Chevron U.S.A. Inc.
2410 Camino Ramon, San Ramon, California • Phone (415) 842-9500
Mail Address. P.O. Box 5004, San Ramon, CA 94583-0804

May 3, 1990

Marketing Operations

D. Moller
Manager, Operations
S. L. Patterson
Area Manager, Operations
C. G. Trimbach
Manager, Engineering

Mr. Gil Wister
Alameda County
Environmental Health
80 Swan Way, Room 200
Oakland, California 94621

Re: Chevron Service Station #9-1583
5509 Martin Luther King Way
Oakland, CA

Dear Mr. Wister:

Enclosed we are forwarding a Work Plan prepared by our consultant Geraghty & Miller, Inc. dated April 23, 1990, which describes additional work steps we propose to take at the above referenced site. We would appreciate your review and concurrence.

I declare under penalty of perjury that the information contained in the attached report is true and correct, and that any recommended actions are appropriate under the circumstances, to the best of my knowledge.

If you have any questions or comments please do not hesitate to call me at (415) 842 - 9625.

Very truly yours,

C. G. Trimbach

By John Randall

JMR/jmr
Enclosure

cc: Mr. Lester Feldman
RWQCB-Bay Area
1800 Harrison Street
Suite # 700
Oakland, CA 94612

90 MAY -7 AM 11:47

GERAGHTY
& MILLER, INC.
Environmental Services

1050 Marina Way South
Richmond, California 94804
(415) 233-3200
FAX: (415) 233-3204

April 23, 1990

KLD APR 26'90

Mr. John Randall
Chevron U.S.A., Inc.
West Central Marketing
2410 Camino Ramon
San Ramon, California 94583

Re: Site Assessment Workplan, Chevron U.S.A., Inc. Service Station #9-1583, 5509 Martin Luther King Jr. Way, Oakland, California.
(Project No: RC02602)

Dear Mr. Randall:

Geraghty & Miller, Inc. (Geraghty & Miller) is pleased to submit this workplan for performing site assessment activities at the Chevron U.S.A., Inc (Chevron) service station referenced above. The objective of the assessment activities is to better define the extent of petroleum hydrocarbons in the shallow ground water in the vicinity of the Chevron site.

BACKGROUND

According to information supplied to Geraghty & Miller by Chevron, product piping was removed from the site on December 14, 1989. A total of seven soil samples were collected by Geotest from the piping trenches and analyzed for total petroleum hydrocarbons (TPH) as gasoline (USEPA Method 8015, modified) and benzene, toluene, xylenes, and ethylbenzene (BTXE) (USEPA Method 8020). The location and extent of the trenches was not included in the information supplied to Geraghty & Miller.

The highest concentration of TPH as gasoline measured in the soil was 1,700 mg/kg. The sampler reportedly encountered water before the concentrations of hydrocarbons "attenuated to below levels of concern". Based on these results, the Alameda County Health Care Services Agency, Department of Environmental Health (ACDEH) requested that Chevron install three ground-water monitor wells to assess whether shallow ground water in the vicinity of the former location of the product piping has been impacted by petroleum hydrocarbons. The ACDEH also requested Chevron to submit an unauthorized release form (ACDEH, January 22, 1990).

According to information supplied to Geraghty & Miller by Chevron, three ground-water monitor wells (Monitor Wells #1 through #3) were installed at the project site by Gettler-Ryan, Inc. during December 1983. The approximate locations of the monitor wells are presented in Figure 1. The exploratory borings were drilled to a total depth of 21 feet below the ground surface and encountered clay and silty clay to the total depth explored. Depth to water ranged from 10.25 feet to 11.58 feet below the ground surface on December 22, 1983, and phase-separated hydrocarbons were reportedly not observed.

On March 12, 1990 ground-water samples were collected from Monitor Wells #1 through #3 and analyzed for TPH as gasoline (USEPA Method 8015, modified) and BTXE (USEPA Method 8020). TPH as gasoline was detected at concentrations ranging from 800 µg/l (Well #2) to 50,000 µg/l (Well #1). BTXE was detected at concentrations ranging from 18 µg/l (toluene, Well #2) to 18,000 µg/l (xylenes, Well #1) (Geraghty & Miller, April 2, 1990).

On March 25, 1990, depth to water ranged from 10.46 feet below the top of casing (Monitor Well #1) to 12.55 feet below the top of casing (Monitor Well #3). Based on these data, the approximate direction of shallow ground-water flow beneath the southern portion of the site is towards the southwest. The three existing monitor wells are located hydraulically downgradient of the fuel dispensing islands. Monitor Well #1 is located downgradient of the underground storage tanks and Well # 2 is located upgradient of the tanks (Geraghty & Miller, April 2, 1990).

A British Petroleum Service Station (BP) is located at 5425 Martin Luther King Jr. Way to the south-southwest of the Chevron site. According to information contained in the project files at the Regional Water Quality Control Board (RWQCB) located in Oakland, California, three underground gasoline storage tanks (one 8,000-gallon regular gasoline, one 10,000-gallon unleaded gasoline, and one-6,000 gallon super unleaded gasoline) were excavated and removed from the site during October 1987. One soil sample was collected from approximately 2 to 3 feet beneath the tank invert (approximately 12 feet to 15 feet below the ground surface) from each end of the three tanks and analyzed for volatile hydrocarbons by USEPA Method 8015, modified. Concentrations of volatile hydrocarbons ranged from below the detection limits (<0.8 mg/kg) to 1.1 mg/kg (Applied GeoSystems, October 23 1989). There are no references to the presence of monitoring wells on the BP property.

SCOPE OF WORK

In order to better define the lateral extent of petroleum hydrocarbons in the shallow ground water in the vicinity of the Chevron site, three additional ground-water monitor wells are proposed for installation at the approximate locations shown in Figure 1. Two wells are proposed for installation off-site to the south-southwest (hydraulically downgradient) of the Chevron site in order to better define the downgradient extent of petroleum hydrocarbons in the shallow ground water. One monitor well is proposed for installation in the vicinity of the northeast property boundary (hydraulically upgradient of the underground storage tanks and fuel dispensing islands) to assess the quality of shallow ground water entering the site.

Task 1 - Pre-Field Activities

Prior to drilling, Geraghty & Miller will schedule subcontractors and materials and obtain the required drilling ,well installation, and encroachment permits. A professional underground utility locating company will be contracted to identify underground utilities and determine whether each proposed drilling location is free of subsurface obstructions. Underground Service Alert, Inc. (USA) will also be contacted to identify the location of utilities in the vicinity of the proposed off-site drilling locations. A representative of Geraghty & Miller will meet the locating company at the site to mark the proposed drilling locations.

Task 2 - Drilling and Well Installation

The proposed borings will be drilled using 8-inch diameter hollow stem auger drilling equipment and will be logged by a Geraghty & Miller geologist. Prior to drilling each boring, all equipment which will enter the borehole will be steam cleaned. The exploratory borings will be drilled to a depth of approximately 20 feet below the depth of first encountered water or will be terminated in a lower permeability layer at least three feet thick beneath the first water bearing zone, whichever occurs first. Based on the available data, it is anticipated that ground water will be encountered at a depth of approximately 12 feet below the ground surface.

Soil samples for logging purposes will be collected at approximately 5-foot depth intervals by advancing a modified California split-spoon sampler into the undisturbed soil beyond the tip of the augers. Field hydrocarbon vapor tests will be performed on a sample of the soil collected from each sampling interval. The hydrocarbon vapor tests will be performed using a Gastech explosimeter calibrated to hexane.

Upon completion, the exploratory borings will be converted to ground-water monitor wells by installing 2-inch diameter schedule 40 PVC casing. The slotted portion of the casing will extend from the bottom of the well to approximately 5 feet above first encountered water. The well completion may vary based on the actual hydrogeologic conditions encountered during the drilling. The wellheads will be secured below grade using lockable water tight caps and a traffic rated monitor well cover. The top of casing elevations relative to mean sea-level will be surveyed by Geraghty & Miller.

The soil generated during the drilling activities will be stored on site in 55-gallon drums or in a covered soil bin prior to proper disposal. At the completion of drilling, a composite soil sample will be collected and submitted to the appropriate Chevron contracted laboratory for analysis. Based on the results of the analysis, recommendations for the appropriate method of disposal will be provided to Chevron by Geraghty & Miller.

Task 3 - Ground-Water Sampling and Laboratory Analysis

Ground-water samples for laboratory analysis will be collected from the three monitor wells proposed for installation in Task 2. Prior to sampling, depth to water and total well depth measurements will be obtained from each well, and each well will be checked for the presence of phase-separated petroleum hydrocarbons. Wells in which phase-separated hydrocarbons are observed will not be sampled.

All equipment which will enter the well will be cleaned in a solution of tri-sodium phosphate and distilled water and will be triple-rinsed in distilled water prior to sampling each well. Each well to be sampled will be purged of a minimum of four casing volumes of water using either a low discharge diaphragm pump or a disposable polyethylene bailer so that a water sample representative of the formation in the vicinity of the monitor well is obtained. The purged water will be monitored for temperature, pH, and specific conductance. The water will be purged into 55-gallon drums and retained on site for proper disposal by Chevron. Water samples for laboratory analysis will be collected using a new disposable polyethylene bailer. The water samples will be collected into appropriate USEPA approved containers, placed on ice and transported to GTEL Environmental Laboratories, Inc. located in Concord, California. A trip blank consisting of laboratory

grade water will accompany the sample bottles from the laboratory to the site and back to the laboratory.

The water samples collected from the monitoring wells will be analyzed for TPH as gasoline (USEPA Method 8015, modified), and BTXE (USEPA Method 602).

Task 4 - Report Preparation

Following receipt of all laboratory data, Geraghty & Miller will prepare a report of the results of the assessment activities including the following:

- Description of the exploratory drilling, soil sampling, well installation, and ground-water sampling activities;
- Exploratory boring logs and well completion details;
- A summary and discussion of the findings and analytical results.

PROJECT SCHEDULE

We estimate that the required subcontractors can be scheduled to begin the drilling activities within three weeks following receipt of approval of the workplan, depending on availability of appropriate drilling contractors and the permitting requirements for the monitor wells proposed for installation within the right-of-way of 55th Street. We estimate that the drilling and well installation activities will require one week to complete. Well development and ground-water sampling activities will require approximately one week. Analytical results will be received from the laboratory two weeks after ground-water sampling is complete. Analysis of the data and preparation of the report will require approximately three weeks to complete.

If you have any questions regarding this project, please do not hesitate to call.

Sincerely,
GERAGHTY & MILLER, INC.

Jeffrey W. Hawkins, R.G.
Senior Geologist

Gary W. Keyes, P.E.
Principal Engineer

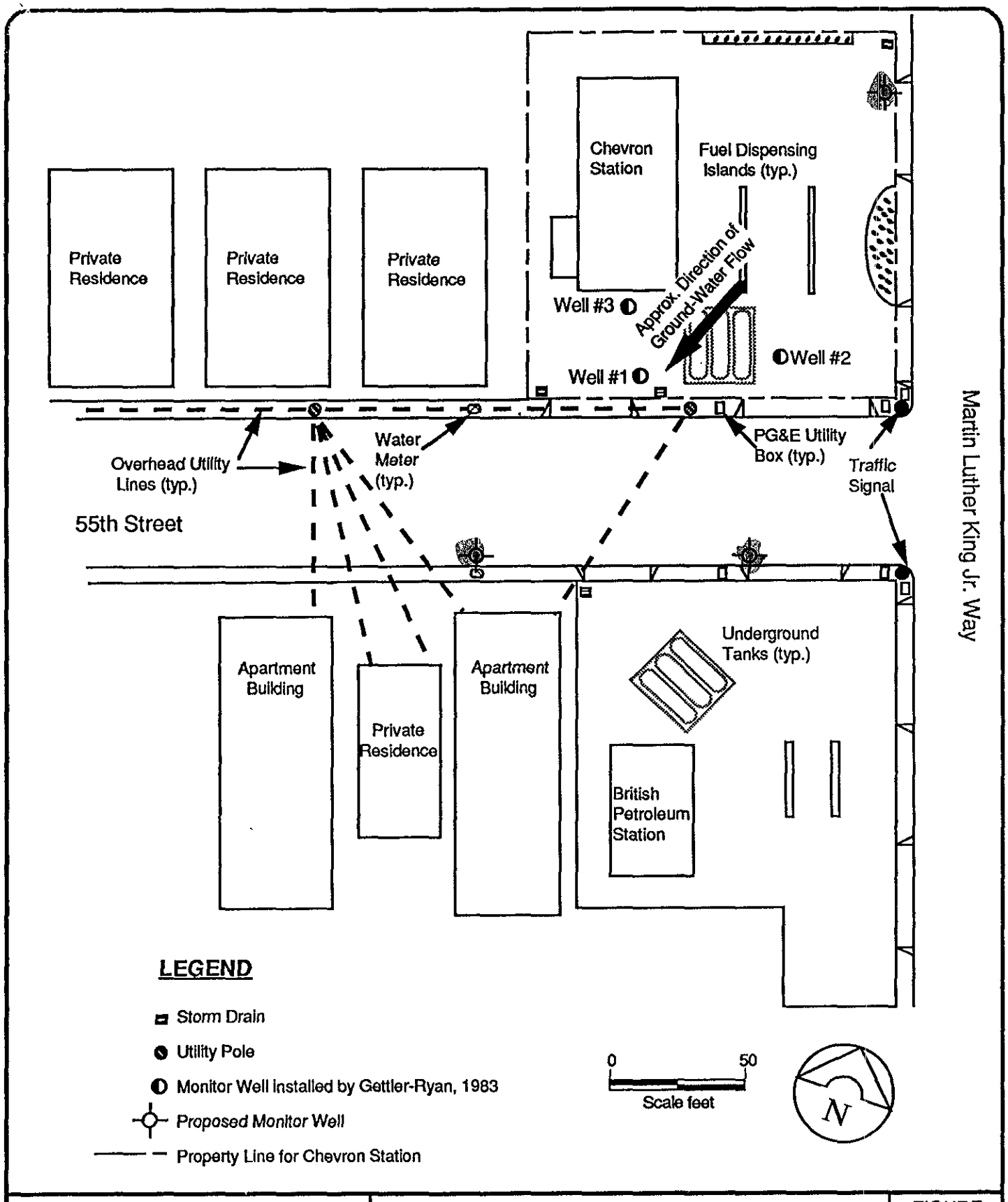
Attachments: References
Figure 1 - Site Plan

REFERENCES

ACDEH, January 22, 1990, Notice of Violation.

Applied Geosystems, October 23, 1987, Letter report No. 87117-1 on tank inspection and laboratory analyses of soil samples collected beneath gasoline storage tanks, Mobil service station No. 10LVW, 5425 Grove Street, Oakland, California..

Geraghty & Miller, April 2, 1990, Results of Ground-Water Sampling Activities, Chevron U.S.A., Inc. Service Station #9-1583, Martin Luther King Way, Oakland, California.



GERAGHTY & MILLER, INC
Environmental Services

Proj. No.RCO2602

SITE PLAN

CHEVRON STATION #9-1583
5509 Martin Luther King Way
Oakland, California

FIGURE
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