PACIFIC
ENVIRONMENTAL
GROUP, INC.

January 16, 1992
Project 325-02.01

Mr. Brian Oliva
Department of Environmental Health
Hazardous Materials Program
80 Swan Way, Room 200
Oakland, CA 94621

Re: Former Chevron USA Station 9-2384
15526 Hesperian Boulevard
San Lorenzo, California

Dear Mr. Oliva:

This letter is being submitted at the request of Chevron USA, Inc. (Chevron), as an addendum to the Pacific Environmental Group, Inc. (PACIFIC) Work Plan dated November 4, 1991, for the referenced location, as requested by Mr. Peacock of the Alameda County Hazardous Materials Division.

In a letter to Chevron USA , dated December 27, 1992, Mr. Peacock requested an addendum modifying the Work Plan to address the following items:

1) Install at least one monitoring well within 10 feet of one of the removed underground storage tanks (USTs).

2) Analyze for organic lead in soil from the boring located closest to the former leaded gasoline tank and provide a background lead sample.

3) Provide evidence of the hydraulic gradient in the area as rationale for monitoring well placement.

4) At least one-foot of bentonite should be used for the monitoring wells seal.

5) Notify the Hazardous Materials Division office at least forty-eight (48) hours prior to construction of the monitoring wells.

1601 Civic Center Drive, Suite 202, Santa Clara, California 95050 (408) 984-6536 FAX: (408) 243-3911
620 Contra Costa Boulevard, Suite 209, Pleasant Hill, California 94523 (415) 825-0855 FAX: (415) 825-0882

6) Submit an addendum to the Work Plan by January 21, 1992.

Responses to the individual items listed above, including Work Plan modifications, are as follows:

1) The groundwater flow direction is inferred to be towards the west (San Francisco Bay) based on regional and local topography. One monitoring well was initially proposed to be located downgradient (west) of the former tank complex to characterize soil and groundwater conditions beneath the site. In compliance with guidelines outlined in "Regional Board Staff Recommendations for Initial Evaluation of Underground Tanks", this well will be relocated to within 10 feet of a former storage tank, and will remain downgradient of the former tank complex. Figure 1 presents the revised locations of the monitoring wells.

2) Organic lead analysis will be performed on one soil sample selected from the boring drilled downgradient (and within 10 feet) of the former storage tanks. To provide a background reference, organic lead analysis will also be performed on a selected soil sample from the upgradient boring located in the eastern portion of the property.

3) Locations of the three proposed monitoring wells are based on the inferred westward groundwater flow direction and will provide constraints for determining the hydraulic gradient beneath the site directly. One well will be located in the inferred upgradient direction (east) of the site, one well will be located in the cross-gradient direction (north) and one well will be located downgradient of (west) and adjacent to the former USTs. The Berkeley-Oakland Hills, located east of the site, provide the catchment and drainage basin for groundwater beneath the site. Base level (the San Francisco Bay) is located west of the site providing a westward topographic gradient influencing both surficial and groundwater flow at the site. Locally, the site is nested between two small drainage basins, one oriented to the southwest and the other to the west (San Lorenzo River). These drainages may also influence the local groundwater flow direction and hydraulic gradient beneath the site. At this time, there are no monitoring wells on the site to directly determine the local groundwater flow direction or hydraulic gradient beneath the site.

4) Revised investigative procedures outlining the minimum thickness of bentonite seal (one foot) to be constructed on monitoring wells is presented in Attachment A.

5) The Hazardous Materials Division office will be notified at least forty-eight (48) hours prior to construction of the monitoring wells.

Chevron will implement this Work Plan upon written approval from your agency.

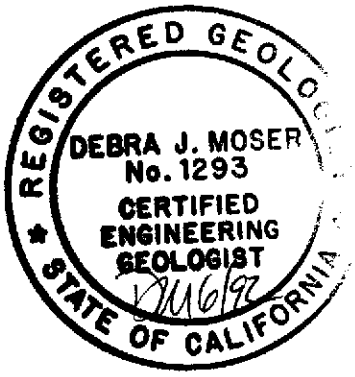
If you have any questions regarding this letter, please call.

Sincerely,

Pacific Environmental Group, Inc.

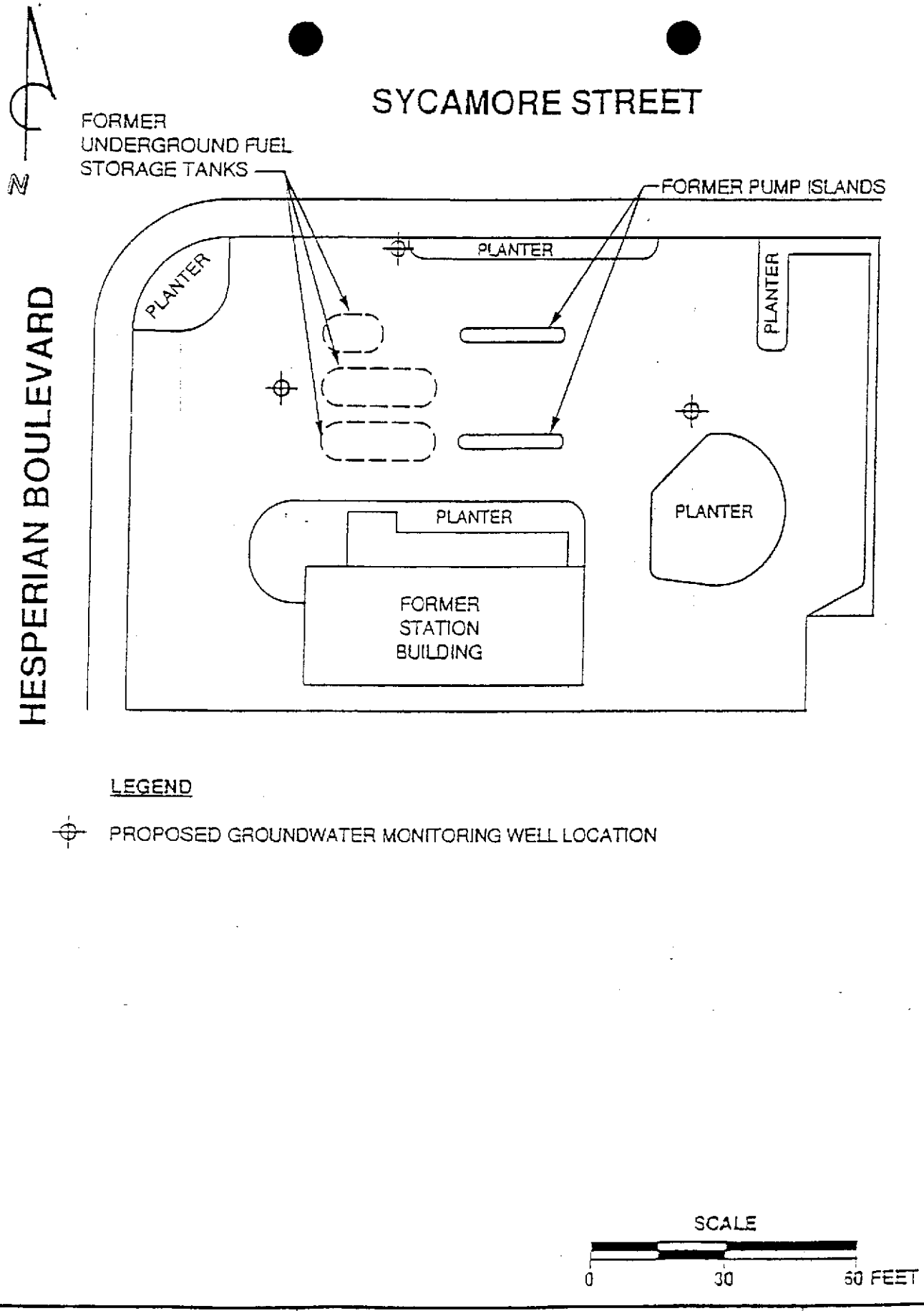
Jerry W. Mitchell
Project Geologist

Debra J. Moser
Senior Geologist
CEG 1293



Attachments: Figure 1 - Site Map
Attachment A - Investigative Procedures

cc: Ms. Nancy Vukelich, Chevron USA, Inc.
Mr. Eddie So, SF, Regional Water Quality Control Board



PACIFIC ENVIRONMENTAL GROUP, INC.	FORMER CHEVRON USA STATION 9-2384 15525 Hesperian Boulevard at Sycamore Street San Lorenzo, California	FIGURE: 1
	SITE MAP	PROJECT: 325-02.01

ATTACHMENT A

INVESTIGATIVE PROCEDURES

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INVESTIGATIVE PROCEDURES

Exploratory Borings and Monitoring Well Installation

The soil borings will be drilled with 8-inch hollow-stem auger drilling equipment and will be logged by a PACIFIC geologist using the Unified Soil Classification System and standard geologic techniques. Soil samples for logging and possible chemical analysis will be collected at 5-foot depth intervals and at significant lithologic changes by advancing a California-modified split-spoon sampler with brass liners into undisturbed soil beyond the tip of the auger. The sampler will be driven a maximum of 18 inches using a 140-pound hammer with a 30-inch drop. Soil samples for chemical analysis will be retained in brass liners, wrapped with aluminum foil and plastic end caps, and sealed in clean glass containers. These samples will be placed on ice for transport to the laboratory accompanied by chain-of-custody documentation.

Soil samples collected during drilling will be analyzed in the field for ionizable organic compounds using the H-NU Model PI 101 photoionization detector (or equivalent) with a 10.2 eV lamp. The test procedure involves measuring approximately 30 grams from an undisturbed soil sample, placing this sub-sample in a clean glass jar, and sealing the jar with aluminum foil secured under a ring-type threaded lid. The jar is warmed for approximately 20 minutes, then the foil is pierced and the head-space within the jar is tested for total organic vapor, measured in parts per million as benzene (ppm: volume/volume). The instrument will be calibrated prior to drilling using a 100 ppm isobutylene standard (in air) and a sensitivity factor of 0.7, which relates the photoionization potential of isobutylene (7.0 ppm) to benzene. The results of the field testing are used to select soil samples for laboratory analysis.

The borings will be converted to groundwater monitoring wells and will penetrate a maximum of 20 feet into the water-bearing zone, taking care not to penetrate a 5-foot thick aquitard. Two-inch diameter Schedule 40 PVC casing and 0.020-inch factory-slotted screen will then be installed. Graded sand pack will be placed into the annular space across the screen interval, and will extend approximately 1 foot above the

top of the screen. One foot of bentonite will be placed above the sand pack and a concrete seal will be placed from the top of the bentonite seal to the ground surface. A locking cap and protective vault box will be installed on the top of each well. The well locations will be noted, and the surface elevation of each vault box and top of casing will be surveyed to the nearest 0.01 foot based on mean sea level datum by a licensed surveyor. This information will be used to calculate the groundwater flow direction and gradient.

All downhole drilling and sampling equipment will be steam cleaned between borings. Steam cleaning water will be contained in 55-gallon drums and secured at the site pending disposal.

Groundwater Sampling

The wells will be developed after installation by surging and pumping until the water pumped from the well is substantially free of sediment. The wells will not be developed until at least 24 hours after installation, and will be allowed to recover for 24 hours after development prior to sampling.

Site groundwater monitoring wells will be sampled by first measuring the water level and checking for the presence of separate-phase hydrocarbons using an electronic interface probe. If no separate-phase hydrocarbons are noted, the wells will then be purged a minimum of four casing volumes of water (or until dry) using a centrifugal pump, during which time temperature, pH, and electrical conductivity will be monitored to indicate that a representative groundwater sample has been obtained. After purging, the water levels in the wells will be allowed to partially recover before sampling. Groundwater samples will be collected using a Teflon bailer, placed into appropriate EPA-approved containers, labeled, logged onto chain-of-custody documents, and transported on ice to the laboratory. A trip blank and a duplicate water sample will accompany the samples to the laboratory. Well development and purged groundwater will be contained in 55-gallon drums and secured on site pending disposal.

Laboratory Analysis

Groundwater samples and selected soil samples will be analyzed for total petroleum hydrocarbons (TPH) as gasoline and benzene, toluene, ethylbenzene, and xylenes (BTEX compounds). The analyses for TPH will be performed by Modified EPA Method 8015 with purge-and-trap extraction, with final detection by gas chromatography using a flame-ionization detector. The analyses for BTEX will be performed according to EPA Methods 8020. Laboratory quality assurance

documentation will accompany the laboratory results. Laboratory detection limits will be in accordance with RWQCB minimum detection limits.

below grade within the piping trench. Ground water was encountered within the tank excavation at a depth of approximately 13-feet below grade. Final excavation samples from the southern piping trench reported non-detectable concentrations. Final excavation samples collected from the sidewalls of the former tank excavation reported non-detectable TPH-G concentrations. These samples were collected at approximately 4 to 5-feet below grade. Samples also were collected at approximately 11 to 12-feet below grade within the excavation and reported TPH-G concentrations ranging from ND to 47 ppm. Excavation was limited vertically to groundwater. The soils at and/or below the groundwater interface will be addressed as a groundwater issue as prescribed by the Regional Water Quality Control Board (RWQCB).

A discreet sample was collected for every 20 cubic yards of soils as prescribed by the Regional Water Quality Control Board (RWQCB) for on-site disposal. The results of these soils reported non-detectable concentrations of total petroleum hydrocarbons as gasoline and BTEX. These soils were used for backfilling and compacting the excavations.

Chevron has instructed Pacific Environmental to permit for the installation of the ground water monitor wells as outlined in our work plan to you dated November 4, 1991. The scope of work proposed to install three (3) ground water monitor wells on-site outside the excavation boundaries to characterize the subsurface and ground water conditions beneath the site. We are pending your review and formal concurrence prior to initiating this work.

If you have any questions or comments, please do not hesitate to contact me at (510) 842-9581.

Sincerely,
CHEVRON U.S.A. INC.

Nancy Vukelich
Environmental Engineer

cc: Mr. Eddy So, RWQCB-Bay Area
Mr. Jerry Mitchell, Pacific Environmental, Pleasant Hill
Mr. W.T. Scudder
File (9-2384A1 Listing)

Mr. Gary Allen
Century 21 Korpi & Associates
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