ENVIRONMENTAL PROTECTION

95 SEP 18 PM 4:23

Chevron

Chevron U.S.A. Products Company
6001 Bollinger Canyon Road
Building L
San Ramon, CA 94583
P.O. Box 5004
San Ramon, CA 94583-0804

Marketing – Northwest Region
Phone 510 842 9500

September 15, 1995

Mr. Scott Seery
Alameda Co. Dept. of Environmental Health
1131 Harbor Bay Pkwy, 2nd Floor
Alameda, CA 94502-6577

Re : Former Chevron Service Station 9-4930
3369 Castro Valley Blvd., Castro Valley, California

Dear Mr. Seery :

The enclosed work plan from Pacific Environmental Group (Pacific) dated September 13, 1995 outlines the tasks associated with the additional investigation required by Alameda County Environmental Health Department and the Regional Water Quality Control Board on August 19, 1994. Pacific plans to drill and install five groundwater probes throughout the area. Depending on the results, Pacific will either install permanent wells and/or additional groundwater probes during the second phase of work. The goal is to define the plume and minimize the number of permanent monitoring wells, yet provide sufficient coverage.

Chevron is also sending a copy of this work plan to Scharff & Greben. Although this work plan may not benefit them directly, Chevron is still willing to work with them.

Please refer to the enclosed work plan. If the work plan meets your approval or disapproval, please send a written letter to my office before the September 22nd deadline. If you have any questions or comments, please feel free to give me a call at (510) 842-8752.

Sincerely,
Chevron U.S.A. Products Co.

Kenneth Kan
Engineer

LKAN/94930R04

cc : Mr. Kevin Graves, RWQCB-San Francisco Bay Region
2101 Webster St., Suite 500, Oakland, CA 94612

Jun Makiishima, Acting Agency Director Alameda Co. Dept. of Environmental Health
1131 Harbor Bay Pkwy, 2nd Floor, Alameda, CA 94502-6577

Anna Counelis & Tula Gallanes
109 Casa Vieja Place, Orinda, CA 94563

Mr. Jeff Scharff, Scharff & Greben
400 Capitol Mall, Ste. 1100, Sacramento, CA 95814

Ms. Bette Owen, Chevron USA Products Co.

PACIFIC
ENVIRONMENTAL
GROUP, INC.

September 13, 1995
Project 320-156.1A

Mr. Kenneth Kan
Chevron U.S.A. Products Company
P.O. Box 5004
San Ramon, California 94583-0804

Re: Work Plan
Former Chevron U.S.A. Service Station 9-4930
3369 Castro Valley Boulevard at Wilbeam Avenue
Castro Valley, California

Dear Mr. Kan:

This letter, prepared by Pacific Environmental Group, Inc. (PACIFIC) on behalf of Chevron U.S.A. Products Company (Chevron), presents a work plan to further investigate groundwater conditions in the vicinity of the site referenced above (Figure 1).

In a meeting attended by Chevron, the Alameda County Health Care Services Agency (ACHCSA), and the Regional Water Quality Control Board - San Francisco Bay Region (RWQCB) on August 19, 1994, additional investigation was requested for the Chevron site. A joint investigation with the nearby Sal's Foreign Car Service site had previously been proposed. However, this joint investigation was not initiated. In a letter dated August 21, 1995, the ACHCSA directed Chevron to proceed with the investigation of the Chevron site. The ACHCSA requested the submittal of a work plan for additional assessment activities by September 22, 1995.

This work plan includes discussions of the site background and previous investigations, the proposed scope of work, and schedule. Field and laboratory procedures are presented as Attachment A.

SITE BACKGROUND

The subject site is a former Chevron service station located at 3369 Castro Valley Boulevard in Castro Valley, California (Figure 1). The site lies at an elevation of approximately 170 feet above mean sea level (MSL). Surface topography dips gently toward the south-southwest. The nearest surface water to the site is an unnamed tributary of San Lorenzo Creek which flows south-southwesterly into the San Francisco Bay.

The unnamed tributary is located approximately 1,500 feet to the east of the Chevron site. Regional groundwater flow in the vicinity of the site is inferred to be toward the south-southwest.

Land usage in the site vicinity is primarily commercial, including retail stores, restaurants, a dry cleaners, and auto repair facilities. The Sal's Foreign Car Service site is located across Wilbeam Avenue west of the Chevron site. A Kragen auto parts store is located adjacent to, and east of the Chevron site. Residences, including apartment complexes and single-family homes are also located in the vicinity of the site.

Available data indicates that the site was operated by Chevron in at least two configurations. The original site layout included four underground fuel storage tanks, two product islands, a station building, and one underground waste oil storage tank. These facilities were located in the central to northeastern portion of the site. The station was subsequently remodeled to include three underground fuel storage tanks and two product islands in the western portion of the site, and a car wash facility in the location central to northeastern portion of the site. The car wash facility included underground water reclamation tanks.

PREVIOUS INVESTIGATIONS

Investigative activities at the site were initiated in November 1992 by Resna Industries, Inc. (Resna). Work performed by Resna included the performance of a water-supply well survey, which identified 58 documented wells within 1/2 mile of the site. Resna also performed an off-site source search, which documented the presence of five fuel leak sites within 750 feet of the Chevron site. Field investigations performed by Resna included the drilling of exploratory Soil Borings B-1 through B-10, and the installation of temporary well casings in Borings B-1 through B-4. Resna also drilled hand-augered Soil Borings H-1 through H-6. Soil samples from all borings, and groundwater samples from Borings B-1 through B-4 were submitted for laboratory analysis. Details of this investigation were documented in Resna's *Subsurface Environmental Investigation Report* dated December 16, 1992.

In February 1993, the service station and car wash buildings were demolished. In March 1993, the existing service station facilities, including three 10,000-gallon fiberglass underground fuel storage tanks, associated underground product piping, product dispenser islands, and car wash waste water reclamation tanks were removed. Soil and groundwater samples were collected by Touchstone Developments (Touchstone) during the removal of the service station facilities. Overexcavation activities were performed by Gettler-Ryan, Inc. and documented by Touchstone Developments. The entire northern portion of the site, where the first and second generations of service station facilities had been located, was excavated to depths of approximately 8 to 15 feet below ground surface (bgs). Approximately, 7,500 cubic yards of soil were excavated and off-hauled.

Details of the removal of the service station facilities and subsequent overexcavation activities were described in Touchstone's *Tank/Line Removal and Over-Excavation Report* dated June 5, 1993.

In October 1993, Resna drilled additional Soil Borings B-11 through B-14 at the site. These borings were converted to groundwater Monitoring Wells MW-1 through MW-4 by the installation of 2-inch diameter PVC well casings. The wells range in depth from 20-1/2 to 21-1/2 feet. Soil and groundwater samples were submitted for laboratory analysis. The monitoring wells were also surveyed to allow the preparation of groundwater elevation contour maps. Findings of this investigation were documented in Resna's *Additional Subsurface Investigation Report* dated December 13, 1993.

Weiss Associates prepared a *Comprehensive Site Evaluation and Proposed Future Action Plan*, which was finalized on July 11, 1994. This document summarized the findings of previous investigations and remediation at the site, and determined that continued groundwater monitoring and sampling were the most appropriate future actions for the site.

Groundwater monitoring and sampling have been performed at the site on a quarterly basis since October 1993. Groundwater monitoring and sampling are currently performed by Blaine Tech Services, Inc.

The following observations are based on a review of investigative and remedial activities performed at the site to date:

- Soils underlying the site consist primarily of silty to gravely clay to depth of approximately 8 to 12 feet bgs. The surficial clays are underlain by clayey silts in most locations at the site. In the areas of the 1993 overexcavation activities, the site is now underlain by a combination of 2-inch drain rock and Class II aggregate base rock.
- Groundwater has occurred at depths of approximately 4.8 to 8.0 feet bgs during the course of groundwater monitoring at the site. Groundwater flow has typically been toward the southwest at hydraulic gradients of approximately 0.005 to 0.010. These data are considered consistent with inferred regional trends.
- Hydrocarbon-impacted soils have been excavated from the site. Figure 2 depicts the extent of the excavation.
- Groundwater samples collected during the second quarter 1995 event contained concentrations of total petroleum hydrocarbons calculated as gasoline (TPH-g) ranging from 330 to 1,300 parts per billion (ppb), and benzene ranging from 42 to 130 ppb. Well MW-3, which typically

contains much lower concentrations of petroleum hydrocarbons, was not sampled during the second quarter 1995 event.

PROPOSED SCOPE OF WORK

Based on the information described above, hydrocarbon impact beneath the site is limited to dissolved hydrocarbons and to a lesser degree soils within the capillary fringe outside of the property boundary. To this effect, the scope of work of this work plan has been designed to complete definition of the dissolved plume and any capillary fringe impact. The specific scope of work is described below. Field and analytical procedures are presented as Attachment A.

- **Encroachment.** Encroachment onto public and private properties will be secured.
- **Groundwater Probes.** Five off-site groundwater probes are proposed to delineate the dissolved plume that occurs beneath the site (Figure 3). In addition, data collected from these probes will be used to determine if other sources of hydrocarbons occur in the site vicinity. Soil samples will also be collected from the probes to characterize the extent of any impact that occurs within the capillary fringe.
- **Soil and Groundwater Analysis.** Selected soil and groundwater samples will be submitted to a state-certified laboratory and analyzed for the presence of TPH-g, and benzene, toluene, ethylbenzene, and xylenes (BTEX compounds).
- **Well Installation.** Based on the findings of the groundwater probes, a second phase of field work will be performed. The second phase will consist of installing groundwater monitoring wells to complete delineation of the plume. As required, the new wells will be surveyed to MSL by a state-licensed surveyor. The wells will then be developed and sampled during routine quarterly monitoring at the site. Typical well installation, development, and sampling procedures are described in Attachment A.

SCHEDULE

PACIFIC is prepared to initiate access agreements and permitting within 2 weeks of receiving approval by Chevron to proceed. Field work will be scheduled as soon as the appropriate permits have been obtained. Installation of the groundwater probes and the groundwater monitoring wells is anticipated to take approximately 4 weeks. A report

documenting the findings of the investigation will be submitted approximately 6 weeks after completion of field work.

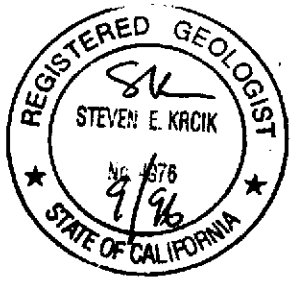
If there are any questions regarding the contents of this work plan, please call.

Sincerely,

Pacific Environmental Group, Inc.

David A. Reinsma
Project Geologist

Steven E. Krcik
Senior Geologist
RG 4976



Attachments: Figure 1 - Site Location Map
Figure 2 - Site Map
Figure 3 - Extended Site Map
Attachment A - Field And Laboratory Procedures

cc: Mr. Scott Seery, Alameda County Health Care Services Agency
Mr. Kevin Graves, Regional Water Quality Control Board - San Francisco Bay Region

QUADRANGLE LOCATION

REFERENCES:
USGS 7.5 MIN. TOPOGRAPHIC MAP
TITLED: HAYWARD, CALIFORNIA
DATED: 1959 REVISED: 1980

SCALE IN FEET

2000 0 2000

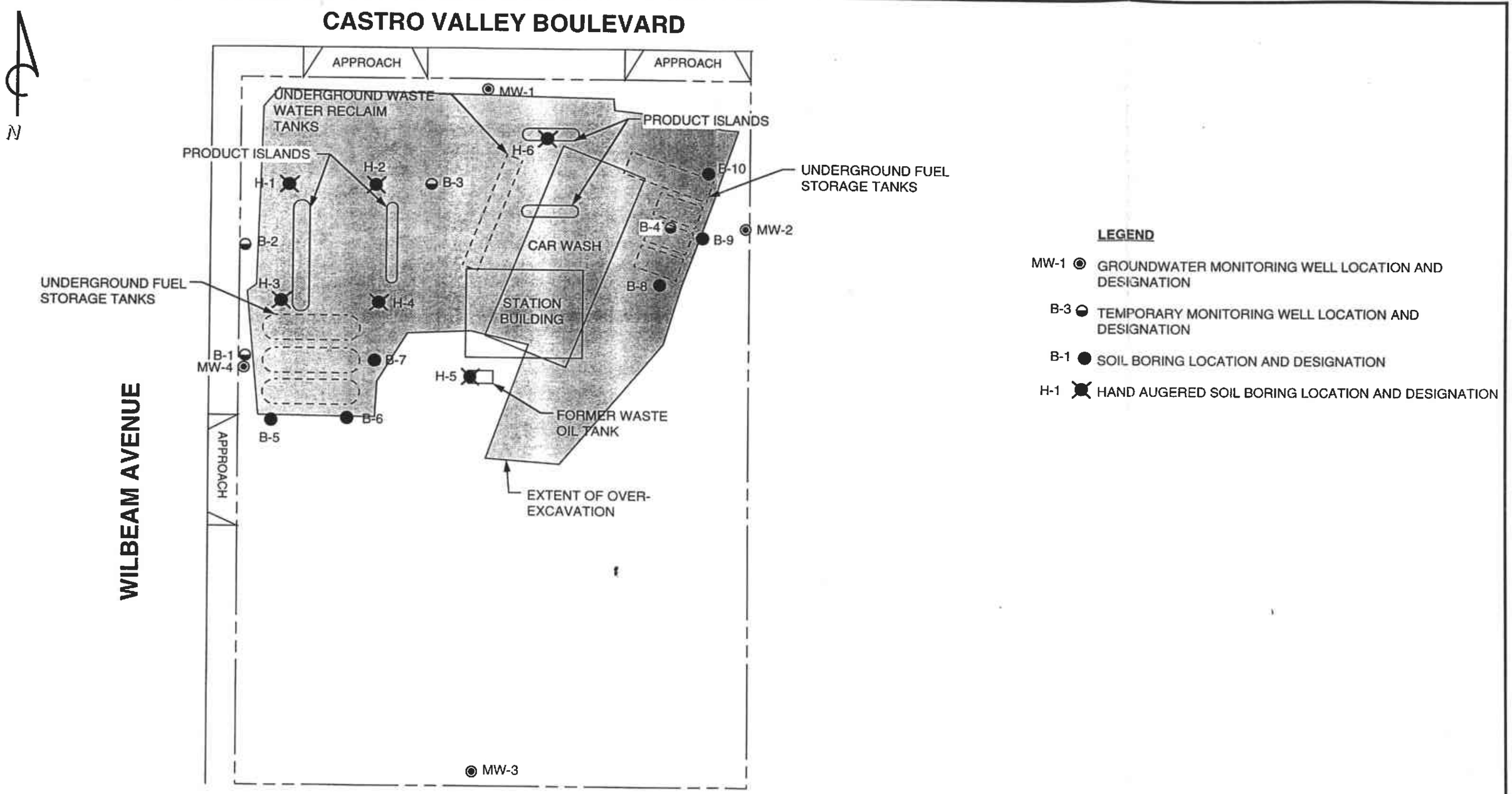
PACIFIC ENVIRONMENTAL GROUP, INC.

FORMER CHEVRON U.S.A. SERVICE STATION 9-4930
3369 Castro Valley Boulevard at Wilbeam Avenue
Castro Valley, California

SITE LOCATION MAP

FIGURE: **1**

PROJECT: 320-156.1A



LEGEND

- MW-1 ◉ GROUNDWATER MONITORING WELL LOCATION AND DESIGNATION
- B-3 ◒ TEMPORARY MONITORING WELL LOCATION AND DESIGNATION
- B-1 ● SOIL BORING LOCATION AND DESIGNATION
- H-1 ✕ HAND AUGERED SOIL BORING LOCATION AND DESIGNATION

SOURCE: RESNA; DATED: 11-92

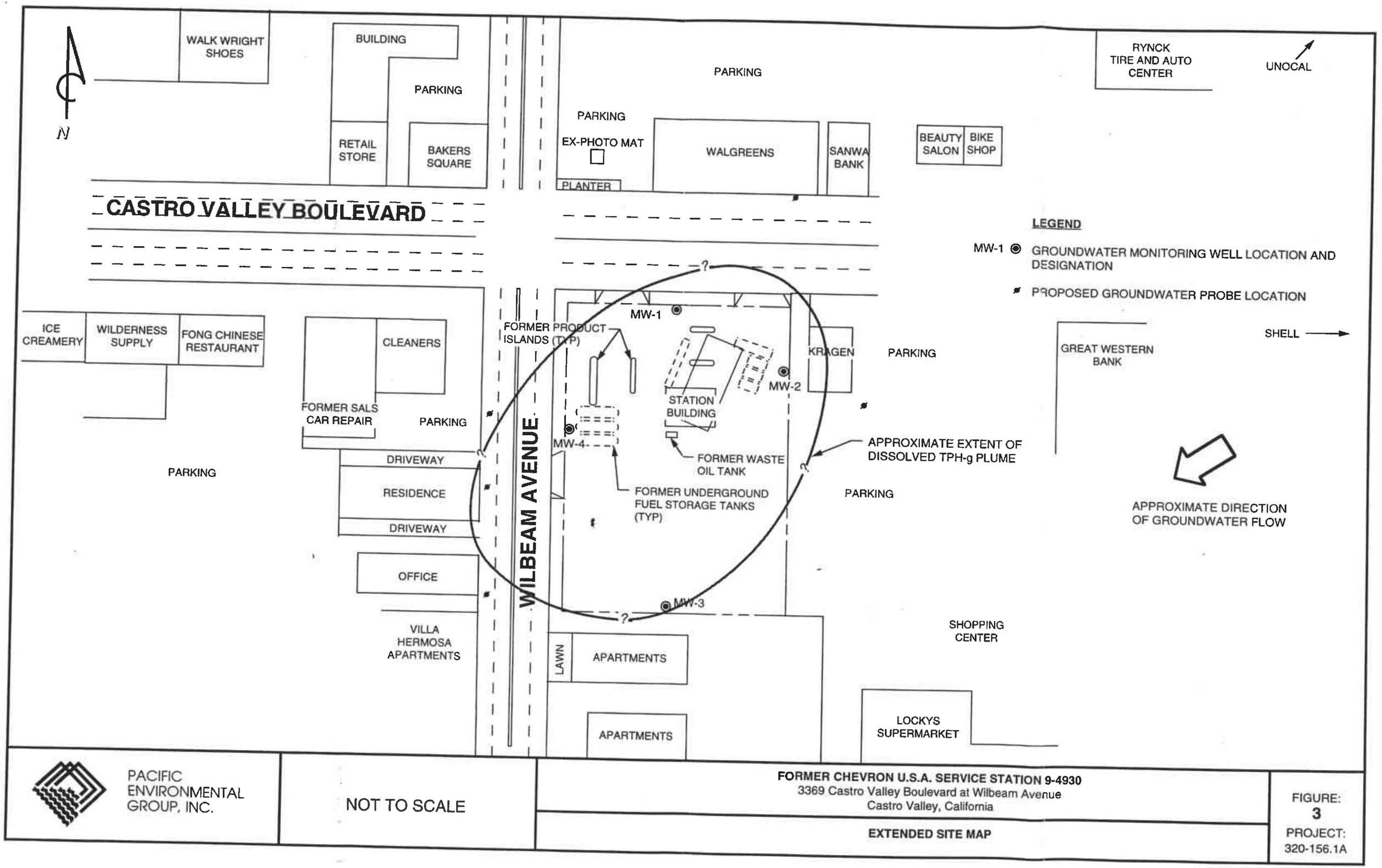
PACIFIC ENVIRONMENTAL GROUP, INC.

SCALE
0 30 60 FEET

FORMER CHEVRON U.S.A. SERVICE STATION 9-4930
3369 Castro Valley Boulevard at Wilbeam Avenue
Castro Valley, California

SITE MAP

FIGURE
2
PROJECT:
320-156.1A



PACIFIC ENVIRONMENTAL GROUP, INC.

NOT TO SCALE

FORMER CHEVRON U.S.A. SERVICE STATION 9-4930
3369 Castro Valley Boulevard at Wilbeam Avenue
Castro Valley, California

EXTENDED SITE MAP

FIGURE: **3**
PROJECT: 320-156.1A

ATTACHMENT A

FIELD AND LABORATORY PROCEDURES

ATTACHMENT A
FIELD AND LABORATORY PROCEDURES

Groundwater Probes

The groundwater probes will be installed using 1.5-inch diameter steel pipe. The pipe will be hydraulically driven or pneumatically driven into the subsurface. Selected soil samples will be collected in steal liners. Groundwater samples will be collected with a bailer from the borehole or custom well screen. Groundwater probe sampling equipment will be either steam-cleaned or cleaned in a tri-sodium phosphate solution prior to use. Soil and groundwater samples will be preserved in accordance to the procedures discussed below.

Soil Borings and Groundwater Monitoring Well Installation

The borings for the groundwater monitoring wells will be drilled using 8-inch diameter hollow-stem auger drilling equipment and logged by a Pacific Environmental Group, Inc. geologist using the Unified Soil Classification System and standard geologic techniques. Each of the borings will be drilled to a total depth of 15 feet below ground surface (bgs). Soil samples for logging will be collected at depth intervals of 5 feet or less using a California-modified split-spoon sampler. 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, capped with Teflon® squares and plastic end caps, and placed in sealable plastic bags. The samples will be placed on ice for transport to the laboratory accompanied by chain-of-custody documentation. Down-hole drilling and sampling equipment will be steam-cleaned before and after the drilling of each boring. Down-hole sampling equipment will be washed in a tri-sodium phosphate solution before and after the collection of each sample.

The borings will be converted to groundwater monitoring wells by installing 2-inch diameter, flush-threaded, Schedule 40 PVC casing with 0.020-inch factory-slotted screen. Each of the well casings will be installed to a total depth of 14 feet bgs. The screened intervals will be placed between the depths of 4 feet and 14 feet bgs. A graded 2/12 sand pack will be placed in the annular space across the entire screened interval, and will extend approximately 1/2 foot above the top of the screen for the well. A bentonite and cement grout seal will be placed

from the top of the sand pack to ground surface. A traffic-rated vault box will be mounted at the top of each well.

Following well completion, the vault box elevation and the elevation of the top of the PVC well casing for each well will be surveyed for elevation to the nearest 0.01 foot relative to mean sea level, by a licensed surveyor. The boring logs will show well construction details and the well head elevations.

Organic Vapor Procedures

Soil samples collected during drilling will be analyzed in the field for ionizable organic compounds using the HNU Model PI-101 (or equivalent) photo-ionization detector (PID) with a 10.2 eV lamp. The test procedure will involve placing approximately 30 grams of soil from an undisturbed soil sample in a clean glass jar, and sealing the jar with aluminum foil secured under a ring-type threaded lid. The jar will be warmed for approximately 20 minutes in the sun, the foil pierced, and the head-space within the jar analyzed 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 55 which relates the photo-ionization potential of benzene to that of isobutylene at 100 ppm. The results of the field testing will be noted on the boring logs. PID readings are useful for indicating relative levels of contamination; but cannot be used to evaluate hydrocarbon levels with the confidence of laboratory analyses.

Well Development and Groundwater Sampling

The groundwater monitoring wells will be developed and sampled a minimum of 24 hours after completion of the wells. Well development procedure will include swabbing and bailing and/or pumping. Water will be removed from the well until relatively turbidity free water is produced, or until a minimum of ten casing volumes have been removed. The groundwater sampling procedure will consist of first measuring the water level in the well, and checking it for the presence of separate-phase hydrocarbons (SPH) using an oil-water interface probe or a clear disposable bailer. If SPH is not present, the well will then be purged of a minimum of five casing volumes of water. During purging, temperature, pH, and electrical conductivity will be monitored until stable, to document that a representative sample is collected. After the water level recovers, a sample will be collected from each well using a Teflon bailer and placed into appropriate EPA-approved containers. The samples will be labeled, logged onto a chain-of-custody document, and transported on ice to the laboratory.

Rinsate, Purge, and Development Waters, and Soil Cuttings Storage and Disposal

Water produced during field activities will be transported via a purge trailer and disposed of at a state-certified treatment and disposal facility. When necessary, waters will temporarily be stored on site in DOT-approved 55-gallon drum pending transport and disposal.

Soil cuttings generated during drilling will be placed on, and covered with, plastic sheeting. Samples of the cuttings will be collected and sent to a state-certified laboratory for analysis. Pending analytical results, the soil cuttings will be hauled by an appropriate waste hauler to a state-certified treatment and disposal facility.

Laboratory Procedures

Selected soil samples and groundwater samples will be analyzed for the presence of total petroleum hydrocarbons calculated as gasoline, benzene, toluene, ethylbenzene, and xylenes using modified EPA Methods 8015 and 8020.