PROPOSED WORK PLAN FOR PRELIMINARY SITE ASSESSMENT

L&D SCAFFOLD, INC.
1420 162ND AVENUE
SAN LEANDRO, CA 94578

March 7, 2000

Prepared By:

ALLCAL Environmental
27973 High Country Drive
Hayward, CA 94542

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REGISTERED GEOLOGIST
JOHN V. MRAKOVICH
4665
EXP. 4/03
STATE OF CALIFORNIA

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1.0 INTRODUCTION

ALLCAL Environmental (ALLCAL) is pleased to submit this proposed Preliminary Site Assessment (PSA) for 1420 162nd Avenue in San Leandro, California, (Figure 1) on behalf of Mr. Don Puckett and Ms. Betty Puckett (Client) of L&D Scaffold, Inc. The Alameda County Health Care Services Agency (ACHCSA) required this PSA in a January 5, 2000, letter (Appendix A). This PSA proposes the drilling of two soil borings for collection of soil and groundwater samples in the vicinity of a removed gasoline underground storage tank (UST). This PSA was written by John V. Mrakovich, a California registered geologist (No. 4665) for ALLCAL (see Statement of Qualifications; Appendix B).

The project site is occupied by one two-story building used for office and shop space and a second single-story building used for warehousing of scaffolding. The site is bounded to the southwest by by an appliance parts distributor, to the northeast and southeast by apartment complexes and residential property, and to the northwest by 162nd Avenue.

The site is currently used to operate a business that rents and erects scaffolding.

2.0 HYDROGEOLOGIC SETTING

The following discussion of regional hydrogeology is taken in part from *GEOHYDROLOGY AND GROUNDWATER-QUALITY OVERVIEW, EAST BAY PLAIN AREA, ALAMEDA COUNTY, CALIFORNIA*, 205 (j) Report, Kelvin Hickenbottom and Kenneth Muir, June 1988, and *HYDROGEOLOGY OF CENTRAL SAN LEANDRO*, Woodward-Clyde Consultants, December, 1993.

2.1 Regional Hydrogeology

The site is located in the East Bay Plain of the Coast Ranges physiographic province. The East Bay Plain is an area of flat alluvial lowlands and bay and tidal marshes lying between the bedrock hills of the Diablo Range to the east and San Francisco Bay to the west. Near the site area, the eastern boundary of the plain is located along the Hayward fault, which is at the base of the Diablo Range escarpment, about 2,000 feet to the northeast.

The East Bay Plain and San Francisco Bay are the result of a structural downwarp that received sediments for much of Pleistocene time, a period that extends from about 2 million years ago until about 10,000 years ago. The degree of downwarping has varied considerably across the two areas. Consequently, some local areas have a thin sedimentary fill and others have relatively thick sedimentary fills. In San Leandro, significant downwarping has occurred, and sedimentary fill may exceed about 1,000 feet in thickness in some areas.

Beneath the sediments are consolidated bedrock whose upper surface is the floor of the structural downwarp. The bedrock is Jurassic, Cretaceous, and Tertiary in age and consists of sandstone,conglomerate, shale, chert, and serpentine with some volcanic rocks. This bedrock also

comprises the hills (East Bay Hills) east of the Hayward fault that are part of the Diablo Range.

Sedimentary fill in the San Leandro area was mostly derived from the East Bay Hills. Toward the bay, some fill consists of estuarine and marine deposits. Based on well driller's logs, the sedimentary fill has been divided into "older alluvium" and "younger alluvium." "Younger alluvium in this report will include the Merritt Sand, bay mud, interfluvial basin deposits, and fluvial deposits.

In general, the "older alluvium" is present beneath all of the East Bay Plain and extends under San Francisco Bay. The "older alluvium" is Pleistocene in age and consists of clay, silt, sand, and gravel that was deposited as alluvial fans extending from the East Bay Hills. This sediment is a major groundwater reservoir in the East Bay Plain and may locally reach a thickness of about 1,000 feet. Wells in the "older alluvium" produce sufficient amounts of groundwater for irrigation, industrial, and municipal use.

The "younger alluvium" overlies the "older alluvium" and, with the exception of the Merritt Sand, is still being deposited. These sediments are Pleistocene, Holocene, and Recent in age and have been deposited as beach and near-shore sediments, peat beds, bay and estuarine deposits, and fluvial and flood plain deposits. They may locally reach a thickness of about 150 feet. These sediments are a minor source of groundwater, mostly sufficient for domestic use (lawn and garden irrigation and other non-potable uses) because much of the permeable "younger alluvium" lies above the zone of saturation.

Groundwater flow in aquifers of both the "older and younger alluvium" is generally westerly toward San Francisco Bay; the gradient may vary locally.

2.2 Site Geology and Hydrogeology

The site is located in Township 3 South, Range 2 West, Section 6 of the Hayward, California 7.5-Minute Series, Topographic Quadrangle Map (Figure 1) at an elevation of about 35 feet above mean sea level (MSL). Surface sediments are "younger alluvium" and Holocene in age. Regional topographic gradient is southwesterly; however, at the site the local gradient is northwesterly with a slope of about .0056 feet per foot. San Lorenzo Creek is about 4,500 feet south of the site, San Francisco Bay, the nearest topographically down-gradient surface water, is about 17,000 feet southwest of the site, and Lake Chabot is about 8,000 feet north-northeast of the site. No other significant bodies of nearby surface water are known.

Groundwater was encountered during UST removal activities at a depth of about 8 feet below grade. Direction of groundwater flow has not been determined at the site. Based on topographic gradient and information provided by the ACHCSA on direction of groundwater flow at nearby sites, direction of groundwater flow at the site is estimated to be northwesterly.

3.0 BACKGROUND

The following discussion is summarized from information provided by the Client and from a

November 3, 1999, *UST REMOVAL REPORT, L&D SCAFFOLD, INC., 1420 162ND AVENUE, SAN LEANDRO, CA*, prepared by Environmental Bio-Systems, Inc. (EBS).

3.1 Site Ownership and UST History

Don and Betty Puckett have owned the subject property since about 1980. Prior to their ownership, Mr. and Ms. Puckett rented the property for about 25 years. During their occupancy, the property has been used as a business that rents and erects scaffolding. The property is used for storing scaffolding.

A 7,500-gallon UST was installed in about 1979 to service company vehicles. The UST was used until Spring 1999.

3.2 UST Closure

On October 25, 1999, a 7,500-gallon, gasoline, single-walled steel UST; appurtenant piping; and dispenser were removed by EBS. The UST and dispenser were located outside the southwestern corner of the site's two-story building (Figure 2). Examination of the UST, after its removal, revealed the tank was in excellent condition with no rust or corrosion visible on the outer surface. The tank had an intact tar wrapping.

During removal of the piping, mild hydrocarbon odor was detected directly beneath a joint located between the dispenser and the UST.

Soil samples were collected for chemical analyses from the northerly sidewall and southwestern corner of the excavation immediately above groundwater; at a depth of about 7 feet below grade. A soil sample was also collected for analysis from beneath the apparent leaky pipe joint discussed above; at a depth of about 1.5 feet below grade. The soil sample collected from the northerly sidewall detected only total petroleum hydrocarbons as gasoline (TPHG), methyl tert-butyl ether (MTBE), and total lead [at concentrations of 2.5 parts per million (ppm), 2.5 ppm, and 10 ppm, respectively]. The soil sample collected from the southwesterly corner detected only MTBE and total lead (at concentrations of 0.037 ppm and 9.1 ppm, respectively). The soil sample collected from beneath the piping detected only TPHG, benzene, MTBE, and total lead (at concentrations of 28 ppm, 2.2 ppm, 28 ppm, and 11 ppm, respectively). The laboratory noted the TPHG concentration in the above samples included the MTBE concentration.

During tank removal activities, water was encountered in the excavation at a depth of about 8 feet below grade. The water was sampled twice for chemical analyses, once prior to UST removal on October 25, 1999, and once after the tank was removed and the excavation was dewatered for backfilling on October 26, 1999. For the second sampling event, only TPHG, toluene, xylenes, and MTBE were detected [at concentrations of 1,300 parts per billion (ppb), 2.1 ppb, 1.6 ppb, and 1,300 ppb, respectively]. The laboratory noted the TPHG concentration included the MTBE concentration.

Because of the concentrations of TPHG and MTBE detected in the above soil and groundwater

samples, the ACHCSA has requested a PSA to delineate the extent of soil and groundwater contamination at the site.

4.0 PROPOSED WORK PLAN FOR PSA

As a further investigation of gasoline contamination of the vadose zone soil and groundwater, ALLCAL proposes to drill two soil borings for the collection and analysis of soil and "grab" groundwater samples.

The following scope of work is proposed:

- Submit this work plan to the Client and ACHCSA for their comment and approval.
- Obtain a soil boring permit from the Alameda County Public Works Agency (ACPWA) and notify Underground Service Alert (USA).
- Drill an exploratory soil boring to a depth of 10 feet below grade at the location of the former dispenser. Drill a second exploratory soil boring, about 15 feet from the excavation of the former UST, in the estimated downgradient direction of groundwater flow.
- Continuously log the soil profile of each boring. From the boring at the location of the former dispenser, collect unsaturated soil samples at depths of 3, 5, and 10 feet below grade for potential chemical analysis (if depth to groundwater is less than 10 feet, collect only the unsaturated samples). Analyze the 3-foot sample first; if nondetectable, do not analyze the remaining samples; if detectable, analyze all remaining samples. From the downgradient boring, collect a soil sample at a depth immediately above the saturated zone and a "grab" groundwater sample for chemical analysis.
- Analyze all soil and groundwater samples for TPHG; benzene, toluene, ethylbenzene, and xylenes (BTEX); and MTBE. If MTBE is detected, confirm its presence in each media by EPA Method 8260.
- Seal each boring to ground surface with neat Portland cement slurry.
- Prepare a report.

Details of the proposed scope of work are presented below.

4.1 Pre-drilling Activities

Prior to drilling soil borings, ALLCAL will: (1) obtain approval of this work plan from the Client and the ACHCSA, (2) obtain a soil boring permit from the ACPWA, (3) visit the site to mark the

locations of the proposed soil borings and notify Underground Service Alert, (4) subcontract a "direct push" driller having a C57 license to drill the soil borings, and (5) give 48 hours' notice to the ACHCSA prior to drilling the borings.

4.2 Rationale for Boring Locations

Soil boring SB-1 is proposed to be drilled at the location of the former dispenser to further evaluate the apparent leaky pipe joint observed at the time of the UST removal and to evaluate potential leakage of the dispenser.

Soil boring SB-2 is proposed to be drilled in the estimated downgradient direction (northwesterly) of groundwater flow from the former UST. A boring at this location will further evaluate the extent of groundwater contamination detected at the time of UST removal. Also, this boring is located in an area to further evaluate the extent of soil contamination that may have originated from the former piping and dispenser.

4.3 Proposed Soil Boring and Sampling Procedures

The following discussion proposes soil boring and soil and groundwater sampling procedures. Appendices C, D, and E document ALLCAL's sample handling procedures, quality assurance and quality control procedures, and waste handling and decontamination procedures, respectively.

The exploratory boring at the former dispenser location, SB-1, is proposed to be drilled to the depth of groundwater or a total depth of about 10 feet, whichever occurs first. The boring drilled in the estimated downgradient direction from the former UST excavation, SB-2, is proposed to be drilled to a depth of about three feet below groundwater, estimated to be 11 to 13 feet below grade. The borings will be drilled with the Geoprobe System, small diameter (about 2-inch) drill casing, direct-push technology. Soil samples will be continuously collected as core into a polyethylene terephthalate glycol (PETG) liner in 4-foot depth intervals. The liner is contained within the 2-inch drill casing. The drill casing and enclosed PETG liner will be pushed or hydraulically driven by drill rods in 4-foot depth intervals to the total depth of each boring (the last driven interval may be less than 4 feet). After driving the 4-foot interval, the drill casing and enclosed liner will be retrieved, and the soil core will be examined for contamination and construction of lithologic logs.

Up to three unsaturated soil samples will be selected from boring SB-1 and one unsaturated soil sample from boring SB-2 for preservation for chemical analysis. Soil samples are proposed to be selected for chemical analysis at depths of 3, 5, and 10 feet in boring SB-1, and at a depth immediately above the saturated zone in boring SB-2. Fewer samples will be collected from boring SB-1 if the depth to groundwater is less than 10 feet.

To minimize the potential for cross-contamination, the drill casing shoe will be cleaned with Alconox detergent and rinsed with distilled water between sampling events and prior to beginning each boring.

After encountering groundwater in boring SB-2, a "grab" groundwater sample will be collected by using a Geoprobe, stainless-steel, discrete water sampler. "Grab" samples are obtained by using an expendable drive point to drive the sampler to the sampling depth; then an internal screen is exposed to allow water to enter the sampler. Water is collected from the sampler with a stainless-steel bailer. If water is slow to enter the sampler, the sampler may be retrieved and polyvinyl chloride screen and casing may be installed and the boring will be allowed to fill with groundwater. A "grab" groundwater sample will be collected using a clean bailer, as above.

After all soil and groundwater samples are collected, each boring will be sealed to grade with neat Portland cement.

A boring log will be prepared for each soil boring. The soil will be logged according to the Unified Soil Classification System by a California Registered Geologist.

Drill cuttings and rinsate will be stored on site in labeled, 5-gallon pails. The labels will show contents, date stored, suspected contaminant, expected date of removal, company name, contact person, and telephone number. Maintenance and security of the pails and their contents is the Client's responsibility. After the soil and groundwater samples are characterized by chemical analysis, ALLCAL, at the Client's request, can assist with properly disposing of the pails and their contents at an additional cost.

4.4 Proposed Sample Handling Methods

Soil samples selected for chemical analysis will be preserved in PETG liners with no headspace by quickly covering the open ends with Teflon sheeting or aluminum foil and capping them with plastic end-caps. The samples will be labeled to show site name, project number, date, time, sample name, depth collected, and sampler name; sealed in quart-size plastic bags; and stored in an iced-cooler.

"Grab" groundwater samples will be stored in laboratory provided, 40-milliliter, HCL-preserved VOAs having Teflon-lined plastic caps. Each sample will be labeled and stored as above.

4.5 Proposed Chemical Analyses

All soil and groundwater samples will be delivered under chain-of-custody to California Department of Health Services certified McCampbell Analytical Inc., laboratory in Pacheco, California. All samples will be analyzed for TPHG, BTEX, and MTBE by EPA Methods GCFID, 5030/8015, 8020, and 8020, respectively. If MTBE is detected, it will be verified by EPA Method 8260 for each media in which it was detectable.

In boring SB-1, the 3-foot depth soil sample will be analyzed first; if all analytes are nondetectable, no further soil samples will be analyzed in this boring. If analytes are detected in the 3-foot depth sample, the remaining soil samples collected from this boring will also be analyzed.

4.6 Report

ALLCAL will document the work conducted and analytical results in a report. The report will include: copies of all permits required to conduct the work, a site plan showing location of the soil borings, graphic boring logs, results of chemical analyses, and copies of certified analytical reports with chains-of-custody.

The report will be certified by a California Registered Geologist.

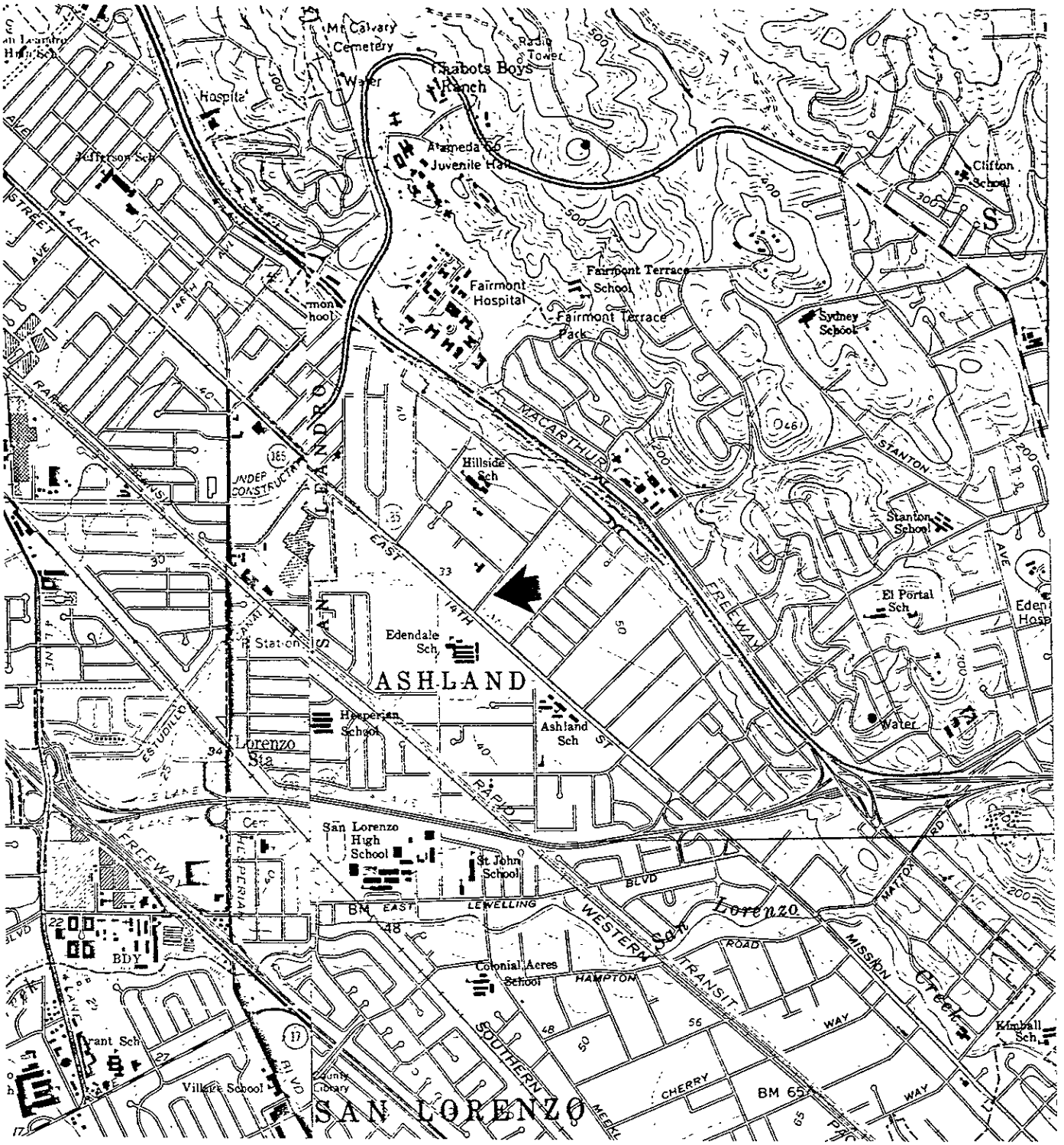
5.0 SITE SAFETY PLAN

A Site Safety Plan for conducting work under this work plan is included in Appendix F.

6.0 TIME SCHEDULE

The projected time schedule for implementation of the activities described in this work plan is presented below. The schedule reflects a relatively problem-free program. However, delays in the work plan review, permitting, or laboratory analyses could lengthen the project schedule. Access difficulties, adverse weather, and regulator review could also delay the proposed time schedule. ALLCAL will make every effort to adhere to the project schedule.

Week 1:	Client/ALLCAL submits work plan to ACHCSA for approval and permit to ACPWA for soil borings. Work plan approved; soil boring permit received; and drilling company subcontracted.
Week 2:	ALLCAL drills the soil borings and submits soil and groundwater samples for chemical analyses.
Week 3:	Chemical analyses are received.
Week 5:	ALLCAL submits a report to Client and ACHCSA.



Legend

U.S.G.S. 7.5 Minute Series Topographic Map, Hayward, California 1959 Photorevised 1980

N

0 2000

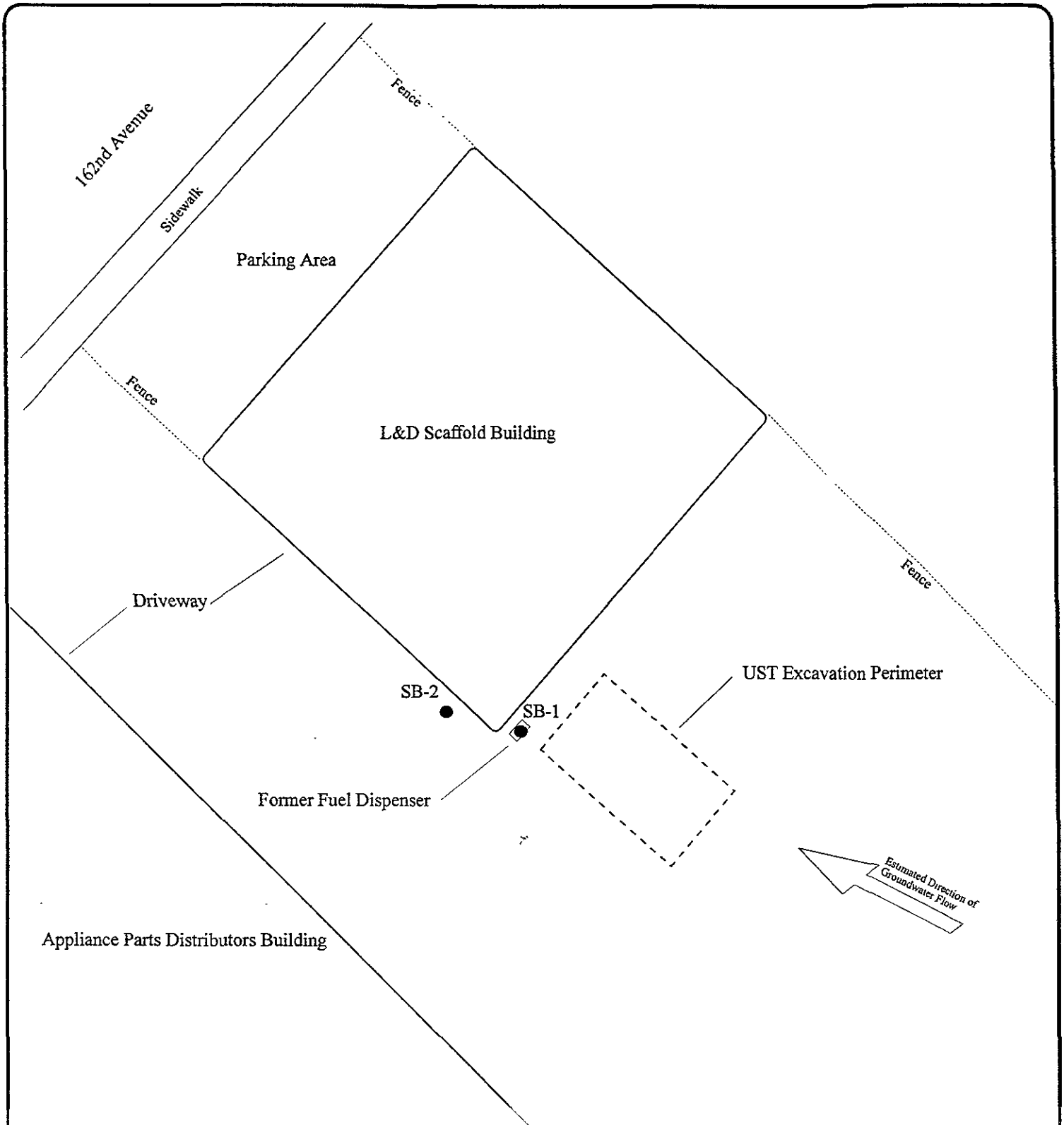
Approximate Scale (ft)

ALLCAL ENVIRONMENTAL

FIGURE 1

SITE LOCATION MAP

L&D SCAFFOLD, INC
1420 162nd AVENUE
SAN LEANDRO, CA 94578



Legend

SB-1
● Proposed Name and Location of Soil Boring

N

0 20
Approximate Scale (ft)

ALLCAL ENVIRONMENTAL

FIGURE 2

SITE PLAN

L&D SCAFFOLD, INC.
1420 162nd AVENUE
SAN LEANDRO, CA 94578

APPENDIX A

ALAMEDA COUNTY HEALTH CARE SERVICES LETTER

ALAMEDA COUNTY
HEALTH CARE SERVICES
AGENCY
DAVID J. KEARS, Agency Director

ENVIRONMENTAL HEALTH SERVICES
ENVIRONMENTAL PROTECTION
1131 Harbor Bay Parkway
Alameda, CA 94502-6577
(510) 567-6700
(510) 337-9432

StID 6645

January 5, 2000

Mr. Don Puckett
P.O.Box 7237
Clear Lake, CA 95422

Ms. Betty Puckett
L&D Scaffold
1420 162nd Avenue
San Leandro, CA 94578

RE: PSA for 1420 162nd Avenue, San Leandro, CA

Dear Mr. and Ms. Puckett:

I have completed review of Environmental Bio-Systems, Inc's *UST Removal* report prepared for the above referenced site. When a 7,500-gallon gasoline underground storage tank (UST) was removed, soil and groundwater samples were collected. Soil analytical results revealed up to 28 parts per million (ppm) MTBE beneath the former dispenser. And the grab groundwater samples contained up to 2,700 parts per billion (ppb) total petroleum hydrocarbons as gasoline (TPHg), 13 ppb benzene, and 2,600 ppb MTBE.

At this time, additional investigations are required to delineate the extent of soil and groundwater contamination at the site. Such an investigation shall be in the form of a **Preliminary Site Assessment**, or PSA. The information gathered by the PSA will be used to determine an appropriate course of action to remediate the site, if deemed necessary. The PSA must be conducted in accordance with the RWQCB Staff Recommendations for the Initial Evaluation and Investigation of Underground Tanks, and Article 11 of Title 23, California Code of Regulations. The major elements of such an investigation are summarized in the attached Appendix A.

The PSA proposal is due **within 60 days** of the date of this letter, or **by March 8, 2000**. If you have any questions, I can be reached at (510) 567-6762.

eva chu
Hazardous Materials Specialist

attachment

l&dscaffo d-1

APPENDIX B

STATEMENT OF QUALIFICATIONS ALLCAL ENVIRONMENTAL

MISSION STATEMENT

ALLCAL Environmental (ALLCAL) is dedicated to conducting environmental investigations and remediations that lead to fast, economical site closures. ALLCAL's mission is to provide professional services that comply with local and State environmental regulations and assist in satisfying the client's needs, i.e., due diligence for property transactions and regulatory closure of contaminated/remediated sites. ALLCAL strives to understand each client's needs and ensure that the client is full informed as to the scope of work, costs, and regulatory requirements that must be met to satisfy those needs. ALLCAL acts as an intermediary between client and regulatory agency.

ALLCAL's President has over twenty years of experience as a geologist and consultant managing and conducting environmental, engineering, and petroleum projects. A partial list of clients is attached as testimony to the numerous successful investigations and site closures conducted by ALLCAL's President.

EXPERIENCE OF ALLCAL'S PRINCIPAL CONSULTANT

JOHN V. MRAKOVICH, Ph.D., R. G., PRESIDENT

Environmental Geologist and Manager:

- Remediated thousands of cubic yards of contaminated soil at fuel leak sites in the San Francisco Bay Area.
- Designed and implemented soil and groundwater chemical plume definition projects at fuel leak sites and for electronic chip manufacturers.
- Interpreted and assessed the regional hydrogeology of an 8,500-acre Superfund site in Sacramento and characterized and managed the remediation of multiple groundwater chemical plumes.

- Established and staffed environmental departments and developed protocols for conducting environmental investigations and soil and groundwater remediations.
- Successfully closed many sites.

Engineering Geologist:

- Conducted geologic investigations for nuclear and conventional power plants in Michigan, Texas, and Louisiana.

Petroleum Geologist:

- Explored for oil and gas and mapped petroleum reserves in the Gulf Coast of the United States.

WORK HISTORY

1987-Present ENVIRONMENTAL:

ALLCAL Environmental; Allcal Property Services, Inc.; Tank Protect Engineering of Northern California, Inc.; EMCON Associates; and Aerojet Gencorp. Supervised and wrote hundreds of proposals/contracts, reports, and workplans. Supervised and conducted: soil borings, groundwater monitoring well installations, soil and groundwater sampling, remediation of contaminated soil and groundwater, underground tank removals, characterization of soil and groundwater contaminant plumes, and hydrogeological modeling. Developed positive professional working relationships with local regulators.

1969-1987 PETROLEUM AND ENGINEERING:

Worked for oil and gas exploration and production companies in Texas and Louisiana and for Bechtel Incorporated in Michigan and Texas.

Explored and mapped petroleum accumulations onshore and offshore Gulf of Mexico by integrating geophysical well logs with seismic surveys. Analyzed economics of oil and gas accumulations.

Conducted geotechnical investigations and seismic studies of locations for proposed nuclear and conventional power plants.

ADDITIONAL CREDENTIALS

Registered California Geologist, Number 4665

Ph.D., Geology, Michigan State University, MI

B.S. and M.S., Geology, Kent State University, OH

Experienced in legal depositions and marketing.

Professional publications.

OSHA certified.

SELECTED PROJECTS

* Stanford Research Institute (SRI International)
* City of Oakland
* City of Berkeley
* City and County of San Francisco - S.F. International Airport
* St. Helena Cemetery Association
* Riverside Golf Course - Coyote, CA
* Canteen Corporation - San Leandro, CA
* Independent Construction Company - Oakland, CA
* Sabek Petroleum Marketing, Inc. - Various Sites in Bay Area
* Bridgehead, Inc. - Antioch, CA
* Escutia's Auto Repair - Fremont, CA
* Pacific Heat Treating Company - Sunnyvale, CA
* Fiesta Beverages - Oakland, CA
* Credit World Auto Sales - Oakland, CA
* Reliable Roofing Company - Oakland, CA
* Shahin's Peninsula Transmission - San Bruno, CA
* Begier Buick - San Leandro, CA
* Plants Unlimited, Inc. - San Leandro, CA
* Don's Tire Service, Inc. - Berkeley, CA

PARTIAL LIST OF CLIENT REFERENCES

DENNIS L. O'LAUGHLIN
O'LAUGHLIN REALTY & INVESTMENT
(510) 886-2929

ROBERT NEILSON
ECOLOGICAL MANAGEMENT
(916) 649-1664

SAN LORENZO UNIFIED SCHOOL DISTRICT
(510) 317-4837

DAVID McCOSKER
INDEPENDENT CONSTRUCTION COMPANY
(510) 686-1780

TED WALBEY
FIESTA BEVERAGE
(510) 832-6081

PHIL BEGIER
BEGIER BUICK
(510) 357-7611

MORRIS DONNELLY
PALACE GARAGE
(510) 357-9835

RAYMOND ROBIDEAUX
ROBIDEAUX EXPRESS TRUCKING
(510) 357-4650

ROBERT BATTINICH
SAINT FRANCIS ELECTRIC
(510) 670-8503

APPENDIX C

SAMPLE HANDLING PROCEDURES

Soil and groundwater samples will be packaged carefully to avoid breakage or contamination and will be delivered to the laboratory in an iced-cooler. Sample bottle/sleeve lids will not be mixed. All sample lids will stay with the original containers.

Samples will be stored in iced-coolers to maintain custody, control temperature, and prevent breakage during transportation to the laboratory. Ice, blue ice, or dry ice (dry ice will be used for preserving soil samples collected for the Alameda County Water District) will be used to cool samples during transport to the laboratory. Water samples will be cooled with crushed ice. In the Alameda County Water District, water samples will be buried in the crushed ice with a thermometer, and the laboratory will be requested to record thermometer temperature at the time of receipt.

Each sample will be identified by affixing a label on the container(s). This label will contain the site identification, sample identification number, date and time of sample collection, and the collector's initials.

Soil samples collected in PETG, brass or stainless-steel tubes will be preserved by covering the ends with Teflon tape and capping with plastic end-caps. The tubes will be labeled, sealed in quart-size bags, and placed in an iced-cooler for transport to the laboratory.

All groundwater sample containers will be pre-cleaned and will be obtained from a State Department of Health Services certified analytical laboratory.

A chain-of-custody form will be completed for all samples and accompany the sample cooler to the laboratory. All sample transfers will be documented in the chain-of-custody. All field personnel are personally responsible for sample collection and the care and custody of collected samples until the samples are transferred or properly dispatched.

The custody record will be completed by the field technician or professional who has been designated as being responsible for sample shipment to the appropriate laboratory. The custody record will include the following information: site identification, name of person collecting the sample(s), date and time sample(s) were collected, type of sampling conducted (composite/grab), location of sampling station, number and type of containers used, and signature of the person relinquishing samples to another person with the date and time of transfer noted.

APPENDIX D

QUALITY ASSURANCE AND QUALITY CONTROL PROCEDURES

The overall objectives of the field sampling program include generation of reliable data that will support development of a remedial action plan. Sample quality will be checked by the use of proper sampling, handling, and testing methods. Additional sample quality control methods may include the use of background samples, equipment rinsate samples, and trip and field blanks. Chain-of-custody forms, use of a qualified laboratory, acceptable detection limits, and proper sample preservation and holding times also provide assurance of accurate analytical data.

A quality assurance and quality control (QA/QC) program may be conducted in the field to ensure that all samples collected and field measurements taken are representative of actual field and environmental conditions and that data obtained are accurate and reproducible. These activities and laboratory QA/QC procedures are described below.

Field Samples: Additional samples may be taken in the field to evaluate both sampling and analytical methods. Three basic categories of QA/QC samples that may be collected are trip blanks, field blanks, and duplicate samples.

Trip blanks are a check for cross-contamination during sample collection, shipment, and laboratory analysis. They are water samples that remain with the collected samples during transportation and are analyzed along with the field samples to check for residual contamination. Analytically confirmed organic-free water will be used for organic parameters and deionized water for metal parameters. Blanks will be prepared by the laboratory supplying the sample containers. The blanks will be numbered, packaged, and sealed in the same manner as the other samples. One trip blank will be used for each sample set of less than 20 samples. At least 5% blanks will be used for sets greater than 20 samples. The trip blank is not to be opened by either the sample collectors or the handlers.

The field blank is a water sample that is taken into the field and is opened and exposed at the sampling point to detect contamination from air exposure. The water sample is poured into appropriate containers to simulate actual sampling conditions. Contamination due to air exposure can vary considerably from site to site.

The laboratory will not be informed about the presence of trip and field blanks, and false identifying numbers will be put on the labels.

Duplicate samples are identical sample pairs (collected in the same place and at the same time), placed in identical containers. For soils, adjacent sample liners will be analyzed. For the purpose of data reporting, one is arbitrarily designated the sample, and the other is designated as a duplicate sample. Both sets of results are reported to give an indication of the precision of sampling and analytical methods.

The laboratory's precision will be assessed without the laboratory's knowledge by labeling one of the duplicates with false identifying information. Data quality will be evaluated on the basis of the duplicate results.

Laboratory QA/QC: Execution of a strict QA/QC program is an essential ingredient in high-quality analytical results. By using accredited laboratory techniques and analytical procedures, estimates of the experimental values can be very close to the actual value of the environmental sample. The experimental value is monitored for its precision and accuracy by performing QC tests designed to measure the amount of random and systematic errors and to signal when correction of these errors is needed.

The QA/QC program describes methods for performing QC tests. These methods involve analyzing method blanks, calibration standards, check standards (both independent and the United States Environmental Protection Agency-certified standards), duplicates, replicates, and sample spikes. Internal QC also requires adherence to written methods, procedural documentation, and the observance of good laboratory practices.

APPENDIX E

WASTE HANDLING AND DECONTAMINATION PROCEDURES

Decontamination: Any drilling, sampling, or field equipment that comes into contact with soil or groundwater will be decontaminated prior to its use at the site and after each incident of contact with the soil or groundwater being investigated. Decontamination is essential to obtain samples that are representative of environmental conditions and to accurately characterize the extent of soil and groundwater contamination. Hollow-stem auger flights, the drill bit, and all other soil boring devices will be steam-cleaned between the drilling of each boring.

All sample equipment, including the split-spoon sampler and brass or stainless-steel tubes, will be cleaned by washing with trisodium phosphate or Alconox detergent, followed by rinsing with tap water. Where required by specific regulatory guidelines, a nonphosphate detergent will be used.

Waste Handling: Waste materials generated during site characterization activities will be handled and stored as hazardous waste and will be stored on site in appropriately labeled containers. Waste materials anticipated include: excavated soil, drill cuttings, development and purge water, water generated during aquifer testing, water generated during decontamination, and used personnel protection equipment such as gloves and Tyvek. The site owner will be responsible for providing the storage containers and will be responsible for the disposal of the waste materials. Drill cuttings from individual borings will be stored separately in drums or covered by plastic sheeting, and the appropriate disposal procedure will be determined by the site owner following receipt of the soil sample analytical results. Storage containers will be labeled to show material stored, known or suspected contaminant, date stored, expected removal date, company name, contact, and telephone number.

APPENDIX F

SITE HEALTH AND SAFETY PLAN

Site: **L&D Scaffold, Inc.**
1420 162nd Avenue
San Leandro, CA 94578

Plan Prepared by: **John Mrakovich** Date: **3/7/00**

1.0 KEY PERSONNEL AND RESPONSIBILITIES

Project Manager:	**John Mrakovich**	**(510) 582-2320**
Site Safety Manager:	**John Mrakovich**	
Alternate Site Safety Manager:	**N/A**	
Field Team Members:	**N/A**	

Agency Reps: **Alameda County Health Care Services Agency** **(510) 567-6783**

2.0 JOB HAZARD ANALYSIS

2.1 OVERALL HAZARD EVALUATION

Hazard Level: High ( ) Moderate ( ) Low (X) Unknown ( )
Hazard Type: Liquid (X) Solid (X) Sludge ( ) Vapor/Gas (X)

Known or suspected hazardous materials present on site:

Gasoline Chemicals.

Characteristics of hazardous materials included above (complete for each chemical presents):

Corrosive ( ) Ignitable ( ) Toxic (X) Reactive ( )
Volatile (X) Radioactive ( ) Biological Agent ( )

Exposure Routes: Inhalation (X) Ingestion (X) Contact (X)

2.2 JOB-SPECIFIC HAZARDS

For each labor category specify the possible hazards based on information available (eg., Task-driller, Hazards-trauma from drill rig accidents, etc.). For each hazard, indicate steps to be taken to minimize the hazard.

Driller/Helper/Geologist-Trauma from drilling rig accidents- wear hard hat, gloves, steel-toed boots.

The following additional hazards are expected on site (i.e., snake infested area, extreme heat, etc.):

Temporary open boreholes.

Measures to minimize the effects of the additional hazards are:

Protect with barricades, caution tape, or traffic cones when unattended.

3.0 MONITORING PLAN

3.1 (a) Air Monitoring Plan

Action levels for implementation of air monitoring. Action levels should be based on published data available on contaminants of concern. Action levels should be set by persons experienced in industrial hygiene.

Level (i.e., .5 ppm)	Action Taken (i.e., commence perimeter monitoring)
5 ppm	**Stop work and monitor until air level drops below 5 ppm.**

(b) Air Monitoring Equipment

Outline the specific equipment to be used, calibration method, frequency of monitoring, locations to be monitored, and analysis of samples (if applicable).

If air monitoring is not to be implemented for this site, explain why:

Air monitoring will not be conducted because previous work at the site has not detected any hazardous vapors.

3.2 Personnel Monitoring (Include hierarchy of responsibilities decision making on the site)

N/A

4.0 PERSONAL PROTECTIVE EQUIPMENT (PPE)

Equipment used by employees for the site tasks and operations being conducted. Be Specific (eg., hard hat, impact resistance goggles, other protective gloves, etc.).

Hard hat, protective gloves (when necessary), steel-toed boots.

5.0 SITE CONTROL AND SECURITY MEASURES

The following general work zone security guidelines should be implemented:

- Work zone shall be delineated with traffic cones.
- Boreholes shall be delineated with traffic cones when drilling and sampling activities are not actually taking place.
- Visitors will not be allowed to enter the work zone unless they have attended a project safety briefing.

6.0 DECONTAMINATION PROCEDURE

List the procedures and specific steps to be taken to decontaminate equipment and PPE.

Wash equipment with a trisodium phosphate or Alconox solution and rinse with clean potable water.

7.0 TRAINING REQUIREMENTS

Prior to mobilization at the job site, employees will attend a safety briefing. The briefing will include the nature of the wastes and the site, donning personal protection equipment, decontamination procedures and emergency procedures.

8.0 MEDICAL SURVEILLANCE REQUIREMENTS

If any task requires a very high personnel protection level (OSHA Level A or B), personnel shall provide assurances that they have received a physical examination and they are fit to do the task. Also personnel will be instructed to look for any symptom of heat stress, heat stroke, heat exhaustion or any other unusual symptom. If there is any report of that kind it will be immediately followed through, and appropriate action will be taken.

9.0 STANDARD OPERATION PROCEDURES

ALLCAL Environmental (ALLCAL) is responsible for the safety of its employees on site. Each contractor shall provide all the equipment necessary to meet safe operation practices and procedures for their personnel on site and be responsible for their safety.

A "Three Warning" system is utilized to enforce compliance with Health and Safety procedures practices which will be implemented at the site for worker safety:

- Eating, drinking, chewing gum or tobacco, and smoking will be allowed only in designated areas.
- Wash facilities will be utilized by workers in the work areas before eating, drinking, or use of the toilet facilities.
- Containers will be labeled identifying them as waste, debris, or contaminated clothing.
- All drilling work will comply with regulatory agency requirements.
- All site personnel will be required to wear hard hats and advised to take adequate measures for self protection.
- Any other action which is determined to be unsafe by the site safety officer will be taken.

10.0 CONFINED SPACE ENTRY PROCEDURES

No one is allowed to enter any confined space operation without proper safety measures. Specifically in case of an excavated tank pit no one should enter at any time.

11.0 EMERGENCY RESPONSE PLAN

Relevant phone numbers:

Person	Title/Phone No.
Betty Puckett	Owner (510) 276-9211
John Mrakovich	Project Manager (510) 581-2320
Fire	911
Police	911
Ambulance	911

HEALTH AND SAFETY COMPLIANCE STATEMENT

I have received and read a copy of the project Health and Safety Plan.

I understand that I am required to have read the aforementioned document and have received proper training under the Occupational Safety and Health Act (29 CFR, Part 1910.120) prior to conducting site activities at the site.

_____ _____

Signature Date

_____ _____

Signature Date

Nearby Hospital:

San Leandro Hospital
13855 East 14th Street
San Leandro, CA 94578
Emergency (510) 667-4545