LEVINE·FRICKE
CONSULTING ENGINEERS AND HYDROGEOLOGISTS

February 23, 1989

LF 1596

Ms. Coramarie Maskell Allenbaugh
10 Waverly Court
Alamo, California 94507

Subject: Proposal for Soil and Ground-Water Investigation
For Property at 14500 East 14th Street
San Leandro, California

Dear Ms. Allenbaugh:

At your request and per our recent conversations, we have prepared the following proposal for additional soil and ground-water investigation of the property located at 14500 East 14th Street, San Leandro, California (the "Site"). As you indicated during our recent conversations, the subject property (owned by you) was for sale and a potential buyer had recently completed a preliminary environmental assessment of the property. The results of that limited assessment revealed that shallow soil and ground water (depths less than 30 to 35 feet) have been affected by various petroleum hydrocarbons, most notably diesel fuel. In view of the results of that investigation, you asked Levine·Fricke to prepare a proposal to further assess the subsurface presence of petroleum hydrocarbons on the subject property.

At your request, we reviewed the "Environmental Site Characterization Report," dated December 23, 1988, prepared by Hageman-Shank, Inc., which details the results of their limited environmental assessment of your property. In addition, Levine·Fricke personnel visited the subject property on February 2, 1989.

Based on our review of the soil and ground-water quality data presented in the Hageman-Shank Report, it appears that several petroleum hydrocarbons, including diesel, gasoline and motor oil, have affected shallow (depths of 25 to 30 feet) soil and ground water. The most prevalent of these hydrocarbons appears to be diesel fuel. The source of these petroleum hydrocarbons appears to be four above-ground fuel storage tanks (two diesel, one regular gasoline and one premium gasoline), one underground gasoline storage tank, one underground waste oil tank and two remote fuel pumping facilities. The proposed Scope of Work presented below for additional subsurface investigations at the subject property are based on our review of the Hageman-Shank Report and our site visit conducted in February 1989.

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Other offices in NEWPORT BEACH and OAKLAND, CA

As we discussed on February 22, 1989, we have also included completion of a record search as an additional task in our proposed Scope of Work (primarily records of regulatory agencies such as the Regional Water Quality Control Board, the California Department of Health Services, and the Fire Department) to investigate whether potential environmental concerns, which may affect your property, have been reported at off-site properties as a result of past or current operating practices.

PROPOSED SCOPE OF WORK

This scope of work is proposed to assess the presence and possible extent of fuel hydrocarbons in soil and ground water at the property located at 14500 East 14th Street, San Leandro, California.

The following describes the tasks involved in our proposed Scope of Work.

Task 1. Background and Record Review
Task 2. Drilling and Installation of Five Shallow Ground-Water Monitoring Wells
Task 3. Soil Sampling
Task 4. Well Development and Ground-Water Sampling
Task 5. Laboratory Analysis
Task 6. Health and Safety Plan
Task 7. Data Evaluation and Report Preparation
Task 8. Project Management and Meetings

Detailed descriptions of each task follow:

Task 1: Background and Record Review

Levine·Fricke will review and evaluate readily available and relevant background information concerning the Site and adjacent properties. This may include: 1) discussing the history and usage of the Site with certain persons familiar with the Site and the vicinity; 2) obtaining and reviewing verbal information or documents from local public agencies, including agency tank registration records and chemical use/purchase records; and 3) reviewing readily available reports of relevant environmental studies conducted in the area.

Selected regulatory agencies' lists of currently known or potential off-site contamination sources which may impact the Site will also be reviewed. If potential sources are identified on those lists, attempts will be made to review, within the timeframe of this project, the agency files for those sites to further assess their potential for impacting the Site.

Task 2. Drilling and Installation of Five Shallow Ground-Water Monitoring Wells

Permits for monitoring well installation will be obtained from the Alameda County Environmental Health Department prior to the start of work. In addition, underground utilities will be located prior to commencement of drilling. This proposal estimate does not include additional costs which may be incurred for underground utility locating services that may be necessary if as-built construction drawings showing underground fuel lines, etc., are not available.

Five monitoring wells will be drilled using the hollow-stem auger drilling method to depths of approximately 25 to 35 feet below the surface. The proposed locations of the monitoring wells are shown on Figure 1. The actual depths of the monitoring wells will be determined in the field based on the depth to ground water and the types, depths and thicknesses of sediments encountered.

Soil samples will be collected near-continuously from the borings for each well for lithologic description. Selected soil samples also will be retained from selected borings for possible chemical analysis for fuel hydrocarbons. Samples for chemical analysis will be collected in clean brass liners using a Modified California sampler, or in laboratory-supplied glass jars. These samples will be immediately sealed and placed in chilled coolers for transport to the laboratory. A portable hydrocarbon vapor analyzer (OVA) will be used during sampling to help select samples for chemical analysis. Approximately four soil samples from selected borings have been budgeted for chemical analysis. Other soil samples delivered to the laboratory will be retained for possible later analysis, if deemed necessary.

Each monitoring well will be constructed of 2- or 4-inch diameter polyvinyl chloride (PVC), factory-slotted casing. The well annulus outside the perforated interval will be backfilled with an appropriately-sized sand pack. Bentonite pellets and a cement-bentonite slurry will be placed above the sand pack to the land surface to seal the annular space of the borehole. A protective, locking steel cover or Christy box will then be placed over the top of each well.

The elevation of each well will be surveyed to the nearest 0.01-foot and tied to an existing elevation benchmark to allow accurate measurement of the ground-water elevation.

Drilling and sampling equipment and well materials will be steam-cleaned before use. Power, water and an area for cleaning equipment are to be provided at the Site.

Levine·Fricke will direct the drilling subcontractor to place waste soils and wastewater generated during this investigation in appropriate containers. Disposal of the wastewater and soils will be the responsibility of Ms. Allenbaugh, the designated waste generator. Levine·Fricke will assist in identifying disposal options after receiving analytical results of soils collected from the borings. The cost for waste disposal will depend on the amounts, types and concentrations of chemicals contained in the waste.

Task 3. Soil Sampling

Approximately six to eight shallow (5 to 10 feet deep) soil borings will be drilled using the hollow-stem auger drilling method. The locations of the proposed soil borings will be determined in the field based on visual observation of site conditions. Soil samples will be collected near-continuosly during drilling using a continuous-core sampler or Modified California sampler. Samples for chemical analysis will be collected in clean brass liners using a Modified California sampler, or in laboratory-supplied glass jars. These samples will be immediately sealed and placed in chilled coolers for transport to the laboratory. A portable hydrocarbon vapor analyzer (OVA) will be used during sampling to help select samples for chemical analysis. Approximately twelve soil samples from selected borings have been budgeted for chemical analysis. Other soil samples delivered to the laboratory will be retained for possible later analysis, if deemed necessary. After completion, each boring will be backfilled with a mixture of drill cuttings and bentonite powder to the ground surface.

Levine·Fricke will direct the drilling subcontractor to place waste soils and wastewater generated during this investigation in appropriate containers. Disposal of the wastewater and soils will be the responsibility of Ms. Allenbaugh, the designated waste generator. Levine·Fricke will assist in identifying disposal options after receiving analytical results soils collected from the borings. The cost for waste disposal will depend on the amounts, types and concentrations of chemicals contained in the waste.

All sampling tools will be cleaned with Alconox (laboratory-grade detergent) and rinsed with deionized water before each use. All drilling equipment also will be steam-cleaned prior to use in each boring.

Task 4. Well Development and Ground-Water Sampling

Monitoring wells will be developed by pumping, surging and/or bailing to remove fine particles near the well screen and improve hydraulic communication with the surrounding formation. Water

clarity, pH, temperature, specific conductance and volume extracted will be measured during the development process to gauge its progress.

Ground-water sampling will involve pumping and/or bailing approximately three to five well casing volumes of water out of the well prior to sampling. Only wells which have no visible signs of floating petroleum hydrocarbons (product) will be sampled. Water clarity, pH, specific conductance, temperature and volume extracted will be measured during purging to determine when to sample, as applicable.

Ground-water samples will be collected using a Teflon bailer. Samples will be transferred into 40-ml VOA vials with Teflon septums and 1-liter amber-colored glass bottles. The samples will be stored in a chilled cooler for delivery to the laboratory. A field blank sample and duplicate will also be collected for quality control purposes.

Measuring of depth-to-ground water and floating product thickness will be completed using an electronic product/water interface sounder and/or a thin rod marked with special water-and gasoline-finding paste. In addition, depth-to-ground water also will be measured using an electric water-level meter when possible. The product/water interface sounder will be cleaned with Alconox (a laboratory-grade detergent) and rinsed with deionized water prior to each use.

Task 5. Laboratory Analysis

Approximately seven ground-water samples (five well samples, one duplicate and one blank) will be analyzed by a State-certified laboratory for Total Petroleum Hydrocarbons (TPH) as both diesel and gasoline using EPA Method 8015 with gas chromatography using a flame ionization detector (GC/FID), and for BTXE distiction using modified EPA Method 602 using GC/FID. In addition, approximately 16 soil samples will be analyzed for TPH as diesel and gasoline using EPA Method 8015, and for BTXE distinction using modified EPA Method 8020.

Task 6. Health and Safety Plan

As required by OSHA, a site health and safety plan will be developed prior to initiating proposed on-site activities. The health and safety plan will incorporate safeguards against chemical and physical hazards associated with drilling and sampling activities. Personnel working on-site as part of this Scope of Work will be required to read and adhere to the plan. The project manager will have the responsibility for implementing the health and safety program.

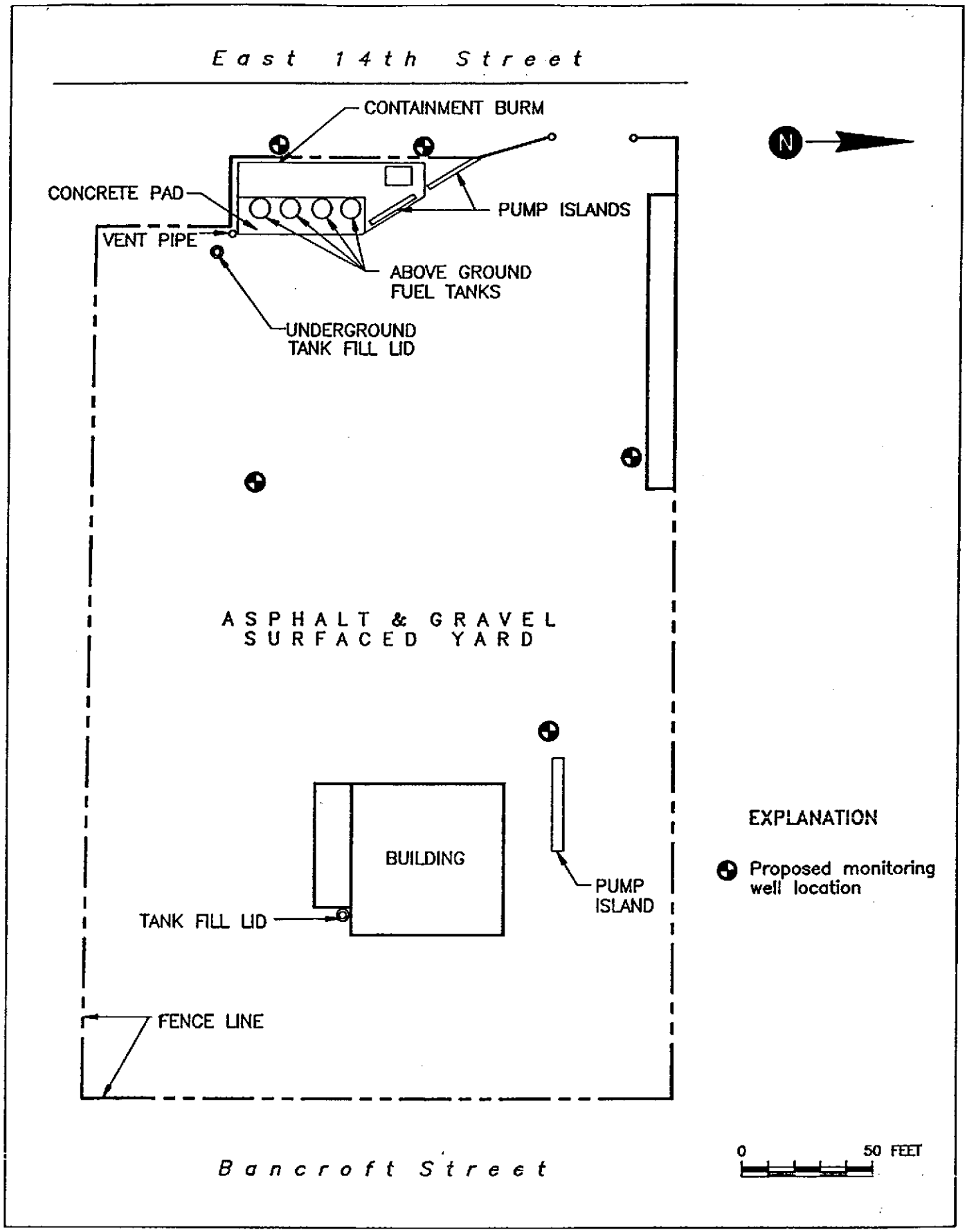
Task 7. Data Evaluation and Report Preparation

A report will be prepared summarizing the data and presenting the resulting interpretations, assessments and recommendations for additional investigations or alternative remedial actions, if deemed necessary. The report will include detailed descriptions of the methodologies used to collect and analyze data and the technical rationale for the conclusions reached.

The report will describe the type(s) of geologic materials encountered, the occurrence, concentrations and distribution of petroleum hydrocarbons and related compounds in soil and ground water and interpretations concerning hydrogeologic conditions at the Site. The report will also contain lithologic logs prepared during drilling activities, including well construction design, geologic cross sections, chemical analysis data and other documentation.

Task 8: Project Management and Meetings

Mr. Gregson Taylor, Project Hydrogeologist, will be the Project Manager. As such, he will be the primary contact for Ms. Allenbaugh and will be responsible for all technical and administrative aspects of the project. Mr. Chuck Pardini, Staff Geologist, will assist with field work, data evaluation and report preparation. Mr. Thomas Johnson, R.G. and Principal Hydrogeologist, will provide peer review for the project.



SITE MAP SHOWING LOCATIONS OF PROPOSED MONITORING WELLS

Project No. 89P-135

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