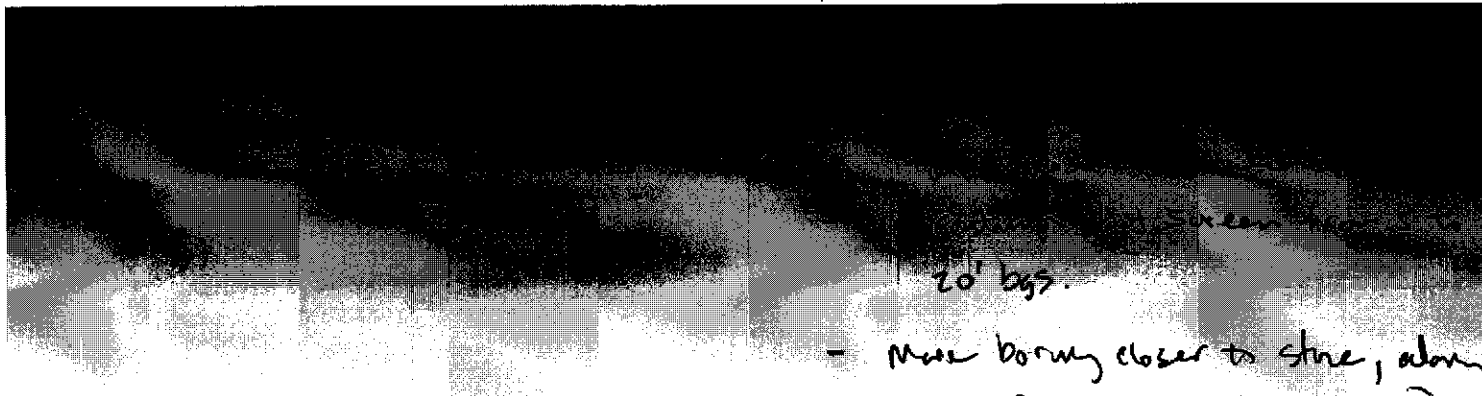


20-262



20' by 7'

- More boring closer to store, along walkway (not through pit)

WORK PLAN
for
ADDITIONAL INVESTIGATIONS
at
ALBANY HILL MINI MART
800 San Pablo Avenue
Albany, California

JAN 15 2002

Prepared for:

Mr. Mohinder S. & Dr. Joginder K. Sikand
1300 Ptarmigan Drive, #1
Walnut Creek, California

January 10, 2002

ADVANCED ASSESSMENT AND REMEDIATION SERVICES



2380 Salvio Street, Suite 202
Concord, CA 94520
Phone: (925) 363-1999
Fax: (925) 363-1998
e-mail: aars@ccnet.com



ADVANCED ASSESSMENT AND REMEDATION SERVICES (AARS)

2380 SALVIO STREET, SUITE 202
CONCORD, CALIFORNIA 94520-2137
TEL: (925) 363-1999 FAX: (925) 363-1998
e-mail: aars@ccnet.com

January 9, 2002

Ms. Eva Chu
Alameda County Department of Environmental Health
1131 Harbor Bay Parkway, 2nd Floor
Alameda, California 94502

Subject: Submittal of Work Plan for Additional Investigations at
Albany Hill Mini Mart, 800 San Pablo Avenue, Albany, California

Dear Ms. Chu:

Enclosed is the work plan for additional investigations to delineate the extent of the contaminant plume at the above referred site. The investigation will be conducted in accordance with the guidelines and requirements of the Alameda County Department of Environmental Health (ACDEH) and the California Regional Water Quality Control Board, San Francisco Bay Region (RWQCB).

Please call me at (925) 363-1999 if you have any questions regarding this work plan.

Sincerely,

Advanced Assessment and Remediation Services

Tridib K. Guha, R.G., R.E.A.
Principal

cc: Mr. Mohinder S. Sikand and Dr. Joginder K. Sikand, Walnut Creek, California
Mr. Larry Oelkers, Albany, California

TG/AHMM.WP3/Enclosure

WORK PLAN
for
ADDITIONAL INVESTIGATIONS
at
Albany Hill Mini Mart
800 San Pablo Avenue
Albany, California

1.0 INTRODUCTION

This work plan presents the scope of work to conduct a groundwater quality investigation to delineate the extent of the contaminant plume at 800 San Pablo Avenue, Albany, California. The proposed scope of work is based on the analytical results of groundwater sampling in all onsite wells and supplemental investigation conducted in June 2001. The soil borings, advanced near the 10,000 gallon gasoline tank and southeastern and northeastern corner of the property, identified elevated petroleum hydrocarbon constituents in soil and groundwater. The last two groundwater sampling events confirmed the presence of elevated total petroleum hydrocarbons as gasoline (TPHg), benzene, and methyl tertiary butyl ether (MTBE) concentrations in all onsite wells. The proposed investigative work is designed to evaluate the extent of the subsurface contamination and whether hydrocarbon constituents have impacted the groundwater off-site.

2.0 PROJECT BACKGROUND

In March 1997, five underground fuel storage tanks (two 10,000 gallon gasoline tanks, one 6,000 gallon gasoline tank, one 2,000 gallon diesel tank, and one 750 gallon tank) were excavated and removed by Superior Underground Tank Services(SUTS). Soil samples were collected from excavations. Analytical results indicated that the TPHg and TPHd concentrations up to 3,800 mg/kg and 820 mg/kg respectively, were present in the soil. BTEX and MTBE constituents were also detected in soil samples. Analytical results of groundwater sample indicated elevated concentrations of TPHg, TPHd, BTEX and MTBE.

The soil and groundwater sampling at the time of tank removal was prepared by GeoPlexus, Inc., March 22, 1997. Advanced Assessment and Remediation Services (AARS) conducted a preliminary site assessment in August 1999. AARS also conducted a supplemental site investigation in June 2001. AARS completed six quarters of groundwater monitoring and sampling under the direction of Alameda County Environmental Health Department (ACEHD). The supplemental site investigation and groundwater sampling event confirmed the presence of elevated petroleum hydrocarbons. The ACEHD required additional investigations to delineate the extent of the plume.

3.0 PROPOSED SCOPE OF WORK

The proposed site investigation will be conducted in accordance with the requirements and guidelines of ACDEH and California Regional Water Quality Control Board, San Francisco Bay Region (RWQCB). AARS proposes:

Installation of seven soil borings to 20 feet below ground surface (bgs). Two soil borings(SB-5/TW and SB-6/TW) will be drilled near the tank area. These two borings will be converted to temporary wells to evaluate the groundwater quality in the tank area. Soil boring MW-4 will be converted to a monitoring

well on the United Transmission property adjacent to soil boring SB-2/TW (which detected elevated petroleum hydrocarbon). Two soil borings (MW- 5 and MW-6) will be drilled next to the curb on San Pablo Avenue and will be converted to monitoring wells to delineate the eastern extent of the plume. Two soil borings (MW-7/TW and MW-8/TW) will be drilled between the 10,000 gallon tank and the wall of the United Transmission Property. These two soil borings will be converted to monitoring/injection wells. The locations of these soil borings are presented in Figure 1. The various tasks associated with this site investigation are discussed below.

Task 1: Project Preparation, Submit Work Plan and Acquire Necessary Permits

Information pertinent to the site will be reviewed and will include available literature, previous field work and other sources. A workplan will be prepared, including a health and safety plan, and will be submitted to the ACEHD. All required permits will be obtained and field activities will be coordinated with the ACEHD. The site will be marked and the Underground Service Alert will be notified prior to drilling of the soil borings. Also, an expert utility locator will be used for clearance in United Transmission property.

Task 2: Horizontal Conduit Investigation

Conduct a conduit study to determine the affects of horizontal conduits on contamination migration and horizontal conduits acting as preferential pathways. The study involves a utility survey -- research records of City of Albany Public Works Department and City of Berkeley Public Works Department for past utility work. Also, research records of Pacific Gas and Electric Company and other local agencies using underground utilities.

Task 3: Well Search

A two thousand-foot (2,000) radius well search will be performed to ascertain whether active drinking water production wells were located in the area. The search will be consisted of a review of the Alameda County Public Works Agency Water Resource Section records. The City of Albany reports that East Bay Municipal Utility District supplies drinking water to the area.

Task 4: Traffic Control

Since two monitoring wells will be drilled on San Pablo Avenue, an encroachment permit will be obtained from City of Albany Public Works Department. A professional traffic control organization may be engaged while installing monitoring wells on San Pablo Avenue.

Task 5: Drill Soil Borings; Install two Temporary Wells

Seven soil borings (SB-5/TW, SB-6/TW, MW-4, MW-5, MW-6, MW-7/TW and MW-8/TW) will be drilled to 20 feet bgs by using a limited access drilling rig with 6-inch-diameter hollow-stem augers, following the standard procedures and requirements of the ACEHD. Soil samples will be obtained with a split-spoon sampler lined with clean sampling sleeves. Soil samples will be collected at every 5 feet or at any lithologic changes, starting at 5 feet bgs. Soil borings will be logged lithologically using the Unified Soil Classification System (USCS) and soil samples will be screened in the field using a portable photoionization detector. The samples recovered for chemical analysis will be sealed with teflon tape and plastic caps and placed immediately into a cooler with ice and transported to a certified laboratory under chain-of-custody.

All drill cuttings will be transferred to 55-gallon drums, labeled and stored at the site for proper disposal.

Task 6: Install five Monitoring Wells

The remaining five soil borings (MW-4, MW-5, MW-6, MW-7/TW and MW-8/TW) will be converted into groundwater monitoring wells. The groundwater monitoring wells will be constructed of clean, 2-inch diameter, flush threaded, schedule 40 PVC blank casing which will be extended from grade level to a depth estimated at the highest anticipated water level, and 2-inch-diameter screened casing with 0.010-inch perforations, extending to a depth of at least 10 feet into the water table. The annular space surrounding the screened portion will be backfilled with No. 2 Monterey sand (filter pack) to approximately 2 feet above the top of the screened section. A bentonite annular seal (approximately 1 foot thick) will be placed above the filter pack. The remaining annulus will be grouted with neat cement to the surface. A monument well box will be installed slightly above grade to minimize infiltration of surface waters. Locking watertight well caps will be installed to ensure the integrity of the well (Appendix A).

*5' above
GWT

Task 7: Sample Temporary Wells

Two soil borings (SB-5/TW and SB-6/TW) will be converted into temporary groundwater wells. The soil borings will be advanced 3 to 5 feet beyond the top of the saturated zone (approximately 15 feet bgs). A 2-inch diameter, flush threaded, schedule 40 PVC screened casing with 0.010-inch perforations covered with polyester filter sock will be installed in the bore holes. The water will be allowed to stabilize and a small volume of water (approximately 3 to 5 gallons) will be purged. Following purging, a groundwater sample will be collected and the casing will be removed. The borings will then be completely back filled with neat cement or cement slurry to grade.

The removed water will be transferred to 55-gallon drums, labeled, and stored at the site for proper disposal.

Task 8: Develop, Sample and Survey Monitoring Wells

Prior to sampling, the water level of the well will be recorded, and the presence of free product or sheen will be observed. Each well will be properly developed prior to purging and sampling.

During purging, pH, temperature, and conductivity readings will be recorded. As these readings stabilize, indicating that the groundwater is representative of the water in the aquifer, the water samples will be collected in appropriate clean glassware. The samples will be placed in an iced cooler and transported to a California-certified laboratory.

To calculate the hydraulic gradient and groundwater flow direction of the shallow aquifer, the wells will be surveyed from a permanent reference mark at the top of the casing, to 0.01 foot accuracy in reference to mean sea level.

The removed water will be transferred to 55-gallon drums, labeled and stored at the site for proper disposal.

Task 9: Analyze Soil Samples

Soil samples will be transported to North State Environmental Laboratory in South San Francisco, a California-certified laboratory for analysis following proper chain of custody procedures. A minimum of 1 soil sample (capillary zone) from each boring will be analyzed for total petroleum hydrocarbons as

gasoline (TPHg), using EPA Method 5030/8015M; benzene, toluene, ethylbenzene and xylenes (BTEX) using EPA Method 8020; Methyl Tertiary Butyl Ether (MTBE) using EPA Method 8020; total petroleum hydrocarbons as diesel (TPHd), using EPA Method 3510/8015M. The detection limits for both TPHd and TPHg is 1.0 milligram per kilogram (mg/kg) and the detection limits for BTEX/MTBE are 0.005 mg/kg.

Task 10: Analyze Water samples

Groundwater samples collected from the monitoring wells will be analyzed for TPHg, using EPA Method 5030/8015M; BTEX, using EPA Method 8020; MTBE, using EPA Method 8020; TPHd, using EPA Method 3510/8015M. The detection limits for TPHd and TPHg is 50 microgram per liter ($\mu\text{g/L}$) and the detection limits for BTEX/MTBE are 0.5 $\mu\text{g/L}$.

Task 11: Analyze Data and Laboratory Results and Prepare Report

Upon completion of the sample analysis and background research, a detailed evaluation of results and available information will be conducted to assess the extent and nature of groundwater contamination. This will include:

Interpretation of geologic and hydrogeologic information.

Description of field and analytical procedures.

Tabulation of soil and groundwater analytical results.

A report presenting the findings of the investigation including conclusions and recommendations, will be prepared for submission to the ACEHD.

4.0 SITE SAFETY PLAN

All field procedures and activities related to the conduct of the site investigation (in accordance with the site specific safety plan) has been developed in compliance with applicable requirements of the California Department of Health Services (DHS) and the Federal and State Occupational Health and Safety Administration (OSHA and Cal-OSHA). The site safety plan is presented in APPENDIX B.

5.0 PROPOSED SCHEDULE OF ACTIVITIES

The proposed schedule includes completion of the following items:

<u>Items</u>	<u>Cumulative Days</u>
1. Work plan and health and safety plan	5
2. Receipt of the soil borings/monitoring well permit from the ACPW	10
3. Field work and sample collection	25
4. Chemical analyses	35
5. Data analyses, integration and interpretation	50
6. Report preparation	60

This schedule may be subject to revision depending on timely receipt of work plan approval and approval of boring/well permit to complete the site investigation. Any changes to the schedule will be communicated in advance to the appropriate agencies and parties involved.

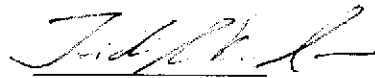
6.0 PROPERTY OWNER AND CONSULTANT

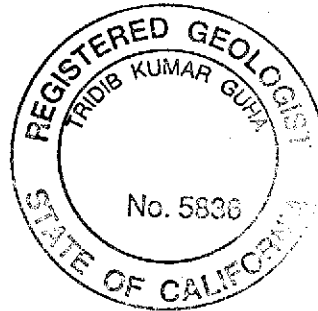
Property owner: Mr. Mohinder S. & Dr. Joginder Sikand
1300 Ptarmigan Drive, #1
Walnut Creek, California 94595

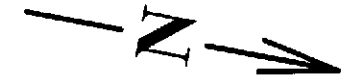
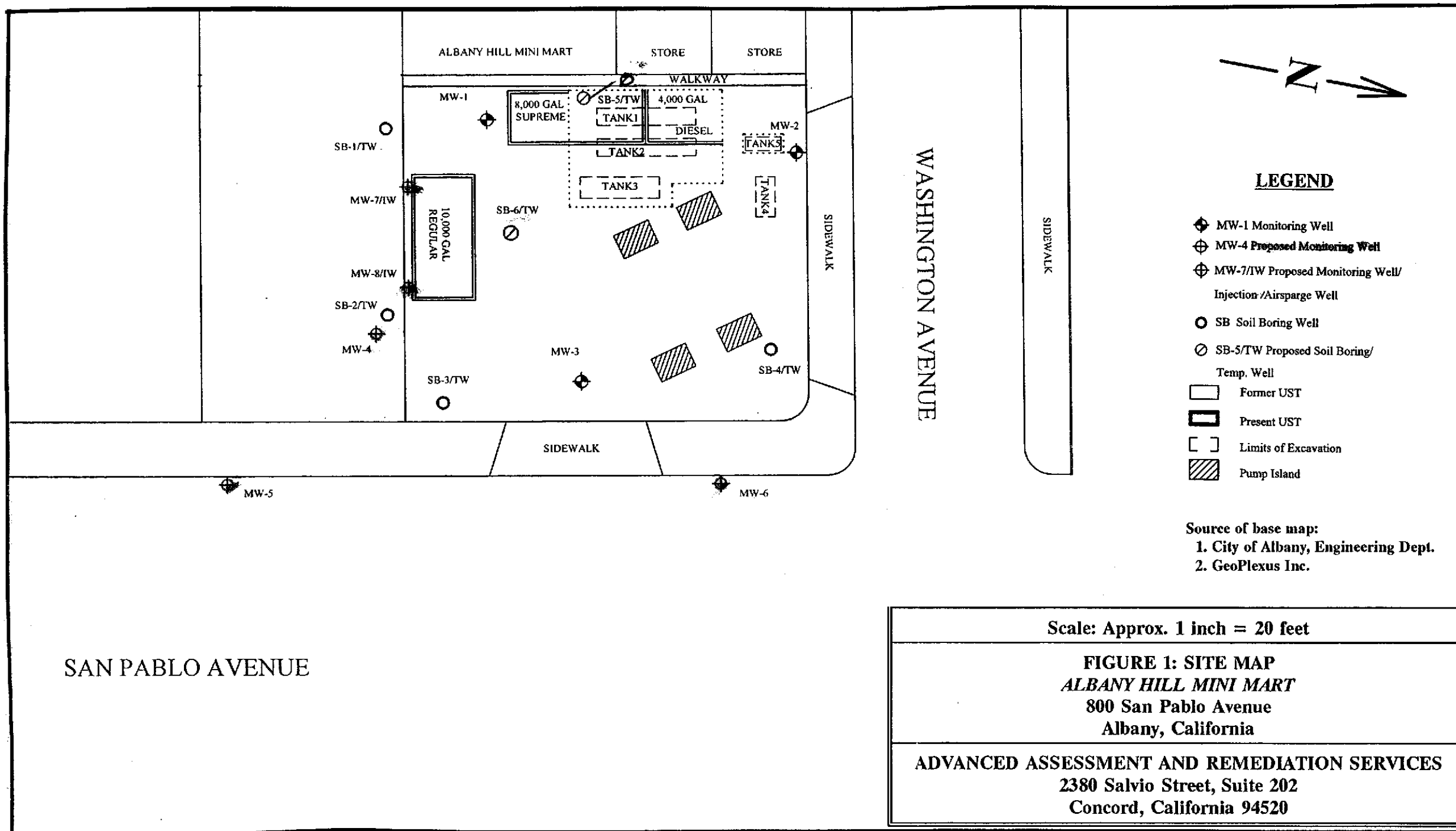
Contact: Mr. Mohinder Sikand (925) 256-1385

Consultant: Advanced Assessment and Remediation Services
2380 Salvio Street, Suite 202
Concord, California 94520

Contact: Tridib Guha (925) 363-1999


Tridib K. Guha, R.G.





LEGEND

- ◆ MW-1 Monitoring Well
- ⊕ MW-4 Proposed Monitoring Well
- ⊕ MW-7/TW Proposed Monitoring Well/
Injection/Airsparge Well
- SB Soil Boring Well
- ⊗ SB-5/TW Proposed Soil Boring/
Temp. Well
- Former UST
- ▭ Present UST
- - - Limits of Excavation
- ▨ Pump Island

Source of base map:
 1. City of Albany, Engineering Dept.
 2. GeoPlexus Inc.

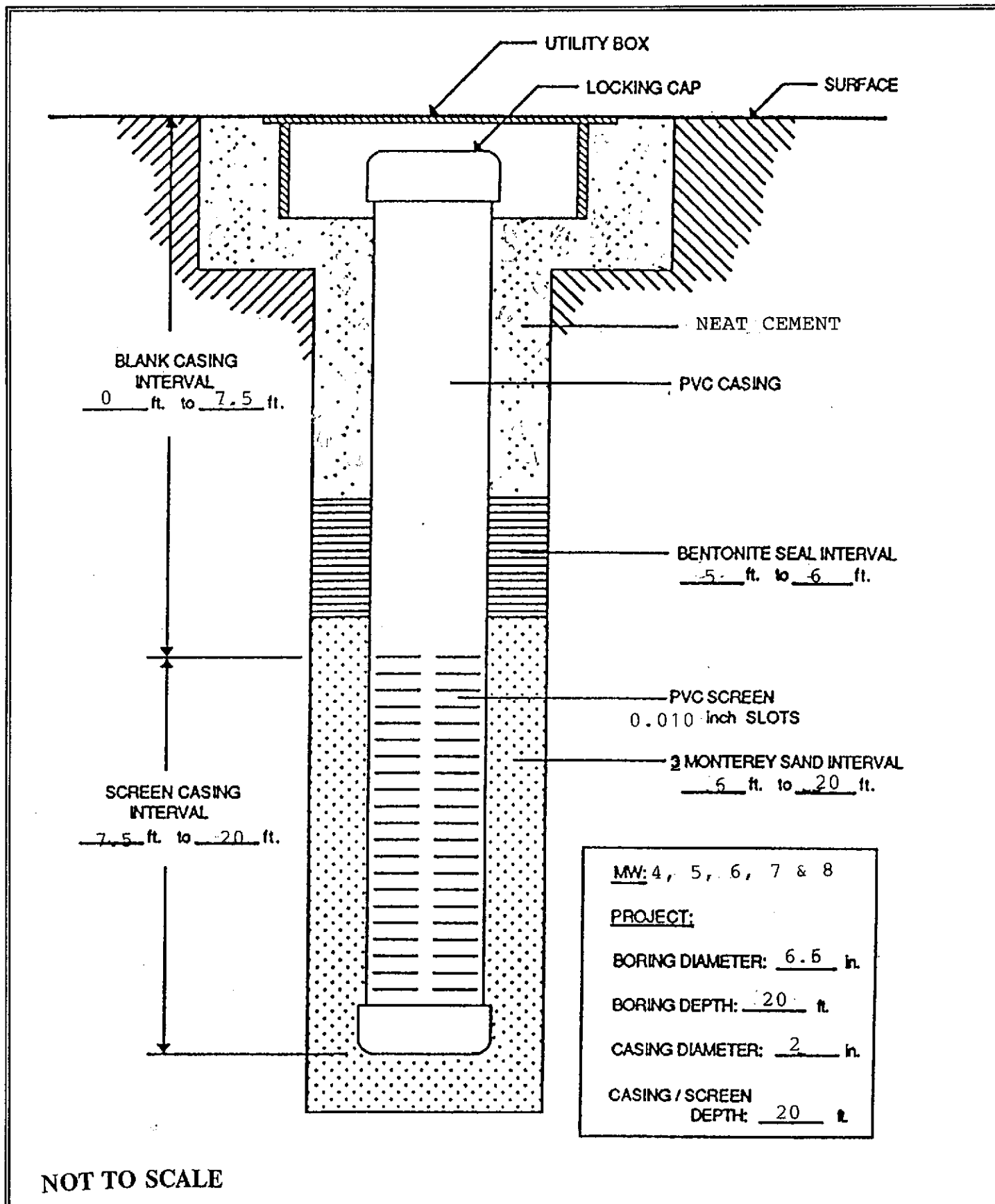
Scale: Approx. 1 inch = 20 feet

FIGURE 1: SITE MAP
ALBANY HILL MINI MART
 800 San Pablo Avenue
 Albany, California

ADVANCED ASSESSMENT AND REMEDIATION SERVICES
 2380 Salvio Street, Suite 202
 Concord, California 94520

SAN PABLO AVENUE

WASHINGTON AVENUE



NOT TO SCALE

PROPOSED WELL CONSTRUCTION DIAGRAM

**Advanced Assessment and
Remediation Services**
2380 Salvio Street, Suite 202
Concord, California 94520

**SITE SAFETY PLAN
Albany Hill Mini Mart
800 San Pablo Avenue
Albany, California**

INTRODUCTION

This site safety plan has been prepared pursuant to requirements of Alameda County Department of Environmental Health (ACDEH). This plan has been prepared in conformance with the Advanced Assessment and Remediation Services (AARS) Health and Safety Program. It addresses those activities associated with site characterization and will be implemented during all site investigations and field related activities. Compliance with this Site Safety Plan (SSP) is required of all AARS personnel, subcontractors, and third parties that enter the site. The requirements and parameters identified in this SSP will be subject to modification as warranted by existing site conditions or as work progresses. However, no changes will be made without the prior approval of the Project Safety Officer.

PROJECT SAFETY OFFICER

The Project Safety Officer has overall responsibility for the development, coordination, and implementation of the SSP and its conformance with the AARS Health and Safety Program. The Project Safety Officer will also be responsible for field implementation of the SSP. This will include communicating the site-specific requirements to all site personnel and third parties, and assuring compliance with the AARS Health and Safety Program.

AARS PERSONNEL AND SUBCONTRACTORS

All AARS personnel and Subcontractors will be responsible for reading, understanding, signing, and complying with these SSP requirements.

BACKGROUND

In March 1997, five underground fuel storage tanks (two 10,000 gallon gasoline tanks, one 6,000 gallon gasoline tank, one 2,000 gallon diesel tank, and one 750 gallon tank) were excavated and removed by Superior Underground Tank Services(SUTS). Soil samples were collected from excavations. Analytical results indicated that the TPHg and TPHd concentrations up to 3,800 mg/kg and 820 mg/kg respectively, were present in the soil. BTEX and MTBE constituents were also detected in soil samples. Analytical results of groundwater sample indicated elevated concentrations of TPHg, TPHd, BTEX and MTBE.

HAZARD SUMMARY

Major potential hazards to personal safety at the site include:

A. Physical Injury

Exposure to this type of injury can occur while working around heavy equipment during the different field operations; e.g., drilling and associated work. If the surface is wet slip, trip and fall can cause

injury. Additionally, exposure to physical injury on this site is increased by the fact this work will be conducted at the sidewalk of a highway, where there will be frequent vehicular traffic.

B. Explosion and Fire

Petroleum products are highly flammable. Liquid petroleum product readily vaporizes from standing pools or saturated soil. Ignition sources of any kind; e.g., engines, impact sparking, and heat or arc from inappropriate equipment or instrumentation pose a major explosion and fire hazard.

C. Inhalation, Ingestion, or Absorption of toxic vapors, liquids, or dusts associated with petroleum hydrocarbons, and organic chemicals

Gasoline vapors in high concentrations (>300 parts per million (ppm)) can cause eye, nose, and throat irritation, headaches, dizziness, and anesthesia. Skin contact and/or absorption of gasoline may result in irritation and dermatitis. Contact with specific toxic petroleum hydrocarbon and organic chemicals substances such as the following volatile organic compounds (VOC): benzene, toluene, ethylbenzene, and xylenes (BTEX) may seriously affect an individuals health. Benzene is a suspected human carcinogen and along with toluene and xylenes can cause damage to the liver, kidneys, and central nervous system. Ethylbenzene is also known to be a skin irritant in both vapor and liquid forms.

D. Electrical Shock or Electrocution

Electrical power lines are known to be in the vicinity of both drilling and hand augering operations.

E. Hearing Damage

Noise from the drilling will be both constant and extensive.

F. Sun Burn and Heat Stress

Due to time of the year, heat stress is not expected.

HAZARD ASSESSMENT

Consistent efforts will be made throughout the project to evaluate the chemical and physical hazards described above. Explosion, fire, and VOC exposure hazards will be evaluated through an air monitoring program. Electrical shock, hearing damage, physical damage, and heat stress will be minimized through a hazard reduction program.

AIR MONITORING PROGRAM

A. Fire and Explosion

A direct-reading portable GasTech combustible gas indicator (CGI) (calibrated to hexane) or a photo ionization detector (PID), which measures VOC concentrations in ppm or as a percentage of the lower explosive limit (LEL), will be used to evaluate the possible formation of flammable atmospheres around

the work area. Continuous measurements will be obtained at the top of each borehole throughout the temporary well/monitoring well installation and soil boring operations.

B. Exposure to VOC's

Airborne concentrations of VOC's will be monitored with the CGI described above, and/or a PID. Measurements will be obtained from the top of each borehole and all soil samples.

HAZARD REDUCTION PROGRAM/ENGINEERING CONTROLS

Access to work areas will be limited by the Project Safety Officer to essential personnel.

Drill cuttings and soil will be stored on site on a plastic liner. The stored soils will be removed from the site at the earliest opportunity by the responsible party. Underground utilities will be identified through Underground Service Alert prior to operation, and power lines and pipelines will be shut down, locked-out and tagged, as appropriate.

A. Flammable Atmospheres

In the event that combustible gas indicator readings anywhere on the site exceed 10% of the LEL of gasoline (11,000 ppm), work will be suspended, monitoring will be continued as necessary to isolate the area of concern, and some or all of the following environmental controls will be implemented as appropriate:

1. Borings or wells emitting excessive VOC concentrations will be ventilated, capped, or shut in as necessary.
2. Drilling equipment will be bonded and grounded during all operations to control ignition sources.

B. Airborne Toxic Chemicals

Workers will be required to wear half-face air purifying respirators with organic vapor cartridges under the following circumstances:

1. If the worker is continuously exposed throughout the day to VOC vapors that exceed the permissible exposure level (time weighted average) (PEL-TWA) for gasoline (300 ppm), or
2. If the worker is exposed at any time to VOC vapors that exceed the permissible exposure level (short term exposure limit) (PEL-STEL) for gasoline (500 ppm).

Similar precautions will be taken with regard to other toxic chemicals such as BTEX components. If VOC vapors exceed 1,000 ppm, full-face air purifying respirators with organic vapor canisters will be worn.

C. Physical Contact with Contaminated Soil and Ground Water

Workers who must come in direct contact with contaminated soil or ground water for sampling purposes, will be required to wear protective gloves and/or necessary protective clothing to prevent skin contact.

D. Physical Hazards

Accidents will be prevented by personal protective equipment, engineering controls, and the exercise of reasonable caution during work activities. Traffic control will be performed for entire duration of drilling operation on the sidewalk.

E. Noise Exposures

All workers entering high-noise areas will be required to wear hearing protection (ear plugs or muffs).

H. Heat Stress

Workers will be provided beverages, shaded rest areas, and breaks, as needed, to prevent heat stress.

GENERAL MEASURES AND PROCEDURES

SAFETY INSPECTIONS

Walk-through safety inspections of the work area will be conducted daily before the start of work and as conditions change. The results of these surveys will be communicated to the work crews during regularly scheduled "tailgate safety" meetings. The safety procedures and the day's planned operations will be discussed at these sessions.

PERSONAL PROTECTIVE EQUIPMENT

Field personnel involved in the site investigation will be required to be prepared with the following personal protective equipment:

- *Hard hats
- *Half-face air purifying respirators with organic vapor cartridges and dust/mist filters
- *Safety glasses with side-shields, or splash goggles
- *Tyvek coveralls and other suitable work clothing
- *Chemical-resistant gloves
- *Steel-toe boots or boot covers
- *Hearing protectors or ear plugs

EMERGENCY RESPONSE

The Project Safety Officer will have controlling authority during an emergency. In the event that this person is not available, the Alternate Safety Officer (driller) will be in charge. Emergency response organizations and contacts are listed at the end of this plan.

GENERAL SAFETY REQUIREMENTS

The following requirements will also be observed:

1. The Project Safety Officer has the authority to correct unsafe site conditions. All accidents, injuries, and potentially unsafe working conditions shall be reported to the Project Safety Officer immediately.
2. Eating, smoking, and drinking will be allowed only in designated offsite areas. Site personnel will wash their hands and faces thoroughly prior to eating or drinking.
3. Respirators will be cleaned, sanitized, inspected, and maintained by workers after each use.
4. Fire extinguisher will be onsite for use on equipment or small fires only.
5. An adequately stocked first aid kit will be onsite at all times during work activities.

All practical engineering and geological information, experience, and accepted practices will be employed as necessary to control any and all aspects of site safety while carrying out the proposed site investigation work.

LIST OF KEY PERSONNEL

Project Safety Officer: Tridib Guha, AARS(925) 363-1999
Alternate Safety Officer: Driller, Exploration Geoservices, Inc.(408) 280-6822
Client Contact: Mr. Mohinder S. Sikand(925) 256-1385

EMERGENCY TELEPHONE NUMBERS

911 Police, Fire and Ambulance
(510) 525-3212 Carlson Convalescent Hospital, 3230 Carlson Blvd., El Cerrito, CA
1-800-258-6492 Hazardous Waste Hotline (California DHS)
1-800-342-9293 Poison Control Hotline

HOSPITAL ADDRESS AND ROUTE

Location and Directions:

Carlson Convalescent Hospital Emergency Room is located at 3230 Carlson Blvd., El Cerrito at the intersection of San Diego Street.

From the site go north on San Pablo Avenue. Turn left on Central Avenue, immediate left on Carlson Blvd. and left on San Diego Street.

This site safety plan is prepared by:



Tridib K. Guha
Project Safety Officer



DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, SACRAMENTO
CORPS OF ENGINEERS
1325 J STREET
SACRAMENTO, CALIFORNIA 95814-2922

REPLY TO
ATTENTION OF

November 7, 2001

HTRW Branch

Mr. Tradib Guha, R.G., R.E.A.
Principal
Advanced Assessment and Remediation Services
3800 Vista Oaks Drive
Suite 201
Martinez, California 94553

Dear Mr. Guha:

I would like to thank you for your efforts in completing two project preliminary assessments, completed under the Formerly Used Defense Sites program. The completion of the preliminary assessments for the Franklin and Ballico Auxiliary Airfields and the Elk Grove projects required extensive record searches and coordination. The documentation provided was thoroughly cross-referenced and well prepared, facilitating our review and our programmatic coordination.

You performed the required services within the contract duration and your draft reports required little to no revisions. All in all you performed these environmental services very well. If you have any questions regarding this contract, please contact William Mullery at (916) 557-6944.

Thank you for your support in the Defense Environmental Program.

Sincerely,

A handwritten signature in cursive script that reads "Michael D. Mahoney".

Michael D. Mahoney
Chief, HTRW Branch



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, SACRAMENTO
CORPS OF ENGINEERS
1325 J STREET
SACRAMENTO, CALIFORNIA 95814-2922

November 7, 2001

HTRW Branch

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Thank you for your support in the Defense Environmental Program.

Sincerely,

A handwritten signature in cursive script that reads "Michael D. Mahoney".

Michael D. Mahoney
Chief, HTRW Branch

Study: Lifestyle can affect prostate cancer growths

By Linda H. Lamb
KNIGHT RIDDER NEWSPAPERS

COLUMBIA, S.C. — There's plenty of publicity about drugs that help prostate patients restore sexual function after surgery.

But new evidence suggests that lifestyle changes can help them with something more important: staying alive.

A small but significant study by a University of South Carolina public health researcher, James Hebert, is the first to show that stress-reducing exercises such as yoga and meditation, along with a low-fat, high-fiber diet, may slow the growth of tumors in men who have prostate cancer.

Hebert, who led the study, sees special relevance for the research in South Carolina — and

hopes to expand on it with a study at Columbia's Dorn Veterans Medical Center.

According to the National Cancer Institute, South Carolina's rate of prostate cancer deaths is the nation's highest: among white men, 22.1 deaths a year per 100,000 people, and among black men, 62 deaths (1994-1998 figures).

"It takes a huge toll on our population," said Hebert, chairman of the epidemiology and biostatistics department at USC's Norman J.

Arnold School of Public Health.

Hebert's team did the study at the University of Massachusetts between 1998 and 2000, and reported its findings last week in the *Journal of Urology*.

The 10 men in the study had had their prostate glands removed. All had elevated levels of prostate-specific antigen (PSA), which indicated the disease had spread to other parts of their bodies.

"If it keeps going, these guys are going to die," Hebert said.

The men, ages 56 to 78, probably had tumors that were so small they weren't detectable, he said.

Over four months, the men learned how to maintain a low-fat diet of whole grains, legumes, fresh green and yellow vegetables, soy foods and fruits. Consumption of processed foods, caffeine, meats and other animal proteins was strictly limited. The stress-reduction component included yoga, meditation and moderate exercise. Each had a partner participating,

usually a wife, and all received supportive counseling.

Results were positive for eight of the 10 men. In five, the PSA increased at a slower rate, and in three others the PSA actually decreased, Hebert said.

Hebert and his team think diet and physical activity are linked directly to the rate at which prostate cancer develops, and that fat can slow the body's efforts to fight cancer cells.

Changes in diet are hard to

implement, Hebert said, and the meditation helped to focus the men's energy and give them "the experience of having mastered a certain aspect of their lives."

He said stress and anger are typical responses following removal of the prostate, a gland at the base of the penis.

"They feel ripped off ... and the meditation was a way for them to face these feelings head on and work through them," Hebert said.

Enzyme found to pad belly

By John Fauber
KNIGHT RIDDER NEWSPAPERS

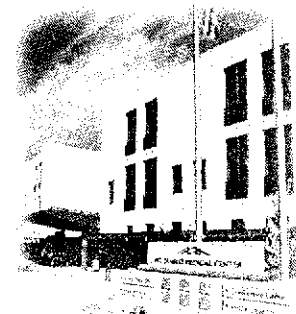
MILWAUKEE — The common beer belly could be the very visible result of an abundance of an enzyme found in fat cells as much as it is an indulgence in brew and chips, a finding that provides a new target for drugs to fight the battle of the bulge.

In a finding released this week in the journal *Science*, researchers reported that increased activity of an obscure enzyme could be a cause of visceral (around the abdomen) obesity as well as several related disorders such as high blood pressure, high

Mt. Diablo Medical Center is here for the community. *Today, and for generations to come.*

Mt. Diablo Medical Center, one of Contra Costa County's top hospitals, has a healthy outlook for the future. We're here to deliver the quality care and services that the community deserves, including Contra Costa's largest cardiac surgery program, which has received national recognition. You'll be

expansion of our Emergency Department. Although obstetrical services for the Health System have been consolidated to one campus, Mt. Diablo Medical Center continues to offer all other high



Study: Lifestyle can affect prostate cancer growths

By Linda H. Lamb
KNIGHT RIDDER NEWSPAPERS

COLUMBIA, S.C. — There's plenty of publicity about drugs that help prostate patients restore sexual function after surgery.

But new evidence suggests that lifestyle changes can help them with something more important: staying alive.

A small but significant study by a University of South Carolina public health researcher, James Hebert, is the first to show that stress-reducing exercises such as yoga and meditation, along with a low-fat, high-fiber diet, may slow the growth of tumors in men who have prostate cancer.

Hebert, who led the study, sees special relevance for the research in South Carolina — and

hopes to expand on it with a study at Columbia's Dorn Veterans Medical Center.

According to the National Cancer Institute, South Carolina's rate of prostate cancer deaths is the nation's highest: among white men, 22.1 deaths a year per 100,000 people, and among black men, 62 deaths (1994-1998 figures).

"It takes a huge toll on our population," said Hebert, chairman of the epidemiology and biostatistics department at USC's Norman J.

Arnold School of Public Health.

Hebert's team did the study at the University of Massachusetts between 1998 and 2000, and reported its findings last week in the *Journal of Urology*.

The 10 men in the study had had their prostate glands removed. All had elevated levels of prostate-specific antigen (PSA), which indicated the disease had spread to other parts of their bodies.

"If it keeps going, these guys are going to die," Hebert said.

The men, ages 56 to 78, probably had tumors that were so small they weren't detectable, he said.

Over four months, the men learned how to maintain a low-fat diet of whole grains, legumes, soy foods and fruits. Consumption of processed foods, caffeine, meats and other animal proteins was strictly limited. The stress-reduction component included yoga, meditation and moderate exercise. Each had a partner participating,

usually a wife, and all received supportive counseling.

Results were positive for eight of the 10 men. In five, the PSA increased at a slower rate, and in three others the PSA actually decreased, Hebert said.

Hebert and his team think diet and physical activity are linked directly to the rate at which prostate cancer develops, and that fat can slow the body's efforts to fight cancer cells.

Changes in diet are hard to

implement, Hebert said, and the meditation helped to focus the men's energy and give them "the experience of having mastered a certain aspect of their lives."

He said stress and anger are typical responses following removal of the prostate, a gland at the base of the penis.

"They feel ripped off ... and the meditation was a way for them to face these feelings head on and work through them," Hebert said.

Enzyme found to pad belly

By John Fauber
KNIGHT RIDDER NEWSPAPERS

MILWAUKEE — The common beer belly could be the very visible result of an abundance of an enzyme found in fat cells as much as it is an indulgence in brew and chips, a finding that provides a new target for drugs to fight the battle of the bulge.

In a finding released this week in the journal *Science*, researchers reported that increased activity of an obscure enzyme could be a cause of visceral obesity — the abdominal obesity associated with several related disorders.

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