THRIFTY OIL CO.

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May 8, 2006 **O.66269**

Mr. Amir Gholami, REHS
Alameda County Health Care Services
Department of Environmental Health
1131 Harbor Bay Parkway, 2nd Floor
Alameda, CA 94502

Local #RO0000004
RWQCB #01-1478

RE: **Former Thrifty Oil Co. Station #049**
3400 San Pablo Avenue
Oakland, CA
Site Conceptual Model and
Plume Travel Time Report

Dear Mr. Gholami:

Presented herein is the *Site Conceptual Model and Plume Travel Time Report* prepared for former Thrifty Oil Co. (Thrifty) Station #049 located at 3400 San Pablo Avenue, Oakland, California. As requested this report contains a discussion of sensitive receptors, plot plans showing excavation areas and existing UST components, depth specific soil and groundwater isoconcentration maps for pre- and post-remediation, tables of historical soil and groundwater data with comparisons to ESLs and Regional Board Basin Plan water quality objectives, a complete list of all boring logs, and cross sections showing borings, wells, preferential pathways, excavation boundaries, water levels, and residual contamination.

Should you have any questions regarding this report, please contact either Michael Bowery or myself at 562 921-3581.

Respectfully submitted,

Chris Panaitescu
General Manager
Environmental Affairs

cc: BP West Coast Products LLC; Mr. Bobby Lu, P.G
File

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Site Conceptual Model and Plume Travel Time Report

Thrifty Oil Co. Station No. 049
3400 San Pablo Avenue
Oakland, California

RWQCB File No. 01-1478
Facility Global ID No. T0600101365

May 3, 2006
GHC 1330

Prepared for
Thrifty Oil Co.
13116 Imperial Highway
Santa Fe Springs, California 90670

Prepared by
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5912 Bolsa Avenue, Suite 200
Huntington Beach, California 92649

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APPENDICES

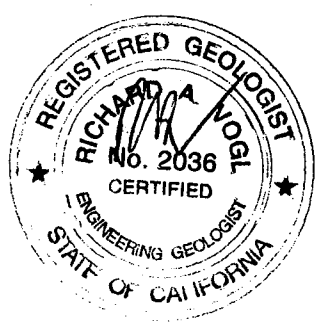
CERTIFICATION

All hydrogeologic and geologic information, conclusions, and recommendations in this document have been prepared under the supervision of and reviewed by a GeoHydrologic Consultants, Inc. California Registered Geologist.

May 3, 2006

Richard A. Vogl
Principal Hydrogeologist
California Registered Geologist (5526)
California Certified Hydrogeologist (47)
California Certified Engineering Geologist (2036)

Date



1.0 INTRODUCTION

On behalf of Thrifty Oil Co. (Thrifty), GeoHydrologic Consultants, Inc. (GHC) has prepared this report to fulfill the requirements of the Alameda County Health Care Agency (ACHCA), which required Thrifty to prepare a Site Conceptual Model for Thrifty Station No. 049 located at 3400 San Pablo Avenue in Oakland, California ("the Site"; **Figure 1**). The requirements of this work were set forth in the ACHCA's letter to Thrifty dated December 7, 2005. The purpose of this work is to summarize all activities that have occurred at the Site to date.

2.0 SITE DESCRIPTION

The Site is an active service station located at the northeast corner of the intersection of San Pablo Avenue and 34th Street in the City of Oakland, California. The Site consists of two active dispenser islands, a cashier's booth, and two 20,000-gallon double-walled underground storage tanks (USTs) (**Figure 2**).

3.0 SITE CHARACTERIZATION DATA

3.1 Geology / Hydrogeology

3.1.1 Geology

The Site is located within the San Francisco Bay structural depression of the Coast Ranges Physiographic Province in central Alameda County, California. Bedrock in the region consists of sedimentary, metasedimentary, volcanic and intrusive rocks of Jurassic through Tertiary geologic age. Quaternary marine and alluvial sediments blanket the downwarped bedrock within the basin in which the Site is located. Based on previous drilling activities performed, the soils beneath the Site consist mainly of silty, sandy, and gravelly clays to 25 feet below ground surface.

Geologic cross sections are included as **Figures 3A, 3B,** and **3C**. The lines of cross section are shown in **Figure 2**. Historic and recent soil laboratory analytical results are compared to the San Francisco Bay Regional Water Quality Control Board's (SFRWQCB) environmental screening levels (ESLs) in **Table 1**.

3.1.2 Hydrogeology

The area of investigation lies within the East Bay Plain 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. The Site is within the Berkeley alluvial plain sub area of the Bay Plains Groundwater Basin.

Groundwater generally occurs beneath the Site at depths ranging from approximately 4 to 7 feet below ground surface (bgs), which is shown in **Table 2A,** along with historic and recent groundwater sample laboratory analytical results and the SFRWQCB's Basin Plan Objectives for groundwater (BPOs). A groundwater elevation contour map based on the October 19, 2005 monitoring data indicates that groundwater flows to the west-southwest at an approximate gradient of 0.0448 feet/foot (**Figure 5**).

3.2 Production Well/Utility Location Survey

Based on the Groundwater Production Well and Utility Conduit Survey Report conducted by AGE, dated October 21, 2003, well driller's reports were found for seven water wells located within a one-mile radius of the Site, with four of the seven wells having been located. The nearest groundwater production well is located approximately 900 feet west of the Site. No other sensitive receptors were identified visually; however, three additional leaking underground storage tanks (LUST) sites were located adjacent to the Site, with the nearest LUST site located 50 feet north of the Site at a Shell station. The East Bay Municipal Utilities Department (EBMUD) provides the water and sewer service for the Site and has no municipal wells in the area. The Utility Conduit Survey concluded that two main trenches border the Site, which follow 34th Street and San Pablo Avenue. The approximate locations of utilities including water service, storm line drain, sanitary sewer line, gas main, and underground electric service are shown in **Figure 2.**

3.3 Previous Site Assessment Activities

An initial site assessment was conducted by Groundwater Technology in August of 1986 and consisted of advancing three soil borings and installing three 2-inch monitoring wells to 15 feet bgs. Only the samples from SB-1 and MW-3 were found to contain detectable hydrocarbons (67 and 22 parts per million (ppm), respectively). However, these concentrations were below the SFRWQCB's ESLs for TPHg in shallow soil.

A follow-up assessment in November 1986 was conducted by Woodward-Clyde Consultants and consisted of installing four monitoring wells (MW-4 through MW-7). Wells MW-4 and MW-7 were constructed as 4-inch diameter wells to allow them to be used for extraction activities, if required, while MW-5 and MW-6 were constructed as 2-inch diameter wells. Free product was found to be present in MW-1 at a thickness of approximately 0.3 feet. Soil samples were taken at the approximate location of the water table at a depth of 7 feet in all of the borings except for MW-5 where a sample could not be recovered. Only the samples from MW-4 and MW-7 exhibited hydrocarbon odors and were submitted to a laboratory for analysis. Only the sample from MW-4 was found to have detectable levels of total petroleum hydrocarbons (TPH) of 1,200 ppm, which is above the ESL of 100 mg/kg, and total benzene, toluene, xylenes, ethyl-benzene, and

xylenes (BTEX) of 107 ppm, which is higher than the highest individual BTEX constituent ESL (3.3 mg/kg for ethylbenzene). Water samples were taken from each newly installed well and submitted for laboratory analysis. Only the water samples from MW-4 and MW-7 had detectable levels of TPH of 97 and 38 ppm, respectively, and total BTEX of 18.8 and 13.9 ppm, respectively. The SFRWQCB's BPOs for TPHg, benzene, toluene, ethylbenzene, and xylenes in groundwater are 100 µg/L, 1.0 µg/L, 40 µg/L, 30 µg/L, and 20 µg/L, respectively.

Soil borings B-1 through B-5 were completed to total a depth of 16 feet (except for B-4 which was completed to 4 feet) on September 11, 1987 by Interstate Soils Sampling under an engineering geologist from Hydrotech. Laboratory analysis was performed on soil samples from borings B-2 and B-3 because they had the highest field-measured readings. TPH was present at the five foot interval of B-2 at a concentration of 3,600 mg/kg, which is higher than the ESL (100 mg/kg). The ten foot interval of B-2 and all of B-3 was non-detect.

On March 23, 1998, four gasoline USTs and their associated piping were removed from the Site. The USTs were 10,000-gallon and 8,000-gallon capacity and were constructed of single-walled steel. On March 27, 1998, two 20,000-gallon double-walled USTs were installed at the Site. Approximately 1,093 tons of impacted soil was excavated. Soil samples and groundwater samples were collected and analyzed. Areas of significant petroleum hydrocarbon impact were the former UST basin and the product piping trenches. TPH concentrations were detected between 9.5 mg/kg in soil sample P-5 to 4,900 mg/kg in soil sample P-4. The ESL for TPHg in soil is 100 mg/kg.

On January 6, 2004, AGE completed four offsite soil borings (B-1 through B-4) to a total depth of 20 feet bgs. TPH as gasoline (TPHg) was detected in B-2 at the five foot interval at a concentration of 654 mg/kg and in B-4 at the five foot interval at 30 mg/kg. The ESL for TPHg in soil is 100 mg/kg.

In a transmittal letter dated March 11, 2004, Thrifty submitted preliminary soil and groundwater data from the four offsite soil borings (B-1 through B-4 (lab report included in **Appendix D**)) and onsite well replacement activities performed by AGE. Post-initial remediation concentrations of TPHg were detected in samples B2-5 (654 mg/kg) and B4-5 (30 mg/kg), benzene concentrations detected ranged from 0.0018J mg/kg in B1-5 to 0.016 mg/kg in B1-10, and MTBE concentrations ranged from 0.0055 mg/kg in B2-20 to 1.32 mg/kg in B3-15. The ESLs for TPHg, benzene, and MTBE in soil are 100 mg/kg, 0.044 mg/kg, and 0.023 mg/kg, respectively. In a letter dated March 19, 2004, the ACHCA requested that Thrifty prepare a workplan to address the offsite contamination detected during the January 2004 site assessment conducted by AGE. After further discussing the scope of work with the ACHCA in an e-mail dated April 27, 2004, Thrifty submitted a workplan to install one onsite (MW-10) and two offsite wells (MW-8 and MW-9) downgradient of the Site (**Figure 2**). The ACHCA responded in an e-mail dated May 4, 2004, requesting additional borings to delineate the plume to the west and southwest of the Site. Thrifty submitted a revised Workplan for Additional Offsite Assessment dated May 7, 2004 that included two additional borings (SB-5 and SB-6) to

the southwest of the Site (**Figure 2**). In a letter dated May 17, 2004, the ACHCA approved the May 7, 2004 workplan with the request that additional borings be considered if soil and groundwater samples indicate significant hydrocarbon contamination. Thrifty has selected GHC to conduct site assessment activities. GHC has obtained well permits and is in the process of obtaining an encroachment permit from the City of Oakland Public Works Department (COPWD). The encroachment permit is still being reviewed by the COPWD following comments by Thrifty. Thrifty expects to complete field activities and submit a site assessment report within 75 days following approval of the encroachment permit.

Copies of historic boring and well logs are included in **Appendix C**. The SFRWQCB's ESLs for soil and BPOs for groundwater are included in **Appendix E**.

3.4 Previous Remedial Activities

Site remedial activities were initiated in April 1991. The remediation system consists of a groundwater treatment system using activated carbon, with groundwater extraction from well RW-1. System operational data is included in **Appendix B**. On April 4, 2003, the system was shut off for upgrade activities. As of April 4, 2003, the system treated approximately 1,445,088 gallons of groundwater since startup (April1991).

Thrifty selected Advance GeoEnvironmental (AGE) to conduct remedial system upgrade activities including installation of a new treatment compound, installation of new piping, connection of piping to the replacement well network, and the operation and maintenance of the upgraded groundwater pump and treat system. In January 2004, AGE abandoned wells MW-2, MW-4, and RW-1 and replaced them with wells MW-2R, MW-4R, and RW-1R.

The upgraded remediation system was restarted by AGE for continuous operation on June 21, 2004. The primary components of the upgraded system within the treatment compound consist of an air compressor, 500 gallon Poly settling tank, control panel, and three 200 pound granular activated carbon canisters. The upgraded system is removing groundwater from extraction wells MW-2R, MW-4R, and RW-1R that are each equipped with downhole submersible pumps.

On January 12, 2005, system operations and maintenance duties were assumed by EMC from AGE. According to EMC, as of March 28, 2006, the upgraded system produced and treated a cumulative system total of 1,563,610 gallons (**Appendix B**). System influent and effluent analytical results are also included in **Appendix B**.

4.0 SITE CONCEPTUAL MODEL

This Site Conceptual Model was prepared on behalf of Thrifty Oil Co. (Thrifty) to fulfill the requirements set forth by the Alameda County Health Care Agency (ACHCA) in their

letter dated December 7, 2005. As additional information is obtained from the Site, the Site Conceptual Model will be updated appropriately. The current Site Conceptual Model is as follows:

- Soils beneath the Site consist primarily of Quaternary alluvial deposits of silty, sandy, and gravelly clays from ground surface to 25 feet below ground surface (bgs), the maximum depth explored (**Figures 3A**, **3B**, and **3C**). Bedrock in the region consists of sedimentary, metasedimentary, volcanic and intrusive rocks of Jurassic through Tertiary geologic age.

- Current and historic depths to groundwater beneath the Site ranged from approximately 4 to 7 feet below grade. Groundwater has historically flowed approximately southwest at a hydraulic gradient ranging from approximately 0.043 feet per foot to 0.06 feet per foot. Currently, the depth to groundwater beneath the Site ranges from 3.86 feet below the ground surface (95.81 feet above sea level) in MW-6 to 7.26 feet below the ground surface (90.43 feet above sea level) in MW-3, as measured on October 19, 2005. Groundwater is flowing towards the west-southwest at an approximate gradient of 0.0448 ft/ft (**Figure 5**). Based on this gradient, an estimated hydraulic conductivity of silt at 0.08 m/day (Todd, 1980) and an assumed porosity of 46 percent, the groundwater velocity beneath the Site is calculated to be approximately 0.0078 meters per day or 2.84 meters per year.

- During the 1st quarter 2006 groundwater sampling event on January 24, 2006, samples were taken from wells MW-1 through MW-7 and RW-1R. TPHg was detected in wells MW-4R, RW-1R, MW-2R, and MW-5 at concentrations of 41,300 µg/L, 14,500 µg/L, 3,200 µg/L, and 681 µg/L, respectively, which are all higher concentrations than the BPO for TPHg in groundwater (100 µg/L). Benzene was detected in wells MW-4R, RW-1R, and MW-2R at concentrations of 391 µg/L, 192 µg/L, and 34 µg/L, respectively, which are all higher concentrations than the BPO for benzene in groundwater (1 µg/L). MTBE was detected in wells RW-1R, MW-4R, MW-5, and MW-2R at concentrations of 432 µg/L, 388 µg/L, 334 µg/L, and 86 µg/L, respectively, which are all higher concentrations than the BPO for MTBE in groundwater (5 µg/L). Post-remediation (after April 1991) distribution of TPHg, benzene, and MTBE in groundwater is shown in **Figures 6A**, **6B**, and **6C**, respectively and is shown in **Table 2A** along with the SFRWQCB's BPOs. Pre-remediation distribution of TPHg, BTEX, and MTBE (November 1986) in groundwater is shown in **Figures 6D, 6E,** and **6F.** The results for other oxygenates detected in groundwater is shown in **Table 2B**. The SFRWQCB's BPOs are included in **Appendix E**.

- The main contaminants of concern at the Site are benzene and MTBE, because of the toxicity of benzene, and the solubility, odor, and taste threshold associated with MTBE. The main potential exposure pathway appears to be through ingestion of groundwater that has been impacted by these fuel constituents. Under typical subsurface conditions, benzene will naturally attenuate through volatilization, dispersion, and biodegradation to plume lengths of less than 150 to 200 feet. Based

on historical data for the Site, it appears that the benzene plume and the total petroleum hydrocarbons (TPH), ethylbenzene, toluene, and xylene plumes have all been stable and/or shrinking as a result of natural attenuation. On the other hand, MTBE is very soluble, appears to be far more resilient to biodegradation compared to TPH and benzene, toluene, ethylbenzene, and total xylenes (BTEX) compounds, and longer plumes can typically be expected. The concentrations of MTBE detected in groundwater in the onsite wells have decreased somewhat over time (**Figure 7** series). However, the Fourth Quarter 2005 groundwater sampling event (October 2005) indicated that the maximum MTBE concentration detected in groundwater was 1,160 µg/L in MW-4R. The BPO for MTBE in groundwater is 5 µg/L. The elevated MTBE concentrations in MW-4 and MW-5 in 2001 through 2004 could be attributed to a potential off-site source. *The adjacent Shell station has had dispenser leaks in the past. In their Site Conceptual Model Report written in December of 2005, Shell states that it is possible that hydrocarbon plumes from the Shell site and the Thrifty Site have commingled.*

- Based on calculations using a soil density of 120 lbs/ft^3, the area of lateral and vertical extent of contamination, and the average constituent concentration per plume, GHC estimates the mass of TPHg in soil beneath the Site to be approximately 3,910 pounds based on an average depth of 5 feet. The mass of benzene in soil beneath the Site, based on an average depth of approximately 6.67 feet, is estimated to be approximately 20 pounds, and the mass of MTBE in soil beneath the Site, based on an average depth of 5 feet, to be approximately 21 pounds. These figures were calculated using the historic soil concentration data (**Table 1**) and soil concentration maps (**Figures 4A** through **4L**).

- Hydrocarbon soil contamination was first detected in August of 1986 in one soil boring (SB-1) and one monitoring well (MW-3) at concentrations up to 67 mg/kg, which indicated that the initial petroleum hydrocarbon release occurred at some point prior to this first assessment.

- On March 23, 1998, four gasoline USTs and their associated piping were removed from the Site. The USTs were 10,000-gallon and 8,000-gallon capacity and were constructed of single-walled steel. On March 27, 1998, two 20,000-gallon double-walled USTs were installed at the Site. Approximately 1,093 tons of impacted soil was excavated. Soil samples and groundwater samples were collected and analyzed. Areas of significant petroleum hydrocarbon impact were the former UST basin and the product piping trenches. TPH concentrations were detected at concentrations between 9.5 mg/kg in soil sample P-5 to 4,900 mg/kg in soil sample P-4.

- TPHg concentrations in excess of 100 mg/kg are confined to depths of 10 feet bgs or less, and the vertical and horizontal extent of contamination has been fairly defined at the Site. The downward vertical migration of petroleum hydrocarbons in soil beneath the Site appears to have been substantially attenuated at relatively shallow depths as a result of the lower permeability soils which were encountered at these same shallow depths beneath the Site, as demonstrated by the decrease in hydrocarbon soil

concentrations to low levels or non-detectable levels at depth. Pre-remediation, shallow (before April 1991, 0-10 feet bgs) TPHg, benzene, and MTBE soil concentration maps are included as **Figures 4A** through **4C**, respectively. Pre-remediation deep (before April 1991, 11-20 feet bgs) TPHg, benzene, and MTBE soil concentration maps are included as **Figures 4D** through **4F**, respectively. Post-remediation, shallow (after April 1991, 0-10 feet bgs) TPHg, benzene, and MTBE soil concentration maps are included as **Figures 4G** through **4I**, respectively. Post-remediation deep (after April 1991, 11-20 feet bgs) TPHg, benzene, and MTBE soil concentration maps are included as **Figures 4J** through **4L**, respectively.

- Site remedial activities were initiated in April 1991. The remediation system consisted of a groundwater treatment system using activated carbon, with groundwater extraction from well RW-1. System operational data is included in **Appendix B**. On April 4, 2003, the system was shut off for upgrade activities. As of April 4, 2003, the system treated approximately 1,445,088 gallons of groundwater since startup (April1991).Thrifty selected Advance GeoEnvironmental (AGE) to conduct remedial system upgrade activities including installation of a new treatment compound, installation of new piping, connection of piping to the replacement well network, and the operation and maintenance of the upgraded groundwater pump and treat system. In January 2004, AGE abandoned wells MW-2, MW-4, and RW-1 and replaced them with wells MW-2R, MW-4R, and RW-1R. As of March 28, 2006, the upgraded system produced and treated a cumulative system total of 1,563,610 gallons since system startup on April 8, 1991 (**Appendix B**).

- As demonstrated by the BIOSCREEN Natural Attenuation Decision Support System runs included in the following section, the MTBE contaminant plume with no degradation arrives at the receptor (nearest groundwater production well; 900 feet, side to downgradient; assumed to be downgradient for purposes of the model) at year 57. A maximum concentration of MTBE is observed at this receptor well at years 135 through 142 at a concentration of 0.125 mg/L, which is above the maximum contaminant level (MCL) of 0.013 mg/L, and the plume becomes detached from the source at year 985. The plume impacts the assumed well at concentration well below the MCL from approximately year 57 through year 75. The BIOSCREEN results using the 1st Order Decay model show that the contaminant plume never arrives at the receptor (nearest groundwater production well; 900 feet) and the plume never impacts the well above the detection limit of 0.0013 mg/L, and obtains a maximum length of approximately 800 feet.

- As demonstrated by the BIOSCREEN Natural Attenuation Decision Support System runs included in the following section, assuming the benzene is actually present in the groundwater beneath the Site at a concentration equal to the laboratory detection limit (currently all wells are below the laboratory detection limit), the contaminant plume with no degradation arrives at the receptor (nearest groundwater production well; 900 feet, side to downgradient; assumed to be downgradient for purposes of the model) at year 199 at a concentration of 0.00001 mg/L. A maximum concentration of benzene at this receptor well is never above the MCL of 0.001 mg/L. The BIOSCREEN using

the 1st Order Decay model shows that the contaminant plume never arrives at the receptor (groundwater production well; 900 feet) and the plume never impacts the well above the detection MCL of 0.001 mg/L. Benzene is currently not detected in groundwater beneath the Site, further supporting the 1st order decay run as being the most representative of actual Site conditions.

5.0 PLUME TRAVEL TIME REPORT

The plume travel time was estimated using BIOSCREEN Natural Attenuation Decision Support System. BIOSCREEN is an easy to use screening model that simulates remediation through natural attenuation (RNA) of dissolved hydrocarbons at petroleum release sites. The software, programmed in Microsoft Excel spreadsheet environment and based on the Domenico analytical solute transport model, has the ability to simulate advection, dispersion, adsorption, and aerobic decay as well as anaerobic reactions that have been shown to be the dominant biodegradation process at many petroleum release sites. BIOSCREEN includes three different model types:

- solute transport without decay
- solute transport with biodegradation modeled as a first-order decay process (simple, lumped-parameter approach)
- solute transport with biodegradation modeled as an "instantaneous" biodegradation reaction (approach used by BIOPLUME models)

In our case all three models types would be applicable for the Site, although the solute transport without decay model will be used as a worst case scenario. Based on the actual observed groundwater conditions at the Site, the solute transport first-order decay model appears to be most representative of actual Site conditions including plume sizes and concentrations for MTBE. If natural attenuation analytical results were present for the Site these values were used for input parameters in the "Instantaneous" Biodegradation Reaction. If Site data was not available, model default parameters were used.

The model is designed to simulate biodegradation by both aerobic and anaerobic reactions. It was developed for the Air Force Center for Environmental Excellence (AFCEE) Technology Transfer Division at Brooks Air Force Base by Groundwater Services, Inc., of Houston, Texas.

BIOSCREEN attempts to answer the two fundamental questions regarding RNA:

- How far will the dissolved contaminant plume extend if no engineered controls or further source reduction measures are implemented?
- How long will the plume persist until natural attenuation processes cause it to dissipate?

BIOSCREEN has the following limitations:

- As an analytical model, BIOSCREEN assumes simple groundwater flow conditions.
- As a screening tool, BIOSCREEN only approximates more complicated processes that occur in the field.

Site-specific data was entered into BIOSCREEN to determine the degree of RNA. Site-specific data such as hydraulic conductivity and porosity were based on text book values for similar as observed at the Site (Todd 1980). The Site specific groundwater gradient which was obtained from the 4th Quarter 2005 sampling event was used and the model length was set at the distance from the closest groundwater production well (which was 900 feet side to downgradient from the source areas). It was assumed that this well was downgradient during the simulation, and that the gradient in the model was equal to that measured at the Site during this quarter. Input parameters such as the estimated plume length and the concentrations of MTBE and benzene were also based on the actual Site data collected during the 4th Quarter 2005. The concentrations of benzene in groundwater were below the method detection limit of 0.32 µg/L (0.00032 mg/L), and therefore the concentration was set to the detection limit for the purpose of the model. The highest concentration of MTBE in groundwater was detected at 1,600 µg/L (1.16 mg/L), which was used for the purpose of the model. The source mass was assumed to be equal to the mass of MTBE in one pore volume of groundwater for a dissolved phase MTBE plume measuring 60 feet by 1,000 feet by 20 feet thick, at an MTBE concentration of 1.16 mg/L. The partitioning coefficient for MTBE (12.59 L/kg) was obtained from the American Petroleum Institute's Strategies for Characterizing Subsurface Releases of Gasoline Containing MTBE (Regulatory and Scientific Affairs Publication Number 4699 dated February 2000). The fraction of organic carbon used (0.0025) was the mean concentration for site soils in the Los Angeles area as reported by the RWQCB in their Interim Site Assessment & Cleanup Guidebook dated May 1996.

The input parameters and MTBE model results for years 1, 56, 57, 75, 76, 134, 135, 142, 143, 984, and 985 are included in **Appendix A**. As demonstrated by the output included in **Appendix A**, the MTBE contaminant plume with no degradation arrives at the receptor (nearest groundwater production well; 900 feet downgradient) at year 57. A maximum concentration of MTBE is observed at this receptor well at years 135 through 142 at a concentration of 0.125 mg/L, which is above the maximum contaminant level (MCL) of 0.013 mg/L, and the plume becomes detached from the source at year 985. The plume impacts the assumed well at concentration well below the MCL from approximately year 57 through year 75. The BIOSCREEN results using the 1st Order Decay model show that the contaminant plume never arrives at the receptor (nearest groundwater production well; 900 feet) and the plume never impacts the well above the detection imit of 0.0013 mg/L, and obtains a maximum length of approximately 800 feet.

The input parameters and benzene model results for years 1, 198, and 199 are included in **Appendix A**. As demonstrated by the output included in **Appendix A**, assuming the benzene is actually present in the groundwater beneath the Site at a concentration equal to

the laboratory detection limit (currently all wells are below the laboratory detection limit), the contaminant plume with no degradation arrives at the receptor (nearest groundwater production well; 900 feet downgradient) at year 199 at a concentration of 0.00001 mg/L. A maximum concentration of benzene at this receptor well is never above the MCL of 0.001 mg/L. The BIOSCREEN using the 1st Order Decay model shows that the contaminant plume never arrives at the receptor (groundwater production well; 900 feet) and the plume never impacts the well above the detection MCL of 0.001 mg/L. Benzene is currently not detected in groundwater beneath the Site, further supporting the 1st order decay run as being the most representative of actual Site conditions.

6.0 CONCLUSIONS AND RECOMMENDATIONS

Site remedial activities have been progressing for the past 15 years. As of March 28, 2006, the upgraded groundwater treatment system produced and treated a cumulative system total of approximately 1,563,610 gallons since system startup on April 8, 1991. The quarterly groundwater monitoring results confirm that the contaminant plume is attenuating and that groundwater concentrations have been decreasing over time.

Based on the BIOSCREEN 1st Order Decay model results for MTBE and benzene, it appears that the contaminant plume never impacts the nearest receptor (groundwater production well; 900 feet downgradient of the Site) above the respective MCLs for MTBE and benzene, and the plume never reaches the sensitive receptor. The MTBE plume length obtains a maximum length of 800 feet, and the benzene plume stays below a length of 100 feet.

Soil contamination appears to be mostly shallow (0 to 10 feet bgs) and is located onsite. The highest concentrations of TPHg, benzene, and MTBE in offsite borings B-1 through B-4 were detected at 654 mg/kg, 0.016 mg/kg, and 1.32 mg/kg, respectively, which are believed to be low enough to make additional offsite work unnecessary.

Based on these conclusions, on behalf of Thrifty, GHC requests closure of the Site based on low risk criteria.

TABLES

TABLE 1A

Historic and Recent Soil Sample Laboratory Analytical Results

Thrifty Oil Station #049 - Oakland, CA

GHC - 1330

Sample ID	Date Sampled	ANALYTICAL PARAMETERS					
		TPHg (mg/Kg)	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethylbenzene (mg/Kg)	Xylenes (mg/Kg)	MTBE (mg/Kg)
ESLs shallow soil (≤3m bgs)		*100*	*0.044*	*2.9*	*3.3*	*2.3*	*0.023*
ESLs deep soil (>3m bgs)		*100*	*0.044*	*2.9*	*3.3*	*2.3*	*0.023*
MW-1	7/31/1986	ND					
MW-2	7/31/1986	ND					
MW-3(4-4.5 ft)	7/31/1986	**22**					
SB-1	7/31/1986	ND					
SB-2(9-9.5 ft)	7/31/1986	**67**					
SB-3	7/31/1986	ND					
MW-4(6.75 ft)	11/14/1986	**1,200**	**12**				
MW-5	11/14/1986						
MW-6	11/14/1986						
MW-7(6.50 ft)	11/14/1986	ND	ND				
B-1	9/11/1987						
B-2(5 ft)	9/11/1987	**3,600**					
B-3	9/11/1987	ND					
B-4	9/11/1987						
B-5	9/11/1987						
T-1	3/23/1998	**430**	**3.0**	<1.2	**7.3**	**7.5**	<6.2
T-2	3/23/1998	**31**	**0.74**	**0.15**	**0.65**	**1.1**	**4.7**
T-3	3/23/1998	**73**	**0.34**	<0.10	<0.10	**0.56**	<0.50
T-4	3/23/1998	**1,600**	**9.3**	**17**	**22**	**100**	**27**
P-1	3/23/1998	**27**	**0.36**	**0.054**	**0.53**	**0.10**	**13**
P-2	3/23/1998	**1,800**	**3.4**	**3.1**	**11**	**21**	**6.0**
P-3	3/23/1998	**14**	**0.28**	**0.023**	**0.048**	**0.16**	**2.8**
P-4	3/23/1998	**3,900**	**19**	**42**	**53**	**330**	**22**
P-5	3/23/1998	**9.5**	**0.15**	**0.080**	**0.031**	**0.12**	**0.066**
B1-5	10/6/2004	<0.401	**0.0018J**	<0.00042	<0.00041	<0.0008	**0.097**
B1-10	10/6/2004	<0.401	**0.016**	<0.00042	**0.0023J**	**0.001J**	**0.411**
B1-15	10/6/2004	<0.401	<0.00039	<0.00042	<0.00041	<0.0008	**0.053**
B1-20	10/6/2004	<0.401	<0.00039	<0.00042	<0.00041	<0.0008	**0.019**
B2-5	10/6/2004	**654**	<0.0195	<0.021	**5.89**	**31.3**	**0.140J**
B2-10	10/6/2004	<0.401	<0.00039	<0.00042	<0.00041	**0.007**	**0.939**
B2-15	10/6/2004	<0.401	<0.00039	<0.00042	**0.0014J**	**0.0084**	**0.22**
B2-20	10/6/2004	<0.401	<0.00039	<0.00042	<0.00041	<0.0008	**0.0055**
B3-10	10/6/2004	<0.401	<0.00039	<0.00042	<0.00041	**0.0035J**	**0.609**
B3-15	10/6/2004	<0.401	**0.0021J**	**0.0061**	**0.0041J**	**0.02**	**1.32**
B3-20	10/6/2004	<0.401	<0.00039	<0.00042	<0.00041	**0.0032J**	**1.06**
B4-5	10/6/2004	**30**	**0.0023J**	<0.00042	**0.0018J**	**0.0035J**	**0.024**
B4-10	10/6/2004	<0.041	<0.00039	<0.00042	<0.00041	<0.0008	**1.07**
B4-15	10/6/2004	<0.041	<0.00039	<0.00042	<0.00041	<0.0008	**0.121**
B4-20	10/6/2004	<0.401	<0.00039	<0.00042	<0.00041	<0.0008	**0.42**

NOTES: TPHg analyzed by EPA Method 8015M

BTEX and MTBE analysis by EPA Method 8260B

"<" = Less than the specified laboratory detection limit

"J" = Trace

* = Total Recoverable Petroleum Hydrocarbons

= Not analyzed

ESLs = Environmental Screening Levels

3m bgs = 3 meters (10 feet) below ground surface

TABLE 1B
Historic and Recent Soil Sample Laboratory Analytical Results
Other Oxygenates
Thrifty Oil Station #049 - Oakland, CA
GHC - 1330

Sample ID	Date Sampled	ANALYTICAL PARAMETERS			
		DIPE (mg/Kg)	ETBE (mg/Kg)	TAME (mg/Kg)	TBA (mg/Kg)
B1-5	10/6/2004	<0.00082	<0.00077	<0.00061	**0.132**
B1-10	10/6/2004	<0.00082	<0.00077	**0.024**	**0.304**
B1-15	10/6/2004	<0.00082	<0.00077	<0.00061	**0.012J**
B1-20	10/6/2004	<0.00082	<0.00077	<0.00061	<0.005
B2-5	10/6/2004	<0.041	<0.0385	<0.0305	<0.250
B2-10	10/6/2004	<0.00082	<0.00077	**0.011**	**0.339**
B2-15	10/6/2004	**0.0016J**	<0.00077	**0.0011J**	**0.038J**
B2-20	10/6/2004	<0.00082	<0.00077	<0.00061	<0.005
B3-10	10/6/2004	<0.00082	<0.00077	**0.0024J**	**0.488**
B3-15	10/6/2004	<0.00082	<0.00077	**0.025**	**0.263**
B3-20	10/6/2004	<0.00082	<0.00077	**0.025**	**0.175**
B4-5	10/6/2004	<0.00082	<0.00077	<0.00061	**0.013J**
B4-10	10/6/2004	<0.00082	<0.00077	**0.0028J**	**0.496**
B4-15	10/6/2004	<0.00082	<0.00077	<0.00061	**0.019J**
B4-20	10/6/2004	<0.00082	<0.00077	<0.00061	**0.070**

NOTES: Oxygenate analysis by EPA Method 8260B
"<" = Less than the specified laboratory detection limit
"J" = Trace
DIPE = Di IsoPropyl Ether
ETBE = Ethyl Tert Butyl Ether
TAME = Tert Amyl Methyl Ether
TBA = Tert Butyl Alcohol

TABLE 2A
GROUNDWATER DATA
THRIFTY OIL STATION #049, OAKLAND, CA.

DATE SAMPLED	ANALYTICAL PARAMETERS						DEPTH TO GROUNDWATER (feet)	DEPTH TO PRODUCT (feet)	PRODUCT THICKNESS (feet)	CASING ELEVATION (feet)	GROUNDWATER ELEVATION (feet)
	TPH (ug/L)	BENZENE (ug/L)	TOLUENE (ug/L)	EthylBenzene (ug/L)	XYLENE (ug/L)	MTBE (ug/L)					
BPOs	**100**	**1.0**	**40**	**30**	**20**	**5.0**					
MONITORING WELL #MW-1				***Screen Interval = 5 to 25 feet***							
01/09/92	-	-	-	-	-	-	5.54	NP	0.00	98.03	92.49
04/13/92	-	-	-	-	-	-	5.86	NP	0.00	98.03	92.17
10/05/92	-	-	-	-	-	-	9.39	NP	0.00	98.03	88.64
01/06/93	-	-	-	-	-	-	4.76	NP	0.00	98.03	93.27
04/26/93	-	-	-	-	-	-	4.96	NP	0.00	98.03	93.07
01/04/94	-	-	-	-	-	-	7.00	NP	0.00	98.03	91.03
04/05/94	-	-	-	-	-	-	6.44	NP	0.00	98.03	91.59
10/09/95	44,000	4,500	4,300	1,700	10,000	-	-	-	-	98.03	-
01/08/96	21,000	1,200	150	34	4,800	-	6.15	NP	0.00	98.03	91.88
04/08/96	4,700	80	110	10	910	-	5.40	NP	0.00	98.03	92.63
07/22/96	7,000	280	130	<3	2,100	440	5.50	NP	0.00	98.03	92.53
10/16/96	120	<0.3	<0.3	<0.3	<0.5	180	6.02	NP	0.00	98.03	92.01
01/22/97	160	<0.3	<0.3	<0.3	<0.5	360	4.40	NP	0.00	98.03	93.63
04/21/97	20,000	420	140	5.8	840	55,000	6.30	NP	0.00	98.03	91.73
07/14/97	13,000	<0.3	<0.3	<0.3	<0.55	30,000	5.92	NP	0.00	98.03	92.11
10/07/97	-	-	-	-	-	-	7.71	7.70	0.01	98.03	90.33
01/15/98	<50	0.3	<0.3	<0.3	<0.5	-	4.40	NP	0.00	98.03	93.63
04/23/98	540	<0.3	<0.3	<0.3	<0.5	<20	8.10	NP	0.00	98.03	89.93
07/20/98	<50	<0.3	<0.3	<0.3	<0.5	<5	5.55	NP	0.00	98.03	92.48
10/14/98	50	1.4	0.56	<0.3	11	22	7.05	NP	0.00	98.03	90.98
01/21/99	<50	0.59	<0.3	<0.3	<0.5	<5	4.10	NP	0.00	98.03	93.93
04/15/99	<50	<0.3	<0.3	<0.3	<0.5	<5	4.30	NP	0.00	98.03	93.73
07/26/99	<50	<0.3	<0.3	<0.3	<0.5	<5	5.54	NP	0.00	98.03	92.49
10/13/99	<50	<0.3	<0.3	<0.3	<0.5	<5	6.13	NP	0.00	98.03	91.90
01/20/00	<50	<0.3	<0.3	<0.3	<0.5	<5	6.04	NP	0.00	98.03	91.99
04/05/00	<50	<0.25	<0.25	<0.25	<0.5	<5	4.03	NP	0.00	98.03	94.00
07/19/00	<50	<0.3	<0.3	<0.3	<0.6	<5	4.00	NP	0.00	98.03	94.03
10/18/00	<50	<0.18	<0.14	<0.18	<0.26	<0.24	5.53	NP	0.00	98.03	92.50
01/17/01	<50	<0.18	<0.14	<0.18	<0.26	<0.24	3.97	NP	0.00	98.03	94.06
04/19/01	<50	<0.18	<0.14	<0.18	<0.26	<0.24	3.98	NP	0.00	98.03	94.05
07/18/01	<50	<0.18	<0.14	<0.18	<0.26	<0.24	5.51	NP	0.00	98.03	92.52
10/10/01	<50	<0.18	<0.14	<0.18	<0.26	<0.24	3.97	NP	0.00	98.03	94.06
01/30/02	<50	<0.18	<0.14	<0.18	<0.26	<0.24	3.95	NP	0.00	98.03	94.08
04/17/02	<50	<0.18	<0.14	<0.18	<0.26	<0.24	2.42	NP	0.00	98.03	95.61

TABLE 2A
GROUNDWATER DATA
THRIFTY OIL STATION #049, OAKLAND, CA.

DATE SAMPLED	ANALYTICAL PARAMETERS						DEPTH TO GROUNDWATER (feet)	DEPTH TO PRODUCT (feet)	PRODUCT THICKNESS (feet)	CASING ELEVATION (feet)	GROUNDWATER ELEVATION (feet)
	TPH (ug/L)	BENZENE (ug/L)	TOLUENE (ug/L)	EthylBenzene (ug/L)	XYLENE (ug/L)	MTBE (ug/L)					
07/31/02	<50	<0.18	1.3	<0.18	<0.26	<0.24	5.49	NP	0.00	98.03	92.54
11/14/02	<50	<0.08	<0.18	<0.17	<0.4	16	6.13	NP	0.00	98.03	91.90
01/29/03	<15	<0.04	<0.02	<0.02	<0.06	<0.03	2.45	NP	0.00	98.03	95.58
04/23/03	<15	<0.04	<0.02	<0.02	<0.06	<0.03	7.02	NP	0.00	98.03	91.01
07/10/03	<15	<0.22	<0.32	<0.31	<0.4	<0.18	5.15	NP	0.00	98.03	92.88
10/20/03	<15	<0.04	<0.02	<0.02	<0.06	<0.03	5.13	NP	0.00	98.03	92.90
01/14/04	<15	<0.04	<0.02	<0.02	<0.06	<0.03	3.92	NP	0.00	98.03	94.11
04/08/04	<15	<0.22	<0.32	<0.31	<0.4	<0.18	4.54	NP	0.00	98.03	93.49
07/21/04	<15	<0.22	<0.32	<0.31	<0.4	<0.18	7.01	NP	0.00	98.03	91.02
10/20/04	<15	<0.22	<0.32	<0.31	<0.4	<0.18	5.46	NP	0.00	98.03	92.57
01/19/05	<15	<0.22	<0.32	<0.31	<0.4	<0.18	5.48	NP	0.00	98.03	92.55
04/20/05	<15	<0.22	<0.32	<0.31	<0.4	<0.18	6.99	NP	0.00	98.03	91.04
07/20/05	<2.9	<0.32	<0.10	<0.24	<0.30	<0.63	6.42	NP	0.00	98.03	91.61
10/19/05	<2.9	<0.32	<0.10	<0.24	<0.30	<0.63	6.98	NP	0.00	98.03	91.05
01/24/06	<2.9	<0.32	<0.10	<0.24	<0.30	<0.63	4.56	NP	0.00	98.03	93.47
MONITORING WELL #MW-2				***Screen Interval = 5 to 25 feet***							
01/09/92	-	-	-	-	-	-	5.35	NP	0.00	97.44	92.09
04/13/92	-	-	-	-	-	-	7.42	NP	0.00	97.44	90.02
10/05/92	-	-	-	-	-	-	12.15	NP	0.00	97.44	85.29
01/06/93	-	-	-	-	-	-	5.46	NP	0.00	97.44	91.98
04/26/93	-	-	-	-	-	-	5.15	NP	0.00	97.44	92.29
01/04/94	-	-	-	-	-	-	9.45	NP	0.00	97.44	87.99
04/05/94	-	-	-	-	-	-	8.23	NP	0.00	97.44	89.21
10/09/95	33,000	6,000	390	1,700	4,900	-	-	-	-	97.44	-
01/08/96	<50	0.32	<0.3	0.41	2.1	-	5.60	NP	0.00	97.44	91.84
04/08/96	10,000	490	210	210	830	-	5.43	NP	0.00	97.44	92.01
07/22/96	60,000	6,500	1,000	1,500	10,000	8,500	5.65	NP	0.00	97.44	91.79
10/16/96	6,500	12	0.34	0.72	110	4,700	5.82	NP	0.00	97.44	91.62
01/22/97	3,200	<0.3	0.46	0.37	<0.5	8,000	4.30	NP	0.00	97.44	93.14
04/21/97	66,000	5,300	1,000	2,300	14,000	30,000	5.80	NP	0.00	97.44	91.64
07/14/97	17,000	1.8	4.6	4.6	350	24,000	8.92	NP	0.00	97.44	88.52
10/07/97	220,000	5,200	1,700	3,800	15,000	-	6.80	NP	0.00	97.44	90.64
01/19/98	25,000	5.4	2.2	2.1	240	-	8.50	NP	0.00	97.44	88.94
04/23/98	7,700	<0.3	0.55	0.38	4.9	28,000	7.60	NP	0.00	97.44	89.84

TABLE 2A
GROUNDWATER DATA
THRIFTY OIL STATION #049, OAKLAND, CA.

DATE SAMPLED	ANALYTICAL PARAMETERS						DEPTH TO GROUNDWATER	DEPTH TO PRODUCT	PRODUCT THICKNESS	CASING ELEVATION	GROUNDWATER ELEVATION
	TPH (ug/L)	BENZENE (ug/L)	TOLUENE (ug/L)	EthylBenzene (ug/L)	XYLENE (ug/L)	MTBE (ug/L)	(feet)	(feet)	(feet)	(feet)	(feet)
07/20/98	430,000	4,200	10,000	5,400	28,000	77,000	6.94	NP	0.00	97.44	90.50
1014/98	27,000	<0.3	4.5	4.1	4.6	65,000	8.45	NP	0.00	97.44	88.99
01/21/99	16,000	7.6	9.8	4.2	310	* 49,000 / 42,000	6.95	NP	0.00	97.44	90.49
04/15/99	20,000	<0.3	<0.3	<0.3	<0.5	* 31,000 / 30,000	8.45	NP	0.00	97.44	88.99
07/26/99	6,700	<6	<6	<6	<10	*11,000 / 15,000	6.94	NP	0.00	97.44	90.50
10/13/99	7,600	<3	3.7	<3	11	11,000	5.48	NP	0.00	97.44	91.96
01/20/00	7,500	<6	<6	<6	<10	*14,000 / 16,000	5.84	NP	0.00	97.44	91.60
04/05/00	10,400	<0.25	<0.25	<0.25	<0.5	*10,000 / 14,400	5.41	NP	0.00	97.44	92.03
07/19/00	130	<0.3	<0.3	<0.3	<0.6	*9,620 / 6,520	5.40	NP	0.00	97.44	92.04
10/18/00	150	<0.18	<0.14	<0.18	<0.26	*9,090 / 6,560	6.91	NP	0.00	97.44	90.53
01/17/01	75	<0.18	2.0	2.0	3.0	*8,650 / 9,710	5.41	NP	0.00	97.44	92.03
04/19/01	4,380	<0.18	<0.14	<0.18	<0.26	8,890	5.40	NP	0.00	97.44	92.04
07/18/01	3,260	<0.18	<0.14	<0.18	2.0	*7960 / 1,710	6.92	NP	0.00	97.44	90.52
10/10/01	1,760	<0.18	<0.14	<0.18	<0.26	*2,980 / 2,600	3.87	NP	0.00	97.44	93.57
01/30/02	1,770	<0.18	1.0	1.0	2.0	*2,560 / 1,590	8.45	NP	0.00	97.44	88.99
04/17/02	1,470	1.0	<0.14	<0.18	<0.26	*2,460 / 2,080	8.45	NP	0.00	97.44	88.99
07/31/02	3,910	<0.18	1.2	<0.18	2.1	*2,090 / 1,740	9.98	NP	0.00	97.44	87.46
11/14/02	39,400	1,680	728	173	5,120	8,270	5.40	NP	0.00	97.44	92.04
01/29/03	22,100	746	76	<1.0	2,840	8,220	8.43	NP	0.00	97.44	89.01
04/23/03	19,500	<0.8	<0.4	<0.4	<1.2	9,580	5.38	NP	0.00	97.44	92.06
07/10/03	29,900	<2.2	<3.2	<3.1	<4.0	6,690	5.10	NP	0.00	97.44	92.34
10/20/03	13,000	4.79	<0.02	<0.02	<0.06	*6,330 / 5,980	5.10	NP	0.00	97.44	92.34
01/14/04	WELL ABANDONED 01/2004										
MONITORING WELL #MW-2R											
02/03/04							-	-	-	-	-
04/08/04	11,600	304	16 J	55	427	4,170	4.58	NP	0.00	-	-
07/21/04	<15	<0.22	<0.32	<0.31	<0.4	<0.18	6.72	NP	0.00	-	-
10/20/04	20,900	3,180	2,970	259	1,240	92	3.72	NP	0.00	-	-
01/19/05	18,900	537	250	866	2,290	3,340	4.50	NP	0.00	-	-
04/20/05	13,100	<2.2	<3.2	<3.1	<4.0	563	5.27	NP	0.00	-	-
07/07/05	2,500	70	7.6	<0.24	160	1,930	-	-	-	-	-
07/20/05	4,260	392	15 J	175	100	742	6.12	NP	0.00	-	-
10/19/05	321	<0.32	<0.10	<0.24	<0.30	423	5.28	NP	0.00	-	-
01/24/06	3,200	34	331	87	510	86	4.58	NP	0.00	-	-

TABLE 2A
GROUNDWATER DATA
THRIFTY OIL STATION #049, OAKLAND, CA.

DATE SAMPLED	ANALYTICAL PARAMETERS						DEPTH TO GROUNDWATER (feet)	DEPTH TO PRODUCT (feet)	PRODUCT THICKNESS (feet)	CASING ELEVATION (feet)	GROUNDWATER ELEVATION (feet)
	TPH (ug/L)	BENZENE (ug/L)	TOLUENE (ug/L)	EthylBenzene (ug/L)	XYLENE (ug/L)	MTBE (ug/L)					
MONITORING WELL #MW-3				***Screen Interval = 5 to 25 feet***							
01/09/92	-	-	-	-	-	-	17.60	NP	0.00	97.69	80.09
04/13/92	-	-	-	-	-	-	17.40	NP	0.00	97.69	80.29
10/05/92	-	-	-	-	-	-	17.35	NP	0.00	97.69	80.34
01/06/93	-	-	-	-	-	-	17.40	NP	0.00	97.69	80.29
04/26/93	-	-	-	-	-	-	17.90	NP	0.00	97.69	79.79
01/04/94	-	-	-	-	-	-	17.60	NP	0.00	97.69	80.09
04/05/94	-	-	-	-	-	-	16.25	NP	0.00	97.69	81.44
01/08/96	-	-	-	-	-	-	7.11	NP	0.00	97.69	90.58
04/08/96	8,800	610	31	530	900	-	7.20	NP	0.00	97.69	90.49
07/22/96	38,000	4,100	1,500	1,600	5,400	2,600	6.82	NP	0.00	97.69	90.87
10/16/96	2,400	<0.3	<0.3	<0.3	<0.5	3,800	6.84	NP	0.00	97.69	90.85
01/22/97	2,200	<0.3	<0.3	<0.3	<0.5	5,500	4.80	NP	0.00	97.69	92.89
04/21/97	15,000	1,500	36	260	710	11,000	9.40	NP	0.00	97.69	88.29
07/14/97	5,400	0.45	<0.3	<0.3	<0.5	14,000	10.92	NP	0.00	97.69	86.77
10/07/97	8,800	0.39	<0.3	<0.3	0.88	-	11.95	NP	0.00	97.69	85.74
01/19/98	22,000	1,300	15	20	310	-	7.85	NP	0.00	97.69	89.84
04/23/98	9,200	3.9	3.1	5.7	9.8	16,000	11.20	NP	0.00	97.69	86.49
07/20/98	750	0.41	1.4	0.47	1.8	2,800	7.36	NP	0.00	97.69	90.33
10/14/98	750	<0.3	<0.3	<0.3	<0.5	15,000	11.95	NP	0.00	97.69	85.74
01/21/99	4,700	0.32	<0.3	<0.3	<0.5	* 12,000 / 16,000	10.45	NP	0.00	97.69	87.24
04/15/99	7,900	0.59	0.69	<0.3	0.94	* 11,000 / 14,000	7.86	NP	0.00	97.69	89.83
07/26/99	5,200	<3	<3	<3	<5	*9,600 / 11,000	10.40	NP	0.00	97.69	87.29
10/13/99	<50	<0.3	<0.3	<0.3	<0.5	<5	7.09	NP	0.00	97.69	90.60
01/20/00	<50	<0.3	<0.3	<0.3	<0.5	<5	6.86	NP	0.00	97.69	90.83
04/05/00	<50	0.8	<0.25	<0.25	<0.5	*5.6 / <5	8.85	NP	0.00	97.69	88.84
07/19/00	<50	<0.3	<0.3	<0.3	<0.6	<5	8.86	NP	0.00	97.69	88.83
10/18/00	<50	<0.18	<0.14	<0.18	<0.26	<0.24	7.32	NP	0.00	97.69	90.37
01/17/01	<50	<0.18	2.0	<0.18	1.0	*39 / 39	5.40	NP	0.00	97.69	92.29
04/19/01	<50	<0.18	<0.14	<0.18	<0.26	<0.24	8.87	NP	0.00	97.69	88.82
07/18/01	<50	<0.18	<0.14	<0.18	<0.26	<0.24	7.32	NP	0.00	97.69	90.37
10/10/01	<50	<0.18	<0.14	<0.18	<0.26	<0.24	8.87	NP	0.00	97.69	88.82
01/30/02	<50	<0.18	<0.14	<0.18	<0.26	<0.24	5.78	NP	0.00	97.69	91.91
04/17/02	<50	<0.18	<0.14	<0.18	<0.26	<0.24	7.31	NP	0.00	97.69	90.38
07/31/02	138	1.1	1.2	<0.18	<0.26	<0.24	5.76	NP	0.00	97.69	91.93

TABLE 2A
GROUNDWATER DATA
THRIFTY OIL STATION #049, OAKLAND, CA.

DATE SAMPLED	ANALYTICAL PARAMETERS						DEPTH TO GROUNDWATER (feet)	DEPTH TO PRODUCT (feet)	PRODUCT THICKNESS (feet)	CASING ELEVATION (feet)	GROUNDWATER ELEVATION (feet)
	TPH (ug/L)	BENZENE (ug/L)	TOLUENE (ug/L)	EthylBenzene (ug/L)	XYLENE (ug/L)	MTBE (ug/L)					
11/14/02	<50	<0.08	<0.18	<0.17	<0.4	21	5.73	NP	0.00	97.69	91.96
01/29/03	<15	<0.04	<0.02	<0.02	<0.06	16	7.30	NP	0.00	97.69	90.39
04/23/03	<15	<0.04	<0.02	<0.02	<0.06	16	5.76	NP	0.00	97.69	91.93
07/10/03	<15	<0.22	<0.32	<0.31	<0.4	11	5.63	NP	0.00	97.69	92.06
10/20/03	13,700	4.13	<0.02	<0.02	<0.06	*6,570 / 4,920	5.61	NP	0.00	97.69	92.08
01/14/04	1,160	2.0	2.2	6.1	7.8	*1,510 / 767	4.23	NP	0.00	97.69	93.46
04/08/04	<15	<0.22	<0.32	<0.31	<0.4	<0.18	5.48	NP	0.00	97.69	92.21
07/21/04	<15	<0.22	<0.32	<0.31	<0.4	<0.18	6.66	NP	0.00	97.69	91.03
10/20/04	<15	<0.22	<0.32	<0.31	<0.4	<0.18	4.20	NP	0.00	97.69	93.49
01/19/05	<15	<0.22	<0.32	<0.31	<0.4	<0.18	5.74	NP	0.00	97.69	91.95
04/20/05	<15	<0.22	<0.32	<0.31	<0.4	<0.18	7.23	NP	0.00	97.69	90.46
07/20/05	<2.9	<0.32	<0.10	<0.24	<0.30	<0.63	6.82	NP	0.00	97.69	90.87
10/19/05	<2.9	<0.32	<0.10	<0.24	<0.30	7.0	7.26	NP	0.00	97.69	90.43
01/24/06	<2.9	<0.32	<0.10	<0.24	<0.30	<0.63	5.50	NP	0.00	97.69	92.19
MONITORING WELL #MW-4				***Screen Interval = 4 to 14 feet***							
01/09/92	-	-	-	-	-	-	5.25	NP	0.00	97.33	92.08
04/13/92	-	-	-	-	-	-	6.40	NP	0.00	97.33	90.93
10/05/92	-	-	-	-	-	-	9.95	NP	0.00	97.33	87.38
01/06/93	-	-	-	-	-	-	4.10	NP	0.00	97.33	93.23
04/26/93	-	-	-	-	-	-	4.84	NP	0.00	97.33	92.49
01/04/94	-	-	-	-	-	-	9.05	NP	0.00	97.33	88.28
04/05/94	-	-	-	-	-	-	8.10	NP	0.00	97.33	89.23
10/09/95	63,000	9,000	2,100	2,500	9,600	-	-	-	-	97.33	-
01/08/96	23,000	2,200	830	880	3,600	-	5.57	NP	0.00	97.33	91.76
04/08/96	56,000	5,000	2,500	2,600	11,000	-	5.36	NP	0.00	97.33	91.97
07/22/96	33,000	3,700	1,600	1,400	6,000	2,400	4.80	NP	0.00	97.33	92.53
10/16/96	2,800	7.8	0.60	0.41	52	2,000	5.47	NP	0.00	97.33	91.86
01/22/97	1,400	<0.3	<0.3	<0.3	<0.5	3,100	5.15	NP	0.00	97.33	92.18
04/21/97	-	-	-	-	-	-	6.36	5.30	1.06	97.33	91.77
07/14/97	-	-	-	-	-	-	5.24	5.21	0.03	97.33	92.11
10/07/97	-	-	-	-	-	-	7.82	7.80	0.02	97.33	89.53
01/15/98	-	-	-	-	-	-	6.68	6.60	0.08	97.33	90.71
04/23/98	-	-	-	-	-	-	6.36	5.30	1.06	97.33	91.77
07/20/98	<50	<0.3	<0.3	<0.3	<0.5	<5	6.05	NP	0.00	97.33	91.28

TABLE 2A
GROUNDWATER DATA
THRIFTY OIL STATION #049, OAKLAND, CA.

DATE SAMPLED	ANALYTICAL PARAMETERS						DEPTH TO GROUNDWATER (feet)	DEPTH TO PRODUCT (feet)	PRODUCT THICKNESS (feet)	CASING ELEVATION (feet)	GROUNDWATER ELEVATION (feet)
	TPH (ug/L)	BENZENE (ug/L)	TOLUENE (ug/L)	EthylBenzene (ug/L)	XYLENE (ug/L)	MTBE (ug/L)					
10/14/98	3,100	86	23	2.0	520	1,100	6.85	NP	0.00	97.33	90.48
01/21/99	9,100	3.2	5.6	1.8	130	* 24,000 / 17,000	6.10	NP	0.00	97.33	91.23
04/15/99	14,000	<0.3	0.71	<0.3	<0.5	* 20,000 / 22,000	6.05	NP	0.00	97.33	91.28
07/26/99	4,500	<6	<6	<6	<10	*8,700 / 9,800	6.07	NP	0.00	97.33	91.26
10/13/99	410	<0.3	0.63	<0.3	<0.5	660	5.54	NP	0.00	97.33	91.79
01/20/00	770	<0.3	<0.3	<0.3	<0.5	*2,400 / 1,900	5.49	NP	0.00	97.33	91.84
04/05/00	61,200	0.9	<0.25	<0.25	<0.5	*18,500 / 21,900	5.30	NP	0.00	97.33	92.03
07/19/00	96,600	1,770	1,760	2,690	8,730	21,900 / 9,740 J	5.29	NP	0.00	97.33	92.04
10/18/00	34,900	698	1,010	607	4,130	*27,800 / 15,900	6.02	NP	0.00	97.33	91.31
01/17/01	29,100	799	930	614	3,400	*24,300 / 31,400	4.88	NP	0.00	97.33	92.45
04/19/01	103,000	4,880	3,980	3,260	11,800	66,900	4.89	NP	0.00	97.33	92.44
07/18/01	52,200	3,320	2,090	440	5,520	*55,500 / 16,800	6.04	NP	0.00	97.33	91.29
10/10/01	8,580	6.1	14	5.3	70	*40,100 / 30,000	4.51	NP	0.00	97.33	92.82
01/30/02	36,500	<0.18	3.0	1.0	3.0	*43,000 / 24,900	4.51	NP	0.00	97.33	92.82
04/17/02	12,900	8.0	1.0	<0.18	1.0	16,000 / 13,600	4.51	NP	0.00	97.33	92.82
07/31/02	19,300	<0.18	1.2	1.5	2.6	*13,200 / 10,100	5.26	NP	0.00	97.33	92.07
11/14/02	36,200	1,720	940	235	6,190	8,280	5.27	NP	0.00	97.33	92.06
01/29/03	13,000	444	39	<0.4	1,200	8,160	4.50	NP	0.00	97.33	92.83
04/23/03	7,430	130	5.7	<0.2	387	5,830	4.80	NP	0.00	97.33	92.53
07/10/03	16,200	<2.2	<3.2	<3.1	<4.0	3,930	4.55	NP	0.00	97.33	92.78
10/20/03	6,040	672	384	3.4	444	*3,780 / 3,220	4.56	NP	0.00	97.33	92.77
01/14/04	WELL ABANDONED 01/2004										
MONITORING WELL #MW-4R											
02/03/04							-	-	-	-	-
04/08/04	37,900	819	424	159	3,190	18,400	4.96	NP	0.00	-	-
07/21/04	14,500	<2.2	<3.2	<3.1	39 J	18,900	6.60	NP	0.00	-	-
10/20/04	66,000	6,390	6,560	672	3,290	13,300	3.38	NP	0.00	-	-
01/19/05	17,600	513	240	855	2,230	3,310	4.32	NP	0.00	-	-
04/20/05	19,200	190	109	452	974	1,870	4.72	NP	0.00	-	-
07/07/05	11,500	233	68	369	875	2,350	-	-	-	-	-
07/20/05	11,300	251	90	154	1,460	1,280	6.08	NP	0.00	-	-
10/19/05	1,310	<0.32	<0.10	<0.24	<0.30	1,160	5.08	NP	0.00	-	-
01/24/06	41,300	391	2,310	871	5,430	388	4.98	NP		-	-

TABLE 2A
GROUNDWATER DATA
THRIFTY OIL STATION #049, OAKLAND, CA.

DATE SAMPLED	ANALYTICAL PARAMETERS						DEPTH TO GROUNDWATER (feet)	DEPTH TO PRODUCT (feet)	PRODUCT THICKNESS (feet)	CASING ELEVATION (feet)	GROUNDWATER ELEVATION (feet)
	TPH (ug/L)	BENZENE (ug/L)	TOLUENE (ug/L)	EthylBenzene (ug/L)	XYLENE (ug/L)	MTBE (ug/L)					
MONITORING WELL #MW-5				*Screen Interval = 4 to 14 feet*							
01/09/92	-	-	-	-	-	-	5.32	NP	0.00	98.85	93.53
04/13/92	-	-	-	-	-	-	4.82	NP	0.00	98.85	94.03
10/0/92	-	-	-	-	-	-	8.78	NP	0.00	98.85	90.07
01/06/93	-	-	-	-	-	-	3.46	NP	0.00	98.85	95.39
04/26/93	-	-	-	-	-	-	4.66	NP	0.00	98.85	94.19
01/04/94	-	-	-	-	-	-	6.36	NP	0.00	98.85	92.49
04/05/94	-	-	-	-	-	-	5.94	NP	0.00	98.85	92.91
07/12/95	<100	<0.5	<0.5	<0.5	<1	-	-	-	-	98.85	-
10/09/95	440	31	11	19	84	-	-	-	-	98.85	-
01/08/96	<50	<0.3	<0.3	<0.3	<0.5	-	6.63	NP	0.00	98.85	92.22
04/08/96	<50	<0.3	<0.3	<0.3	<0.5	-	5.22	NP	0.00	98.85	93.63
07/22/96	<50	<0.3	<0.3	<0.3	<0.5	<20	6.62	NP	0.00	98.85	92.23
10/16/96	<50	<0.3	<0.3	<0.3	<0.5	<20	6.12	NP	0.00	98.85	92.73
01/22/97	<50	<0.3	<0.3	<0.3	<0.5	<20	5.17	NP	0.00	98.85	93.68
04/21/97	73	2.5	0.34	0.74	3.8	21	6.64	NP	0.00	98.85	92.21
07/14/97	<50	<0.3	<0.3	<0.3	<0.5	<20	6.67	NP	0.00	98.85	92.18
10/07/97	130	<0.3	<0.3	<0.3	<0.5	-	8.20	NP	0.00	98.85	90.65
01/19/98	85	<0.3	<0.3	<0.3	<0.5	-	1.55	NP	0.00	98.85	97.30
04/23/98	220	0.39	<0.3	<0.3	<0.5	350	8.10	NP	0.00	98.85	90.75
07/20/98	<50	<0.3	<0.3	<0.3	<0.5	<5	6.30	NP	0.00	98.85	92.55
10/14/98	<50	<0.3	<0.3	<0.3	<0.5	<5	7.65	NP	0.00	98.85	91.20
01/21/99	<50	<0.3	<0.3	<0.3	<0.5	*6.7 / <5	6.15	NP	0.00	98.85	92.70
04/15/99	<50	<0.3	<0.3	<0.3	<0.5	<5	1.60	NP	0.00	98.85	97.25
07/26/99	<50	<0.3	<0.3	<0.3	<0.5	<5	6.13	NP	0.00	98.85	92.72
10/13/99	<50	<0.3	<0.3	<0.3	<0.5	<5	6.61	NP	0.00	98.85	92.24
01/20/00	<50	<0.3	<0.3	<0.3	<0.5	<5	6.14	NP	0.00	98.85	92.71
04/05/00	<50	0.5	<0.25	<0.25	<0.5	*5.4 / <5	4.58	NP	0.00	98.85	94.27
07/19/00	<50	<0.3	<0.3	<0.3	<0.6	<5	4.59	NP	0.00	98.85	94.26
10/18/00	<50	<0.18	<0.14	<0.18	<0.26	<0.24	6.28	NP	0.00	98.85	92.57
01/17/01	<50	<0.18	<0.14	<0.18	1.0	*5 / 4.8	4.58	NP	0.00	98.85	94.27
04/19/01	<50	<0.18	<0.14	<0.18	<0.26	<0.24	4.58	NP	0.00	98.85	94.27
07/18/01	<50	<0.18	<0.14	<0.18	<0.26	<0.24	6.12	NP	0.00	98.85	92.73
10/10/01	<50	<0.18	<0.14	<0.18	<0.26	<0.24	4.58	NP	0.00	98.85	94.27
01/30/02	<50	<0.18	<0.14	<0.18	<0.26	<0.24	4.48	NP	0.00	98.85	94.37
04/17/02	<50	<0.18	<0.14	<0.18	<0.26	<0.24	4.58	NP	0.00	98.85	94.27

TABLE 2A
GROUNDWATER DATA
THRIFTY OIL STATION #049, OAKLAND, CA.

DATE SAMPLED	ANALYTICAL PARAMETERS						DEPTH TO GROUNDWATER (feet)	DEPTH TO PRODUCT (feet)	PRODUCT THICKNESS (feet)	CASING ELEVATION (feet)	GROUNDWATER ELEVATION (feet)
	TPH (ug/L)	BENZENE (ug/L)	TOLUENE (ug/L)	EthylBenzene (ug/L)	XYLENE (ug/L)	MTBE (ug/L)					
07/31/02	<50	<0.18	<0.14	<0.18	<0.26	<0.24	6.10	NP	0.00	98.85	92.75
11/14/02	<50	<0.08	<0.18	<0.17	<0.4	9	6.11	NP	0.00	98.85	92.74
01/29/03	<15	<0.04	<0.02	<0.02	<0.06	7.1	4.55	NP	0.00	98.85	94.30
04/23/03	<15	<0.04	<0.02	<0.02	<0.06	7.9	3.03	NP	0.00	98.85	95.82
07/10/03	<15	<0.22	<0.32	<0.31	<0.4	7.4	5.25	NP	0.00	98.85	93.60
10/20/03	<15	<0.04	<0.02	<0.02	<0.06	*9.11 / 9.2	5.25	NP	0.00	98.85	93.60
01/14/04	<15	<0.04	<0.02	<0.02	<0.06	*8.2 / 4.1	3.03	NP	0.00	98.85	95.82
04/08/04	797	<0.22	<0.32	<0.31	<0.4	635	4.35	NP	0.00	98.85	94.50
07/21/04	548	<0.22	<0.32	<0.31	<0.4	788	5.56	NP	0.00	98.85	93.29
10/20/04	901	<0.22	<0.32	<0.31	<0.4	734	4.15	NP	0.00	98.85	94.70
01/19/05	350	<0.22	<0.32	<0.31	<0.4	860	4.57	NP	0.00	98.85	94.28
04/20/05	718	<0.22	<0.32	<0.31	<0.4	848	6.10	NP	0.00	98.85	92.75
07/20/05	255	<0.32	<0.10	<0.24	<0.30	274	5.76	NP	0.00	98.85	93.09
10/19/05	225	<0.32	<0.10	<0.24	<0.30	300	6.10	NP	0.00	98.85	92.75
01/24/06	681	<0.32	<0.10	<0.24	<0.30	334	4.34	NP	0.00	98.85	94.51
MONITORING WELL #MW-6				***Screen Interval = 4 to 14 feet***							
01/09/92	-	-	-	-	-	-	6.30	NP	0.00	99.67	93.37
04/13/92	-	-	-	-	-	-	5.47	NP	0.00	99.67	94.20
10/05/92	-	-	-	-	-	-	9.85	NP	0.00	99.67	89.82
01/06/93	-	-	-	-	-	-	4.16	NP	0.00	99.67	95.51
04/26/93	-	-	-	-	-	-	5.75	NP	0.00	99.67	93.92
01/14/94	-	-	-	-	-	-	7.20	NP	0.00	99.67	92.47
04/05/94	-	-	-	-	-	-	6.76	NP	0.00	99.67	92.91
07/10/95	<100	<0.5	0.9	<0.5	1.1	-	-	-	-	99.67	-
10/09/95	250	4.8	5.6	11	58	-	-	-	-	99.67	-
01/08/96	<50	<0.3	<0.3	<0.3	<0.5	-	6.16	NP	0.00	99.67	93.51
04/08/96	230	4.6	4.7	3.2	33	-	4.60	NP	0.00	99.67	95.07
07/22/96	<50	<0.3	<0.3	<0.3	<0.5	<20	7.30	NP	0.00	99.67	92.37
10/16/96	<50	<0.3	<0.3	<0.3	<0.5	<20	5.82	NP	0.00	99.67	93.85
01/22/97	<50	<0.3	<0.3	<0.3	<0.5	<20	4.40	NP	0.00	99.67	95.27
04/21/97	130	<0.3	<0.3	<0.3	<0.5	<20	7.10	NP	0.00	99.67	92.57
07/14/97	<50	<0.3	<0.3	<0.3	0.70	<20	7.35	NP	0.00	99.67	92.32
10/07/97	<50	0.78	0.3	<0.3	<0.5	-	6.98	NP	0.00	99.67	92.69
01/23/98	<50	<0.3	<0.3	<0.3	<0.5	-	2.35	NP	0.00	99.67	97.32

TABLE 2A
GROUNDWATER DATA
THRIFTY OIL STATION #049, OAKLAND, CA.

DATE SAMPLED	ANALYTICAL PARAMETERS						DEPTH TO GROUNDWATER (feet)	DEPTH TO PRODUCT (feet)	PRODUCT THICKNESS (feet)	CASING ELEVATION (feet)	GROUNDWATER ELEVATION (feet)
	TPH (ug/L)	BENZENE (ug/L)	TOLUENE (ug/L)	EthylBenzene (ug/L)	XYLENE (ug/L)	MTBE (ug/L)					
04/23/98	<50	<0.3	<0.3	<0.3	<0.5	<20	6.90	NP	0.00	99.67	92.77
07/20/98	<50	<0.3	1.1	<0.3	1.4	<5	5.45	NP	0.00	99.67	94.22
10/14/98	<50	<0.3	<0.3	<0.3	<0.5	<5	4.95	NP	0.00	99.67	94.72
01/21/99	<50	0.35	0.62	<0.3	<0.5	<5	3.90	NP	0.00	99.67	95.77
04/15/99	<50	<0.3	<0.3	<0.3	<0.5	<5	2.35	NP	0.00	99.67	97.32
07/26/99	1,000	<0.3	<0.3	<0.3	<0.5	*2,300 / 3,900	3.93	NP	0.00	99.67	95.74
10/13/99	<50	<0.3	<0.3	<0.3	<0.5	<5	6.15	NP	0.00	99.67	93.52
01/20/00	<50	<0.3	<0.3	<0.3	<0.5	*42 / 41	5.84	NP	0.00	99.67	93.83
04/05/00	4,600	338	2.8	1.2	55.2	*282 / 230	3.89	NP	0.00	99.67	95.78
07/19/00	60	1.0	2.0	<0.3	<0.6	*87 / 76	3.07	NP	0.00	99.67	96.60
10/18/00	-	-	-	-	-	-	-	-	-	99.67	-
01/17/01	103	<0.18	2.0	<0.18	3.0	*78 / 106	3.87	NP	0.00	99.67	95.80
04/19/01	<50	<0.18	<0.14	<0.18	<0.26	<0.24	3.86	NP	0.00	99.67	95.81
07/18/01	<50	<0.18	<0.14	<0.18	<0.26	<0.24	5.40	NP	0.00	99.67	94.27
10/10/01	<50	<0.18	<0.14	<0.18	<0.26	<0.24	3.86	NP	0.00	99.67	95.81
01/30/02	<50	<0.18	<0.14	<0.18	<0.26	<0.24	3.86	NP	0.00	99.67	95.81
04/17/02	<50	<0.18	<0.14	<0.18	<0.26	<0.24	3.86	NP	0.00	99.67	95.81
07/31/02	<50	<0.18	<0.14	<0.18	<0.26	<0.24	5.40	NP	0.00	99.67	94.27
11/14/02	140	3.2	<0.18	5.2	<0.4	111	5.42	NP	0.00	99.67	94.25
01/29/03	694 J	<0.04	<0.02	<0.02	<0.06	630	3.88	NP	0.00	99.67	95.79
04/23/03	1,550	<0.04	<0.02	<0.02	<0.06	578	3.86	NP	0.00	99.67	95.81
07/10/03	1,670	<0.22	<0.32	<0.31	<0.4	509	5.31	NP	0.00	99.67	94.36
10/20/03	1,320	<0.04	<0.02	<0.02	<0.06	*656 / 662	5.30	NP	0.00	99.67	94.37
01/14/04	272	<0.04	<0.02	<0.02	<0.06	*304 / 180	3.82	NP	0.00	99.67	95.85
04/08/04	<15	<0.22	<0.32	<0.31	<0.4	<0.18	5.18	NP	0.00	99.67	94.49
07/21/04	<15	<0.22	<0.32	<0.31	<0.4	<0.18	6.42	NP	0.00	99.67	93.25
10/20/04	<15	<0.22	<0.32	<0.31	<0.4	<0.18	5.62	NP	0.00	99.67	94.05
01/19/05	<15	<0.22	<0.32	<0.31	<0.4	<0.18	5.40	NP	0.00	99.67	94.27
04/20/05	<15	<0.22	<0.32	<0.31	<0.4	<0.18	5.41	NP	0.00	99.67	94.26
07/20/05	<2.9	<0.32	<0.10	<0.24	<0.30	<0.63	4.07	NP	0.00	99.67	95.60
10/19/05	<2.9	<0.32	<0.10	<0.24	<0.30	<0.63	3.86	NP	0.00	99.67	95.81
01/24/06	<2.9	<0.32	<0.10	<0.24	<0.30	<0.63	5.20	NP	0.00	99.67	94.47
MONITORING WELL #MW-7				***Screen Interval = 4 to 14 feet***							
01/09/92	-	-	-	-	-	-	6.30	NP	0.00	99.02	92.72

TABLE 2A
GROUNDWATER DATA
THRIFTY OIL STATION #049, OAKLAND, CA.

DATE SAMPLED	ANALYTICAL PARAMETERS						DEPTH TO GROUNDWATER (feet)	DEPTH TO PRODUCT (feet)	PRODUCT THICKNESS (feet)	CASING ELEVATION (feet)	GROUNDWATER ELEVATION (feet)
	TPH (ug/L)	BENZENE (ug/L)	TOLUENE (ug/L)	EthylBenzene (ug/L)	XYLENE (ug/L)	MTBE (ug/L)					
04/13/92	-	-	-	-	-	-	6.68	NP	0.00	99.02	92.34
10/05/92	-	-	-	-	-	-	9.60	NP	0.00	99.02	89.42
01/06/93	-	-	-	-	-	-	13.90	NP	0.00	99.02	85.12
04/26/93	-	-	-	-	-	-	5.55	NP	0.00	99.02	93.47
01/04/94	-	-	-	-	-	-	7.58	NP	0.00	99.02	91.44
04/05/94	-	-	-	-	-	-	6.66	NP	0.00	99.02	92.36
10/09/95	27,000	2,400	140	1,700	2,700	-	-	-	-	99.02	-
01/08/96	13,000	800	42	540	860	-	6.94	NP	0.00	99.02	92.08
04/08/94	9,100	840	31	690	1,200	-	5.48	NP	0.00	99.02	93.54
07/22/96	11,000	1,700	22	660	700	840	6.60	NP	0.00	99.02	92.42
10/16/96	180	<0.3	<0.3	<0.3	<0.5	270	6.42	NP	0.00	99.02	92.60
01/22/97	130	<0.3	<0.3	<0.3	<0.5	470	5.70	NP	0.00	99.02	93.32
04/21/97	10,000	1,400	27	820	490	1,100	5.30	NP	0.00	99.02	93.72
07/14/97	8,200	660	15	230	270	560	7.90	NP	0.00	99.02	91.12
10/07/97	7,700	480	15	8.4	350	-	7.70	NP	0.00	99.02	91.32
01/19/98	1,400	20	0.74	0.46	4.4	-	6.05	NP	0.00	99.02	92.97
04/23/98	590	<0.3	<0.3	<0.3	<0.5	1,700	7.60	NP	0.00	99.02	91.42
07/20/98	4,900	570	150	300	500	1,500	5.30	NP	0.00	99.02	93.72
10/14/98	1,100	1.0	<0.3	<0.3	5.3	2,000	8.60	NP	0.00	99.02	90.42
01/21/99	570	0.32	<0.3	<0.3	<0.5	* 1,500 / 1,700	6.70	NP	0.00	99.02	92.32
04/15/99	770	<0.3	<0.3	<0.3	<0.5	* 1,400 / 1,200	6.07	NP	0.00	99.02	92.95
07/26/99	500	<0.3	<0.3	<0.3	<0.5	*710 / 950	7.86	NP	0.00	99.02	91.16
10/13/99	<50	<0.3	0.44	<0.3	0.62	<5	6.93	NP	0.00	99.02	92.09
01/20/00	<50	<0.3	<0.3	<0.3	<0.5	*5 / <5	6.44	NP	0.00	99.02	92.58
04/05/00	5,670	415	19	1.7	60.1	*329 / 194	7.86	NP	0.00	99.02	91.16
07/19/00	1,350	14	<3	<3	10	*237 / 120	7.10	NP	0.00	99.02	91.92
10/18/00	<50	<0.18	<0.14	<0.18	<0.26	*63 / 41.1	5.28	NP	0.00	99.02	93.74
01/17/01	<50	<0.18	<0.14	<0.18	3.0	*57 / 81	5.27	NP	0.00	99.02	93.75
04/19/01	<50	<0.18	<0.14	<0.18	<0.26	66	7.86	NP	0.00	99.02	91.16
07/18/01	<50	<0.18	<0.14	<0.18	<0.26	*9 / 3.5	6.30	NP	0.00	99.02	92.72
10/10/01	<50	<0.18	<0.14	<0.18	<0.26	*9.4 / 7.9	8.23	NP	0.00	99.02	90.79
01/30/02	2,590	40	9.0	8.0	6.0	*45 / 22	5.14	NP	0.00	99.02	93.88
04/17/02	51	<0.18	<0.14	<0.18	<0.26	*58 / 45	5.53	NP	0.00	99.02	93.49
07/31/02	<50	<0.18	<0.14	<0.18	<0.26	*39 / 33	5.93	NP	0.00	99.02	93.09
11/14/02	<50	<0.08	<0.18	<0.17	<0.4	6.8	5.92	NP	0.00	99.02	93.10
01/29/03	<15	<0.04	<0.02	<0.02	<0.06	<0.03	5.51	NP	0.00	99.02	93.51

TABLE 2A
GROUNDWATER DATA
THRIFTY OIL STATION #049, OAKLAND, CA.

DATE SAMPLED	ANALYTICAL PARAMETERS						DEPTH TO GROUNDWATER (feet)	DEPTH TO PRODUCT (feet)	PRODUCT THICKNESS (feet)	CASING ELEVATION (feet)	GROUNDWATER ELEVATION (feet)
	TPH (ug/L)	BENZENE (ug/L)	TOLUENE (ug/L)	EthylBenzene (ug/L)	XYLENE (ug/L)	MTBE (ug/L)					
04/23/03	<15	<0.04	<0.02	<0.02	<0.06	<0.03	5.14	NP	0.00	99.02	93.88
07/10/03	<15	<0.22	<0.32	<0.31	<0.4	<0.18	5.03	NP	0.00	99.02	93.99
10/20/03	<15	<0.04	<0.02	<0.02	<0.06	<0.03	5.01	NP	0.00	99.02	94.01
01/14/04	<15	<0.04	<0.02	<0.02	<0.06	<0.03	4.38	NP	0.00	99.02	94.64
04/08/04	<15	<0.22	<0.32	<0.31	<0.4	<0.18	4.86	NP	0.00	99.02	94.16
07/21/04	<15	<0.22	<0.32	<0.31	<0.4	<0.18	6.82	NP	0.00	99.02	92.20
10/20/04	<15	<0.22	<0.32	<0.31	<0.4	<0.18	5.71	NP	0.00	99.02	93.31
01/19/05	<15	<0.22	<0.32	<0.31	<0.4	<0.18	4.77	NP	0.00	99.02	94.25
04/20/05	<15	<0.22	<0.32	<0.31	<0.4	<0.18	5.54	NP	0.00	99.02	93.48
07/20/05	<2.9	<0.32	<0.10	<0.24	<0.30	<0.63	6.80	NP	0.00	99.02	92.22
10/19/05	<2.9	<0.32	<0.10	<0.24	<0.30	<0.63	5.89	NP	0.00	99.02	93.13
01/24/06	<2.9	<0.32	<0.10	<0.24	<0.30	<0.63	4.89	NP	0.00	99.02	94.13
MONITORING WELL #RW-1											
01/09/92	-	-	-	-	-	-	14.00	NP	0.00	-	-
04/13/92	-	-	-	-	-	-	14.00	NP	0.00	-	-
10/05/92	-	-	-	-	-	-	15.05	NP	0.00	-	-
01/06/93	-	-	-	-	-	-	5.43	NP	0.00	-	-
04/26/93	-	-	-	-	-	-	13.20	NP	0.00	-	-
0104/94	-	-	-	-	-	-	14.30	NP	0.00	-	-
04/05/94	-	-	-	-	-	-	14.13	NP	0.00	-	-
01/08/96	-	-	-	-	-	-	14.22	NP	0.00	-	-
04/08/96	-	-	-	-	-	-	14.33	NP	0.00	-	-
07/22/96	8,100	530	84	120	860	-	14.27	NP	0.00	-	-
10/16/96	-	-	-	-	-	-	13.10	NP	0.00	-	-
01/22/97	-	-	-	-	-	-	16.97	NP	0.00	-	-
10/07/97	-	-	-	-	-	-	14.20	NP	0.00	-	-
01/15/98	-	-	-	-	-	-	15.60	NP	0.00	-	-
04/23/98	81,000	0.72	1.4	3.2	5.7	270,000	14.20	NP	0.00	-	-
07/20/98	-	-	-	-	-	-	14.30	NP	0.00	-	-
10/14/98	-	-	-	-	-	-	11.20	NP	0.00	-	-
01/21/99	-	-	-	-	-	-	-	-	-	-	-
04/15/99	-	-	-	-	-	-	13.10	NP	0.00	-	-
07/26/99	4,400	<3	<3	<3	<5	*6,800 / 9,000	13.83	NP	0.00	-	-
10/13/99	-	-	-	-	-	-	-	-	-	-	-

TABLE 2A
GROUNDWATER DATA
THRIFTY OIL STATION #049, OAKLAND, CA.

DATE SAMPLED	ANALYTICAL PARAMETERS						DEPTH TO GROUNDWATER (feet)	DEPTH TO PRODUCT (feet)	PRODUCT THICKNESS (feet)	CASING ELEVATION (feet)	GROUNDWATER ELEVATION (feet)
	TPH (ug/L)	BENZENE (ug/L)	TOLUENE (ug/L)	EthylBenzene (ug/L)	XYLENE (ug/L)	MTBE (ug/L)					
01/20/00	-	-	-	-	-	-	13.22	NP	0.00	-	-
04/05/00	-	-	-	-	-	-	-	-	-	-	-
07/19/00	-	-	-	-	-	-	13.25	NP	0.00	-	-
10/18/00	-	-	-	-	-	-	11.14	NP	0.00	-	-
01/17/01	-	-	-	-	-	-	11.12	NP	0.00	-	-
04/19/01	-	-	-	-	-	-	-	-	-	-	-
07/18/01	-	-	-	-	-	-	11.20	NP	0.00	-	-
10/10/01	-	-	-	-	-	-	11.20	NP	0.00	-	-
01/30/02	-	-	-	-	-	-	12.30	NP	0.00	-	-
04/17/02	-	-	-	-	-	-	14.30	NP	0.00	-	-
07/31/02	-	-	-	-	-	-	14.21	NP	0.00	-	-
11/14/02	-	-	-	-	-	-	14.13	NP	0.00	-	-
01/29/03	-	-	-	-	-	-	13.12	NP	0.00	-	-
04/23/03	-	-	-	-	-	-	No Access	-	-	-	-
07/10/03	-	-	-	-	-	-	No Access	-	-	-	-
10/20/03	-	-	-	-	-	-	No Access	-	-	-	-
01/14/04	WELL ABANDONED 01/2004										
MONITORING WELL #RW-1R											
02/03/04							-	-	-	-	-
04/08/04	6,740	42	32 J	<3.1	1,160	239	4.76	NP	0.00	-	-
07/21/04	118	<0.22	<0.32	<0.31	<0.4	107	6.85	NP	0.00	-	-
10/20/04	29,900	3,850	4,010	381	1,920	103	4.28	NP	0.00	-	-
01/19/05	13,400	272	243	24 J	2,230	2,110	4.54	NP	0.00	-	-
04/20/05	1,220	<0.22	<0.32	<0.31	<0.4	1,580	4.95	NP	0.00	-	-
07/07/05	6,490	410	74	84	620	2,560	-	-	-	-	-
07/20/05	4,900	133	52	<2.4	750	465	6.32	NP	0.00	-	-
10/19/05	572	<0.32	<0.10	<0.24	<0.30	417	5.68	NP	0.00	-	-
01/24/06	14,500	192	1,150	342	2,980	432	4.78	NP	0.00	-	-

NOTE:

* MTBE 8020 / 8260
ND = Nondetectable
NP = No free hydrocarbon product
" - " = Not analyzed / Not available
BPOs = SFRWQCB's Basin Plan Objectives for groundwater

Benzene, toluene, ethlybenzene, and xylene analyzed by EPA method 8020.
Total petroleum hydrocarbons (TPH) analyzed by EPA method 8015 modified for gasoline
Methyl-tert Butyl Ether (MTBE) analyzed by EPA method 8020 or 8260
On 7/21/04, 4/08/04, 7/10/03 & 11/14/02, BTEX and MTBE done by 8260B

TABLE 2B
ADDITIONAL GROUNDWATER DATA
THRIFTY OIL STATION # 049, OAKLAND, CA.

DATE SAMPLED	Di-isopropyl Ether (DIPE) (ug/L)	Ethyl-Tert-Butyl Ether (ETBE) (ug/L)	Tert-Amyl Methyl Ether (TAME) (ug/L)	Tert-Butyl Alcohol (TBA) (ug/L)	1,2-Dichloroethane (1,2-DCA) (ug/L)	Ethanol (ug/L)	Methanol (ug/L)
MONITORING WELL # MW-1							
11/14/02	<0.2	<0.12	<0.16	<10	<0.13	-	-
01/29/03	-	-	-	-	-	-	-
04/23/03	-	-	-	-	-	-	-
07/10/03	<0.29	<0.17	<0.28	<10	-	-	-
10/20/03	-	-	-	-	-	-	-
01/14/04	-	-	-	-	-	-	-
04/08/04	-	-	-	-	-	-	-
07/21/04	-	-	-	-	-	-	-
10/20/04	-	-	-	-	-	-	-
01/19/05	-	-	-	-	-	-	-
04/20/05	-	-	-	-	-	-	-
07/20/05	<0.29	<0.17	<0.28	<10	-	<20	<20
10/19/05	<0.29	<0.17	<0.28	12	-	<20	<20
01/24/06	<0.29	<0.17	<0.28	<10	-	<20	<20
MONITORING WELL #MW-2							
11/14/02	<2.0	<1.2	111	341	<1.3	-	-
01/29/03	-	-	-	-	-	-	-
04/23/03	-	-	-	-	-	-	-
07/10/03	<2.9	<1.7	59	449	-	-	-
10/20/03	-	-	-	-	-	-	-
	WELL ABANDONED 01/2004						
MONITORING WELL #MW-2R							
02/03/04	<0.29	<0.17	76	1,610	-	-	-
04/08/04	-	-	-	-	-	-	-
07/21/04	-	-	-	-		-	
10/20/04	-	-	-	-	-	-	-
01/19/05	-	-	-	-	-	-	-
04/20/05	-	-	-	-	-	-	-
07/07/05	<0.29	<0.17	37	1,130	-	-	-
07/20/05	<0.29	<0.17	95	151	-	<20	<20
10/19/05	<0.29	<0.17	13	33	-	<20	<20
01/24/06	<0.29	<0.17	<0.28	42	-	<20	<20
MONITORING WELL # MW-3							
11/14/02	<0.2	<0.12	<0.16	<10	<0.13	-	-
01/29/03	-	-	-	-	-	-	-
04/23/03	-	-	-	-	-	-	-
07/10/03	<0.29	<0.17	<0.28	<10	-	-	-
10/20/03	-	-	-	-	-	-	-
01/14/04	-	-	-	-	-	-	-
04/08/04	-	-	-	-	-	-	-
07/21/04	-	-	-	-	-	-	-
10/20/04	-	-	-	-	-	-	-
01/19/05	-	-	-	-	-	-	-
04/20/05	-	-	-	-	-	-	-
07/20/05	<0.29	<0.17	<0.28	<10	-	<20	<20
10/19/05	<0.29	<0.17	<0.28	<10	-	<20	<20
01/24/06	<0.29	<0.17	<0.28	<10	-	<20	<20
MONITORING WELL # MW-4							
11/14/02	<2.0	<1.2	106	281	<1.3	-	-
01/29/03	-	-	-	-	-	-	-
04/23/03	-	-	-	-	-	-	-
07/10/03	<2.9	<1.7	35	<100	-	-	-
10/20/03	-	-	-	-	-	-	-
	WELL ABANDONED 01/2004						
MONITORING WELL # MW-4R							

TABLE 2B
ADDITIONAL GROUNDWATER DATA
THRIFTY OIL STATION # 049, OAKLAND, CA.

DATE SAMPLED	Di-isopropyl Ether (DIPE) (ug/L)	Ethyl-Tert-Butyl Ether (ETBE) (ug/L)	Tert-Amyl Methyl Ether (TAME) (ug/L)	Tert-Butyl Alcohol (TBA) (ug/L)	1,2-Dichloroethane (1,2-DCA) (ug/L)	Ethanol (ug/L)	Methanol (ug/L)
02/03/04	<0.29	<0.17	209	1,350	-	-	-
04/08/04	-	-	-	-	-	-	-
07/21/04	-	-	-	-	-	-	-
10/20/04	-	-	-	-	-	-	-
01/19/05	-	-	-	-	-	-	-
04/20/05	-	-	-	-	-	-	-
07/07/05	<0.29	<0.17	57	167	-	-	-
07/20/05	<0.29	<0.17	<0.28	369	-	<20	<20
10/19/05	<0.29	<0.17	39	335	-	<20	<20
01/24/06	<0.29	<0.17	<0.28	<10	-	<20	<20
MONITORING WELL # MW-5							
11/14/02	<0.2	<0.12	<0.16	<10	<0.13	-	-
01/29/03	-	-	-	-	-	-	-
04/23/03	-	-	-	-	-	-	-
07/10/03	<0.29	<0.17	<0.28	<10	-	-	-
10/20/03	-	-	-	-	-	-	-
01/14/04	-	-	-	-	-	-	-
04/08/04	-	-	-	-	-	-	-
07/21/04	-	-	-	-	-	-	-
10/20/04	-	-	-	-	-	-	-
01/19/05	-	-	-	-	-	-	-
04/20/05	-	-	-	-	-	-	-
07/20/05	<0.29	<0.17	<0.28	<10	-	<20	<20
10/19/05	<0.29	<0.17	1.4	<10	-	<20	<20
01/24/06	<0.29	<0.17	1.2	19	-	<20	<20
MONITORING WELL # MW-6							
11/14/02	<0.2	<0.12	<0.16	<10	<0.13	-	-
01/29/03	-	-	-	-	-	-	-
04/23/03	-	-	-	-	-	-	-
07/10/03	<0.29	<0.17	2.1	38	-	-	-
10/20/03	-	-	-	-	-	-	-
01/14/04	-	-	-	-	-	-	-
04/08/04	-	-	-	-	-	-	-
07/21/04	-	-	-	-	-		-
10/20/04	-	-	-	-	-	-	-
01/19/05	-	-	-	-	-	-	-
04/20/05	-	-	-	-	-	-	-
07/20/05	<0.29	<0.17	<0.28	<10	-	<20	<20
10/19/05	<0.29	<0.17	<0.28	<10	-	<20	<20
01/24/06	<0.29	<0.17	<0.28	<10	-	<20	<20
MONITORING WELL # MW-7							
11/14/02	<0.2	<0.12	<0.16	<10	<0.13	-	-
01/29/03	-	-	-	-	-	-	-
04/23/03	-	-	-	-	-	-	-
07/10/03	<0.29	<0.17	<0.28	<10	-	-	-
10/20/03	-	-	-	-	-	-	-
01/14/04	-	-	-	-	-	-	-
04/08/04	-	-	-	-	-	-	-
07/21/04	-	-	-	-	-	-	-
10/20/04	-	-	-	-	-	-	-
01/19/05	-	-	-	-	-	-	-
04/20/05	-	-	-	-	-	-	-
07/20/05	<0.29	<0.17	<0.28	<10	-	<20	<20
10/19/05	<0.29	<0.17	<0.28	<10	-	<20	<20
01/24/06	<0.29	<0.17	<0.28	<10	-	<20	<20
MONITORING WELL # RW-1R							

TABLE 2B
ADDITIONAL GROUNDWATER DATA
THRIFTY OIL STATION # 049, OAKLAND, CA.

DATE SAMPLED	Di-isopropyl Ether (DIPE) (ug/L)	Ethyl-Tert-Butyl Ether (ETBE) (ug/L)	Tert-Amyl Methyl Ether (TAME) (ug/L)	Tert-Butyl Alcohol (TBA) (ug/L)	1,2-Dichloroethane (1,2-DCA) (ug/L)	Ethanol (ug/L)	Methanol (ug/L)
02/03/04	<0.29	<0.17	53	1,370	-	-	-
04/08/04	-	-	-	-	-	-	-
07/21/04	-	-	-	-	-	-	-
10/20/04	-	-	-	-	-	-	-
01/19/05	-	-	-	-	-	-	-
04/20/05	-	-	-	-	-	-	-
07/07/05	<0.29	<0.17	71	1,740	-	-	-
07/20/05	<0.29	<0.17	<0.28	<10	_	<20	<20
10/19/05	<0.29	<0.17	9.6	65	-	<20	<20
01/24/06	<2.9	<1.7	<2.8	156	-	<20	<20

NOTE: DIPE, ETBE, TAME, TBA analyzed by EPA Method 8260B

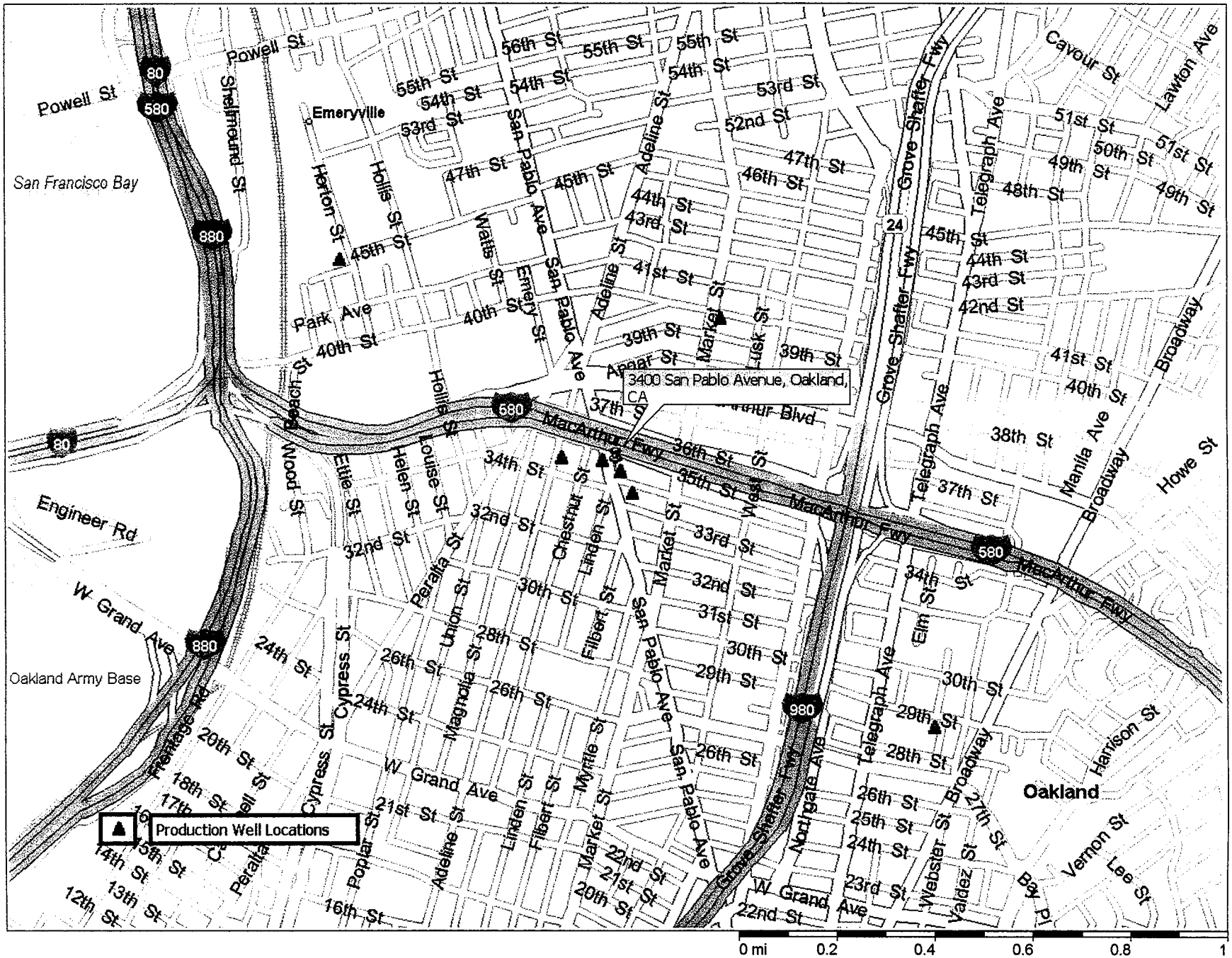
TABLE 3
WELL COMPLETION DETAILS
Thrifty Oil Station #049 - Oakland, CA
GHC - 1330

Well ID	Date Constructed	Total Depth	Casing Diameter	Screen Interval	TOC Elevation *
MW-1	07/31/86	25'	2-inch	5-25'	98.03
MW-2	07/31/86	25'	2-inch	5-25'	abandoned
MW-3	07/31/86	25'	2-inch	5-25'	97.69
MW-4	11/14/86	14'	4-inch	4-14'	abandoned
MW-5	11/14/86	14'	2-inch	4-14'	93.53
MW-6	11/14/86	14'	2-inch	4-14'	93.37
MW-7	11/14/86	14'	4-inch	4-14'	92.72
RW-1	1992	20'	4-inch	5-20'	abandoned
RW-1R	01/15/04	20'	4-inch	5-20'	-
MW-2R	01/15/04	20'	2-inch	5-20'	-
MW-4R	01/15/04	20'	4-inch	5-20'	-

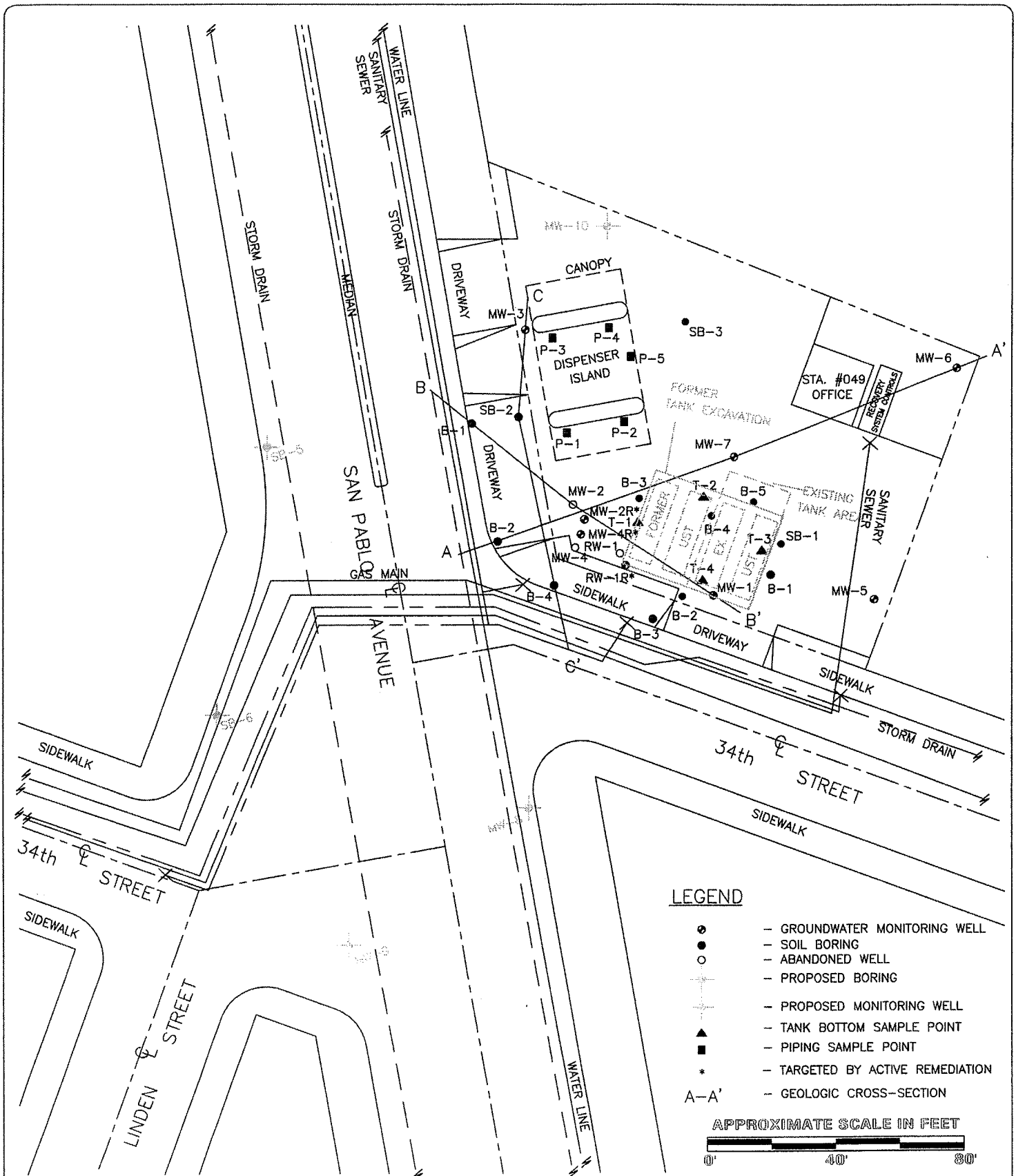
NOTES: * Feet above mean sea level
-- = Not surveyed

FIGURES

Figure 1- Site Vicinity with Production Well Locations



GeoHydrologic Consultants, Inc.



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DATE: 02/18/06

FIGURE 2
SITE PLAN
THRIFTY SERVICE STATION #049
3400 San Pablo Avenue
Oakland, CA

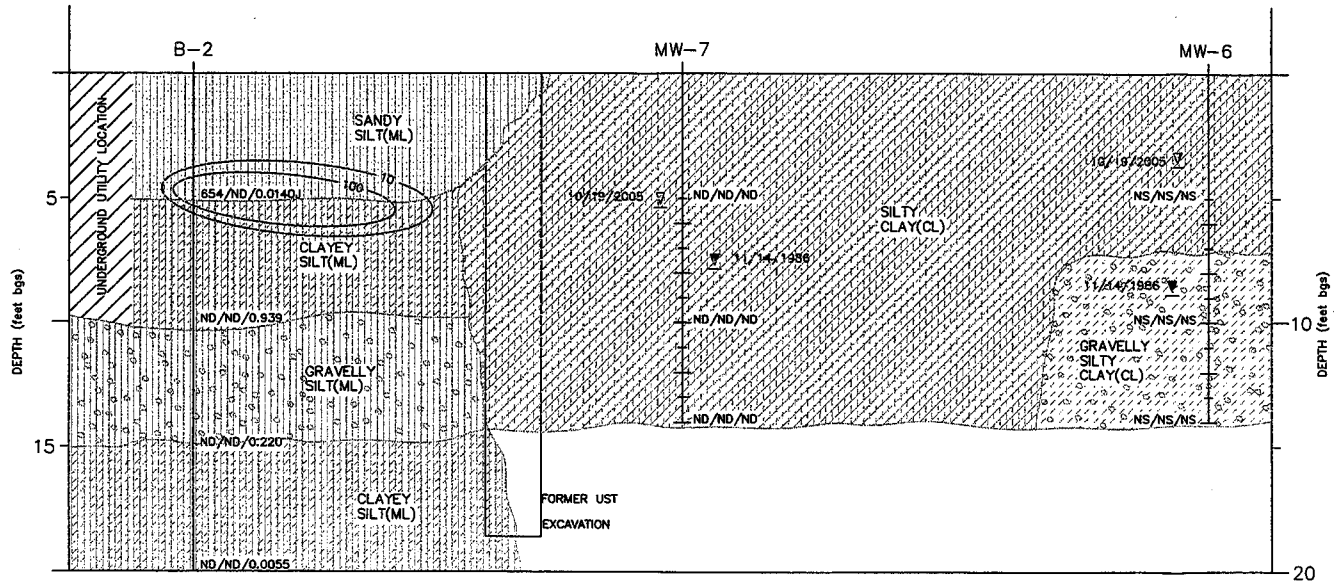
VIEW NORTHWEST

A

A'

SOUTHWEST

NORTHEAST



HORIZONTAL 1"=20'
VERTICAL 1"=5'

APPROXIMATE SCALE IN FEET

0' 20' 40'

LEGEND

▼ – RECENT ENCOUNTERED

▽ – MOST RECENT WATER LEVEL (DATE)

ND/ND/ND – TPHg/BENZENE/MTBE CONCENTRATIONS in mg/Kg

ND – NOT DETECTED ABOVE LABORATORY REPORTING LIMITS

NS – NOT SAMPLED

— 100 — – TPHg IN SOIL CONTOUR IN mg/Kg

GHC: 1330

DATE: 04/27/06

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FIGURE 3A
GEOLOGIC CROSS-SECTION A-A'
THRIFTY SERVICE STATION #049
3400 San Pablo Avenue
Oakland, CA

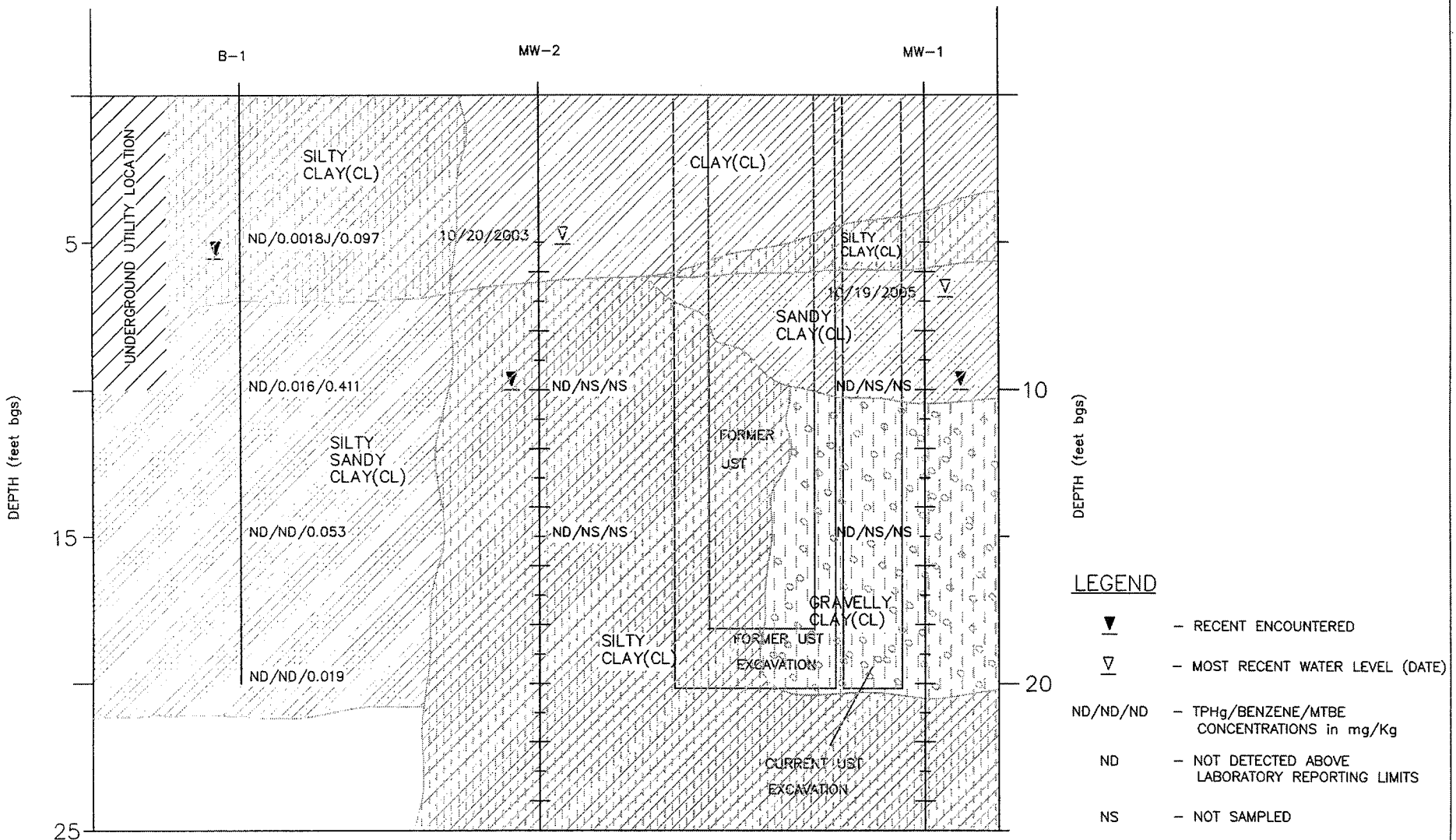
VIEW NORTHEAST

B

B'

NORTHWEST

SOUTHEAST



LEGEND

▼ – RECENT ENCOUNTERED

▽ – MOST RECENT WATER LEVEL (DATE)

ND/ND/ND – TPHg/BENZENE/MTBE CONCENTRATIONS in mg/Kg

ND – NOT DETECTED ABOVE LABORATORY REPORTING LIMITS

NS – NOT SAMPLED

HORIZONTAL 1"=20'
VERTICAL 1"=5'

APPROXIMATE SCALE IN FEET

0' 20' 40'

GHC: 1330

DATE: 04/27/06

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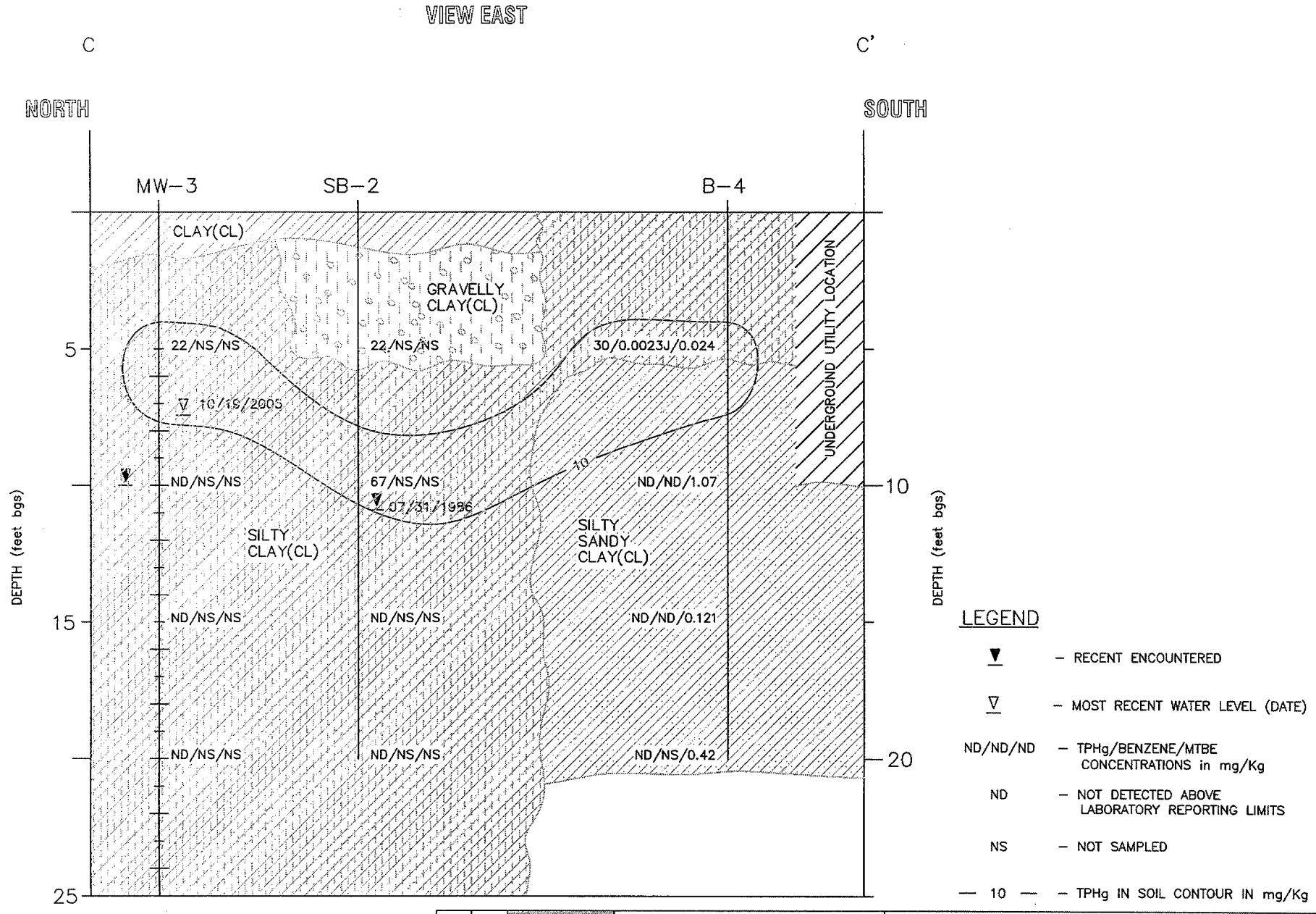
FIGURE 3B
GEOLOGIC CROSS-SECTION B-B'
THRIFTY SERVICE STATION #049
3400 San Pablo Avenue
Oakland, CA



GHC: 1330

DATE: 04/27/06

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FIGURE 3C
GEOLOGIC CROSS-SECTION C-C'
THRIFTY SERVICE STATION #049
3400 San Pablo Avenue
Oakland, CA

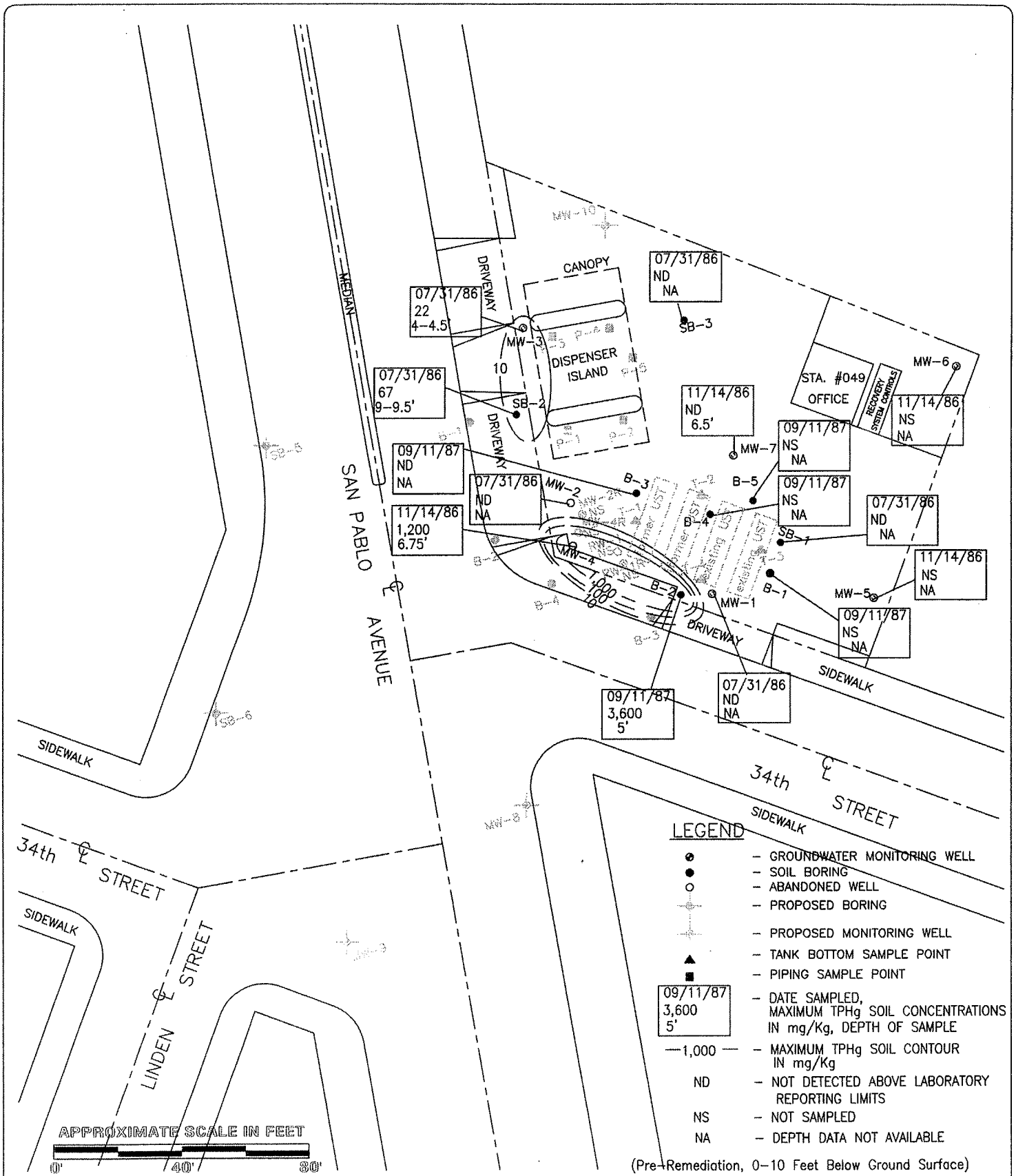

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FIGURE 4A
DISTRIBUTION OF TPHg IN SOIL
THRIFTY SERVICE STATION #049
3400 San Pablo Avenue
Oakland, CA

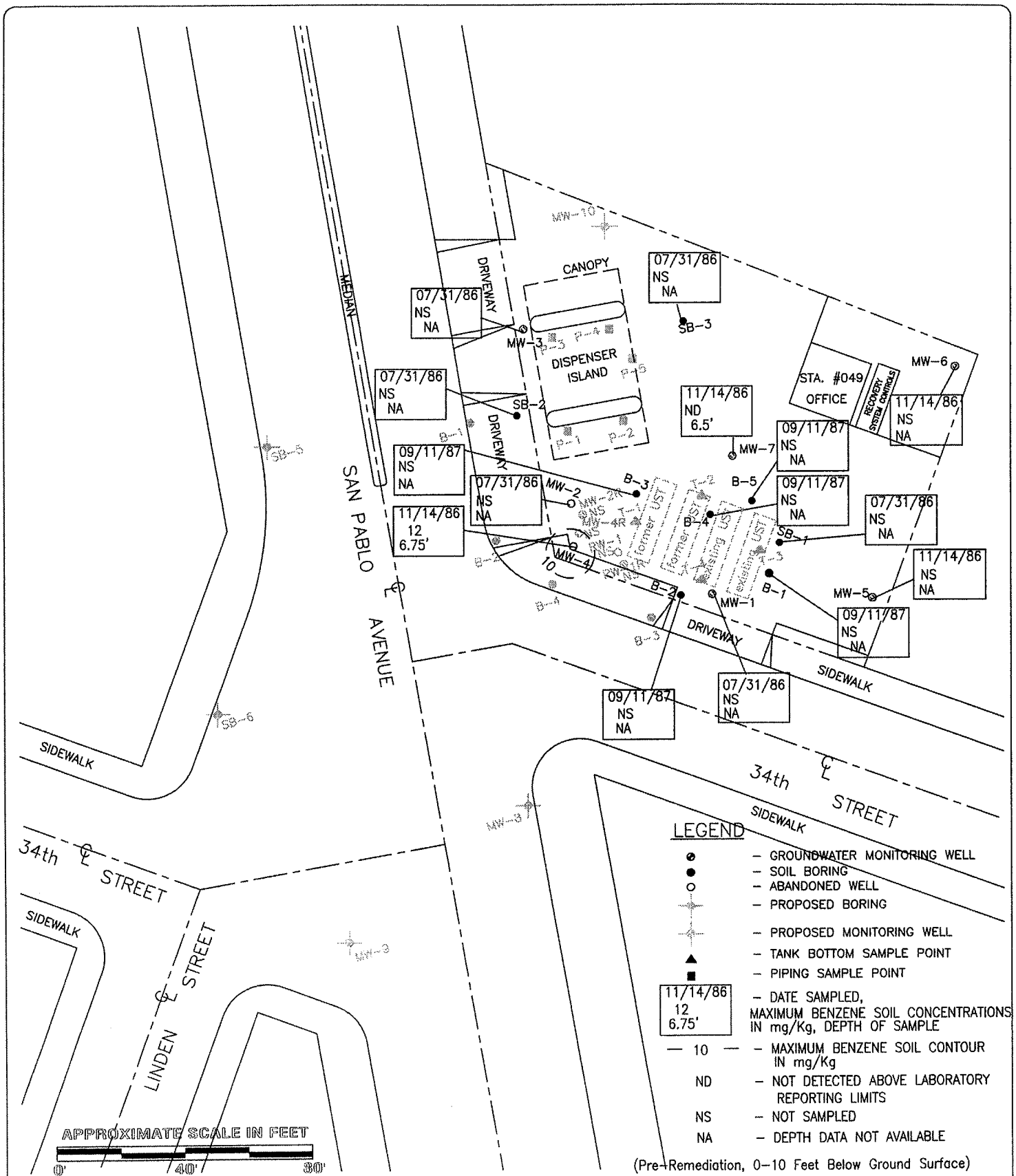

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FIGURE 4B
DISTRIBUTION OF BENZENE IN SOIL
THRIFTY SERVICE STATION #049
3400 San Pablo Avenue
Oakland, CA

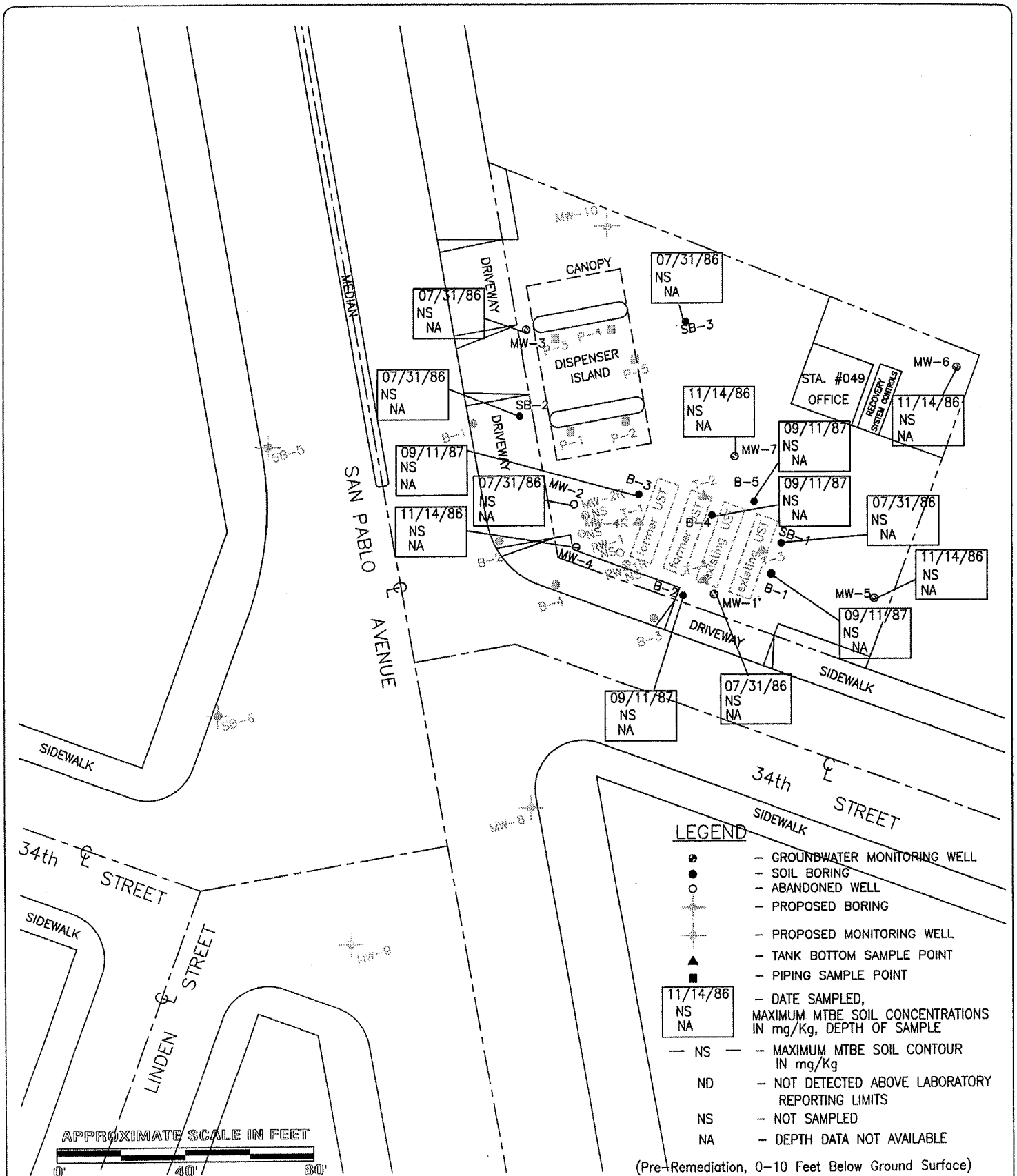

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FIGURE 4C
DISTRIBUTION OF MTBE IN SOIL
THRIFTY SERVICE STATION #049
3400 San Pablo Avenue
Oakland, CA

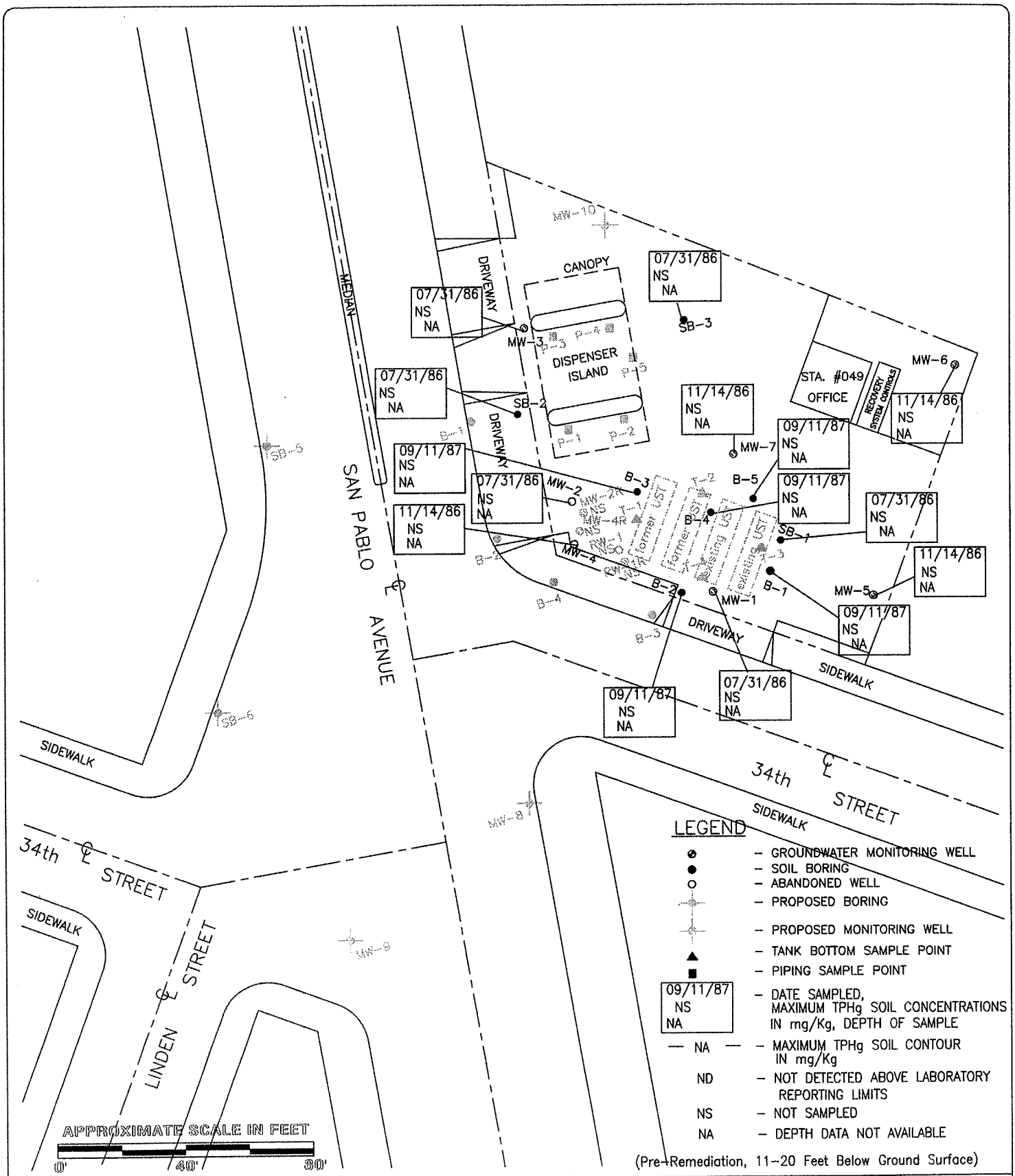

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FIGURE 4D
DISTRIBUTION OF TPHg IN SOIL
THRIFTY SERVICE STATION #049
3400 San Pablo Avenue
Oakland, CA

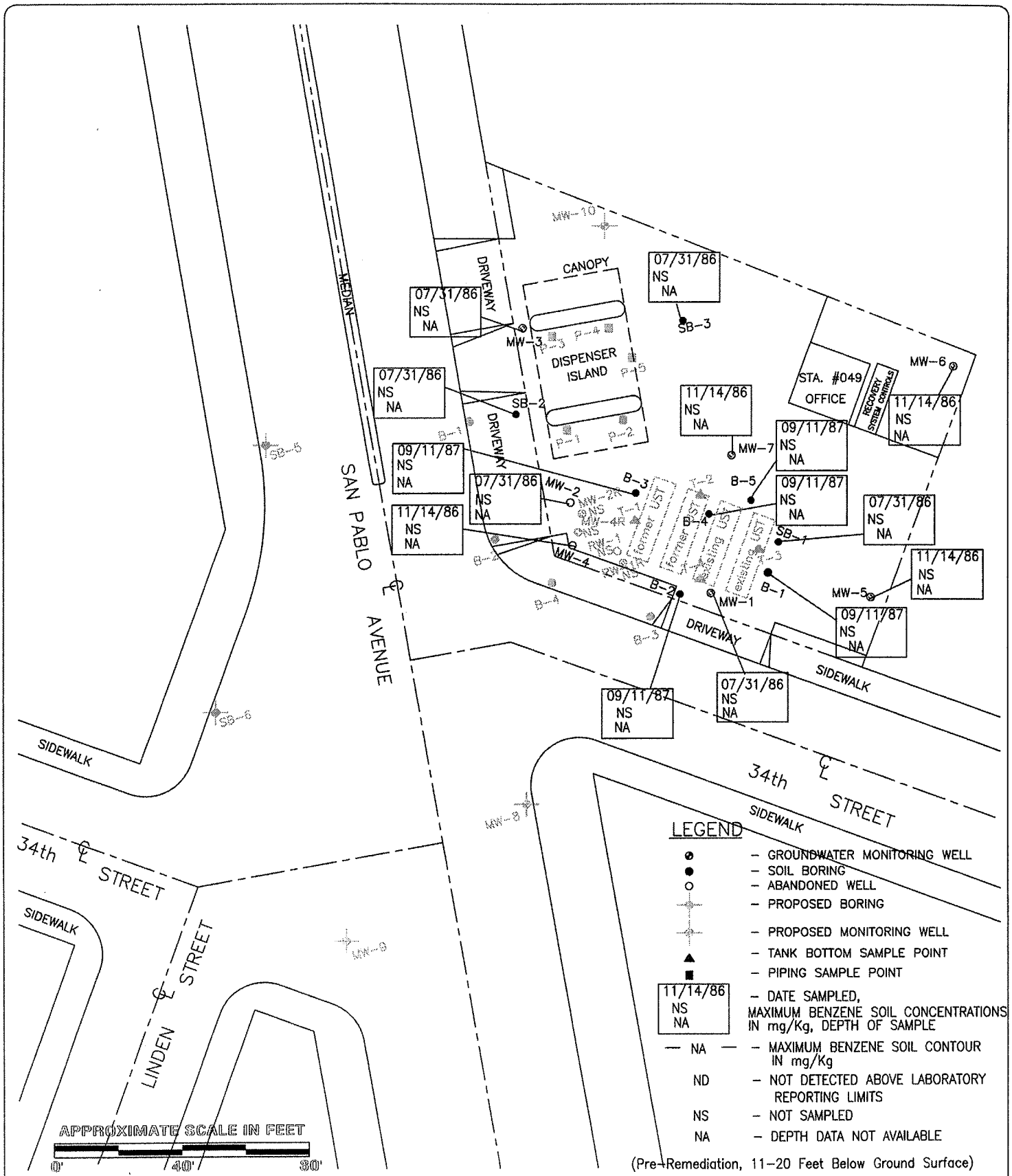

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FIGURE 4E
DISTRIBUTION OF BENZENE IN SOIL
THRIFTY SERVICE STATION #049
3400 San Pablo Avenue
Oakland, CA

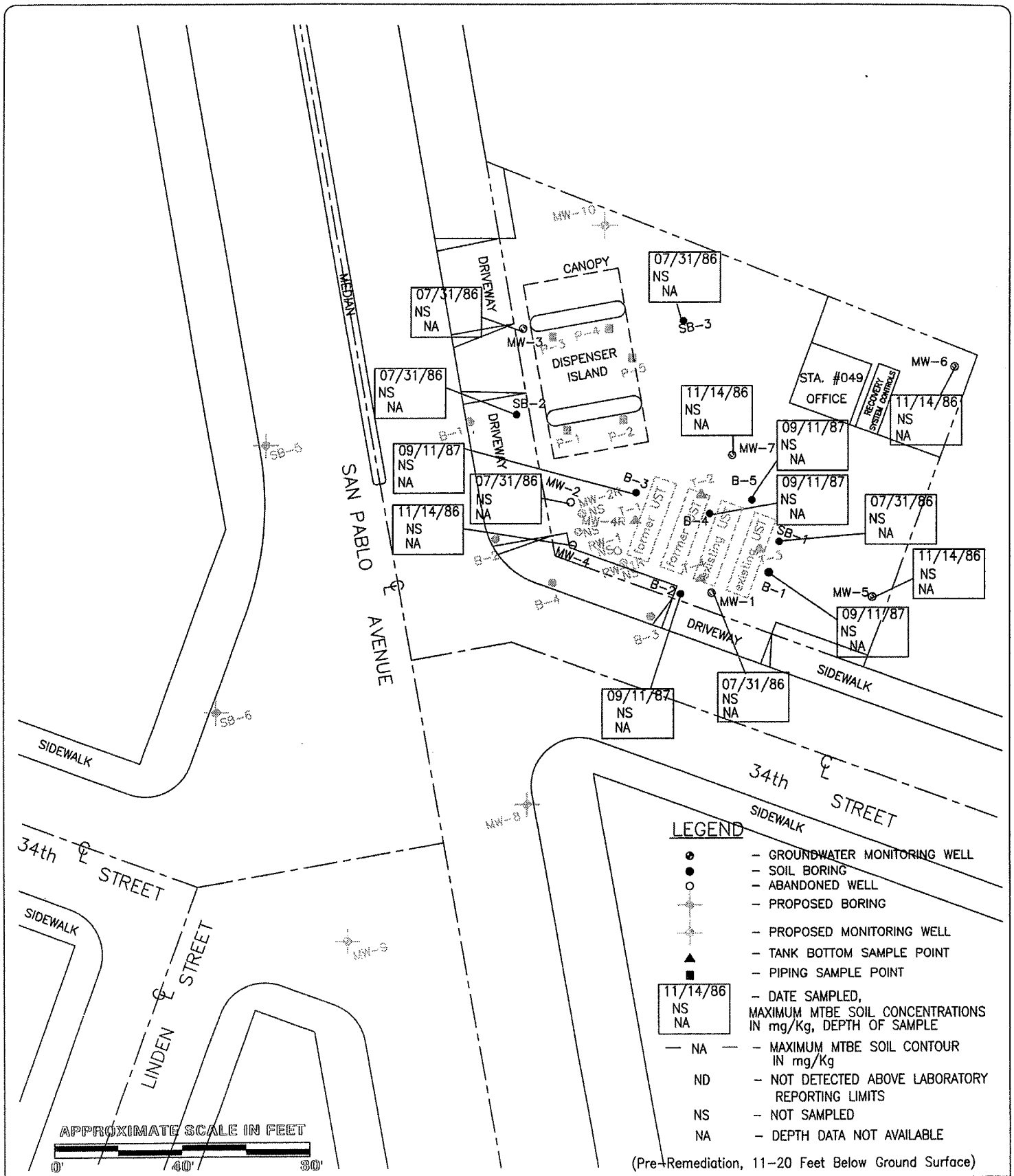

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FIGURE 4F
DISTRIBUTION OF MTBE IN SOIL
THRIFTY SERVICE STATION #049
3400 San Pablo Avenue
Oakland, CA

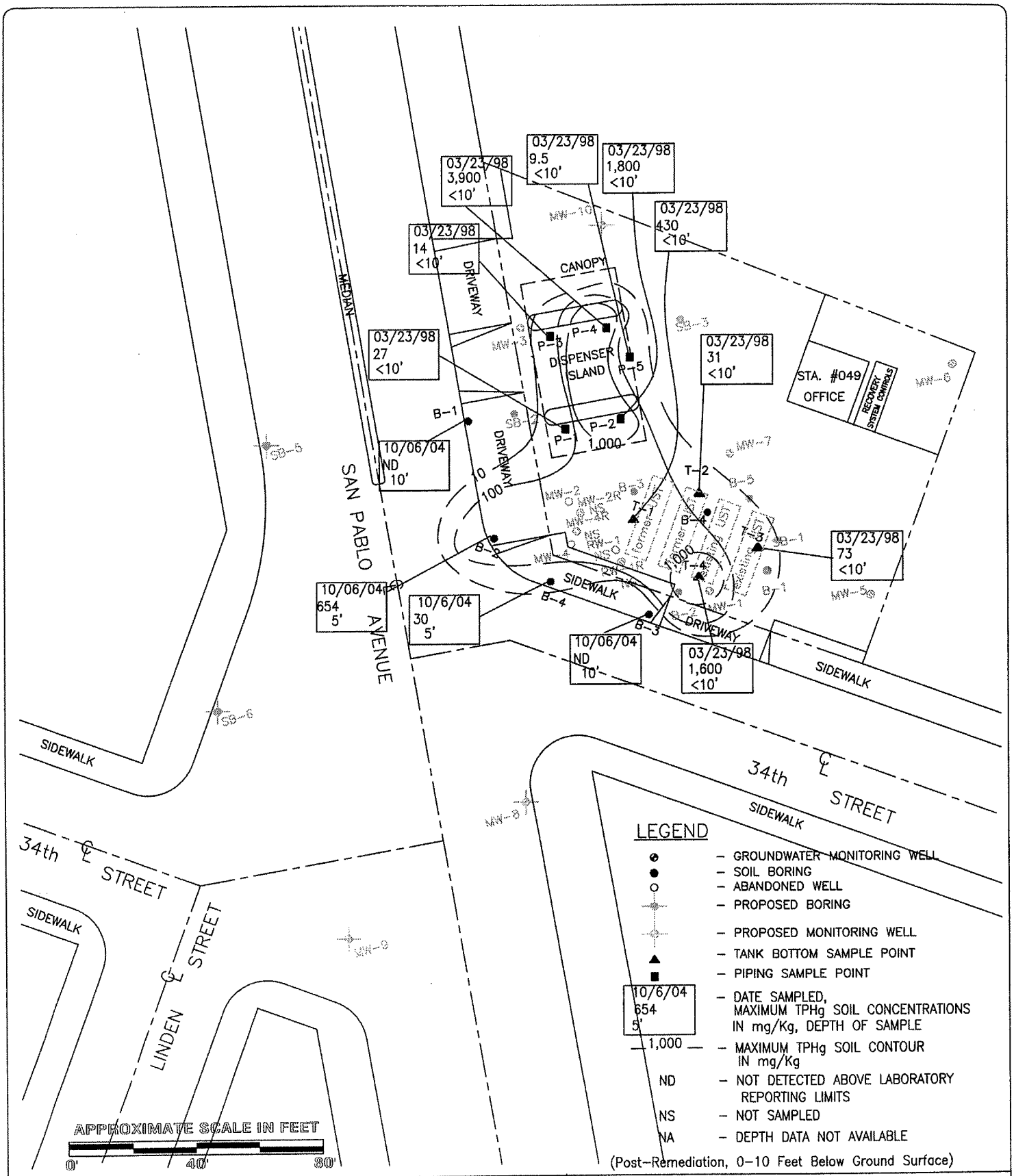

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FIGURE 4G
DISTRIBUTION OF TPHg IN SOIL
THRIFTY SERVICE STATION #049
3400 San Pablo Avenue
Oakland, CA

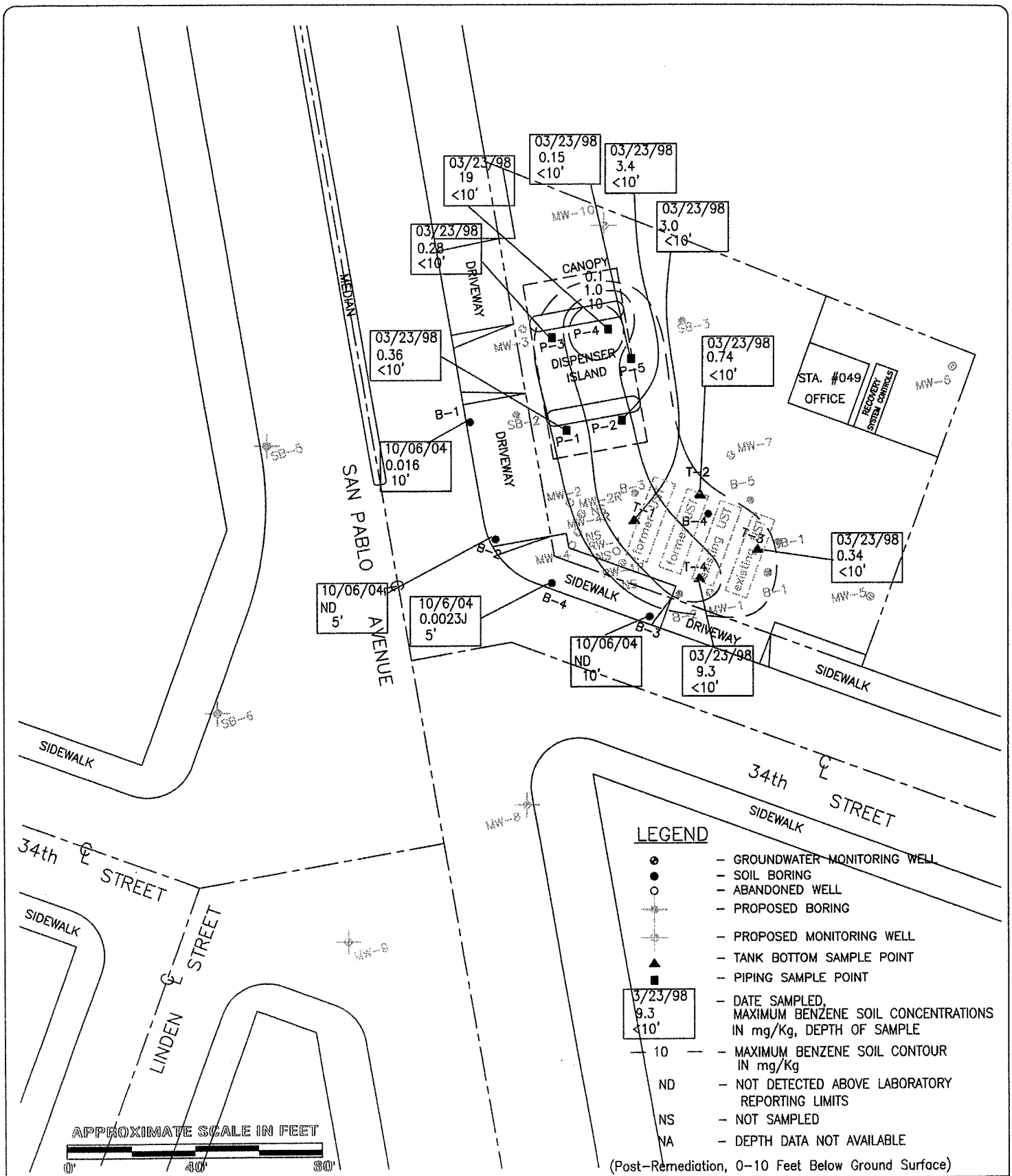

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FIGURE 4H
DISTRIBUTION OF BENZENE IN SOIL
THRIFTY SERVICE STATION #049
3400 San Pablo Avenue
Oakland, CA

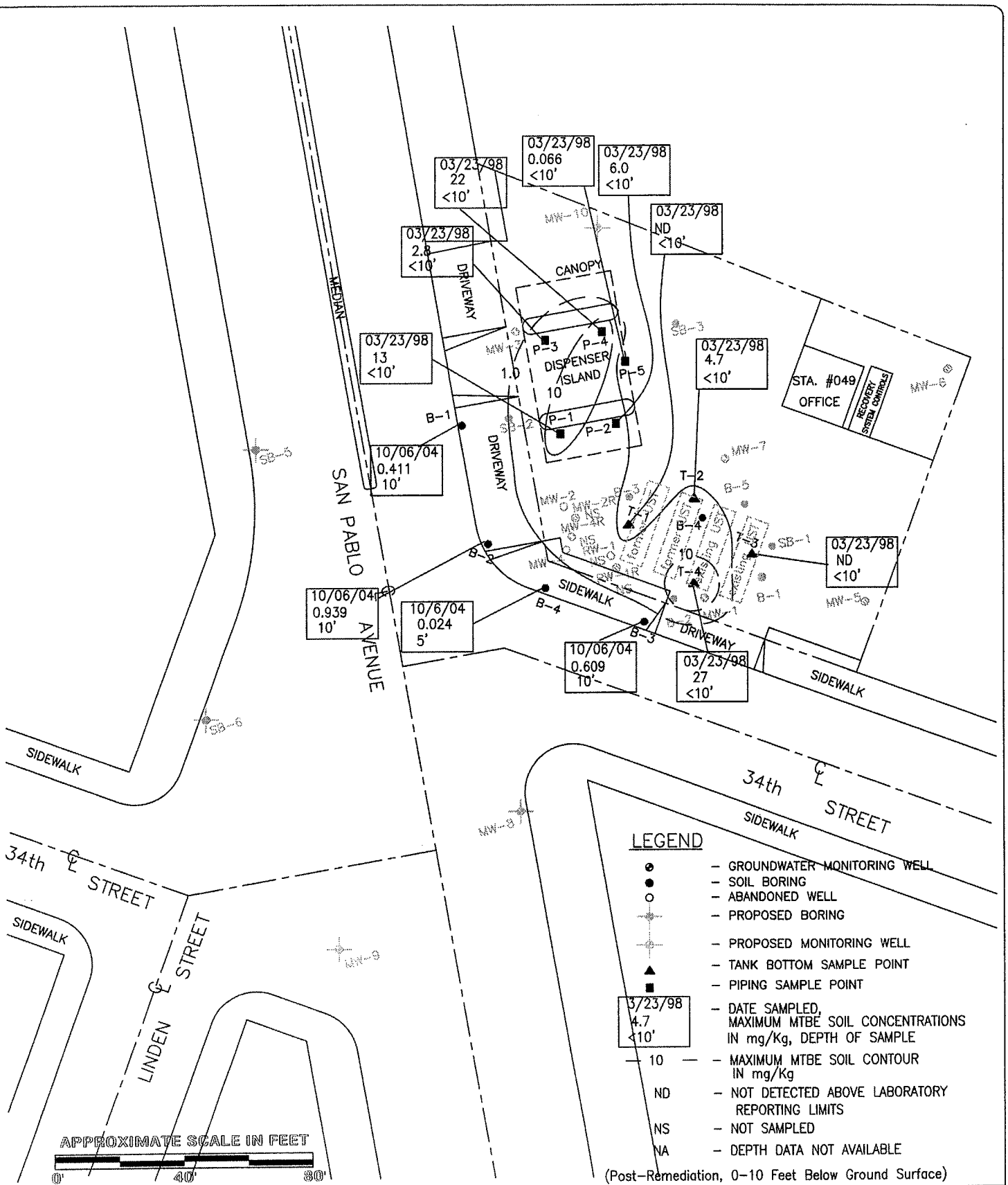

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FIGURE 4I
DISTRIBUTION OF MTBE IN SOIL
THRIFTY SERVICE STATION #049
3400 San Pablo Avenue
Oakland, CA

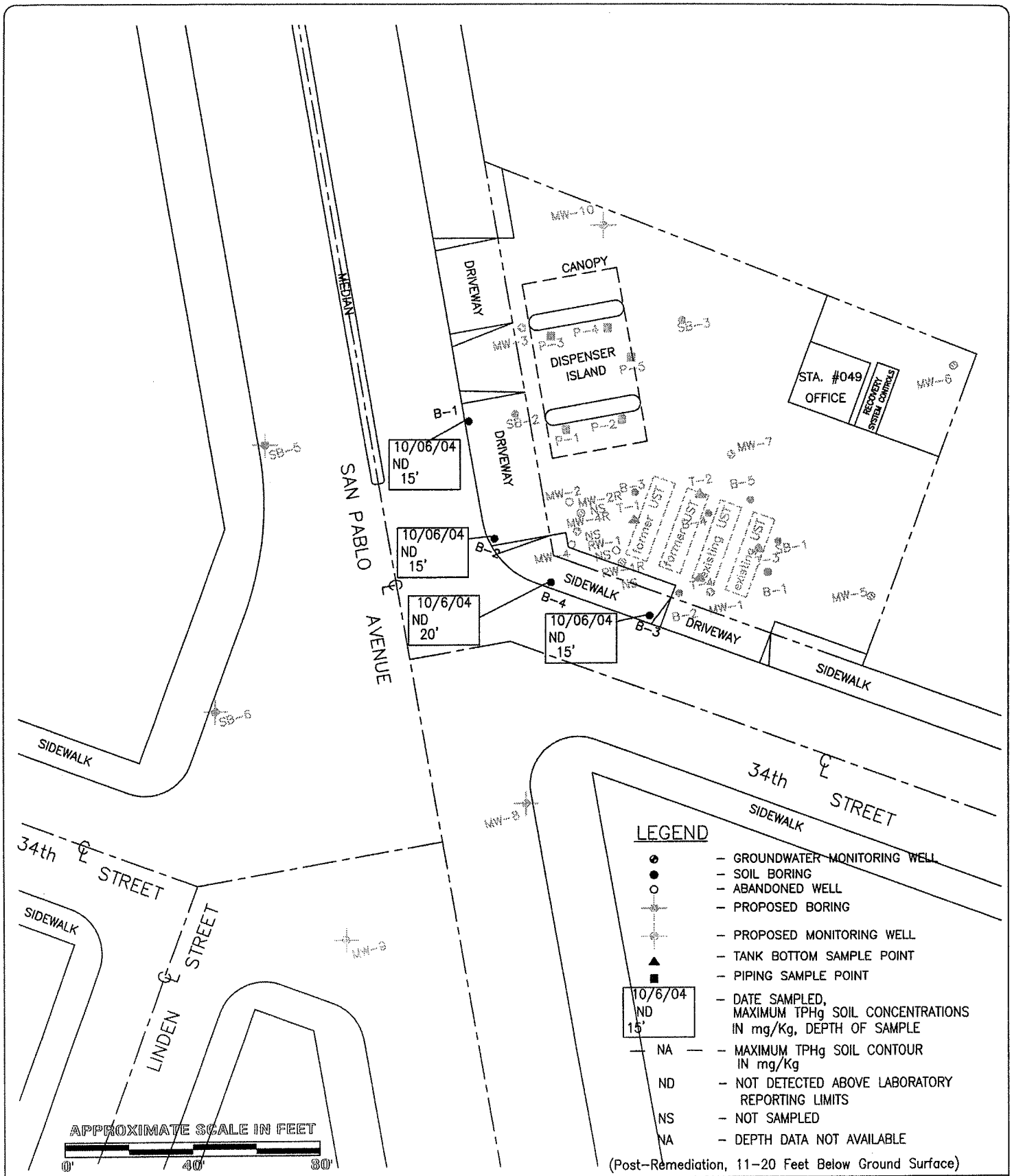

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FIGURE 4J
DISTRIBUTION OF TPHg IN SOIL
THRIFTY SERVICE STATION #049
3400 San Pablo Avenue
Oakland, CA

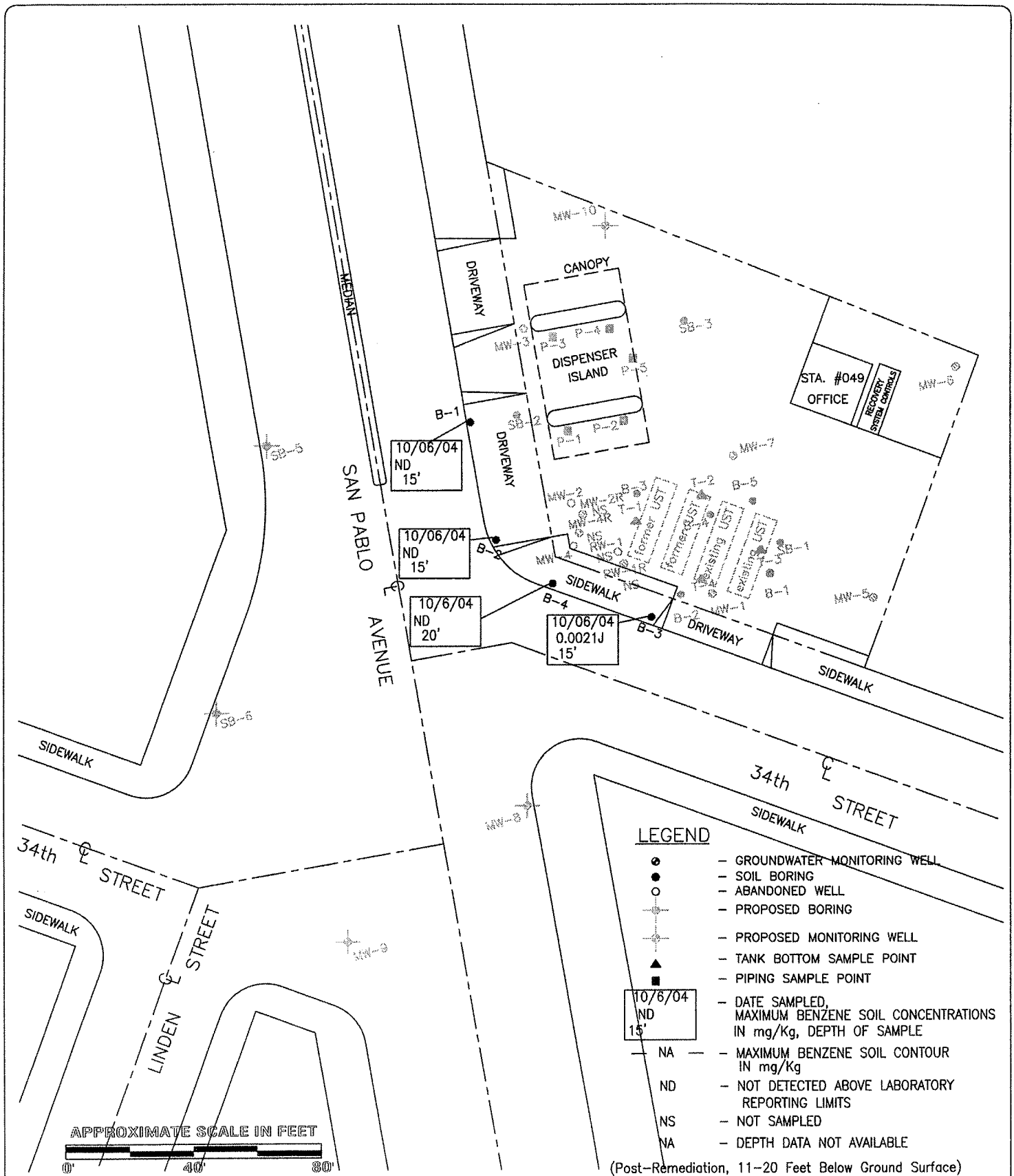

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FIGURE 4K
DISTRIBUTION OF BENZENE IN SOIL
THRIFTY SERVICE STATION #049
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Oakland, CA

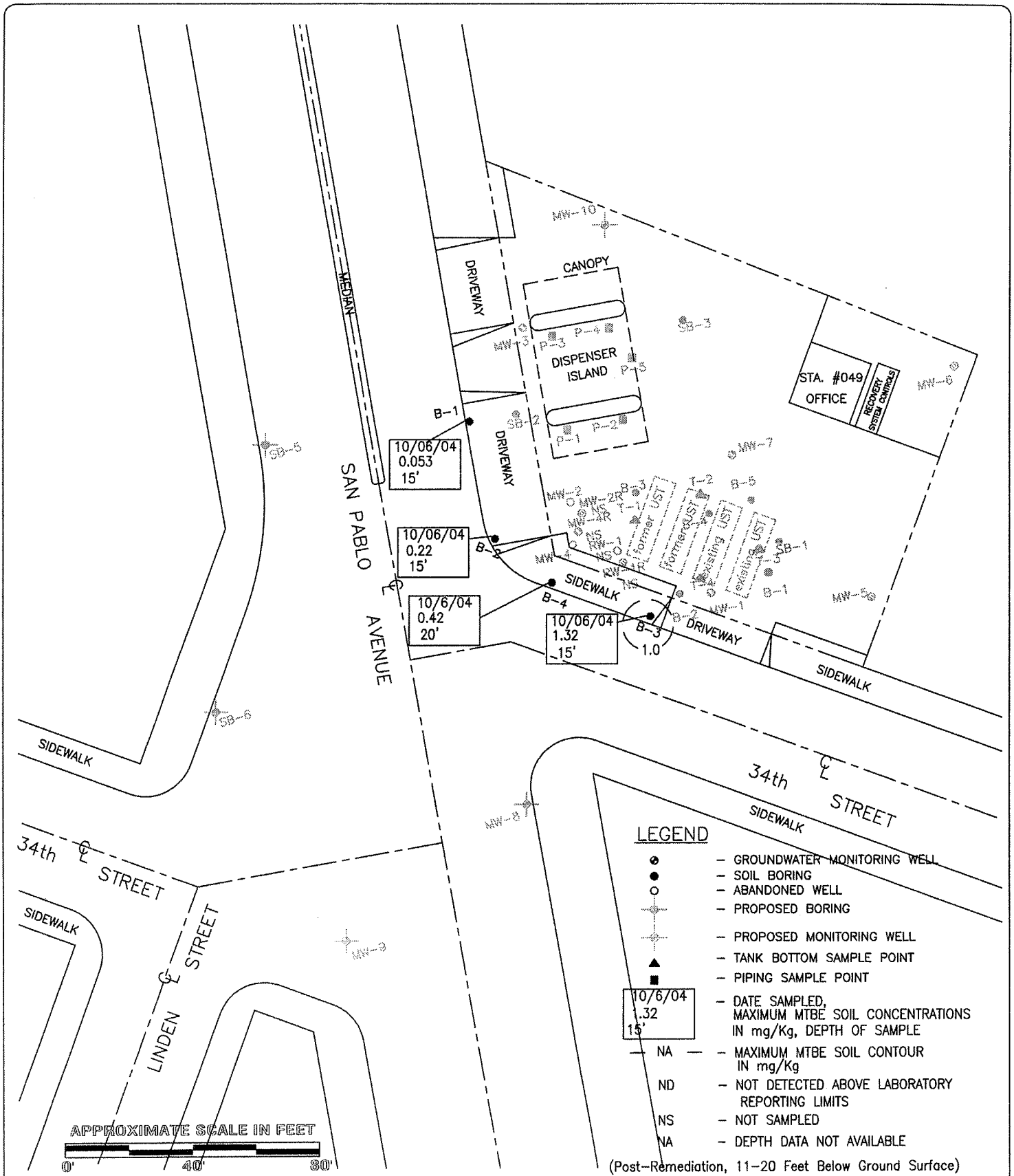

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FIGURE 4L
DISTRIBUTION OF MTBE IN SOIL
THRIFTY SERVICE STATION #049
3400 San Pablo Avenue
Oakland, CA

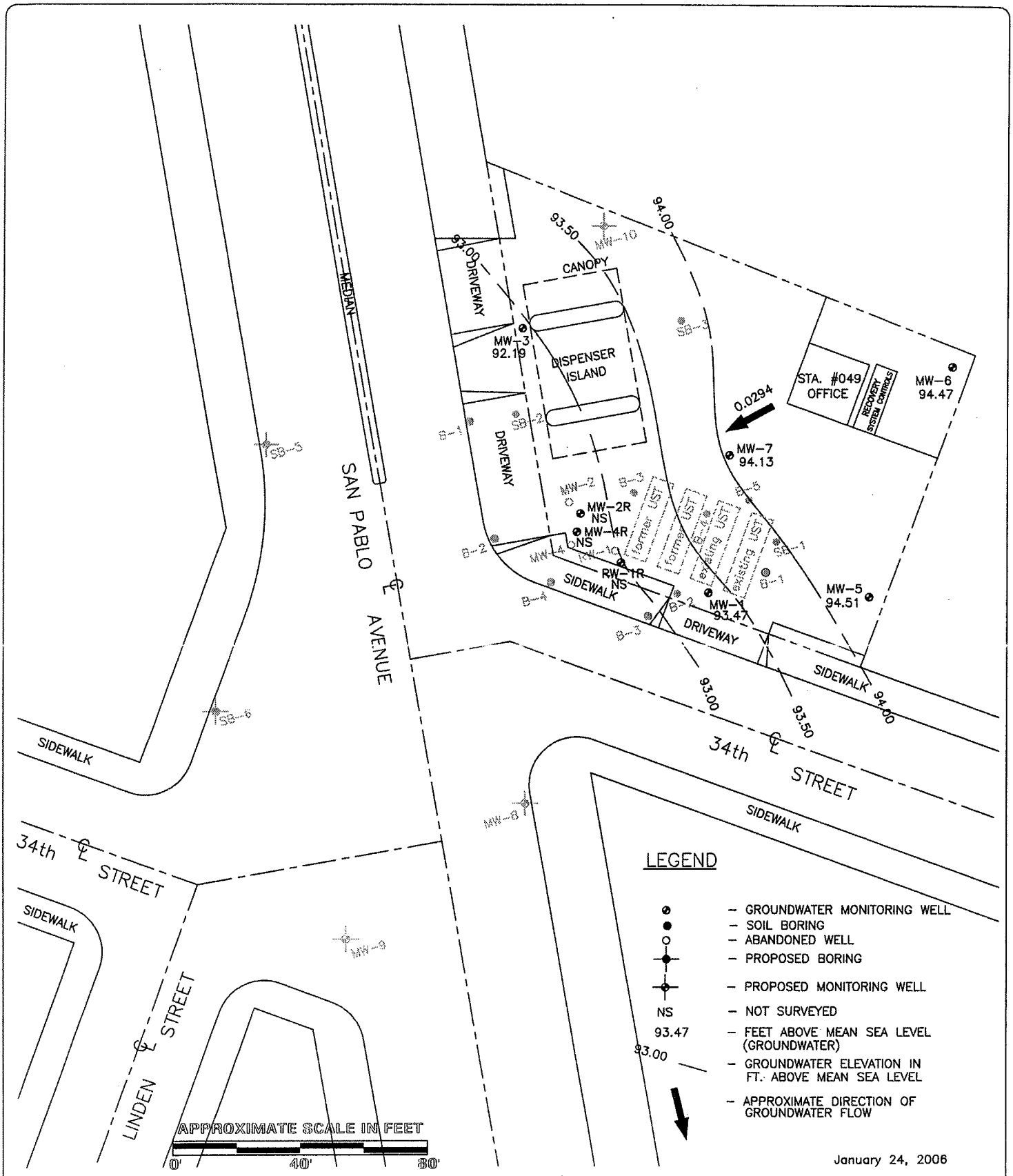

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FIGURE 5
GROUNDWATER ELEVATION CONTOUR MAP
THRIFTY SERVICE STATION #049
3400 San Pablo Avenue
Oakland, CA

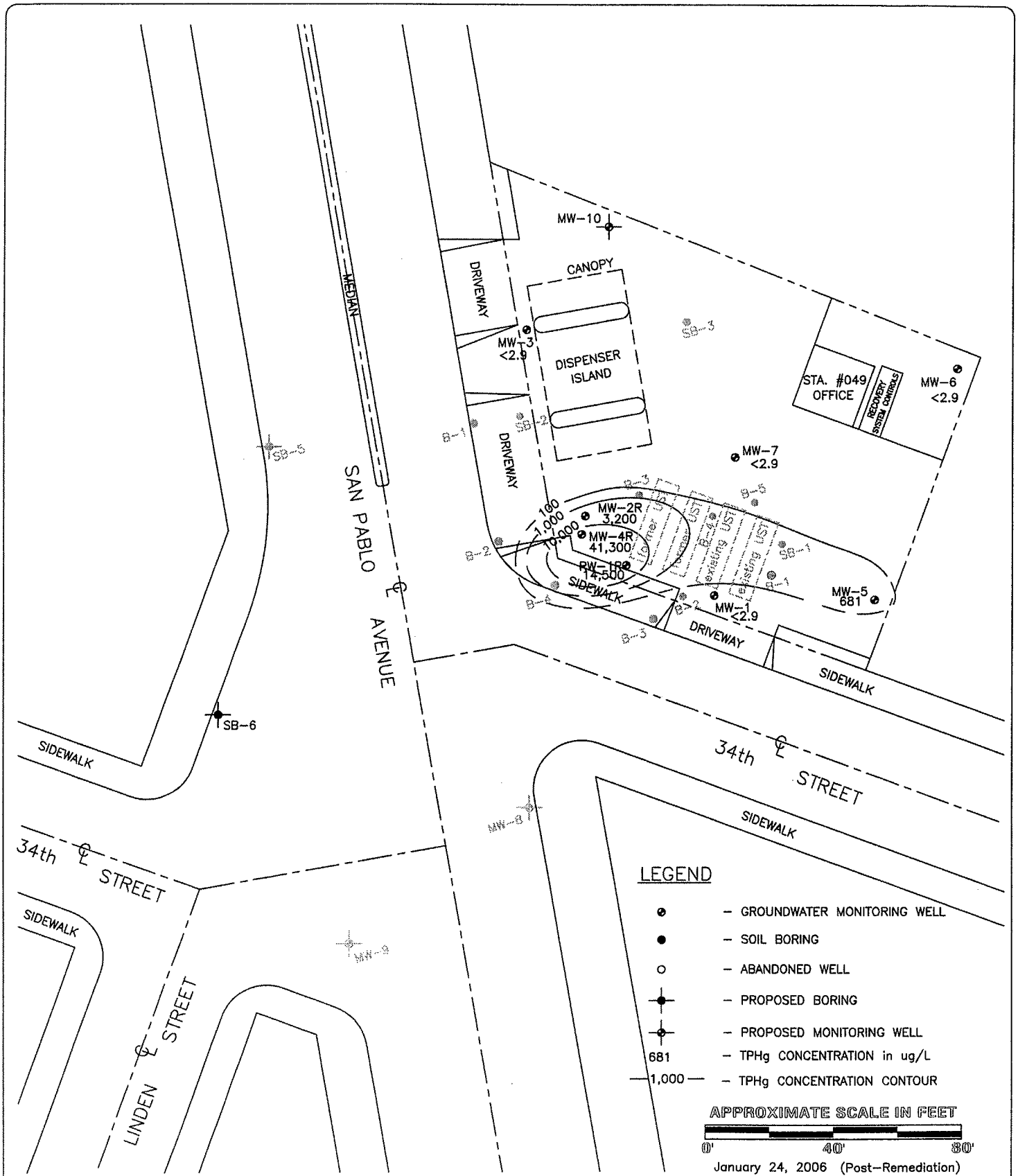

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FIGURE 6A
DISTRIBUTION OF TPHg IN GROUNDWATER
THRIFTY SERVICE STATION #049
3400 San Pablo Avenue
Oakland, CA

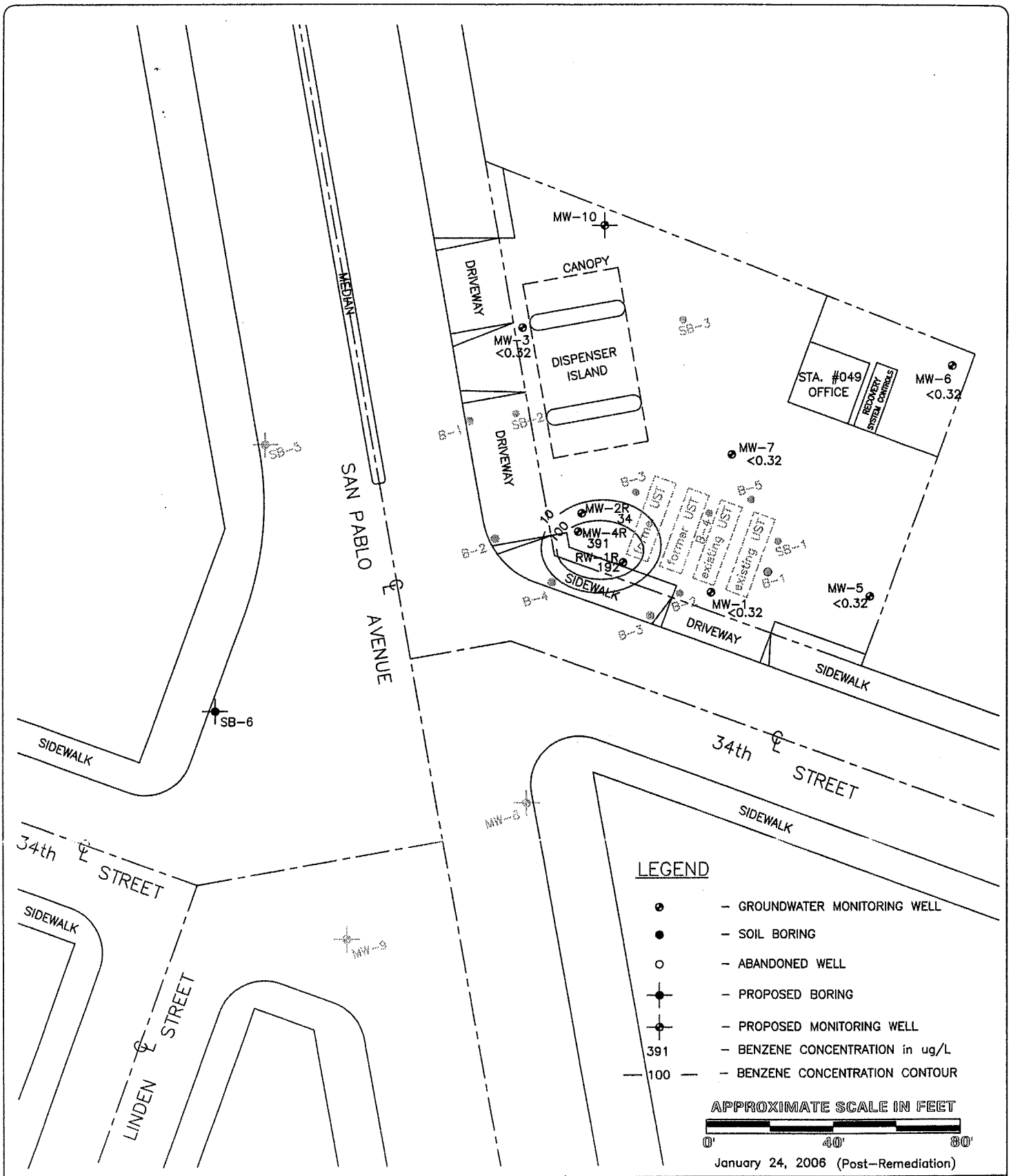

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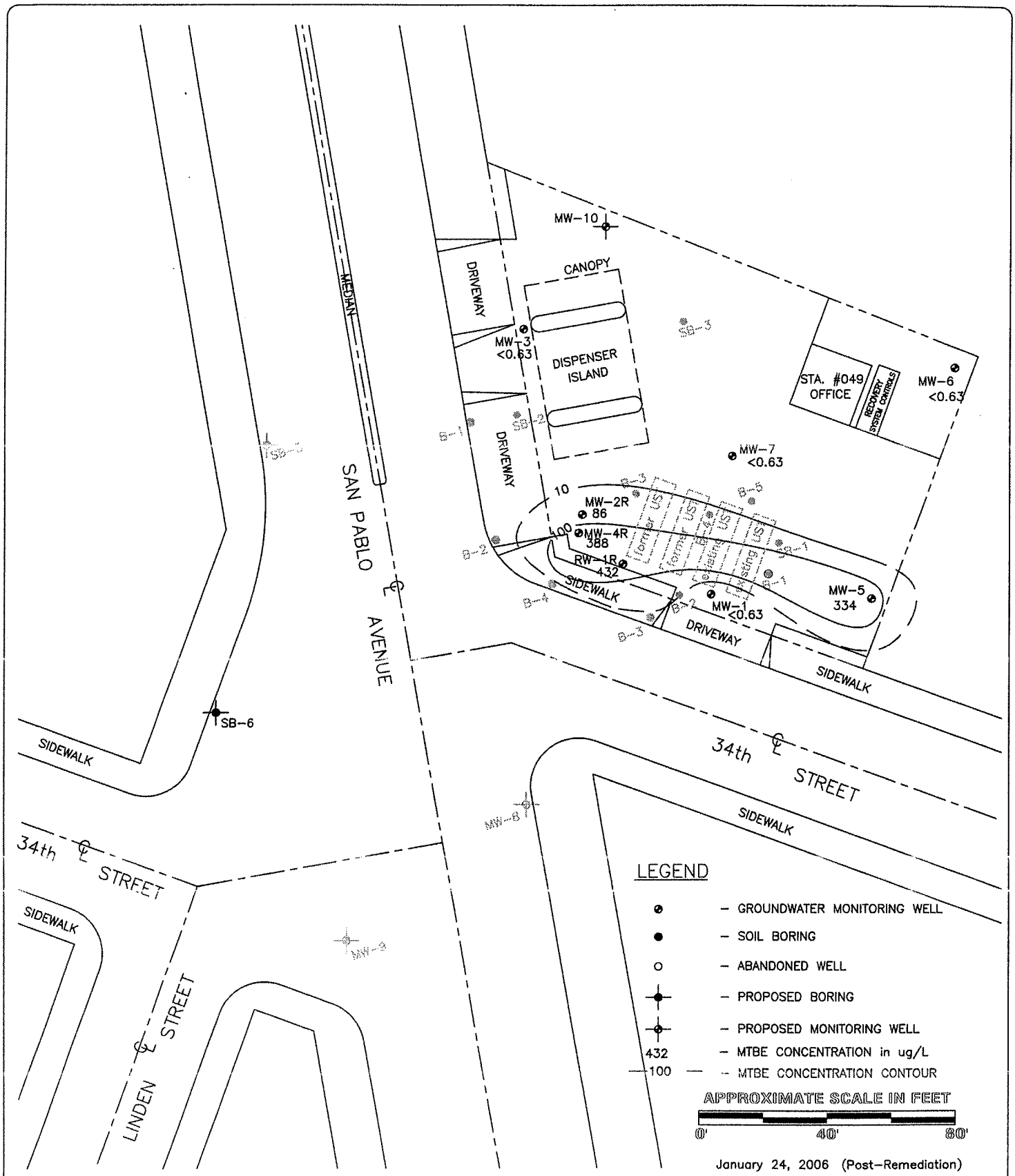
FIGURE 6B
DISTRIBUTION OF BENZENE IN GROUNDWATER
THRIFTY SERVICE STATION #049
3400 San Pablo Avenue
Oakland, CA



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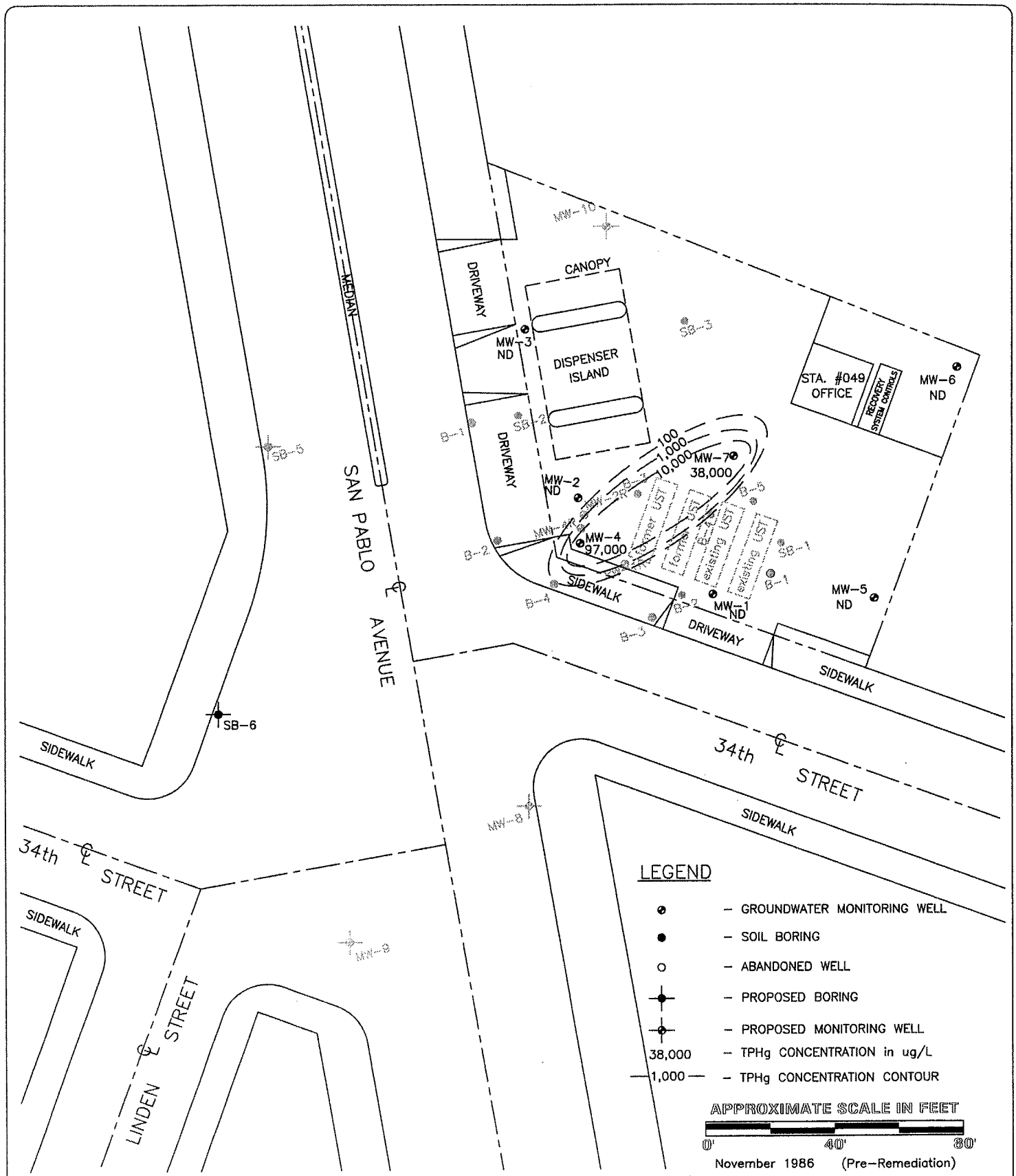
DATE: 01/25/06

FIGURE 6C
DISTRIBUTION OF MTBE IN GROUNDWATER
THRIFTY SERVICE STATION #049
3400 San Pablo Avenue
Oakland, CA



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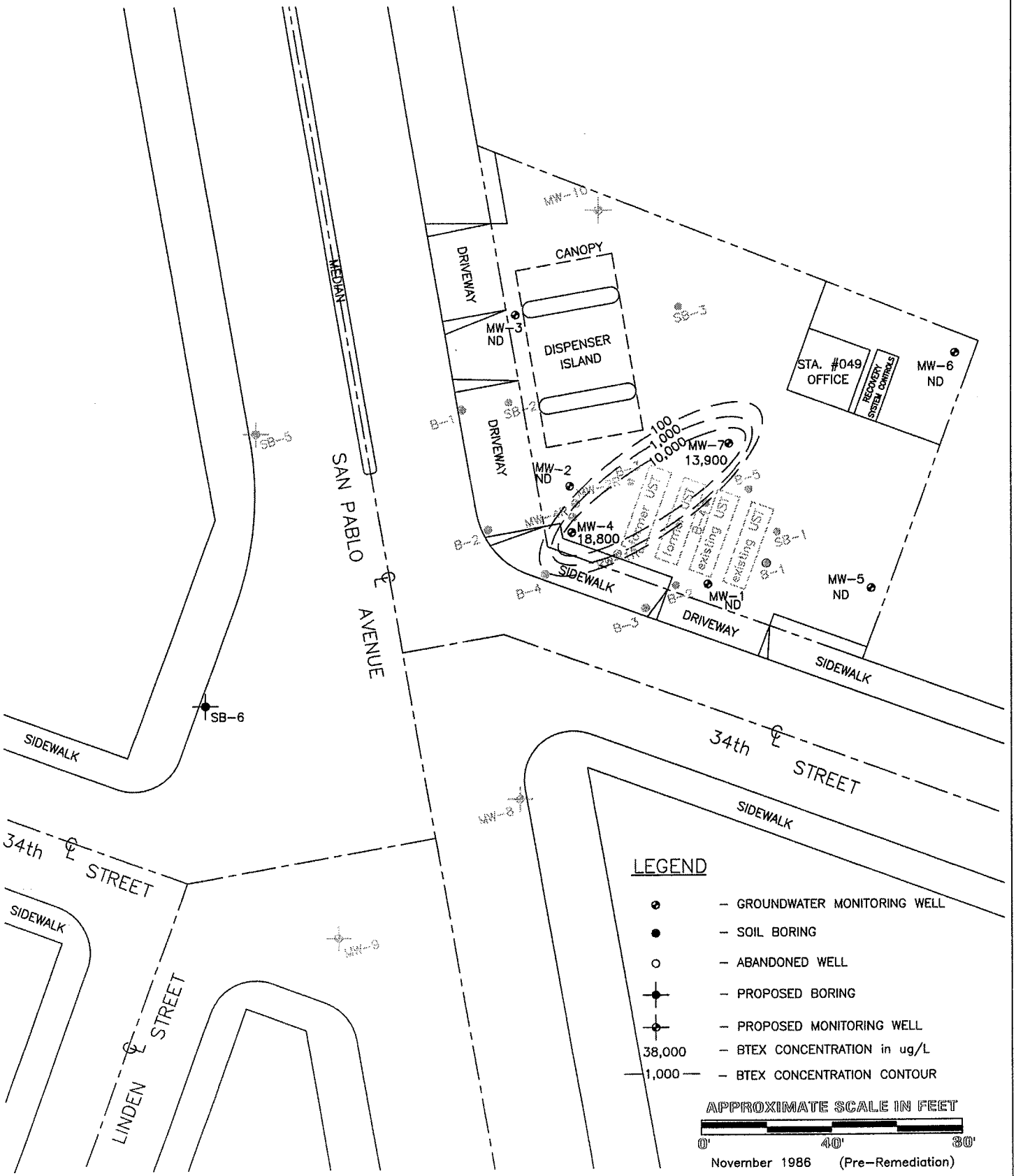
DATE: 01/25/06

FIGURE 6D
DISTRIBUTION OF TPHg IN GROUNDWATER
THRIFTY SERVICE STATION #049
3400 San Pablo Avenue
Oakland, CA



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DATE: 01/25/06

FIGURE 6E
DISTRIBUTION OF BTEX IN GROUNDWATER
THRIFTY SERVICE STATION #049
3400 San Pablo Avenue
Oakland, CA

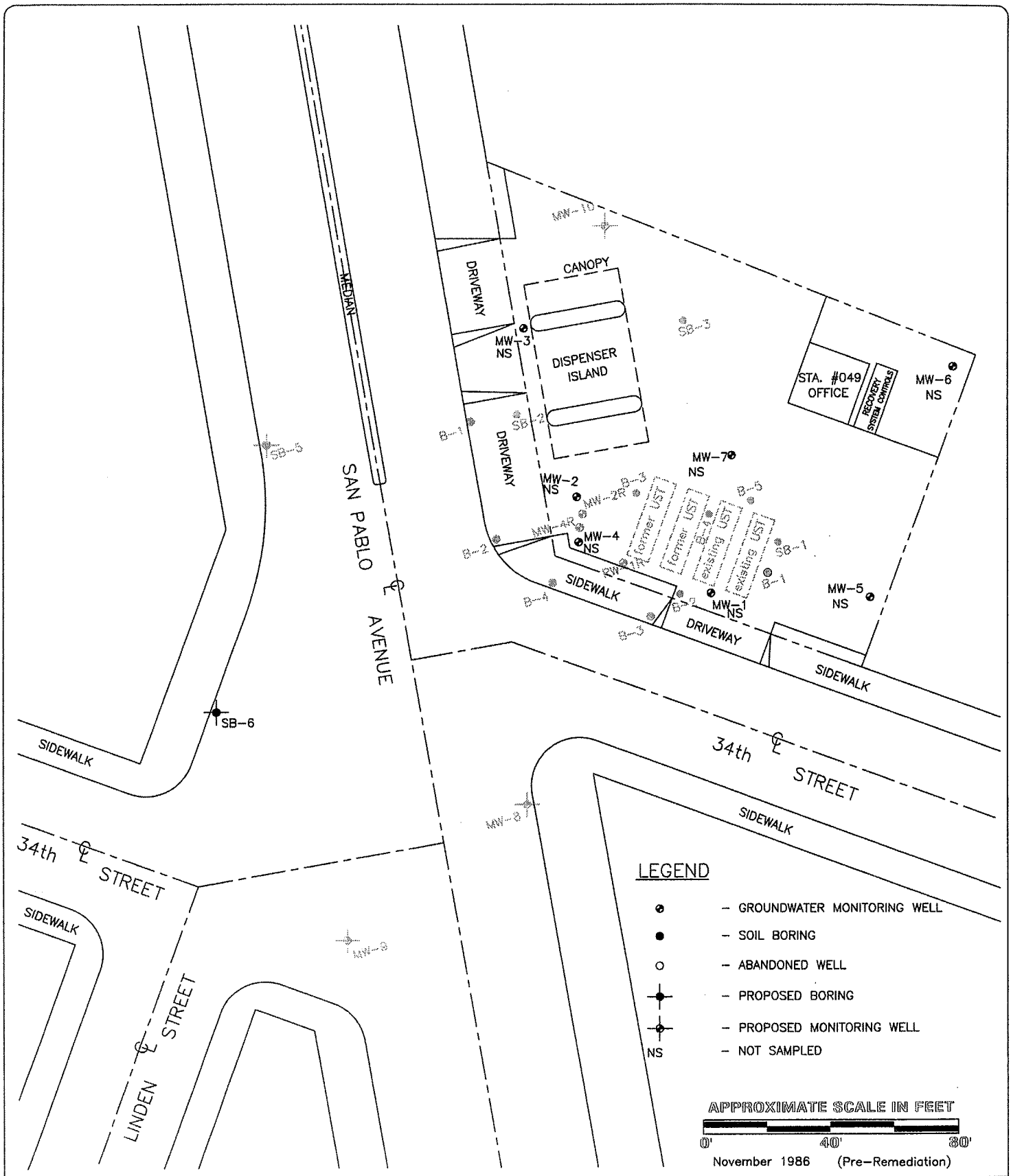

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FIGURE 6F
DISTRIBUTION OF MTBE IN GROUNDWATER
THRIFTY SERVICE STATION #049
3400 San Pablo Avenue
Oakland, CA

FIGURE 7A: Benzene / MTBE Concentrations and Groundwater Elevations vs. Time TOC Station 049 (MW-1)

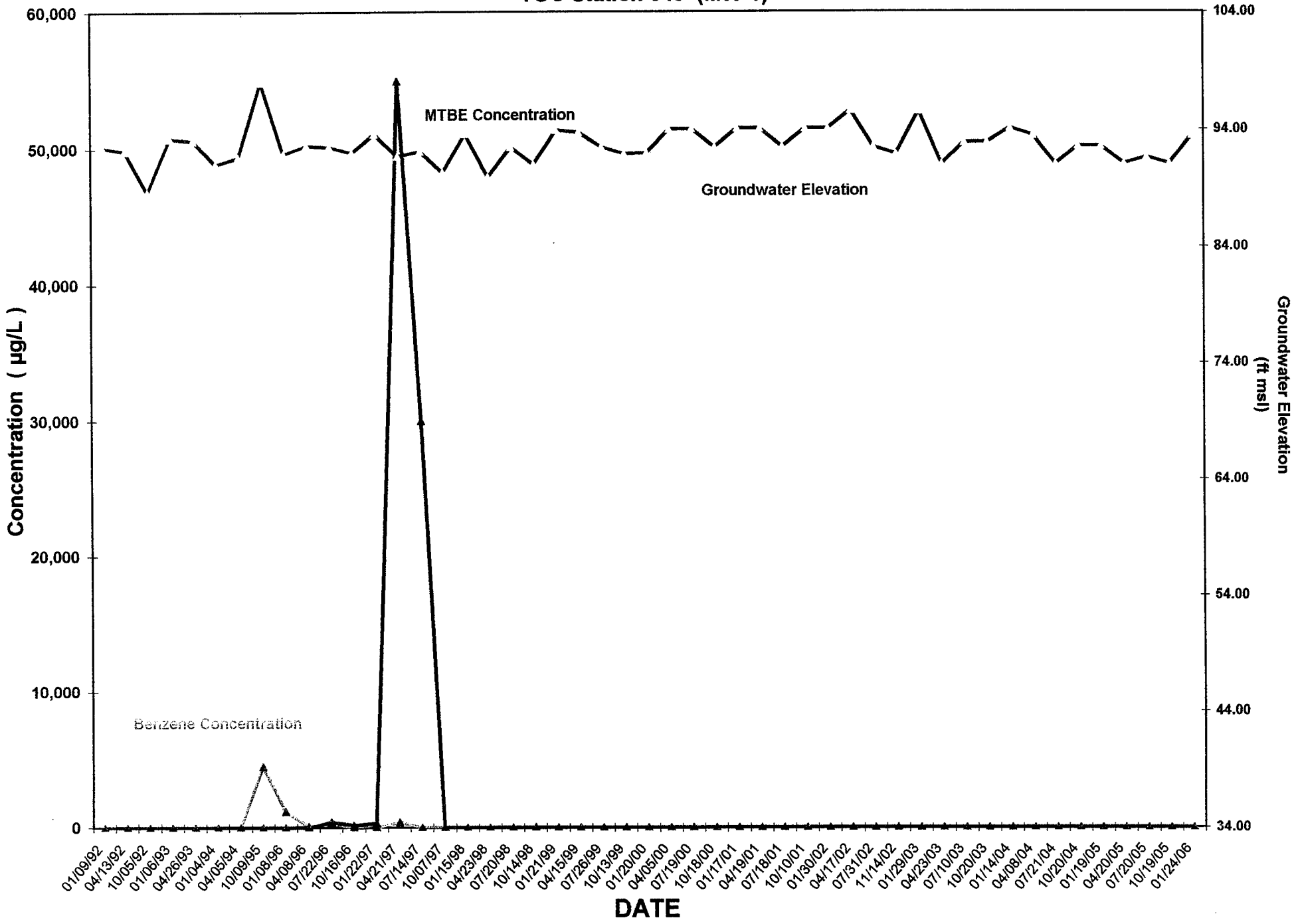


FIGURE 7B: Benzene / MTBE Concentrations and Groundwater Elevations vs. Time TOC Station 049 (MW-2)

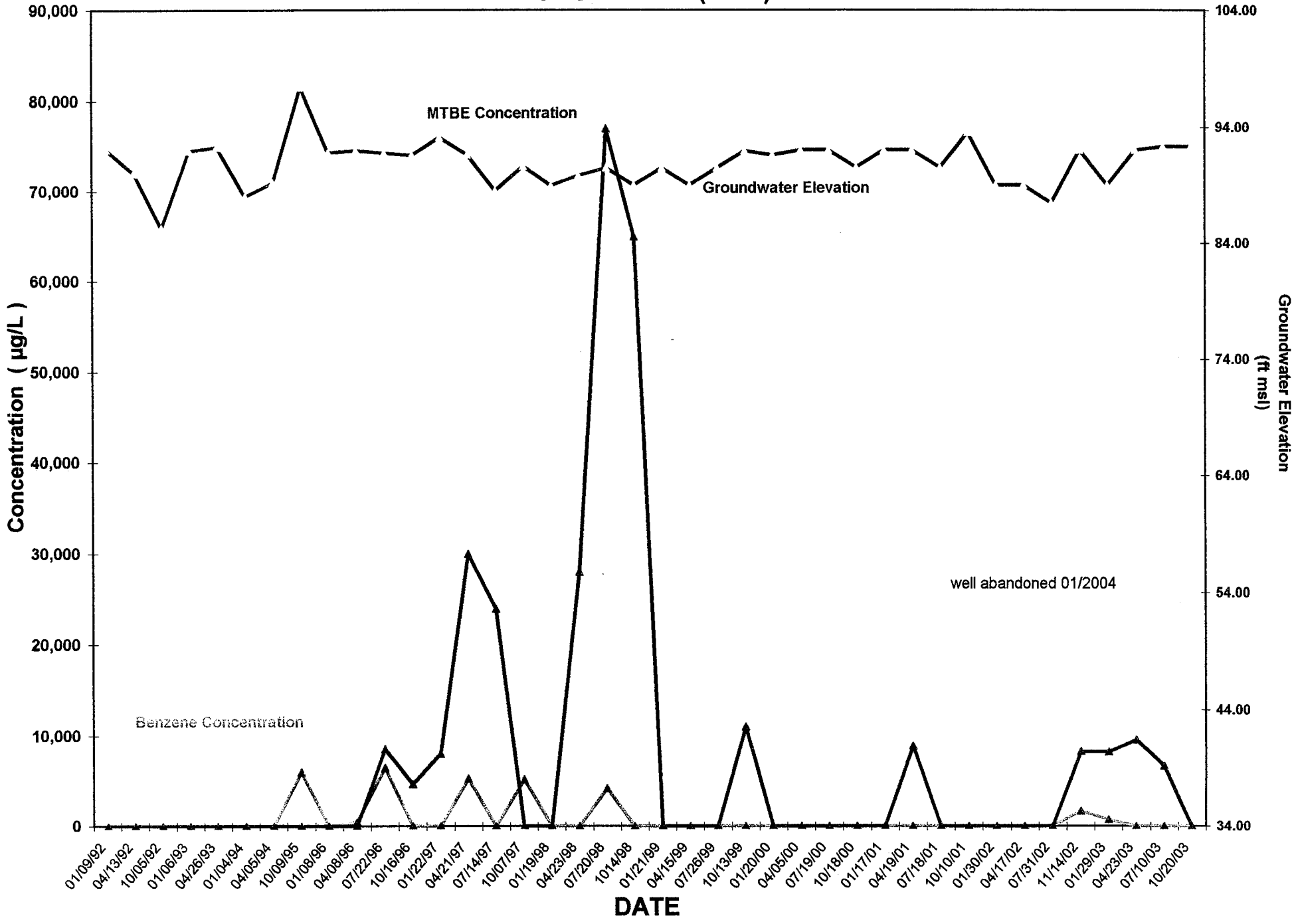


FIGURE 7C: Benzene / MTBE Concentrations and Groundwater Elevations* vs. Time TOC Station 049 (MW-2R)

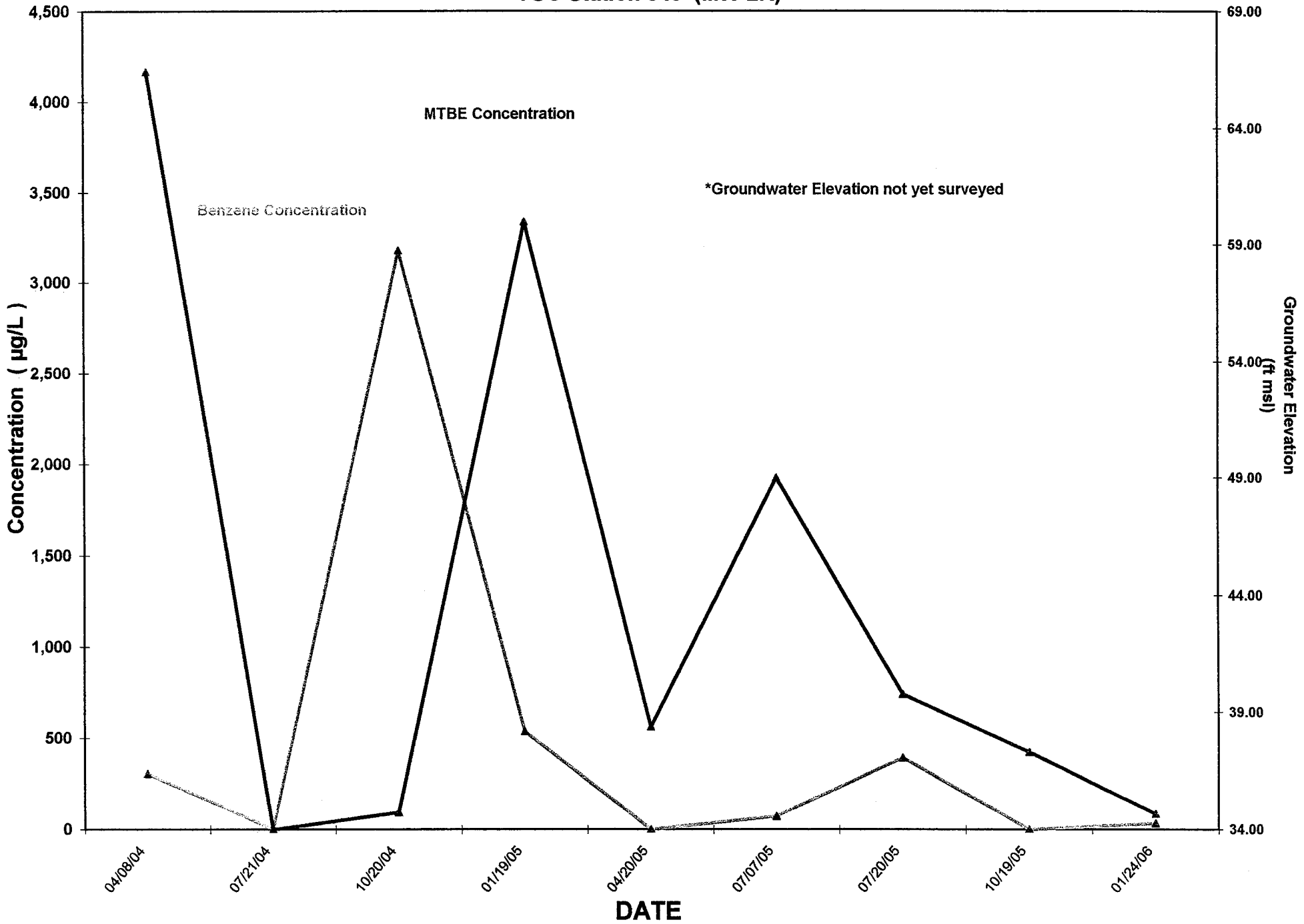


FIGURE 7D: Benzene / MTBE Concentrations and Groundwater Elevations vs. Time TOC Station 049 (MW-3)

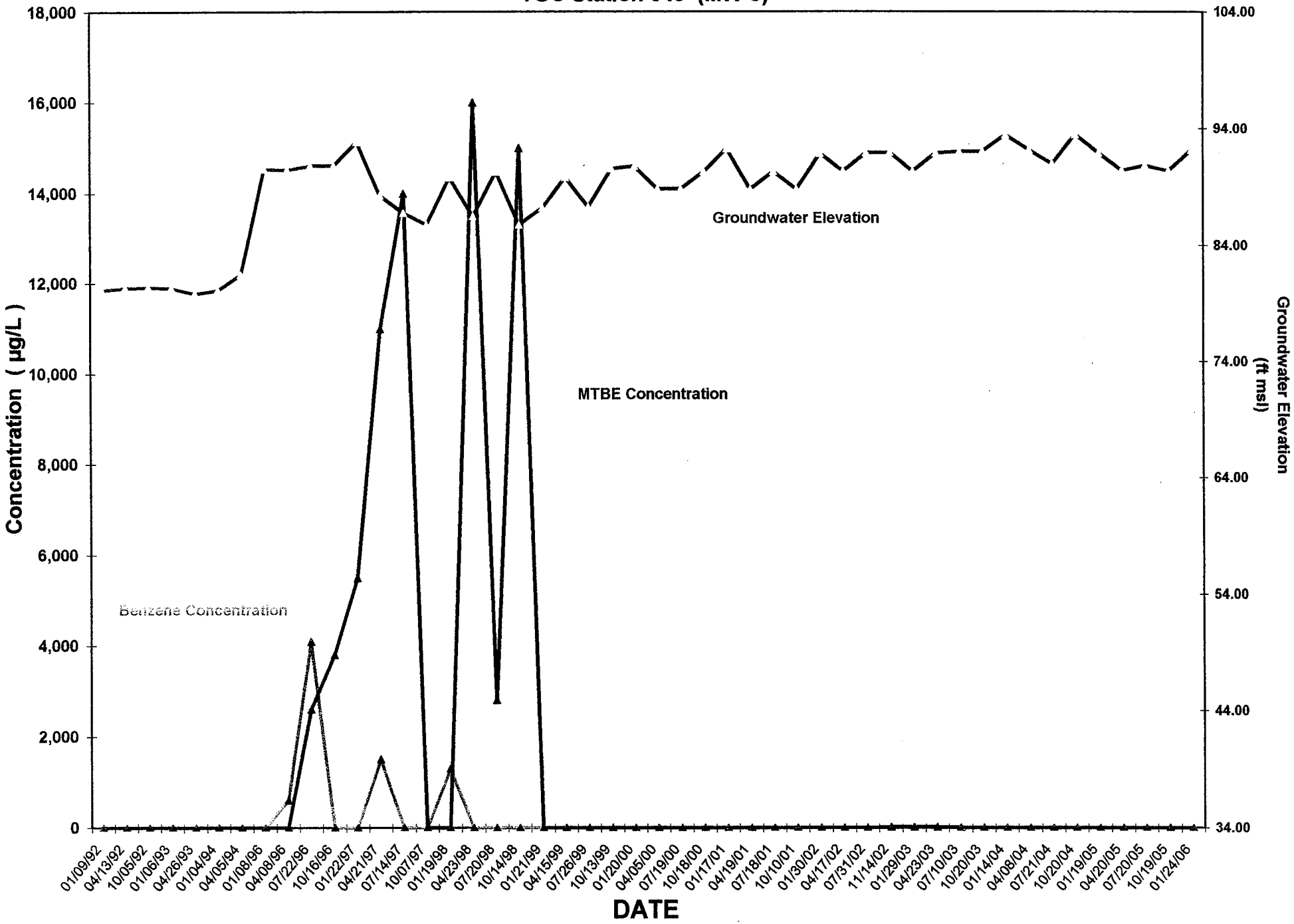


FIGURE 7E: Benzene / MTBE Concentrations and Groundwater Elevations vs. Time TOC Station 049 (MW-4)

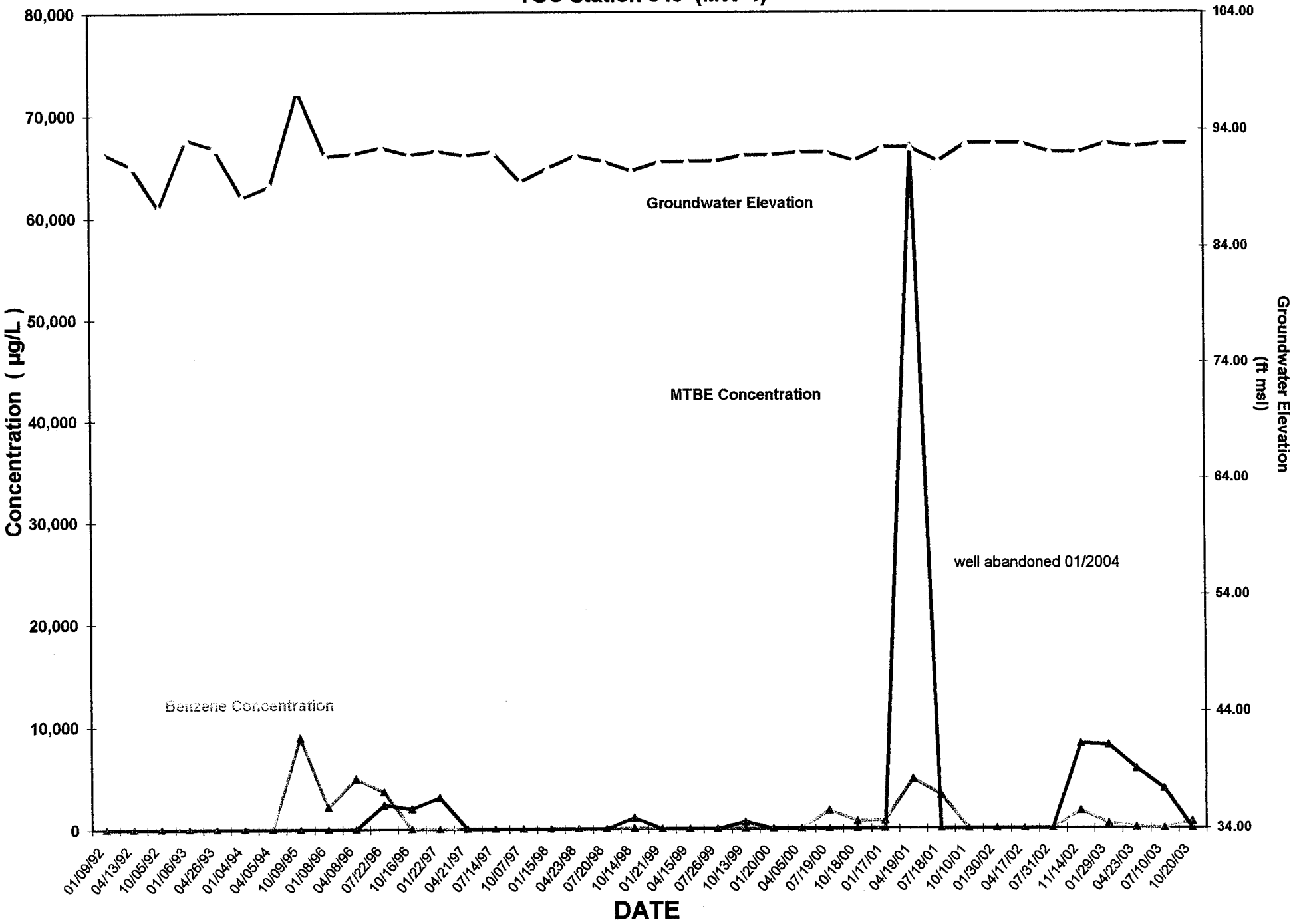


FIGURE 7F: Benzene / MTBE Concentrations and Groundwater Elevations* vs. Time TOC Station 049 (MW-4R)

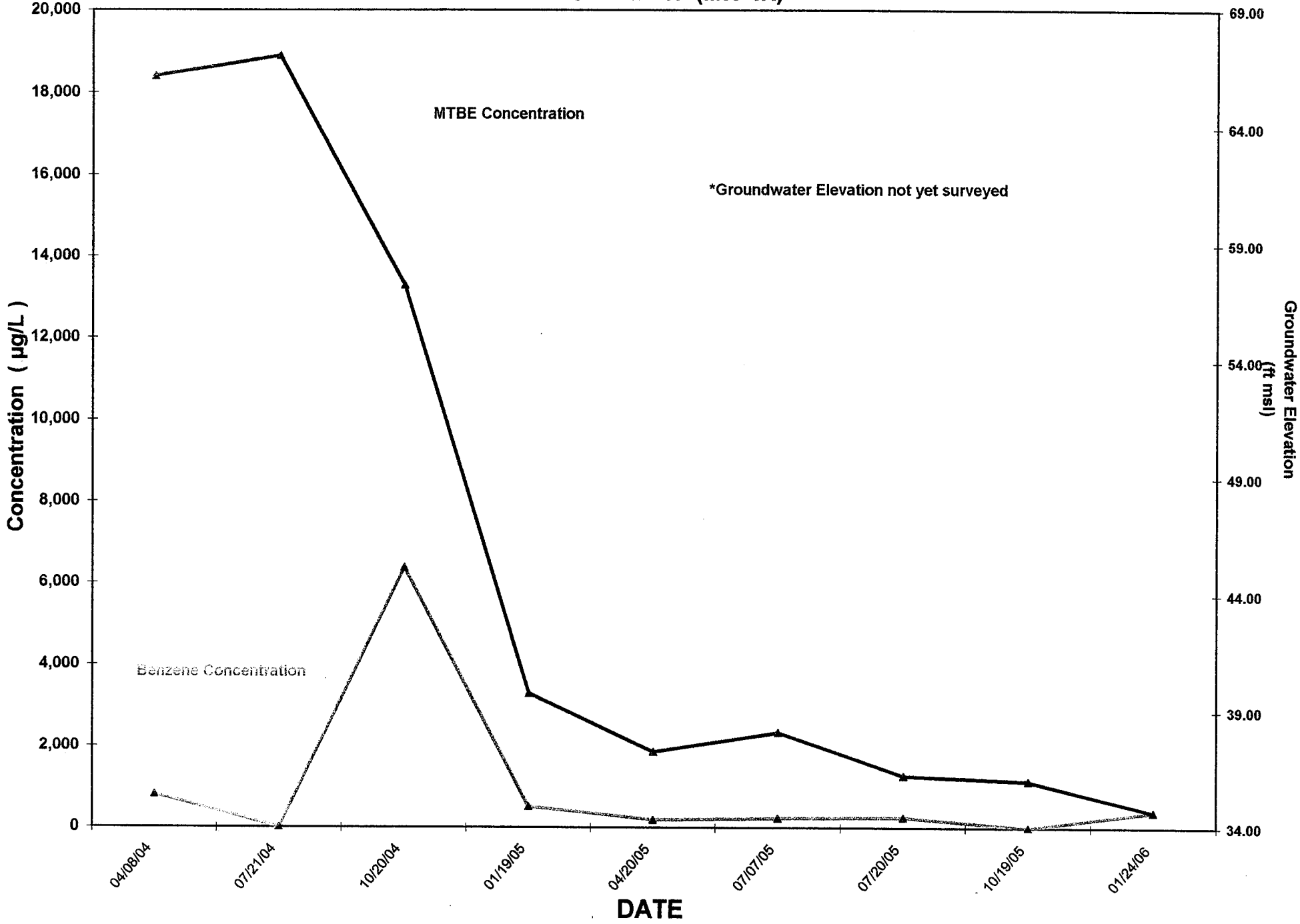


FIGURE 7G: Benzene / MTBE Concentrations and Groundwater Elevations vs. Time TOC Station 049 (MW-5)

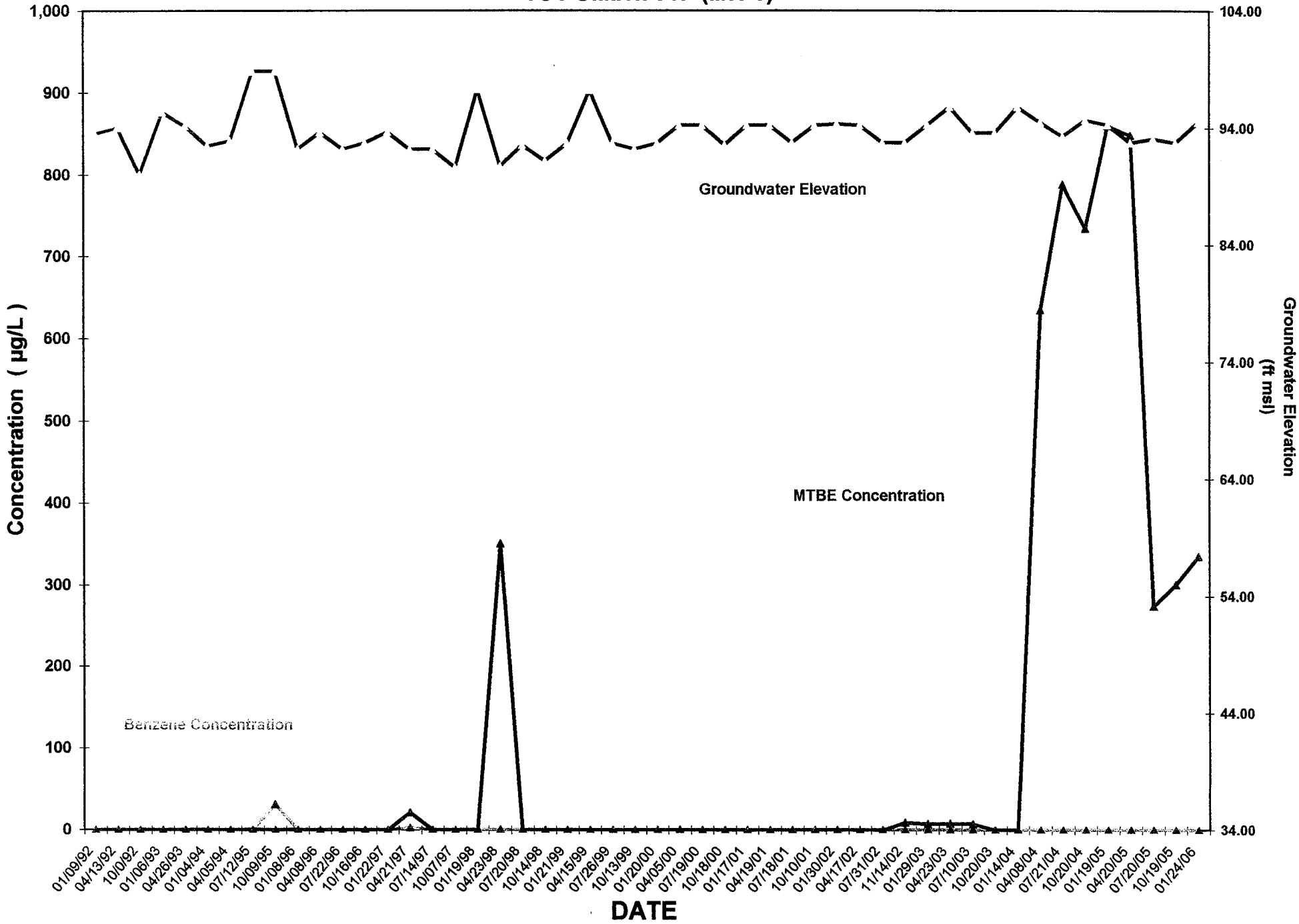


FIGURE 7H: Benzene / MTBE Concentrations and Groundwater Elevations vs. Time TOC Station 049 (MW-6)

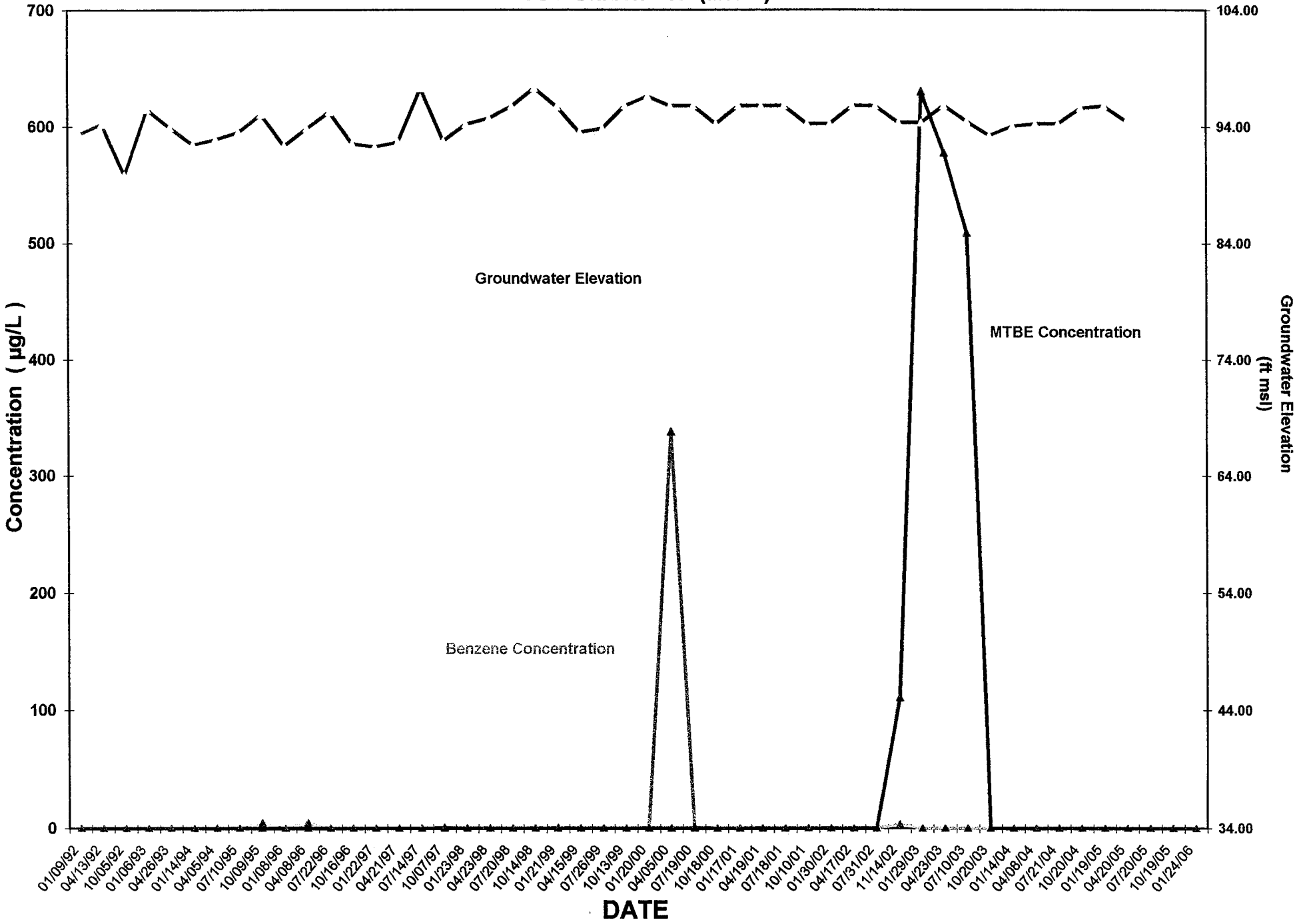


FIGURE 7I: Benzene / MTBE Concentrations and Groundwater Elevations vs. Time TOC Station 049 (MW-7)

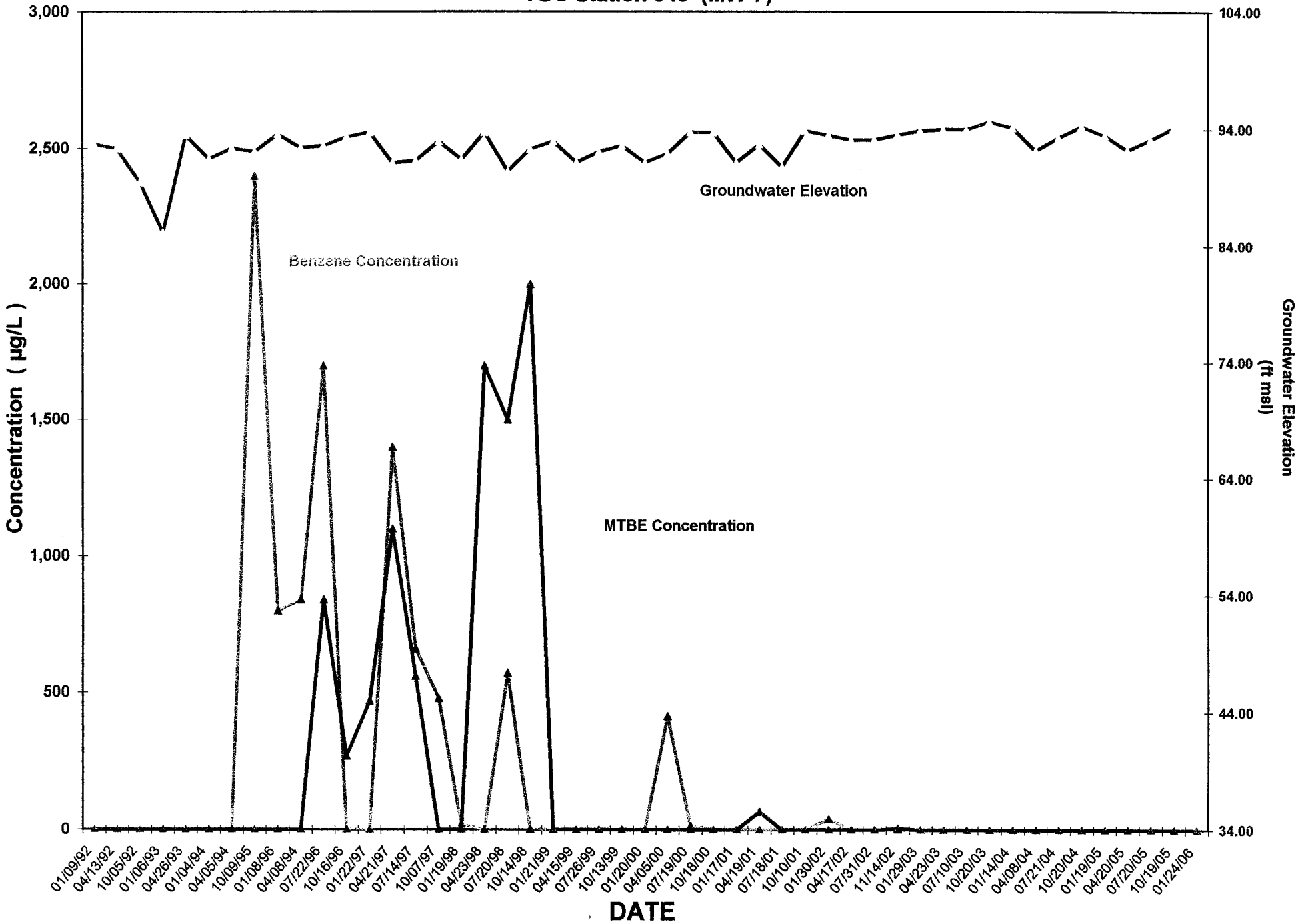


FIGURE 7J: Benzene / MTBE Concentrations and Groundwater Elevations* vs. Time TOC Station 049 (RW-1)

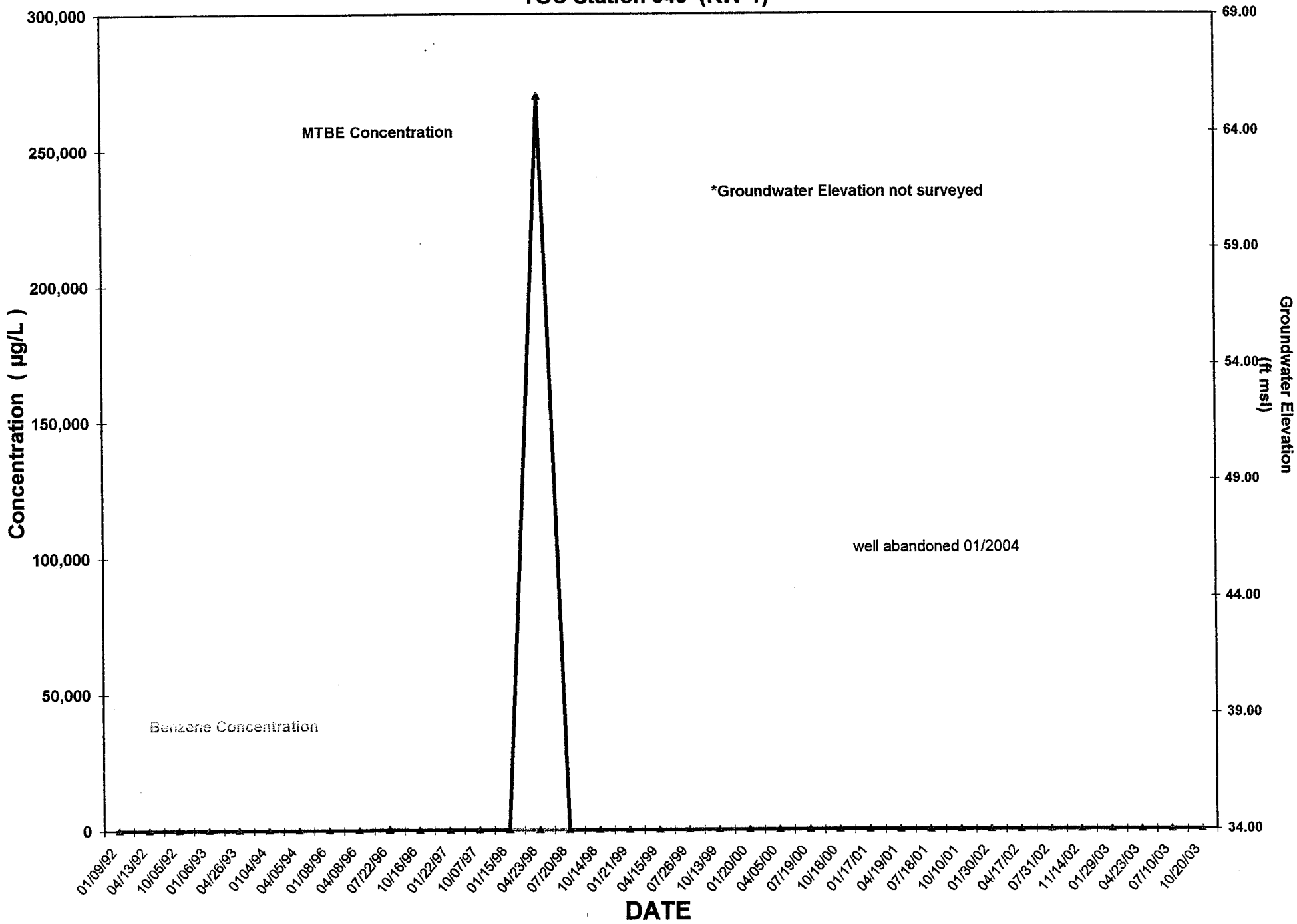
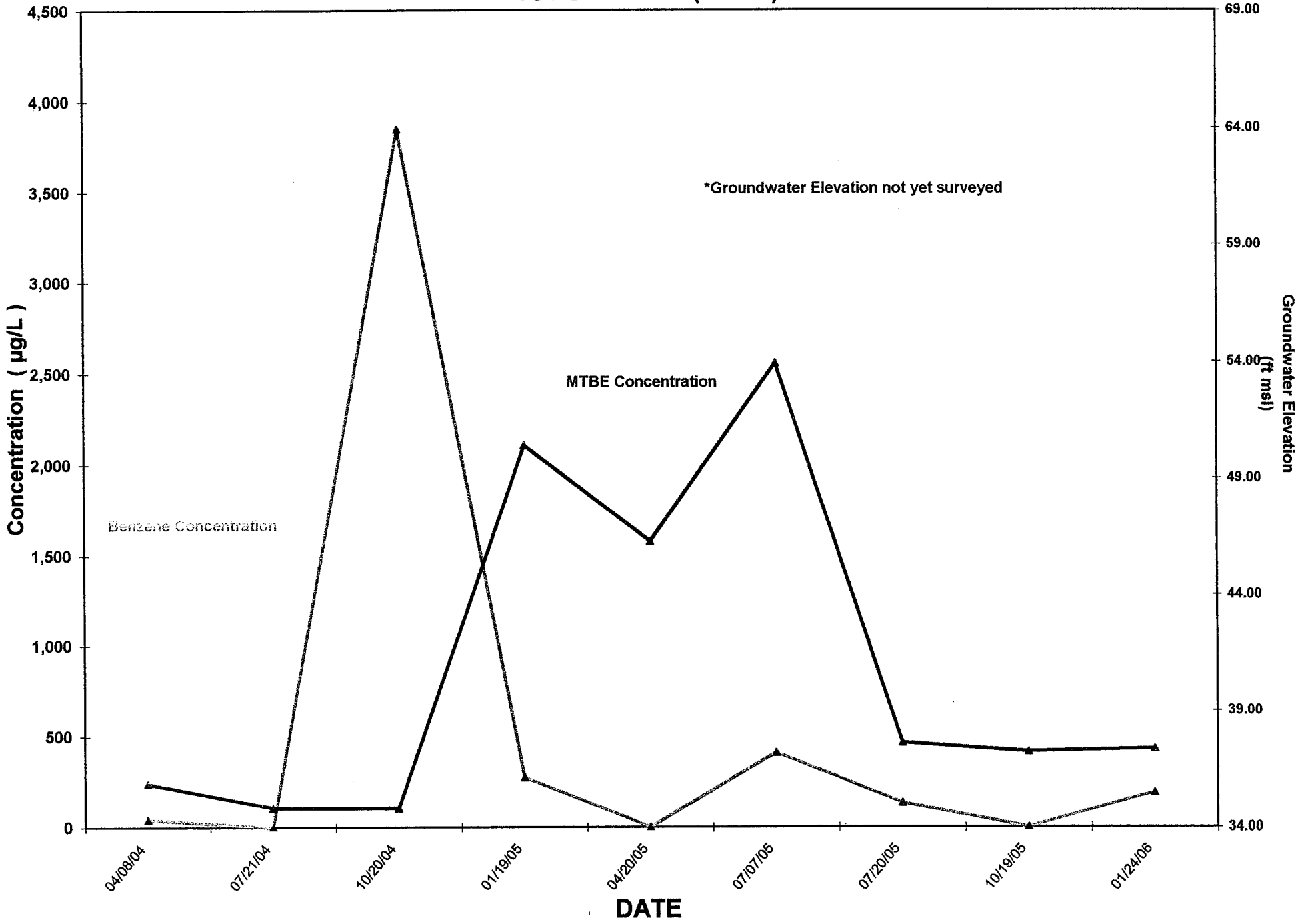


FIGURE 7K: Benzene / MTBE Concentrations and Groundwater Elevations* vs. Time TOC Station 049 (RW-1R)



APPENDICES

APPENDIX A

BIOSCREEN Plume Travel Time Output

BIOSCREEN Natural Attenuation Decision Support System

Air Force Center for Environmental Excellence — *Version 1.4*

TOC 049 MTBE
Run Name

Data Input Instructions:

1. *Enter value directly....or*
2. *Calculate by filling in grey cells below. (To restore formulas, hit button below).*

Data used directly in model.
Value calculated by model. (Don't enter any data).

1. HYDROGEOLOGY

Seepage Velocity*	*Vs*	9.4	*(ft/yr)*
or		↑ *or*	
Hydraulic Conductivity	*K*	9.3E-05	*(cm/sec)*
Hydraulic Gradient	*i*	0.0448	*(ft/ft)*
Porosity	*n*	0.46	*(-)*

2. DISPERSION

Longitudinal Dispersivity*	*alpha x*	24.5	*(ft)*
Transverse Dispersivity*	*alpha y*	2.4	*(ft)*
Vertical Dispersivity*	*alpha z*	0.0	*(ft)*
or		↑ *or*	
Estimated Plume Length	*Lp*	1000	*(ft)*

3. ADSORPTION

Retardation Factor*	*R*	1.1	*(-)*
or		↑ *or*	
Soil Bulk Density	*rho*	1.7	*(kg/l)*
Partition Coefficient	*Koc*	12.59	*(L/kg)*
FractionOrganicCarbon	*foc*	2.5E-3	*(-)*

4. BIODEGRADATION

1st Order Decay Coeff*	*lambda*	6.9E-2	*(per yr)*
or		↑ *or*	
Solute Half-Life	*t-half*	10.00	*(year)*
or Instantaneous Reaction Model			
Delta Oxygen*	*DO*	1.65	*(mg/L)*
Delta Nitrate*	*NO3*	0.7	*(mg/L)*
Observed Ferrous Iron*	*Fe2+*	16.6	*(mg/L)*
Delta Sulfate*	*SO4*	22.4	*(mg/L)*
Observed Methane*	*CH4*	6.6	*(mg/L)*

5. GENERAL

Modeled Area Length*	900	*(ft)*	L
Modeled Area Width*	60	*(ft)*	W
Simulation Time*	1	*(yr)*	

115 ↑ *or* 0.02

Variable*: 20

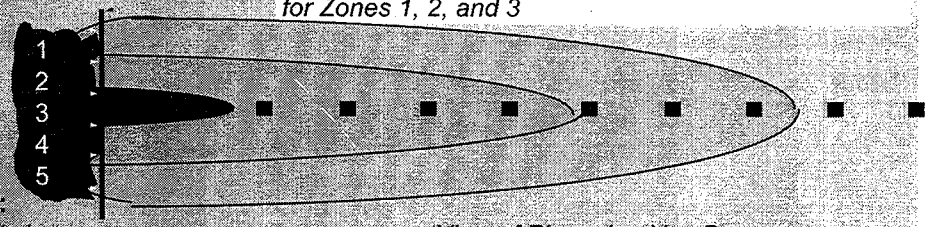
6. SOURCE DATA

Source Thickness in Sat.Zone* 20 *(ft)*

Vertical Plane Source: Look at Plume Cross-Section and Input Concentrations & Widths for Zones 1, 2, and 3

Source Zones:

	Width* (ft)	Conc. (mg/L)*
1	10	0.05
2	10	0.5
3	20	1
4	10	0.5
5	10	0.05



View of Plume Looking Down

Source Halflife (see Help): 3 | 90 *(yr)*

Inst. Reactc. ↑ ↑ 1st Order

Soluble Mass 9.80 *(Kg)* In Source NAPL, Soil

Observed Centerline Concentrations at Monitoring Wells
If No Data Leave Blank or Enter "0"

7. FIELD DATA FOR COMPARISON

Concentration (mg/L)	1.16	.002									
Dist. from Source (ft)	*0*	*90*	*180*	*270*	*360*	*450*	*540*	*630*	*720*	*810*	*900*

8. CHOOSE TYPE OF OUTPUT TO SEE:

RUN CENTERLINE — **View Output**

RUN ARRAY — **View Output**

Help

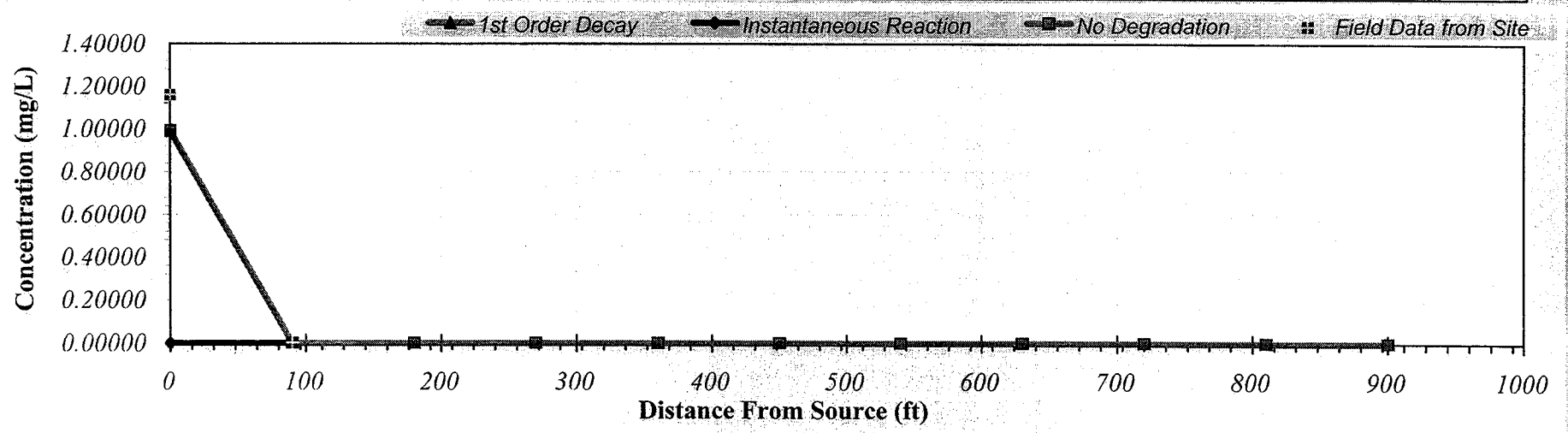
Recalculate This Sheet

Paste Example Dataset

Restore Formulas for Vs, Dispersivities, R, lambda, other

DISSOLVED HYDROCARBON CONCENTRATION ALONG PLUME CENTERLINE (mg/L at Z=0)

TYPE OF MODEL	Distance from Source (ft) 0	90	180	270	360	450	540	630	720	810	900
No Degradation	0.992	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1st Order Decay	0.992	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Inst. Reaction	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Field Data from Site	1.16000	0.00200									



Calculate Animation

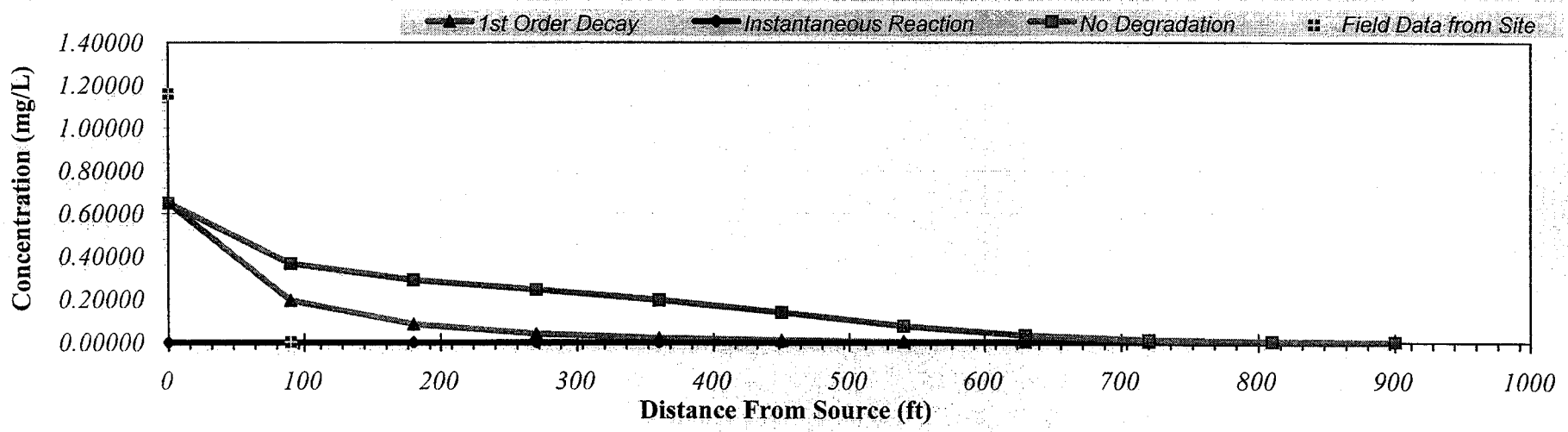
Time: 1 Years

Return to Input

Recalculate This Sheet

DISSOLVED HYDROCARBON CONCENTRATION ALONG PLUME CENTERLINE (mg/L at Z=0)

TYPE OF MODEL	Distance from Source (ft) 0	90	180	270	360	450	540	630	720	810	900
No Degradation	0.649	0.366	0.291	0.246	0.198	0.140	0.076	0.032	0.010	0.002	0.000
1st Order Decay	0.649	0.195	0.084	0.040	0.020	0.009	0.004	0.001	0.000	0.000	0.000
Inst. Reaction	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Field Data from Site	1.16000	0.00200									



Calculate Animation

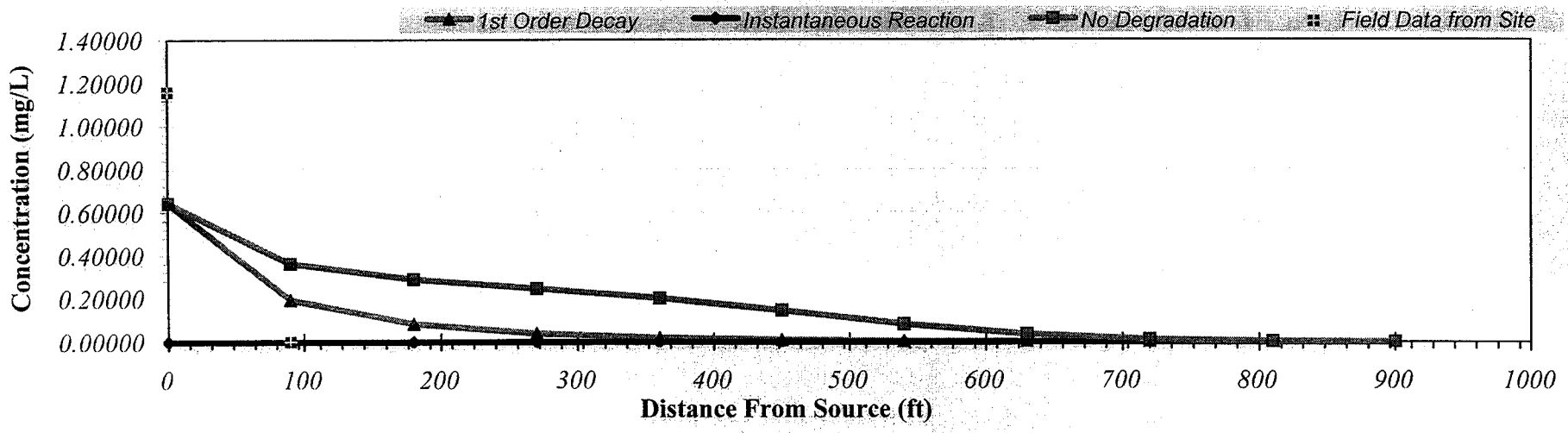
Time: 56 Years

Return to Input

Recalculate This Sheet

DISSOLVED HYDROCARBON CONCENTRATION ALONG PLUME CENTERLINE (mg/L at Z=0)

TYPE OF MODEL	Distance from Source (ft) 0	90	180	270	360	450	540	630	720	810	900
No Degradation	0.644	0.363	0.290	0.246	0.200	0.144	0.081	0.035	0.012	0.003	0.001
1st Order Decay	0.644	0.194	0.084	0.040	0.020	0.009	0.004	0.001	0.000	0.000	0.000
Inst. Reaction	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Field Data from Site	1.16000	0.00200									



Calculate Animation

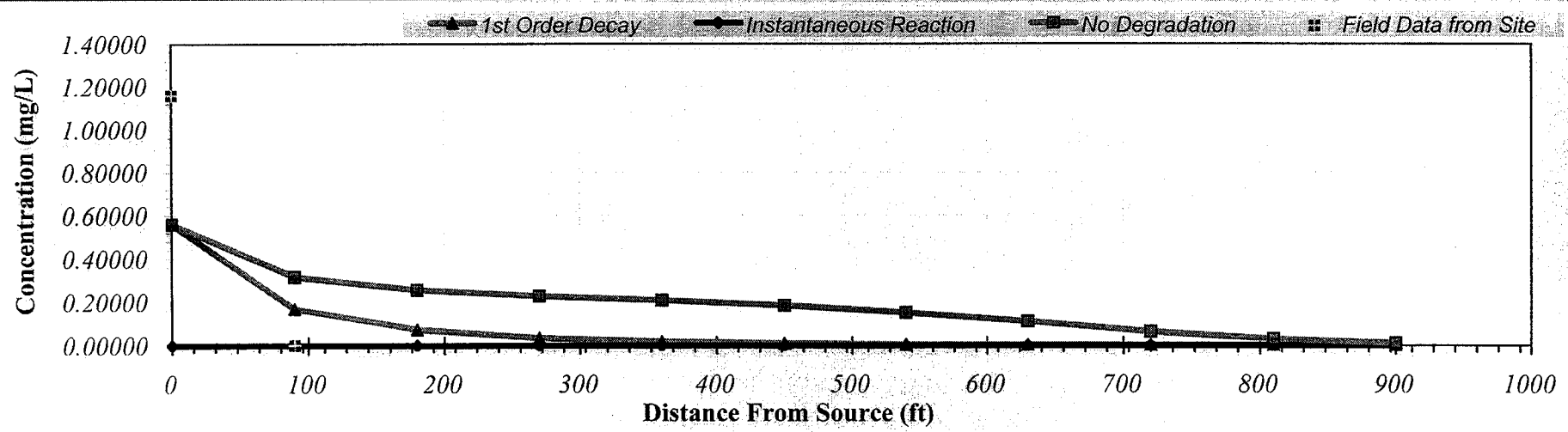
Time: 57 Years

Return to Input

Recalculate This Sheet

DISSOLVED HYDROCARBON CONCENTRATION ALONG PLUME CENTERLINE (mg/L at Z=0)

TYPE OF MODEL	Distance from Source (ft) 0	90	180	270	360	450	540	630	720	810	900
No Degradation	0.561	0.318	0.257	0.229	0.209	0.184	0.151	0.109	0.062	0.030	0.011
1st Order Decay	0.561	0.169	0.073	0.035	0.018	0.009	0.005	0.002	0.001	0.000	0.000
Inst. Reaction	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Field Data from Site	1.16000	0.00200									



Calculate Animation

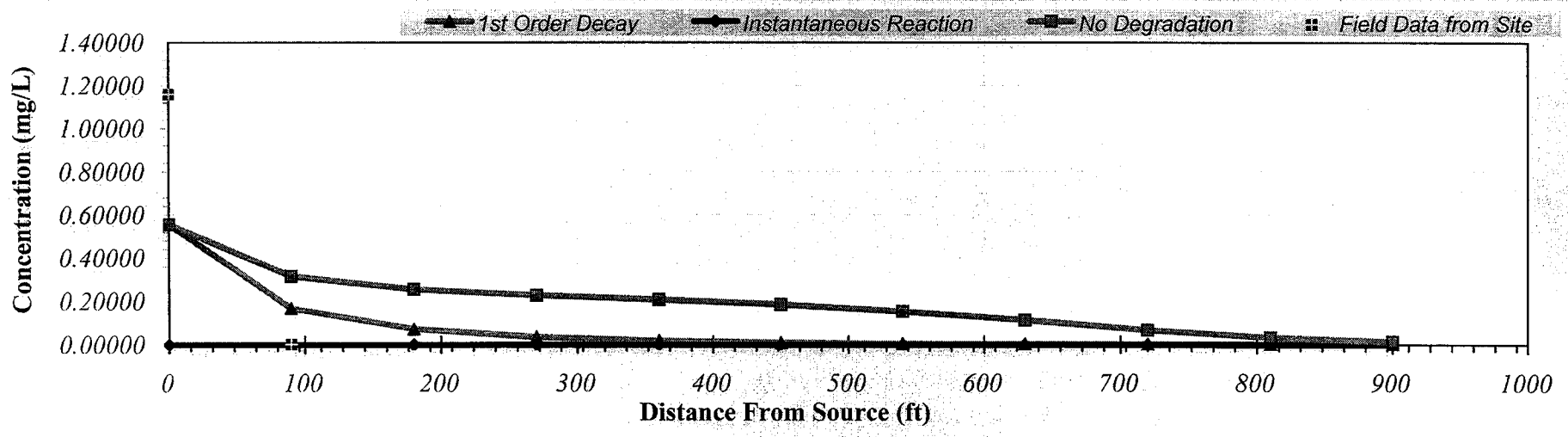
Time: 75 Years

Return to Input

Recalculate This Sheet

DISSOLVED HYDROCARBON CONCENTRATION ALONG PLUME CENTERLINE (mg/L at Z=0)

TYPE OF MODEL	Distance from Source (ft) 0	90	180	270	360	450	540	630	720	810	900
No Degradation	0.556	0.315	0.255	0.228	0.208	0.185	0.153	0.113	0.066	0.032	0.013
1st Order Decay	0.556	0.167	0.072	0.035	0.018	0.009	0.005	0.002	0.001	0.000	0.000
Inst. Reaction	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Field Data from Site	1.16000	0.00200									



Calculate Animation

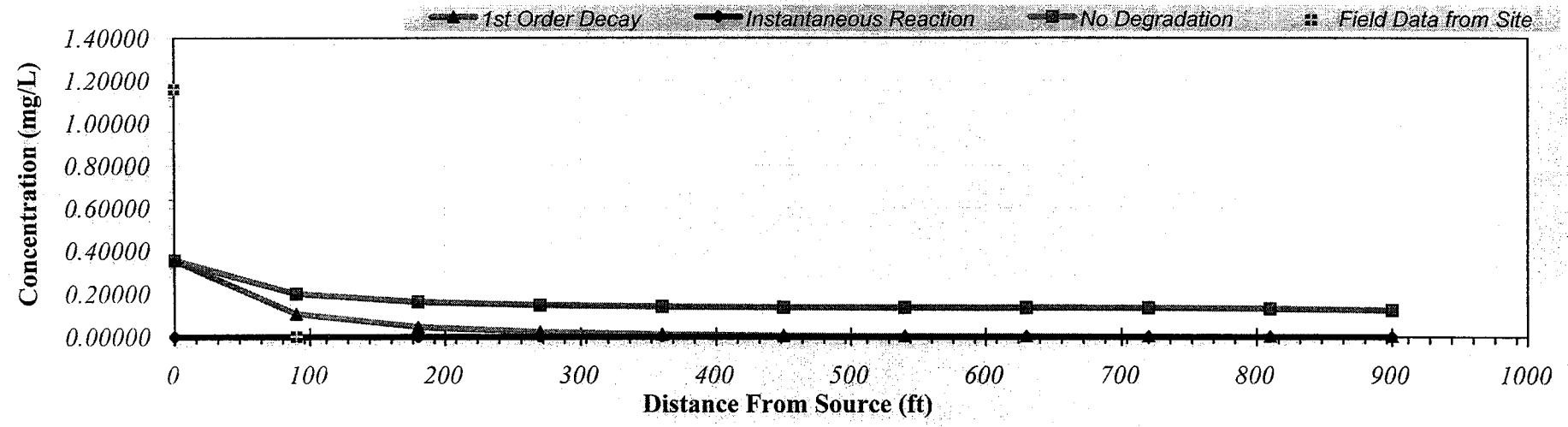
Time: 76 Years

Return to Input

Recalculate This Sheet

DISSOLVED HYDROCARBON CONCENTRATION ALONG PLUME CENTERLINE (mg/L at Z=0)

TYPE OF MODEL	Distance from Source (ft) 0	90	180	270	360	450	540	630	720	810	900
No Degradation	0.356	0.202	0.164	0.148	0.141	0.138	0.136	0.136	0.135	0.132	0.124
1st Order Decay	0.356	0.107	0.046	0.022	0.011	0.006	0.003	0.002	0.001	0.000	0.000
Inst. Reaction	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Field Data from Site	1.16000	0.00200									



Calculate Animation

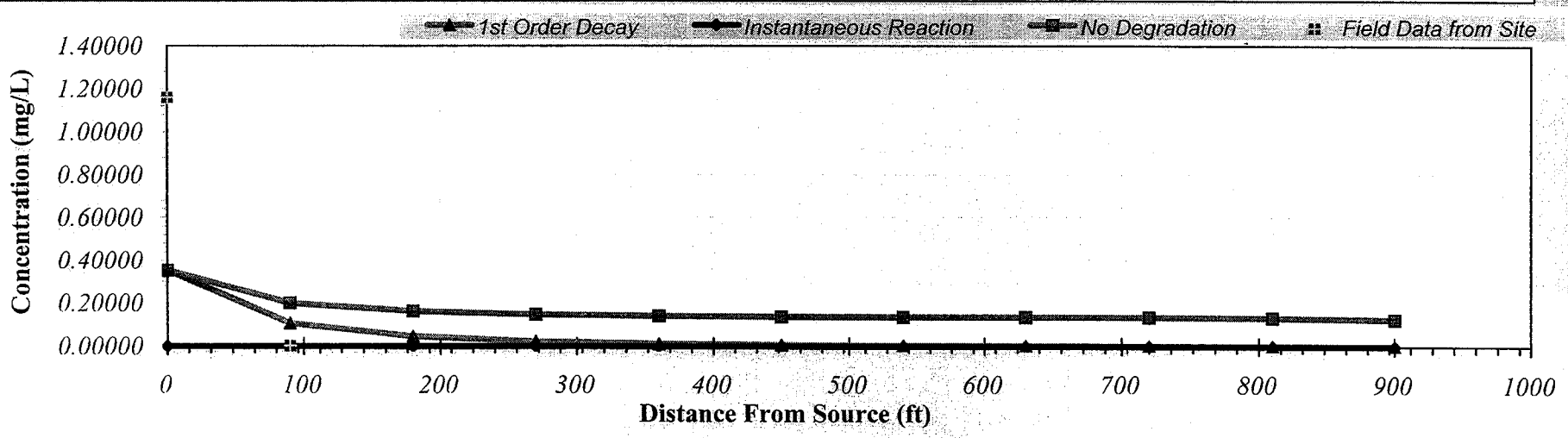
Time: 134 Years

Return to Input

Recalculate This Sheet

DISSOLVED HYDROCARBON CONCENTRATION ALONG PLUME CENTERLINE (mg/L at Z=0)

TYPE OF MODEL	Distance from Source (ft) 0	90	180	270	360	450	540	630	720	810	900
No Degradation	0.353	0.200	0.163	0.147	0.140	0.137	0.136	0.135	0.135	0.132	0.125
1st Order Decay	0.353	0.106	0.046	0.022	0.011	0.006	0.003	0.002	0.001	0.000	0.000
Inst. Reaction	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Field Data from Site	1.16000	0.00200									



Calculate Animation

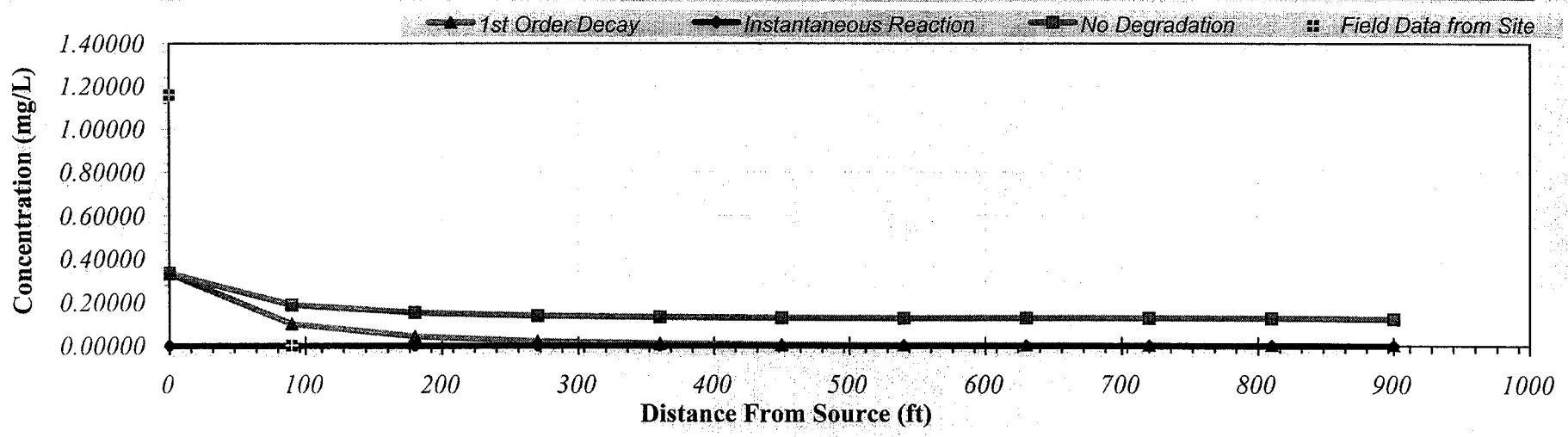
Time: 135 Years

Return to Input

Recalculate This Sheet

DISSOLVED HYDROCARBON CONCENTRATION ALONG PLUME CENTERLINE (mg/L at Z=0)

TYPE OF MODEL	Distance from Source (ft) 0	90	180	270	360	450	540	630	720	810	900
No Degradation	0.334	0.190	0.154	0.140	0.133	0.130	0.129	0.129	0.129	0.128	0.125
1st Order Decay	0.334	0.101	0.043	0.021	0.011	0.005	0.003	0.002	0.001	0.000	0.000
Inst. Reaction	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Field Data from Site	1.16000	0.00200									



Calculate Animation

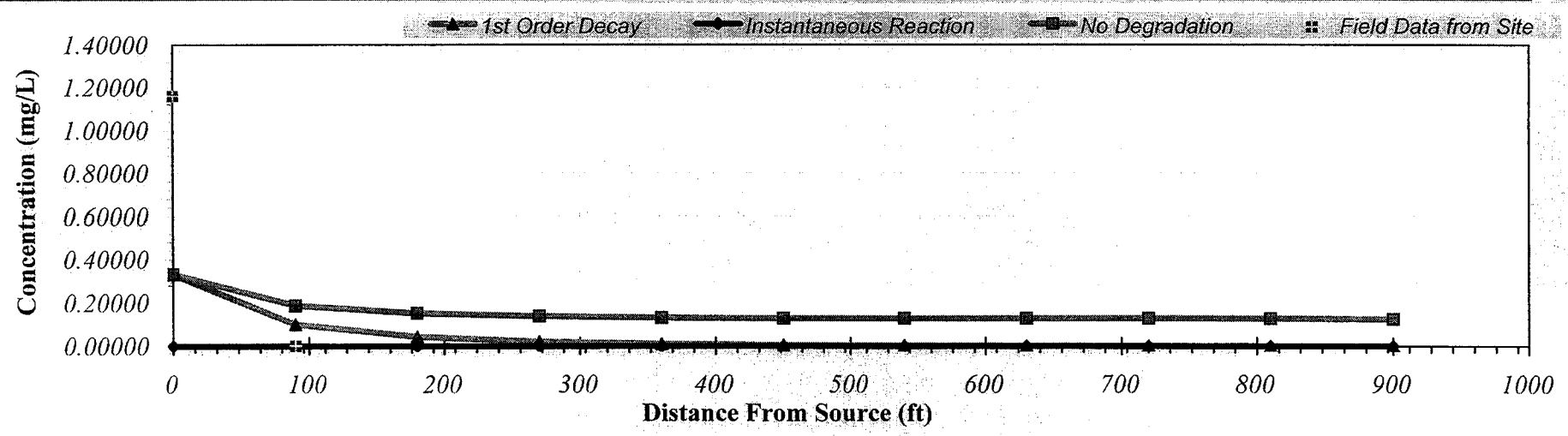
Time: 142 Years

Return to Input

Recalculate This Sheet

DISSOLVED HYDROCARBON CONCENTRATION ALONG PLUME CENTERLINE (mg/L at Z=0)

TYPE OF MODEL	Distance from Source (ft) 0	90	180	270	360	450	540	630	720	810	900
No Degradation	0.332	0.188	0.153	0.138	0.132	0.129	0.128	0.128	0.129	0.128	0.124
1st Order Decay	0.332	0.100	0.043	0.021	0.010	0.005	0.003	0.002	0.001	0.000	0.000
Inst. Reaction	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Field Data from Site	1.16000	0.00200									



Calculate Animation

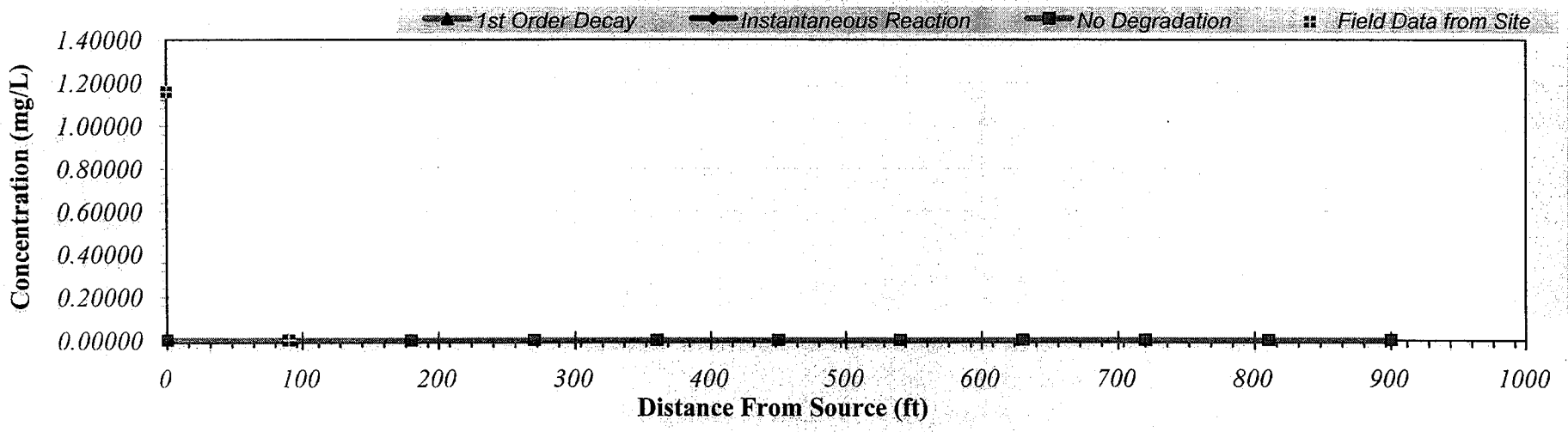
Time: 143 Years

Return to Input

Recalculate This Sheet

DISSOLVED HYDROCARBON CONCENTRATION ALONG PLUME CENTERLINE (mg/L at Z=0)

TYPE OF MODEL	Distance from Source (ft) 0	90	180	270	360	450	540	630	720	810	900
No Degradation	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1st Order Decay	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Inst. Reaction	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Field Data from Site	1.16000	0.00200									



Calculate Animation

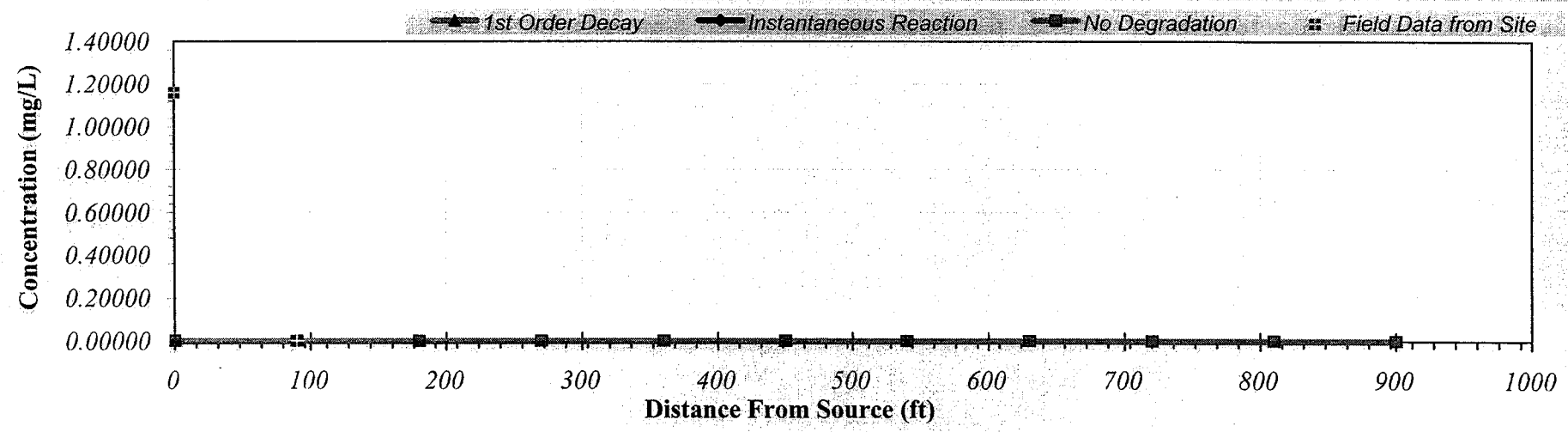
Time: 984 Years

Return to Input

Recalculate This Sheet

DISSOLVED HYDROCARBON CONCENTRATION ALONG PLUME CENTERLINE (mg/L at Z=0)

TYPE OF MODEL	Distance from Source (ft) 0	90	180	270	360	450	540	630	720	810	900
No Degradation	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1st Order Decay	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Inst. Reaction	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Field Data from Site	1.16000	0.00200									



Calculate Animation

Time: 985 Years

Return to Input

Recalculate This Sheet

BIOSCREEN Natural Attenuation Decision Support System

Air Force Center for Environmental Excellence

Version 1.4

TOC 049
Benzene
Run Name

Data Input Instructions:

1. *Enter value directly.... or*
2. *Calculate by filling in grey cells below. (To restore formulas, hit button below).*

Data used directly in model.
Value calculated by model. (Don't enter any data).

1. HYDROGEOLOGY

Seepage Velocity*	*Vs*	5.0	*(ft/yr)*
or		↑ *or*	
Hydraulic Conductivity	*K*	5.0E-05	*(cm/sec)*
Hydraulic Gradient	*i*	0.0448	*(ft/ft)*
Porosity	*n*	0.46	*(-)*

2. DISPERSION

Longitudinal Dispersivity*	*alpha x*	8.0	*(ft)*
Transverse Dispersivity*	*alpha y*	0.8	*(ft)*
Vertical Dispersivity*	*alpha z*	0.0	*(ft)*
or		↑ *or*	
Estimated Plume Length	*Lp*	120	*(ft)*

3. ADSORPTION

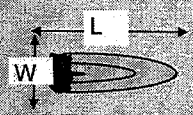
Retardation Factor*	*R*	1.4	*(-)*
or		↑ *or*	
Soil Bulk Density	*rho*	1.7	*(kg/l)*
Partition Coefficient	*Koc*	38	*(L/kg)*
FractionOrganicCarbon	*foc*	2.5E-3	*(-)*

4. BIODEGRADATION

1st Order Decay Coeff*	*lambda*	6.9E-1	*(per yr)*
or		↑ *or*	
Solute Half-Life	*t-half*	1.00	*(year)*
or Instantaneous Reaction Model			
Delta Oxygen*	*DO*	5.8	*(mg/L)*
Delta Nitrate*	*NO3*	6.3	*(mg/L)*
Observed Ferrous Iron*	*Fe2+*	16.6	*(mg/L)*
Delta Sulfate*	*SO4*	24.6	*(mg/L)*
Observed Methane*	*CH4*	7.2	*(mg/L)*

5. GENERAL

Modeled Area Length*	900	*(ft)*
Modeled Area Width*	110	*(ft)*
Simulation Time*	0	*(yr)*



115	
↑ *or*	
0.02	
Variable*	
20	

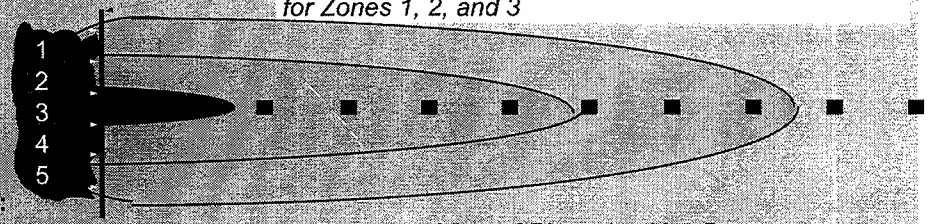
6. SOURCE DATA

Source Thickness in Sat.Zone* 20 *(ft)*

Source Zones:

Zone	Width* (ft)	Conc. (mg/L)*
1	40	0.00001
2	10	0.00015
3	10	0.00032
4	10	0.00015
5	40	0.00001

Vertical Plane Source: Look at Plume Cross-Section and Input Concentrations & Widths for Zones 1, 2, and 3



View of Plume Looking Down

Source Halflife (see Help):

2	>1000 *(yr)*
Inst. React.	1st Order

Soluble Mass 9.10 *(Kg)*
In Source NAPL, Soil

Observed Centerline Concentrations at Monitoring Wells
If No Data Leave Blank or Enter "0"

7. FIELD DATA FOR COMPARISON

Dist. from Source (ft)	Concentration (mg/L)
0	0.00032
90	
180	
270	
360	
450	
540	
630	
720	
810	
900	

8. CHOOSE TYPE OF OUTPUT TO SEE:

RUN CENTERLINE — **View Output**

RUN ARRAY — **View Output**

Help

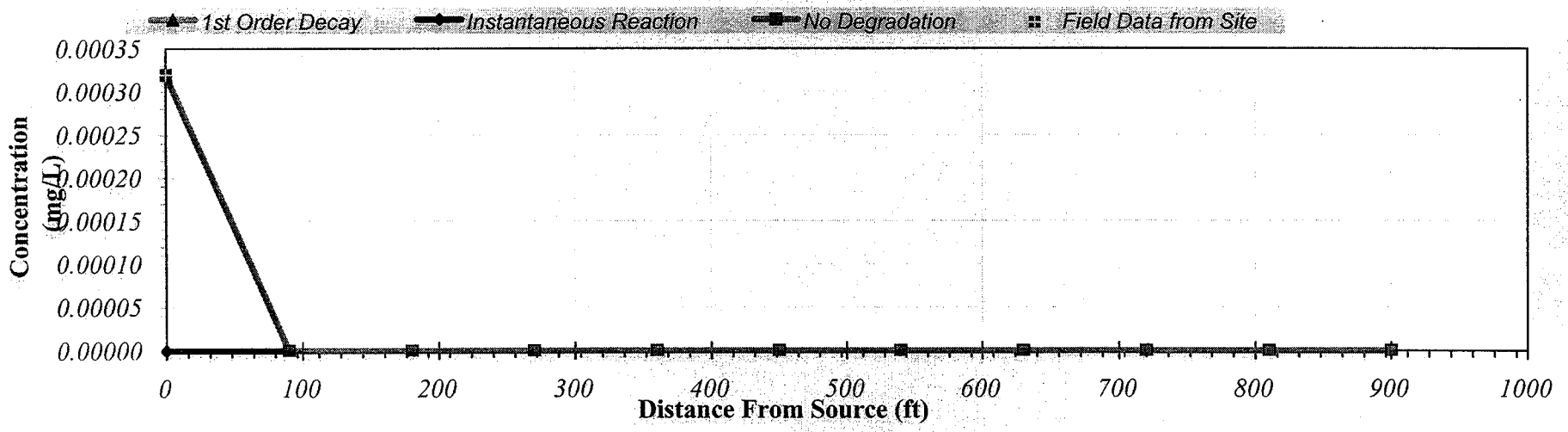
Recalculate This Sheet

Paste Example Dataset

Restore Formulas for Vs, Dispersivities, R, lambda, other

DISSOLVED HYDROCARBON CONCENTRATION ALONG PLUME CENTERLINE (mg/L at Z=0)

TYPE OF MODEL	Distance from Source (ft) 0	90	180	270	360	450	540	630	720	810	900
No Degradation	0.00032	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
1st Order Decay	0.00032	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Inst. Reaction	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Field Data from Site	0.00032										



Calculate Animation

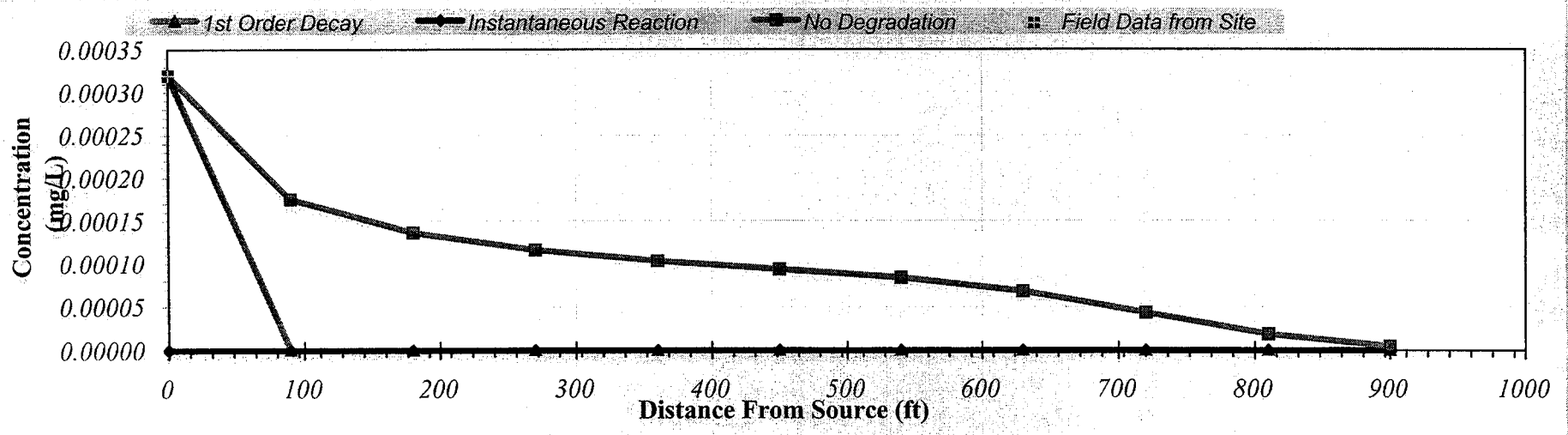
Time: 1 Years

Return to Input

Recalculate This Sheet

DISSOLVED HYDROCARBON CONCENTRATION ALONG PLUME CENTERLINE (mg/L at Z=0)

TYPE OF MODEL	Distance from Source (ft) 0	90	180	270	360	450	540	630	720	810	900
No Degradation	0.00032	0.00018	0.00014	0.00012	0.00010	0.00009	0.00008	0.00007	0.00004	0.00002	0.00000
1st Order Decay	0.00032	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Inst. Reaction	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Field Data from Site	0.00032										



Time:
198 Years

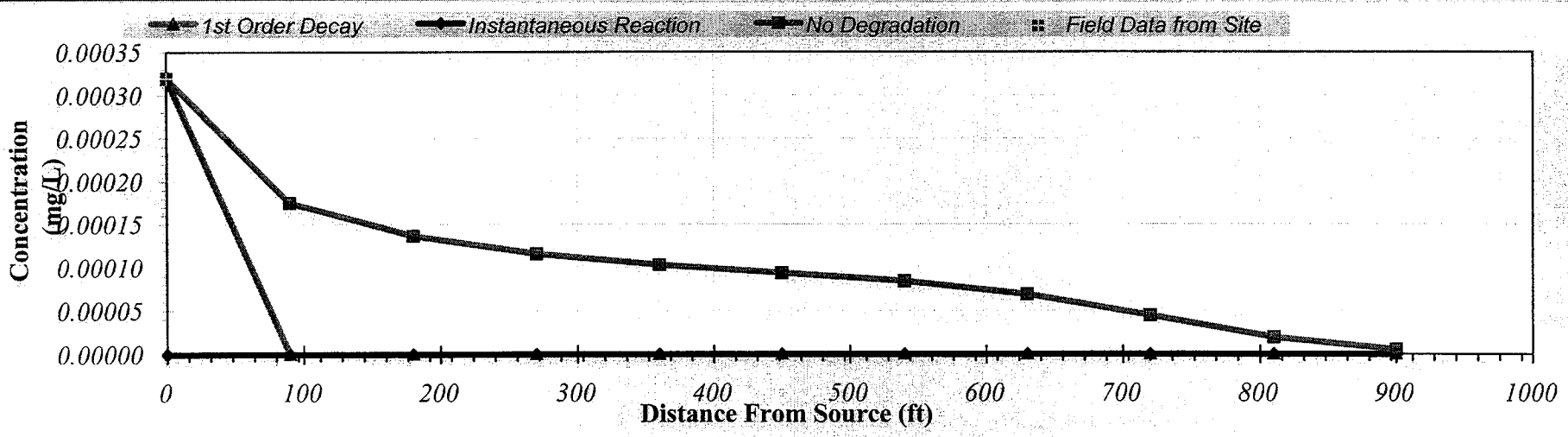
Calculate Animation

Return to Input

Recalculate This Sheet

DISSOLVED HYDROCARBON CONCENTRATION ALONG PLUME CENTERLINE (mg/L at Z=0)

TYPE OF MODEL	Distance from Source (ft) 0	90	180	270	360	450	540	630	720	810	900
No Degradation	0.00032	0.00018	0.00014	0.00012	0.00010	0.00009	0.00008	0.00007	0.00004	0.00002	0.00001
1st Order Decay	0.00032	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Inst. Reaction	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Field Data from Site	0.00032										



Calculate Animation

Time: 199 Years

Return to Input

Recalculate This Sheet

APPENDIX B

Groundwater Remediation System Data

TABLE 2
GROUNDWATER REMEDIATION SYSTEM MONITORING PROGRAM
Thrifty Oil Co. Station No 049, OAKLAND, CA

Date	Totalizer (gallons)	Total/Cum. Discharge (gallons)	Flow (gal/day)	Total H-C Removed (lbs)	EFFLUENT (ug/L)						INFLUENT (ug/L)					
					TPH-g	B	T	E	X	MTBE	TPH-g	B	T	E	X	MTBE
4/8/1991	1,310	0	-	0.00	-	<0.3	<0.3	<0.3	<0.9	-	-	910	2000	160	2000	-
4/15/1991	1,434	124	18	0.05	-	<0.3	<0.3	<0.3	<0.3	-	-	2800	4600	310	5000	-
4/22/1991	1,510	200	11	0.08	-	<15	<15	<15	<45	-	-	3100	3300	<15	2800	-
4/29/1991	1,660	350	21	0.14	-	<0.3	<0.3	<0.3	<0.9	-	-	3600	4500	300	5000	-
5/6/1991	1,740	430	11	0.17	-	<0.3	<0.3	<0.3	<0.9	-	-	3600	3500	300	3800	-
5/13/1991	1,880	570	20	0.22	-	<0.3	<0.3	<0.3	<0.9	-	-	3300	3200	230	3900	-
5/20/1991	2,010	700	19	0.27	-	<0.3	<0.3	<0.3	<0.9	-	-	3300	3400	260	5100	-
5/28/1991	2,050	740	5	0.29	-	<0.3	<0.3	<0.3	<0.9	-	-	2900	3000	230	4200	-
6/3/1991	2,110	800	10	0.31	-	<0.3	<0.3	<0.3	<0.9	-	-	2500	2100	110	2800	-
6/10/1991	2,160	850	7	0.33	-	<0.3	<0.3	<0.3	<0.9	-	-	1800	1700	120	2100	-
6/17/1991	2,219	909	8	0.36	-	<0.3	<0.3	<0.3	<0.9	-	-	2100	1900	170	2700	-
6/24/1991	2,263	953	6	0.37	-	<0.3	<0.3	<0.3	<0.9	-	-	2100	1800	150	2700	-
07/01/91	2,313	1,003	7	0.39	-	<0.5	<0.5	<1	<1	-	-	2,700	2,000	150	2,900	-
07/08/91	2,700	1,390	55	0.54	-	<0.5	<0.5	<1	<1	-	-	4,000	2,500	130	4,400	-
07/15/91	2,872	1,562	25	0.61	-	<0.5	<0.5	<1	<1	-	-	3,100	1,900	140	3,200	-
07/22/91	3,144	1,834	39	0.72	-	<0.5	<0.5	<1	<1	-	-	3,400	2,100	110	2,800	-
07/29/91	3,220	1,910	11	0.75	-	<0.5	<0.5	<1	<1	-	-	5,100	2,200	180	2,700	-
08/05/91	3,348	2,038	18	0.80	-	<0.5	<0.5	<1	<1	-	-	5,100	3,900	400	4,200	-
08/12/91	3,472	2,162	18	0.85	-	<0.5	<0.5	<1	<1	-	-	11,000	6,200	440	8,400	-
08/19/91	3,548	2,238	11	0.88	-	<0.5	<0.5	<1	<1	-	-	4,500	2,400	130	2,600	-
08/26/91	3,655	2,345	15	0.92	-	<0.5	<0.5	<1	<1	-	-	4,400	2,500	260	3,600	-
09/09/91	3,822	2,512	12	0.98	-	<0.5	<0.5	<1	<1	-	-	5,200	3,000	390	3,700	-
09/16/91	3,884	2,574	9	1.01	-	<0.5	<0.5	<1	<1	-	-	4,100	2,000	460	4,900	-
09/23/91	4,013	2,703	18	1.06	-	<0.5	<0.5	<1	<1	-	-	4,600	1,600	710	6,400	-
09/30/91	4,092	2,782	11	1.09	-	<0.5	<0.5	<1	<1	-	-	5,700	2,000	380	6,200	-
10/07/91	4,131	2,821	6	1.10	System shut down						-					-
10/14/91	4,195	2,885	9	1.13	-	<0.5	<0.5	<1	<1	-	-	4,400	2,000	370	8,100	-
10/21/91	4,406	3,096	30	1.21	-	<0.5	<0.5	<1	<1	-	-	2,300	1,100	190	4,200	-
10/28/91	4,474	3,164	10	1.24	-	<0.5	<0.5	<1	<1	-	-	6,400	4,100	620	6,100	-
11/03/91	4,613	3,303	23	1.29	-	<0.5	<0.5	<1	<1	-	-	6,100	2,800	200	5,600	-
11/11/91	4,700	3,390	11	1.33	-	<0.5	<0.5	<1	<1	-	-	6,500	2,300	<30	4,900	-
11/18/91	4,887	3,577	27	1.40	-	<0.5	<0.5	<1	<1	-	-	5,600	2,500	300	4,600	-
11/25/91	5,042	3,732	22	1.46	-	<0.5	<0.5	<1	<1	-	-	5,400	2,800	230	5,700	-
12/03/91	5,263	3,953	28	1.55	-	<0.5	<0.5	<1	<1	-	-	7,200	3,300	490	5,500	-
12/09/91	5,362	4,052	17	1.59	-	<0.5	<0.5	<1	<1	-	-	4,400	1,700	140	3,900	-
12/16/91	5,486	4,176	18	1.63	-	<0.5	<0.5	<0.5	<0.5	-	-	4,700	2,300	310	4,600	-
12/23/91	5,516	4,206	4	1.65	-	<0.5	<0.5	<0.5	<0.5	-	-	4,000	2,200	290	5,900	-
12/30/91	5,575	4,265	8	1.67	-	<0.5	<0.5	<0.5	<0.5	-	-	5,200	2,500	350	5,800	-
01/15/92	5,720	4,410	9	1.73	-	<0.5	<0.5	<0.5	<0.5	-	-	3,400	1,900	300	6,300	-
02/10/92	6,264	4,954	21	1.94	-	<0.5	<0.5	<0.5	<0.5	-	-	5,800	2,800	320	7,200	-
03/09/92	8,520	7,210	81	2.82	<200	<0.5	1.6	<0.5	<0.5	-	47,000	7,100	4,800	630	10,300	-
04/13/92	22,888	21,578	411	7.37	<200	<0.5	<0.5	<0.5	<0.5	-	29,000	4,500	2,200	160	4,800	-
05/11/92	24,920	23,610	73	7.80	<200	<0.5	<0.5	<0.5	<0.5	-	22,000	4,300	1,500	130	3,800	-

TABLE 2
GROUNDWATER REMEDIATION SYSTEM MONITORING PROGRAM
Thrifty Oil Co. Station No 049, OAKLAND, CA

Date	Totalizer (gallons)	Total/Cum. Discharge (gallons)	Flow (gal/day)	Total H-C Removed (lbs)	EFFLUENT (ug/L)						INFLUENT (ug/L)					
					TPH-g	B	T	E	X	MTBE	TPH-g	B	T	E	X	MTBE
06/01/92	28,330	27,020	162	8.37	<200	<0.5	<0.5	<0.5	<0.5	-	18,000	3,400	1,500	660	4,200	-
07/13/92	72,675	27,020		8.37	-	<0.5	<0.5	<0.5	<0.5	-	-	1,800	750	150	5,600	-
07/13/92	72,675	27,020		8.37	The system pumped air and flowmeter jumped from 30,000 gallons to 70,000 gallons.						-	-	-	-	-	-
08/17/92	75,046	29,391	68	8.72	-	<0.5	<0.5	<0.5	<0.5	-	-	1,100	350	200	1,100	-
09/14/92	75,582	29,927	19	8.80	-	<0.5	<0.5	<0.5	<1	-	-	2,100	520	<25	3,500	-
10/05/92	75,680	30,025	5	8.82	<200	<0.5	<0.5	<0.5	<1	-	19,000	1,700	270	<25	4,000	-
11/09/92	77,280	31,625	46	9.07	-	<0.5	<0.5	<0.5	<0.5	-	-	4,000	1,400	120	5,900	-
12/14/92	79,420	33,765	61	9.41	-	<0.5	<0.5	<0.5	<1	-	-	7,300	4,900	1,800	16,000	-
01/04/93	84,720	39,065	252	10.25	-	<0.5	<0.5	<0.5	<1	-	-	5,400	2,100	450	7,800	-
02/15/93	102,689	57,034	428	14.74	<200	<0.5	<0.5	<0.5	<1	-	41,000	6,600	3,200	260	9,600	-
02/22/93	146,430	57,034	-	14.74	The system pumped air and flowmeter jumped from 102,689 gallons to 146,430 gallons.						-	-	-	-	-	-
03/08/93	147,500	58,104	76	15.10	-	<0.5	<0.5	<0.5	<1	-	-	7,400	3,400	56	11,000	-
04/26/93	151,200	61,804	76	16.29	<100	<0.5	<0.5	<0.5	<1	-	36,000	4,300	2,200	420	8,300	-
04/26/93	151,200	61,804	-	16.29	Shut down system for repair						-	-	-	-	-	-
07/21/93	151,240	61,844	0	16.30	Restart the system						-	-	-	-	-	-
08/11/93	151,650	62,254	20	16.43	-	<0.5	<0.5	<0.5	<1	-	-	6,500	2,300	390	6,200	-
09/16/93	154,005	64,609	65	17.20	<60	<0.3	<0.3	<0.3	<0.6	-	43,000	2,300	320	<4.4	2,900	-
10/04/93	154,896	65,500	50	17.48	<60	<0.3	<0.3	<0.3	<0.6	-	33,000	2,900	470	6.9	3,500	-
11/05/93	157,431	68,035	79	17.99	<50	<0.3	<0.3	<0.3	<0.5	-	15,000	1,100	27	<0.3	920	-
12/03/93	159,324	69,928	68	18.23	<50	<0.3	<0.3	<0.3	<0.5	-	16,000	1,100	88	<6.6	2,300	-
01/06/94	166,440	77,044	209	19.18	-	<0.3	<0.3	<0.3	<0.5	-	-	3,800	730	<13	1,200	-
02/03/94	170,720	81,324	153	19.75	-	<0.3	<0.3	<0.3	<0.5	-	-	3,600	610	<4.4	4,800	-
03/03/94	178,168	88,772	266	20.74	-	<0.3	<0.3	<0.3	<0.5	-	-	2,800	2,000	270	3,400	-
04/07/94	185,670	96,274	214	22.06	<50	<0.3	<0.3	<0.3	<0.5	-	26,000	2,200	550	<6.6	1,900	-
05/12/94	188,840	99,444	91	22.46	<50	<0.3	<0.3	<0.3	<0.5	-	4,600	100	10	8.4	280	-
06/16/94	194,680	105,284	167	22.68	<50	<0.3	<0.3	<0.3	<0.5	-	<50	<0.3	<0.3	<0.3	<0.5	-
07/11/94	199,135	109,739	178	22.83	<50	<0.3	<0.3	<0.3	<0.5	-	4,000	220	<2.6	<2.6	320	-
08/04/94	200,910	111,514	74	22.92	<50	<0.3	<0.3	<0.3	<0.5	-	7,800	480	6.2	<0.3	630	-
09/15/94	203,450	114,054	60	23.04	<50	<0.3	<0.3	<0.3	<0.5	-	3,200	150	2.4	2.6	170	-
10/10/94	205,210	115,814	70	23.07	<50	<0.3	<0.3	<0.5	<0.5	-	1,300	8.6	1.5	1.1	15	-
11/07/94	206,060	116,664	30	23.07	<50	<0.3	<0.3	<0.5	<0.5	-	170	1.5	<0.3	<0.5	0.5	-
12/05/94	207,093	117,697	37	23.07	<50	<0.3	<0.3	<0.5	<0.5	-	75	1.3	<0.3	<0.5	<0.5	-
01/09/95	207,293	117,897	6	23.08	<50	<0.3	<0.3	<0.5	<0.5	-	<50	<0.3	<0.3	<0.5	<0.5	-
02/01/95	207,650	118,254	16	23.08	<50	<0.3	<0.3	<0.5	<0.5	-	<50	<0.3	<0.3	<0.5	<0.5	-
02/06/95	207,810	118,414	32	23.08	<50	<0.3	<0.3	<0.5	<0.5	-	<50	2.7	<0.3	<0.5	<0.5	-
03/10/95	208,430	119,034	19	23.08	<100	<0.5	<0.5	<0.5	<1	-	<100	<0.5	<0.5	<0.5	<1	-
04/10/95	208,564	119,168	4	23.08	<100	<0.5	<0.5	<0.5	<1	-	3,300	180	7.6	2.1	150	-
05/08/95	208,608	119,212	2	23.08	<100	<0.5	<0.5	<0.5	<1	-	11,000	640	9.2	<5	1,100	-
06/05/95	208,926	119,530	11	23.10	<100	<0.5	<0.5	<0.5	<1	-	5,100	270	2.2	<0.5	49	-
07/10/95	214,182	124,786	150	23.50	<100	<0.5	<0.5	<0.5	<1	-	13,000	1,600	120	24	1,300	-
08/07/95	221,876	132,480	275	24.33	Shut down system for repair						-	-	-	-	-	-
08/28/95	221,997	132,601	6	24.35	Restart the system						-	-	-	-	-	-
09/06/95	222,003	132,607	1	24.35	<100	<0.5	<0.5	<0.5	<1	-	2,300	<0.5	<0.5	<0.5	<1	-

TABLE 2
GROUNDWATER REMEDIATION SYSTEM MONITORING PROGRAM
Thrifty Oil Co. Station No 049, OAKLAND, CA

Date	Totalizer (gallons)	Total/Cum. Discharge (gallons)	Flow (gal/day)	Total H-C Removed (lbs)	EFFLUENT (ug/L)						INFLUENT (ug/L)					
					TPH-g	B	T	E	X	MTBE	TPH-g	B	T	E	X	MTBE
10/09/95	222,343	132,947	10	24.35	<100	<0.5	<0.5	<0.5	<1	-	2,000	5.6	0.77	0.66	3.8	-
11/06/95	222,704	133,308	13	24.36	<50	0.3	0.31	<0.3	0.68	-	3,000	27	1.7	3.7	48	-
12/11/95	223,792	134,396	31	24.39	<50	<0.3	<0.3	<0.3	<0.5	-	<50	<0.3	<0.3	<0.3	0.96	-
01/08/96	224,661	135,265	31	24.40	970	<0.3	<0.3	<0.3	0.67	-	1,800	39	<0.3	<0.3	<0.5	-
02/12/96	227,812	138,416	90	24.47	<50	10	0.37	<0.3	0.53	-	3,300	190	<7.5	<7.5	20	-
03/12/96	229,301	139,905	51	24.50	<50	<0.3	<0.3	<0.3	<0.5	-	2,700	250	2.3	<1.5	<2.5	-
04/08/96	242,320	152,924	482	24.70	<50	<0.3	<0.3	<0.3	<0.5	-	1,000	90	5	<0.3	67	-
05/06/96	247,840	158,444	197	25.07	100	<0.3	<0.3	<0.3	<0.5	-	15,000	2,200	600	32	2,400	-
06/03/96	248,423	159,027	21	25.15	Shut down system for carbon change						-	-	-	-	-	-
08/08/96	248,423	159,027	-	25.15	Start-up system						-	-	-	-	-	-
08/20/96	248,630	159,234	17	25.15	<50	<0.3	<0.3	<0.3	<0.5	-	2,100	24	<0.3	<0.3	49	-
09/23/96	259,030	169,634	386	25.42	<50	<0.3	<0.3	<0.3	<0.5	-	4,100	260	<3	<3	34	-
10/16/96	263,610	174,214	199	25.55	<50	<0.3	<0.3	<0.3	<0.5	-	2,700	220	3.8	<0.6	44	-
11/19/96	263,986	174,590	11	25.55	<50	<0.3	<0.3	<0.3	<0.5	-	1,200	<0.3	<0.3	<0.3	<0.5	-
12/16/96	264,210	174,814	8	25.58	<50	<0.3	<0.3	<0.3	1.5	-	29,000	410	2,300	120	1,100	-
01/22/97	266,220	176,824	54	26.39	<50	<0.3	<0.3	<0.3	<0.5	-	68,000	<0.3	<0.3	<0.3	<0.5	-
02/24/97	267,030	177,634	25	26.79	<50	<0.3	<0.3	<0.3	<0.5	-	51,000	3,500	3,200	390	2,200	-
03/17/97	267,230	177,834	10	26.91	<50	<0.3	<0.3	<0.3	<0.5	-	89,000	<6	11	<6	14	-
04/21/97	267,415	178,019	5	27.03	<50	<0.3	<0.3	<0.3	<0.5	-	61,000	730	18	130	360	-
05/22/97	276,535	187,139	294	29.38	<50	<0.3	<0.3	<0.3	<0.5	-	850	1.3	<0.3	0.4	4.6	-
06/23/97	281,214	191,818	146	29.41	-	-	-	-	-	-	-	-	-	-	-	-
07/14/97	284,210	194,814	143	29.50	<50	<0.3	<0.3	<0.3	<0.5	-	6,600	<0.3	0.59	<0.3	9	-
08/18/97	298,610	209,214	411	30.29	-	-	-	-	-	-	-	-	-	-	-	-
09/15/97	301,043	211,647	87	30.43	-	-	-	-	-	-	-	-	-	-	-	-
10/07/97	333,480	244,084	1,474	44.01	<50	<0.3	<0.3	<0.3	<0.5	-	94,000	<0.3	<0.3	<0.3	<0.5	-
11/17/97	334,286	244,890	20	44.65	-	-	-	-	-	-	-	-	-	-	-	-
12/08/97	334,382	244,986	5	44.72	-	-	-	-	-	-	-	-	-	-	-	-
12/12/97	334,382	244,986	-	44.72	Shut down system due to stolen equipment						-	-	-	-	-	-
04/08/98	334,382	244,986	-	44.72	<50	<0.3	<0.3	<0.3	<0.5	<20	3,100	12	1	<0.3	490	2,600
05/11/98	334,382	244,986	-	44.72	-	-	-	-	-	-	-	-	-	-	-	-
06/22/98	334,382	244,986	-	44.72	-	-	-	-	-	-	-	-	-	-	-	-
07/20/98	334,382	244,986	-	44.72	<50	<0.3	<0.3	<0.3	<0.5	-	52,000	8	0.52	0.83	1.5	-
08/03/98	346,521	257,125	867	49.98	Shut down system for carbon canisters replacement						-	-	-	-	-	-
09/17/98	354,985	265,589	188	53.64	-	-	-	-	-	-	-	-	-	-	-	-
10/14/98	359,015	268,619	112	54.34	<50	<0.3	<0.3	<0.3	1.6	-	3,100	45	13	3.5	350	-
11/05/98	359,600	270,204	72	54.38	System shut down due to vandalism and stolen equipment						-	-	-	-	-	-
11/20/98	359,600	270,204	-	54.38	Restart						-	-	-	-	-	-
12/11/98	369,452	280,056	469	54.63	-	-	-	-	-	-	-	-	-	-	-	-
12/24/98	-	280,056	-	54.63	No reading, meter broken						-	-	-	-	-	-
01/15/99	0	280,056	-	54.63	Replaced Flowmeter started at 0						-	-	-	-	-	-
01/21/99	986	281,042	164	54.64	57	<0.3	<0.3	<0.3	0.76	-	380	6.2	1	<0.3	9.1	-
02/12/99	1,971	282,027	45	54.64	-	-	-	-	-	-	-	-	-	-	-	-
03/12/99	4,390	284,446	86	54.65	-	-	-	-	-	-	-	-	-	-	-	-

TABLE 2
GROUNDWATER REMEDIATION SYSTEM MONITORING PROGRAM
Thrifty Oil Co. Station No 049, OAKLAND, CA

Date	Totalizer (gallons)	Total/Cum. Discharge (gallons)	Flow (gal/day)	Total H-C Removed (lbs)	EFFLUENT (ug/L)						INFLUENT (ug/L)					
					TPH-g	B	T	E	X	MTBE	TPH-g	B	T	E	X	MTBE
04/15/99	8,595	288,651	124	54.66	<50	<0.3	<0.3	<0.3	<0.5	<5	410	1.6	0.78	<0.3	5	*580 / 330
05/04/99	9,410	289,466	43	54.66	-	-	-	-	-	-	-	-	-	-	-	-
05/18/99	9,410	289,466	-	54.66	Shut down system for pump controller repair by manufacturer						-	-	-	-	-	-
09/20/99	9,411	289,467	0	54.66	Restart the system						-	-	-	-	-	-
09/24/99	9,412	289,468	0	54.66	-	-	-	-	-	-	-	-	-	-	-	-
10/13/99	9,510	289,566	5	54.67	<50	<0.3	<0.3	<0.3	<0.5	<5	6,000	<0.3	<0.3	<0.3	<0.5	13,000
11/12/99	9,702	289,758	6	54.68	-	-	-	-	-	-	-	-	-	-	-	-
12/17/99	9,894	289,950	5	54.69	-	-	-	-	-	-	-	-	-	-	-	-
01/20/00	10,052	290,108	5	54.69	<50	<0.3	<0.3	<0.3	<0.5	-	<50	<0.3	<0.3	<0.3	<0.5	-
02/17/00	10,157	290,213	4	54.70	-	-	-	-	-	-	-	-	-	-	-	-
03/13/00	10,355	290,411	8	54.71	-	-	-	-	-	-	-	-	-	-	-	-
04/05/00	10,546	290,602	8	54.90	72.7	1.8	4.1	0.7	6.7	-	119,000	2,360	6,440	6,240	25,200	*30,800 / 21,800
05/19/00	11,072	291,128	12	55.42	Shut down system for carbon drum replacement						-	-	-	-	-	-
06/05/00	11,075	291,131	0	55.42	Restart the system						-	-	-	-	-	-
06/14/00	11,132	291,188	6	55.47	<50	<0.3	<0.3	<0.3	<0.6	<5	<1,000	<6	<6	<6	14	24,500
07/06/00	11,362	291,418	10	55.70	Shut down system for carbon replacement						-	-	-	-	-	-
07/17/00	0	291,418	-	55.70	Restart the system after carbon change, repipe and flowmeter change (starting at 0.0)											
07/24/00	411	291,829	59	55.91	<50	<0.3	<0.3	<0.3	<0.6	<5	205	<0.3	1	<0.3	<0.6	*99 / 104
08/21/00	8,193	299,611	278	55.92	-	-	-	-	-	-	-	-	-	-	-	-
09/18/00	27,251	318,669	681	55.95	-	-	-	-	-	-	-	-	-	-	-	-
10/18/00	54,280	345,698	901	96.15	<50	<0.18	<0.14	<0.18	<0.26	<0.24	357,000	2,380	2,960	1,290	6,850	9,630
10/30/00	64,610	356,028	861	126.87	-	-	-	-	-	-	-	-	-	-	-	-
11/27/00	79,870	371,288	545	172.24	-	-	-	-	-	-	-	-	-	-	-	-
12/22/00	99,240	390,658	775	229.82	-	-	-	-	-	-	-	-	-	-	-	-
01/17/01	101,250	392,668	77	233.02	<50	<0.18	<0.14	<0.18	<0.26	<0.24	24,700	783	373	2	3,480	15,000
02/23/01	144,120	435,538	1,159	241.84	-	-	-	-	-	-	-	-	-	-	-	-
03/30/01	195,400	486,818	1,465	252.38	-	-	-	-	-	-	-	-	-	-	-	-
04/06/01	199,090	490,508	527	253.14	System shut down for carbon replacement; Replaced on 4/11/01, restart on 4/13/01.											
04/20/01	207,050	498,468	569	255.17	88	<0.18	<0.14	<0.18	<0.26	93	36,500	855	716	659	1,570	11,400
04/27/01	210,640	502,058	513	256.26	System shut down for repair/replacement of compressor's pressure switch and exhaust valve											
04/30/01	210,640	502,058	-	256.26	320	<0.18	<0.14	<0.18	<0.26	*337 / 60	7,620	268	22	10	124	*13,600 / 9,130
05/11/01	210,640	502,058	-	256.26	Replaced pressure switch on 5/7/01, system still off for carbon replacement.						-	-	-	-	-	-
05/21/01	210,640	502,058	-	256.26	Restart the system						-	-	-	-	-	-
05/30/01	226,830	518,248	1,799	263.29	<50	<0.18	<0.14	<0.18	<0.26	<0.24	96,600	4,980	1,660	2,770	11,300	*53,600 / 41,600
06/29/01	267,230	558,648	1,347	295.79	-	-	-	-	-	-	-	-	-	-	-	-
07/11/01	310,010	601,428	3,565	341.86	<50	<0.18	<0.14	<0.18	<0.26	<0.24	162,000	<0.18	4,140	4,760	24,000	<0.24
08/17/01	441,270	732,688	3,548	518.94	-	-	-	-	-	-	-	-	-	-	-	-
09/28/01	498,310	789,728	1,358	595.89	-	-	-	-	-	-	-	-	-	-	-	-
10/03/01	503,930	795,348	1,124	600.42	<50	<0.18	<0.14	<0.18	<0.26	<0.24	31,600	<1.8	150	294	5,280	<2.4
11/12/01	664,700	956,118	4,019	642.73	-	-	-	-	-	-	-	-	-	-	-	-
12/28/01	706,300	997,718	904	653.68	-	-	-	-	-	-	-	-	-	-	-	-
01/11/02	721,050	1,012,468	1,054	657.56	System shut down for carbon replacement						-	-	-	-	-	-
01/21/02	721,050	1,012,468	-	657.56	Restart the system						-	-	-	-	-	-

TABLE 2
GROUNDWATER REMEDIATION SYSTEM MONITORING PROGRAM
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Date	Totalizer (gallons)	Total/Cum. Discharge (gallons)	Flow (gal/day)	Total H-C Removed (lbs)	EFFLUENT (ug/L)						INFLUENT (ug/L)					
					TPH-g	B	T	E	X	MTBE	TPH-g	B	T	E	X	MTBE
02/01/02	731,320	1,022,738	924	658.96	<100	<0.3	<0.3	<0.3	<0.6	<5	1,172	1	1	1	6	<5
02/22/02	751,340	1,042,758	953	659.16	-	-	-	-	-	-	-	-	-	-	-	-
03/27/02	813,240	1,104,658	1,876	659.76	-	-	-	-	-	-	-	-	-	-	-	-
04/12/02	835,170	1,126,588	1,371	660.97	<50	<0.18	<0.14	<0.18	<0.26	<0.24	12,100	5	1	<0.18	<0.26	18,400
04/26/02	918,670	1,210,088	5,964	669.39	System shut down						-	-	-	-	-	-
05/10/02	918,680	1,210,098	1	669.39	Restart						-	-	-	-	-	-
05/17/02	928,670	1,220,088	1,427	670.40	-	-	-	-	-	-	-	-	-	-	-	-
06/03/02	-	-	-	-	<50	<0.18	<0.14	<0.18	<0.26	<0.24	Split-sample results during EBMUD inspection & sampling					
06/07/02	971,240	1,262,658	2,027	674.69	-	-	-	-	-	-	-	-	-	-	-	-
06/28/02	1,012,150	1,303,568	1,948	678.81	-	-	-	-	-	-	-	-	-	-	-	-
07/15/02	1,045,670	1,337,088	1,972	681.98	<50	<0.18	<0.14	<0.18	<0.26	3.3 J	10,600	<0.18	<0.14	<0.18	<0.26	10,000
07/31/02	1,052,380	1,343,798	419	682.57	System shut down for carbon replacement						-	-	-	-	-	-
08/16/02	1,052,390	1,343,808	1	682.57	Restart						-	-	-	-	-	-
08/30/02	1,057,310	1,348,728	351	683.00	-	-	-	-	-	-	-	-	-	-	-	-
09/20/02	1,061,730	1,353,148	210	683.39	<50	< 0.1	< 0.15	< 0.06	-	-	Split-sample results during EBMUD inspection & sampling					
09/27/02	1,064,020	1,355,438	327	683.60	-	-	-	-	-	-	-	-	-	-	-	-
10/04/02	1,069,130	1,360,548	730	683.79	<50	<0.18	<0.14	<0.18	<0.26	<0.24	4,500 J	<0.18	<0.14	<0.18	<0.26	2,570
10/25/02	1,082,500	1,373,918	637	684.29	-	-	-	-	-	-	-	-	-	-	-	-
11/29/02	1,108,680	1,400,098	748	685.27	-	-	-	-	-	-	-	-	-	-	-	-
12/27/02	1,123,890	1,415,308	543	685.84	-	-	-	-	-	-	-	-	-	-	-	-
01/03/03	1,128,910	1,420,328	717	686.03	System shut down for carbon replacement						-	-	-	-	-	-
01/10/03	1,128,970	1,420,388	9	686.03	Restart						-	-	-	-	-	-
01/17/03	1,132,560	1,423,978	513	687.00	<50	<0.14	<0.07	<0.08	1.1	<2.0	32,400	11	64	<0.8	6,050	706
01/31/03	1,143,290	1,434,708	766	689.46	<15	<0.04	0.58	<0.02	1.1	<0.03	22,700	14	34	18	5,160	550
02/14/03	1,153,670	1,445,088	741	691.42	System shut down for carbon replacement						-	-	-	-	-	-
04/04/03	1,153,670	1,445,088	-	691.42	System kept off and dismantled for upgrade						-	-	-	-	-	-
											-	-	-	-	-	-
06/18/04	0.0	1,445,088	-	691.42	Startup of upgraded system						-	-	-	-	-	-
06/21/04	2,322.2	1,447,410	774	691.94	-	< 0.22	< 0.32	< 0.31	< 0.4	-	-	-	-	-	-	-
06/23/04	3,361.0	1,448,449	519	692.18	-	< 0.14	< 0.16	< 0.18	< 0.45	-	-	-	-	-	-	-
06/25/04	4,398.0	1,449,486	519	692.41	-	< 0.14	< 0.16	< 0.18	< 0.45	-	-	-	-	-	-	-
07/01/04	6,395.7	1,451,484	333	692.86	-	-	-	-	-	-	-	-	-	-	-	-
07/09/04	8,606.5	1,453,695	276	693.36	-	-	-	-	-	-	-	-	-	-	-	-
07/19/04	11,130.0	1,456,218	252	693.93	-	-	-	-	-	-	-	-	-	-	-	-
07/29/04	11,346.0	1,456,434	22	693.97	-	-	-	-	-	-	-	-	-	-	-	-
08/09/04	12,511.0	1,457,599	106	694.24	-	-	-	-	-	-	27,000	201	247	< 0.18	2,060	11,300
08/30/04	19,294.0	1,464,382	323	695.76	-	-	-	-	-	-	-	-	-	-	-	-
09/03/04	20,211.0	1,465,299	229	695.94	-	< 0.14	< 0.16	< 0.18	< 0.45	-	18,900	280	290	27	3,600	9,810
09/21/04	24,766.0	1,469,854	253	696.65	-	-	-	-	-	-	-	-	-	-	-	-
10/07/04	28,244.9	1,473,333	217	697.28	-	< 0.14	< 0.16	< 0.18	< 0.45	-	24,100	221	151	74	3,100	11,800
10/18/04	28,288.1	1,473,376	4	697.28	-	< 0.14	< 0.16	< 0.18	< 0.45	-	Split-sample results during EBMUD inspection & sampling					
10/21/04	28,463.5	1,473,552	58	697.32	-	-	-	-	-	-	-	-	-	-	-	-
10/28/04	34,435.8	1,479,524	853	698.52	-	-	-	-	-	-	-	-	-	-	-	-

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Date	Totalizer (gallons)	Total/Cum. Discharge (gallons)	Flow (gal/day)	Total H-C Removed (lbs)	EFFLUENT (ug/L)						INFLUENT (ug/L)					
					TPH-g	B	T	E	X	MTBE	TPH-g	B	T	E	X	MTBE
11/02/04	37,200.4	1,482,288	553	699.07	-	-	-	-	-	-	-	-	-	-	-	-
11/09/04	39,902.6	1,484,991	386	699.68	-	-	-	-	-	-	29,500	564	628	173	4,550	11,800
11/17/04	43,165.9	1,488,254	408	700.48	-	-	-	-	-	-	-	-	-	-	-	-
11/22/04	43,760.3	1,488,848	119	700.62	-	-	-	-	-	-	-	-	-	-	-	-
12/03/04	43,827.9	1,488,916	6	700.64	-	-	-	-	-	-	-	-	-	-	-	-
12/09/04	43,862.7	1,488,951	6	700.65	-	-	-	-	-	-	-	-	-	-	-	-
12/17/04	44,034.6	1,489,123	21	700.69	-	-	-	-	-	-	-	-	-	-	-	-
12/23/04	45,408.0	1,490,496	229	700.99	-	<0.14	<0.16	<0.18	1.2	-	23,200	473	256	488	2,100	6,080
12/29/04	47,405.4	1,492,493	333	701.38	-	-	-	-	-	-	-	-	-	-	-	-
01/07/05	54,048.5	1,499,137	738	702.66	-	-	-	-	-	-	-	-	-	-	-	-
01/12/05	56,143.5	1,501,232	419	703.07	EMC took over operation and maintenance of system						-	-	-	-	-	-
01/14/05	56,307.2	1,501,395	82	703.10	Carbon change						-	-	-	-	-	-
01/19/05	56,307.2	1,501,395	-	703.10	Restarted after carbon change						-	-	-	-	-	-
01/27/05	57,610.1	1,502,698	163	703.25	<15	<0.14	1.1	<0.18	<0.45	-	4,850	189	205	255	1,450	966
02/03/05	63,253.1	1,508,341	806	703.48	-	-	-	-	-	-	-	-	-	-	-	-
02/11/05	65,739.0	1,510,827	311	703.58	-	-	-	-	-	-	-	-	-	-	-	-
02/18/05	67,326.3	1,512,414	227	703.64	-	-	-	-	-	-	-	-	-	-	-	-
02/24/05	67,392.1	1,512,480	11	703.65	-	-	-	-	-	-	-	-	-	-	-	-
03/09/05	67,984.2	1,513,072	46	703.67	-	-	-	-	-	-	-	-	-	-	-	-
03/17/05	69,219.3	1,514,307	154	703.72	-	-	-	-	-	-	-	-	-	-	-	-
03/23/05	70,454.2	1,515,542	206	703.77	-	-	-	-	-	-	-	-	-	-	-	-
03/30/05	71,783.1	1,516,871	190	703.82	-	-	-	-	-	-	-	-	-	-	-	-
04/06/05	75,721.2	1,520,809	563	704.08	<15	<0.14	0.91	<0.18	<0.45	-	10,900	247	112	356	892	2,010
04/07/05	-	-	-	-	<15	< 0.14	< 0.16	<0.18	< 0.45	<0.22	Split-sample results during EBMUD inspection & sampling					
04/14/05	79,730.2	1,524,818	501	704.45	System was turned off for QWS						-	-	-	-	-	-
04/21/05	79,885.1	1,524,973	22	704.46	Restarted system						-	-	-	-	-	-
04/27/05	80,674.2	1,525,762	132	704.53	-	-	-	-	-	-	-	-	-	-	-	-
05/12/05	83,901.3	1,528,989	215	704.82	-	-	-	-	-	-	-	-	-	-	-	-
05/20/05	84,601.7	1,529,690	88	704.89	-	-	-	-	-	-	-	-	-	-	-	-
05/27/05	86,432.1	1,531,520	261	705.05	-	-	-	-	-	-	-	-	-	-	-	-
06/02/05	87,654.3	1,532,742	204	705.17	-	-	-	-	-	-	-	-	-	-	-	-
06/09/05	87,981.1	1,533,069	47	705.19	-	-	-	-	-	-	-	-	-	-	-	-
06/16/05	88,340.0	1,533,428	51	705.23	-	-	-	-	-	-	-	-	-	-	-	-
06/16/05	0.0	1,533,428	-	705.23	Changed battery for flow meter (reset to 0.0 gallons)						-	-	-	-	-	-
06/23/05	2,914.2	1,536,342	416	705.49	-	-	-	-	-	-	-	-	-	-	-	-
06/28/05	4,751.3	1,538,179	367	705.66	-	-	-	-	-	-	-	-	-	-	-	-
07/07/05	7,125.7	1,540,554	264	705.84	<2.9	<0.17	<0.22	<0.14	<0.38	-	7,530	301	71 J	132	800	2,580
07/12/05	8,534.3	1,541,962	282	705.93	-	-	-	-	-	-	-	-	-	-	-	-
07/19/05	9,145.3	1,542,573	87	705.97	System was turned off for QWS and carbon change				-	-	-	-	-	-	-	-
07/26/05	10,570.5	1,543,999	204	706.06	-	-	-	-	-	-	-	-	-	-	-	-
08/03/05	10,572.1	1,544,000	0	706.06	Restarted system		-	-	-	-	-	-	-	-	-	-
08/09/05	10,827.1	1,544,255	43	706.07	-	-	-	-	-	-	-	-	-	-	-	-
08/19/05	11,219.6	1,544,648	39	706.10	-	<0.10	<0.15	<0.06	<0.40	-	Split-sample results during EBMUD inspection & sampling					-

TABLE 2
GROUNDWATER REMEDIATION SYSTEM MONITORING PROGRAM
Thrifty Oil Co. Station No 049, OAKLAND, CA

Date	Totalizer (gallons)	Total/Cum. Discharge (gallons)	Flow (gal/day)	Total H-C Removed (lbs)	EFFLUENT (ug/L)						INFLUENT (ug/L)					
					TPH-g	B	T	E	X	MTBE	TPH-g	B	T	E	X	MTBE
08/23/05	11,311.2	1,544,739	23	706.10	-	-	-	-	-	-	-	-	-	-	-	-
09/07/05	11,713.1	1,545,141	27	706.13	-	-	-	-	-	-	-	-	-	-	-	-
09/13/05	11,816.3	1,545,244	17	706.13	-	-	-	-	-	-	-	-	-	-	-	-
09/20/05	11,930.2	1,545,358	16	706.14	-	-	-	-	-	-	-	-	-	-	-	-
09/26/05	12,241.6	1,545,670	52	706.16	-	-	-	-	-	-	-	-	-	-	-	-
10/04/05	12,314.2	1,545,742	9	706.17	<2.9	<0.17	<0.22	<0.14	<0.38	-	4,250	129	113	3.9 J	237	2,120
10/11/05	12,578.6	1,546,007	38	706.18	-	-	-	-	-	-	-	-	-	-	-	-
10/17/05	12,781.3	1,546,209	34	706.19	System was turned off for QWS						-	-	-	-	-	-
10/21/05	12,796.1	1,546,224	4	706.20	Restarted system						-	-	-	-	-	-
11/01/05	13,383.2	1,546,811	53	706.23	-	-	-	-	-	-	-	-	-	-	-	-
11/08/05	13,399.2	1,546,827	2	706.23	-	<0.10	<0.15	<0.06	<0.40	-	-	-	-	-	-	-
11/16/05	13,807.4	1,547,235	51	706.26	-	-	-	-	-	-	-	-	-	-	-	-
11/23/05	0.0	1,547,235	-	706.26	-	-	-	-	-	-	Meter Reset to "0"					-
11/29/05	717.2	1,547,952	120	706.30	-	-	-	-	-	-	-	-	-	-	-	-
12/07/05	1,038.1	1,548,273	40	706.32	-	-	-	-	-	-	-	-	-	-	-	-
12/14/05	1,669.4	1,548,904	90	706.36	-	-	-	-	-	-	-	-	-	-	-	-
WD PERMIT LIMITS:					*NE*	*5.0*	*5.0*	*5.0*	*5.0*	*NE*						

Note:
< = less than laboratory detection level indicated
- = no sample / not analyzed
NE = Permit Limit not established
TPH is analyzed by EPA Method 8015 M
BTEX is analyzed by EPA Method 602/8020 or 8021
*MTBE 8021/8260
Total Hydrocarbons Removed = From 4/8/91 to 2/10/92, the influent TPHg is assumed to be 47,000 (3/9/92)
In February 2000, the total cumulative discharge amount was corrected to reflect all system maintenance and flowmeter changeouts since the startup of the system. The total number may be different from previous versions of this table.

APPENDIX C

Historic Boring and Well Logs

GROUNDWATER TECHNOLOGY

Division of Oil Recovery Systems, Inc.

Drilling Log

Well Number MW 1

Project Arco/San Pablo Owner Arco Petroleum

Location 3400 San Pablo Ave. Project Number 20-8126

Date Drilled 7/31/86 Total Depth of Hole 25 ft. Diameter 8 in.

Surface Elevation _____ Water Level, Initial _____ 24-hrs. _____

Screen: Dia. 2 in. Length 20 ft. Slot Size .020

Casing: Dia. 2 in. Length 5 ft. Type PVC

Drilling Company Sierra Pacific Drilling Method H. S. Auger

Driller L. Pera Log by B. Channell

Sketch Map

Notes

Depth (Feet)	Well Construction	Notes	Sample Number	Graphic Log	Description/Soil Classification (Color, Texture, Structures)
0		PID			Concrete
1				CL	Black clay, stiff, damp, no odor
2					
3				CL	Green gray clay, stiff, damp, moderate odor
4					
5				CL	Brown silty clay, stiff, damp, moderate odor
6					
7				CL	Brown sandy clay, soft, wet, pebbles, moderate odor
8		3 ppm	A 12		
9			16		Grey gravel and brown clay, dry, crumbly, moderate
10			27		▼ 7/31/86 odor
11					
12					
13		0 ppm	B	GC	Gray gravel in brown clay, soft, wet, no odor
14			9		
15			8		
16			7		
17					
18					
19					
20				CL	Brown silty clay, stiff, dry, no odor
21					
22					
23					
24					
25					

GROUNDWATER TECHNOLOGY

Division of Oil Recovery Systems, Inc.

Drilling Log

Well Number MW-2

Project Arco/San Pablo Owner Arco Petroleum

Location 3400 San Pablo Ave. Project Number 20-8126

Date Drilled 7/31/86 Total Depth of Hole 25 ft. Diameter 8 in.

Surface Elevation _____ Water Level, Initial _____ 24-hrs. _____

Screen: Dia. 2 in. Length 20 ft. Slot Size .020

Casing: Dia. 2 in. Length 5 ft. Type PVC

Drilling Company Sierra Pacific Drilling Method H. S. Auger

Driller L. Pera Log by B. Channell

Sketch Map

Notes

Depth (Feet)	Well Construction	Notes	Sample Number	Graphic Log	Description/Soil Classification (Color, Texture, Structures)
0		PID			Concrete
1					Black clay, stiff, dry, no odor
2					
3					Green gray clay, stiff, camp, moderate odor
4				CL	
5					
6					Brown clay, soft, moist, pebbles, moderate odor
7					
8					
9		12 ppm	A 5 6 7		Brown silty clay, stiff, pockets of water, minor pebbles, no odor
10					▼ 7/31/86
11					
12					
13		7 ppm	B		
14			3 4		
15			6		
16				CL	Brown silty clay, very stiff, damp, no odor
17					
18					
19					
20					
21					
22					
23					
24					
25					

GROUNDWATER TECHNOLOGY

Division of Oil Recovery Systems, Inc.

Drilling Log

Well Number MW 3

Project Arco/San Pablo — Owner Arco Petroleum

Location 3400 San Pablo Ave. — Project Number 20-8126

Date Drilled 7/31/86 — Total Depth of Hole 25 ft. — Diameter 8 in.

Surface Elevation ____ — Water Level, Initial ____ — 24-hrs. ____

Screen: Dia. 2 in. — Length 20 ft. — Slot Size .020 in.

Casing: Dia. 2 in. — Length 5 ft. — Type PVC

Drilling Company Sierra Pacific — Drilling Method H. S. Auger

Driller L. Pera — Log by B. Channell

Sketch Map

Notes

Depth (Feet)	Well Construction	Notes	Sample Number	Graphic Log	Description/Soil Classification (Color, Texture, Structures)
0		PID			Concrete
1					Black clay, stiff, damp, slight odor
2				CL	
3		15 ppm	A		
4			4 4 4		Gray silty clay, soft, damp, minor gravel, moderate odor
5				CL	
6					
7					
8		15 ppm	B		Brown silty clay, stiff, damp, pebbles, slight odor
9			4 4 6		
10					▼ 7/31/86
11					
12					
13		0 ppm	C		
14			4 5 7		
15				CL	Brown silty clay, stiff, dry, no odor
16					
17					
18			5		
19		0 ppm	D 7 13		
20					
21					
22					
23					
24					
25					

GROUNDWATER TECHNOLOGY

Division of Oil Recovery Systems, Inc.

SOIL BORING SB 1

Drilling Log

Project Arco/San Pablo Owner Arco Petroleum

Location 3400 San Pablo Ave. Project Number 20-8126

Date Drilled 7/31/86 Total Depth of Hole 20ft Diameter 8 in.

Surface Elevation _____ Water Level, Initial _____ 24-hrs. _____

Screen: Dia. _____ Length _____ Slot Size _____

Casing: Dia. _____ Length _____ Type _____

Drilling Company Sierra Pacific Drilling Method H. S. Auger

Driller L. Pera Log by B. Channell

Sketch Map

Notes

Depth (Feet)	Well Construction	Notes	Sample Number	Graphic Log	Description/Soil Classification (Color, Texture, Structures)
0		PID			Asphalt
1				CL	Black clay, damp, semi-stiff, no odor
2					
3					
4				CL	Green gray clay, stiff, damp, no odor
5					
6					
7					
8		55 ppm	A 6		Green gray sandy clay, moderately stiff, wet in
9			7	CL	▼7/31/86 places, moderate odor
10			21		
11					Brown silty clay, stiff, dry, no odor
12					
13		0 ppm	B 3		
14			5		
15			6	CL	
16					
17					Brown silty clay, very stiff, damp, minor pebbles,
18					no odor
19		0 ppm	5 C 12		
20			12		
21					
22					
23					
24					
25					

02100144

GROUNDWATER TECHNOLOGY

Division of Oil Recovery Systems, Inc.

Drilling Log

SOIL BORING SB-2

Project Arco/San Pablo Owner Arco Petroleum

Location 3400 San Pablo Ave. Project Number 20-8126

Date Drilled 7/31/86 Total Depth of Hole 20 ft Diameter 8 in.

Surface Elevation ____ Water Level, Initial ____ 24-hrs. ____

Screen: Dia. ____ Length ____ Slot Size ____

Casing: Dia. ____ Length ____ Type ____

Drilling Company Sierra Pacific Drilling Method H. S. Auger

Driller L. Pera Log by B. Channell

Sketch Map

Notes

Depth (Feet)	Well Construction	Notes	Sample Number	Graphic Log	Description/Soil Classification (Color, Texture, Structures)
0		PID			Concrete
1				CL	Black clay, stiff, damp, no odor
2					
3		11 ppm	A		Gray gravel and brown clay, damp, moderate odor
4			5	GC	
5			7 12		
6					
7					
8		7 ppm	B		Brown silty clay, stiff, damp, minor pebbles, slight odor
9			4 5		
10			6		
11					▼ 7/31/86
12					
13		0 ppm	C	CL	
14			4 5		
15			5		Brown silty clay, very stiff, dry, no odor
16					
17					
18		0 ppm	D		
19			5 10		
20			12		
21					
22					
23					
24					
25					

GROUNDWATER TECHNOLOGY

Division of Oil Recovery Systems, Inc.

SOIL BORING SB 3 — s Drilling Log

Project Arco/San Pablo — Owner Arco Petroleum

Location 3400 San Pablo Ave. — Project Number 20-8126

Date Drilled 7/31/86 — Total Depth of Hole 20 ft — Diameter 8 in.

Surface Elevation ____ — Water Level, Initial ____ — 24-hrs. ____

Screen: Dia. ____ — Length ____ — Slot Size ____

Casing: Dia. ____ — Length ____ — Type ____

Drilling Company Sierra Pacific — Drilling Method H. S. Auger

Driller L. Pera — Log by Lynn Pera

Sketch Map

Notes

Depth (Feet)	Well Construction	Notes	Sample Number	Graphic Log	Description/Soil Classification (Color, Texture, Structures)
0					Concrete
1					Black silty clay, stiff, damp, slight hydrocarbon odor
2					
3					Greenish gray fine sandy clay with gravel, stiff, moist, slight odor
4		28 ppm	A 5 7 11		
5					
6					Greenish brown fine sandy clay, medium stiff, moist,
7					
8					Brown sandy clay with gravel, stiff, moist
9		12 ppm	B 5 7 7		
10				CL	
11					
12					
13					Grayish brown sandy clay, stiff, moist
14		0ppm	C 3 6 8		
15					
16					▼ 7/31/86
17					
18					(grades orange-brown)
19		0ppm	D 5 7 10		
20					
21					
22					
23					
24					
25					

02100144

No.: 90386A

11-14-86

Elevation.

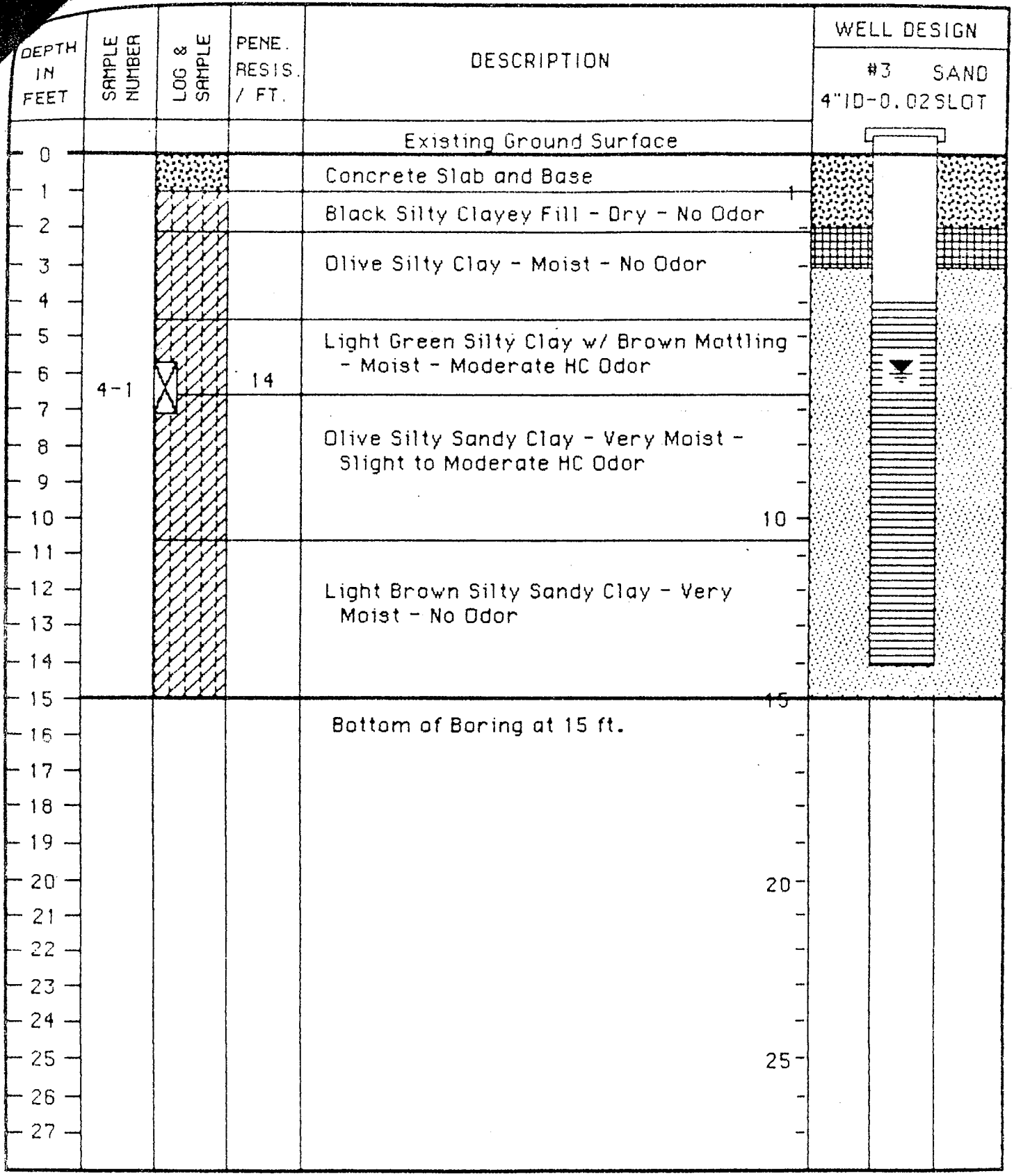

Figure 2 - Test Boring Log No. B-1
- Monitoring Well No. MW-4

Woodward-Clyde Consultants

No.: 90386A

11-14-86

Elevation.

DEPTH IN FEET	SAMPLE NUMBER	LOG & SAMPLE	PENE. RESIS. / FT.	DESCRIPTION	WELL DESIGN: #3 SAND 2"ID-0.02SLOT
				Existing Ground Surface	
0				AC Pavement and Base	
1				Black Silty Clay Fill	
2				Brown Silty Loam - Dry - No Odor	
3					
4					
5				Light Green Silty Clay w/ Some Sand - Moist - No Odor	
6	5-1		50		
7				Same as Above Except More Moisture - No Odor - No Recovery From Sample	
8					
9				Brown Silty Gravelly Clay - Moist - No Odor	
10					
11					
12				Same as Above Except No Gravel	
13					
14					
15				Bottom of Boring at 15 ft.	
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					

Figure 3 - Test Boring Log No. B-2
- Monitoring Well No. MW-5

Woodward-Clyde Consultants

No.: 90386A

: 11-14-86

Elevation.

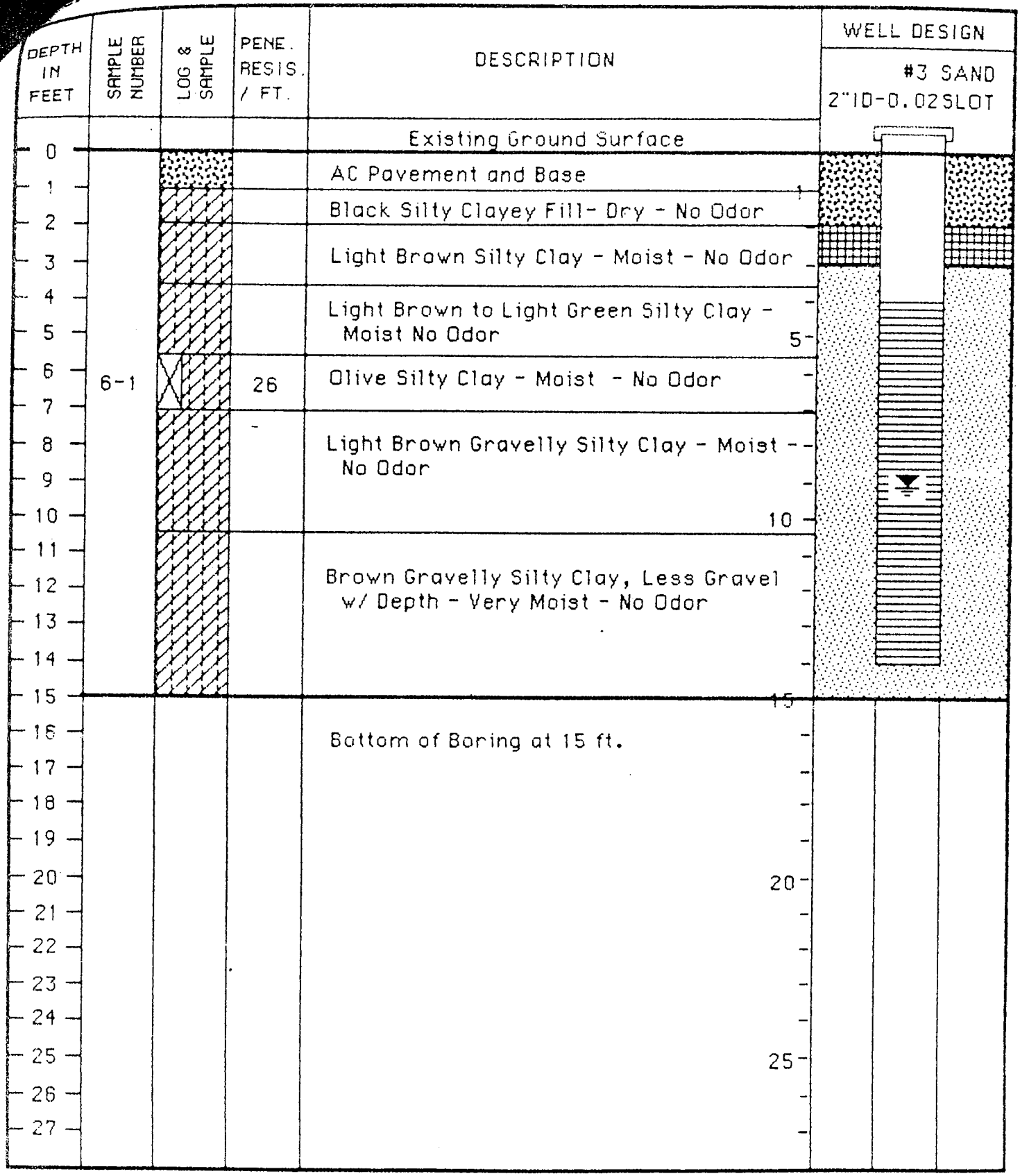

Figure 4 - Test Boring Log No. B-3
- Monitoring Well No. MW-6

Woodward-Clyde Consultants

No.: 90386A

11-14-86

Elevation.

DEPTH IN FEET	SAMPLE NUMBER	LOG & SAMPLE	PENE. RESIS. / FT.	DESCRIPTION	WELL DESIGN: #3 SAND 4"ID-0.02SLOT
				Existing Ground Surface	
0				AC Pavement and Base	
1				Black Silty Clayey Fill - Dry - No Odor	
2					
3				Olive Silty Clay - Moist - Possible HC Odor	
4					
5				Light Blue/Green Silty Clay - Moist - No Odor	
6	7-1		20		
7				Lt. Green/Brown Silty Clay-Slight HC Odor	
8				Light Brown Silty Clay - Moist - Slight HC Odor	
9					
10				- Some Gravel	
11					
12				Brown Silty Clay w/ Less Gravel and Some Sand - Moist - No Odor	
13					
14					
15					
16				Bottom of Boring at 15 ft.	
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					

Figure 5 - Test Boring Log No. B-7
- Monitoring Well No. MW-7

Woodward-Clyde Consultants

DATE OBSERVED: 9-11-87 METHOD OF DRILLING: HOLLOW STEM AUGER

LOGGED BY: SAW GROUND ELEVATION: 30' LOCATION: SEE PLOT PLAN FIGURE 1

BORING NO. B-1

DEPTH (FEET)	CLASSIFICATION	BLOWS/FOOT	UNDISTURBED SAMPLE	BULK SAMPLE	MOISTURE CONTENT (%)	IN PLACE DRY DENSITY (PCF)	DESCRIPTION	SOIL TEST GASTECHTOR READING in ppm
0							CONCRETE COVER	
							NATURAL GROUND: WEATHERED BEDROCK: Dark Brown CLAY with silt, moist, no petroleum odor	
5		26					@ 5' color change to grey-green, becomes very stiff, petroleum odor noted	225 ppm
10		38					@ 10' becomes hard, petroleum odor noted	225 ppm
15		16					@ 15' Groundwater Present	
							TOTAL DEPTH: 16 FEET	
							GROUNDWATER @ 15 FEET	

JOB NO.: [illegible] LOG OF BORING FIGURE: B-1

DATE OBSERVED: 9-11-87 METHOD OF DRILLING: HOLLOW STEM AUGER

LOGGED BY: SAW GROUND ELEVATION: 30' LOCATION: SEE PLOT PLAN FIGURE 1

BORING NO. B-2

DEPTH (FEET)	CLASSIFICATION	BLOWS/FOOT	UNDISTURBED SAMPLE	BULK SAMPLE	MOISTURE CONTENT (%)	IN PLACE DRY DENSITY (PCF)	DESCRIPTION	SOIL TEST GASTECHTOR READING in ppm
0								
5	SM	23					FILL: Brown fine silty SAND, dry slight petroleum odor @ 5' strong petroleum odor noted	500 ppm
10	Ss	24					NATURAL GROUND: BEDROCK: Grey-green weathered SILTSTONE, very moist to wet, very stiff, no petroleum odor noted	125 ppm
15		24					@ 15' Groundwater noted	
20							TOTAL DEPTH: 16 FEET GROUNDWATER @ 15 FEET	
25								
30								
35								
40								

JOB NO. [illegible] LOG OF BORING FIGURE [illegible]

DATE OBSERVED: 9-11-87 METHOD OF DRILLING: HOLLOW STEM AUGER

LOGGED BY: SAW GROUND ELEVATION: 30' LOCATION: SEE PLOT PLAN FIGURE B-1

BORING NO. B-3

DEPTH (FEET)	CLASSIFICATION	BLOWS/FOOT	UNDISTURBED SAMPLE	BULK SAMPLE	MOISTURE CONTENT (%)	IN PLACE DRY DENSITY (PCF)	DESCRIPTION	SOIL TEST GASTECHTOR READING in ppm
0							CONCRETE COVER	
	CL						FILL: Black to dark brown, CLAY with silt, moist, stiff, slight petroleum odor	
5	Ss	28					BEDROCK: Green weathered SILTSTONE, moist very stiff, petroleum odor noted	220 ppm
10		8					@ 10' color changed to brown, petroleum odor noted	500 ppm
							@ 12' becomes wet, no petroleum odor noted	
15							@ 15' Groundwater noted	
20							TOTAL DEPTH: 16 FEET	
							GROUNDWATER @ 15 FEET	
25								
30								
35								
40								

JOB NO.: 13-[illegible]-217-00-30 LOG OF BORING FIGURE: B-3

DATE OBSERVED: 9-11-87 METHOD OF DRILLING: HOLLOW STEM AUGER

LOGGED BY: SAW GROUND ELEVATION: 30' LOCATION: SEE PLOT PLAN FIGURE 1

BORING NO. B-4

DEPTH (FEET)	CLASSIFICATION	BLOWS/FOOT	UNDISTURBED SAMPLE	BULK SAMPLE	MOISTURE CONTENT (%)	IN PLACE DRY DENSITY (PCF)	DESCRIPTION	SOIL TEST GASTECHTOR READING in ppm
0							CONCRETE COVER	
	ML CL						FILL: Black CLAY and SILT, moist stiff, strong petroleum odor	500 ppm
5							@ 4' boring terminated due to presence of subsurface vent lines, no damage	
							TOTAL DEPTH: 4 FEET	
							NO GROUNDWATER	
10								
15								
20								
25								
30								
35								
40								

JOB NO.: [illegible] LOG OF BORING FIGURE: [illegible]

DATE OBSERVED: 9-29-87 METHOD OF DRILLING: HOLLOW STEM AUGER

LOGGED BY: SAW GROUND ELEVATION: 30' LOCATION: SEE PLOT PLAN FIGURE B-1

BORING NO. B-5

DEPTH (FEET)	CLASSIFICATION	BLOWS/FOOT	UNDISTURBED SAMPLE	BULK SAMPLE	MOISTURE CONTENT (%)	IN PLACE DRY DENSITY (PCF)	DESCRIPTION	SOIL TEST GASTECHTOR READING
0							6" concrete cover	
							FILL: Gray-green silty SAND with gravel	
5		24					Dark brown to black silty CLAY to clayey SILT, moist, very stiff, no petroleum odor.	50 ppm
10	Ss	50					NATURAL GROUND: BEDROCK: Gray-green weathered SILTSTONE, moist, very stiff to hard, strong petroleum odor.	480 ppm
15		32					@ 15' groundwater noted	30 ppm
							TOTAL DEPTH 16 FEET GROUNDWATER AT 15 FEET	
20								
25								
30								
35								
40								

JOB NO.: [illegible] LOG OF BORING FIGURE: B-7

Project:: Thrifty 49	Project No.: AGE-NC-	BORING NO.: B-1
Site Address:	Total Depth: 20	
	Date: 1-6-04	
Drilling Co.: Enviro Probe	Logged by: CRM	Page 1 of 1
Rig/Auger Type:	Reviewed by:	

Depth (feet)	Sample ID	Blow Counts (per 6")	OVA Reading (ppm)	USCS Class	Graphic Log	Lithologic Description
5	B-1-5	1339	24.5			100% Recover odor Blue grey Silty Sand moist poorly graded fine grained
10	B-1-10	1345	22.5			100% Recover odor Orange Brown Clay High consistency low to moderate plasticity low toughness Sl. moist to moist
15	B-1-15	1352	3.1			100% Recover Orange Brown Clay moist low consistency/toughness high to moderate plasticity
20	B-1-20	1403	1.2			100% Recover Brown Silty Clay High consistency low plasticity Moderate toughness Sl moist
						No Water Sample @ 1421

Project: Thrifty 49	Project No.: AGE-NC-	BORING NO.: B-2
Site Address:	Total Depth: 20	
	Date: 1-6-04	
Drilling Co.: Enviroprobe	Logged by: CRM	Page 1 of 1
Rig/Auger Type:	Reviewed by:	

Depth (feet)	Sample ID	Blow Counts (per 6")	OVA Reading (ppm)	USCS Class	Graphic Log	Lithologic Description
5		1238	919.0			100% Recover odor Grey Sandy Silt low consistency/toughness/plast. moist
10		1244	7.5			100% Recover odor Grey Brown Clayey Silt High ~~toughness~~ consistency low plasticity moderate toughness moist
15		1252	4.1			100% Recover Orange Brown 10-20% Gravely Silt gravel ¼" low consistency moist low toughness low to mod plasticity
20		1302	1.2			100% Recover Orange Brown ~~silt~~ clayey silt High consistency low plasticity moderate toughness moist
						B-2-WS @ 1306

Advanced GeoEnvironmental, Inc.

Project:- Thrifty Station #049	Project No.: AGE-NC-	BORING NO.:
Site Address: 3400 San Pablo Ave Oakland	Total Depth: 20	B-3
	Date: 01-06-04	
Drilling Co.: Enviroprobe	Logged by: CRM	Page 1 of 1
Rig/Auger Type: Geo Probe	Reviewed by:	

Depth (feet)	Sample ID	Blow Counts (per 6")	OVA Reading (ppm)	USCS Class	Graphic Log	Lithologic Description
5	B-3-5 1021		38.1			No Sample Recovery Soil to Soft, Fell out of brass. Small amount of soil remained, high contamination, strong odor, Saturated with a sheen.
10	B-3-10 1028		67.2			Odor brown/black Gravely 100% Recover Blue Gray Gravely Silt low consistency low toughness low to medium plasticity moist Grave ¼"
15	B-3-15 1035		15.2			Brown, wet, odor 100% Recover Orange Brown (Rust) Silty Gravel Sub Angular, moderately sorted Very moist
20	B-3-20 1049		10.4			Brown moist 100% Recover Light Brown Clay High consistency low plasticity Medium toughness
						B-3-WS @ 1056

Advanced
GeoEnvironmental, Inc.

Project: Thrifty 99	Project No.: AGE-NC-	BORING NO.: B-4
Site Address:	Total Depth: 20	
	Date: 1-6-04	
Drilling Co.: Enviro probe	Logged by: CRM	Page 1 of 1
Rig/Auger Type:	Reviewed by:	

Depth (feet)	Sample ID	Blow Counts (per 6")	OVA Reading (ppm)	USCS Class	Graphic Log	Lithologic Description
5	B-4-5	1126	11.8			25% Recovery odor brown + gray Gravelly silt low toughness moist low plasticity/toughness
10	B-4-10	1133	49.2			100% Recover Blue grey Silty gravel Gravel ½" well to moderately sorted moist
15	B-4-15	1140	2.1			100% Recover odor Orange Brown Silt very moist low consistency/toughness moderate to high plasticity
20	B-4-20	1149	1.6			100% Recover orange Brown Clay High consistency Moderate toughness moist-low plasticity
						B-4-WS @ 1201

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Project: Thrifty 49	Project No.: AGE-NC-	BORING NO.: RW-1R
Site Address:	Total Depth: 20	
	Date: 1-15-04	
Drilling Co.: Cascade	Logged by: CRm	Page 1 of 1
Rig/Auger Type:	Reviewed by:	

Depth (feet)	Sample ID	Blow Counts (per 6")	OVA Reading (ppm)	USCS Class	Graphic Log	Lithologic Description
5	RW1R-5 RW2 1228	11-12-14				
10	RW1R-10 1233	9-11-11				
15	1239 RW1R-15	13-15-15				
20	1244 RW1R-20	12-15-17				

Advanced
GeoEnvironmental, Inc.

Project: Thrifty Station #049	Project No.: AGE-NC-	BORING NO.: MW-2R
Site Address: 3400 San Pablo Ave	Total Depth: 20'	
	Date: 1-15-04	
Drilling Co.: Cascade	Logged by: CBM	Page 1 of 1
Rig/Auger Type: CMT-75	Reviewed by:	

Depth (feet)	Sample ID	Blow Counts (per 6")	OVA Reading (ppm)	USCS Class	Graphic Log	Lithologic Description
5	0918 ~~0920~~ MW2R-5	13-13-16				
10	0923 MW2R-10	12-15-16				
15	0927 MW2R-15	11-11-16				
20	0931 MW2R-20					

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GeoEnvironmental, Inc.

Project:- Thrifty 49	Project No.: AGE-NC-	BORING NO.:
Site Address:	Total Depth: 20	MW-4R
	Date: 1-15-04	
Drilling Co.: Cascade	Logged by: CRM	Page 1 of 1
Rig/Auger Type:	Reviewed by:	

Depth (feet)	Sample ID	Blow Counts (per 6")	OVA Reading (ppm)	USCS Class	Graphic Log	Lithologic Description
5	1033 MW4R-5	12-13-14				
10	1040 MW4R-10	12-14-15				95% Recover
15	1055 MW4R-15	10-14-15				80% Recover
20	1103 MW4R-20	7-11-16				50% Recover

Advanced
GeoEnvironmental, Inc.

APPENDIX D

10/16/04 Soil Boring Laboratory Report and Chain-of-Custody Documentation

ASSOCIATED LABORATORIES
806 North Batavia - Orange, California 92868 - 714/771-6900 *FAX 714/538-1209*

CLIENT Thrifty Oil Company (8871)
ATTN: Mike Bowery
13116 Imperial Hwy.
P.O. Box 2128
Santa Fe Springs, CA 90670

LAB REQUEST 122596
REPORTED 01/19/2004
RECEIVED 01/09/2004

PROJECT Station #049

SUBMITTER Client

COMMENTS

This laboratory request covers the following listed samples which were analyzed for the parameters indicated on the attached Analytical Result Report. All analyses were conducted using the appropriate methods as indicated on the report. This cover letter is an integral part of the final report.

Order No.	Client Sample Identification
489688	TOC #049, B-3-10/010604
489689	TOC #049, B-3-15/010604
489690	TOC #049, B-3-20/010604
489691	TOC #049, B-3-WS/010604
489692	TOC #049, B-4-5/010604
489693	TOC #049, B-4-10/010604
489694	TOC #049, B-4-15/010604
489695	TOC #049, B-4-20/010604
489696	TOC #049, B-4-WS/010604
489697	TOC #049, B-2-5/010604
489698	TOC #049, B-2-10/010604
489699	TOC #049, B-2-15/010604
489700	TOC #049, B-2-20/010604
489701	TOC #049, B-2-WS/010604
489702	TOC #049, B-1-5/010604
489703	TOC #049, B-1-10/010604

Thank you for the opportunity to be of service to your company. Please feel free to call if there are any questions regarding this report or if we can be of further service.

ASSOCIATED LABORATORIES by,

Edward S. Behare, Ph.D.
Vice President

NOTE: Unless notified in writing, all samples will be discarded by appropriate disposal protocol 30 days from date reported.

TESTING & CONSULTING
Chemical
Microbiological
Environmental

ASSOCIATED LABORATORIES
806 North Batavia - Orange, California 92868 - 714/771-6900 *FAX 714/538-1209*

CLIENT Thrifty Oil Company (8871)
ATTN: Mike Bowery
13116 Imperial Hwy.
P.O. Box 2128
Santa Fe Springs, CA 90670

LAB REQUEST 122596
REPORTED 01/19/2004
RECEIVED 01/09/2004

PROJECT Station #049

SUBMITTER Client

COMMENTS

This laboratory request covers the following listed samples which were analyzed for the parameters indicated on the attached Analytical Result Report. All analyses were conducted using the appropriate methods as indicated on the report. This cover letter is an integral part of the final report.

Order No.	Client Sample Identification
489704	TOC #049, B-1-15/010604
489705	TOC #049, B-1-20/010604
489706	Laboratory Method Blank-S
489707	Laboratory Method Blank-W

Thank you for the opportunity to be of service to your company. Please feel free to call if there are any questions regarding this report or if we can be of further service.

ASSOCIATED LABORATORIES by,

Edward S. Behare, Ph.D.
Vice President

NOTE: Unless notified in writing , all samples will be discarded by appropriate disposal protocol 30 days from date reported.

TESTING & CONSULTING
Chemical
Microbiological
Environmental

Order #: 489701 Clier `amp' ID: TOC #049, B-2-WS/0106(
Matrix: WATER Date Sampled: 01/06/2004 Time Sampled: 13:06

Analyte	Result	DF	PQL	MDL	Units	Date/Analyst
8260B BTEX/MTBE Only						
Benzene	2490	100	100.0	0.22	ug/L	01/13/04 AM
Ethyl benzene	4020	100	500.0	0.31	ug/L	01/13/04 AM
Ethyl-tertbutylether (ETBE)	ND	100	100.0	0.17	ug/L	01/13/04 AM
Isopropyl ether (DIPE)	ND	100	100.0	0.29	ug/L	01/13/04 AM
Methyl-tert-butylether (MTBE)	7060	100	100.0	0.18	ug/L	01/13/04 AM
Tert-amylmethylether (TAME)	216	100	100.0	0.28	ug/L	01/13/04 AM
Tertiary butyl alcohol (TBA)	ND	100	1000.0	10	ug/L	01/13/04 AM
Toluene	4310	100	500.0	0.32	ug/L	01/13/04 AM
Xylenes, total	21400	100	500.0	0.4	ug/L	01/13/04 AM
Surrogates					**Units**	**Control Limits**
Surr1 - Dibromofluoromethane	98				%	70 - 130
Surr2 - 1,2-Dichloroethane-d4	93				%	70 - 130
Surr3 - Toluene-d8	105				%	70 - 130
Surr4 - p-Bromofluorobenzene	101				%	70 - 130
8015M - Gasoline						
Gasoline	172000	50	2500.0	15	ug/L	01/13/04 LZ
Surrogates					**Units**	**Control Limits**
a,a,a-Trifluorotoluene	208*				%	55 - 200

PQL = Practical Quantitation Limit, MDL = Method detection limit, DF = Dilution Factor
ND = Not detected below indicated MDL, J=Trace

Order #: 489691 **Client Sample ID:** TOC #049, B-3-WS/01060
Matrix: WATER **Date Sampled:** 01/06/2004 **Time Sampled:** 10:56

Analyte	Result	DF	PQL	MDL	Units	Date/Analyst
8260B BTEX/MTBE Only						
Benzene	1450	10	10.0	0.22	ug/L	01/13/04 AM
Ethyl benzene	2870	10	50.0	0.31	ug/L	01/13/04 AM
Ethyl-tertbutylether (ETBE)	ND	10	10.0	0.17	ug/L	01/13/04 AM
Isopropyl ether (DIPE)	ND	10	10.0	0.29	ug/L	01/13/04 AM
Methyl-tert-butylether (MTBE)	19400	100	100.0	0.18	ug/L	01/17/04 AM
Tert-amylmethylether (TAME)	368	10	10.0	0.28	ug/L	01/13/04 AM
Tertiary butyl alcohol (TBA)	3270	10	100.0	10	ug/L	01/13/04 AM
Toluene	3600	10	50.0	0.32	ug/L	01/13/04 AM
Xylenes, total	11300	100	500.0	0.4	ug/L	01/17/04 AM
Surrogates					**Units**	**Control Limits**
Surr1 - Dibromofluoromethane	106				%	70 - 130
Surr2 - 1,2-Dichloroethane-d4	85				%	70 - 130
Surr3 - Toluene-d8	99				%	70 - 130
Surr4 - p-Bromofluorobenzene	102				%	70 - 130
8015M - Gasoline						
Gasoline	89600	20	1000.0	15	ug/L	01/13/04 LZ
Surrogates					**Units**	**Control Limits**
a,a,a-Trifluorotoluene	207*				%	55 - 200

PQL = Practical Quantitation Limit, MDL = Method detection limit, DF = Dilution Factor
ND = Not detected below indicated MDL, J=Trace

Order #: 489696
Matrix: WATER

Clier ampl D: TOC #049, B-4-WS/0106(
Date Sampled: 01/06/2004 Time Sampled: 12:01

Analyte	Result	DF	PQL	MDL	Units	Date/Analyst
8260B BTEX/MTBE Only						
Benzene	247	10	10.0	0.22	ug/L	01/13/04 AM
Ethyl benzene	1110	10	50.0	0.31	ug/L	01/13/04 AM
Ethyl-tertbutylether (ETBE)	ND	10	10.0	0.17	ug/L	01/13/04 AM
Isopropyl ether (DIPE)	ND	10	10.0	0.29	ug/L	01/13/04 AM
Methyl-tert-butylether (MTBE)	27900	100	100.0	0.18	ug/L	01/18/04 AM
Tert-amylmethylether (TAME)	212	10	10.0	0.28	ug/L	01/13/04 AM
Tertiary butyl alcohol (TBA)	5080	10	100.0	10	ug/L	01/13/04 AM
Toluene	65	10	50.0	0.32	ug/L	01/13/04 AM
Xylenes, total	3530	10	50.0	0.4	ug/L	01/13/04 AM
Surrogates					**Units**	**Control Limits**
Surr1 - Dibromofluoromethane	103				%	70 - 130
Surr2 - 1,2-Dichloroethane-d4	96				%	70 - 130
Surr3 - Toluene-d8	102				%	70 - 130
Surr4 - p-Bromofluorobenzene	102				%	70 - 130
8015M - Gasoline						
Gasoline	65800	20	1000.0	15	ug/L	01/13/04 LZ
Surrogates					**Units**	**Control Limits**
a,a,a-Trifluorotoluene	188				%	55 - 200

PQL = Practical Quantitation Limit, MDL = Method detection limit, DF = Dilution Factor
ND = Not detected below indicated MDL, J=Trace

Order #: 489688 Client Sample ID: TOC #049, B-3-10/010604
Matrix: SOLID Date Sampled: 01/06/2004 Time Sampled: 10:28

Analyte	Result	DF	PQL	MDL	Units	Date/Analyst
8260B BTEX/MTBE Only						
Benzene	ND	1	5	0.39	ug/Kg	01/14/04 AM
Ethyl benzene	ND	1	5	0.41	ug/Kg	01/14/04 AM
Ethyl-tertbutylether (ETBE)	ND	1	10	0.77	ug/Kg	01/14/04 AM
Isopropyl ether (DIPE)	ND	1	10	0.82	ug/Kg	01/14/04 AM
Methyl-tert-butylether (MTBE)	609	1	5	0.51	ug/Kg	01/14/04 AM
Tert-amylmethylether (TAME)	2.4 J	1	10	0.61	ug/Kg	01/14/04 AM
Tertiary butyl alcohol (TBA)	488	1	50	5.0	ug/Kg	01/14/04 AM
Toluene	ND	1	5	0.42	ug/Kg	01/14/04 AM
Xylenes, total	3.5 J	1	5	0.8	ug/Kg	01/14/04 AM
Surrogates					**Units**	**Control Limits**
Surr1 - Dibromofluoromethane	97				%	70 - 130
Surr2 - 1,2-Dichloroethane-d4	105				%	70 - 130
Surr3 - Toluene-d8	104				%	70 - 130
Surr4 - p-Bromofluorobenzene	102				%	70 - 130
8015M - Gasoline						
Gasoline	ND	1	3	0.401	mg/Kg	01/13/04 LT
Surrogates					**Units**	**Control Limits**
a,a,a-Trifluorotoluene	104				%	55 - 200

PQL = Practical Quantitation Limit, MDL = Method detection limit, DF = Dilution Factor
ND = Not detected below indicated MDL, J=Trace

Order #: 489689 **Clier amp ID:** TOC #049, B-3-15/010604
Matrix: SOLID **Date Sampled:** 01/06/2004 **Time Sampled:** 10:35

Analyte	Result		DF	PQL	MDL	Units	Date/Analyst
8260B BTEX/MTBE Only							
Benzene	2.1	J	1	5	0.39	ug/Kg	01/14/04 AM
Ethyl benzene	4.1	J	1	5	0.41	ug/Kg	01/14/04 AM
Ethyl-tertbutylether (ETBE)	ND		1	10	0.77	ug/Kg	01/14/04 AM
Isopropyl ether (DIPE)	ND		1	10	0.82	ug/Kg	01/14/04 AM
Methyl-tert-butylether (MTBE)	1320		1	5	0.51	ug/Kg	01/14/04 AM
Tert-amylmethylether (TAME)	25		1	10	0.61	ug/Kg	01/14/04 AM
Tertiary butyl alcohol (TBA)	263		1	50	5.0	ug/Kg	01/14/04 AM
Toluene	6.1		1	5	0.42	ug/Kg	01/14/04 AM
Xylenes, total	20		1	5	0.8	ug/Kg	01/14/04 AM
Surrogates						**Units**	**Control Limits**
Surr1 - Dibromofluoromethane	97					%	70 - 130
Surr2 - 1,2-Dichloroethane-d4	105					%	70 - 130
Surr3 - Toluene-d8	111					%	70 - 130
Surr4 - p-Bromofluorobenzene	104					%	70 - 130
8015M - Gasoline							
Gasoline	ND		1	3	0.401	mg/Kg	01/13/04 LT
Surrogates						**Units**	**Control Limits**
a,a,a-Trifluorotoluene	112					%	55 - 200

PQL = Practical Quantitation Limit, MDL = Method detection limit, DF = Dilution Factor
ND = Not detected below indicated MDL, J=Trace

Order #: 489690 **Clien amp ID:** TOC #049, B-3-20/010604
Matrix: SOLID **Date Sampled:** 01/06/2004 **Time Sampled:** 10:49

Analyte	Result	DF	PQL	MDL	Units	Date/Analyst
8260B BTEX/MTBE Only						
Benzene	ND	1	5	0.39	ug/Kg	01/14/04 AM
Ethyl benzene	ND	1	5	0.41	ug/Kg	01/14/04 AM
Ethyl-tertbutylether (ETBE)	ND	1	10	0.77	ug/Kg	01/14/04 AM
Isopropyl ether (DIPE)	ND	1	10	0.82	ug/Kg	01/14/04 AM
Methyl-tert-butylether (MTBE)	1060	1	5	0.51	ug/Kg	01/14/04 AM
Tert-amylmethylether (TAME)	25	1	10	0.61	ug/Kg	01/14/04 AM
Tertiary butyl alcohol (TBA)	175	1	50	5.0	ug/Kg	01/14/04 AM
Toluene	ND	1	5	0.42	ug/Kg	01/14/04 AM
Xylenes, total	3.2 J	1	5	0.8	ug/Kg	01/14/04 AM
Surrogates					**Units**	**Control Limits**
Surr1 - Dibromofluoromethane	93				%	70 - 130
Surr2 - 1,2-Dichloroethane-d4	102				%	70 - 130
Surr3 - Toluene-d8	106				%	70 - 130
Surr4 - p-Bromofluorobenzene	102				%	70 - 130
8015M - Gasoline						
Gasoline	ND	1	3	0.401	mg/Kg	01/13/04 LT
Surrogates					**Units**	**Control Limits**
a,a,a-Trifluorotoluene	108				%	55 - 200

PQL = Practical Quantitation Limit, MDL = Method detection limit, DF = Dilution Factor
ND = Not detected below indicated MDL, J=Trace

Order #: 489692 **Clien amp D:** TOC #049, B-4-5/010604
Matrix: SOLID **Date Sampled:** 01/06/2004 **Time Sampled:** 11:26

Analyte	Result		DF	PQL	MDL	Units	Date/Analyst
8260B BTEX/MTBE Only							
Benzene	2.3	J	1	5	0.39	ug/Kg	01/14/04 AM
Ethyl benzene	1.8	J	1	5	0.41	ug/Kg	01/14/04 AM
Ethyl-tertbutylether (ETBE)	ND		1	10	0.77	ug/Kg	01/14/04 AM
Isopropyl ether (DIPE)	ND		1	10	0.82	ug/Kg	01/14/04 AM
Methyl-tert-butylether (MTBE)	24		1	5	0.51	ug/Kg	01/14/04 AM
Tert-amylmethylether (TAME)	ND		1	10	0.61	ug/Kg	01/14/04 AM
Tertiary butyl alcohol (TBA)	13	J	1	50	5.0	ug/Kg	01/14/04 AM
Toluene	ND		1	5	0.42	ug/Kg	01/14/04 AM
Xylenes, total	3.5	J	1	5	0.8	ug/Kg	01/14/04 AM
Surrogates						**Units**	**Control Limits**
Surr1 - Dibromofluoromethane	97					%	70 - 130
Surr2 - 1,2-Dichloroethane-d4	98					%	70 - 130
Surr3 - Toluene-d8	101					%	70 - 130
Surr4 - p-Bromofluorobenzene	106					%	70 - 130
8015M - Gasoline							
Gasoline	30		2	6.0	0.401	mg/Kg	01/13/04 LT
Surrogates						**Units**	**Control Limits**
a,a,a-Trifluorotoluene	148					%	55 - 200

PQL = Practical Quantitation Limit, MDL = Method detection limit, DF = Dilution Factor
ND = Not detected below indicated MDL, J=Trace

Order #: 489693 **Clier 'amp' D:** TOC #049, B-4-10/01060
Matrix: SOLID **Date Sampled:** 01/06/2004 **Time Sampled:** 11:33

Analyte	Result	DF	PQL	MDL	Units	Date/Analyst
8260B BTEX/MTBE Only						
Benzene	ND	1	5	0.39	ug/Kg	01/14/04 AM
Ethyl benzene	ND	1	5	0.41	ug/Kg	01/14/04 AM
Ethyl-tertbutylether (ETBE)	ND	1	10	0.77	ug/Kg	01/14/04 AM
Isopropyl ether (DIPE)	ND	1	10	0.82	ug/Kg	01/14/04 AM
Methyl-tert-butylether (MTBE)	1070	1	5	0.51	ug/Kg	01/14/04 AM
Tert-amylmethylether (TAME)	2.8 J	1	10	0.61	ug/Kg	01/14/04 AM
Tertiary butyl alcohol (TBA)	496	1	50	5.0	ug/Kg	01/14/04 AM
Toluene	ND	1	5	0.42	ug/Kg	01/14/04 AM
Xylenes, total	ND	1	5	0.8	ug/Kg	01/14/04 AM
Surrogates					**Units**	**Control Limits**
Surr1 - Dibromofluoromethane	96				%	70 - 130
Surr2 - 1,2-Dichloroethane-d4	103				%	70 - 130
Surr3 - Toluene-d8	106				%	70 - 130
Surr4 - p-Bromofluorobenzene	105				%	70 - 130
8015M - Gasoline						
Gasoline	ND	1	3	0.401	mg/Kg	01/13/04 LT
Surrogates					**Units**	**Control Limits**
a,a,a-Trifluorotoluene	110				%	55 - 200

PQL = Practical Quantitation Limit, MDL = Method detection limit, DF = Dilution Factor
ND = Not detected below indicated MDL, J=Trace

Order #: 489694 **Clier amp D:** TOC #049, B-4-15/010604
Matrix: SOLID **Date Sampled:** 01/06/2004 **Time Sampled:** 11:40

Analyte	Result	DF	PQL	MDL	Units	Date/Analyst
8260B BTEX/MTBE Only						
Benzene	ND	1	5	0.39	ug/Kg	01/14/04 AM
Ethyl benzene	ND	1	5	0.41	ug/Kg	01/14/04 AM
Ethyl-tertbutylether (ETBE)	ND	1	10	0.77	ug/Kg	01/14/04 AM
Isopropyl ether (DIPE)	ND	1	10	0.82	ug/Kg	01/14/04 AM
Methyl-tert-butylether (MTBE)	121	1	5	0.51	ug/Kg	01/14/04 AM
Tert-amylmethylether (TAME)	ND	1	10	0.61	ug/Kg	01/14/04 AM
Tertiary butyl alcohol (TBA)	19 J	1	50	5.0	ug/Kg	01/14/04 AM
Toluene	ND	1	5	0.42	ug/Kg	01/14/04 AM
Xylenes, total	ND	1	5	0.8	ug/Kg	01/14/04 AM
Surrogates					**Units**	**Control Limits**
Surr1 - Dibromofluoromethane	95				%	70 - 130
Surr2 - 1,2-Dichloroethane-d4	102				%	70 - 130
Surr3 - Toluene-d8	105				%	70 - 130
Surr4 - p-Bromofluorobenzene	100				%	70 - 130
8015M - Gasoline						
Gasoline	ND	1	3	0.401	mg/Kg	01/13/04 LT
Surrogates					**Units**	**Control Limits**
a,a,a-Trifluorotoluene	69				%	55 - 200

PQL = Practical Quantitation Limit, MDL = Method detection limit, DF = Dilution Factor
ND = Not detected below indicated MDL, J=Trace

Order #: 489695 Clier ampl D: TOC #049, B-4-20/010604
Matrix: SOLID Date Sampled: 01/06/2004 Time Sampled: 11:49

Analyte	Result	DF	PQL	MDL	Units	Date/Analyst
8260B BTEX/MTBE Only						
Benzene	ND	1	5	0.39	ug/Kg	01/14/04 AM
Ethyl benzene	ND	1	5	0.41	ug/Kg	01/14/04 AM
Ethyl-tertbutylether (ETBE)	ND	1	10	0.77	ug/Kg	01/14/04 AM
Isopropyl ether (DIPE)	ND	1	10	0.82	ug/Kg	01/14/04 AM
Methyl-tert-butylether (MTBE)	420	1	5	0.51	ug/Kg	01/14/04 AM
Tert-amylmethylether (TAME)	ND	1	10	0.61	ug/Kg	01/14/04 AM
Tertiary butyl alcohol (TBA)	70	1	50	5.0	ug/Kg	01/14/04 AM
Toluene	ND	1	5	0.42	ug/Kg	01/14/04 AM
Xylenes, total	ND	1	5	0.8	ug/Kg	01/14/04 AM
Surrogates					**Units**	**Control Limits**
Surr1 - Dibromofluoromethane	95				%	70 - 130
Surr2 - 1,2-Dichloroethane-d4	103				%	70 - 130
Surr3 - Toluene-d8	108				%	70 - 130
Surr4 - p-Bromofluorobenzene	101				%	70 - 130
8015M - Gasoline						
Gasoline	ND	1	3	0.401	mg/Kg	01/13/04 LT
Surrogates					**Units**	**Control Limits**
a,a,a-Trifluorotoluene	108				%	55 - 200

PQL = Practical Quantitation Limit, MDL = Method detection limit, DF = Dilution Factor
ND = Not detected below indicated MDL, J=Trace

Order #: 489697 **Clier ampl): TOC #049, B-2-5/010604**
Matrix: SOLID **Date Sampled:** 01/06/2004 **Time Sampled:** 12:38

Analyte	Result	DF	PQL	MDL	Units	Date/Analyst
8260B BTEX/MTBE Only						
Benzene	ND	50	250.0	0.39	ug/Kg	01/15/04 AM
Ethyl benzene	5890	50	250.0	0.41	ug/Kg	01/15/04 AM
Ethyl-tertbutylether (ETBE)	ND	50	500.0	0.77	ug/Kg	01/15/04 AM
Isopropyl ether (DIPE)	ND	50	500.0	0.82	ug/Kg	01/15/04 AM
Methyl-tert-butylether (MTBE)	140 J	50	250.0	0.51	ug/Kg	01/15/04 AM
Tert-amylmethylether (TAME)	ND	50	500.0	0.61	ug/Kg	01/15/04 AM
Tertiary butyl alcohol (TBA)	ND	50	2500.0	5.0	ug/Kg	01/15/04 AM
Toluene	ND	50	250.0	0.42	ug/Kg	01/15/04 AM
Xylenes, total	31300	50	250.0	0.8	ug/Kg	01/15/04 AM
Surrogates					**Units**	**Control Limits**
Surr1 - Dibromofluoromethane	97				%	70 - 130
Surr2 - 1,2-Dichloroethane-d4	82				%	70 - 130
Surr3 - Toluene-d8	102				%	70 - 130
Surr4 - p-Bromofluorobenzene	109				%	70 - 130
8015M - Gasoline						
Gasoline	654	50	150.0	0.401	mg/Kg	01/13/04 LT
Surrogates					**Units**	**Control Limits**
a,a,a-Trifluorotoluene	142				%	55 - 200

PQL = Practical Quantitation Limit, MDL = Method detection limit, DF = Dilution Factor
ND = Not detected below indicated MDL, J=Trace

Order #: 489698
Matrix: SOLID

Client Sample ID: TOC #049, B-2-10/010604
Date Sampled: 01/06/2004 Time Sampled: 12:44

Analyte	Result	DF	PQL	MDL	Units	Date/Analyst
8260B BTEX/MTBE Only						
Benzene	ND	1	5	0.39	ug/Kg	01/15/04 AM
Ethyl benzene	ND	1	5	0.41	ug/Kg	01/15/04 AM
Ethyl-tertbutylether (ETBE)	ND	1	10	0.77	ug/Kg	01/15/04 AM
Isopropyl ether (DIPE)	ND	1	10	0.82	ug/Kg	01/15/04 AM
Methyl-tert-butylether (MTBE)	939	1	5	0.51	ug/Kg	01/15/04 AM
Tert-amylmethylether (TAME)	11	1	10	0.61	ug/Kg	01/15/04 AM
Tertiary butyl alcohol (TBA)	339	1	50	5.0	ug/Kg	01/15/04 AM
Toluene	ND	1	5	0.42	ug/Kg	01/15/04 AM
Xylenes, total	7.0	1	5	0.8	ug/Kg	01/15/04 AM
Surrogates					**Units**	**Control Limits**
Surr1 - Dibromofluoromethane	94				%	70 - 130
Surr2 - 1,2-Dichloroethane-d4	103				%	70 - 130
Surr3 - Toluene-d8	106				%	70 - 130
Surr4 - p-Bromofluorobenzene	103				%	70 - 130
8015M - Gasoline						
Gasoline	ND	1	3	0.401	mg/Kg	01/13/04 LT
Surrogates					**Units**	**Control Limits**
a,a,a-Trifluorotoluene	113				%	55 - 200

PQL = Practical Quantitation Limit, MDL = Method detection limit, DF = Dilution Factor
ND = Not detected below indicated MDL, J=Trace

Order #: 489699 **Client Sample #:** TOC #049, B-2-15/01060
Matrix: SOLID **Date Sampled:** 01/06/2004 **Time Sampled:** 12:52

Analyte	Result	DF	PQL	MDL	Units	Date/Analyst
8260B BTEX/MTBE Only						
Benzene	ND	1	5	0.39	ug/Kg	01/15/04 AM
Ethyl benzene	1.4 J	1	5	0.41	ug/Kg	01/15/04 AM
Ethyl-tertbutylether (ETBE)	ND	1	10	0.77	ug/Kg	01/15/04 AM
Isopropyl ether (DIPE)	1.6 J	1	10	0.82	ug/Kg	01/15/04 AM
Methyl-tert-butylether (MTBE)	220	1	5	0.51	ug/Kg	01/15/04 AM
Tert-amylmethylether (TAME)	1.1 J	1	10	0.61	ug/Kg	01/15/04 AM
Tertiary butyl alcohol (TBA)	38 J	1	50	5.0	ug/Kg	01/15/04 AM
Toluene	ND	1	5	0.42	ug/Kg	01/15/04 AM
Xylenes, total	8.4	1	5	0.8	ug/Kg	01/15/04 AM
Surrogates					**Units**	**Control Limits**
Surr1 - Dibromofluoromethane	93				%	70 - 130
Surr2 - 1,2-Dichloroethane-d4	103				%	70 - 130
Surr3 - Toluene-d8	107				%	70 - 130
Surr4 - p-Bromofluorobenzene	102				%	70 - 130
8015M - Gasoline						
Gasoline	ND	1	3	0.401	mg/Kg	01/13/04 LT
Surrogates					**Units**	**Control Limits**
a,a,a-Trifluorotoluene	113				%	55 - 200

PQL = Practical Quantitation Limit, MDL = Method detection limit, DF = Dilution Factor
ND = Not detected below indicated MDL, J=Trace

Order #: 489700 **Client Sample ID:** TOC #049, B-2-20/01060
Matrix: SOLID **Date Sampled:** 01/06/2004 **Time Sampled:** 13:02

Analyte	Result	DF	PQL	MDL	Units	Date/Analyst
8260B BTEX/MTBE Only						
Benzene	ND	1	5	0.39	ug/Kg	01/15/04 AM
Ethyl benzene	ND	1	5	0.41	ug/Kg	01/15/04 AM
Ethyl-tertbutylether (ETBE)	ND	1	10	0.77	ug/Kg	01/15/04 AM
Isopropyl ether (DIPE)	ND	1	10	0.82	ug/Kg	01/15/04 AM
Methyl-tert-butylether (MTBE)	5.5	1	5	0.51	ug/Kg	01/15/04 AM
Tert-amylmethylether (TAME)	ND	1	10	0.61	ug/Kg	01/15/04 AM
Tertiary butyl alcohol (TBA)	ND	1	50	5.0	ug/Kg	01/15/04 AM
Toluene	ND	1	5	0.42	ug/Kg	01/15/04 AM
Xylenes, total	ND	1	5	0.8	ug/Kg	01/15/04 AM
Surrogates					**Units**	**Control Limits**
Surr1 - Dibromofluoromethane	92				%	70 - 130
Surr2 - 1,2-Dichloroethane-d4	101				%	70 - 130
Surr3 - Toluene-d8	106				%	70 - 130
Surr4 - p-Bromofluorobenzene	105				%	70 - 130
8015M - Gasoline						
Gasoline	ND	1	3	0.401	mg/Kg	01/13/04 LT
Surrogates					**Units**	**Control Limits**
a,a,a-Trifluorotoluene	78				%	55 - 200

PQL = Practical Quantitation Limit, MDL = Method detection limit, DF = Dilution Factor
ND = Not detected below indicated MDL, J=Trace

Order #: 489702
Matrix: SOLID

Client Sample ID: TOC #049, B-1-5/010604
Date Sampled: 01/06/2004 Time Sampled: 13:39

Analyte	Result	DF	PQL	MDL	Units	Date/Analyst
8260B BTEX/MTBE Only						
Benzene	1.8 J	1	5	0.39	ug/Kg	01/15/04 AM
Ethyl benzene	ND	1	5	0.41	ug/Kg	01/15/04 AM
Ethyl-tertbutylether (ETBE)	ND	1	10	0.77	ug/Kg	01/15/04 AM
Isopropyl ether (DIPE)	ND	1	10	0.82	ug/Kg	01/15/04 AM
Methyl-tert-butylether (MTBE)	97	1	5	0.51	ug/Kg	01/15/04 AM
Tert-amylmethylether (TAME)	ND	1	10	0.61	ug/Kg	01/15/04 AM
Tertiary butyl alcohol (TBA)	132	1	50	5.0	ug/Kg	01/15/04 AM
Toluene	ND	1	5	0.42	ug/Kg	01/15/04 AM
Xylenes, total	ND	1	5	0.8	ug/Kg	01/15/04 AM
Surrogates					**Units**	**Control Limits**
Surr1 - Dibromofluoromethane	97				%	70 - 130
Surr2 - 1,2-Dichloroethane-d4	102				%	70 - 130
Surr3 - Toluene-d8	103				%	70 - 130
Surr4 - p-Bromofluorobenzene	101				%	70 - 130
8015M - Gasoline						
Gasoline	ND	1	3	0.401	mg/Kg	01/13/04 LT
Surrogates					**Units**	**Control Limits**
a,a,a-Trifluorotoluene	105				%	55 - 200

PQL = Practical Quantitation Limit, MDL = Method detection limit, DF = Dilution Factor
ND = Not detected below indicated MDL, J=Trace

Order #: 489703
Matrix: SOLID

Client Sample ID: TOC #049, B-1-10/01060
Date Sampled: 01/06/2004 Time Sampled: 13:45

Analyte	Result	DF	PQL	MDL	Units	Date/Analyst
8260B BTEX/MTBE Only						
Benzene	16	1	5	0.39	ug/Kg	01/15/04 AM
Ethyl benzene	2.3 J	1	5	0.41	ug/Kg	01/15/04 AM
Ethyl-tertbutylether (ETBE)	ND	1	10	0.77	ug/Kg	01/15/04 AM
Isopropyl ether (DIPE)	ND	1	10	0.82	ug/Kg	01/15/04 AM
Methyl-tert-butylether (MTBE)	411	1	5	0.51	ug/Kg	01/15/04 AM
Tert-amylmethylether (TAME)	24	1	10	0.61	ug/Kg	01/15/04 AM
Tertiary butyl alcohol (TBA)	304	1	50	5.0	ug/Kg	01/15/04 AM
Toluene	ND	1	5	0.42	ug/Kg	01/15/04 AM
Xylenes, total	1.0 J	1	5	0.8	ug/Kg	01/15/04 AM
Surrogates					**Units**	**Control Limits**
Surr1 - Dibromofluoromethane	95				%	70 - 130
Surr2 - 1,2-Dichloroethane-d4	101				%	70 - 130
Surr3 - Toluene-d8	107				%	70 - 130
Surr4 - p-Bromofluorobenzene	101				%	70 - 130
8015M - Gasoline						
Gasoline	ND	1	3	0.401	mg/Kg	01/13/04 LT
Surrogates					**Units**	**Control Limits**
a,a,a-Trifluorotoluene	116				%	55 - 200

PQL = Practical Quantitation Limit, MDL = Method detection limit, DF = Dilution Factor
ND = Not detected below indicated MDL, J=Trace

Order #: 489704 Client Sample ID: TOC #049, B-1-15/010604
Matrix: SOLID Date Sampled: 01/06/2004 Time Sampled: 13:52

Analyte	Result		DF	PQL	MDL	Units	Date/Analyst
8260B BTEX/MTBE Only							
Benzene	ND		1	5	0.39	ug/Kg	01/15/04 AM
Ethyl benzene	ND		1	5	0.41	ug/Kg	01/15/04 AM
Ethyl-tertbutylether (ETBE)	ND		1	10	0.77	ug/Kg	01/15/04 AM
Isopropyl ether (DIPE)	ND		1	10	0.82	ug/Kg	01/15/04 AM
Methyl-tert-butylether (MTBE)	53		1	5	0.51	ug/Kg	01/15/04 AM
Tert-amylmethylether (TAME)	ND		1	10	0.61	ug/Kg	01/15/04 AM
Tertiary butyl alcohol (TBA)	12	J	1	50	5.0	ug/Kg	01/15/04 AM
Toluene	ND		1	5	0.42	ug/Kg	01/15/04 AM
Xylenes, total	ND		1	5	0.8	ug/Kg	01/15/04 AM
Surrogates						**Units**	**Control Limits**
Surr1 - Dibromofluoromethane	92					%	70 - 130
Surr2 - 1,2-Dichloroethane-d4	100					%	70 - 130
Surr3 - Toluene-d8	107					%	70 - 130
Surr4 - p-Bromofluorobenzene	102					%	70 - 130
8015M - Gasoline							
Gasoline	ND		1	3	0.401	mg/Kg	01/13/04 LT
Surrogates						**Units**	**Control Limits**
a,a,a-Trifluorotoluene	109					%	55 - 200

PQL = Practical Quantitation Limit, MDL = Method detection limit, DF = Dilution Factor
ND = Not detected below indicated MDL, J=Trace

Order #: 489705 Clier amp ID TOC #049, B-1-20/01060
Matrix: SOLID Date Sampled: 01/06/2004 Time Sampled: 14:03

Analyte	Result	DF	PQL	MDL	Units	Date/Analyst
8260B BTEX/MTBE Only						
Benzene	ND	1	5	0.39	ug/Kg	01/15/04 AM
Ethyl benzene	ND	1	5	0.41	ug/Kg	01/15/04 AM
Ethyl-tertbutylether (ETBE)	ND	1	10	0.77	ug/Kg	01/15/04 AM
Isopropyl ether (DIPE)	ND	1	10	0.82	ug/Kg	01/15/04 AM
Methyl-tert-butylether (MTBE)	19	1	5	0.51	ug/Kg	01/15/04 AM
Tert-amylmethylether (TAME)	ND	1	10	0.61	ug/Kg	01/15/04 AM
Tertiary butyl alcohol (TBA)	ND	1	50	5.0	ug/Kg	01/15/04 AM
Toluene	ND	1	5	0.42	ug/Kg	01/15/04 AM
Xylenes, total	ND	1	5	0.8	ug/Kg	01/15/04 AM
Surrogates					**Units**	**Control Limits**
Surr1 - Dibromofluoromethane	89				%	70 - 130
Surr2 - 1,2-Dichloroethane-d4	97				%	70 - 130
Surr3 - Toluene-d8	107				%	70 - 130
Surr4 - p-Bromofluorobenzene	104				%	70 - 130
8015M - Gasoline						
Gasoline	ND	1	3	0.401	mg/Kg	01/13/04 LT
Surrogates					**Units**	**Control Limits**
a,a,a-Trifluorotoluene	108				%	55 - 200

PQL = Practical Quantitation Limit, MDL = Method detection limit, DF = Dilution Factor
ND = Not detected below indicated MDL, J=Trace

Order #: 489706 Clier amp ID: Laboratory Method Blank

Matrix: SOLID

Analyte	Result	DF	PQL	MDL	Units	Date/Analyst
8260B BTEX/MTBE Only						
Benzene	ND	1	5	0.39	ug/Kg	01/14/04 AM
Ethyl benzene	ND	1	5	0.41	ug/Kg	01/14/04 AM
Ethyl-tertbutylether (ETBE)	ND	1	10	0.77	ug/Kg	01/14/04 AM
Isopropyl ether (DIPE)	ND	1	10	0.82	ug/Kg	01/14/04 AM
Methyl-tert-butylether (MTBE)	ND	1	5	0.51	ug/Kg	01/14/04 AM
Tert-amylmethylether (TAME)	ND	1	10	0.61	ug/Kg	01/14/04 AM
Tertiary butyl alcohol (TBA)	ND	1	50	5.0	ug/Kg	01/14/04 AM
Toluene	ND	1	5	0.42	ug/Kg	01/14/04 AM
Xylenes, total	ND	1	5	0.8	ug/Kg	01/14/04 AM
Surrogates					**Units**	**Control Limits**
Surr1 - Dibromofluoromethane	92				%	70 - 130
Surr2 - 1,2-Dichloroethane-d4	101				%	70 - 130
Surr3 - Toluene-d8	103				%	70 - 130
Surr4 - p-Bromofluorobenzene	104				%	70 - 130
8015M - Gasoline						
Gasoline	ND	1	3	0.401	mg/Kg	01/12/04 LT
Surrogates					**Units**	**Control Limits**
a,a,a-Trifluorotoluene	162				%	55 - 200

PQL = Practical Quantitation Limit, MDL = Method detection limit, DF = Dilution Factor
ND = Not detected below indicated MDL, J=Trace

Order #: 489707 Client Sample ID: Laboratory Method Blank
Matrix: WATER

Analyte	Result	DF	PQL	MDL	Units	Date/Analyst
8260B BTEX/MTBE Only						
Benzene	ND	1	1	0.22	ug/L	01/13/04 AM
Ethyl benzene	ND	1	5	0.31	ug/L	01/13/04 AM
Ethyl-tertbutylether (ETBE)	ND	1	1	0.17	ug/L	01/13/04 AM
Isopropyl ether (DIPE)	ND	1	1	0.29	ug/L	01/13/04 AM
Methyl-tert-butylether (MTBE)	ND	1	1	0.18	ug/L	01/13/04 AM
Tert-amylmethylether (TAME)	ND	1	1	0.28	ug/L	01/13/04 AM
Tertiary butyl alcohol (TBA)	ND	1	10	10	ug/L	01/13/04 AM
Toluene	ND	1	5	0.32	ug/L	01/13/04 AM
Xylenes, total	ND	1	5	0.4	ug/L	01/13/04 AM
Surrogates					**Units**	**Control Limits**
Surr1 - Dibromofluoromethane	93				%	70 - 130
Surr2 - 1,2-Dichloroethane-d4	98				%	70 - 130
Surr3 - Toluene-d8	107				%	70 - 130
Surr4 - p-Bromofluorobenzene	105				%	70 - 130
8015M - Gasoline						
Gasoline	ND	1	50	15	ug/L	01/12/04 LZ

PQL = Practical Quantitation Limit, MDL = Method detection limit, DF = Dilution Factor
ND = Not detected below indicated MDL, J=Trace

ASSOCIATED LABORATORIES
QA REPORT FORM

QC Sample: LCS / LCSD

Matrix: SOLID

Prep. Date: 01/12/04

Analysis Date: 01/12/04-01/13/04

ID#'s in Batch: LR 122596

Reporting Units = mg/Kg

PREPARATION BLANK / LAB CONTROL SAMPLE RESULTS

			PREP BLK					
			Value	Result	True	%Rec	L.Limit	H.Limit
Test	Method	LCS	ND	5.3	5	106	80%	120%
TPH	8015M-G	LCSD	ND	5.2	5	104	80%	120%

LCS Result = Lab Control Sample Result
True = True Value of LCS
L.Limit / H.Limit = LCS Control Limits

SURROGATE RECOVERY

Sample No.	AAA-TFT
QC Limit	55-200
Method Blank	162
LCS	133
LCSD	132

AAA-TFT = a,a,a-Trifluorotoluene

SS

ASSOCIATED LABORATORIES
QA REPORT FORM

QC Sample: LCS / LCSD

Matrix: WATER

Prep. Date: 01/12/04

Analysis Date: 01/12/04-01/13/04

ID#'s in Batch: LR 122457, 122560, 122557, 122596

Reporting Units = mg/L

PREPARATION BLANK / LAB CONTROL SAMPLE RESULTS

			PREP BLK					
			Value	Result	True	%Rec	L.Limit	H.Limit
Test	Method	LCS	ND	431	500	86	80%	120%
TPH	8015M-G	LCSD	ND	467	500	93	80%	120%

LCS Result = Lab Control Sample Result
True = True Value of LCS
L.Limit / H.Limit = LCS Control Limits

SURROGATE RECOVERY

Sample No.	AAA-TFT
QC Limit	55-200
Method Blank	92
LCS	153
LCSD	158

AAA-TFT = a,a,a-Trifluorotoluene

ASSOCIATED LABORATORIES

LCS REPORT FORM - METHOD 8260 / 624 / 524.2

QC Sample: LCS/LCSD - Soil Samples

Analysis Date: 01/14/04 8:29 PM

Applies to: LR 122708, 122596

Reporting Units = ug/Kg

Lab Controlled Spike / Lab Controlled Spike Duplicate

Test	Sample Result	Spike Added	LCS Spike	LCS Spk. Dup	%Rec LCS	%Rec LCS D	RPD	QC Limits RPD	QC Limits %REC
1,1-Dichloroethene	ND	50	49.32	44.60	99	89	10	22	59-172
MTBE	ND	50	48.37	48.23	97	96	0	24	62-137
Benzene	ND	50	51.71	51.29	103	103	1	24	62-137
Trichloroethene	ND	50	53.73	59.91	107	120	11	21	66-142
Toluene	ND	50	56.12	57.76	112	116	3	21	59-139
Chlorobenzene	ND	50	53.21	54.45	106	109	2	21	60-133

Method Blank = All ND

SURROGATE (QC Limits : 70-135)

Compound	MB 2	MB 3	LCS Soil	LCSD Soil
DBFM	94	91	95	96
1,2-DCA	100	99	89	89
Tol-d8	105	110	103	105
p-BFB	103	100	97	99

ASSOCIATED LABORATORIES

LCS REPORT FORM - METHOD 8260 / 624 / 524.2

QC Sample: LCS/LCSD - Water Samples

Analysis Date: 01/13/04 2:48 PM

Applies to: LR 122523, 122558, 122573, 122588, 122614, 122648, 122596

Reporting Units = ug/L

Lab Controlled Spike / Lab Controlled Spike Duplicate

Test	Sample Result	Spike Added	LCS Spike	LCS Spk. Dup	%Rec LCS	%Rec LCS D	RPD	QC Limits RPD	QC Limits %REC
1,1-Dichloroethene	ND	50	57.87	56.39	116	113	3	22	59-172
MTBE	ND	50	45.92	46.57	92	93	1	24	62-137
Benzene	ND	50	51.84	52.81	104	106	2	24	62-137
Trichloroethene	ND	50	56.61	54.12	113	108	4	21	66-142
Toluene	ND	50	58.02	56.55	116	113	3	21	59-139
Chlorobenzene	ND	50	55.68	55.25	111	111	1	21	60-133

Method Blank = All ND

SURROGATE (QC Limits : 70-135)

Compound	MB 1	LCS	LCSD
DBFM	93	96	99
1,2-DCA	98	86	90
Tol-d8	107	107	100
p-BFB	105	97	96

ASSOCIATED LABORATORIES

LCS REPORT FORM - METHOD 8260 / 624 / 524.2

QC Sample: LCS/LCSD - Water Samples

Analysis Date: 01/18/04 2:17 AM

Applies to: LR 122952, 122596, 122812, 122855, 122838, 122888, 122864, 122887, 122865, 123000, 122910

Reporting Units = ug/L

Lab Controlled Spike / Lab Controlled Spike Duplicate

Test	Sample Result	Spike Added	LCS Spike	LCS Spk. Dup	%Rec LCS	%Rec LCS D	RPD	QC Limits RPD	QC Limits %REC
1,1-Dichloroethene	ND	50	47.60	48.39	95	97	2	22	59-172
MTBE	ND	50	46.87	45.90	94	92	2	24	62-137
Benzene	ND	50	50.63	51.99	101	104	3	24	62-137
Trichloroethene	ND	50	56.83	55.34	114	111	3	21	66-142
Toluene	ND	50	54.63	54.57	109	109	0	21	59-139
Chlorobenzene	ND	50	51.74	52.86	103	106	2	21	60-133

Method Blank = All ND

SURROGATE (QC Limits : 70-135)

Compounds	MB 4	MB 5	LCS Water	LCSD Water
DBFM	94	89	98	99
1,2-DCA	99	97	90	86
Tol-d8	104	108	102	100
p-BFB	104	99	96	97

Advanced
GeoEnvironmental, Inc.
837 Shaw Road - Stockton, California - 95215 - (209) 467-1006 - Fax (209) 467-1118

122596 V

CHAIN OF CUSTODY RECORD

Date 1-6-04 Page 1 of 3

Client Thrifty Oil Co.

Project Manager: Mike Bowers

Phone Number: 562 - 921-3581 x404

Samplers: (Signature)

Project Name: Thrifty Station #049

Invoice: AGE ☐ Client ☑

Tests Required: TPH-g (8015m) / BTEX / 5 Fuel oxys / MTBE

Sample Number	Location Description	Date	Time	Sample Type: Water Comp.	Water Grab.	Air	Solid	No. of Conts.	TPH-g (8015m)	BTEX	5 Fuel oxys / MTBE	Notes
B-3-10/010604		01-06-04	1028				X	1	X	X	X	
B-3-15/010604			1035				X	1	X	X	X	
B-3-20/010604			1049				X	1	X	X	X	
B-3-WS/010604			1056		X			3 4	X	X	X	
B-4-5/010604			1126				X	1	X	X	X	
B-4-10/010604			1133				X	1	X	X	X	
B-4-15/010604			1140				X	1	X	X	X	

Relinquished by: (Signature) — Received by: (Signature) — 1/9/04 11:05 — Date/Time 01-08-04 1635

Relinquished by: (Signature) — Received by: (Signature) — Date/Time

Relinquished by: (Signature) — Received by Mobile Laboratory for field analysis: (Signature) — Date/Time

Dispatched by: (Signature) — Date/Time — Received for Laboratory by: — Date/Time

Method of Shipment: Cal Overnight

Laboratory Name: Associated

Special Instructions:

I hereby authorize the performance of the above indicated work.

Advanced
GeoEnvironmental, Inc.
837 Shaw Road - Stockton, California - 95215 - (209) 467-1006 - Fax (209) 467-1118

122596 ✓

CHAIN OF CUSTODY RECORD

Date 1-6-04 Page 2 of 3

Client Thrifty Oil Co

Project Manager: Mike Bowerey

Phone Number: 562-921-3581 x404

Samplers: (Signature)

Project Name Thrifty 49 ✓

Invoice: AGE ☐ Client ☑

Tests Required: TPH-g / BTEX / 5 Fuel oxys / MTBE

Sample Number	Location Description	Date	Time	Sample Type: Water Comp.	Water Grab.	Air	Solid	No. of Conts.	TPH-g	BTEX	5 Fuel oxys / MTBE	Notes
B-4-20/010604		1-6-04	1149				X	1	X	X	X	
B-4-WS/010604		1-6-04	1201		X			4 (3)	X	X	X	
B-2-5/010604		1	1238				X	1	X	X	X	
B-2-10/010604			1244				X	1	X	X	X	
B-2-15/010604			1252				X	1	X	X	X	
B-2-20/010604			1302				X	1	X	X	X	
B-2-WS/010604			1306		X			4 (3)	X	X	X	

Relinquished by: (Signature) — Received by: (Signature) — 1/9/04 1105 — Date/Time 1-8-04/1630

Relinquished by: (Signature) — Received by: (Signature) — Date/Time

Relinquished by: (Signature) — Received by Mobile Laboratory for field analysis: (Signature) — Date/Time

Dispatched by: (Signature) — Date/Time — Received for Laboratory by: — Date/Time

Method of Shipment: Cal Overnight

Laboratory Name: Associated

Special Instructions:

I hereby authorize the performance of the above indicated work.

Advanced
GeoEnvironmental, Inc.
837 Shaw Road - Stockton, California - 95215 - (209) 467-1006 - Fax (209) 467-1118

122596 ✓

CHAIN OF CUSTODY RECORD

Date 1-6-04 Page 3 of 3

Client: Thrifty Oil Co.

Project Manager: Mike Bowerey

Phone Number: 562-921-3581 (404)

Samplers: (Signature)

Project Name: Thrifty Station #049 ✓

Invoice: AGE ☐ Client ☑

Tests Required: TPH-g / BTEX / 5 Fuel Oxys / MTBE

Sample Number	Location Description	Date	Time	Sample Type: Water Comp.	Water Grab.	Air	Solid	No. of Conts.	TPH-g		BTEX		5 Fuel Oxys / MTBE			Notes
B-1-5/010604		1-6-04	1339				X	1	X		X		X			
B-1-10/010604		↓	1345				↓	↓	X		X		X			
B-1-15/010604			1352						X		X		X			
B-1-20/010604		↓	1403				↓	↓	X		X		X			

Relinquished by: (Signature) — Received by: (Signature) 1/9/04 1105 — Date/Time 1-8-04/1630

Relinquished by: (Signature) — Received by: (Signature) — Date/Time

Relinquished by: (Signature) — Received by Mobile Laboratory for field analysis: (Signature) — Date/Time

Dispatched by: (Signature) — Date/Time — Received for Laboratory by: — Date/Time

Method of Shipment: Cal Overnight

Laboratory Name: Associated

Special Instructions:

I hereby authorize the performance of the above indicated work.

APPENDIX E

ESLs for Soils and Basin Plan Objectives for Groundwater

TABLE A. ENVIRONMENTAL SCREENING LEVELS (ESLs)
Shallow Soils (≤3m bgs)
Groundwater IS Current or Potential Source of Drinking Water

	[1]Shallow Soil		
CHEMICAL PARAMETER	[2]Residential Land Use (mg/kg)	Commercial/ Industrial Land Use Only (mg/kg)	[3]Groundwater (ug/L)
ACENAPHTHENE	1.6E+01	1.6E+01	2.0E+01
ACENAPHTHYLENE	1.3E+01	1.3E+01	3.0E+01
ACETONE	5.0E-01	5.0E-01	1.5E+03
ALDRIN	3.2E-02	1.3E-01	2.0E-03
ANTHRACENE	2.8E+00	2.8E+00	7.3E-01
ANTIMONY	6.1E+00	4.0E+01	6.0E+00
ARSENIC	5.5E+00	5.5E+00	3.6E+01
BARIUM	7.5E+02	1.5E+03	1.0E+03
BENZENE	4.4E-02	4.4E-02	1.0E+00
BENZO(a)ANTHRACENE	3.8E-01	1.3E+00	2.7E-02
BENZO(b)FLUORANTHENE	3.8E-01	1.3E+00	2.9E-02
BENZO(k)FLUORANTHENE	3.8E-01	1.3E+00	2.9E-02
BENZO(g,h,i)PERYLENE	2.7E+01	2.7E+01	1.0E-01
BENZO(a)PYRENE	3.8E-02	1.3E-01	1.4E-02
BERYLLIUM	4.0E+00	8.0E+00	2.7E+00
BIPHENYL, 1,1-	6.5E-01	6.5E-01	5.0E-01
BIS(2-CHLOROETHYL)ETHER	1.8E-04	1.8E-04	1.4E-02
BIS(2-CHLOROISOPROPYL)ETHER	5.4E-03	5.4E-03	5.0E-01
BIS(2-ETHYLHEXYL)PHTHALATE	6.6E+01	6.6E+01	4.0E+00
BORON	1.6E+00	2.0E+00	1.6E+00
BROMODICHLOROMETHANE	1.4E-02	3.9E-02	1.0E+02
BROMOFORM	2.2E+00	2.2E+00	1.0E+02
BROMOMETHANE	2.2E-01	3.9E-01	9.8E+00
CADMIUM	1.7E+00	7.4E+00	1.1E+00
CARBON TETRACHLORIDE	1.2E-02	3.4E-02	5.0E-01
CHLORDANE	4.4E-01	1.7E+00	4.0E-03
CHLOROANILINE, p-	5.3E-02	5.3E-02	5.0E+00
CHLOROBENZENE	1.5E+00	1.5E+00	2.5E+01
CHLOROETHANE	6.3E-01	8.5E-01	1.2E+01
CHLOROFORM	8.8E-01	1.9E+00	7.0E+01
CHLOROMETHANE	7.0E-02	2.0E-01	1.3E+00
CHLOROPHENOL, 2-	1.2E-02	1.2E-02	1.8E-01
CHROMIUM (Total)	5.8E+01	5.8E+01	5.0E+01
CHROMIUM III	7.5E+02	7.5E+02	1.8E+02
CHROMIUM VI	1.8E+00	1.8E+00	1.1E+01
CHRYSENE	3.8E+00	1.3E+01	2.9E-01
COBALT	1.0E+01	1.0E+01	3.0E+00
COPPER	2.3E+02	2.3E+02	3.1E+00
CYANIDE (Free)	3.6E-03	3.6E-03	1.0E+00
DIBENZO(a,h)ANTHTRACENE	1.1E-01	3.8E-01	8.5E-03
DIBROMOCHLOROMETHANE	1.9E-02	5.4E-02	1.0E+02
1,2-DIBROMO-3-CHLOROPROPANE	4.5E-03	4.5E-03	2.0E-01
DIBROMOETHANE, 1,2-	3.3E-04	3.3E-04	5.0E-02
DICHLOROBENZENE, 1,2-	1.1E+00	1.1E+00	1.0E+01

TABLE A. ENVIRONMENTAL SCREENING LEVELS (ESLs)
Shallow Soils (≤3m bgs)
Groundwater IS Current or Potential Source of Drinking Water

CHEMICAL PARAMETER	[1]Shallow Soil		[3]Groundwater (ug/L)
	[2]Residential Land Use (mg/kg)	Commercial/ Industrial Land Use Only (mg/kg)	
DICHLOROBENZENE, 1,3-	7.4E+00	7.4E+00	6.5E+01
DICHLOROBENZENE, 1,4-	4.6E-02	1.3E-01	5.0E+00
DICHLOROBENZIDINE, 3,3-	7.7E-03	7.7E-03	2.9E-02
DICHLORODIPHENYLDICHLOROETHANE (DDD)	2.3E+00	9.0E+00	1.0E-03
DICHLORODIPHENYLDICHLOROETHYLENE (DDE)	1.6E+00	4.0E+00	1.0E-03
DICHLORODIPHENYLTRICHLOROETHANE (DDT)	1.6E+00	4.0E+00	1.0E-03
DICHLOROETHANE, 1,1-	2.0E-01	2.0E-01	5.0E+00
DICHLOROETHANE, 1,2-	4.5E-03	4.5E-03	5.0E-01
DICHLOROETHYLENE, 1,1-	1.0E+00	1.0E+00	6.0E+00
DICHLOROETHYLENE, Cis 1,2-	1.9E-01	1.9E-01	6.0E+00
DICHLOROETHYLENE, Trans 1,2-	6.7E-01	6.7E-01	1.0E+01
DICHLOROPHENOL, 2,4-	3.0E-01	3.0E-01	3.0E-01
DICHLOROPROPANE, 1,2-	5.1E-02	1.2E-01	5.0E+00
DICHLOROPROPENE, 1,3-	3.3E-02	5.9E-02	5.0E-01
DIELDRIN	2.3E-03	2.3E-03	1.9E-03
DIETHYLPHTHALATE	3.5E-02	3.5E-02	1.5E+00
DIMETHYLPHTHALATE	3.5E-02	3.5E-02	1.5E+00
DIMETHYLPHENOL, 2,4-	6.7E-01	6.7E-01	1.0E+02
DINITROPHENOL, 2,4-	4.0E-02	4.0E-02	1.4E+01
DINITROTOLUENE, 2,4-	8.5E-04	8.5E-04	1.1E-01
1,4 DIOXANE	1.8E-03	1.8E-03	3.0E+00
DIOXIN (2,3,7,8-TCDD)	4.6E-06	1.9E-05	5.0E-06
ENDOSULFAN	4.6E-03	4.6E-03	8.7E-03
ENDRIN	6.5E-04	6.5E-04	2.3E-03
ETHANOL	4.5E+01	4.5E+01	5.0E+04
ETHYLBENZENE	3.3E+00	3.3E+00	3.0E+01
FLUORANTHENE	4.0E+01	4.0E+01	8.0E+00
FLUORENE	8.9E+00	8.9E+00	3.9E+00
HEPTACHLOR	1.4E-02	1.4E-02	3.8E-03
HEPTACHLOR EPOXIDE	1.5E-02	1.5E-02	3.8E-03
HEXACHLOROBENZENE	2.7E-01	9.6E-01	1.0E+00
HEXACHLOROBUTADIENE	1.0E+00	1.0E+00	2.1E-01
HEXACHLOROCYCLOHEXANE (gamma) LINDANE	4.9E-02	4.9E-02	8.0E-02
HEXACHLOROETHANE	2.4E+00	2.4E+00	7.0E-01
INDENO(1,2,3-cd)PYRENE	3.8E-01	1.3E+00	2.9E-02
LEAD	1.5E+02	7.5E+02	2.5E+00
MERCURY	3.7E+00	1.0E+01	1.2E-02
METHOXYCHLOR	1.9E+01	1.9E+01	1.9E-02
METHYLENE CHLORIDE	7.7E-02	7.7E-02	5.0E+00
METHYL ETHYL KETONE	3.9E+00	3.9E+00	4.2E+03
METHYL ISOBUTYL KETONE	2.8E+00	2.8E+00	1.2E+02
METHYL MERCURY	1.2E+00	1.0E+01	3.0E-03
METHYLNAPHTHALENE (total 1- & 2-)	2.5E-01	2.5E-01	2.1E+00
METHYL TERT BUTYL ETHER	2.3E-02	2.3E-02	5.0E+00

TABLE A. ENVIRONMENTAL SCREENING LEVELS (ESLs)
Shallow Soils (≤3m bgs)
Groundwater IS Current or Potential Source of Drinking Water

CHEMICAL PARAMETER	[1]Shallow Soil		[3]Groundwater (ug/L)
	[2]Residential Land Use (mg/kg)	Commercial/ Industrial Land Use Only (mg/kg)	
MOLYBDENUM	4.0E+01	4.0E+01	3.5E+01
NAPHTHALENE	4.6E-01	1.5E+00	1.7E+01
NICKEL	1.5E+02	1.5E+02	8.2E+00
PENTACHLOROPHENOL	4.4E+00	5.0E+00	1.0E+00
PERCHLORATE	1.0E-02	1.0E-02	6.0E+00
PHENANTHRENE	1.1E+01	1.1E+01	4.6E+00
PHENOL	7.6E-02	7.6E-02	5.0E+00
POLYCHLORINATED BIPHENYLS (PCBs)	2.2E-01	7.4E-01	1.4E-02
PYRENE	8.5E+01	8.5E+01	2.0E+00
SELENIUM	1.0E+01	1.0E+01	5.0E+00
SILVER	2.0E+01	4.0E+01	1.9E-01
STYRENE	1.5E+00	1.5E+00	1.0E+01
tert-BUTYL ALCOHOL	7.3E-02	7.3E-02	1.2E+01
TETRACHLOROETHANE, 1,1,1,2-	2.4E-02	2.4E-02	1.3E+00
TETRACHLOROETHANE, 1,1,2,2-	9.1E-03	1.8E-02	1.0E+00
TETRACHLOROETHYLENE	8.7E-02	2.4E-01	5.0E+00
THALLIUM	1.0E+00	1.3E+01	2.0E+00
TOLUENE	2.9E+00	2.9E+00	4.0E+01
TOXAPHENE	4.2E-04	4.2E-04	2.0E-04
TPH (gasolines)	1.0E+02	1.0E+02	1.0E+02
TPH (middle distillates)	1.0E+02	1.0E+02	1.0E+02
TPH (residual fuels)	5.0E+02	1.0E+03	1.0E+02
TRICHLOROBENZENE, 1,2,4-	3.8E-01	1.0E+00	2.5E+01
TRICHLOROETHANE, 1,1,1-	7.8E+00	7.8E+00	6.2E+01
TRICHLOROETHANE, 1,1,2-	3.2E-02	7.0E-02	5.0E+00
TRICHLOROETHYLENE	2.6E-01	4.6E-01	5.0E+00
TRICHLOROPHENOL, 2,4,5-	1.8E-01	1.8E-01	1.1E+01
TRICHLOROPHENOL, 2,4,6-	1.7E-01	1.7E-01	5.0E-01
VANADIUM	1.1E+02	2.0E+02	1.5E+01
VINYL CHLORIDE	6.7E-03	1.9E-02	5.0E-01
XYLENES	2.3E+00	2.3E+00	2.0E+01
ZINC	6.0E+02	6.0E+02	8.1E+01

TABLE A. ENVIRONMENTAL SCREENING LEVELS (ESLs)
Shallow Soils (≤3m bgs)
Groundwater IS Current or Potential Source of Drinking Water

	[1]Shallow Soil		
CHEMICAL PARAMETER	[2]Residential Land Use (mg/kg)	Commercial/ Industrial Land Use Only (mg/kg)	[3]Groundwater (ug/L)
Electrical Conductivity (mS/cm, USEPA Method 120.1 MOD)	2.0	4.0	not applicable
Sodium Adsorption Ratio	5.0	12	not applicable

Red: Updated with respect to ESLs presented in July 2003 document.

Notes:

1. Shallow soils defined as soils less than or equal to 3 meters (approximately 10 feet) below ground surface.
2. Category "Residential Land Use" generally considered adequate for other sensitive uses (e.g., day-care centers, hospitals, etc.)
3. Assumes potential discharge of groundwater into a freshwater, marine or estuary surface water system.

Source of soil ESLs: Refer to Appendix 1, Tables A-1 and A-2.

Source of groundwater ESLs: Refer to Appendix 1, Table F-1a.

Soil data should be reported on dry-weight basis (see Appendix 1, Section 6.2).

Soil ESLs intended to address direct-exposure, groundwater protection, ecologic (urban areas) and nuisance concerns under noted land-use scenarios. **Soil gas data should be collected for additional evaluation of potential indoor-air impacts at sites with significant areas of VOC-impacted soil. See Section 2.6 and Table E.**

Groundwater ESLs intended to be address drinking water, surface water, indoor-air and nuisance concerns. **Use in conjunction with soil gas screening levels to more closely evaluate potential impacts to indoor-air if groundwater screening levels for this concern approached or exceeded (refer to Section 2.6 and Appendix 1, Table F-1a).**

Aquatic habitat goals for bioaccumulation concerns not considered in selection of groundwater goals (refer to Section 2.7).

Refer to appendices for summary of ESL components.

Soil and water ESLs for ethanol based on gross contamination concerns (see Appendix 1, Chapter 5 and related tables).

TPH -Total Petroleum Hydrocarbons. TPH ESLs must be used in conjunction with ESLs for related chemicals (e.g., BTEX, PAHs, oxidizers, etc.). See Volume 1, Section 2.2 and Appendix 1, Chapter 5.

TABLE C. ENVIRONMENTAL SCREENING LEVELS (ESLs)
Deep Soils (>3m bgs)
Groundwater IS a Current or Potential Source of Drinking Water

	[1]Deep Soil		
CHEMICAL PARAMETER	[2]Residential Land Use (mg/kg)	Commercial/ Industrial Land Use Only (mg/kg)	[3]Groundwater (ug/L)
ACENAPHTHENE	1.6E+01	1.6E+01	2.0E+01
ACENAPHTHYLENE	1.3E+01	1.3E+01	3.0E+01
ACETONE	5.0E-01	5.0E-01	1.5E+03
ALDRIN	1.5E+00	1.5E+00	2.0E-03
ANTHRACENE	2.8E+00	2.8E+00	7.3E-01
ANTIMONY	2.8E+02	2.8E+02	6.0E+00
ARSENIC	5.5E+00	5.5E+00	3.6E+01
BARIUM	2.5E+03	2.5E+03	1.0E+03
BENZENE	4.4E-02	4.4E-02	1.0E+00
BENZO(a)ANTHRACENE	1.2E+01	1.2E+01	2.7E-02
BENZO(b)FLUORANTHENE	1.5E+01	1.5E+01	2.9E-02
BENZO(k)FLUORANTHENE	2.7E+00	2.7E+00	2.9E-02
BENZO(g,h,i)PERYLENE	2.7E+01	2.7E+01	1.0E-01
BENZO(a)PYRENE	1.5E+00	1.5E+00	1.4E-02
BERYLLIUM	3.6E+01	3.6E+01	2.7E+00
BIPHENYL, 1,1-	6.5E-01	6.5E-01	5.0E-01
BIS(2-CHLOROETHYL)ETHER	1.8E-04	1.8E-04	1.4E-02
BIS(2-CHLOROISOPROPYL)ETHER	5.4E-03	5.4E-03	5.0E-01
BIS(2-ETHYLHEXYL)PHTHALATE	6.6E+01	6.6E+01	4.0E+00
BORON	4.6E+04	4.6E+04	1.6E+00
BROMODICHLOROMETHANE	1.4E-02	3.9E-02	1.0E+02
BROMOFORM	2.2E+00	2.2E+00	1.0E+02
BROMOMETHANE	2.2E-01	3.9E-01	9.8E+00
CADMIUM	3.8E+01	3.8E+01	1.1E+00
CARBON TETRACHLORIDE	1.2E-02	3.4E-02	5.0E-01
CHLORDANE	1.5E+01	1.5E+01	4.0E-03
CHLOROANILINE, p-	5.3E-02	5.3E-02	5.0E+00
CHLOROBENZENE	1.5E+00	1.5E+00	2.5E+01
CHLOROETHANE	6.3E-01	8.5E-01	1.2E+01
CHLOROFORM	2.1E+00	2.1E+00	7.0E+01
CHLOROMETHANE	7.0E-02	2.0E-01	1.3E+00
CHLOROPHENOL, 2-	1.2E-02	1.2E-02	1.8E-01
CHROMIUM (Total)	5.8E+01	5.8E+01	5.0E+01
CHROMIUM III	2.5E+03	5.0E+03	1.8E+02
CHROMIUM VI	1.8E+00	1.8E+00	1.1E+01
CHRYSENE	1.9E+01	1.9E+01	2.9E-01
COBALT	1.0E+01	1.0E+01	3.0E+00
COPPER	2.5E+03	5.0E+03	3.1E+00
CYANIDE (Free)	3.6E-03	3.6E-03	1.0E+00
DIBENZO(a,h)ANTHTRACENE	4.3E+00	4.3E+00	8.5E-03
DIBROMOCHLOROMETHANE	1.9E-02	5.4E-02	1.0E+02
1,2-DIBROMO-3-CHLOROPROPANE	4.5E-03	4.5E-03	2.0E-01
DIBROMOETHANE, 1,2-	3.3E-04	3.3E-04	5.0E-02
DICHLOROBENZENE, 1,2-	1.1E+00	1.1E+00	1.0E+01

TABLE C. ENVIRONMENTAL SCREENING LEVELS (ESLs)
Deep Soils (>3m bgs)
Groundwater IS a Current or Potential Source of Drinking Water

CHEMICAL PARAMETER	[1]Deep Soil		[3]Groundwater (ug/L)
	[2]Residential Land Use (mg/kg)	Commercial/ Industrial Land Use Only (mg/kg)	
DICHLOROBENZENE, 1,3-	7.4E+00	7.4E+00	6.5E+01
DICHLOROBENZENE, 1,4-	4.6E-02	1.3E-01	5.0E+00
DICHLOROBENZIDINE, 3,3-	7.7E-03	7.7E-03	2.9E-02
DICHLORODIPHENYLDICHLOROETHANE (DDD)	1.1E+02	1.1E+02	1.0E-03
DICHLORODIPHENYLDICHLOROETHYLENE (DDE)	7.6E+01	7.6E+01	1.0E-03
DICHLORODIPHENYLTRICHLOROETHANE (DDT)	4.3E+00	4.3E+00	1.0E-03
DICHLOROETHANE, 1,1-	2.0E-01	2.0E-01	5.0E+00
DICHLOROETHANE, 1,2-	4.5E-03	4.5E-03	5.0E-01
DICHLOROETHYLENE, 1,1-	1.0E+00	1.0E+00	6.0E+00
DICHLOROETHYLENE, Cis 1,2-	1.9E-01	1.9E-01	6.0E+00
DICHLOROETHYLENE, Trans 1,2-	6.7E-01	6.7E-01	1.0E+01
DICHLOROPHENOL, 2,4-	3.0E-01	3.0E-01	3.0E-01
DICHLOROPROPANE, 1,2-	5.1E-02	1.2E-01	5.0E+00
DICHLOROPROPENE, 1,3-	3.3E-02	5.9E-02	5.0E-01
DIELDRIN	2.3E-03	2.3E-03	1.9E-03
DIETHYLPHTHALATE	3.5E-02	3.5E-02	1.5E+00
DIMETHYLPHTHALATE	3.5E-02	3.5E-02	1.5E+00
DIMETHYLPHENOL, 2,4-	6.7E-01	6.7E-01	1.0E+02
DINITROPHENOL, 2,4-	4.0E-02	4.0E-02	1.4E+01
DINITROTOLUENE, 2,4-	8.5E-04	8.5E-04	1.1E-01
1,4 DIOXANE	1.8E-03	1.8E-03	3.0E+00
DIOXIN (2,3,7,8-TCDD)	2.4E-04	2.4E-04	5.0E-06
ENDOSULFAN	4.6E-03	4.6E-03	8.7E-03
ENDRIN	6.5E-04	6.5E-04	2.3E-03
ETHANOL	4.5E+01	4.5E+01	5.0E+04
ETHYLBENZENE	3.3E+00	3.3E+00	3.0E+01
FLUORANTHENE	6.0E+01	6.0E+01	8.0E+00
FLUORENE	8.9E+00	8.9E+00	3.9E+00
HEPTACHLOR	1.4E-02	1.4E-02	3.8E-03
HEPTACHLOR EPOXIDE	1.5E-02	1.5E-02	3.8E-03
HEXACHLOROBENZENE	1.1E+01	1.1E+01	1.0E+00
HEXACHLOROBUTADIENE	1.0E+00	1.0E+00	2.1E-01
HEXACHLOROCYCLOHEXANE (gamma) LINDANE	4.9E-02	4.9E-02	8.0E-02
HEXACHLOROETHANE	2.4E+00	2.4E+00	7.0E-01
INDENO(1,2,3-cd)PYRENE	7.7E+00	7.7E+00	2.9E-02
LEAD	7.5E+02	7.5E+02	2.5E+00
MERCURY	9.8E+01	9.8E+01	1.2E-02
METHOXYCHLOR	1.9E+01	1.9E+01	1.9E-02
METHYLENE CHLORIDE	7.7E-02	7.7E-02	5.0E+00
METHYL ETHYL KETONE	3.9E+00	3.9E+00	4.2E+03
METHYL ISOBUTYL KETONE	2.8E+00	2.8E+00	1.2E+02
METHYL MERCURY	4.1E+01	4.1E+01	3.0E-03
METHYLNAPHTHALENE (total 1- & 2-)	2.5E-01	2.5E-01	2.1E+00
METHYL TERT BUTYL ETHER	2.3E-02	2.3E-02	5.0E+00

TABLE C. ENVIRONMENTAL SCREENING LEVELS (ESLs)
Deep Soils (>3m bgs)
Groundwater IS a Current or Potential Source of Drinking Water

CHEMICAL PARAMETER	[1]Deep Soil		[3]Groundwater (ug/L)
	[2]Residential Land Use (mg/kg)	Commercial/ Industrial Land Use Only (mg/kg)	
MOLYBDENUM	2.5E+03	3.6E+03	3.5E+01
NAPHTHALENE	4.6E-01	1.5E+00	1.7E+01
NICKEL	1.0E+03	1.0E+03	8.2E+00
PENTACHLOROPHENOL	5.3E+00	5.3E+00	1.0E+00
PERCHLORATE	1.0E-02	1.0E-02	6.0E+00
PHENANTHRENE	1.1E+01	1.1E+01	4.6E+00
PHENOL	7.6E-02	7.6E-02	5.0E+00
POLYCHLORINATED BIPHENYLS (PCBs)	6.3E+00	6.3E+00	1.4E-02
PYRENE	8.5E+01	8.5E+01	2.0E+00
SELENIUM	2.5E+03	3.4E+03	5.0E+00
SILVER	2.5E+03	3.6E+03	1.9E-01
STYRENE	1.5E+00	1.5E+00	1.0E+01
tert-BUTYL ALCOHOL	7.3E-02	7.3E-02	1.2E+01
TETRACHLOROETHANE, 1,1,1,2-	2.4E-02	2.4E-02	1.3E+00
TETRACHLOROETHANE, 1,1,2,2-	9.1E-03	1.8E-02	1.0E+00
TETRACHLOROETHYLENE	8.7E-02	2.4E-01	5.0E+00
THALLIUM	4.7E+01	4.7E+01	2.0E+00
TOLUENE	2.9E+00	2.9E+00	4.0E+01
TOXAPHENE	4.2E-04	4.2E-04	2.0E-04
TPH (gasolines)	1.0E+02	1.0E+02	1.0E+02
TPH (middle distillates)	1.0E+02	1.0E+02	1.0E+02
TPH (residual fuels)	1.0E+03	1.0E+03	1.0E+02
TRICHLOROBENZENE, 1,2,4-	3.8E-01	1.0E+00	2.5E+01
TRICHLOROETHANE, 1,1,1-	7.8E+00	7.8E+00	6.2E+01
TRICHLOROETHANE, 1,1,2-	3.2E-02	7.0E-02	5.0E+00
TRICHLOROETHYLENE	2.6E-01	4.6E-01	5.0E+00
TRICHLOROPHENOL, 2,4,5-	1.8E-01	1.8E-01	1.1E+01
TRICHLOROPHENOL, 2,4,6-	1.7E-01	1.7E-01	5.0E-01
VANADIUM	2.5E+03	5.0E+03	1.5E+01

TABLE C. ENVIRONMENTAL SCREENING LEVELS (ESLs)
Deep Soils (>3m bgs)
Groundwater IS a Current or Potential Source of Drinking Water

CHEMICAL PARAMETER	[1]Deep Soil		[3]Groundwater (ug/L)
	[2]Residential Land Use (mg/kg)	Commercial/ Industrial Land Use Only (mg/kg)	
VINYL CHLORIDE	6.7E-03	1.9E-02	5.0E-01
XYLENES	2.3E+00	2.3E+00	2.0E+01
ZINC	2.5E+03	5.0E+03	8.1E+01
Electrical Conductivity (mS/cm, USEPA Method 120.1 MOD)	not applicable	not applicable	not applicable
Sodium Adsorption Ratio	not applicable	not applicable	not applicable

Red: Updated with respect to ESLs presented in July 2003 document.

Notes:

1. Deep soils defined as soils greater than 3 meters (approximately 10 feet) below ground surface.
2. Category "Residential Land Use" generally considered adequate for other sensitive uses (e.g., day-care centers, hospitals, etc.)
3. Assumes potential discharge of groundwater into a freshwater, marine or estuary surface water system.

Source of soil ESLs: Refer to Appendix 1, Tables C-1 and C-2.

Source of groundwater ESLs: Refer to Appendix 1, Table F-1a.

Soil data should be reported on dry-weight basis (see Appendix 1, Section 6.2).

Soil ESLs intended to address human health, groundwater protection and nuisance concerns under a construction/trench worker exposure scenario and noted land-use scenarios. **Soil gas data should be collected for additional evaluation of potential indoor-air impacts at sites with significant areas of VOC-impacted soil. See Section 2.6 and Table E.**

Groundwater ESLs intended to be address drinking water, surface water, indoor-air and nuisance concerns. **Use in conjunction with soil gas screening levels to more closely evaluate potential impacts to indoor-air if groundwater screening levels for this concern approached or exceeded (refer to Section 2.6 and Appendix 1, Table F-1a).**

Aquatic habitat goals for bioaccumulation concerns not considered in selection of groundwater goals (refer to Section 2.7).

Refer to appendices for summary of ESL components.

Soil and water ESLs for ethanol based on gross contamination concerns (see Appendix 1, Chapter 5 and related tables).

TPH -Total Petroleum Hydrocarbons. TPH ESLs must be used in conjunction with ESLs for related chemicals (e.g., BTEX, PAHs, oxidizers, etc.). See Volume 1, Section 2.2 and Appendix 1, Chapter 5.

APPENDIX F

Existing and Potential Beneficial Uses of Groundwater in Identified Basins

TABLE 2-9 EXISTING AND POTENTIAL BENEFICIAL USES OF GROUNDWATER IN IDENTIFIED BASINS

GROUNDWATER BASIN	COUNTY	DWR BASIN NO.	MUN[1]	PROC[2]	IND[3]	AGR[4]	FRESH[5]
Alameda Creek (Niles Cone)	Alameda	2 - 9.01	E[6]	E	E	E	
Castro Valley	Alameda	2 - 8	P[7]	P	P	P	
East Bay Plain	Alameda	2 - 9.01	E	E	E	E	
Livermore Valley	Alameda	2 - 10	E	E	E	E	
Sunol Valley	Alameda	2 - 11	E	E	E	E	
Arroyo Del Hambre Valley	Contra Costa	2 - 31	P	P	P	P	
Clayton Valley	Contra Costa	2 - 5	E	P	P	P	
Pittsburg Plain	Contra Costa	2 - 4	P	P	P	P	
San Ramon Valley	Contra Costa	2 - 7	E	P	P	E	
Ygnacio Valley	Contra Costa	2 - 6	P	P	P	P	
Novato Valley	Marin	2 - 30	P	P	P	P	
Sand Point Area	Marin	2 - 27	E	P	P	P	
San Rafael	Marin	2 - 29	P	P	P	P	
Ross Valley	Marin	2 - 28	E	P	P	E	
Napa Valley	Napa	2.2 & 2 - 2.01	E	E	E	E	
Islais Valley	San Francisco	2 - 33	P	E	E	P	
Merced Valley (North)	San Francisco	2 - 35	P	P	P	E	
San Francisco Sands	San Francisco	2 - 34	E	P	P	E	
Visitation Valley	San Francisco	2 - 32	P	E	E	P	
Half Moon Bay Terrace	San Mateo	2 - 22	E	P	P	E	
Merced Valley (South)	San Mateo	2 - 35A	E	P	P	E	
Pescadero Valley	San Mateo	2 - 26	E	P	P	E	
San Gregorio Valley	San Mateo	2 - 24	E	P	P	E	
San Mateo Plain	San Mateo	2 - 9A	E	E	E	P	
San Pedro Valley	San Mateo	2 - 36	P	P	P	P	
Santa Clara Valley (& Coyote)	Santa Clara	2 - 9B	E	E	E	E	
Suisun/Fairfield Valley	Solano	2 - 3	E	E	E	E	
Kenwood Valley	Sonoma	2 - 19	E	P	P	E	
Petaluma Valley	Sonoma	2 - 1	E	P	P	E	
Sebastopol-Merced Fm. Highlands	Sonoma	2 - 25	E	P	P	E	
Sonoma Valley	Sonoma	2 - 2.022	E	P	P	E	

NOTES:
(1) MUN = Municipal and domestic water supply.
(2) PROC = Industrial process water supply.
(3) IND = Industrial service water supply.
(4) AGR = Agricultural water supply.
(5) FRESH = Freshwater replenishment to surface water. (Designation will be determined at a later date; for the interim, a site-by-site determination will be made).
(6) E = Existing beneficial use; based on available information (see references listed in Table 2-8).
(7) P = Potential beneficial use; based on available information. There is no known use of the basin for this category; however, the basin could be used for this purpose (see references listed in Table 2-8).