



Atlantic Richfield Company
(a BP affiliated company)

P.O. Box 1257
San Ramon, California 94583
Phone: (925) 275-3801
Fax: (925) 275-3815

5 August 2009

Re: Initial Site Conceptual Model with Soil & Ground-Water Investigation Work Plan
Former BP Service Station # 6002
6235 Seminary Avenue
Oakland, California
ACEH Case #RO0000163

RECEIVED

2:01 pm, Aug 10, 2009

Alameda County
Environmental Health



"I declare, that to the best of my knowledge at the present time, that the information and/or recommendations contained in the attached document are true and correct."

Submitted by:

Paul Supple
Environmental Business Manager


**INITIAL SITE CONCEPTUAL MODEL WITH
SOIL & GROUND-WATER INVESTIGATION
WORK PLAN**

Former Atlantic Richfield Company Station #6002
6235 Seminary Avenue
Oakland, California

Prepared for:

Mr. Paul Supple
Environmental Business Manager
Atlantic Richfield Company
P.O. Box 1257
San Ramon, California 94583

Prepared by:

 **BROADBENT & ASSOCIATES, INC.**
ENGINEERING, WATER RESOURCES & ENVIRONMENTAL
1324 Mangrove Ave., Suite 212
Chico, California 95926
(530) 566-1400
www.broadbentinc.com

5 August 2009

Project No. 06-88-634

5 August 2009

Project No. 06-88-634

Atlantic Richfield Company
P.O. Box 1257
San Ramon, CA 94583
Submitted via ENFOS

Attn.: Mr. Paul Supple


Re: Initial Site Conceptual Model with Soil & Ground-Water Investigation Work Plan,
Former Atlantic Richfield Company Station #6002, 6235 Seminary Avenue, Oakland,
California; ACEH Case No.RO0000163


Dear Mr. Supple:

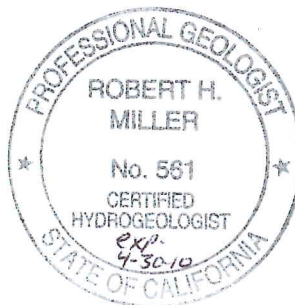
Broadbent & Associates, Inc. (BAI) is pleased to submit this *Initial Site Conceptual Model with Soil & Ground-Water Investigation Work Plan* for Former Atlantic Richfield Company Station #6002 located at 6235 Seminary Avenue, Oakland, California (Site). This document was prepared in response to a directive letter from Mr. Paresh Khatri of Alameda County Environmental Health (ACEH) dated 22 May 2009.

Should you have questions or require additional information, please do not hesitate to contact us at (530) 566-1400.

Sincerely,
BROADBENT & ASSOCIATES, INC.


Thomas A. Venus, P.E.
Senior Engineer


Robert H. Miller, P.G., C.HG.
Principal Hydrogeologist



Enclosures

cc: Mr. Paresh Khatri, Alameda County Environmental Health (Submitted via ACEH ftp site)
Electronic copy uploaded to GeoTracker

**INITIAL SITE CONCEPTUAL MODEL WITH
SOIL & GROUND-WATER INVESTIGATION WORK PLAN
Former Atlantic Richfield Company Station #6002
6235 Seminary Avenue, Oakland, California
Fuel Leak Case No. RO0000163**

TABLE OF CONTENTS

| | | |
|------------|---|----------|
| 1.0 | INTRODUCTION..... | 1 |
| 2.0 | BACKGROUND INFORMATION | 1 |
| 2.1 | Site Location | 1 |
| 2.2 | Previous Environmental Activities at Site | 1 |
| 3.0 | HYDROCARBON SOURCE..... | 4 |
| 3.1 | Release Source and Volume | 4 |
| 3.2 | Release Intervention..... | 4 |
| 4.0 | SITE CHARACTERIZATION | 4 |
| 4.1 | Soil Definition Status..... | 4 |
| 4.2 | Ground-Water Definition Status | 4 |
| 4.2.1 | Ground-Water Depth, Flow Direction, and Gradient | 4 |
| 4.2.2 | Separate-Phase Hydrocarbons | 5 |
| 4.2.3 | Gasoline-Range Organics | 5 |
| 4.2.4 | Benzene, Toluene, Ethylbenzene, and Xylenes | 5 |
| 4.2.5 | Methyl-Tertiary Butyl Ether | 5 |
| 4.3 | Regional Geology and Hydrogeology | 6 |
| 4.4 | Topography | 6 |
| 4.5 | Stratigraphy..... | 6 |
| 4.6 | Preferential Pathway Analysis | 7 |
| 5.0 | REMEDIATION STATUS | 7 |
| 5.1 | Remedial Actions Taken..... | 7 |
| 5.2 | Areas Remediated | 7 |
| 5.3 | Remediation Effectiveness..... | 7 |
| 6.0 | WELL AND SENSITIVE RECEPTOR SURVEY | 7 |
| 6.1 | Designated Beneficial Shallow and Deep Ground-Water Use | 7 |
| 6.2 | Well Survey Results..... | 8 |
| 6.3 | Likelihood of Impact to Wells | 8 |
| 6.4 | Likelihood of Impact to Surface Water | 8 |
| 6.5 | Potential Sensitive Receptors..... | 8 |
| 7.0 | RISK ASSESSMENT | 9 |
| 7.1 | Site Conceptual Exposure Model..... | 9 |
| 7.2 | Exposure Pathways | 9 |
| 7.3 | Risk Assessment Status..... | 9 |
| 7.4 | Identified Human Exceedances..... | 9 |
| 7.5 | Identified Ecological Exceedances | 9 |

**INITIAL SITE CONCEPTUAL MODEL WITH
SOIL & GROUND-WATER INVESTIGATION WORK PLAN
Former Atlantic Richfield Company Station #6002
6235 Seminary Avenue, Oakland, California
Fuel Leak Case No. RO0000163**

TABLE OF CONTENTS (Concluded)

| | | |
|-------------|---|-----------|
| 8.0 | DATA GAPS..... | 9 |
| 9.0 | PROPOSED SCOPE OF WORK..... | 10 |
| 9.1 | Proposed Well Installation Locations | 10 |
| 9.2 | Preliminary Activities, Permitting and Notifications..... | 11 |
| 9.3 | Soil Boring Activities | 11 |
| 9.2 | Monitoring Well Construction..... | 11 |
| 9.3 | Monitoring Well Development and Sampling..... | 12 |
| 9.4 | Soil and Ground-Water Investigation Report | 12 |
| 10.0 | PROPOSED SCHEDULE..... | 12 |
| 11.0 | CLOSURE | 13 |
| 12.0 | REFERENCES..... | 13 |

TABLES

- 1 - Summary of Ground-Water Monitoring Data
- 2 - Summary of Fuel Additives Analytical Data
- 3 - Historical Ground-Water Flow Direction and Gradient

FIGURES

- 1 - GRO Concentrations vs. Time
- 2 - Benzene Concentrations vs. Time
- 3 - MTBE Concentrations vs. Time

DRAWINGS

- 1 - Site Location Map
- 2 - Area Development Photo
- 3 - Ground-Water Elevation Contours & Analytical Summary Map – 21 August 2008
- 4 - Site Layout Plan with Proposed Monitoring Well Locations

APPENDICES

- A - Recent Regulatory Correspondence
- B - Historical Soil & Ground-Water Data
- C - Soil Boring and Well Construction Logs
- D - Geologic Cross-Sections

**INITIAL SITE CONCEPTUAL MODEL WITH
SOIL & GROUND-WATER INVESTIGATION WORK PLAN
Former Atlantic Richfield Company Station #6002
6235 Seminary Avenue, Oakland, California
Fuel Leak Case No. RO0000163**

1.0 INTRODUCTION

On behalf of the Atlantic Richfield Company, RM - a BP affiliated company, Broadbent & Associates, Inc. (BAI) has prepared this *Initial Site Conceptual Model with Soil & Ground-Water Investigation Work Plan* for the Former Atlantic Richfield Company (ARCO) Station #6002 (herein referred to as Station #6002), located at 6235 Seminary Avenue, Oakland, California (Site). This report was prepared in response to the request within the 22 May 2009 directive letter from Mr. Paresh Khatri of Alameda County Environmental Health (ACEH), provided within Appendix A. This report includes discussions on the Site background and previous environmental activities, regional and Site geology and hydrogeology, definition of contamination within soil and ground water, status of Site remediation, sensitive receptors, preliminary risk assessment, discussion of data gaps, proposed scope of work, and proposed schedule. Tables, figures, and appendices referenced within this report are provided following the conclusion of the document's text.

2.0 BACKGROUND INFORMATION

2.1 Site Location

The Site is located at 6235 Seminary Avenue in Oakland, California. It is presently an independently-branded gasoline station. Although Atlantic Richfield Company sold the property, it retained the environmental liability for contamination released prior to this transfer. Current improvements to the Site include three gasoline underground storage tanks (USTs) believed to have been installed in 1996, two fuel dispenser islands with a total of four dispensers, and a convenience store building. The majority of the Site surface is paved with asphalt and concrete. A Site Location Map is provided as Drawing 1. A recent aerial photo showing the Site and local area development is provided as Drawing 2.

The Site is bound by Seminary Avenue to the north-northwest, Sunnymere Avenue to the east-northeast and single-family residential dwellings to the west-southwest and south-southeast. Interstate 580 and the associated on- and off-ramps are located across Sunnymere Avenue to the east.

2.2 Previous Environmental Activities at Site

In their 31 March 1994 *Initial Onsite Subsurface Investigation Report*, RESNA Industries, Inc. (RESNA) stated that no known environmental work had been performed at the Site prior to their January 1994 onsite subsurface investigation.

On 13 and 14 January 1994 RESNA observed the advancement of four soil borings (B-1 through B-4). Borings B-1 (15.5 ft bgs), B-2 (36.5 ft bgs), and B-4 (16 ft bgs) were located west of the former USTs. Boring B-3 (15.5 ft bgs) was located east of the USTs. Borings B-2, B-3, and B-4 were converted to monitoring well MW-1, and vapor extraction wells VW-2 and VW-1, respectively. Monitoring well MW-1 was installed to a depth of 25 ft bgs and constructed with

four-inch diameter Schedule 40 PVC casing and screened from 5 to 25 ft bgs with 0.020-inch machine-slotted casing. Vapor extraction wells VW-1 and VW-2 were installed to a depth of 14 ft bgs and constructed with four-inch diameter Schedule 40 PVC casing and screened from six to 14 ft bgs with 0.10-inch machine-slotted casing. Well MW-1 was developed on 26 January 1994. RESNA determined that gasoline hydrocarbon concentrations were greatest in the central region of the site at approximately 10.5 ft bgs, downgradient of the former USTs. RESNA also noted there seems to be little to no impact by gasoline hydrocarbons upgradient of the USTs (RESNA, 3/31/1994). Boring locations are depicted in Drawing 3, Drawing 4 and within Appendix B. Tabulated historic analytical results are contained within Appendix B. Copies of available soil boring and monitoring well construction logs are contained within Appendix C.

On 29 June 1994 GeoStrategies, Inc. (GSI) observed the advancement of four soil borings (B-5 through B-8). Boring B-5 was advanced to a depth of 21.5 ft bgs, B-7 to 24.4 ft bgs, and B-6 and B-8 to 25 ft bgs. Monitoring wells MW-2 through MW-5 were installed in boring B-5 through B-8, respectively, with the intent of further delineating the extent of hydrocarbon-impacted ground water beneath the Site. Monitoring well MW-2 was installed to a depth of 18 ft bgs and constructed with four-inch diameter Schedule 40 PVC casing and screened from 5 to 18 ft bgs with 0.020-inch machine-slotted casing. Monitoring wells MW-3, MW-4, and MW-5 were installed to total respective boring depths and constructed with four-inch diameter Schedule 40 PVC casing and screened from 5 ft bgs to total depth with 0.020-inch machine-slotted casing. Wells MW-2 through MW-5 were developed by Gettler-Ryan, Inc. on 5 July 1994. Wells MW-1 through MW-5, VW-1, and VW-2 were surveyed on 12 July 1994 by John Koch, a California Licensed Land Surveyor (GSI, 8/29/1994). Boring locations are depicted in Drawing 3, Drawing 4 and within Appendix B. Tabulated historic analytical results are contained within Appendix B. Copies of available soil boring and monitoring well construction logs are contained within Appendix C.

On 26 and 27 June 1995, EMCON observed the advancement of eight soil borings. Soil borings SB-1 through SB-4 were drilled onsite, beneath the station canopy. Air sparge well AS-1 and vapor extraction wells VW-3 and VW-4 were installed between the former UST complex and the pump islands, intended to evaluate the feasibility of air sparging and vapor extraction as remediation techniques at the Site. Monitoring well MW-6 was installed offsite to further investigate the potential for an up-gradient source of hydrocarbon-impacted ground water. SB-1 was advanced to a depth of 16.5 ft bgs, SB-2 to 15.5 ft bgs, and SB-3 and SB-4 to 21.5 ft bgs. MW-6 was advanced and installed at a depth of 32 ft bgs and constructed with two-inch diameter Schedule 40 PVC casing, and screened from 17 to 32 ft bgs with machine-slotted casing. AS-1 was advanced to a depth of 31.5 ft bgs and installed at a depth of 22.5 ft bgs, constructed with two-inch diameter Schedule 40 PVC casing, and screened from 20 to 22.5 ft bgs with machine-slotted casing. VW-3 and VW-4 were advanced and installed at a depth of 15 ft bgs and constructed with four-inch diameter Schedule 40 PVC casing, and screened from 5.5 to 15 ft bgs with machine-slotted casing (EMCON, 11/8/1995). Boring locations are depicted in Drawing 3, Drawing 4 and within Appendix B. Tabulated historic analytical results are contained within Appendix B. Copies of available soil boring and monitoring well construction logs are contained within Appendix C.

On 12 February 1996 EMCON observed the decommissioning and abandonment of monitoring wells MW-1 and MW-2 by HEW Drilling, according to local requirements. These wells were abandoned in preparation for the installation of the new USTs (EMCON, 2/23/1996). Two 4,000 gallon and two 6,000 gallon USTs located on the east side of the Site were removed on 6 March 1996 by Balch Petroleum. Personnel from the Oakland Fire Department and from the Alameda County Health Care Services Agency also witnessed the removal activities. EMCON reported that the USTs appeared to be in good condition with no obvious holes or leaks. The UST cavity was excavated to an approximate depth of 12 ft bgs, with select locations over-excavated to approximately 14 ft bgs. As a means of source removal, approximately 11,500 gallons of hydrocarbon-impacted ground water that had accumulated in the UST cavity were pumped out for off-site disposal. Balch Petroleum also excavated and removed the product lines associated with the UST complex. Product line trenches were excavated to between approximately five and seven ft bgs. The UST cavity and associated product line trenches were reportedly backfilled with baserock. Approximately 370 cubic yards (yd³) of hydrocarbon impacted soil was removed during UST removal activities at the Site (EMCON, 4/26/1996). The limits of excavation are depicted in Drawing 3, Drawing 4, and within Appendix B. Historic soil sample locations and tabulated historic analytical results are contained within Appendix B.

In their 3 June 1996 *Onsite Tier 2 Risk-Based Corrective Action Evaluation*, EMCON concluded that the results of their evaluation indicated no acceptable levels of risk being exceeded at the Site. EMCON further concluded that the Site qualified as a low-risk case, as defined by the Regional Water Quality Control Board's January 1996 Supplemental Instructions.

On 15 July 1996, EMCON observed the advancement of two off-site soil borings south of the Site at 6267 Sunnymere Avenue and southwest of the Site at 6217 Seminary Avenue. The boring at 6267 Sunnymere Avenue was advanced to a depth of 14.5 ft bgs. Monitoring well MW-8 was installed in this boring with a two-inch diameter Schedule 40 PVC casing screened from 5.5 to 14 ft bgs with 0.020-inch machine-slotted casing. The boring at 6217 Seminary Avenue was aborted and backfilled with bentonite when a ceramic sewer line was encountered at approximately seven ft bgs. The boring location was moved to 6209 Seminary Avenue, approximately 50 feet west of 6217 Seminary Avenue. The boring was advanced on 6 August 1996, with monitor well MW-7 installed to the total depth of the boring at 14 ft bgs. MW-7 was constructed with two-inch diameter Schedule 40 PVC casing and screened from 8 to 14 ft bgs with 0.020-inch machine-slotted casing. Well locations are depicted in Drawing 3 and Drawing 4. Tabulated historic analytical results are contained within Appendix B. Copies of available soil boring and monitoring well construction logs are contained within Appendix C.

Quarterly ground-water monitoring at the Site was initiated in the First Quarter 1994 by RESNA, and is currently performed by Stratus Environmental, Inc. (Stratus). Historic ground water and soil analytical data, soil boring and well construction logs, and geologic cross-sections are provided within Appendices B through D.

3.0 HYDROCARBON SOURCE

3.1 Release Source and Volume

The source of the release at Station #6002 is believed to be the former UST complex in the eastern portion of the Site, and portions of the product piping east of the southern dispenser island. The exact or even approximate volume released is unknown.

3.2 Release Intervention

The removal of the original UST complex and associated piping in 1996 was conducted as a release intervention. In addition, approximately 370 yd³ of contaminated soil was reportedly excavated and removed at the time of the UST complex removal, as well as 11,500 gallons of hydrocarbon-impacted ground water (EMCON, 4/26/1996).

4.0 SITE CHARACTERIZATION

4.1 Soil Definition Status

The limits of soil contamination above the ground-water table by petroleum hydrocarbons appear to have been adequately delineated by EMCON during the 1996 removal/replacement of the USTs and associated pipelines. Source areas in the soil appear to have been hotspots on the southwestern sidewall of the former UST pit, and under the western end of the northern pump dispenser island. Sample T4-W located near the southern end of the western sidewall of the UST excavation (as exhibited within Appendix B) contained 120 milligrams per kilogram (mg/kg) Total Petroleum Hydrocarbons in the Gasoline Range (TPH-G) and minor concentrations of fuel constituents Benzene (0.14 mg/kg), Toluene (1.8 mg/kg), Ethylbenzene (0.7 mg/kg) and Total Xylenes (5.1 mg/kg). Following over-excavation in this area, the confirmation soil sample T4-W(C) contained just trace concentrations of the above hydrocarbon contaminants. Product line sample PL-3 collected at a depth of five feet bgs on the southern side of the northwestern dispenser pump contained 130 mg/kg TPH-G, but no Benzene, Toluene, Ethylbenzene, or Total Xylenes (BTEX) with the exception of 0.21 mg/kg Ethylbenzene. With a fluctuating depth to ground water across the central, presumed source area of the Site, an unknown amount of petroleum hydrocarbon contamination is now believed to have been smeared across the vadose zone/submerged soil interface.

4.2 Ground-Water Definition Status

4.2.1 Ground-Water Depth, Flow Direction, and Gradient

Ground-water depth varies across the Site and through time from approximately 5 to 18 ft bgs. Based on ground-water elevation data, the ground-water flow direction has varied between southwest and west (with one measurement to the west-northwest), but predominantly to the west-southwest. Historically, the ground-water gradient has ranged from 0.04 ft/ft to 0.10 ft/ft. Historic ground-water flow directions and gradients are provided in Table 3. A rose diagram showing the percentage occurrence of historic ground-water flow directions is provided on the second page of Table 3.

4.2.2 Separate-Phase Hydrocarbons

Separate-phase hydrocarbons (SPH) or free product has not been detected in current or former ground-water monitoring wells associated with the Site (MW-2 through MW-8, VW-1 through VW-4, and AS-1) during quarterly monitoring or other sampling activities, with the exception of 0.01 feet SPH recorded in former well MW-1 during the fourth quarter 1995 monitoring event.

4.2.3 Gasoline-Range Organics

Concentrations of TPH-G/GRO have been detected above laboratory reporting limits in eight of the 13 wells currently and formerly associated with the Site (MW-1, MW-3, MW-4, MW-5, MW-7, MW-8, VW-1, and VW-4). However, concentrations in wells MW-3, MW-4, MW-7, and MW-8 have been intermittently detected since monitoring first began. The highest concentration of TPH-G/GRO was reported in well MW-5 at 41,000 micrograms per liter ($\mu\text{g/L}$) on 8 July 1994. Generally speaking, the extent of GRO contamination has been delineated to the east by well MW-6, to the north by wells VW-3 and MW-4, to the south by wells VW-1, MW-3, and MW-8, and to the southwest by well MW-7. It is presently unknown the extent of GRO contamination in ground water directly west (downgradient) of the dispenser islands, roughly between wells MW-4 and MW-5. Historic laboratory analytical results from ground-water sampling are summarized in Table 1 and Appendix B. GRO concentrations from Third Quarter 2008 (the most recent comprehensive sampling quarter) are included in the map of ground-water elevation contours provided as Drawing 3. Figure 1 depicts a graphical representation of TPH-G/GRO concentrations versus time.

4.2.4 Benzene, Toluene, Ethylbenzene, and Xylenes

Concentrations of Benzene, Toluene, Ethylbenzene, and/or Xylenes (BTEX) have been detected above laboratory reporting limits in 10 of the 13 wells currently and formerly associated with the Site (AS-1, MW-1, MW-3, MW-4, MW-5, MW-6, MW-7, MW-8, VW-1, and VW-4). However, concentrations in wells MW-3, MW-4, MW-6, MW-7, MW-8, VW-1, and VW-4 have been intermittently detected at relatively low levels since monitoring first began. The highest concentrations of Benzene and Toluene were reported in well MW-1 at 5,200 $\mu\text{g/L}$ (7/8/1994) and 1,600 $\mu\text{g/L}$ (1/21/1994), respectively. The highest concentrations of Ethylbenzene and Total Xylenes were found in a sample collected 21 November 1994 from well MW-5 at 3,100 $\mu\text{g/L}$ and 4,100 $\mu\text{g/L}$, respectively. Generally speaking, the extent of BTEX contamination has been delineated to the east by well MW-6, to the north by wells VW-3 and MW-4, to the south by wells VW-1, MW-3, and MW-8, and to the southwest by well MW-7. It is presently unknown the extent of BTEX contamination in ground water directly west (downgradient) of the dispenser islands, roughly between wells MW-4 and MW-5. Historic laboratory analytical results from ground-water sampling are summarized in Table 1 and Appendix B. Benzene concentrations from Third Quarter 2008 (the most recent comprehensive sampling quarter) are included in the map of ground-water elevation contours provided as Drawing 3. Figure 2 depicts a graphical representation of Benzene concentrations versus time.

4.2.5 Methyl-Tertiary Butyl Ether

Concentrations of Methyl-Tertiary Butyl Ether (MTBE) have been detected above laboratory reporting limits in nine of the 13 wells currently and formerly associated with the Site (MW-1,

MW-3, MW-4, MW-5, MW-7, MW-8, VW-1, VW-3, and VW-4). However, concentrations in wells MW-3, MW-4, MW-7, MW-8, VW-1 and VW-3 have been intermittently detected at relatively low levels since monitoring first began. The highest concentration of MTBE was reported in well MW-1 at 25,000 µg/L from a sample collected on 13 November 1995. Generally speaking, the extent of MTBE contamination has been delineated to the east by well MW-6, to the north by wells VW-3 and MW-4, to the south by wells VW-1, MW-3, and MW-8, and to the southwest by well MW-7. It is presently unknown the extent of MTBE contamination in ground water directly west (downgradient) of the dispenser islands, roughly between wells MW-4 and MW-5. Historic laboratory analytical results from ground-water sampling are summarized in Table 1 and Appendix B. MTBE concentrations from Third Quarter 2008 (the most recent comprehensive sampling quarter) are included in the map of ground-water elevation contours provided as Drawing 3. Figure 3 depicts a graphical representation of MTBE concentrations versus time.

4.3 Regional Geology and Hydrogeology

According to the *East Bay Plain Groundwater Basin Beneficial Use Evaluation Report* (California Regional Water Quality Control Board – San Francisco Bay Region/SFRWQCB, June 1999), the Site is located within the Oakland Sub-Area of the East Bay Plain of the San Francisco Basin. The Oakland Sub-Area contains a sequence of alluvial fans. The alluvial fill thickness ranges from 300 to 700 feet deep. There are no well-defined aquitards such as estuarine muds. The largest and deepest wells in this sub-area historically pumped one to two million gallons per day at depths greater than 200 feet. Overall, sustainable yields are low due in part to low recharge potential. The Merrit sand in West Oakland was an important part of the early water supply for the City of Oakland. It is shallow (up to 60 feet), but before the turn of the last century, septic systems contaminated the water supply wells.

Throughout most of the Alameda County portion of the East Bay Plain, from Hayward north to Albany, water level contours show that the general direction of ground-water flow is from east to west or from the Hayward Fault to the San Francisco Bay. Ground-water flow direction generally correlates to topography. Flow direction and velocity are also influenced by buried stream channels that typically are oriented in an east to west direction.

4.4 Topography

The Site is situated at an approximate elevation of 250 feet above mean sea level. The Site is relatively flat, but slopes slightly to the west, consistent with the local topography. Topographic contours to the Site vicinity are shown in Drawing 1.

4.5 Stratigraphy

Based on geologic cross sections and soil boring logs from previous consultants, the shallow local water-bearing zone consists of (10 to 20 feet thick) clayey sand, clayey gravel and silty gravel layers with occasional sand and gravel zones. These moderately permeable layers range from approximately 5 to 20 feet bgs and are overlain and underlain by clay and silt layers. According to the geologic cross section and Site boring interpretations, these layers appear to be relatively continuous. Copies of available lithologic soil boring logs and well construction

details are provided in Appendix C. Previously constructed geologic cross-sections are provided in Appendix D.

4.6 Preferential Pathway Analysis

Although normally a component of a Site Conceptual Model, delays in receiving maps of underground utilities in the area of the Site requires that the Preferential Pathway Analysis be prepared at a later date. It is proposed that the Preferential Pathway Analysis be submitted within the soil and ground-water investigation report which will result from following the work plan component of this Initial Site Conceptual Model with Soil and Ground-Water Investigation Work Plan. By the time of the resultant report submittal, BAI will have received the maps of underground infrastructure from the applicable utility owners. In addition, the results of a Site survey by the contracted private utility locating service should identify the locations of underground infrastructure onsite, which would generally not be provided by the utility owners.

5.0 REMEDIATION STATUS

5.1 Remedial Actions Taken

As mentioned previously, the former USTs and significant amount of contaminated soil was excavated and removed from the Site in 1996. Numerous soil borings and monitor wells have also been installed to delineate and monitor the extent of contamination and migration as discussed in previous sections.

5.2 Areas Remediated

Effective remedial action by excavation and removal has taken place in the immediate vicinity of the former USTs in the eastern portion of the Site and the product pipeline runs in the central northern portion of the Site. Reportedly, approximately 370 yd³ of contaminated soil was over-excavated and removed for off-site treatment/disposal (EMCON, 4/26/1996).

5.3 Remediation Effectiveness

The removal of contaminated soil within the UST excavation certainly reduced hydrocarbon concentrations in the soil present within the immediate vicinity of the excavation. However, the effectiveness of this remediation effort is not quantifiable in regards to the hydrocarbon concentrations observed in the ground water and other soil on-site.

6.0 WELL AND SENSITIVE RECEPTOR SURVEY

6.1 Designated Beneficial Shallow and Deep Ground-Water Use

According to the *East Bay Plain Groundwater Basin Beneficial Use Evaluation Report*, the City of Oakland does not have “any plans to develop local ground-water resources for drinking water purposes, because of existing or potential saltwater intrusion, contamination, or poor or limited quantity.” However, the California Regional Water Quality Control Board – San Francisco Bay Region’s Basin Plan denotes existing beneficial uses of municipal and domestic supply (MUN),

industrial process supply (PROC), industrial service supply (IND), and agricultural supply (AGR) for the East Bay Plain ground-water basin.

6.2 Well Survey Results

The initial stage of the well survey consisted of requesting an authorized review of well records maintained by the California Department of Water Resources (DWR) and the Alameda County Public Works Agency (ACPWA). After BAI prepared the Well Completion Report Release Agreement forms, Mr. Paresh Khatri of ACEH provided the necessary authorization signatures to the release of confidential well records forms which were then forwarded to the DWR and the ACPWA.

The Well Completion Report Release Agreement forms sought records for wells located within a quarter-mile radius of the Site address at 6235 Seminary Avenue, Oakland, California. A Site Location Map is provided as Drawing 1. The Site address is located within Township 2 South, Range 3 West Section 3 (Subsection R) relative to the Mount Diablo Baseline and Meridian of Northern California. No records were returned by the ACPWA. The records received from DWR were supposed to be the known well records within Township 2 South, Range 3 West Sections 2, 3, and 10. The results of this search returned 10 monitoring wells (MON), including wells associated with the Site and one well of unidentified use within the quarter-mile search radius.

Three monitoring wells were identified in association with Leona Sulfur Mine located approximately 1,150 feet east of the Site on the corner of Leona Street and Mountain View Avenue. The well of unidentified use is located approximately 1,300 feet northwest of the Site associated with Mills College. A monitoring/cathodic well associated with East Bay Municipal Utility District located on Kuhule Avenue and Leona Street was identified approximately 925 feet northeast of the Site. Six monitoring wells were identified are associated with the Site. Records on file with the DWR indicated that there were no municipal (MUN), domestic (DOM), irrigation (IRR), or industrial process (IND) water supply wells within a quarter-mile radius of the Site.

6.3 Likelihood of Impact to Wells

Results of the well survey do not indicate the likelihood that historic or active wells in the area are acting as preferential pathways for vertical migration of contamination from the Site.

6.4 Likelihood of Impact to Surface Water

The nearest natural drainage is Arroyo Viejo, located approximately 1 mile southwest of the Site. Arroyo Viejo flows generally northeast to southwest at its closest proximity to the Site. The closest body of surface water is a small pond called Lake Aliso, approximately 1,500 feet northwest of the Site within the Mills College campus.

6.5 Potential Sensitive Receptors

No K-12 public or private schools are known to be located within one quarter mile of the Site, although Mills College is located to the north of the Site across Seminary Avenue. No hospitals are known to be located within one quarter mile of the Site.

7.0 RISK ASSESSMENT

7.1 Site Conceptual Exposure Model

The Site is currently an operational privately owned service station. The Site is open to the public and authorized environmental professionals performing sampling or other relevant activities. Review of historical investigation data indicates that the majority of soil and ground-water contamination associated with the Site is at depths generally greater than eight ft bgs and downgradient of the former UST pit. Public and general occupational exposure to these secondary sources of contamination is believed to be remote and/or of short duration.

7.2 Exposure Pathways

Potential exposure pathways associated with this Site include human inhalation, ingestion, and absorption risks by environmental professionals. A potential exposure pathway might be human inhalation by tradesmen in the underground utility installation and maintenance occupation. The likelihood of vapor migration has not been verified by a soil-gas investigation. However, the soil concentrations present would seem unlikely to present a viable exposure pathway of concern. It is also noted that the majority of soil and ground-water contamination associated with this Site is located in two particular areas: the former UST pit area, and the dispenser islands. Soil contamination is presently understood to be relatively minimal elsewhere on site. In addition, customers are not present for extended periods while utilizing the station, and would be congregating in open-air areas.

7.3 Risk Assessment Status

A formal Risk Assessment has not been performed for this Site. Based on the geologic/hydrogeologic characteristics and limited viable exposure pathways, consideration should be given to development of risk-based cleanup levels in lieu of strict adherence to Maximum Contaminant Levels for drinking water, Environmental Screening Levels or California Human Health Screening Levels.

7.4 Identified Human Exceedances

Human exceedances are unknown at this time but unlikely due to the geologic/hydrogeologic characteristics and location of the contaminants.

7.5 Identified Ecological Exceedances

Ecological exceedances are unknown at this time but unlikely due to the geologic/hydrogeologic characteristics and location of the contaminants.

8.0 DATA GAPS

The following data gaps have been identified:

- The absence or presence and severity of ground-water contamination west of the southern dispenser island and station building out to the western property boundary are unknown.

- A complete preferential pathway analysis has yet to be completed. Some offsite underground utilities were mapped by EMCON and included within the Additional Site Characterization Report (11/8/1995), however the locations of onsite utilities are currently unknown.

9.0 PROPOSED SCOPE OF WORK

9.1 Proposed Well Installation Locations

At the request of ACEH, the purpose of the proposed soil and ground-water investigation is to further characterize the site within soils and ground-water down-gradient of the source area. On-site soil and ground-water conditions were initially characterized in 1994 by RESNA and GSI and in 1995 by EMCON as described in previous sections. As put forth by ACEH, characterization of the site is incomplete due to the lack of monitoring points directly downgradient of the suspected source area. Installation of the proposed new monitoring wells between existing wells MW-4, MW-5, and the southern dispenser island should close this data gap.

BAI proposes advancing three borings using hollow-stem auger technology at locations shown on Drawing 4. The borings are anticipated to be advanced to a depth of up to 20 feet bgs; however, the actual total depth will depend upon the ground-water conditions encountered in the field. Upon advancement of the borings, well installation activities will proceed. Boring MW-9 is proposed to be located approximately 15 feet west of the southern dispenser island. Boring MW-10 is proposed to be located approximately 30 feet south of existing well MW-4. Boring MW-11 is proposed to be located approximately 30 feet north of existing well MW-5. Proposed new wells MW-10 and MW-11 will be located in a vehicle parking area, in front of a four-foot tall block wall. These three new wells (MW-9, MW-10, MW-11), should provide the necessary data to delineate the downgradient extents and/or significance of ground-water contamination from Station #6002. The proposed new boring and well locations are shown in Drawing 4. The proposed boring locations are preliminary, and may be subject to change in order to obtain the necessary clearance from underground and above-ground utilities per BP drilling and utility clearance policy.

9.2 Preliminary Activities, Permitting and Notifications

Prior to initiating field activities, Stratus Environmental Inc. (Stratus) will obtain the necessary permits from Alameda County; prepare a site health and safety plan (HASP) for the proposed work; clear the Site for subsurface utilities; and provide 72-hour advance written notification to ACEH (email preferred to paresh.khatri@acgov.org) and BAI (email tvenus@broadbentinc.com or mobile phone 530-588-5887) prior to start of field activities. The utility clearance will include notifying Underground Service Alert (USA) of the pending work a minimum of 48 hours prior to initiating the field investigation, and securing the services of a private utility locating company to confirm the absence of underground utilities at the boring location. Boreholes will be physically cleared to 6.5 ft bgs using hand auger or air knife methods, in accordance with the BP Ground Disturbance Defined Practice.

The Site-specific HASP will be prepared for use by personnel implementing the work plan. A copy of the HASP will be available on-site during work. The subcontractor(s) performing field activities will be provided with a copy of the HASP prior to initiating work. Safety tailgate meetings will also be conducted to review potential hazards and scope of work.

9.3 Soil Boring Activities

A Stratus field geologist will observe a California-licensed drilling company advance the soil borings using a hollow-stem auger drilling rig to a proposed total approximate depth of 20 ft bgs. Soils will be classified according to the Unified Soil Classification System (USCS), and will be examined using visual and manual methods for parameters including odor, staining, color, grain size, and moisture content. Soil samples will be collected from each of the three borings at three-foot intervals, beginning at a depth of 6.5 feet following borehole clearance, until ground water is encountered. The soil samples will be submitted to the laboratory for chemical analysis.

Soil samples will be submitted under chain-of-custody protocol to Calscience Environmental Laboratories, Inc. (Garden Grove), a California State-certified environmental laboratory. The soil samples will be analyzed for the following: Gasoline Range Organics (GRO, C6-12) by EPA Method 8015B; BTEX, MTBE, TBA, TAME, ETBE, DIPE, EDB, 1,2-DCA, and Ethanol by EPA Method 8260.

Investigation-derived residuals will be temporarily stored onsite in 55-gallon, DOT-approved drums, pending characterization for proper management. Stratus will coordinate the removal and transportation of surplus soils and liquids to appropriate California-regulated facilities.

9.4 Monitoring Well Construction

The proposed monitoring wells (MW-9 through MW-11) will be constructed of threaded four-inch diameter, Schedule 40 poly-vinyl chloride (PVC) and screened with 0.020-inch machine-cut slots. Monitoring wells MW-9 through MW-11 are proposed to contain screened intervals from 5 feet bgs to 20 feet bgs, the total depth of each well, depending on ground-water conditions encountered in the field. A filter pack consisting of No.2/12 sand will be installed from total depth to two feet above the top of the well screen, which will be overlain by three feet of bentonite, and bentonite-cement grout to the surface. A traffic-rated locking vault will be installed to protect the well head.

9.5 Monitoring Well Development and Sampling

At least 48 hours after well installation the new wells will be developed. The well development process will consist of surging and bailing the well to remove fine-grained sediments from the well and sand filter pack. A minimum of three and a maximum of ten wetted casing volumes of ground water will be removed until water quality clarity indicates removal of fines. Periodic measurements of the water quality parameters pH, temperature, conductivity, and turbidity will be recorded during the development to establish baseline values for ground water. Purge water generated during development activities will be handled according to BP protocols and procedures.

After well development, the new monitoring wells MW-9, MW-10, and MW-11 will be surveyed. A California-licensed Professional Land Surveyor will be scheduled to survey the well heads for top of casing elevation with North American Vertical Datum (NAVD88), and for lateral position using northings/eastings and latitude/longitude. Survey information will be uploaded to GeoTracker.

The wells will be sampled no sooner than 48 hours after well development. The sampling procedure for the wells consists of first measuring the water level and depth to bottom, and checking for the presence of separate phase hydrocarbons (free product) using an electronic oil-water interface probe. If the well does not contain free product, it will be purged of approximately three wetted casing volumes of water (or until dewatered) using a centrifugal pump, gas displacement pump, or bailer. During purging, temperature, pH, and electrical conductivity will be monitored to document that these parameters have stabilized prior to collecting samples. After purging, water levels will be allowed to partially (at least 80%) recover. Ground-water samples will be collected using a dedicated disposable bailer, placed into appropriate Environmental Protection Agency (EPA) approved containers, labeled, logged onto chain-of-custody records, and transported on ice to the laboratory. Sample labels will include sample name, sampling time and date, analytical methods, and sampler's initials. If the well contains free product, it will not be sampled and free product will be removed according to California Code of Regulations, Title 23, Division 3, Chapter 16, Section 2655, UST Regulations.

Ground-water samples will be analyzed for the following: GRO by EPA Method 8015B, and for BTEX, MTBE, TBA, TAME, ETBE, DIPE, EDB, 1,2-DCA, and Ethanol by EPA Method 8260B.

9.6 Soil and Ground-Water Investigation Report

Upon completion of field activities and receipt of the certified field data package (including copies of permits, field data sheets, boring logs, and the laboratory analytical report with chain-of-custody documentation), BAI will prepare a Soil and Ground-Water Investigation Report. The report will document the results of the investigation, field activities, copies of required permit(s), copies of field notes, soil boring and well construction logs, laboratory analytical reports with copies of chain-of-custody records, discussion of findings, conclusions and recommendations. Deviations from the work plan or data inconsistencies will be discussed in the report. Also included within the report will be the completed Preferential Pathway Evaluation.

10.0 PROPOSED SCHEDULE

The schedule for the above-noted work shall proceed as follows:

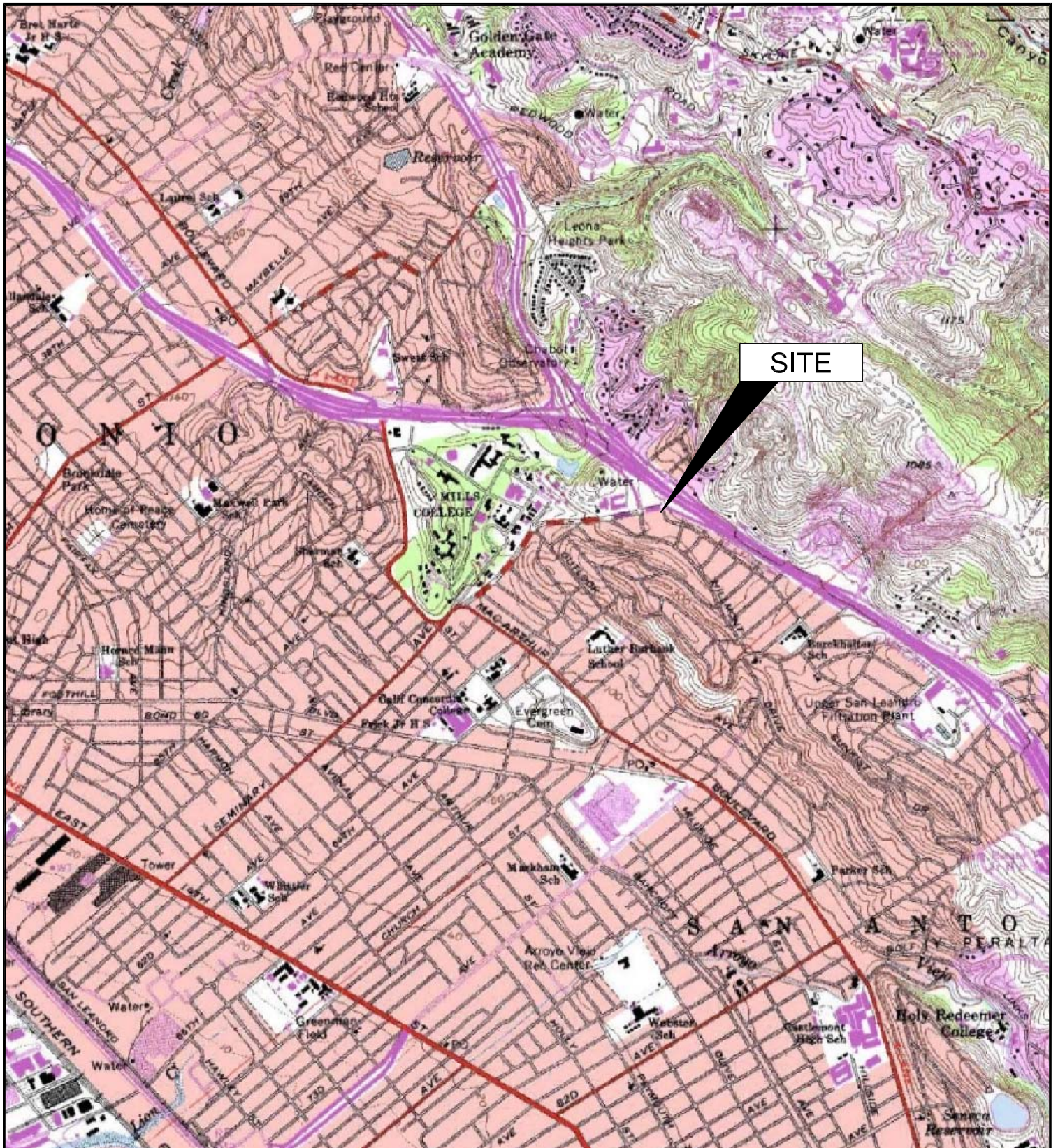
- Implementation of Soil and Ground-Water Investigation – Within 90 days following approval of this work plan;
- Soil & Ground-Water Investigation Report with Preferential Pathway Evaluation – Within 180 days following approval of this work plan.

11.0 CLOSURE

The findings presented in this document are based upon: observations of field personnel from previous consultants, the points investigated, and results of analytical tests performed by various laboratories. Our services were performed in accordance with the generally accepted standard of practice at the time this document was written. No other warranty, expressed or implied was made. This report has been prepared for the exclusive use of BP. It is possible that variations in soil or ground-water conditions could exist beyond points explored in this investigation. Also changes in site conditions could occur in the future due to variations in rainfall, temperature, regional water usage, or other factors.

12.0 REFERENCES

- California Regional Water Quality Control Board, San Francisco Bay Region, Groundwater Committee, June 1999. *East Bay Plain Groundwater Basin Beneficial Use Evaluation Report, Alameda and Contra Costa Counties, CA.*
- EMCON, 8 November 1995. *Additional Site Characterization, ARCO Service Station 6002, 6235 Seminary Avenue, Oakland, California.*
- EMCON, 23 February 1996. *Fourth Quarter 1995 Groundwater Monitoring Program Results, ARCO Service Station 6002, Oakland, California.*
- EMCON, 26 April 1996. *Underground Storage Tank Removal Report, ARCO Service Station 6002, 6235 Seminary Avenue, Oakland, California.*
- EMCON, 3 June 1996. *Onsite Tier 2 Risk-Based Corrective Action Evaluation, ARCO Station 6002, 6235 Seminary Avenue, Oakland, California.*
- EMCON, 15 April 1997. *Results of Off-Site Groundwater Monitoring Well Installation at Former ARCO Service Station 6002, 6235 Seminary Ave., Oakland, California.*
- EMCON, 27 June 1997. *First Quarter 1997 Groundwater Monitoring Results, ARCO Service Station 6002, Oakland, California.*
- GeoStrategies, Inc., 29 August 1994. *Additional Onsite Subsurface Investigation and Second Quarter 1994 Quarterly Monitoring Report, ARCO Station 6002, 6235 Seminary Avenue, Oakland, California.*
- RESNA Industries, Inc., 31 March 1994. *Initial Onsite Subsurface Investigation Report, ARCO Station 6002, 6235 Seminary Avenue, Oakland, California.*



SITE

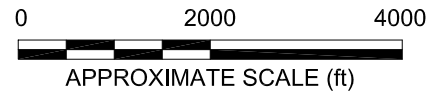
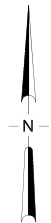
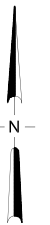
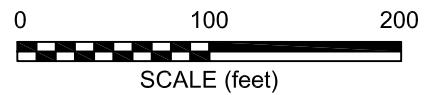
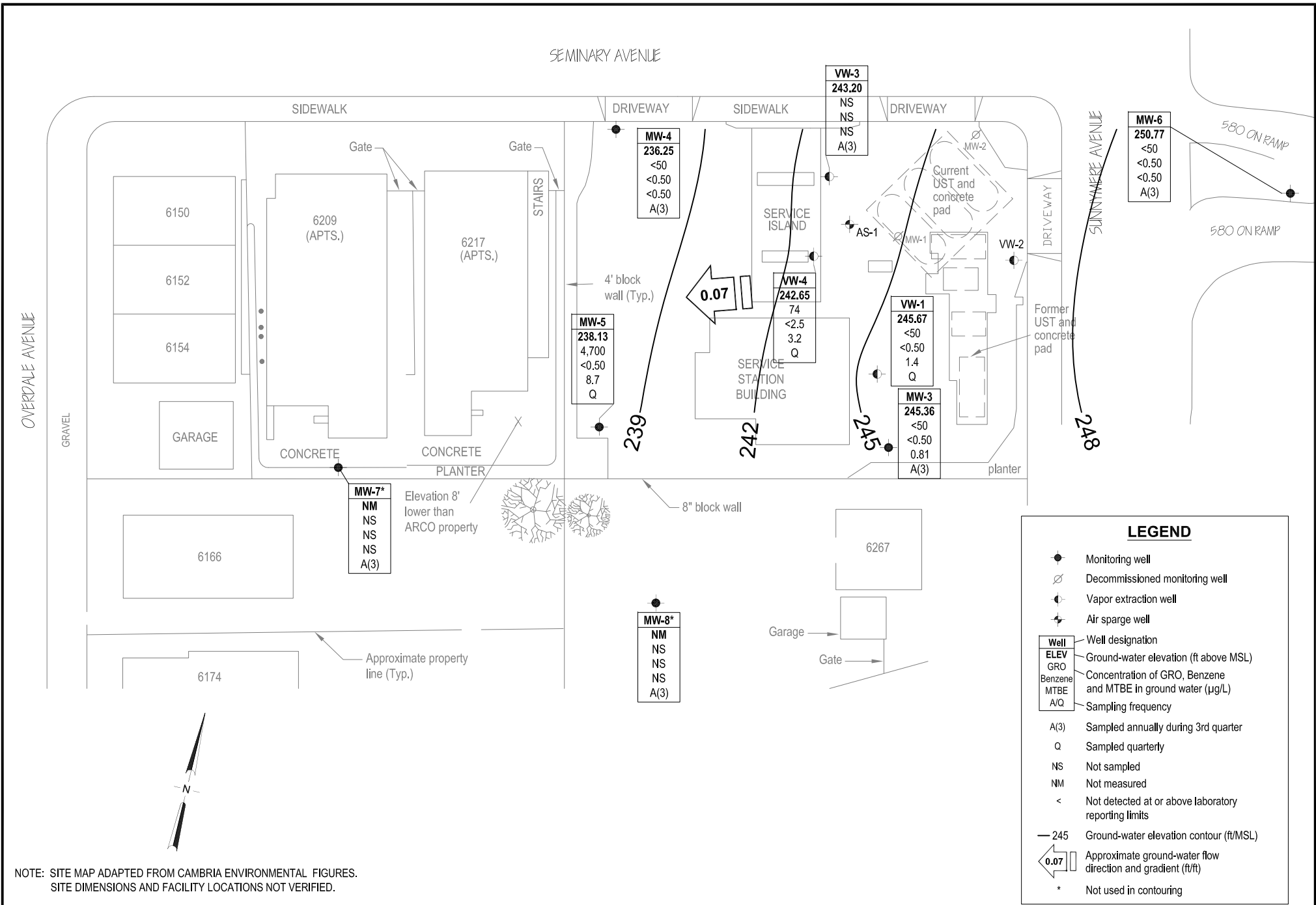
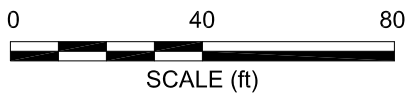


IMAGE SOURCE: USGS





NOTE: SITE MAP ADAPTED FROM CAMBRIA ENVIRONMENTAL FIGURES.
SITE DIMENSIONS AND FACILITY LOCATIONS NOT VERIFIED.



BROADBENT & ASSOCIATES, INC.
ENGINEERING, WATER RESOURCES & ENVIRONMENTAL
1324 Mangrove Ave. Suite 212, Chico, California 95926
Project No.: 06-08-634 Date: 9/11/08

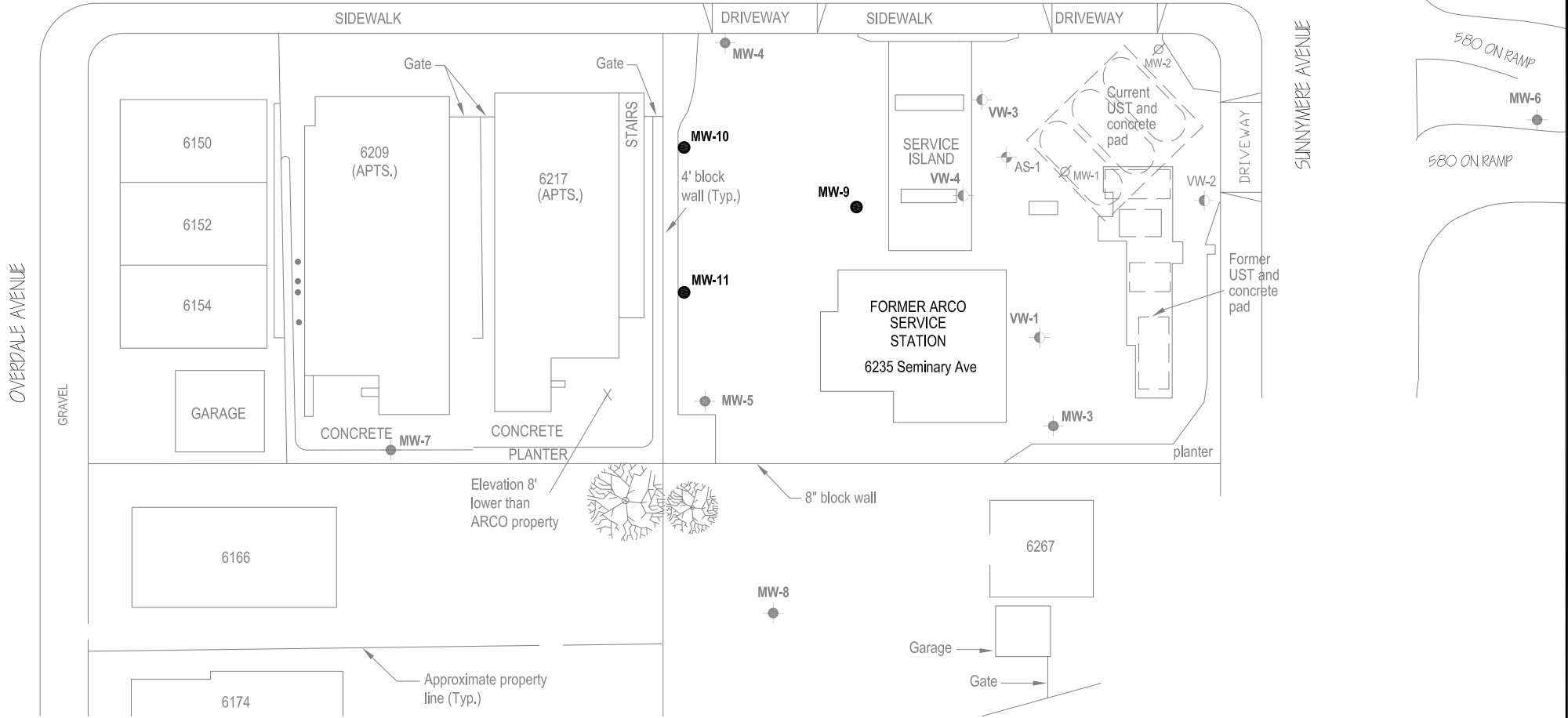
Former ARCO Service Station #6002
6235 Seminary Avenue
Oakland, California

Ground-Water Elevation Contours
and Analytical Summary Map
21 August 2008

Drawing

3

SEMINARY AVENUE



OVERDALE AVENUE

SUNNYMERE AVENUE

580 ON RAMP

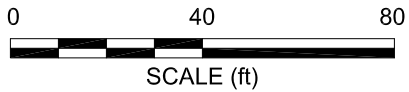
580 ON RAMP



NOTE: SITE MAP ADAPTED FROM CAMBRIA ENVIRONMENTAL FIGURES.
 SITE DIMENSIONS AND FACILITY LOCATIONS NOT VERIFIED.

LEGEND

- Proposed Monitoring well
- Monitoring well
- ⊘ Decommissioned monitoring well
- ⊖ Vapor extraction well
- ⚡ Air sparge well



BROADBENT & ASSOCIATES, INC.
 ENGINEERING, WATER RESOURCES & ENVIRONMENTAL
 1324 Mangrove Ave. Suite 212, Chico, California 95926
 Project No.: 06-88-634 Date: 7/29/09

Former ARCO Service Station #6002
 6235 Seminary Avenue
 Oakland, California

Site Map with Proposed
 Monitoring Well Locations

Drawing

4

Table 1. Summary of Ground-Water Monitoring Data: Relative Water Elevations and Laboratory Analyses

Station #6002, 6235 Seminary Ave., Oakland, CA

| Well and Sample Date | P/NP | Comments | TOC (feet) | Top of Screen (ft bgs) | Bottom of Screen (ft bgs) | DTW (feet bgs) | Product Thickness (feet) | Water Level Elevation (feet) | Concentrations in (µg/L) | | | | | | DO (mg/L) | pH |
|----------------------|------|----------|------------|------------------------|---------------------------|----------------|--------------------------|------------------------------|--------------------------|---------|---------|---------------|---------------|--------|-----------|----|
| | | | | | | | | | GRO/TPHg | Benzene | Toluene | Ethyl-Benzene | Total Xylenes | MtBE | | |
| AS-1 | | | | | | | | | | | | | | | | |
| 6/29/1995 | -- | | -- | 20.0 | 22.0 | 9.20 | -- | -- | <50 | 1.6 | <0.5 | 0.9 | 0.9 | -- | -- | -- |
| MW-1 | | | | | | | | | | | | | | | | |
| 3/15/1995 | -- | | 247.06 | 4.5 | 24.5 | 7.37 | -- | 239.69 | 13,000 | 1,200 | 44 | 770 | 1,100 | -- | -- | -- |
| 5/30/1995 | -- | | 247.06 | 4.5 | 24.5 | 8.48 | -- | 238.58 | 19,000 | 1,600 | 30 | 890 | 1,400 | -- | -- | -- |
| 9/1/1995 | -- | | 247.06 | 4.5 | 24.5 | 9.47 | -- | 237.59 | 14,000 | 1,300 | 28 | 480 | 780 | 24,000 | -- | -- |
| 11/13/1995 | -- | a, b | 247.06 | 4.5 | 24.5 | 8.78 | -- | 238.28 | 11,000 | 570 | 17 | 260 | 410 | 25,000 | -- | -- |
| 2/23/1996 | -- | d | 247.06 | 4.5 | 24.5 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| MW-2 | | | | | | | | | | | | | | | | |
| 3/15/1995 | -- | | 249.30 | 5.0 | 17.5 | 8.25 | -- | 241.05 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | -- | -- | -- |
| 5/30/1995 | -- | | 249.30 | 5.0 | 17.5 | 9.93 | -- | 239.37 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | -- | -- | -- |
| 9/1/1995 | -- | | 249.30 | 5.0 | 17.5 | 10.69 | -- | 238.61 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <3 | -- | -- |
| 11/13/1995 | -- | | 249.30 | 5.0 | 17.5 | 10.32 | -- | 238.98 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | -- | -- | -- |
| 2/23/1996 | -- | d | 249.30 | 5.0 | 17.5 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| MW-3 | | | | | | | | | | | | | | | | |
| 3/15/1995 | -- | | 248.35 | 5.0 | 24.5 | 6.76 | -- | 241.59 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | -- | -- | -- |
| 5/30/1995 | -- | | 248.35 | 5.0 | 24.5 | 7.81 | -- | 240.54 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | -- | -- | -- |
| 9/1/1995 | -- | | 248.35 | 5.0 | 24.5 | 8.65 | -- | 239.70 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <3 | -- | -- |
| 11/13/1995 | -- | | 248.35 | 5.0 | 24.5 | 8.25 | -- | 240.10 | 120 | 45 | 0.7 | <0.5 | 6.2 | -- | -- | -- |
| 2/23/1996 | -- | | 248.35 | 5.0 | 24.5 | 6.64 | -- | 241.71 | <50 | <0.5 | <0.5 | 0.6 | 1.9 | <3 | -- | -- |
| 5/10/1996 | -- | | 248.35 | 5.0 | 24.5 | 7.95 | -- | 240.40 | -- | -- | -- | -- | -- | -- | -- | -- |
| 8/9/1996 | -- | | 248.35 | 5.0 | 24.5 | 8.06 | -- | 240.29 | -- | -- | -- | -- | -- | -- | -- | -- |
| 11/8/1996 | -- | e | 248.35 | 5.0 | 24.5 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 3/21/1997 | -- | | 248.35 | 5.0 | 24.5 | 8.21 | -- | 240.14 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <3 | -- | -- |
| 5/27/1997 | -- | | 248.35 | 5.0 | 24.5 | 8.25 | -- | 240.10 | -- | -- | -- | -- | -- | -- | -- | -- |
| 8/5/1997 | -- | | 248.35 | 5.0 | 24.5 | 8.29 | -- | 240.06 | -- | -- | -- | -- | -- | -- | -- | -- |
| 10/29/1997 | -- | | 248.35 | 5.0 | 24.5 | 8.58 | -- | 239.77 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <3 | -- | -- |
| 2/25/1998 | -- | | 248.35 | 5.0 | 24.5 | 7.69 | -- | 240.66 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <3 | -- | -- |
| 5/12/1998 | -- | | 248.35 | 5.0 | 24.5 | 8.20 | -- | 240.15 | -- | -- | -- | -- | -- | -- | -- | -- |
| 7/28/1998 | -- | | 248.35 | 5.0 | 24.5 | 8.55 | -- | 239.80 | -- | -- | -- | -- | -- | -- | -- | -- |

Table 1. Summary of Ground-Water Monitoring Data: Relative Water Elevations and Laboratory Analyses

Station #6002, 6235 Seminary Ave., Oakland, CA

| Well and Sample Date | P/NP | Comments | TOC (feet) | Top of Screen (ft bgs) | Bottom of Screen (ft bgs) | DTW (feet bgs) | Product Thickness (feet) | Water Level Elevation (feet) | Concentrations in (µg/L) | | | | | | DO (mg/L) | pH |
|----------------------|------|----------|------------|------------------------|---------------------------|----------------|--------------------------|------------------------------|--------------------------|---------|---------|---------------|---------------|-------|-----------|-----|
| | | | | | | | | | GRO/TPHg | Benzene | Toluene | Ethyl-Benzene | Total Xylenes | MtBE | | |
| MW-3 Cont. | | | | | | | | | | | | | | | | |
| 10/27/1998 | -- | | 248.35 | 5.0 | 24.5 | 8.30 | -- | 240.05 | -- | -- | -- | -- | -- | -- | -- | -- |
| 2/8/1999 | -- | | 248.35 | 5.0 | 24.5 | 7.90 | -- | 240.45 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <3 | -- | -- |
| 6/1/1999 | -- | | 248.35 | 5.0 | 24.5 | 8.40 | -- | 239.95 | -- | -- | -- | -- | -- | -- | -- | -- |
| 8/25/1999 | -- | | 248.35 | 5.0 | 24.5 | 8.49 | -- | 239.86 | -- | -- | -- | -- | -- | -- | 1.67 | -- |
| 10/29/1999 | -- | | 248.35 | 5.0 | 24.5 | 8.52 | -- | 239.83 | -- | -- | -- | -- | -- | -- | 6.9 | -- |
| 2/16/2000 | NP | | 248.35 | 5.0 | 24.5 | 8.03 | -- | 240.32 | <50 | <0.5 | 0.8 | <0.5 | <1 | <3 | 8.51 | -- |
| 6/23/2000 | -- | | 248.35 | 5.0 | 24.5 | 7.55 | -- | 240.80 | -- | -- | -- | -- | -- | -- | 2.1 | -- |
| 8/17/2000 | -- | | 248.35 | 5.0 | 24.5 | 8.65 | -- | 239.70 | -- | -- | -- | -- | -- | -- | 1.1 | -- |
| 11/10/2000 | -- | | 248.35 | 5.0 | 24.5 | 7.19 | -- | 241.16 | -- | -- | -- | -- | -- | -- | -- | -- |
| 2/12/2001 | NP | | 248.35 | 5.0 | 24.5 | 8.60 | -- | 239.75 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <2.5 | 0.81 | -- |
| 4/13/2001 | -- | | 248.35 | 5.0 | 24.5 | 6.13 | -- | 242.22 | -- | -- | -- | -- | -- | -- | -- | -- |
| 7/18/2001 | -- | | 248.35 | 5.0 | 24.5 | 6.47 | -- | 241.88 | -- | -- | -- | -- | -- | -- | -- | -- |
| 10/1/2001 | -- | | 248.35 | 5.0 | 24.5 | 6.99 | -- | 241.36 | -- | -- | -- | -- | -- | -- | -- | -- |
| 1/14/2002 | NP | | 248.35 | 5.0 | 24.5 | 5.47 | -- | 242.88 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <5.0 | -- | -- |
| 4/3/2002 | -- | | 248.35 | 5.0 | 24.5 | 6.95 | -- | 241.40 | -- | -- | -- | -- | -- | -- | -- | -- |
| 8/8/2002 | -- | | 248.35 | 5.0 | 24.5 | 8.78 | -- | 239.57 | -- | -- | -- | -- | -- | -- | -- | -- |
| 11/27/2002 | -- | | 248.35 | 5.0 | 24.5 | 8.52 | -- | 239.83 | -- | -- | -- | -- | -- | -- | -- | -- |
| 2/10/2003 | NP | | 248.35 | 5.0 | 24.5 | 8.40 | -- | 239.95 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 0.7 | 6.4 |
| 6/3/2003 | -- | | 248.35 | 5.0 | 24.5 | 8.40 | -- | 239.95 | -- | -- | -- | -- | -- | -- | -- | -- |
| 8/14/2003 | -- | | 248.35 | 5.0 | 24.5 | 8.60 | -- | 239.75 | -- | -- | -- | -- | -- | -- | -- | -- |
| 11/13/2003 | -- | | 248.35 | 5.0 | 24.5 | 8.41 | -- | 239.94 | -- | -- | -- | -- | -- | -- | -- | -- |
| 02/13/2004 | -- | | 253.88 | 5.0 | 24.5 | 8.40 | -- | 245.48 | -- | -- | -- | -- | -- | -- | -- | -- |
| 05/05/2004 | -- | | 253.88 | 5.0 | 24.5 | 8.28 | -- | 245.60 | -- | -- | -- | -- | -- | -- | -- | -- |
| 08/30/2004 | NP | | 253.88 | 5.0 | 24.5 | 10.32 | -- | 243.56 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | 0.72 | 1.4 | 6.4 |
| 11/08/2004 | -- | | 253.88 | 5.0 | 24.5 | 8.12 | -- | 245.76 | -- | -- | -- | -- | -- | -- | -- | -- |
| 02/07/2005 | -- | | 253.88 | 5.0 | 24.5 | 8.20 | -- | 245.68 | -- | -- | -- | -- | -- | -- | -- | -- |
| 05/09/2005 | -- | | 253.88 | 5.0 | 24.5 | 8.23 | -- | 245.65 | -- | -- | -- | -- | -- | -- | -- | -- |
| 08/11/2005 | NP | | 253.88 | 5.0 | 24.5 | 8.72 | -- | 245.16 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | 0.73 | 1.6 | 6.1 |
| 12/02/2005 | -- | | 253.88 | 5.0 | 24.5 | 8.15 | -- | 245.73 | -- | -- | -- | -- | -- | -- | -- | -- |
| 02/15/2006 | -- | | 253.88 | 5.0 | 24.5 | 8.23 | -- | 245.65 | -- | -- | -- | -- | -- | -- | -- | -- |
| 5/19/2006 | -- | | 253.88 | 5.0 | 24.5 | 8.38 | -- | 245.50 | -- | -- | -- | -- | -- | -- | -- | -- |

Table 1. Summary of Ground-Water Monitoring Data: Relative Water Elevations and Laboratory Analyses

Station #6002, 6235 Seminary Ave., Oakland, CA

| Well and Sample Date | P/NP | Comments | TOC (feet) | Top of Screen (ft bgs) | Bottom of Screen (ft bgs) | DTW (feet bgs) | Product Thickness (feet) | Water Level Elevation (feet) | Concentrations in (µg/L) | | | | | | DO (mg/L) | pH |
|----------------------|-----------|----------|---------------|------------------------|---------------------------|----------------|--------------------------|------------------------------|--------------------------|-----------|-----------|---------------|---------------|-----------|-----------|-----------|
| | | | | | | | | | GRO/TPHg | Benzene | Toluene | Ethyl-Benzene | Total Xylenes | MtBE | | |
| MW-3 Cont. | | | | | | | | | | | | | | | | |
| 8/25/2006 | P | | 253.88 | 5.0 | 24.5 | 8.59 | -- | 245.29 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 1.15 | 6.2 |
| 11/2/2006 | -- | | 253.88 | 5.0 | 24.5 | 8.65 | -- | 245.23 | -- | -- | -- | -- | -- | -- | -- | -- |
| 2/6/2007 | -- | | 253.88 | 5.0 | 24.5 | 8.38 | -- | 245.50 | -- | -- | -- | -- | -- | -- | -- | -- |
| 5/9/2007 | -- | | 253.88 | 5.0 | 24.5 | 8.42 | -- | 245.46 | -- | -- | -- | -- | -- | -- | -- | -- |
| 8/8/2007 | NP | | 253.88 | 5.0 | 24.5 | 8.67 | -- | 245.21 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 1.16 | 6.90 |
| 11/14/2007 | -- | | 253.88 | 5.0 | 24.5 | 8.48 | -- | 245.40 | -- | -- | -- | -- | -- | -- | -- | -- |
| 2/28/2008 | -- | | 253.88 | 5.0 | 24.5 | 8.28 | -- | 245.60 | -- | -- | -- | -- | -- | -- | -- | -- |
| 5/23/2008 | -- | | 253.88 | 5.0 | 24.5 | 8.42 | -- | 245.46 | -- | -- | -- | -- | -- | -- | -- | -- |
| 8/21/2008 | NP | | 253.88 | 5.0 | 24.5 | 8.52 | -- | 245.36 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | 0.81 | 1.17 | 7.17 |
| 11/13/2008 | -- | | 253.88 | 5.0 | 24.5 | 8.52 | -- | 245.36 | -- | -- | -- | -- | -- | -- | -- | -- |
| 2/23/2009 | -- | | 253.88 | 5.0 | 24.5 | 7.92 | -- | 245.96 | -- | -- | -- | -- | -- | -- | -- | -- |
| 5/14/2009 | -- | | 253.88 | 5.0 | 24.5 | 8.37 | -- | 245.51 | -- | -- | -- | -- | -- | -- | -- | -- |
| MW-4 | | | | | | | | | | | | | | | | |
| 3/15/1995 | -- | | 242.91 | 4.5 | 24.5 | 9.37 | -- | 233.54 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | -- | -- | -- |
| 5/30/1995 | -- | | 242.91 | 4.5 | 24.5 | 11.47 | -- | 231.44 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | -- | -- | -- |
| 9/1/1995 | -- | | 242.91 | 4.5 | 24.5 | 12.28 | -- | 230.63 | 78 | <0.5 | 0.7 | <0.5 | <0.5 | <3 | -- | -- |
| 11/13/1995 | -- | | 242.91 | 4.5 | 24.5 | 11.75 | -- | 231.16 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | -- | -- | -- |
| 2/23/1996 | -- | | 242.91 | 4.5 | 24.5 | 8.51 | -- | 234.40 | 59 | 1.2 | 7.4 | 1.6 | 9.3 | 3 | -- | -- |
| 5/10/1996 | -- | | 242.91 | 4.5 | 24.5 | 11.35 | -- | 231.56 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <3 | -- | -- |
| 8/9/1996 | -- | | 242.91 | 4.5 | 24.5 | 9.70 | -- | 233.21 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <3 | -- | -- |
| 11/8/1996 | -- | | 242.91 | 4.5 | 24.5 | 11.79 | -- | 231.12 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <3 | -- | -- |
| 3/21/1997 | -- | | 242.91 | 4.5 | 24.5 | 10.94 | -- | 231.97 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | 81 | -- | -- |
| 5/27/1997 | -- | | 242.91 | 4.5 | 24.5 | 11.51 | -- | 231.40 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <3 | -- | -- |
| 8/5/1997 | -- | | 242.91 | 4.5 | 24.5 | 11.90 | -- | 231.01 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <3 | -- | -- |
| 10/29/1997 | -- | | 242.91 | 4.5 | 24.5 | 12.00 | -- | 230.91 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <3 | -- | -- |
| 2/25/1998 | -- | | 242.91 | 4.5 | 24.5 | 8.34 | -- | 234.57 | <50 | <0.5 | 0.9 | <0.5 | 0.9 | 4 | -- | -- |
| 5/12/1998 | -- | | 242.91 | 4.5 | 24.5 | 10.93 | -- | 231.98 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <3 | -- | -- |
| 7/28/1998 | -- | | 242.91 | 4.5 | 24.5 | 12.08 | -- | 230.83 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <3 | -- | -- |
| 10/27/1998 | -- | | 242.91 | 4.5 | 24.5 | 11.40 | -- | 231.51 | <5,000 | <50 | <50 | 160 | 64 | 6,400 | -- | -- |
| 2/8/1999 | -- | | 242.91 | 4.5 | 24.5 | 8.40 | -- | 234.51 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <3 | -- | -- |

Table 1. Summary of Ground-Water Monitoring Data: Relative Water Elevations and Laboratory Analyses

Station #6002, 6235 Seminary Ave., Oakland, CA

| Well and Sample Date | P/NP | Comments | TOC (feet) | Top of Screen (ft bgs) | Bottom of Screen (ft bgs) | DTW (feet bgs) | Product Thickness (feet) | Water Level Elevation (feet) | Concentrations in (µg/L) | | | | | | DO (mg/L) | pH |
|----------------------|------|----------|------------|------------------------|---------------------------|----------------|--------------------------|------------------------------|--------------------------|---------|---------|---------------|---------------|-------|-----------|------|
| | | | | | | | | | GRO/TPHg | Benzene | Toluene | Ethyl-Benzene | Total Xylenes | MtBE | | |
| MW-4 Cont. | | | | | | | | | | | | | | | | |
| 6/1/1999 | NP | | 242.91 | 4.5 | 24.5 | 11.93 | -- | 230.98 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <3 | 4 | 6.26 |
| 8/25/1999 | NP | | 242.91 | 4.5 | 24.5 | 12.21 | -- | 230.70 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <3 | 1.29 | 6.34 |
| 10/29/1999 | NP | | 242.91 | 4.5 | 24.5 | 12.37 | -- | 230.54 | <50 | <0.5 | <0.5 | <0.5 | <1 | <3 | 1.5 | 5.60 |
| 2/16/2000 | NP | | 242.91 | 4.5 | 24.5 | 7.45 | -- | 235.46 | <50 | <0.5 | <0.5 | <0.5 | <1 | <3 | 2.38 | -- |
| 6/23/2000 | NP | | 242.91 | 4.5 | 24.5 | 12.31 | -- | 230.60 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <2.50 | 2.8 | -- |
| 8/17/2000 | -- | f | 242.91 | 4.5 | 24.5 | -- | -- | -- | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <2.50 | -- | -- |
| 8/17/2000 | NP | | 242.91 | 4.5 | 24.5 | 11.92 | -- | 230.99 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <2.50 | 2.38 | -- |
| 11/10/2000 | NP | | 242.91 | 4.5 | 24.5 | 10.80 | -- | 232.11 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <2.50 | 1.55 | -- |
| 2/12/2001 | NP | | 242.91 | 4.5 | 24.5 | 11.65 | -- | 231.26 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <2.50 | 1.12 | -- |
| 4/13/2001 | -- | f | 242.91 | 4.5 | 24.5 | -- | -- | -- | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <2.50 | -- | -- |
| 4/13/2001 | NP | | 242.91 | 4.5 | 24.5 | 8.17 | -- | 234.74 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <2.50 | -- | -- |
| 7/18/2001 | NP | | 242.91 | 4.5 | 24.5 | 8.51 | -- | 234.40 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <2.5 | -- | -- |
| 10/1/2001 | NP | | 242.91 | 4.5 | 24.5 | 8.71 | -- | 234.20 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <2.5 | -- | -- |
| 1/14/2002 | -- | f | 242.91 | 4.5 | 24.5 | -- | -- | -- | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <5.0 | -- | -- |
| 1/14/2002 | NP | | 242.91 | 4.5 | 24.5 | 7.13 | -- | 235.78 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <5.0 | -- | -- |
| 4/3/2002 | NP | | 242.91 | 4.5 | 24.5 | 10.10 | -- | 232.81 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <2.5 | -- | -- |
| 8/8/2002 | NP | | 242.91 | 4.5 | 24.5 | 12.64 | -- | 230.27 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <2.5 | 2.4 | 8.1 |
| 11/27/2002 | NP | | 242.91 | 4.5 | 24.5 | 12.01 | -- | 230.90 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | 4.7 | 2.5 | 6.5 |
| 2/10/2003 | NP | | 242.91 | 4.5 | 24.5 | 11.22 | -- | 231.69 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 0.8 | 6.6 |
| 6/3/2003 | -- | | 242.91 | 4.5 | 24.5 | 11.54 | -- | 231.37 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 3.9 | 6 |
| 8/14/2003 | -- | | 242.91 | 4.5 | 24.5 | 12.41 | -- | 230.50 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 1.8 | 6.3 |
| 11/13/2003 | -- | | 242.91 | 4.5 | 24.5 | 11.64 | -- | 231.27 | -- | -- | -- | -- | -- | -- | -- | -- |
| 02/13/2004 | -- | | 248.62 | 4.5 | 24.5 | 10.28 | -- | 238.34 | -- | -- | -- | -- | -- | -- | -- | -- |
| 05/05/2004 | -- | | 248.62 | 4.5 | 24.5 | 12.04 | -- | 236.58 | -- | -- | -- | -- | -- | -- | -- | -- |
| 08/30/2004 | NP | | 248.62 | 4.5 | 24.5 | 12.98 | -- | 235.64 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 1.6 | 5.8 |
| 11/08/2004 | -- | | 248.62 | 4.5 | 24.5 | 11.29 | -- | 237.33 | -- | -- | -- | -- | -- | -- | -- | -- |
| 02/07/2005 | -- | | 248.62 | 4.5 | 24.5 | 10.03 | -- | 238.59 | -- | -- | -- | -- | -- | -- | -- | -- |
| 05/09/2005 | -- | | 248.62 | 4.5 | 24.5 | 10.65 | -- | 237.97 | -- | -- | -- | -- | -- | -- | -- | -- |
| 08/11/2005 | NP | | 248.62 | 4.5 | 24.5 | 12.68 | -- | 235.94 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 1.9 | 6.5 |
| 12/02/2005 | -- | | 248.62 | 4.5 | 24.5 | 10.35 | -- | 238.27 | -- | -- | -- | -- | -- | -- | -- | -- |
| 02/15/2006 | -- | | 248.62 | 4.5 | 24.5 | 8.38 | -- | 240.24 | -- | -- | -- | -- | -- | -- | -- | -- |

Table 1. Summary of Ground-Water Monitoring Data: Relative Water Elevations and Laboratory Analyses

Station #6002, 6235 Seminary Ave., Oakland, CA

| Well and Sample Date | P/NP | Comments | TOC (feet) | Top of Screen (ft bgs) | Bottom of Screen (ft bgs) | DTW (feet bgs) | Product Thickness (feet) | Water Level Elevation (feet) | Concentrations in (µg/L) | | | | | | DO (mg/L) | pH |
|----------------------|-----------|----------|---------------|------------------------|---------------------------|----------------|--------------------------|------------------------------|--------------------------|-----------|-----------|---------------|---------------|-----------|-----------|-----------|
| | | | | | | | | | GRO/TPHg | Benzene | Toluene | Ethyl-Benzene | Total Xylenes | MtBE | | |
| MW-4 Cont. | | | | | | | | | | | | | | | | |
| 5/19/2006 | -- | | 248.62 | 4.5 | 24.5 | 11.24 | -- | 237.38 | -- | -- | -- | -- | -- | -- | -- | -- |
| 8/25/2006 | P | | 248.62 | 4.5 | 24.5 | 12.28 | -- | 236.34 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 2.51 | 5.7 |
| 11/2/2006 | -- | | 248.62 | 4.5 | 24.5 | 12.64 | -- | 235.98 | -- | -- | -- | -- | -- | -- | -- | -- |
| 2/6/2007 | -- | | 248.62 | 4.5 | 24.5 | 10.52 | -- | 238.10 | -- | -- | -- | -- | -- | -- | -- | -- |
| 5/9/2007 | -- | | 248.62 | 4.5 | 24.5 | 10.97 | -- | 237.65 | -- | -- | -- | -- | -- | -- | -- | -- |
| 8/8/2007 | NP | | 248.62 | 4.5 | 24.5 | 12.95 | -- | 235.67 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 1.70 | 7.11 |
| 11/14/2007 | -- | | 248.62 | 4.5 | 24.5 | 11.38 | -- | 237.24 | -- | -- | -- | -- | -- | -- | -- | -- |
| 2/28/2008 | -- | | 248.62 | 4.5 | 24.5 | 9.01 | -- | 239.61 | -- | -- | -- | -- | -- | -- | -- | -- |
| 5/23/2008 | -- | | 248.62 | 4.5 | 24.5 | 11.20 | -- | 237.42 | -- | -- | -- | -- | -- | -- | -- | -- |
| 8/21/2008 | NP | | 248.62 | 4.5 | 24.5 | 12.37 | -- | 236.25 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 1.39 | 7.24 |
| 11/13/2008 | -- | | 248.62 | 4.5 | 24.5 | 12.08 | -- | 236.54 | -- | -- | -- | -- | -- | -- | -- | -- |
| 2/23/2009 | -- | | 248.62 | 4.5 | 24.5 | 7.95 | -- | 240.67 | -- | -- | -- | -- | -- | -- | -- | -- |
| 5/14/2009 | -- | | 248.62 | 4.5 | 24.5 | 10.77 | -- | 237.85 | -- | -- | -- | -- | -- | -- | -- | -- |
| MW-5 | | | | | | | | | | | | | | | | |
| 3/15/1995 | -- | | 244.82 | 5.0 | 24.5 | 11.99 | -- | 232.83 | 21,000 | 870 | 22 | 1,600 | 1,900 | -- | -- | -- |
| 5/30/1995 | -- | | 244.82 | 5.0 | 24.5 | 12.97 | -- | 231.85 | 17,000 | 2,100 | 250 | 1,000 | 520 | -- | -- | -- |
| 9/1/1995 | -- | | 244.82 | 5.0 | 24.5 | 14.03 | -- | 230.79 | 19,000 | 1,500 | 25 | 1,600 | 880 | 8,300 | -- | -- |
| 11/13/1995 | -- | | 244.82 | 5.0 | 24.5 | 13.65 | -- | 231.17 | 21,000 | 1,300 | 22 | 1,400 | 630 | -- | -- | -- |
| 2/23/1996 | -- | | 244.82 | 5.0 | 24.5 | 11.93 | -- | 232.89 | 27,000 | 1,300 | <50 | 1,600 | 1,500 | 730 | -- | -- |
| 5/10/1996 | -- | | 244.82 | 5.0 | 24.5 | 13.05 | -- | 231.77 | 17,000 | 460 | 21 | 760 | 480 | 1,000 | -- | -- |
| 8/9/1996 | -- | | 244.82 | 5.0 | 24.5 | 13.22 | -- | 231.60 | 16,000 | 420 | 14 | 870 | 390 | 1,500 | -- | -- |
| 11/8/1996 | -- | e | 244.82 | 5.0 | 24.5 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 3/21/1997 | -- | | 244.82 | 5.0 | 24.5 | 13.24 | -- | 231.58 | 18,000 | 110 | <50 | 730 | 1,500 | 1,800 | -- | -- |
| 5/27/1997 | -- | | 244.82 | 5.0 | 24.5 | 13.10 | -- | 231.72 | 21,000 | 86 | <20 | 810 | 610 | 1,700 | -- | -- |
| 8/5/1997 | -- | | 244.82 | 5.0 | 24.5 | 13.14 | -- | 231.68 | 340 | 2.2 | <0.5 | 15 | 8.8 | 39 | -- | -- |
| 10/29/1997 | -- | | 244.82 | 5.0 | 24.5 | 13.03 | -- | 231.79 | 19,000 | 130 | <20 | 1,400 | 620 | 1,700 | -- | -- |
| 2/25/1998 | -- | | 244.82 | 5.0 | 24.5 | 11.33 | -- | 233.49 | 8,500 | 19 | 13 | 190 | 100 | 170 | -- | -- |
| 5/12/1998 | -- | | 244.82 | 5.0 | 24.5 | 12.81 | -- | 232.01 | 10,000 | 34 | <10 | 390 | 220 | 610 | -- | -- |
| 7/28/1998 | -- | | 244.82 | 5.0 | 24.5 | 13.12 | -- | 231.70 | 15,000 | 68 | <10 | 690 | 620 | 1,000 | -- | -- |
| 10/27/1998 | -- | | 244.82 | 5.0 | 24.5 | 12.90 | -- | 231.92 | 15,000 | 60 | <10 | 770 | 400 | 890 | -- | -- |

Table 1. Summary of Ground-Water Monitoring Data: Relative Water Elevations and Laboratory Analyses

Station #6002, 6235 Seminary Ave., Oakland, CA

| Well and Sample Date | P/NP | Comments | TOC (feet) | Top of Screen (ft bgs) | Bottom of Screen (ft bgs) | DTW (feet bgs) | Product Thickness (feet) | Water Level Elevation (feet) | Concentrations in (µg/L) | | | | | | DO (mg/L) | pH |
|----------------------|------|----------|------------|------------------------|---------------------------|----------------|--------------------------|------------------------------|--------------------------|---------|---------|---------------|---------------|-------|-----------|------|
| | | | | | | | | | GRO/TPHg | Benzene | Toluene | Ethyl-Benzene | Total Xylenes | MtBE | | |
| MW-5 Cont. | | | | | | | | | | | | | | | | |
| 2/8/1999 | -- | | 244.82 | 5.0 | 24.5 | 11.08 | -- | 233.74 | 8,200 | 23 | <10 | 290 | 120 | <60 | -- | -- |
| 6/1/1999 | NP | | 244.82 | 5.0 | 24.5 | 12.95 | -- | 231.87 | 11,000 | 33 | 3.3 | 340 | 180 | 580 | 1 | 6.49 |
| 8/25/1999 | NP | | 244.82 | 5.0 | 24.5 | 12.99 | -- | 231.83 | 9,200 | 26 | 14 | 420 | 270 | 1,100 | 0.37 | 7.78 |
| 10/29/1999 | NP | | 244.82 | 5.0 | 24.5 | 13.10 | -- | 231.72 | 11,000 | 19 | 9.8 | 260 | 150 | 590 | 1.27 | 6.2 |
| 2/16/2000 | NP | | 244.82 | 5.0 | 24.5 | 8.21 | -- | 236.61 | 12,000 | 8.1 | 10 | 340 | 160 | 130 | 1.42 | -- |
| 6/23/2000 | NP | | 244.82 | 5.0 | 24.5 | 12.90 | -- | 231.92 | 9,680 | 38 | <20.0 | 212 | 114 | 930 | 1.4 | -- |
| 8/17/2000 | NP | | 244.82 | 5.0 | 24.5 | 13.00 | -- | 231.82 | 10,500 | 15 | 7.98 | 223 | 118 | 430 | 0.68 | -- |
| 11/10/2000 | NP | | 244.82 | 5.0 | 24.5 | 12.50 | -- | 232.32 | 7,030 | 19.7 | <10.0 | 190 | 43.6 | 445 | 1.27 | -- |
| 2/12/2001 | NP | | 244.82 | 5.0 | 24.5 | 12.81 | -- | 232.01 | 8,840 | 33.9 | <10.0 | 186 | 56.4 | 352 | 0.4 | -- |
| 4/13/2001 | NP | | 244.82 | 5.0 | 24.5 | 11.31 | -- | 233.51 | 9,020 | 54.2 | 43.3 | 137 | 96 | 297 | -- | -- |
| 7/18/2001 | NP | | 244.82 | 5.0 | 24.5 | 11.59 | -- | 233.23 | 13,000 | 19 | 10 | 110 | 49 | 230 | -- | -- |
| 10/1/2001 | NP | | 244.82 | 5.0 | 24.5 | 11.84 | -- | 232.98 | 8,500 | 6.9 | <1.0 | 87 | 27 | 220 | -- | -- |
| 1/14/2002 | NP | | 244.82 | 5.0 | 24.5 | 10.75 | -- | 234.07 | 9,500 | <20 | <20 | 140 | 22 | <200 | -- | -- |
| 4/3/2002 | NP | f | 244.82 | 5.0 | 24.5 | -- | -- | -- | 2,700 | 24 | 5.1 | 92 | 8.5 | 130 | -- | -- |
| 4/3/2002 | NP | | 244.82 | 5.0 | 24.5 | 12.50 | -- | 232.32 | 2,400 | 21 | <5.0 | 91 | 8.5 | 130 | -- | -- |
| 8/8/2002 | NP | | 244.82 | 5.0 | 24.5 | 12.83 | -- | 231.99 | 2,000 | <20 | <20 | 48 | <20 | 520 | 0.8 | 6.9 |
| 11/27/2002 | NP | | 244.82 | 5.0 | 24.5 | 12.79 | -- | 232.03 | 2,200 | <10 | <10 | 33 | <10 | 150 | 0.8 | 6.4 |
| 2/10/2003 | NP | | 244.82 | 5.0 | 24.5 | 12.62 | -- | 232.20 | 2,600 | <2.5 | <2.5 | 47 | 4.2 | 100 | 0.7 | 6.6 |
| 6/3/2003 | -- | | 244.82 | 5.0 | 24.5 | 12.41 | -- | 232.41 | 2,400 | <5.0 | <5.0 | 26 | <5.0 | 160 | 1.8 | 6.3 |
| 8/14/2003 | -- | e | 244.82 | 5.0 | 24.5 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 11/13/2003 | NP | | 244.82 | 5.0 | 24.5 | 12.49 | -- | 232.33 | 1,900 | <5.0 | <5.0 | 13 | <5.0 | 90 | 0.9 | 6.4 |
| 02/13/2004 | NP | | 250.55 | 5.0 | 24.5 | 12.38 | -- | 238.17 | 1,400 | 1.4 | 1.9 | 23 | 3.6 | 90 | 1.1 | 62.8 |
| 05/05/2004 | NP | | 250.55 | 5.0 | 24.5 | 12.68 | -- | 237.87 | 5,800 | <2.5 | <2.5 | 13 | <2.5 | 130 | 1.1 | 6.3 |
| 08/30/2004 | P | | 250.55 | 5.0 | 24.5 | 12.96 | -- | 237.59 | 4,100 | <2.5 | <2.5 | <2.5 | <2.5 | 85 | -- | 6.4 |
| 11/08/2004 | NP | | 250.55 | 5.0 | 24.5 | 12.10 | -- | 238.45 | 3,300 | 14 | 1.9 | 17 | 6.1 | 69 | 1.05 | 6.0 |
| 02/07/2005 | NP | | 250.55 | 5.0 | 24.5 | 12.02 | -- | 238.53 | 3,500 | <1.0 | 1.1 | 16 | 2.6 | 15 | 0.95 | 6.5 |
| 05/09/2005 | NP | j | 250.55 | 5.0 | 24.5 | 11.94 | -- | 238.61 | 3,400 | <1.0 | 1.7 | 12 | 2.2 | 19 | 2.2 | 6.7 |
| 08/11/2005 | NP | | 250.55 | 5.0 | 24.5 | 12.77 | -- | 237.78 | 5,700 | <2.5 | <2.5 | 13 | <2.5 | 51 | 0.7 | 6.0 |
| 12/02/2005 | NP | | 250.55 | 5.0 | 24.5 | 11.83 | -- | 238.72 | 3,900 | <2.5 | <2.5 | 15 | 8.3 | 13 | 1.41 | 6.9 |
| 02/15/2006 | NP | | 250.55 | 5.0 | 24.5 | 10.77 | -- | 239.78 | 790 | <0.50 | <0.50 | 1.2 | <0.50 | <0.50 | 1.2 | 6.9 |
| 5/19/2006 | NP | | 250.55 | 5.0 | 24.5 | 12.29 | -- | 238.26 | 4,100 | 0.97 | 1.3 | 3.9 | 1.8 | 15 | 0.98 | 6.5 |

Table 1. Summary of Ground-Water Monitoring Data: Relative Water Elevations and Laboratory Analyses

Station #6002, 6235 Seminary Ave., Oakland, CA

| Well and Sample Date | P/NP | Comments | TOC (feet) | Top of Screen (ft bgs) | Bottom of Screen (ft bgs) | DTW (feet bgs) | Product Thickness (feet) | Water Level Elevation (feet) | Concentrations in (µg/L) | | | | | | DO (mg/L) | pH |
|----------------------|-----------|----------|---------------|------------------------|---------------------------|----------------|--------------------------|------------------------------|--------------------------|-----------------|------------|---------------|---------------|------------|-------------|-------------|
| | | | | | | | | | GRO/TPHg | Benzene | Toluene | Ethyl-Benzene | Total Xylenes | MtBE | | |
| MW-5 Cont. | | | | | | | | | | | | | | | | |
| 8/25/2006 | P | | 250.55 | 5.0 | 24.5 | 12.62 | -- | 237.93 | 3,700 | <2.5 | <2.5 | 4.0 | <2.5 | 17 | 1.15 | 6.2 |
| 11/2/2006 | P | | 250.55 | 5.0 | 24.5 | 12.90 | -- | 237.65 | 5,700 | <1.0 | 1.5 | 4.3 | 1.7 | 18 | 1.86 | 6.67 |
| 2/6/2007 | NP | | 250.55 | 5.0 | 24.5 | 12.37 | -- | 238.18 | 4,800 | <1.0 | <1.0 | 5.2 | 1.3 | 13 | 0.96 | 6.99 |
| 5/9/2007 | NP | | 250.55 | 5.0 | 24.5 | 12.50 | -- | 238.05 | 4,400 | <1.0 | <1.0 | 4.9 | 1.5 | 31 | 1.42 | 6.89 |
| 8/8/2007 | NP | | 250.55 | 5.0 | 24.5 | 12.88 | -- | 237.67 | 4,100 | <1.0 | <1.0 | 4.1 | 1.3 | 11 | 1.16 | 6.44 |
| 11/14/2007 | NP | | 250.55 | 5.0 | 24.5 | 12.30 | -- | 238.25 | 4,700 | <1.0 | <1.0 | 7.3 | 1.8 | 11 | 1.22 | 6.77 |
| 2/28/2008 | NP | | 250.55 | 5.0 | 24.5 | 11.37 | -- | 239.18 | 4,100 | <2.5 | <2.5 | <2.5 | <2.5 | <2.5 | 1.15 | 6.67 |
| 5/23/2008 | NP | | 250.55 | 5.0 | 24.5 | 11.68 | -- | 238.87 | 4,700 | <0.50 | 0.87 | 5.6 | 1.2 | 17 | 1.28 | 6.57 |
| 8/21/2008 | NP | | 250.55 | 5.0 | 24.5 | 12.42 | -- | 238.13 | 4,700 | <0.50 | 0.60 | 3.6 | 1.4 | 8.7 | 1.24 | 6.78 |
| 11/13/2008 | NP | | 250.55 | 5.0 | 24.5 | 12.32 | -- | 238.23 | 7,400 | <0.50 | 0.63 | 6.3 | 1.4 | 5.6 | 1.18 | 6.67 |
| 2/23/2009 | NP | 1 | 250.55 | 5.0 | 24.5 | 10.50 | -- | 240.05 | 4,100 | <0.50 | <0.50 | 1.9 | 1.1 | 3.2 | 1.30 | 6.17 |
| 5/14/2009 | NP | | 250.55 | 5.0 | 24.5 | 12.08 | -- | 238.47 | 4,200 | <0.50 | 1.0 | 3.6 | 1.8 | 5.4 | 1.14 | 6.65 |
| MW-6 | | | | | | | | | | | | | | | | |
| 6/29/1995 | -- | | -- | 17.0 | 31.5 | 6.63 | -- | -- | <50 | <0.5 | <0.5 | <0.5 | <0.5 | -- | -- | -- |
| 9/1/1995 | -- | | -- | 17.0 | 31.5 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 11/13/1995 | -- | | -- | 17.0 | 31.5 | 7.70 | -- | -- | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <3 | -- | -- |
| 2/23/1996 | -- | | -- | 17.0 | 31.5 | 9.82 | -- | -- | <50 | <0.5 | 0.8 | <0.5 | 0.6 | <3 | -- | -- |
| 5/10/1996 | -- | | -- | 17.0 | 31.5 | 15.25 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 8/9/1996 | -- | | 252.20 | 17.0 | 31.5 | 11.11 | -- | 241.09 | -- | -- | -- | -- | -- | -- | -- | -- |
| 11/8/1996 | -- | | 252.20 | 17.0 | 31.5 | 9.31 | -- | 242.89 | -- | -- | -- | -- | -- | -- | -- | -- |
| 3/21/1997 | -- | | 252.20 | 17.0 | 31.5 | 9.40 | -- | 242.80 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <3 | -- | -- |
| 5/27/1997 | -- | | 252.20 | 17.0 | 31.5 | 7.08 | -- | 245.12 | -- | -- | -- | -- | -- | -- | -- | -- |
| 8/5/1997 | -- | | 252.20 | 17.0 | 31.5 | 7.12 | -- | 245.08 | -- | -- | -- | -- | -- | -- | -- | -- |
| 10/29/1997 | -- | | 252.20 | 17.0 | 31.5 | 7.42 | -- | 244.78 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <3 | -- | -- |
| 2/25/1998 | -- | | 252.20 | 17.0 | 31.5 | 10.35 | -- | 241.85 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <3 | -- | -- |
| 5/12/1998 | -- | | 252.20 | 17.0 | 31.5 | 15.83 | -- | 236.37 | -- | -- | -- | -- | -- | -- | -- | -- |
| 7/28/1998 | -- | | 252.20 | 17.0 | 31.5 | 11.84 | -- | 240.36 | -- | -- | -- | -- | -- | -- | -- | -- |
| 10/27/1998 | -- | | 252.20 | 17.0 | 31.5 | 9.73 | -- | 242.47 | -- | -- | -- | -- | -- | -- | -- | -- |
| 2/8/1999 | -- | | 252.20 | 17.0 | 31.5 | 8.10 | -- | 244.10 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <3 | -- | -- |
| 6/1/1999 | -- | | 252.20 | 17.0 | 31.5 | 17.84 | -- | 234.36 | -- | -- | -- | -- | -- | -- | -- | -- |

Table 1. Summary of Ground-Water Monitoring Data: Relative Water Elevations and Laboratory Analyses

Station #6002, 6235 Seminary Ave., Oakland, CA

| Well and Sample Date | P/NP | Comments | TOC (feet) | Top of Screen (ft bgs) | Bottom of Screen (ft bgs) | DTW (feet bgs) | Product Thickness (feet) | Water Level Elevation (feet) | Concentrations in (µg/L) | | | | | | DO (mg/L) | pH |
|----------------------|------|----------|------------|------------------------|---------------------------|----------------|--------------------------|------------------------------|--------------------------|---------|---------|---------------|---------------|-------|-----------|------|
| | | | | | | | | | GRO/TPHg | Benzene | Toluene | Ethyl-Benzene | Total Xylenes | MtBE | | |
| MW-6 Cont. | | | | | | | | | | | | | | | | |
| 8/25/1999 | -- | | 252.20 | 17.0 | 31.5 | 11.00 | -- | 241.20 | -- | -- | -- | -- | -- | -- | 0.77 | -- |
| 10/29/1999 | -- | | 252.20 | 17.0 | 31.5 | 9.03 | -- | 243.17 | -- | -- | -- | -- | -- | -- | 3.42 | -- |
| 2/16/2000 | P | | 252.20 | 17.0 | 31.5 | 7.71 | -- | 244.49 | <50 | <0.5 | <0.5 | <0.5 | <1 | <3 | 2.42 | -- |
| 6/23/2000 | -- | | 252.20 | 17.0 | 31.5 | 6.69 | -- | 245.51 | -- | -- | -- | -- | -- | -- | 2.3 | -- |
| 8/17/2000 | -- | | 252.20 | 17.0 | 31.5 | 6.95 | -- | 245.25 | -- | -- | -- | -- | -- | -- | 2.51 | -- |
| 11/10/2000 | -- | | 252.20 | 17.0 | 31.5 | 11.79 | -- | 240.41 | -- | -- | -- | -- | -- | -- | -- | -- |
| 2/12/2001 | P | | 252.20 | 17.0 | 31.5 | 7.35 | -- | 244.85 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <2.5 | 1.66 | 7.77 |
| 2/12/2001 | -- | f | -- | 17.0 | 31.5 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 4/13/2001 | -- | | 252.20 | 17.0 | 31.5 | 10.52 | -- | 241.68 | -- | -- | -- | -- | -- | -- | -- | -- |
| 7/18/2001 | -- | | 252.20 | 17.0 | 31.5 | 11.03 | -- | 241.17 | -- | -- | -- | -- | -- | -- | -- | -- |
| 10/1/2001 | -- | | 252.20 | 17.0 | 31.5 | 11.31 | -- | 240.89 | -- | -- | -- | -- | -- | -- | -- | -- |
| 1/14/2002 | P | | 252.20 | 17.0 | 31.5 | 9.87 | -- | 242.33 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <5.0 | -- | -- |
| 4/3/2002 | -- | | 252.20 | 17.0 | 31.5 | 12.19 | -- | 240.01 | -- | -- | -- | -- | -- | -- | -- | -- |
| 8/8/2002 | -- | | 252.20 | 17.0 | 31.5 | 7.04 | -- | 245.16 | -- | -- | -- | -- | -- | -- | -- | -- |
| 11/27/2002 | -- | | 252.20 | 17.0 | 31.5 | 6.85 | -- | 245.35 | -- | -- | -- | -- | -- | -- | -- | -- |
| 2/10/2003 | NP | | 252.20 | 17.0 | 31.5 | 6.74 | -- | 245.46 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 1.1 | 7.4 |
| 6/3/2003 | -- | | 252.20 | 17.0 | 31.5 | 14.35 | -- | 237.85 | -- | -- | -- | -- | -- | -- | -- | -- |
| 8/14/2003 | -- | | 252.20 | 17.0 | 31.5 | 10.74 | -- | 241.46 | -- | -- | -- | -- | -- | -- | -- | -- |
| 11/13/2003 | -- | | 252.20 | 17.0 | 31.5 | 10.68 | -- | 241.52 | -- | -- | -- | -- | -- | -- | -- | -- |
| 02/13/2004 | -- | | 257.94 | 17.0 | 31.5 | 7.38 | -- | 250.56 | -- | -- | -- | -- | -- | -- | -- | -- |
| 05/05/2004 | -- | | 257.94 | 17.0 | 31.5 | 7.43 | -- | 250.51 | -- | -- | -- | -- | -- | -- | -- | -- |
| 08/30/2004 | P | | 257.94 | 17.0 | 31.5 | 7.39 | -- | 250.55 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 2.5 | 7.0 |
| 11/08/2004 | -- | | 257.94 | 17.0 | 31.5 | 15.57 | -- | 242.37 | -- | -- | -- | -- | -- | -- | -- | -- |
| 02/07/2005 | -- | | 257.94 | 17.0 | 31.5 | 15.26 | -- | 242.68 | -- | -- | -- | -- | -- | -- | -- | -- |
| 05/09/2005 | -- | | 257.94 | 17.0 | 31.5 | 11.31 | -- | 246.63 | -- | -- | -- | -- | -- | -- | -- | -- |
| 08/11/2005 | P | | 257.94 | 17.0 | 31.5 | 9.80 | -- | 248.14 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 2.4 | 7.1 |
| 12/02/2005 | -- | | 257.94 | 17.0 | 31.5 | 14.55 | -- | 243.39 | -- | -- | -- | -- | -- | -- | -- | -- |
| 02/15/2006 | -- | | 257.94 | 17.0 | 31.5 | 10.33 | -- | 247.61 | -- | -- | -- | -- | -- | -- | -- | -- |
| 5/19/2006 | -- | | 257.94 | 17.0 | 31.5 | 6.50 | -- | 251.44 | -- | -- | -- | -- | -- | -- | -- | -- |
| 8/25/2006 | P | | 257.94 | 17.0 | 31.5 | 6.75 | -- | 251.19 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 1.90 | 6.6 |
| 11/2/2006 | -- | | 257.94 | 17.0 | 31.5 | 7.15 | -- | 250.79 | -- | -- | -- | -- | -- | -- | -- | -- |

Table 1. Summary of Ground-Water Monitoring Data: Relative Water Elevations and Laboratory Analyses

Station #6002, 6235 Seminary Ave., Oakland, CA

| Well and Sample Date | P/NP | Comments | TOC (feet) | Top of Screen (ft bgs) | Bottom of Screen (ft bgs) | DTW (feet bgs) | Product Thickness (feet) | Water Level Elevation (feet) | Concentrations in (µg/L) | | | | | | DO (mg/L) | pH |
|----------------------|------|----------|---------------|------------------------|---------------------------|----------------|--------------------------|------------------------------|--------------------------|---------|---------|---------------|---------------|-------|-----------|------|
| | | | | | | | | | GRO/TPHg | Benzene | Toluene | Ethyl-Benzene | Total Xylenes | MtBE | | |
| MW-6 Cont. | | | | | | | | | | | | | | | | |
| 2/6/2007 | -- | | 257.94 | 17.0 | 31.5 | 6.93 | -- | 251.01 | -- | -- | -- | -- | -- | -- | -- | -- |
| 5/9/2007 | -- | | 257.94 | 17.0 | 31.5 | 7.03 | -- | 250.91 | -- | -- | -- | -- | -- | -- | -- | -- |
| 8/8/2007 | P | | 257.94 | 17.0 | 31.5 | 7.01 | -- | 250.93 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 2.64 | 7.12 |
| 11/14/2007 | -- | | 257.94 | 17.0 | 31.5 | 7.25 | -- | 250.69 | -- | -- | -- | -- | -- | -- | -- | -- |
| 2/28/2008 | -- | | 257.94 | 17.0 | 31.5 | 6.85 | -- | 251.09 | -- | -- | -- | -- | -- | -- | -- | -- |
| 5/23/2008 | -- | | 257.94 | 17.0 | 31.5 | 7.15 | -- | 250.79 | -- | -- | -- | -- | -- | -- | -- | -- |
| 8/21/2008 | P | | 257.94 | 17.0 | 31.5 | 7.17 | -- | 250.77 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 1.38 | 7.27 |
| 11/13/2008 | -- | | 257.94 | 17.0 | 31.5 | 12.30 | -- | 245.64 | -- | -- | -- | -- | -- | -- | -- | -- |
| 2/23/2009 | -- | | 257.94 | 17.0 | 31.5 | 7.61 | -- | 250.33 | -- | -- | -- | -- | -- | -- | -- | -- |
| 5/14/2009 | -- | | 257.94 | 17.0 | 31.5 | 7.50 | -- | 250.44 | -- | -- | -- | -- | -- | -- | -- | -- |
| MW-7 | | | | | | | | | | | | | | | | |
| 8/9/1996 | -- | g | 235.95 | 8.5 | 13.5 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 11/8/1996 | -- | g | 235.95 | 8.5 | 13.5 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1/27/1997 | -- | | 235.95 | 8.5 | 13.5 | -- | -- | -- | 2,900 | 29 | <5 | <5 | 580 | 220 | -- | -- |
| 3/21/1997 | -- | | 235.95 | 8.5 | 13.5 | 7.13 | -- | 228.82 | 590 | 3.5 | <0.5 | <0.5 | 1.3 | 90 | -- | -- |
| 5/27/1997 | -- | | 235.95 | 8.5 | 13.5 | 9.02 | -- | 226.93 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <3 | -- | -- |
| 8/5/1997 | -- | | 235.95 | 8.5 | 13.5 | 12.33 | -- | 223.62 | 110 | 0.5 | <0.5 | <0.5 | 0.8 | 81 | -- | -- |
| 10/29/1997 | -- | g | 235.95 | 8.5 | 13.5 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 2/25/1998 | -- | | 235.95 | 8.5 | 13.5 | 8.04 | -- | 227.91 | <50 | <0.5 | 0.6 | <0.5 | 0.7 | <3 | -- | -- |
| 5/12/1998 | -- | | 235.95 | 8.5 | 13.5 | 8.88 | -- | 227.07 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <3 | -- | -- |
| 7/28/1998 | -- | | 235.95 | 8.5 | 13.5 | 10.50 | -- | 225.45 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <3 | -- | -- |
| 10/27/1998 | -- | | 235.95 | 8.5 | 13.5 | 8.75 | -- | 227.20 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <3 | -- | -- |
| 2/8/1999 | -- | | 235.95 | 8.5 | 13.5 | 9.35 | -- | 226.60 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <3 | -- | -- |
| 6/1/1999 | NP | | 235.95 | 8.5 | 13.5 | 9.85 | -- | 226.10 | 250 | <0.5 | 0.6 | <0.5 | 1.6 | 18 | 1 | 6.43 |
| 8/25/1999 | NP | | 235.95 | 8.5 | 13.5 | 11.31 | -- | 224.64 | 119 | <0.5 | 5.7 | <0.5 | <0.5 | 11 | 0.41 | 8.28 |
| 10/29/1999 | NP | | 235.95 | 8.5 | 13.5 | 9.08 | -- | 226.87 | <50 | <0.5 | <0.5 | <0.5 | <1 | <3 | 1.29 | 5.82 |
| 2/25/2000 | NP | | 235.95 | 8.5 | 13.5 | 8.02 | -- | 227.93 | <50 | <0.5 | <0.5 | <0.5 | <1 | 38 | 2.1 | -- |
| 6/23/2000 | NP | | 235.95 | 8.5 | 13.5 | 10.68 | -- | 225.27 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | 14.4 | 1.6 | -- |
| 8/17/2000 | NP | | 235.95 | 8.5 | 13.5 | 11.85 | -- | 224.10 | 70 | <0.500 | 0.678 | <0.500 | 1.07 | 14.2 | 1.59 | -- |
| 11/10/2000 | NP | | 235.95 | 8.5 | 13.5 | 9.62 | -- | 226.33 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <2.5 | 1.09 | -- |

Table 1. Summary of Ground-Water Monitoring Data: Relative Water Elevations and Laboratory Analyses

Station #6002, 6235 Seminary Ave., Oakland, CA

| Well and Sample Date | P/NP | Comments | TOC (feet) | Top of Screen (ft bgs) | Bottom of Screen (ft bgs) | DTW (feet bgs) | Product Thickness (feet) | Water Level Elevation (feet) | Concentrations in (µg/L) | | | | | | DO (mg/L) | pH |
|----------------------|------|----------|------------|------------------------|---------------------------|----------------|--------------------------|------------------------------|--------------------------|---------|---------|---------------|---------------|-------|-----------|-----|
| | | | | | | | | | GRO/TPHg | Benzene | Toluene | Ethyl-Benzene | Total Xylenes | MtBE | | |
| MW-7 Cont. | | | | | | | | | | | | | | | | |
| 2/12/2001 | NP | | 235.95 | 8.5 | 13.5 | 12.10 | -- | 223.85 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <2.5 | 0.84 | -- |
| 4/13/2001 | P | | 235.95 | 8.5 | 13.5 | 7.95 | -- | 228.00 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <2.5 | -- | -- |
| 7/18/2001 | P | | 235.95 | 8.5 | 13.5 | 8.20 | -- | 227.75 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <2.5 | -- | -- |
| 10/1/2001 | NP | | 235.95 | 8.5 | 13.5 | 8.59 | -- | 227.36 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <2.5 | -- | -- |
| 1/14/2002 | P | | 235.95 | 8.5 | 13.5 | 6.93 | -- | 229.02 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <5.0 | -- | -- |
| 4/3/2002 | P | | 235.95 | 8.5 | 13.5 | 8.31 | -- | 227.64 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <2.5 | -- | -- |
| 8/8/2002 | P | h | 235.95 | 8.5 | 13.5 | 12.11 | -- | 223.84 | -- | -- | -- | -- | -- | -- | -- | -- |
| 11/27/2002 | NP | h | 235.95 | 8.5 | 13.5 | 13.01 | -- | 222.94 | -- | -- | -- | -- | -- | -- | -- | -- |
| 2/10/2003 | NP | | 235.95 | 8.5 | 13.5 | 10.02 | -- | 225.93 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 1.5 | 6.7 |
| 6/3/2003 | NP | | 235.95 | 8.5 | 13.5 | 6.82 | -- | 229.13 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 8.1 | 6.8 |
| 8/14/2003 | P | | 235.95 | 8.5 | 13.5 | 8.16 | -- | 227.79 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 2.8 | 6.7 |
| 11/13/2003 | -- | | 235.95 | 8.5 | 13.5 | 8.07 | -- | 227.88 | -- | -- | -- | -- | -- | -- | -- | -- |
| 02/13/2004 | -- | | 241.64 | 8.5 | 13.5 | 7.62 | -- | 234.02 | -- | -- | -- | -- | -- | -- | -- | -- |
| 05/05/2004 | -- | | 241.64 | 8.5 | 13.5 | 11.01 | -- | 230.63 | -- | -- | -- | -- | -- | -- | -- | -- |
| 08/30/2004 | -- | h | 241.64 | 8.5 | 13.5 | 13.27 | -- | 228.37 | -- | -- | -- | -- | -- | -- | -- | -- |
| 11/08/2004 | -- | | 241.64 | 8.5 | 13.5 | 13.22 | -- | 228.42 | -- | -- | -- | -- | -- | -- | -- | -- |
| 02/07/2005 | -- | | 241.64 | 8.5 | 13.5 | 13.07 | -- | 228.57 | -- | -- | -- | -- | -- | -- | -- | -- |
| 05/09/2005 | -- | | 241.64 | 8.5 | 13.5 | 7.57 | -- | 234.07 | -- | -- | -- | -- | -- | -- | -- | -- |
| 08/11/2005 | NP | | 241.64 | 8.5 | 13.5 | 11.55 | -- | 230.09 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 1.1 | 6.7 |
| 12/02/2005 | -- | | 241.64 | 8.5 | 13.5 | 13.12 | -- | 228.52 | -- | -- | -- | -- | -- | -- | -- | -- |
| 02/15/2006 | -- | | 241.64 | 8.5 | 13.5 | 7.27 | -- | 234.37 | -- | -- | -- | -- | -- | -- | -- | -- |
| 5/19/2006 | -- | | 241.64 | 8.5 | 13.5 | 7.84 | -- | 233.80 | -- | -- | -- | -- | -- | -- | -- | -- |
| 8/25/2006 | P | | 241.64 | 8.5 | 13.5 | 12.19 | -- | 229.45 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 3.33 | 6.2 |
| 11/2/2006 | -- | | 241.64 | 8.5 | 13.5 | 13.15 | -- | 228.49 | -- | -- | -- | -- | -- | -- | -- | -- |
| 2/6/2007 | -- | | 241.64 | 8.5 | 13.5 | 11.12 | -- | 230.52 | -- | -- | -- | -- | -- | -- | -- | -- |
| 5/9/2007 | -- | | 241.64 | 8.5 | 13.5 | 11.60 | -- | 230.04 | -- | -- | -- | -- | -- | -- | -- | -- |
| 8/8/2007 | -- | g | 241.64 | 8.5 | 13.5 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 11/14/2007 | -- | g | 241.64 | 8.5 | 13.5 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 2/28/2008 | -- | | 241.64 | 8.5 | 13.5 | 7.70 | -- | 233.94 | -- | -- | -- | -- | -- | -- | -- | -- |
| 5/23/2008 | -- | | 241.64 | 8.5 | 13.5 | 5.15 | -- | 236.49 | -- | -- | -- | -- | -- | -- | -- | -- |
| 8/21/2008 | -- | g | 241.64 | 8.5 | 13.5 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

Table 1. Summary of Ground-Water Monitoring Data: Relative Water Elevations and Laboratory Analyses

Station #6002, 6235 Seminary Ave., Oakland, CA

| Well and Sample Date | P/NP | Comments | TOC (feet) | Top of Screen (ft bgs) | Bottom of Screen (ft bgs) | DTW (feet bgs) | Product Thickness (feet) | Water Level Elevation (feet) | Concentrations in (µg/L) | | | | | | DO (mg/L) | pH |
|----------------------|-----------|----------|---------------|------------------------|---------------------------|----------------|--------------------------|------------------------------|--------------------------|-----------|-----------|---------------|---------------|-----------|-----------|-----------|
| | | | | | | | | | GRO/TPHg | Benzene | Toluene | Ethyl-Benzene | Total Xylenes | MtBE | | |
| MW-7 Cont. | | | | | | | | | | | | | | | | |
| 11/13/2008 | -- | | 241.64 | 8.5 | 13.5 | 12.98 | -- | 228.66 | -- | -- | -- | -- | -- | -- | -- | -- |
| 2/23/2009 | -- | | 241.64 | 8.5 | 13.5 | 7.03 | -- | 234.61 | -- | -- | -- | -- | -- | -- | -- | -- |
| 5/14/2009 | -- | | 241.64 | 8.5 | 13.5 | 11.80 | -- | 229.84 | -- | -- | -- | -- | -- | -- | -- | -- |
| MW-8 | | | | | | | | | | | | | | | | |
| 8/9/1996 | -- | | 240.37 | 5.5 | 14.0 | 9.41 | -- | 230.96 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <3 | -- | -- |
| 11/8/1996 | -- | | 240.37 | 5.5 | 14.0 | 9.19 | -- | 231.18 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <3 | -- | -- |
| 3/21/1997 | -- | | 240.37 | 5.5 | 14.0 | 8.55 | -- | 231.82 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <3 | -- | -- |
| 5/27/1997 | -- | | 240.37 | 5.5 | 14.0 | 11.06 | -- | 229.31 | 91 | 0.6 | <0.5 | <0.5 | 0.6 | 66 | -- | -- |
| 8/5/1997 | -- | | 240.37 | 5.5 | 14.0 | 9.32 | -- | 231.05 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <3 | -- | -- |
| 10/29/1997 | -- | | 240.37 | 5.5 | 14.0 | 9.35 | -- | 231.02 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <3 | -- | -- |
| 2/25/1998 | -- | | 240.37 | 5.5 | 14.0 | 7.08 | -- | 233.29 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <3 | -- | -- |
| 5/12/1998 | -- | | 240.37 | 5.5 | 14.0 | 8.61 | -- | 231.76 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <3 | -- | -- |
| 7/28/1998 | -- | | 240.37 | 5.5 | 14.0 | 9.63 | -- | 230.74 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | 4 | -- | -- |
| 10/27/1998 | -- | | 240.37 | 5.5 | 14.0 | 9.30 | -- | 231.07 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <3 | -- | -- |
| 2/8/1999 | -- | | 240.37 | 5.5 | 14.0 | 5.56 | -- | 234.81 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <3 | -- | -- |
| 6/1/1999 | -- | e | 240.37 | 5.5 | 14.0 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 8/25/1999 | -- | e | 240.37 | 5.5 | 14.0 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 10/29/1999 | -- | e | 240.37 | 5.5 | 14.0 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 2/16/2000 | -- | e | 240.37 | 5.5 | 14.0 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 6/23/2000 | NP | | 240.37 | 5.5 | 14.0 | 9.45 | -- | 230.92 | <50 | <0.50 | <0.50 | <0.500 | <0.50 | <2.5 | 1.9 | -- |
| 8/17/2000 | NP | | 240.37 | 5.5 | 14.0 | 6.40 | -- | 233.97 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <2.5 | 2.56 | -- |
| 11/10/2000 | -- | f | 240.37 | 5.5 | 14.0 | -- | -- | -- | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <2.5 | -- | -- |
| 11/10/2000 | NP | | 240.37 | 5.5 | 14.0 | 6.25 | -- | 234.12 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <2.5 | 1.93 | -- |
| 2/12/2001 | NP | | 240.37 | 5.5 | 14.0 | 8.11 | -- | 232.26 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <2.5 | 1.65 | -- |
| 4/13/2001 | P | | 240.37 | 5.5 | 14.0 | 5.19 | -- | 235.18 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <2.5 | -- | -- |
| 7/18/2001 | NP | | 240.37 | 5.5 | 14.0 | 5.55 | -- | 234.82 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <2.5 | -- | -- |
| 10/1/2001 | NP | | 240.37 | 5.5 | 14.0 | 6.41 | -- | 233.96 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <2.5 | -- | -- |
| 1/14/2002 | P | | 240.37 | 5.5 | 14.0 | 5.07 | -- | 235.30 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <5.0 | -- | -- |
| 4/3/2002 | P | | 240.37 | 5.5 | 14.0 | 8.60 | -- | 231.77 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <2.5 | -- | -- |
| 8/8/2002 | P | | 240.37 | 5.5 | 14.0 | 9.58 | -- | 230.79 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <2.5 | 1.7 | 7 |

Table 1. Summary of Ground-Water Monitoring Data: Relative Water Elevations and Laboratory Analyses

Station #6002, 6235 Seminary Ave., Oakland, CA

| Well and Sample Date | P/NP | Comments | TOC (feet) | Top of Screen (ft bgs) | Bottom of Screen (ft bgs) | DTW (feet bgs) | Product Thickness (feet) | Water Level Elevation (feet) | Concentrations in (µg/L) | | | | | | DO (mg/L) | pH |
|----------------------|-----------|----------|---------------|------------------------|---------------------------|----------------|--------------------------|------------------------------|--------------------------|-----------|-----------|---------------|---------------|-----------|-----------|-----------|
| | | | | | | | | | GRO/TPHg | Benzene | Toluene | Ethyl-Benzene | Total Xylenes | MtBE | | |
| MW-8 Cont. | | | | | | | | | | | | | | | | |
| 11/27/2002 | P | | 240.37 | 5.5 | 14.0 | 9.15 | -- | 231.22 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 3.1 | 6.7 |
| 2/10/2003 | P | | 240.37 | 5.5 | 14.0 | 8.55 | -- | 231.82 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 1.3 | 6.6 |
| 6/3/2003 | -- | | 240.37 | 5.5 | 14.0 | 8.72 | -- | 231.65 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 9.1 | 6.3 |
| 8/14/2003 | -- | | 240.37 | 5.5 | 14.0 | 9.52 | -- | 230.85 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 5.5 | 6.4 |
| 11/13/2003 | -- | | 240.37 | 5.5 | 14.0 | 9.45 | -- | 230.92 | -- | -- | -- | -- | -- | -- | -- | -- |
| 02/13/2004 | -- | | 246.09 | 5.5 | 14.0 | 8.38 | -- | 237.71 | -- | -- | -- | -- | -- | -- | -- | -- |
| 05/05/2004 | -- | | 246.09 | 5.5 | 14.0 | 9.30 | -- | 236.79 | -- | -- | -- | -- | -- | -- | -- | -- |
| 08/30/2004 | P | | 246.09 | 5.5 | 14.0 | 9.69 | -- | 236.40 | <50 | <0.50 | <0.50 | <0.50 | 0.75 | <0.50 | 5.1 | 6.5 |
| 11/08/2004 | -- | | 246.09 | 5.5 | 14.0 | 8.34 | -- | 237.75 | -- | -- | -- | -- | -- | -- | -- | -- |
| 02/07/2005 | -- | | 246.09 | 5.5 | 14.0 | 8.23 | -- | 237.86 | -- | -- | -- | -- | -- | -- | -- | -- |
| 05/09/2005 | -- | | 246.09 | 5.5 | 14.0 | 7.07 | -- | 239.02 | -- | -- | -- | -- | -- | -- | -- | -- |
| 08/11/2005 | -- | e | 246.09 | 5.5 | 14.0 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 12/02/2005 | -- | | 246.09 | 5.5 | 14.0 | 8.15 | -- | 237.94 | -- | -- | -- | -- | -- | -- | -- | -- |
| 02/15/2006 | -- | e | 246.09 | 5.5 | 14.0 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 5/19/2006 | -- | | 246.09 | 5.5 | 14.0 | 8.48 | -- | 237.61 | -- | -- | -- | -- | -- | -- | -- | -- |
| 8/25/2006 | P | | 246.09 | 5.5 | 14.0 | 9.45 | -- | 236.64 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 2.27 | 6.0 |
| 11/2/2006 | -- | | -- | 5.5 | 14.0 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 2/6/2007 | -- | | 246.09 | 5.5 | 14.0 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 5/9/2007 | -- | e | 246.09 | 5.5 | 14.0 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 8/8/2007 | -- | e | 246.09 | 5.5 | 14.0 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 11/14/2007 | -- | | 246.09 | 5.5 | 14.0 | 8.78 | -- | 237.31 | -- | -- | -- | -- | -- | -- | -- | -- |
| 2/28/2008 | -- | | 246.09 | 5.5 | 14.0 | 7.77 | -- | 238.32 | -- | -- | -- | -- | -- | -- | -- | -- |
| 5/23/2008 | -- | | 246.09 | 5.5 | 14.0 | 8.30 | -- | 237.79 | -- | -- | -- | -- | -- | -- | -- | -- |
| 8/21/2008 | -- | e | 246.09 | 5.5 | 14.0 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 11/13/2008 | -- | e | 246.09 | 5.5 | 14.0 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 2/23/2009 | -- | e | 246.09 | 5.5 | 14.0 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 5/14/2009 | -- | e | 246.09 | 5.5 | 14.0 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| VW-1 | | | | | | | | | | | | | | | | |
| 2/23/1996 | -- | | -- | 6.0 | 14.0 | 5.29 | -- | -- | 21,000 | 490 | 57 | 520 | 1,500 | 240 | -- | -- |
| 5/10/1996 | -- | | -- | 6.0 | 14.0 | 6.80 | -- | -- | 3,700 | 61 | <5 | 100 | 50 | 200 | -- | -- |

Table 1. Summary of Ground-Water Monitoring Data: Relative Water Elevations and Laboratory Analyses

Station #6002, 6235 Seminary Ave., Oakland, CA

| Well and Sample Date | P/NP | Comments | TOC (feet) | Top of Screen (ft bgs) | Bottom of Screen (ft bgs) | DTW (feet bgs) | Product Thickness (feet) | Water Level Elevation (feet) | Concentrations in (µg/L) | | | | | | DO (mg/L) | pH |
|----------------------|------|----------|------------|------------------------|---------------------------|----------------|--------------------------|------------------------------|--------------------------|---------|---------|---------------|---------------|-------|-----------|------|
| | | | | | | | | | GRO/TPHg | Benzene | Toluene | Ethyl-Benzene | Total Xylenes | MtBE | | |
| VW-1 Cont. | | | | | | | | | | | | | | | | |
| 8/9/1996 | -- | | -- | 6.0 | 14.0 | 7.03 | -- | -- | 970 | 2.7 | <2.5 | 2.7 | 3.7 | 180 | -- | -- |
| 11/8/1996 | -- | e | -- | 6.0 | 14.0 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 3/21/1997 | -- | | -- | 6.0 | 14.0 | 7.51 | -- | -- | 640 | <4 | <1 | 1 | 3 | 194 | -- | -- |
| 5/27/1997 | -- | | -- | 6.0 | 14.0 | 7.51 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 8/5/1997 | -- | | -- | 6.0 | 14.0 | 7.51 | -- | -- | 630 | <1 | <1 | 3 | 2 | 120 | -- | -- |
| 10/29/1997 | -- | | -- | 6.0 | 14.0 | 7.53 | -- | -- | 600 | <0.5 | <0.5 | <0.5 | 1.6 | 84 | -- | -- |
| 2/25/1998 | -- | | -- | 6.0 | 14.0 | 6.77 | -- | -- | 230 | <4 | <0.7 | 1.2 | 0.5 | 27 | -- | -- |
| 5/12/1998 | -- | | -- | 6.0 | 14.0 | 7.43 | -- | -- | 340 | <0.5 | 0.5 | 2.3 | 0.8 | 29 | -- | -- |
| 7/28/1998 | -- | | -- | 6.0 | 14.0 | 7.00 | -- | -- | 240 | <0.5 | <0.5 | <0.5 | 1.1 | 54 | -- | -- |
| 10/27/1998 | -- | | -- | 6.0 | 14.0 | 7.52 | -- | -- | 230 | <0.5 | <0.5 | <0.5 | <0.5 | 65 | -- | -- |
| 2/8/1999 | -- | c | -- | 6.0 | 14.0 | 7.05 | -- | -- | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <3/36 | -- | -- |
| 6/1/1999 | NP | | -- | 6.0 | 14.0 | 7.55 | -- | -- | 180 | <0.5 | <0.5 | <0.5 | <0.5 | 23 | 1 | 6.36 |
| 8/25/1999 | NP | | -- | 6.0 | 14.0 | 7.66 | -- | -- | 130 | <0.5 | 5.6 | <0.5 | <0.5 | 40 | 0.39 | 7.5 |
| 10/29/1999 | NP | | -- | 6.0 | 14.0 | 7.59 | -- | -- | 200 | 1 | <0.5 | 0.6 | 1.6 | 36 | 0.89 | 5.65 |
| 2/16/2000 | NP | | -- | 6.0 | 14.0 | 7.03 | -- | -- | 210 | <0.5 | 0.9 | 2.2 | 1.9 | 11 | 1.41 | -- |
| 6/23/2000 | NP | | -- | 6.0 | 14.0 | 7.71 | -- | -- | 175 | 1.04 | <0.500 | <0.500 | <0.500 | 14.4 | 1.9 | -- |
| 8/17/2000 | NP | | -- | 6.0 | 14.0 | 7.75 | -- | -- | 180 | <0.500 | <0.500 | 0.622 | 0.76 | 23.7 | 0.63 | -- |
| 11/10/2000 | NP | | -- | 6.0 | 14.0 | 6.83 | -- | -- | 157 | 0.955 | <0.500 | 0.973 | <0.500 | 32.5 | 1.03 | -- |
| 2/12/2001 | NP | | -- | 6.0 | 14.0 | 7.85 | -- | -- | 273 | 0.627 | <0.500 | <0.500 | 0.507 | 9.19 | 0.47 | -- |
| 4/13/2001 | P | | -- | 6.0 | 14.0 | 5.11 | -- | -- | 213 | <0.500 | <0.500 | <0.500 | <0.500 | 6.38 | -- | -- |
| 7/18/2001 | P | | -- | 6.0 | 14.0 | 5.39 | -- | -- | 270 | <0.50 | <0.50 | <0.50 | <0.50 | 20 | -- | -- |
| 10/1/2001 | NP | | -- | 6.0 | 14.0 | 6.50 | -- | -- | 200 | <0.50 | <0.50 | <0.50 | 0.81 | 14 | -- | -- |
| 1/14/2002 | P | | -- | 6.0 | 14.0 | 5.04 | -- | -- | 110 | <0.50 | <0.50 | <0.50 | <0.50 | 6.4 | -- | -- |
| 4/3/2002 | P | | -- | 6.0 | 14.0 | 7.51 | -- | -- | 91 | 0.72 | <0.50 | <0.50 | <0.50 | 12 | -- | -- |
| 8/8/2002 | P | | -- | 6.0 | 14.0 | 9.58 | -- | -- | <50 | <0.50 | <0.50 | <0.50 | <0.50 | 33 | 0.6 | 6.3 |
| 11/27/2002 | P | | -- | 6.0 | 14.0 | 7.42 | -- | -- | 52 | 0.72 | 0.78 | <0.50 | <0.50 | 21 | 1 | 6.1 |
| 2/10/2003 | NP | | -- | 6.0 | 14.0 | 7.38 | -- | -- | 52 | <0.50 | <0.50 | <0.50 | <0.50 | 11 | 1.7 | 6.5 |
| 6/3/2003 | -- | | -- | 6.0 | 14.0 | 7.30 | -- | -- | 71 | <0.50 | <0.50 | <0.50 | <0.50 | 13 | 3.3 | 6.3 |
| 8/14/2003 | -- | | -- | 6.0 | 14.0 | 7.59 | -- | -- | <50 | <0.50 | <0.50 | <0.50 | <0.50 | 18 | 0.3 | 6.1 |
| 11/13/2003 | P | | -- | 6.0 | 14.0 | 7.43 | -- | -- | <50 | <0.50 | <0.50 | <0.50 | <0.50 | 13 | 0.6 | 6.1 |
| 02/13/2004 | P | | 253.19 | 6.0 | 14.0 | 7.35 | -- | 245.84 | 59 | <0.50 | <0.50 | <0.50 | 0.56 | 8.0 | 1.0 | 6.0 |

Table 1. Summary of Ground-Water Monitoring Data: Relative Water Elevations and Laboratory Analyses

Station #6002, 6235 Seminary Ave., Oakland, CA

| Well and Sample Date | P/NP | Comments | TOC (feet) | Top of Screen (ft bgs) | Bottom of Screen (ft bgs) | DTW (feet bgs) | Product Thickness (feet) | Water Level Elevation (feet) | Concentrations in (µg/L) | | | | | | DO (mg/L) | pH |
|----------------------|-----------|----------|---------------|------------------------|---------------------------|----------------|--------------------------|------------------------------|--------------------------|-----------------|-----------------|-----------------|-----------------|------------|-------------|-------------|
| | | | | | | | | | GRO/TPHg | Benzene | Toluene | Ethyl-Benzene | Total Xylenes | MtBE | | |
| VW-1 Cont. | | | | | | | | | | | | | | | | |
| 05/05/2004 | P | | 253.19 | 6.0 | 14.0 | 7.30 | -- | 245.89 | <50 | 0.71 | <0.50 | <0.50 | 0.60 | 11 | 0.1 | 6.4 |
| 08/30/2004 | P | | 253.19 | 6.0 | 14.0 | 8.50 | -- | 244.69 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | 24 | 0.2 | 6.2 |
| 11/08/2004 | P | | 253.19 | 6.0 | 14.0 | 7.22 | -- | 245.97 | 230 | <0.50 | <0.50 | <0.50 | 0.75 | 27 | 0.65 | 5.1 |
| 02/07/2005 | P | | 253.19 | 6.0 | 14.0 | 7.25 | -- | 245.94 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | 5.1 | 1.57 | 5.9 |
| 05/09/2005 | P | | 253.19 | 6.0 | 14.0 | 7.10 | -- | 246.09 | 64 | <0.50 | <0.50 | <0.50 | <0.50 | 6.9 | 3.5 | -- |
| 08/11/2005 | P | | 253.19 | 6.0 | 14.0 | 7.89 | -- | 245.30 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | 10 | 0.04 | 6.3 |
| 12/02/2005 | P | | 253.19 | 6.0 | 14.0 | 7.32 | -- | 245.87 | 130 | <0.50 | <0.50 | <0.50 | 0.57 | 9.0 | 1.85 | 6.6 |
| 02/15/2006 | P | | 253.19 | 6.0 | 14.0 | 7.16 | -- | 246.03 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | 2.8 | 0.9 | 6.2 |
| 5/19/2006 | P | | 253.19 | 6.0 | 14.0 | 7.24 | -- | 245.95 | <50 | 0.71 | <0.50 | 0.65 | 1.4 | 3.7 | 0.85 | 6.2 |
| 8/25/2006 | P | | 253.19 | 6.0 | 14.0 | 7.48 | -- | 245.71 | 50 | <0.50 | <0.50 | <0.50 | <0.50 | 8.3 | 0.49 | 6.2 |
| 11/2/2006 | P | | 253.19 | 6.0 | 14.0 | 7.77 | -- | 245.42 | 57 | <0.50 | <0.50 | <0.50 | <0.50 | 11 | 1.84 | 6.88 |
| 2/6/2007 | NP | | 253.19 | 6.0 | 14.0 | 7.35 | -- | 245.84 | 64 | <0.50 | <0.50 | <0.50 | <0.50 | 2.3 | 0.70 | 6.92 |
| 5/9/2007 | NP | | 253.19 | 6.0 | 14.0 | 7.40 | -- | 245.79 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | 3.2 | 1.16 | 6.72 |
| 8/8/2007 | NP | | 253.19 | 6.0 | 14.0 | 7.85 | -- | 245.34 | 87 | <0.50 | <0.50 | <0.50 | <0.50 | 1.9 | 1.46 | 7.07 |
| 11/14/2007 | NP | | 253.19 | 6.0 | 14.0 | 7.52 | -- | 245.67 | 79 | <0.50 | <0.50 | <0.50 | <0.50 | 3.7 | 1.49 | 6.47 |
| 2/28/2008 | NP | | 253.19 | 6.0 | 14.0 | 7.22 | -- | 245.97 | 88 | <0.50 | <0.50 | <0.50 | <0.50 | 0.86 | 1.36 | 6.51 |
| 5/23/2008 | NP | | 253.19 | 6.0 | 14.0 | 7.40 | -- | 245.79 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | 0.91 | 1.05 | 6.92 |
| 8/21/2008 | NP | | 253.19 | 6.0 | 14.0 | 7.52 | -- | 245.67 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | 1.4 | 1.09 | 6.99 |
| 11/13/2008 | NP | | 253.19 | 6.0 | 14.0 | 7.52 | -- | 245.67 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | 1.5 | 1.12 | 6.80 |
| 2/23/2009 | NP | | 253.19 | 6.0 | 14.0 | 6.85 | -- | 246.34 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | 0.84 | 1.11 | 5.56 |
| 5/14/2009 | NP | | 253.19 | 6.0 | 14.0 | 7.35 | -- | 245.84 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | 1.5 | 1.05 | 6.15 |
| VW-2 | | | | | | | | | | | | | | | | |
| 2/23/1996 | -- | i | -- | -- | -- | 6.92 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 8/8/2002 | -- | i | -- | -- | -- | 10.51 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| VW-3 | | | | | | | | | | | | | | | | |
| 8/8/2002 | -- | | -- | 5.5 | 14.5 | 8.85 | -- | -- | <50 | <0.50 | <0.50 | <0.50 | <0.50 | 2.5 | 0.7 | 6.1 |
| 11/27/2002 | -- | i | -- | 5.5 | 14.5 | 8.80 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 2/10/2003 | -- | i | -- | 5.5 | 14.5 | 8.41 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 6/3/2003 | -- | i | -- | 5.5 | 14.5 | 8.71 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

Table 1. Summary of Ground-Water Monitoring Data: Relative Water Elevations and Laboratory Analyses

Station #6002, 6235 Seminary Ave., Oakland, CA

| Well and Sample Date | P/NP | Comments | TOC (feet) | Top of Screen (ft bgs) | Bottom of Screen (ft bgs) | DTW (feet bgs) | Product Thickness (feet) | Water Level Elevation (feet) | Concentrations in (µg/L) | | | | | | DO (mg/L) | pH |
|----------------------|------|----------|---------------|------------------------|---------------------------|----------------|--------------------------|------------------------------|--------------------------|---------|---------|---------------|---------------|--------|-----------|----|
| | | | | | | | | | GRO/TPHg | Benzene | Toluene | Ethyl-Benzene | Total Xylenes | MtBE | | |
| VW-3 Cont. | | | | | | | | | | | | | | | | |
| 8/14/2003 | -- | i | -- | 5.5 | 14.5 | 8.81 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 11/13/2003 | -- | | -- | 5.5 | 14.5 | 8.75 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 02/13/2004 | -- | | 252.26 | 5.5 | 14.5 | 8.48 | -- | 243.78 | -- | -- | -- | -- | -- | -- | -- | -- |
| 05/05/2004 | -- | | 252.26 | 5.5 | 14.5 | 8.85 | -- | 243.41 | -- | -- | -- | -- | -- | -- | -- | -- |
| 08/30/2004 | -- | | 252.26 | 5.5 | 14.5 | 9.07 | -- | 243.19 | -- | -- | -- | -- | -- | -- | -- | -- |
| 11/08/2004 | -- | | 252.26 | 5.5 | 14.5 | 8.32 | -- | 243.94 | -- | -- | -- | -- | -- | -- | -- | -- |
| 02/07/2005 | -- | | 252.26 | 5.5 | 14.5 | 8.28 | -- | 243.98 | -- | -- | -- | -- | -- | -- | -- | -- |
| 05/09/2005 | -- | | 252.26 | 5.5 | 14.5 | 8.44 | -- | 243.82 | -- | -- | -- | -- | -- | -- | -- | -- |
| 08/11/2005 | -- | | 252.26 | 5.5 | 14.5 | 8.96 | -- | 243.30 | -- | -- | -- | -- | -- | -- | -- | -- |
| 12/02/2005 | -- | | 252.26 | 5.5 | 14.5 | 8.26 | -- | 244.00 | -- | -- | -- | -- | -- | -- | -- | -- |
| 02/15/2006 | -- | | 252.26 | 5.5 | 14.5 | 7.61 | -- | 244.65 | -- | -- | -- | -- | -- | -- | -- | -- |
| 5/19/2006 | -- | | 252.26 | 5.5 | 14.5 | 8.83 | -- | 243.43 | -- | -- | -- | -- | -- | -- | -- | -- |
| 8/25/2006 | -- | | 252.26 | 5.5 | 14.5 | 8.95 | -- | 243.31 | -- | -- | -- | -- | -- | -- | -- | -- |
| 11/2/2006 | -- | | 252.26 | 5.5 | 14.5 | 9.08 | -- | 243.18 | -- | -- | -- | -- | -- | -- | -- | -- |
| 2/6/2007 | -- | | 252.26 | 5.5 | 14.5 | 8.61 | -- | 243.65 | -- | -- | -- | -- | -- | -- | -- | -- |
| 5/9/2007 | -- | | 252.26 | 5.5 | 14.5 | 8.79 | -- | 243.47 | -- | -- | -- | -- | -- | -- | -- | -- |
| 8/8/2007 | -- | | 252.26 | 5.5 | 14.5 | 9.10 | -- | 243.16 | -- | -- | -- | -- | -- | -- | -- | -- |
| 11/14/2007 | -- | | 252.26 | 5.5 | 14.5 | 8.52 | -- | 243.74 | -- | -- | -- | -- | -- | -- | -- | -- |
| 2/28/2008 | -- | | 252.26 | 5.5 | 14.5 | 8.27 | -- | 243.99 | -- | -- | -- | -- | -- | -- | -- | -- |
| 5/23/2008 | -- | | 252.26 | 5.5 | 14.5 | 8.95 | -- | 243.31 | -- | -- | -- | -- | -- | -- | -- | -- |
| 8/21/2008 | -- | | 252.26 | 5.5 | 14.5 | 9.06 | -- | 243.20 | -- | -- | -- | -- | -- | -- | -- | -- |
| 11/13/2008 | -- | | 252.26 | 5.5 | 14.5 | 8.80 | -- | 243.46 | -- | -- | -- | -- | -- | -- | -- | -- |
| 2/23/2009 | -- | | 252.26 | 5.5 | 14.5 | 6.60 | -- | 245.66 | -- | -- | -- | -- | -- | -- | -- | -- |
| 5/14/2009 | -- | | 252.26 | 5.5 | 14.5 | 8.70 | -- | 243.56 | -- | -- | -- | -- | -- | -- | -- | -- |
| VW-4 | | | | | | | | | | | | | | | | |
| 5/10/1996 | -- | | -- | 5.5 | 14.5 | 8.58 | -- | -- | 13,000 | 2,500 | 41 | 420 | 660 | 43,000 | -- | -- |
| 8/9/1996 | -- | | -- | 5.5 | 14.5 | 11.70 | -- | -- | <50 | <0.5 | <0.5 | <0.5 | <0.5 | 6,200 | -- | -- |
| 11/8/1996 | -- | | -- | 5.5 | 14.5 | 9.38 | -- | -- | 7,800 | 510 | 7 | 180 | 370 | 21,000 | -- | -- |
| 3/21/1997 | -- | | -- | 5.5 | 14.5 | 9.11 | -- | -- | 10,000 | 290 | 10 | 270 | 230 | 8,900 | -- | -- |
| 5/27/1997 | -- | | -- | 5.5 | 14.5 | 9.34 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

Table 1. Summary of Ground-Water Monitoring Data: Relative Water Elevations and Laboratory Analyses

Station #6002, 6235 Seminary Ave., Oakland, CA

| Well and Sample Date | P/NP | Comments | TOC (feet) | Top of Screen (ft bgs) | Bottom of Screen (ft bgs) | DTW (feet bgs) | Product Thickness (feet) | Water Level Elevation (feet) | Concentrations in (µg/L) | | | | | | DO (mg/L) | pH |
|----------------------|------|----------|------------|------------------------|---------------------------|----------------|--------------------------|------------------------------|--------------------------|---------|---------|---------------|---------------|-------------|-----------|------|
| | | | | | | | | | GRO/TPHg | Benzene | Toluene | Ethyl-Benzene | Total Xylenes | MtBE | | |
| VW-4 Cont. | | | | | | | | | | | | | | | | |
| 8/5/1997 | -- | | -- | 5.5 | 14.5 | 9.47 | -- | -- | <10,000 | 180 | <100 | <100 | 110 | 12,000 | -- | -- |
| 10/29/1997 | -- | | -- | 5.5 | 14.5 | 9.35 | -- | -- | 9,800 | 200 | 69 | 260 | 360 | 4,900 | -- | -- |
| 2/25/1998 | -- | | -- | 5.5 | 14.5 | 7.08 | -- | -- | <50 | 2.5 | <0.5 | <0.5 | 0.7 | <3 | -- | -- |
| 5/12/1998 | -- | | -- | 5.5 | 14.5 | 9.17 | -- | -- | 3,200 | <20 | 22 | 29 | 52 | 2,100 | -- | -- |
| 7/28/1998 | -- | | -- | 5.5 | 14.5 | 9.55 | -- | -- | <10,000 | <100 | <100 | <100 | <100 | 5,100 | -- | -- |
| 10/27/1998 | -- | | -- | 5.5 | 14.5 | 9.92 | -- | -- | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <3 | -- | -- |
| 2/8/1999 | -- | c | -- | 5.5 | 14.5 | 7.50 | -- | -- | <2,500 | <25 | <25 | 28 | <25 | 2,400/3,100 | -- | -- |
| 6/1/1999 | NP | | -- | 5.5 | 14.5 | 9.87 | -- | -- | 2,100 | 2.5 | 1.1 | 2.5 | 15 | 3,300 | 2 | 6.69 |
| 8/25/1999 | NP | | -- | 5.5 | 14.5 | 9.78 | -- | -- | 1,300 | 4.4 | 4.9 | 1.7 | 2.9 | 4,600 | 0.36 | 7.94 |
| 10/29/1999 | NP | | -- | 5.5 | 14.5 | 9.93 | -- | -- | 1,400 | <0.5 | 1.8 | 1.6 | 3 | 4,200 | 1.18 | 6.64 |
| 2/16/2000 | NP | | -- | 5.5 | 14.5 | 7.45 | -- | -- | 1,800 | <0.5 | 2.9 | 15 | 10 | 3,400 | 1.01 | -- |
| 6/23/2000 | NP | | -- | 5.5 | 14.5 | 9.74 | -- | -- | 1,360 | <2.00 | 2.26 | <2.00 | 2.25 | 4,900 | 1.5 | -- |
| 6/23/2000 | -- | f | -- | 5.5 | 14.5 | -- | -- | -- | 1,260 | <2.00 | <2.00 | <2.00 | 2.73 | 2,720 | -- | -- |
| 8/17/2000 | NP | | -- | 5.5 | 14.5 | 9.95 | -- | -- | 2,230 | <10.0 | <10.0 | <10.0 | <10.0 | 5,310 | 1.13 | -- |
| 11/10/2000 | NP | | -- | 5.5 | 14.5 | 9.22 | -- | -- | 1,390 | 18.5 | <5.00 | <5.00 | <5.00 | 8,840 | 1.25 | -- |
| 2/12/2001 | NP | | -- | 5.5 | 14.5 | 8.99 | -- | -- | 1,400 | 9.42 | <2.00 | 17.8 | 16.1 | 3,570 | 0.91 | -- |
| 4/13/2001 | NP | | -- | 5.5 | 14.5 | 7.80 | -- | -- | 556 | 3.82 | <1.25 | <1.25 | <1.25 | 2,450 | -- | -- |
| 7/18/2001 | -- | f | -- | 5.5 | 14.5 | -- | -- | -- | 2,000 | 8.7 | 2.2 | <2.0 | <2.0 | 3,400 | -- | -- |
| 7/18/2001 | NP | | -- | 5.5 | 14.5 | 7.73 | -- | -- | 2,100 | 9.2 | <2.0 | <2.0 | <2.0 | 3,700 | -- | -- |
| 10/1/2001 | NP | | -- | 5.5 | 14.5 | 6.69 | -- | -- | 2,000 | <10 | <10 | <10 | 13 | 5,900 | -- | -- |
| 10/1/2001 | -- | f | -- | 5.5 | 14.5 | -- | -- | -- | 1,800 | <10 | <10 | <10 | <10 | 5,800 | -- | -- |
| 1/14/2002 | P | | -- | 5.5 | 14.5 | 5.93 | -- | -- | 580 | <2.0 | <2.0 | <2.0 | <2.0 | 2,700 | -- | -- |
| 4/3/2002 | NP | | -- | 5.5 | 14.5 | 9.60 | -- | -- | 1,400 | 5.2 | 16 | <5.0 | 9.6 | 2,200 | -- | -- |
| 8/8/2002 | -- | i | -- | 5.5 | 14.5 | 10.01 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 11/27/2002 | P | | -- | 5.5 | 14.5 | 10.30 | -- | -- | <10,000 | <100 | <100 | <100 | <100 | 3,800 | 1.7 | 6.7 |
| 2/10/2003 | NP | | -- | 5.5 | 14.5 | 10.06 | -- | -- | <5,000 | <50 | <50 | <50 | <50 | 2,500 | 1 | 6.8 |
| 6/3/2003 | -- | | -- | 5.5 | 14.5 | 10.04 | -- | -- | <1,000 | <10 | <10 | <10 | <10 | 440 | 1.9 | 6.6 |
| 8/14/2003 | -- | | -- | 5.5 | 14.5 | 9.66 | -- | -- | <500 | <5.0 | <5.0 | <5.0 | <5.0 | 170 | 0.8 | 6.7 |
| 11/13/2003 | P | | -- | 5.5 | 14.5 | 10.01 | -- | -- | <500 | <5.0 | <5.0 | <5.0 | <5.0 | 130 | 1.7 | 6.4 |
| 02/13/2004 | P | | 252.69 | 5.5 | 14.5 | 9.34 | -- | 243.35 | 330 | <2.5 | <2.5 | <2.5 | 3.0 | 210 | 2.0 | 6.6 |
| 05/05/2004 | P | | 252.69 | 5.5 | 14.5 | 10.07 | -- | 242.62 | 130 | <1.0 | <1.0 | <1.0 | <1.0 | 66 | 1.2 | 6.8 |

Table 1. Summary of Ground-Water Monitoring Data: Relative Water Elevations and Laboratory Analyses

Station #6002, 6235 Seminary Ave., Oakland, CA

| Well and Sample Date | P/NP | Comments | TOC (feet) | Top of Screen (ft bgs) | Bottom of Screen (ft bgs) | DTW (feet bgs) | Product Thickness (feet) | Water Level Elevation (feet) | Concentrations in (µg/L) | | | | | | DO (mg/L) | pH |
|----------------------|-----------|----------|---------------|------------------------|---------------------------|----------------|--------------------------|------------------------------|--------------------------|-------------|-----------------|-----------------|-----------------|-----------|-------------|------------|
| | | | | | | | | | GRO/TPHg | Benzene | Toluene | Ethyl-Benzene | Total Xylenes | MtBE | | |
| VW-4 Cont. | | | | | | | | | | | | | | | | |
| 08/30/2004 | P | | 252.69 | 5.5 | 14.5 | 10.32 | -- | 242.37 | <500 | <5.0 | <5.0 | <5.0 | <5.0 | 220 | 1.1 | 6.6 |
| 11/08/2004 | P | | 252.69 | 5.5 | 14.5 | 9.35 | -- | 243.34 | 480 | <2.5 | <2.5 | <2.5 | <2.5 | 140 | 1.1 | 6.0 |
| 02/07/2005 | P | | 252.69 | 5.5 | 14.5 | 9.22 | -- | 243.47 | 180 | <0.50 | <0.50 | <0.50 | <0.50 | 47 | 1.83 | 6.5 |
| 05/09/2005 | P | | 252.69 | 5.5 | 14.5 | 9.78 | -- | 242.91 | 120 | 0.63 | <0.50 | <0.50 | <0.50 | 37 | -- | -- |
| 08/11/2005 | P | | 252.69 | 5.5 | 14.5 | 10.11 | -- | 242.58 | 74 | <0.50 | <0.50 | <0.50 | <0.50 | 15 | 0.7 | 6.7 |
| 12/02/2005 | P | | 252.69 | 5.5 | 14.5 | 9.59 | -- | 243.10 | 160 | <1.0 | <1.0 | <1.0 | <1.0 | 28 | 0.75 | 6.9 |
| 02/15/2006 | P | | 252.69 | 5.5 | 14.5 | 8.56 | -- | 244.13 | 64 | <0.50 | <0.50 | <0.50 | <0.50 | 11 | 0.9 | 6.9 |
| 5/19/2006 | P | | 252.69 | 5.5 | 14.5 | 9.95 | -- | 242.74 | 150 | <0.50 | <0.50 | <0.50 | 1.2 | 16 | 0.76 | 6.7 |
| 8/25/2006 | P | | 252.69 | 5.5 | 14.5 | 10.03 | -- | 242.66 | 140 | <0.50 | <0.50 | <0.50 | <0.50 | 17 | 1.14 | 6.7 |
| 11/2/2006 | P | | 252.69 | 5.5 | 14.5 | 10.13 | -- | 242.56 | 120 | <0.50 | <0.50 | <0.50 | <0.50 | 20 | 1.76 | 6.49 |
| 2/6/2007 | NP | | 252.69 | 5.5 | 14.5 | 9.57 | -- | 243.12 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | 1.6 | 0.98 | 6.89 |
| 5/9/2007 | NP | | 252.69 | 5.5 | 14.5 | 9.75 | -- | 242.94 | 110 | <0.50 | <0.50 | <0.50 | <0.50 | 21 | 0.76 | 6.94 |
| 8/8/2007 | NP | | 252.69 | 5.5 | 14.5 | 10.13 | -- | 242.56 | 140 | <0.50 | <0.50 | <0.50 | <0.50 | 5.4 | 0.88 | 6.81 |
| 11/14/2007 | NP | | 252.69 | 5.5 | 14.5 | 9.81 | -- | 242.88 | 150 | <0.50 | <0.50 | <0.50 | <0.50 | 6.4 | 1.17 | 6.67 |
| 2/28/2008 | NP | | 252.69 | 5.5 | 14.5 | 9.00 | -- | 243.69 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | 8.4 | 0.92 | 6.55 |
| 5/23/2008 | NP | | 252.69 | 5.5 | 14.5 | 9.73 | -- | 242.96 | 68 | <1.0 | <1.0 | <1.0 | <1.0 | 6.4 | 1.40 | 6.92 |
| 8/21/2008 | NP | | 252.69 | 5.5 | 14.5 | 10.04 | -- | 242.65 | 74 | <2.5 | <2.5 | <2.5 | <2.5 | 3.2 | 1.29 | 6.89 |
| 11/13/2008 | NP | | 252.69 | 5.5 | 14.5 | 9.95 | -- | 242.74 | 89 | <2.0 | <2.0 | <2.0 | <2.0 | 2.7 | 1.23 | 6.93 |
| 2/23/2009 | NP | 1 | 252.69 | 5.5 | 14.5 | 7.35 | -- | 245.34 | 290 | 0.97 | <0.50 | <0.50 | <0.50 | 27 | 1.27 | 5.66 |
| 5/14/2009 | NP | | 252.69 | 5.5 | 14.5 | 9.60 | -- | 243.09 | <50 | 0.54 | <0.50 | <0.50 | <0.50 | 10 | 1.08 | 7.3 |

SYMBOLS AND ABBREVIATIONS:

-- = Not analyzed/applicable/measured/available
< = Not detected at or above laboratory reporting limit
BTEX = Benzene, toluene, ethylbenzene and xylenes
DO = Dissolved oxygen
DTW = Depth to water in ft bgs
ft bgs = feet below ground surface
GRO = Gasoline range organics
GWE = Groundwater elevation measured in ft
mg/L = Milligrams per liter
MTBE = Methyl tert butyl ether
NP = Well not purged prior to sampling
P = Well purged prior to sampling
TOC = Top of casing measured in ft
TPH-g = Total petroleum hydrocarbons as gasoline
µg/L = Micrograms per liter

FOOTNOTES:

a = SPH detected and GWE corrected: Corrected elevation (Z') = Z + (h * 0.73) where: Z: measured elevation, h: floating product thickness, 0.73: density ratio of oil to water.
b = MTBE analyzed by EPA method 8240.
c = MTBE, sample also analyzed for fuel oxygenates.
d = Well was decommissioned on 2/12/1996.
e = Well inaccessible.
f = Duplicate
g = Well was dry.
h = Insufficient water to sample.
i = Well is not part of the sampling program and therefore was not sampled.
j = Sheen in well.
k = Could not locate well.
l = Quantitation of unknown hydrocarbon(s) in sample based on gasoline.

NOTES:

Wells surveyed to NAVD'88 datum on 1/27/2004.

Beginning on the first quarter 2003 sampling event (2/10/2003), TPH-g, BTEX and MTBE analyzed by EPA method 8260. Prior to 2/10/2003, BTEX by EPA method 8021B from 10/29/99 to 2/10/03, and 8020 prior to 10/29/99.

Beginning in the fourth quarter 2003, the laboratory modified the reported analyte list. TPH-g was changed to GRO. The resulting data may be impacted by the potential of non-TPH-g analytes within the requested fuel range resulting in a higher concentration being reported.

Beginning in the second quarter 2004, the carbon range for GRO was changed from C6-C10 to C4-C12.

Values for DO and pH were obtained through field measurements.

GRO analysis was completed by EPA method 8260B (C4-C12) for samples collected from the time period April 2006 through February 4, 2008. The analysis for GRO was changed to EPA method 8015B (C6-C12) for samples collected from the time period February 5, 2008 through the present.

Note: The data within this table collected prior to April 2006 was provided to Broadbent & Associates, Inc. by Atlantic Richfield Company and their previous consultants. Broadbent & Associates, Inc. has not verified the accuracy of this information.

**Table 2. Summary of Fuel Additives Analytical Data
Station #6002, 6235 Seminary Ave., Oakland, CA**

| Well and Sample Date | Concentrations in (µg/L) | | | | | | | | Comments |
|----------------------|--------------------------|------|-------|-------|-------|-------|---------|-------|----------|
| | Ethanol | TBA | MTBE | DIPE | ETBE | TAME | 1,2-DCA | EDB | |
| MW-3 | | | | | | | | | |
| 2/10/2003 | <40 | <20 | <0.50 | <0.50 | <0.50 | <0.50 | -- | -- | |
| 08/30/2004 | <100 | <20 | 0.72 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 08/11/2005 | <100 | <20 | 0.73 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 8/25/2006 | <300 | <20 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 8/8/2007 | <300 | <20 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 8/21/2008 | <300 | <10 | 0.81 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| MW-4 | | | | | | | | | |
| 2/10/2003 | <40 | <20 | <0.50 | <0.50 | <0.50 | <0.50 | -- | -- | |
| 6/3/2003 | <100 | <20 | <0.50 | <0.50 | <0.50 | <0.50 | -- | -- | |
| 8/14/2003 | <100 | <20 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 08/30/2004 | <100 | <20 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 08/11/2005 | <100 | <20 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 8/25/2006 | <300 | <20 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 8/8/2007 | <300 | <20 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 8/21/2008 | <300 | <10 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| MW-5 | | | | | | | | | |
| 2/10/2003 | <200 | <100 | 100 | <0.50 | <0.50 | <0.50 | -- | -- | |
| 6/3/2003 | <1,000 | <200 | 160 | <5.0 | <5.0 | <5.0 | -- | -- | |
| 11/13/2003 | <1,000 | <200 | 90 | <5.0 | <5.0 | <5.0 | -- | -- | |
| 02/13/2004 | <200 | 41 | 90 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | |
| 05/05/2004 | <500 | <100 | 130 | <2.5 | <2.5 | <2.5 | <2.5 | <2.5 | |
| 08/30/2004 | <500 | 100 | 85 | <2.5 | <2.5 | <2.5 | <2.5 | <2.5 | |
| 11/08/2004 | <200 | 43 | 69 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | |
| 02/07/2005 | <200 | <40 | 15 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | |
| 05/09/2005 | <200 | <40 | 19 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | a |
| 08/11/2005 | <500 | <100 | 51 | <2.5 | <2.5 | <2.5 | <2.5 | <2.5 | |
| 12/02/2005 | <500 | <100 | 13 | <2.5 | <2.5 | <2.5 | <2.5 | <2.5 | |
| 02/15/2006 | <300 | <20 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 5/19/2006 | <300 | 25 | 15 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | a, c |
| 8/25/2006 | <1,500 | <100 | 17 | <2.5 | <2.5 | <2.5 | <2.5 | <2.5 | |

**Table 2. Summary of Fuel Additives Analytical Data
Station #6002, 6235 Seminary Ave., Oakland, CA**

| Well and Sample Date | Concentrations in (µg/L) | | | | | | | | Comments |
|----------------------|--------------------------|-----------|------------|-----------------|-----------------|-----------------|-----------------|-----------------|-------------------|
| | Ethanol | TBA | MTBE | DIPE | ETBE | TAME | 1,2-DCA | EDB | |
| MW-5 Cont. | | | | | | | | | |
| 11/2/2006 | <600 | 70 | 18 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | a |
| 2/6/2007 | <600 | 45 | 13 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | |
| 5/9/2007 | <600 | 69 | 31 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | |
| 8/8/2007 | <600 | <40 | 11 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | |
| 11/14/2007 | <600 | 46 | 11 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | |
| 2/28/2008 | <1,500 | <50 | <2.5 | <2.5 | <2.5 | <2.5 | <2.5 | <2.5 | |
| 5/23/2008 | <300 | 52 | 17 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 8/21/2008 | <300 | 40 | 8.7 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 11/13/2008 | <300 | 27 | 5.6 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 2/23/2009 | <300 | 14 | 3.2 | <0.50 | <0.50 | <0.50 | <0.50 | 0.61 | |
| 5/14/2009 | <300 | 31 | 5.4 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| MW-6 | | | | | | | | | |
| 2/10/2003 | <40 | <20 | <0.50 | <0.50 | <0.50 | <0.50 | -- | -- | |
| 08/30/2004 | <100 | <20 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 08/11/2005 | <100 | <20 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 8/25/2006 | <300 | <20 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 8/8/2007 | <300 | <20 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 8/21/2008 | <300 | <10 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| MW-7 | | | | | | | | | |
| 2/10/2003 | <40 | <20 | <0.50 | <0.50 | <0.50 | <0.50 | -- | -- | |
| 6/3/2003 | <100 | <20 | <0.50 | <0.50 | <0.50 | <0.50 | -- | -- | |
| 8/14/2003 | <100 | <20 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 08/11/2005 | <100 | <20 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 8/25/2006 | <300 | <20 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| MW-8 | | | | | | | | | |
| 2/10/2003 | <40 | <20 | <0.50 | <0.50 | <0.50 | <0.50 | -- | -- | |
| 6/3/2003 | <100 | <20 | <0.50 | <0.50 | <0.50 | <0.50 | -- | -- | |
| 8/14/2003 | <100 | <20 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 08/30/2004 | <100 | <20 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 02/15/2006 | -- | -- | -- | -- | -- | -- | -- | -- | Well inaccessible |

**Table 2. Summary of Fuel Additives Analytical Data
Station #6002, 6235 Seminary Ave., Oakland, CA**

| Well and Sample Date | Concentrations in (µg/L) | | | | | | | | Comments |
|----------------------|--------------------------|---------------|------------|-----------------|-----------------|-----------------|-----------------|-----------------|----------|
| | Ethanol | TBA | MTBE | DIPE | ETBE | TAME | 1,2-DCA | EDB | |
| MW-8 Cont. | | | | | | | | | |
| 8/25/2006 | <300 | <20 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| VW-1 | | | | | | | | | |
| 2/10/2003 | <40 | <20 | 11 | <0.50 | <0.50 | <0.50 | -- | -- | |
| 6/3/2003 | <100 | <20 | 13 | <0.50 | <0.50 | <0.50 | -- | -- | |
| 8/14/2003 | <100 | <20 | 18 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 11/13/2003 | <100 | <20 | 13 | <0.50 | <0.50 | <0.50 | -- | -- | |
| 02/13/2004 | <100 | <20 | 8.0 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 05/05/2004 | <100 | <20 | 11 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 08/30/2004 | <100 | <20 | 24 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 11/08/2004 | <100 | <20 | 27 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 02/07/2005 | <100 | <20 | 5.1 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 05/09/2005 | <100 | <20 | 6.9 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 08/11/2005 | <100 | <20 | 10 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 12/02/2005 | <100 | <20 | 9.0 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | a |
| 02/15/2006 | <300 | <20 | 2.8 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 5/19/2006 | <300 | <20 | 3.7 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | a, c |
| 8/25/2006 | <300 | <20 | 8.3 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 11/2/2006 | <300 | <20 | 11 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | a |
| 2/6/2007 | <300 | <20 | 2.3 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 5/9/2007 | <300 | <20 | 3.2 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 8/8/2007 | <300 | <20 | 1.9 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 11/14/2007 | <300 | <20 | 3.7 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 2/28/2008 | <300 | <10 | 0.86 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 5/23/2008 | <300 | <10 | 0.91 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 8/21/2008 | <300 | <10 | 1.4 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 11/13/2008 | <300 | <10 | 1.5 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 2/23/2009 | <300 | <10 | 0.84 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 5/14/2009 | <300 | <10 | 1.5 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| VW-3 | | | | | | | | | |
| VW-4 | | | | | | | | | |

**Table 2. Summary of Fuel Additives Analytical Data
Station #6002, 6235 Seminary Ave., Oakland, CA**

| Well and Sample Date | Concentrations in (µg/L) | | | | | | | | Comments |
|----------------------|--------------------------|------------|-----------|-----------------|-----------------|-----------------|-----------------|-----------------|----------|
| | Ethanol | TBA | MTBE | DIPE | ETBE | TAME | 1,2-DCA | EDB | |
| VW-4 Cont. | | | | | | | | | |
| 2/10/2003 | <4,000 | <2,000 | 2500 | <0.50 | <0.50 | <0.50 | -- | -- | |
| 6/3/2003 | <2,000 | 4,100 | 440 | <10 | <10 | <10 | -- | -- | |
| 8/14/2003 | <1,000 | 3,200 | 170 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | |
| 11/13/2003 | <1,000 | 3,300 | 130 | <5.0 | <5.0 | <5.0 | -- | -- | |
| 02/13/2004 | <500 | 1,300 | 210 | <2.5 | <2.5 | <2.5 | <2.5 | <2.5 | |
| 05/05/2004 | <200 | 1,500 | 66 | <1.0 | 1.3 | <1.0 | <1.0 | <1.0 | |
| 08/30/2004 | <1,000 | 5,400 | 220 | <5.0 | 5.4 | <5.0 | <5.0 | <5.0 | |
| 11/08/2004 | <500 | 2,700 | 140 | <2.5 | <2.5 | <2.5 | <2.5 | <2.5 | |
| 02/07/2005 | <100 | 1,000 | 47 | <0.50 | 0.89 | <0.50 | <0.50 | <0.50 | |
| 05/09/2005 | <100 | 1,200 | 37 | <0.50 | 0.92 | <0.50 | <0.50 | <0.50 | |
| 08/11/2005 | <100 | 2,000 | 15 | <0.50 | 1.8 | <0.50 | <0.50 | <0.50 | b |
| 12/02/2005 | <200 | 2,400 | 28 | <1.0 | 2.2 | <1.0 | <1.0 | <1.0 | |
| 02/15/2006 | <300 | 230 | 11 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 5/19/2006 | <300 | 580 | 16 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | a |
| 8/25/2006 | <300 | 1,900 | 17 | <0.50 | 1.9 | <0.50 | <0.50 | <0.50 | |
| 11/2/2006 | <300 | 2,400 | 20 | <0.50 | 2.3 | <0.50 | <0.50 | <0.50 | a |
| 2/6/2007 | <300 | <20 | 1.6 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 5/9/2007 | <300 | 410 | 21 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 8/8/2007 | <300 | 1,300 | 5.4 | <0.50 | 1.2 | <0.50 | <0.50 | <0.50 | |
| 11/14/2007 | <300 | 1,700 | 6.4 | <0.50 | 1.7 | <0.50 | <0.50 | <0.50 | |
| 2/28/2008 | <300 | 59 | 8.4 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 5/23/2008 | <600 | 280 | 6.4 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | |
| 8/21/2008 | <1,500 | 720 | 3.2 | <2.5 | <2.5 | <2.5 | <2.5 | <2.5 | |
| 11/13/2008 | <1,200 | 940 | 2.7 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | |
| 2/23/2009 | <300 | 99 | 27 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 5/14/2009 | <300 | 100 | 10 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |

SYMBOLS AND ABBREVIATIONS:

-- = Not analyzed/applicable/measured/available

< = Not detected at or above the laboratory reporting limit

1,2-DCA = 1,2-Dichloroethane

DIPE = Di-isopropyl ether

EDB = 1,2-Dibromoethane

ETBE = Ethyl tert-butyl ether

MTBE = Methyl tert-butyl ether

TAME = tert-Amyl methyl ether

TBA = tert-Butyl alcohol

µg/L = Micrograms per Liter

FOOTNOTES:

a = Calibration verification for ethanol was within the method limits but outside the contract limits.

b = The initial analysis for TBA was within holding time but required dilution.

NOTES:

All volatile organic compounds analyzed using EPA Method 8260B.

The data within this table collected prior to August 2002 was provided to URS by RM and their previous consultants. URS has not verified the accuracy of this information.

Note: The data within this table collected prior to April 2006 was provided to Broadbent & Associates, Inc. by Atlantic Richfield Company and their previous consultants. Broadbent & Associates, Inc. has not verified the accuracy of this information.

**Table 3. Historical Ground-Water Flow Direction and Gradient
Station #6002, 6235 Seminary Ave., Oakland, CA**

| Date Sampled | Approximate Flow Direction | Approximate Hydraulic Gradient |
|---------------------|-----------------------------------|---------------------------------------|
| 3/15/1995 | West-Southwest | 0.08 |
| 5/30/1995 | West-Southwest | 0.08 |
| 9/1/1995 | West-Southwest | 0.09 |
| 11/13/1995 | West-Southwest | 0.08 |
| 2/23/1996 | West-Southwest | 0.08 |
| 5/10/1996 | West-Southwest | 0.08 |
| 8/9/1996 | Southwest | 0.08 |
| 11/8/1996 | Southwest | 0.06 |
| 3/21/1997 | West-Southwest | 0.05 |
| 5/27/1997 | West-Southwest | 0.07 |
| 8/5/1997 | West | 0.08 |
| 10/29/1997 | West-Southwest | 0.04 |
| 2/25/1998 | West-Southwest | 0.05 |
| 5/12/1998 | West | 0.07 |
| 7/28/1998 | West | 0.07 |
| 10/27/1998 | West-Southwest | 0.06 |
| 2/8/1999 | West-Southwest | 0.07 |
| 6/1/1999 | West-Northwest | 0.07 |
| 8/25/1999 | West-Southwest | 0.07 |
| 10/29/1999 | West | 0.07 |
| 2/16/2000 | Southwest | 0.05 |
| 6/23/2000 | West | 0.04 |
| 8/17/2000 | West | 0.09 |
| 11/10/2000 | West-Southwest | 0.08 |
| 2/12/2001 | West-Southwest | 0.07 |
| 4/13/2001 | West | 0.09 |
| 7/18/2001 | West | 0.08 |
| 10/1/2001 | West-Southwest | 0.08 |
| 1/14/2002 | West-Southwest | 0.07 |
| 4/3/2002 | West-Southwest | 0.08 |
| 8/8/2002 | West-Southwest | 0.09 |
| 11/27/2002 | West-Southwest | 0.08 |
| 2/10/2003 | Southwest | 0.06 |
| 6/3/2003 | West | 0.07 |
| 8/14/2003 | West-Southwest | 0.07 |
| 11/13/2003 | West-Southwest | 0.07 |
| 2/13/2004 | Southwest | 0.05 |
| 5/4/2004 | Southwest | 0.06 |
| 8/30/2004 | Southwest | 0.07 |
| 11/8/2004 | Southwest | 0.10 |
| 2/7/2005 | Southwest | 0.1 |
| 5/9/2005 | Southwest | 0.07 |

Table 3. Historical Ground-Water Flow Direction and Gradient
Station #6002, 6235 Seminary Ave., Oakland, CA

| Date Sampled | Approximate Flow Direction | Approximate Hydraulic Gradient |
|------------------|----------------------------|--------------------------------|
| 8/11/2005 | West | 0.07 |
| 12/2/2005 | Southwest | 0.10 |
| 2/15/2006 | Southwest | 0.07 |
| 4/28/2006 | West | 0.07 |
| 8/25/2006 | West | 0.07 |
| 11/2/2006 | West | 0.09 |
| 2/6/2007 | West | 0.05 |
| 5/9/2007 | West | 0.05 |
| 8/8/2007 | West | 0.05 |
| 11/14/2007 | West | 0.06 |
| 2/28/2008 | West-Southwest | 0.06 |
| 5/23/2008 | West-Southwest | 0.06 |
| 8/21/2008 | West-Southwest | 0.07 |
| 11/13/2008 | West | 0.08 |
| 2/23/2009 | West | 0.05 |
| 5/14/2009 | West-Southwest | 0.06 |

Note: The data within this table collected prior to April 2006 was provided to Broadbent & Associates, Inc. by Atlantic Richfield Company and their previous consultants. Broadbent & Associates, Inc. has not verified the accuracy of this information.

Rose Diagram of Historic Ground-Water Flow Directions

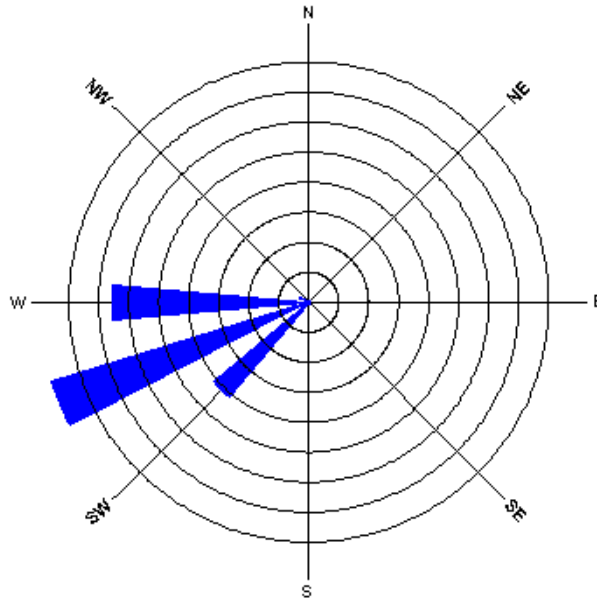


Figure 1
GRO Concentrations vs. Time
Former ARCO Station #6002
6235 Seminary Avenue, Oakland, California

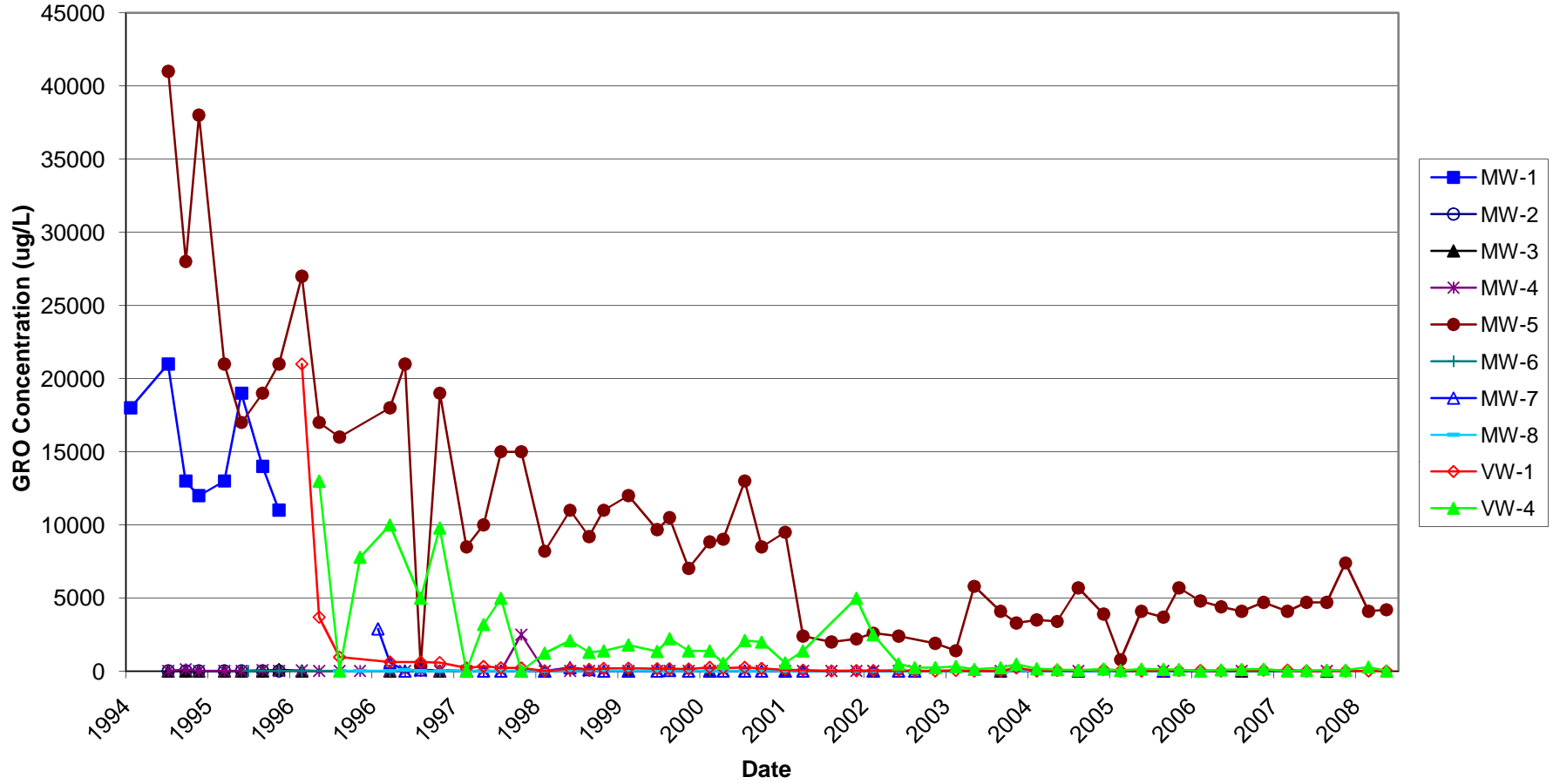


Figure 2
Benzene Concentrations vs. Time
Former ARCO Station #6002
6235 Seminary Avenue, Oakland, California

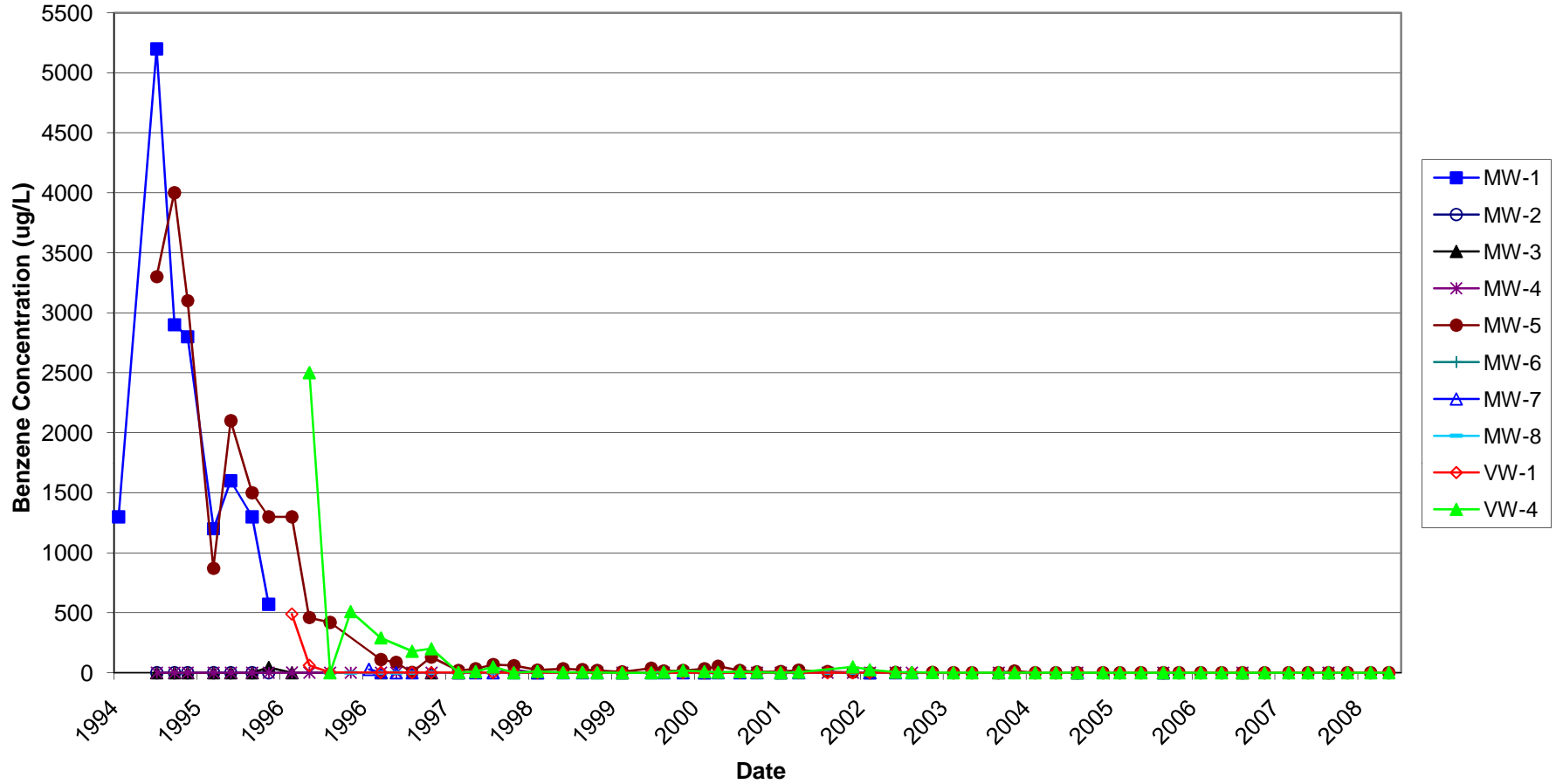


Figure 3
MTBE Concentrations vs. Time
Former ARCO Station #6002
6235 Seminary Avenue, Oakland, California

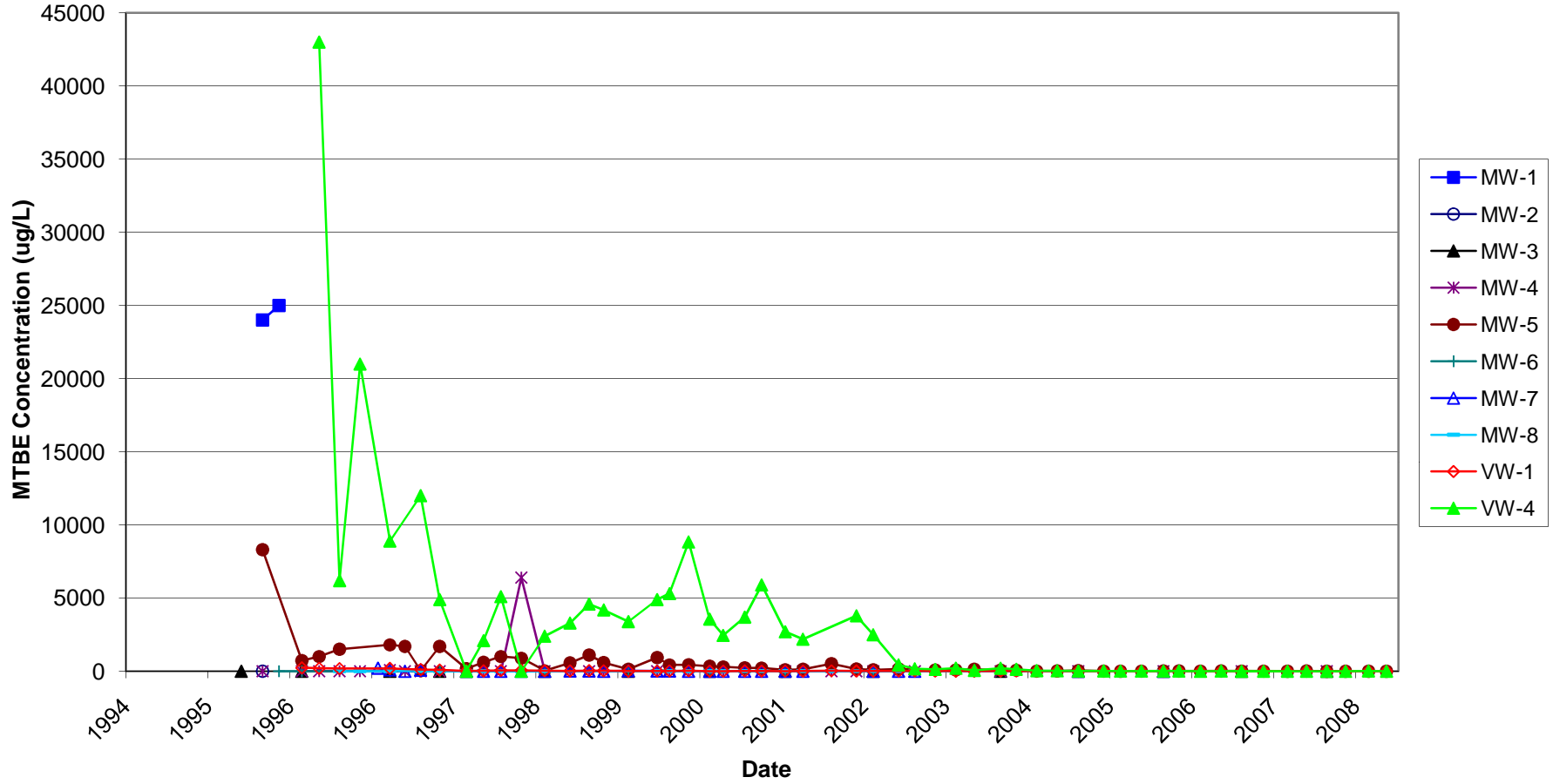
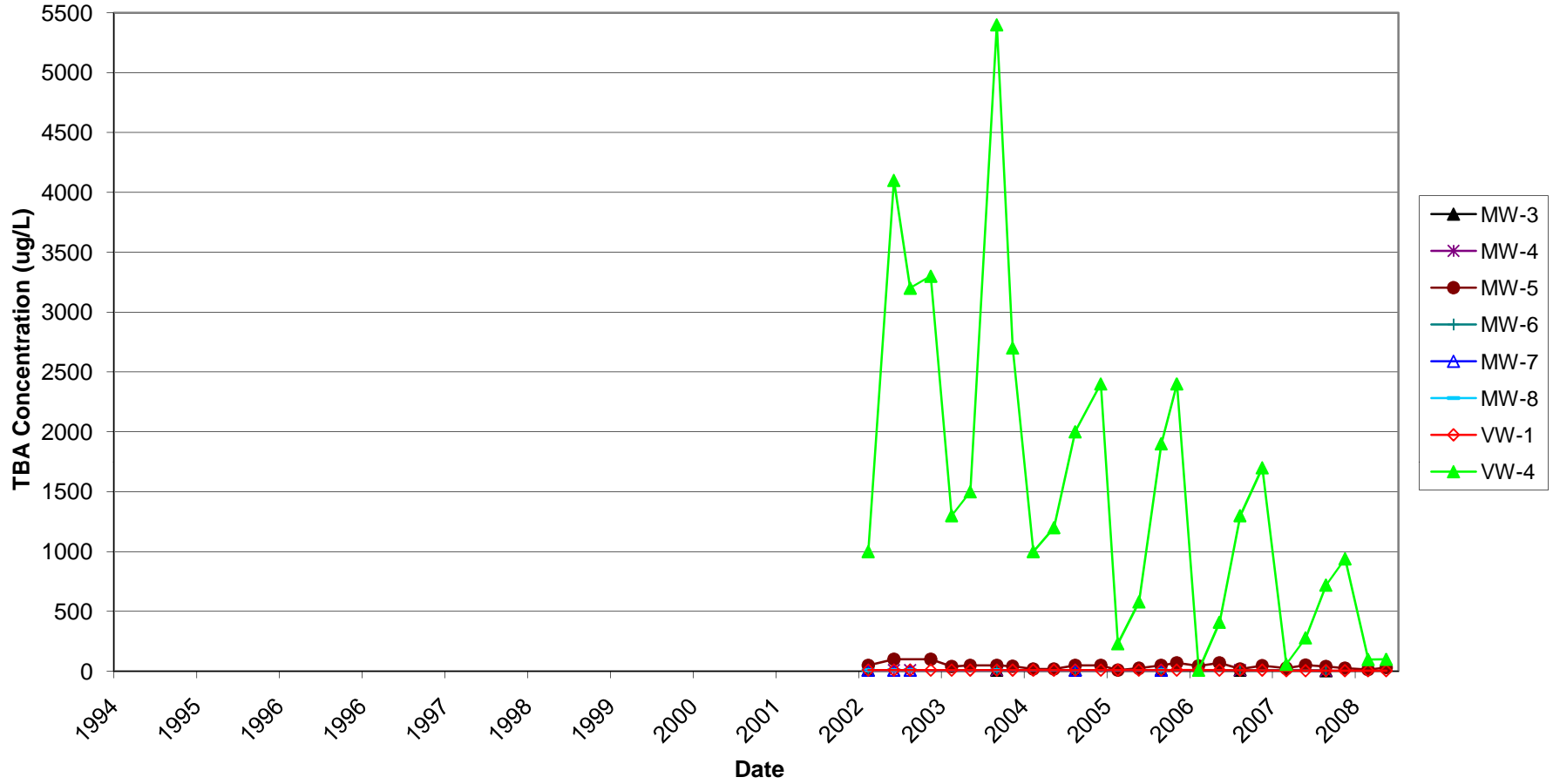


Figure 4
TBA Concentrations vs. Time
Former ARCO Station #6002
6235 Seminary Avenue, Oakland, California



APPENDIX A

Recent Regulatory Correspondence

ALAMEDA COUNTY
HEALTH CARE SERVICES

AGENCY

DAVID J. KEARS, Agency Director



ENVIRONMENTAL HEALTH SERVICES
ENVIRONMENTAL PROTECTION
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577
(510) 567-6700
FAX (510) 337-9335

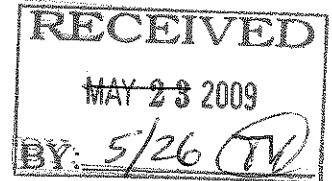
May 22, 2009

Paul Supple
Atlantic Richfield Company
(A BP Affiliated Company)
P.O. Box 1257
San Ramon, CA 94583

Jasbir Tatla
Seminary Gas & Food
6235 Seminary Avenue
Oakland, CA 94605-1847

MVA Resources, Inc.
2239 Moorpark Avenue
San Jose, CA 95128-2661

Manal A. & Mohamed A. Gazali
P.O. Box 18592
Oakland, CA 94619-2906



Subject: Fuel Leak Case No. RO000163 and GeoTracker Global ID T0600100105, ARCO
#6002, 6235 Seminary Avenue, Oakland, CA 94605

Dear Responsible Parties:

Alameda County Environmental Health (ACEH) staff has reviewed the case file for the above-referenced site including the recently submitted document entitled, "First Quarter 2009 Ground-Water Monitoring Report," dated April 30, 2009, which was prepared by Broadbent & Associates, Inc. for the subject site. Groundwater sample analytical results detected a maximum TPH-g concentration of 4,100 µg/L in monitoring well MW-5, located on the southwest corner of the site in a cross-gradient to down-gradient direction from the dispenser islands.

Based on our site review, site characterization in the past consisted of borings and monitoring well installations, as well as vapor extraction well installations. However, it is not clear whether any active remediation besides over-excavation during UST and piping upgrades was conducted at the site, and groundwater contaminant plume definition appears uncertain.

ACEH requests that you address the following technical comments and send us the technical reports requested below.

TECHNICAL COMMENTS

1. **Soil and Groundwater Characterization** – Based on the groundwater flow direction calculated at the site, it appears that there are no monitoring points directly down-gradient of the dispenser islands. Monitoring well MW-4, located on the northwest corner of the site, has not detected hydrocarbon contaminant concentrations above the laboratory detection limit, while the highest concentrations of hydrocarbons have been detected in monitoring well MW-5, located on the southwest corner of the property, which is over ninety feet south of monitoring well MW-4. Therefore, directly down-gradient of the dispenser islands, there is an expanse of over ninety feet, which remains uncharacterized. Please note that directly west of the site are apartment complexes and single family homes. Therefore, ACEH requests that you collect data to evaluate this data gap. Please prepare a scope of work to address the

above-mentioned concerns and submit a work plan due by the date specified below. It is recommended that a series of borings located between MW-4 and MW-5 and along the western property boundary are proposed to address this data gap.

2. **Preferential Pathway Evaluation** - Depth to groundwater at the site has ranged between approximately 7 to 12 feet below the ground surface (bgs). Since groundwater is relatively shallow at the site and the fact that the neighboring properties on the west are approximately eight feet lower in surface elevation, a preferential pathway evaluation appears prudent. The purpose of the preferential pathway study is to locate potential migration pathways and conduits and determine the probability of the NAPL and/or plume encountering preferential pathways and conduits that could spread contamination. We request that you perform a preferential pathway study that details the potential migration pathways and potential conduits (wells, utilities, pipelines, etc.) for vertical and lateral migration that may be present in the vicinity of the site.

Discuss your analysis and interpretation of the results of the preferential pathway study (including the detailed well survey and utility survey requested below) and report your results in the work plan and site conceptual model requested below. The results of your study shall contain all information required by California Code of Regulations, Title 23, Division 3, Chapter 16, §2654(b).

a. Utility Survey

An evaluation of all utility lines and trenches (including sewers, storm drains, pipelines, trench backfill, etc.) within and near the site and plume area(s) is required as part of your study. Please include maps and cross-sections illustrating the location and depth of all utility lines and trenches within and near the site and plume areas(s) as part of your study.

b. Well Survey

The preferential pathway study shall include a well survey of all wells (monitoring and production wells: active, inactive, standby, decommissioned (sealed with concrete), abandoned (improperly decommissioned or lost); backyard irrigation, dewatering, drainage, and cathodic protection wells) within a ¼ mile radius of the subject site.

3. **Site Conceptual Model** – At this juncture, it may be advantageous to develop a site conceptual model (SCM), which synthesizes all the analytical data and evaluates all potential exposure pathways and potential receptors that may exist at the site, including identifying or developing contamination cleanup levels and cleanup goals, in accordance with the San Francisco Regional Water Quality Control Board Basin Plan and appropriate ESL guidance for all COCs and for the appropriate groundwater designation. Please note that soil cleanup levels should ultimately (within a reasonable timeframe) achieve water quality objectives (cleanup goals) for groundwater in accordance with San Francisco Regional Water Quality Control Board Basin Plan. Please propose appropriate cleanup levels and cleanup goals in accordance with 23 CCR Section 2725, 2726, and 2727 in the SCM. At a minimum, the SCM should include:

- (1) Include a detailed site history that summarizes all site investigations and site remediation activities initiated at the site and its effectiveness;
- (2) Local and regional plan view maps that illustrate the location of sources (former facilities, piping, tanks, etc.) extent of contamination, direction and rate of groundwater flow, potential preferential pathways, and locations of receptors;
- (3) Geologic cross section maps that illustrate subsurface features, man-made conduits, and lateral and vertical extent of contamination;
- (4) Plots of chemical concentrations versus time;
- (5) Plots of chemical concentrations versus distance from the source;
- (6) Summary tables of chemical concentrations in different media (i.e. soil, groundwater, and soil vapor);
- (7) Well logs, boring logs, and well survey maps; and
- (8) Discussion of likely contaminant fate and transport.

If data gaps (i.e. groundwater contaminant plume definition or contaminant migration along preferential pathways, etc.) are identified in the SCM, please include a proposed scope of work to address those data gaps in the work plan due by the date specified below. Please note that the work plan must address all technical comments presented in this correspondence and all data gaps identified in the SCM.

4. **Groundwater Contaminant Plume Monitoring** – Quarterly groundwater sampling has been conducted for the most part since 1995. At this time, a monitoring frequency reduction appears warranted. Therefore, please initiate semi-annual groundwater sampling during the 1st and 3rd quarters of the year. You may also submit a site-specific groundwater monitoring plan for review that proposes an alternate monitoring schedule. This may include a combination of quarterly, semi-annually, or annually sampled groundwater monitoring wells. Please include the proposal in the soil and groundwater investigation work plan due by the date specified below.

NOTIFICATION OF FIELDWORK ACTIVITIES

Please schedule and complete the fieldwork activities by the date specified below and provide ACEH with at least three (3) business days notification prior to conducting the fieldwork, including routine groundwater sampling.

TECHNICAL REPORT REQUEST

Please submit technical reports to ACEH (Attention: Paresh Khatri), according to the following schedule:

- **August 5, 2009** – Site Conceptual Model with Soil and Water Investigation Work Plan
- **Due within 30 Days of Sampling** – Semi-annual Monitoring Report (3rd Quarter 2009)

These reports are being requested pursuant to California Health and Safety Code Section 25296.10. 23 CCR Sections 2652 through 2654, and 2721 through 2728 outline the responsibilities of a responsible party in response to an unauthorized release from a petroleum UST system, and require your compliance with this request.

ELECTRONIC SUBMITTAL OF REPORTS

ACEH's Environmental Cleanup Oversight Programs (LOP and SLIC) require submission of reports in electronic form. The electronic copy replaces paper copies and is expected to be used for all public information requests, regulatory review, and compliance/enforcement activities. Instructions for submission of electronic documents to the Alameda County Environmental Cleanup Oversight Program FTP site are provided on the attached "Electronic Report Upload Instructions." Submission of reports to the Alameda County FTP site is an addition to existing requirements for electronic submittal of information to the State Water Resources Control Board (SWRCB) GeoTracker website. In September 2004, the SWRCB adopted regulations that require electronic submittal of information for all groundwater cleanup programs. For several years, responsible parties for cleanup of leaks from underground storage tanks (USTs) have been required to submit groundwater analytical data, surveyed locations of monitoring wells, and other data to the GeoTracker database over the Internet. Beginning July 1, 2005, these same reporting requirements were added to Spills, Leaks, Investigations, and Cleanup (SLIC) sites. Beginning July 1, 2005, electronic submittal of a complete copy of all reports for all sites is required in GeoTracker (in PDF format). Please visit the SWRCB website for more information on these requirements (http://www.swrcb.ca.gov/ust/electronic_submittal/report_rqmts.shtml).

PERJURY STATEMENT

All work plans, technical reports, or technical documents submitted to ACEH must be accompanied by a cover letter from the responsible party that states, at a minimum, the following: "I declare, under penalty of perjury, that the information and/or recommendations contained in the attached document or report is true and correct to the best of my knowledge." This letter must be signed by an officer or legally authorized representative of your company. Please include a cover letter satisfying these requirements with all future reports and technical documents submitted for this fuel leak case.

PROFESSIONAL CERTIFICATION & CONCLUSIONS/RECOMMENDATIONS

The California Business and Professions Code (Sections 6735, 6835, and 7835.1) requires that work plans and technical or implementation reports containing geologic or engineering evaluations and/or judgments be performed under the direction of an appropriately registered or certified professional. For your submittal to be considered a valid technical report, you are to present site specific data, data interpretations, and recommendations prepared by an appropriately licensed professional and include the professional registration stamp, signature,

and statement of professional certification. Please ensure all that all technical reports submitted for this fuel leak case meet this requirement.

UNDERGROUND STORAGE TANK CLEANUP FUND

Please note that delays in investigation, later reports, or enforcement actions may result in your becoming ineligible to receive grant money from the state's Underground Storage Tank Cleanup Fund (Senate Bill 2004) to reimburse you for the cost of cleanup.

AGENCY OVERSIGHT

If it appears as though significant delays are occurring or reports are not submitted as requested, we will consider referring your case to the Regional Board or other appropriate agency, including the County District Attorney, for possible enforcement actions. California Health and Safety Code, Section 25299.76 authorizes enforcement including administrative action or monetary penalties of up to \$10,000 per day for each day of violation.

If you have any questions, please call me at (510) 777-2478 or send me an electronic mail message at paresh.khatri@acgov.org.

Sincerely,



Paresh C. Khatri
Hazardous Materials Specialist



Donna L. Drogos, PE
Supervising Hazardous Materials Specialist

Enclosure: ACEH Electronic Report Upload (ftp) Instructions

cc: Tom Venus, Broadbent & Associates, Inc., 1324 Mangrove Avenue, Suite 212, Chico, CA 95926
Leroy Griffin, Oakland Fire Department, 250 Frank H. Ogawa Plaza, Ste. 3341, Oakland, CA
94612-2032
Donna Drogos, ACEH
Paresh Khatri, ACEH
GeoTracker
File

APPENDIX B

Historical Soil and Ground-Water Data

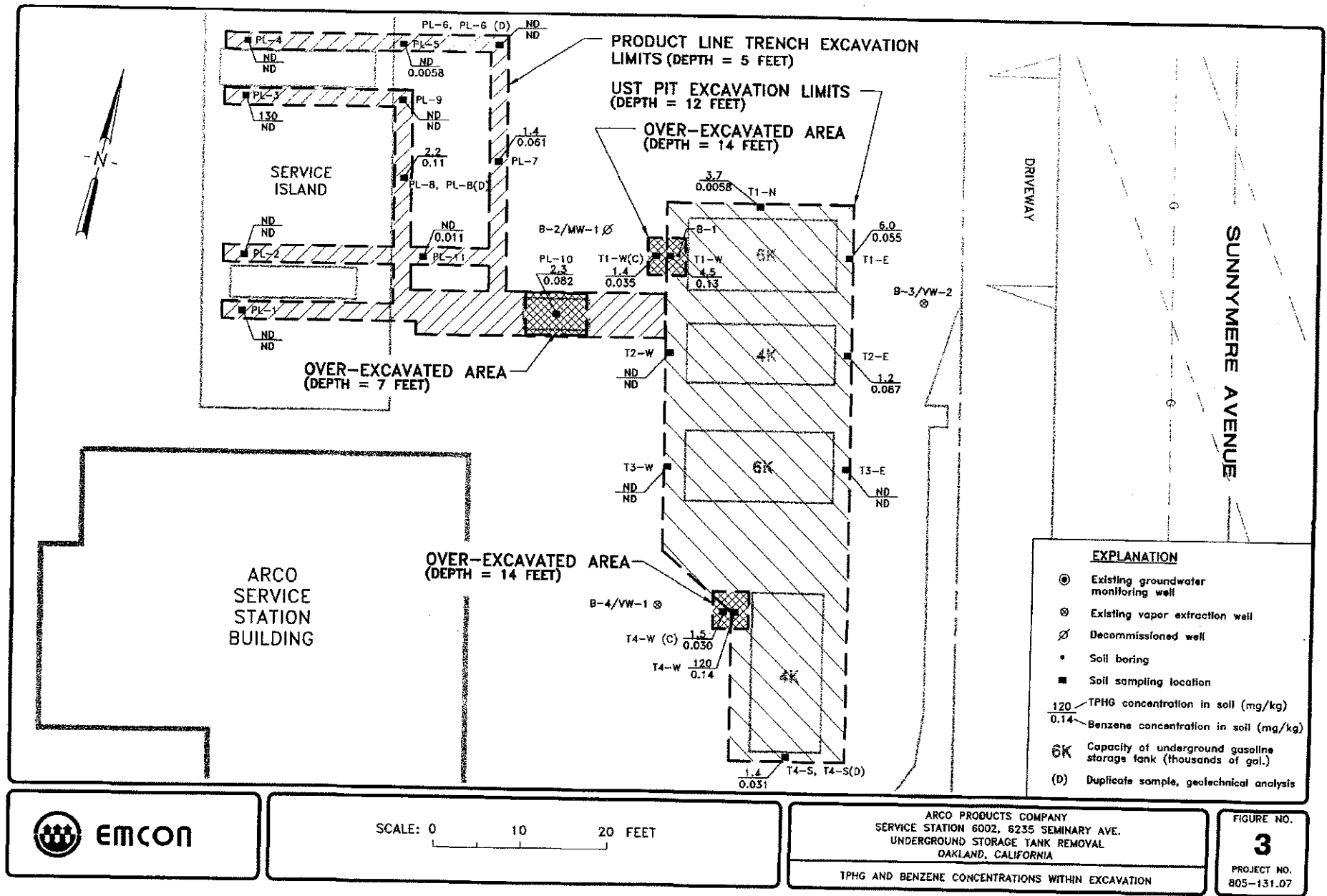


TABLE 1
RESULTS OF LABORATORY ANALYSES OF SOIL SAMPLES
ARCO Station 6002
Oakland, California

| Date Sample | TPHg | Benzene | Toluene | Ethyl benzene | Total xylenes |
|--|-------|---------|---------|---------------|---------------|
| <u>January 1994</u> | | | | | |
| S-5-B1 | <1.0 | <0.0050 | <0.0050 | <0.0050 | <0.0050 |
| S-8.5-B1 | 3.8* | <0.0050 | <0.0050 | <0.0050 | <0.0050 |
| S-5.5-B2 | 3.8 | 0.031 | 0.022 | 0.013 | 0.060 |
| S-7.5-B2 | 7.2 | 0.030 | 0.042 | 0.027 | 0.16 |
| S-10.5-B2 | 420** | <0.0050 | <0.0050 | \$5 | 14 |
| S-13.5-B2 | <1.0 | <0.0050 | <0.0050 | <0.0050 | <0.0050 |
| S-18-B2 | <1.0 | <0.0050 | <0.0050 | <0.0050 | <0.0050 |
| S-20.5-B2 | <1.0 | <0.0050 | <0.0050 | <0.0050 | <0.0050 |
| S-23.5-B2 | <1.0 | <0.0050 | <0.0050 | <0.0050 | <0.0050 |
| S-27-B2 | <1.0 | <0.0050 | <0.0050 | <0.0050 | <0.0050 |
| S-32.5-B2 | <1.0 | <0.0050 | <0.0050 | <0.0050 | <0.0050 |
| S-36-B2 | <1.0 | <0.0050 | <0.0050 | <0.0050 | <0.0050 |
| S-5-B3 | <1.0 | <0.0050 | <0.0050 | <0.0050 | <0.0050 |
| S-10-B3 | <1.0 | 0.014 | 0.013 | 0.0060 | 0.026 |
| S-14.5-B3 | <1.0 | <0.0050 | <0.0050 | <0.0050 | <0.0050 |
| S-5-B4 | <1.0 | <0.0050 | <0.0050 | <0.0050 | <0.0050 |
| S-10-B4 | 3.9 | 0.014 | <0.0050 | <0.0050 | 0.041 |
| S-15.5-B4 | <1.0 | <0.0050 | <0.0050 | <0.0050 | <0.0050 |
| <u>Soil Stockpile</u> | | | | | |
| 0114-SP-(A-D) | 3.1 | <0.0050 | <0.0050 | <0.0050 | <0.0050 |
| Additional Analyses: pH = 6.7, ignitability = >100°C, reactivity with sulfide = none, reactivity with cyanide = none, reactivity with water = negative, lead = 0.050 ppm | | | | | |

DTW ≈ 7.8' bps
converted into MWL

Results in parts per million (ppm)

TPHg = total petroleum hydrocarbons as gasoline using EPA Method 8015

BTEX = benzene, toluene, ethylbenzene, and total xylenes using EPA Method 8020

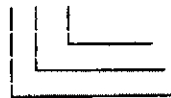
< = less than the detection limit

* = Laboratory reported the Chromatogram Pattern to indicate a "non-gas mix > C8."

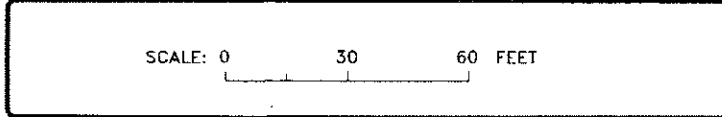
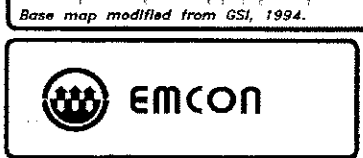
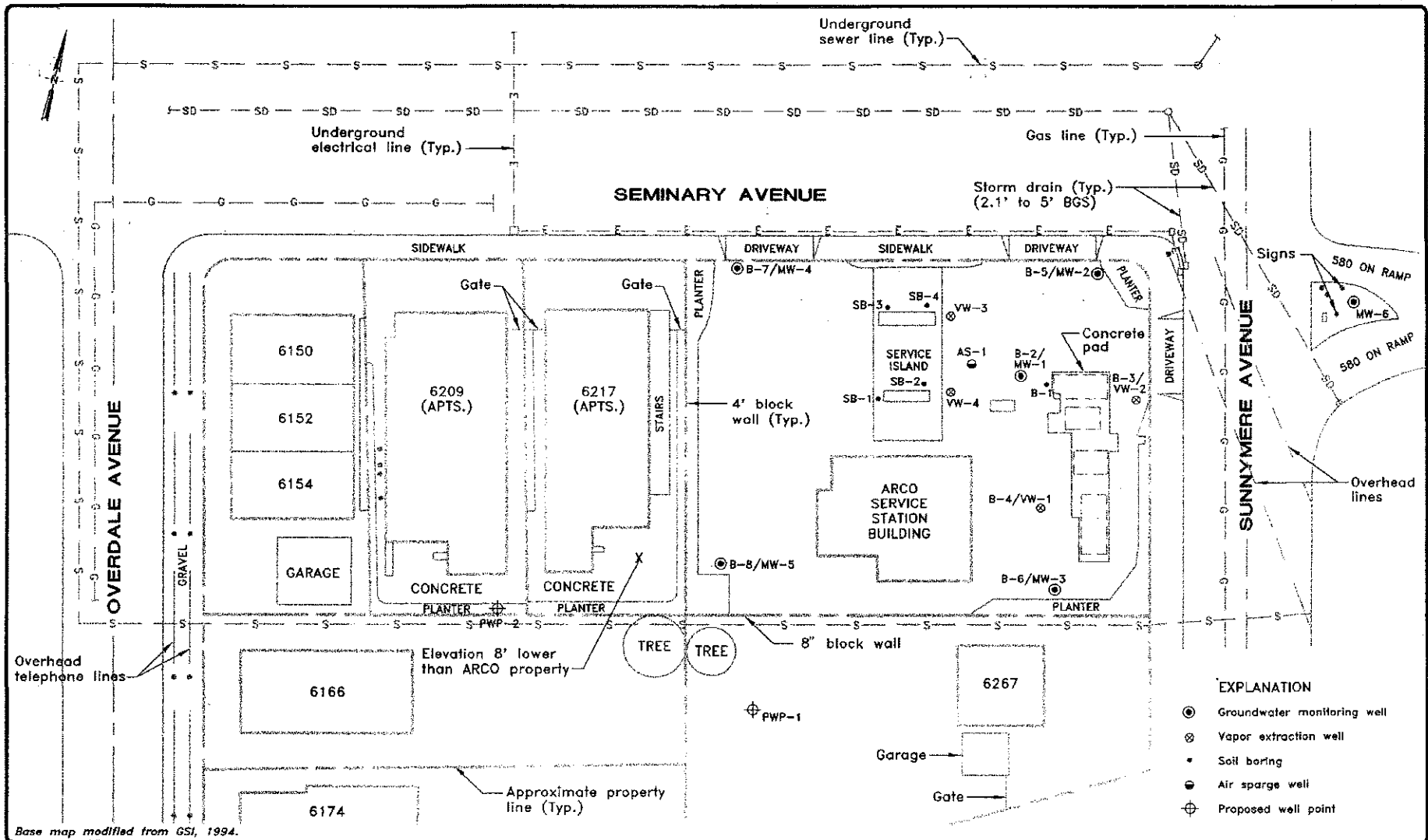
** = Laboratory reported the Chromatogram Pattern to indicate "weathered gas."

Sample ID

S-15½-B4



Boring Number
Depth of Sample
Soil



ARCO PRODUCTS COMPANY
 SERVICE STATION 6002, 6235 SEMINARY AVE.
 OAKLAND, CALIFORNIA

SITE PLAN

FIGURE NO. **1**
 PROJECT NO. 805-131.02

Base map modified from GSI, 1994.

TABLE 1

*Worst soil contain. at
10.5' bgs in B2+B8*

CUMULATIVE LABORATORY ANALYSES RESULTS FOR SOIL SAMPLES
ARCO Station 6002
Oakland, California

| BOREHOLE NO | SAMPLE ID | SAMPLE DEPTH (FEET) | TPH-G (PPM) | BENZENE (PPM) | TOLUENE (PPM) | ETHYLBENZENE (PPM) | XYLENES (PPM) |
|---------------------|---------------|---------------------|-------------|---------------|---------------|--------------------|---------------|
| <u>January 1994</u> | | | | | | | |
| B-1 | S-5-B1 | 5 | <1.0 | <0.0050 | <0.0050 | <0.0050 | <0.0050 |
| B-1 | S-8.5-B1 | 8.5 | 3.8* | <0.0050 | <0.0050 | <0.0050 | <0.0050 |
| B-2 | S-5.5-B2 | 5.5 | 3.8 | 0.031 | 0.022 | 0.013 | <0.060 |
| B-2 | S-7.5-B2 | 7.5 | 7.2 | 0.030 | 0.042 | 0.027 | 0.16 |
| B-2 | S-10.5-B2 | 10.5 | 420** | <0.0050 | <0.0050 | 5.5 | 14 |
| B-2 | S-13.5-B2 | 13.5 | <1.0 | <0.0050 | <0.0050 | <0.0050 | <0.0050 |
| B-2 | S-18-B2 | 18 | <1.0 | <0.0050 | <0.0050 | <0.0050 | <0.0050 |
| B-2 | S-20.5-B2 | 20.5 | <1.0 | <0.0050 | <0.0050 | <0.0050 | <0.0050 |
| B-2 | S-23.5-B2 | 23.5 | <1.0 | <0.0050 | <0.0050 | <0.0050 | <0.0050 |
| B-2 | S-27-B2 | 27 | <1.0 | <0.0050 | <0.0050 | <0.0050 | <0.0050 |
| B-2 | S-32.5-B2 | 32.5 | <1.0 | <0.0050 | <0.0050 | <0.0050 | <0.0050 |
| B-2 | S-36-B2 | 36 | <1.0 | <0.0050 | <0.0050 | <0.0050 | <0.0050 |
| B-3 | S-5-B3 | 5 | <1.0 | <0.0050 | <0.0050 | <0.0050 | <0.0050 |
| B-3 | S-10-B3 | 10 | <1.0 | 0.014 | 0.013 | 0.0060 | 0.026 |
| B-3 | S-14.5-B3 | 14.5 | <1.0 | <0.0050 | <0.0050 | <0.0050 | <0.0050 |
| B-4 | S-5-B4 | 5 | <1.0 | <0.0050 | <0.0050 | <0.0050 | <0.0050 |
| B-4 | S-10-B4 | 10 | 3.9 | 0.014 | <0.0050 | <0.0050 | 0.041 |
| B-4 | S-15.5-B4 | 15.5 | <1.0 | <0.0050 | <0.0050 | <0.0050 | <0.0050 |
| Soil Stockpile | 01140SP-(A-D) | --- | 3.1 | <0.0050 | <0.0050 | <0.0005 | <0.0050 |
| <u>June 1994</u> | | | | | | | |
| B-5 | B-5-5.5 | 5.5 | <1.0 | <0.0050 | <0.0050 | <0.0050 | <0.0050 |
| B-5 | B-5-7.5 | 7.5 | <1.0 | <0.0050 | <0.0050 | <0.0050 | <0.0050 |
| B-5 | B-5-21 | 21 | <1.0 | <0.0050 | <0.0050 | <0.0050 | <0.0050 |
| B-6 | B-5-5.5 | 5.5 | <1.0 | <0.0050 | <0.0050 | <0.0050 | <0.0050 |
| B-6 | B-5-7 | 7 | <1.0 | <0.0050 | <0.0050 | <0.0050 | <0.0050 |
| B-6 | B-5-24.5 | 24.5 | <1.0 | <0.0050 | <0.0050 | <0.0050 | <0.0050 |

TABLE 1
CUMULATIVE LABORATORY ANALYSES RESULTS FOR SOIL SAMPLES
ARCO Station 6002
Oakland, California

| BORING NO | SAMPLE ID | SAMPLE DEPTH (FEET) | TPH-G (PPM) | BENZENE (PPM) | TOLUENE (PPM) | ETHYLBENZENE (PPM) | XYLENES (PPM) |
|----------------|-------------------|---------------------|-------------|---------------|---------------|--------------------|---------------|
| B-7 | B-7-5.5 | 5.5 | <1.0 | <0.0050 | <0.0050 | <0.0050 | <0.0050 |
| B-7 | B-7-8.5 | 8.5 | <1.0 | <0.0050 | <0.0050 | <0.0050 | <0.0050 |
| B-7 | B-7-10 | 10 | <1.0 | <0.0050 | <0.0050 | <0.0050 | <0.0050 |
| B-7 | B-7-24 | 24 | <1.0 | <0.0050 | <0.0050 | <0.0050 | <0.0050 |
| B-8 | B-8-5.5 | 5.5 | <1.0 | <0.0050 | <0.0050 | <0.0050 | <0.0050 |
| B-8 | B-8-10.5 | 10.5 | 1,500** | <0.50 | 2.4 | 17 | 43 |
| B-8 | B-8-24.5 | 24.5 | <1.0 | <0.0050 | <0.0050 | 0.0070 | 0.013 |
| Soil Stockpile | SP-0629(Comp.A-D) | -- | 110** | <0.01 | 0.13 | 1.0 | 2.3 |

TPH-G = Total Petroleum Hydrocarbons calculated as Gasoline.

PPM = Parts Per Million.

< = less than detection limit.

* = Laboratory reported the chromatogram pattern to indicate a "non-gas mix >C8."

** = Laboratory reported the chromatogram pattern to indicate "weathered gas."

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: EMCON
Project: ARCO Facility No. 6002/EMCON Project No.0805-131.04
Sample Matrix: Soil

Service Request: S950811
Date Collected: 6/27/95
Date Received: 6/28/95
Date Extracted: NA
Date Analyzed: 6/30 - 7/3/95

BTEX and TPH as Gasoline
 EPA Methods 5030/8020/California DHS LUFT Method
 As Received Basis

| | | | | | |
|-------------------------|-----------------|----------------|----------------|----------------|-----------------|
| Analyte: | TPH as | | | Ethyl- | Xylenes, |
| Units: | Gasoline | Benzene | Toluene | benzene | Total |
| Method Reporting Limit: | mg/Kg (ppm) | mg/Kg (ppm) | mg/Kg (ppm) | mg/Kg (ppm) | mg/Kg (ppm) |
| | 1 | 0.005 | 0.005 | 0.005 | 0.005 |

| Sample Name | Lab Code | TPH as Gasoline | Benzene | Toluene | Ethyl-benzene | Xylenes, Total |
|--------------|-------------|-----------------|---------|---------|---------------|----------------|
| SB-3, 6' | S950811-001 | ND | ND | ND | ND | ND |
| SB-3, 11' | S950811-002 | ND | ND | ND | ND | ND |
| SB-3, 21' | S950811-004 | ND | ND | ND | ND | ND |
| SB-4, 6' | S950811-005 | ND | ND | ND | ND | ND |
| SB-4, 21.5' | S950811-008 | ND | ND | ND | ND | ND |
| SB-2, 5' | S950811-009 | 2 | 0.066 | 0.028 | 0.018 | 0.14 |
| SB-2, 15.5' | S950811-013 | ND | ND | ND | ND | ND |
| SB-1, 5' | S950811-014 | ND | 0.007 | ND | 0.028 | 0.047 |
| SB-1, 9' | S950811-015 | 2 | 0.008 | ND | 0.034 | 0.14 |
| SB-1, 12.5' | S950811-017 | ND | ND | ND | ND | ND |
| Method Blank | S950630-SB1 | ND | ND | ND | ND | ND |
| Method Blank | S950703-SB1 | ND | ND | ND | ND | ND |

Approved By: 
 5ABTXGAS/061694

Date: 7/6/95

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: EMCON
Project: ARCO Facility No. 6002/EMCON Project No.0805-131.04
Sample Matrix: Soil

Service Request: S950811
Date Collected: 6/27/95
Date Received: 6/28/95
Date Extracted: NA
Date Analyzed: 6/30 - 7/5/95

BTEX and TPH as Gasoline
 EPA Methods 5030/8020/California DHS LUFT Method
 As Received Basis

| Analyte: | TPH as Gasoline | Benzene | Toluene | Ethyl-benzene | Xylenes, Total |
|--------------------------|-----------------|-------------|-------------|---------------|----------------|
| Units: | mg/Kg (ppm) | mg/Kg (ppm) | mg/Kg (ppm) | mg/Kg (ppm) | mg/Kg (ppm) |
| Method Reporting Limit:* | 5 | 0.05 | 0.1 | 0.1 | 0.1 |

| Sample Name | Lab Code | TPH as Gasoline | Benzene | Toluene | Ethyl-benzene | Xylenes, Total |
|--------------|-------------|-----------------|---------|---------|---------------|----------------|
| SB-4, 11' | S950811-006 | 10 | ND | ND | ND | ND |
| SB-2, 9.5' | S950811-010 | 260 | <0.5** | 2.6 | 4.3 | 18 |
| SB-1, 11' | S950811-016 | 730 | <0.5** | 4.4 | 10 | 49 |
| Method Blank | S950630-SB2 | ND | ND | ND | ND | ND |
| Method Blank | S950630-SB2 | ND | ND | ND | ND | ND |
| Method Blank | S950630-SB2 | ND | ND | ND | ND | ND |

* Raised MRL due to high analyte concentration requiring methanol extraction of sample.
 ** Raised MRL due to high analyte concentration requiring methanol extraction and dilution of sample.


Approved By:  Date: 7/6/95

Table 1
Summary of Confirmation Soil Sample Analytical Results

ARCO Service Station 6002
6235 Seminary Avenue, Oakland, California

| Sample ID | Date Sampled | TPHG [mg/kg] | Benzene [mg/kg] | Toluene [mg/kg] | Ethylbenzene [mg/kg] | Xylenes [mg/kg] |
|--|--------------|-----------------|--------------------|--------------------|-------------------------|--------------------|
| Underground Storage Tank Excavation | | | | | | |
| T1-W* | 6-Mar-96 | 4.5 | 0.13 | 0.021 | 0.083 | 0.11 |
| T1-W(C) | 8-Mar-96 | 1.4 | 0.035 | 0.02 | 0.018 | 0.037 |
| T1-E | 6-Mar-96 | 6.0 | 0.055 | <0.005 | 0.044 | 0.15 |
| T1-N | 6-Mar-96 | 3.7 | 0.0058 | <0.005 | 0.036 | 0.2 |
| T2-W | 6-Mar-96 | <1.0 | <0.005 | <0.005 | 0.0052 | 0.0074 |
| T2-E | 6-Mar-96 | 1.2 | 0.087 | 0.073 | 0.024 | 0.13 |
| T3-W | 6-Mar-96 | <1.0 | <0.005 | <0.005 | <0.005 | <0.005 |
| T3-E | 6-Mar-96 | <1.0 | <0.005 | <0.005 | <0.005 | <0.005 |
| T4-S | 6-Mar-96 | 1.4 | 0.031 | 0.15 | 0.022 | 0.24 |
| T4-W** | 6-Mar-96 | 120 | 0.14 | 1.8 | 0.7 | 5.1 |
| T4-W(C) | 8-Mar-96 | 1.5 | 0.03 | <0.005 | 0.0086 | 0.097 |
| Product-Line Piping Excavation | | | | | | |
| PL-1 | 6-Mar-96 | <1.0 | <0.005 | <0.005 | <0.005 | <0.005 |
| PL-2 | 6-Mar-96 | <1.0 | <0.005 | 0.012 | <0.005 | 0.048 |
| PL-3 | 6-Mar-96 | 130 | <0.10 | <0.10 | 0.21 | <0.10 |
| PL-4 | 6-Mar-96 | <1.0 | <0.005 | <0.005 | <0.005 | <0.005 |
| PL-5 | 8-Mar-96 | <1.0 | 0.0058 | <0.005 | <0.005 | 0.0065 |
| PL-6 | 8-Mar-96 | <1.0 | <0.005 | <0.005 | <0.005 | <0.005 |
| PL-7 | 8-Mar-96 | 1.4 | 0.061 | <0.005 | 0.012 | 0.034 |
| PL-8 | 8-Mar-96 | 2.2 | 0.11 | 0.057 | 0.012 | 0.07 |
| PL-9 | 8-Mar-96 | <1.0 | <0.005 | <0.005 | <0.005 | <0.005 |
| PL-10 | 11-Mar-96 | 2.3 | 0.082 | 0.027 | 0.06 | 0.035 |
| PL-11 | 11-Mar-96 | <1.0 | 0.011 | <0.005 | <0.005 | <0.005 |

Notes:

- * See confirmation sample T1-W(C) for results after overexcavation in area.
- ** See confirmation sample T4-W(C) for results after overexcavation in area.
- < = Not detected at or above stated method reporting limit.
- TPHG = Total purgeable petroleum hydrocarbons as gasoline by U.S. EPA modified method 8015/8020.
- Benzene, toluene, ethylbenzene, and total xylenes by U.S. EPA modified method 8020.

Table 2
Summary of Soil Stockpile Analytical Results

ARCO Service Station 6002
6235 Seminary Avenue, Oakland, California

| Sample ID | Date Sampled | TPHG [mg/kg] | Benzene [mg/kg] | Toluene [mg/kg] | Ethylbenzene [mg/kg] | Xylenes [mg/kg] |
|-------------------------------|--------------|-----------------|--------------------|--------------------|-------------------------|--------------------|
| Soil Stockpile Samples | | | | | | |
| SP-1 (A-D) Comp | 11-Mar-96 | <1.0 | <0.005 | 0.008 | <0.005 | 0.021 |
| SP-2 (A-D) Comp | 11-Mar-96 | 1.9 | 0.0051 | <0.005 | <0.005 | 0.023 |
| SP-3 (A-D) Comp | 11-Mar-96 | 750 | 3.9 | 12 | 5.7 | 41 |
| SP-4 (A-D) Comp | 11-Mar-96 | 2100 | 8.5 | 74 | 33 | 200 |
| SP-5 (A-D) Comp | 11-Mar-96 | 790 | <0.005 | 5.5 | 5.2 | 40 |
| SP-6 (A-D) Comp | 11-Mar-96 | 38 | 0.41 | 0.17 | 0.16 | 1.9 |
| SP-7 (A-D) Comp | 11-Mar-96 | 280 | 0.28 | <0.005 | <0.005 | 13 |
| SP-8 (A-D) Comp | 11-Mar-96 | 400 | 0.86 | <0.005 | 0.71 | 15 |
| SP-9 (A-D) Comp | 11-Mar-96 | 410 | <0.005 | 8.4 | 4.7 | 38 |
| SP-10 (A-D) Comp | 11-Mar-96 | 330 | <0.005 | <0.005 | <0.005 | 14 |

Notes:

* Stockpile resampled following additional aeration to meet ignitability requirements.

— < = Not detected at or above stated method reporting limit.

TPHG = Total purgeable petroleum hydrocarbons as gasoline by U.S. EPA modified method 8015/8020.

Benzene, Toluene, Ethylbenzene, and total Xylene analyses by U.S. EPA modified method 8020.

Table 1

ARCO 6002 Offsite Well Installation
Soil Analytical Data

| Sample Identification | Date Sampled | Depth (feet BGS) | TPHG (mg/kg) | Benzene (mg/kg) | Toluene (mg/kg) | High benzene (mg/kg) | Xylenes (mg/kg) |
|-----------------------|--------------|------------------|--------------|-----------------|-----------------|----------------------|-----------------|
| MW-7 | 7/16/96 | 3.0 | <1 | <0.005 | <0.005 | <0.005 | <0.005 |
| MW-7 | 7/16/96 | 5.0 | <1 | <0.005 | <0.005 | <0.005 | <0.005 |
| MW-7 | 8/6/96 | 8.0 | <1 | <0.005 | <0.005 | <0.005 | <0.005 |
| MW-7 | 8/6/96 | 12.5 | <1 | <0.005 | <0.005 | <0.005 | <0.005 |
| MW-8 | 7/15/96 | 5.0 | <1 | <0.005 | <0.005 | <0.005 | <0.005 |

1 mg/kg = milligrams per kilogram

2 TPHG = total petroleum hydrocarbons as gasoline

< indicates laboratory minimum reporting limit

Table 2
 Historical Groundwater Elevation Data
 1994 - Present*

ARCO Service Station 6002
 6235 Seminary Avenue, Oakland, California

Date: 05-14-96

| Well Designation | Water Level Field Date | Top of Casing Elevation | Depth to Water | Groundwater Elevation | Floating Product Thickness | Groundwater Flow Direction | Hydraulic Gradient | |
|------------------|------------------------|-------------------------|------------------------------------|-----------------------|----------------------------|----------------------------|--------------------|--|
| | | ft-MSL | feet | ft-MSL | feet | MWN | foot/foot | |
| MW-1 | 01-21-94 | 247.06 | 7.82 | 239.24 | ND | NR | NR | |
| MW-1 | 07-08-94 | 247.06 | 8.32 | 238.74 | ND | W | 0.08 | |
| MW-1 | 09-24-94 | 247.06 | 8.84 | 238.22 | ND | WSW | 0.08 | |
| MW-1 | 11-21-94 | 247.06 | 7.27 | 239.79 | ND | SW | 0.07 | |
| MW-1 | 03-15-95 | 247.06 | 7.37 | 239.69 | ND | WSW | 0.08 | |
| MW-1 | 05-30-95 | 247.06 | 8.48 | 238.58 | ND | WSW | 0.08 | |
| MW-1 | 09-01-95 | 247.06 | 9.47 | 237.59 | ND | WSW | 0.09 | |
| MW-1 | 11-13-95 | 247.06 | 8.78 | ** 238.29 | 0.01 | WSW | 0.08 | |
| MW-1 | 02-23-96 | 247.06 | Well was decommissioned on 2-12-96 | | | | | |
| | | | | | | | | |
| MW-2 | 07-08-94 | 249.30 | 9.51 | 239.79 | ND | W | 0.08 | |
| MW-2 | 09-24-94 | 249.30 | 10.02 | 239.28 | ND | WSW | 0.08 | |
| MW-2 | 11-21-94 | 249.30 | 7.83 | 241.47 | ND | SW | 0.07 | |
| MW-2 | 03-15-95 | 249.30 | 8.25 | 241.05 | ND | WSW | 0.08 | |
| MW-2 | 05-30-95 | 249.30 | 9.93 | 239.37 | ND | WSW | 0.08 | |
| MW-2 | 09-01-95 | 249.30 | 10.69 | 238.61 | ND | WSW | 0.09 | |
| MW-2 | 11-13-95 | 249.30 | 10.32 | 238.98 | ND | WSW | 0.08 | |
| MW-2 | 02-23-96 | 249.30 | Well was decommissioned on 2-12-96 | | | | | |
| | | | | | | | | |
| MW-3 | 07-08-94 | 248.35 | 7.75 | 240.60 | ND | W | 0.08 | |
| MW-3 | 09-24-94 | 248.35 | 8.14 | 240.21 | ND | WSW | 0.08 | |
| MW-3 | 11-21-94 | 248.35 | 6.80 | 241.55 | ND | SW | 0.07 | |
| MW-3 | 03-15-95 | 248.35 | 6.76 | 241.59 | ND | WSW | 0.08 | |
| MW-3 | 05-30-95 | 248.35 | 7.81 | 240.54 | ND | WSW | 0.08 | |
| MW-3 | 09-01-95 | 248.35 | 8.65 | 239.70 | ND | WSW | 0.09 | |
| MW-3 | 11-13-95 | 248.35 | 8.25 | 240.10 | ND | WSW | 0.08 | |
| MW-3 | 02-23-96 | 248.35 | 6.64 | 241.71 | ND | WSW | 0.08 | |
| | | | | | | | | |
| MW-4 | 07-08-94 | 242.91 | 10.97 | 231.94 | ND | W | 0.08 | |
| MW-4 | 09-24-94 | 242.91 | 11.81 | 231.10 | ND | WSW | 0.08 | |
| MW-4 | 11-21-94 | 242.91 | 9.14 | 233.77 | ND | SW | 0.07 | |
| MW-4 | 03-15-95 | 242.91 | 9.37 | 233.54 | ND | WSW | 0.08 | |
| MW-4 | 05-30-95 | 242.91 | 11.47 | 231.44 | ND | WSW | 0.08 | |
| MW-4 | 09-01-95 | 242.91 | 12.28 | 230.63 | ND | WSW | 0.09 | |
| MW-4 | 11-13-95 | 242.91 | 11.75 | 231.16 | ND | WSW | 0.08 | |
| MW-4 | 02-23-96 | 242.91 | 8.51 | 234.40 | ND | WSW | 0.08 | |

Table 2
Historical Groundwater Elevation Data
1994 - Present*

ARCO Service Station 6002
6235 Seminary Avenue, Oakland, California

Date: 05-14-96

| Well Designation | Water Level Field Date | Top of Casing Elevation | Depth to Water | Groundwater Elevation | Floating Product Thickness | Groundwater Flow Direction | Hydraulic Gradient |
|------------------|------------------------|-------------------------|----------------|-----------------------|----------------------------|----------------------------|--------------------|
| | | ft-MSL | feet | ft-MSL | feet | MWN | foot/foot |
| MW-5 | 07-08-94 | 244.82 | 12.94 | 231.88 | ND | W | 0.08 |
| MW-5 | 09-24-94 | 244.82 | 13.60 | 231.22 | ND | WSW | 0.08 |
| MW-5 | 11-21-94 | 244.82 | 12.45 | 232.37 | ND | SW | 0.07 |
| MW-5 | 03-15-95 | 244.82 | 11.99 | 232.83 | ND | WSW | 0.08 |
| MW-5 | 05-30-95 | 244.82 | 12.97 | 231.85 | ND | WSW | 0.08 |
| MW-5 | 09-01-95 | 244.82 | 14.03 | 230.79 | ND | WSW | 0.09 |
| MW-5 | 11-13-95 | 244.82 | 13.65 | 231.17 | ND | WSW | 0.08 |
| MW-5 | 02-23-96 | 244.82 | 11.93 | 232.89 | ND | WSW | 0.08 |
| MW-6 | 06-29-95 | NR | 6.63 | NR | ND | NR | NR |
| MW-6 | 09-01-95 | NR Not surveyed: | | | | | |
| MW-6 | 11-13-95 | NR | 7.70 | NR | ND | WSW | 0.08 |
| MW-6 | 02-23-96 | NR | 9.82 | NR | ND | WSW | 0.08 |
| AS-1 | 06-29-95 | NR | 9.20 | NR | ND | NR | NR |
| VW-1 | 02-23-96 | NR | 5.29 | NR | ND | WSW | 0.08 |
| VW-2 | 02-23-96 | NR | 6.92 | NR | ND | WSW | 0.08 |

ft-MSL: elevation in feet, relative to mean sea level

MWN: ground-water flow direction and gradient apply to the entire monitoring well network

ND: none detected

NR: not reported; data not available or not measurable

W: west

WSW: west-southwest

SW: southwest

*: For previous historical groundwater elevation data please refer to *Fourth Quarter 1995 Groundwater Monitoring Program Results, ARCO Service Station 6002, Oakland, California*, (EMCON, February 23, 1996).

** [corrected elevation (Z')] = Z + (h * 0.73) where: Z: measured elevation, h: floating product thickness, 0.73: density ratio of oil to water

Table 3
 Historical Groundwater Analytical Data
 Petroleum Hydrocarbons and Their Constituents
 1994 - Present*

ARCO Service Station 6002
 6235 Seminary Avenue, Oakland, California

Date: 05-14-96

| Well Designation | Water Sample Field Date | TPHC | Benzene | Toluene | Ethylbenzene | Total Xylenes | MTBE | MTBE |
|------------------|-------------------------|------------------------------------|----------|----------|--------------|---------------|----------|----------|
| | | LUFT Method | EPA 8020 | EPA 8020 | EPA 8020 | EPA 8020 | EPA 8020 | EPA 8240 |
| | | µg/L | µg/L | µg/L | µg/L | µg/L | µg/L | µg/L |
| MW-1 | 01-21-94 | 18000 | 1300 | 1600 | 250 | 1900 | -- | -- |
| MW-1 | 07-08-94 | 21000 | 5200 | <50 | 1000 | 1500 | -- | -- |
| MW-1 | 09-24-94 | 13000 | 2900 | 37 | 830 | 640 | -- | -- |
| MW-1 | 11-21-94 | 12000 | 2800 | 160 | 640 | 1300 | -- | -- |
| MW-1 | 03-15-95 | 13000 | 1200 | 44 | 770 | 1100 | -- | -- |
| MW-1 | 05-30-95 | 19000 | 1600 | 30 | 890 | 1400 | -- | -- |
| MW-1 | 09-01-95 | 14000 | 1300 | 28 | 480 | 780 | 24000 | -- |
| MW-1 | 11-13-95 | 11000 | 570 | 17 | 260 | 410 | -- | 25000 |
| MW-1 | 03-01-96 | Well was decommissioned on 2-12-96 | | | | | | |
| MW-2 | 07-08-94 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | -- | -- |
| MW-2 | 09-24-94 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | -- | -- |
| MW-2 | 11-21-94 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | -- | -- |
| MW-2 | 03-15-95 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | -- | -- |
| MW-2 | 05-30-95 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | -- | -- |
| MW-2 | 09-01-95 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <3 | -- |
| MW-2 | 11-13-95 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | -- | -- |
| MW-2 | 03-01-96 | Well was decommissioned on 2-12-96 | | | | | | |
| MW-3 | 07-08-94 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | -- | -- |
| MW-3 | 09-24-94 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | -- | -- |
| MW-3 | 11-21-94 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | -- | -- |
| MW-3 | 03-15-95 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | -- | -- |
| MW-3 | 05-30-95 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | -- | -- |
| MW-3 | 09-01-95 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <3 | -- |
| MW-3 | 11-13-95 | 120 | 45 | 0.7 | <0.5 | 6.2 | -- | -- |
| MW-3 | 03-01-96 | <50 | <0.5 | <0.5 | 0.6 | 1.9 | <3 | -- |
| MW-4 | 07-08-94 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | -- | -- |
| MW-4 | 09-24-94 | 140 | <0.5 | <0.5 | <0.9 | <0.5 | -- | -- |
| MW-4 | 11-21-94 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | -- | -- |
| MW-4 | 03-15-95 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | -- | -- |
| MW-4 | 05-30-95 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | -- | -- |
| MW-4 | 09-01-95 | 78 | <0.5 | 0.7 | <0.5 | <0.5 | <3 | -- |
| MW-4 | 11-13-95 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | -- | -- |
| MW-4 | 03-01-96 | 59 | 1.2 | 7.4 | 1.6 | 9.3 | 3 | -- |

Table 3
Historical Groundwater Analytical Data
Petroleum Hydrocarbons and Their Constituents
1994 - Present*

ARCO Service Station 6002
 6235 Seminary Avenue, Oakland, California

Date: 05-14-96

| Well Designation | Water Sample Field Date | TPHG LUFT Method µg/L | Benzene EPA 8020 µg/L | Toluene EPA 8020 µg/L | Ethylbenzene EPA 8020 µg/L | Total Xylenes EPA 8020 µg/L | MTBE EPA 8020 µg/L | MTBE EPA 8240 µg/L |
|------------------|-------------------------|---|--------------------------|--------------------------|-------------------------------|--------------------------------|-----------------------|-----------------------|
| MW-5 | 07-08-94 | 41000 | 3300 | <50 | 2200 | 2900 | -- | -- |
| MW-5 | 09-24-94 | 28000 | 4000 | <50 | 2400 | 2100 | -- | -- |
| MW-5 | 11-21-94 | 38000 | 3100 | <50 | 3100 | 4100 | -- | -- |
| MW-5 | 03-15-95 | 21000 | 870 | 22 | 1600 | 1900 | -- | -- |
| MW-5 | 05-30-95 | 17000 | 2100 | 250 | 1000 | 520 | -- | -- |
| MW-5 | 09-01-95 | 19000 | 1500 | 25 | 1600 | 880 | 8300 | -- |
| MW-5 | 11-13-95 | 21000 | 1300 | 22 | 1400 | 630 | -- | -- |
| MW-5 | 03-01-96 | 27000 | 1300 | <50 | 1600 | 1500 | 730 | -- |
| MW-6 | 06-30-95 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | -- | -- |
| MW-6 | 09-01-95 | Not sampled: | | | | | | |
| MW-6 | 11-13-95 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | Δ | -- |
| MW-6 | 03-01-96 | <50 | <0.5 | 0.8 | <0.5 | 0.6 | Δ | -- |
| AS-1 | 06-30-95 | <50 | 1.6 | <0.5 | 0.9 | 0.9 | -- | -- |
| VW-1 | 03-01-96 | 21000 | 490 | 57 | 520 | 1500 | 240 | -- |
| VW-2 | 03-01-96 | Not sampled: not part of sampling program | | | | | | |

TPHG: total petroleum hydrocarbons as gasoline, California DHS LUFT Method

µg/L: micrograms per liter

EPA: United States Environmental Protection Agency

MTBE: Methyl-tert-butyl ether

-- : not analyzed

*: For previous historical analytical data please refer to *Fourth Quarter 1995 Groundwater Monitoring Program Results, ARCO Service Station 6002, Oakland, California, (EMCON, February 23, 1996).*

TABLE 2
RESULTS OF LABORATORY ANALYSES OF GROUNDWATER SAMPLES
ARCO Station 6002
Oakland, California

| Date Sample | TPHg | Benzene | Toluene | Ethyl benzene | Total xylenes |
|--------------------------|--------|---------|---------|------------------|------------------|
| <u>January 31, 1994</u> | | | | | |
| <u>MW-1</u> W-14-MW-1 | 18,000 | 1,300 | 1,600 | 250 | 1,900 |
| <u>VW-1*</u> W-6-VW-1 | 19,000 | 1,100 | 180 | 720 | 2,800 |
| <u>VW-2*</u> W-8-VW-2 | 11,000 | 620 | 1,500 | 330 | 1,400 |
| MCL | NA | 1.0 | NA | 680 | 1,750 |
| DWAL | NA | NA | 100 | NA | NA |

Results in parts per billion (ppb)

TPHg = total petroleum hydrocarbons as gasoline using EPA Method 8015

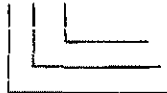
BTEX = benzene, toluene, ethylbenzene, and total xylenes using EPA Method 8020

< = less than the detection limit

* = Grab samples collected from vapor wells VW-1 and VW-2 as a one-time sampling event only.

Sample ID

W-14-MW-1



Well Number
Depth of Sample
Water

TABLE 2

GROUNDWATER QUALITY DATABASE
 ARCO Station 6002
 Oakland, California

| SAMPLE DATE | SAMPLE POINT | TPH-G (PPB) | BENZENE (PPB) | TOLUENE (PPB) | ETHYLBENZENE (PPB) | XYLENES (PPB) |
|-------------|--------------|-------------|---------------|---------------|--------------------|---------------|
| 21-Jan-94 | VW-1* | 19,000 | 1,100 | 180 | 720 | 2,800 |
| 21-Jan-94 | VW-2* | 11,000 | 620 | 1,500 | 330 | 1,400 |
| 21-Jan-94 | MW-1 | 18,000 | 1,300 | 1,600 | 250 | 1,900 |
| 08-Jul-94 | MW-1 | 21,000 | 5,200 | <50 | 1,000 | 1,500 |
| 08-Jul-94 | MW-2 | <50 | <0.5 | <0.5 | <0.5 | <0.5 |
| 08-Jul-94 | MW-3 | <50 | <0.5 | <0.5 | <0.5 | <0.5 |
| 08-Jul-94 | MW-4 | <50 | <0.5 | <0.5 | <0.5 | <0.5 |
| 08-Jul-94 | MW-5 | 41,000 | 3,300 | <50 | 2,200 | 2,900 |

TPH-G = Total Petroleum Hydrocarbons calculated as Gasoline.

PPB = Parts Per Billion.

* = Grab samples collected from vapor wells VW-1 and VW-2 as a one-time sampling event only.

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

| | | | |
|-----------------------|---|-------------------------|------------|
| Client: | EMCON | Service Request: | S950839 |
| Project: | ARCO Facility No. 6002/EMCON Project No.0805-131.03 | Date Collected: | 6/30/95 |
| Sample Matrix: | Water | Date Received: | 6/30/95 |
| | | Date Extracted: | NA |
| | | Date Analyzed: | 7/10-11/95 |

BTEX and TPH as Gasoline
EPA Methods 5030/8020/California DHS LUFT Method

| | | | | | |
|-------------------------|------------------------|----------------|----------------|----------------------|-----------------------|
| Analyte: | TPH as Gasoline | Benzene | Toluene | Ethyl-benzene | Xylenes, Total |
| Units: | ug/L (ppb) | ug/L (ppb) | ug/L (ppb) | ug/L (ppb) | ug/L (ppb) |
| Method Reporting Limit: | 50 | 0.5 | 0.5 | 0.5 | 0.5 |

| Sample Name | Lab Code | TPH as Gasoline | Benzene | Toluene | Ethyl-benzene | Xylenes, Total |
|--------------|-------------|-----------------|---------|---------|---------------|----------------|
| MW-6 (31) | S950839-001 | ND | ND | ND | ND | ND |
| AS-1 (22) | S950839-002 | ND | 1.6 | ND | 0.9 | 0.9 |
| Method Blank | S950710-WB2 | ND | ND | ND | ND | ND |
| Method Blank | S950711-WB1 | ND | ND | ND | ND | ND |

Approved By: _____



Date: _____

7/11/95

Table 2

ARCO 6002 Offsite Well Installation
Groundwater Analytical Data

| MW-7 | 1/27/97 | 5,900 | 29 | <5 | <5 | 580 | 220 |
|------|---------|-------|------|------|------|------|-----|
| MW-8 | 8/9/96 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <3 |
| MW-8 | 11/8/96 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <3 |

- 1 $\mu\text{g/L}$ = micrograms per liter
2 TPHG = total petroleum hydrocarbons as gasoline
3 MTBE = Methyl tert-Butyl Ether
< indicates laboratory minimum reporting limit



EMCON Associates
 1921 Ringwood Avenue
 San Jose, CA 95131

Client Proj. ID: Arco 6002
 Sample Descript: GW GRAB
 Matrix: LIQUID
 Analysis Method: 8015Mod/8020
 Lab Number: 9603273-14

Sampled: 03/06/96
 Received: 03/06/96
 Analyzed: 03/07/96
 Reported: 03/07/96

GC Batch Number: GC030796BTEX17A
 Instrument ID: GCHP17

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

| Analyte | Detection Limit ug/L | Sample Results ug/L |
|-----------------------|-------------------------|------------------------|
| TPPH as Gas | 10000 | 71000 |
| Methyl t-Butyl Ether | 500 | N.D. |
| Benzene | 100 | 2200 |
| Toluene | 100 | 9200 |
| Ethyl Benzene | 100 | 1900 |
| Xylenes (Total) | 100 | 11000 |
| Chromatogram Pattern: | | Gas |
| Surrogates | Control Limits % | % Recovery |
| Trifluorotoluene | 70 130 | 90 ✓ |

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210


 Vytas Ankaitis
 Project Manager

APPENDIX C

Soil Boring and Well Construction Logs

UNIFIED SOIL CLASSIFICATION SYSTEM

| MAJOR DIVISION | | LTR | DESCRIPTION | MAJOR DIVISION | | LTR | DESCRIPTION | | |
|-----------------------------|------------------------------------|-----|--|---------------------------|--------------------------------|-----|--|--|--|
| COARSE- GRAINED SOILS | GRAVEL AND GRAVELLY SOILS | GW | Well-graded gravels or gravel-sand mixtures, little or no fines. | FINE- GRAINED SOILS | SILTS AND CLAYS LL<50 | ML | Inorganic silts and very fine sands, rock flour, silty or clayey fine sands, or clayey silts with slight plasticity. | | |
| | | GP | Poorly-graded gravels or gravel-sand mixtures, little or no fines. | | | CL | Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays. | | |
| | | GM | Silty gravels, gravel-sand-silt mixtures. | | | OL | Organic silts and organic silt-clays of low plasticity. | | |
| | | GC | Clayey gravel, gravel-sand-clay mixtures. | | | | | | |
| | SAND AND SANDY SOILS | SW | Well-graded sand or gravelly sands, little or no fines. | | SILTS AND CLAYS LL>50 | MH | Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts. | | |
| | | SP | Poorly-graded sands or gravelly sands, little or no fines. | | | CH | Inorganic clays of high plasticity, fat clays. | | |
| | | SM | Silty sands, sand-silt mixtures. | | | OH | Organic clays of medium to high plasticity, organic silts. | | |
| | | SC | Clayey sands, sand-clay mixtures. | | | PT | Peat and other highly organic soils. | | |
| | | | | | HIGHLY ORGANIC SOILS | | | | |

| | | | | | | | |
|------|--|--|-------------------|--------|--------------------------|--|---------------------|
| | Depth through which sampler is driven | | Sand pack | | Stratigraphic contact | | |
| | Relatively undisturbed sample | | Bentonite | | | | |
| | No sample recovered | | Neat cement | | | | |
| | Static water level observed in well/boring | | Caved native soil | | | | Gradational contact |
| | Initial water level observed in boring | | Blank PVC | | | | Inferred contact |
| | Machine-slotted PVC | | Pea gravel | | | | |
| S-10 | Sample number | | | P.I.D. | Photoionization detector | | |

BLOWS REPRESENT THE NUMBER OF BLOWS OF A 140-POUND HAMMER FALLING 30 INCHES TO DRIVE THE SAMPLER THROUGH EACH 6 INCHES OF AN 18-INCH PENETRATION.

GRADATIONAL AND INFERRED CONTACT LINES SEPARATING UNITS ON THE LOG REPRESENT APPROXIMATE BOUNDARIES ONLY. ACTUAL BOUNDARIES MAY BE GRADUAL. LOGS REPRESENT SUBSURFACE CONDITIONS AT THE BORING LOCATION AT THE TIME OF DRILLING ONLY.



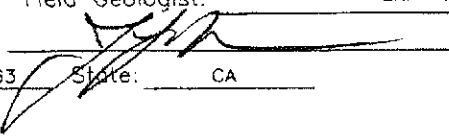
**UNIFIED SOIL CLASSIFICATION SYSTEM
AND SYMBOL KEY**
ARCO Station 6002
6235 Seminary Avenue
Oakland, California

PLATE
3

PROJECT 130063.01

Total depth of boring: 15-1/2 feet
 Diameter of boring: 12 inches
 Date drilled: 1-13-94
 Drilling Company: Exploration Geoservices
 Driller: Dave and Howard
 Drilling method: Hollow-Stem Auger

Casing diameter: NA
 Casing material: NA
 Slot size: NA
 Sand size: NA
 Screen Interval: NA
 Field Geologist: Erin Krueger

Signature of Registered Professional: 
 Registration No.: CEG 1463 State: CA

| P.I.D. | Sample No. | Blows | Depth | USCS Code | Description | Well Const. |
|--------|------------|-------|-------|-----------|--|-------------|
| | | | 2 | SP | Asphalt (2 inches). | ▽▽▽▽ |
| 90 | S-5 | | 4 | | Medium-grained sand, trace cobbles, tan, damp, very dense; probably fill, trace patches silty clay, black, damp, medium plasticity, stiff. | ▽▽▽▽ |
| | | | 6 | | Hand dug to 5 feet, fill, no pipes or utilities encountered. | ▽▽▽▽ |
| 250 | S-8.5 | | 8 | ML | Sandy silt, gray, damp, medium plasticity, stiff; fill. | ▽▽▽▽ |
| | | | 10 | SP-SM | Medium-grained sand with silt, gray, moist to wet, medium dense; probable fill, pieces of wood; fill. | ▽▽▽▽ |
| | | | 12 | | Wet, product odor. | ▽▽▽▽ |
| 108 | S-14.5 | | 14 | CL | Silty clay, trace gravel, brown-orange, damp, medium plasticity, wet around gravel. | ▽▽▽▽ |
| | | | 16 | | Total Depth = 15-1/2 feet. | |
| | | | 18 | | | |
| | | | 20 | | | |
| | | | 22 | | | |
| | | | 24 | | | |
| | | | 26 | | | |
| | | | 28 | | | |
| | | | 30 | | | |
| | | | 32 | | | |
| | | | 34 | | | |
| | | | 36 | | | |
| | | | 38 | | | |
| | | | 40 | | | |



LOG OF BORING B-1
 ARCO Station 6002
 6235 Seminary Avenue
 Oakland, California

PLATE
 4

PROJECT: 130063.01

Total depth of boring: 36-1/2 feet
 Diameter of boring: 12 inches
 Date drilled: 1-13-94
 Drilling Company: Exploration Geoservices
 Driller: Dave and Howard
 Drilling method: Hollow-Stem Auger

Casing diameter: 4 inches
 Casing material: Sch 40 PVC
 Slot size: 0.020-inch
 Sand size: No. 3 sand
 Screen interval: 5 feet to 25 feet
 Field Geologist: Erin Krueger

Signature of Registered Professional: [Signature]
 Registration No.: CEG 1463 State: CA

| P.I.D. | Sample No. | Blows | Depth | USCS Code | Description | Well Const. |
|--------|------------|-------|-------|-----------|---|-------------|
| | | | 2 | GP | Asphalt (2 inches). Sandy gravel, orange, damp, very dense; baserock. | |
| | | | 4 | ML | Clayey silt, trace fine gravel, black, damp, medium plasticity, very stiff. | |
| 4400 | S-5.5 | | 6 | ML | Sandy silt, with gravel, gray, damp, medium plasticity, stiff. | |
| >9999 | S-7.5 | | 8 | | Visible product, black, rootholes. | |
| | S-8.5 | | | | | |
| 614 | S-10.5 | | 10 | CL | Silty clay, with gravel, orange, damp, medium plasticity, stiff; visible product. | |
| | | | 12 | | Wet around gravel and in rootholes. | |
| 1500 | S-13.5 | | 14 | | With gray mottling. | |
| 190 | S-16 | | 16 | | | |
| 210 | S-18 | | 18 | | Roots and increasing amounts of gravel and moisture. | |
| 770 | S-20.5 | | 20 | GM | Silty gravel with sand, gray, moist to wet, dense; wet around roots and in rootholes. | |
| | | | 22 | | Wet. | |
| 250 | S-23.5 | | 24 | | Wet around gravel. | |
| | | | 26 | GP | Coarse sandy gravel, gray, sand red, white, and gray, damp, dense; wet around gravel. | |
| 20 | S-27 | | 28 | | | |
| | | | 30 | SM | Silty sand with gravel, gray, damp to moist, dense; wet around gravel. | |
| | | | 32 | GP | Coarse sandy gravel, orange, moist to wet, dense. | |
| 0 | S-32.5 | | 34 | SC | Clayey sand with fine gravel, orange, damp, dense; wet around gravel. | |
| 0 | S-36 | | 36 | | | |
| | | | 38 | | Total Depth = 36-1/2 feet. | |
| | | | 40 | | | |



PROJECT: 130063.01

LOG OF BORING B-2/MW-1
 ARCO Station 6002
 6235 Seminary Avenue
 Oakland, California

PLATE
 5

Total depth of boring: 15-1/2 feet
 Diameter of boring: 12 inches
 Date drilled: 1-14-94
 Drilling Company: Exploration Geoservices
 Driller: Dave and Howard
 Drilling method: Hollow-Stem Auger

Casing diameter: 4 inches
 Casing material: Sch 40 PVC
 Slot size: 0.1-inch
 Sand size: 3/8" pea gravel
 Screen Interval: 6 feet to 14 feet
 Field Geologist: Erin Krueger

Signature of Registered Professional: [Signature]
 Registration No.: CEG 1463 State: CA

| P.I.D. | Sample No. | Blows | Depth | USCS Code | Description | Well Const. |
|--------|------------|---------------|-------|-----------|--|-------------|
| | | | 2 | GP | Asphalt (2 inches). | |
| | | | 2 | ML | Sandy gravel, orange, damp, dense; baserock | |
| 95 | S-5 | 5 6 8 | 4 | | Sandy silt with fine gravel, brown, damp, medium plasticity, stiff. | |
| | | | 4 | | Hand dug to 4 feet, native material encountered. | |
| 78 | S-10 | 8 10 17 | 10 | ML | Gray, moist, wet around gravel. | |
| | | | 12 | | | |
| | | | 14 | ML | Sandy silt, with gravel, trace clay, orange, moist to wet, medium plasticity, stiff. | |
| 33 | S-14.5 | 6 7 8 | 14 | | | |
| | | | 16 | | Total Depth = 15-1/2 feet. | |
| | | | 18 | | | |
| | | | 20 | | | |
| | | | 22 | | | |
| | | | 24 | | | |
| | | | 26 | | | |
| | | | 28 | | | |
| | | | 30 | | | |
| | | | 32 | | | |
| | | | 34 | | | |
| | | | 36 | | | |
| | | | 38 | | | |
| | | | 40 | | | |



PROJECT: 130063.01

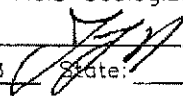
LOG OF BORING B-3/VW-2
 ARCO Station 6002
 6235 Seminary Avenue
 Oakland, California


PLATE

6

Total depth of boring: 16 feet
 Diameter of boring: 12 inches
 Date drilled: 1-14-94
 Drilling Company: Exploration Geoservices
 Driller: Dave and Howard
 Drilling method: Hollow-Stem Auger

Casing diameter: 4 inches
 Casing material: Sch 40 PVC
 Slot size: 0.1 inch
 Sand size: 3/8" pea gravel
 Screen interval: 6 feet to 14 feet
 Field Geologist: Erin Krueger

Signature of Registered Professional: 
 Registration No.: CEG 1463 State: CA

| P.I.D. | Sample No. | Blows | Depth | USCS Code | Description | Well Const. |
|--------|------------|----------------|-------|---|--|-------------|
| | | | 2 | GP | Asphalt (2 inches). Sandy gravel, brown, damp, dense; baserock. Hand dug to 3 feet, native material encountered. | |
| 8 | S-5 | 5 6 6 | 4 | ML | Sandy silt with gravel, brown, damp, medium plasticity, stiff. | |
| | | | 6 | | Gray, moist to wet. | |
| | | | 8 | | Brown. | |
| 39 | S-10 | 15 18 12 | 10 |  | Orange, damp, wet around gravel. | |
| | | | 12 | | | |
| | | | 14 | | | |
| 26 | S-15.5 | 7 11 13 | 16 | | With gray mottling in rootholes. | |
| | | | 18 | | Total Depth = 16 feet. | |
| | | | 20 | | | |
| | | | 22 | | | |
| | | | 24 | | | |
| | | | 26 | | | |
| | | | 28 | | | |
| | | | 30 | | | |
| | | | 32 | | | |
| | | | 34 | | | |
| | | | 36 | | | |
| | | | 38 | | | |
| | | | 40 | | | |



PROJECT: 130063.01

LOG OF BORING B-4/VW-1
 ARCO Station 6002
 6235 Seminary Avenue
 Oakland, California

PLATE

7

| MAJOR DIVISIONS | | | | | TYPICAL NAMES |
|--|---|---------------------------------------|----|---|--|
| COARSE-GRAINED SOILS MORE THAN HALF IS COARSER THAN NO. 200 SIEVE | GRAVELS MORE THAN HALF COARSE FRACTION IS LARGER THAN NO. 4 SIEVE SIZE | CLEAN GRAVELS WITH LITTLE OR NO FINES | GW | | WELL GRADED GRAVELS WITH OR WITHOUT SAND, LITTLE OR NO FINES |
| | | | GP | | POORLY GRADED GRAVELS WITH OR WITHOUT SAND, LITTLE OR NO FINES |
| | | GRAVELS WITH OVER 15% FINES | GM | | SILTY GRAVELS, SILTY GRAVELS WITH SAND |
| | | | GC | | CLAYEY GRAVELS, CLAYEY GRAVELS WITH SAND |
| | SANDS MORE THAN HALF COARSE FRACTION IS SMALLER THAN NO. 4 SIEVE SIZE | CLEAN SANDS WITH LITTLE OR NO FINES | SW | | WELL GRADED SANDS WITH OR WITHOUT GRAVEL, LITTLE OR NO FINES |
| | | | SP | | POORLY GRADED SANDS WITH OR WITHOUT GRAVEL, LITTLE OR NO FINES |
| | | SANDS WITH OVER 15% FINES | SM | | SILTY SANDS WITH OR WITHOUT GRAVEL |
| | | | SC | | CLAYEY SANDS WITH OR WITHOUT GRAVEL |
| FINE-GRAINED SOILS MORE THAN HALF IS FINER THAN NO. 200 SIEVE | SILTS AND CLAYS LIQUID LIMIT 50% OR LESS | ML | | INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTS WITH SANDS AND GRAVELS | |
| | | CL | | INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY CLAYS WITH SANDS AND GRAVELS, LEAN CLAYS | |
| | | OL | | ORGANIC SILTS OR CLAYS OF LOW PLASTICITY | |
| | SILTS AND CLAYS LIQUID LIMIT GREATER THAN 50% | MH | | INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS, FINE SANDY OR SILTY SOILS, ELASTIC SILTS | |
| | | CH | | INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS | |
| | | OH | | ORGANIC SILTS OR CLAYS OF MEDIUM TO HIGH PLASTICITY | |
| HIGHLY ORGANIC SOILS | | PT | | PEAT AND OTHER HIGHLY ORGANIC SOILS | |

- LL - Liquid Limit (%)
- PI - Plastic Index (%)
- PIV - Volatile Vapors in ppm
- MA - Particle Size Analysis
- 2.5 YR 6/2 - Soil Color according to Munsell Soil Color Charts (1975 Edition)
- 5 GY 5/2 - GSA Rock Color Chart

- No Soil Sample Recovered
- "Undisturbed" Sample
- Bulk or Classification Sample
- First Encountered Ground Water Level
- Piezometric Ground Water Level
- Penetration - Sample drive hammer weight - 140 pounds falling 30 inches. Blows required to drive sampler 1 foot are indicated on the logs



GeoStrategies Inc.

Unified Soil Classification - ASTM D 2488-85
and Key to Test Data



PROJECT: ARCO PRODUCTS COMPANY

LOCATION: 6235 Seminary Avenue, Oakland, CA

GSI PROJECT NO.: 4945.703

SURFACE ELEVATION:

DATE STARTED: 6/29/94

WL (ft. bgs): 9.50 DATE: 6/29/94 TIME: 14:30

DATE FINISHED: 6/29/94

WL (ft. bgs): 9.50 DATE: 6/29/94 TIME: 16:00

DRILLING METHOD: 10 in. Hollow Stem Auger

TOTAL DEPTH: 21.5 Feet

DRILLING COMPANY: West Hazmat Drilling Corp.

GEOLOGIST: BS

| DEPTH feet | PID (ppm) | BLOWS/FT. * | SAMPLE NUMBER | SAMPLE INT. | GRAPHIC LOG | SOIL CLASS | GEOLOGIC DESCRIPTION | WELL DIAGRAM |
|---------------|--------------|-------------|---------------|-------------|-------------|------------|--|---|
| | | | | | | ML | PAVEMENT | <p>WELL DIAGRAM</p> <p>4" blank PVC (sch. 40)</p> <p>4" machine slotted PVC (0.02 inch)</p> <p>Cap</p> <p>gout</p> <p>ben-tonite</p> <p>sand Lonestar #2/12</p> <p>ben-tonite</p> |
| 5 | 0 | 22 | B-5-5.5 | | | GC | SANDY SILT WITH GRAVEL (ML) - dark reddish brown (5YR 3/2), damp, very stiff, low plasticity; 60% fines, 30% sand, 10% gravel. | |
| | 0 | 20 | B-5-7.5 | | | GC | CLAYEY GRAVEL (GC) - dark yellowish brown (10YR 4/4), moist, medium dense, 50% gravel, 30% fines, 20% sand. | |
| 10 | | 50 | B-5-10.5 | | | GC | saturated at 9.5 feet. increasing clay at 10 feet. | |
| 15 | 0 | 38 | B-5-15.5 | | | CL | SANDY CLAY WITH GRAVEL (CL) - dark yellowish brown (10YR 4/6), mottled dark gray (N5), moist, low plasticity; hard, 50% fines, 30% sand, 20% gravel. | |
| 20 | 0 | 48 | B-5-21.0 | | | CL | SILTY CLAY WITH SAND (CL) - strong brown (7.5YR 3/4), damp, hard, medium plasticity; 70% fines, 30% sand. | |
| 21.5 | | | | | | | Bottom of boring at 21.5 feet, 6/29/94 | |
| 25 | | | | | | | (* = converted to equivalent standard penetration blows/ft.) | |



PROJECT: ARCO PRODUCTS COMPANY

LOCATION: 6235 Seminary Avenue, Oakland, CA

GSI PROJECT NO.: 4945.703

SURFACE ELEVATION:

DATE STARTED: 6/29/94

WL (ft. bgs): 7.50 DATE: 6/29/94 TIME: 10:00

DATE FINISHED: 6/29/94

WL (ft. bgs): 7.50 DATE: 6/29/94 TIME: 16:30

DRILLING METHOD: 10 in. Hollow Stem Auger

TOTAL DEPTH: 25.0 Feet

DRILLING COMPANY: West Hazmat Drilling Corp.

GEOLOGIST: BS

| DEPTH feet | PID (ppm) | BLOWS/FT. * | SAMPLE NUMBER | SAMPLE INT. | GRAPHIC LOG | SOIL CLASS | GEOLOGIC DESCRIPTION | WELL DIAGRAM |
|---------------|--------------|-------------|---------------|-------------|-------------|------------|--|--|
| | | | | | | ML | PAVEMENT | |
| 5 | 0 | 28 | B-6-5.5 | | | ML | SANDY SILT WITH GRAVEL (ML) - dark reddish brown (5YR 3/2), damp, very stiff, low plasticity; 60% fines, 25% sand, 15% gravel. | <p>4" blank PVC (sch. 40)</p> <p>4" machine slotted PVC (0.02 inch)</p> <p>cap</p> <p>grout</p> <p>ben-tonite</p> <p>sand Lonestar #2/12</p> |
| | 0 | 36 | B-6-7.0 | | | GC | CLAYEY GRAVEL WITH SAND (GC) - dark yellowish brown (10YR 4/4), saturated, dense; 50% gravel, 30% sand, 20% fines. | |
| 10 | 0 | 29 | B-6-10.0 | | | GC | increasing clay, medium dense. | |
| 15 | 0 | 18 | B-6-15.0 | | | CL | | |
| 20 | 0 | 27 | B-6-20.5 | | | CL | SANDY CLAY (CL) - dark yellowish brown (10YR 4/4), mottled grayish green (5G 5/2), moist, very stiff, low plasticity; 60% fines, 40% fine- to medium-grained sand. | |
| | | | | | | GC | CLAYEY GRAVEL WITH SAND (GC) - dark yellowish brown (10YR 4/4), saturated, dense; 50% gravel, 30% sand, 20% fines. | |
| 25 | 0 | 47 | B-6-24.5 | | | CL | SANDY CLAY WITH GRAVEL (CL) - strong brown (7.5YR 4/6), damp to moist, hard, low plasticity; 60% fines, 40% fine- to medium-grained sand. | |
| 30 | | | | | | | Bottom of boring at 25.0 feet, 6/29/94 (* = converted to equivalent standard penetration blows/ft.) | |
| 35 | | | | | | | | |



PROJECT: ARCO PRODUCTS COMPANY

LOCATION: 6235 Seminary Avenue, Oakland, CA

GSI PROJECT NO.: 4945.703

SURFACE ELEVATION:

DATE STARTED: 6/29/94

WL (ft. bgs): 10.30 DATE: 6/29/94 TIME: 12:00

DATE FINISHED: 6/29/94

WL (ft. bgs): 10.70 DATE: 6/29/94 TIME: 19:00

DRILLING METHOD: 10 in. Hollow Stem Auger

TOTAL DEPTH: 24.5 Feet

DRILLING COMPANY: West Hazmat Drilling Corp.

GEOLOGIST: BS

| DEPTH feet | PID (ppm) | BLOWS/FT. * | SAMPLE NUMBER | SAMPLE INT. | GRAPHIC LOG | SOIL CLASS | GEOLOGIC DESCRIPTION | WELL DIAGRAM |
|---------------|--------------|-------------|---------------|-------------|-------------|------------|---|---|
| 0 | | | | | | ML | PAVEMENT | <p>4" blank PVC (sch. 40)</p> <p>4" machine slotted PVC (0.02 inch)</p> <p>cap</p> <p>grout</p> <p>ben- tonite</p> <p>sand Lanester #2/12</p> |
| 5 | 0 | 18 | B-7-5.5 | | | ML | SANDY SILT WITH GRAVEL (ML) - very dark grayish brown (2.5YR 3/2), damp, very stiff, low plasticity; 60% fines, 25% sand, 15% gravel. | |
| 3 | | | | | | GC | becoming moist at 6 feet. | |
| 6 | 18 | 18 | B-7-7.0 | | | GC | CLAYEY GRAVEL (GC) - dark yellowish brown (10YR 4/4), damp to moist, medium dense; 50% gravel, 20% sand, 30% fines. | |
| 6 | 18 | 18 | B-7-8.5 | | | GC | color change to grayish green (5G 4/2), increasing sand, saturated at 10.3 feet. | |
| 10 | 6 | 21 | B-7-10.0 | | | GP | SANDY GRAVEL (GP) - strong brown (7.5YR 4/6), saturated, medium dense; 50% gravel, 30% sand, 20% fines. | |
| 2 | 29 | 29 | B-7-12.0 | | | GP | SANDY GRAVEL (GP) - strong brown (7.5YR 4/6), saturated, medium dense; 50% gravel, 30% sand, 20% fines. | |
| 0 | 20 | 20 | B-7-14.0 | | | GP | SANDY GRAVEL (GP) - strong brown (7.5YR 4/6), saturated, medium dense; 50% gravel, 30% sand, 20% fines. | |
| 15 | 0 | 24 | B-7-16.0 | | | SP | CLAYEY SAND WITH GRAVEL (SP) - yellowish red (5YR 3/4), saturated, medium dense; 60% sand, 25% fines, 15% gravel. | |
| 0 | 40 | 40 | | | | GP | SANDY GRAVEL (GP) - strong brown (7.5YR 4/6), saturated, dense; 50% gravel, 35% sand, 15% fines. | |
| 20 | 0 | 56 | | | | GP | becoming very dense at 19 feet. | |
| 0 | 48 | 48 | B-7-21.0 | | | GP | increasing clay, becoming moist at 21 feet. | |
| 0 | 52 | 52 | | | | GP | decreasing gravel, becoming damp to moist at 23 feet. | |
| 0 | | | B-7-24.0 | | | | | |
| 25 | | | | | | | Bottom of boring at 24.5 feet, 6/29/94 | |
| 30 | | | | | | | (* = converted to equivalent standard penetration blows/ft.) | |
| 35 | | | | | | | | |



PROJECT: ARCO PRODUCTS COMPANY

LOCATION: 6235 Seminary Avenue, Oakland, CA

GSI PROJECT NO.: 4945.703

SURFACE ELEVATION:

DATE STARTED: 6/29/94

WL (ft. bgs): 13.00 DATE: 6/29/94 TIME: 16:30

DATE FINISHED: 6/29/94

WL (ft. bgs): 13.00 DATE: 6/29/94 TIME: 18:00

DRILLING METHOD: 10 in. Hollow Stem Auger

TOTAL DEPTH: 25.0 Feet

DRILLING COMPANY: West Hazmat Drilling Corp.

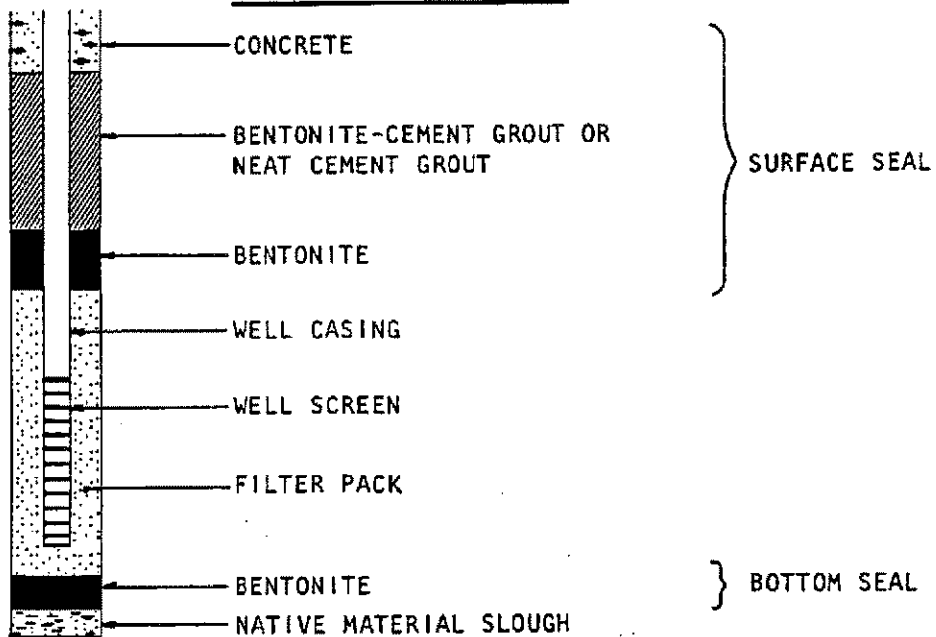
GEOLOGIST: BS

| DEPTH feet | P.D (ppm) | BLOWS/FT. * | SAMPLE NUMBER | SAMPLE INT. | GRAPHIC LOG | SOIL CLASS | GEOLOGIC DESCRIPTION | WELL DIAGRAM |
|------------|-----------|-------------|---------------|-------------|-------------|------------|---|--------------|
| | | | | | | | PAVEMENT | |
| | | | | | | SC | CLAYEY SAND (SC) - light olive brown (2.5Y 5/6), damp, dense; 70% sand, 30% fines. | |
| 5 | 0 | 38 | U-8-5.5 | | | ML | SANDY SILT WITH GRAVEL (ML) - very dark brown (10YR 2/1), damp, hard, low plasticity; 60% fines, 30% sand, 10% fine gravel. color change to dark grayish brown (10YR 4/2) at 7 feet. | |
| 0 | | 31 | B-8-7.5 | | | | | |
| 10 | 230 | 48 | B-8-10.5 | | | GC | CLAYEY GRAVEL (GC) - dark yellowish brown (10YR 4/4), damp, dense; 50% gravel, 30% fines, 20% sand, obvious product odor; becoming moist at 11 feet. | |
| 15 | 4 | <50 | B-8-15.5 | | | GP | SANDY GRAVEL WITH CLAY (GP) - strong brown (7.5YR 4/8), mottled grayish green (5G 5/2), saturated, very dense, 50% gravel, 30% sand, 20% fines. | |
| | | | | | | GC | CLAYEY GRAVEL WITH SAND (GC) - strong brown (7.5YR 4/8), wet around gravel, very dense; 40% gravel, 30% fines, 30% sand. increasing clay at 20 feet. | |
| 20 | 5 | 48 | B-8-20.5 | | | | | |
| 25 | 3 | 52 | B-8-24.5 | | | ML | SANDY SILT WITH FINE GRAVEL (ML) - yellowish brown (10YR 5/6), moist, hard, low plasticity, 50% silt, 40% fine-grained sand, 10% fine gravel. | |
| | | | | | | | Bottom of boring at 25.0 feet, 6/29/94 | |
| | | | | | | | (* = converted to equivalent standard penetration blows/ft.) | |
| | | | | | | | <50 = less than 1 foot was penetrated | |



EXPLANATION OF SYMBOLS ON EXPLORATORY BORING LOGS

Well Details Column



Sample Column



BAG/BULK SAMPLES

FIVE-FOOT SPLIT BARREL SAMPLER (CONTINUOUS SAMPLER)

MODIFIED CALIFORNIA SPLIT SPOON

OTHER SAMPLERS (SEE REMARKS FOR TYPE AND SIZE)

PITCHER BARREL

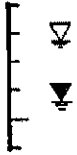
ROCK CORE (SEE REMARKS FOR TYPE AND SIZE)

SHELBY TUBE SAMPLER

STANDARD PENETRATION TEST SPLIT SPOON SAMPLER (2" OD)

EXPLANATION OF SYMBOLS ON
EXPLORATORY BORING LOGS
(CONTINUED)

Ground-Water Level Column



DEPTH TO FIRST OBSERVED GROUND WATER

DEPTH TO STABILIZED GROUND WATER

Miscellaneous

2.5 YR 6/2

Color as field checked to Munsell Soil Color Chart
(1975 Edition)

PENETRATION

Blows required to drive sampler 1 foot into soil.
Standard drive hammer weight: 140 pounds.
Standard drop: 30 inches

DBA

LOG OF EXPLORATORY BORING

PROJECT NUMBER: 805-131.04

BORING NO.: AS-1

PROJECT NAME: ARCO Service Station 6002

PAGE: 1 of 2

BY: R. Davis

DATE: 6/26/95

SURFACE ELEVATION: ft.

| RECOVERY (ft/ft) | PID (ppm) | PENETRATION (blows/ft) | GROUND WATER LEVELS | DEPTH IN FEET | SAMPLES | LITHOGRAPHIC COLUMN | DESCRIPTION | WELL DETAIL |
|---------------------|--------------|---------------------------|------------------------|---------------------|---------|------------------------|--|----------------|
| | | | | 5 | | | ASPHALT FILL. | |
| 100% | 26 | 2 4 5 | | 5 | | | CLAYEY SAND (SC), dark grayish brown (2.5Y, 3/3); 50% medium plasticity fines; 20-30% fine to coarse sand; 20-30% fine to coarse gravel, to 2.5"; damp; product odor. | |
| 60% | 156 | 4 7 7 | | 10 | | | CLAYEY SAND (SC), olive brown (2.5Y, 4/4); 40% medium plasticity fines; 30% fine to coarse sand; 20% fine to coarse gravel, up to 1.5"; medium dense; moist; product odor. | |
| 100% | 0 | 4 6 9 | | 15 | | | SANDY CLAY (CL), dark yellowish brown (10YR, 4/4); 55-60% medium plasticity fines; 30-35% fine to coarse sand; 10% fine gravel; stiff; damp to moist; product odor. | |
| | | | | 20 | | | CLAYEY SAND (SC), 20-30% medium plasticity fines; 70-80% fine to coarse sand; wet; no product odor. | |

REMARKS

Boring drilled with 8" diameter hollow-stem augers. Samples were taken using a 2" diameter modified-California split spoon sampler. Boring converted into a 2" diameter polyvinyl chloride (PVC) air-sparge well. See explanation sheet for definition of symbols used in well detail and sample columns of this log. See explanation sheet for definition of symbols on this log.



LOG OF EXPLORATORY BORING

PROJECT NUMBER: 805-131.04

BORING NO.: AS-1

PROJECT NAME: ARCO Service Station 8002

PAGE: 2 of 2

BY: R. Davis

DATE: 8/26/85

SURFACE ELEVATION: ft.

| RECOVERY (ft/ft) | PID (ppm) | PENETRATION (blows/ft) | GROUND WATER LEVELS | DEPTH IN FEET | SAMPLES | LITHOGRAPHIC COLUMN | DESCRIPTION | WELL DETAIL |
|------------------|-----------|------------------------|---------------------|---------------|---------|---------------------|---|-------------|
| 25% | 0 | 2 2 8 | ▽ | | | | CLAYEY SAND (SC), continued. | |
| 100% | 0 | 7 7 7 | | 25 | | | SILTY CLAY (CL), dark olive gray (5Y, 3/2); 75-80% low plasticity fines; 20-25% fine to medium sand; stiff; moist; no product odor. | |
| 100% | | 2 7 8 | | | | | @28-28.5': 55-60% low plasticity fines; 40-45% fine to coarse sand; trace fine gravel; damp; no product odor. | |
| 90% | | 6 14 25 | | 30 | | | CLAYEY SAND (SC), dark olive gray (5y, 3/2); 20-30% low to medium plasticity fines; 70-80% fine to coarse sand; medium dense; moist; no product odor. @30-31.5': dark brown (7.5YR, 4/4); 30% low to medium plasticity fines; 50% fine to coarse sand; 20% fine gravel; damp; no product odor. | |
| | | | | 35 | | | BORING TERMINATED AT 31.5 FEET BGS. | |
| | | | | 40 | | | | |



REMARKS

Boring drilled with 8" diameter hollow-stem augers. Samples were taken using a 2" diameter modified-California split spoon sampler. Boring converted into a 2" diameter polyvinyl chloride (PVC) air-spargue well. See explanation sheet for definition of symbols used in well detail and sample columns of this log. See explanation sheet for definition of symbols on this log.

LOG OF EXPLORATORY BORING

PROJECT NUMBER: 805-131.04

BORING NO.: MW-6 *mw-6*

PROJECT NAME: ARCO Service Station 6002

PAGE: 1 of 2

BY: R. Davis

DATE: 6/26/95

SURFACE ELEVATION: NA ft.

| RECOVERY (ft/ft) | PID (ppm) | PENETRATION (blows/ft) | GROUND WATER LEVELS | DEPTH IN FEET | SAMPLES | LITHOGRAPHIC COLUMN | DESCRIPTION | WELL DETAIL |
|------------------|-----------|------------------------|---------------------|---------------|---------|---------------------|--|-------------|
| 100% | 0 | 6 14 16 | | 5 | 5 | | <p>CONCRETE</p> <p>FILL - CLAYEY GRAVEL (GC), brown, 20-30% low to medium plasticity fines; 30-40% fine to coarse sand; 40% fine to coarse gravel; damp; no product odor.</p> | |
| 60% | 0 | 3 13 14 | | 10 | 10 | | <p>CLAYEY SAND (SC), dark grayish brown (10YR, 4/2); 40% medium plasticity fines; 40% fine to coarse sand; 20% fine to coarse gravel, up to 1"; medium dense; moist or wet; no product odor.</p> | |
| 100% | 0 | 4 8 10 | | 15 | 15 | | <p>SANDY CLAY (CL), mottled gray (2.5Y, 5/0) and light olive brown (2.5Y, 5/6); 70% low to medium plasticity fines; 20% fine to coarse sand; 10% fine gravel, subangular; thin (<1mm) organic fragments present; very stiff; damp; no product odor.</p> | |
| 0 | 0 | 4 7 | | 20 | 20 | | <p>@19.0-20.5': as above at 14.0-15.5'.</p> | |

REMARKS

Boring drilled with 8" diameter hollow-stem augers. Samples were taken using a 2" diameter modified-California split spoon sampler. Boring converted into a 2" diameter polyvinyl chloride (PVC) groundwater monitoring well. See explanation sheet for definition of symbols used in well detail and sample columns of this log. See explanation sheet for definition of symbols on this log.



LOG OF EXPLORATORY BORING

PROJECT NUMBER: 805-131.04

BORING NO.: MW-6

PROJECT NAME: ARCO Service Station 8002

PAGE: 2 of 2

BY: R. Davis

DATE: 6/26/95

SURFACE ELEVATION: NA ft.

| RECOVERY (ft/ft) | PID (ppm) | PENETRATION (blows/ft) | GROUND WATER LEVELS | DEPTH IN FEET | SAMPLES | LITHOGRAPHIC COLUMN | DESCRIPTION | WELL DETAIL |
|------------------|-----------|------------------------|---------------------|---------------|---------|---------------------|---|-------------|
| | | 9 | ▽ | | | 0 | SANDY CLAY (CL), continued. @20.5': moist to wet. | 0 |
| 100% | 0 | 9 11 17 | | 25 | 1 | 1 | CLAYEY SAND (SC), strong brown (7.5YR, 4/6); 40-45% low plasticity fines; 50-55% fine to medium sand; 5% fine to coarse gravel, up to 1-in; medium dense; moist to wet; no odor. @25.5-27': 20% low plasticity fines; 60% fine to coarse sand; 20% fine to coarse gravel, up to 2"; very moist; no odor. | 0 |
| 80% | 0 | 7 14 16 | | | 1 | 1 | @27.5-28.5': dark brown (10YR, 4/3); moist to wet. | 0 |
| 80% | 0 | 12 14 18 | | | 1 | 1 | | 0 |
| 85% | 0 | 6 16 13 | | 30 | 1 | 1 | @30-31.5': 25-30% low to medium plasticity fines; 65-70% fine to medium sand; 5% fine gravel; wet; no product odor. | 0 |
| | | | | 35 | | | BORING TERMINATED AT 32.0 FEET BGS. | |
| | | | | 40 | | | | |

REMARKS

Boring drilled with 8" diameter hollow-stem augers. Samples were taken using a 2" diameter modified-California split spoon sampler. Boring converted into a 2" diameter polyvinyl chloride (PVC) groundwater monitoring well. See explanation sheet for definition of symbols used in well detail and sample columns of this log. See explanation sheet for definition of symbols on this log.



EMCON
ASSOCIATES

LOG OF EXPLORATORY BORING

PROJECT NUMBER: 805-13104

BORING NO.: SB-1

PROJECT NAME: ARCO Service Station 6002

PAGE: 1 of 1

BY: R. Davis

DATE: 8/27/85

SURFACE ELEVATION: ft.

| RECOVERY (ft./ft) | PID (ppm) | PENETRA- TION (blows/ft) | GROUND WATER LEVELS | DEPTH IN FEET | SAMPLES | LITHOGRAPHIC COLUMN | DESCRIPTION | WELL DETAIL |
|----------------------|--------------|--------------------------------|---------------------------|---------------------|---------|---|---|----------------|
| | | | | | | CONCRETE | | |
| | | | | | | FILL: GRAVELLY CLAYEY SAND (SC). | | |
| 95% | 6.4 | 4 | | 5 | | CLAYEY SAND (SC), dark brown (10YR, 3/3); 40% medium plasticity fines; 45% fine to coarse sand (f:m:c=1:1:2); 15% fine to coarse gravel; medium dense; damp; no product odor. | | |
| | 2.1 | 5 | | | | @5.8-6.5': very dark grayish brown (2.5Y, 3/2); moist; product odor. | | |
| 40% | 29.1 | 5 | | | | @8-9.5': as above at 5.8'-6.5' with ~30% coarse gravel, up to 2-in. | | |
| 90% | 608 | 9 | | 10 | | @10-11.5': dark grayish brown (2.5Y, 4/2); 40% low to medium plasticity fines; 40% fine to coarse sand (f:m:c=2:2:1); 20% fine to coarse gravel; dense; wet; product odor. | <i>Sample contained 730ppm TPH & BTEX</i> | |
| 80% | 36 | 12 | | | | @11.5-12.5': damp; no product odor. | | |
| 90% | 0 | 11 | | 15 | | SANDY CLAY (CL), dark yellowish brown (10YR, 4/4); 55-60% low to medium plasticity fines; 35-40% fine to coarse sand; 5% fine to coarse gravel; damp; no product odor. | | |
| | | 15 | | | | BORING TERMINATED AT 16.5 FEET BELOW GROUND SURFACE. | | |

REMARKS

Boring drilled with 6-inch-diameter solid-stem augers. Boring sampled using 2-inch-diameter modified California split spoon samplers. See explanation sheet for definition of symbols on this log.



EMCON
ASSOCIATES

LOG OF EXPLORATORY BORING

PROJECT NUMBER: 805-13104

BORING NO.: SB-2

PROJECT NAME: ARCO Service Station 8002

PAGE: 1 of 1

BY: R. Davis

DATE: 8/27/95

SURFACE ELEVATION: ft.

| RECOVERY (ft/ft) | PIU (ppm) | PENETRATION (blows/ft) | GROUND WATER LEVELS | DEPTH IN FEET | SAMPLES | LITHOGRAPHIC COLUMN | DESCRIPTION | WELL DETAIL |
|------------------|-----------|------------------------|---------------------|---------------|---------|---------------------|---|---|
| | | | | | | | CONCRETE | |
| 70% | 8.1 | 5 | | 5 | | | FILL: GRAVELLY CLAYEY SAND (SC), 30% fines (clay); 40% fine to coarse sand; 30% fine to coarse gravel, up to 3-in. | |
| 70% | 6.9 | 7 | | 8 | | | CLAYEY SAND (SC), dark brown (10YR, 3/3); 25-30% medium plasticity fines; 55-60% fine to coarse sand (f:m:c=1:1:1); 10-15% fine to coarse gravel, up to 2-in.; medium dense; damp; product odor. | |
| 40% | 0 | 10 | | 10 | | | @8-9.5': moist to wet; product odor. | <i>3 Sample Containers 2.0 ppm TPH & BTEX</i> |
| 80% | 0 | 10 | | 10 | | | @10-11.5': 20% medium plasticity fines; 60% fine to coarse sand (f:m:c=1:1:1); 20% fine to coarse gravel; medium dense; no product odor. | |
| 90% | 0 | 6 | | 9 | | | SANDY CLAY (CL), mottled grayish brown (10YR, 5/2) and dark yellowish brown (10YR, 4/4); 55-60% medium plasticity fines; 35-40% fine to coarse sand, poorly graded; 5% fine gravel; moist; no product odor. | |
| | | 9 | | 15 | | | BORING TERMINATED AT 15.5 FEET BELOW GROUND SURFACE. | |
| | | 11 | | 20 | | | | |

REMARKS

Boring drilled with 6-inch-diameter solid-stem augers. Boring sampled using 2-inch-diameter modified California split spoon samplers. See explanation sheet for definition of symbols on this log.



EMCON
ASSOCIATES

LOG OF EXPLORATORY BORING

PROJECT NUMBER: 805-131.04

BORING NO.: SB-3

PROJECT NAME: ARCO Service Station 6002

PAGE: 1 of 2

BY: R. Davis

DATE: 8/27/85

SURFACE ELEVATION: ft.

| RECOVERY (ft/ft) | PID (ppm) | PENETRATION (blows/ft) | GROUND WATER LEVELS | DEPTH IN FEET | SAMPLES | LITHOLOGIC COLUMN | DESCRIPTION | WELL DETAIL |
|------------------|-----------|------------------------|---------------------|---------------|---------|-------------------|---|-------------|
| 70% | 0 | 5 6 7 | | 5 | | | <p>CONCRETE</p> <p>FILL: GRAVELLY CLAYEY SAND (SC), 30% fines (clay); 40% fine to coarse sand; 30% fine to coarse gravel, up to 3-in.</p> <p>CLAYEY SAND (SC), dark brown (10YR, 3/3); 25-30% low to medium plasticity fines; 40% fine to coarse sand, poorly graded; 30-35% fine to coarse gravel, subangular; medium dense; damp; no product odor.</p> | |
| 90% | 0 | 2 3 3 | | 10 | | | <p>@10-11.5': dark olive gray (5Y, 3/2); 15-20% low to medium plasticity fines; 45-50% fine to coarse sand; well sorted; 35% fine to coarse gravel, subangular; loose; wet; product odor.</p> | |
| 60% | 0 | 12 18 27 | | 15 | | | <p>@15-15.3': Sandy Clay (SC), same as SB-2 at 12-13.5'.</p> <p>SANDY CLAY (CL), mottled grayish brown (10YR, 5/2) and dark yellowish brown (10YR, 4/4); 55-60% medium plasticity fines; 35-40% fine to coarse sand, poorly graded; 5% fine gravel; moist; no product odor.</p> <p>CLAYEY GRAVEL (GC), yellowish brown (10YR, 5/4); 15% medium plasticity fines; 35% fine to coarse sand, poorly graded; 50% fine to coarse gravel, up to 2.5-in.; dense; wet; no product odor.</p> | |
| | | | | 20 | | | <p>CLAYEY GRAVEL (GC), yellowish brown (10YR, 5/4); 15% medium plasticity fines; 35% fine to coarse sand, poorly graded; 50% fine to coarse gravel, up to 2.5-in.; dense; wet; no product odor.</p> | |



REMARKS
 Boring drilled with 6-inch-diameter solid-stem augers. Boring sampled using 2-inch-diameter modified California split spoon samplers. See explanation sheet for definition of symbols on this log. See explanation sheet for definition of symbols on this log.

LOG OF EXPLORATORY BORING

PROJECT NUMBER: 805-131.04

BORING NO.: SB-3


PROJECT NAME: ARCO Service Station 6002

PAGE: 2 of 2

BY: R. Davis

DATE: 6/27/85

SURFACE ELEVATION: ft.

| RECOVERY (ft/ft) | PID (ppm) | PENETRA- TION (blows/ft) | GROUND WATER LEVELS | DEPTH IN FEET | SAMPLES | LITHOGRAPHIC COLUMN | DESCRIPTION | WELL DETAIL |
|---------------------|--------------|--------------------------------|---------------------------|---|---------|---|---|----------------|
| 100% | 0 | 12 15 19 | | 0 25 30 35 40 | |  | <p>SANDY CLAY (CL), dark reddish brown (5YR, 3/4); 60% medium plasticity fines; 25% fine to coarse sand; 15% fine to coarse gravel, up to 1-in.; hard; damp; no product odor.</p> <p>BORING TERMINATED AT 21.5 FEET BELOW GROUND SURFACE.</p> | |



EMCON
ASSOCIATES

REMARKS

Boring drilled with 6-inch-diameter solid-stem augers. Boring sampled using 2-inch-diameter modified California split spoon samplers. See explanation sheet for definition of symbols on this log. See explanation sheet for definition of symbols on this log.

LOG OF EXPLORATORY BORING

PROJECT NUMBER: 805-131.04

BORING NO.: SB-4

PROJECT NAME: ARCO Service Station 6002

PAGE: 1 of 2

BY: R. Davis

DATE: 6/27/85

SURFACE ELEVATION: ft.

| RECOVERY (ft/ft) | PIU (ppm) | PENETRATION (blows/ft) | GROUND WATER LEVELS | DEPTH IN FEET | SAMPLES | LITHOGRAPHIC COLUMN | DESCRIPTION | WELL DETAIL |
|------------------|-----------|------------------------|---------------------|---------------|---------|-------------------------|--|-------------|
| 100% | 0 | 6 7 9 | | 5 | ■ | [Cross-hatched pattern] | <p>CONCRETE</p> <p>FILL: GRAVELLY CLAYEY SAND (SC), 30% fines (clay); 40% fine to coarse sand; 30% fine to coarse gravel, up to 3-in.</p> | |
| 60% | 0 | 5 8 9 | ▽ | 10 | ■ | [Diagonal hatching] | <p>CLAYEY SAND (SC), dark brown (10YR, 3/3); 20-25% low to medium plasticity fines; 40-45% fine to coarse sand, poorly graded; 35% fine to coarse gravel, subangular, moderately weathered; medium dense; damp; no product odor.</p> <p>@10-11.5': dark olive gray (5Y, 3/2); 15-20% low to medium plasticity fines; 45-50% fine to coarse sand; well sorted; 35% coarse gravel, subangular, up to 2-in; loose; wet; faint product odor.</p> | |
| 70% | 0 | 13 8 10 | | 15 | ■ | [Diagonal hatching] | <p>CLAYEY GRAVEL (GC), yellowish brown (10YR, 5/4); 10-20% low to medium plasticity fines; 20% fine to coarse sand; 60-70% fine to coarse gravel, up to 2.5-in.; medium dense; wet; no product odor.</p> <p>SANDY CLAY (CL), yellowish brown (10YR, 5/4); 55% medium plasticity fines; 35% fine to coarse sand; 10% fine gravel; firm; moist; no product odor.</p> | |
| | | | | 20 | | | | |

REMARKS

Boring drilled with 6-inch-diameter solid-stem augers. Boring sampled using 2-inch-diameter modified California split spoon samplers. See explanation sheet for definition of symbols on this log.



EMCON
ASSOCIATES

LOG OF EXPLORATORY BORING

PROJECT NUMBER: **805-13104**

BORING NO.: **SB-4**

PROJECT NAME: **ARCO Service Station 6002**

PAGE: **2 of 2**

BY: **R. Davis**

DATE: **6/27/85**

SURFACE ELEVATION: **ft.**

| RECOVERY (ft/ft) | PID (ppm) | PENETRA- TION (blows/ft) | GROUND WATER LEVELS | DEPTH IN FEET | SAMPLES LITHOGRAPHIC COLUMN | DESCRIPTION | WELL DETAIL |
|---------------------|--------------|--------------------------------|---------------------------|---------------------|-----------------------------------|---|----------------|
| 90% | 0 | 11 18 21 | | 25 | 30 | <p>@20.0-21.5': dark reddish brown (5YR, 3/4); 80% medium plasticity fines; 25% fine to coarse sand; 15% fine to coarse gravel, up to 1-in.; hard; damp; no product odor.</p> <p>BORING TERMINATED AT 21.5 FEET BELOW GROUND SURFACE.</p> | |
| | | | | 35 | | | |
| | | | | 40 | | | |

REMARKS

Boring drilled with 6-inch-diameter solid-stem augers. Boring sampled using 2-inch-diameter modified California split spoon samplers. See explanation sheet for definition of symbols on this log.



EMCON
ASSOCIATES

LOG OF EXPLORATORY BORING

PROJECT NUMBER: 805-131.04

BORING NO.: VW-3




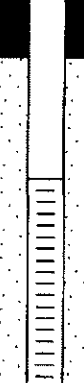


PROJECT NAME: ARCO Service Station 6002

PAGE: 1 of 1

BY: R. Davis

DATE: 6/26/85

SURFACE ELEVATION: ft.

| RECOVERY (ft/ft) | PID (ppm) | PENETRA- TION (blws/ft) | GROUND WATER LEVELS | DEPTH IN FEET | SAMPLES | LITHOGRAPHIC COLUMN | DESCRIPTION | WELL DETAIL |
|---------------------|--------------|-------------------------------|---------------------------|---------------------|---------|---|---|---|
| 100% | 0.5 | 2 3 5 | | 5 | |  | ASPHALT FILL. |  |
| 100% | 665 | 2 3 5 | ▽ | 10 | |  | SANDY CLAY (CL) TO CLAYEY SAND (SC), very dark grayish brown (2.5Y, 3/2); 50% medium plasticity fines; 20-30% fine to coarse sand; 20-30% fine to coarse gravel, up to 2-in; damp; product odor at 5'. @9-10.2': CLAYEY SAND (SC), very dark grayish brown (2.5Y, 3/2); 35-40% medium plasticity fines; 35% fine to coarse sand; 25-30% fine to coarse gravel; loose; wet; product odor. @10.2-10.5': dark brown (10YR, 4/3). |  |
| 100% | 0 | 8 13 7 | | 15 | |  | CLAYEY GRAVEL (GC), brown (2.5Y, 5/4); 20% medium plasticity fines; 30% fine to coarse sand, subangular; 50% fine to coarse gravel, subangular; medium dense; no product odor. CLAY (CL), mottled brown (7.5YR, 5/2) & (7.5YR, 5/4); 80-85% medium plasticity fines; 15-20% fine to medium sand; very stiff; damp; no product odor. BORING TERMINATED AT 15.0 FEET BELOW GROUND SURFACE. |  |
| | | | | 20 | | | | |

REMARKS

Boring drilled with 10" diameter hollow-stem augers. Samples were taken using a 2" diameter modified-California split spoon sampler. Boring converted into a 4" diameter polyvinyl chloride (PVC) vapor extraction well. See explanation sheet for definition of symbols used in well detail and sample columns of this log.



EMCON
ASSOCIATES

LOG OF EXPLORATORY BORING

PROJECT NUMBER: 805-131.04

BORING NO.: VW-4

PROJECT NAME: ARCO Service Station 8002

PAGE: 1 of 1

BY: R. Davis

DATE: 8/28/85

SURFACE ELEVATION: ft.

| RECOVERY (ft./ft.) | PIG (ppm) | PENETRA- TION (blws/ft) | GROUND WATER LEVELS | DEPTH IN FEET | SAMPLES | LITHOGRAPHIC COLUMN | DESCRIPTION | WELL DETAIL |
|-----------------------|--------------|-------------------------------|---------------------------|---------------------|---------|--|-------------|----------------|
| | | | | | | ASPHALT FILL - SANDY CLAYEY GRAVEL. | | |
| 100% | 95 | 1 3 5 | | 5 | | CLAYEY SAND (SC), very dark grayish brown (2.5Y, 3/2); 30-40% medium plasticity fines; 50-60% fine to coarse sand; 10% fine gravel; loose; damp; product odor. | | |
| 100% | 698 | 3 3 4 | ▽ | 10 | | @8-9.5': 30% fines; 50% fine to coarse sand; 20% fine to coarse gravel; moist; product odor. | | |
| 25% | 0 | 4 8 9 | | 15 | | SANDY CLAY (CL), brown (10YR, 4/3) with grayish brown and block mottling; 70-75% medium plasticity fines; 20-25% fine to coarse sand; 5% fine to coarse gravel; stiff to very stiff; moist; no product odor. | | |
| 100% | 0 | 3 5 6 | | 15.5 | | @15-15.5': 45-50% low to medium plasticity fines. BORING TERMINATED AT 15.5 FEET BELOW GROUND SURFACE. | | |
| | | | | 20 | | | | |

REMARKS

Boring drilled with 10" diameter hollow-stem augers. Samples were taken using a 2" diameter modified-California split spoon sampler. Boring converted into a 4" diameter polyvinyl chloride (PVC) vapor extraction well. See explanation sheet for definition of symbols used in well detail and sample columns of this log.



EMCON
ASSOCIATES

LOG OF EXPLORATORY BORING

PROJECT NUMBER: 20805-13L002

BORING NO.: MW-7













PROJECT NAME: ARCO Service Station 6002

PAGE: 1 of 1

BY: R. Davis

DATE: 8/08/98

SURFACE ELEVATION: NA

| RECOVERY (ft/ft) | PENETRATION (blows/6") | GROUND WATER LEVELS | DEPTH IN FEET | SAMPLES | LITHOGRAPHIC COLUMN | DESCRIPTION | WELL DETAIL |
|---------------------|---------------------------|---------------------------|---------------------|---------|---|---|---|
| | | | 5 | |  | FILL, CLAYEY GRAVEL (GC), dark grayish brown; nails, copper wire, and plastic fragments in soil. |  |
| | | | 10 | |  | CLAYEY SAND to CLAYEY GRAVEL (SC-GC), yellowish brown; 20% medium-plasticity fines; 40% fine to coarse sand, (1:1:1); 40% fine to coarse gravel, (2:1); damp; no odor. |  |
| 100% | | | | ■ |  | @9.0-10.5': very tough drilling; coarse gravel and cobbles. |  |
| | | | 15 | |  | SANDY CLAY (CL), yellowish brown; 60% medium-plasticity fines; 25% fine to coarse sand; 15% fine to coarse gravel; damp; no odor. |  |
| 100% | | | | ■ |  | CLAYEY SAND to CLAYEY GRAVEL (SC-GC), yellowish brown; 20% medium-plasticity fines; 40% fine to coarse sand, (1:1:1); 40% fine to coarse gravel, (1:3); damp to moist; no odor. |  |
| | | | 20 | |  | @11.0-14.0': very tough drilling. BORING TERMINATED AT 14.0 FEET, AUGER REFUSAL. |  |



REMARKS

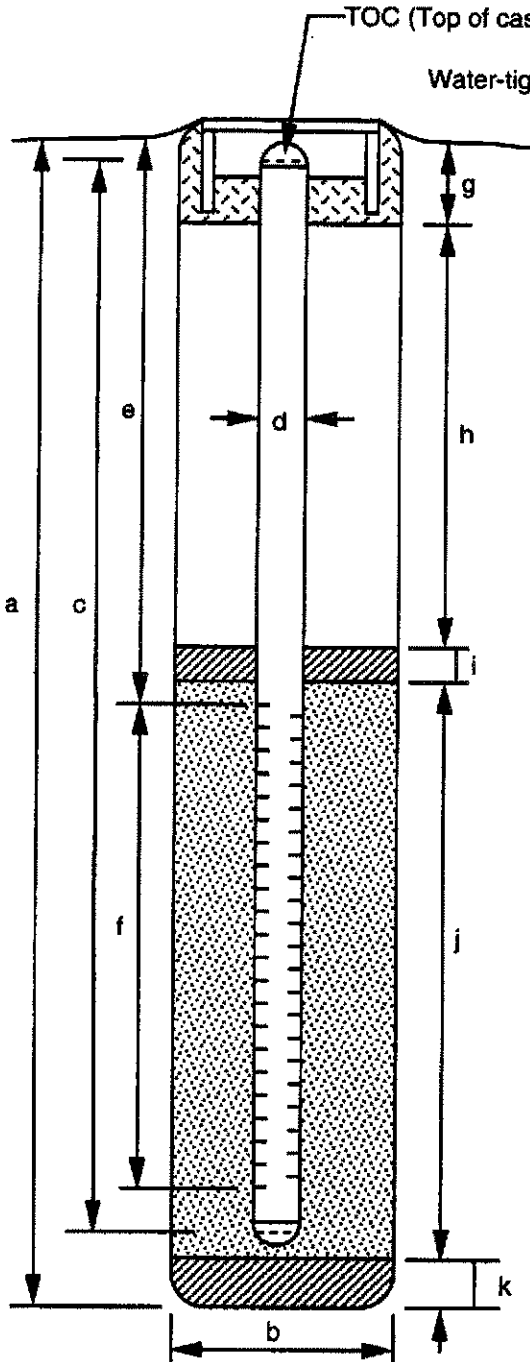
Boring completed to 14.0' using 4" diameter hand auger drilling equipment. Samples were collected by driving 2" diameter by 4" long stainless steel liners into undisturbed soil. Boring converted into a 2" diameter polyvinyl chloride (PVC) groundwater monitoring well. See explanation sheet for definition of symbols used in well detail and sample columns of this log.



EMCON
ASSOCIATES

WELL DETAILS

PROJECT NUMBER 20805-131.002 BORING / WELL NO. MW-7
 PROJECT NAME ARCO 6002 TOP OF CASING ELEV. NA
 LOCATION Oakland GROUND SURFACE ELEV. NA
 WELL PERMIT NO. 96485 DATUM M.S.L.
 INSTALLATION DATE 8/06/96



EXPLORATORY BORING

a. Total depth 14.0 ft.
 b. Diameter 4.0 in.
 Drilling method Hand Auger

WELL CONSTRUCTION

c. Total casing length 13.7 ft.
 Material Schedule 40 PVC
 d. Diameter 2.0 in.
 e. Depth to top perforations 5.0 ft.
 f. Perforated length 8.5 ft.
 Perforated interval from 8.5 to 13.5 ft.
 Perforation type Machine Slotted
 Perforation size 0.020 inch
 g. Surface seal 1.0 ft.
 Material Concrete
 h. Backfill NA ft.
 Material NA
 i. Seal 6.0 ft.
 Material Bentonite
 j. Gravel pack 7.0 ft.
 Gravel pack interval from 7.0 to 14.0 ft.
 Material 2/12 Sand
 k. Bottom seal/fill NA ft.
 Material NA

filepath: RKD-welldetails/ARCO/6002

Form prepared by R. Davis

LOG OF EXPLORATORY BORING

PROJECT NUMBER: 805-131.02

BORING NO.: MW-8

PROJECT NAME: ARCO Service Station 8002

PAGE: 1 of 1

BY: J. Young

DATE: 7/15/95

SURFACE ELEVATION: NA

| RECOVERY (ft/ft) | PENETRA- TION (blows/6") | GROUND WATER LEVELS | DEPTH IN FEET | SAMPLES | LITHOGRAPHIC COLUMN | DESCRIPTION | WELL DETAIL |
|---------------------|--------------------------------|---------------------------|---------------------|----------|------------------------|--|----------------|
| | | | 5 | [Sample] | [Hatched] | SANDY CLAY (CL), brown (10YR,4/3); 60% fines; 35% fine to coarse sand; 5% fine gravel; moist; no odor. | [Hatched] |
| 100% | | | 10 | [Sample] | [Dotted] | CLAYEY GRAVEL (GC), light brown; 30% fines; 20-25% fine to coarse sand; 45-50% fine to coarse gravel; very moist; no odor. | [Dotted] |
| | | ▽ 7/15/95 | 15 | | | BORING TERMINATED AT 14.5 FEET BGS. | |
| | | | 20 | | | | |



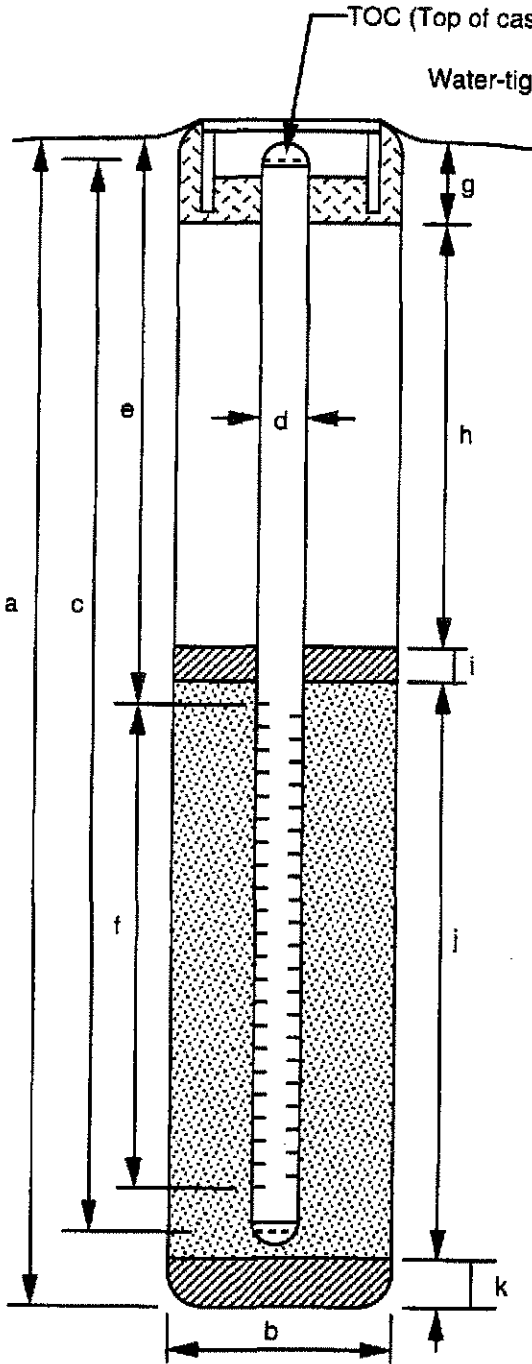
REMARKS

Boring drilled with 8" diameter hollow-stem augers. Samples were taken using a 2" diameter modified-California split spoon sampler. Boring converted into a 2" diameter polyvinyl chloride (PVC) groundwater monitoring well. See explanation sheet for definition of symbols used in well detail and sample columns of this log. See explanation sheet for definition of symbols on this log.

WELL DETAILS



PROJECT NUMBER 20805-131.002 BORING / WELL NO. MW-8
 PROJECT NAME ARCO 6002 TOP OF CASING ELEV. NA
 LOCATION Oakland GROUND SURFACE ELEV. NA
 WELL PERMIT NO. 96486 DATUM M.S.L.
 INSTALLATION DATE 7/15/96



EXPLORATORY BORING

a. Total depth 14.5 ft.
 b. Diameter 4.0 in.
 Drilling method Hand Auger

WELL CONSTRUCTION

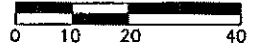
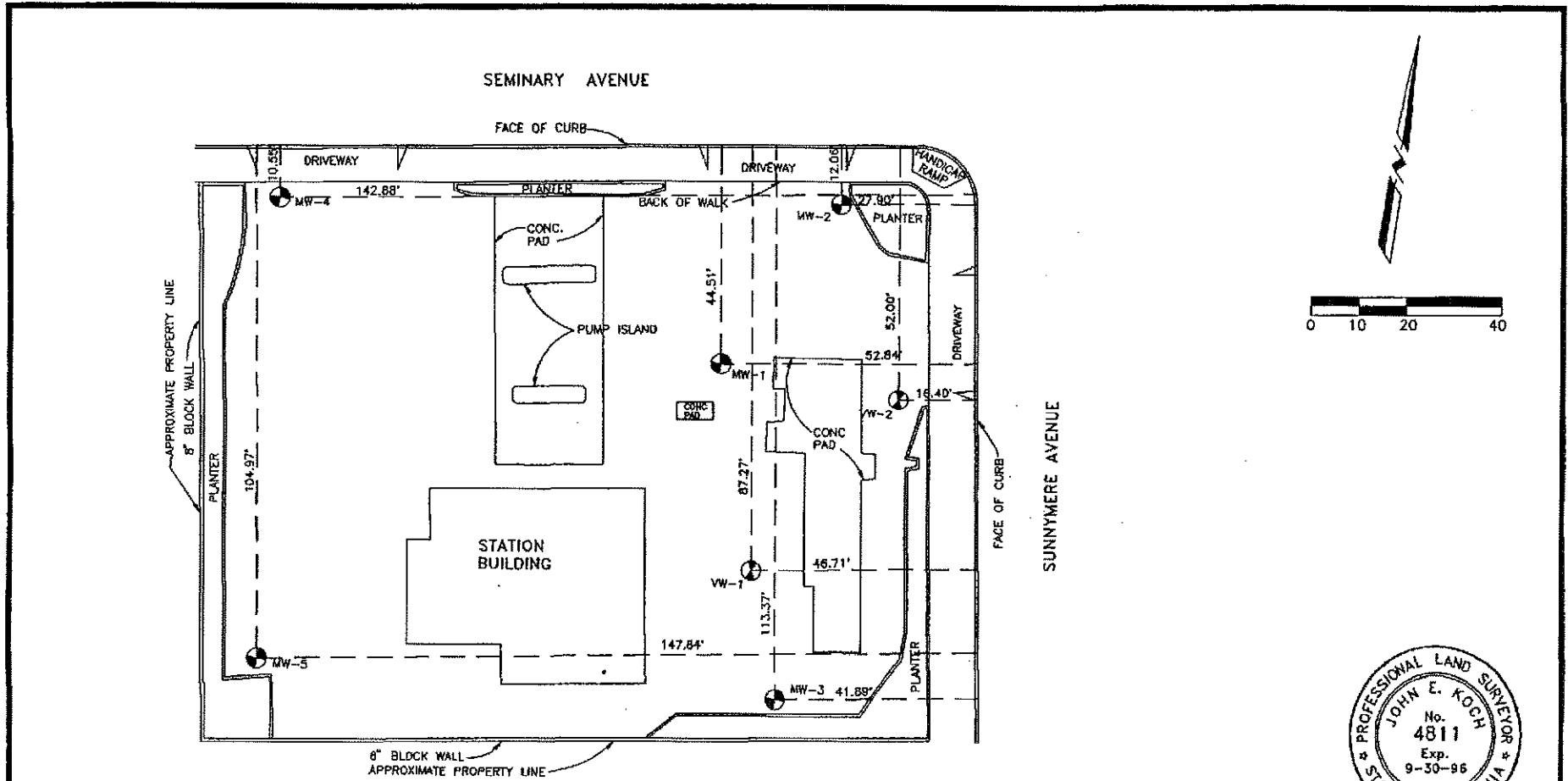
c. Total casing length 14.0 ft.
 Material Schedule 40 PVC
 d. Diameter 2.0 in.
 e. Depth to top perforations 5.0 ft.
 f. Perforated length 8.5 ft.
 Perforated interval from 5.5 to 14.0 ft.
 Perforation type Machine Slotted
 Perforation size 0.020 inch
 g. Surface seal 1.0 ft.
 Material Concrete
 h. Backfill 2.5 ft.
 Material Cement
 i. Seal 1.5 ft.
 Material Bentonite
 j. Gravel pack 9.5 ft.
 Gravel pack interval from 5.0 to 14.5 ft.
 Material 2/12 Sand
 k. Bottom seal/fill NA ft.
 Material NA

filepath: RKD-welldetails/ARCO/6002

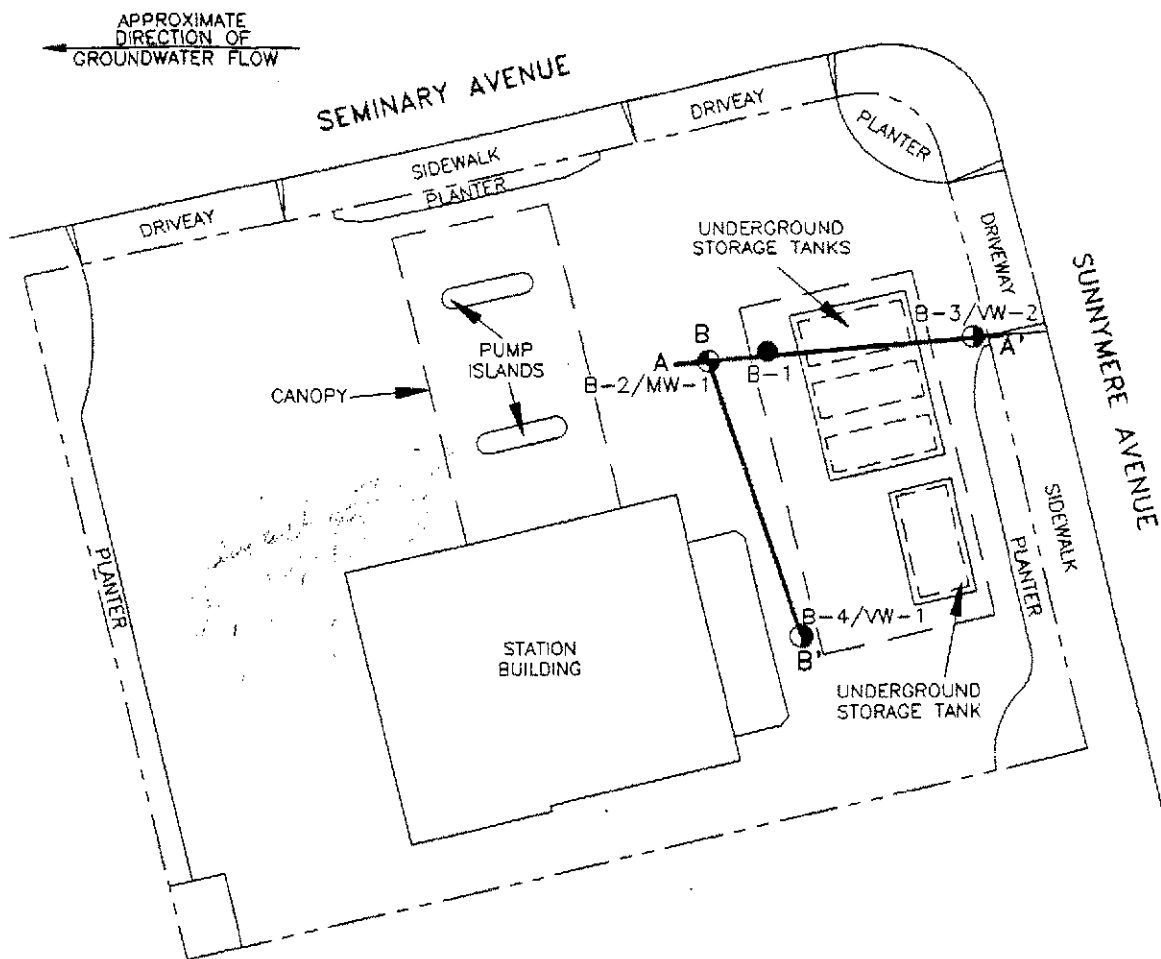
Form prepared by R. Davis

APPENDIX D





Geologic Cross-Sections

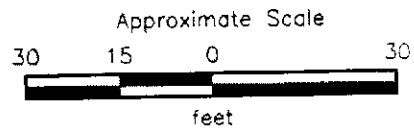


| | | | | |
|---|---|--|--|--|
| ALHAMBRA LAND SURVEYORS JOHN E. KOCH, L.S. CA. STATE LIC. NO. LS4811 649 MAIN STREET MARTINEZ, CALIFORNIA 94553 (510) 655-9956 (510) 655-9745 FAX | GSI / GETTLER-RYAN INC. 8747 SIERRA COURT, SUITE J DUBLIN, CALIFORNIA 94568 (510) 551-7555 (510) 551-7888 FAX | SITE: ARCO 6002 6235 SEMINARY AVENUE ☉ SUNNYMERE AVENUE OAKLAND, CALIFORNIA 94605 | MLWH DRAWN BY: JEK CHECKED BY: A94053 JOB NO. | JULY, 1994 DATE: 1 DRAWING NO. 1 OF 1 SHEET |
|---|---|--|--|--|



EXPLANATION

- MW-1  = Approximate location of monitoring well (RESNA, 1994)
- B-4/VW-1  = Approximate location of vapor extraction well (RESNA, 1994)
- B-1  = Approximate location of soil boring
- B ——— B' = Geologic cross section
-  = Approximate area of apparent excavation and backfill



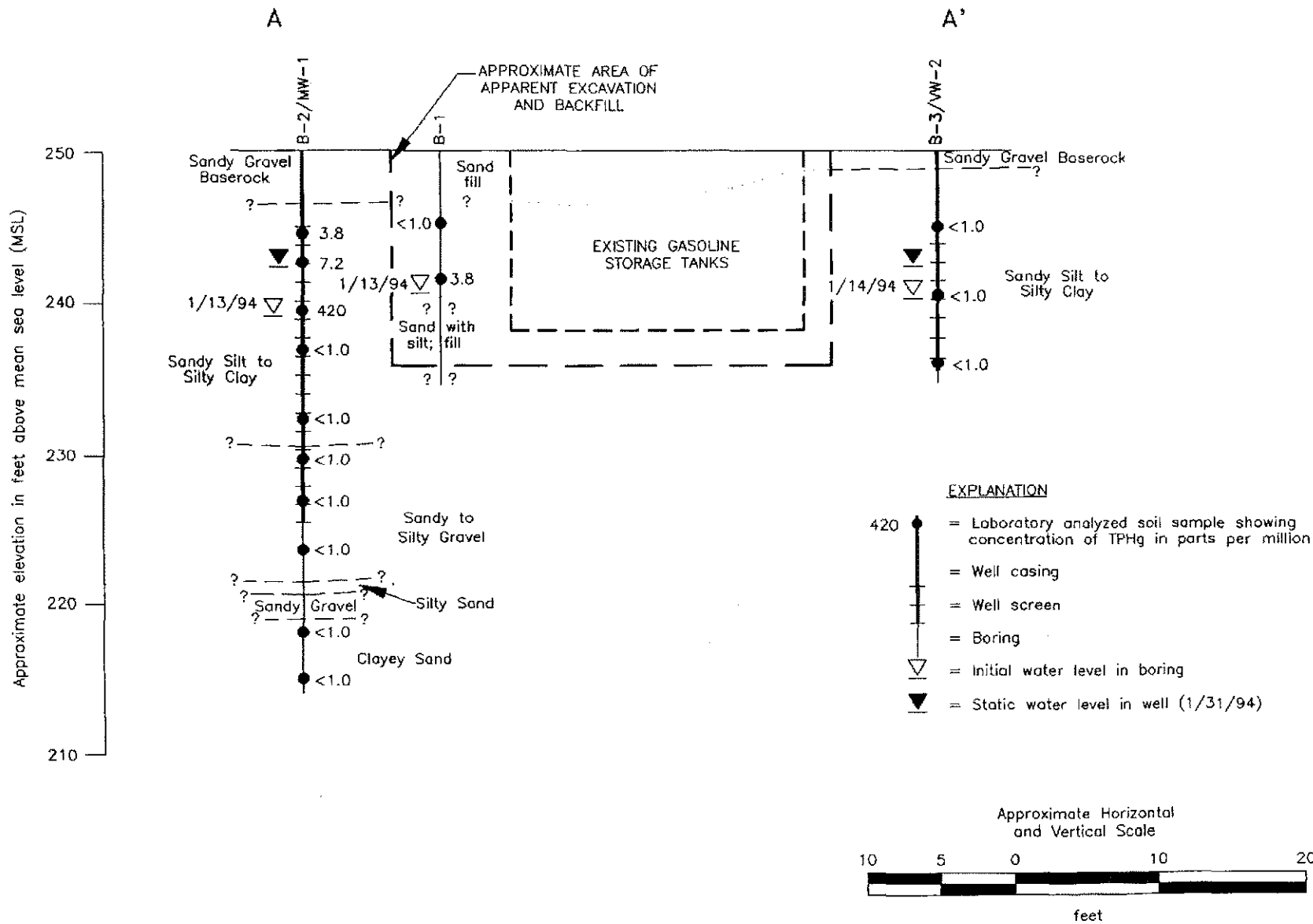
PROJECT

130063.01

GENERALIZED SITE PLAN
 ARCO Station 6002
 6235 Seminary Avenue
 Oakland, California

PLATE

2



RESNA
Working to Restore Nature

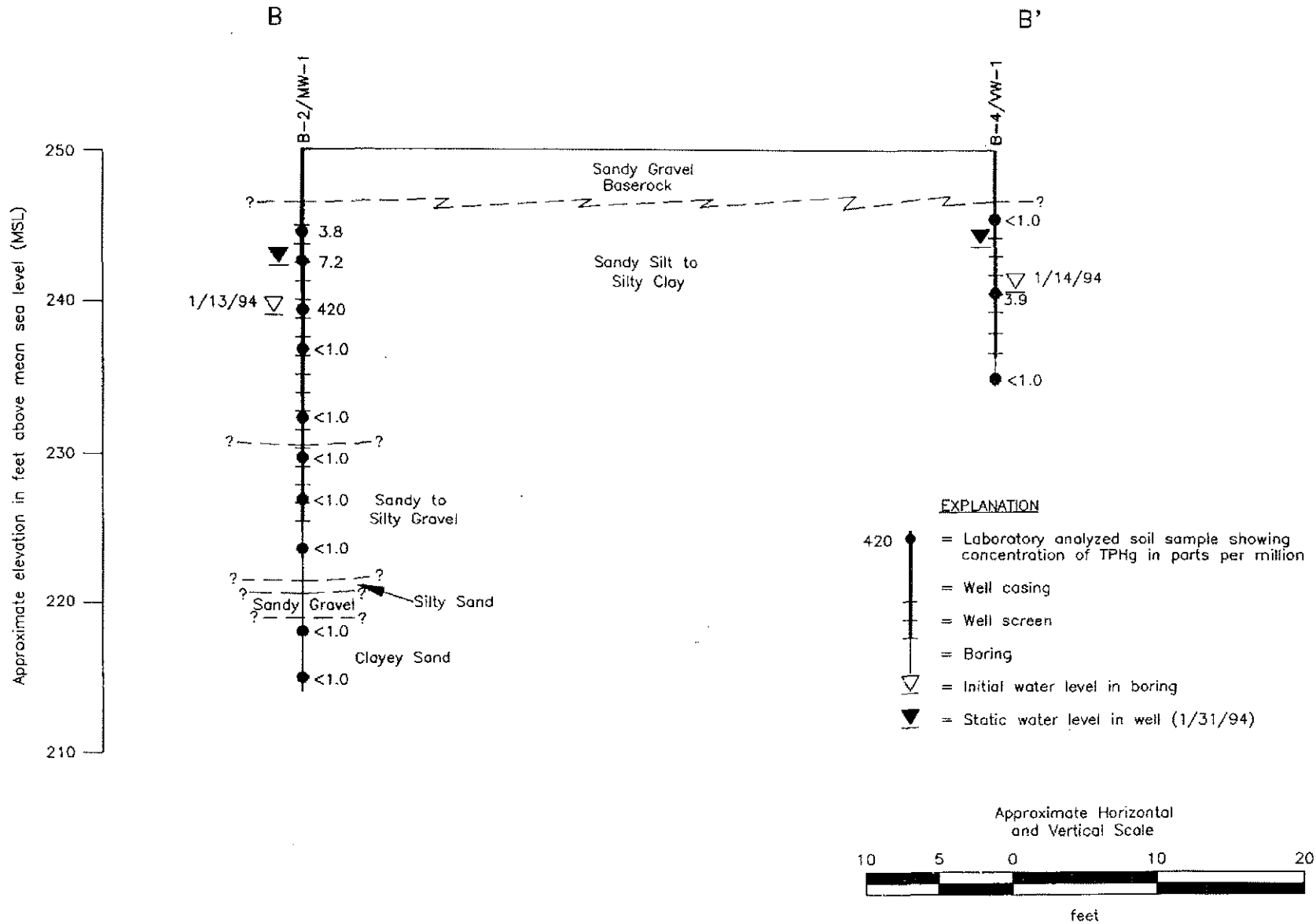
PROJECT

130063.01

GEOLOGIC CROSS SECTION A-A'
ARCO Station 6002
6235 Seminary Avenue
Oakland, California

PLATE

8



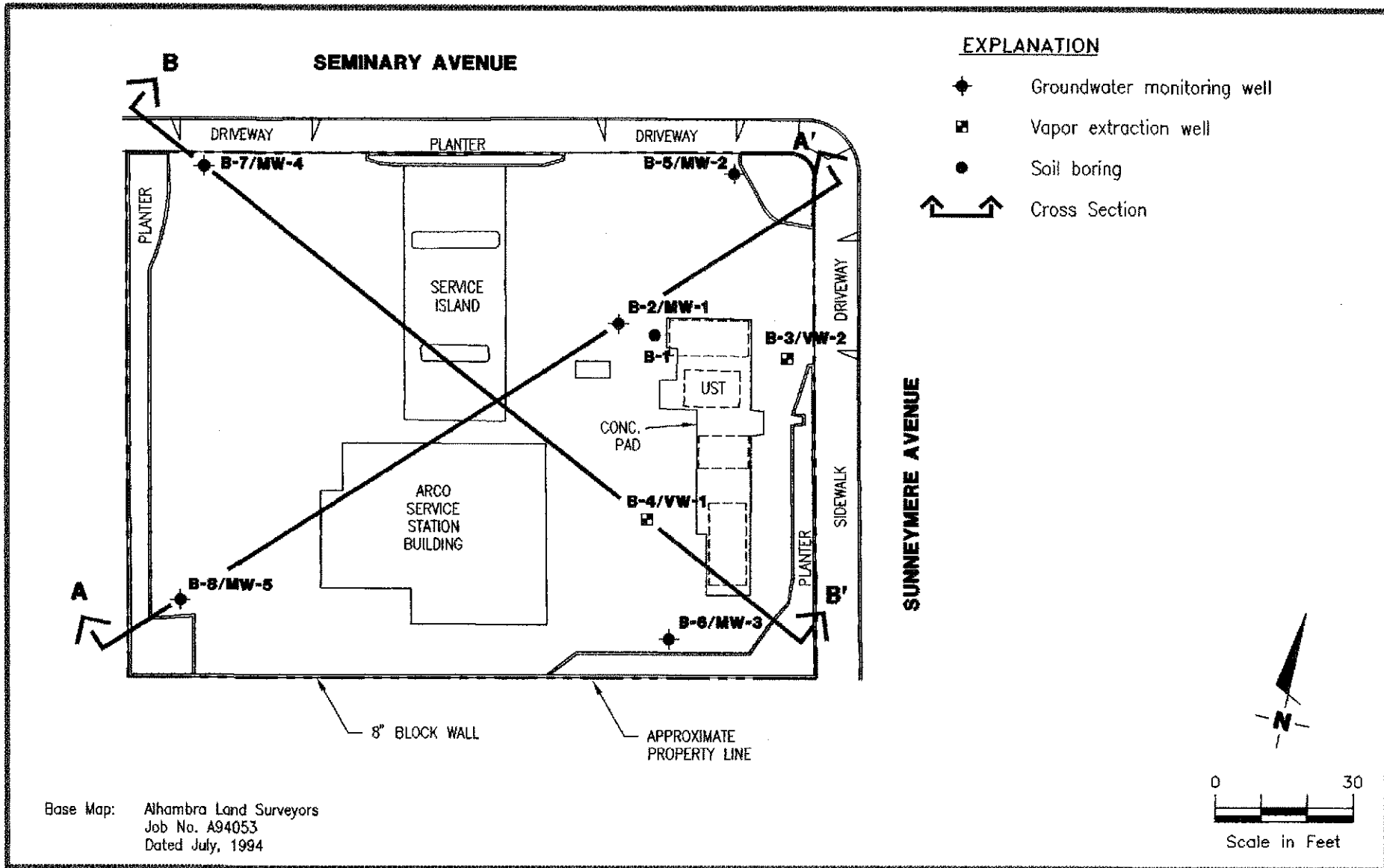
RESNA
Working to Restore Nature

PROJECT 130063.01

GEOLOGIC CROSS SECTION B-B'
ARCO Station 6002
6235 Seminary Avenue
Oakland, California

PLATE

9



GeoStrategies Inc.

SITE PLAN
 ARCO Service Station #6002
 6235 Seminary Avenue
 Oakland, California

FIGURE

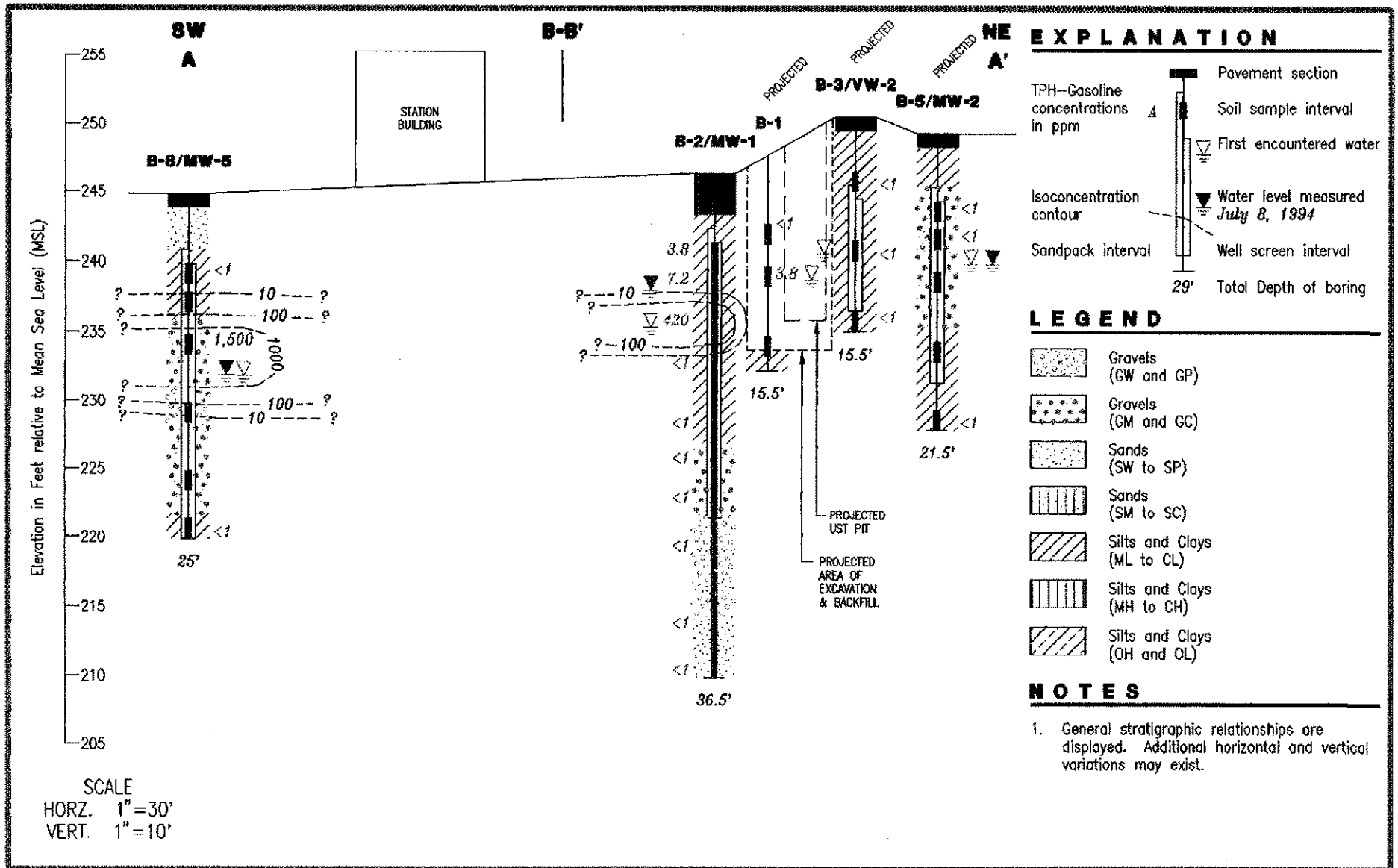
2

JOB NUMBER
 4945703-2

REVIEWED BY
 PS

DATE
 8/94

REVISED DATE



GSI GeoStrategies Inc.

CROSS SECTION A-A'
 ARCO Service Station #6002
 6235 Seminary Avenue
 Oakland, California

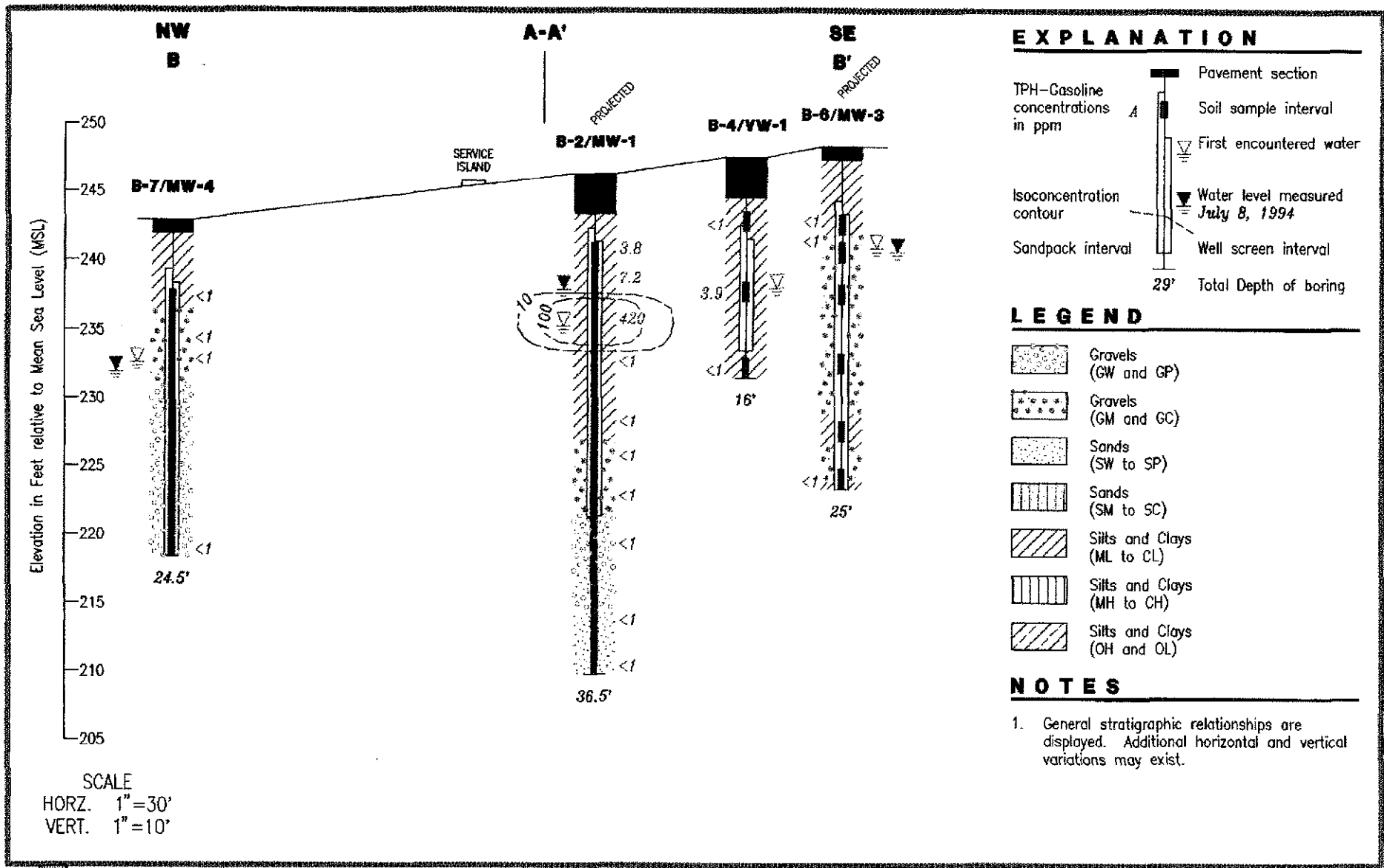
FIGURE
3

JOB NUMBER
 4945703-2

REVIEWED BY
 BS

DATE
 8/94

REVISED DATE



EXPLANATION

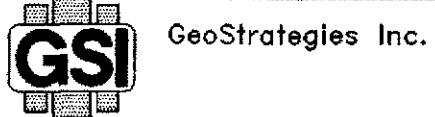
- TPH-Gasoline concentrations in ppm
- Soil sample interval
- First encountered water
- Water level measured July 8, 1994
- Isoconcentration contour
- Well screen interval
- Sandpack interval
- Total Depth of boring

LEGEND

- Gravels (GW and GP)
- Gravels (GM and GC)
- Sands (SW to SP)
- Sands (SM to SC)
- Silts and Clays (ML to CL)
- Silts and Clays (MH to CH)
- Silts and Clays (OH and OL)

NOTES

1. General stratigraphic relationships are displayed. Additional horizontal and vertical variations may exist.



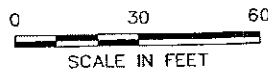
CROSS SECTION B-B'
 ARCO Service Station #6002
 6235 Seminary Avenue
 Oakland, California

FIGURE
4

JOB NUMBER 4945703-2 REVIEWED BY [Signature] DATE 8/94 REVISED DATE

EA-SANJOSE-CAD/DRINKING: CA:RDS-131\SJWELVEY.dwg Xref: <NONE>
 Scale: 1" = 30.00' Date: 6/13/97 Time: 1:19 PM Operator: KAJ

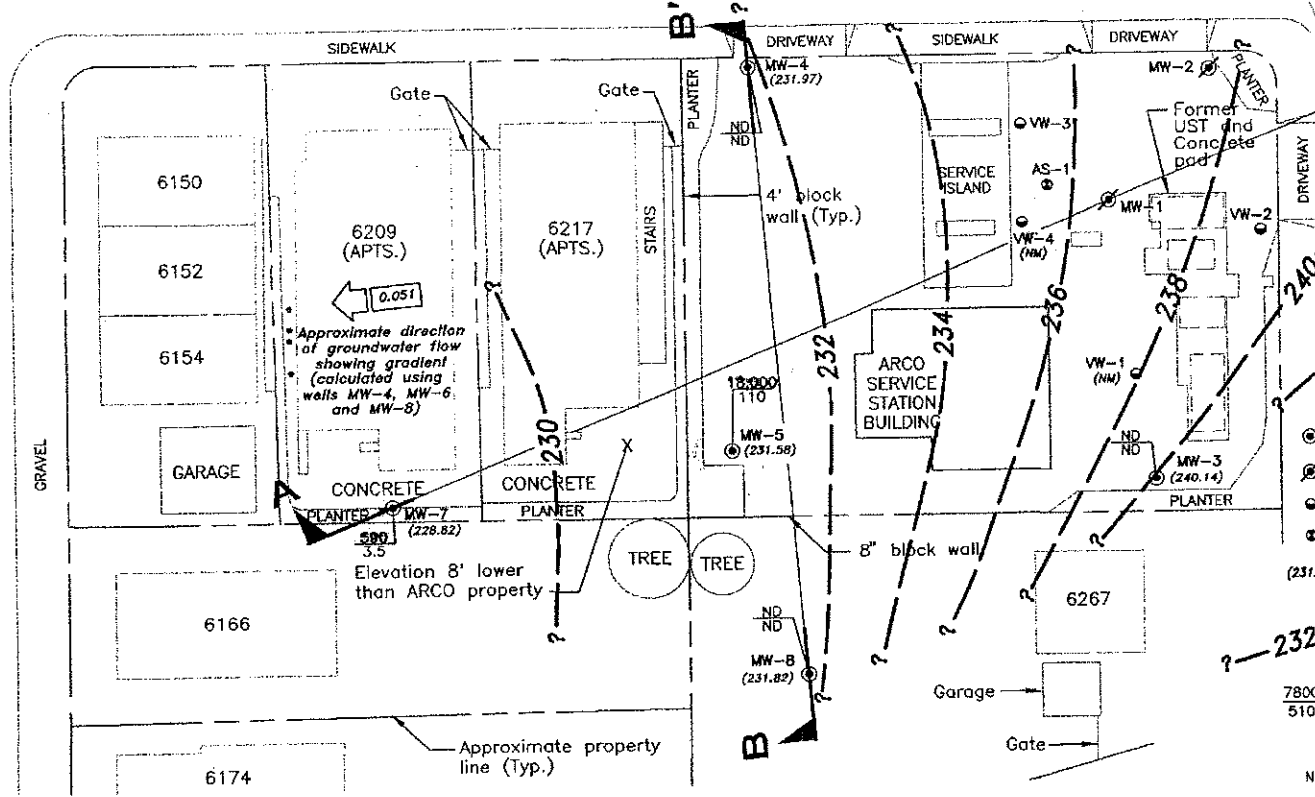
Base map modified from GSI, 1994.



OVERDALE AVENUE

SEMINARY AVENUE

SUNNYMERE AVENUE



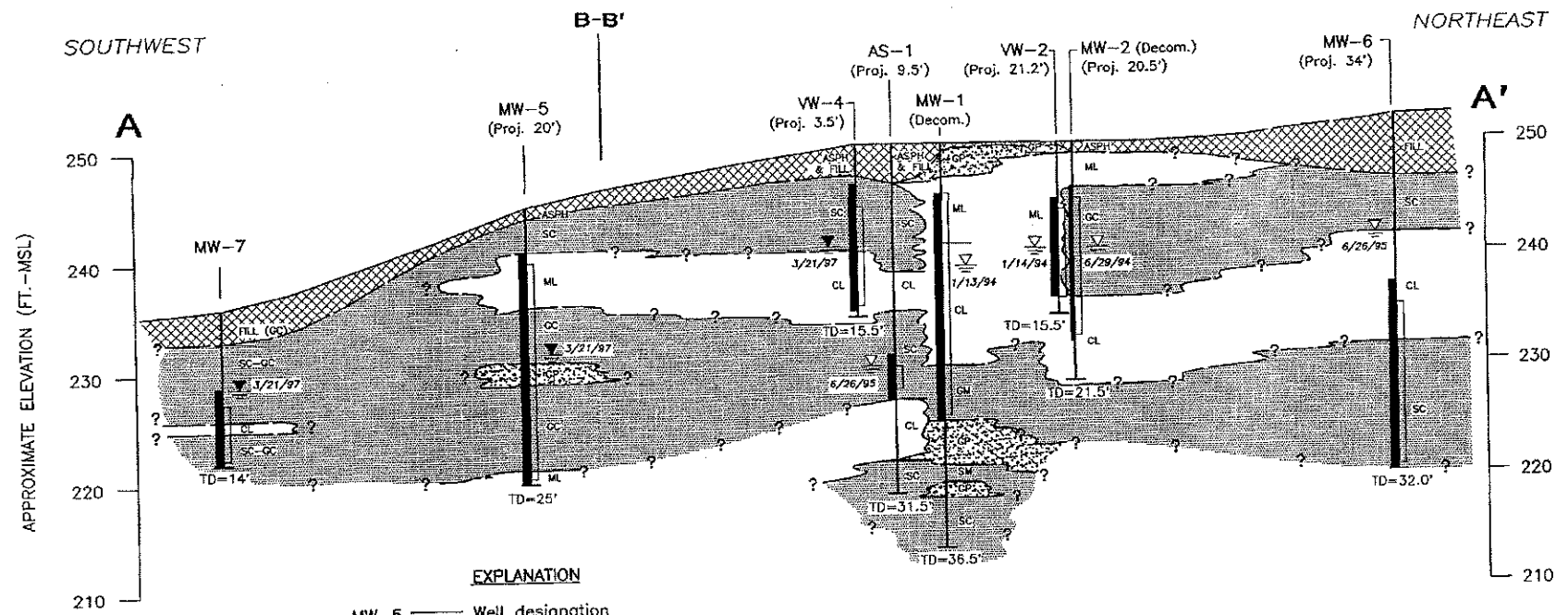
EXPLANATION

- ⊙ Groundwater monitoring well
- ⊘ Decommissioned monitoring well
- ⊙ Vapor extraction well
- ⊙ Air sparge well
- (231.12) Groundwater elevation (Ft.-MSL) measured 3/21/97
- - - 232 - - - Groundwater elevation contour (Ft.-MSL)
- 7800 / 510 TPHG concentration in groundwater (ug/L); sampled 3/21/97
- 510 Benzene concentration in groundwater 3/21/97
- NS Not sampled; not scheduled for chemical analysis
- ND Not detected at or above method reporting limit for TPHG (50 ug/L) or benzene (0.5 ug/L)
- NM Not measured; well inaccessible
- ▲ Line of geologic cross section (See Figures 3 and 4)

DATE: MAY 1997
 DWN: KMM
 APP:
 REV: 0
 PROJECT NO. 20805-131.012

FIGURE 2
 ARCO PRODUCTS COMPANY
 SERVICE STATION 6002, 6235 SEMINARY AVE.
 OAKLAND, CALIFORNIA
**QUARTERLY GROUNDWATER MONITORING
 GROUNDWATER DATA - 1ST QUARTER 1997**

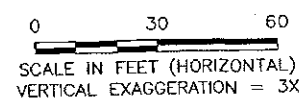
EA-SANJOSE-CAD/DRAWINGS: G:\BOS-131\SECDIA.dwg, Xrefs: <NONE>
 Scale: 1" = 30.00', DimScale: 1" = 1.00', Date: 6/12/97, Time: 3:42 PM, Operator: KMM



EXPLANATION

- | | |
|--|--|
| <p>MW-5 — Well designation (Proj. 13.5') — (Projected distance to section)</p> <p>— Borehole</p> <p>— Pack interval</p> <p>— Screen interval</p> <p>gc — USCS symbol</p> <p>▽ 3/21/97 First encountered water level</p> <p>▽ 3/21/97 Static water level</p> <p>— Geologic contact; dashed where approximate, queried where uncertain</p> <p>TD=25' — Total depth (Ft.-BGS)</p> | <p>[Cross-hatch pattern] Asphalt; asphalt and fill (ASPH, FILL)</p> <p>[White box] Clays and silts (CL, ML)</p> <p>[Stippled box] Clayey and silty sands and gravels (SC, SM, GC, GM)</p> <p>[Dotted box] Sands and gravels (SP, GP)</p> |
|--|--|

NOTE: Well construction and lithology from RESNA, Geo Strategies, Inc., and EMCON boring logs.



DATE JUNE 1997
 DWN KMM
 APP
 REV 0
 PROJECT NO. 20805-131.012

FIGURE 3
 ARCO PRODUCTS COMPANY
 SERVICE STATION 6002, 6235 SEMINARY AVE.
 OAKLAND, CALIFORNIA
GEOLOGIC CROSS SECTION A-A'