√ rec 9/14/92

Chevron U.S.A. Products Company
2410 Camino Ramon, San Ramon, California • Phone (510) 842-9500
Mail Address: P.O. Box 5004, San Ramon, CA 94583-0804

August 28, 1992

Ms. Eva Chu
Alameda County Environmental Health
80 Swan Way, Room 200
Oakland, CA 94621

Re: Chevron Station # 9-5542, 7007 San Ramon Valley Blvd., Dublin, CA
Attached work plan for additional assessment (Ger. & Miller, 8/21/92)

Dear Ms. Chu:

Attached is a work plan dated August 21, 1992, which was prepared by Chevron's consultant, Geraghty & Miller (GM), to describe the additional assessment proposed for the subject site. Chevron proposes the drilling of two soil borings to further assess impacted soil in the vicinity of the former underground tank complex, and the completion of the borings as vadose wells for potential use as vapor extraction points. Chevron also proposes the replacement of well MW-1 with a deeper well which would have potential for use as a vapor and water extraction well. The applicability of remedial alternatives may be determined with the help of a remedial pilot test utilizing the wells described in GM's work plan.

If you have any questions or comments, I can be reached at (510) 842-8658.

Sincerely,

Clint B. Rogers

Clint B. Rogers
Environmental Engineer
Site Assessment and Remediation

Attachment

cc: Richard Hiett, San Francisco Bay RWQCB, Oakland, CA
Paul Hehn, Geraghty & Miller, Richmond, CA (w/o attachment)

GERAGHTY
& MILLER, INC.
Environmental Services

Ground Water *Engineering* *Hydrocarbon* *Remediation* *Education*

August 21, 1992
Project No. RC09302

Mr. Clint Rogers
Chevron U.S.A. Products Company
2410 Camino Ramon
San Ramon, CA 94583

SUBJECT: Work Plan for the Installation of Ground-Water and Vapor-Extraction Well, and Vacuum-Monitoring Wells
Chevron Service Station #9-5542
7007 San Ramon Road, Dublin, California.

Dear Mr. Rogers:

In accordance with our telephone conversation of August 12, 1992, Geraghty & Miller, Inc. (Geraghty & Miller) has prepared this work plan for installation of a ground-water and vapor-extraction well and vacuum-monitoring wells at the Chevron U.S.A. Products Company (Chevron) service station referenced above. The purpose of the installations is to provide wells appropriately constructed for concurrent pumping to dewater the aquifer and the performance of a soil vapor extraction (SVE) pilot test at the site. Performance of the SVE pilot test will be addressed by a future work plan.

SCOPE OF WORK

TASK 1: PREFIELD ACTIVITIES

Geraghty & Miller will submit the required well-installation permits from the Alameda County Department of Health Services (ACDHS) and schedule the underground services locators and drilling subcontractor. A site-specific Health and Safety Plan will be prepared prior to initiating drilling and well-installation activities.

TASK 2: UNDERGROUND UTILITIES LOCATING

The underground utilities, and any other subsurface obstructions, will be located by a professional underground utility locating service coordinated by Geraghty & Miller.

TASK 3: DRILLING AND WELL INSTALLATION ACTIVITIES

One ground-water and vapor-extraction well (MW-1) and two vapor-extraction/ vacuum-monitoring wells (VW-1 and VW-2) will be installed in the approximate locations shown on Figure 2. Drilling will be performed using hollow-stem auger drilling methods. The drilling augers and any equipment which will enter the borehole will be steamed cleaned or washed with a nonphosphate cleaner prior to use. Soil samples will be collected for laboratory analysis and/or lithologic description at 5-foot intervals below ground surface using a California modified split-spoon sampler equipped with brass liners. All references to depth in this work plan are depth below the ground surface.

Monitoring Well MW-1 will be destroyed by overdrilling using 10-inch diameter hollow-stem auger drilling equipment and replaced using 4-inch diameter Schedule 40 polyvinyl chloride (PVC) well casing and 0.010-inch slotted Schedule 40 PVC well screen. The depth of existing Monitoring Well MW-1 is 35 feet. The anticipated completed depth and construction of Extraction Well MW-1 is 50 feet with a well screen interval from 30 to 50 feet. This well construction has been selected since MW-1 will be used for both ground-water extraction and vapor-extraction purposes. The 50-foot completion depth will provide a greater radius of influence and cone of depression during ground-water extraction than would be created from a well completed to 35 feet, while still being able to effecetively remove petroleum hydrocarbons during vapor extraction. The screened interval will not be above the 30-foot depth because it could then provide a conduit for air to flow directly through the tank backfill during vapor extraction. The final well-construction details will be determined based on the headspace readings and lithologic descriptions by the field geologist logging the drill cuttings during drilling. The soils will be logged in accordance with the Unified Soils Classification System (ASTM D-2488).

Vapor Monitor Wells VW-1 and VW-2 will be installed using 8-inch diameter hollow-stem augers to a total depth of 30 feet. The wells will be completed using 2-inch Schedule 40 PVC casing from the ground surface to 25 feet with 0.010 slotted Schedule 40 PVC well screen between 25 and 30 feet. Wells VW-1 and VW-2 will be used to monitor the relationship of vacuum versus distance from Well MW-1 during the SVE pilot test. This well screen interval was selected for obtaining vacuum response data at the soil/water interface during the vapor-extraction pilot test, and to provide vapor-extraction capabilities for reducing the concentrations of petroleum hydrocarbons in the soil and ground water at these locations, if

recommended based on the pilot test results. Vapor Monitor Wells VW-1 or VW-2 may be incorporated into the final remediation system as determined by the pilot test results.

All wells will be completed with a filter pack, using RMC Lonestar sand #2/20 or equivalent, to be placed in the annular space around the casing to a depth equivalent to the depth of the upper screened interval of each well for the vapor monitor wells and to a depth of one to two feet above the top of the well screen for Well MW-1. A minimum of 2 feet of bentonite will be placed in the annular space above the sand pack, and a cement/bentonite slurry will be placed above the bentonite seal, extending to approximately 1 foot below the ground surface. The wellhead will be secured below grade using an expandable-gasket, locking wellcap secured with a standard Chevron lock. A traffic-rated wellbox will be concreted approximately 1 inch above grade for wellhead protection.

Soil samples from each borehole will be selected for laboratory analysis based on the results of the headspace measurements and lithology. Headspace measurements will be obtained from each sampling interval by sealing a portion of the soil sample in a ziplock bag, allowing the vapors within the bag to equilibrate, and measuring the concentration of hydrocarbon vapors using either an explosimeter or photoionization detector. All soil samples will be retained in brass liners, sealed with Teflon™ tape and plastic end caps, labeled, and placed on ice in preparation for transport to the laboratory. The soil samples selected for analysis will be analyzed for total petroleum hydrocarbons (TPH) as gasoline (USEPA Method 8015, modified) and benzene, toluene, ethylbenzene, and xylenes (BTEX, USEPA Method 8020) by Superior Precision Analytical, Inc. (Superior), a State of California-certified laboratory located in San Francisco, California.

Per current Chevron procedure, the soil cuttings from each borehole will be placed on and covered with plastic sheeting. Four discrete soil samples will be collected and then composited in the laboratory to assist Chevron in disposing of the soil through a Chevron-approved soil disposal contractor. The Chevron procedure requests that the composite soil samples be analyzed by the Chevron-approved, State of California-certified laboratory on a 48-hour turnaround basis, and that the soil samples be analyzed for TPH as gasoline and BTEX. All steam-cleaner water used to clean the drilling equipment will be containerized in 55-gallon Department of Transportation (DOT) approved drums, labeled, and retained on-site for proper disposal by Chevron.

TASK 4: WELL DEVELOPMENT

MW-1 will be developed by alternately surging the well using a development swab, by bailing any material that collects in the bottom of the well as a result of the swabbing activity, and by purging the development water from the well. Temperature, pH, and specific conductivity measurements of the purge water will be monitored. The well will be considered to be developed when the visual clarity of the water improves and the temperature, pH, and specific conductivity stabilize. The development water will be containerized in 55-gallon drums, labeled, and left on-site for proper disposal by Chevron.

TASK 5: ASSESSMENT REPORT PREPARATION

Following receipt of all 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;
- Summary tables of soil sample results; and
- A summary and discussion of the findings and analytical results.

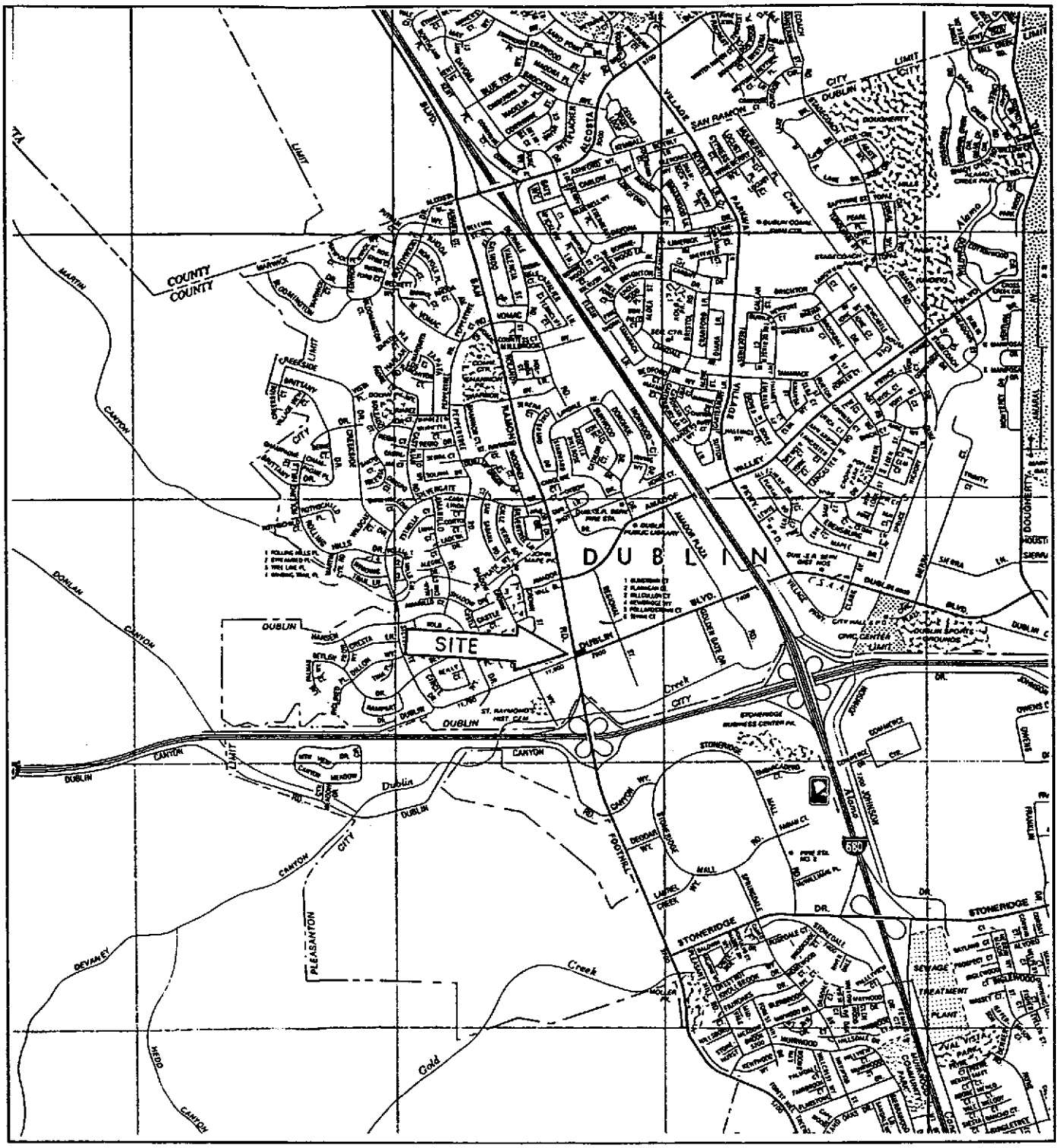
Geraghty & Miller is pleased to be of service to Chevron. If you have any questions or need further information regarding this work plan, please contact the undersigned.

Sincerely,
GERAGHTY & MILLER, INC.

Paul V. Hehn
Project Hydrogeologist/Project Manager

Gary W. Keyes, P.E.
Principal Engineer/Associate

Attachments: Figure 1 Site Location
Figure 2 Site Plan



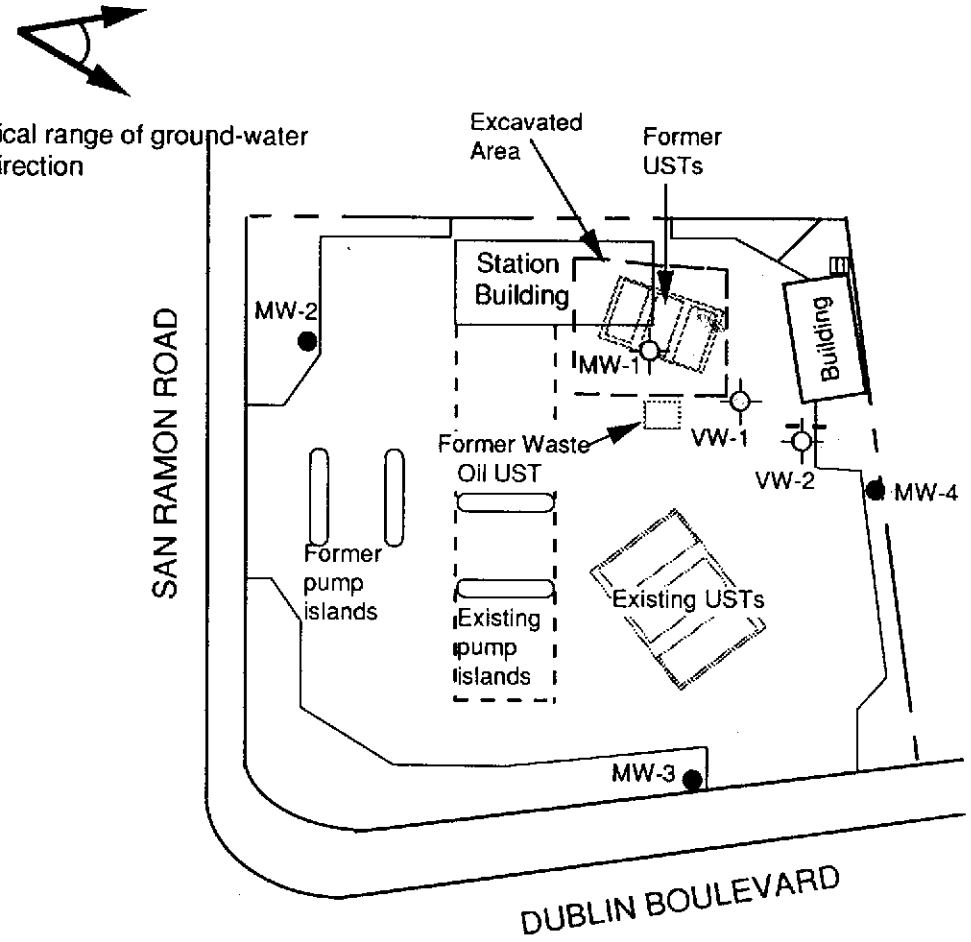
Reference: California State Automobile Association
Map of Pleasanton and Vicinity
Scale: 1: 24,000

GERAGHTY & MILLER, INC.
Environmental Services
Project No. RC09300

SITE LOCATION

Chevron Service Station # 9-5542
7007 San Ramon Road
Dublin, California

FIGURE
1



EXPLANATION

Proposed Well location

MW-3 Monitor Well installed by previous consultants

USTs Underground Storage Tanks

Reference: Sierra Environmental Services

N

0 50

Scale feet

GERAGHTY & MILLER, INC. *Environmental Services* Project No. RC09300	**SITE PLAN** Chevron Service Station #9-5542 7007 San Ramon Road Dublin, California	FIGURE **2**