

THRIFTY OIL CO.

ALCO
HAZMAT

94 JUN 17 AM 11:41

June 10, 1994

Ms. Susan L. Hugo
Alameda County Health Care Services
Dept. of Environmental Health
UST Local Oversight Program
80 Swan Way, Rm. 200
Oakland, CA 94621

RE: Thrifty Oil Co. Station #063
6125 Telegraph Avenue
Oakland, California 94609
Transmittal of Site Assessment Proposal

Dear Ms. Hugo,

Please find enclosed the "Site Assessment Proposal, Thrifty Oil Company Station #063, 6125 Telegraph Avenue, Oakland, California" dated June 9, 1994. This proposal was prepared by Thrifty Oil Co. To the best of my knowledge and under the penalty of perjury, the information presented in the report is true and correct.

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

cc: *Luft Coord.*
RWQCB-SF
2101 Webster St., Ste. 500
Oakland, CA 94612



SITE ASSESSMENT PROPOSAL

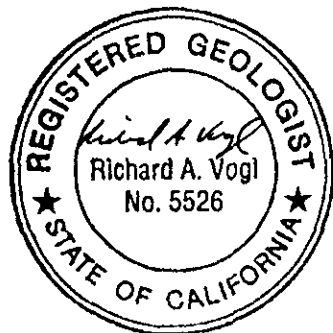
**THRIFTY OIL COMPANY STATION #063
6125 TELEGRAPH AVENUE
OAKLAND, CALIFORNIA**

June 9, 1994

Submitted to:

**Alameda County
Health Care Services**

Written by:



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

INTRODUCTION

This Work Plan has been prepared in response to the county's request to fully characterize the vertical and lateral extent of the dissolved-phase plume at Thrifty Oil Company's (TOC) retail station number 063 located at 6125 Telegraph Avenue in Oakland, California (Figure 1), as stated in its letter to TOC dated March 16, 1994 (Appendix A). Specifically, the county requested that TOC delineate the vertical and lateral extent of the dissolved-phase groundwater contaminant plume downgradient of monitoring well MW-4. This Work Plan has been prepared to address this concern of the county.

PREVIOUS INVESTIGATIONS AND REMEDIATION

There have been at least three previous investigations at this site. The first was by Groundwater Technology. (Subsurface Investigation for Petroleum Hydrocarbon Contamination Assessment, August 18, 1986). Three borings were drilled and three 2-inch diameter monitoring wells were installed around the tanks. Groundwater Technology collected soil samples at 5-foot intervals in all borings beginning at a depth of about 6 to 8 feet. Headspace tests were performed on the samples in the field using a photoionization detector. The samples taken at a depth of 14.0 to 14.5 feet in borings MW-2 and MW-3 and 17.0 to 17.5 feet in boring MW-1 were submitted to an analytical laboratory for analysis. These samples were submitted for analysis because they were found at or near the groundwater surface. The sample from MW-2 contained 735 ppm total petroleum hydrocarbons (TPH), while samples from MW-1 and MW-3 contained 471.5 and 52 ppm, respectively. Groundwater samples were taken from each well and analyzed for TPH. Total petroleum hydrocarbons in MW-1, MW-2 and MW-3 were 20.6, 1.5 and 49.4 ppm, respectively. Benzene, ethyl benzene, toluene and xylene (BTEX) levels in monitoring wells MW-1, MW-2, and MW-3 totaled 13.8, 0.4 and 23.9 ppm, respectively.

A subsequent site assessment conducted by Woodward-Clyde Consultants (WCC) consisted of advancing three 30-foot deep borings and installing three monitoring wells. Soil samples were taken at 5-foot intervals down to the water table in all borings. Only those samples exhibiting signs of contamination and/or located at the water table were submitted to a lab for analysis. Water samples were taken from each of the three newly-installed wells and submitted for laboratory analysis. Relative well casing elevations were established to calculate the local groundwater gradient.

The third investigation was performed by WCC to assess the potential for remediation of liquid phase hydrocarbon at the site. A 6-inch diameter recovery well was installed on October 12, 1989, at the location shown on Figure 2. A total fluids ejector pump system was placed in the recovery well. The system pumps extracted groundwater and floating product through the oil/water separator, then to a holding tank, and finally through a pair of activated carbon filters to remove the dissolved hydrocarbons before being discharged into the sanitary sewer. A discharge permit was obtained from East Bay Municipal Utility District (EBMUD) prior to discharging the treated water. The recovery system incorporates a series of sensors and controls to regulate pumping rates and to prevent overfilling of the treatment system. All tubing and hoses are contained below grade in PVC conduits between the recovery well and oil/water separator. Floating product recovered in the separator gravity drains to a product storage drum. The product drum is equipped with secondary containment and a high level switch to shut down the system should it become full. A hazardous materials management plan (HMMP) was prepared for the temporary on-site collection of the recovered product.

HYDROGEOLOGY

The area of investigation lies within the Bay Plains groundwater basin, which consists of two main water bearing units. The primary unit is comprised of unconsolidated alluvial deposits of Late Quaternary age and a secondary, older semi-consolidated deposit of Tertiary - Quaternary age. Groundwater within these deposits is both confined and unconfined, with

the majority of the aquifers being confined. Consolidated basement rock of Pre-Quaternary age is considered non-water bearing due to poor water yield.

The study site is within the Berkeley alluvial plain sub area of the Bay Plains Groundwater Basin. The older deposits of the Berkeley alluvial plain contain confined aquifers but the groundwater hydrology is poorly understood. The water bearing unconsolidated deposits within this sub area are composed of coalescing alluvial fans to the east and marsh tideland deposits to the west.

These alluvial sediments consist of gravel, sands, silts, and clays which increase in grain size and thickness eastward towards the head of the alluvial plain at the foot of the uplands. The sands and gravel were deposited by streams which braided over periods of thousands of years. The finer grained silt and clay materials were deposited by flood stage overbank deposition and occasional inundation by the sea. Where these silts and clay are thick or widespread they form confining beds.

The marsh and tideland deposits are generally fine grained and consist mostly of marine organic silts and clays which are interfingered with the alluvial deposits over a broad belt. The Merrit sands which outcrop three miles south of the site are a main water bearing unit located within these deposits. They consist of a well graded sand and form an unconfined aquifer.

The unconsolidated alluvial deposits directly beneath the study site varied between predominantly clays to fine grained sand to a depth of twelve feet. Groundwater ranged from 13.80 feet to 25.00 feet below grade and flows in a westerly direction towards the San Francisco Bay. On November 12, 1993, liquid phase hydrocarbons were noted in monitoring wells MW-1, MW-2, and MW-4 with thicknesses of a sheen, 0.05 feet, and film, respectively.

PROPOSED WORK

The scope of work for this proposed investigation will include the installation of one offsite monitoring well. The offsite well (MW-7) will be installed in an access road west of the home directly adjacent to monitoring well MW-4, directly west of the site in order to further define the vertical and lateral extent of the dissolved phase plume downgradient from monitoring well MW-4. The county specifically requested that a monitoring well be installed downgradient from well MW-4 in order to define the extent of contamination in this direction.

The proposed location of this monitoring well (MW-7) is depicted in Figure 2. However, if access is denied by the homeowner prior to drilling, the proposed well will be relocated in Racing Street, directly west of the site.

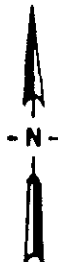
All necessary permits will be obtained from Alameda County prior to installation of the proposed monitoring well.

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 30 feet bgs with the screened interval extending a minimum of 10 feet above and 10 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.

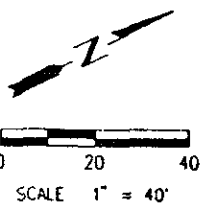
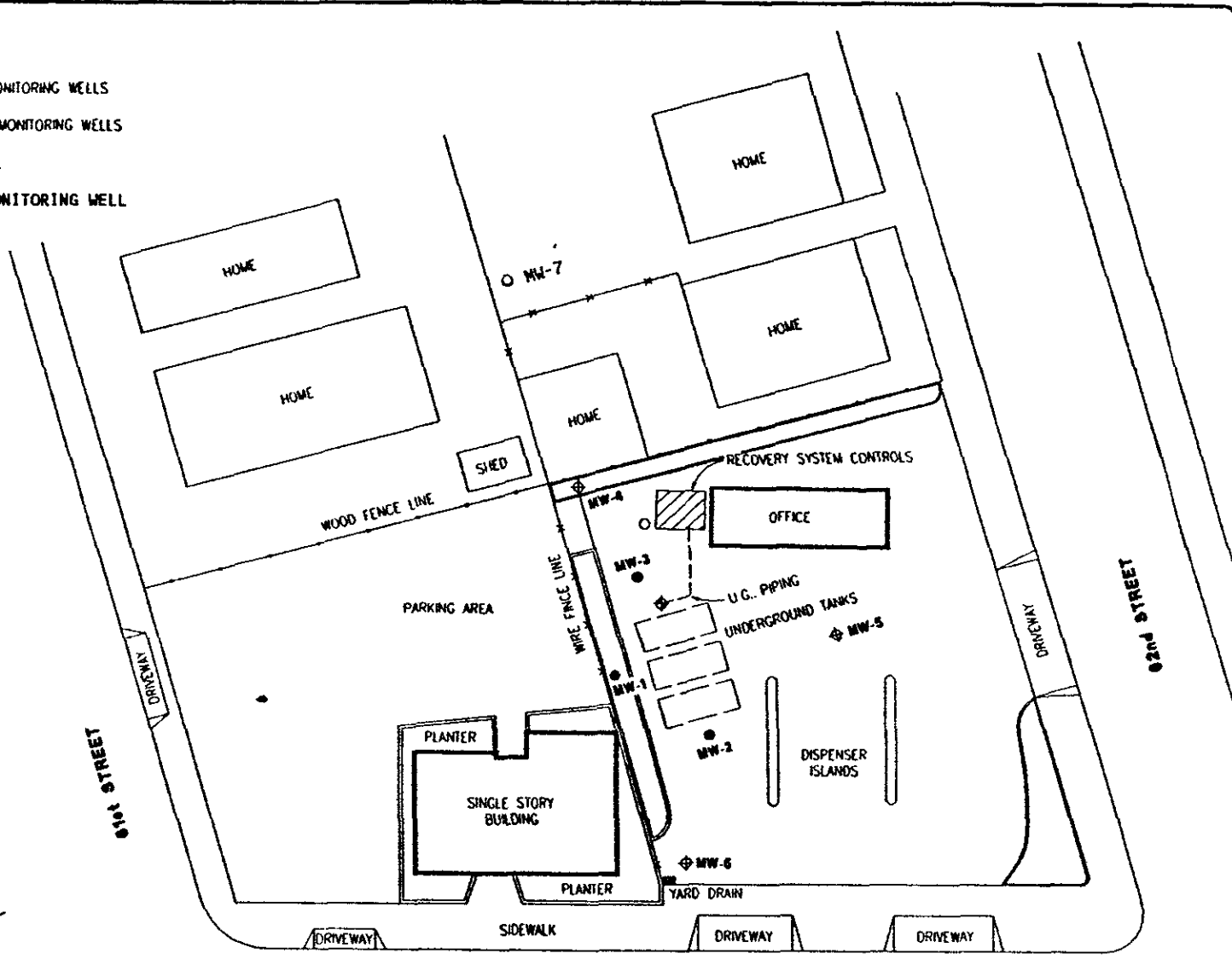


MILES

Project No.	8910281A
Figure 1. SITE LOCATION MAP	

LEGEND

- ⊕ MW-4 / GT MONITORING WELLS
- MW-1 / WCC MONITORING WELLS
- ⊕ RECOVERY WELL
- PROPOSED MONITORING WELL



REVISIONS	BY


TRIMTY OIL COMPANY
 10008 LAKEWOOD BLVD.
 DOWNEY, CA 90249
 (310) 838-0878

STATION No. 062
TELEGRAPH AVENUE & 62ND STREET
OAKLAND, CA.

DRAWN BY RCI
05-02-94
1" = 40'-0"

A P P E N D I X A

**Letter from Alameda County
Health Care Services**

ALAMEDA COUNTY
HEALTH CARE SERVICES
AGENCY

DAVID J KEARS, Agency Director



RAFATA SHAHID, ASST. AGENCY DIRECTOR

DEPARTMENT OF ENVIRONMENTAL HEALTH
State Water Resources Control Board
Division of Clean Water Programs
UST Local Oversight Program
80 Swan Way, Rm 200
Oakland, CA 94621
(510) 271-2530

March 16, 1994
STID# 3871

RECEIVED

MAR 21 1994

ENVIRONMENTAL

Mr. Peter D' Amico
Thrifty Oil Company
10000 Lakewood Boulevard
Downey, California 90240

SS-#63

**RE: Status of the Soil and Groundwater Investigation/Remediation
at Circle K Service Station - 6125 Telegraph Avenue
Oakland, California 94609**

Dear Mr. D'Amico:

The Alameda County Department of Environmental Health, Hazardous Materials Division has recently reviewed the files concerning the site investigation of pollution conditions in soil and groundwater resulting from leaking underground storage tanks at the referenced site. We are in receipt of the following reports:

- * Site Assessment Investigation Report (8/18/86) prepared by Groundwater Technology
- * Remedial Investigation Proposal (11/7/86) prepared by Woodward Clyde Consultants (WCC)
- * Subsurface Assessment Report (12/16/86) prepared by WCC
- * Monthly Report (10/21/87) prepared by
- * Third Progress Report on Well Monitoring and Product Recovery (1/20/88) prepared by WCC
- * Fourth Progress Report on Well Monitoring and Product Recovery (4/7/88) prepared by WCC
- * Fifth Progress Report on Well Monitoring and Product Recovery (7/1/88) prepared by WCC
- * Sixth Progress Report on Well Monitoring and Product Recovery (11/16/88) prepared by WCC
- * Underground Storage Tank Unauthorized Release (Leak) / Contamination Site Report (11/10/89)
- * Work Plan for Groundwater Remediation (12/8/89) prepared by WCC

Based upon the review process of all the reports submitted to this office for the referenced site, the following issues needed clarification and must be addressed:

- 1) Please clarify the status of the groundwater remediation as proposed by Woodward Clyde in the December 8, 1989 work plan submitted for the referenced site. Has the proposed groundwater remediation plan been implemented? Is the remediation system currently running? If not, what is the rationale behind the delay or termination of the remediation treatment system?

Mr. Peter D'Amico
RE: 6125 Telegraph Avenue, Oakland CA 94609
March 16, 1994
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- 2) It appears that the extent of the soil and groundwater contamination at the site remains **undefined and may have migrated off site**. The downgradient well (MW-4) near the property boundary consistently detected **free product** since 2/17/88. A workplan to delineate the vertical and lateral extent of the plume must be submitted to this office **no later than April 29, 1994**.
- 3) Free floating product had been detected in MW-1, MW-2, MW-3, MW-4. Please clarify the total volume of free floating product recovered from all the wells at the referenced site to date. Free floating product must be measured in all the wells using an optical probe or a comparable instrument capable of measuring free product to 0.01 foot. These data must be incorporated in your quarterly report. Free product must be recovered in all the wells on a regular basis. Free product removal must comply with the California Code of Regulations, Title 23, Section 2655.
- 4) A total of 6 monitoring wells had been installed since 1986. It appears that **monitoring of the wells has not been conducted since 10/26/88**. Quarterly monitoring is the maximum sampling interval typically allowed when groundwater contamination is present as per Tri-Regional Board Staff Recommendations for Preliminary Evaluation and Investigation of Underground Tank Sites (August 10, 1990). Quarterly sampling of all the monitoring wells must be implemented in a **timely fashion** because of the extent of groundwater contamination at the site. Groundwater samples must be analyzed for the following target compounds: TPH gasoline, TPH diesel, benzene, toluene, ethyl benzene, xylene, and lead. Groundwater elevation readings must be incorporated in the quarterly monitoring program and verified groundwater flow direction must be established at the site.
- 5) A waste oil tank was removed at the referenced site in 1987. Please provide our office with the analytical results of the soil and/or groundwater samples collected in the waste oil tank excavation. Waste oil constituents must be included as target compounds in item #4.

Response to items # 1, 3, 4 and 5 mentioned above must be provided to this office **no later than April 16, 1994**.

Until cleanup is complete, you will need to submit reports to this office every three months or at a more frequent interval, if specified at any time. In addition, the following items must be incorporated in your future reports or workplans:

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RE: 6125 Telegraph Avenue, Oakland, CA 94609
March 16, 1994
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- a cover letter from the responsible party or tank owner stating the accuracy of the report and whether he/she concurs with the conclusions and recommendations in the report or workplan
- site map delineating contamination contours for soil and groundwater based on recent data should be included and the status of the investigation and cleanup must be identified
- proposed continuing or next phase of investigation / cleanup activities must be included to inform this department of the responsible party or tank owner's intention
- any changes in the groundwater flow direction and gradient based on the measured data since the last sampling event must be explained
- historical records of groundwater level in each well must be tabulated to indicate the fluctuation in water levels
- tabulate analytical results from all previous sampling events; provide laboratory reports (including quality control/quality assurance) and chain of custody documentation

All reports and proposals must be submitted under seal of a California Registered Geologist or Registered Civil Engineer with a statement of qualifications for each lead professionals involved with the project.

Please contact me at (510) 271-4530 if you have any questions concerning this letter.

Sincerely,



Susan L. Hugo
Senior Hazardous Materials Specialist

cc: Rafat A. Shahid, Asst. Agency Director, Environmental Health
Rich Hiatt, San Francisco Bay RWQCB
Edgar B. Howell, Chief, Hazardous Materials Division - files

A P P E N D I X B

Field Procedures

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.