THRIFTY OIL CO.

May 27, 1994

Mr. Scott O. Seery
Department of Environmental Health
Hazardous Materials Program
80 Swan Way, RM 200
Oakland, CA 94621

RE: **Thrifty Oil Co. Station #054**
2504 Castro Valley Blvd.
Castro Valley, CA
Transmittal of Site Assessment Proposal

Dear Mr. Seery,

Please find enclosed the "Site Assessment Proposal, Thrifty Oil Company Station #054, 2504 Castro Valley Boulevard, Castro Valley, California" dated May 20, 1994. This proposal has been prepared by Thrifty Oil Co. environmental staff and upon approval by your office work will begin. If you have any questions, please contact me or Mr. Karl Kerner at (310) 923-9876.

Very truly yours,

Peter D'Amico
Manager
Environmental Affairs

Enclosure (1)

10000 Lakewood Boulevard, Downey, CA 90240-4082 • (310) 923-9876

THRIFTY OIL CO.

SITE ASSESSMENT PROPOSAL

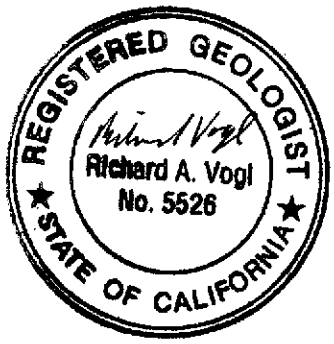
THRIFTY OIL COMPANY STATION #054
2504 CASTRO VALLEY BOULEVARD
CASTRO VALLEY, CALIFORNIA

May 20, 1994

Submitted to:

Alameda County
Health Care Services

Written by:



Richard A. Vogl, R.G. No. 5526

10000 Lakewood Boulevard, Downey, CA 90240-4082 • (310) 923-9876

INTRODUCTION

This Work Plan has been prepared in response to the county's request to fully characterize the lateral extent of the dissolved-phase plume at Thrifty Oil Company's (TOC) former retail station number 054 located at 2504 Castro Valley Blvd. in Castro Valley, California (Figure 1), as stated in it's letter to TOC dated February 25, 1994 (Appendix A). Specifically, the county requested that TOC delineate the lateral extent of the dissolved-phase groundwater contaminant plume downgradient of monitoring well RE-7. This Work Plan has been prepared to address this concern of the county.

PREVIOUS INVESTIGATIONS AND REMEDIATION STATUS

There have been at least three previous investigations at this site. The first was by Hydrotech Consultants, Inc. (Subsurface Investigation for Petroleum Hydrocarbon Contamination Assessment. January 14, 1987). Four borings (B-1, B-2, B-3 and B-4) were drilled around the tanks to depths of 20 feet below ground surface (bgs). Evidence of hydrocarbon contamination was found in soil samples from all four borings. The affected soils were generally confined to the upper 10 feet.

A second investigation was conducted by Robert Elbert and Associates (Report of Subsurface Investigation. April 11, 1988) to further define the extent of hydrocarbon contamination. Seven monitoring wells (labeled RE-1 through RE-7 on Figure 2) were drilled and installed at depths ranging from 15 to 25 feet bgs. Laboratory analysis of soil samples indicated that the main zone of soil contamination tends to trend northwest-southeast, through the former tank area.

The third investigation was performed by Remediation Service, Intl. (RSI). To assess the potential for off-site contamination three groundwater wells were installed. One well is directly east of the underground tanks, on the adjacent property (RS-8, Figure 2). The second

well (RS-9, Figure 2) is located upgradient from the underground tanks, to the west of the site on Stanton Avenue. The third well (RS-10, Figure 2) is located downgradient from the underground tanks, southeast of the site on Castro Valley Boulevard.

A S.A.V.E. system was installed in August, 1989. However, due to unanticipated delays in permits, the system was not started until April, 1990. The system was operated only during the daylight hours recovering soil vapor during the first three months of operation. The equipment was moved in late June, 1990, and is now operating around the clock. Groundwater occurs at a very shallow depth, approximately 5 ft. to 6 ft. below ground surface. The vapor extraction process has been working in the vadose zone above the water table, and reducing free product levels.

GEOLOGY/HYDROGEOLOGY

Soils encountered during drilling operations were reported to be fairly uniform across the site. They consist of clay or clay with gravel and/or possible evaporites overlying clay with abundant siltstone gravel. Siltstone bedrock was encountered at depths of 15 feet or more in all wells or borings except RE-1, which was drilled to 25 feet bgs and did not encounter bedrock.

No groundwater was found by Hydrotech during their site investigation. However, groundwater was found by RSI and Robert Elbert & Associates at depths ranging from 6 to 8 feet during drilling operations. On March 30, 1988, after monitoring wells RE-1 through RE-7 were installed, the depth to groundwater was measured and the wellhead elevations were surveyed. Previously existing wells PW-1 and PW-2 (Figure 2) were also measured and surveyed. It was determined that the water table elevation ranged from 158.64 to 161.87 feet above sea level (MSL). The gradient sloped approximately 1 foot every 35 feet towards the southeast. Water samples collected from wells RE-1 through RE-7 all contained elevated levels of petroleum hydrocarbons. A small amount of free product was found in wells RE-3 (0.01 feet), PW-1 (0.07 feet) and PW-2 (0.03 feet).

On May 22, 1991, depth to groundwater ranged from 4.40 feet to 11.70 feet. Currently depth to groundwater beneath the site occurs from 2.75 to 8.75 feet below grade. On December 14, 1993, the groundwater flow was to the east at a calculated gradient of 6.7 feet per 100 feet. This data suggests a currently rising water table.

PROPOSED WORK

The scope of work for this proposed investigation will include the installation of one offsite monitoring well. The offsite well (RS-11) will be installed near the sidewalk in front of the pet store on the north side of Castro Valley Blvd., directly east of the site in order to further define the lateral extent of the dissolved phase plume downgradient from monitoring well RE-7. The county specifically requested that a monitoring well be installed downgradient from well RE-7 in order to define the extent of contamination in this direction.

The proposed location of this monitoring well (RS-11) is depicted in Figure 2.

All necessary permits will be obtained from Alameda County and Caltrans prior to installation of the proposed monitoring well.

The soil boring and monitoring well will be installed with a hollow-stem auger drilling rig. Relatively undisturbed soil samples will be collected at five foot intervals above and below the water table for lithologic description by a state of California Registered Geologist using the Unified Soils Classification System (USCS). Soil samples will also be collected above the water table for possible laboratory analysis. **A minimum of three soil samples will be chosen for laboratory analysis from each boring.** Soil samples chosen for laboratory analysis will be analyzed by a state certified laboratory for total petroleum hydrocarbons as gasoline using CAL-EPA Draft Method and for benzene, toluene, ethylbenzene, and xylene (BTEX) using EPA Method 8020.

Two-inch diameter schedule 40 PVC ground-water monitoring wells will be constructed through either 6-inch or 8-inch diameter hollow stem auger. Screen size will consist of 0.010 inch schedule 40 PVC slotted well screen and sand pack will consist of No. 3 Lonestar sand. The monitoring well will be installed to an estimated depth of 25 feet bgs with the screened interval extending a minimum of 5 feet above and 15 feet below the water table. All monitoring wells will be installed in accordance with all state and county standards. Monitoring wells will be developed properly immediately following installation. A relative elevation survey will be conducted for the monitoring wells at the Site. Ground-water samples will be collected from all monitoring wells at the Site that do not contain free product approximately one week following installation of the new monitoring wells. Ground water and free product (if present) depths will be measured in the field to the nearest 0.01 feet. Ground-water samples will be analyzed by a state certified laboratory for total petroleum hydrocarbons as gasoline using CAL-EPA Draft Method and for benzene, toluene, ethylbenzene, and xylene using EPA Method 8020.

Field procedures to be used during this investigation are discussed in greater detail in Appendix B.

A report of findings will be submitted to Alameda County in approximately 60 days from the start date of this proposed scope of work. The report will include a summary of the activities performed, boring logs, laboratory reports, chain-of-custody documents, ground-water elevation and hydrocarbon plume maps, conclusions and recommendations.

A PORTION OF THE U.S.G.S. HAYWARD 7.5' QUADRANGLE

LOCATION MAP
THRIFTY OIL STATION NO. 054
CASTRO VALLEY, CALIFORNIA

THRIFTY OIL COMPANY
DOWNEY, CALIFORNIA

N

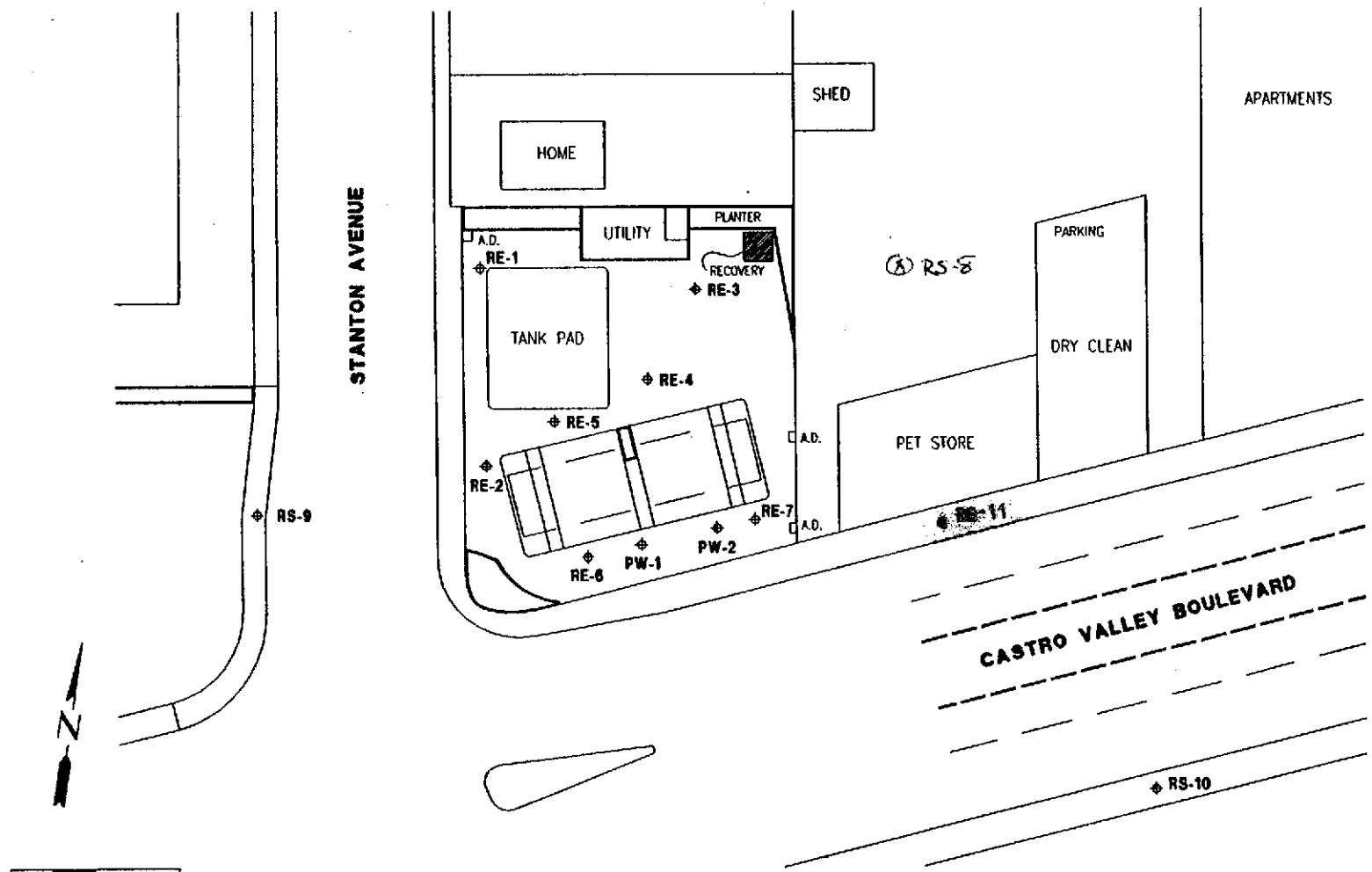
0 2000 4000

SCALE IN FEET

FIGURE 1

LEGEND

- ⌖ RE-1 / MONITORING WELL
- A.D. AREA DRAIN
- ● **PROPOSED MONITORING WELL**



REVISIONS	BY

TRINITY OIL COMPANY
10000 LAKEWOOD BLVD.
DOWNEY, CA 90240
(310) 923-8870

STATION No. 054
CASTRO VALLEY BLVD./STANTON AVE.
CASTRO VALLEY, CA.

DRAWN BY RCI
05-04-94
1" = 50'-0"

2

APPENDIX A

Letter from Alameda County

Health Care Services

ALAMEDA COUNTY
HEALTH CARE SERVICES
AGENCY
DAVID J. KEARS, Agency Director

ALAMEDA COUNTY
DEPARTMENT OF ENVIRONMENTAL HEALTH
State Water Resources Control Board
Division of Clean Water Programs
UST Local Oversight Program
[illegible]
[illegible]
(510) 271-4530

STID 1252

RECEIVED
MAR 0 3 1994
ENVIRONMENTAL

February 25, 1994

Peter D'Amico
Thrifty Oil Company
10000 Lakewood Boulevard
Downey, CA 90240

RE: THRIFTY OIL COMPANY STATION #054, 2504 CASTRO VALLEY BLVD., CASTRO VALLEY

Dear Mr. D'Amico:

This office has recently completed review of the case file for this site, including, but not limited to, reports documenting the results of monitoring, sampling, and operation of the RSI-SAVE ground water treatment unit for calendar year 1993.

During review it became apparent that reports documenting work which occurred during the 3rd and 4th quarters of 1993, dated November 26, 1993 and February 15, 1994, respectively, were not submitted under seal of a California-registered geologist or civil engineer. Provisions of the California Business and Professions Code require that technical reports requiring professional interpretation of data must be submitted under seal of an appropriate, California-registered professional. This issue was previously discussed in correspondence from this office dated October 26, 1992. Please be advised that future reports will not be accepted in the absence of this professional certification.

Review of historic sampling and monitoring data has revealed trends. Ground water has consistently been calculated to flow towards the east, essentially down the topographic slope, parallel to Castro Valley Boulevard. Ground water monitored in well RE-7 has exhibited product sheen or film, and during several past monitoring events, measurable product thicknesses were recorded. As you are aware, RE-7 is located within 10 feet or so of the eastern property line, adjacent to Castro Valley Boulevard. Off-site wells RS-8 and -10, located down- and cross-gradient of the site, have shown periodic "hits" for fuel hydrocarbons. Neither of these two wells, however, are located downgradient of RE-7. Hence, the extent of the plume downgradient of RE-7 has not been evaluated.

This issue and prospective well locations were discussed with Mr. Karl Kerner of Thrifty Oil during an on-site meeting which took place on January 16, 1991. This meeting was in part a result of the December 26, 1990 and July 14, 1989 correspondence from this office requesting the installation of an appropriate array of off-site wells. Several prospective locations were evaluated during our meeting, including one near or through the sidewalk in front of the pet store on the north side of Castro Valley Boulevard, directly east of the Thrifty station. A well in this location was never installed nor officially proposed. The data clearly indicate the need for such a well at this time, however.

At this time Thrifty Oil Company is requested to submit a work plan for the installation of a well or wells downgradient of RE-7 designed to define the downgradient extent of the plume, as noted above. This work plan is due within 45 days of the date of this letter, **or by April 11, 1994.**

Please call me at 5120/271-4530 should you have any questions.

Sincerely,

Scott O. Seery, CHMM
Senior Hazardous Materials Manager

cc: Rafat A. Shahid, Assistant Agency Director
Gil Jensen, Alameda County District Attorney's Office
Ed Laudani, Alameda County Fire District
Scott Hooten, BP Oil Company

APPENDIX B

Field Procedures

Well Permitting

Monitoring well construction permits will be obtained from Alameda County prior to drilling the well. Necessary permits will also be obtained from Caltrans for installing the well in the city streets.

Utility Clearance

Underground alert will be notified of the well locations to mark underground utilities in the areas of the proposed well location prior to drilling.

Drilling and Decontamination

Soil borings will be advanced using the hollow-stem auger drilling method. Either six-inch, eight-inch, or ten-inch diameter augers will be used for drilling soil borings and installing ground-water monitoring wells.

To reduce the potential for cross contamination, auger flights will be steam cleaned prior to use at the Site and before drilling each soil boring. Sampling equipment will be washed with a laboratory-grade detergent (e.g., Alconox) and double-rinsed with distilled water between sampling points.

Soils generated during drilling activities will be placed in 55-gallon drums and stored on site, pending evaluation of disposal options.

Soil Boring Sampling

Soil samples will be collected using a modified California split-spoon sampler lined with clean brass tubes. Soils will be sampled at 5-foot intervals, or at other selected intervals specified by the site work plan, or at the discretion of the on-site geologist. When possible, the bottom brass tube from each boring will be retained for laboratory analysis. The remaining tubes will be used for lithologic description and head space analysis in the field.

Organic vapor emissions from soil samples will be measured in the field for volatile organic compound (VOC) emissions using either a photoionization detector (PID) or a flameionization detector (FID). The PID or FID will be calibrated prior to use. One soil sample from each sampling interval will be placed in a Ziploc® plastic bag, broken apart, and placed in the sun. After several minutes, the vapor emissions will be measured from the headspace in the bag. The organic vapor readings will be summarized on the boring logs. Selection of soil samples for chemical analysis will be based on emission measurements and field observations, such as visual indications of staining.

Drilling and logging will be performed under the direction of a California Registered Geologist (RG). Soil samples will be lithologically described and classified using the Unified Soil Classification System.

Soil Samples

Soil samples will be collected for possible laboratory analysis from each soil boring at 5-foot intervals until ground water is encountered. Soil samples will be collected below the water table only for lithologic descriptions.

Immediately following sampling, a Teflon® cover and plastic end caps will be placed over each end of the retained sample tubes. The tubes will then be labeled and delivered to the analytical laboratory. Strict chain-of-custody protocol will be maintained throughout the sample handling process.

Monitoring Well Construction

The ground-water monitoring wells will be constructed with 2-inch inside diameter, Schedule 40 PVC flush-threaded well casing. Screened intervals will be completed with 0.02-inch slotted casing. After installing the well casing in each well boring, the well annulus opposite and extending 3 feet above the perforated casing will be backfilled with #3 Lonestar sand. The sand pack will then be sealed by the installation of at least a 3-foot-thick layer of bentonite pellets, and hydrated with distilled water. Bentonite chips will then be placed from the top of the bentonite seal to the ground surface. The top of the well will be secured using a traffic grade utility box and locking well cap.

Ground-Water Monitoring Well Development and Sampling

All equipment used to develop or sample the wells will be washed in a laboratory-grade detergent and/or steam cleaned prior to use in each monitoring well.

Development of the ground-water monitoring wells will be conducted prior to sampling to remove sediments from the well boring and to enhance communication with the surrounding formation. Development will be conducted using a PVC bailer and will consist of bailing approximately ten well casing volumes from each well. The ground-water temperature, specific conductivity, turbidity, and pH will be monitored during the development process.

Prior to ground-water sampling, approximately 4 to 5 well casing volumes will be purged from the well. Purging will be conducted using a PVC bailer. The ground-water temperature, specific conductance, turbidity, and pH will be measured throughout the purging process. For the purpose of collecting a representative ground-water sample, these ground-water parameters will be allowed to reach relative stabilization before samples will be collected.

Purged groundwater will be collected in a DOT-approved 55-gallon drum and stored on site. Ground-water samples will be collected from each well using a disposable bailer suspended by a clean (new) length of rope. Ground-water samples will be decanted from the bailer into appropriate laboratory-supplied 40-milliliter vials using a bottom decanting pep-cock device. The bottles will then be sealed, labeled, and placed in a chilled cooler for delivery to the analytical laboratory. Strict chain-of-custody protocol will be followed throughout the sample handling process.

Measurement of Ground-Water Elevation

The monitoring wellhead relative elevations will be surveyed in the field prior to preparation of a ground-water elevation contour map. An electronic interface probe will be used to measure the depth to ground water and product (if present) in each well at the Site to the nearest 0.01 feet.