Chemist Enterprises
333-B Camino Verde
Boulder Creek, California 95006
ph. (408) 338-0198

September 6, 1994

Scott O. Seery
Senior Hazardous Materials Specialist
Alameda County Health Care Services Agency
Department of Environmental Health
1131 Harbor Bay Parkway, 2nd Floor
Alameda, CA 94502-6577

Re: PROPOSED SOIL AND WATER INVESTIGATION WORK PLAN

SUBJECT SITE: GERMAN AUTOCRAFT
301 EAST 14TH STREET, SAN LEANDRO

Dear Mr. Seery:

As per your request on behalf of the Alameda County Department of Environmental Health (ACDEH) to Mr. Lee dated April 13, 1994, German Autocraft has contracted Chemist Enterprises (CE) to advance four soil borings and construct two monitoring wells at/around the subject site and prepare a Soil and Water Investigation Report.

I. INTRODUCTION

A. SCOPE OF WORK

The objective of these activities is to evaluate the nature and distribution of impacts to soils and groundwater which may have resulted from a hydrocarbon release from former Underground Storage Tanks (USTs) at the subject property.

B. BACKGROUND/PREVIOUS ENVIRONMENTAL SAMPLING RESULTS

The German Autocraft property is an automotive repair outlet owned by Mr. Seung Lee located in northern San Leandro within the boundaries of the Zone 7 Water Agency. **Figure 1** shows the general location of the site. A total of six USTs were removed from the site in 1990. These included one 550-gallon leaded gasoline, two 1,000-gallon and two 2,000-gallon unleaded gasoline, and one 150-gallon waste oil USTs. **Figure 2** shows the previous locations of these tanks on a site map. When the USTs were removed, three of them (two 1,000 gallon unleaded gasoline and one 550-gallon regular gasoline) were observed to have holes in them. Hydrocarbon odor and staining of soils below all USTs was observed. A total of 14 soil samples were collected at that time. Nine of these samples were collected from the main tank pit and had concentrations of Total Petroleum Hydrocarbons as Gasoline (TPHg) ranging from less than 2.5 parts per million (ppm) to 840 ppm. A single soil sample collected from below the product lines had non-detectable or less than 2.5 ppm TPHg. A single soil sample collected from below the waste oil tank after over-excavation had non-detectable or less than 5 ppm Total Oil and Grease (TOG). Three composite samples were taken from over-excavation stockpiles. TPHg levels of 36 and 75 ppm were found in two of the stockpiles and TOG levels of 970 ppm was found in the waste oil tank stockpile. No diesel or solvents were identified in samples collected below the waste oil tank. The volume of hydrocarbon-impacted soils excavated from the main tank pit is unknown. The waste oil tank pit was over-excavated by approximately fifteen cubic yards. No information concerning the back fill material has been documented. A Preliminary Site Assessment was performed in 1991 which included the advancement of three soil borings and subsequent placement of a single monitoring well. Soil samples collected during the soil boring resulted in the detection of TPHg at concentrations ranging from 1.7 to 2,100 ppm. A grab groundwater sample and water from the monitoring well contained dissolved TPHg concentrations of 28 ppm and 51 ppm respectively.

II. SITE DESCRIPTION

A. HYDROGEOLOGIC SETTING

The area of the site is relatively flat and is located approximately 3-miles east of the San Francisco Bay and 3,000-feet north of San Leandro Creek. The sediments under the site consist of Holocene and Late Pleistocene Alluvium. Available borehole logs indicate predominately clay soils with a gravel and clay zone at approximately 35-feet below grade. Groundwater was first encountered at approximately 35-feet below grade and rose to about 30-feet below grade following well installation.

III. MONITORING WELL INSTALLATION/SOIL SAMPLING

This scope of work includes borehole drilling, soil sampling and analysis; well installation, well development, sampling of water from the well, analysis of the water samples; and preparation of a technical report for submittal to the ACDEH All work performed for this project will be under the direction of a California Registered Geologist. **Figure 2** shows the locations of the proposed borings. **A total of four borings will be advanced and two of these borings will be constructed into monitoring wells.** The determination of which borings would be constructed into monitoring wells would be made in the field.

Prior to beginning drilling, we will ask that Mr. Lee provide a map showing underground utilities on the private property of the subject site or verify to the best of his knowledge that the proposed well location will not hit underground utilities that may be damaged by drilling activities. Also, CE and subcontractors to CE will not be responsible for damaged utilities or damages resulting

from damages to utilities. CE will hand auger at the borehole location to a depth of 4- feet to check for underground utilities.

Prior to beginning drilling, CE will obtain permits from the Zone 7 Water Agency, provide notification to Underground Service Alert, may coordinate additional underground utility location efforts, and coordinate with the Zone 7 Water Agency for inspection of well seal installation.

The boreholes selected for monitoring well construction will be drilled approximately 10-feet below the first encountered groundwater zone with a truck-mounted hollow stem auger drill rig. Soil samples will be collected every five-feet starting at five -feet below grade, using a 1.5-inch diameter California modified split-spoon sampler. Once the split-spoon sampler is retrieved, the bottom 6-inch brass sleeve containing soils will be sealed with aluminum foil, plastic end caps and duct tape and stored on ice for potential laboratory analysis. The remaining soil in the middle brass sleeve and the auger spoils will be visually inspected for lithology, moisture content, and any obvious hydrocarbon impacts by a qualified technician. Soils from the top-most sleeve are generally cavings and do not represent undisturbed materials, therefore, these soils will not be used for any purpose. Based on the results of the field inspection, two soil samples will be selected for analysis at a certified laboratory. The selected soil samples will be transported to the laboratory in iced storage under chain of custody documentation for analysis for TPHg and benzene, toluene, ethyl benzene and total xylenes (BTEX) using LUFT Methods. All downhole drilling equipment will be steam cleaned in advance. The split-spoon sampler will be decontaminated between sampling locations by the following:

enough? too many?

1. Remove loose soil and debris with a scrub brush using a mixture of tap water and laboratory grade cleaning solution (liquinox).
2. Tap water rinse.

3. Distilled water rinse.

Soils generated during drilling will be stockpiled on-site on top of and covered by visqueen. Decontamination derived liquid wastes will be stored in drums on-site. The disposition of these wastes are the responsibility of the property owner and are not a part of this work plan. Once the laboratory reports are issued, appropriate disposal options for all investigation derived wastes can be developed.

Following drilling, at the locations selected for well construction, 2-inch diameter monitoring wells will be installed. The actual construction of the well will be determined in the field based on conditions encountered during drilling. The general construction will consist of an appropriate length of 2-inch diameter PVC well screen with machine slotted perforations and a bottom end cap, and an appropriate length of blank well casing. The top of the well screen will be placed approximately 3-feet above the water table surface, if feasible. The top of the blank well casing will be fitted with a water-tight locking cap. A sand pack consisting of washed and graded silica sand will be placed in the remaining annulus from the bottom of the borehole to approximately 2-feet above the top of the well screening. A one-foot hydrated bentonite seal will be installed on top of the sand pack. A Portland cement-bentonite slurry will fill the remaining annulus. A flush mounted 8-inch diameter water-tight traffic-rated well box will be placed in concrete over the well.

IV. WELL DEVELOPMENT/GROUNDWATER SAMPLING, ELEVATION SURVEY

After a minimum of 48-hours following well construction, the newly installed monitoring well will be developed by swabbing and over-pumping to remove fine grained sediments entrained in the sand pack and near the well bore due to the drilling operations. Approximately 100 gallons of groundwater will be removed during development. **After a minimum of 48-hours following well development, groundwater monitoring well sampling will be initiated.** The sampling will include: measuring water levels in the new well using an electronic water level indicator; purging the well a minimum of four well volumes or until groundwater temperature, pH, and specific conductance have stabilized; sampling groundwater; transport of samples on iced storage under chain of custody documentation to a State of California, Department of Health Services certified laboratory; and laboratory analyses for TPHg and BTEX by LUFT Methods. All extracted groundwater will be stored on-site in drums and the disposition of these waters will be determined pending laboratory analyses. Also included in this scope of work is and elevation survey of the monitoring wells by a registered surveyor. This data will allow us to determine groundwater flow direction.

V. PREPARATION OF TECHNICAL REPORT

CE will prepare a monitoring well installation and sampling report describing our methods and findings. The report will be prepared under the direction of a California Registered Geologist and will include: a site map showing relevant features and boring and well locations, boring lithology, water level contour maps, plume definition maps, geologic cross sections, soil inspection observations, analytical results of soil sampling, well installation procedures, groundwater sampling results, groundwater depth data, laboratory chain of custody documentation, analysis of accumulated data and recommendations based on the findings of the

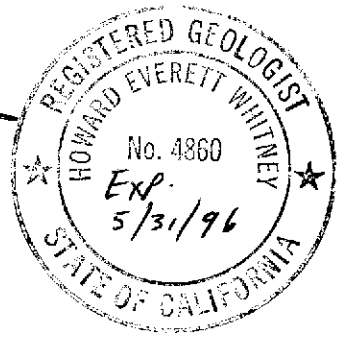
investigation. Well completion reports will be submitted to the Zone 7 Water Agency in accordance with permit requirements. Also, copies of the report will be submitted to the Regional Water Quality Control Board.

If you have any questions concerning this work plan, please don't hesitate to contact us at (408) 338-0198. We intend to schedule these activities as soon as possible.

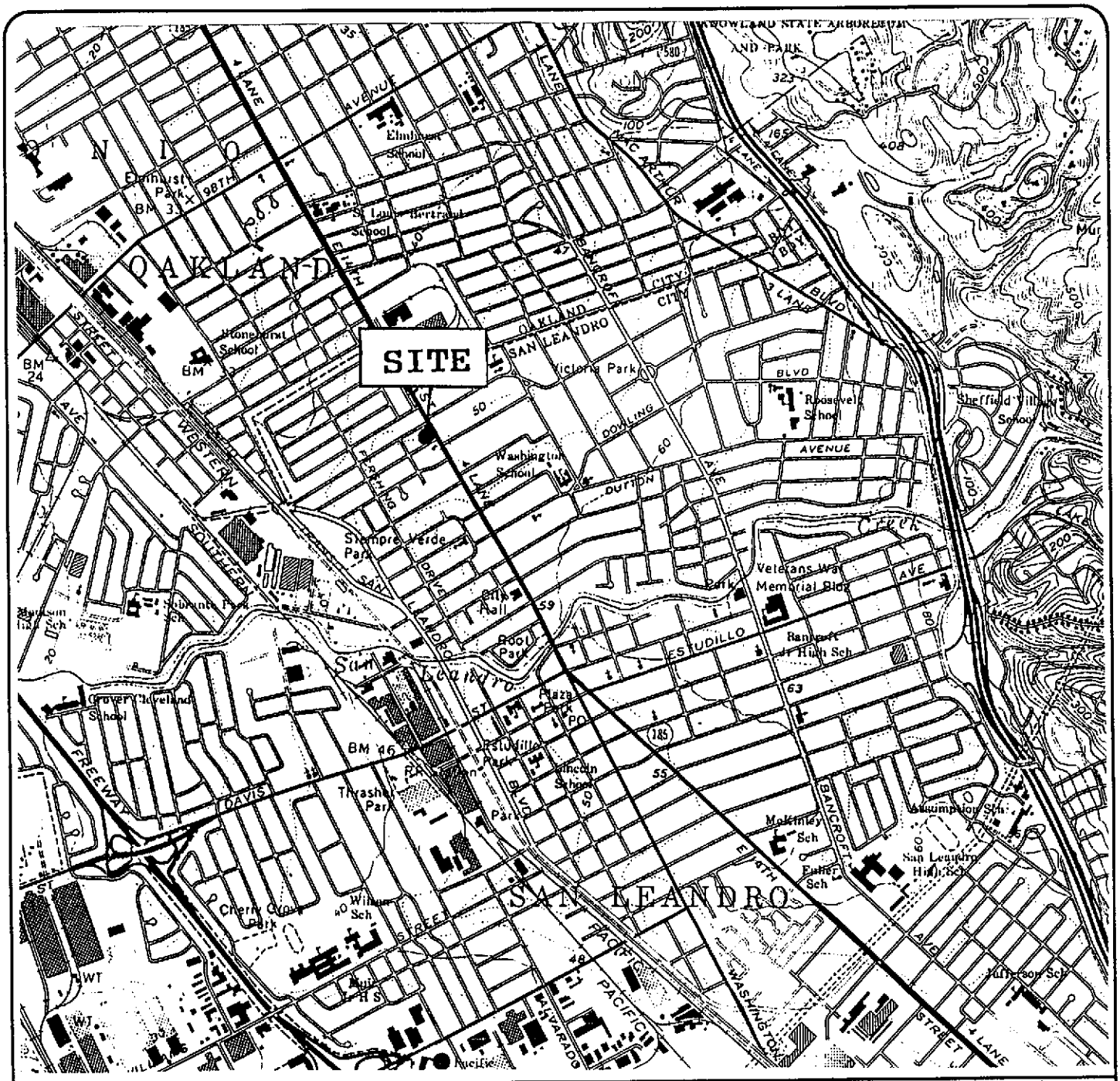
Sincerely yours,

Tom Price
Consulting Chemist

Howard Whitney
Registered Geologist #4860



Attachments: Figure 1: Location Map
Figure 2: Site Map
Statement of Qualifications

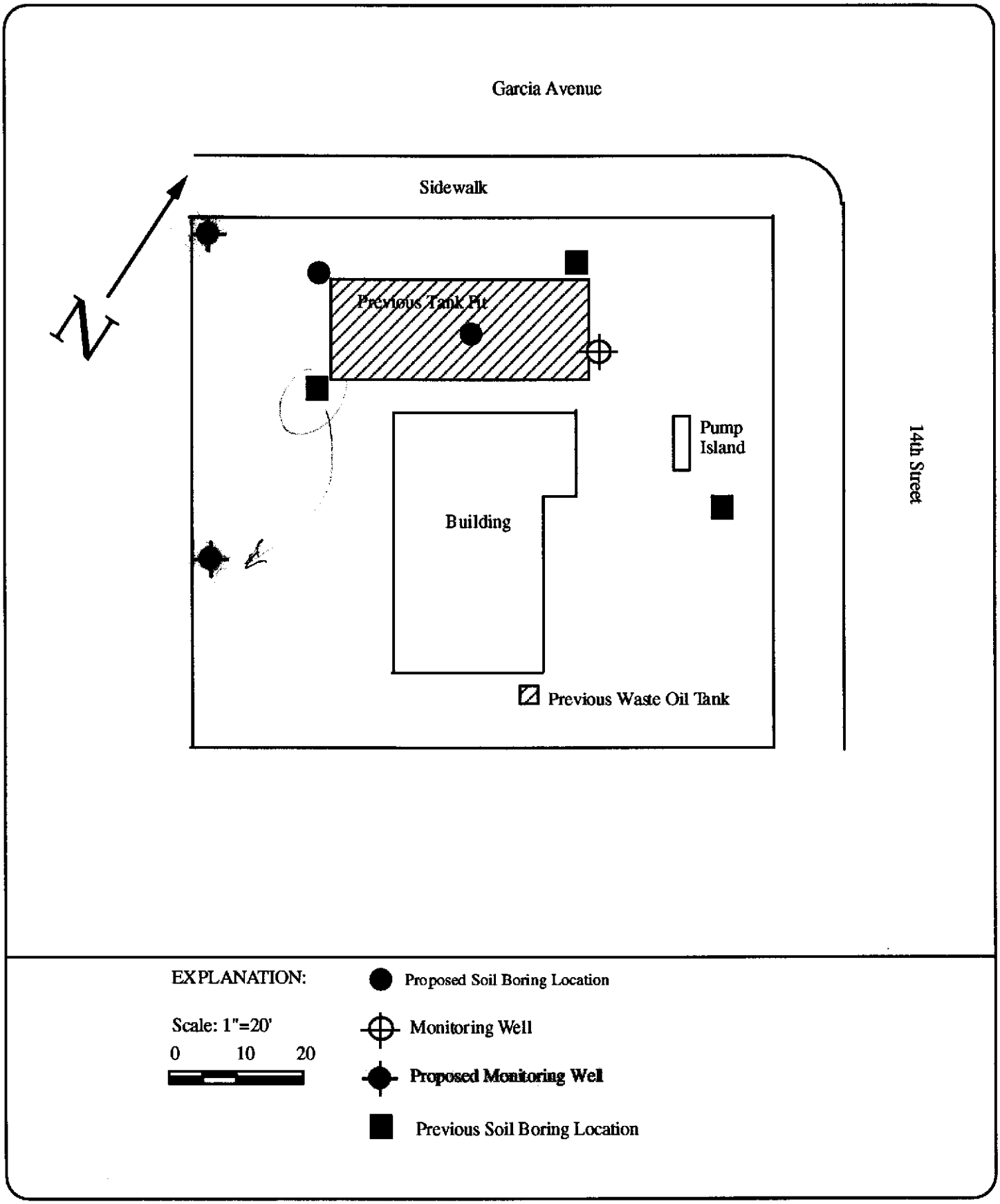


Chemist Enterprises
Boulder Creek, California

LOCATION MAP
German Autocraft
301 East 14th Street
San Leandro, California

Figure 1

Project No.
94-52
Date: 8/94

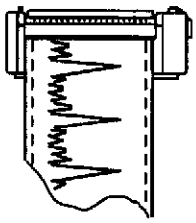


Chemist Enterprises
Boulder Creek, California

SITE MAP
German Autocraft
301 East 14th Street
San Leandro, California

Figure 2

Project No. 94-52
Date: 9/94



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PROJECT: GERMAN AUTOCRAFT/SAN LEANDRO
STATEMENT OF QUALIFICATIONS OF LEAD PERSONNEL

Tom Price, Consulting Chemist, received his Bachelor of Science Degree from the University of Arizona in 1988. He has taken OSHA 120CFR1910.120 40-Hour Hazardous Waste Operations and Emergency Response Training. He has been working in the environmental industry for four years. His experience includes project management and site investigations related to leaking underground storage tanks. Related activities include soil gas surveys by gas chromatography, soil sampling, water sampling, air sampling, analysis, and report writing. His experience in air pollution testing has involved source testing, analyses, and report writing. He has been certified by the California Air Resources Board for visible emissions readings.

Howard Whitney, Registered Geologist, received his Bachelor of Arts Degree from the University of California at Santa Barbara. Mr. Whitney has over 11-years experience as a professional hydrogeologist working on a broad range of hazardous waste and water supply projects applying innovative on-site analysis to field investigations and applying advanced computer systems to hydrogeological problems. Mr. Whitney has also taken OSHA 120CFR1910.120 40-hour Hazardous Waste Operations and Emergency Response Training. Mr. Whitney's project experiences include designing, conducting, and directing large field investigations and feasibility testing. As the senior technical professional, he is responsible for field data collection techniques, field and laboratory analyses, and for testing equipment design.