/rinse chemical resistant outer gloves
- cross hotline (into clean area) and change air tanks, then redress or
- cross hotline (into clean area)
- remove boots and gloves
- remove SCBA, if worn over chemical resistant suit
- if SCBA is worn under the suit, remove the chemical resistant suit, then the SCBA
- remove hard hat

5.6 Excavation Procedures

A USA number must be obtained from appropriate agency prior to excavating. To determine presence of subsurface metal tanks and/or drums, a metal detector should be used before excavating at a site.

During the excavation operation, two persons (one designated as "operator" and the other as the "supervisor") must be present at all times. The supervisor (whether Versar, Inc. personnel or subcontractors) must be instructed as to the whereabouts of the emergency shut-off switch. Every attempt must be made to keep unauthorized personnel from entering the work area. If this is not possible, the operation should be shut down until the area is cleared. The Site Safety Officer or the Field Team Leader has the authority and responsibility to shut down the excavation operations whenever a hazardous situation is deemed present.

The arm of the excavator should maintain a preferred clearance of 20 feet from any overhead electrical cables, with 10 feet being the minimum. All excavation operations will immediately cease during any hazardous weather conditions. Following the removal of the USTs, temporary chain-link fencing will be installed around the excavation site to restrict access to the area and secure the excavation.

Hard hats shall be worn at all times.

5.7 Electrical Equipment and Ground Fault Circuit Interrupters

All electrical equipment and power cables used in and around excavations or structures containing chemical contamination must be explosion-proof and/or intrinsically-safe and equipped with a three-wire ground lead that has been rated as explosion-proof for hazardous atmospheres (Class 1 Div 1&2). In accordance with OSHA 29 CFR 1926.404, approved ground fault circuit interrupters (GFCI) must be utilized for all 120 vault, single-phase, 15 and 20 amp receptacle outlets on the site that are in use by employees and that are not part of the permanent wiring as defined by the NEC 1987. Receptacles on the ends of the extension cords are not part of the permanent wiring and therefore, must be protected by GFCI's whether or not the extension cord is plugged into permanent wiring.

The GFCI is a fast-acting circuit breaker that senses small imbalances in the circuit caused by current leakage to ground, and in a fraction of a second, shuts off the electricity. However, the GFCI will not protect the employee from line-to-line contact hazards such as a person holding two "hot" wires or a hot and neutral wire in each hand. The GFCI does provide protection against the most common form of electrical hazard - the ground fault. It also provides protection against fires, overheating, and destruction of wire insulation.

GFCI's can be used successfully to reduce electrical hazards on construction sites. Tripping of GFCI's interruption of current flow, is sometimes caused by wet connectors and tools. It is good practice to limit exposure of connectors and tools to excessive moisture by using watertight or sealable connectors. Providing more GFCI's on shorter circuits can prevent tripping caused by the cumulative leakage from several tools or by leakages from extremely long circuits. (Adapted from OSHA 3007; Ground-Faulting Protection on Construction Sites - 1987.)

5.8 Fire Protection

Only approved metal cans will be used to transport and store flammable liquids.

All gasoline and diesel-driven engines requiring refueling must be shut down and allowed to cool before filling.

Smoking is not allowed during any operations within the work area in which petroleum products or solvents in free-floating, dissolved or vapor forms, or other flammable liquids may be present.

No open flame or spark is allowed in any area containing petroleum products or other flammable liquids.

5.9 General Health

Medicine and alcohol can increase the effects of exposure to toxic chemicals. Unless specifically approved by a qualified physician, prescription drugs should not be taken by personnel assigned to operations where the potential for absorption, inhalation, or ingestion of toxic substances exists.

Drinking and driving is prohibited at any time. Driving at excessive speeds is always prohibited.

Skin abrasions must be thoroughly protected to prevent chemicals from penetrating the abrasion.

It is recommended that contact lenses not be worn by persons working on the site.

6.0 EMPLOYEE TRAINING

All Versar employees with the potential for hazardous materials exposure will have the required OSHA Health and Safety Training certification to assist in recognizing, evaluating, and controlling site hazards. Three days of supervised field-training is also included within the initial training program. Project manager level and above must also participate in an additional eight-hour supervisory training course. Once employees have received the above training, they receive a certificate of completion and are scheduled for an eight-hour refresher training session within one year of their initial training. Versar training includes specific details on the following:

- regulatory requirements
- confined space entry
- respiratory protection
- hazard communication
- decontamination procedures
- incident command system
- first aid/CPR
- air monitoring
- toxicology
- Prop. 65 (California)
- fire technology
- personal protective equipment

All Versar subcontractors are required to provide proof of certification for appropriate safety training courses.

7.0 MEDICAL MONITORING PROGRAM

All Versar, Inc. field personnel are required to have annual medical evaluations in accordance with the company's Health and Safety Program policy. Additional re-evaluation will be considered in the event of chemical over-exposure while working on this site.

The chemicals typical of this site can affect specific organ systems producing characteristic health effects. The medical evaluation will, therefore, focus on the liver, kidney, nervous system, blood systems, and skin and lung function. Laboratory testing will include complete blood count, and applicable kidney and liver function tests. Other tests include skin examination.

8.0 DOCUMENTATION

8.1 Health and Safety Plan Agreement

Versar personnel have the authority to stop work performed by our subcontractors at this site if any work is not performed in accordance with the requirements of this Health and Safety Plan.

All Versar, Inc. project personnel and subcontractor personnel are required to sign the following agreement prior to conducting work at the site.

A. I have read and fully understand the Health and Safety Plan and my individual responsibilities.

B. I agree to abide by the provisions of the Health and Safety Plan.

Name	Company	Date	Signature

Versar INC.

8.2 Health and Safety Plan Amendment Sheet

Project Name: _____

Project Number: _____

Location: _____

Changes in field activities or hazards:

Proposed Amendment:

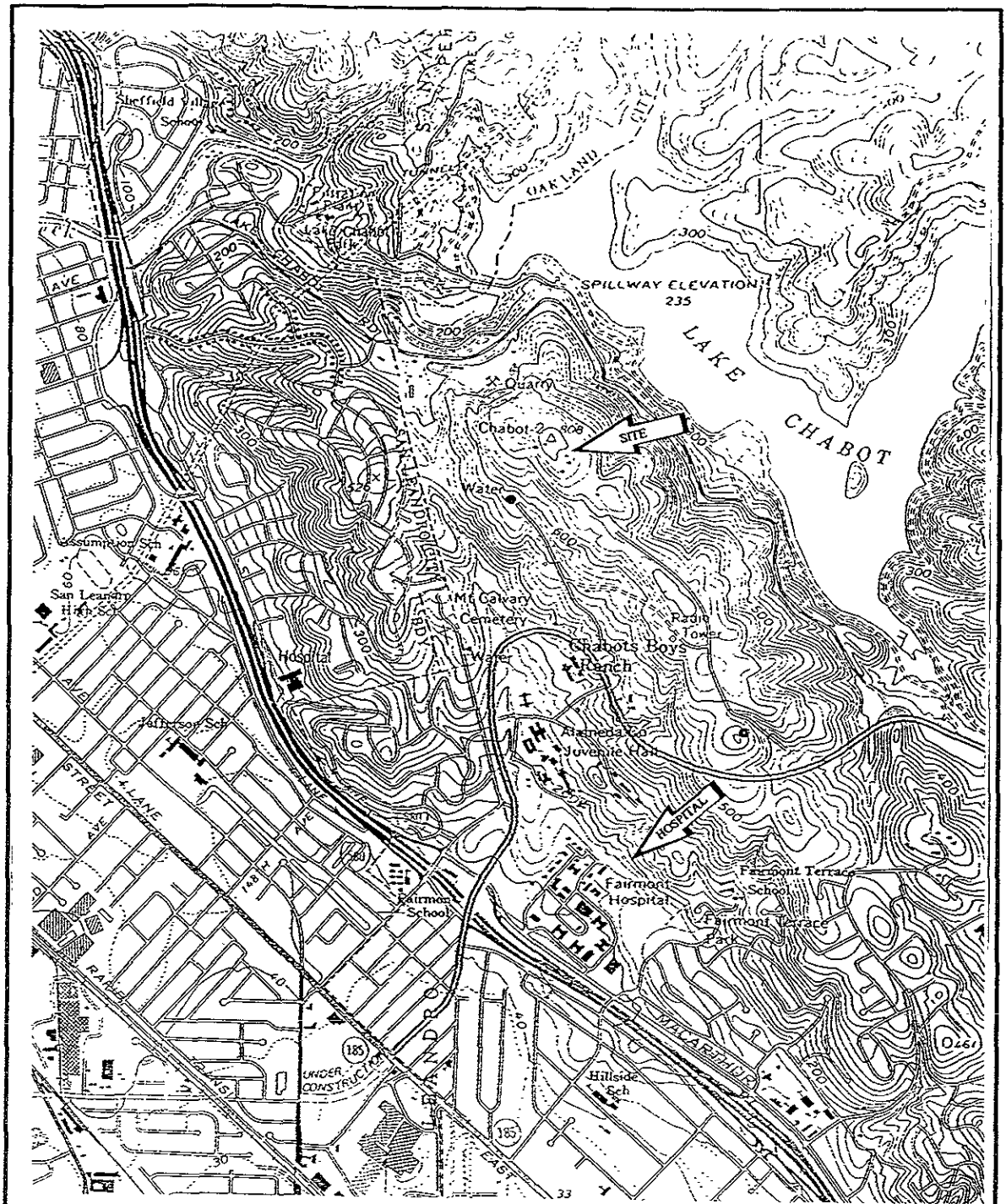
Proposed By:_____ Date _____

Approved By:_____ Date _____
Project Manager

_____ Date _____
Health & Safety Manager

Declined By:_____ Date _____

Amendment Effective Date _____



Note: base map from USGS Hayward and San Leandro, CA quadrangles,7.5 minute series.

Versar INC. ENVIRONMENTAL RISK MANAGEMENT	**AREA MAP** Site and Hospital Location Nike Military Site San Leandro, California	Versar Project: 2241-008	N	**FIGURE** **1** Not To Scale

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