

# Ultramar

**Ultramar Inc.**  
P.O. Box 466  
525 W. Third Street  
Hanford, CA 93232-0466  
(209) 582-0241

Approved w/  
additions  
1/20/93  
SOJ

Telecopy: 209-584-6113 Credit & Wholesale  
209-583-3330 Administrative  
209-583-3302 Information Services  
209-583-3358 Accounting

January 12, 1993

Mr. Scott O. Seery, CHMM  
Senior Hazardous Materials Specialist  
Alameda County Health Care Services  
80 Swan Way, Room 200  
Oakland, California 94621

**Subject: WORK PLAN FOR A SUBSURFACE ENVIRONMENTAL INVESTIGATION AT FORMER  
BEACON STATION NO. 574, 22315 REDWOOD ROAD, CASTRO VALLEY,  
CALIFORNIA**

Dear Mr. Seery:


The enclosed work plan summarizes work necessary to evaluate the lateral extent of hydrocarbons in the soil and ground-water beneath the above-referenced site. The proposed work will be performed by an environmental consultant selected by Ultramar Inc. (Ultramar). Prior to commencement of the field work, Alameda County Health Care Services will be notified regarding the start-up date and which consulting firm will be performing the investigation.

The work described in the enclosed work plan should yield the data necessary to evaluate the lateral extent of hydrocarbon constituents associated with the soil and ground-water beneath the site.

If you have any questions regarding this information call (209) 583-5571.

Sincerely,

**ULTRAMAR INC.**



Kenneth R. Earnest  
Environmental Specialist I  
Marketing Environmental Department

Enclosure: Work plan



A Member of the Ultramar Group of Companies

**BEACON**  
#1 Quality and Service

Approved w/  
additions 1/20/93  
SOS

**WORK PLAN  
SUBSURFACE ENVIRONMENTAL INVESTIGATION**

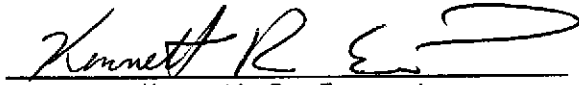
at  
Former Beacon Station No. 574  
22315 Redwood Road  
Castro Valley, California

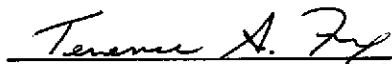
Prepared for

Alameda County  
Health Care Services  
Oakland, California

by

ULTRAMAR INC.  
525 West Third Street  
Hanford, California 93230

  
Kenneth R. Earnest  
Environmental Specialist  
Marketing Environmental Department

  
Terrence A. Fox, R.G. #5029  
Senior Project Manager  
Marketing Environmental Department



January 11, 1993

WORK PLAN  
SUBSURFACE ENVIRONMENTAL INVESTIGATION  
at  
Former Beacon Station No. 574  
22315 Redwood Road  
Castro Valley, California

**INTRODUCTION**

This work plan describes the work necessary to evaluate the lateral extent of hydrocarbon constituents in the soil and ground-water beneath former Beacon Station No. 574, at 22315 Redwood Road, Castro Valley, California. The proposed work includes: 1) drilling five soil borings to approximately 30-feet on and surrounding the site; 2) collecting soil samples from the borings for field evaluation and laboratory analysis; 3) analyzing selected soil samples obtained from the borings for hydrocarbon constituents benzene, toluene, ethylbenzene, total xylenes (BTEX) and total petroleum hydrocarbons as gasoline (TPHg); 4) completing the five borings as ground-water monitoring wells; 5) purging and sampling the newly installed wells for BTEX and TPHg; and 6) preparing a final report documenting field methodologies and presenting findings, conclusions, and recommendations. The proposed work will be performed by an environmental consulting firm under the supervision of a registered geologist or professional engineer.

**BACKGROUND AND PREVIOUS WORK**

The subject former Beacon service station is located at the intersection of Grove Way and Redwood Road in Castro Valley, California. The site location is shown on the Site Vicinity Map (Figure 1). The approximate locations of the former station facilities, surrounding properties structures, monitoring wells currently present, and proposed monitoring wells are shown on the Generalized Site Plan (Figure 2).

On May 5, 1987 one 500 gallon waste oil tank, two 5,000 gallon diesel tanks, and a 7,000 and an 8,000 gallon gasoline tanks were removed. Soil samples were collected from below the tanks at the site by a representative of Applied Geosystems. The samples were submitted to a State Certified laboratory for analysis of total volatile hydrocarbons, total extractable hydrocarbons and BTEX. The results of the analyses indicated the presence of hydrocarbon constituents in the soil samples analyzed. Over-excavation to approximately 20-feet was undertaken on May 18, 1987 and more samples were collected. Four of the samples collected during the over-excavation were below 10 ppm total volatile hydrocarbons (TVH) and the other three were 125.5, 208.7 and 1,989 ppm TVH. \*

On March 26, 1991 three boring were advanced on the site and completed as ground-water monitoring wells. Quarterly ground-water monitoring results indicate that elevated levels of hydrocarbons are present at the site. Based on the analytical results of the ground-water samples, Ultramar Inc. (Ultramar) proposes to conduct a further investigation to evaluate the presence of hydrocarbon constituents in the soil and ground-water surrounding the site.

#### GROUND-WATER DATA

Based on information obtained from the monitoring wells on-site, the depth to first-encountered ground water at the site is approximately 20 feet below ground surface.

### PROPOSED WORK

The following tasks will be performed by an environmental consultant selected by Ultramar:

- 1) Prepare a Site Safety Plan discussing the precautions and protective equipment required for work at the site.
- 2) Acquire all necessary permits from the appropriate regulatory agencies and right-of-entry agreements to install the proposed monitoring wells.
- 3) Drill five 8- to 10-inch diameter soil borings to a minimum depth of approximately 30 feet each.
- 4) Collect and classify relatively undisturbed soil samples from the borings at 5 foot intervals beginning at 5 feet below ground surface or at significant changes in lithology. An OVM or similar device will be used in the field to subjectively evaluate the potential concentration of hydrocarbons in the soil samples collected above the saturated zone.
- 5) Submit a minimum of two soil samples per boring for laboratory analysis (one sample associated with the highest OVM reading and one from immediately above the ground-water surface). The samples will be analyzed for hydrocarbon constituents BTEX and TPHg.
- 6) Submit a final report summarizing field and laboratory procedures, findings, interpretations, conclusions, and recommendations.

#### Site Safety Plan

Field work performed by Ultramar's consultant at the site will be conducted in accordance with a Site Safety Plan. This safety plan will describe the basic safety requirements for the subsurface environmental investigation, and drilling of the soil borings. The Site Safety Plan is applicable to personnel and subcontractors of the consultant. The consultant's personnel (and subcontractors) scheduled to perform work at the site will be briefed on the contents of the Site Safety Plan before work begins. A copy of the Site Safety Plan will be kept at the site and

will be available for reference by appropriate parties during work at the site. A Site Safety Officer will be appointed for the duration of the subject work at the site.

Drilling and Soil Sampling

Appropriate permits and right-of-entry agreements will be acquired prior to commencement of drilling. Underground Service Alert will be contacted prior to drilling to delineate public utility lines. Initially, each borehole will be hand-augered to a minimum depth of 5 feet.

The soil borings will be drilled using continuous-flight, hollow-stem augers and a truck-mounted drill rig. The auger flights will be steam-cleaned prior to each use to minimize the possibility of cross-contamination between borings. Drilling will be performed under the guidance of a field geologist or engineer, and the earth materials encountered in the borings will be logged as drilled. Soil samples will be logged using the Unified Soil Classification System and recorded onto a boring log form. During the drilling, soil samples from the borings will be collected at 5 foot intervals or at significant lithology changes using a California-modified, split-spoon sampler equipped with clean brass sleeves using the protocols described in the appendix. Each soil sample collected from the borings will be visually inspected and field screened with an OVM, or similar device, for evidence of petroleum hydrocarbons.

The borings will be advanced to a minimum depth of 30 feet each. Subsequent water sampling will be conducted following the procedures presented in the appendix.

#### Laboratory Analyses

A minimum of two soil samples from each borehole (e.g., the sample associated with the highest OVM reading, and immediately above the ground-water surface) will be selected for laboratory analysis. Additional samples may be analyzed, if deemed appropriate. The selected samples will be analyzed in a California State certified laboratory for BTEX, using EPA method 8020, and TPHg by EPA modified 8015. Copies of the laboratory reports will be included in the final report. When ground-water samples are collected from the site, they will be submitted for laboratory analysis for BTEX and TPHg using approved EPA methods. Copies of the laboratory reports will be included in the final report.

#### Report Preparation

A report prepared by the consultant summarizing the soil and ground-water conditions encountered during the drilling, field and laboratory procedures, well construction details, analytical results, and recommendations for further work (if needed) will be presented to Ultramar approximately 45 days after field work is completed. After Ultramar review, the report will be forwarded to the Alameda County Health Care Services.

# APPENDIX



## FIELD PROTOCOLS

### Soil Sampling

The soil samples obtained from the borings will be collected by advancing each boring to a point immediately above the sampling depth, then driving the sampler into the native soil through the hollow center of the auger. The sampler will be driven 18 inches with a standard 140-pound hammer dropped 30 inches per blow. The number of blows required to drive the sampler each successive 6 inches will be counted and recorded on the boring log to give an indication of soil consistency. A soil sample from each recovered sample interval, above the saturated portion of the boring, will be analyzed in the field with a photoionization detector or a similar instrument. The data will be recorded on the boring logs.

Soil samples selected for chemical analysis will be sealed with teflon sheets and plastic end caps. The samples will then be labeled and immediately placed in iced storage for transport to a California State Certified laboratory which will perform the required chemical analyses. A Chain-of-Custody Record will be initiated in the field and will accompany the samples to the laboratory. A copy of the Chain-of-Custody Record will be included in the final report.

### Construction of Monitoring Wells

The monitoring wells will be constructed of flush thread-jointed, Schedule 40 PVC casing. No chemical cements, glues, or solvents will be used in well construction.

The screened portion of the well will consist of factory-perforated casing with 0.020-inch-wide slots. The well screen will extend from the total depth of the well to a depth of approximately 5 feet above measured ground-water levels at the site to allow monitoring throughout the year despite expected seasonal fluctuations of ground water. The annulus of the well will be packed with #2 Monterey sand, or similar, to approximately 2 feet above the screened interval. A 3-foot-thick bentonite plug will be placed above the sand as a seal against cement entering the sand pack. The remaining annulus will be backfilled with a slurry of water, neat cement, and 5 percent bentonite to a few inches below grade. A locking well cap and padlock will be installed on each well head, and a traffic-rated utility box will be placed over each well and set with concrete flush with the surrounding material. The box has a watertight seal to protect against surface-water infiltration and requires a specially-designed wrench to open. This design discourages vandalism and reduces the possibility of accidental disturbance of the well.

### Ground-Water Sampling

Prior to developing, the wells will be subjectively analyzed for floating product and/or product sheen by lowering a bailer approximately halfway through the air/water interface in the well. Depth to water in each well will also be measured. The wells will then be developed by swabbing, surge-pumping, or another suitable method until the discharge from the wells is relatively clean and free of suspended sediment. Each well will then be purged a minimum of four casing volumes of water. Each well will then again be subjectively analyzed.

Any floating product observed in the wells will be removed prior to sampling, using a bailer. If the product can not be removed from any of the wells, a final measurement of the product thickness will be made and that particular well will not be sampled.

Ground water level will be allowed to recover to approximate static conditions in the wells, and the water level will again be measured. If the water level is at or greater than 80% of the initial measured level, a clean bailer will be used to obtain a sample from the surface of the water in the well. Any subjective evidence of product detected in the well will be recorded.

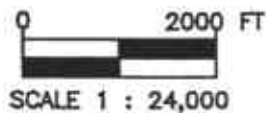
Water samples will be collected using a disposable bailer. The water samples will be sealed in laboratory-cleaned, 40-milliliter glass vials with Teflon-lined lids. The samples will then be labeled and immediately placed in iced storage. A Chain-of-Custody Record will be initiated by the field geologist or engineer and will accompany the samples to a laboratory certified by the State of California for the analyses requested. A copy of the Chain-of-Custody Record will be included in the final report.



GENERAL NOTES:  
 BASE MAPS FROM U.S.G.S.  
 HAYWOOD, CA.  
 15 MINUTE TOPOGRAPHIC



QUADRANGLE LOCATION



R.2 W.

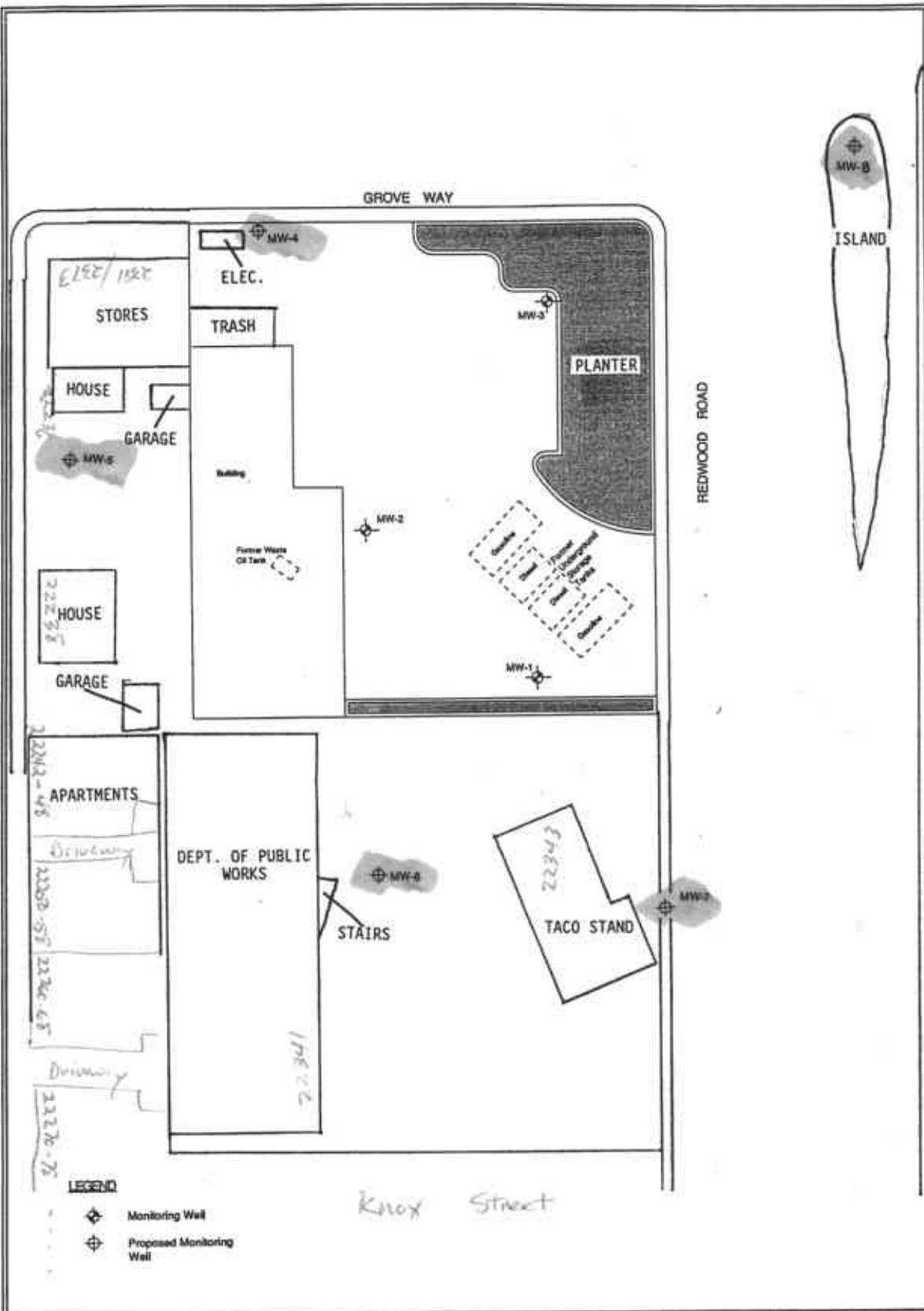
FIGURE 1  
 SITE LOCATION MAP  
 FORMER BEACON STATION NO 574  
 22315 REDWOOD ROAD  
 CASTRO VALLEY, CA.

PROJECT NO. 40-90-818	DRAWN BY L.H. 8/17/90
FILE NO.	PREPARED BY HEH 8/17/90
REVISION NO. 1	REVIEWED BY DJD 8/17/90



Delta  
 Environmental  
 Consultants, Inc.

N. 6<sup>th</sup> Street



LEGEND

- ◆ Monitoring Well
- ⊠ Proposed Monitoring Well

Generalized Site Plan  
Former Beacon Station 574  
22315 Redwood Road  
Castro Valley, California

Figure  
2