August 27, 1992

SEACOR

Mr. Tom Peacock
Alameda County Environmental Health Department
Division of Hazardous Materials
80 Swan Way, Room 200
Oakland, California 94620

WORK PLAN TO INSTALL GROUNDWATER MONITORING WELL AT 4070 SAN PABLO AVENUE, EMERYVILLE, CALIFORNIA

Dear Mr. Peacock:

On behalf of the San Francisco French Bread Company, Science & Engineering Analysis Corporation (SEACOR) is pleased to submit this Work Plan to install a groundwater monitoring well at the above referenced Site. The objective of the proposed monitoring well is to evaluate shallow groundwater quality directly downgradient of two former underground storage tanks (USTs).

SITE BACKGROUND

Site background information provided herein is based on information provided to SEACOR by the San Francisco French Bread Company. The San Francisco French Bread Company, the former owner of the subject Site operated two USTs at the Site until 1989. The 10,000 gallon capacity USTs were buried side by side within a common excavation. One UST was used for storing gasoline and the other diesel fuel. Fill pipes for both were formerly located on the south side of the excavation. In 1989, Paradiso Construction Company (Paradiso) removed the two USTs; however, it is not known whether the USTs and piping were leak tested prior to removal.

Following removal of the USTs, soil and groundwater samples were collected from the open UST excavation by Clayton Environmental Consultants (Clayton). Mr. Dennis Byrne of the Alameda County Environmental Health Department (ACEHD) was on-site during the sampling and directed sampling locations and chemical analyses required. Four soil samples were collected at a depth of 9 feet from the excavation sidewalls adjacent to the north and south end of each UST. Two groundwater samples were collected from water which flowed into depressions created by each UST bottom. Water was noted at a depth of 10 feet within the excavation at the time of sampling.

Analysis of sidewall soil samples indicated total petroleum hydrocarbon as gasoline (TPHg) concentrations up to 40 parts per million (ppm), TPH as diesel (TPHd) concentrations up to 70 ppm, and benzene, toluene, ethylbenzene, and xylenes (BTEX) concentrations up to 19 ppm. The highest analyte concentrations were detected in soil samples collected from the south side of the excavation. Both groundwater samples were reported contain detectable fuel hydrocarbons at the following maximum concentrations: TPHg (200 ppm), benzene (24 ppm), toluene (35 ppm), ethylbenzene (2.9 ppm), and xylenes (18 ppm).

100 Pine Street
Suite 2025
San Francisco, CA 94111
(415) 296-7877
(415) 677-9694 FAX

A letter from Paradiso to the ACEHD dated August 29, 1989, stated that the UST excavation was purged of water three times and a total of approximately 5,000 gallons of water was removed and disposed of as hazardous waste through H&H Shipping Company in San Francisco, California. According to the August 29, 1989 letter, a water sample from the excavation was collected and chemically analyzed following purging and "shows that the contaminated water was purged from the Site through this process". Analytical laboratory reports for this water sample were not included in the information provided to SEACOR. Paradiso's August 29, 1989 letter also stated that soil removed from the UST excavation was being aerated on-site and would be used to backfill the excavation once hydrocarbon concentrations were confirmed to be insignificant. No further information regarding the Site was provided.

PROPOSED SITE CHARACTERIZATION ACTIVITIES

In accordance with the Tri-Regional Board Staff Recommendations for Preliminary Investigation and Evaluation of Underground Tank Sites, SEACOR proposes to install one groundwater monitoring well within 10 feet of the former UST excavation in the confirmed downgradient direction. To confirm groundwater flow direction in the Site vicinity, SEACOR reviewed files for three fuel or toxic leak sites maintained at the Regional Water Quality Control Board, San Francisco Bay Region (RWQCB) office in Oakland, California. The three sites and their corresponding locations for which SEACOR reviewed files are: 1) City of Emeryville, 4300-4310 San Pablo Avenue; 2) Sherwin Williams, Sherwin Avenue and Horton Street; and 3) PG&E Material Distribution Center, 4525 Hollis Street. Groundwater elevation contour maps included in reports for each of these three sites indicate that shallow groundwater in the vicinity of the subject Site flows from east to west toward San Francisco Bay. Based on a confirmed groundwater flow direction towards the west, SEACOR proposes to install a groundwater monitoring well on the western side of the former UST excavation, within 10 feet from the excavation edge.

The following sections describe the procedures which will be followed during well installation and sampling.

Underground Utilities

Prior to conducting any drilling activities at the Site, the location of underground utilities will be checked by reviewing available blueprints of the Site and by contacting Underground Service Alert. If necessary, the services of a professional underground locating company will also be utilized.

Borehole Advancement and Soil Sampling

The borehole will be drilled and sampled to a depth to 10 to 15 feet below the top of the first encountered water (~20 to 25 feet below ground surface) provided a continuous aquitard is not encountered. If an aquitard (i.e., a stiff clay layer) is encountered below the water table and is found

not to contain elevated levels of petroleum hydrocarbons using field methods (e.g., photoionization detector, or PID), then the vertical continuity of this clay layer will be verified by sampling and advancing the borehole 3 feet. If the clay layer is found to be greater than 3 feet thick, the clay will be considered a continuous confining layer and the borehole will be plugged with bentonite or grout to the top of the clay. The monitoring well will be completed in the portion of the saturated zone overlying the clay layer. If the clay layer is found to be less than 3 feet thick, the clay will be considered a localized clay lens and the borehole will be advanced to the designed depth.

During advancement of the borehole, relatively undisturbed soil samples for lithologic description and possible chemical analysis will be collected at intervals no greater than 5 feet using a 2-inch or 2 1/2-inch I.D. split spoon sampler, or a continuous coring device. The boreholes will be logged by a qualified field geologist under the supervision of a State of California Registered Geologist. Soil samples will be screened in the field for the presence of volatile organic compounds using a PID. Field screening results will be recorded directly on the boring log. It is anticipated that a minimum of one native soil sample will be submitted for chemical analysis. The soil sample will be analyzed for TPHg (EPA method 5030/8015), BTEX (EPA method 8020), and total lead (EPA method 7421).

The following procedures will be employed when collecting and handling soil samples:

1. Prior to sampling, the split spoon sampler (or equivalent) and sample liners will be thoroughly washed with a trisodium phosphate solution and rinsed with potable water.

2. The samples will be retained in brass or stainless steel sample liners by the ends covered with aluminum foil or Teflon sheets. Plastic end caps will be attached and secured with adhesive tape.

3. Each sample will be labeled using waterproof ink with the job number, boring number, sample depth, date collected, and the initials of the person who collected the sample.

4. A description of the soil sample will be entered on a boring log form by the field geologist. This description will include soil classification (ASTM D-2487-83), color, moisture content and consistency (in relative terms), and estimated degree of hydrocarbon content as measured using a PID.

5. Immediately after sample collection and labeling, the samples will be sealed in a plastic bag and placed in a sturdy ice chest. The temperature in the ice chest will be maintained at or below 4°C.

6. When the ice chest is full (or contains all the samples which will be stored in it), a completed chain-of-custody form will be inserted and the chest will be closed and sealed.

Well Construction Procedures

Two-inch diameter, Schedule 40 PVC casing and screen will be used to complete the groundwater monitoring well. The screen and blank casing will be thoroughly steam-cleaned and threaded above ground prior to lowering inside the hollow-stem augers. The bottom of the screened interval will be fitted with an end plug and the top of the well casing will be equipped with an expandable, watertight, locking cap. The well screen will be placed to intersect the water table and account for anticipated seasonal variations within the aquifer. No glue will be used in this assembly.

The annular space between the well screen and the wall of the borehole will be filled with clean sand to provide filtration capacity and prevent movement of sand or silt into the well. The sandpack will extend about 1 to 2 feet above the top of the well screen. A 2-foot thick plug of hydrated bentonite will be placed above the sandpack and the remaining annular space will be backfilled with a neat cement grout. The grout will be pumped or tremied into the hole if necessary.

The monitoring well will be protected from vandalism or the entry of surface fluids. The wellhead will be finished with either a watertight, security traffic box or a locking standpipe which is secured in place with concrete.

Well Development

The monitoring well will be developed with a vented surge block and bailer used to surge the water around the screened interval to remove fine particles and stabilize the sandpack materials around the well screen. After several well volumes of water have been surged and bailed, the well will be pumped (or bailed) until the discharge water is relatively free of sand and silt.

Monitoring Well Sampling and Analytical Procedures

Prior to purging, the water level in the well will be measured using a Solinst immersion probe and the well will be sampled with a clear bailer (or measured with an interface probe) in order to inspect the well for the possible presence of floating hydrocarbons. The monitoring well will be purged prior to collecting groundwater samples for chemical analyses. During the purging process, approximately three to five well volumes of groundwater will be discharged from the well using either a pump or bailer. The well will be properly purged when the physical parameters of the groundwater (i.e., pH, temperature, and conductivity) have stabilized. If the well is evacuated prior to the removal of three to five well volumes, a sample of the groundwater will be collected when the water level is sufficient to provide a representative sample (i.e., return to 80% or more of the static water level).

Samples of the groundwater will be collected using a Teflon or stainless steel bailer which has been washed in a solution of trisodium phosphate and water followed by several rinses with potable water. The groundwater samples collected from the well will be decanted into laboratory provided sample containers. The sample containers will be labeled with the Site location, well I.D. number, date, time, and initials of person collecting the sample. Care will be taken when transferring the water from the bailer to the sample containers to avoid turbulence and the containers will be filled above the top of the opening to form a positive meniscus. No headspace will be present in the sample container once it is sealed. The samples will then be placed in an ice chest with the completed chain-of-custody form and maintained at 4°C until delivered to a State of California-certified analytical laboratory for chemical analyses. The groundwater samples will be analyzed for TPHg (EPA method 5030/8015), BTEX compounds (EPA method 602), and total lead (EPA method 7421).

Chain of Custody Control

Chain of Custody procedures will be used to identify and ensure traceability of the samples collected. These procedures will also be used to document the handling and shipping procedures of the sample(s). Specifically, the Chain of Custody procedures will trace the sample(s) from collection, through all custody transfers, and finally to the storage facility or the analytical laboratory, where the laboratory's internal procedures will govern until final disposition of the samples. This information will be recorded on the Chain of Custody form which will remain with the samples at all times. Proper taping, locking, and sealing procedures shall be used to prevent or detect tampering of the samples. The Chain of Custody form(s) will be used for a packaged lot of samples (i.e., more than one sample will most likely be recorded on a single form). If all samples in a given lot cannot be recorded on a single Chain of Custody form, an additional form(s) will be used.

Waste Disposal Plan

This section provides guidelines for the handling of any potentially contaminated materials generated during the field activities associated with this investigation.

All soils brought to the surface will be stored in DOT-approved 55-gallon drums. The drums will be labeled with the borehole number(s), date, and nature of the contents. All drums will remain on-Site until analytical results are obtained from the analytical laboratory. The soils will be disposed of appropriately, based on the analytical results.

The water collected during steam cleaning operation, as well as the water removed from wells during development, purging, and sampling, will be stored on-site in sealed DOT-approved 55-gallon drums. The drums will be labeled with the well I.D. number(s), date, and nature of the contents. All drummed liquids will be sampled and properly disposed of based on the analytical results.

TECHNICAL REPORT

Upon completion of the field investigation and receipt of the chemical testing results, a Technical Report will be prepared and submitted to the ACEHD. The Technical Report will include a boring log and construction details for the newly-installed well and chemical analytical results for soil and groundwater samples analyzed.

SCHEDULE

Monitoring well installation will be initiated when the necessary permits are obtained, and underground utilities are located. *SEACOR* will provide the ACEHD with a minimum of 72 hour notice prior to installing the groundwater monitoring well. We estimate that the field work can be completed in 3 working days; laboratory results will take approximately 2 weeks from time of submittal. A Technical Report will be submitted to the ACEHD approximately 6 to 7 weeks following the project commencement date.

Please find attached to this Work Plan a permit application for the proposed monitoring well. If you have any questions or comments regarding this Work Plan, please do not hesitate to contact us at (415) 296-7877.

Sincerely yours,

Science & Engineering Analysis Corporation

Bruce Scarbrough, R.G. #4931
Project Manager

James G. Ritchie, R.G.
Principal Geologist

BES/mms

cc: Mr. Pete Sher, San Francisco French Bread Company