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

April 10, 2009

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

James F. Brown
Apogee Holdings, LLC
100 Pringle Avenue, #229
Walnut Creek, CA 94596

**REMEDIAL ACTION COMPLETION CERTIFICATE**

Subject: Fuel Leak Case No. RO0000204 and GeoTracker Global ID T0600100104 ARCO #4494, 566 Hegenberger Road, Oakland, CA 94621

Dear Messrs. Supple and Brown:

This letter confirms the completion of a site investigation and remedial action for the underground storage tanks formerly located at the above-described location. Thank you for your cooperation throughout this investigation. Your willingness and promptness in responding to our inquiries concerning the former underground storage tank(s) are greatly appreciated.

Based on information in the above-referenced file and with the provision that the information provided to this agency was accurate and representative of site conditions, this agency finds that the site investigation and corrective action carried out at your underground storage tank(s) site is in compliance with the requirements of subdivisions (a) and (b) of Section 25296.10 of the Health and Safety Code and with corrective action regulations adopted pursuant to Section 25299.3 of the Health and Safety Code and that no further action related to the petroleum release(s) at the site is required.

This notice is issued pursuant to subdivision (h) of Section 25299.37 of the Health and Safety Code.

Please contact our office if you have any questions regarding this matter.

Sincerely,

Ariu Levi
Director
Alameda County Environmental Health

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

April 16, 2009

ENVIRONMENTAL HEALTH SERVICES
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Subject: Fuel Leak Case No. RO0000204 and GeoTracker Global ID T0600100104 ARCO #4494, 566 Hegenberger Road, Oakland, CA 94621

Dear Messrs. Supple and Brown:

This letter transmits the enclosed underground storage tank (UST) case closure letter in accordance with Chapter 6.75 (Article 4, Section 25299.37[h]). The State Water Resources Control Board adopted this letter on February 20, 1997. As of March 1, 1997, the Alameda County Environmental Health (ACEH) is required to use this case closure letter for all UST leak sites. We are also transmitting to you the enclosed case closure summary. These documents confirm the completion of the investigation and cleanup of the reported release at the subject site. The subject fuel leak case is closed.

SITE INVESTIGATION AND CLEANUP SUMMARY

Please be advised that the following conditions exist at the site:

- Residual pollution remaining in soil beneath the site includes TPH as gasoline, TPH as diesel, and benzene, at concentrations of up to 33 mg/kg, 36 mg/kg, and 1.3 mg/kg, respectively.
- Maximum concentrations of up to 1.8 µg/L MTBE remain in groundwater beneath the site.

If you have any questions, please call Paresh Khatri at (510) 777-2478. Thank you.

Sincerely,

Donna L. Drogos, P.E.
LOP and Toxics Program Manager

Enclosures:
1. Remedial Action Completion Certificate
2. Case Closure Summary

cc:
Ms. Cherie McCaulou (w/enc)
SF- Regional Water Quality Control Board
1515 Clay Street, Suite 1400
Oakland, CA 94612

Closure Unit (w/enc)
State Water Resources Control Board
UST Cleanup Fund
P.O. Box 944212
Sacramento, CA 94244-2120

Paresh Khatri (w/orig enc), D. Drogos (w/enc), R. Garcia (w/enc)

**CASE CLOSURE SUMMARY**
**LEAKING UNDERGROUND FUEL STORAGE TANK - LOCAL OVERSIGHT PROGRAM**

## I. AGENCY INFORMATION

Date: August 19, 2008

| | |
|---|---|
| Agency Name: Alameda County Environmental Health | Address: 1131 Harbor Bay Parkway |
| City/State/Zip: Alameda, CA 94502-6577 | Phone: (510) 777-2478 |
| Responsible Staff Person: Paresh Khatri | Title: Hazardous Materials Specialist |

## II. CASE INFORMATION

| | | |
|---|---|---|
| Site Facility Name: Arco #4494 | | |
| Site Facility Address: 566 Hegenberger Road, Oakland, CA 94621 | | |
| RB Case No.: 01-0112 | Local Case No.: 3854 | LOP Case No.: RO0000204 |
| URF Filing Date: 04/19/89, 10/15/90, 02/06/91 | Geotracker ID: T0600100104 | APN: 42-4318-40-11 |

| Responsible Parties | Addresses | Phone Numbers |
|---|---|---|
| Bp West Coast Products, LLC c/o Paul Supple | PO Box 1257, San Ramon, CA, 94583 | 925-275-3801 |
| Apogee Holdings, LLC c/o James F. Brown | 100 Pringle Ave., #229 Walnut Creek, CA 94596 | |
| | | |

| Tank I.D. No | Size in Gallons | Contents | Closed In Place/Removed? | Date |
|---|---|---|---|---|
| 1 | 10,000 | Regular gasoline | Removed & Replaced | 12/1992 |
| 2 | 10,000 | Unleaded gasoline | Removed & Replaced | 12/1992 |
| 3 | 10,000 | Super Unleaded Gasoline | Removed & Replaced | 12/1992 |
| 4 | 280 | Waste Oil | Removed | 12/16/1988 |
| Piping | | | Removed & Replaced | 12/1992 |

## III. RELEASE AND SITE CHARACTERIZATION INFORMATION

| | | |
|---|---|---|
| Cause and Type of Release: Unknown | | |
| Site characterization complete? Yes | Date Approved By Oversight Agency: ----- | |
| Monitoring wells installed? Yes | Number: 8 | Proper screened interval? No<br>Most screened intervals are submerged. |
| Highest GW Depth Below Ground Surface: 4.59 | Lowest Depth: 9.76' | Flow Direction: Northwesterly |
| Most Sensitive Current Use: Potential drinking water source. | | |

Summary of Production Wells in Vicinity: According ACPW, there are no active public-use or domestic-use water producing wells. However, two industrial-use wells, one irrigation well, and 39 monitoring well (including 4 extraction wells) were identified within a ½ mile radius of the site. In addition, there are at least 13 wells of unknown use and 10 destroyed or abandoned wells. Three wells of unknown use are located approximately 2,300 feet down-gradient of the subject site. All other wells are either greater than 1,000 ft cross-gradient or up-gradient of the subject site. The depths of the industrial wells are 448 and 600 feet bgs, with static water level at approximately 59 and 69 ft bgs. The depth of the irrigation well is 175 feet, but the static water level was not available. Monitoring wells within a ½ mile radius of the site range in depth between 4 and 15 feet bgs. The depths of the destroyed or abandoned water wells were between 5 and 1,000 feet in depth. Based on the distance between the site in relation to the identified well and considering the low concentrations of contaminants presently detected in groundwater that are currently defined onsite, it is unlikely that contaminants will impact the identified wells.

| | |
|---|---|
| Are drinking water wells affected? No | Aquifer Name: East Bay Plain (San Leandro Cone) |
| Is surface water affected? No | Nearest SW Name: Elmhurst Creek, located approx 1,300 feet north of the site. |
| Off-Site Beneficial Use Impacts (Addresses/Locations): None | |
| Reports on file? Yes | Where are reports filed? Alameda County Environmental Health & Oakland Fire Department, Fire Prevention Bureau |

**TREATMENT AND DISPOSAL OF AFFECTED MATERIAL**

| Material | Amount (Include Units) | Action (Treatment or Disposal w/Destination) | Date |
|---|---|---|---|
| Tank | 1 x 280 gallon tank<br>3 x 10,000-gallon tanks | Disposal, H&H Ship Service Co. | December 16, 1988<br>December 1992 |
| Piping | 160 feet / 2 islands | Disposal, H&H Ship Service Co. | December 1992 |
| Free Product | Quantity Unknown | Disposal, H&H Ship Service Co. | December, 1992 |
| Soil | ~900 cubic yards<br>~100 cubic yards<br>~200 cubic yards | Disposal, Laidlaw Class II Landfill<br>Disposal, Laidlaw Class II Landfill<br>Disposal, BFI Class III Landfill | January 28/29, 1993<br>February 8, 1993<br>February 1, 1993 |
| Groundwater | Not Reported<br>20,000 gallons | Disposal, H&H Ship Service Co.<br>Disposal, H&H Ship Service Co. | December, 1992<br>March-April, 1993 |

**MAXIMUM DOCUMENTED CONTAMINANT CONCENTRATIONS BEFORE AND AFTER CLEANUP**
(Please see Attachments for additional information on contaminant locations and concentrations)

| Contaminant | Soil (ppm) | | Water (ppb) | |
|---|---|---|---|---|
| | Before | After | Before | After |
| TPH (Gas) | 52,000[1] | 33[2] | 78,000[3] | <50[4] |
| TPH (Diesel) | 5,700[1] | 36[5] | <0.5[6] | <0.5[6] |
| Oil and Grease | 4800[7] | Not analyzed | <5000[6] | <5000[6] |
| Benzene | 220[2] | 1.3[8] | 2,900[3] | <0.5[4] |
| Toluene | 1,400[1] | 1.7[8] | 6,700[3] | <0.5[4] |
| Ethylbenzene | 440[1] | 1[8] | 2,900[3] | <0.5[4] |
| Xylenes | 2,700[1] | 2.2[8] | 16,000[3] | <0.5[4] |
| Heavy Metals (Cd, Cr, Pb, Ni, Zn) | 126[*,1] | 170[±,5] | 0.31[†] | 0.31[†] |
| MTBE | Not analyzed | Not analyzed | 18,800[a] | 1.8[b] |
| Other (8240/8270) | 0.008[Φ,7] | 0.008[Φ,7] | 6,600[Ω,1] | <10 [α,5] |

* 2.1 ppm Cd, 55 ppm Cr, 79 ppm Pb, ppm Ni, 126 ppm Zn

± 4.8 ppm Cd, 85 ppm Cr, 170 ppm Pb, NA Ni, 52 ppm Zn

Φ 0.008 ppm total Xylenes, 0.006 ppm Methylene Chloride, 0.9 ppm 2-Methylnaphthalene

Ω 3,800 ppb 2-Methylnaphthalene, 6,600 ppb Naphthalene, <800 ppb Organochloride Pesticides, <200 ppb PCBs

α <10 ppb 2-Methylnaphthalene, <10 ppb Naphthalene

† <0.1 ppb Cd, 0.069 ppb Cr, 0.19 ppb Pb, 0.11 ppb Ni, 0.31 ppm Zn. Sampled from former tank pit in December, 1992. Laboratory identified interference in samples. Likely offsite contamination which has been found and contained.

a 18,800 ppb MTBE, <1,000 ppb EtOH, <5 ppb TAME, <5 ppb ETBE, <5 ppb DIPE, 640 ppb TBA, and <5 ppb EDB

b 1.8 ppb MTBE, <300 ppb EtOH, <0.5 ppb TAME, <0.5 ppb ETBE, <0.5 ppb DIPE, <20 ppb TBA, and <0.5 ppb EDB

1 Sampled October 30, 1989 from MW-2. Laboratory identified interference in samples. Likely offsite contamination which has been found and contained. Contaminated soil removed.

2 Sampled December 16-18, 1992

3 Sampled from MW-2 in 1992. Laboratory identified interference in samples. Likely offsite contamination which has been found and contained.

4 Sampled September 27, 2006

5 Sampled August 10, 1990

6 Sampled June 19, 1990

7 Sampled December 16, 1988

8 Sampled March 1991; sample collected at 6 ft bgs from Boring B-17. Stabilized DTW in boring B-17 was approximately 5 feet bgs and sheen was noted on groundwater surface. Therefore, the soil sample collected at 6 ft bgs may have been saturated and not be representative of actual vadose zone soil conditions and may be indicative of groundwater conditions. Concentrations of contaminants in MW-7, located approximately 10 feet south of B-17, have not been detected above the laboratory detection limit since the well was installed in 1992.

The site is an operating gasoline station located at 566 Hegenberger Road on the northeastern corner of the intersection of Hegenberger and Edes Avenue in Oakland, California. The site is on a relatively flat lot at an elevation of approximately 5 ft mean sea level (msl). Before its development, the property was covered by sparse growth of native grasses and weeds, and was situated on reclaimed tidal marshlands covered by approximately four feet of artificial fill. The fill material is described as heterogeneous sandy gravelly clay containing construction debris, including pieces of concrete, asphalt, and metallic slag. The source of the construction debris is not known. Below the fill material is marshland soil and Bay Mud deposits. It is reported that the site may contain a buried tidal slough crossing on southern portion of the site. This slough was filled in between 1947 and 1953, based on observations of aerial photos from those years, and replaced with an excavated drainage channel. The drainage channel was then filled in and replaced with a 72-inch storm drain pipeline sometime after 1968. Gulf Oil originally developed the site in 1969. ARCO purchased the site from Gulf in 1977.

On December 16, 1988 (sometimes listed as December 16, 1989), a 280-gallon waste oil tank was removed from the site. Strong product odor was observed in the soil, despite no obvious holes in the piping or tank. Soil samples (WO-1 and WO-2) were collected from 7 and 10 feet bgs. Analysis detected up to 11 ppm TPH-G, 370 ppm TPH-D, 4,800 ppm TOG, 48 ppm chromium, 150 ppm lead, and 76 ppm zinc.

The tank pit was then overexcavated on January 4, 1989 to a depth of 10 feet bgs. Sidewall samples (WOSW-E, WOSW-S, WOSW-W, & WOSW-N) were taken from the four sides of the pit. Analysis detected <33 ppm TPH-D, up to 400 ppm TPH-mo, and 200 ppm TOG.

On January 18, 1989, the north side of the pit was overexcavated 3-1/2 feet to removed contaminated soil. Another sidewall sample was taken, which showed 10 ppm TOG. The excavation was then backfilled to existing grade.

In October 30 and 31, 1989, two soil borings (B-1 and B-2) to be converted in monitoring wells (MW-1 and MW-2) were installed. One well was not installed due to fill material containing "melted glass, metallic slag, and concrete". On August 10, 1990, three borings (B-3 to B-5) were drilled, and two were converted into monitoring wells (MW-3 and MW-4). Soil samples detected up to 52 ppm TPH-G, 200 ppm TPH-D, 1.8 ppm benzene, 1.2 ppm toluene, 0.48 ppm ethylbenzene, 2.7 ppm xylenes, and 1,600 ppm TOG, except for analysis of soil sample S-16-B2, which detected 52,000 ppm TPH-G, 5,700 ppm TPH-D, 120 ppm benzene, 1,400 ppm toluene, 490 ppm ethylbenzene, 3,200 ppm xylenes, and 2,300 ppm TOG. Additional soil sample analysis detected up to 4.8 ppm cadmium, 85 ppm chromium, 170 ppm lead, and 126 ppm zinc.

On March 11 and 26, 1991, a total of twelve soil borings (B-6 to B-17) were advanced to further determine extent of contamination around existing underground storage tanks and in the vicinity of the proposed station building. Soil sample analysis detected up to 69 ppm TPH-G, <100 ppm TPH-D, 1.3 ppm benzene, 1.7 ppm toluene, 1 ppm ethylbenzene, 2.2 ppm xylenes, and 1,100 ppm TOG. Heaviest contamination was detected in the northwest corner of the site (S-6-B17, near the failed boring which was to become MW-3) and around the existing USTs (B-6 to B-9).

In 1990, up to 0.92 ft of free product was measured in monitoring well MW-2. Monitoring well was later decommissioned on December 8, 1992 in preparation for the UST removals, described below.

On July 9 & 10, 1992, three more soil borings (B-18 to B-20) were drilled and subsequently converted into monitoring wells (MW-5 to MW-7). Soil sample analysis detected up to 0.022 ppm benzene.

On December 8, 1992, MW-2 was destroyed and four soil borings (B-21 to B-24) were installed in preparation for excavation and removal of the three USTs. Soil sample analysis showed up to 2.3 ppm TPH-G, 0.01 ppm benzene, 0.034 ppm toluene, 0.039 ppm ethylenzene, and 0.22 ppm xylenes.

On December 16, 17, and 18, 1992, three 10,000 gallon tanks and their associated piping were removed. Sidewall soil samples (S-10-TP1 to S-9-TP6) and grab groundwater samples (TP-1, TP-1d, TP-1g, TP-1m, TP-1o, TP-1p, TP-2, TP-2b, and TP-2s) from the former tank pit were obtained, along with soil samples (S-2-TL1 to S-2-TL7) from beneath the former product lines. Once the tanks were removed, black hydrocarbon product was observed to be seeping into the tank pit from the northeast corner. That corner of the tank pit was overexcavated, revealing an existing 6-foot diameter storm drain, and it was observed that the hydrocarbon product was migrating through the storm drain backfill into the former tank pit. The northwest corner of the tank pit was also observed to be contaminated and was overexcavated, with a soil sample (S-11-TL7) taken at the final sidewall. Impacted soil was also observed near the former product dispensers. This area was overexcavated and confirmation samples (S-14-TL1 and S-12-TL5) were collected for analysis.

Preliminary sidewall soil sample analysis detected up to 220 ppm TPH-G, 3.5 ppm benzene, 1.6 ppm toluene, 7.2 ppm ethylbenzene, and 6 ppm xylenes. The highest levels of contaminationg came from the northwest and northeast corner of th tank pit, which were both subsequently overexcavated. A subsequent sidewall soil sample showed 33 ppm TPH-G, 1.7 ppm benzene, 0.083 ppm toluene, 1 ppm ethylbnzene, and 0.63 ppm xylenes. Product line soil sample analysis detected

up to 12,000 ppm TPH-G, 220 ppm benzene, 1,000 ppm toluene.310 ppm ethylbenzene, and 1,700 ppm xylenes. This area was subsequently overexcavated as well. Grab groundwater sample analysis detected 57,000 ppb TPH-G, 170,000 ppb TPH-D, 3,900 ppb benzene, 5,400 ppm toluene, 1,800 ppm ethylbenzene, 11,000 ppb xylenes, 81,000 ppm TOG, 0.19 ppb lead, 0.31 ppb zinc, 0.069 ppb chromium, <0.1 ppb cadmium, and 0.11 ppb nickel. These high levels of contaminants were believed to be from the seepage of black hydrocarbon product from offsite, which laboratory tests indicate does not resemble any of ARCO's finished products.

From January 4 to January 8, 1993, a new tank pit was excavated to make room for four 10,000 gallon USTs.

From March 17 to April 2, 1993, the former UST pit was dewatered by removing approximately 20,000 gallons of water, then backfilled using boulders and stockpiled soil from the new tank pit excavation.

On April 5, 1993, a concrete slurry wall and one recovery well (RW-1) were installed between the storm drain and the former tank pit in order to limit and monitor migration of black hydrocarbon product from an offsite source.

August 16, 1996 and groundwater monitoring ceased.

Groundwater monitoring resumed in July 2000 due to new laws regarding MTBE. This July 2000 groundwater monitoring detected <1000 ppb TPH-G, <10 ppb benzene, toluene, and ethylbenzene, <20 ppm xylenes, and up to 15,000 ppb MTBE. Since MTBE was detected approximately 1,000 times higher in the most upgradient well than any other, it appears that the MTBE contamination was emanating from the neighboring Shell station.

Groundwater Monitoring continued until March 6, 2007. This final groundwater monitoring detected <50 ppb TPH-G, <0.5 ppb BTEX, and up to 1.8 ppb MTBE.

## IV. CLOSURE

| | | |
|---|---|---|
| Does completed corrective action protect existing beneficial uses per the Regional Board Basin Plan? Yes | | |
| Does completed corrective action protect potential beneficial uses per the Regional Board Basin Plan? Yes | | |
| Does corrective action protect public health for current land use? Alameda County Environmental Health staff does not make specific determinations concerning public health risk. However, based upon the information available in our files to date, it does not appear that the release would present a risk to human health based upon current land use and conditions. | | |
| Site Management Requirements: City of Oakland Building Department has been notified that should excavation or development of the property be proposed that may encounter impacted soil or groundwater, Alameda County Environmental Health must be notified as required by Government Code Section 65850.2.2. The current property owner/developer must submit a soil and groundwater management plan for review prior to any construction activities. Please note that case closure for the fuel leak site is granted for commercial land use. If a change in land use to residential or other conservative scenario occurs at this property, Alameda County Environmental Health must be notified and the case needs to be re-evaluated. | | |
| Should corrective action be reviewed if land use changes? Yes | | |
| Was a deed restriction or deed notification filed? No | | Date Recorded: -- |
| Monitoring Wells Decommissioned: No | Number Decommissioned: 1 | Number Retained: 7 |
| List Enforcement Actions Taken: None | | |
| List Enforcement Actions Rescinded: -- | | |

## V. ADDITIONAL COMMENTS, DATA, ETC.

Considerations and/or Variances:
Currently, residual soil contamination of TPH-g, TPH-d, and benzene at concentrations of 33 mg/kg, 36 mg/kg, and 1.3 mg/kg, respectively, was left in place near at the site. The soil sample containing benzene was collected at 6 ft bgs from Boring B-17. Stabilized DTW in boring B-17 was approximately 5 feet bgs and sheen was noted on groundwater surface. Therefore, the soil sample collected at 6 ft bgs may have been saturated and not be representative of actual vadose zone soil conditions and may be indicative of groundwater conditions. Concentrations of contaminants in MW-7, located approximately 10 feet south of B-17, have not been detected above the laboratory detection limit since the well was installed in 1992. MtBE was not analyzed for in soil samples, but has been assessed in groundwater (see next paragraph). The residual soil contamination does not appear to pose a significant risk to the current commercial use of the site or to groundwater resources in the area.

Concentrations of TPH-g, TPH-d, and benzene were not detected above the laboratory detection limits in groundwater monitoring wells at the site. However, most screened intervals of the groundwater monitoring wells are submerged. Oil and grease was not detected, however, the results yielded an elevated detection limit of <5,000 µg/L and MtBE was detected at 1.8 µg/L, below the MCL. TPH-g, TPH-d, and benzene were not detected above the ESLs where groundwater is a potential drinking water source. Therefore, the residual concentrations of contaminants in site groundwater do not appear to pose a significant risk to the current commercial use of the site or to the groundwater resources in the area. Please note that case closure for the fuel leak site is granted for commercial land use. If a change in land use to residential or other conservative scenario occurs at this property, Alameda County Environmental Health must be notified and the case needs to be re-evaluated.

Conclusion:
Alameda County Environmental Health staff believe that the levels of residual contamination do not pose a significant threat to water resources, public health and safety, and the environment based upon the information available in our files to date. No further investigation or cleanup is necessary. ACEH staff recommend case closure for this site based on the commercial use of the site. If a change in land use to residential or other conservative scenario occurs at this property, Alameda County Environmental Health must be notified and the case needs to be re-evaluated

## VI. LOCAL AGENCY REPRESENTATIVE DATA

| | |
|---|---|
| Prepared by: Paresh Khatri | Title: Hazardous Materials Specialist |
| Signature: | Date: August 19, 2008 |
| Approved by: Donna L. Drogos, P.E. | Title: Supervising Hazardous Materials Specialist |
| Signature: | Date: 08/20/08 |

This closure approval is based upon the available information and with the provision that the information provided to this agency was accurate and representative of site conditions.

**VII. REGIONAL BOARD NOTIFICATION**

| | |
|---|---|
| Regional Board Staff Name: Cherie McCaulou | Title: Engineering Geologist |
| RB Response: Concur, based solely upon information contained in this case closure summary. | Date Submitted to RB: 8/22/08 |
| Signature: | Date: 9/5/08 |

VIII. MONITORING WELL DECOMMISSIONING

| | | |
|---|---|---|
| Date Requested by ACEH: 9/12/2008 | Date of Well Decommissioning Report: 12/3/2008 | |
| All Monitoring Wells Decommissioned: NO YES | Number Decommissioned: 17 | Number Retained: 7 0 |
| Reason Wells Retained: | | |
| Additional requirements for submittal of groundwater data from retained wells: | | |
| ACEH Concurrence - Signature: | | Date: 4/10/2009 |

Attachments:

1. Site Vicinity Map
2. Site Plans
3. Soil Analytical Data (10 pp)
4. Groundwater Analytical Data (14 pp)
5. Cross Sections (23 pp)
6. Boring Logs (27 pp)

This document and the related CASE CLOSURE LETTER & REMEDIAL ACTION COMPLETION CERTIFICATE shall be retained by the lead agency as part of the official site file.

# Environmental Impacts in Soil

ARCO #4494

566 Hegenberger Road, Oakland, California

**Table 1. Comparison of Maximum Residual Soil Concentrations at the Site to Relevant Cleanup Standards (mg/kg)**

| | TPH-g (mg/kg) | TPH-d (mg/kg) | Benzene (mg/kg) | Toluene (mg/kg) | Ethyl Benzene (mg/kg) | Xylenes (mg/kg) | MtBE (mg/kg) |
|---|---|---|---|---|---|---|---|
| **Maximum Residual Soil Concentrations at Site in milligrams per kilogram** | 33[4] | 36 | **1.3**[4] | **1.7**[4] | **1**[4] | **2.2**[4] | -- |
| RWQCB, Region 2 ESLs[1] | 83[3] | 83[3] | 0.044[3] | 2.9[3] | 2.3[2] | 2.3[3] | 0.023[3] |

[1] Environmental Screening Levels (ESLs); Shallow Soil Screening Level for residential land use where potentially impacted groundwater is current or potential drinking water resource. Shallow soils defined as soils situated <3 meters below the ground surface. Depth to water ranges between 5 ft and 9 ft bgs.

[2] Lowest ESL value based on direct exposure scenario. Depth to water ranges between 5 ft and 9 ft bgs.

[3] Lowest ESL value based on groundwater protection (soil leaching). Depth to water ranges between 5 ft and 9 ft bgs.

[4] Soil sample collected at 6 feet bgs. DTW is approx 5 ft bgs, therefore, the soil sample appears saturated and not representative of actual vadose zone soil conditions

# Environmental Impacts in Groundwater
ARCO #4494
566 Hegenberger Road, Oakland, California

**Table 2. Comparison of Maximum Residual Groundwater Concentrations at the Site to Relevant Cleanup Standards (µg/L)**

| | TPH-g (µg/L) | TPH-d (µg/L) | Benzene (µg/L) | Toluene (µg/L) | Ethyl Benzene (µg/L) | Xylenes (µg/L) | MTBE (µg/L) | TBA (µg/L) |
|---|---|---|---|---|---|---|---|---|
| **Maximum Residual Groundwater Concentrations at Site** | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <5.0 | -- |
| RWQCB Region 2 ESLs[2] | 100[1]<br>100[3]<br>210[4]<br>210[6] | 100[1]<br>100[5]<br>210[6]<br>210[6] | 1.0[1]<br>170[2]<br>1.0[3]<br>540[4]<br>46[6] | 40[1]<br>40[2]<br>150[3]<br>380,000[4]<br>130[6] | 30[1]<br>30[2]<br>300[3]<br>170,000[4]<br>43[6] | 20[1]<br>20[2]<br>1,800[3]<br>160,000[4]<br>100[6] | 5[1]<br>5[2]<br>13[3]<br>24,000[4]<br>8,000[6] | --[1]<br>50,000[2]<br>--[3]<br>--[4]<br>1,800[6] |
| ASTM Tier 1 Standard Human Health RBSL (Benzene) | NA | NA | 11,000[7]<br>23.8[8] | 32,800 | 77,500 | NA | NA | NA |

[1] Environmental Screening Levels (ESLs) for impacted subsurface groundwater less than 10 feet, where groundwater IS a current or potential drinking water resource
[2] Final Groundwater Screening Level, based on ceiling value (taste and odor threshold)
[3] Groundwater Screening Level, based on drinking water toxicity
[4] Groundwater Volatilization to indoor air (residential) Level,
[5] Groundwater Vapor Intrusion from groundwater to buildings (residential, chronic hazard quotient = 1)
[3] Groundwater Screening Level, based on drinking water toxicity
[4] Groundwater Volatilization to indoor air (residential) Level,
[5] Groundwater Vapor Intrusion from groundwater to buildings (residential, chronic hazard quotient = 1)
[6] Final Groundwater Screening Level, based on Aquatic Habitat


Source: U.S. Geological Survey
7.5—Minute Quadrangle
Oakland East/San Leandro,
California
Photorevised 1980

- O = Water well of unkown use
- ● = Water supply (irrigation industrial)
- ◉ = Monitoring Well (including extraction or recovery wells)

N

Approximate Scale

2000 1000 0 2000 4000

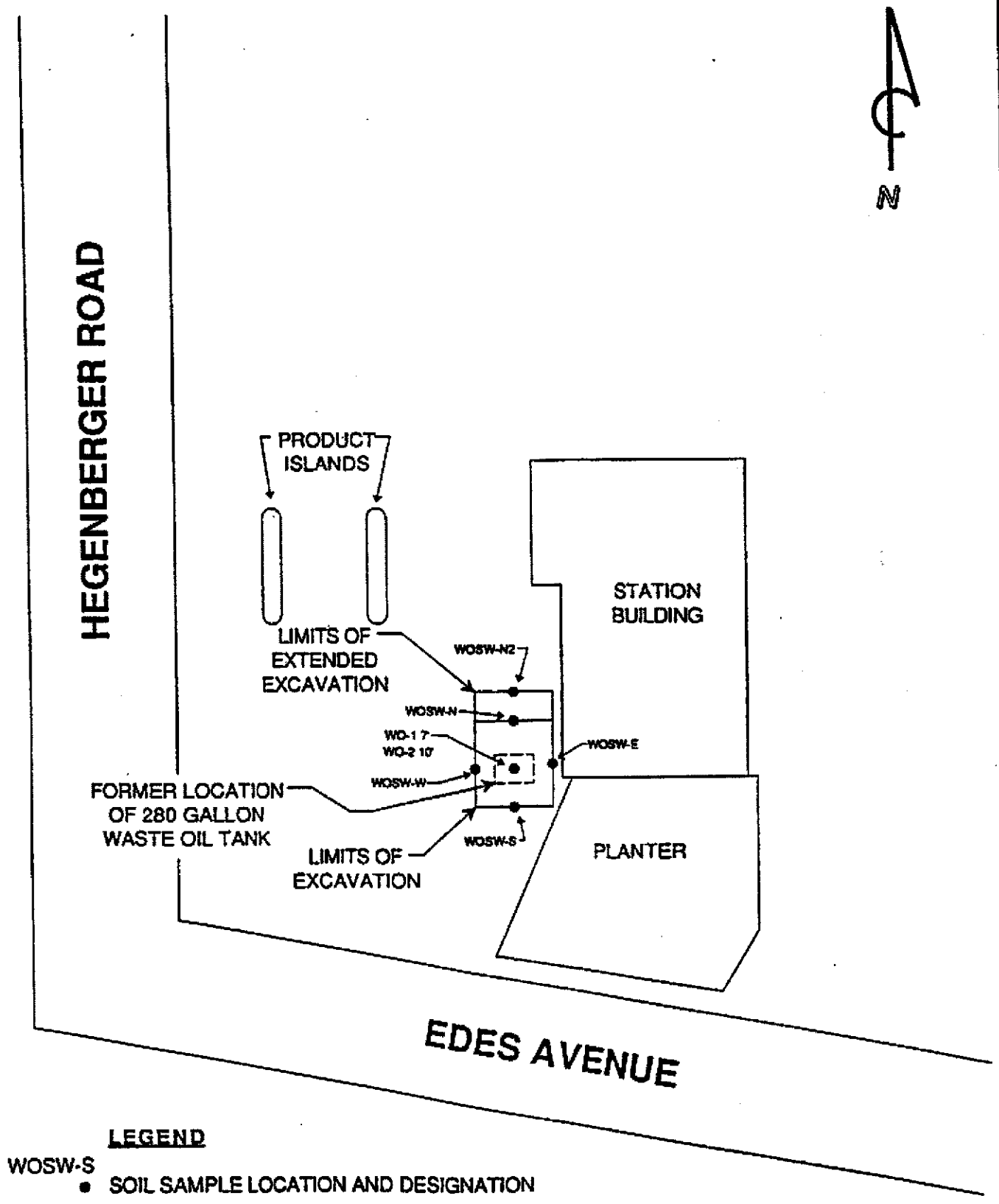
feet

Applied GeoSystems

PROJECT 69038-2

**WELL LOCATION MAP**
**ARCO Service Station 4494**
**566 Hegenberger Road**
**Oakland, California**

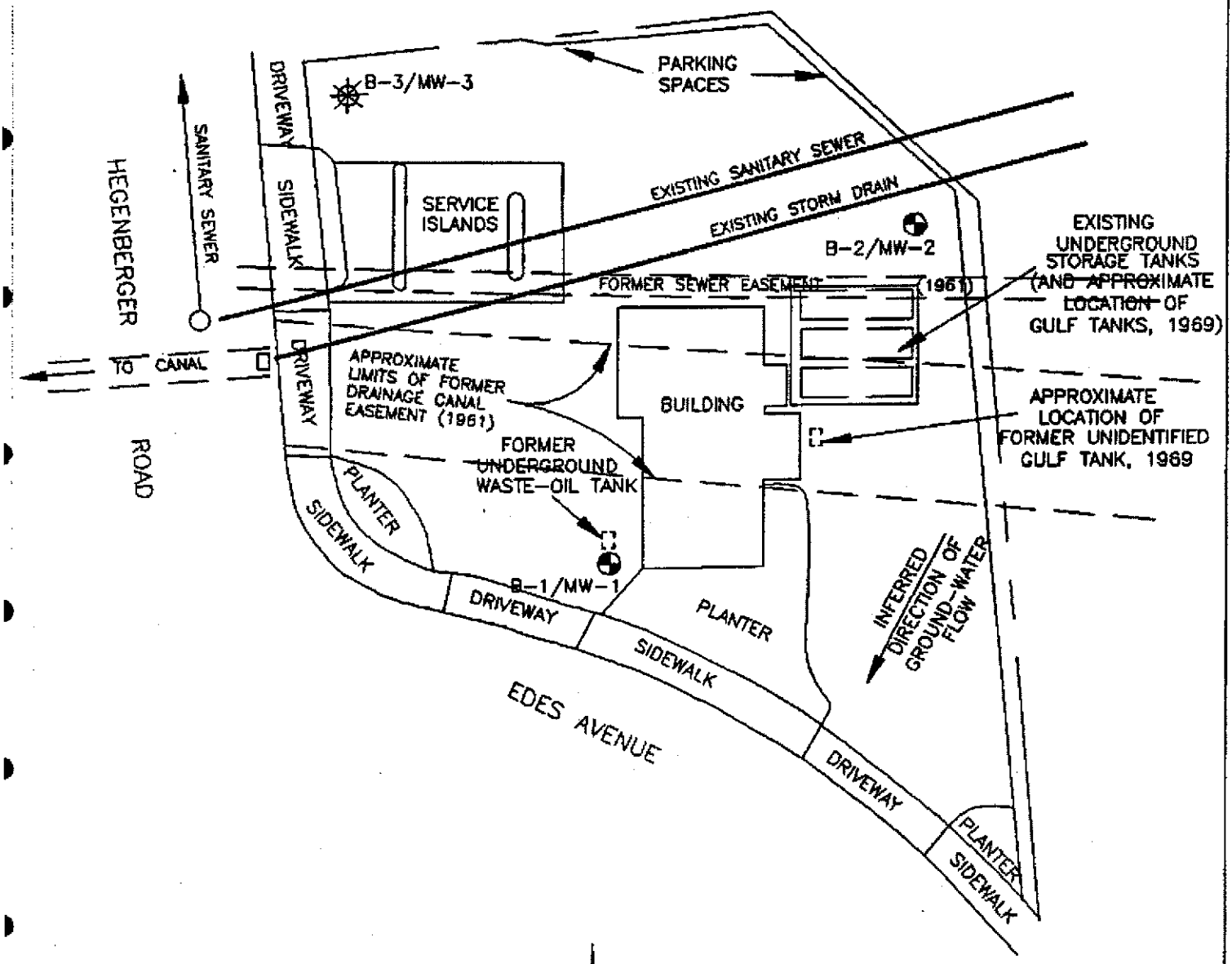
**PLATE**
**3**




**LEGEND**

WOSW-S • SOIL SAMPLE LOCATION AND DESIGNATION

| | | |
|---|---|---|
| PACIFIC ENVIRONMENTAL GROUP, INC. | ARCO SERVICE STATION #4494<br>566 Hegenberger Road<br>Oakland, California | FIGURE:<br>2 |
| | SITE MAP | PROJECT:<br>330-41.01 |




EXPLANATION

B-3/MW-3 = Not installed due to refusal

B-2/MW-2 = Monitoring Well (Applied GeoSystems, October 1989)

N

Approximate Scale

40 20 0 40 80

feet

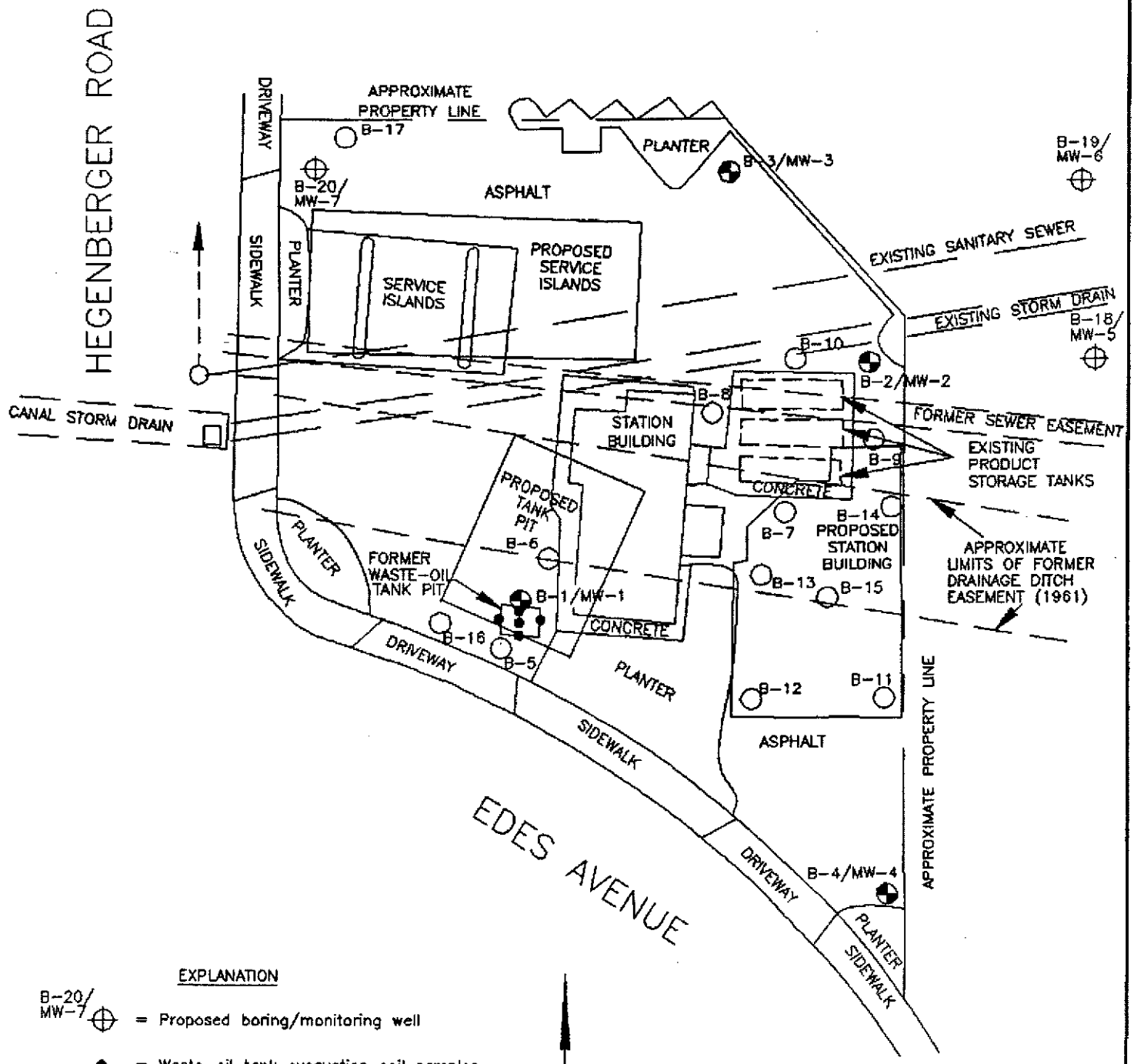
Source: Modified from plans supplied by ARCO Products Co. (dated August 12, 1982) and City of Oakland Dept. of Public Works (dated December 19, 1981).

Applied GeoSystems

PROJECT 69038-3

**GENERALIZED SITE PLAN**
**ARCO Service Station 4494**
**566 HEGENBERGER ROAD**
**Oakland, California**

**PLATE 2**




EXPLANATION

B-20/MW-7 = Proposed boring/monitoring well

= Waste-oil tank excavation soil samples (Pacific Environmental Group, January 1989)

B-4/MW-4 = Monitoring wells (Applied GeoSystems, October 1989 and August 1990)

B-10 = Soil boring (Applied GeoSystems, August 1990 and March 1991)

N

Approximate Scale

40 20 0 40 80

feet

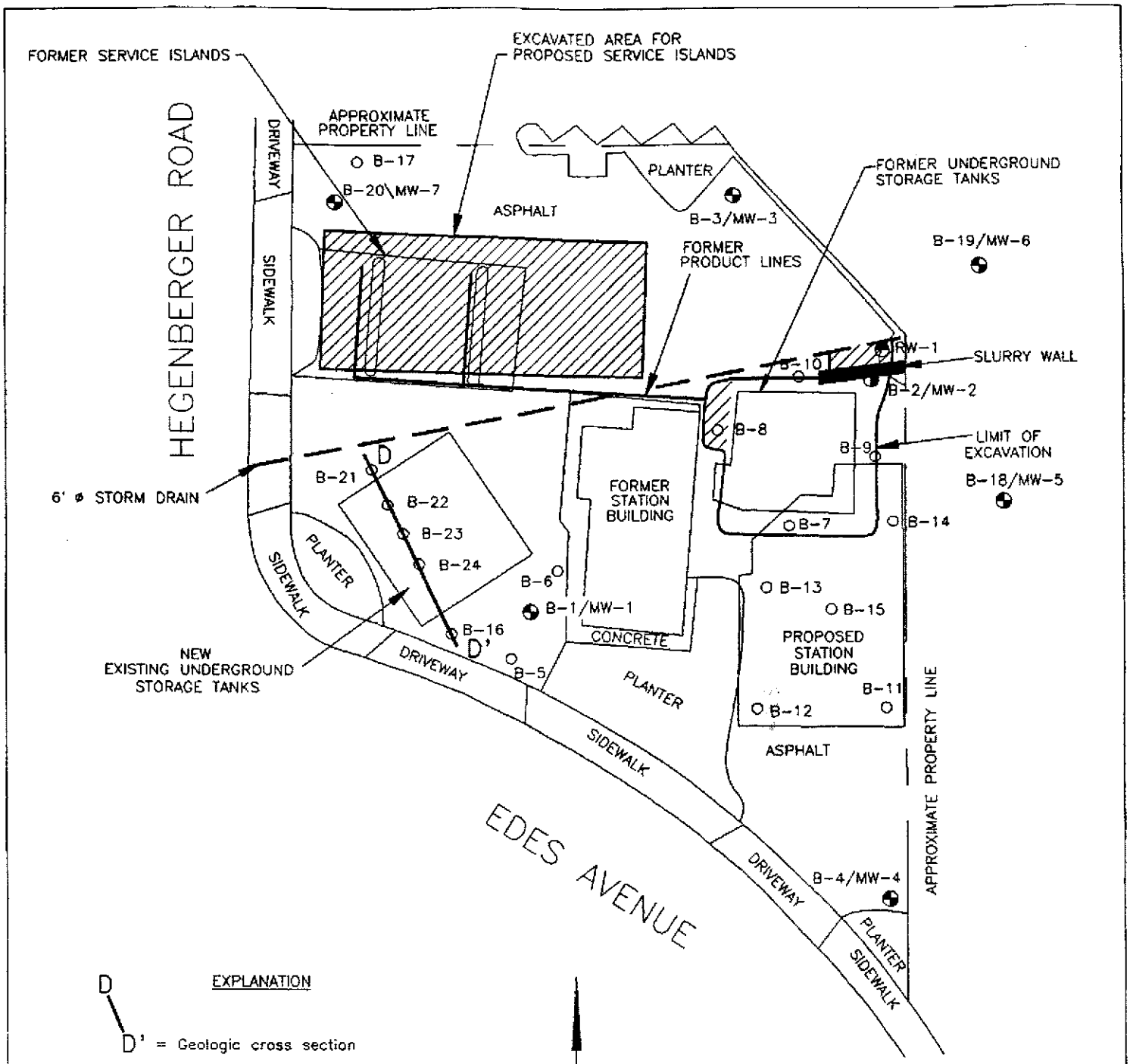
Source: Modified from plans supplied by ARCO Products Co. (dated August 12, 1982) and City of Oakland Dept. of Public Works (dated December 19, 1961).

Applied GeoSystems

**PROJECT 69038-6**

**GENERALIZED SITE PLAN**
**ARCO Service Station 4494**
**566 Hegenberger Road**
**Oakland, California**

**PLATE A**

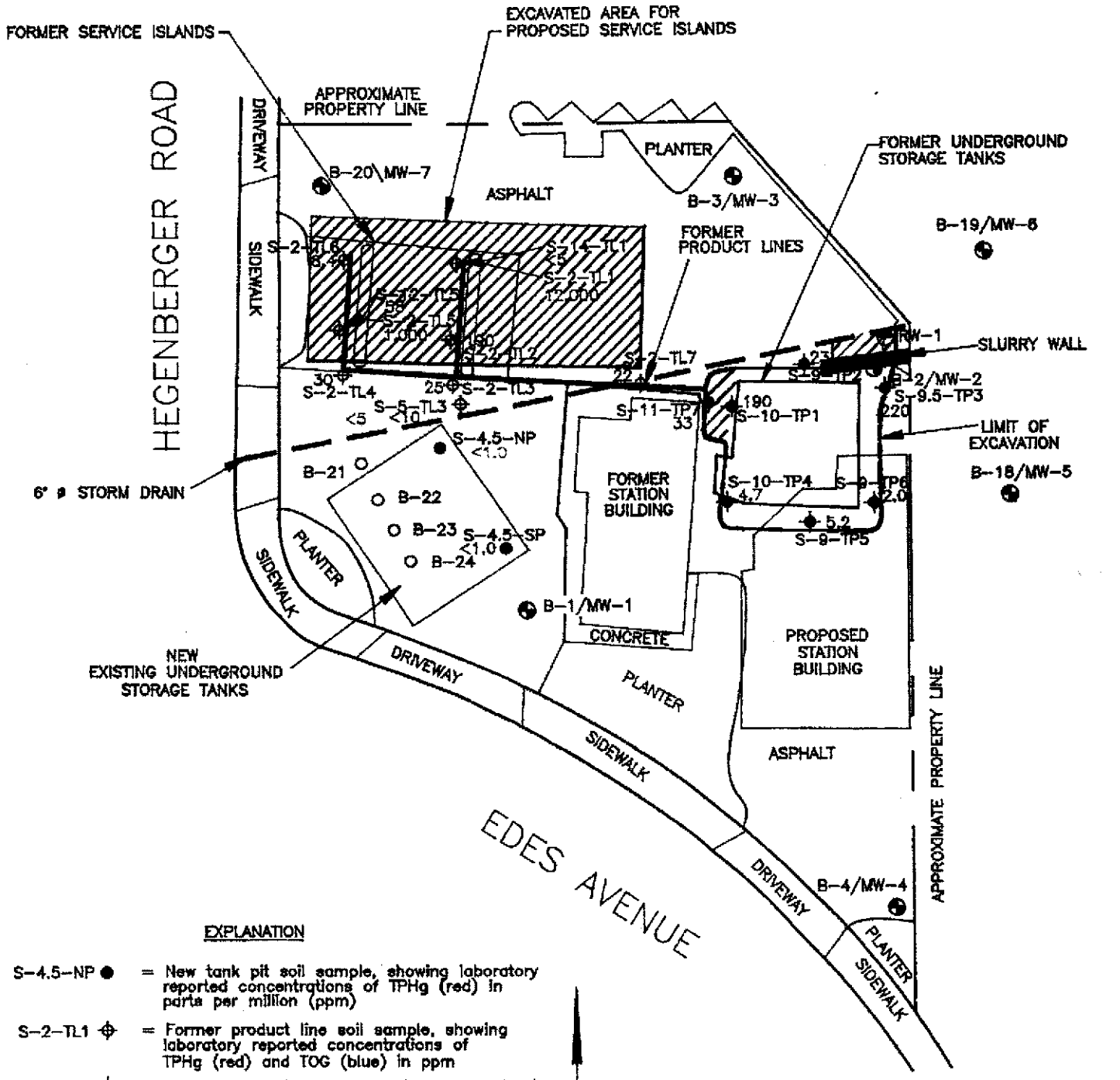



RESNA
Working to Restore Nature

**PROJECT 69038.13**

**GENERALIZED SITE PLAN**
**ARCO Service Station 4494**
**566 Hegenberger Road**
**Oakland, California**

**PLATE 2**




EXPLANATION

- S-4.5-NP ● = New tank pit soil sample, showing laboratory reported concentrations of TPHg (red) in parts per million (ppm)
- S-2-TL1 ⊕ = Former product line soil sample, showing laboratory reported concentrations of TPHg (red) and TOG (blue) in ppm
- S-10-TP1 ✦ = Former tank pit side wall soil sample, showing laboratory reported concentrations of TPHg (red) in ppm
- B-20/MW-7 ◔ = Monitoring wells (Applied GeoSystems, October 1989, August 1990; and RESNA, July 1992)
- B-2/MW-2 ◑ = Destroyed monitoring well (December 1992)
- RW-1 ◓ = Recovery well installed during slurry wall construction (RESNA April 1993)
- B-24 ○ = Soil boring (RESNA, December 1992)
- ▨ = Approximate location of over-excavated areas

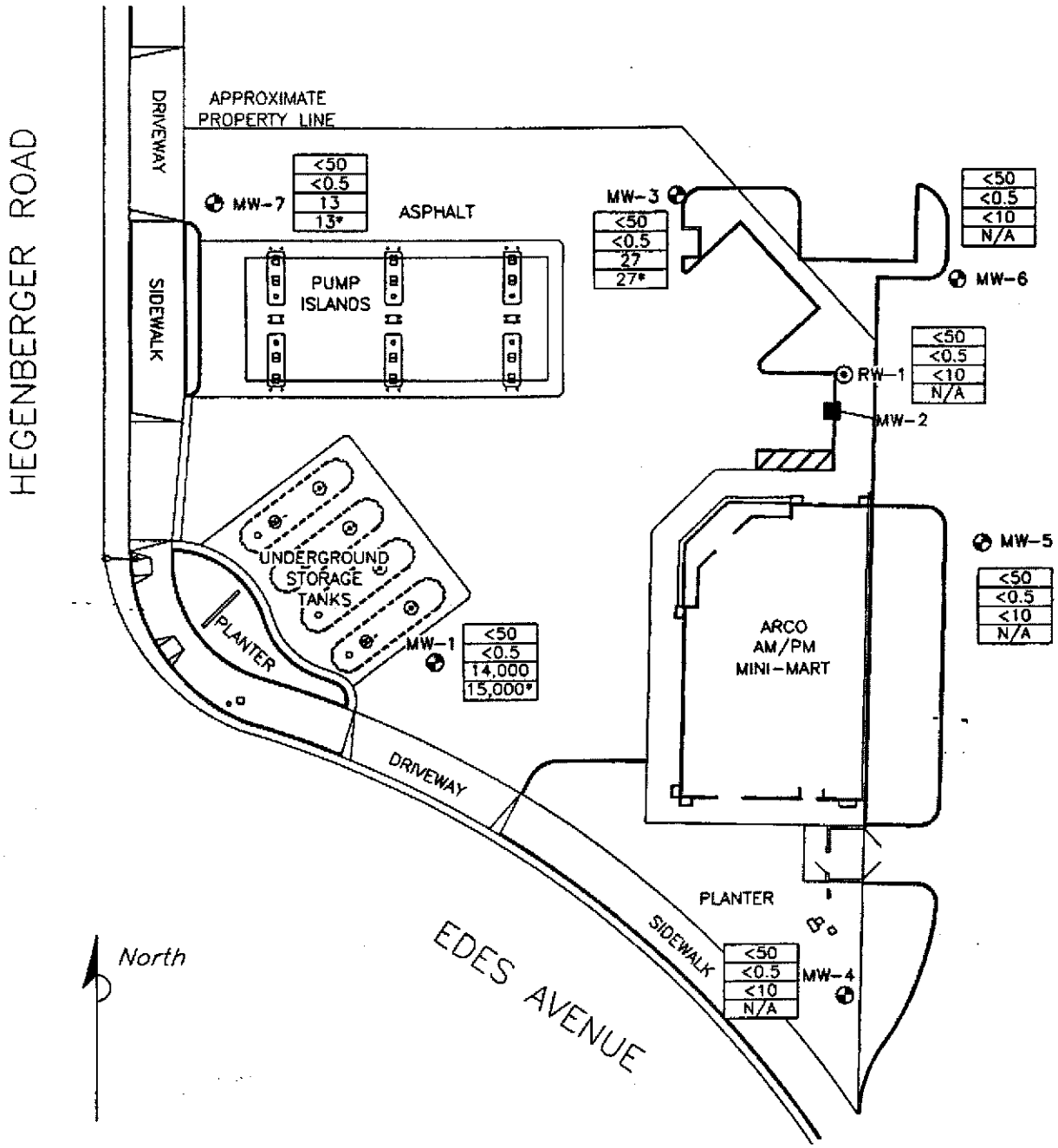
Source: Surveyed by John Koch, Licensed Land surveyor, July 1992.

RESNA
Working to Restore Nature

PROJECT 69038.13

**SOIL SAMPLE LOCATION AND CONCENTRATION MAP**
**ARCO Service Station 4494**
**566 Hegenberger Road**
**Oakland, California**

**PLATE 8**




LEGEND:

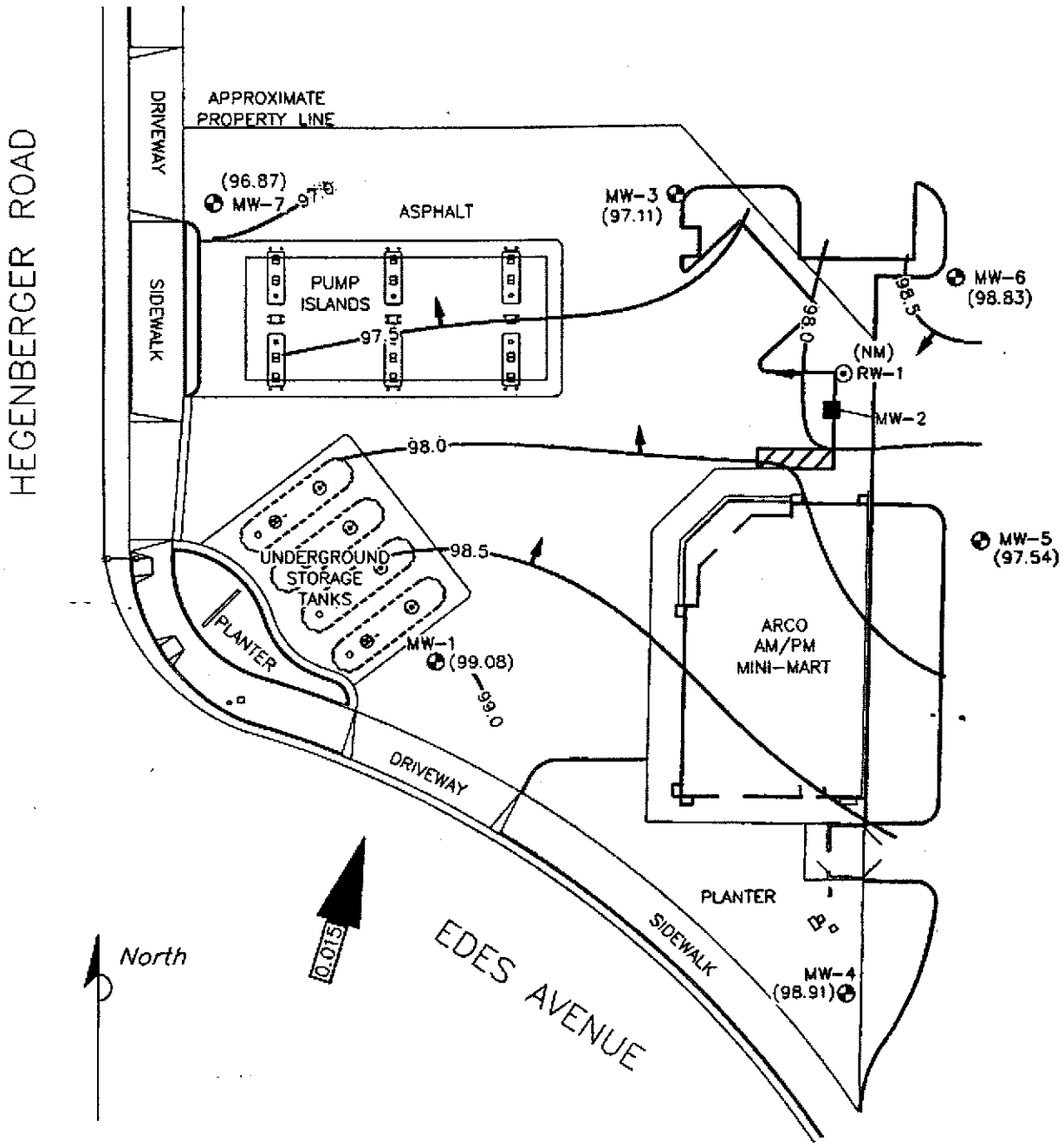
| | |
|---|---|
| MW-7 | MONITORING WELL LOCATION |
| RW-1 | RECOVERY WELL LOCATION, INSTALLED DURING SLURRY WALL CONSTRUCTION (RESNA–APRIL 1993) |
| MW-2 | DESTROYED MONITORING WELL (DECEMBER 1992) |
| <50 | TPH AS GASOLINE IN MICROGRAMS PER LITER |
| <0.5 | BENZENE IN MICROGRAMS PER LITER |
| 14,000 | MTBE IN MICROGRAMS PER LITER |
| 15,000* | MTBE CONFIRMED BY EPA METHOD 8260 |
| N/A | NOT APPLICABLE |

NOTE: SITE MAP ADAPTED FROM RESNA INC. AND TAIT & ASSOCIATES FIGURES. SITE DIMENSIONS AND FACILITY LOCATIONS NOT VERIFIED.

FIGURE 1
GROUND WATER ANALYTICAL SUMMARY
SECOND QUARTER 2000
ARCO STATION NO. 4494
566 HEGENBERGER ROAD
OAKLAND, CALIFORNIA

| | |
|---|---|
| PROJECT NO. 0000-319 | DRAWN BY TLA 7/20/00 |
| FILE NO. 4494-1 | PREPARED BY TLA |
| REVISION NO. 1 | REVIEWED BY |

Delta Environmental Consultants, Inc.




LEGEND:

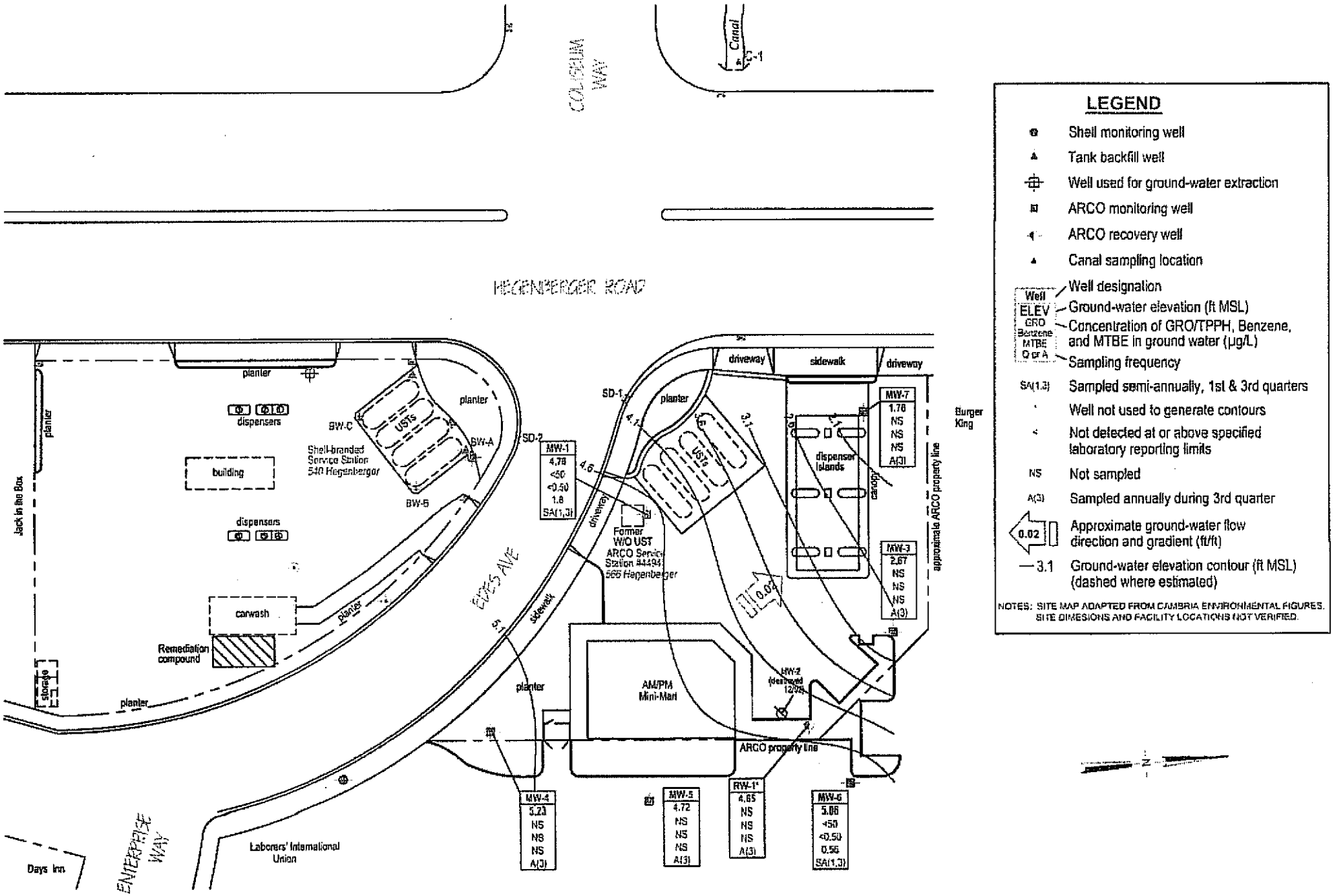
| | |
|---|---|
| MW-7 | MONITORING WELL LOCATION |
| RW-1 | RECOVERY WELL LOCATION, INSTALLED DURING SLURRY WALL CONSTRUCTION (RESNA-APRIL 1993) |
| MW-2 | DESTROYED MONITORING WELL (DECEMBER 1992) |
| (99.08) | GROUND WATER ELEVATION IN FEET ABOVE MEAN SEA LEVEL (MSL) |
| —98.5— | WATER TABLE CONTOUR IN FEET ABOVE MSL |
| → | GROUND WATER FLOW DIRECTION |
| 0.015 | APPROXIMATE GROUND WATER FLOW GRADIENT |

NOTE: SITE MAP ADAPTED FROM RESNA INC. AND TAIT & ASSOCIATES FIGURES. SITE DIMENSIONS AND FACILITY LOCATIONS NOT VERIFIED.

FIGURE 2
GROUND WATER ELEVATION CONTOUR MAP
SECOND QUARTER 2000
ARCO STATION NO. 4494
566 HEGENBERGER ROAD
OAKLAND, CALIFORNIA

| | |
|---|---|
| PROJECT NO. D000-319 | DRAWN BY TLA 7/21/00 |
| FILE NO. 4494-1 | PREPARED BY TLA |
| REVISION NO. 2 | REVIEWED BY |

Delta Environmental Consultants, Inc.




## LEGEND

- Shell monitoring well
- Tank backfill well
- Well used for ground-water extraction
- ARCO monitoring well
- ARCO recovery well
- Canal sampling location
- Well designation
- Well / ELEV / GRO / Benzene / MTBE / Q or A — Ground-water elevation (ft MSL); Concentration of GRO/TPPH, Benzene, and MTBE in ground water (µg/L); Sampling frequency
- SA(1,3) — Sampled semi-annually, 1st & 3rd quarters
- Well not used to generate contours
- < — Not detected at or above specified laboratory reporting limits
- NS — Not sampled
- A(3) — Sampled annually during 3rd quarter
- 0.02 — Approximate ground-water flow direction and gradient (ft/ft)
- —3.1 — Ground-water elevation contour (ft MSL) (dashed where estimated)

NOTES: SITE MAP ADAPTED FROM CAMBRIA ENVIRONMENTAL FIGURES. SITE DIMESIONS AND FACILITY LOCATIONS NOT VERIFIED.

0 60 120
SCALE (ft)

BROADBENT & ASSOCIATES, INC.
ENGINEERING, WATER RESOURCES & ENVIRONMENTAL
1324 Mangrove Ave. Suite 212. Chico, California 95926
Project No.: 06-02-623 Date: 4/20/07

Station #4494
566 Hegenberger Road
Oakland, California

Ground-Water Elevation Contour and Analytical Summary Map
6 March 2007

Drawing
1

Additional Subsurface Investigation
ARCO Station 4494, Oakland, California

October 27, 1992
69038.10

TABLE 1
CUMULATIVE RESULTS OF LABORATORY ANALYSES OF SOIL SAMPLES
ARCO Station 4494
Oakland,California
(Page 1 of 3)

| Sample ID | TPHg | TPHd | B | T | E | X | TOG |
|---|---|---|---|---|---|---|---|
| December 1988 | | | | | | | |
| WO-1 | 11* | 370.+** | NA | NA | NA | NA | 4,500(4800) |
| WO-2 | <5* | <10** | NA | NA | NA | NA | <20(<10) |
| January 1989 | | | | | | | |
| WOSW-E | NA | <10** | NA | NA | NA | NA | 190(50) |
| WOSW-S | NA | <10** | NA | NA | NA | NA | <10(<10) |
| WOSW-W | NA | <10** | NA | NA | NA | NA | <10(<10) |
| WOSW-N | NA | 33** | NA | NA | NA | NA | 200(400) |
| WOSW-N2 | NA | <10** | NA | NA | NA | NA | 10(<10) |
| October 1989 | | | | | | | |
| S-5-B1 | <1.0 | 200 | <0.005 | <0.005 | <0.005 | <0.005 | 1,600 |
| S-10-B1 | <1.0 | <10 | <0.005 | <0.005 | <0.005 | <0.005 | <30 |
| S-20-B1 | <1.0 | <10 | <0.005 | <0.005 | <0.005 | <0.005 | <30 |
| S-24-B1 | <1.0 | <10 | <0.005 | <0.005 | <0.005 | <0.005 | <30 |
| S-5-B2 | 52 | <10 | 1.8 | 0.25 | 0.48 | 2.6 | 280 |
| S-11-B2 | 30 | <10 | 0.75 | 0.51 | 0.43 | 2.7 | <30 |
| S-16-B2 | 52,000 | 5,700 | <100 | 1,400 | 440 | 2,700 | 2,300 |
| S-16-B2# | --- | --- | (120) | (930) | (490) | (3,200) | --- |
| S-19-B2 | 11 | 14 | 0.25 | 1.2 | 0.22 | 1.5 | <30 |
| S-21-B2 | <1.0 | <10 | <0.005 | 0.012 | <0.005 | 0.021 | <30 |
| S-5-B3 | <2.0 | <10 | <0.050 | <0.050 | <0.050 | <0.050 | <50 |
| S-20-B3 | <2.0 | <10 | <0.050 | <0.050 | <0.050 | <0.050 | <50 |
| August 1990 | | | | | | | |
| S-7-B4 | <2.0 | 36 | <0.050 | <0.050 | <0.050 | <0.050 | 110 |
| S-10-B4 | <2.0 | <10 | <0.050 | <0.050 | <0.050 | <0.050 | <50 |
| S-19.5-B4 | <2.0 | 15 | <0.050 | <0.050 | <0.050 | <0.050 | <50 |
| S-22-B4 | NA | <10 | NA | NA | NA | NA | NA |
| S-6-B5 | <2.0 | <10 | <0.050 | <0.050 | <0.050 | <0.050 | <50 |
| March 1991 | | | | | | | |
| S-5-B6 | <1.0 | NA | <0.005 | <0.005 | <0.005 | <0.005 | NA |
| S-5-B7 | 63 | NA | 1.0 | 0.23 | 0.86 | 1.8 | NA |
| S-10-B7 | <1.0 | NA | <0.005 | <0.005 | <0.005 | 0.006 | NA |
| S-5-B8 | 29 | NA | 0.86 | 0.088 | 0.36 | 0.21 | NA |
| S-5-B9 | 5.4 | NA | 0.66 | 0.035 | 0.31 | <0.005 | NA |
| S-10-B9 | <1.0 | NA | 0.037 | <0.005 | 0.011 | 0.036 | NA |
| S-5-B10 | 3.0 | NA | 0.28 | 0.013 | <0.005 | 0.023 | NA |
| S-10-B10 | 5.2 | NA | 0.53 | 0.036 | 0.096 | 0.23 | NA |
| S-6-B11 | <1.0 | <1.0 | <0.005 | <0.005 | <0.005 | <0.005 | 330 |
| S-11-B11 | <1.0 | <1.0 | <0.005 | <0.005 | <0.005 | <0.005 | <30 |
| S-6-B12 | <1.0 | <1.0 | <0.005 | <0.005 | <0.005 | <0.005 | <30 |
| S-11-B12 | <1.0 | <1.0 | <0.005 | <0.005 | <0.005 | <0.005 | <30 |
| S-6-B13 | <1.0 | <1.0 | <0.005 | <0.005 | <0.005 | <0.005 | <30 |
| S-11-B13 | <1.0 | <1.0 | <0.005 | <0.005 | <0.005 | <0.005 | <30 |
| S-5-B14 | <1.0 | <1.0 | <0.005 | <0.005 | <0.005 | <0.005 | 570 |

See notes on Page 3 of 3.

TABLE 1
CUMULATIVE RESULTS OF LABORATORY ANALYSES OF SOIL SAMPLES
ARCO Station 4494
Oakland, California
(Page 2 of 3)

| Sample ID | TPHg | TPHd | B | T | E | X | TOG |
|---|---|---|---|---|---|---|---|
| March 1991 | | | | | | | |
| S-11-B14 | <1.0 | <1.0 | <0.005 | <0.005 | <0.005 | <0.005 | <30 |
| S-6-B15 | <1.0 | <1.0 | <0.005 | <0.005 | <0.005 | <0.005 | 280 |
| S-10.5-B15 | <1.0 | <1.0 | <0.005 | <0.005 | <0.005 | <0.005 | <30 |
| S-5.5-B16 | <1.0 | <1.0 | <0.005 | <0.005 | <0.005 | <0.005 | <30 |
| S-6-B17 | 69 | <100 | 1.3 | 1.7 | 1.0 | 2.2 | 1,100 |
| July 1992 | | | | | | | |
| S-5.5-B18 | <1.0 | NA | <0.0050 | <0.0050 | <0.0050 | <0.0050 | NA |
| S-10.5-B18 | <1.0 | NA | <0.0050 | <0.0050 | <0.0050 | <0.0050 | NA |
| S-5.5-B19 | <1.0 | NA | <0.0050 | <0.0050 | <0.0050 | <0.0050 | NA |
| S-10.5-B19 | <1.0 | NA | <0.0050 | <0.0050 | <0.0050 | <0.0050 | NA |
| S-7-B-20 | <1.0 | NA | 0.022 | <0.0050 | <0.0050 | <0.0050 | NA |
| COMPOSITE STOCKPILE SAMPLES | | | | | | | |
| June 1990 | | | | | | | |
| SP-0619-1A<br>SP-0619-1B<br>SP-0619-1C<br>SP-0619-1D | 19 | 110 | <0.050 | <0.050 | 0.087 | 0.67 | <0.5 |
| August 1990 | | | | | | | |
| S-B3-1<br>S-B3-2<br>S-B4-1<br>S-B4-2<br>S-B4-3 | <2.0 | <10 | <0.050 | <0.050 | <0.050 | <0.050 | <0.5 |
| April 1991 | | | | | | | |
| S-0411-1A<br>S-0411-1B<br>S-0411-1C<br>S-0411-1D | <1.0 | NA | <0.0050 | 0.0080 | 0.0098 | 0.017 | NA |
| July 1992 | | | | | | | |
| SP-0710-A<br>SP-0710-B<br>SP-0710-C | <1.0 | NA | 0.014 | <0.0050 | 0.0060 | <0.0050 | NA |

See notes on Page 3 of 3.

TABLE 1
CUMULATIVE RESULTS OF LABORATORY ANALYSIS OF
SOIL SAMPLES FOR HYDROCARBONS
ARCO Station 4494
Oakland, California
(Page 1 of 3)

| Sample Identifier | TPHg | TPHd | Benzene | Toluene | Ethyl-benzene | Total Xylenes | TOG |
|---|---|---|---|---|---|---|---|
| December 16, 1988 - Waste-Oil Tank Excavation | | | | | | | |
| WO-1 | 11.* | 370.+** | NA | NA | NA | NA | 4,500 (4,800) |
| WO-2 | <5.* | <10.** | NA | NA | NA | NA | <20 |
| January 4, 1989 - Excavation Sidewall Samples | | | | | | | |
| WOSW-E | NA | <10.** | NA | NA | NA | NA | 190 (50) |
| WOSW-S | NA | <10.** | NA | NA | NA | NA | <10 (<10) |
| WOSW-W | NA | <10.** | NA | NA | NA | NA | <10 (<10) |
| WOSW-N | NA | 33.** | NA | NA | NA | NA | 200 (400) |
| January 18, 1989 | | | | | | | |
| WOSW-N2 | NA | <10.** | NA | NA | NA | NA | 10 (<10) |
| October 1989 | | | | | | | |
| S-5-B1 | <1.0 | 200 | <0.005 | <0.005 | <0.005 | <0.005 | 1,600 |
| S-10-B1 | <1.0 | <10 | <0.005 | <0.005 | <0.005 | <0.005 | <30 |
| S-20-B1 | <1.0 | <10 | <0.005 | <0.005 | <0.005 | <0.005 | <30 |
| S-5-B2 | 52 | <10 | 1.8 | 0.25 | 0.48 | 2.6 | 280 |
| S-11-B2 | 30 | <10 | 0.75 | 0.51 | 0.43 | 2.7 | <30 |
| S-16-B2 | 52,000 | 5,700 | <100 | 1,400 | 440 | 2,700 | 2,300 |
| S-16-B2# | ---- | ---- | (120) | (930) | (490) | (3,200) | ---- |
| S-19-B2 | 11 | 14 | 0.25 | 1.2 | 0.22 | 1.5 | <30 |
| S-21-B2 | <1.0 | <10 | <0.005 | 0.012 | <0.005 | 0.021 | <30 |
| S-24-B2 | <1.0 | <10 | <0.005 | <0.005 | <0.005 | <0.005 | <30 |
| S-5-B3 | <2.0 | <10 | <0.050 | <0.050 | <0.050 | <0.050 | <50 |
| S-20-B3 | <2.0 | <10 | <0.050 | <0.050 | <0.050 | <0.050 | <50 |
| August 1990 | | | | | | | |
| S-7-B4 | <2.0 | 36 | <0.050 | <0.050 | <0.050 | <0.050 | 110 |
| S-10-B4 | <2.0 | <10 | <0.050 | <0.050 | <0.050 | <0.050 | <50 |
| S-19.5-B4 | <2.0 | 15 | <0.050 | <0.050 | <0.050 | <0.050 | <50 |
| S-22-B4 | NA | <10 | NA | NA | NA | NA | NA |
| S-6-B5 | <2.0 | <10 | <0.050 | <0.050 | <0.050 | <0.050 | <50 |

See notes on page 3 of 3.

TABLE 1
CUMULATIVE RESULTS OF LABORATORY ANALYSIS OF
SOIL SAMPLES FOR HYDROCARBONS
ARCO Station 4494
Oakland, California
(Page 2 of 3)

| Sample Identifier | TPHg | TPHd | Benzene | Toluene | Ethyl-benzene | Total Xylenes | TOG |
|---|---|---|---|---|---|---|---|
| March 1991 | | | | | | | |
| S-5-B6 | <1.0 | NA | <0.005 | <0.005 | <0.005 | <0.005 | NA |
| S-5-B7 | 63 | NA | 1.0 | 0.23 | 0.86 | 1.8 | NA |
| S-10-B7 | <1.0 | NA | <0.005 | <0.005 | <0.005 | 0.006 | NA |
| S-5-B8 | 29 | NA | 0.86 | 0.088 | 0.36 | 0.21 | NA |
| S-5-B9 | 5.4 | NA | 0.66 | 0.035 | 0.31 | 0.11 | NA |
| S-10-B9 | <1.0 | NA | 0.037 | <0.005 | 0.011 | 0.036 | NA |
| S-5-B10 | 3.0 | NA | 0.28 | 0.013 | <0.005 | 0.023 | NA |
| S-10-B10 | 5.2 | NA | 0.53 | 0.036 | 0.096 | 0.23 | NA |
| S-6-B11 | <1.0 | <1.0 | <0.005 | <0.005 | <0.005 | <0.005 | 330 |
| S-11-B11 | <1.0 | <1.0 | <0.005 | <0.005 | <0.005 | <0.005 | <30 |
| S-6-B12 | <1.0 | <1.0 | <0.005 | <0.005 | <0.005 | <0.005 | <30 |
| S-11-B12 | <1.0 | <1.0 | <0.005 | <0.005 | <0.005 | <0.005 | <30 |
| S-6-B13 | <1.0 | <1.0 | <0.005 | <0.005 | <0.005 | <0.005 | <30 |
| S-11-B13 | <1.0 | <1.0 | <0.005 | <0.005 | <0.005 | <0.005 | <30 |
| S-5-B14 | <1.0 | <1.0 | <0.005 | <0.005 | <0.005 | <0.005 | 570 |
| S-11-B14 | <1.0 | <1.0 | <0.005 | <0.005 | <0.005 | <0.005 | <30 |
| S-6-B15 | <1.0 | <1.0 | <0.005 | <0.005 | <0.005 | <0.005 | 280 |
| S-10-1/2-B15 | <1.0 | <1.0 | <0.005 | <0.005 | <0.005 | <0.005 | <30 |
| S-5-1/2-B16 | <1.0 | <1.0 | <0.005 | <0.005 | <0.005 | <0.005 | <30 |
| S-6-B17 | 69 | <100 | 1.3 | 1.7 | 1.0 | 2.2 | 1,100 |
| June 1990 - Composite Soil Sample (Borings B-1 and B-2) | | | | | | | Pb |
| SP-0619-1A | | | | | | | |
| SP-0619-1B | | | | | | | |
| SP-0619-1C | 19 | 110 | <0.050 | <0.050 | 0.087 | 0.67 | <0.5 |
| SP-0619-1D | | | | | | | |
| August 1990 - Composite Soil Sample (Borings B-3 and B-4) | | | | | | | |
| S-B3-1 | | | | | | | |
| S-B3-2 | | | | | | | |
| S-B4-1 | <2.0 | <10 | <0.050 | <0.050 | <0.050 | <0.050 | <0.5 |
| S-B4-2 | | | | | | | |
| S-B4-3 | | | | | | | |

See notes on page 3 of 3.

TABLE 1
CUMULATIVE RESULTS OF LABORATORY ANALYSIS OF
SOIL SAMPLES FOR HYDROCARBONS
ARCO Station 4494
Hegenberger Road and Edes Avenue
Oakland, California
(Page 3 of 3)

| Sample Identifier | TPHg | TPHd | Benzene | Toluene | Ethyl-benzene | Total Xylenes | Pb* |
|---|---|---|---|---|---|---|---|
| April 1991 - Composite Soil Sample (Borings B-6 through B-17) | | | | | | | |
| S-0411-1A<br>S-0411-1B<br>S-0411-1C<br>S-0411-1D | <1.0 | NA | <0.0050 | 0.0080 | 0.0098 | 0.017 | 0.11 |

Results in milligrams per kilogram (mg/kg), or parts per million (ppm).
TPHg: Total petroleum hydrocarbons as gasoline by EPA Method 8015/3050.
TPHd: Total petroleum hydrocarbons as diesel by EPA Method 8015/3550.
TOG: Total oil and grease by EPA Standard Method 503 A/E.
* : Analyzed as low boiling hydrocarbons as gasoline (LBHC-g).
** : Analyzed as high boiling hydrocarbons as diesel (HBHC-d).
(4,800): Analyzed as high boiling hydrocarbons as oil (HBHC-o).
+ : Chromatographic pattern of compounds detected and calculated as diesel does not match that of the diesel standard used for calibration.
# : Results of analysis by EPA Method 8240.
Benzene: 120 ppm Toluene: 930 ppm Ethylbenzene: 490 ppm Total Xylenes: 3,200 ppm
Naphthalene: 11 ppm 2-Methylnaphthalene: 6 ppm
Di-n-Octyl Phthalate: 0.60 ppm Butylbenzylphthalate: 0.77 ppm
Pb: Organic Lead by EPA Method 7420.
Pb*: Organic Lead by California LUFT Manual Method (December 1987).

Soil Sample Identification:

S-12-B10
- S: Soil sample
- 12: Approximate sample depth in feet
- B10: Boring number

Composite Soil Sample Identifications:

S-B4-3
- S: Soil sample
- B4: Boring number
- 3: Storage drum number

S(P)-0411-1D
- S: Stockpile soil sample
- 0411: Date
- 1D: Composite soil sample location

TABLE 2
CUMULATIVE RESULTS OF LABORATORY ANALYSIS
OF SOIL SAMPLES FOR VOCs AND METALS
ARCO Station 4494
Oakland, California

| Sample Identifier | VOCs | Total Cadmium | Total Chromium | Total Lead | Total Zinc |
|---|---|---|---|---|---|
| October 1989 | | | | | |
| S-5-B1 | NA | <0.5 | 46.8 | 29.8 | 67.3 |
| S-10-B1 | NA | <0.5 | 31.2 | <1.0 | 48.5 |
| S-20-B1 | NA | <0.5 | 39.2 | <1.0 | 62.5 |
| S-24-B1 | NA | 0.757 | 48.2 | <1.0 | 81.5 |
| S-5-B2 | NA | <0.5 | 32.4 | 19.9 | 64.1 |
| S-11-B2 | NA | <0.5 | 22.4 | 2.16 | 33.4 |
| S-16-B2 | NA | <0.5 | 27.6 | 10.2 | 43.3 |
| S-19-B2 | NA | <0.5 | 40.6 | <1.0 | 60.1 |
| S-21-B2 | NA | <0.5 | 51.2 | <1.0 | 126 |
| S-5-B3 | NA | 1.1 | 49 | 66 | 48 |
| S-20-B3 | NA | 2.1 | 55 | 79 | 45 |
| August 1990 | | | | | |
| S-7-B4 | NA | 4.8 | 85 | 170 | 31 |
| S-10-B4 | NA | 2.7 | 63 | 88 | 44 |
| S-19.5-B4 | NA | 2.3 | 66 | 94 | 52 |
| S-6-B5 | ND | 3.4 | 58 | 84 | 41 |
| TTLC | | 100 | 2,500 | 1,000 | 5,000 |

Results in milligrams per kilogram (mg/kg), or parts per million (ppm).
NA: Not analyzed.
ND: Below the detection limit; see laboratory data sheets for detection limits.
TTLC: Total Threshold Limit Concentration values (Title 22 of California Administrative Code, January 1988).

Sample Identification:

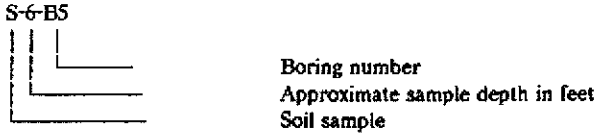


TABLE A3
RESULTS OF LABORATORY ANALYSIS OF WATER SAMPLES
FOR BNAs, VOCs, AND METALS
ARCO Station 4494
Hegenberger Road and Edes Avenue
Oakland, California

| Well<br>Date | BNAs | VOCs | Total Cadmium | Total Chromium | Total Organic Lead | Total Zinc |
|---|---|---|---|---|---|---|
| MW-1 | | | | | | |
| 06/19/90 | ND | ND | 0.024 | <0.05 | 0.10 | 0.049 |
| 08/16/90 | NA | NA | NA | NA | NA | NA |
| MW-3 | | | | | | |
| 08/16/90 | ND | ND | <0.01 | 0.06 | 0.07 | 0.07 |
| MW-4 | | | | | | |
| 08/16/90 | ND | ND | <0.01 | <0.02 | <0.02 | 0.03 |
| **MCLs** | — | — | **0.010** | **0.05** | **0.05** | **NR** |

Results in milligrams per liter (mg/l), or parts per million (ppm).
NA: Not Analyzed.
ND: Below the detection limit; see laboratory data sheets for detection limits.

MCLs: Maximum Contaminant Levels (California Department of Health Services, Office of Drinking Water, October 1990).
NR: No established DWAL or MCL.

RESNA
Working to Restore Nature

Report on Tank Removal Investigation
ARCO Station 4494, Oakland, California.

May 17, 1993
69038.13

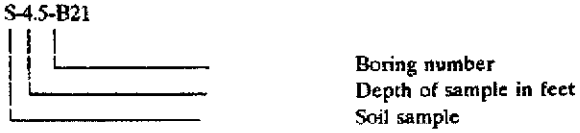
TABLE 1
RESULTS OF LABORATORY ANALYSES OF NEW TANK PIT SOIL SAMPLES
ARCO Station 4494
Oakland, California

| Sample ID | B | T | E | X | TPHg | STLC Lead |
|---|---|---|---|---|---|---|
| Borings December 8, 1992 | | | | | | |
| S-4.5-B21 | 0.010(<0.50) | <0.0050(<0.50) | <0.0050(<0.50) | 0.0070(<0.50) | 2.3 | 0.31 |
| S-10-B21 | <0.0050(<0.50) | <0.0050(<0.50) | <0.0050(<0.50) | <0.0050(<0.50) | <1.0 | <0.10 |
| S-5.5-B22 | <0.0050(<0.50) | <0.0050(<0.50) | <0.0050(<0.50) | <0.0050(<0.50) | <1.0 | <0.10 |
| S-10-B22 | <0.0050(<0.50) | <0.0050(<0.50) | <0.0050(<0.50) | <0.0050(<0.50) | <1.0 | <0.10 |
| S-5-B23 | <0.0050(<0.50) | <0.0050(<0.50) | <0.0050(<0.50) | <0.0050(<0.50) | <1.0 | <0.10 |
| S-10-B23 | <0.0050(<0.50) | <0.0050(<0.50) | <0.0050(<0.50) | <0.0050(<0.50) | <1.0 | <0.10 |
| S-4.5-B24 | <0.0050(<0.50) | 0.034(<0.50) | 0.039(<0.50) | 0.22(<0.50) | 1.8 | <0.10 |
| S-9.5-B24 | <0.0050(<0.50) | <0.0050(<0.50) | <0.0050(<0.50) | <0.0050(<0.50) | <1.0 | <0.10 |
| Tank Pit Sidewall January 7, 1993 | | | | | | |
| S-4.5-NP | <0.0050 | <0.0050 | <0.0050 | <0.0050 | <1.0 | NA |
| S-4.5-SP | <0.0050 | <0.0050 | <0.0050 | <0.0050 | <1.0 | NA |

Results in parts per million (ppm), the exception of TCLP BTEX which was reported in parts per billion (ppb).
< : Less than the indicated laboratory detection limit.
B: benzene, T: toluene, E: ethylbenzene, X: total xylenes
TPHg : Total petroleum hydrocarbons as gasoline.
TPHg with BTEX distinction measured by EPA Methods 5030/8015/8020.
( ) : Analytical results of toxicity characteristic leaching procedure (TCLP) for BTEX in ppb.
NA : Not analyzed.

Sample Identification:

Soil Borings:




Excavation Samples:

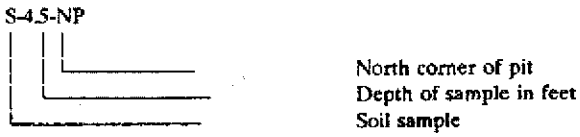


TABLE 2
RESULTS OF LABORATORY ANALYSES OF FORMER GASOLINE TANK PIT SOIL SAMPLES
ARCO Station 4494
Oakland, California

| Sample ID | B | T | E | X | TPHg |
|---|---|---|---|---|---|
| December 17, 1992 | | | | | |
| S-10-TP1 | 3.5 | 0.99 | 7.2 | 6.0 | 190 |
| S-9-TP2 | 0.50 | 0.26 | 0.46 | 2.0 | 23 |
| S-9.5-TP3 | 2.2 | 1.6 | 7.0 | 5.7 | 220 |
| S-10-TP4 | 0.14 | 0.028 | 0.013 | 0.066 | 4.7 |
| S-9-TP5 | 0.031 | 0.020 | 0.014 | 0.059 | 5.2 |
| S-9-TP6 | 0.058 | 0.010 | 0.0050 | 0.010 | 2.0 |
| December 18, 1992 | | | | | |
| S-11-TP7 | 1.7 | 0.083 | 1.0 | 0.63 | 33 |

Results in parts per million (ppm).
NA : Not analyzed.
< : Less than the indicated laboratory detection limit.
B: benzene, T: toluene, E: ethylbenzene, X: total xylenes.
TPHg : Total petroleum hydrocarbons as gasoline.
(TPHg with BTEX distinction measured by EPA Methods 5030/8015/8020).

Sample Identification: S-10-TP1

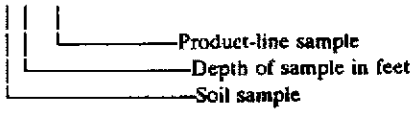
- Tank number
- Depth of sample in feet
- Soil sample

TABLE 3
RESULTS OF LABORATORY ANALYSES OF PRODUCT-LINE
AND PRODUCT-DISPENSER SOIL SAMPLES
ARCO Station 4494
Oakland, California

| Sample ID | B | T | E | X | TPHg | TOG |
|---|---|---|---|---|---|---|
| December 17, 1992 | | | | | | |
| **S-2-TL1** | **220** | **1,000** | **310** | **1,700** | **12,000** | NA |
| S-2-TL2 | 5.6 | 15 | 6.6 | 26 | 190 ← | NA |
| S-2-TL3 | 0.83 | 0.095 | 0.34 | 0.33 | 25 | NA |
| S-2-TL4 | 0.83 | 3.9 | 0.92 | 5.6 | 30 | NA |
| **S-2-TL5** | **10** | **7.7** | **34** | **120** | **1,100** | NA |
| S-2-TL6 | 0.16 | 0.044 | 0.018 | 1.1 | 8.4 | NA |
| S-2-TL7 | 0.71 | 0.055 | 0.80 | 0.44 | 22 | NA |
| December 18, 1992 | | | | | | |
| S-14-TL1 | <0.005 | <0.005 | <0.005 | <0.015 | <5 | NA |
| S-5-TL3 | 0.047 | 0.006 | 0.010 | 0.019 | <5 | <10 |
| S-12-TL5 | 1.5 | 0.21 | 1.6 | 0.95 | 58 | NA |

Results in parts per million (ppm).
< : Less than the laboratory detection limit.
B: benzene, T: toluene, E: ethylbenzene, X: total xylenes
BTEX : Measured by EPA Method 8020.
TPHg : Total petroleum hydrocarbons as gasoline by EPA Methods 5030/8015.
TOG : Total oil and grease by EPA Method 418.1.
NA : Not analyzed.

Sample Identification: S-2-TL1



ORGANIC ANALYSIS DATA SHEET - EPA METHOD 624/8240
ANAMETRIX, INC. (408) 432-8192

Sample I.D. : S8-12-199-01A
Matrix : SOIL
Date sampled : 12-16-88
Date analyzed: 12-20-88
Dilut. factor: NONE

Anametrix I.D. : 8812124-01 Wo-i 7'
Analyst : TC
Supervisor : PG
Date released : 12-21-88
Instrument ID : F1

| CAS # | Compound Name | Detection Limit (ug/Kg) | Amount Found (ug/Kg) |
|---|---|---|---|
| 74-87-3 | * Chloromethane | 10 | ND |
| 75-01-4 | * Vinyl Chloride | 10 | ND |
| 74-83-9 | * Bromomethane | 10 | ND |
| 75-00-3 | * Chloroethane | 10 | ND |
| 75-69-4 | * Trichlorofluoromethane | 5 | ND |
| 75-35-4 | * 1,1-Dichloroethene | 5 | ND |
| 76-13-1 | # Trichlorotrifluoroethane | 5 | ND |
| 67-64-1 | **Acetone | 20 | ND |
| 75-15-0 | **Carbondisulfide | 5 | ND |
| 75-09-2 | * Methylene Chloride | 5 | ND |
| 156-60-5 | * Trans-1,2-Dichloroethene | 5 | ND |
| 75-34-3 | * 1,1-Dichloroethane | 5 | ND |
| 78-93-3 | **2-Butanone | 20 | ND |
| 156-59-2 | * Cis-1,2-Dichloroethene | 5 | ND |
| 67-66-3 | * Chloroform | 5 | ND |
| 71-55-6 | * 1,1,1-Trichloroethane | 5 | ND |
| 56-23-5 | * Carbon Tetrachloride | 5 | ND |
| 71-43-2 | * Benzene | 5 | ND |
| 107-06-2 | * 1,2-Dichloroethane | 5 | ND |
| 79-01-6 | * Trichloroethene | 5 | ND |
| 78-87-5 | * 1,2-Dichloropropane | 5 | ND |
| 75-27-4 | * Bromodichloromethane | 5 | ND |
| 110-75-8 | * 2-Chloroethylvinylether | 5 | ND |
| 108-05-4 | **Vinyl Acetate | 10 | ND |
| 10061-02-6 | * Trans-1,3-Dichloropropene | 5 | ND |
| 108-10-1 | **4-Methyl-2-Pentanone | 10 | ND |
| 108-88-3 | * Toluene | 5 | ND |
| 10061-01-5 | * cis-1,3-Dichloropropene | 5 | ND |
| 79-00-5 | * 1,1,2-Trichloroethane | 5 | ND |
| 127-18-4 | * Tetrachloroethene | 5 | ND |
| 591-78-6 | **2-Hexanone | 10 | ND |
| 124-48-1 | * Dibromochloromethane | 5 | ND |
| 108-90-7 | * Chlorobenzene | 5 | ND |
| 100-41-4 | * Ethylbenzene | 5 | ND |
| 1330-20-7 | **Total Xylenes | 5 | 8 |
| 100-42-5 | **Styrene | 5 | ND |
| 75-25-2 | * Bromoform | 5 | ND |
| 79-34-5 | * 1,1,2,2-Tetrachloroethane | 5 | ND |
| 541-73-1 | * 1,3-Dichlorobenzene | 5 | ND |
| 106-46-7 | * 1,4-Dichlorobenzene | 5 | ND |
| 95-50-1 | * 1,2-Dichlorobenzene | 5 | ND |

| CAS # | Surrogate Compounds | Limits | % Recovery |
|---|---|---|---|
| 17060-07-0 | 1,2-Dichloroethane-d4 | 75-135% | 86% |
| 2037-26-5 | Toluene-d8 | 70-135% | 114% |
| 460-00-4 | p-Bromofluorobenzene | 52-132% | 57% |

* A Method 624 priority pollutant compound (Federal Register, 10/26/84)
** A compound on the U.S. EPA CLP Hazardous Substance List (HSL)
\# A compound added by Anametrix, Inc.

ORGANIC ANALYSIS DATA SHEET - EPA METHOD 624/8240
ANAMETRIX, INC. (408) 432-8192

Sample I.D. : S8-12-199-02A
Matrix : SOIL
Date sampled : 12-16-88
Date analyzed: 12-20-88
Dilut. factor: NONE

Anametrix I.D. : 8812124-02 WO-2 15'
Analyst : JC
Supervisor : PG
Date released : 12-21-88
Instrument ID : F1

| CAS # | Compound Name | Detection Limit (ug/Kg) | Amount Found (ug/Kg) |
|---|---|---|---|
| 74-87-3 | * Chloromethane | 10 | ND |
| 75-01-4 | * Vinyl Chloride | 10 | ND |
| 74-83-9 | * Bromomethane | 10 | ND |
| 75-00-3 | * Chloroethane | 10 | ND |
| 75-69-4 | * Trichlorofluoromethane | 5 | ND |
| 75-35-4 | * 1,1-Dichloroethene | 5 | ND |
| 76-13-1 | # Trichlorotrifluoroethane | 5 | ND |
| 67-64-1 | **Acetone | 20 | ND |
| 75-15-0 | **Carbondisulfide | 5 | ND |
| 75-09-2 | * Methylene Chloride | 5 | ND |
| 156-60-5 | * Trans-1,2-Dichloroethene | 5 | ND |
| 75-34-3 | * 1,1-Dichloroethane | 5 | ND |
| 78-93-3 | **2-Butanone | 20 | ND |
| 156-59-2 | * Cis-1,2-Dichloroethene | 5 | ND |
| 67-66-3 | * Chloroform | 5 | ND |
| 71-55-6 | * 1,1,1-Trichloroethane | 5 | ND |
| 56-23-5 | * Carbon Tetrachloride | 5 | ND |
| 71-43-2 | * Benzene | 5 | ND |
| 107-06-2 | * 1,2-Dichloroethane | 5 | ND |
| 79-01-6 | * Trichloroethene | 5 | ND |
| 78-87-5 | * 1,2-Dichloropropane | 5 | ND |
| 75-27-4 | * Bromodichloromethane | 5 | ND |
| 110-75-8 | * 2-Chloroethylvinylether | 5 | ND |
| 108-05-4 | **Vinyl Acetate | 10 | ND |
| 10061-02-6 | * Trans-1,3-Dichloropropene | 5 | ND |
| 108-10-1 | **4-Methyl-2-Pentanone | 10 | ND |
| 108-88-3 | * Toluene | 5 | ND |
| 10061-01-5 | * cis-1,3-Dichloropropene | 5 | ND |
| 79-00-5 | * 1,1,2-Trichloroethane | 5 | ND |
| 127-18-4 | * Tetrachloroethene | 5 | ND |
| 591-78-6 | **2-Hexanone | 10 | ND |
| 124-48-1 | * Dibromochloromethane | 5 | ND |
| 108-90-7 | * Chlorobenzene | 5 | ND |
| 100-41-4 | * Ethylbenzene | 5 | ND |
| 1330-20-7 | **Total Xylenes | 5 | ND |
| 100-42-5 | **Styrene | 5 | ND |
| 75-25-2 | * Bromoform | 5 | ND |
| 79-34-5 | * 1,1,2,2-Tetrachloroethane | 5 | ND |
| 541-73-1 | * 1,3-Dichlorobenzene | 5 | ND |
| 106-46-7 | * 1,4-Dichlorobenzene | 5 | ND |
| 95-50-1 | * 1,2-Dichlorobenzene | 5 | ND |

| CAS # | Surrogate Compounds | Limits | % Recovery |
|---|---|---|---|
| 17060-07-0 | 1,2-Dichloroethane-d4 | 75-135% | 90% |
| 2037-26-5 | Toluene-d8 | 70-135% | 98% |
| 460-00-4 | p-Bromofluorobenzene | 52-132% | 121% |

* A Method 624 priority pollutant compound (Federal Register, 10/26/84)
** A compound on the U.S. EPA CLP Hazardous Substance List (HSL)
\# A compound added by Anametrix, Inc.

ORGANICS ANALYSIS DATA SHEET - TENTATIVELY IDENTIFIED COMPOUNDS
ANAMETRIX, INC. (408) 432-8192

| | | | |
|---|---|---|---|
| Sample I.D. | : S8-12-199-01A | Anametrix I.D. | : 8812124-01 |
| Matrix | : SOIL | Analyst | : TC |
| Date Sampled | : 12-16-88 | Supervisor | : PG |
| Analyzed VOA | : 12-20-88 | Date Released | : 12-21-88 |
| Dilution VOA | : NONE | | |
| Analyzed SV | : NA | | |
| Dilution SV | : NA | | |

| | CAS # | Scan# | Volatile Fraction Compound Name | Det. Limit ppb | Amt. Found ppb |
|---|---|---|---|---|---|
| 1 | 108-67-8 | 982 | 1,3,5-trimethylbenzene | 5 | 50 |
| 2 | 95-63-6 | 1035 | 1,2,4-trimethylbenzene | 5 | 30 |
| 3 | 25340-17-4 | 1061 | diethylbenzene | 5 | 20 |
| 4 | 25155-15-1 | 1070 | methyl(1-methylethyl)benzene | 5 | 30 |
| 5 | 1758-88-9 | 1113 | 2-ethyl-1,4-dimethylbenzene | 5 | 30 |
| 6 | | | | 5 | |
| 7 | | | | 5 | |
| 8 | | | | 5 | |
| 9 | | | | 5 | |
| 10 | | | | 5 | |

| | CAS # | Scan# | Semivolatile Fraction Compound Name | Det. Limit ppb | Amt. Found ppb |
|---|---|---|---|---|---|
| 1 | | | | 10 | |
| 2 | | | | 10 | |
| 3 | | | | 10 | |
| 4 | | | | 10 | |
| 5 | | | | 10 | |
| 6 | | | | 10 | |
| 7 | | | | 10 | |
| 8 | | | | 10 | |
| 9 | | | | 10 | |
| 10 | | | | 10 | |
| 11 | | | | 10 | |
| 12 | | | | 10 | |
| 13 | | | | 10 | |
| 14 | | | | 10 | |
| 15 | | | | 10 | |
| 16 | | | | 10 | |
| 17 | | | | 10 | |
| 18 | | | | 10 | |
| 19 | | | | 10 | |
| 20 | | | | 10 | |

Tentatively identified compounds are significant chromatographic peaks (TICs) other than priority pollutants. TIC spectra are compared with entries in the National Bureau of Standards mass spectral library. Identification is made by following US EPA guidelines and acceptance criteria. TICs are quantitated by using the area of the nearest internal standard and assuming a response factor of one (1). Values calculated are ESTIMATES ONLY.

ORGANIC ANALYSIS DATA SHEET - EPA METHOD 624/8240

ANAMETRIX, INC. (408) 432-8192

| | | | |
|---|---|---|---|
| Sample I.D. | : METHOD BLANK | Anametrix I.D. | : 1CB1220V000 |
| Matrix | : SOIL | Analyst | : TC |
| Date sampled | : NA | Supervisor | : PG |
| Date analyzed | : 12-20-88 | Date released | : 12-21-88 |
| Dilut. factor | : NONE | Instrument ID | : F1 |

| CAS # | Compound Name | Detection Limit (ug/Kg) | Amount Found (ug/Kg) |
|---|---|---|---|
| 74-87-3 | * Chloromethane | 10 | ND |
| 75-01-4 | * Vinyl Chloride | 10 | ND |
| 74-83-9 | * Bromomethane | 10 | ND |
| 75-00-3 | * Chloroethane | 10 | ND |
| 75-69-4 | * Trichlorofluoromethane | 5 | ND |
| 75-35-4 | * 1,1-Dichloroethene | 5 | ND |
| 76-13-1 | # Trichlorotrifluoroethane | 5 | ND |
| 67-64-1 | **Acetone | 20 | ND |
| 75-15-0 | **Carbondisulfide | 5 | ND |
| 75-09-2 | * Methylene Chloride | 5 | 6 |
| 156-60-5 | * Trans-1,2-Dichloroethene | 5 | ND |
| 75-34-3 | * 1,1-Dichloroethane | 5 | ND |
| 78-93-3 | **2-Butanone | 20 | ND |
| 156-59-2 | * Cis-1,2-Dichloroethene | 5 | ND |
| 67-66-3 | * Chloroform | 5 | ND |
| 71-55-6 | * 1,1,1-Trichloroethane | 5 | ND |
| 56-23-5 | * Carbon Tetrachloride | 5 | ND |
| 71-43-2 | * Benzene | 5 | ND |
| 107-06-2 | * 1,2-Dichloroethane | 5 | ND |
| 79-01-6 | * Trichloroethene | 5 | ND |
| 78-87-5 | * 1,2-Dichloropropane | 5 | ND |
| 75-27-4 | * Bromodichloromethane | 5 | ND |
| 110-75-8 | * 2-Chloroethylvinylether | 5 | ND |
| 108-05-4 | **Vinyl Acetate | 10 | ND |
| 10061-02-6 | * Trans-1,3-Dichloropropene | 5 | ND |
| 108-10-1 | **4-Methyl-2-Pentanone | 10 | ND |
| 108-88-3 | * Toluene | 5 | ND |
| 10061-01-5 | * cis-1,3-Dichloropropene | 5 | ND |
| 79-00-5 | * 1,1,2-Trichloroethane | 5 | ND |
| 127-18-4 | * Tetrachloroethene | 5 | ND |
| 591-78-6 | **2-Hexanone | 10 | ND |
| 124-48-1 | * Dibromochloromethane | 5 | ND |
| 108-90-7 | * Chlorobenzene | 5 | ND |
| 100-41-4 | * Ethylbenzene | 5 | ND |
| 1330-20-7 | **Total Xylenes | 5 | ND |
| 100-42-5 | **Styrene | 5 | ND |
| 75-25-2 | * Bromoform | 5 | ND |
| 79-34-5 | * 1,1,2,2-Tetrachloroethane | 5 | ND |
| 541-73-1 | * 1,3-Dichlorobenzene | 5 | ND |
| 106-46-7 | * 1,4-Dichlorobenzene | 5 | ND |
| 95-50-1 | * 1,2-Dichlorobenzene | 5 | ND |

| CAS # | Surrogate Compounds | Limits | % Recovery |
|---|---|---|---|
| 17060-07-0 | 1,2-Dichloroethane-d4 | 75-135% | 104% |
| 2037-26-5 | Toluene-d8 | 70-135% | 104% |
| 460-00-4 | p-Bromofluorobenzene | 52-132% | 110% |

* A Method 624 priority pollutant compound (Federal Register, 10/26/84)

** A compound on the U.S. EPA CLP Hazardous Substance List (HSL)

\# A compound added by Anametrix, Inc.

IT/Santa Clara Valley Lab to
Pacific Environmental Group, Inc.
ATTN: John Adams

December 27, 1988


Project: 330-41.01

Sample Identification: WO-1 7'

Lab Number: S8-12-199-01

Date Analysis Completed: 12/20/88

ND = None Detected

Results
Semi-Volatile Organic Compounds
(Milligrams per Kilogram)

| Compound | Detected | Detection Limit |
|---|---|---|
| Phenol | ND | 410. |
| Bis(2-chloroethyl)ether | ND | 410. |
| 2-Chlorophenol | ND | 410. |
| 1,3-Dichlorobenzene | ND | 410. |
| 1,4-Dichlorobenzene | ND | 410. |
| Benzyl alcohol | ND | 410. |
| 1,2-Dichlorobenzene | ND | 410. |
| 2-Methylphenol | ND | 410. |
| Bis(2-chloroisopropyl)ether | ND | 410. |
| 4-Methylphenol | ND | 410. |
| N-Nitroso-di-n-propylamine | ND | 410. |
| Hexachloroethane | ND | 410. |
| Nitrobenzene | ND | 410. |
| Isophorone | ND | 410. |
| 2-Nitrophenol | ND | 410. |
| 2,4-Dimethylphenol | ND | 410. |
| Benzoic acid | ND | 2,000. |
| Bis(2-chloroethoxy)methane | ND | 410. |
| 2,4-Dichlorophenol | ND | 410. |
| 1,2,4-Trichlorobenzene | ND | 410. |
| Naphthalene | ND | 410. |
| 4-Chloroaniline | ND | 410. |
| Hexachlorobutadiene | ND | 410. |
| 4-Chloro-3-methylphenol | ND | 410. |
| 2-Methylnapthalene | ND | 410. |
| Hexachlorocyclopentadiene | ND | 410. |
| 2,4,6-Trichlorophenol | ND | 410. |
| 2,4,5-Trichlorophenol | ND | 2,000. |
| 2-Chloronaphthalene | ND | 410. |
| 2-Nitroaniline | ND | 2,000. |
| Dimethylphthalate | ND | 410. |
| Acenaphthylene | ND | 410. |
| 3-Nitroaniline | ND | 2,000. |
| Acenaphthene | ND | 410. |
| 2,4-Dinitrophenol | ND | 2,000. |
| 4-Nitrophenol | ND | 2,000. |
| Dibenzofuran | ND | 410. |

IT/Santa Clara Valley Lab to
Pacific Environmental Group, Inc.
ATTN: John Adams

December 27, 1988


Project: 330-41.01

Sample Identification: WO-1 7'

Lab Number: S8-12-199-01

Date Analysis Completed: 12/20/88

ND = None Detected

Results (continued)
Semi-Volatile Organic Compounds
(Milligrams per Kilogram)

| Compound | Detected | Detection Limit |
|---|---|---|
| 2,4-Dinitrotoluene | ND | 410. |
| 2,6-Dinitrotoluene | ND | 410. |
| Diethylphthalate | ND | 410. |
| 4-Chlorophenylphenyl ether | ND | 410. |
| Fluorene | ND | 410. |
| 4-Nitroaniline | ND | 2,000. |
| 4,6-Dinitro-o-cresol | ND | 2,000. |
| N-Nitrosodiphenylamine | ND | 410. |
| 4-Bromophenyl-phenyl ether | ND | 410. |
| Hexachlorobenzene | ND | 410. |
| Pentachlorophenol | ND | 2,000. |
| Phenanthrene | ND | 410. |
| Anthracene | ND | 410. |
| Di-n-butylphthalate | ND | 410. |
| Fluoranthene | ND | 410. |
| Pyrene | ND | 410. |
| Butylbenzylphthalate | ND | 410. |
| 3,3'-Dichlorobenzidine | ND | 800. |
| Benzo(a)anthracene | ND | 410. |
| Bis(2-ethylhexyl)phthalate | ND | 410. |
| Chrysene | ND | 410. |
| Di-n-octylphthalate | ND | 410. |
| Benzo(b)fluoranthene | ND | 410. |
| Benzo(k)fluoranthene | ND | 410. |
| Benzo(a)pyrene | ND | 410. |
| Indeno-(1,2,3-c,d,)pyrene | ND | 410. |
| Dibenzo(a,h)anthracene | ND | 410. |
| Benzo(g,h,i)perylene | ND | 410. |
| N-Nitrosodimethylamine | ND | 410. |
| 1,2-Diphenylhydrazine | ND | 410. |
| Benzidine | ND | 410. |

IT/Santa Clara Valley Lab to
Pacific Environmental Group, Inc.
ATTN: John Adams

December 27, 1988


Project: 330-41.01

Sample Identification: WO-2 10'

Lab Number: S8-12-199-02

Date Analysis Completed: 12/20/88

ND = None Detected

Results
Semi-Volatile Organic Compounds
(Milligrams per Kilogram)

| Compound | Detected | Detection Limit |
|---|---|---|
| Phenol | ND | 0.87 |
| Bis(2-chloroethyl)ether | ND | 0.87 |
| 2-Chlorophenol | ND | 0.87 |
| 1,3-Dichlorobenzene | ND | 0.87 |
| 1,4-Dichlorobenzene | ND | 0.87 |
| Benzyl alcohol | ND | 0.87 |
| 1,2-Dichlorobenzene | ND | 0.87 |
| 2-Methylphenol | ND | 0.87 |
| Bis(2-chloroisopropyl)ether | ND | 0.87 |
| 4-Methylphenol | ND | 0.87 |
| N-Nitroso-di-n-propylamine | ND | 0.87 |
| Hexachloroethane | ND | 0.87 |
| Nitrobenzene | ND | 0.87 |
| Isophorone | ND | 0.87 |
| 2-Nitrophenol | ND | 0.87 |
| 2,4-Dimethylphenol | ND | 0.87 |
| Benzoic acid | ND | 4.0 |
| Bis(2-chloroethoxy)methane | ND | 0.87 |
| 2,4-Dichlorophenol | ND | 0.87 |
| 1,2,4-Trichlorobenzene | ND | 0.87 |
| Naphthalene | ND | 0.87 |
| 4-Chloroaniline | ND | 0.87 |
| Hexachlorobutadiene | ND | 0.87 |
| 4-Chloro-3-methylphenol | ND | 0.87 |
| 2-Methylnapthalene | 0.9 | 0.87 |
| Hexachlorocyclopentadiene | ND | 0.87 |
| 2,4,6-Trichlorophenol | ND | 0.87 |
| 2,4,5-Trichlorophenol | ND | 4.0 |
| 2-Chloronaphthalene | ND | 0.87 |
| 2-Nitroaniline | ND | 4.0 |
| Dimethylphthalate | ND | 0.87 |
| Acenaphthylene | ND | 0.87 |
| 3-Nitroaniline | ND | 4.0 |
| Acenaphthene | ND | 0.87 |
| 2,4-Dinitrophenol | ND | 4.0 |
| 4-Nitrophenol | ND | 4.0 |
| Dibenzofuran | ND | 0.87 |

IT/Santa Clara Valley Lab to
Pacific Environmental Group, Inc.
ATTN: John Adams

December 27, 1988


Project: 330-41.01

Sample Identification: WO-2 10'

Lab Number: S8-12-199-02

Date Analysis Completed: 12/20/88

Results (continued)
Semi-Volatile Organic Compounds
(Milligrams per Kilogram)

ND = None Detected

| Compound | Detected | Detection Limit |
|---|---|---|
| 2,4-Dinitrotoluene | ND | 0.87 |
| 2,6-Dinitrotoluene | ND | 0.87 |
| Diethylphthalate | ND | 0.87 |
| 4-Chlorophenylphenyl ether | ND | 0.87 |
| Fluorene | ND | 0.87 |
| 4-Nitroaniline | ND | 4.0 |
| 4,6-Dinitro-o-cresol | ND | 4.0 |
| N-Nitrosodiphenylamine | ND | 0.87 |
| 4-Bromophenyl-phenyl ether | ND | 0.87 |
| Hexachlorobenzene | ND | 0.87 |
| Pentachlorophenol | ND | 4.0 |
| Phenanthrene | ND | 0.87 |
| Anthracene | ND | 0.87 |
| Di-n-butylphthalate | ND | 0.87 |
| Fluoranthene | ND | 0.87 |
| Pyrene | ND | 0.87 |
| Butylbenzylphthalate | ND | 0.87 |
| 3,3'-Dichlorobenzidine | ND | 1.7 |
| Benzo(a)anthracene | ND | 0.87 |
| Bis(2-ethylhexyl)phthalate | ND | 0.87 |
| Chrysene | ND | 0.87 |
| Di-n-octylphthalate | ND | 0.87 |
| Benzo(b)fluoranthene | ND | 0.87 |
| Benzo(k)fluoranthene | ND | 0.87 |
| Benzo(a)pyrene | ND | 0.87 |
| Indeno-(1,2,3-c,d,)pyrene | ND | 0.87 |
| Dibenzo(a,h)anthracene | ND | 0.87 |
| Benzo(g,h,i)perylene | ND | 0.87 |
| N-Nitrosodimethylamine | ND | 0.87 |
| 1,2-Diphenylhydrazine | ND | 0.87 |
| Benzidine | ND | 0.87 |
| Tentatively Identified Compounds as Hydrocarbons | 22. | 2.8 |

Table 3
**Groundwater Analytical Data**
Total Petroleum Hydrocarbons
(TPPH as Gasoline, BTEX Compounds, TEPH as Diesel, and Total Oil and Grease)

ARCO Service Station 4494
566 Hegenberger Road at Edes Avenue
Oakland, California

| Well Number | Date Sampled | TPPH as Gasoline (ppb) | Benzene (ppb) | Toluene (ppb) | Ethyl-benzene (ppb) | Xylenes (ppb) | TEPH as Diesel (ppb) | Total Oil and Grease (ppm) |
|---|---|---|---|---|---|---|---|---|
| MW-1 | 06/19/90 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <5,000 |
| | 08/16/90 | <20 | <0.50 | <0.50 | <0.50 | <0.50 | N/A | N/A |
| | 09/07/90 | N/A | N/A | N/A | N/A | N/A | N/A | <5,000 |
| | 11/29/90 | <50 | <0.50 | 0.7 | <0.50 | <0.50 | N/A | N/A |
| | 03/07/91 | <50 | <0.30 | <0.30 | <0.30 | <0.50 | N/A | N/A |
| | 06/27/91 | <30 | <0.30 | <0.30 | <0.30 | <0.30 | N/A | N/A |
| | 09/30/91 | <30 | <0.30 | <0.30 | <0.30 | <0.30 | N/A | N/A |
| | 12/18/91 | <30 | <0.30 | <0.30 | <0.30 | <0.30 | N/A | N/A |
| | 03/20/92 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | N/A | N/A |
| | 06/08/92 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | N/A | N/A |
| | 08/06/92 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | N/A | N/A |
| | 10/29/92 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | N/A | N/A |
| | 08/16/93 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | N/A | N/A |
| | 11/17/93 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | N/A | N/A |
| | 02/22/94 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | N/A | N/A |
| | 05/11/94 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | N/A | N/A |
| | 08/12/94 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | N/A | N/A |
| | 11/17/94 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | N/A | N/A |
| | 02/22/95 | ---------- Well Sampled Annually ---------- | | | | | | |
| | 05/24/95 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | N/A | N/A |
| | 08/23/95 | ---------- Well Sampled Annually ---------- | | | | | | |
| | 11/17/95 | ---------- Well Sampled Annually ---------- | | | | | | |
| MW-2 | 06/19/90 | ---------- 0.92 foot of Separate-Phase Hydrocarbons ---------- | | | | | | |
| | 08/16/90 | ---------- 0.17 foot of Separate-Phase Hydrocarbons ---------- | | | | | | |
| | 09/07/90 | ---------- 0.17 foot of Separate-Phase Hydrocarbons ---------- | | | | | | |
| | 11/29/90 | ---------- Separate-Phase Hydrocarbon Sheen ---------- | | | | | | |
| | 03/07/91 | ---------- Separate-Phase Hydrocarbon Sheen ---------- | | | | | | |
| | 06/27/91 | ---------- Separate-Phase Hydrocarbon Sheen ---------- | | | | | | |
| | 09/30/91 | ---------- Separate-Phase Hydrocarbon Sheen ---------- | | | | | | |
| | 12/18/91 | ---------- Separate-Phase Hydrocarbon Sheen ---------- | | | | | | |
| | 03/20/92 | 48,000 | 2,000 | 580 | 2,300 | 7,000 | N/A | N/A |
| | 06/08/92 | 43,000 | 2,900 | 940 | 2,400 | 5,100 | N/A | N/A |
| | 08/06/92 | 78,000 | 2,500 | 6,700 | 2,900 | 16,000 | N/A | N/A |
| | 10/29/92 | NS | NS | NS | NS | NS | NS | NS |
| | 12/08/92 | ---------- Well Destroyed ---------- | | | | | | |
| MW-3 | 06/19/90 | <20 | <0.50 | <0.50 | <0.50 | <0.50 | N/A | N/A |
| | 08/16/90 | N/A | N/A | N/A | N/A | N/A | N/A | <5,000 |
| | 09/07/90 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | N/A | N/A |
| | 11/29/90 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | N/A | N/A |
| | 03/07/91 | <50 | <0.30 | <0.30 | <0.30 | <0.50 | N/A | N/A |
| | 06/27/91 | <30 | <0.30 | <0.30 | <0.50 | <0.30 | N/A | N/A |
| | 09/30/91 | <30 | <0.30 | <0.30 | <0.30 | <0.30 | N/A | N/A |
| | 12/18/91 | <30 | <0.30 | <0.30 | <0.30 | <0.30 | N/A | N/A |
| | 03/20/92 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | N/A | N/A |
| | 06/08/92 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | N/A | N/A |
| | 08/06/92 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | N/A | N/A |
| | 10/29/92 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | N/A | N/A |
| | 08/16/93 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | N/A | N/A |
| | 11/17/93 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | N/A | N/A |

Table 3 (continued)
**Groundwater Analytical Data**
Total Petroleum Hydrocarbons
(TPPH as Gasoline, BTEX Compounds, TEPH as Diesel, and Total Oil and Grease)

ARCO Service Station 4494
566 Hegenberger Road at Edes Avenue
Oakland, California

| Well Number | Date Sampled | TPPH as Gasoline (ppb) | Benzene (ppb) | Toluene (ppb) | Ethyl-benzene (ppb) | Xylenes (ppb) | TEPH as Diesel (ppb) | Total Oil and Grease (ppm) |
|---|---|---|---|---|---|---|---|---|
| MW-3 | 02/22/94 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | N/A | N/A |
| (cont.) | 05/11/94 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | N/A | N/A |
| | 08/12/94 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | N/A | N/A |
| | 11/17/94 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | N/A | N/A |
| | 02/22/95 | ---Well Sampled Annually--- | | | | | | |
| | 05/24/95 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | N/A | N/A |
| | 08/23/95 | ---Well Sampled Annually--- | | | | | | |
| | 11/17/95 | ---Well Sampled Annually--- | | | | | | |
| MW-4 | 08/16/90 | <20 | <0.50 | <0.50 | <0.50 | <0.50 | N/A | N/A |
| | 09/07/90 | N/A | N/A | N/A | N/A | N/A | N/A | <5,000 |
| | 11/29/90 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | N/A | N/A |
| | 03/07/91 | <50 | <0.30 | <0.30 | <0.30 | <0.50 | N/A | N/A |
| | 06/27/91 | <30 | 0.75 | 1.1 | <0.30 | 1.6 | N/A | N/A |
| | 09/30/91 | <30 | <0.30 | <0.30 | <0.30 | <0.30 | N/A | N/A |
| | 12/18/91 | <30 | 0.83 | 1.2 | <0.30 | 0.58 | N/A | N/A |
| | 03/20/92 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | N/A | N/A |
| | 06/08/92 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | N/A | N/A |
| | 08/06/92 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | N/A | N/A |
| | 10/29/92 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | N/A | N/A |
| | 08/16/93 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | N/A | N/A |
| | 11/17/93 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | N/A | N/A |
| | 02/22/94 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | N/A | N/A |
| | 05/11/94 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | N/A | N/A |
| | 08/12/94 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | N/A | N/A |
| | 11/17/94 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | N/A | N/A |
| | 02/22/95 | ---Well Sampled Annually--- | | | | | | |
| | 05/24/95 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | N/A | N/A |
| | 08/23/95 | ---Well Sampled Annually--- | | | | | | |
| | 11/17/95 | ---Well Sampled Annually--- | | | | | | |
| MW-5 | 08/06/92 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | N/A | N/A |
| | 10/29/92 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | N/A | N/A |
| | 08/16/93 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | N/A | N/A |
| | 11/17/93 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | N/A | N/A |
| | 02/22/94 | <50 | <0.5 | <0.5 | <0.5 | 0.6 | N/A | N/A |
| | 05/11/94 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | N/A | N/A |
| | 08/12/94 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | N/A | N/A |
| | 11/17/94 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | N/A | N/A |
| | 02/22/95 | ---Well Sampled Annually--- | | | | | | |
| | 05/24/95 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | N/A | N/A |
| | 08/23/95 | ---Well Sampled Annually--- | | | | | | |
| | 11/17/95 | ---Well Sampled Annually--- | | | | | | |
| MW-6 | 08/06/92 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | N/A | N/A |
| | 10/29/92 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | N/A | N/A |
| | 08/16/93 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | N/A | N/A |
| | 11/17/93 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | N/A | N/A |
| | 02/22/94 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | N/A | N/A |
| | 05/11/94 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | N/A | N/A |
| | 08/12/94 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | N/A | N/A |
| | 11/17/94 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | N/A | N/A |
| | 02/22/95 | ---Well Sampled Annually--- | | | | | | |

Table 3 (continued)
**Groundwater Analytical Data**
Total Petroleum Hydrocarbons
(TPPH as Gasoline, BTEX Compounds, TEPH as Diesel, and Total Oil and Grease)

ARCO Service Station 4494
566 Hegenberger Road at Edes Avenue
Oakland, California

| Well Number | Date Sampled | TPPH as Gasoline (ppb) | Benzene (ppb) | Toluene (ppb) | Ethyl-benzene (ppb) | Xylenes (ppb) | TEPH as Diesel (ppb) | Total Oil and Grease (ppm) |
|---|---|---|---|---|---|---|---|---|
| MW-6 | 05/24/95 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | N/A | N/A |
| (cont.) | 08/23/95 | ----------Well Sampled Annually---------- | | | | | | |
| | 11/17/95 | ----------Well Sampled Annually---------- | | | | | | |
| MW-7 | 08/06/92 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | N/A | N/A |
| | 10/29/92 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | N/A | N/A |
| | 08/16/93 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | N/A | N/A |
| | 11/17/93 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | N/A | N/A |
| | 02/22/94 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | N/A | N/A |
| | 05/11/94 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | N/A | N/A |
| | 08/12/94 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | N/A | N/A |
| | 11/17/94 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | N/A | N/A |
| | 02/22/95 | ----------Well Sampled Annually---------- | | | | | | |
| | 05/24/95 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | N/A | N/A |
| | 08/23/95 | ----------Well Sampled Annually---------- | | | | | | |
| | 11/17/95 | ----------Well Sampled Annually---------- | | | | | | |
| RW-1 | 08/16/93 | NS | NS | NS | NS | NS | NS | NS |
| | 11/17/93 | NS | NS | NS | NS | NS | NS | NS |
| | 02/22/94 | 280 | 2,100 | 19 | 40 | 66 | N/A | N/A |
| | 05/11/94 | 3,300 | 32 | 28 | 87 | 310 | N/A | N/A |
| | 08/12/94 | 4,600 | 42 | 59 | 190 | 400 | N/A | N/A |
| | 11/17/94 | 1,400 | 56 | 21 | 28 | 210 | N/A | N/A |
| | 02/22/95 | 6,100 | 140 | <10 | 550 | 560 | N/A | N/A |
| | 05/24/95 | 940 | 53 | 0.75 | 11 | 1.4 | N/A | N/A |
| | 08/23/95 | 620 | 2.1 | 2.3 | 0.67 | 0.67 | N/A | N/A |
| | 11/17/95 | 1,100 | 7.6 | 21 | 46 | 180 | N/A | N/A |

ppb = Parts per billion
ppm = Parts per million
N/A = Not applicable
NS = Not sampled

Report on Tank Removal Investigation
ARCO Station 4494, Oakland, California.

May 17, 1993
69038.13

TABLE 6
RESULTS OF LABORATORY ANALYSES OF "GRAB" WATER SAMPLE FROM FORMER TANK PIT-
BTEX, TPHg, TPHd, TOG, Pb, Zn, Cr, Cd, Ni, and Fingerprint
ARCO Station 4494
Oakland, California

| Sample ID | B | T | E | X | TPHg | TPHd | TOG | Pb | Zn | Cr | Cd | Ni |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TP-1g | 3,900 | 5,400 | 1,800 | 11,000 | 57,000 | NA | NA | NA | NA | NA | NA | NA |
| TP-1d | NA | NA | NA | NA | NA | 170,000* | NA | NA | NA | NA | NA | NA |
| TP-1o | NA | NA | NA | NA | NA | NA | 81,000 | NA | NA | NA | NA | NA |
| TP-1m | NA | NA | NA | NA | NA | NA | NA | 0.19 | 0.31 | 0.069 | <0.10 | 0.11 |

HYDROCARBON FINGERPRINT

TP-2 Fingerprint analysis indicated a chromatogram pattern between a degraded gasoline and motor oil

Results in parts per billion (ppb).
< : Less than the laboratory detection limit.
B: benzene, T: toluene, E: ethylbenzene, X: total xylenes
TPHg : Total petroleum hydrocarbons as gasoline.
(TPHg with BTEX distinction measured by EPA Methods 5030/8015/8020).
TPHd : Total petroleum hydrocarbons as diesel by EPA Methods 3510/3520/8015.
* : Chromatogram pattern indicated a non-diesel mix in sample.
TOG : Total oil and grease by EPA Method 418.1.
Pb : Lead by EPA Method 7421.
Zn : Zinc by EPA Method 6010.
Cr : Chromium by EPA Method 6010.
Cd : Cadmium by EPA Method 6010.
Ni : Nickel by EPA Method 6010.
The fingerprint was performed using simulated distillation by gas chromatography.

TABLE 7
RESULTS OF LABORATORY ANALYSES OF "GRAB" WATER SAMPLE FROM FORMER TANK PIT-
VOCs, BNAs, Organochlorine Pesticides, and PCBs
ARCO Station 4494
Oakland, California

| Sample ID | VOCs | BNAs | Organochloride Pesticides | PCBs |
|---|---|---|---|---|
| TP-1 and TP-1p | 3,800 Benzene<br>6,300 Toluene<br>1,500 Ethylbenzene<br>7,300 Total Xylenes | 3,800 2-Methylnaphalene<br>6,600 Naphthalene | <800 | <200 |

Results in parts per billion (ppb).
< : Less than the laboratory detection limit.
VOCs : Volatile organic compounds by EPA Method 624.
BNAs : Base neutral acids by EPA Method 625.
PCBs : Polychlorinated biphenyls (and organochloride pesticides) by EPA Method 8080.
Compounds not listed were not detected.

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

### Station #4494, 566 Hegenberger Rd., Oakland, CA

| Well and Sample Date | P/NP | Comments | TOC (feet msl) | Top of Screen (ft bgs) | Bottom of Screen (ft bgs) | DTW (feet bgs) | Water Level Elevation (feet msl) | Concentrations in (µg/L) | | | | | | DO (mg/L) | pH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | GRO/ TPHg | Benzene | Toluene | Ethyl-Benzene | Total Xylenes | MTBE | | |
| MW-1 | | | | | | | | | | | | | | | |
| 6/20/2000 | -- | a | 106.10 | 13.0 | -- | 7.02 | 99.08 | <1,000 | <10 | <10 | <10 | <20 | 4000/ 15000 | -- | -- |
| 9/28/2000 | -- | a | 106.10 | 13.0 | -- | 7.07 | 99.03 | <500 | <5.0 | <5.0 | <5.0 | <5.0 | 3000/ 18800 | -- | -- |
| 12/17/2000 | -- | | 106.10 | 13.0 | -- | 6.95 | 99.15 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | 10,600 | -- | -- |
| 3/28/2001 | -- | | 106.10 | 13.0 | -- | 6.88 | 99.22 | <500 | <5.0 | <5.0 | <5.0 | <5.0 | 16,900 | -- | -- |
| 6/21/2001 | -- | | 106.10 | 13.0 | -- | 7.18 | 98.92 | <1,000 | <10 | <10 | <10 | <10 | 3,400 | -- | -- |
| 9/23/2001 | -- | a | 106.10 | 13.0 | -- | 7.11 | 98.99 | <1,000 | <10 | <10 | <10 | <10 | 2200/1800 | -- | -- |
| 12/31/2001 | -- | | 106.10 | 13.0 | -- | 6.91 | 99.19 | <5,000 | <50 | <50 | <50 | <50 | 14,000 | -- | -- |
| 3/14/2002 | -- | | 106.10 | 13.0 | -- | 6.85 | 99.25 | <5,000 | <50 | <50 | <50 | <50 | 6,200 | -- | -- |
| 4/17/2002 | -- | | 106.10 | 13.0 | -- | 5.89 | 100.21 | <5,000 | <50 | <50 | <50 | <50 | 4,500 | -- | -- |
| 8/8/2002 | -- | a, b | 106.10 | 13.0 | -- | 7.19 | 98.91 | 230 | <2.0 | <2.0 | <2.0 | <2.0 | 660/440 | 4.5 | 7.8 |
| 12/12/2002 | -- | a, d | 106.10 | 13.0 | -- | 7.28 | 98.82 | 630 | <5.0 | <5.0 | <5.0 | <5.0 | 1300/830 | 1.9 | 7.6 |
| 3/20/2003 | -- | c | 106.10 | 13.0 | -- | 6.91 | 99.19 | 1,100 | <5.0 | <5.0 | <5.0 | <5.0 | 780 | 2.2 | 8.5 |
| 6/23/2003 | -- | | 106.10 | 13.0 | -- | 7.61 | 98.49 | 530 | <5.0 | <5.0 | <5.0 | <5.0 | 260 | 1.2 | 7.6 |
| 9/22/2003 | -- | | 11.36 | 13.0 | -- | 7.78 | 3.58 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | 17 | 3.5 | 7.7 |
| 12/03/2003 | P | | 11.36 | 13.0 | -- | 7.90 | 3.46 | 410 | 2.6 | 9.8 | <2.5 | 11 | 260 | 2.1 | 6.9 |
| 03/18/2004 | P | | 11.36 | 13.0 | -- | 6.68 | 4.68 | <250 | <2.5 | <2.5 | <2.5 | <2.5 | 130 | 2.4 | 7.0 |
| 05/25/2004 | P | | 11.36 | 13.0 | -- | 7.55 | 3.81 | <250 | <2.5 | <2.5 | <2.5 | <2.5 | 120 | 1.3 | 7.0 |
| 09/22/2004 | P | | 11.36 | 13.0 | -- | 6.78 | 4.58 | 150 | 1.5 | <1.0 | <1.0 | <1.0 | 140 | 3.8 | 7.12 |
| 12/22/2004 | P | | 11.36 | 13.0 | -- | 6.44 | 4.92 | <500 | <5.0 | <5.0 | <5.0 | <5.0 | 74 | 1.7 | 6.8 |
| 02/23/2005 | P | | 11.36 | 13.0 | -- | 7.03 | 4.33 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | 6.0 | 2.1 | 7.2 |
| 06/27/2005 | P | | 11.36 | 13.0 | -- | 6.66 | 4.70 | <250 | <2.5 | <2.5 | <2.5 | <2.5 | 150 | 3.6 | 7.4 |
| 08/31/2005 | P | | 11.36 | 13.0 | -- | 6.67 | 4.69 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | 0.82 | 3.8 | 7.2 |
| 03/08/2006 | P | i | 11.36 | 13.0 | -- | 6.27 | 5.09 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | 6.8 | 3.9 | 7.5 |
| 9/27/2006 | P | | 11.36 | 13.0 | -- | 7.12 | 4.24 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | 2.8 | 3.1 | 7.1 |
| 3/6/2007 | NP | | 11.36 | 13.0 | -- | 6.58 | 4.78 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | 1.8 | 2.89 | 6.95 |
| MW-3 | | | | | | | | | | | | | | | |
| 6/20/2000 | -- | a | 106.29 | 7.00 | -- | 9.18 | 97.11 | <50 | <0.5 | <0.5 | <0.5 | <1.0 | 27/27 | -- | -- |
| 9/28/2000 | -- | a | 106.29 | 7.00 | -- | 9.33 | 96.96 | <50 | <0.5 | <0.5 | <0.5 | <1.0 | 4.3/<2.0 | -- | -- |
| 12/17/2000 | -- | | 106.29 | 7.00 | -- | 9.31 | 96.98 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <2.5 | -- | -- |
| 3/28/2001 | -- | | 106.29 | 7.00 | -- | 9.23 | 97.06 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | 7.42 | -- | -- |

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

Station #4494, 566 Hegenberger Rd., Oakland, CA

| Well and Sample Date | P/NP | Comments | TOC (feet msl) | Top of Screen (ft bgs) | Bottom of Screen (ft bgs) | DTW (feet bgs) | Water Level Elevation (feet msl) | Concentrations in (µg/L) | | | | | | DO (mg/L) | pH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | GRO/ TPHg | Benzene | Toluene | Ethyl-Benzene | Total Xylenes | MTBE | | |
| MW-3 Cont. | | | | | | | | | | | | | | | |
| 6/21/2001 | -- | | 106.29 | 7.00 | -- | 9.58 | 96.71 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <2.5 | -- | -- |
| 9/23/2001 | -- | | 106.29 | 7.00 | -- | 9.76 | 96.53 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <2.5 | -- | -- |
| 12/31/2001 | -- | | 106.29 | 7.00 | -- | 8.78 | 97.51 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <2.5 | -- | -- |
| 3/14/2002 | -- | | 106.29 | 7.00 | -- | 9.25 | 97.04 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | 4.0 | -- | -- |
| 4/17/2002 | -- | | 106.29 | 7.00 | -- | 8.44 | 97.85 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <2.5 | -- | -- |
| 8/8/2002 | -- | | 106.29 | 7.00 | -- | 9.63 | 96.66 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <2.5 | 2.6 | 7.9 |
| 12/12/2002 | -- | d | 106.29 | 7.00 | -- | 9.51 | 96.78 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <2.5 | 3.0 | 6.8 |
| 3/20/2003 | -- | e | 106.29 | 7.00 | -- | 9.40 | 96.89 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | 6.1 | 1.2 | 7.0 |
| 6/23/2003 | -- | | 106.29 | 7.00 | -- | 9.36 | 96.93 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | 5.2 | 0.9 | 8.2 |
| 9/22/2003 | -- | | 11.62 | 7.00 | -- | 9.48 | 2.14 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | 3.9 | 1.4 | 7.9 |
| 12/03/2003 | -- | g | 11.62 | 7.00 | -- | 9.44 | 2.18 | -- | -- | -- | -- | -- | -- | -- | -- |
| 03/18/2004 | NP | | 11.62 | 7.00 | -- | 8.76 | 2.86 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | 4.6 | 0.8 | 7.3 |
| 05/25/2004 | -- | g | 11.62 | 7.00 | -- | 9.55 | 2.07 | -- | -- | -- | -- | -- | -- | -- | -- |
| 09/22/2004 | NP | | 11.62 | 7.00 | -- | 9.44 | 2.18 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | 4.7 | -- | -- |
| 12/22/2004 | -- | | 11.62 | 7.00 | -- | 9.06 | 2.56 | -- | -- | -- | -- | -- | -- | -- | -- |
| 02/23/2005 | NP | | 11.62 | 7.00 | -- | 8.75 | 2.87 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 1.6 | 8.2 |
| 06/27/2005 | -- | | 11.62 | 7.00 | -- | 9.35 | 2.27 | -- | -- | -- | -- | -- | -- | -- | -- |
| 08/31/2005 | NP | | 11.62 | 7.00 | -- | 9.31 | 2.31 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | 1.3 | 0.5 | 7.7 |
| 03/08/2006 | -- | | 11.62 | 7.00 | -- | 9.03 | 2.59 | -- | -- | -- | -- | -- | -- | -- | -- |
| 9/27/2006 | NP | | 11.62 | 7.00 | -- | 9.40 | 2.22 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | 2.8 | 1.5 | 7.4 |
| 3/6/2007 | -- | | 11.62 | 7.00 | -- | 8.95 | 2.67 | -- | -- | -- | -- | -- | -- | -- | -- |
| MW-4 | | | | | | | | | | | | | | | |
| 6/20/2000 | -- | | 107.40 | 7.0 | -- | 8.49 | 98.91 | <50 | <0.5 | <0.5 | <0.5 | <1.0 | <10 | -- | -- |
| 9/28/2000 | -- | | 107.40 | 7.0 | -- | 8.70 | 98.70 | <50 | <0.5 | <0.5 | <0.5 | <1.0 | <2.5 | -- | -- |
| 12/17/2000 | -- | | 107.40 | 7.0 | -- | 8.53 | 98.87 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <2.5 | -- | -- |
| 3/28/2001 | -- | | 107.40 | 7.0 | -- | 8.59 | 98.81 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <2.5 | -- | -- |
| 6/21/2001 | -- | | 107.40 | 7.0 | -- | 8.79 | 98.61 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <2.5 | -- | -- |
| 9/23/2001 | -- | | 107.40 | 7.0 | -- | 8.67 | 98.73 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <2.5 | -- | -- |
| 12/31/2001 | -- | | 107.40 | 7.0 | -- | 8.03 | 99.37 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <2.5 | -- | -- |
| 3/14/2002 | -- | | 107.40 | 7.0 | -- | 8.48 | 98.92 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <2.5 | -- | -- |

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

Station #4494, 566 Hegenberger Rd., Oakland, CA

| Well and Sample Date | P/NP | Comments | TOC (feet msl) | Top of Screen (ft bgs) | Bottom of Screen (ft bgs) | DTW (feet bgs) | Water Level Elevation (feet msl) | Concentrations in (µg/L) | | | | | | DO (mg/L) | pH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | GRO/ TPHg | Benzene | Toluene | Ethyl-Benzene | Total Xylenes | MTBE | | |
| MW-4 Cont. | | | | | | | | | | | | | | | |
| 4/17/2002 | -- | -- | 107.40 | 7.0 | -- | 7.79 | 99.61 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | 5.6 | -- | -- |
| 8/8/2002 | -- | | 107.40 | 7.0 | -- | 8.90 | 98.50 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <2.5 | 4.5 | 8.0 |
| 12/12/2002 | -- | d | 107.40 | 7.0 | -- | 9.07 | 98.33 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <2.5 | 5.6 | 6.2 |
| 3/20/2003 | -- | e | 107.40 | 7.0 | -- | 8.85 | 98.55 | <50 | <0.50 | <0.50 | <0.50 | 0.50 | <0.50 | 4.8 | 7.8 |
| 6/23/2003 | -- | | 107.40 | 7.0 | -- | 9.26 | 98.14 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 6.3 | 7.5 |
| 9/22/2003 | -- | | 13.18 | 7.0 | -- | 9.22 | 3.96 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 7.4 | 8.0 |
| 12/03/2003 | -- | g | 13.18 | 7.0 | -- | 9.48 | 3.70 | -- | -- | -- | -- | -- | -- | -- | -- |
| 03/18/2004 | NP | | 13.18 | 7.0 | -- | 8.32 | 4.86 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 4.5 | 8.4 |
| 05/25/2004 | -- | g | 13.18 | 7.0 | -- | 9.03 | 4.15 | -- | -- | -- | -- | -- | -- | -- | -- |
| 09/22/2004 | NP | | 13.18 | 7.0 | -- | 8.62 | 4.56 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 3.7 | -- |
| 12/22/2004 | -- | | 13.18 | 7.0 | -- | 7.80 | 5.38 | -- | -- | -- | -- | -- | -- | -- | -- |
| 02/23/2005 | NP | | 13.18 | 7.0 | -- | 7.74 | 5.44 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 1.1 | 7.3 |
| 06/27/2005 | -- | | 13.18 | 7.0 | -- | 8.38 | 4.80 | -- | -- | -- | -- | -- | -- | -- | -- |
| 08/31/2005 | NP | | 13.18 | 7.0 | -- | 8.15 | 5.03 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 1.7 | 6.9 |
| 03/08/2006 | -- | | 13.18 | 7.0 | -- | 7.84 | 5.34 | -- | -- | -- | -- | -- | -- | -- | -- |
| 9/27/2006 | NP | | 13.18 | 7.0 | -- | 8.59 | 4.59 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 2.1 | 6.6 |
| 3/6/2007 | -- | | 13.18 | 7.0 | -- | 7.95 | 5.23 | -- | -- | -- | -- | -- | -- | -- | -- |
| MW-5 | | | | | | | | | | | | | | | |
| 6/20/2000 | -- | | 105.19 | 8.0 | -- | 7.65 | 97.54 | <50 | <0.5 | <0.5 | <0.5 | <1.0 | <10 | -- | -- |
| 9/28/2000 | -- | | 105.19 | 8.0 | -- | 6.82 | 98.37 | <50 | <0.5 | <0.5 | <0.5 | <1.0 | <2.5 | -- | -- |
| 12/17/2000 | -- | | 105.19 | 8.0 | -- | 6.50 | 98.69 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <2.5 | -- | -- |
| 3/28/2001 | -- | | 105.19 | 8.0 | -- | 6.34 | 98.85 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <2.5 | -- | -- |
| 6/27/2001 | -- | | 105.19 | 8.0 | -- | 7.88 | 97.31 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <2.5 | -- | -- |
| 9/23/2001 | -- | | 105.19 | 8.0 | -- | 6.98 | 98.21 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <2.5 | -- | -- |
| 12/31/2001 | -- | | 105.19 | 8.0 | -- | 5.01 | 100.18 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <2.5 | -- | -- |
| 3/14/2002 | -- | | 105.19 | 8.0 | -- | 5.93 | 99.26 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <2.5 | -- | -- |
| 4/17/2002 | -- | | 105.19 | 8.0 | -- | 5.37 | 99.82 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | 8.5 | -- | -- |
| 8/8/2002 | -- | b | 105.19 | 8.0 | -- | 6.85 | 98.34 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <2.5 | 0.7 | 7.3 |
| 12/12/2002 | -- | d | 105.19 | 8.0 | -- | 6.53 | 98.66 | <50 | 2.2 | 4.7 | 1.3 | 6.8 | <2.5 | 1.3 | 7.0 |
| 3/20/2003 | -- | e | 105.19 | 8.0 | -- | 6.40 | 98.79 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 2.7 | 7.1 |

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

Station #4494, 566 Hegenberger Rd., Oakland, CA

| Well and Sample Date | P/NP | Comments | TOC (feet msl) | Top of Screen (ft bgs) | Bottom of Screen (ft bgs) | DTW (feet bgs) | Water Level Elevation (feet msl) | Concentrations in (µg/L) | | | | | | DO (mg/L) | pH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | GRO/ TPHg | Benzene | Toluene | Ethyl-Benzene | Total Xylenes | MTBE | | |
| **MW-5 Cont.** | | | | | | | | | | | | | | | |
| 6/23/2003 | -- | | 105.19 | 8.0 | -- | 6.72 | 98.47 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 1.3 | 7.2 |
| 9/22/2003 | -- | f | 10.63 | 8.0 | -- | 6.76 | 3.87 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 1.7 | 7.2 |
| 12/03/2003 | -- | g | 10.63 | 8.0 | -- | 6.56 | 4.07 | -- | -- | -- | -- | -- | -- | -- | -- |
| 03/18/2004 | P | | 10.63 | 8.0 | -- | 5.98 | 4.65 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 0.7 | 7.3 |
| 05/25/2004 | -- | g | 10.63 | 8.0 | -- | 6.77 | 3.86 | -- | -- | -- | -- | -- | -- | -- | -- |
| 09/22/2004 | P | | 10.63 | 8.0 | -- | 6.90 | 3.73 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 1.0 | 7.17 |
| 12/22/2004 | -- | | 10.63 | 8.0 | -- | 6.18 | 4.45 | -- | -- | -- | -- | -- | -- | -- | -- |
| 02/23/2005 | P | | 10.63 | 8.0 | -- | 5.36 | 5.27 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 1.0 | 7.2 |
| 06/27/2005 | -- | | 10.63 | 8.0 | -- | 6.26 | 4.37 | -- | -- | -- | -- | -- | -- | -- | -- |
| 08/31/2005 | P | | 10.63 | 8.0 | -- | 6.70 | 3.93 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | 1.9 | 0.8 | 7.2 |
| 03/08/2006 | -- | | 10.63 | 8.0 | -- | 5.12 | 5.51 | -- | -- | -- | -- | -- | -- | -- | -- |
| 9/27/2006 | P | | 10.63 | 8.0 | -- | 6.69 | 3.94 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 1.1 | 7.2 |
| 3/6/2007 | -- | | 10.63 | 8.0 | -- | 5.91 | 4.72 | -- | -- | -- | -- | -- | -- | -- | -- |
| **MW-6** | | | | | | | | | | | | | | | |
| 6/20/2000 | -- | | 105.07 | 8.0 | -- | 6.24 | 98.83 | <50 | <0.5 | <0.5 | <0.5 | <1.0 | <10 | -- | -- |
| 9/28/2000 | -- | | 105.07 | 8.0 | -- | 6.45 | 98.62 | <50 | <0.5 | <0.5 | <0.5 | <1.0 | <2.5 | -- | -- |
| 12/17/2000 | -- | | 105.07 | 8.0 | -- | 6.26 | 98.81 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <2.5 | -- | -- |
| 3/28/2001 | -- | | 105.07 | 8.0 | -- | 6.10 | 98.97 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <2.5 | -- | -- |
| 6/27/2001 | -- | | 105.07 | 8.0 | -- | 7.68 | 97.39 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <2.5 | -- | -- |
| 9/23/2001 | -- | | 105.07 | 8.0 | -- | 6.72 | 98.35 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <2.5 | -- | -- |
| 12/23/2001 | -- | | 105.07 | 8.0 | -- | 4.68 | 100.39 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <2.5 | -- | -- |
| 3/14/2002 | -- | | 105.07 | 8.0 | -- | 5.55 | 99.52 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <2.5 | -- | -- |
| 4/17/2002 | -- | | 105.07 | 8.0 | -- | 4.96 | 100.11 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | 7.0 | -- | -- |
| 8/8/2002 | -- | | 105.07 | 8.0 | -- | 6.46 | 98.61 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <2.5 | 0.7 | 7.3 |
| 12/12/2002 | -- | d | 105.07 | 8.0 | -- | 6.18 | 98.89 | 65 | 3.3 | 8.4 | 2.7 | 14 | <2.5 | 1.1 | 6.9 |
| 3/20/2003 | -- | e | 105.07 | 8.0 | -- | 6.18 | 98.89 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 2.2 | 7.0 |
| 6/23/2003 | -- | | 105.07 | 8.0 | -- | 6.15 | 98.92 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 2.0 | 7.1 |
| 9/22/2003 | -- | f | 10.41 | 8.0 | -- | 6.43 | 3.98 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 2.5 | 7.0 |
| 12/03/2003 | -- | g | 10.41 | 8.0 | -- | 6.12 | 4.29 | -- | -- | -- | -- | -- | -- | -- | -- |
| 03/18/2004 | P | | 10.41 | 8.0 | -- | 5.40 | 5.01 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 0.9 | 7.2 |

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

Station #4494, 566 Hegenberger Rd., Oakland, CA

| Well and Sample Date | P/NP | Comments | TOC (feet msl) | Top of Screen (ft bgs) | Bottom of Screen (ft bgs) | DTW (feet bgs) | Water Level Elevation (feet msl) | Concentrations in (µg/L) | | | | | | DO (mg/L) | pH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | GRO/ TPHg | Benzene | Toluene | Ethyl-Benzene | Total Xylenes | MTBE | | |
| MW-6 Cont. | | | | | | | | | | | | | | | |
| 05/25/2004 | -- | g | 10.41 | 8.0 | -- | 6.50 | 4.11 | -- | -- | -- | -- | -- | -- | -- | -- |
| 09/22/2004 | P | | 10.41 | 8.0 | -- | 6.43 | 3.98 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 1.3 | 7.01 |
| 12/22/2004 | -- | | 10.41 | 8.0 | -- | 5.73 | 4.68 | -- | -- | -- | -- | -- | -- | -- | -- |
| 02/23/2005 | P | | 10.41 | 8.0 | -- | 4.61 | 5.80 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | 5.0 | 2.6 | 7.1 |
| 06/27/2005 | -- | | 10.41 | 8.0 | -- | 5.78 | 4.63 | -- | -- | -- | -- | -- | -- | -- | -- |
| 08/31/2005 | P | | 10.41 | 8.0 | -- | 6.19 | 4.22 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 0.9 | 7.0 |
| 03/08/2006 | P | j | 10.41 | 8.0 | -- | 4.59 | 5.82 | 200 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 2.8 | 7.3 |
| 9/27/2006 | P | | 10.41 | 8.0 | -- | 6.13 | 4.28 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 1.8 | 7.1 |
| 3/6/2007 | P | | 10.41 | 8.0 | -- | 5.35 | 5.06 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | 0.56 | 1.77 | 7.49 |
| MW-7 | | | | | | | | | | | | | | | |
| 6/20/2000 | -- | a | 105.52 | 9.0 | -- | 8.65 | 96.87 | <50 | <0.5 | <0.5 | <0.5 | <1.0 | 13/13 | -- | -- |
| 9/28/2000 | -- | a | 105.52 | 9.0 | -- | 8.75 | 96.77 | <50 | <0.5 | <0.5 | <0.5 | <1.0 | 136/261 | -- | -- |
| 12/17/2000 | -- | | 105.52 | 9.0 | -- | 8.62 | 96.90 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | 27.1 | -- | -- |
| 3/28/2001 | -- | | 105.52 | 9.0 | -- | 8.66 | 96.86 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | 51.5 | -- | -- |
| 6/21/2001 | -- | | 105.52 | 9.0 | -- | 8.84 | 96.68 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | 53 | -- | -- |
| 9/23/2001 | -- | a | 105.52 | 9.0 | -- | 8.75 | 96.77 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | 35/21 | -- | -- |
| 12/23/2001 | -- | | 105.52 | 9.0 | -- | 7.79 | 97.73 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | 440 | -- | -- |
| 3/14/2002 | -- | | 105.52 | 9.0 | -- | 8.30 | 97.22 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | 18 | -- | -- |
| 4/17/2002 | -- | | 105.52 | 9.0 | -- | 7.43 | 98.09 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | 67 | -- | -- |
| 8/8/2002 | -- | a, b | 105.52 | 9.0 | -- | 8.61 | 96.91 | 55 | <0.5 | <0.5 | <0.5 | <0.5 | 130/100 | 1.1 | 7.1 |
| 12/12/2002 | -- | a, d, k | 105.52 | 9.0 | -- | 8.55 | 96.97 | 75 | <0.5 | <0.5 | <0.5 | <0.5 | 160/130 | 1.2 | 7.0 |
| 3/20/2003 | -- | e | 105.52 | 9.0 | -- | 8.38 | 97.14 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | 32 | 2.2 | 7.2 |
| 6/23/2003 | -- | | 105.52 | 9.0 | -- | 8.37 | 97.15 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | 14 | 0.8 | 7.1 |
| 9/22/2003 | -- | f | 10.51 | 9.0 | -- | 8.95 | 1.56 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | 5.3 | 2.2 | 7.2 |
| 12/03/2003 | P | | 10.51 | 9.0 | -- | 8.86 | 1.65 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | 4.2 | 0.1 | 7.2 |
| 03/18/2004 | P | | 10.51 | 9.0 | -- | 8.03 | 2.48 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | 3.0 | 1.0 | 7.2 |
| 05/25/2004 | P | | 10.51 | 9.0 | -- | 8.37 | 2.14 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | 4.1 | 0.7 | 7.1 |
| 09/22/2004 | P | | 10.51 | 9.0 | -- | 8.90 | 1.61 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | 2.3 | 0.9 | 7.27 |
| 12/23/2004 | P | | 10.51 | 9.0 | -- | 7.90 | 2.61 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | 2.7 | 2.8 | 7.2 |
| 02/23/2005 | P | | 10.51 | 9.0 | -- | 8.23 | 2.28 | 180 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 1.3 | 7.1 |

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

Station #4494, 566 Hegenberger Rd., Oakland, CA

| Well and Sample Date | P/NP | Comments | TOC (feet msl) | Top of Screen (ft bgs) | Bottom of Screen (ft bgs) | DTW (feet bgs) | Water Level Elevation (feet msl) | Concentrations in (µg/L) GRO/ TPHg | Benzene | Toluene | Ethyl-Benzene | Total Xylenes | MTBE | DO (mg/L) | pH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MW-7 Cont. | | | | | | | | | | | | | | | |
| 06/27/2005 | P | | 10.51 | 9.0 | -- | 8.24 | 2.27 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | 4.2 | 0.1 | 6.7 |
| 08/31/2005 | P | | 10.51 | 9.0 | -- | 8.27 | 2.24 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | 2.5 | 1.6 | 7.2 |
| 03/08/2006 | -- | | 10.51 | 9.0 | -- | 7.73 | 2.78 | -- | -- | -- | -- | -- | -- | -- | -- |
| 9/27/2006 | P | | 10.51 | 9.0 | -- | 8.31 | 2.20 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | 3.7 | 1.1 | 7.3 |
| 3/6/2007 | -- | | 10.51 | 9.0 | -- | 8.75 | 1.76 | -- | -- | -- | -- | -- | -- | -- | -- |
| RW-1 | | | | | | | | | | | | | | | |
| 6/20/2000 | -- | | -- | -- | -- | 8.21 | -- | <50 | <0.5 | 1.1 | <0.5 | <1.0 | <10 | -- | -- |
| 9/28/2000 | -- | | -- | -- | -- | 8.28 | -- | <50 | <0.5 | <0.5 | <0.5 | <1.0 | <2.5 | -- | -- |
| 12/17/2000 | -- | | -- | -- | -- | 8.29 | -- | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <2.5 | -- | -- |
| 3/28/2001 | -- | | -- | -- | -- | 8.16 | -- | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <2.5 | -- | -- |
| 6/21/2001 | -- | | -- | -- | -- | 9.37 | -- | 160 | 5.1 | <0.5 | 1.1 | 3.2 | <2.5 | -- | -- |
| 9/23/2001 | -- | | -- | -- | -- | 8.75 | -- | 57 | <0.5 | <0.5 | <0.5 | <0.5 | <2.5 | -- | -- |
| 12/31/2001 | -- | | -- | -- | -- | 6.80 | -- | 520 | 3.1 | <0.5 | 6.4 | 4.7 | <2.5 | -- | -- |
| 3/14/2002 | -- | | -- | -- | -- | 7.86 | -- | 240 | 3.7 | <0.5 | 0.7 | 2.8 | <2.5 | -- | -- |
| 4/17/2002 | -- | | -- | -- | -- | 7.13 | -- | <50 | <0.5 | 1.6 | <0.5 | 0.72 | <2.5 | -- | -- |
| 8/8/2002 | -- | a, c | -- | -- | -- | 8.48 | -- | <50 | <0.5 | <0.5 | <0.5 | <0.5 | 3.7/<0.5 | 1.1 | 7.0 |
| 12/12/2002 | -- | | -- | -- | -- | 8.63 | -- | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <2.5 | 1.9 | 6.9 |
| 3/20/2003 | -- | c | -- | -- | -- | 8.08 | -- | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 1.9 | 7.3 |
| 6/23/2003 | -- | | -- | -- | -- | 8.28 | -- | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 1.1 | 7.3 |
| 9/22/2003 | -- | f | 11.97 | -- | -- | 8.42 | 3.55 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 1.8 | 7.1 |
| 12/03/2003 | -- | g | 11.97 | -- | -- | 8.05 | 3.92 | -- | -- | -- | -- | -- | -- | -- | -- |
| 03/18/2004 | P | | 11.97 | -- | -- | 7.18 | 4.79 | 50 | 0.54 | <0.50 | <0.50 | <0.50 | <0.50 | 0.9 | 7.1 |
| 05/25/2004 | -- | g | 11.97 | -- | -- | 8.32 | 3.65 | -- | -- | -- | -- | -- | -- | -- | -- |
| 09/22/2004 | P | | 11.97 | -- | -- | 8.42 | 3.55 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 1.0 | 6.7 |
| 12/22/2004 | -- | | 11.97 | -- | -- | 7.23 | 4.74 | -- | -- | -- | -- | -- | -- | -- | -- |
| 02/23/2005 | P | | 11.97 | -- | -- | 6.89 | 5.08 | 190 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 0.71 | 7.2 |
| 06/27/2005 | -- | | 11.97 | -- | -- | 7.86 | 4.11 | -- | -- | -- | -- | -- | -- | -- | -- |
| 08/31/2005 | P | | 11.97 | -- | -- | 8.20 | 3.77 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 0.7 | 7.2 |
| 03/08/2006 | -- | | 11.97 | -- | -- | 6.49 | 5.48 | -- | -- | -- | -- | -- | -- | -- | -- |
| 9/27/2006 | P | | 11.97 | -- | -- | 8.04 | 3.93 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 1.1 | 6.9 |

## Table 2. Summary of Fuel Additives Analytical Data

### Station #4494, 566 Hegenberger Rd., Oakland, CA

| Well and Sample Date | Concentrations in (µg/L) | | | | | | | | Comments |
|---|---|---|---|---|---|---|---|---|---|
| | Ethanol | TBA | MTBE | DIPE | ETBE | TAME | 1,2-DCA | EDB | |
| **MW-1** | | | | | | | | | |
| 3/20/2003 | <1,000 | 640 | 780 | <5.0 | <5.0 | <5.0 | -- | -- | |
| 6/23/2003 | <1,000 | <200 | 260 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | |
| 9/22/2003 | <100 | 250 | 17 | <0.50 | <0.50 | <0.50 | -- | -- | |
| 12/03/2003 | <500 | <100 | 260 | <2.5 | <2.5 | <2.5 | -- | -- | |
| 03/18/2004 | <500 | <100 | 130 | <2.5 | <2.5 | <2.5 | <2.5 | <2.5 | |
| 05/25/2004 | <500 | <100 | 120 | <2.5 | <2.5 | <2.5 | <2.5 | <2.5 | |
| 09/22/2004 | <200 | <40 | 140 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | |
| 12/22/2004 | <1,000 | <200 | 74 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | |
| 02/23/2005 | <100 | <20 | 6.0 | <0.50 | <0.50 | 2.4 | <0.50 | <0.50 | |
| 06/27/2005 | <500 | <100 | 150 | <2.5 | <2.5 | <2.5 | <2.5 | <2.5 | |
| 08/31/2005 | <100 | <20 | 0.82 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | a |
| 03/08/2006 | <300 | <20 | 6.8 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | b |
| 9/27/2006 | <300 | <20 | 2.8 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 3/6/2007 | <300 | <20 | 1.8 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| **MW-3** | | | | | | | | | |
| 3/20/2003 | <100 | <20 | 601 | <0.50 | <0.50 | 1.1 | -- | -- | |
| 6/23/2003 | <100 | <20 | 5.2 | <0.50 | <0.50 | 0.75 | <0.50 | <0.50 | |
| 9/22/2003 | <100 | <20 | 3.9 | <0.50 | <0.50 | <0.50 | -- | -- | |
| 03/18/2004 | <100 | <20 | 4.6 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 09/22/2004 | <100 | <20 | 4.7 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 02/23/2005 | <100 | <20 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 08/31/2005 | <100 | <20 | 1.3 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 9/27/2006 | <300 | <20 | 2.8 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| **MW-4** | | | | | | | | | |
| 3/20/2003 | <100 | <20 | <0.50 | <0.50 | <0.50 | <0.50 | -- | -- | |
| 6/23/2003 | <100 | <20 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 9/22/2003 | <100 | <20 | <0.50 | <0.50 | <0.50 | <0.50 | -- | -- | |
| 03/18/2004 | <100 | <20 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 09/22/2004 | <100 | <20 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 02/23/2005 | <100 | <20 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |

## Table 2. Summary of Fuel Additives Analytical Data

### Station #4494, 566 Hegenberger Rd., Oakland, CA

| Well and Sample Date | Concentrations in (µg/L) | | | | | | | | Comments |
|---|---|---|---|---|---|---|---|---|---|
| | Ethanol | TBA | MTBE | DIPE | ETBE | TAME | 1,2-DCA | EDB | |
| **MW-4 Cont.** | | | | | | | | | |
| 08/31/2005 | <100 | <20 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 9/27/2006 | <300 | <20 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| **MW-5** | | | | | | | | | |
| 3/20/2003 | <100 | <20 | <0.50 | <0.50 | <0.50 | <0.50 | – | – | |
| 6/23/2003 | <100 | <20 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 9/22/2003 | <100 | <20 | <0.50 | <0.50 | <0.50 | <0.50 | – | – | |
| 03/18/2004 | <100 | <20 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 09/22/2004 | <100 | <20 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 02/23/2005 | <100 | <20 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 08/31/2005 | <100 | <20 | 1.9 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 9/27/2006 | <300 | <20 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| **MW-6** | | | | | | | | | |
| 3/20/2003 | <100 | <20 | <0.50 | <0.50 | <0.50 | <0.50 | – | – | |
| 6/23/2003 | <100 | <20 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 9/22/2003 | <100 | <20 | <0.50 | <0.50 | <0.50 | <0.50 | – | – | |
| 03/18/2004 | <100 | <20 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 09/22/2004 | <100 | <20 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 02/23/2005 | <100 | 140 | 5.0 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 08/31/2005 | <100 | <20 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 03/08/2006 | <300 | <20 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | b |
| 9/27/2006 | <300 | <20 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 3/6/2007 | <300 | <20 | 0.56 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| **MW-7** | | | | | | | | | |
| 3/20/2003 | <100 | <20 | 21 | <0.50 | <0.50 | 0.62 | – | – | |
| 6/23/2003 | <100 | 170 | 14 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 9/22/2003 | <100 | 170 | 5.3 | <0.50 | <0.50 | <0.50 | – | – | |
| 12/03/2003 | <100 | 85 | 4.2 | <0.50 | <0.50 | <0.50 | – | – | |
| 03/18/2004 | <100 | <20 | 3.0 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | a |
| 05/25/2004 | <100 | 43 | 4.1 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 09/22/2004 | <100 | <20 | 2.3 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |

## Table 2. Summary of Fuel Additives Analytical Data

### Station #4494, 566 Hegenberger Rd., Oakland, CA

| Well and Sample Date | Concentrations in (µg/L) | | | | | | | | Comments |
|---|---|---|---|---|---|---|---|---|---|
| | Ethanol | TBA | MTBE | DIPE | ETBE | TAME | 1,2-DCA | EDB | |
| **MW-7 Cont.** | | | | | | | | | |
| 12/22/2004 | <100 | 34 | 2.7 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 02/23/2005 | <100 | <20 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 06/27/2005 | <100 | 86 | 4.2 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 08/31/2005 | <100 | 41 | 2.5 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 9/27/2006 | <300 | 120 | 3.7 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| **RW-1** | | | | | | | | | |
| 3/20/2003 | <100 | <20 | <0.50 | <0.50 | <0.50 | <0.50 | -- | -- | |
| 6/23/2003 | <100 | <20 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 9/22/2003 | <100 | <20 | <0.50 | <0.50 | <0.50 | <0.50 | -- | -- | |
| 03/18/2004 | <100 | <20 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 09/22/2004 | <100 | <20 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 02/23/2005 | <100 | <20 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 08/31/2005 | <100 | <20 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 9/27/2006 | <300 | <20 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |

Total depth of boring: 24-1/2 feet Diameter of boring: 10 inches Date drilled: 10-30-89

Casing diameter: 4 inches Length: 23 feet Slot size: 0.020-inch

Screen diameter: 4 inches Length: 10 feet Material type: Sch 40 PVC

Drilling Company: HEW Drilling Co., Inc. Driller: Tomas & Perfecto

Method Used: Hollow-Stem Auger Field Geologist: Steve Bittman

Signature of Registered Professional: _____

Registration No.: CE 044600 State: CA

| Depth | Sample No. | Blows | P.I.D. | USCS Code | Description | Well Const. |
|---|---|---|---|---|---|---|
| | | | | | Paved entrance area. | |
| 0 | | | | | Asphalt (4 inches) and baserock (10 inches). | |
| 2 | | | | CH | Silty clay, gray-brown, damp, high plasticity, very stiff; some minor debris; noticeable odor; fill. | |
| 4 | | 5 | | | | |
| | | 6 | | CL | Silty clay with angular metallic slag fragments, black, moist, medium plasticity, stiff; noticeable odor; fill. | |
| 6 | S-5 | 7 | 0.6 | | | |
| | | | | CH | Silty clay, gray, damp, high plasticity, very stiff. | |
| 8 | | | | | (8/21/90) | |
| | | 5 | | | | |
| 10 | | 7 | | | | |
| | S-10 | 10 | 0 | | Moist. | |
| 12 | | | | | | |
| | | 4 | | | | |
| 14 | | 7 | | CL | Sandy clay, brown, wet, medium plasticity, stiff. | |
| | S-15 | 9 | 0 | | | |
| 16 | | | | | | |
| 18 | | | | CH | Silty clay, gray, moist, high plasticity, very stiff. | |
| | | 6 | | | | |
| 20 | | 8 | | | | |
| | S-20 | 14 | 0 | | (Section continues downward) | |

Applied GeoSystems

PROJECT 69038-2

LOG OF BORING B-1/MW-1

ARCO Station 4494
566 Hegenberger Road
Oakland, California

PLATE 5

| Depth | Sample No. | BLOWS | P.I.D. | USCS Code | Description | Well Const. |
|---|---|---|---|---|---|---|
| 22 | | | | CH | Silty clay, gray, moist, high plasticity, very stiff. | |
| 24 | S-24 | 7<br>9<br>15 | 0 | | | |
| 26 | | | | | Total Depth = 24-1/2 feet. | |
| 28 | | | | | | |
| 30 | | | | | | |
| 32 | | | | | | |
| 34 | | | | | | |
| 36 | | | | | | |
| 38 | | | | | | |
| 40 | | | | | | |
| 42 | | | | | | |
| 44 | | | | | | |
| 46 | | | | | | |
| 48 | | | | | | |
| 50 | | | | | | |

Applied GeoSystems

PROJECT 69038-2

LOG OF BORING B-1/MW-1
ARCO Station 4494
566 Hegenberger Road
Oakland, California

PLATE 6

Total depth of boring: 21-1/2 feet Diameter of boring: 10 inches Date drilled: 10-31-89

Casing diameter: 4 inches Length: 18 feet Slot size: 0.020-inch

Screen diameter: 4 inches Length: 5 feet Material type: Sch 40 PVC

Drilling Company: HEW Drilling Co., Inc. Driller: Tomas & Perfecto

Method Used: Hollow-Stem Auger Field Geologist: Steve Bittman

Signature of Registered Professional: _____

Registration No.: CE 044600 State: CA

| Depth | Sample No. | Blows | P.I.D. | USCS Code | Description | Well Const. |
|---|---|---|---|---|---|---|
| | | | | | Paved parking area. | |
| 0 | | | | | Asphalt (4 inches) and baserock (10 inches). | |
| 2 | | | | CH | Silty clay, gray-brown, damp, high plasticity, very stiff; some minor debris; fill. | |
| 4 | | 10 | | CL | Silty clay with angular versiculated glass fragments, black, moist, medium plasticity, hard; noticeable odor; fill. | |
| | S-5 | 15 20 | 50 | | | |
| 6 | | | | CH | Silty clay, dark gray, damp, high plasticity, very stiff; noticeable odor. | |
| 8 | | | | | | |
| 10 | | 11 9 | | | | |
| | S-10 | 9 3 | 280 | CL | Sandy clay, gray, moist, medium plasticity, very stiff; obvious odor. | |
| 12 | | 6 | | | | |
| | S-12.5 | 9 | 490 | ▽ | Wet at 12-1/2 feet. Black viscous fluid present. Stiff. | |
| 14 | | | | | | |
| | | 2 4 | | | | |
| 16 | S-16 | 7 | 1000+ | | Black, fluid slightly less viscous. | |
| 18 | | 5 10 | | CH | Silty clay, gray, moist, high plasticity, very stiff; obvious odor. | |
| | S-19 | 16 | 800+ | | | |
| 20 | | | | | Damp, noticeable odor. | |
| | S-21 | | 5 | | | |
| | | | | | Total Depth = 21-1/2 feet. | |

Applied GeoSystems

PROJECT 69038-2

LOG OF BORING B-2/MW-2

ARCO Station 4494
566 Hegenberger Road
Oakland, California

PLATE 7

Total depth of boring: 23-1/2 feet Diameter of boring: 10 inches Date drilled: 8-10-90

Casing diameter: 4 inches Length: 18 feet Slot size: 0-010 inch

Screen diameter: 4 inches Length: 11 feet Material type: Sch 40 PVC

Drilling Company: HEW Drilling Co., Inc. Driller: Anibal & Mike

Method Used: Hollow Stem Auger Field Geologist: Steve Bittman

Signature of Registered Professional: _____

Registration No.: CE 044600 State: CA

| Depth | Sample No. | Blows | P.I.D. | USCS Code | Description | Well Const. |
|---|---|---|---|---|---|---|
| | | | | | Paved parking area. | |
| 0 | | | | | Asphalt (4 inches) and baserock (10 inches). | |
| 2 | | | | CL | Silty clay, brown, damp, low to medium plasticity, stiff; some minor debris; fill. | |
| 4 | S-4.5 | 8 | | CH | Silty clay with interbeds of fine-sand and metallic slag fragments, black, damp, high plasticity, stiff; fill. | |
| | S-5 | 6 5 | 0 | | | |
| 6 | | | | | Moist. | |
| 8 | | | | SC | Clayey sand, medium-grained, black, very moist, medium dense; noticeable odor. | |
| | | | 7.0 | | Water at 9 feet. | |
| 10 | S-9.5 | 1 | | CH | Silty clay, blue-gray, wet, high plasticity, very soft; small plant rootlets throughout. | |
| | S-10 | 1 1 | 0 | | | |
| 12 | | | | | Very easy drilling. | |
| 14 | S-14.5 | 1 | | | Some minor coarse sand interbeds. | |
| | S-15 | 1 1 | 0 | | | |
| 16 | | | | | | |
| 18 | | | | | Harder drilling begin at 18-1/2 feet. | |
| 20 | S-19.5 | 3 | | CL | Silty clay, brown, damp, medium plasticity, stiff. | |
| | S-20 | 6 6 | 0 | | | |
| | | | | | (Section continues downward) | |

Applied GeoSystems

PROJECT 69038-2

LOG OF BORING B-3/MW-3
ARCO Station 4494
566 Hegenberger Road
Oakland, California

PLATE 8

| Depth | Sample No. | BLOWS | P.I.D. | USCS Code | Description | Well Const. |
|---|---|---|---|---|---|---|
| 22 | S-22.5<br>S-23 | 4<br>5<br>6 | 0 | CL | Silty clay, brown, damp, medium plasticity, stiff. | |
| 24 | | | | | Total Depth = 23-1/2 feet. | |
| 26 | | | | | | |
| 28 | | | | | | |
| 30 | | | | | | |
| 32 | | | | | | |
| 34 | | | | | | |
| 36 | | | | | | |
| 38 | | | | | | |
| 40 | | | | | | |
| 42 | | | | | | |
| 44 | | | | | | |
| 46 | | | | | | |
| 48 | | | | | | |
| 50 | | | | | | |

Applied GeoSystems

PROJECT 69038-2

LOG OF BORING B-3/MW-3
ARCO Station 4494
566 Hegenberger Road
Oakland, California

PLATE 9

Total depth of boring: 22-1/2 feet Diameter of boring: 10 inches Date drilled: 8-10-90

Casing diameter: 4 inches Length: 18 feet Slot size: 0.010-inch

Screen diameter: 4 inches Length: 11 feet Material type: Sch 40 PVC

Drilling Company: HEW Drilling Co., Inc. Driller: Anibal & Mike

Method Used: Hollow Stem Auger Field Geologist: Steve Bittman

Signature of Registered Professional: _____

Registration No.: CE 044600 State: CA

| Depth | Sample No. | Blows | P.I.D. | USCS Code | Description | Well Const. |
|---|---|---|---|---|---|---|
| | | | | | Paved parking area. | |
| 0 | | | | | Asphalt (4 inches) and baserock (10 inches). | |
| 2 | | | | CH | Silty clay, black, damp, high plasticity, very stiff; some minor debris; fill. | |
| 4 | S-4.5 S-5 | 30 45 52 | 0 | GP | Sandy gravel, black, damp, very dense; abundant metallic slag fragments; fill. | |
| 6 | | | | | Easier drilling beginning at 6 feet. | |
| 8 | S-7 | 6 7 8 | 0 | CH ▼ | Silty clay with minor sand, black, moist, high plasticity, stiff. (8/21/90) | |
| 10 | S-9.5 S-10 | 3 3 4 | 0 | | Minor coarse sand, very moist; firm. | |
| 12 | | | | | | |
| 14 | S-14.5 S-15 | 2 2 5 | 0 | ▽ CL | Sandy clay, olive-brown, wet, medium plasticity; firm. | |
| 16 | | | | | | |
| 18 | | | | | Harder drilling beginning at 18 feet. | |
| 20 | S-19.5 S-20 | 3 4 6 | 0 | CH | Silty clay, brown, damp, high plasticity, stiff. (Section continues downward) | |

Applied GeoSystems

PROJECT 69038-2

LOG OF BORING B-4/MW-4

ARCO Station 4494
566 Hegenberger Road
Oakland, California

PLATE 10

| Depth | Sample No. | BLOWS | P.I.D. | USCS Code | Description | Well Const. |
|---|---|---|---|---|---|---|
| | | 3 | | CH | Silty clay, brown, damp, high plasticity, stiff. | |
| 22 | S-23 | 4 8 | 0 | | Gray. | |
| | | | | | Total Depth = 22-1/2 feet. | |
| 24 | | | | | | |
| 26 | | | | | | |
| 28 | | | | | | |
| 30 | | | | | | |
| 32 | | | | | | |
| 34 | | | | | | |
| 36 | | | | | | |
| 38 | | | | | | |
| 40 | | | | | | |
| 42 | | | | | | |
| 44 | | | | | | |
| 46 | | | | | | |
| 48 | | | | | | |
| 50 | | | | | | |

Applied GeoSystems

PROJECT 69038-2

LOG OF BORING B-4/MW-4
ARCO Station 4494
566 Hegenberger Road
Oakland, California

PLATE 11

Total depth of boring: 11-1/2 feet Diameter of boring: N/A Date drilled: 8-10-90

Casing diameter: N/A Length: N/A Slot size: N/A

Screen diameter: N/A Length: N/A Material type: N/A

Drilling Company: HEW Drilling Co., Inc. Driller: Anibal & Mike

Method Used: Hollow Stem Auger Field Geologist: Steve Bittman

Signature of Registered Professional: _____

Registration No.: _____ State: _____

| Depth | Sample No. | Blows | P.I.D. | USCS Code | Description | Well Const. |
|---|---|---|---|---|---|---|
| | | | | | Paved entrance area. | |
| 0 | | | | | Asphalt (4 inches) and baserock (10 inches). | |
| 2 | | | | CL | Silty clay, black, damp, medium plasticity, stiff; some metallic fragments to 1-inch diamter dispersed throughout; fill. | |
| 4 | | | | CH | Silty clay, black, damp, high plasticity; firm | |
| 6 | S-5.5 S-6 | 2 3 4 | 0 | | | |
| 8 | | | | | | |
| 10 | S-10.5 S-11 | 4 5 7 | 0 | | Some coarse sand, dark brown, moist, very stiff. | |
| 12 | | | | | Total Depth = 11-1/2 feet. | |
| 14 | | | | | | |
| 16 | | | | | | |
| 18 | | | | | | |
| 20 | | | | | | |

Applied GeoSystems

PROJECT 69038-2

LOG OF BORING B-5

ARCO Station 4494
566 Hegenberger Road
Oakland, California

PLATE 12

Depth of boring: 7 feet Diameter of boring: 6 inches Date drilled: 3-11-91

Well depth: N/A Material type: N/A Casing diameter: N/A

Screen interval: N/A Slot size: N/A

Drilling Company: Exceltech Drilling Driller: Rich and Scott

Method Used: Solid Stem Auger Field Geologist: Ken Mateik

Signature of Registered Professional: _____

Registration No.: _____ State: _____

| Depth | Sample No. | Blows | P.I.D. | USCS Code | Description | Well Const. |
|---|---|---|---|---|---|---|
| | | | | | Paved parking area. | |
| 0 | | | | | Asphalt (2-1/2 inches) and pea gravel (4 inches). | |
| 2 | | | | CL | Sandy clay, dark brown, moist, low to medium plasticity, very stiff: Fill. | |
| | | | | CH | Silty clay, black, moist, high plasticity, stiff to very stiff: Fill. | |
| 4 | S-5 | 23<br>27<br>8 | 1.7 | SP | Gravelly sand with rock fragments, gray and brown, moist very dense: Fill. | |
| 6 | | | | CL ▽ ▼ | Sandy clay, black, very moist, low to medium plasticity, stiff: Native soil. Wet at 7 feet. | |
| 8 | | | | | Boring terminated at 7 feet. | |
| 10 | | | | | | |
| 12 | | | | | | |
| 14 | | | | | | |
| 16 | | | | | | |
| 18 | | | | | | |
| 20 | | | | | | |

Applied GeoSystems

PROJECT: 69038-5

LOG OF BORING B-6

ARCO Service Station 4494
566 Hegenberger Road
Oakland, California

PLATE 4

Depth of boring: 15-1/2 feet Diameter of boring: 6 inches Date drilled: 3-11-91

Well depth: N/A Material type: N/A Casing diameter: N/A

Screen interval: N/A Slot size: N/A

Drilling Company: Exceltech Drilling Driller: Rich and Scott

Method Used: Solid Stem Auger Field Geologist: Ken Mateik

Signature of Registered Professional: _____

Registration No.: _____ State: _____

| Depth | Sample No. | Blows | P.I.D. | USCS Code | Description | Well Const. |
|---|---|---|---|---|---|---|
| | | | | | Paved driveway area. | |
| 0 | | | | | Asphalt (6 inches) and baserock (6 inches). | |
| | | | | CL | Sandy clay, brown, moist, medium plasticity, very stiff: Fill. | |
| 2 | | | | CH | Silty clay, black, damp to moist, high plasticity, very stiff: Fill. | |
| 4 | S-5 | 10<br>10<br>10 | 29 | | Noticeable product odor. | |
| 6 | S-7 | 5<br>10<br>12 | 492 | | Obvious product odor. | |
| 8 | | | | CH | Silty clay, black mottled with blue-gray, very moist, high plasticity, stiff; noticeable product odor: Native soil. | |
| 10 | S-10 | 5<br>7<br>7 | 197 | | ▼ | |
| 12 | | | | | ▽ | |
| | | | | SC | Clayey sand, black, wet, medium dense. | |
| 14 | S-15 | 4<br>6<br>8 | | | | |
| 16 | | | | | Boring terminated at 15-1/2 feet. | |
| 18 | | | | | | |
| 20 | | | | | | |

Applied GeoSystems

PROJECT: 69038-5

LOG OF BORING B-7

ARCO Service Station 4494
566 Hegenberger Road
Oakland, California

PLATE 5

Depth of boring: 6-1/2 feet Diameter of boring: 6 inches Date drilled: 3-11-91

Well depth: N/A Material type: N/A Casing diameter: N/A

Screen interval: N/A Slot size: N/A

Drilling Company: Exceltech Drilling Driller: Rich and Scott

Method Used: Solid Stem Auger Field Geologist: Ken Mateik

Signature of Registered Professional: _____

Registration No.: _____ State: _____

| Depth | Sample No. | Blows | P.I.D. | USCS Code | Description | Well Const. |
|---|---|---|---|---|---|---|
| 0 | | | | | | |
| | | | | SC | Asphalt (3 inches) and baserock (9 inches). | |
| 2 | | | | CL | Sandy clay, black, moist, low plasticity, very stiff: Fill. | |
| | | | | | Mottled with light gray, glass and rock fragments common; obvious prodct odor. | |
| 4 | S-5 | 4<br>8<br>18 | 767 | | Stringers of fine sand. | |
| 6 | | | | | Refusal at 6-1/2 feet due to concrete debris. | |
| | | | | | Boring terminated at 6-1/2 feet. | |
| 8 | | | | | | |
| 10 | | | | | | |
| 12 | | | | | | |
| 14 | | | | | | |
| 16 | | | | | | |
| 18 | | | | | | |
| 20 | | | | | | |

Applied GeoSystems

PROJECT: 69038-5

LOG OF BORING B-8

ARCO Service Station 4494
566 Hegenberger Road
Oakland, California

PLATE 6

Depth of boring: 13-1/2 feet Diameter of boring: 6 inches Date drilled: 3-11-91

Well depth: N/A Material type: N/A Casing diameter: N/A

Screen interval: N/A Slot size: N/A

Drilling Company: Exceltech Drilling Driller: Rich and Scott

Method Used: Solid Stem Auger Field Geologist: Ken Mateik

Signature of Registered Professional: _____

Registration No.: _____ State: _____

| Depth | Sample No. | Blows | P.I.D. | USCS Code | Description | Well Const. |
|---|---|---|---|---|---|---|
| | | | | | Paved driveway area. | |
| 0 | | | | CL | Asphalt (2-1/2 inches) and baserock (9 inches). | |
| 2 | | | | CL | Silty clay with abundant glass fragments, black, moist, low to medium plasticity, stiff; noticeable product odor: Fill. | |
| 4 | S-5 | 6<br>8<br>13 | 17.5 | CH | Silty clay, blue-gray, moist, high plasticity, very stiff; noticeable product odor: Native soil. | |
| 6 | | | | | | |
| 8 | | | | | | |
| 10 | S-10 | 4<br>4<br>5 | 27 | | Abundant plant organics and peat. Noticeable product odor. | |
| 12 | S-13 | 7<br>3<br>3 | 5.1 | ▽<br>SC | Alternating layers of black and gray with peat fragments.<br>Clayey fine sand, gray, wet, loose; plant roots and medium to coarse sand in sample head. | |
| 14 | | | | | Boring terminated at 13-1/2 feet. | |
| 16 | | | | | | |
| 18 | | | | | | |
| 20 | | | | | | |

Applied GeoSystems

PROJECT: 69038-5

LOG OF BORING B-9

ARCO Service Station 4494
566 Hegenberger Road
Oakland, California

PLATE 7

Depth of boring: 11 feet Diameter of boring: 6 inches Date drilled: 3-11-91

Well depth: N/A Material type: N/A Casing diameter: N/A

Screen interval: N/A Slot size: N/A

Drilling Company: Exceltech Drilling Driller: Rich and Scott

Method Used: Solid Stem Auger Field Geologist: Ken Mateik

Signature of Registered Professional: _____

Registration No.: _____ State: _____

| Depth | Sample No. | Blows | P.I.D. | USCS Code | Description | Well Const. |
|---|---|---|---|---|---|---|
| | | | | | Paved driveway area. | |
| 0 | | | | | Asphalt (3 inches) and baserock (12 inches). | |
| 2 | | | | CL | Fine sandy clay, black, moist, low to medium plasticity, very stiff; noticeable product odor: Fill. | |
| 4 | S-5 | 7<br>11<br>13 | 11.5 | | Fragments of metallic/glass slag. | |
| 6 | | | | CH | Sandy clay, black and blue-gray, moist, high plasticity, very stiff; noticeable product odor: Fill. | |
| 8 | | | | | Some peat and roots. | |
| 10 | S-10 | 6<br>9<br>13 | 143 | | Obvious product odor. | |
| | | | | GC | Clayey gravel, gray, very moist, medium dense. | |
| 12 | | | | | Boring terminated at 11 feet due to concrete debris. | |
| 14 | | | | | | |
| 16 | | | | | | |
| 18 | | | | | | |
| 20 | | | | | | |

Applied GeoSystems

PROJECT: 69038-5

LOG OF BORING B-10

ARCO Service Station 4494
566 Hegenberger Road
Oakland, California

PLATE 8

Depth of boring: 13 feet Diameter of boring: 6 inches Date drilled: 3-26-91

Well depth: N/A Material type: N/A Casing diameter: N/A

Screen interval: N/A Slot size: N/A

Drilling Company: Exceltech Drilling Driller: Cam & Tim

Method Used: Solid Stem Auger Field Geologist: Steve Bittman

Signature of Registered Professional: _____

Registration No.: _____ State: _____

| Depth | Sample No. | Blows | P.I.D. | USCS Code | Description | Well Const. |
|---|---|---|---|---|---|---|
| 0 | | | | | Asphalt (3 inches) and baserock (10 inches). | |
| 2 | | | | CH | Silty clay, black, damp, high plasticity, stiff: Fill. | |
| 4 | | | | SM | Silty sand, fine-grained, black, moist, loose, abundant glass fragments: Fill. | |
| 6 | S-6 | 17<br>7<br>4 | 0 | CH | Silty clay, gray, moist, high plasticity, stiff: Native soil. | |
| 8 | S-8 | 15<br>10<br>14 | 0 | | Very stiff. | |
| 10 | S-11 | 7<br>7<br>12 | 0 | | Small roots and peat fragments. | |
| 12 | | 3<br>4<br>2 | | SC | Clayey sand, gray, wet, loose. | |
| 14 | | | | | Boring terminated at 13 feet. | |
| 16 | | | | | | |
| 18 | | | | | | |
| 20 | | | | | | |

Applied GeoSystems

PROJECT: 69038-5

LOG OF BORING B-11

ARCO Service Station 4494
566 Hegenberger Road
Oakland, California

PLATE 9

Depth of boring: 12 feet Diameter of boring: 6 inches Date drilled: 3-26-91

Well depth: N/A Material type: N/A Casing diameter: N/A

Screen interval: N/A Slot size: N/A

Drilling Company: Exceltech Drilling Driller: Cam & Tim

Method Used: Solid Stem Auger Field Geologist: Steve Bittman

Signature of Registered Professional: _____

Registration No.: _____ State: _____

| Depth | Sample No. | Blows | P.I.D. | USCS Code | Description | Well Const. |
|---|---|---|---|---|---|---|
| 0 | | | | | Asphalt (3 inches) and baserock (10 inches). | |
| 2 | | | | CL | Silty clay, black, damp, low plasticity, stiff, abundant glass and metal fragments: Fill. | |
| 4 | | | | CH | Silty clay, gray, moist, high plasticity, stiff; Native soil. | |
| 6 | S-6 | 6<br>7<br>13 | 0 | ▼ | | |
| 8 | | | | | | |
| 10 | S-11 | 4<br>2<br>2 | 0 | SC<br>▽ | Clayey sand, medium-grained, gray, moist, loose, abundant plant roots.<br>Wet. | |
| 12 | | | | | Boring terminated at 12 feet. | |
| 14 | | | | | | |
| 16 | | | | | | |
| 18 | | | | | | |
| 20 | | | | | | |

Applied GeoSystems

PROJECT: 69038-5

LOG OF BORING B-12

ARCO Service Station 4494
566 Hegenberger Road
Oakland, California

PLATE 10

Depth of boring: 12-1/2 feet Diameter of boring: 6 inches Date drilled: 3-26-91

Well depth: N/A Material type: N/A Casing diameter: N/A

Screen interval: N/A Slot size: N/A

Drilling Company: Exceltech Drilling Driller: Cam & Tim

Method Used: Solid Stem Auger Field Geologist: Steve Bittman

Signature of Registered Professional: _____

Registration No.: _____ State: _____

| Depth | Sample No. | Blows | P.I.D. | USCS Code | Description | Well Const. |
|---|---|---|---|---|---|---|
| 0 | | | | | | |
| | | | | | Asphalt (3 inches) and baserock (10 inches). | |
| 2 | | | | CH | Silty clay, black, damp to moist, high plasticity, very stiff: Fill. | |
| 4 | | | | | | |
| 6 | S-6 | 6<br>6<br>7 | 1 | ▼ | Color change to gray. | |
| 8 | | | | | | |
| | | | | CL | Sandy clay with gravel, gray, moist, low plasticity, stiff: Native soil. | |
| 10 | S-11 | 4<br>4<br>6 | 0 | | | |
| 12 | | | | ▽ | Wet. | |
| | | | | | Boring terminated at 12-1/2 feet. | |
| 14 | | | | | | |
| 16 | | | | | | |
| 18 | | | | | | |
| 20 | | | | | | |

Applied GeoSystems

PROJECT: 69038-5

LOG OF BORING B-13

ARCO Service Station 4494
566 Hegenberger Road
Oakland, California

PLATE 11

Depth of boring: 13 feet Diameter of boring: 6 inches Date drilled: 3-26-91

Well depth: N/A Material type: N/A Casing diameter: N/A

Screen interval: N/A Slot size: N/A

Drilling Company: Exceltech Drilling Driller: Cam & Tim

Method Used: Solid Stem Auger Field Geologist: Steve Bittman

Signature of Registered Professional: _____

Registration No.: _____ State: _____

| Depth | Sample No. | Blows | P.I.D. | USCS Code | Description | Well Const. |
|---|---|---|---|---|---|---|
| 0 | | | | | | |
| | | | | | Asphalt (3 inches) and baserock (10 inches). | |
| 2 | | | | CL | Silty clay, black, damp, low to medium plasticity, stiff; abundant glass and metal fragments: Fill. | |
| 4 | | | | SM | Silty sand, fine-grained, black, moist, loose; abundant glass fragments: Fill. | |
| | S-5 | 7<br>11<br>13 | 0 | CH | Silty clay, gray, damp, medium plasticity, very stiff: Fill. | |
| 6 | | | | | | |
| 8 | | | | | | |
| | S-9 | 9<br>4<br>8 | 0 | CH | Silty clay, black, moist, high plasticity, stiff: Native soil. | |
| 10 | S-11 | 3<br>3<br>6 | 0 | | | |
| 12 | S-12.5 | 2<br>1<br>2 | 0 | SC ▽ ▼ | Clayey sand, fine-grained, gray, moist, loose; abundant plant roots. Wet. | |
| | | | | | Boring terminated at 13 feet. | |
| 14 | | | | | | |
| 16 | | | | | | |
| 18 | | | | | | |
| 20 | | | | | | |

Applied GeoSystems

PROJECT: 69038-5

LOG OF BORING B-14

ARCO Service Station 4494
566 Hegenberger Road
Oakland, California

PLATE 12

Depth of boring: 11-1/2 feet Diameter of boring: 6 inches Date drilled: 3-26-91

Well depth: N/A Material type: N/A Casing diameter: N/A

Screen interval: N/A Slot size: N/A

Drilling Company: Exceltech Drilling Driller: Cam & Tim

Method Used: Solid Stem Auger Field Geologist: Steve Bittman

Signature of Registered Professional:

Registration No.: State:

| Depth | Sample No. | Blows | P.I.D. | USCS Code | Description | Well Const. |
|---|---|---|---|---|---|---|
| 0 | | | | | Asphalt (4 inches) and baserock (8 inches). | |
| 2 | | | | CL | Sandy clay, dark gray, damp, low plasticity, very stiff: Fill | |
| | | | | CH | Silty clay, black, damp, high plasticity, very stiff: Fill. Abundant glass and metal fragments. Hard drilling. | |
| 4 | | | | | | |
| 6 | S-6 | 11<br>13<br>19 | 0 | CH | Silty clay, gray, damp, high plasticity, very stiff; abundant peat fragments: Native soil. | |
| 8 | | | | | | |
| 10 | S-10.5 | 5<br>4<br>6 | 0 | CL | Sandy clay, gray, moist, low plasticity, stiff. Wet. | |
| 12 | | | | | Boring terminated at 11-1/2 feet. | |
| 14 | | | | | | |
| 16 | | | | | | |
| 18 | | | | | | |
| 20 | | | | | | |

Applied GeoSystems

PROJECT: 69038-5

LOG OF BORING B-15

ARCO Service Station 4494
566 Hegenberger Road
Oakland, California

PLATE 13

Depth of boring: 6-1/2 feet Diameter of boring: 6 inches Date drilled: 3-26-91

Well depth: N/A Material type: N/A Casing diameter: N/A

Screen interval: N/A Slot size: N/A

Drilling Company: Exceltech Drilling Driller: Cam & Tim

Method Used: Solid Stem Auger Field Geologist: Steve Bittman

Signature of Registered Professional: _____

Registration No.: _____ State: _____

| Depth | Sample No. | Blows | P.I.D. | USCS Code | Description | Well Const. |
|---|---|---|---|---|---|---|
| 0 | | | | | | |
| | | | | | Asphalt (3 inches) and baserock (6 inches). | |
| 2 | | | | CH | Silty clay, dark gray, damp, high plasticity, very stiff: Fill. | |
| 4 | | | | | | |
| 6 | S-5.5 | 5<br>6<br>7 | 0 | CL | Sandy clay, dark gray, moist, medium plasticity, stiff: Native soil. Wet. | |
| | | | | | Boring terminated at 6-1/2 feet. | |
| 8 | | | | | | |
| 10 | | | | | | |
| 12 | | | | | | |
| 14 | | | | | | |
| 16 | | | | | | |
| 18 | | | | | | |
| 20 | | | | | | |

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PROJECT: 69038-5

LOG OF BORING B-16

ARCO Service Station 4494
566 Hegenberger Road
Oakland, California

PLATE 14

Depth of boring: 11-1/2 feet Diameter of boring: 6 inches Date drilled: 3-26-91

Well depth: N/A Material type: N/A Casing diameter: N/A

Screen interval: N/A Slot size: N/A

Drilling Company: Exceltech Drilling Driller: Cam & Tim

Method Used: Solid Stem Auger Field Geologist: Steve Bittman

Signature of Registered Professional: _____

Registration No.: _____ State: _____

| Depth | Sample No. | Blows | P.I.D. | USCS Code | Description | Well Const. |
|---|---|---|---|---|---|---|
| 0 | | | | | | |
| | | | | | Asphalt (6 inches) and baserock (12 inches). | |
| 2 | | | | CL | Silty clay, black, damp, low plasticity, very stiff; abundant glass and metal fragments, very hard to drill: Fill. | |
| 4 | | | | | Smoother drilling at 4-1/2 feet. | |
| 6 | S-6 | 3<br>7<br>10 | 0 | CL | Silty clay, dark gray, damp, high plasticity, very stiff: Native soil. | |
| 8 | | | | SC | Clayey sand, medium-grained, gray, wet, loose. | |
| 10 | S-11 | 2<br>3<br>5 | 0 | | Shen on ground water | |
| 12 | | | | | Boring terminated at 11-1/2 feet. | |
| 14 | | | | | | |
| 16 | | | | | | |
| 18 | | | | | | |
| 20 | | | | | | |

Applied GeoSystems

PROJECT: 69038-5

LOG OF BORING B-17

ARCO Service Station 4494
566 Hegenberger Road
Oakland, California

PLATE 15

Depth of boring: 21-1/2 feet Diameter of boring: 8 inches Date drilled: 07/09/92

Well depth: 17 feet Material type: Sch 40 PVC Casing diameter: 2 inches

Screen interval: 8 to 17 feet Slot size: 0.020-inch

Drilling Company: Exploration Geoservices Driller: John and Dennis

Method Used: Hollow-Stem Auger Field Geologist: Rob Campbell

Signature of Registered Professional:

Registration No.: CEG 1463 State: CA

| Depth | Sample No. | Blows | P.I.D. | USCS Code | Description | Well Const. |
|---|---|---|---|---|---|---|
| | | | | | Asphalt surface. | |
| 0 | | | | | Asphalt (2 inches). | |
| | S-1.5 | 5 13 7 | 0 | SM/SC | Silty sand with clay, brown, damp, medium dense; fire brick fragments: fill. | |
| 2 | | | | CL | Silty clay with sand, black, damp to moist, medium plasticity, very stiff; brick fragments: fill. | |
| 4 | S-5 S-5.5 | 5 6 8 | 0 | | | |
| 6 | | | | CH | Silty clay, bluish-green, moist, high plasticity, stiff; root fibers, sulfur odor. | |
| 8 | | | | | | |
| 10 | S-10 S-10.5 | 2 1 1 | 0 | | | |
| 12 | | | | | Moist to very moist at 13 feet. | |
| 14 | | | | MH | Clayey silt, bluish-green, very moist, high plasticity, firm. | |
| | S-15 S-15.5 | 3 3 3 | 0 | GW-GM | Sandy gravel with silt, bluish-green, wet, loose; sulfur odor. | |
| 16 | | | | | | |
| | | 6 7 10 | | CH | Silty clay, bluish-green, moist to very moist, high plasticity, stiff; root fibers. | |
| 18 | S-18 | 5 6 9 | 0 | | | |
| | S-19.5 | 6 8 8 | 0 | | Grades to brown at 19-1/2 feet. | |
| 20 | S-21 | | | | | |
| | | | | | Total depth = 21-1/2 feet. | |

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PROJECT: 69038.10

LOG OF BORING B-18/MW-5
ARCO Station 4494
566 Hegenberger Road
Oakland, California

PLATE 4

Depth of boring: 21 feet Diameter of boring: 8 inches Date drilled: 07/09/92

Well depth: 16-1/2 feet Material type: Sch 40 PVC Casing diameter: 2 inches

Screen interval: 8 to 16-1/2 feet Slot size: 0.020-inch

Drilling Company: Exploration Geoservices Driller: John and Dennis

Method Used: Hollow-Stem Auger Field Geologist: Rob Campbell

Signature of Registered Professional:

Registration No.: CEG 1463 State: CA

| Depth | Sample No. | Blows | P.I.D. | USCS Code | Description | Well Const. |
|---|---|---|---|---|---|---|
| | | | | | Asphalt surface. | |
| 0 | | | | | Asphalt (2 inches). | |
| | | | | GW-GM | Baserock, angular gravel, brown, damp, medium dense (4 inches). | |
| 2 | | | | | Gravelly sand with silt, brown, damp, medium dense; fire brick debris; fill. | |
| | | | | | Grades to black with metallic slag at 2 feet. | |
| 4 | | | | | Very hard drilling between 3 and 4 feet due to large cobbles of metallic slag and fire brick fragments. | |
| | S-5.5 | 7 | 3 | SP-SM | Sand with silt, medium-grained, black, moist, medium dense, angular pebbles. | |
| 6 | | 14 | | | | |
| | S-7 | 7 | 1.5 | CH | Sandy clay with silt, blue-green, moist, very soft; abundant organic matter, burrow holes, sulfur odor. | |
| | | 2 | | | | |
| 8 | | 1 | | | Grades to more clay. | |
| | | 1 | | | | |
| | S-9.5 | 1 | 0 | | Encountered water at 10 feet. | |
| 10 | S-10.5 | 1 | | | | |
| | | 1 | | | | |
| 12 | | | | | | |
| 14 | | | | SP | Sand, fine-grained, bluish-green, wet, dense. | |
| | S-14.5 | 15 | 0 | | | |
| | S-15 | 27 | | GP | Gravel with sand, bluish-green, wet, dense. | |
| 16 | | 17 | | | | |
| | | 1 | | CH | Clay with silt, bueish-green, very moist to wet, high plasticity, firm; sulfur odor, root fibers. | |
| | S-17.5 | 2 | 0 | | | |
| 18 | | 5 | | | | |
| | | 2 | | | | |
| | S-19 | 5 | 0 | | Grades to very moist. | |
| | | 5 | | | | |
| 20 | | 4 | | | | |
| | S-20.5 | 4 | 0 | | | |
| | | 6 | | | | |
| | | | | | Total depth = 21 feet. | |

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PROJECT: 69038.10

LOG OF BORING B-19/MW-6
ARCO Station 4494
566 Hegenberger Road
Oakland, California

PLATE 5

Depth of boring: 18 feet Diameter of boring: 12 inches Date drilled: 07/10/92

Well depth: 15 feet Material type: Sch 40 PVC Casing diameter: 4 inches

Screen interval: 9 to 15 feet Slot size: 0.020-inch

Drilling Company: Exploration Geoservices Driller: John and Dennis

Method Used: Hollow-Stem Auger Field Geologist: Erin McLucas

Signature of Registered Professional:

Registration No.: CEG 1463 State: CA

| Depth | Sample No. | Blows | P.I.D. | USCS Code | Description | Well Const. |
|---|---|---|---|---|---|---|
| 0 | | | | | Asphalt surface. | |
| | | | | | Asphalt (6 inches). | |
| 2 | | | | SM | Silty sand with coarse gravel and clay, medium-grained sand, black, damp, medium dense; metallic slag: fill. | |
| 4 | | | | | Hard drilling between 4 and 6 feet due to angular slag fragments. | |
| 6 | | | | | | |
| | S-7 | 1 0 0 | 0 | CL / SM | Silty clay, gray with black mottling, moist, medium plasticity, stiff. | |
| 8 | | | | | Silty sand, fine-grained, gray, wet, loose; root fragments. | |
| 10 | S-10 | 2 2 2 | 0.6 | | | |
| 12 | | | | | | |
| 14 | | | | | | |
| | S-15.5 | 3 3 7 | 0 | CL | Silty clay, olive-gray mottled brown, moist, medium plasticity, stiff. | |
| 16 | | | | | | |
| | S-17.5 | 5 5 7 | 0 | | | |
| 18 | | | | | Total depth = 18 feet. | |
| 20 | | | | | | |

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PROJECT: 69038.10

LOG OF BORING B-20/MW-7
ARCO Station 4494
566 Hegenberger Road
Oakland, California

PLATE 6

Depth of boring: 12 feet Diameter of boring: 8 inches Date drilled: 12/8/92

Well depth: N/A Material type: N/A Casing diameter: N/A

Screen interval: N/A Slot size: N/A

Drilling Company: Exploration Geoservices Driller: Dave and Dennis

Method Used: Hollow-Stem Auger Field Geologist: Rob Campbell

Signature of Registered Professional:

Registration No.: CEG 1463 State: CA

| Depth | Sample No. | Blows | P.I.D. | USCS Code | Description | Well Const. |
|---|---|---|---|---|---|---|
| 0 | | | | | Asphalt-covered surface. | |
| | | | | | Asphalt (3 inches). | |
| | | | | SW | Sandy gravel, brown, damp, medium dense: baserock. | |
| 2 | | | | CL | Sandy clay with silt, black, damp, low plasticity, soft; no product odor: fill. | |
| 4 | S-4.5 | 2 2 2 | 0 | | Grades to bluish green @ 3 1/2 feet. Glass fragments in sample. | |
| | | | | | Grades to dark olive green @ 6 feet. | |
| 6 | | | | CL | Silty clay with sand, dark olive green, moist, low plasticity, soft; no product odor; root holes. | |
| 8 | | | | | | |
| 10 | S-10 | 2 2 2 2 4 2 | 0 ▽ 0 | | | |
| 12 | | | | | Depth of boring 12 feet. | |
| 14 | | | | | | |
| 16 | | | | | | |
| 18 | | | | | | |
| 20 | | | | | | |

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PROJECT: 69038.13

LOG OF BORING B-21
ARCO Station 4494
566 Hegenberger Road
Oakland, California

PLATE 4

Depth of boring: 11 feet Diameter of boring: 8 inches Date drilled: 12/8/92

Well depth: N/A Material type: N/A Casing diameter: N/A

Screen interval: N/A Slot size: N/A

Drilling Company: Exploration Geoservices Driller: Dave and Dennis

Method Used: Hollow-Stem Auger Field Geologist: Rob Campbell

Signature of Registered Professional:

Registration No.: CEG 1463 State: CA

| Depth | Sample No. | Blows | P.I.D. | USCS Code | Description | Well Const. |
|---|---|---|---|---|---|---|
| 0 | | | | | Asphalt-covered surface. | |
| | | | | | Asphalt (3 inches). | |
| | | | | SP | Sandy gravel, light brown, damp, medium dense; baserock. | |
| 2 | | | | CL | Sandy clay with gravel, damp, low plasticity, soft; glass and brick fragments, and rusted iron handles: fill. | |
| 4 | | | | CL | Silty clay, black, damp, low plasticity, firm; no product odor; root holes and roots. | |
| | S-5.5 | 2<br>3<br>3 | 0 | | | |
| 6 | | | | | | |
| 8 | | | | | Grades to light gray @ 9 1/2 feet. | |
| | S-9.5 | 4 | | | | |
| 10 | S-10 | 5 | ▽ 0 | | Silty clay with sand stringers @ 10 feet. | |
| | | 6 | ⏚ | | | |
| 12 | | | | | Depth of boring 11 feet. | |
| 14 | | | | | | |
| 16 | | | | | | |
| 18 | | | | | | |
| 20 | | | | | | |

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PROJECT: 69038.13

LOG OF BORING B-22
ARCO Station 4494
566 Hegenberger Road
Oakland, California

PLATE
5

Depth of boring: 11 feet Diameter of boring: 8 inches Date drilled: 12/8/92

Well depth: N/A Material type: N/A Casing diameter: N/A

Screen interval: N/A Slot size: N/A

Drilling Company: Exploration Geoservices Driller: Dave and Dennis

Method Used: Hollow-Stem Auger Field Geologist: Rob Compbell

Signature of Registered Professional:

Registration No.: CEG 1463 State: CA

| Depth | Sample No. | Blows | P.I.D. | USCS Code | Description | Well Const. |
|---|---|---|---|---|---|---|
| | | | | | Asphalt-covered surface. | |
| 0 | | | | | Asphalt (3 inches). | |
| | | | | SP | Sandy gravel, brown, damp, medium dense: baserock. | |
| 2 | | | | CL | Sandy clay with silt, dark brown, damp, low plasticity, firm; no product odor, glass and brick fragments: fill. | |
| 4 | S-5 | 3 4 3 | 0 | | Silty clay, black, damp, firm; no product odor; root holes and roots. | |
| 6 | | | | | Grades to less sand and becomes gray @ 7 feet. | |
| 8 | | | | | | |
| 10 | S-9.5 S-10 | 4 3 5 | ▽ 0 | | Silty clay with sand, and gravel stringers, gray, moist, low plasticity, firm; no product odor, root holes. | |
| 12 | | | | | Depth of boring 11 feet. | |
| 14 | | | | | | |
| 16 | | | | | | |
| 18 | | | | | | |
| 20 | | | | | | |

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LOG OF BORING B-23
ARCO Station 4494
566 Hegenberger Road
Oakland, California

PLATE 6

Depth of boring: 11 feet Diameter of boring: 8 inches Date drilled: 12/8/92

Well depth: N/A Material type: N/A Casing diameter: N/A

Screen interval: N/A Slot size: N/A

Drilling Company: Exploration Geoservices Driller: Dave and Dennis

Method Used: Hollow-Stem Auger Field Geologist: Rob Campbell

Signature of Registered Professional:

Registration No.: CEG 1463 State: CA

| Depth | Sample No. | Blows | P.I.D. | USCS Code | Description | Well Const. |
|---|---|---|---|---|---|---|
| | | | | | Asphalt-covered surface. | |
| 0 | | | | | Asphalt (3 inches). | |
| | | | | SP | Sandy gravel, brown, damp, medium dense: baserock. | |
| 2 | | | | SM | Silty sand, black, damp, loose; no product odor, glass fragments: fill. | |
| 4 | S-4.5 | 4 3 3 | 0 | | | |
| 6 | | | | | | |
| 8 | | | | CL | Silty clay, gray, moist, low plasticity, firm; no product odor, root holes. | |
| 10 | S-9.5 | 4 5 6 | ▽ = 0 | | | |
| 12 | | | | | Depth of boring 11 feet. | |
| 14 | | | | | | |
| 16 | | | | | | |
| 18 | | | | | | |
| 20 | | | | | | |

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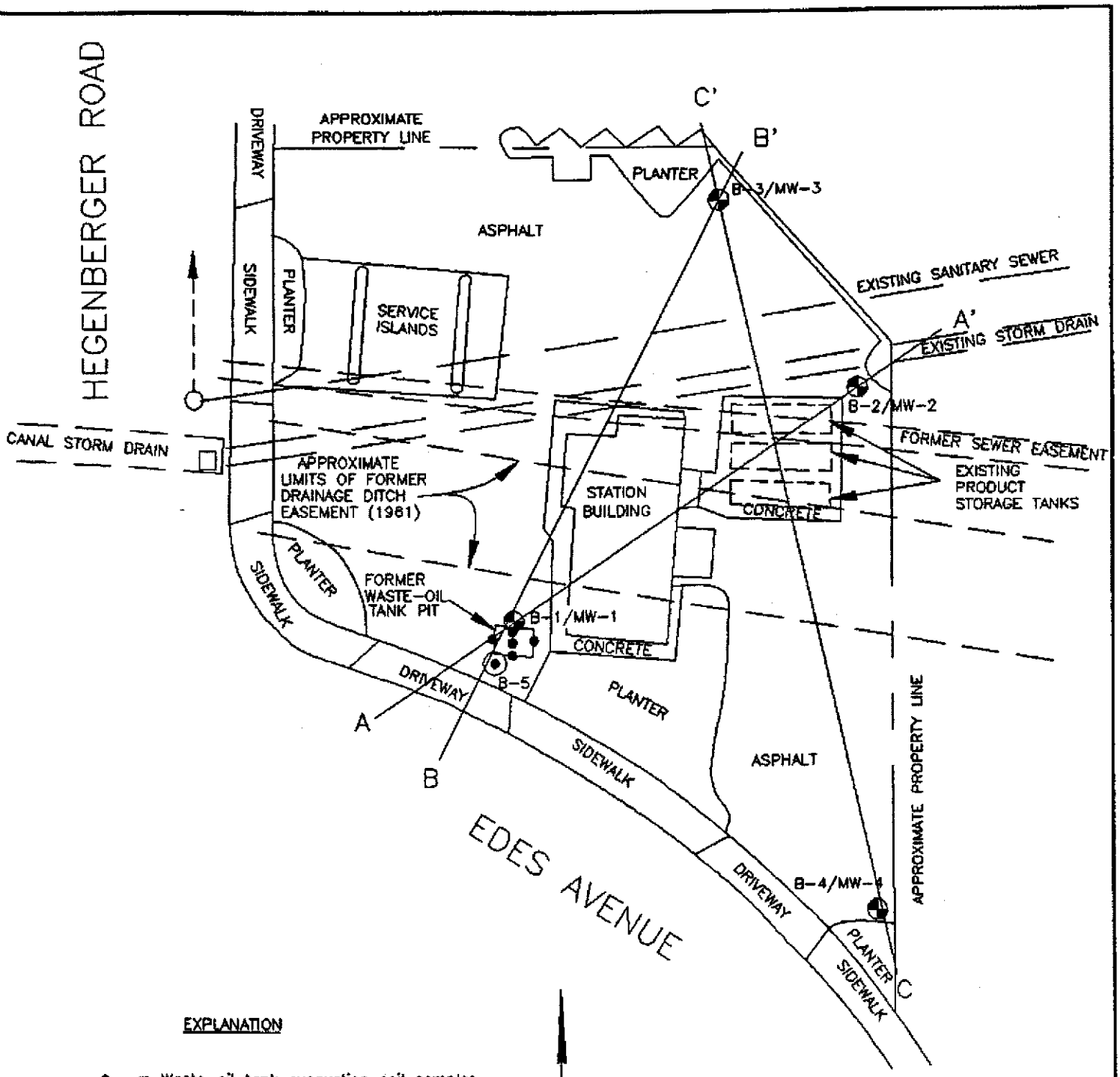
PROJECT: 69038.13

LOG OF BORING B-24
ARCO Station 4494
566 Hegenberger Road
Oakland, California

PLATE 7




EXPLANATION

◆ = Waste-oil tank excavation soil samples (Pacific Environmental Group, January 1989)

B-4/MW-4 = Monitoring wells (Applied GeoSystems, October 1989 and August 1990)

B-5 = Soil boring (Applied GeoSystems, August 1990)

C C' = Geologic Cross Sections

N

Approximate Scale

40 20 0 40 80

feet

Source: Modified from plans supplied by ARCO Products Co. (dated August 12, 1982) and City of Oakland Dept. of Public Works (dated December 19, 1961).

Applied GeoSystems

PROJECT 69038-2

**GENERALIZED SITE PLAN**
**ARCO Service Station 4494**
**566 Hegenberger Road**
**Oakland, California**

**PLATE 2**

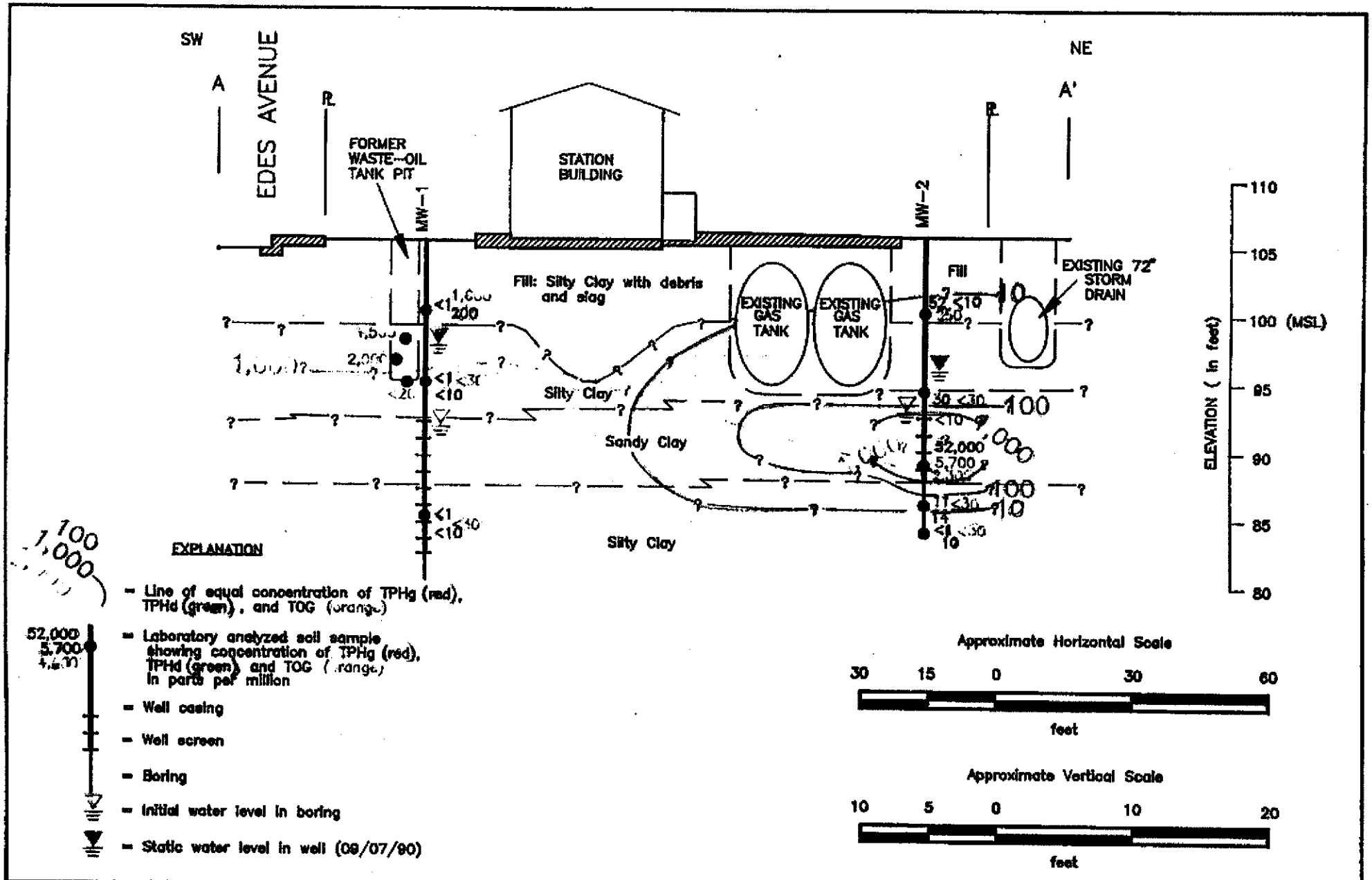
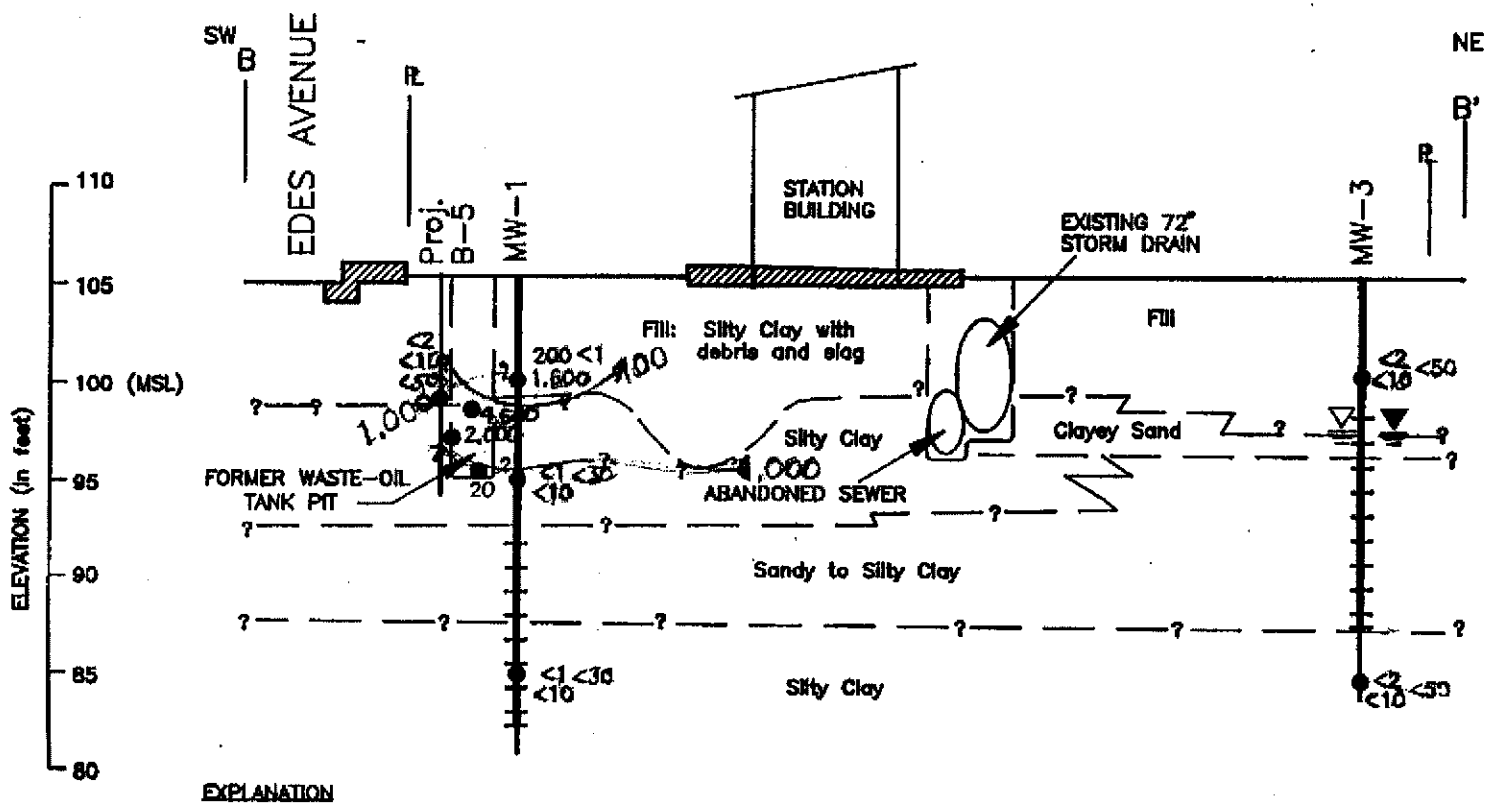



**PLATE 13**

# GEOLOGIC CROSS SECTION A-A'
## ARCO Service Station 4494
## 566 Hegenberger Road
## Oakland, California

Applied GeoSystems




EXPLANATION

100 / 1,000 = Line of equal concentration of TPHd (green), and TOG (orange)

<2 / 200 / 1,600 = Laboratory analyzed soil sample showing concentration of TPHg (red), TPHd (green), and TOG (orange) in parts per million

= Well casing

= Well screen

= Boring

= Initial water level in boring

= Static water level in well (09/07/90)

Approximate Horizontal Scale

30 15 0 30 60

feet

Approximate Vertical Scale

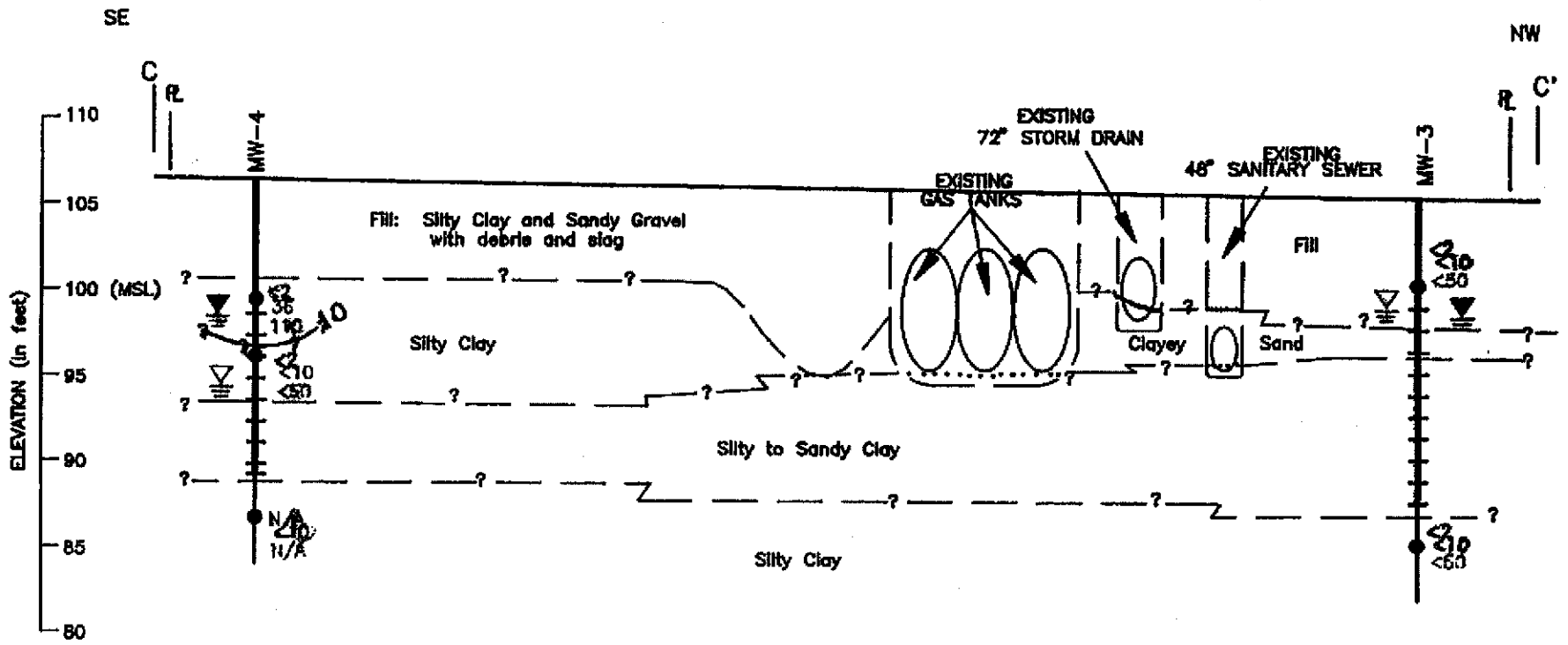
10 5 0 10 20

feet

**PLATE 14**

# GEOLOGIC CROSS SECTION B-B'
## ARCO Service Station 4494
## 566 Hegenberger Road
## Oakland, California

Applied GeoSystems




EXPLANATION

10 = Line of equal concentration of TPHd (green)

36 / 110 = Laboratory analyzed soil sample showing concentration of TPHg (red), TPHd (green), and TOG (orange) in parts per million

= Well casing

= Well screen

= Boring

= Initial water level in boring

= Static water level in well (09/07/90)

Approximate Horizontal Scale

30 15 0 30 60

feet

Approximate Vertical Scale

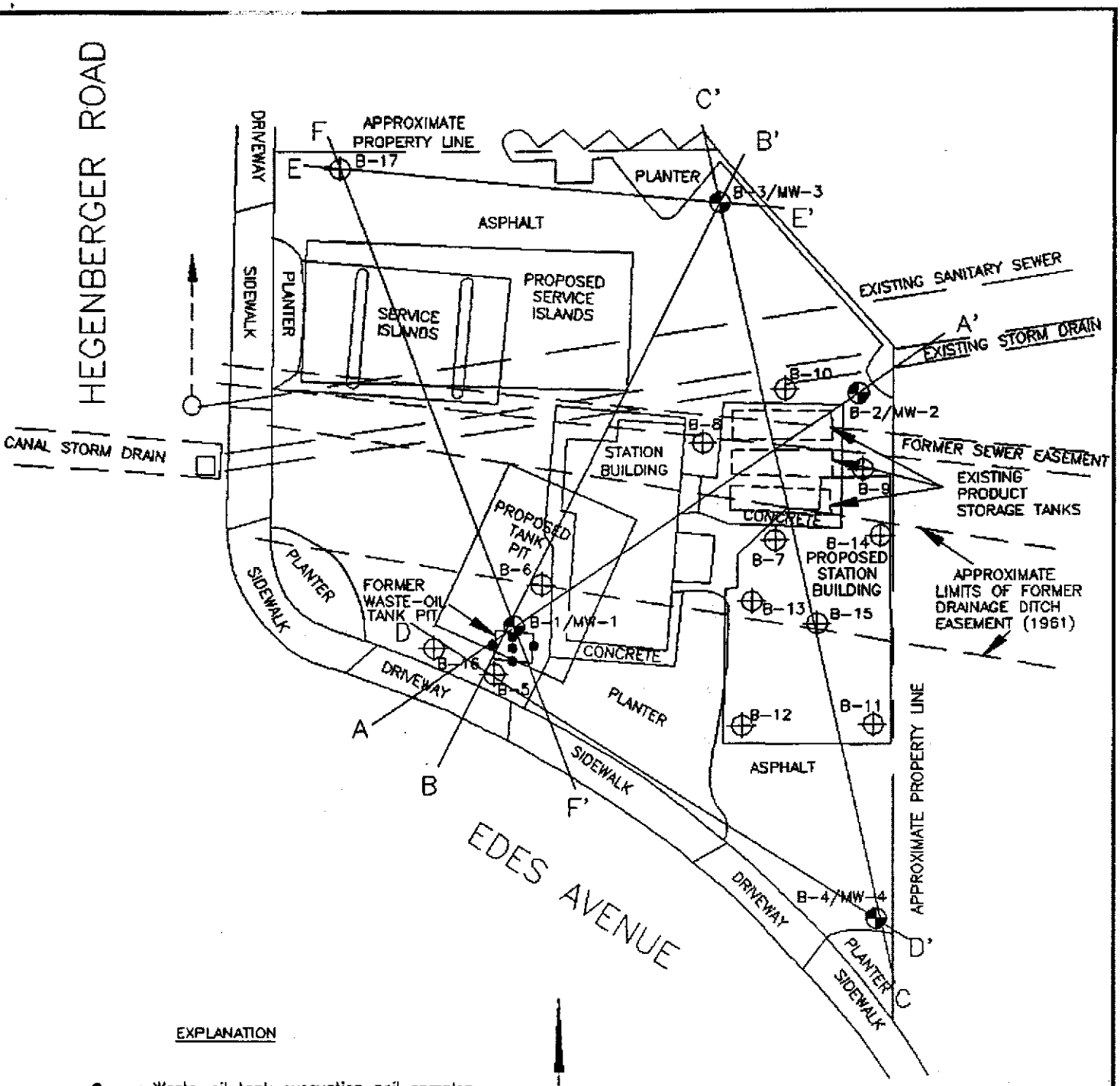
10 5 0 10 20

feet

**PLATE 15**

# GEOLOGIC CROSS SECTION C-C'
## ARCO Service Station 4494
## 566 Hegenberger Road
## Oakland, California

Applied GeoSystems




EXPLANATION

- ● = Waste-oil tank excavation soil samples (Pacific Environmental Group, January 1989)
- B-4/MW-4 ◒ = Monitoring wells (Applied GeoSystems, October 1989 and August 1990)
- B-10 ⊕ = Soil boring (Applied GeoSystems, August 1990 and March 1991)
- F — F' = Geologic Cross Sections

N

Approximate Scale

40 20 0 40 80

feet

Source: Modified from plans supplied by ARCO Products Co. (dated August 12, 1982) and City of Oakland Dept. of Public Works (dated December 19, 1961).

Applied GeoSystems

**PROJECT 69038-5**

# GENERALIZED SITE PLAN
## ARCO Service Station 4494
## 566 Hegenberger Road
## Oakland, California

**PLATE 2**

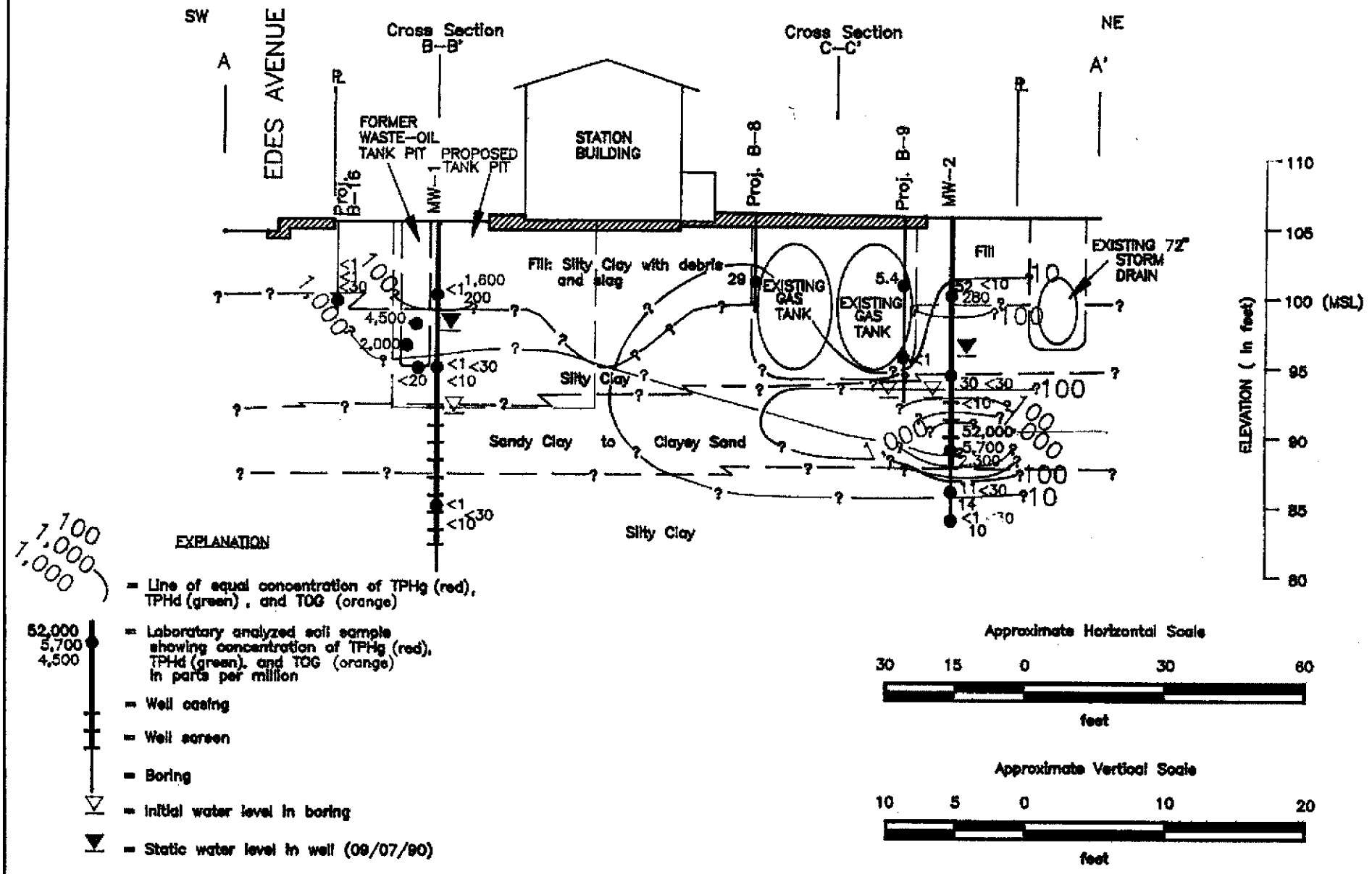



**PLATE 16**

# GEOLOGIC CROSS SECTION A-A'
## ARCO Service Station 4494
## 566 Hegenberger Road
## Oakland, California

Applied GeoSystems

**PROJECT 69038-5**

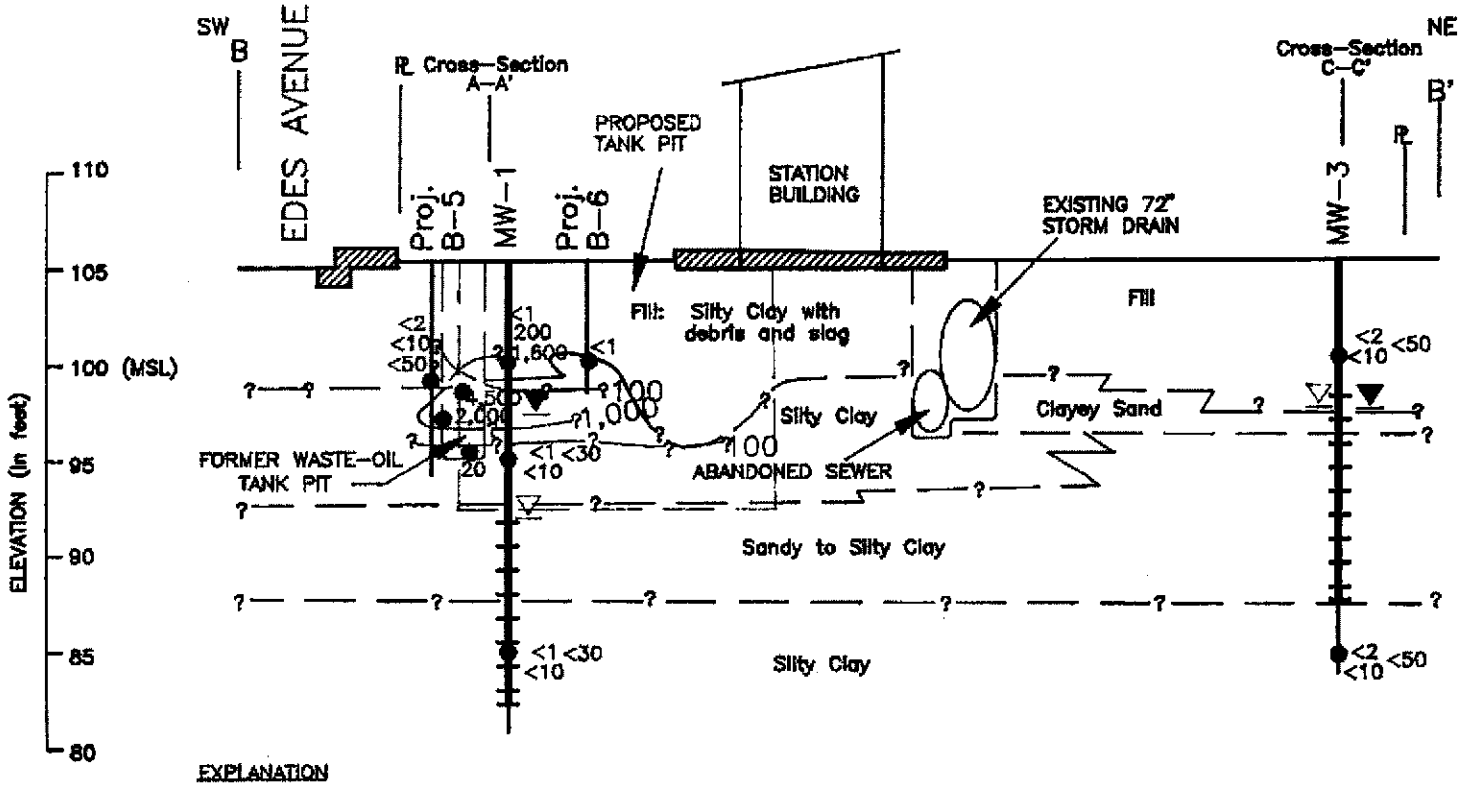
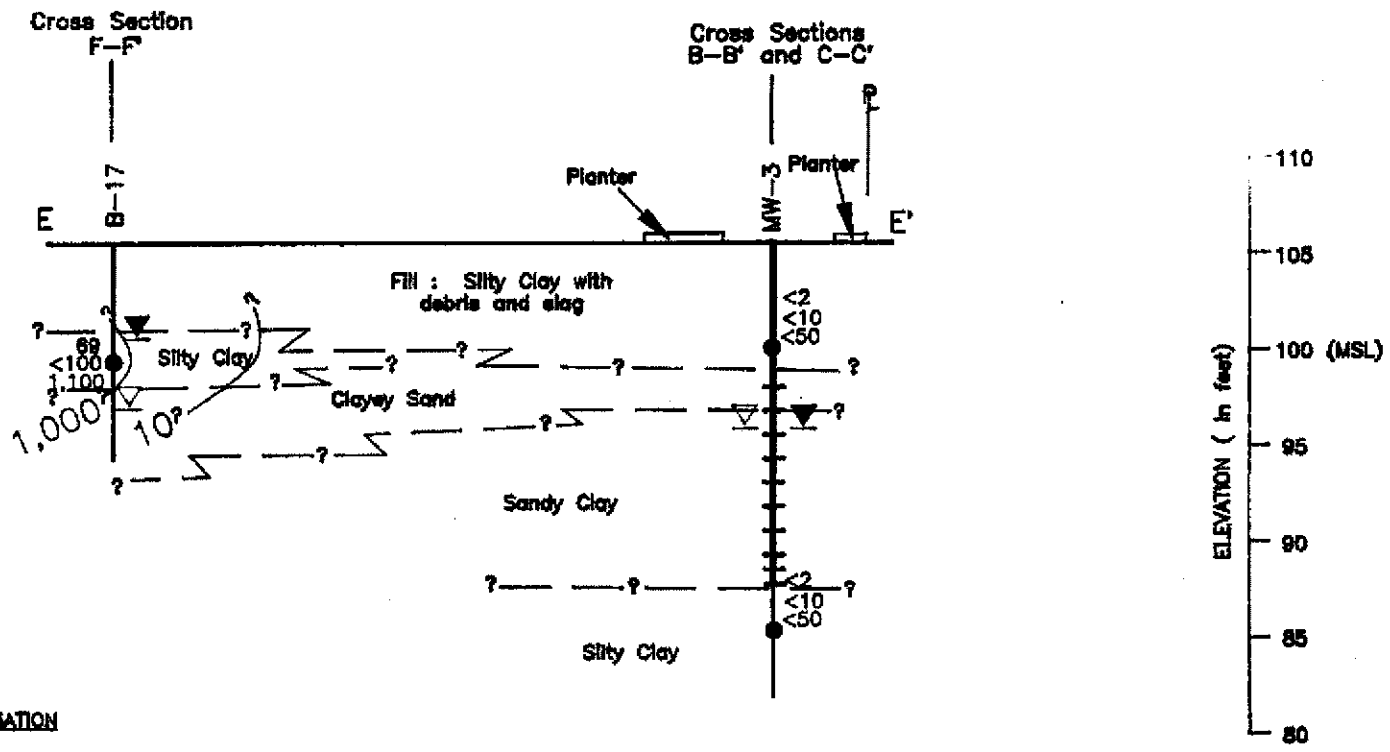



**PLATE 17**

# GEOLOGIC CROSS SECTION B-B'
## ARCO Service Station 4494
## 566 Hegenberger Road
## Oakland, California

Applied GeoSystems

**PROJECT 69038-5**




EXPLANATION

1,000 / 10 = Line of equal concentration of TPHg, (red), and TPHd (green)

<2 / 36 / 0 = Laboratory analyzed soil sample showing concentration of TPHg (red), TPHd (green), and TOG (orange) in parts per million

= Well casing

= Well screen

= Boring

= Initial water level in boring

= Static water level in well (09/07/90)

Approximate Horizontal Scale

30 15 0 30 60

feet

Approximate Vertical Scale

10 5 0 10 20

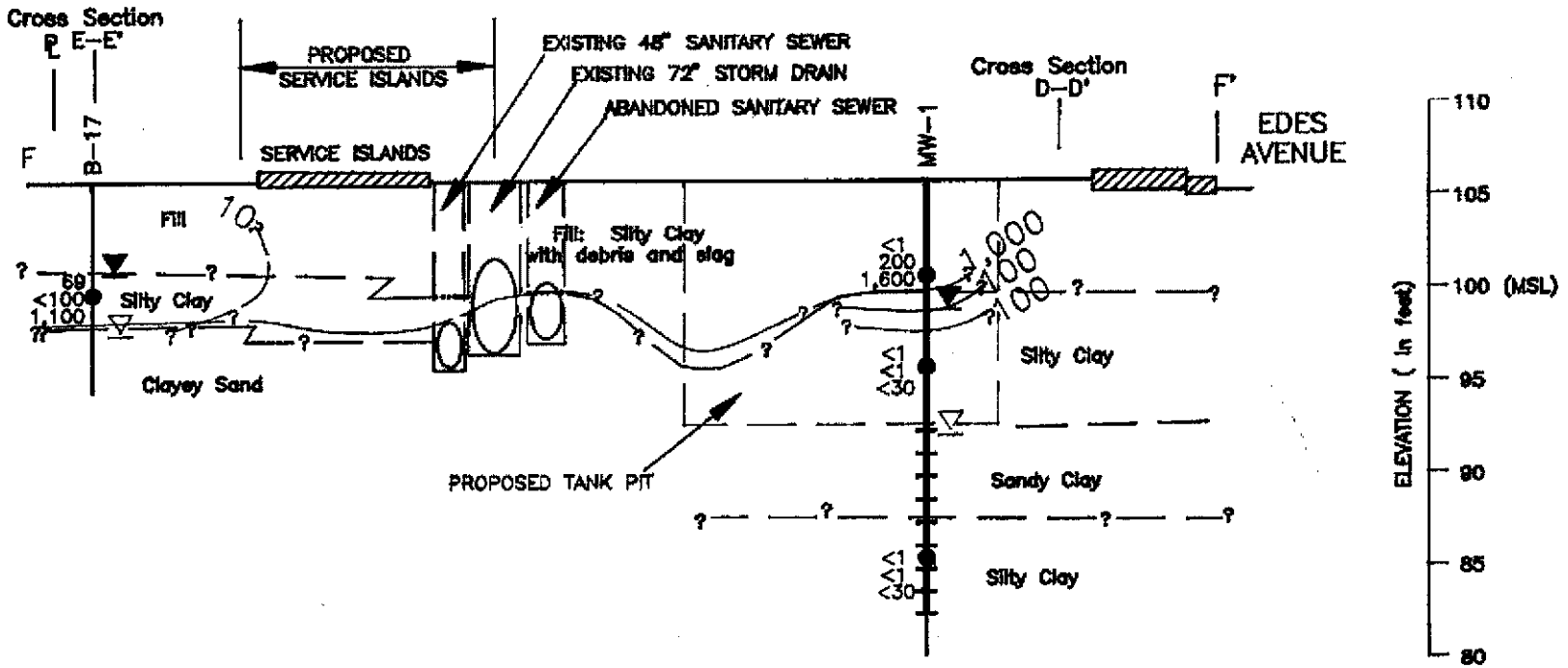
feet

**PLATE 20**

# GEOLOGIC CROSS SECTION E-E'
## ARCO Service Station 4494
## 566 Hegenberger Road
## Oakland, California

Applied GeoSystems

**PROJECT 69038-5**




**EXPLANATION**

1,000 / 100 / 10 = Line of equal concentration of TPHg (red), and TPHd (green)

69 / 200 / 1,600 = Laboratory analyzed soil sample showing concentration of TPHg (red), TPHd (green), and TOG (orange) in parts per million

= Well casing

= Well screen

= Boring

= Initial water level in boring

= Static water level in well (09/07/90)

Approximate Horizontal Scale

30 15 0 30 60

feet

Approximate Vertical Scale

10 5 0 10 20

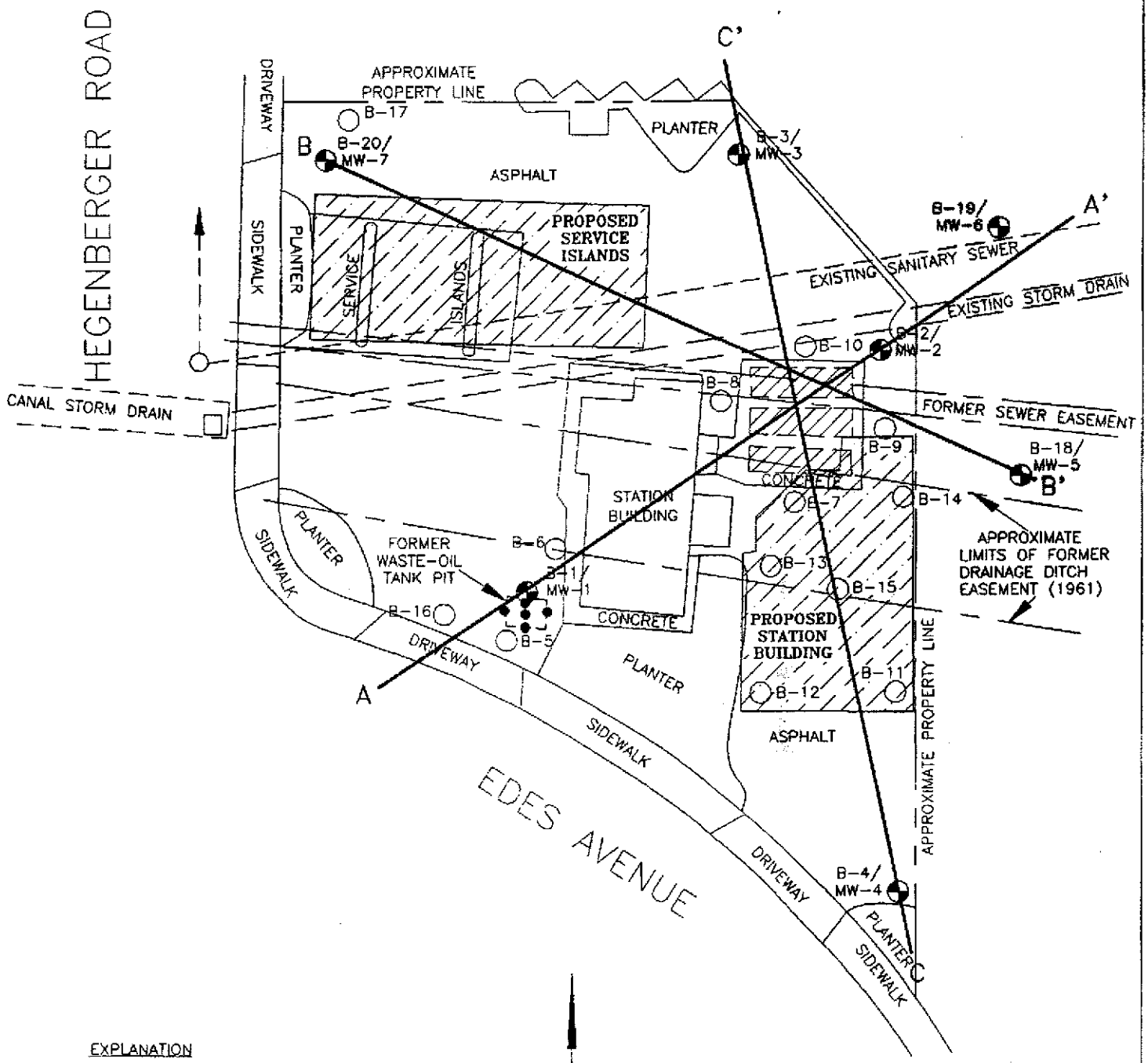
feet

**PLATE 21**

# GEOLOGIC CROSS SECTION F-F'
## ARCO Service Station 4494
## 566 Hegenberger Road
## Oakland, California

Applied GeoSystems

**PROJECT 69038-5**

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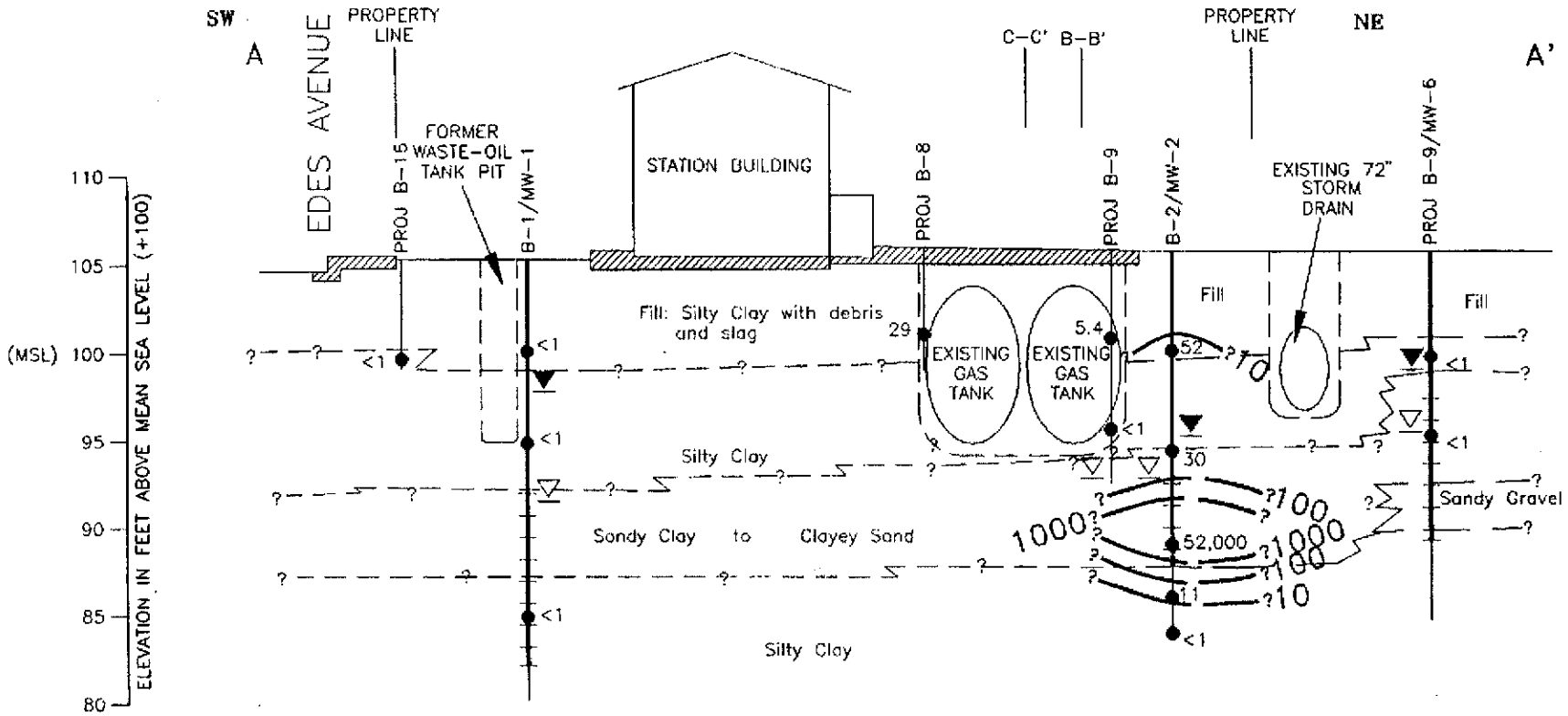
**PROJECT** 69038.10

# GENERALIZED SITE PLAN
## ARCO Service Station 4494
## 566 Hegenberger Road
## Oakland, California

**PLATE** 2




EXPLANATION

1000 — = Line of equal concentration of TPHg in soil in parts per million (ppm)

52,000 = Laboratory analyzed soil sample showing concentration of TPHg in ppm

= Well casing

= Well screen

= Boring

= Initial water level in boring

= Static water level in well (8/6/92)

Approximate Horizontal Scale

30 15 0 30 60

feet

Approximate Vertical Scale

10 5 0 10 20

feet

**PLATE 7**

# GEOLOGIC CROSS SECTION A-A'
## ARCO Service Station 4494
## 566 Hegenberger Road
## Oakland, California

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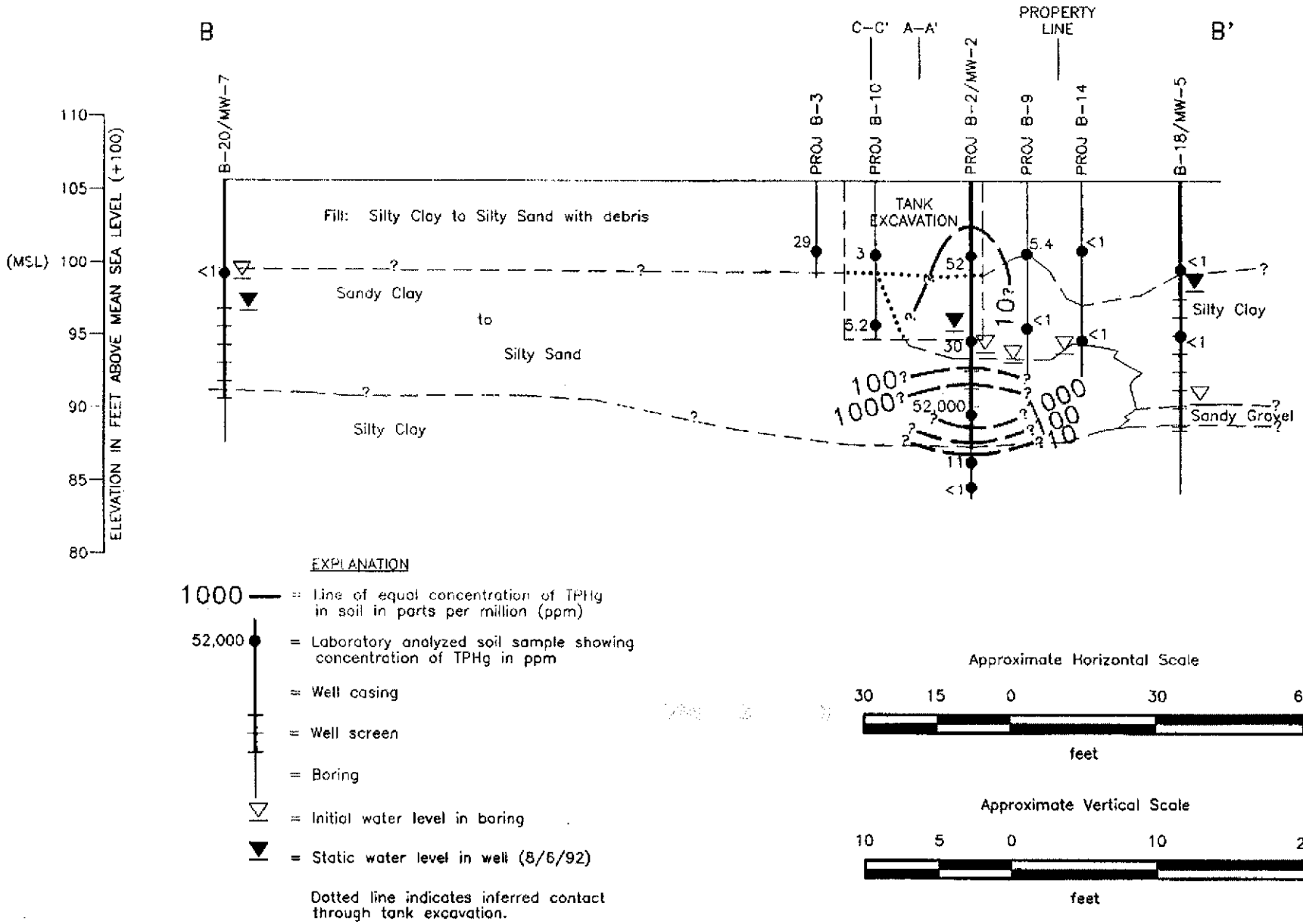
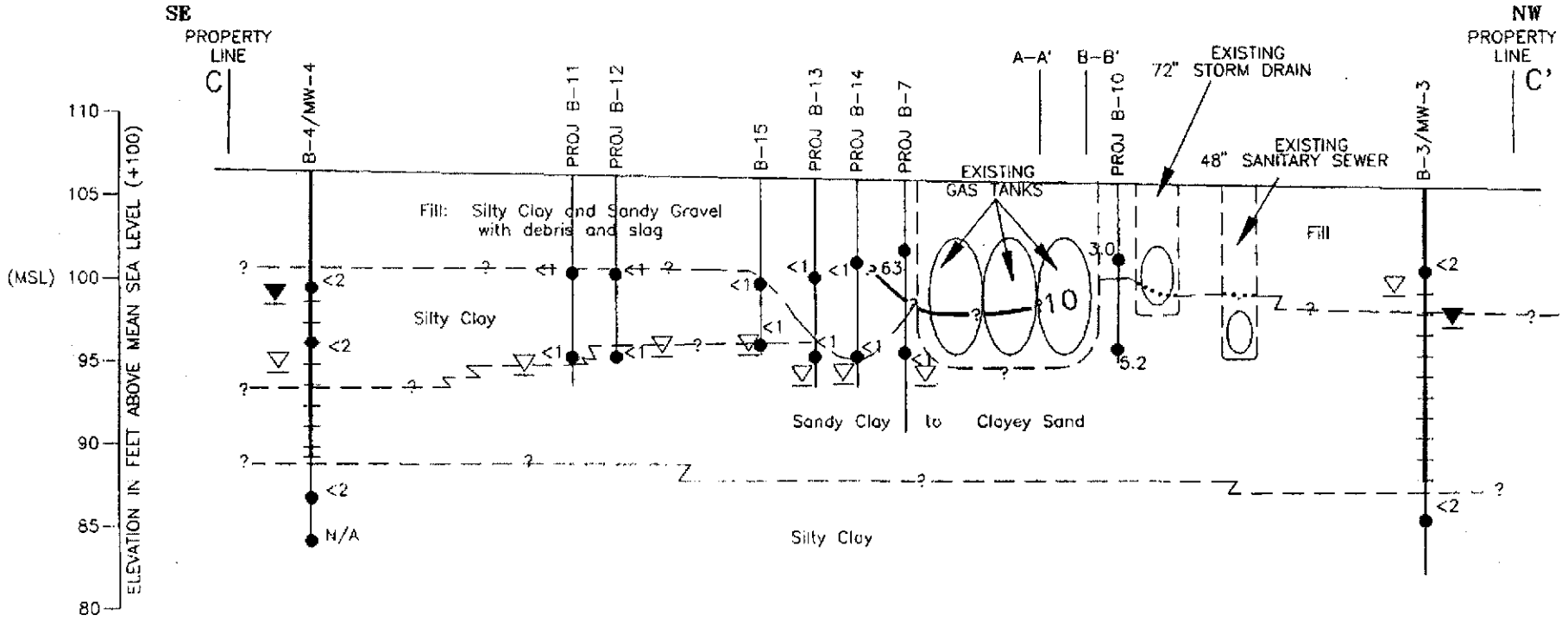
**PROJECT** 69038.10




| PLATE 8 | GEOLOGIC CROSS SECTION B-B'<br>ARCO Service Station 4494<br>566 Hegenberger Road<br>Oakland, California | RESNA<br>Working to Restore Nature<br>PROJECT 69038.10 |
|---|---|---|




EXPLANATION

10 = Line of equal concentration of TPHg in soil in parts per million (ppm)

63 = Laboratory analyzed soil sample showing concentration of TPHg in ppm

= Well casing

= Well screen

= Boring

= Initial water level in boring

= Static water level in well (8/6/92)

Dotted line indicates inferred contact through tank excavation.

Approximate Horizontal Scale

30 15 0 30 60

feet

Approximate Vertical Scale

10 5 0 10 20

feet

**PLATE 9**

# GEOLOGIC CROSS SECTION C-C'
## ARCO Service Station 4494
## 566 Hegenberger Road
## Oakland, California

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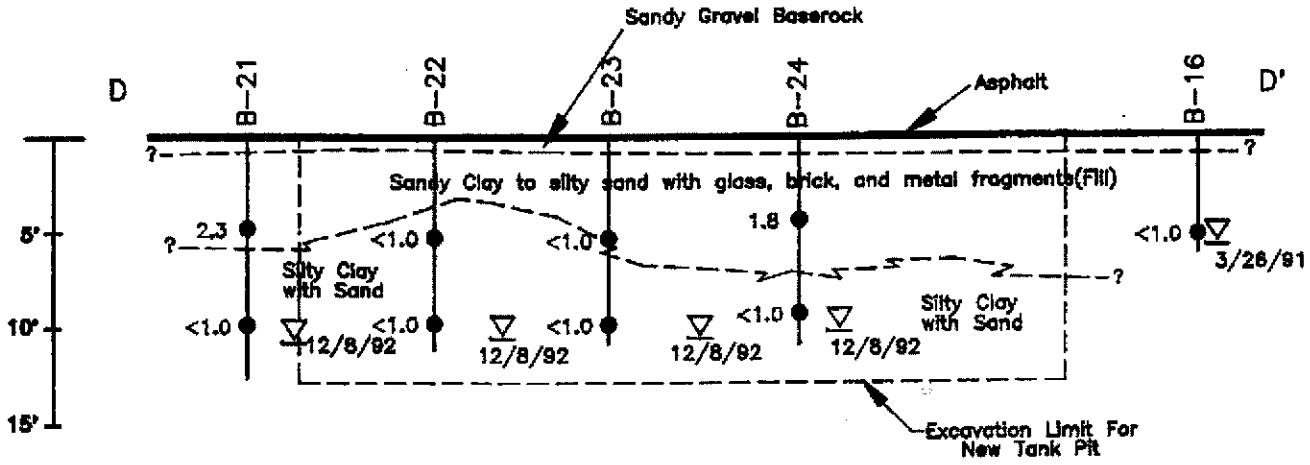


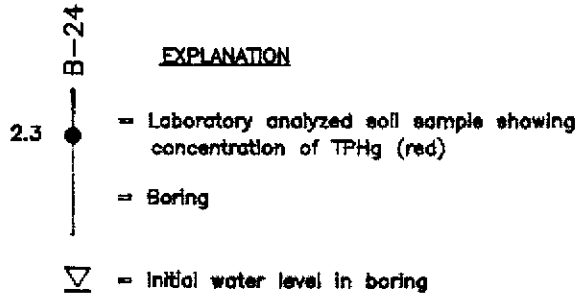


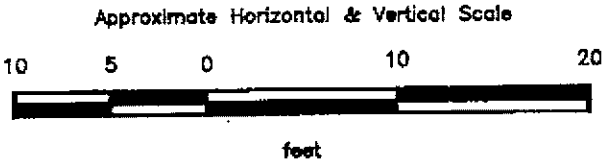


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**GEOLOGIC CROSS SECTION D-D'**
**ARCO Service Station 4494**
**566 Hegenberger Road**
**Oakland, California**

**PLATE**
**9**