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**Jennifer C. Sedlachek**  
Project Manager

**RECEIVED**

7:54 am, Mar 16, 2007

Alameda County  
Environmental Health

**ExxonMobil**  
Refining & Supply

March 14, 2007

Mr. Steven Plunkett  
Alameda County Health Care Services Agency  
Department of Environmental Health  
1131 Harbor Bay Parkway, Room 250  
Alameda, California 94502-6577

**RE: Former Exxon RAS #7-0238/2200 East 12<sup>th</sup> Street, Oakland California.**

Dear Mr. Plunkett:

Attached for your review and comment is a copy of the letter report entitled *Site Conceptual Model*, dated March 14, 2007, for the above-referenced site. The report was prepared by Environmental Resolutions, Inc. (ERI) of Petaluma, California, and presents information regarding the subject site.

I declare, under penalty of perjury, that the information and/or recommendations contained in the attached document or report is true and correct to the best of my knowledge.

If you have any questions or comments, please contact me at 510.547.8196.

Sincerely,



Jennifer C. Sedlachek  
Project Manager

Attachment: ERI's Site Conceptual Model, dated March 14, 2007

cc: w/ attachment  
Mr. Chuck Headlee, California Regional Water Quality Control Board, San Francisco Bay Region  
Mr. Robert C. Ehlers, M.S., P.E., The Valero Companies, Environmental Liability Management

w/o attachment  
Ms. Paula Sime, Environmental Resolutions, Inc.



*Southern California  
Northern California  
Pacific Northwest  
Southwest  
Texas  
Montana*

March 14, 2007  
ERI 229303.R23

Ms. Jennifer C. Sedlachek  
ExxonMobil Refining & Supply-Global Remediation  
4096 Piedmont Avenue #194  
Oakland, California 94611

**SUBJECT** Site Conceptual Model  
Former Exxon Service Station 7-0238  
2200 East 12<sup>th</sup> Street, Oakland, California

Ms. Sedlachek:

At the request of Exxon Mobil Corporation (Exxon Mobil), Environmental Resolutions, Inc. (ERI) prepared this Site Conceptual Model (SCM) report for the subject site. Specifically, this report provides a summary of site history, a summary of remedial measures performed at the site, a summary of site geology and hydrogeology, an assessment of soil and groundwater data, results of an update to the existing sensitive receptor survey (SRS), and recommendations for future investigations. This SCM report was prepared in response to a request from Alameda County Health Agency, Department of Environmental Health (the County) in a letter to Exxon Mobil dated January 17, 2006, and subsequent conversations and electronic correspondence with the County (Attachment A).

## **SITE BACKGROUND**

### **Site Location and Land Use**

The site is located on the eastern corner of 22<sup>nd</sup> Avenue and East 12<sup>th</sup> Street in Oakland, California (Plate 1). The site gently slopes west-southwest at elevations ranging from approximately 16 feet to 11.5 feet above mean sea level. The Brooklyn Basin Tidal Canal is located approximately 1,500 feet west-southwest of the site. The basin is connected to the Oakland Estuary Tidal Canal to the south, which joins the San Francisco Bay approximately 11,000 feet south of the site. The Brooklyn Basin connects to the Oakland Inner Harbor to the west-northwest, which joins the San Francisco Bay approximately 27,000 feet west-northwest of the site.

Land use in the vicinity of the site is mixed-use commercial/industrial and residential (Plate 2). To the west, across 22<sup>nd</sup> Avenue, is a former service station and to the northwest, across 22<sup>nd</sup> Avenue, is Life Academy High School. To the north/northeast adjacent to the site is an alley designated Solano Way, beyond the alley is a building that houses a furniture store, a restaurant, and an automobile repair facility. There is also a two story residential building located directly behind the station building at 2214 Solano Way adjacent to the automobile repair facility. To the east and adjacent to the site is an auto body shop. To the south and southwest beyond East 12<sup>th</sup> Street are the elevated Bay Area Rapid Transit (BART) tracks and the 22<sup>nd</sup> Avenue elevated on and off-ramp to Interstate 880 freeway.

### **Site History and Previous Investigations**

Texaco Refining and Marketing, Incorporated (Texaco) operated a service station at the site from 1971 until 1988 when the site property was transferred to Exxon Mobil. Exxon Mobil sold the site to Valero Refining Company (Valero) in 2000. In 2001, Valero sold the site to Mr. Stanley Wong and Mr. Aaron Wong. The Wong's currently own and operate the station, which dispenses three grades of gasoline. The three gasoline USTs and the product piping are constructed of double-wall fiberglass. The locations

**Environmental Resolutions, Inc.**

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of the former and current USTs, dispenser islands, groundwater monitoring wells, and select site features are shown on Plate 3. Groundwater monitoring has been conducted at the site since June 1988.

A summary of site activities at the site follows.

- May 1988            Texaco retained Harding Lawson Associates (HLA) to conduct a sensitive receptor study (HLA, 1989b).
- June 1988            HLA installed three groundwater monitoring wells (MW9A through MW9C) and started quarterly monitoring and sampling of the wells (HLA, 1989a).
- September 1988        HLA observed Tracer Research Corporation advance 13 soil-gas probes. Nine soil-gas and three groundwater samples were analyzed on site using a mobile laboratory. The maximum concentrations of total petroleum hydrocarbons (TPH) and benzene in soil-gas were reported in sample SG01 at 700,000 micrograms per liter ( $\mu\text{g/L}$ ) and 320,000  $\mu\text{g/L}$ , respectively (HLA, 1989). The maximum concentrations of TPH and benzene in groundwater were reported in sample WS02 at 25,000  $\mu\text{g/L}$  and 12,000  $\mu\text{g/L}$ , respectively (HLA, 1989b).
- 1988                 Texaco transferred the site to Exxon Mobil.
- October and November 1988    HLA observed the advancement of eight soil borings (MW9D through MW9H, SB1, B9-1, and B9-2). Five of the borings were completed as groundwater monitoring wells MW9D through MW9H. Concentrations of TPH as gasoline (TPHg) and benzene were reported in two different soil samples at 1,900 milligrams per kilogram (mg/kg) (MW9E, 5.5 feet below ground surface [fbgs]) and 0.30 mg/kg (SB1, 4.8 fbgs), respectively (HLA, 1989b).
- January 1989        HLA advanced six soil borings (SB4 through SB9) to up to 9 fbgs. Concentrations of TPHg were reported in two samples at 160 mg/kg (SB4, 4.0 fbgs) and 39 mg/kg (SB9, 4.0 fbgs). Concentrations of benzene were reported in three samples at up to 1.0 mg/kg (SB4, 4.0 fbgs) (HLA, 1989b).
- February 1989      HLA performed slug tests on two on-site wells (MW9B and MW9E). The estimated hydraulic conductivity for the clayey sand encountered at well MW9B was reported at 0.42 ft/day; and for the sandy clay with gravel encountered at well MW9E, the hydraulic conductivity was reported at 0.52 ft/day (HLA, 1989b).
- March 1989         HLA advanced two soil borings (SB10 and SB11) to 10 fbgs. Concentrations of TPHg and benzene were not reported at or above the laboratory reporting limit in the samples collected at 5.0 and 10.0 fbgs from the borings (HLA, 1989b).
- October 1990        HLA excavated soil containing hydrocarbon concentrations greater than 100 mg/kg from an area (approximately 12 by 23 feet) between the southwestern product dispensers and the sidewalk. Soil was excavated to a depth of approximately 7 fbgs. Concentrations of TPHg and benzene were reported in boring S5 at 5 fbgs up to 290 mg/kg and 2.8 mg/kg, respectively. However, concentrations of TPHg and benzene did not exceed 52 mg/kg (S8, 7 fbgs) and 0.30 mg/kg (S7, 7 fbgs), respectively at the base of the excavation at 7 fbgs (HLA, 1991).
- October 1990        HLA destroyed groundwater monitoring well MW9E because it was located inside of the excavation boundaries. Groundwater monitoring well MW9I was installed in approximately the same location as well MW9E after the excavation was backfilled (HLA, 1991).
- September 1991      Woodward-Clyde Consultants (WCC) removed two 10,000-gallon USTs, one 7,500-gallon UST, and product piping. The USTs were constructed of single-wall steel.

- Holes or breaches were not reported in the USTs during removal. The USTs were replaced with three 12,000-gallon double-wall fiberglass USTs. The product lines were also replaced with double-wall fiberglass lines (WCC, 1992).
- August 1995 Pacific Environmental Group, Inc (PEG) submitted a *Non-Attainment Area Management Plan and Work Plan* (PEG, 1995).
- April 1996 PEG conducted a utility trench survey and concluded that the utility trenches in the vicinity of the site were not acting as preferential pathways for petroleum hydrocarbon migration (PEG, 1996).
- June 1996 Texaco requested that the site be designated for "Low-Risk Groundwater Case" (PEG, 1996).
- September 1997 EA Engineering, Science and Technology (EA) witnessed the removal of one 550-gallon used-oil UST. One soil sample (WO-10') was collected from the native soil beneath the UST. Concentrations of volatile organic compounds (VOCs) (by EPA Method 8240) and semi-volatile organic compounds (by EPA Method 8270) were not reported at or above the laboratory reporting limits in the soil sample. Concentrations of TPHg, TPH as diesel (TPHd), total recoverable petroleum hydrocarbons, and benzene were reported in the sample at 11 mg/kg, 440 mg/kg, 200 mg/kg, and 0.24 mg/kg, respectively. The sample was also analyzed for cadmium (<0.50), chromium (18 mg/kg), lead (27 mg/kg), nickel (24 mg/kg), and zinc (35 mg/kg) (EA, 1997).
- June 1999 ERI submitted a *Report of Findings*, detailing groundwater gradient and flow direction at the site and utility line depth. ERI concluded that based on the depth of the utilities it does not appear that they are acting as preferential pathways for petroleum hydrocarbon migration (ERI, 1999a).
- September 1999 Exxon submitted a *Report of Tank and Line Testing*. The report stated that the UST system is monitored by a leak detection system, and that the USTs had not failed any tests (ERI, 1999b).
- February 2000 ERI submitted the results of a Sensitive Receptor Survey (ERI, 2000).
- April 2000 Exxon Mobil sold the property including the UST system to Valero (ERI, 2001).
- January to March 2001 ERI observed the installation of two vapor point wells (VP1 and VP2) and performed a dual-phase extraction (DPE) feasibility test. During the test, TPHg removal rates were calculated at 5.6 pounds per day (lbs/day) and methyl tertiary butyl ether (MTBE) removal rates were calculated at 0.08 lbs/day (ERI, 2001).
- June 2003 ERI's geologist observed Cascade Drilling, Inc. (Cascade) of Rancho Cordova, California, drill four soil borings and install four DPE wells (DPE1 through DPE4) (ERI, 2003b).
- January 2004 ERI began operation of a DPE system to treat dissolved-phase petroleum hydrocarbons in groundwater and vapor-phase petroleum hydrocarbons present in the vadose zone.

Currently there are eight groundwater monitoring wells (MW9A through MW9D, and MW9F through MW9I), four DPE wells (DPE through DPE4), two tank pit observation wells (TP1 and TP2) and two vapor point wells (VP1 and VP2) on and in the vicinity of the site as shown on Plate 3.

Laboratory analytical results for groundwater samples collected from the wells indicate the presence of TPHg, MTBE, and benzene, toluene, ethylbenzene, and total xylenes (BTEX). Groundwater monitoring and sampling data (1988 to present) are summarized in Tables 1A and 1B. A soil-gas location map and an excavation map are presented in Attachment B. The most recent groundwater elevation data

(December 15, 2006) and a rose diagram are shown on Plate 4. Soil sample analytical results are summarized in Tables 2A, 2B, and 2C. Soil-gas results are summarized in Table 3. Grab groundwater results are summarized on Tables 4A and 4B. Well construction details are summarized in Table 5.

### **Remedial Measures**

Exxon Mobil's remedial efforts at the site have included excavation and operation of a DPE system.

#### **Excavation**

In October 1990, HLA excavated an area, approximately 12 by 23 feet, between the southwestern product dispensers and the sidewalk to 7 fbs. Concentrations of TPHg up to 290 mg/kg (S5, 5 fbs) and benzene up to 2.8 mg/kg (S5, 5 fbs) were reported. However, concentrations of TPHg and benzene did not exceed 52 mg/kg (S8, 7 fbs) and 0.30 mg/kg (S7, 7 fbs), respectively at the base of the excavation at 7 fbs. The excavated soil was aerated on site and transported to Redwood Landfill in Novato, California, for disposal (HLA, 1991).

Approximately 700 cubic yards of fill material and native soil were excavated in 1991, when the gasoline USTs and product lines were removed and the UST pit was enlarged to accommodate larger new USTs. The excavated soil was stockpiled on site, characterized, and then transported off site for disposal (WCC, 1992).

#### **Remediation System Operation**

A DPE system designed to treat dissolved-phase petroleum hydrocarbons in groundwater and vapor-phase petroleum hydrocarbons present in the vadose zone was installed at the site. The groundwater extraction portion of the DPE system began operation in January 2004, and the vapor extraction portion of the system began operation in March 2004. The DPE system simultaneously extracts soil vapor and groundwater from four DPE wells (DPE1 through DPE4). In May 2005, well MW9A was also hooked up to the DPE system. Extracted soil vapor is abated using a catalytic oxidizer prior to atmospheric discharge in compliance with a Bay Area Air Quality Management District (BAAQMD) Permit to Operate. Groundwater extracted by the DPE system is processed through two sediment filters and three 1,000-pound liquid-phase granular activated carbon vessels prior to discharge to the sanitary sewer under provisions of an East Bay Municipal Utility District (EBMUD) discharge permit. On a monthly basis, ERI collects soil vapor and water samples from influent, intermediate, and effluent sample ports.

To date, the DPE system removed approximately <1,235 pounds TPHg, <11 pounds benzene, and <49 pounds MTBE from the vadose zone, and <1.8 pounds TPHg, <0.015 pounds benzene, and 1.1 pounds MTBE from groundwater. Operation and performance data for DPE system, vapor-phase and liquid-phase are presented in Tables 6 and 7, respectively and graphically displayed on Graphs 1 through 4.

### **Regional Geology and Hydrogeology**

The site is located along the eastern margin of the San Francisco Bay within the East Bay Plain (Hickenbottom and Muir, 1988). The surficial deposits in the site vicinity are mapped as younger Holocene alluvial fan deposits consisting of poorly sorted, dense, sandy or gravelly clay and Pleistocene marine terrace deposits (Graymer, 2000). The site is located approximately 1,500 feet east-northeast of the Brooklyn Basin. The active northwest trending Hayward fault is located approximately 3½ miles east of the site.

The East Bay Plain is regionally divided into two major groundwater basins: the San Pablo and the San Francisco Basin. These basins are tectonic depressions that are filled primarily with a sequence of coalescing alluvial fans. The San Francisco Basin is further divided into seven sub-areas. The site is located in the Oakland Sub-Area, which is filled primarily by alluvial deposits that range from 300 to 700 feet thick with no well-defined aquitards (CRWQCB, 1999). Under natural conditions, the direction of groundwater flow in the East Bay Plain is east to west.

The site is located approximately 1,400 east of the Brooklyn Basin. The basin is connected to the Oakland Estuary tidal canal which connects to San Leandro Bay to the south and the Oakland Inner Harbor to the west, which connects to the San Francisco Bay. The San Francisco Bay is located approximately 5 miles west and 2 miles south of the site. Groundwater flow direction is predominantly to the west towards the basin consistent with site data. Groundwater recharge in the shallow aquifer occurs by infiltration from precipitation, irrigation, and stream flow.

### **Local Geology**

The local geology and hydrogeology of the site was evaluated using boring logs from previous investigations and monitoring data. The lithology of the site consists primarily of silt to sandy clay with lenses of fine sand and gravel.

Soil boring logs from previous investigations are included in Attachment C. Cross sections were prepared using boring logs and monitoring well construction details to illustrate subsurface conditions. Geologic cross section locations are shown on Plate 5. Cross sections A-A', B-B', and C-C' are presented as Plates 6 through 11.

### **Local Hydrogeology**

The depth to groundwater beneath the site has varied over time and has ranged from approximately 4.2 fbgs to 16.5 fbgs. Currently, groundwater is encountered at depths ranging from approximately 5.1 fbgs to 16.2 fbgs. Cumulative results of groundwater monitoring and sampling indicate that the groundwater flow direction is predominantly towards the west-southwest. The most recent groundwater data from December 15, 2006, indicate that the groundwater flow direction is towards the west. A rose diagram showing groundwater flow direction is included on Plate 4. Cumulative results of groundwater monitoring and sampling events are provided in Tables 1A and 1B.

Groundwater elevation data versus time is presented on Graphs 5 through 12 for monitoring wells MW9A through MW9D and MW9F through MW9I, respectively. The hydrographs also include concentrations of TPHg, benzene, MTBE, and tertiary butyl alcohol (TBA) versus time.

## **SITE CONDITIONS**

### **Petroleum Hydrocarbon Concentrations in Soil**

The vertical and lateral distribution of petroleum hydrocarbons in soil were delineated by 23 soil borings advanced between May 1988 and October 1989 (HLA, 1989). Concentrations of petroleum hydrocarbons were reported in soil samples collected in the vicinity of the dispenser islands located on the west side of the station. Concentrations of TPHg were reported in samples collected from boring SB4 (located between the station building and the dispenser island) at a maximum of 160 mg/kg and in boring MW9E (located on the southwest side of the dispenser island) at a maximum of 1,900 mg/kg. Concentrations of benzene were reported in soil samples collected from boring SB4 at a maximum concentration of 1.0 mg/kg. The vertical extent of TPHg and benzene in soil is defined at 9.0 fbgs at both borings SB4 and MW9E with concentrations not reported at or above the laboratory reporting limits.

In 1990, an area, approximately 12 by 23 feet, between the southwestern product dispensers and the sidewalk and also the location of boring MW9E, was excavated to 7 fbgs. Concentrations of TPHg and benzene were reported at a maximum of 290 mg/kg (S5, 5 fbgs) and 2.8 mg/kg (S5, 5 fbgs) in a sidewall sample.

In 1991, the USTs and approximately 115 feet of product lines were removed (WCC, 1992). Petroleum hydrocarbons were reported in six product line trench samples and in four of the six soil samples collected from the base of the sidewalls of the excavated UST pit. Concentrations of TPHg were reported in five soil samples: TP1 at 190 mg/kg, TP2 at 1,100 mg/kg, P2 at 1,200 mg/kg, P3 at 190 mg/kg, and P6

at 240 mg/kg. Concentrations of benzene were reported in sample TP1 at 0.88 mg/kg and in sample P2 at 10 mg/kg.

The original tank pit was further excavated and confirmation soil samples were collected from the west and south sides of the tank pit. The three product line locations with TPHg concentrations in excess of 100 mg/kg were excavated vertically to depths of 11 to 13 fbs and confirmation soil samples were collected. Concentrations of TPHg in the confirmation samples ranged from not reported above the laboratory reporting limit to 2.5 mg/kg (TC1 at 12 fbs).

The distribution of remaining TPHg and benzene concentrations in soil is shown on Plates 12 and 13 and on the cross sections on Plates 7, 9, and 11, respectively. Cumulative soil analytical results are summarized in Tables 2A, 2B, and 2C. The locations of the excavation, tank pit, and product line trench samples are shown on Plates 3, 12, and 13.

## **Groundwater Conditions**

### **Dissolved Constituent Distribution in Groundwater**

Quarterly monitoring of groundwater quality has been conducted at the site since 1988. Groundwater monitoring data are summarized in Tables 1A and 1B. Select analytical results from the December 15, 2006, sampling event are shown on Plate 14. The groundwater monitoring report was submitted under separate cover (ERI, 2007).

The site currently has five on-site groundwater monitoring wells (MW9A, MW9B, MW9C, MW9D, and MW9I), three off-site groundwater monitoring wells (MW9F, MW9G, and MW9H), two tank pit observation wells (TP1 and TP2), and four DPE wells (DPE1 through DPE4). The maximum concentrations of TPHg, MTBE, and TBA have been reported in well MW9C at 70,400 µg/L (04/12/02), 150,000 µg/L (04/21/98 using EPA Method 8260B), and 90,700 µg/L (01/06/04), respectively. Benzene was reported at a maximum concentration of 2,000 µg/L (02/26/99) in well MW9B. Beginning in January 2001, MTBE was also included in the calculation of TPHg results. Isoconcentration maps showing the distribution of TPHg, benzene, MTBE, and TBA on October 1, 2003 (prior to system startup) are shown on Plates 15 through 18, respectively.

Since the start up of the DPE remediation system in January 2004, declining concentration trends in groundwater have been observed and continue to be observed. During the last four quarters of monitoring the maximum reported concentrations of TPHg, benzene, and MTBE were found in well MW9A at 400 µg/L (03/07/06), <2.5 µg/L (12/15/06), and 560 µg/L (03/07/06), respectively. A concentration of 0.63 µg/L benzene was also reported in well MW9B (6/26/06). The maximum concentration of TBA was reported in well MW9I at 10,300 µg/L (09/25/06). Isoconcentration maps showing the distribution of TPHg, benzene, MTBE, and TBA on December 15, 2006 are shown on Plates 19 through 22, respectively.

Hydrographs presenting groundwater elevations over time, TPHg, BTEX, and the oxygenated compound concentrations were prepared for wells MW9A through MW9D and MW9F through M9I and are included as Graphs 5 through 12. These concentration hydrographs indicate that petroleum hydrocarbon concentrations have declined over time.

The decline in analyte concentrations may be attributed to remediation. As described in the Remedial Measures section of this report, soil containing petroleum hydrocarbons was removed when soil was excavated between the southwestern product dispenser and the sidewalk, during the UST removal and replacement project, and the DPE system began operation in January 2004. These activities have contributed to subsurface source removal and mass reduction resulting in groundwater analyte concentrations exhibiting stable or declining trends.

### **Lateral Delineation of Petroleum Hydrocarbons in Groundwater**

The lateral extent of benzene concentrations in groundwater is defined across the site by wells MW9A through MW9D and MW9F through MW9I. Benzene has not been reported at or above the laboratory reporting limit since June 26, 2006, when it was reported at 0.63 µg/L in well MW9B.

The lateral extent of TPHg and MTBE concentrations in groundwater is not defined north of well MW9C or south of wells MW9A and MW9G; however, concentrations of TPHg and are defined to the east by well MW9D and to the west by wells MW9B and MW9F. Concentrations of TPHg have not been reported at or above the laboratory reporting limit in wells MW9B, MW9D, and MW9F since June 26, 2006 when it was reported at 130 µg/L in well MW9B.

The lateral extent of TBA concentrations in groundwater is defined to the north by MW9C, to the east by MW9D, to the south by MW9G, and to the west by MW9F and MW9H. The lateral extent of TBA concentrations is not defined southwest of well MW9I and southeast of well MW9A.

Select groundwater analytical results from the December 15, 2006 monitoring and sampling event are shown on Plate 14. Isoconcentration maps showing TPHg, benzene, MTBE, and TBA concentrations on October 1, 2003 (before DPE remediation was started) are shown on Plates 15 through 18, respectively. Isoconcentration maps showing TPHg, benzene, MTBE, and TBA concentrations on December 15, 2006 (most recent quarterly monitoring event and DPE remediation ongoing) are shown on Plates 19 through 22, respectively. As shown on the plates the lateral extent of petroleum hydrocarbon constituents in groundwater has been reduced by active remediation.

### **Vertical Delineation of Petroleum Hydrocarbons in Groundwater**

The vertical extent of petroleum hydrocarbons in groundwater has not been investigated.

### **Liquid-Phase Hydrocarbons**

To date, liquid-phase hydrocarbons have not been observed in the groundwater monitoring wells at the site.

### **Preferential Pathway Study**

ERI updated the sensitive receptor survey (SRS) in September 2006. The original SRS report was completed in 2000. The SRS is updated annually. Underground gas, electric, water, sewer, storm drain, and telephone lines are located adjacent to the site (Plate 23). Based on utility depth information gathered by PEG in 1996, and based on depth to water measurements in monitoring wells MW9F and MW9G ranging from 4 to 8 fbgs, it is likely that at least some of the trenches are submerged during periods of high groundwater levels. These utility trenches may provide conduits for groundwater migration during periods of high groundwater levels.

### **Public Water Supply Wells and Private Water Wells**

A search of Department of Water Resource well logs and information from the Alameda County Public Works (Public Works) did not identify public use water wells within 1,500 meters of the site and did not identify private use water wells within 300 meters of the site.

### **Surface Water Bodies and Wetlands**

The Brooklyn Basin Tidal Canal is located approximately 1,400 feet west of the site.



## **Schools, Hospitals, Day Care Centers, Residential Buildings, and Public Use Areas**

There is one school located within a 2,000-foot radius of the site. Life Academy High School is located 300 feet northwest of the site. Residential buildings or other public use areas were not identified within 100 meters of the site.

## **Utility Vaults, Storm Drains, and Underground Utility Lines**

No sub-grade structures were identified within 100 meters of the site. Nine utility vaults, including two storm drains, are located on and adjacent to the site. Uses for eight of these vaults were identified (including water and electrical). Use of the other vault was not identified. Several utility trenches are located on and adjacent to the site including Pacific Gas and Electric Company (PG&E) Subsurface Gas & Electrical Lines, EBMUD Potable Water Lines, and City of Oakland Office of Public Works Sanitary Sewer Lines. Two storm drains (that discharge to the tidal canal) are located within 10 meters of the site. The City of Oakland Public Works Department confirmed that the storm drains discharge into the tidal canal located 1,400 feet to the west of the site. Sanitary sewer vaults were not identified on or adjacent to the site, but are inferred to exist. Sanitary sewer lines run northeast-southwest beneath 22<sup>nd</sup> Avenue and southeast-northwest beneath East 12<sup>th</sup> Street. The locations of the known utility lines are shown on Plate 23.

## **SUMMARY AND CONCLUSIONS**

Based on the information available to date, the following conclusions are presented:

- The site is an active service station and is paved with asphalt.
- Land use in the site vicinity is mixed-use commercial/industrial and residential.
- Investigations have been conducted at the site since 1988.
- Cumulative soil analytical data indicate that TPHg and benzene concentrations in soil have decreased and that remedial activities were effective.
- Cumulative groundwater analytical data indicate that the remedial activities have reduced hydrocarbon concentrations in groundwater on site and that natural attenuation may be occurring.
- Sensitive receptors in the vicinity of the site are unlikely to encounter petroleum hydrocarbons in groundwater. Utility line trenches may provide conduits for groundwater migration during periods of seasonal high groundwater levels.
- The lateral extent of TPHg and benzene concentrations in soil has been defined to the north by SB9, SB10, and SB11; to the east by MW9D; to the south MW9G; and to the west by SB6 and SB7. Concentrations of TPHg and benzene were not reported at or above the laboratory reporting limit in these samples.
- The vertical extent of TPHg and benzene concentrations in soil has been defined by borings B9-2, SB4, SB5, and SB8. Concentrations of TPHg and benzene were not reported at or above the laboratory reporting limit in the lowermost samples from these borings.
- The lateral extent of benzene in groundwater is defined across the site. Concentrations of benzene were not reported at or above the laboratory reporting limit in samples collected from wells MW9A through MW9D and MW9F through MW9I since June 2006.
- The lateral extent of TPHg and MTBE concentrations are not defined north of MW9C or south of wells MW9A and MW9G; however, concentrations of TPHg are defined to the east by well MW9D and to the west by wells MW9B and MW9F.

- The lateral extent of TBA concentrations in groundwater is defined to the north by MW9C, to the east by MW9D, to the south by MW9G, and to the west by MW9F and MW9H. The lateral extent of TBA concentrations is not defined southwest of well MW9I and southeast of well MW9A.

## RECOMMENDATIONS

Based on the results of these conclusions, ERI recommends further investigation including:

- Advancing one soil boring in the vicinity of the former used-oil tank to investigate the vertical distribution of dissolved TPHg, benzene, MTBE, and TBA in soil and groundwater.
- Advancing one soil boring southwest of MW9A to investigate the lateral distribution of dissolved TPHg, benzene, MTBE, and TBA in soil and groundwater.
- Advancing one soil boring southwest of MW9I to investigate the vertical and lateral distribution of TPHg, benzene, MTBE, and TBA in soil and groundwater.
- Advancing two soil borings beneath the elevated BART tracks southwest of MW9I to investigate the vertical and lateral distribution of dissolved TPHg, benzene, MTBE, and TBA in groundwater.
- Advancing one soil boring west of MW9B to investigate the vertical and lateral distribution of dissolved TPHg, benzene, MTBE, and TBA in soil and groundwater.
- Advance two soil borings at 2121 East 12<sup>th</sup> Street to investigate the lateral distribution of dissolved TPHg, benzene, MTBE, and TBA in groundwater west-southwest of MW9H and downgradient of the site.

In addition to these specific areas of investigation, the DPE remediation should continue to be operated, and the overall site conditions should continue to be monitored by quarterly monitoring and sampling of the groundwater monitoring wells to evaluate the groundwater flow direction, hydraulic gradient, and dissolved hydrocarbon concentrations. The proposed boring locations are shown on Plate 24.

## DOCUMENT DISTRIBUTION

ERI recommends that a signed copy of this report be forwarded to the following:

Mr. Steven Plunkett  
Alameda County Health Care Services Agency  
Department of Environmental Health  
1131 Harbor Bay Parkway, Suite 250  
Alameda, California 94502-6577

Mr. Chuck Headlee  
California Regional Water Quality Control Board  
San Francisco Bay Region  
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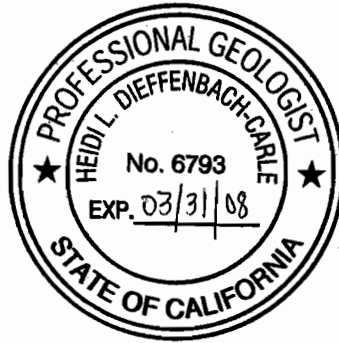
Mr. Robert C. Ehlers, M.S., P.E.  
The Valero Companies  
Environmental Liability Management  
685 West Third Street  
Hanford, California 93230

**LIMITATIONS**

This report was prepared in accordance with generally accepted standards of environmental practice in California at the time this investigation was performed. This report has been prepared for Exxon Mobil, and any reliance on this report by third parties shall be at such party's sole risk.

Please contact Ms. Paula Sime, ERI's project manager for this site, at (707) 766-2000 with any questions regarding this report.

Sincerely,  
Environmental Resolutions, Inc.



*Heidi Search*  
*for*  
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**SCANNED IMAGE**

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**TABLE 1A**  
**CUMULATIVE GROUNDWATER MONITORING AND SAMPLING DATA**  
Former Exxon Service Station 7-0238  
2200 East 12th Street  
Oakland, California  
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Well ID	Sampling Date	TOC (feet)	DTW (feet)	GW Elev. (feet)	SUBJ	TPHg (µg/L)	MTBE 8021B (µg/L)	MTBE 8260B (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)
MW9A	06/13/88	---	---	---	---	---	---	---	<0.5	<1.0	<2.0	<1.0
MW9A	10/24/88	---	---	---	---	---	---	---	<0.5	<1.0	<2.0	<1.0
MW9A	10/13/89	100.07 l	---	---	---	---	---	---	<0.5	<0.5	<0.5	<3.0
MW9A	10/19/90	100.07 l	---	---	---	<50	---	---	<0.5	<0.5	<0.5	<0.5
MW9A	02/05/92	100.07 l	6.93	93.14	---	<50	---	---	1.1	1.8	0.6	1.3
MW9A	05/05/92	100.07 l	6.95	93.12	---	<50	---	---	<0.5	<0.5	<0.5	<0.5
MW9A	09/14/92	100.07 l	7.65	92.42	---	<50	---	---	<0.5	<0.5	<0.5	<0.5
MW9A	11/16/92	100.07 l	7.35	92.72	---	<50	---	---	1.1	<0.5	<0.5	<0.5
MW9A	02/03/93	100.07 l	7.85	92.22	---	140	---	---	17	19	1.6	20
MW9A	05/18/93	100.07 l	6.95	93.12	---	<50	---	---	0.8	<0.5	1.3	7
MW9A	08/26/93	100.07 l	7.14	92.93	---	<50	---	---	<0.5	<0.5	<0.5	<0.5
MW9A	11/04/93	100.07 l	7.23	92.84	---	<50	---	---	<0.5	<0.5	<0.5	<0.5
MW9A	02/04/94	100.07 l	6.70	93.37	---	<50	---	---	<0.5	<0.5	<0.5	<0.5
MW9A	05/31/94	100.07 l	6.74	93.33	---	<50	---	---	<0.5	<0.5	<0.5	<0.5
MW9A	10/26/94	11.46	7.06	4.40	---	<50	---	---	<0.5	<0.5	<0.5	<0.5
MW9A	05/15/95	11.46	6.32	5.14	---	<50	---	---	<0.5	<0.5	<0.5	<0.5
MW9A	11/02/95	11.46	7.16	4.30	NLPH	<50	---	---	0.52	0.67	<0.5	<0.5
MW9A	04/26/96	11.46	6.33	5.13	NLPH	---	<10	---	<0.5	<0.5	<0.5	<0.5
MW9A	08/22/96	11.46	7.02	4.44	NLPH	---	---	---	---	---	---	---
MW9A	02/24/97	11.46	---	---	---	---	---	---	---	---	---	---
MW9A	03/16/98	11.46	6.14	5.32	NLPH	<200	40,000	---	7.9	<2.0	<2.0	<2.0
MW9A	04/21/98	11.46	6.29	5.17	NLPH	<50	53,000	---	3.8	<0.5	<0.5	<0.5
MW9A	07/22/98	14.53	6.58	7.95	NLPH	<250	18,000	---	<2.5	<2.5	<2.5	<2.5
MW9A	12/22/98	14.53	6.47	8.06	NLPH	<50	5,200	---	<0.5	<0.5	<0.5	<0.5
MW9A	02/26/99	14.53	6.38	8.15	NLPH	<100	10,000	---	<1.0	<1.0	<1.0	<1.0
MW9A	05/27/99 a	14.53	6.56	7.97	NLPH	<5,000	15,300	---	<50	<50	<50	<50
MW9A	08/03/99	14.53	9.39	5.14	NLPH	<50	<2.5	---	<0.5	<0.5	<0.5	<0.5
MW9A	12/03/99	14.53	6.52	8.01	NLPH	<50	1,400	---	<0.5	<0.5	<0.5	0.67 b
MW9A	02/29/00	14.53	5.31	9.22	NLPH	<50	20,000	---	1.2	<0.5	<0.5	<0.5
MW9A	05/18/00	14.53	6.31	8.22	NLPH	<50	14,000	11,000	<0.5	<0.5	<0.5	<0.5
MW9A	07/24/00	14.53	6.54	7.99	NLPH	<50	7,400	---	<0.5	<0.5	<0.5	<0.5
MW9A	10/09/00	14.53	6.00	8.53	NLPH	<50	2,300	---	<0.5	<0.5	<0.5	<0.5
MW9A	01/10/01	14.53	6.34	8.19	NLPH	<50	3,700	---	<0.5	<0.5	<0.5	<0.5
MW9A	04/10/01	14.53	9.31	5.22	NLPH	<50	11,000	---	<0.5	<0.5	<0.5	<0.5
MW9A	07/12/01	14.53	---	---	NLPH	<50	3,600	---	<0.5	<0.5	<0.5	<0.5
MW9A	08/17/01 c	14.53	6.61	7.92	---	---	---	---	<0.5	<0.5	<0.5	<0.5
MW9A	10/11/01	14.53	7.03	7.50	NLPH	<50	1,700	---	<0.5	<0.5	<0.5	<0.5
MW9A	10/11/01	14.51	Well surveyed in compliance with AB2886 requirements.				---	---	<0.5	<0.5	<0.5	<0.5
MW9A	01/11/02	14.51	5.93	8.58	NLPH	2,090e	31,000e	---	18.6e	<0.50	<0.50	<0.50
MW9A	04/12/02	14.51	6.41	8.10	NLPH	34,300	32,200	---	<5.00	<5.00	<5.00	<5.00
MW9A	07/12/02	14.51	6.64	7.87	NLPH	6,760	8,070	---	<0.5	<0.5	<0.5	<0.5
MW9A	10/11/02	14.51	6.76	7.75	NLPH	2,420	2,860	3,040	<0.5	<0.5	<0.5	<0.5

**TABLE 1A**  
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Former Exxon Service Station 7-0238  
2200 East 12th Street  
Oakland, California  
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Well ID	Sampling Date	TOC (feet)	DTW (feet)	GW Elev. (feet)	SUBJ	TPHg (µg/L)	MTBE 8021B (µg/L)	MTBE 8260B (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)
MW9A	01/10/03	14.51	5.90	8.61	NLPH	38,800	51,900	---	103	15.0	<5.0	13.0
MW9A	04/09/03	14.51	6.38	8.13	NLPH	34,200	38,600	---	14.0	<5.0	<5.0	<5.0
MW9A	07/22/03	14.51	6.56	7.95	NLPH	20,200	19,500	---	0.50	<0.5	<0.5	<0.5
MW9A	10/01/03	14.51	6.72	7.79	NLPH	9,460	---	7,620	0.70	<0.5	<0.5	<0.5
MW9A	01/06/04	14.51	5.89	8.62	NLPH	8,540	11,600	---	<0.50	<0.5	<0.5	<0.5
MW9A	06/07/04	14.51	6.80	7.71	NLPH	3,470	---	5,600	<0.50	<0.5	<0.5	<0.5
MW9A	08/30/04 d	14.51	---	---	---	---	---	---	---	---	---	---
MW9A	12/13/04	14.51	5.99	8.52	NLPH	1,130	---	1,360	<0.50	<0.5	<0.5	<0.5
MW9A	03/14/05	14.51	6.03	8.48	NLPH	2,150	---	2,560	0.80	<0.5	<0.5	<0.5
MW9A	06/08/05	14.51	14.33	0.18	NLPH	1,610	---	2,040	<0.50	<0.5	<0.5	<0.5
MW9A	09/01/05	14.51	6.50	8.01	NLPH	1,020	---	1,320	<0.50	<0.50	<0.50	<0.50
MW9A	12/09/05 i	14.51	16.50	-1.99	NLPH	1,140	---	801	1.16	<0.50	<0.50	<0.50
MW9A	12/30/05	14.51	5.21	9.30	NLPH	---	---	---	---	---	---	---
MW9A	03/07/06	14.51	16.01	-1.50	NLPH	400	---	560	<2.5	<2.5	<2.5	<2.5
MW9A	06/26/06	14.51	6.10	8.41	NLPH	390	---	430	<2.5	<2.5	<2.5	<2.5
MW9A	09/25/06	14.51	6.54	7.97	NLPH	150	---	172	<0.50	<0.50	<0.50	<0.50
MW9A	12/15/06	14.51	16.21	-1.70	NLPH	250k	---	190	<2.5	<2.5	<2.5	<2.5
MW9B	06/13/88	---	---	---	---	---	---	---	350	7.8	66	160
MW9B	10/24/88	---	---	---	---	---	---	---	84	<1.0	3.1	3.2
MW9B	10/13/89	98.41 l	---	---	---	---	---	---	4.1	<0.5	<0.5	<3.0
MW9B	10/19/90	98.41 l	---	---	---	62	---	---	27	<0.5	2.3	<0.5
MW9B	02/05/92	98.41 l	5.95	92.46	---	60	---	---	14	<0.5	2.9	2.5
MW9B	05/05/92	98.41 l	5.92	92.49	---	620	---	---	180	2.4	8.4	2.2
MW9B	09/14/92	98.41 l	6.60	91.81	---	110	---	---	9.6	<0.5	<0.5	<0.5
MW9B	11/16/92	98.41 l	6.35	92.06	---	200	---	---	33	<0.5	4.2	1.4
MW9B	02/03/93	98.41 l	6.50	91.91	---	12,000	---	---	320	13	35	110
MW9B	05/18/93	98.41 l	6.42	91.99	---	180	---	---	1.1	<0.5	2.6	5.9
MW9B	08/26/93	98.41 l	6.28	92.13	---	180	---	---	36	<0.5	3	1.7
MW9B	11/04/93	98.41 l	6.23	92.18	---	98	---	---	13	<0.5	1.4	<0.5
MW9B	02/04/94	98.41 l	5.92	92.49	---	790	---	---	170	1.3	12	0.8
MW9B	05/31/94	98.41 l	9.22	89.19	---	1,000	---	---	150	2.5	8.0	2.1
MW9B	10/26/94	9.80	6.04	3.76	---	84	---	---	2.8	0.72	<0.5	<0.5
MW9B	05/15/95	9.80	5.34	4.46	---	2,800	---	---	420	25	27	6.7
MW9B	11/02/95	9.80	6.14	3.66	NLPH	130	<10	---	3.3	<0.5	<0.5	<0.5
MW9B	04/26/96	9.80	5.66	4.14	NLPH	270	70	---	130	2.8	6.7	<3
MW9B	08/22/96	9.80	6.16	3.64	NLPH	210	31	---	5.7	6.8	1.1	9.2
MW9B	02/24/97	9.80	5.58	4.22	NLPH	1,400	1,300	---	76	1.4	4.1	1.2
MW9B	03/16/98	12.83	5.32	7.51	NLPH	860	1,500	---	140	2.0	1.1	<2.0
MW9B	04/21/98	12.83	5.49	7.34	NLPH	1,800	18,000	---	300	<5.0	7.9	<5.0
MW9B	07/22/98	12.83	5.79	7.04	NLPH	<500	26,000	---	13	<5.0	<5.0	<5.0
MW9B	12/22/98	12.83	5.69	7.14	NLPH	700	21,000	---	110	3.1	9.1	14



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Well ID	Sampling Date	TOC (feet)	DTW (feet)	GW Elev. (feet)	SUBJ	TPHg (µg/L)	MTBE 8021B (µg/L)	MTBE 8260B (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)
MW9B	02/26/99	12.83	5.10	7.73	NLPH	8,800	8,000	---	2,000	<25	52	38
MW9B	05/18/99	12.83	5.65	7.18	NLPH	<10,000	42,100	---	158	<100	<100	<100
MW9B	08/03/99	12.83	6.24	6.59	NLPH	960	24,900	---	<5.0	<5.0	<5.0	<5.0
MW9B	12/03/99	12.83	5.66	7.17	NLPH	<50	1,000	---	<0.5	<0.5	<0.5	<0.5
MW9B	02/29/00	12.83	4.61	8.22	NLPH	3,100	25,000	---	900	7	23	7.1
MW9B	05/18/00	12.83	5.54	7.29	NLPH	780	34,000	26,000	150	<2.5	4.5	<2.5
MW9B	07/24/00	12.83	8.75	4.08	NLPH	<250	39,000	---	8	<2.5	<2.5	<2.5
MW9B	10/09/00	12.83	4.84	7.99	NLPH	<1,200	30,000	---	1.7	<0.5	<0.5	<0.5
MW9B	01/10/01	12.83	5.56	7.27	NLPH	<250	32,000	---	5.3	<0.5	<0.5	<0.5
MW9B	04/10/01	12.83	5.40	7.43	NLPH	360	27,000	---	69.0	<2.5	22.0	29.8
MW9B	07/12/01	12.83	---	---	NLPH	<250	41,000	---	<2.5	<2.5	<2.5	<2.5
MW9B	08/17/01 c	12.83	5.83	7.00	---	---	---	---	---	---	---	---
MW9B	10/11/01	12.83	8.70	4.13	NLPH	<250	24,000	---	<2.5	<2.5	<2.5	<2.5
MW9B	11/01/01	12.84	Well surveyed in compliance with AB2886 requirements.									
MW9B	01/11/02	12.84	5.16	7.68	NLPH	9,170e	14,600e	---	66.0e	<10.0	54.0	<10.0
MW9B	04/12/02	12.84	5.57	7.27	NLPH	29,600	28,600	---	12.0	<5.00	<5.00	<5.00
MW9B	07/12/02	12.84	5.81	7.03	NLPH	20,200	27,700	---	<10.0	14.0	<10.0	16.0
MW9B	10/11/02 f	12.84	5.91	6.93	NLPH	18,900	24,300	28,200	2.3	<0.5	<0.5	<0.5
MW9B	01/10/03	12.84	5.09	7.75	NLPH	14,900	18,600	---	118	1.0	6.5	3.6
MW9B	04/09/03	12.84	5.51	7.33	NLPH	21,800	24,900	---	51.0	<5.0	<5.0	<5.0
MW9B	07/22/03	12.84	6.09	6.75	NLPH	33,500	36,900	---	<0.50	<0.5	<0.5	<0.5
MW9B	10/01/03	12.84	6.16	6.68	NLPH	25,500	---	19,100	1.10	<0.5	<0.5	<0.5
MW9B	01/06/04	12.84	5.14	7.70	NLPH	10,400	---	15,700	16.9	1.8	18.6	1.7
MW9B	06/07/04	12.84	9.47	3.37	NLPH	3,910	---	1,960	<0.50	<0.5	<0.5	<0.5
MW9B	08/30/04	12.84	h	h	h	954h	---	925h	<0.50h	<0.5h	<0.5	<0.5h
MW9B	12/13/04	12.84	4.96	7.88	NLPH	233	---	140	0.90	<0.5	<0.5	<0.5
MW9B	03/14/05	12.84	5.52	7.32	NLPH	523	---	504	<0.50	<0.5	<0.5	<0.5
MW9B	06/08/05	12.84	6.70	6.14	NLPH	114	---	130	<0.50	<0.5	<0.5	<0.5
MW9B	09/01/05	12.84	5.92	6.92	NLPH	90.5	---	82.6	0.55	<0.50	<0.50	<0.50
MW9B	12/09/05	12.84	8.46	4.38	NLPH	207	---	149	<0.50	<0.50	<0.50	<0.50
MW9B	12/30/05	12.84	4.59	8.25	NLPH	---	---	---	---	---	---	---
MW9B	03/07/06	12.84	6.41	6.43	NLPH	98	---	64	<0.50	<0.50	<0.50	<0.50
MW9B	06/26/06	12.84	5.71	7.13	NLPH	130	---	39	0.63	<0.50	0.53	0.53
MW9B	09/25/06	12.84	6.35	6.49	NLPH	<50.0	---	7.40	<0.50	<0.50	<0.50	<0.50
<b>MW9B</b>	<b>12/15/06</b>	<b>12.84</b>	<b>6.77</b>	<b>6.07</b>	<b>NLPH</b>	<b>&lt;50</b>	<b>---</b>	<b>11</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>
MW9C	06/13/88	---	---	---	---	---	---	---	<0.5	<1.0	<2.0	<1.0
MW9C	10/24/88	---	---	---	---	---	---	---	<0.5	<1.0	<2.0	<1.0
MW9C	10/13/89	99.73 l	---	---	---	---	---	---	<0.5	<0.5	<0.5	<3.0
MW9C	10/19/90	99.73 l	---	---	---	<50	---	---	<0.5	<0.5	<0.5	<0.5
MW9C	02/05/92	99.73 l	6.44	93.29	---	<50	---	---	<0.5	<0.5	<0.5	<0.5
MW9C	05/05/92	99.73 l	6.50	93.23	---	<50	---	---	<0.5	<0.5	<0.5	<0.5

**TABLE 1A**  
**CUMULATIVE GROUNDWATER MONITORING AND SAMPLING DATA**  
Former Exxon Service Station 7-0238  
2200 East 12th Street  
Oakland, California  
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Well ID	Sampling Date	TOC (feet)	DTW (feet)	GW Elev. (feet)	SUBJ	TPHg (µg/L)	MTBE 8021B (µg/L)	MTBE 8260B (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)
MW9C	09/14/92	99.73	7.00	92.73	---	<50	---	---	<0.5	<0.5	<0.5	<0.5
MW9C	11/16/92	99.73	6.72	93.01	---	<50	---	---	<0.5	<0.5	<0.5	<0.5
MW9C	02/03/93	99.73	5.75	93.98	---	<50	---	---	<0.5	<0.5	<0.5	<0.5
MW9C	05/18/93	99.73	6.72	93.01	---	<50	---	---	<0.5	<0.5	<0.5	<0.5
MW9C	08/26/93	99.73	6.84	92.89	---	<50	---	---	<0.5	<0.5	<0.5	<0.5
MW9C	11/04/93	99.73	6.90	92.83	---	<50	---	---	<0.5	<0.5	<0.5	<0.5
MW9C	02/04/94	99.73	6.28	93.45	---	<50	---	---	<0.5	<0.5	<0.5	<0.5
MW9C	05/31/94	99.73	6.42	93.31	---	---	---	---	<0.5	<0.5	<0.5	<0.5
MW9C	10/26/94	11.14	6.80	4.34	---	---	---	---	<0.5	<0.5	<0.5	<0.5
MW9C	05/15/95	11.14	5.72	5.42	---	---	---	---	<0.5	<0.5	<0.5	<0.5
MW9C	11/02/95	11.14	6.88	4.26	---	---	---	---	<0.5	<0.5	<0.5	<0.5
MW9C	04/26/96	11.14	6.28	4.86	---	---	---	---	<0.5	<0.5	<0.5	<0.5
MW9C	08/22/96	11.14	6.65	4.49	---	---	---	---	<0.5	<0.5	<0.5	<0.5
MW9C	03/16/98	11.14	5.51	5.63	NLPH	<500	150,000	---	24	<5.0	<5.0	<5.0
MW9C	04/21/98	11.14	5.83	5.31	NLPH	150	130,000	150,000	<0.5	<0.5	<0.5	<0.5
MW9C	07/22/98	14.19	6.43	7.76	NLPH	<500	95,000	---	<5.0	<5.0	<5.0	<5.0
MW9C	12/22/98	14.19	6.16	8.03	NLPH	<500	84,000	---	<5.0	<5.0	<5.0	<5.0
MW9C	02/26/99	14.19	5.46	8.73	NLPH	<250	55,000	---	<2.5	<2.5	<2.5	<2.5
MW9C	05/18/99	14.19	6.27	7.92	NLPH	<25,000	68,900	---	<250	<250	<250	<250
MW9C	08/03/99	14.19	7.13	7.06	NLPH	210	69,200	---	<1.0	1.3	<1.0	<1.0
MW9C	12/03/99	14.19	6.17	8.02	NLPH	290	50,000	---	<2.5	<2.5	<2.5	<2.5
MW9C	02/29/00	14.19	4.49	9.70	NLPH	<250	40,000	---	<2.5	<2.5	<2.5	<2.5
MW9C	05/18/00	14.19	5.96	8.23	NLPH	<250	46,000	33,000	<2.5	<2.5	<2.5	<2.5
MW9C	07/24/00	14.19	6.47	7.72	NLPH	<250	44,000	---	<2.5	<2.5	<2.5	<2.5
MW9C	10/09/00	14.19	6.57	7.62	NLPH	<250	39,000	---	<2.5	<2.5	<2.5	<2.5
MW9C	01/10/01	14.19	6.09	8.10	NLPH	<250	42,000	---	<2.5	<2.5	<2.5	<2.5
MW9C	04/10/01	14.19	7.88	6.31	NLPH	<250	35,000	---	<2.5	<2.5	<2.5	<2.5
MW9C	07/12/01	14.19	---	---	NLPH	<250	32,000	---	<2.5	<2.5	<2.5	<2.5
MW9C	08/17/01 c	14.19	6.60	7.59	---	---	---	---	---	---	---	---
MW9C	10/11/01	14.19	6.67	7.52	NLPH	<250	53,000	---	<2.5	<2.5	<2.5	<2.5
MW9C	11/01/01	14.16	Well surveyed in compliance with AB2886 requirements.				---	---	---	---	---	---
MW9C	01/11/02	14.16	5.29	8.87	NLPH	2,470e	90,000e	---	0.90e	<0.50	<0.50	<0.50
MW9C	04/12/02	14.16	6.14	8.02	NLPH	70,400	66,800	---	<5.00	<5.00	<5.00	<5.00
MW9C	07/12/02	14.16	6.54	7.62	NLPH	50,900	58,300	---	<500	<500	<500	<500
MW9C	10/11/02	14.16	6.73	7.43	NLPH	52,100	58,800	76,000	<10.0	<10.0	<10.0	<10.0
MW9C	01/10/03	14.16	5.21	8.95	NLPH	40,600	55,500	---	<0.5	<0.5	<0.5	<0.5
MW9C	04/09/03	14.16	6.08	8.08	NLPH	24,700	29,600	---	<5.00	<5.0	<5.0	<5.0
MW9C	07/22/03	14.16	6.47	7.69	NLPH	13,800	13,100	---	1.40	<0.5	<0.5	<0.5
MW9C	10/01/03	14.16	6.62	7.54	NLPH	9,100	---	38,400	0.70	<0.5	<0.5	<0.5
MW9C	01/06/04	14.16	4.86	9.30	NLPH	4,160	---	5,020	0.70	<0.5	<0.5	<0.5
MW9C	06/07/04	14.16	7.35	6.81	NLPH	4,480	---	3,420	<0.50	<0.5	<0.5	<0.5
MW9C	08/30/04	14.16	h	h	h	1,950h	---	1,950h	<0.50h	<0.5h	<0.5h	<0.5h

TABLE 1A  
 CUMULATIVE GROUNDWATER MONITORING AND SAMPLING DATA  
 Former Exxon Service Station 7-0238  
 2200 East 12th Street  
 Oakland, California  
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Well ID	Sampling Date	TOC (feet)	DTW (feet)	GW Elev. (feet)	SUBJ	TPHg (µg/L)	MTBE 8021B (µg/L)	MTBE 8260B (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)
MW9C	12/13/04	14.16	5.03	9.13	NLPH	610	---	705	<0.50	<0.5	<0.5	<0.5
MW9C	03/14/05	14.16	5.63	8.53	NLPH	906	---	1,110	<0.50	<0.5	<0.5	<0.5
MW9C	06/08/05	14.16	12.75	1.41	NLPH	854	---	1,100	<0.50	<0.5	<0.5	<0.5
MW9C	09/01/05	14.16	6.95	7.21	NLPH	361	---	409	<0.50	<0.50	<0.50	<0.50
MW9C	12/09/05	14.16	7.54	6.62	NLPH	217	---	171	<0.50	<0.50	<0.50	<0.50
MW9C	12/30/05	14.16	4.21	9.95	NLPH	---	---	---	---	---	---	---
MW9C	03/07/06	14.16	12.48	1.68	NLPH	320	---	480	<2.0	<2.0	<2.0	<2.0
MW9C	06/26/06	14.16	6.36	7.80	NLPH	350	---	300	<2.0	<2.0	<2.0	<2.0
MW9C	09/25/06	14.16	6.71	7.45	NLPH	136	---	234	<0.50	<0.50	<0.50	<0.50
<b>MW9C</b>	<b>12/15/06</b>	<b>14.16</b>	<b>12.21</b>	<b>1.95</b>	<b>NLPH</b>	<b>190k</b>	<b>---</b>	<b>260</b>	<b>&lt;1.0</b>	<b>&lt;1.0</b>	<b>&lt;1.0</b>	<b>&lt;1.0</b>
MW9D	10/24/88	---	---	---	---	---	---	---	<0.5	<1.0	<2.0	<1.0
MW9D	10/13/89	101.46 l	---	---	---	---	---	---	<0.5	<0.5	<0.5	<3.0
MW9D	10/19/90	101.46 l	---	---	---	<50	---	---	<0.5	<0.5	<0.5	<0.5
MW9D	02/05/92	101.46 l	7.78	93.68	---	<50	---	---	<0.5	<0.5	<0.5	<0.5
MW9D	05/05/92	101.46 l	7.90	93.56	---	<50	---	---	<0.5	<0.5	<0.5	<0.5
MW9D	09/14/92	101.46 l	8.45	93.01	---	<50	---	---	<0.5	<0.5	<0.5	<0.5
MW9D	11/16/92	101.46 l	8.10	93.36	---	<50	---	---	<0.5	<0.5	<0.5	<0.5
MW9D	02/03/93	101.46 l	7.07	94.39	---	<50	---	---	<0.5	<0.5	<0.5	<0.5
MW9D	05/18/93	101.46 l	7.85	93.61	---	<50	---	---	<0.5	<0.5	<0.5	<0.5
MW9D	08/26/93	101.46 l	8.30	93.16	---	<50	---	---	<0.5	<0.5	<0.5	<0.5
MW9D	11/04/93	101.46 l	8.33	93.13	---	<50	---	---	<0.5	<0.5	<0.5	<0.5
MW9D	02/04/94	101.46 l	7.66	93.80	---	<50	---	---	<0.5	<0.5	<0.5	<0.5
MW9D	05/31/94	101.46 l	6.80	94.66	---	---	---	---	<0.5	<0.5	<0.5	<0.5
MW9D	10/26/94	12.90	8.34	4.56	---	---	---	---	<0.5	<0.5	<0.5	<0.5
MW9D	05/15/95	12.90	7.22	5.68	---	---	---	---	<0.5	<0.5	<0.5	<0.5
MW9D	11/02/95	12.90	8.31	4.59	---	---	---	---	<0.5	<0.5	<0.5	<0.5
MW9D	04/26/96	12.90	7.58	5.32	---	---	---	---	<0.5	<0.5	<0.5	<0.5
MW9D	08/22/96	12.90	8.12	4.78	---	---	---	---	<0.5	<0.5	<0.5	<0.5
MW9D	03/16/98	12.90	6.94	5.96	NLPH	<50	10	---	<0.5	<0.5	<0.5	<0.5
MW9D	04/21/98	12.90	7.22	5.68	NLPH	<50	12	---	<0.5	<0.5	<0.5	<0.5
MW9D	07/22/98	15.98	7.85	8.13	NLPH	<50	13	---	<0.5	<0.5	<0.5	<0.5
MW9D	12/22/98	15.98	7.58	8.40	NLPH	<50	12	---	<0.5	<0.5	<0.5	<0.5
MW9D	02/26/99	15.98	6.42	9.56	NLPH	<50	310	---	<0.5	<0.5	<0.5	<0.5
MW9D	05/18/99	15.98	6.55	9.43	NLPH	<2,500	13,500	---	<0.5	<0.5	<0.5	<0.5
MW9D	08/03/99	15.98	8.34	7.64	NLPH	<50	<2.5	---	<0.5	<0.5	<0.5	<0.5
MW9D	12/03/99	15.98	7.56	8.42	NLPH	<50	<2	---	<0.5	<0.5	<0.5	<0.5
MW9D	02/29/00	15.98	4.82	11.16	NLPH	<50	2.5	---	<0.5	<0.5	<0.5	<0.5
MW9D	05/18/00	15.98	7.40	8.58	NLPH	<50	6.2	---	<0.5	<0.5	<0.5	<0.5
MW9D	07/24/00	15.98	7.91	8.07	NLPH	<50	14	---	<0.5	<0.5	0.85	0.74
MW9D	10/09/00	15.98	8.02	7.96	NLPH	<50	14	---	<0.5	<0.5	<0.5	<0.5
MW9D	01/10/01	15.98	7.26	8.72	NLPH	<50	18	---	<0.5	<0.5	<0.5	<0.5

**TABLE 1A**  
**CUMULATIVE GROUNDWATER MONITORING AND SAMPLING DATA**  
Former Exxon Service Station 7-0238  
2200 East 12th Street  
Oakland, California  
(Page 6 of 12)

Well ID	Sampling Date	TOC (feet)	DTW (feet)	GW Elev. (feet)	SUBJ	TPHg (µg/L)	MTBE 8021B (µg/L)	MTBE 8260B (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)
MW9D	04/10/01	15.98	7.32	8.66	NLPH	<50	14	---	<0.5	<0.5	<0.5	<0.5
MW9D	07/12/01	15.98	--	--	NLPH	<50	22	---	<0.5	<0.5	<0.5	<0.5
MW9D	08/17/01 d	15.98	---	---	---	---	---	---	---	---	---	---
MW9D	10/11/01	15.98	8.16	7.82	NLPH	<50	24	---	<0.5	<0.5	<0.5	<0.5
MW9D	11/01/01	15.97	Well surveyed in compliance with AB2886 requirements.									
MW9D	01/11/02	15.97	6.64	9.33	NLPH	352e	2.0e	---	<0.50	<0.50	<0.50	<0.50
MW9D	04/12/02	15.97	7.58	8.39	NLPH	191	192	---	<0.50	<0.50	<0.50	<0.50
MW9D	07/12/02	15.97	8.01	7.96	NLPH	108	124	---	<0.5	<0.5	<0.5	<0.5
MW9D	10/11/02	15.97	8.13	7.84	NLPH	187	243	---	<0.5	<0.5	<0.5	<0.5
MW9D	01/10/03	15.97	5.98	9.99	NLPH	386	132	---	4.1	<0.5	<0.5	<0.5
MW9D	04/09/03	15.97	7.53	8.44	NLPH	468	292	---	3.80	<0.5	<0.5	<0.5
MW9D	07/22/03	15.97	7.87	8.10	NLPH	446	339	---	0.70	<0.5	<0.5	<0.5
MW9D	10/01/03	15.97	8.04	7.93	NLPH	402	---	362	<0.50	<0.5	<0.5	<0.5
MW9D	01/06/04	15.97	6.31	9.66	NLPH	72.2	---	80.9	<0.50	<0.5	<0.5	<0.5
MW9D	06/07/04	15.97	8.17	7.80	NLPH	237	---	353	<0.50	<0.5	<0.5	<0.5
MW9D	08/30/04 d	15.97	---	---	---	---	---	---	---	---	---	---
MW9D	12/13/04	15.97	5.39	10.58	NLPH	379	---	353	4.80	0.7	<0.5	0.9
MW9D	03/14/05	15.97	6.93	9.04	NLPH	<50.0	---	13.8	<0.50	<0.5	<0.5	<0.5
MW9D	06/08/05	15.97	8.83	7.14	NLPH	<50.0	---	57.2	<0.50	<0.5	<0.5	<0.5
MW9D	09/01/05	15.97	7.99	7.98	NLPH	64.3	---	51.8	<0.50	<0.50	<0.50	<0.50
MW9D	12/09/05	15.97	7.96	8.01	NLPH	56.3	---	33.0	<0.50	<0.50	<0.50	<0.50
MW9D	12/30/05 d	15.97	---	---	---	---	---	---	---	---	---	---
MW9D	03/07/06	15.97	6.19	9.78	NLPH	<50	---	9.3	<0.50	<0.50	<0.50	<0.50
MW9D	06/26/06	15.97	7.68	8.29	NLPH	<50	---	9.7	<0.50	<0.50	<0.50	<0.50
MW9D	09/25/06	15.97	8.00	7.97	NLPH	<50.0	---	13.8	<0.50	<0.50	<0.50	<0.50
<b>MW9D</b>	<b>12/15/06</b>	<b>15.97</b>	<b>6.91</b>	<b>9.06</b>	<b>NLPH</b>	<b>&lt;50</b>	<b>---</b>	<b>11</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>
MW9E	10/24/88	---	---	---	---	---	---	---	1.3	<1.0	<2.0	<1.0
MW9E	10/13/89	---	---	---	---	---	---	---	15	<0.5	2.1	<3.0
MW9E	10/19/90	---	---	---	---	<50	---	---	4.0	<0.5	0.9	<0.5
MW9F	12/06/88	---	---	---	---	---	---	---	<0.5	<1.0	<2.0	<1.0
MW9F	10/13/89	---	---	---	---	---	---	---	<0.5	<0.5	<0.5	<3.0
MW9F	10/19/90	---	---	---	---	<50	---	---	<0.5	<0.5	<0.5	<0.5
MW9F	02/05/92	96.96 l	5.81	91.15	---	<50	---	---	<0.5	<0.5	<0.5	<0.5
MW9F	05/05/92	96.96 l	5.86	91.10	---	<50	---	---	<0.5	<0.5	<0.5	<0.5
MW9F	09/14/92	96.96 l	---	---	---	---	---	---	---	---	---	---
MW9F	11/16/92	96.96 l	5.82	91.14	---	<50	---	---	<0.5	<0.5	<0.5	<0.5
MW9F	02/03/93	96.96 l	5.55	91.41	---	<50	---	---	<0.5	<0.5	<0.5	<0.5
MW9F	05/18/93	96.96 l	5.86	91.10	---	---	---	---	---	---	---	---
MW9F	05/19/93	96.96 l	---	---	---	<50	---	---	<0.5	---	1.2	6.8
MW9F	08/26/93	96.96 l	5.86	91.10	---	<50	---	---	<0.5	<0.5	<0.5	<0.5

**TABLE 1A**  
**CUMULATIVE GROUNDWATER MONITORING AND SAMPLING DATA**  
Former Exxon Service Station 7-0238  
2200 East 12th Street  
Oakland, California  
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Well ID	Sampling Date	TOC (feet)	DTW (feet)	GW Elev. (feet)	SUBJ	TPHg (µg/L)	MTBE 8021B (µg/L)	MTBE 8260B (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)
MW9F	11/04/93	96.96 l	5.96	91.00	---	<50	---	---	<0.5	<0.5	<0.5	<0.5
MW9F	02/04/94	96.96 l	5.68	91.28	---	<50	---	---	<0.5	<0.5	<0.5	<0.5
MW9F	05/31/94	96.96 l	5.76	91.20	---	---	---	---	<0.5	<0.5	<0.5	<0.5
MW9F	10/26/94	8.37	5.96	2.41	---	---	---	---	<0.5	<0.5	<0.5	<0.5
MW9F	05/15/95	8.37	5.52	2.85	---	---	---	---	<0.5	<0.5	<0.5	<0.5
MW9F	11/02/95	8.37	6.60	1.77	---	---	---	---	<0.5	<0.5	<0.5	<0.5
MW9F	04/26/96	8.37	6.50	1.87	NLPH	<50	57	---	<0.5	<0.5	<0.5	<0.5
MW9F	08/22/96	8.37	5.74	2.63	NLPH	<50	5.8	---	<0.5	<0.5	<0.5	<0.5
MW9F	02/24/97	8.37	---	---	NLPH	<50	<30	---	<0.5	<0.5	<0.5	<0.5
MW9F	03/16/98	8.37	---	---	NLPH	---	---	---	---	---	---	---
MW9F	04/21/98	8.37	---	---	---	---	---	---	---	---	---	---
MW9F	07/22/98	11.38	---	---	---	---	---	---	---	---	---	---
MW9F	12/22/98	11.38	5.47	5.91	NLPH	<50	81	---	<0.5	<0.5	<0.5	<0.5
MW9F	02/26/99	11.38	5.35	6.03	NLPH	<50	<2.5	---	<0.5	<0.5	<0.5	<0.5
MW9F	05/18/99	11.38	5.62	5.76	NLPH	<50	61.6	---	<0.5	<0.5	<0.5	<0.5
MW9F	08/03/99	11.38	6.32	5.06	NLPH	<50	3.10	---	<0.5	<0.5	<0.5	<0.5
MW9F	12/03/99	11.38	5.59	5.79	NLPH	<50	<2	---	<0.5	<0.5	0.71	<0.5
MW9F	02/29/00	11.38	4.70	6.68	NLPH	<50	52	---	<0.5	<0.5	<0.5	<0.5
MW9F	05/18/00	11.38	5.37	6.01	NLPH	<50	65	---	<0.5	<0.5	<0.5	<0.5
MW9F	07/24/00	11.38	5.65	5.73	NLPH	<50	170	---	<0.5	<0.5	<0.5	<0.5
MW9F	10/09/00	11.38	5.71	5.67	NLPH	<50	170	---	<0.5	<0.5	<0.5	<0.5
MW9F	01/10/01	11.38	4.30	7.08	NLPH	<50	140	---	<0.5	<0.5	<0.5	<0.5
MW9F	04/10/01	11.38	5.20	6.18	NLPH	<50	50	---	<0.5	<0.5	<0.5	<0.5
MW9F	07/12/01	11.38	---	---	NLPH	<50	190	---	<0.5	<0.5	<0.5	<0.5
MW9F	08/17/01 d	11.38	---	---	---	---	---	---	---	---	---	---
MW9F	10/11/01	11.38	5.82	5.56	NLPH	<50	260	---	<0.5	<0.5	<0.5	<0.5
MW9F	11/01/01	11.38	Well surveyed in compliance with AB2886 requirements.					---	<0.5	<0.5	<0.5	<0.5
MW9F	01/11/02	11.38	5.12	6.26	NLPH	<100	67.0e	---	<1.00	<1.00	<1.00	<1.00
MW9F	04/12/02	11.38	5.50	5.88	NLPH	55.9	58.6	---	<0.50	<0.50	<0.50	<0.50
MW9F	07/12/02	11.38	5.65	5.73	NLPH	102	121	---	<0.5	<0.5	<0.5	<0.5
MW9F	10/11/02	11.38	5.67	5.71	NLPH	99.9	128	138	<0.5	<0.5	<0.5	<0.5
MW9F	01/10/03	11.38	5.09	6.29	NLPH	<50.0	45.5	---	<0.5	<0.5	<0.5	<0.5
MW9F	04/09/03	11.38	5.39	5.99	NLPH	<50.0	50.8	---	<0.50	<0.5	<0.5	<0.5
MW9F	07/22/03	11.38	5.52	5.86	NLPH	82.3	64.0	---	<0.50	<0.5	<0.5	<0.5
MW9F	10/01/03	11.38	5.59	5.79	NLPH	67.0	---	56.4	<0.50	<0.5	<0.5	<0.5
MW9F	01/06/04	11.38	5.21	6.17	NLPH	<50.0	---	36.7	<0.50	<0.5	<0.5	<0.5
MW9F	06/07/04	11.38	6.03	5.35	NLPH	<50.0	---	20.5	<0.50	<0.5	<0.5	<0.5
MW9F	08/30/04	11.38	h	h	h	<50.0h	---	14.0h	<0.50h	<0.5h	<0.5h	<0.5h
MW9F	12/13/04	11.38	4.80	6.58	NLPH	<50.0	---	13.4	<0.50	<0.5	<0.5	<0.5
MW9F	03/14/05	11.38	5.10	6.28	NLPH	<50.0	---	4.20	<0.50	<0.5	<0.5	<0.5
MW9F	06/08/05	11.38	5.38	6.00	NLPH	<50.0	---	8.70	<0.50	<0.5	<0.5	<0.5
MW9F	09/01/05	11.38	5.53	5.85	NLPH	<50.0	---	19.6	<0.50	<0.50	<0.50	<0.50





**TABLE 1A**  
**CUMULATIVE GROUNDWATER MONITORING AND SAMPLING DATA**  
Former Exxon Service Station 7-0238  
2200 East 12th Street  
Oakland, California  
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Well ID	Sampling Date	TOC (feet)	DTW (feet)	GW Elev. (feet)	SUBJ	TPHg (µg/L)	MTBE 8021B (µg/L)	MTBE 8260B (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)
MW9H	02/24/97	8.58	---	---	---	---	---	---	---	---	---	---
MW9H	03/16/98	8.58	---	---	---	---	---	---	---	---	---	---
MW9H	04/21/98	8.58	---	---	---	---	---	---	---	---	---	---
MW9H	07/22/98	11.61	---	---	---	---	---	---	---	---	---	---
MW9H	12/22/98	11.61	7.81	3.80	NLPH	<50	<2.5	---	<0.5	<0.5	<0.5	<0.5
MW9H	02/26/99	11.61	7.61	4.00	NLPH	<50	<2.5	---	<0.5	<0.5	<0.5	<0.5
MW9H	05/18/99	11.61	8.00	3.61	NLPH	<50	3.98	---	<0.5	<0.5	<0.5	<0.5
MW9H	08/03/99	11.61	6.05	5.56	NLPH	<50	<2.5	---	<0.5	<0.5	<0.5	<0.5
MW9H	12/03/99	11.61	5.32	6.29	NLPH	<50	<2	---	<0.5	<0.5	<0.5	<0.5
MW9H	02/29/00	11.61	7.10	4.51	NLPH	<50	<2	---	<0.5	<0.5	<0.5	0.57 b
MW9H	05/18/00	11.61	7.84	3.77	NLPH	<50	9.7	---	<0.5	<0.5	<0.5	<0.5
MW9H	07/24/00	11.61	7.94	3.67	NLPH	<50	17	---	<0.5	<0.5	<0.5	<0.5
MW9H	10/09/00	11.61	8.09	3.52	NLPH	<50	13	---	<0.5	<0.5	<0.5	<0.5
MW9H	01/10/01	11.61	7.89	3.72	NLPH	<50	11	---	<0.5	<0.5	<0.5	1.1
MW9H	04/10/01	11.61	8.71	2.90	NLPH	<50	44	---	<0.5	<0.5	<0.5	0.5
MW9H	07/12/01	11.61	--	--	NLPH	<50	28	---	<0.5	0.78	0.52	2.36
MW9H	08/17/01 d	11.61	---	---	---	---	---	---	<0.5	<0.5	<0.5	<0.5
MW9H	10/11/01	11.61	8.15	3.46	NLPH	<50	30	---	<0.5	<0.5	<0.5	<0.5
MW9H	11/01/01	11.59	Well surveyed in compliance with AB2886 requirements.									
MW9H	01/11/02	11.59	7.48	4.11	NLPH	<50.0	20.5e	---	<0.50	<0.50	<0.50	<0.50
MW9H	04/12/02	11.59	7.68	3.91	NLPH	<50.0	32.8	---	<0.50	<0.50	<0.50	<0.50
MW9H	07/12/02	11.59	8.06	3.53	NLPH	<50.0	34.6	---	<0.5	<0.5	<0.5	<0.5
MW9H	10/11/02	11.59	7.83	3.76	NLPH	<50.0	33.1	28.7	<0.5	<0.5	<0.5	<0.5
MW9H	01/10/03	11.59	7.39	4.20	NLPH	<50.0	16.0	---	0.5	0.8	0.6	1.8
MW9H	04/09/03	11.59	7.69	3.90	NLPH	<50.0	26.8	---	<0.50	<0.5	<0.5	<0.5
MW9H	07/22/03	11.59	7.94	3.65	NLPH	55.3	34.7	---	<0.50	<0.5	<0.5	<0.5
MW9H	10/01/03	11.59	7.93	3.66	NLPH	<50.0	---	32.3	<0.50	<0.5	<0.5	0.9
MW9H	01/06/04	11.59	7.27	4.32	NLPH	<50.0	---	10	<0.50	<0.5	<0.5	<0.5
MW9H	06/07/04	11.59	7.99	3.60	NLPH	50.6	---	71.7	<0.50	<0.5	<0.5	<0.5
MW9H	08/30/04	11.59	h	h	h	64.2h	---	51.0h	<0.50h	<0.5h	<0.50h	<0.5h
MW9H	12/13/04	11.59	7.22	4.37	NLPH	<50.0	---	14.0	<0.50	<0.5	0.5	1.2
MW9H	03/14/05	11.59	6.96	4.63	NLPH	<50.0	---	27.4	<0.50	<0.5	<0.5	<0.5
MW9H	06/08/05	11.59	7.53	4.06	NLPH	52.6	---	68.8	<0.50	<0.5	<0.5	<0.5
MW9H	09/01/05	11.59	7.82	3.77	NLPH	140	---	71.6	<0.50	<0.50	<0.50	<0.50
MW9H	12/09/05 j	---	---	---	---	---	---	---	---	---	---	---
MW9H	12/30/05	11.59	7.27	4.32	NLPH	<50.0	---	13.7	<0.50	<0.50	<0.50	<0.50
MW9H	03/07/06 j	11.59	---	---	---	---	---	---	---	---	---	---
MW9H	06/26/06 j	11.59	---	---	---	---	---	---	---	---	---	---
MW9H	09/25/06	11.59	7.96	3.63	NLPH	59.5	---	71.0	<0.50	<0.50	<0.50	<0.50
<b>MW9H</b>	<b>12/15/06</b>	<b>11.59</b>	<b>7.42</b>	<b>4.17</b>	<b>NLPH</b>	<b>57</b>	<b>---</b>	<b>21</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>
MW9I	11/15/90	---	---	---	---	55	---	---	4.0	1.1	1.2	2.2



**TABLE 1A**  
**CUMULATIVE GROUNDWATER MONITORING AND SAMPLING DATA**  
Former Exxon Service Station 7-0238  
2200 East 12th Street  
Oakland, California  
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Well ID	Sampling Date	TOC (feet)	DTW (feet)	GW Elev. (feet)	SUBJ	TPHg (µg/L)	MTBE 8021B (µg/L)	MTBE 8260B (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)
MW9I	02/05/92	98.66 I	5.56	93.10	---	<50	---	---	<0.5	<0.5	<0.5	<0.5
MW9I	05/05/92	98.66 I	5.60	93.06	---	<50	---	---	0.9	<0.5	<0.5	0.7
MW9I	09/14/92	98.66 I	6.12	92.54	---	<50	---	---	<0.5	<0.5	<0.5	<0.5
MW9I	11/16/92	98.66 I	5.82	92.84	---	<50	---	---	<0.5	<0.5	<0.5	<0.5
MW9I	02/03/93	98.66 I	4.92	93.74	---	240	---	---	46	1.1	2.3	2.1
MW9I	05/18/93	98.66 I	5.60	93.06	---	79	---	---	<0.5	<0.5	<0.5	<0.5
MW9I	08/26/93	98.66 I	5.91	92.75	---	<50	---	---	<0.5	<0.5	<0.5	<0.5
MW9I	11/04/93	98.66 I	6.03	92.63	---	<50	---	---	<0.5	<0.5	<0.5	<0.5
MW9I	02/04/94	98.66 I	5.37	93.29	---	<50	---	---	<0.5	<0.5	<0.5	<0.5
MW9I	05/31/94	98.66 I	5.46	93.20	---	240	---	---	0.66	0.63	<0.5	1.4
MW9I	10/26/94	10.11	5.88	4.23	---	150	---	---	<0.5	<0.5	<0.5	<0.5
MW9I	05/15/95	10.11	4.94	5.17	---	56	---	---	<0.5	0.82	<0.5	<0.5
MW9I	11/02/95	10.11	6.04	4.07	NLPH	<50	<10	---	<0.5	<0.5	<0.5	<0.5
MW9I	04/26/96	10.11	5.27	4.84	NLPH	<50	99	---	<0.5	<0.5	<0.5	<0.5
MW9I	08/22/96	10.11	5.66	4.45	NLPH	<50	170	---	<0.5	<0.5	<0.5	<0.5
MW9I	02/24/97	10.11	5.24	4.87	NLPH	120	9,100	---	<0.5	<0.5	<0.5	<0.5
MW9I	03/16/98	10.11	4.91	5.20	NLPH	<200	59,000	---	13	<2.0	<2.0	<2.0
MW9I	04/21/98	10.11	5.08	5.03	NLPH	<500	59,000	---	<5.0	<5.0	<5.0	<5.0
MW9I	07/22/98	13.14	5.44	7.70	NLPH	<500	62,000	---	<5.0	<5.0	<5.0	<5.0
MW9I	12/22/98	13.14	5.32	7.82	NLPH	200	51,000	---	1.7	<0.5	<0.5	<0.5
MW9I	02/26/99	13.14	4.71	8.43	NLPH	<500	9,700	---	<5.0	<5.0	<5.0	<5.0
MW9I	05/18/99	13.14	5.30	7.84	NLPH	<1,000	3,730	---	<10	<10	<10	<10
MW9I	08/03/99	13.14	5.98	7.16	NLPH	<50	21,900	---	<0.5	0.650	<0.5	<0.5
MW9I	12/03/99	13.14	5.31	7.83	NLPH	<250	2,000	---	3.9	2.9	<2.5	14
MW9I	02/29/00	13.14	4.20	8.94	NLPH	50	16,000	---	0.74	<0.5	<0.5	<0.5
MW9I	05/18/00	13.14	5.12	8.02	NLPH	<50	2,900	---	<0.5	<0.5	<0.5	<0.5
MW9I	07/24/00	13.14	5.41	7.73	NLPH	<250	43,000	---	<2.5	<2.5	<2.5	<2.5
MW9I	10/09/00	13.14	5.41	7.73	NLPH	<2,500	54,000	---	1.6	<0.5	<0.5	<0.5
MW9I	01/10/01	13.14	5.24	7.90	NLPH	<250	36,000	---	<2.5	<2.5	<2.5	<2.5
MW9I	04/10/01	13.14	4.84	8.30	NLPH	<50	4,800	---	<0.5	<0.5	<0.5	<0.5
MW9I	07/12/01	13.14	---	---	NLPH	<50	8,400	---	<0.5	<0.5	<0.5	<0.5
MW9I	08/17/01	13.14	6.49	6.65	---	---	---	---	---	---	---	---
MW9I	10/11/01	13.14	5.64	7.50	NLPH	<250	38,000	---	<2.5	<2.5	<2.5	<2.5
MW9I	11/01/01	13.13	Well surveyed in compliance with AB2886 requirements.									
MW9I	01/11/02	13.13	4.80	8.33	NLPH	1,330e	5,400e	---	4.80e	<0.50	<0.50	<0.50
MW9I	04/12/02	13.13	5.22	7.91	NLPH	1,460	1,480	---	<0.50	<0.50	<0.50	<0.50
MW9I	07/12/02	13.13	5.50	7.63	NLPH	4,460	6,490	---	<0.5	<0.5	<0.5	<0.5
MW9I	10/11/02	13.13	5.35	7.78	NLPH	31,300	37,700	51,000	<5.0	<5.0	<5.0	<5.0
MW9I	01/10/03	13.13	4.75	8.38	NLPH	4,820	6,180	---	9.4	0.7	1.1	1.3
MW9I	04/09/03	13.13	5.15	7.98	NLPH	2,130	1,510	---	22.3	1.9	1.5	1.5
MW9I	07/22/03	13.13	5.50	7.63	NLPH	2,330	2,540	---	1.60	<0.5	<0.5	<0.5
MW9I	10/01/03	13.13	5.65	7.48	NLPH	6,080	---	4,610	1.00	<0.5	<0.5	<0.5

**TABLE 1A**  
**CUMULATIVE GROUNDWATER MONITORING AND SAMPLING DATA**  
Former Exxon Service Station 7-0238  
2200 East 12th Street  
Oakland, California  
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Well ID	Sampling Date	TOC (feet)	DTW (feet)	GW Elev. (feet)	SUBJ	TPHg (µg/L)	MTBE 8021B (µg/L)	MTBE 8260B (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)
MW9I	01/06/04	13.13	4.50	8.63	NLPH	175	---	61.3	0.90	<0.5	0.5	<0.5
MW9I	06/07/04	13.13	6.87	6.26	NLPH	4,620	---	3,410	<0.50	<0.5	<0.5	<0.5
MW9I	08/30/04	13.13	h	h	h	817h	---	847h	<0.50h	<0.5h	<0.5h	<0.5h
MW9I	12/13/04	13.13	4.47	8.66	NLPH	<50.0	---	14.4	<0.50	<0.5	<0.5	<0.5
MW9I	03/14/05	13.13	5.05	8.08	NLPH	96.7	---	44.9	<0.50	<0.5	<0.5	<0.5
MW9I	06/08/05	13.13	6.47	6.66	NLPH	1,230	---	321	<0.50	<0.5	<0.5	<0.5
MW9I	09/01/05	13.13	5.60	7.53	NLPH	170	---	62.3	1.22	0.77	<0.50	<0.50
MW9I	12/09/05	13.13	6.82	6.31	NLPH	78.3	---	81.0	<0.50	0.58	<0.50	<0.50
MW9I	12/30/05	13.13	4.23	8.90	NLPH	---	---	---	---	---	---	---
MW9I	03/07/06	13.13	5.08	8.05	NLPH	<50	---	0.96	<0.50	<0.50	<0.50	<0.50
MW9I	06/26/06	13.13	5.30	7.83	NLPH	<50	---	3.7	<0.50	<0.50	<0.50	<0.50
MW9I	09/25/06	13.13	6.17	6.96	NLPH	50.9	---	24.0	<0.50	<0.50	<0.50	<0.50
<b>MW9I</b>	<b>12/15/06</b>	<b>13.13</b>	<b>5.45</b>	<b>7.68</b>	<b>NLPH</b>	<b>&lt;50</b>	<b>---</b>	<b>0.59</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>

Notes:

SUBJ	=	Results of subjective evaluation.
NLPH	=	No liquid-phase hydrocarbons present in well.
TOC	=	Top of well casing elevation; datum is mean sea level.
DTW	=	Depth to water.
GW Elev.	=	Groundwater elevation; datum is mean sea level
TPHg	=	Total petroleum hydrocarbons as gasoline analyzed using EPA Method 8015B.
MTBE 8021B	=	Methyl tertiary butyl ether analyzed using EPA Method 8021B.
MTBE 8260B	=	Methyl tertiary butyl ether analyzed using EPA Method 8260B.
BTEX	=	Benzene, toluene, ethylbenzene, and total xylenes analyzed using EPA Method 8021B.
ETBE	=	Ethyl tertiary butyl ether analyzed using EPA Method 8260B.
TAME	=	Tertiary amyl methyl ether analyzed using EPA Method 8260B.
TBA	=	Tertiary butyl alcohol analyzed using EPA Method 8260B.
EDB	=	1,2-Dibromoethane analyzed using EPA Method 8260B.
1,2-DCA	=	1,2-Dichloroethane analyzed using EPA Method 8260B.
DIPE	=	Di-isopropyl ether analyzed using EPA Method 8260B.
Ethanol	=	Ethanol analyzed using EPA Method 8260B.
µg/L	=	Micrograms per liter.
<	=	Less than the indicated reporting limit shown by the laboratory.
---	=	Not measured or sampled or analyzed.
a	=	Miscalculation in field. Field technician may have inadvertently monitored and sampled the wrong well. Resampled 05/27/99.
b	=	Analyte detected in the trip blank and/or bailer blank.
c	=	Due to measurement error during initial sampling event, DTW was re-measured on 08/17/01. No samples were taken.
d	=	Well inaccessible.
e	=	Samples collected after fourth quarter 2001 analyzed by TestAmerica, Incorporated. Reported concentrations may be affected by differing laboratory quantitation methods.
f	=	Sample erroneously labeled MA9B on Chain-of-Custody form and laboratory report.
g	=	Insufficient sample volume to perform analyses.
h	=	Groundwater elevation data invalidated; analytical results suspect.
i	=	Well sampled using no-purge method.
j	=	Well not gauged and/or sampled due to encroachment permit restrictions.
k	=	Hydrocarbon result partly due to individual peak(s) in quantitation range.
l	=	Elevation relative to temporary benchmark with an arbitrary elevation of 100.0 feet.

**TABLE 1B**  
**ADDITIONAL CUMULATIVE GROUNDWATER MONITORING AND SAMPLING DATA**  
Former Exxon Service Station 7-0238  
2200 East 12th Street  
Oakland, California  
(Page 1 of 5)

Well ID	Sampling Date	ETBE (µg/L)	TAME (µg/L)	TBA (µg/L)	EDB (µg/L)	1,2-DCA (µg/L)	DIPE (µg/L)	Ethanol (µg/L)
MW9A	06/13/88 - 07/12/02	Not analyzed for these analytes.						
MW9A	10/11/02	<0.50	<0.50	<10.0	<0.50	<0.50	<0.50	---
MW9A	01/10/03	---	---	---	---	---	---	---
MW9A	04/09/03	---	---	---	---	---	---	---
MW9A	07/22/03	---	---	---	---	---	---	---
MW9A	10/01/03	<0.50	2.80	1,100	<0.50	<0.50	<0.50	---
MW9A	01/06/04	<0.50	4.90	11,900	<0.50	<0.50	<0.50	---
MW9A	06/07/04	---	---	---	---	---	---	---
MW9A	08/30/04 d	---	---	---	---	---	---	<2,500
MW9A	12/13/04	---	---	---	---	---	---	---
MW9A	03/14/05	<0.50	1.00	14,400	<0.50	<0.50	<0.50	---
MW9A	06/08/05	<0.50	<0.50	22,400	<0.50	<0.50	<0.50	<50.0
MW9A	09/01/05	---	---	---	---	---	---	<100
MW9A	12/09/05	---	---	---	---	---	---	---
MW9A	12/30/05	---	---	---	---	---	---	---
MW9A	03/07/06	<5.0	<5.0	5,600	<5.0	<5.0	<5.0	<1,000
MW9A	06/26/06	---	---	---	---	---	---	<1,000
MW9A	09/25/06	<0.500	<0.500	<10.0	<0.500	<0.500	<0.500	<50.0
<b>MW9A</b>	<b>12/15/06</b>	<b>&lt;5.0</b>	<b>&lt;5.0</b>	<b>1,200</b>	<b>&lt;5.0</b>	<b>&lt;5.0</b>	<b>&lt;5.0</b>	<b>&lt;1,000</b>
MW9B	06/13/88 - 07/12/02	Not analyzed for these analytes.						
MW9B	10/11/02 f	<0.50	<0.50	<10.0	<0.50	<0.50	<0.50	---
MW9B	01/10/03	---	---	---	---	---	---	---
MW9B	04/09/03	---	---	---	---	---	---	---
MW9B	07/22/03	---	---	---	---	---	---	---
MW9B	10/01/03	<0.50	9.70	2,430	<0.50	<0.50	<0.50	---
MW9B	01/06/04	0.80	9.00	11,500	<0.50	<0.50	<0.50	---
MW9B	06/07/04	---	---	---	---	---	---	---
MW9B	08/30/04	---	---	---	---	---	---	<50.0
MW9B	12/13/04	---	---	---	---	---	---	<50.0j
MW9B	03/14/05	<0.50	<0.50	4,800	<0.50	<0.50	<0.50	---
MW9B	06/08/05	<0.50	<0.50	2,320	<0.50	<0.50	<0.50	<50.0
MW9B	09/01/05	---	---	---	---	---	---	<100
MW9B	12/09/05	---	---	---	---	---	---	---
MW9B	12/30/05	---	---	---	---	---	---	---
MW9B	03/07/06	<0.50	<0.50	1,200	<0.50	<0.50	<0.50	---
MW9B	06/26/06	---	---	---	---	---	---	---
MW9B	09/25/06	<0.500	<0.500	70.1	<0.500	<0.500	<0.500	---
<b>MW9B</b>	<b>12/15/06</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>56</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	---

**TABLE 1B**  
**ADDITIONAL CUMULATIVE GROUNDWATER MONITORING AND SAMPLING DATA**  
Former Exxon Service Station 7-0238  
2200 East 12th Street  
Oakland, California  
(Page 2 of 5)

Well ID	Sampling Date	ETBE (µg/L)	TAME (µg/L)	TBA (µg/L)	EDB (µg/L)	1,2-DCA (µg/L)	DIPE (µg/L)	Ethanol (µg/L)
MW9C	06/13/88 - 07/12/02	Not analyzed for these analytes.						
MW9C	10/11/02	<0.50	34.3	<10.0	<0.50	<0.50	<0.50	---
MW9C	01/10/03	---	---	---	---	---	---	---
MW9C	04/09/03	---	---	---	---	---	---	---
MW9C	07/22/03	---	---	---	---	---	---	---
MW9C	10/01/03	<0.50	2.70	38,400	<0.50	<0.50	<0.50	---
MW9C	01/06/04	0.80	2.50	90,700	<0.50	<0.50	<0.50	---
MW9C	06/07/04	---	---	---	---	---	---	<50.0
MW9C	08/30/04	---	---	---	---	---	---	<50.0j
MW9C	12/13/04	---	---	---	---	---	---	---
MW9C	03/14/05	<0.50	<0.50	674	<0.50	<0.50	<0.50	<50.0
MW9C	06/08/05	<0.50	<0.50	817	<0.50	<0.50	<0.50	<100
MW9C	09/01/05	---	---	---	---	---	---	---
MW9C	12/09/05	---	---	---	---	---	---	---
MW9C	12/30/05	---	---	---	---	---	---	---
MW9C	03/07/06	<2.5	<2.5	160	<2.5	<2.5	<2.5	---
MW9C	06/26/06	---	---	---	---	---	---	---
MW9C	09/25/06	<0.500	<0.500	<10.0	<0.500	<0.500	<0.500	---
<b>MW9C</b>	<b>12/15/06</b>	<b>&lt;2.5</b>	<b>&lt;2.5</b>	<b>&lt;60</b>	<b>&lt;2.5</b>	<b>&lt;2.5</b>	<b>&lt;2.5</b>	---
MW9D	10/24/88 - 07/12/02	Not analyzed for these analytes.						
MW9D	10/11/02 g	---	---	---	---	---	---	---
MW9D	01/10/03	---	---	---	---	---	---	---
MW9D	04/09/03	---	---	---	---	---	---	---
MW9D	07/22/03	---	---	---	---	---	---	---
MW9D	10/01/03	<0.50	<0.50	235	<0.50	<0.50	<0.50	---
MW9D	01/06/04	<0.50	<0.50	51.8	<0.50	<0.50	<0.50	---
MW9D	06/07/04	---	---	---	---	---	---	<50.0
MW9D	08/30/04 h	---	---	---	---	---	---	---
MW9D	12/13/04	---	---	---	---	---	---	---
MW9D	03/14/05	<0.50	<0.50	<10.0	<0.50	<0.50	<0.50	<50.0
MW9D	06/08/05	<0.50	<0.50	57.8	<0.50	<0.50	<0.50	<100
MW9D	09/01/05	---	---	---	---	---	---	---
MW9D	12/09/05	---	---	---	---	---	---	---
MW9D	12/30/05 d	---	---	---	---	---	---	---
MW9D	03/07/06	<0.50	<0.50	<5.0	<0.50	<0.50	<0.50	---
MW9D	06/26/06	---	---	---	---	---	---	---
MW9D	09/25/06	<0.500	<0.500	<10.0	<0.500	<0.500	<0.500	---
<b>MW9D</b>	<b>12/15/06</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;12</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	---
MW9E	10/24/88 - 10/19/90	Not analyzed for these analytes.						

**TABLE 1B**  
**ADDITIONAL CUMULATIVE GROUNDWATER MONITORING AND SAMPLING DATA**

Former Exxon Service Station 7-0238

2200 East 12th Street

Oakland, California

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Well ID	Sampling Date	ETBE (µg/L)	TAME (µg/L)	TBA (µg/L)	EDB (µg/L)	1,2-DCA (µg/L)	DIPE (µg/L)	Ethanol (µg/L)
MW9F	12/06/88 - 07/12/02	Not analyzed for these analytes.						
MW9F	10/11/02	<0.50	<0.50	<10.0	<0.50	<0.50	<0.50	---
MW9F	01/10/03	---	---	---	---	---	---	---
MW9F	04/09/03	---	---	---	---	---	---	---
MW9F	07/22/03	---	---	---	---	---	---	---
MW9F	10/01/03	<0.50	<0.50	<10.0	<0.50	<0.50	<0.50	---
MW9F	01/06/04	<0.50	<0.50	13.7	<0.50	<0.50	<0.50	---
MW9F	06/07/04	---	---	---	---	---	---	<50.0
MW9F	08/30/04	---	---	---	---	---	---	<50.0j
MW9F	12/13/04	---	---	---	---	---	---	---
MW9F	03/14/05	<0.50	<0.50	<10.0	<0.50	<0.50	<0.50	<50.0
MW9F	06/08/05	<0.50	<0.50	<10.0	<0.50	<0.50	<0.50	<100
MW9F	09/01/05	---	---	---	---	---	---	---
MW9F	12/09/05 j	---	---	---	---	---	---	---
MW9F	12/30/05	---	---	---	---	---	---	---
MW9F	03/07/06 j	---	---	---	---	---	---	---
MW9F	06/26/06 j	---	---	---	---	---	---	---
MW9F	09/25/06	<0.500	<0.500	<10.0	<0.500	<0.500	<0.500	---
<b>MW9F</b>	<b>12/15/06</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;20</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	---
MW9G	12/06/88 - 07/12/02	Not analyzed for these analytes.						
MW9G	10/11/02	<0.50	<0.50	<10.0	<0.50	<0.50	<0.50	---
MW9G	01/10/03	---	---	---	---	---	---	---
MW9G	04/09/03	---	---	---	---	---	---	---
MW9G	07/22/03	---	---	---	---	---	---	---
MW9G	10/01/03	<0.50	<0.50	17.1	<0.50	<0.50	<0.50	---
MW9G	01/06/04	<0.50	<0.50	367	<0.50	<0.50	<0.50	---
MW9G	06/07/04	---	---	---	---	---	---	<50.0
MW9G	08/30/04	---	---	---	---	---	---	<50.0j
MW9G	12/13/04	---	---	---	---	---	---	---
MW9G	03/14/05	<0.50	<0.50	569	<0.50	<0.50	<0.50	<50.0
MW9G	06/08/05	<0.50	<0.50	150	<0.50	<0.50	<0.50	<100
MW9G	09/01/05	---	---	---	---	---	---	---
MW9G	12/09/05 j	---	---	---	---	---	---	---
MW9G	12/30/05	---	---	---	---	---	---	---
MW9G	03/07/06 j	---	---	---	---	---	---	---
MW9G	06/26/06 j	---	---	---	---	---	---	---
MW9G	09/25/06	<0.500	<0.500	<10.0	<0.500	<0.500	<0.500	---
<b>MW9G</b>	<b>12/15/06</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;12</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	---
MW9H	12/06/88 - 10/19/90	Not analyzed for these analytes.						
MW9H	11/02/95	---	---	---	<50	<10	<0.5	<0.5

**TABLE 1B**  
**ADDITIONAL CUMULATIVE GROUNDWATER MONITORING AND SAMPLING DATA**  
Former Exxon Service Station 7-0238  
2200 East 12th Street  
Oakland, California  
(Page 4 of 5)

Well ID	Sampling Date	ETBE (µg/L)	TAME (µg/L)	TBA (µg/L)	EDB (µg/L)	1,2-DCA (µg/L)	DIPE (µg/L)	Ethanol (µg/L)
MW9H	04/26/96 - 07/12/02	Not analyzed for these analytes.						
MW9H	10/11/02	<0.50	<0.50	<10.0	<0.50	<0.50	<0.50	---
MW9H	01/10/03	---	---	---	---	---	---	---
MW9H	04/09/03	---	---	---	---	---	---	---
MW9H	07/22/03	---	---	---	---	---	---	---
MW9H	10/01/03	<0.50	<0.50	<10.0	<0.50	<0.50	<0.50	---
MW9H	01/06/04	<0.50	<0.50	<10.0	<0.50	<0.50	<0.50	---
MW9H	06/07/04	---	---	---	---	---	---	<50.0
MW9H	08/30/04	---	---	---	---	---	---	<50.0j
MW9H	12/13/04	---	---	---	---	---	---	---
MW9H	03/14/05	<0.50	<0.50	<10.0	<0.50	<0.50	<0.50	<50.0
MW9H	06/08/05	<0.50	<0.50	<10.0	<0.50	<0.50	<0.50	<100
MW9H	09/01/05	---	---	---	---	---	---	---
MW9H	12/09/05 j	---	---	---	---	---	---	---
MW9H	12/30/05	---	---	---	---	---	---	---
MW9H	03/07/06 j	---	---	---	---	---	---	---
MW9H	06/26/06 j	---	---	---	---	---	---	---
MW9H	09/25/06	<0.500	<0.500	<10.0	<0.500	<0.500	<0.500	---
<b>MW9H</b>	<b>12/15/06</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;12</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>---</b>
MW9I	11/15/90 - 07/12/02	Not analyzed for these analytes.						
MW9I	10/11/02	<0.50	24.1	<10.0	<0.50	<0.50	<0.50	---
MW9I	01/10/03	---	---	---	---	---	---	---
MW9I	04/09/03	---	---	---	---	---	---	---
MW9I	07/22/03	---	---	---	---	---	---	---
MW9I	10/01/03	<0.50	1.50	30,300	<0.50	<0.50	<0.50	---
MW9I	01/06/04	<0.50	<0.50	377	<0.50	<0.50	<0.50	---
MW9I	06/07/04	---	---	---	---	---	---	<50.0
MW9I	08/30/04	---	---	---	---	---	---	<50.0j
MW9I	12/13/04	---	---	---	---	---	---	---
MW9I	03/14/05	<0.50	<0.50	1,640	<0.50	<0.50	<0.50	<50.0
MW9I	06/08/05	<0.50	<0.50	47,000	<0.50	<0.50	<0.50	<100
MW9I	09/01/05	---	---	---	---	---	---	---
MW9I	12/09/05	---	---	---	---	---	---	---
MW9I	12/30/05	---	---	---	---	---	---	---
MW9I	03/07/06	<0.50	<0.50	<5.0	<0.50	<0.50	<0.50	<100
MW9I	06/26/06	---	---	---	---	---	---	<100
MW9I	09/25/06	<0.500	<0.500	10,300	<0.500	<0.500	<0.500	<50.0
<b>MW9I</b>	<b>12/15/06</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>730</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;100</b>

**TABLE 1B**  
**ADDITIONAL CUMULATIVE GROUNDWATER MONITORING AND SAMPLING DATA**

Former Exxon Service Station 7-0238  
 2200 East 12th Street  
 Oakland, California  
 (Page 5 of 5)

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Notes:		
SUBJ	=	Results of subjective evaluation.
NLPH	=	No liquid-phase hydrocarbons present in well.
TOC	=	Top of well casing elevation; datum is mean sea level.
DTW	=	Depth to water.
GW Elev.	=	Groundwater elevation; datum is mean sea level
TPHg	=	Total petroleum hydrocarbons as gasoline analyzed using EPA Method 8015B.
MTBE 8021B	=	Methyl tertiary butyl ether analyzed using EPA Method 8021B.
MTBE 8260B	=	Methyl tertiary butyl ether analyzed using EPA Method 8260B.
BTEX	=	Benzene, toluene, ethylbenzene, and total xylenes analyzed using EPA Method 8021B.
ETBE	=	Ethyl tertiary butyl ether analyzed using EPA Method 8260B.
TAME	=	Tertiary amyl methyl ether analyzed using EPA Method 8260B.
TBA	=	Tertiary butyl alcohol analyzed using EPA Method 8260B.
EDB	=	1,2-Dibromoethane analyzed using EPA Method 8260B.
1,2-DCA	=	1,2-Dichloroethane analyzed using EPA Method 8260B.
DIPE	=	Di-isopropyl ether analyzed using EPA Method 8260B.
Ethanol	=	Ethanol analyzed using EPA Method 8260B.
µg/L	=	Micrograms per liter.
<	=	Less than the indicated reporting limit shown by the laboratory.
---	=	Not measured or sampled or analyzed.
a	=	Miscalculation in field. Field technician may have inadvertently monitored and sampled the wrong well. Resampled 05/27/99.
b	=	Analyte detected in the trip blank and/or bailer blank.
c	=	Due to measurement error during initial sampling event, DTW was re-measured on 08/17/01. No samples were taken.
d	=	Well inaccessible.
e	=	Samples collected after fourth quarter 2001 analyzed by TestAmerica, Incorporated. Reported concentrations may be affected by differing labor.
f	=	Sample erroneously labeled MA9B on Chain-of-Custody form and laboratory report.
g	=	Insufficient sample volume to perform analyses.
h	=	Groundwater elevation data invalidated; analytical results suspect.
i	=	Well sampled using no-purge method.
j	=	Well not gauged and/or sampled due to encroachment permit restrictions.
k	=	Hydrocarbon result partly due to individual peak(s) in quantitation range.
l	=	Elevation relative to temporary benchmark with an arbitrary elevation of 100.0 feet.

**TABLE 2A**  
**CUMULATIVE ANALYTICAL RESULTS OF SOIL SAMPLES**  
Former Exxon Service Station 7-0238  
2200 East 12th Street  
Oakland, California  
(Page 1 of 4)

Sample ID	Sample Date	Depth (fbgs)	TPHd (mg/kg)	TPHg (mg/kg)	MTBE (mg/kg)	B (mg/kg)	T (mg/kg)	E (mg/kg)	X (mg/kg)
<b>Soil Boring Samples</b>									
MW-9D	10/05/88	6.0	---	<10	---	<0.05	<0.1	<0.2	<0.1
MW-9D	10/05/88	10.5	---	<10	---	<0.05	<0.1	<0.2	<0.1
MW-9E	10/05/88	5.5	---	1,900	---	<0.05	<0.1	18	<0.1
MW-9E	10/05/88	9.0	---	<10	---	<0.05	<0.1	<0.2	<0.1
MW-9G	11/22/88	4.0	---	<10	---	<0.05	0.2	<0.2	<0.1
SB-1	11/22/88	4.8	---	<10	---	0.30	0.2	<0.2	<0.1
SB-9-1	10/06/88	5.0	---	<10	---	<0.05	<0.1	<0.2	<0.1
SB-9-1	10/06/88	9.0	---	<10	---	<0.05	<0.1	<0.2	<0.1
SB-9-1	10/06/88	12.0	---	<10	---	<0.05	<0.1	<0.2	<0.1
SB-9-2	10/06/88	5.0	---	<10	---	<0.05	<0.1	<0.2	<0.1
SB-9-2	10/06/88	9.0	---	<10	---	<0.05	<0.1	<0.2	<0.1
SB-9-2	10/06/88	10.5	---	<10	---	<0.05	<0.1	<0.2	<0.1
SB-9-2	10/06/88	13.0	---	<10	---	<0.05	<0.1	<0.2	<0.1
SB-4	01/12/89	4.0	---	160	---	1.0	0.9	2.3	5.8
SB-4	01/12/89	9.0	---	<10	---	<0.05	<0.1	<0.2	<0.1
SB-5	01/12/89	4.0	---	<10	---	0.33	<0.1	<0.2	<0.1
SB-5	01/12/89	9.0	---	<10	---	<0.05	<0.1	<0.2	<0.1
SB-6	01/12/89	5.0	---	<10	---	<0.05	<0.1	<0.2	<0.1
SB-6	01/12/89	5.5	---	<10	---	<0.05	<0.1	<0.2	<0.1
SB-7	01/12/89	4.0	---	<10	---	<0.05	<0.1	<0.2	<0.1
SB-7	01/12/89	8.5	---	<10	---	<0.05	<0.1	<0.2	<0.1
SB-8	01/12/89	5.5	---	<10	---	0.43	<0.1	<0.2	<0.1
SB-8	01/12/89	9.0	---	<10	---	<0.05	<0.1	<0.2	<0.1
SB-9	01/12/89	4.0	---	39	---	<0.05	<0.1	0.4	1.1
SB-9	01/12/89	9.0	---	<10	---	<0.05	<0.1	<0.2	<0.1
SB-10-1	03/02/89	5.0	---	<10	---	<0.05	<0.1	<0.2	<0.1
SB-10-2	03/02/89	10.0	---	<10	---	<0.05	<0.1	<0.2	<0.1



**TABLE 2A**  
**CUMULATIVE ANALYTICAL RESULTS OF SOIL SAMPLES**  
Former Exxon Service Station 7-0238  
2200 East 12th Street  
Oakland, California  
(Page 2 of 4)

Sample ID	Sample Date	Depth (fbgs)	TPHd (mg/kg)	TPHg (mg/kg)	MTBE (mg/kg)	B (mg/kg)	T (mg/kg)	E (mg/kg)	X (mg/kg)
SB-11-1	03/02/89	5.0	---	<10	---	<0.05	0.1	<0.2	<0.1
SB-11-2	03/02/89	10.0	---	<10	---	<0.05	<0.1	<0.2	<0.1
SB-12	09/19/89	3.5	---	11	---	0.09	0.2	0.07	0.09
SB-13	09/19/89	4.0	---	1.7	---	<0.05	0.1	<0.2	<0.1
SB-14	09/19/89	4.5	---	3.5	---	<0.05	<0.1	<0.2	<0.1
SB-15	09/19/89	3.5	---	6.3	---	0.07	<0.1	<0.2	<0.1
SB-16	09/19/89	4.5	---	9.0	---	0.21	<0.1	0.08	<0.1
SB-17	09/19/89	5.0	---	42	---	0.093	0.043	0.139	<0.01
SB-18	09/19/89	5.0	---	5	---	<0.01	0.245	0.021	0.015
SB-19	09/19/89	5.0	---	6	---	<0.01	0.078	0.022	<0.01
SB-20	09/19/89	5.0	---	7	---	0.035	0.038	0.017	<0.01
S-20-DPE1	06/05/03	20	---	<5	2.03/2.36c	0.0011	<0.001	<0.001	<0.001
S-20-DPE2	06/04/03	20	---	<5	0.165/0.102c	<0.001	<0.001	<0.001	<0.001
S-20-DPE3	06/04/03	20	---	<5	0.089/0.0317c	<0.001	<0.001	<0.001	0.0033
S-20-DPE4	06/05/03	20	---	<5	0.047/0.0356c	<0.001	<0.001	<0.001	<0.001
<b>Excavation Boundaries Samples</b>									
S-1	Oct-90	5	1.4	9.5	---	0.66	0.038	0.77	0.076
S-2	Oct-90	5	6.1	40	---	0.32	0.15	1.5	0.17
S-3	Oct-90	6	<1.0	2.3	---	0.49	0.028	0.15	0.16
S-4	Oct-90	5	1.3	16	---	1.2	0.056	1.7	0.052
S-5	Oct-90	5	22	290	---	2.8	1.5	12	<0.0050
S-6	Oct-90	6	10	7.7	---	0.28	0.028	0.52	0.21
S-7	Oct-90	7	1.4	17	---	0.30	0.070	0.68	0.36
S-8	Oct-90	7	2.2	52	---	0.068	0.19	0.20	0.27
<b>Tank Hole Samples</b>									
TP1	09/04/91	11.0	---	190	---	0.22	0.26	0.32	0.65
TP2	09/04/91	11.0	340	1,100	---	0.88	1.6	14	7.7
TP3	09/04/91	11.0	---	<0.2	---	<0.001	<0.001	<0.001	<0.001

**TABLE 2A**  
**CUMULATIVE ANALYTICAL RESULTS OF SOIL SAMPLES**  
Former Exxon Service Station 7-0238  
2200 East 12th Street  
Oakland, California  
(Page 3 of 4)

Sample ID	Sample Date	Depth (fbgs)	TPHd (mg/kg)	TPHg (mg/kg)	MTBE (mg/kg)	B (mg/kg)	T (mg/kg)	E (mg/kg)	X (mg/kg)
TP4	09/04/91	11.0	---	<0.2	---	<0.001	<0.001	<0.001	<0.001
TP5	09/04/91	11.0	---	0.78	---	0.0014	<0.001	0.0092	0.025
TP6	09/04/91	11.0	---	0.47	---	0.0033	<0.001	0.0012	0.0017
<b><u>Tank Hole Overexcavation Confirmation Samples</u></b>									
TC1	09/05/91	12.0	---	2.5	---	0.005	0.012	0.078	0.12
TC2	09/05/91	5.0	---	2.0	---	0.078	0.022	0.009	0.013
TC2	09/05/91	11.0	---	<0.2	---	<0.001	<0.001	<0.001	<0.001
TC3	09/05/91	5.0	---	1.6	---	0.026	0.017	0.0043	0.011
TC3	09/05/91	12.0	---	<0.2	---	<0.001	<0.001	<0.001	<0.001
TC4	09/05/91	11.0	---	<0.2	---	<0.001	<0.001	<0.001	0.0018
<b><u>Product Line Trench Samples</u></b>									
P1	09/04/91	3.0	---	27	---	0.44	0.13	0.89	0.29
P2	09/04/91	6.0	---	1,200	---	10	55	16	88
P3	09/04/91	3.0	---	190	---	0.41	2.2	0.93	5.4
P4	09/04/91	4.0	---	1.9	---	0.007	0.013	0.024	0.034
P5	09/04/91	3.0	---	35	---	0.41	0.26	0.34	1.4
P6	09/04/91	3.0	---	240	---	0.18	0.67	1.7	2.7
<b><u>Product Line Trench Overexcavation Confirmation Samples</u></b>									
P2	09/11/91	13.0	---	0.25	---	0.014	0.0077	0.007	0.023
P3	09/11/91	12.0	---	1.5	---	0.68	<0.005	<0.005	0.009
P6	09/11/91	11.0	---	1.3	---	0.005	<0.005	0.081	0.37
<b><u>Waste-Oil Tank Removal Samples</u></b>									
WO-10'	09/17/97	10.0	440	11	---	0.024	0.011	0.064	0.11
<b><u>Stockpile</u></b>									
SP1	Sep. 1991	---	---	3.0	---	<0.001	<0.001	0.0053	0.0059
SP2	Sep. 1991	---	---	<0.2	---	<0.001	<0.001	<0.001	<0.001
SP3	Sep. 1991	---	---	0.36	---	<0.001	0.001	<0.001	0.0014
SP4	Sep. 1991	---	---	0.82	---	<0.001	0.0058	0.0017	0.011
SP5	Sep. 1991	---	---	72	---	<0.01	0.67	0.60	0.71
SP6	Sep. 1991	---	---	1.1	---	<0.001	0.0096	0.0018	0.0049
SP7	Sep. 1991	---	---	32	---	<0.025	0.18	0.1	0.34
SP8	Sep. 1991	---	---	2.9	---	0.0023	0.0012	0.01	0.06
SP9	Sep. 1991	---	---	25	---	<0.02	<0.02	0.036	0.27
SP10	Sep. 1991	---	---	320	---	<0.2	<0.2	0.28	1.5
SP11	Sep. 1991	---	---	16	---	<0.01	0.065	0.052	0.25

**TABLE 2A  
CUMULATIVE ANALYTICAL RESULTS OF SOIL SAMPLES**

Former Exxon Service Station 7-0238

2200 East 12th Street

Oakland, California

(Page 4 of 4)

Sample ID	Sample Date	Depth (fbgs)	TPHd (mg/kg)	TPHg (mg/kg)	MTBE (mg/kg)	B (mg/kg)	T (mg/kg)	E (mg/kg)	X (mg/kg)
SP12	Sep. 1991	---	---	13	---	0.005	0.01	0.062	0.18
SP13	Sep. 1991	---	---	35	---	0.036	0.077	0.13	0.46
WOSP-(A-D) a	09/19/97	---	40	<1.0	---	<0.0050	<0.0050	<0.0050	<0.0050
SP1-1-(1-4)	06/05/03	---	---	<5	0.261	0.0076/<0.002c	0.0041/<0.002c	0.1303/0.0048c	0.079/0.0066c

**Notes:**

- TPHd = Total petroleum hydrocarbons as diesel analyzed using EPA Method 8015B.
- TPHg = Total petroleum hydrocarbons as gasoline analyzed using EPA Method 8015/8015B.
- MTBE = Methyl tertiary butyl ether analyzed using EPA Method 8021B.
- BTEX = Benzene, toluene, ethylbenzene, and total xylenes analyzed using EPA Method 8020.
- Metals = Metals analyzed using method Title 22.
- ETBE = Ethyl tertiary butyl ether analyzed using EPA Method 8260B.
- TAME = Tertiary butyl methyl ether analyzed using EPA Method 8260B.
- TBA = Tertiary butyl alcohol analyzed using EPA Method 8260B.
- EDB = 1,2-Dibromoethane analyzed using EPA Method 8260B.
- 1,2-DCA = 1,2-Dichloroethane analyzed using EPA Method 8260B.
- DIPE = Di-isopropyl ether analyzed using EPA Method 8260B.
- Other VOCs = Other volatile organic compounds analyzed using EPA Method 8260B.
- mg/kg = Milligrams per kilogram.
- = Not analyzed/Not sampled/Not measured.
- a = Also analyzed for volatile organic compounds using EPA Method 8240 and semivolatile organic compounds using EPA Method 8270. Results were not detected at or above the method reporting limit.
- b = Analyzed using CA DHS Method #338
- c = Analyzed using EPA Method 8260B.
- d = Analyzed using EPA Method 6010/200.7.
- e = Results not detected at or above the laboratory reporting limit except: Acetone: 0.0501 mg/kg; carbon disulfide: 0.00368 mg/kg; isopropylbenzene: 0.00219 mg/kg; naphthalene: 0.0105 mg/kg; n-propylbenzene: 0.00805 mg/kg; 1,2,4-trimethylbenzene: 0.0061 mg/kg; and 1,3,5-trimethylbenzene: 0.00249 mg/kg.

**TABLE 2B**  
**ADDITIONAL CUMULATIVE ANALYTICAL RESULTS OF SOIL SAMPLES-VOLATILE ORGANIC COMPOUNDS**

Former Exxon Service Station 7-0238

2200 East 12th Street

Oakland, California

(Page 1 of 1)

Sample ID	Sample Date	Depth (fbgs)	ETBE (mg/kg)	TAME (mg/kg)	TBA (mg/kg)	EDB (mg/kg)	1,2-DCA (mg/kg)	DIPE (mg/kg)	Other VOCs (mg/kg)
S-20-DPE1	06/05/03	20	<0.002	<0.002	0.644	<0.00201	<0.002	<0.01	---
S-20-DPE2	06/04/03	20	<0.002	<0.002	0.41	<0.00201	<0.002	<0.01	---
S-20-DPE3	06/04/03	20	<0.002	<0.002	<0.0496	<0.00198	<0.002	<0.0099	---
S-20-DPE4	06/05/03	20	<0.002	<0.002	<0.0503	<0.00201	<0.002	<0.0101	---
<b>Stockpile</b>									
SP1-1-(1-4)	06/05/03	---	---	---	---	<0.00199	<0.002	---	e

<b>Notes:</b>	
TPHd	= Total petroleum hydrocarbons as diesel analyzed using EPA Method 8015B.
TPHg	= Total petroleum hydrocarbons as gasoline analyzed using EPA Method 8015/8015B.
MTBE	= Methyl tertiary butyl ether analyzed using EPA Method 8021B.
BTEX	= Benzene, toluene, ethylbenzene, and total xylenes analyzed using EPA Method 8020.
Metals	= Metals analyzed using method Title 22.
ETBE	= Ethyl tertiary butyl ether analyzed using EPA Method 8260B.
TAME	= Tertiary butyl methyl ether analyzed using EPA Method 8260B.
TBA	= Tertiary butyl alcohol analyzed using EPA Method 8260B.
EDB	= 1,2-Dibromoethane analyzed using EPA Method 8260B.
1,2-DCA	= 1,2-Dichloroethane analyzed using EPA Method 8260B.
DIPE	= Di-isopropyl ether analyzed using EPA Method 8260B.
Other VOCs	= Other volatile organic compounds analyzed using EPA Method 8260B.
mg/kg	= Milligrams per kilogram.
---	= Not analyzed/Not sampled/Not measured.
a	= Also analyzed for volatile organic compounds using EPA Method 8240 and semivolatile organic compounds using EPA Method 8270. Results were not detected at or above the method reporting limit.
b	= Analyzed using CA DHS Method #338
c	= Analyzed using EPA Method 8260B.
d	= Analyzed using EPA Method 6010/200.7.
e	= Results not detected at or above the laboratory reporting limit except: Acetone: 0.0501 mg/kg; carbon disulfide: 0.00368 mg/kg; isopropylbenzene: 0.00219 mg/kg; naphthalene: 0.0105 mg/kg; n-propylbenzene: 0.00805 mg/kg; 1,2,4-trimethylbenzene: 0.0061 mg/kg; and 1,3,5-trimethylbenzene: 0.00249 mg/kg.



**TABLE 2C**  
**ADDITIONAL CUMULATIVE ANALYTICAL RESULTS OF SOIL SAMPLES-METALS**

Former Exxon Service Station 7-0238

2200 East 12th Street

Oakland, California

(Page 2 of 2)

Sample ID	Sample Date	Sample Depth	Antimony (mg/kg)	Arsenic (mg/kg)	Barium (mg/kg)	Beryllium (mg/kg)	Cadmium (mg/kg)	Chromium (mg/kg)	Cobalt (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Soluble Lead (mg/L)	Mercury (mg/kg)	Molybdenum (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Thallium (mg/kg)	Vanadium (mg/kg)	Zinc (mg/kg)
SP12	Sep. 1991	---	---	---	---	---	---	---	---	---	---	1.0d	---	---	---	---	---	---	---	---
SP13	Sep. 1991	---	---	---	---	---	---	---	---	---	---	0.78d	---	---	---	---	---	---	---	---
WOSP-(A-D)	09/19/97	---	<5.0	8.9	97	<0.50	<0.50	40	6.8	21	47	---	0.051	<2.5	56	<5.0	<0.50	11	26	68
SP1-1-(1-4)	06/05/03	---	---	---	---	---	---	---	---	---	7.83d	---	---	---	---	---	---	---	---	---

Notes:

- TPHd = Total petroleum hydrocarbons as diesel analyzed using EPA Method 8015B.
- TPHg = Total petroleum hydrocarbons as gasoline analyzed using EPA Method 8015/8015B.
- MTBE = Methyl tertiary butyl ether analyzed using EPA Method 8021B.
- BTEX = Benzene, toluene, ethylbenzene, and total xylenes analyzed using EPA Method 8020.
- Metals = Metals analyzed using method Title 22.
- ETBE = Ethyl tertiary butyl ether analyzed using EPA Method 8260B.
- TAME = Tertiary butyl methyl ether analyzed using EPA Method 8260B.
- TBA = Tertiary butyl alcohol analyzed using EPA Method 8260B.
- EDB = 1,2-Dibromoethane analyzed using EPA Method 8260B.
- 1,2-DCA = 1,2-Dichloroethane analyzed using EPA Method 8260B.
- DIPE = Di-isopropyl ether analyzed using EPA Method 8260B.
- Other VOCs = Other volatile organic compounds analyzed using EPA Method 8260B.
- mg/kg = Milligrams per kilogram.
- = Not analyzed/Not sampled/Not measured.
- a = Also analyzed for volatile organic compounds using EPA Method 8240 and semivolatile organic compounds using EPA Method 8270. Results were not detected at or above the method reporting limit.
- b = Analyzed using CA DHS Method #338
- c = Analyzed using EPA Method 8260B.
- d = Analyzed using EPA Method 6010/200.7.
- e = Results not detected at or above the laboratory reporting limit except: Acetone: 0.0501 mg/kg; carbon disulfide: 0.00368 mg/kg; isopropylbenzene: 0.00219 mg/kg; naphthalene: 0.0105 mg/kg; n-propylbenzene: 0.00805 mg/kg; 1,2,4-trimethylbenzene: 0.0061 mg/kg; and 1,3,5-trimethylbenzene: 0.00249 mg/kg.

**TABLE 3**  
**LABORATORY ANALYTICAL RESULTS OF SOIL-GAS SURVEY**  
 Former Exxon Service Station 7-0235  
 2225 Telegraph Avenue  
 Oakland, California  
 (Page 1 of 1)

Sample ID	Sample Date	Depth (fbgs)	TPHg (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)
Air	09/20/88	---	<0.8	<0.8	<0.7	<0.8	<0.8
SG-01	09/20/88	5.0	700,000	320,000	1	320	2,200
SG-03	09/20/88	4.0	96,000	32,000	<28,000	<8	800
SG-04	09/20/88	5.0	<0.8	<0.8	<0.7	<0.8	<0.8
SG-05	09/20/88	2.0	<0.8	<0.8	<0.7	<0.8	<0.8
SG-06	09/20/88	---	---	---	---	---	---
SG-07	09/20/88	---	---	---	---	---	---
SG-08	09/20/88	5.0	<0.8	<0.8	<0.7	<0.8	<0.8
SG-09	09/20/88	6.0	<0.8	<0.8	<0.7	<0.8	<0.8
SG-11	09/20/88	4.0	<0.8	<0.8	<0.7	<0.8	<0.8
SG-12	09/20/88	5.0	<0.8	<0.8	<0.7	<0.8	<0.8
SG-13	09/20/88	5.0	23	<0.8	<0.7	<0.8	<0.8
Air	09/20/88	---	<0.7	<0.7	<0.8	<0.8	<0.8

**Notes:**

- TPHg = Total petroleum hydrocarbons as gasoline analyzed using DHS Method-LUFT Field Manual.
- BTEX = Benzene, toluene, ethylbenzene, and total xylenes analyzed using EPA Method 8020.
- fbgs = Feet below ground surface.
- µg/L = Micrograms per liter.
- = Not applicable/Not samples/Not analyzed.
- a = Analyzed using EPA Method 602.

**TABLE 4A**  
**LABORATORY ANALYTICAL RESULTS OF GRAB GROUNDWATER SAMPLES**

Former Exxon Service Station 7-0235  
 2225 Telegraph Avenue  
 Oakland, California  
 (Page 1 of 1)

Sample ID	Sample Date	Depth (fbgs)	TPHg (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)
WS-02	09/20/88	5.0	25,000	12,000a	<73a	<80a	<80a
MW-9A	09/20/88	6.0	<76	<76a	<73a	<80a	<80a
WS-10	09/20/88	6.0	<76	<76a	<73a	<80a	<80a

Notes:

- TPHg = Total petroleum hydrocarbons as gasoline analyzed using DHS Method-LUFT Field Manual.
- BTEX = Benzene, toluene, ethylbenzene, and total xylenes analyzed using EPA Method 8020.
- Metals = Metals analyzed using EPA Method 200.7.
- fbgs = Feet below ground surface.
- µg/L = Micrograms per liter.
- = Not applicable/Not samples/Not analyzed.
- a = Analyzed using EPA Method 602.



**TABLE 4B**  
**ADDITIONAL LABORATORY ANALYTICAL RESULTS OF GRAB GROUNDWATER SAMPLES-METALS**

Former Exxon Service Station 7-0235

2225 Telegraph Avenue

Oakland, California

(Page 1 of 1)

Sample ID	Date Collected	Arsenic (µg/L)	Lead (µg/L)	Cadmium (µg/L)	Chromium (µg/L)	Copper (µg/L)	Iron (µg/L)	Nickel (µg/L)	Silver (µg/L)	Zinc (µg/L)
W-Comp	10/26/00	11.5	<5	<5	<10	<10	825	27.5	<10	28.5

Notes:

- TPHg = Total petroleum hydrocarbons as gasoline analyzed using DHS Method-LUFT Field Manual.
- BTEX = Benzene, toluene, ethylbenzene, and total xylenes analyzed using EPA Method 8020.
- Metals = Metals analyzed using EPA Method 200.7.
- fbgs = Feet below ground surface.
- µg/L = Micrograms per liter.
- = Not applicable/Not samples/Not analyzed.
- a = Analyzed using EPA Method 602.

**TABLE 5**  
**WELL CONSTRUCTION DETAILS**  
Former Exxon Service Station 7-0238  
2200 East 12th Street  
Oakland, California  
(Page 1 of 1)

Well ID	Date Well Installed	TOC Elevation (feet)	Borehole Diameter (inches)	Total Depth of Boring (feet)	Well Depth (feet)	Well Casing Diameter (inches)	Well Casing Material	Screened Interval (feet)	Slot Size (inches)	Filter Pack Interval (feet)	Filter Pack Material
MW9A	06/10/88	14.51	8	18	18	2	PVC	8-18	0.020	NS	NS
MW9B	06/10/88	12.84	8	20	18	2	PVC	8-18	0.020	NS	NS
MW9C	06/10/88	14.16	8	17	18	2	PVC	8-18	0.020	NS	NS
MW9D	10/05/88	15.97	12	16.5	14	NS	PVC	5-14	NS	NS	NS
MW9E	10/05/88	NS	12	18.5	14	NS	PVC	5-14	NS	NS	NS
MW9F	11/23/88	11.38	8	16	14	NS	PVC	4-14	NS	NS	NS
MW9G	11/22/88	12.98	8	16.5	14	NS	PVC	5-14	NS	NS	NS
MW9H	11/23/88	11.59	8	16.5	14	NS	PVC	5-14	NS	NS	NS
MW9I	11/02/90	13.13	12	16	16	NS	NS	4-14	NS	NS	NS
DPE1	06/05/03	NS	10	21	20	4	PVC	5-20	0.020	4-20	#3 Sand
DPE2	06/04/03	NS	10	21	20	4	PVC	5-20	0.020	4-20	#3 Sand
DPE3	06/04/03	NS	10	21	20	4	PVC	5-20	0.020	4-20	#3 Sand
DPE4	06/05/03	NS	10	21	20	4	PVC	5-20	0.020	4-20	#3 Sand
VP1	01/11/01	NS	8	20	20	2	PVC	5-20	0.020	4-20	#3 Sand
VP2	01/11/01	NS	8	20	20	2	PVC	5-20	0.020	4-20	#3 Sand

Notes:

- TOC = Top of well casing elevation; datum is mean sea level.
- NS = Not specified.
- PVC = Polyvinyl chloride.





TABLE 6  
 OPERATION AND PERFORMANCE DATA FOR DUAL-PHASE EXTRACTION SYSTEM, VAPOR- PHASE  
 Former Exxon Service Station 7-0238  
 2200 East 12th Street  
 Oakland, California  
 (Page 3 of 5)

DATE	FIELD MEASUREMENTS									LABORATORY ANALYTICAL RESULTS			TPHg Removal		MTBE Removal		Benzene Removal		Destruction Efficiency (%)	Benzene Emission (lb/day)
	System Hours	Total Hours	Temp (deg F)	Vacuum ("Hg)	Pressure ("H <sub>2</sub> O)	Flow (fpm)	Flow (scfm)	Sample ID	PID (ppmv)	TPHg (mg/M <sup>3</sup> )	Benzene (mg/M <sup>3</sup> )	MTBE (mg/M <sup>3</sup> )	Period (lbs)	Cumulative (lbs)	Period (lbs)	Cumulative (lbs)	Period (lbs)	Cumulative (lbs)		
07/08/05	3,441	6,407	75	16	0.0	1,500	100	A-INF 32.6 A-EFF 0.0												
07/15/05	3,510	6,476	74	18	0.0	1,400	94	A-INF 67.2 A-EFF 0.1												
07/22/05	3,675	6,641	74	15	0.0	1,400	94	A-INF 12.0 A-EFF 0.0												
07/29/05	3,844	6,810	72	16	0.0	1,000	67	A-INF 4.0 A-EFF 0.0												
08/05/05	3,860	6,826	72	14	0.0	1,400	93	A-INF 4.5 A-EFF 0.0												
08/12/05	3,860	6,826	72	14	0.0	1,400	93	A-INF 4.5 A-EFF 0.0	< 5.000	< 0.500	< 0.500	< 8.75	< 1,161.62	< 0.64	< 46.69	< 0.62	< 9.78	100.00	0.0041	
08/19/05	System down for pump repair/replacement.																			
08/19/05	3,867	6,833	—	—	—	—	—	A-INF — A-EFF —												
09/23/05	3,882	6,848	72	17	0.0	1,400	93	A-INF 56.0 A-EFF 0.0	44.8	1.78	0.902	< 0.19	< 1,161.81	< 0.01	< 46.69	< 0.01	< 9.79	100.00	0.0042	
09/30/05	4,048	7,014	72	12	0.0	1,400	93	A-INF 5.1 A-EFF 0.0	< 5.00	< 0.500	< 0.500									
10/07/05	4,217	7,183	72	16	0.0	1,200	80	A-INF 1.0 A-EFF 0.0	< 5.00	< 0.500	< 0.500	< 2.70	< 1,164.51	< 0.08	< 46.77	< 0.12	< 9.92	100.00		
10/14/05	4,386	7,352	72	16	0.0	1,200	80	A-INF 3.0 A-EFF 0.0	—	—	—									
10/21/05	4,400	7,366	72	18	0.0	1,200	80	A-INF 0.0 A-EFF 0.0	< 5.00	< 0.500	< 0.500	< 0.27	< 1,164.78	< 0.03	< 46.79	< 0.03	< 9.94	100.00	0.0039	
10/28/05	4,564	7,530	72	12	0.0	1,400	93	A-INF 0.0 A-EFF 0.0	< 5.00	< 0.500	< 0.500									
11/04/05	4,735	7,701	72	16	0.0	1,400	93	A-INF 4.0 A-EFF 0.0	7.48	< 0.500	< 0.500	< 0.88	< 1,165.46	< 0.05	< 46.85	< 0.05	< 10.00	100.00	0.0039	
11/11/05	4,905	7,871	72	14	0.0	1,500	100	A-INF 14.0 A-EFF 0.0	< 5.00	< 0.500	< 0.500									
11/18/05	5,068	8,034	72	18	0.0	1,400	93	A-INF 26.0 A-EFF 0.0												
11/21/05	5,110	8,076	72	19	0.0	1,200	80	A-INF 320.0 A-EFF 0.0												
12/05/05	5,371	8,337	72	16	0.0	1,500	100	A-INF 28.0 A-EFF 0.0	30.0	1.77	7.62	< 4.30	< 1,169.76	< 0.93	< 47.78	< 0.26	< 10.26	100.00	0.0022	
12/09/05	System shut down pending catalytic oxidizer repair.																			
12/09/05	5,540	8,506	72	18	0.0	1,300	87	A-INF 100.0 A-EFF 0.0	< 5.00	< 0.500	< 0.500									
01/27/06	Catalytic oxidizer repair complete. Restart system and discharge to holding tank. Shut down system prior to departure.																			
01/27/06	5,546	8,512	72	18	0.0	1,400	93	A-INF 0.0 A-EFF 0.0	< 5.00	< 0.500	< 0.500	< 1.11	< 1,170.87	< 0.26	< 48.04	< 0.07	< 10.33	100.00	0.0043	
02/24/06	Restart system, resample, and discharge to holding tank. Shut down system prior to departure.																			
02/24/06	5,548	8,514	72	20	1.0	1,400	93	A-INF 0.0 A-EFF 0.0	< 5.00	< 0.500	< 0.500	< 0.00	< 1,170.87	< 0.00	< 48.04	< 0.00	< 10.33	100.00	0.0042	



TABLE 6  
 OPERATION AND PERFORMANCE DATA FOR DUAL-PHASE EXTRACTION SYSTEM, VAPOR-PHASE  
 Former Exxon Service Station 7-0238  
 2200 East 12th Street  
 Oakland, California  
 (Page 5 of 5)

DATE	FIELD MEASUREMENTS										LABORATORY ANALYTICAL RESULTS			TPH <sub>g</sub> Removal		MTBE Removal		Benzene Removal		Destruction Efficiency (%)	Benzene Emission (lb/day)
	System Hours	Total Hours	Temp (deg F)	Vacuum ("Hg)	Pressure ("H <sub>2</sub> O)	Flow (fpm)	Flow (scfm)	Sample ID	PID (ppmv)	TPH <sub>g</sub> (mg/M <sup>3</sup> )	Benzene (mg/M <sup>3</sup> )	MTBE (mg/M <sup>3</sup> )	Period (lbs)	Cumulative (lbs)	Period (lbs)	Cumulative (lbs)	Period (lbs)	Cumulative (lbs)			
11/03/06	System running on arrival and departure.																				
	8,069	11,035	74	10	1.0	1,400	93	A-INF	22												
								A-EFF	0.0												
11/10/06	System running on arrival and departure.										< 50.0	< 0.500	0.890	< 12.14	< 1,214.46	0.24	< 48.80	< 0.12	< 10.78	100.00	0.0042
	8,232	11,198	74	10	1.0	1,400	93	A-INF	0.0	< 50.0	< 0.500	< 0.500									
								A-EFF	0.0												
11/14/06	System running on arrival and departure.																				
	8,329	11,295	73	10	1.0	1,400	93	A-INF	20												
								A-EFF	0.0												
11/20/06	System running on arrival and departure.																				
	8,475	11,441	72	11	1.0	1,250	83	A-INF	20												
								A-EFF	0.0												
11/27/06	System running on arrival and departure.																				
	8,641	11,607	72	12	1.0	1,200	80	A-INF	16												
								A-EFF	0.0												
12/06/06	System running on arrival and departure.										< 50.0	< 0.500	< 0.500	< 10.87	< 1,225.33	< 0.15	< 48.95	< 0.11	< 10.89	100.00	0.0042
	8,656	11,822	72	10	1.0	1,400	93	A-INF	12.0	< 50.0	< 0.500	< 0.500									
								A-EFF	0.0												
12/15/06	System running on arrival and departure.																				
	9,070	12,036	72	15	1.0	1,000	66	A-INF	10.0												
								A-EFF	0.0												
12/21/06	System running on arrival and departure.																				
	9,216	12,182	72	10	1.0	1,200	80	A-INF	16.0												
								A-EFF	0.0												
12/27/06	System down on arrival and running on departure.																				
	9,276	12,242	72	14	0.0	1,100	73	A-INF	30.6												
								A-EFF	0.0												

- Notes:
- A-INF = Influent vapor sample.
  - A-EFF = Effluent vapor sample.
  - TPH<sub>g</sub> = Total petroleum hydrocarbons as gasoline analyzed using EPA Method 8015B or 18M.
  - Benzene = Benzene analyzed using EPA Method 8021B or 18M.
  - MTBE = Methyl tertiary butyl ether analyzed using EPA Method 8021B or 18M.
  - Temp = Temperature of vapor stream.
  - deg F = Degrees Fahrenheit.
  - "Hg = Inches of mercury vacuum.
  - "H<sub>2</sub>O = Inches of water column.
  - PID = Photo-ionization detector measurement.
  - acfm = Actual cubic feet per minute.
  - scfm = Standard cubic feet per minute.
  - deg F = Degrees Fahrenheit.
  - ppmv = Parts per million by volume.
  - fpm = Feet per minute.
  - mg/M<sup>3</sup> = Milligrams per cubic meter.
  - lbs = Pounds.
  - = Not sampled/Not analyzed/Not measured/Not calculated/Not applicable.













**TABLE 7**  
**OPERATION AND PERFORMANCE DATA**  
**FOR DUAL-PHASE EXTRACTION SYSTEM, LIQUID-PHASE**

Former Exxon Service Station 7-0238

2200 East 12th Street

Oakland, California

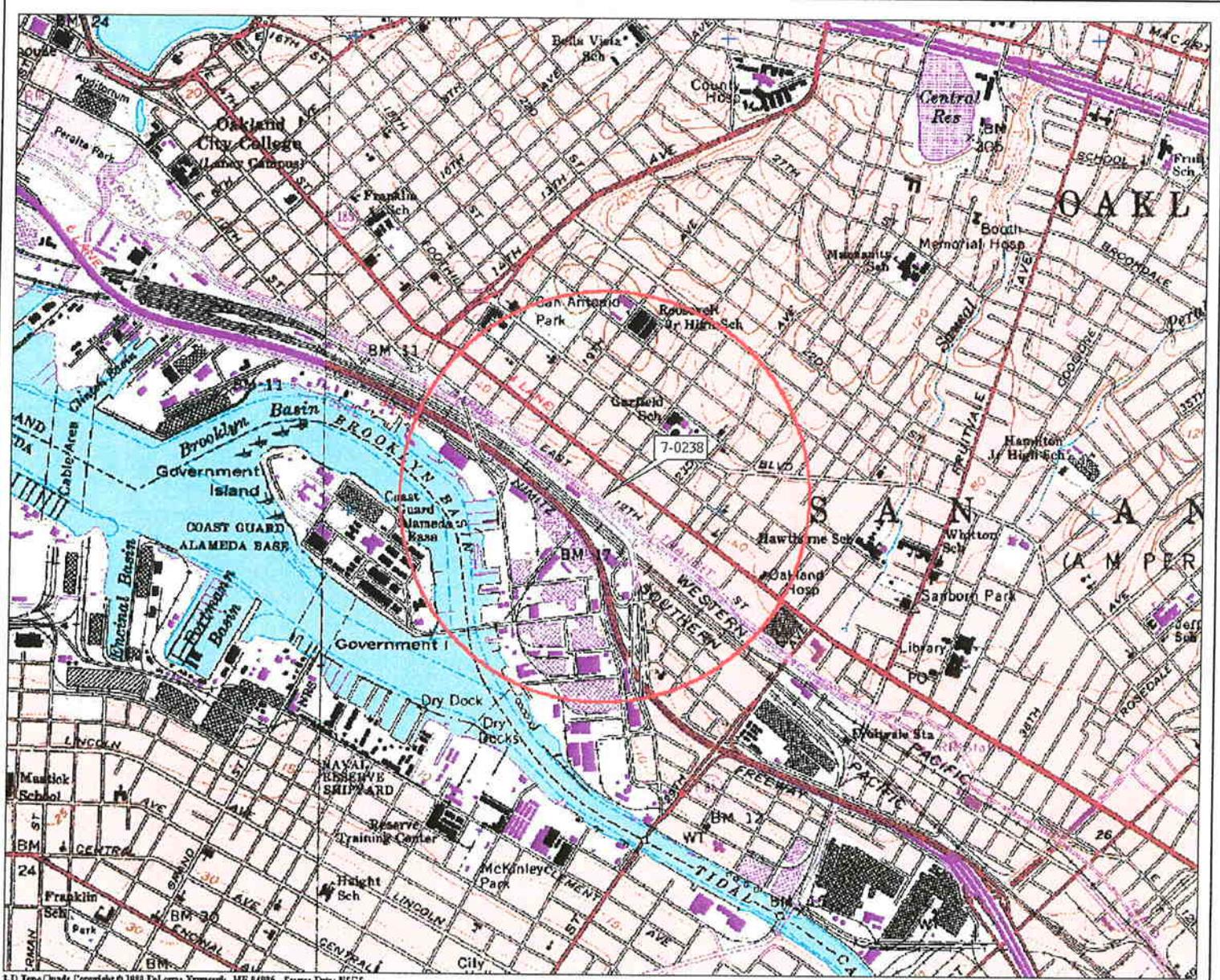
(Page 6 of 6)

Notes:

W-INF	=	Water influent combined.
W-INT1	=	Water intermediate after first carbon vessel.
W-INT2	=	Water intermediate after second carbon vessel.
PSP-1	=	Water effluent.
TPHg	=	Total petroleum hydrocarbons as gasoline analyzed using modified EPA Method 8015M/8015B.
TPHd	=	Total petroleum hydrocarbons as diesel analyzed using modified EPA Method 8015M.
BTEX	=	Benzene, toluene, ethylbenzene, and total xylenes analyzed using EPA Method 8021B.
MTBE	=	Methyl tertiary butyl ether analyzed using EPA Method 8021B.
gal	=	Gallons.
gpm	=	Gallons per minute.
µg/L	=	Micrograms per liter.
lbs	=	Pounds.
--	=	Not sampled/Not analyzed/Not measured/Not calculated/Not applicable.
<	=	Less than the laboratory method reporting limit.
a	=	Diesel-range organic compounds reported in sample; however, chromatogram pattern is not representative of diesel fuel.
b	=	Diesel result was within the range diesel fuel. There was insufficient area for pattern match.
c	=	Sample mislabeled as W-EFF on the Chain-of-Custody and laboratory report.
d	=	Sample inadvertently misdated by laboratory. Correct sampling date is shown.

\* If value is below laboratory reporting limit, then detection limit value is used for removal calculations.

\*\* Indicates the concentrations of identifiable analytes are below the laboratory reporting limit unless otherwise noted.



3-D Topo Quad Copyright © 1999 DeLorme Yarmouth, ME 04096 Source Data: USGS 1:50,000 Scale: 1:19,200 Detail: 13-0 Datum: WGS84

FN 2293TOP0

**EXPLANATION**



1/2-mile radius circle

**APPROXIMATE SCALE**



SOURCE:  
Modified from a map  
provided by  
DeLorme 3-D TopoQuads

**SITE VICINITY MAP**

FORMER EXXON SERVICE STATION 7-0238  
2200 East 12th Street  
Oakland, California

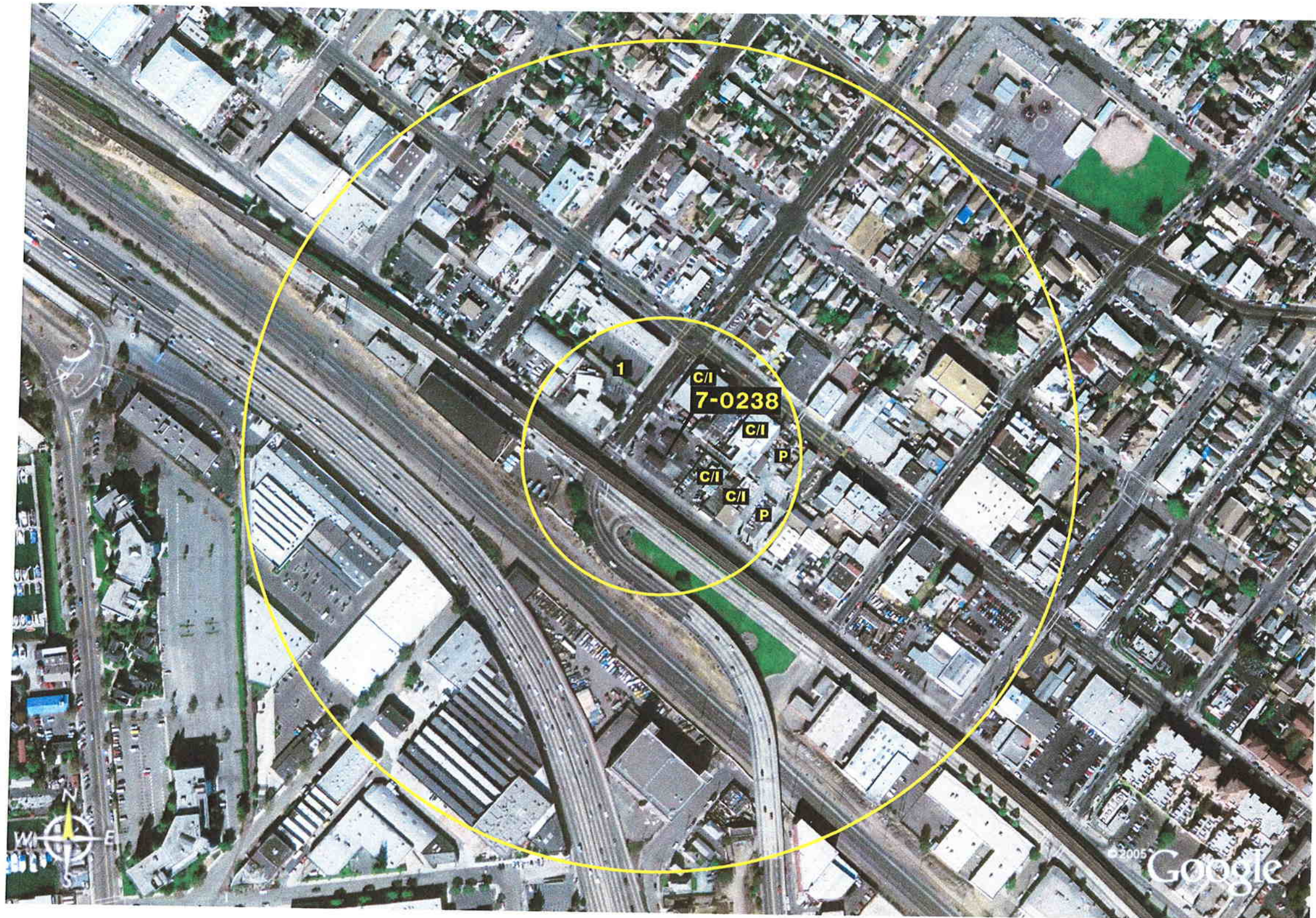


**PROJECT NO.**

2293

**PLATE**

1



**LEGEND**

- C/I** Commercial / Industrial
- VAC** Vacant Lot
- P** Parking Lot
- R** Additional Residential

**WELLS**

**⚠** There are no public or private wells within a 300-Meter radius. See the Regional Area Map.

**WELLS (SPECIAL USE OR MUNICIPAL)**

**⚠**

**RESIDENCES**

**①** None

**PUBLIC USE AREAS**

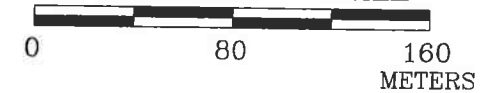
**1** Life Academy High School

**SURFACE WATER**

**①** None

**○** 100-Meter and 300-Meter Radius

**APPROXIMATE SCALE**



**LOCAL AREA MAP**

FORMER EXXON SERVICE STATION 7-0238  
 2200 East 12th Street  
 Oakland, California

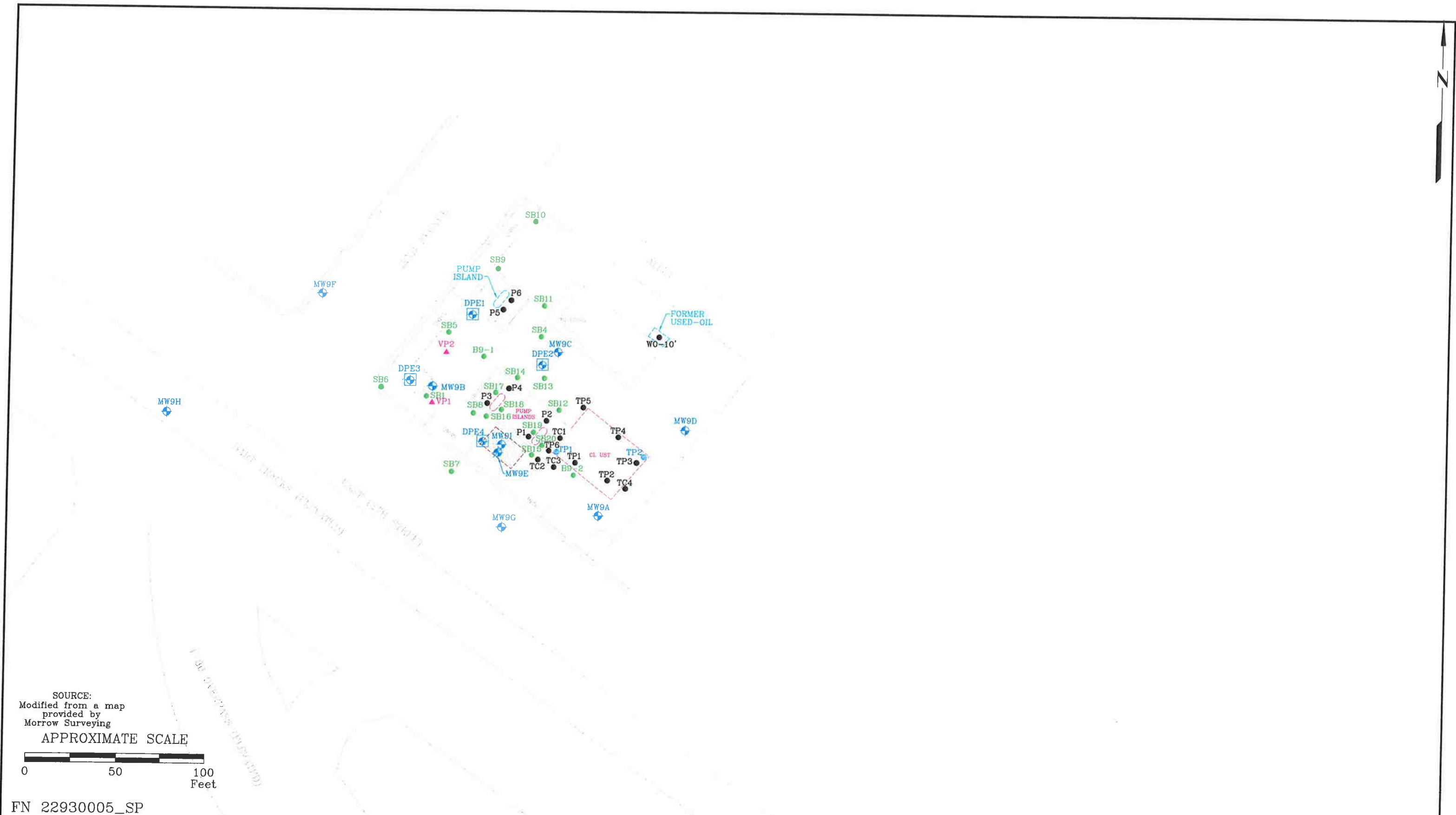


**PROJECT NO.**

2293

**PLATE**

2



SOURCE:  
 Modified from a map  
 provided by  
 Morrow Surveying

APPROXIMATE SCALE

0 50 100  
 Feet

FN 22930005\_SP



**GENERALIZED SITE PLAN**

FORMER EXXON SERVICE STATION 7-0238  
 2200 East 12th Street  
 Oakland, California

**EXPLANATION**

- MW9I Groundwater Monitoring Well
- TP2 Observation Well
- DPE4 Dual-Phase Extraction Well
- VP2 Soil Vapor Extraction Well
- SB11 Soil Boring
- MW9E Destroyed Groundwater Monitoring Well

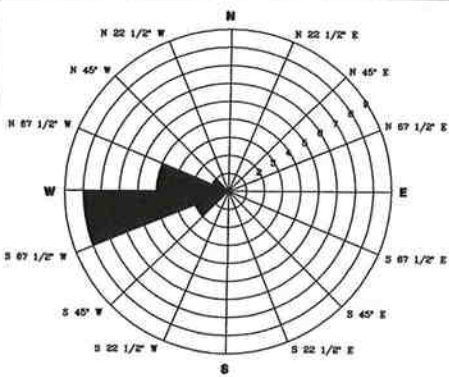
NOTE:  
 Former Groundwater Monitoring Well  
 MW9E was in the current location  
 of MW9I.

Excavation

**PROJECT NO.**  
 2293

**PLATE**  
 3





**GROUNDWATER FLOW DIRECTION  
ROSE DIAGRAM**  
January 10, 2003 - December 15, 2006



MW9H  
4.17

MW9F  
6.28

DPE1

MW9C  
1.95

DPE3

MW9B  
6.07

DPE4

MW9I  
7.68

MW9G  
7.68

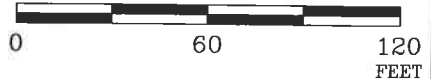
TP1

CL UST

TP2

MW9D  
9.06

APPROXIMATE SCALE



SOURCE:  
Modified from a map  
provided by  
Morrow Surveying

FN: 22930005\_QM

**EXPLANATION**

MW9I  
 Groundwater Monitoring Well  
7.68 Groundwater elevation in feet;  
datum is mean sea level

8 --- Line of Equal Groundwater Elevation;  
datum is mean sea level

DPE4  
 Dual-Phase Extraction Well

TP2  
 Tank Pit Well



**GROUNDWATER ELEVATION MAP  
December 15, 2006**

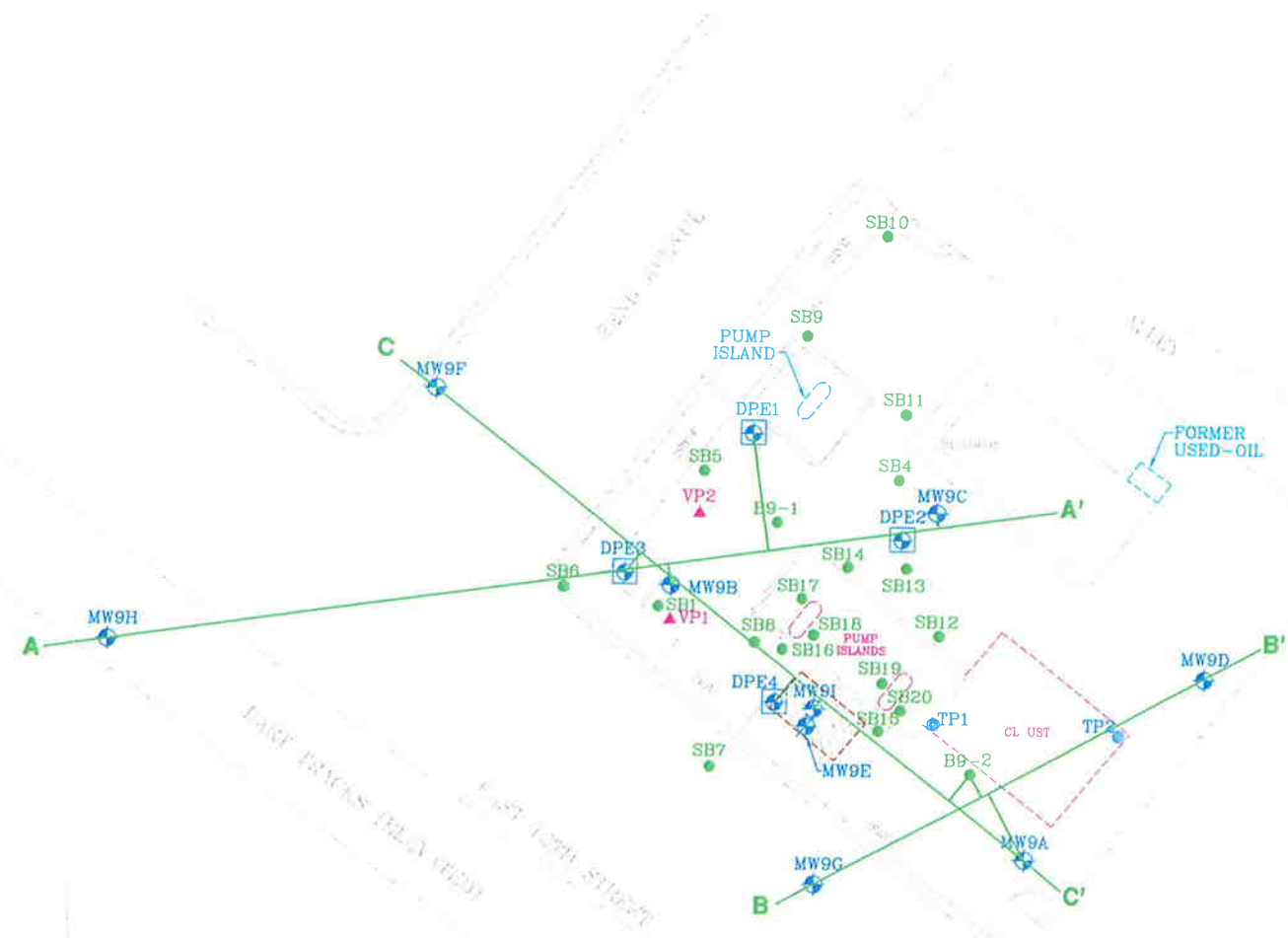
FORMER EXXON SERVICE STATION 7-0238  
2200 East 12th Street  
Oakland, California

**PROJECT NO.**

2293

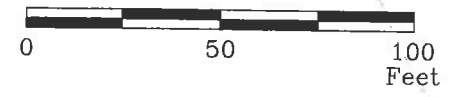
**PLATE**

4



SOURCE:  
Modified from a map  
provided by  
Morrow Surveying

APPROXIMATE SCALE



FN 22930005\_SP

### CROSS SECTION LOCATION MAP

FORMER EXXON SERVICE STATION 7-0238  
2200 East 12th Street  
Oakland, California

#### EXPLANATION

- MW9I Groundwater Monitoring Well
- TP2 Observation Well
- DPE4 Dual-Phase Extraction Well
- VP2 Soil Vapor Extraction Well
- SB11 Soil Boring
- MW9E Destroyed Groundwater Monitoring Well

NOTE:  
Former Groundwater Monitoring Well  
MW9E was in the current location  
of MW9I.

- Excavation
- Cross Section Locations

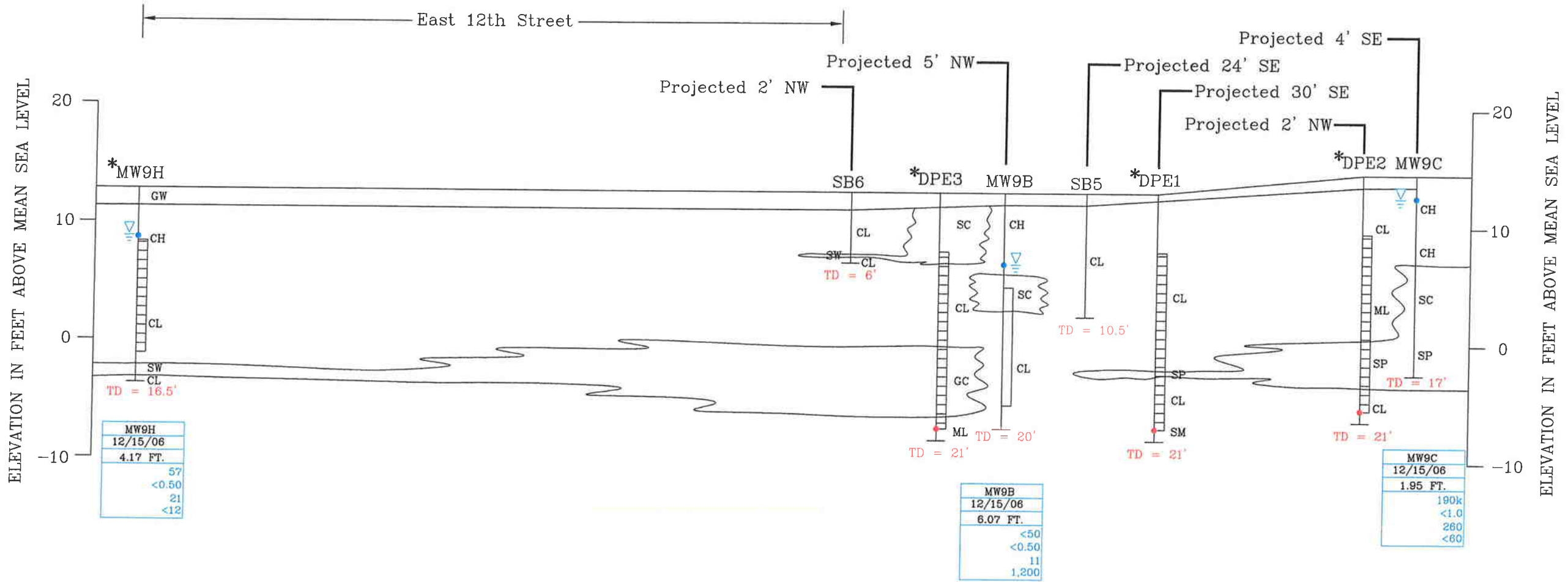
PROJECT NO.  
2293

PLATE  
5



**WEST  
A**

**EAST  
A'**

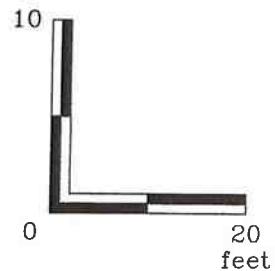


MW9H
12/15/06
4.17 FT.
57
<0.50
21
<12

MW9B
12/15/06
6.07 FT.
<50
<0.50
11
1,200

MW9C
12/15/06
1.95 FT.
190k
<1.0
260
<60

APPROXIMATE SCALE



Vertical Exaggeration x2

FN 2293 07 R23 XSA-A'-GW

Analyte Concentrations in ug/L

MW9C
12/15/06
1.95 FT.
190k
<1.0
260
<60

< Less Than the Stated Laboratory Reporting Limit  
 ug/L Micrograms per liter  
 k Hydrocarbon result partly due to individual peak(s) in quantitation range.

**CROSS SECTION A-A'**  
**SELECT GROUNDWATER ANALYTICAL RESULTS**

FORMER  
 EXXON SERVICE STATION 7-0238  
 2200 East 12th Street  
 Oakland, California

**EXPLANATION**

(Including SP, SW, SM, SC, and GC.)

Fine-grained sediments (Including, CL, CH, and ML)

Static Groundwater

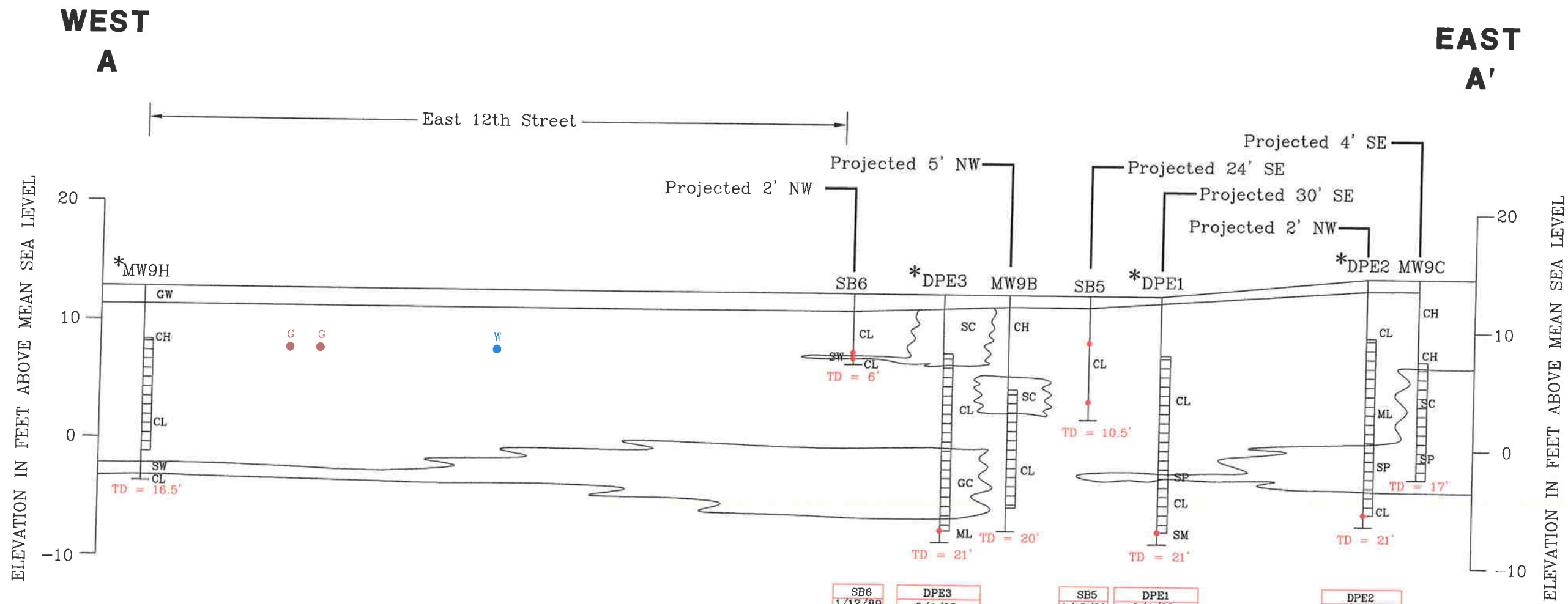
TD = Total Depth

\* Inferred Depth

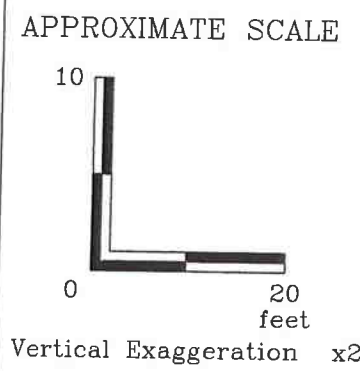
**PROJECT NO.**  
2293

**PLATE**  
6





Well ID	Date	Sample Depth	Total Petroleum Hydrocarbons as gasoline	Benzene	Methyl Tertiary Butyl Ether
SB6	1/12/89	5 FT.	<10	<0.05	NA
DPE3	6/4/03	20 FT.	<5	<0.001	0.089/0.0317 <sup>c</sup>
SB5	1/12/89	5 FT.	<10	0.33	NA
DPE1	6/4/03	20 FT.	<5	<0.001	2.03/2.36 <sup>c</sup>
DPE2	6/4/03	20 FT.	<5	<0.001	0.165/0.102 <sup>c</sup>
		5.5 FT.	<10	<0.05	NA



Analyte Concentrations in mg/kg

SB6
1/12/89 Sample Date
5 FT. Sample Depth
<10 Total Petroleum Hydrocarbons as gasoline
<0.05 Benzene
NA Methyl Tertiary Butyl Ether
NA TBA

< Less Than the Stated Laboratory Reporting Limit  
 mg/kg Milligrams per kilogram  
<sup>c</sup> Analyzed using EPA Method 8260B

FN 2293 07 R23 XSA-A'-SOIL



## CROSS SECTION A-A' SELECT SOIL ANALYTICAL RESULTS

FORMER  
EXXON SERVICE STATION 7-0238  
2200 East 12th Street  
Oakland, California

### EXPLANATION

- (Including SP, SW, SM, SC, and GC.)
- PG&E Gas Utility
- EBMUD Water Utility

- Fine-grained sediments (Including, CL, CH, and ML)
- Sample Depth
- TD = Total Depth
- Inferred Depth

**PROJECT NO.**  
2293

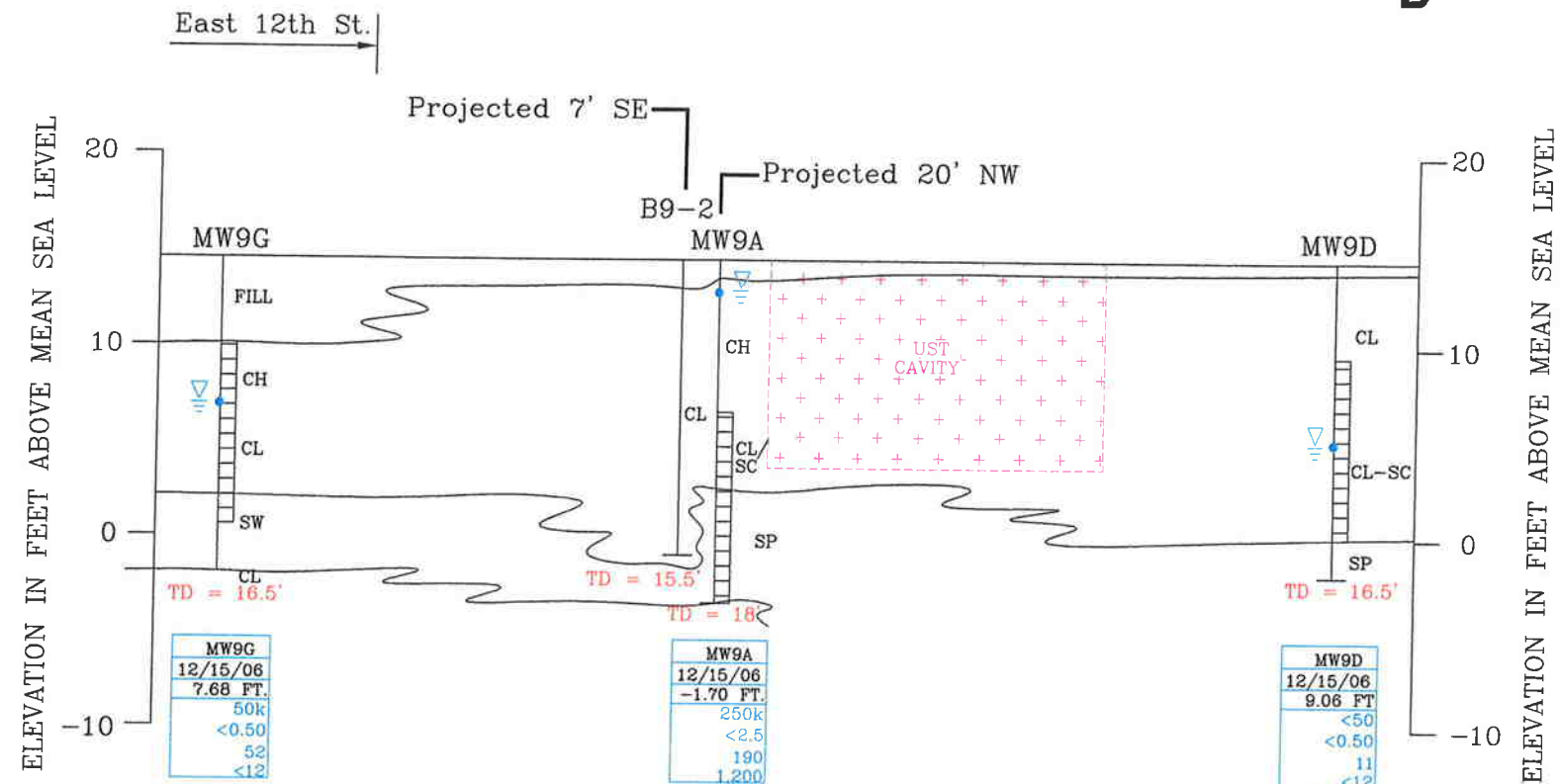
**PLATE**  
7

**SOUTHWEST**

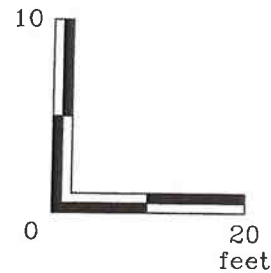
**NORTHEAST**

**B**

**B'**



APPROXIMATE SCALE



Vertical Exaggeration x2

FN 2293 07 R23 XSB-B'-GW

Analyte Concentrations in ug/L

Well	Date	Sample Depth	Total Petroleum Hydrocarbons as gasoline	Benzene	Methyl Tertiary Butyl Ether
MW9G	12/15/06	-1.70'	250k	<2.5	190
					1,200

- < Less Than the Stated Laboratory Reporting Limit
- ug/L Micrograms per Liter
- < Hydrocarbon result partly due to individual peak(s) in quantitation range.

**CROSS SECTION B-B'**  
**SELECT GROUNDWATER ANALYTICAL RESULTS**

FORMER  
EXXON SERVICE STATION 7-0238  
2200 East 12th Street  
Oakland, California

**EXPLANATION**

(Including SP, SW, SM, SC, and GC.)

Fine-grained sediments (Including, CL, CH, and ML)

• Static Groundwater  
TD = Total Depth

**PROJECT NO.**

2293

**PLATE**

8

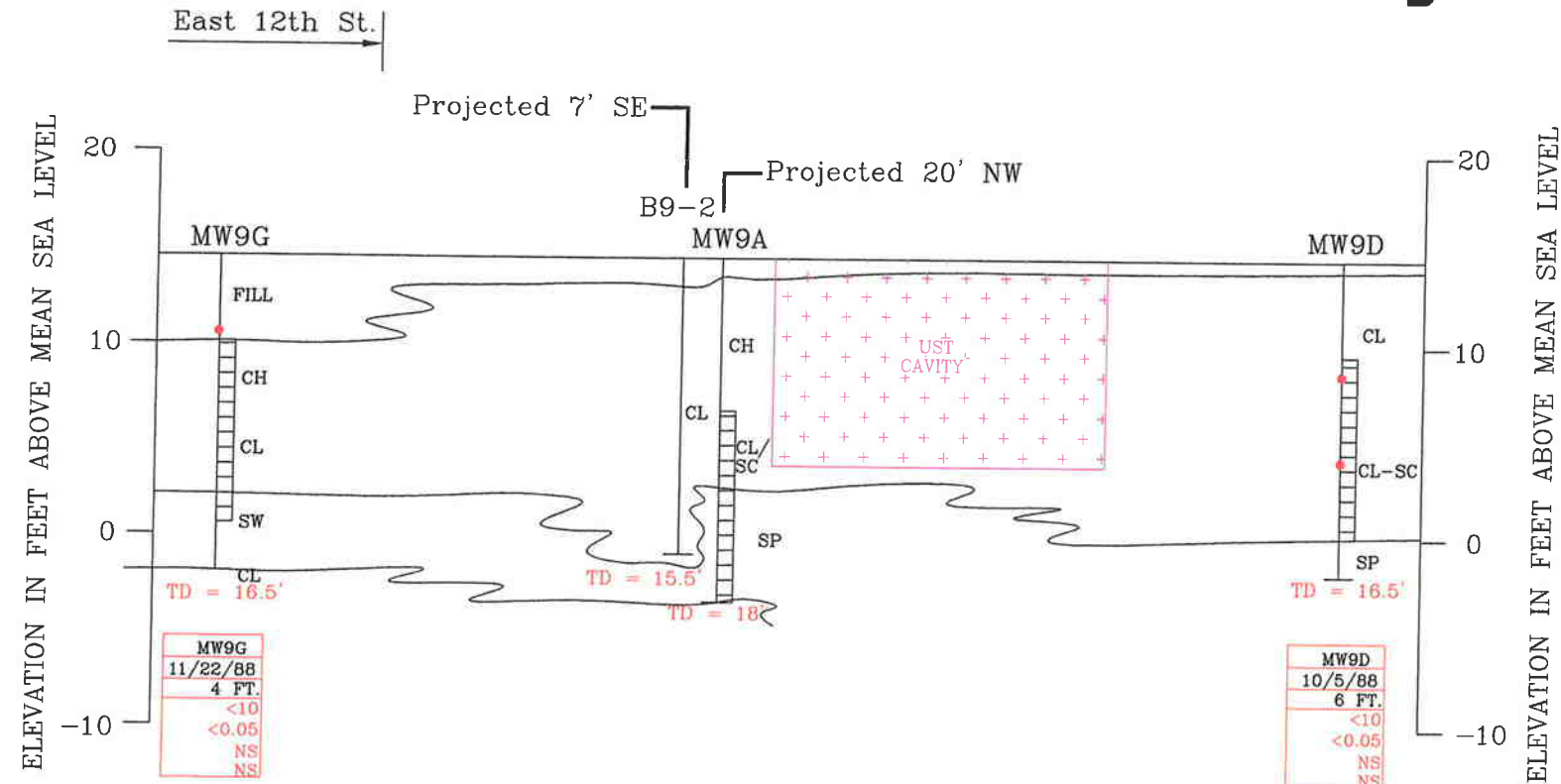


**SOUTHWEST**

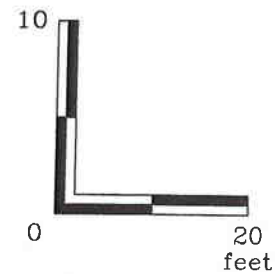
**NORTHEAST**

**B**

**B'**



APPROXIMATE SCALE



Vertical Exaggeration x2

FN 2293 07 R23 XSB-B'-SOIL

Analyte Concentrations in mg/kg

MW9G
11/22/88
5 FT. Sample Depth
<10
<0.05
NA
NA

< Less Than the Stated Laboratory Reporting Limit  
mg/kg Milligrams per kilogram

**CROSS SECTION B-B'**  
**SELECT SOIL ANALYTICAL RESULTS**

FORMER  
EXXON SERVICE STATION 7-0238  
2200 East 12th Street  
Oakland, California

**EXPLANATION**

(Including SP, SW, SM, SC, and GC.)

Fine-grained sediments (Including, CL, CH, and ML)

• Sample Depth  
TD = Total Depth

**PROJECT NO.**

2293

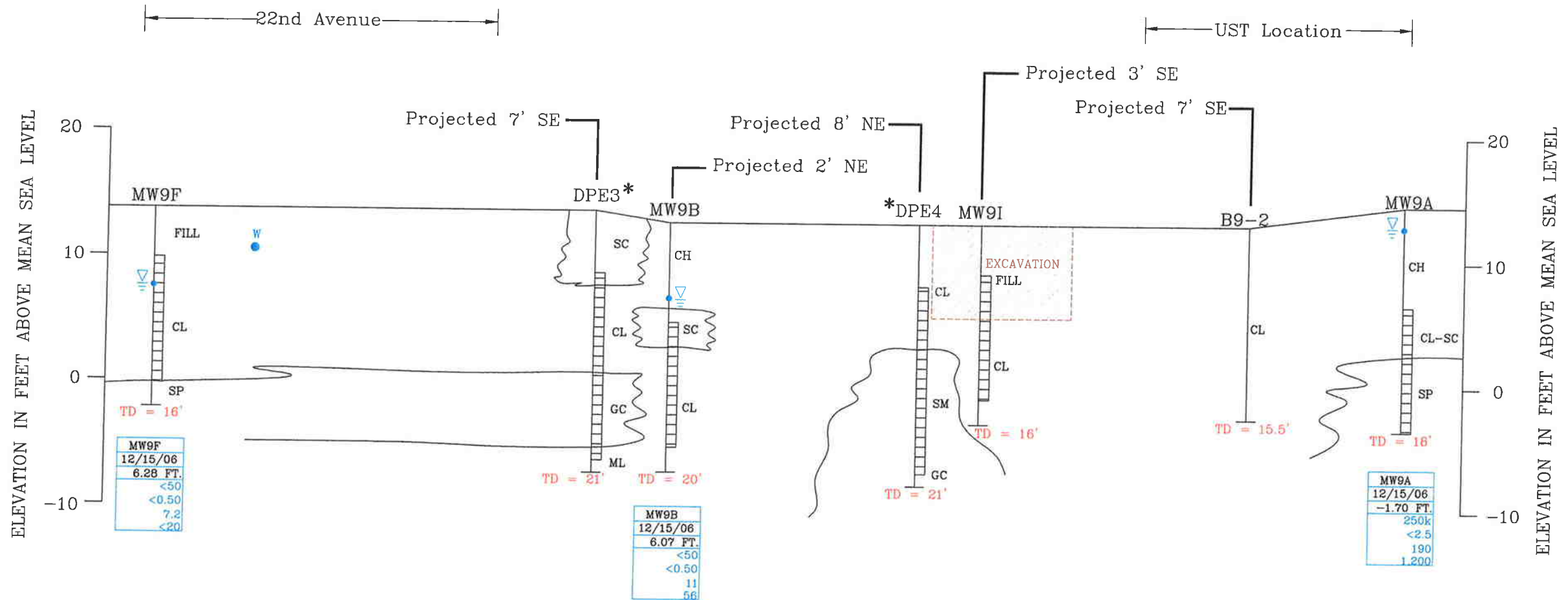
**PLATE**

9

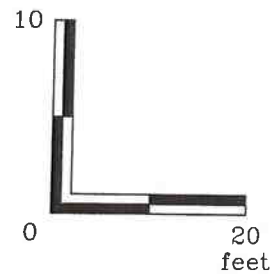


**NORTHWEST**  
**C**

**SOUTHWEST**  
**C'**



APPROXIMATE SCALE



Analyte Concentrations in ug/L

MW9A
12/15/06
-1.70 FT.
250k
<2.5
190
1,200

< Less Than the Stated Laboratory Reporting Limit  
ug/L Micograms per Liter  
k Hydrocarbon result partly due to individual peak(s) in quantitation range.

Vertical Exaggeration x2

FN 2293 07 R23 XSC-C'-GW



**CROSS SECTION C-C'**  
**SELECT GROUNDWATER ANALYTICAL RESULTS**

FORMER  
EXXON SERVICE STATION 7-0238  
2200 East 12th Street  
Oakland, California

**EXPLANATION**

(Including SP, SW, SM, SC, and GC.)

W EBMUD Water Utility

Fine-grained sediments (Including, CL, CH, and ML)

Static Groundwater

TD = Total Depth

\* Inferred Depth

**PROJECT NO.**

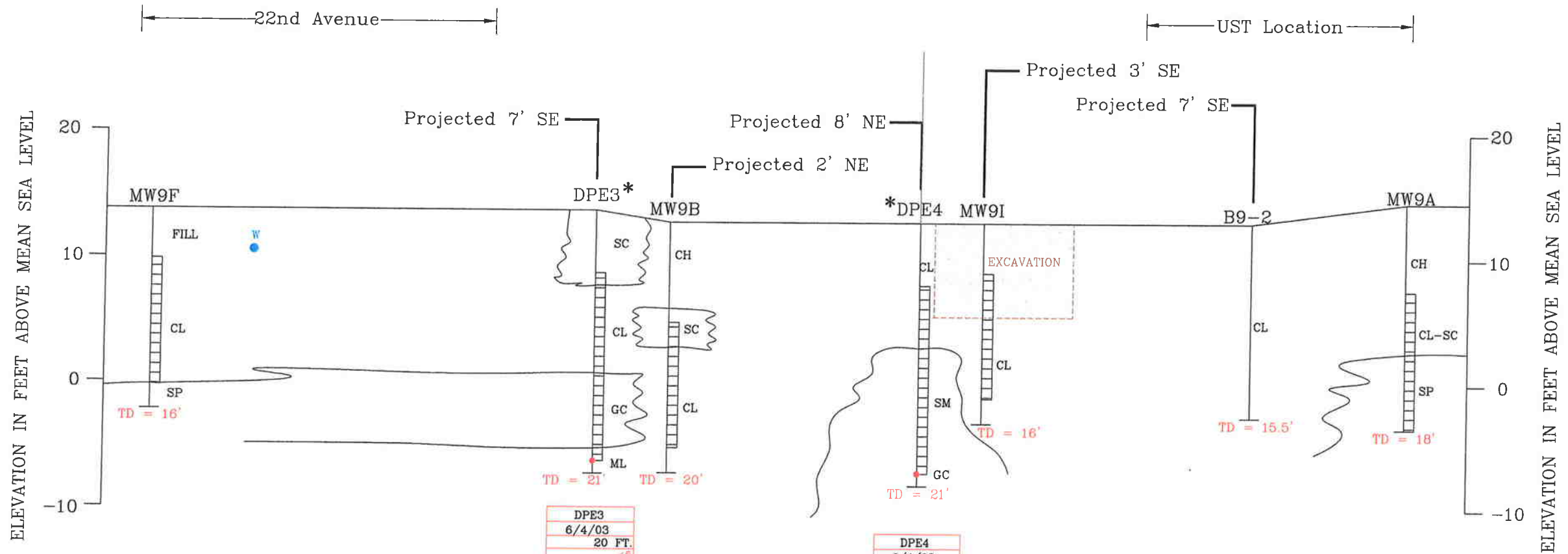
2293

**PLATE**

10

**NORTHWEST**  
**C**

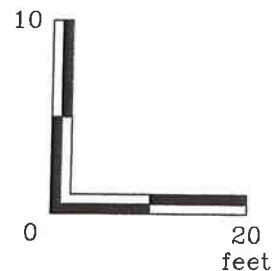
**SOUTHWEST**  
**C'**



DPE3
6/4/03
20 FT.
<5
<0.001
0.089/0.0317c
<0.0496

DPE4
6/4/03
20 FT.
<5
<0.001
0.047/0.0356c
<0.0503

APPROXIMATE SCALE



Vertical Exaggeration x2

FN 2293 07 R23 XSC-C'-SOIL

Analyte Concentrations in mg/kg	
DPE4	
6/4/03	Sample Date
20 FT.	Sample Depth
<5	Total Petroleum Hydrocarbons as gasoline
<0.001	Benzene
0.047/0.0356c	Methyl Tertiary Butyl Ether
<0.0503	TBA
<	Less Than the Stated Laboratory Reporting Limit
mg/kg	Milligrams per kilogram
c	Analyzed using EPA Method 8260B

**CROSS SECTION C-C'**  
**SELECT SOIL ANALYTICAL RESULTS**

FORMER  
EXXON SERVICE STATION 7-0238  
2200 East 12th Street  
Oakland, California

**EXPLANATION**

(Including SP, SW, SM, SC, and GC.)

W EBMUD Water Utility

Fine-grained sediments (Including, CL, CH, and ML)

• Sample Depth  
TD = Total Depth  
\* Inferred Depth

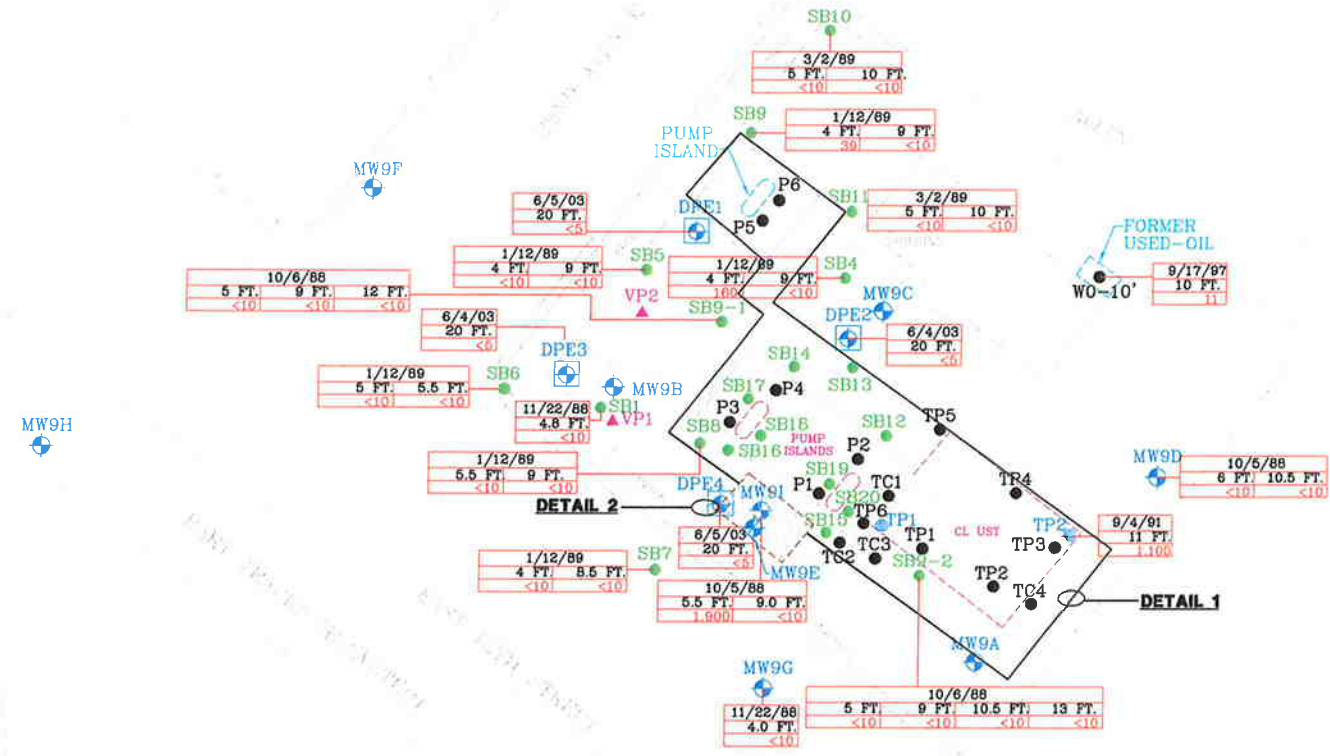
**PROJECT NO.**  
2293

**PLATE**  
11



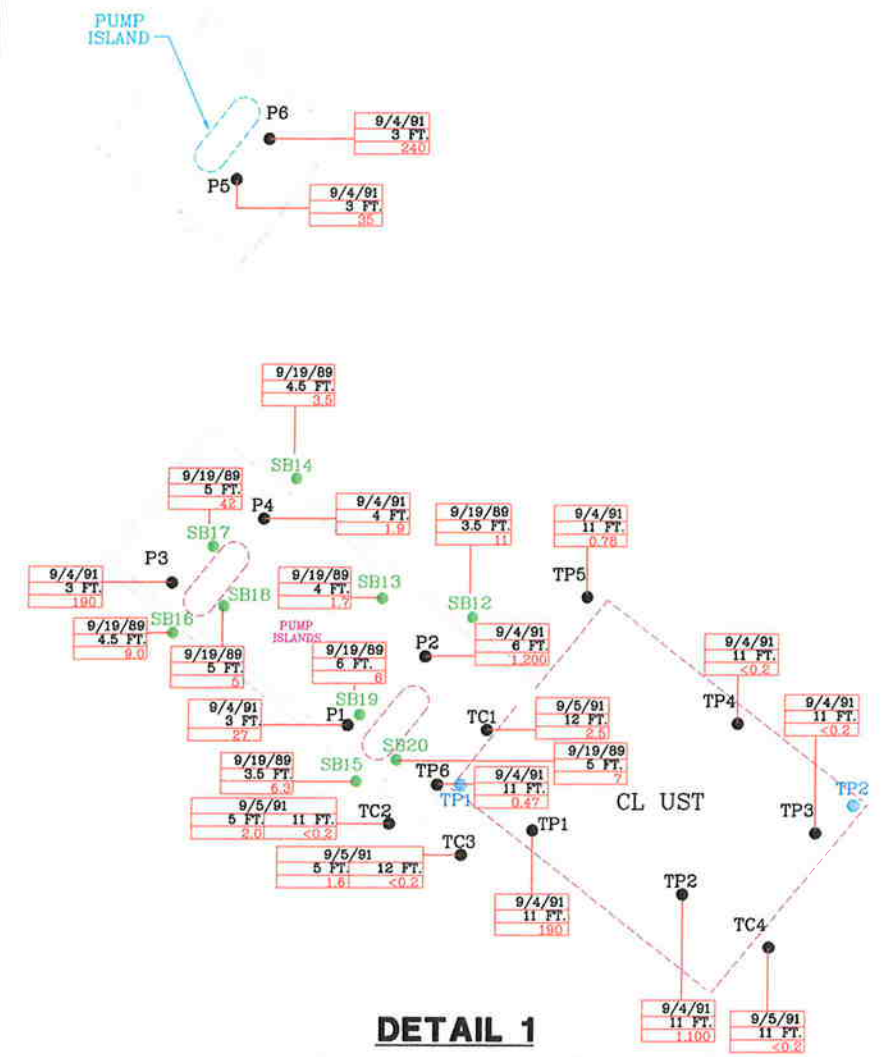
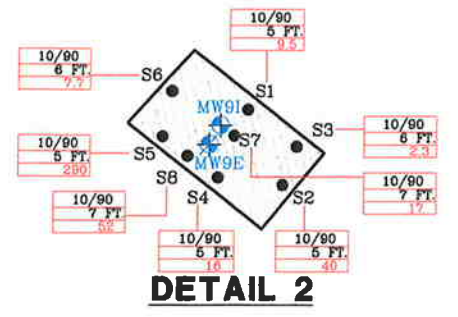


Analyte Concentrations in mg/kg  
 9/4/91 Sample Date  
 11 FT. Sample Depth  
 1.100 TPHg  
 < Less Than the Stated Laboratory Detection Limit  
 mg/kg Milligrams per kilogram



SOURCE:  
 Modified from a map provided by Morrow Surveying  
 APPROXIMATE SCALE  
 0 50 100 Feet

FN 22930005\_SP



APPROXIMATE SCALE  
 0 25 50 Feet

**RESIDUAL TPHg CONCENTRATIONS IN SOIL**  
 FORMER EXXON SERVICE STATION 7-0238  
 2200 East 12th Street  
 Oakland, California

**EXPLANATION**

- MW9I Groundwater Monitoring Well
- TP2 Observation Well
- DPE4 Dual-Phase Extraction Well
- VP2 Soil Vapor Extraction Well
- SB11 Soil Boring
- MW9E Destroyed Groundwater Monitoring Well
- SB Excavation Sample

NOTE:  
 Former Groundwater Monitoring Well MW9E was in the current location of MW9I.

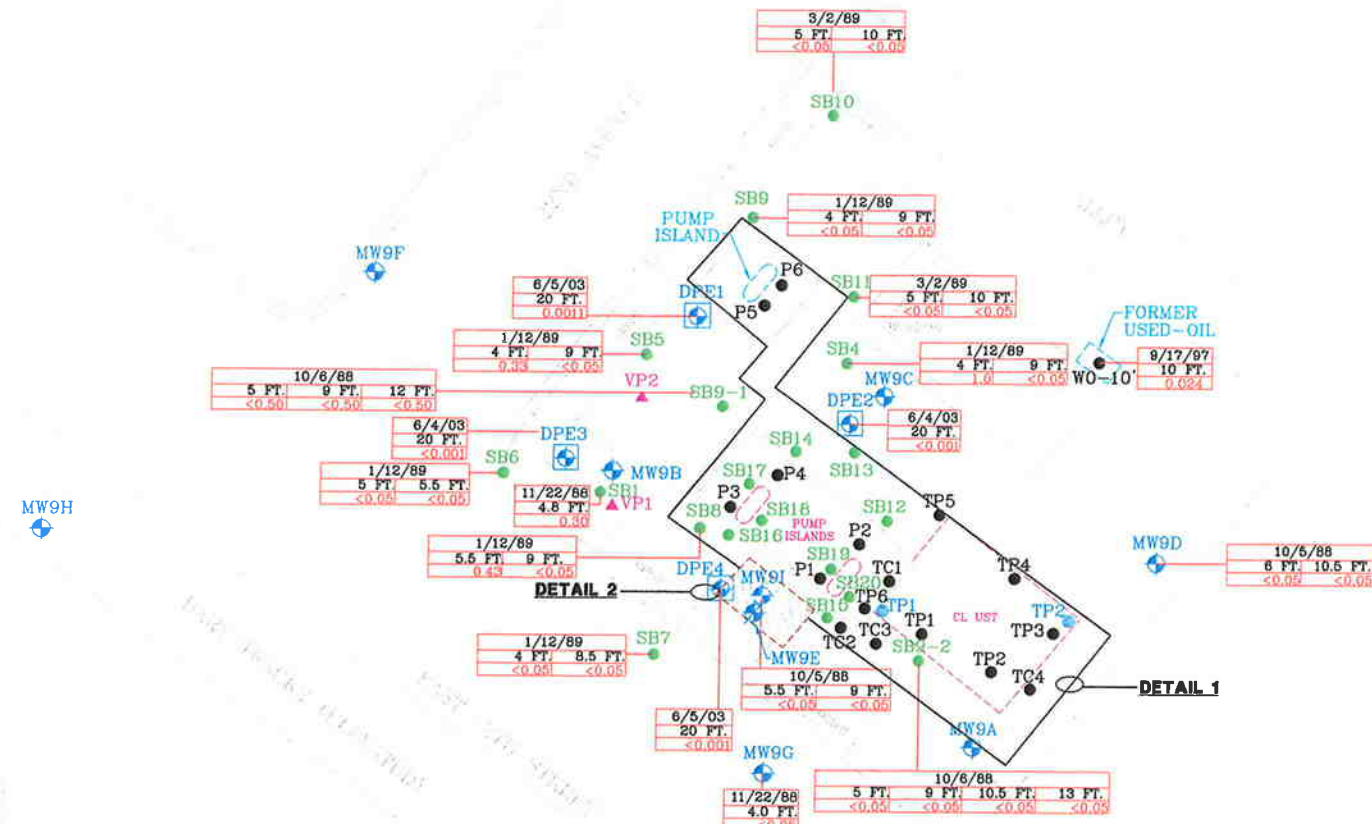
Excavation

**PROJECT NO.**  
 2293

**PLATE**  
 12

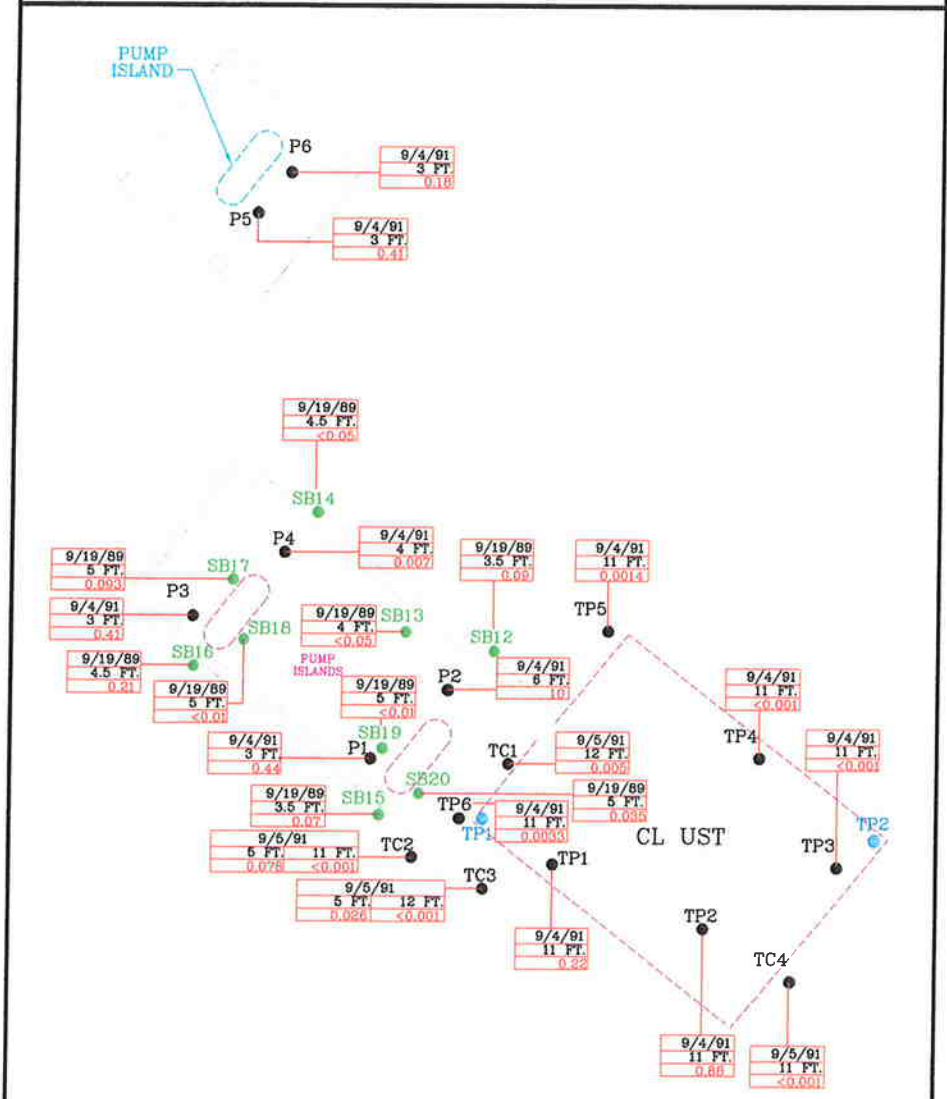
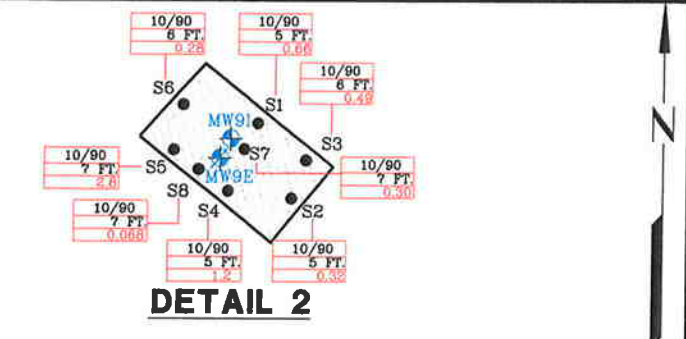


Analyte Concentrations in mg/kg  
 9/4/91 Sample Date  
 11 FT. Sample Depth  
 0.66 Benzene  
 < Less Than the Stated Laboratory Detection Limit  
 mg/kg Milligrams per kilogram



SOURCE:  
 Modified from a map provided by Morrow Surveying  
 APPROXIMATE SCALE  
 0 50 100 Feet

FN 22930005\_SP



**DETAIL 1**  
**BENZENE CONCENTRATIONS IN SOIL**  
 APPROXIMATE SCALE  
 0 25 50 Feet

**RESIDUAL BENZENE CONCENTRATIONS IN SOIL**

FORMER EXXON SERVICE STATION 7-0238  
 2200 East 12th Street  
 Oakland, California

**EXPLANATION**

- MW9I Groundwater Monitoring Well
- TP2 Observation Well
- DPE4 Dual-Phase Extraction Well

- VP2 Soil Vapor Extraction Well
- SB11 Soil Boring
- MW9E Destroyed Groundwater Monitoring Well
- SB Excavation Sample

**NOTE:**

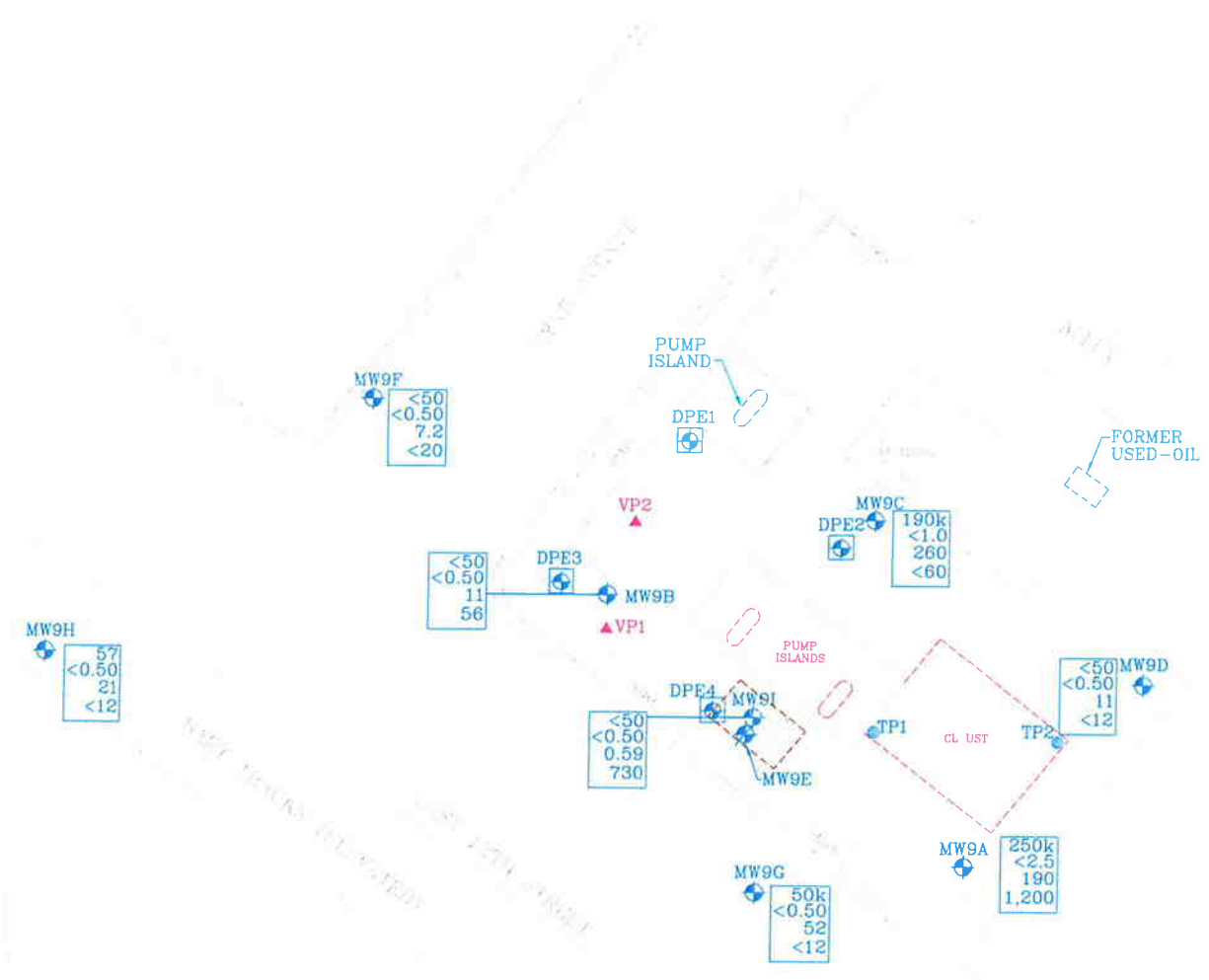
Former Groundwater Monitoring Well MW9E was in the current location of MW9I.

Excavation

**PROJECT NO.**  
2293

**PLATE**  
13





SOURCE:  
Modified from a map  
provided by  
Morrow Surveying

APPROXIMATE SCALE

Analyte Concentrations in ug/L  
Sampled December 15, 2006

250k Total Petroleum Hydrocarbons as gasoline  
 <2.5 Benzene  
 190 Methyl Tertiary Butyl Ether  
 1,200 Tertiary Butyl Alcohol

< Less Than the Stated Laboratory Reporting Limit  
 ug/L Micrograms per Liter  
 k Hydrocarbon result partly due to individual peak(s) in quantitation range.

FN 22930005\_SP



**SELECT GROUNDWATER ANALYTICAL RESULTS**  
**December 15, 2006**  
 FORMER EXXON SERVICE STATION 7-0238  
 2200 East 12th Street  
 Oakland, California

**EXPLANATION**

- MW9I Groundwater Monitoring Well
- TP2 Observation Well
- DPE4 Dual-Phase Extraction Well

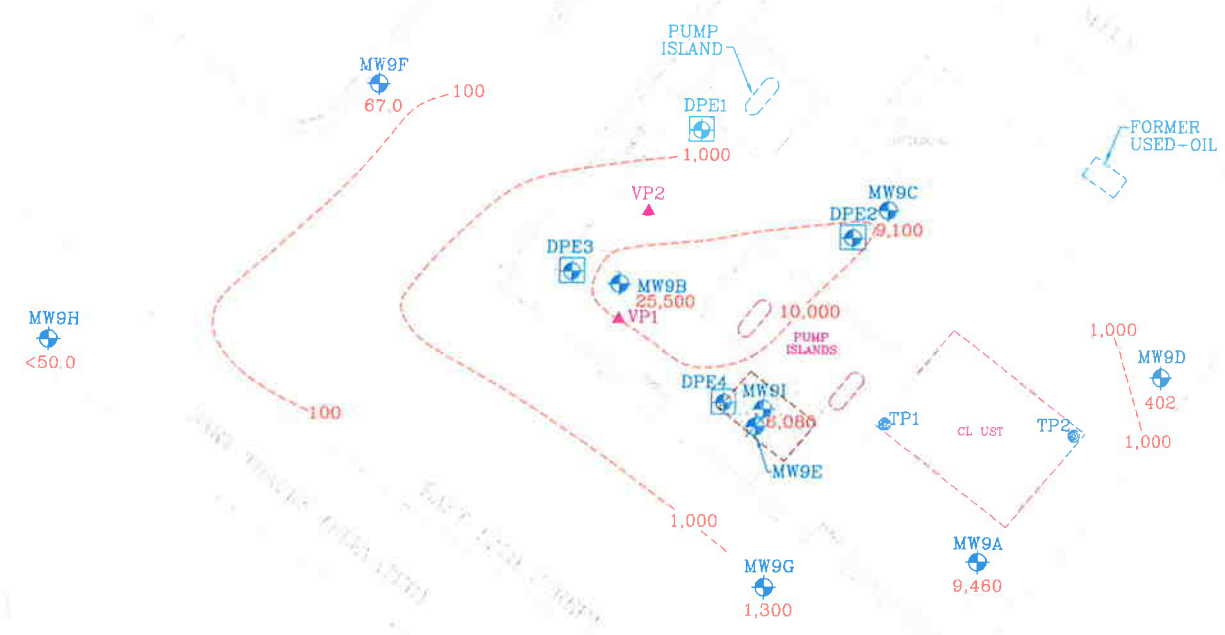
- VP2 Soil Vapor Extraction Well
- MW9E Destroyed Groundwater Monitoring Well

**NOTE:**  
Former Groundwater Monitoring Well MW9E was in the current location of MW9I.



**PROJECT NO.**  
2293

**PLATE**  
14



SOURCE:  
 Modified from a map  
 provided by  
 Morrow Surveying  
 APPROXIMATE SCALE  
  
 0 50 100  
 Feet

FN 22930005\_SP

10,000----Line of Equal TPHg Concentration (ug/L)  
 (Micrograms per liter [ug/L])



**TPHg ISOCONCENTRATION MAP**  
**October 1, 2003**  
 FORMER EXXON SERVICE STATION 7-0238  
 2200 East 12th Street  
 Oakland, California

**EXPLANATION**

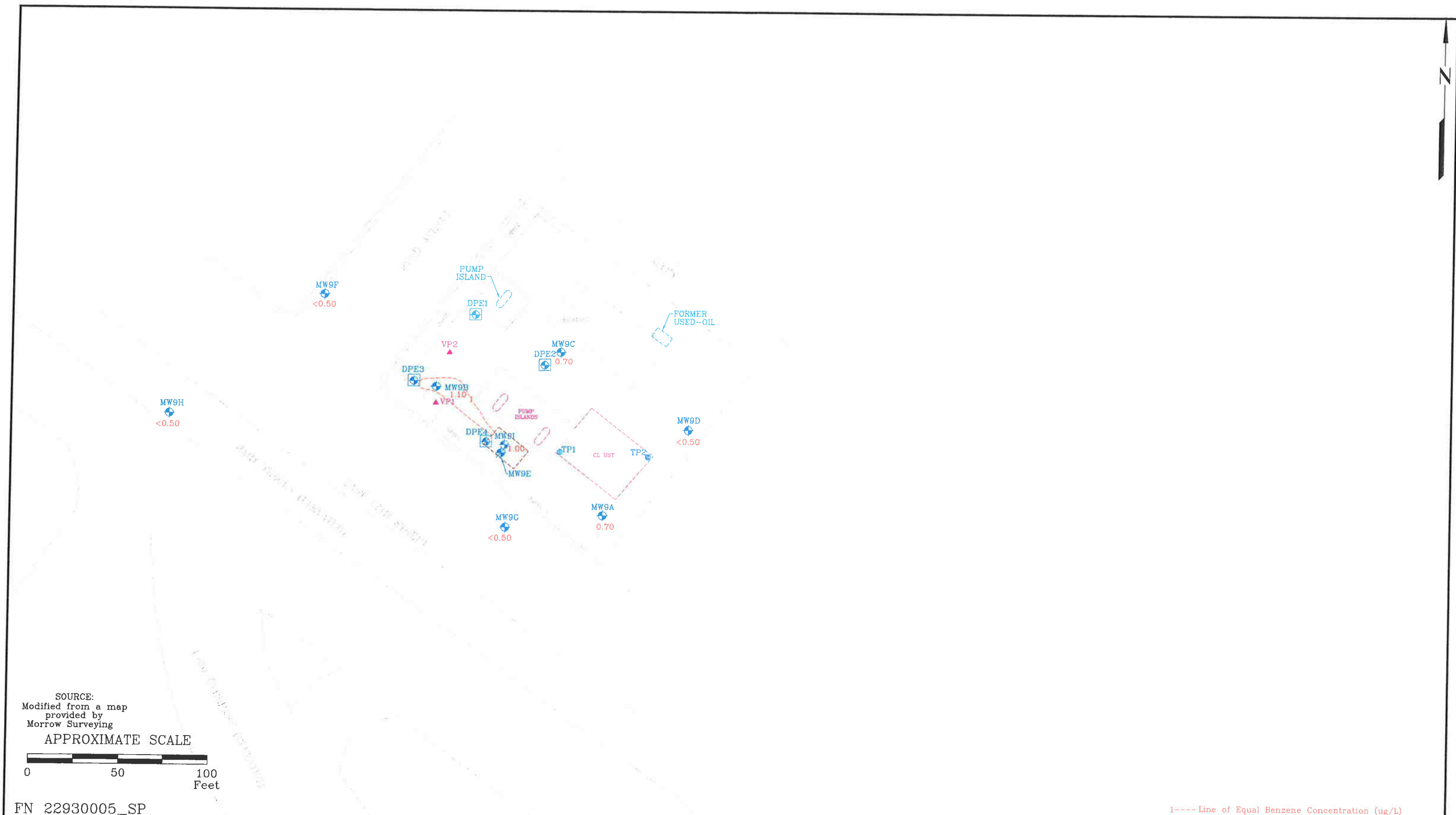
- Groundwater Monitoring Well  
6,080 TPHg concentration (ug/L)
- Observation Well
- Dual-Phase Extraction Well

- Soil Vapor Extraction Well
- Destroyed Groundwater Monitoring Well

**NOTE:**  
 Former Groundwater Monitoring Well  
 MW9E was in the current location  
 of MW9I.

Excavation

**PROJECT NO.**  
 2293  
**PLATE**  
 15



SOURCE:  
Modified from a map  
provided by  
Morrow Surveying

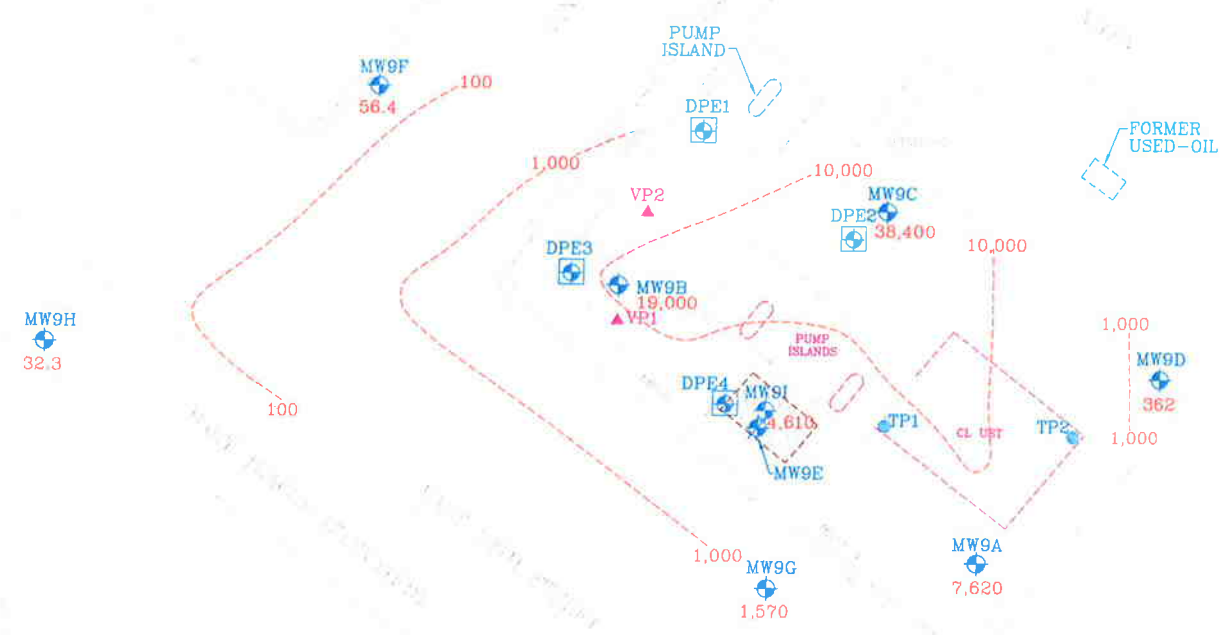
APPROXIMATE SCALE

0 50 100  
Feet

FN 22930005\_SP

1-----Line of Equal Benzene Concentration (ug/L)  
(Micrograms per liter [ug/L])

	<p align="center"><b>BENZENE ISOCONCENTRATION MAP</b> <b>October 1, 2003</b> FORMER EXXON SERVICE STATION 7-0238 2200 East 12th Street Oakland, California</p>	<p><b>EXPLANATION</b></p> <p>MW91 Groundwater Monitoring Well</p> <p>1.00 Benzene concentration (ug/L)</p> <p>TP2 Observation Well</p> <p>DPE4 Dual-Phase Extraction Well</p> <p>VP2 Soil Vapor Extraction Well</p> <p>MW9E Destroyed Groundwater Monitoring Well</p>		<p><b>NOTE:</b> Former Groundwater Monitoring Well MW9E was in the current location of MW91.</p>	<p><b>PROJECT NO.</b> 2293</p>
				<p>Excavation</p>	<p><b>PLATE</b> 16</p>



SOURCE:  
 Modified from a map  
 provided by  
 Morrow Surveying  
 APPROXIMATE SCALE  
  
 0 50 100  
 Feet

FN 22930005\_SP

10,000----Line of Equal MTBE Concentration (ug/L)  
 (Micrograms per liter [ug/L])



**MTBE ISOCONCENTRATION MAP**  
**October 1, 2003**  
 FORMER EXXON SERVICE STATION 7-0238  
 2200 East 12th Street  
 Oakland, California

**EXPLANATION**

- MW9I  
 Groundwater Monitoring Well  
 4,610 MTBE concentration (ug/L)
- TP2  
 Observation Well
- DPE4  
 Dual-Phase Extraction Well

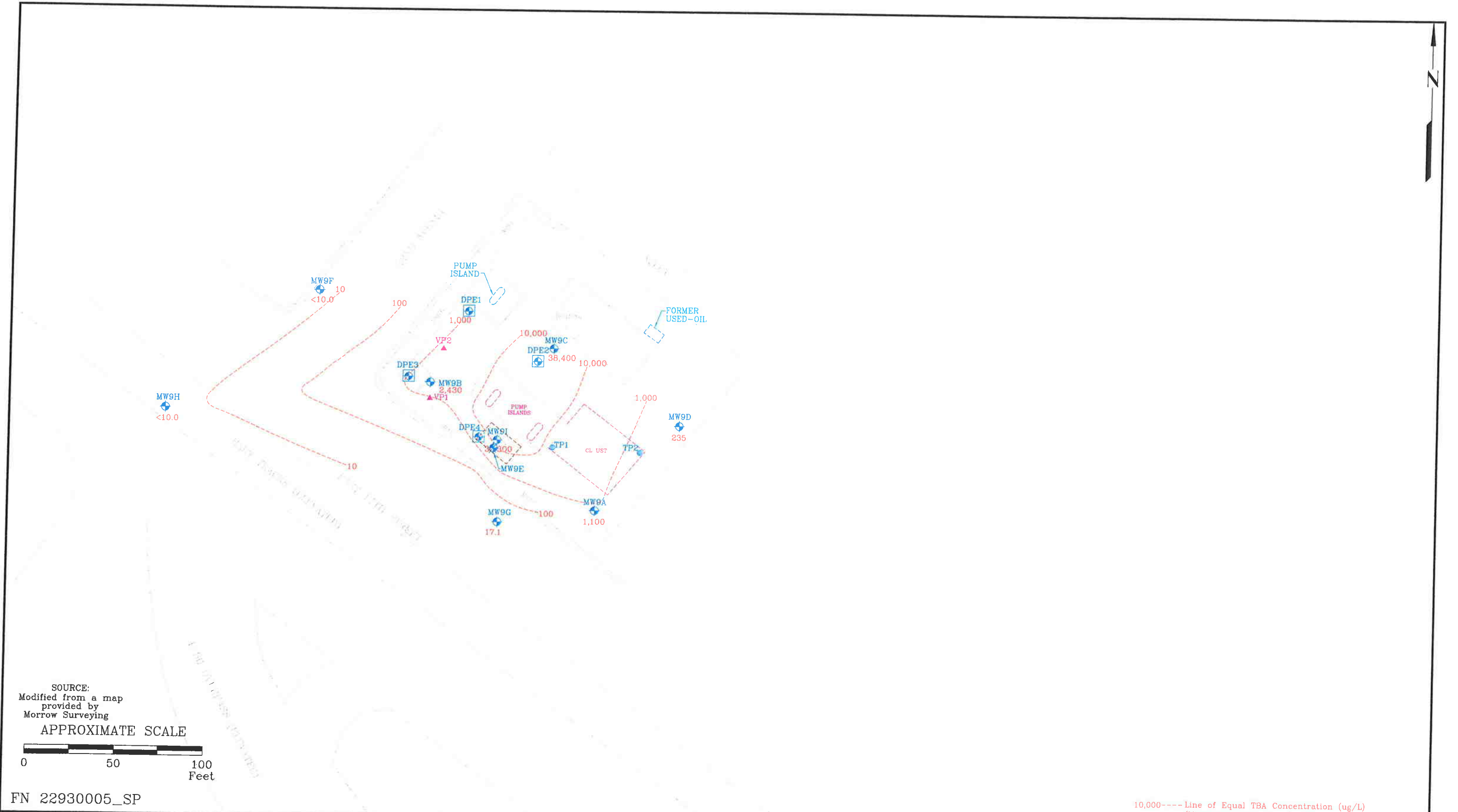
- VP2  
 Soil Vapor Extraction Well
- MW9E  
 Destroyed Groundwater Monitoring Well

**NOTE:**  
 Former Groundwater Monitoring Well  
 MW9E was in the current location  
 of MW9I.

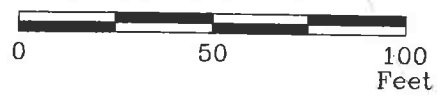
Excavation

**PROJECT NO.**  
 2293

**PLATE**  
 17



SOURCE:  
 Modified from a map  
 provided by  
 Morrow Surveying  
 APPROXIMATE SCALE



FN 22930005\_SP

10,000-----Line of Equal TBA Concentration (ug/L)  
 (Micrograms per liter [ug/L])



**TBA ISOCONCENTRATION MAP**  
**October 1, 2003**  
 FORMER EXXON SERVICE STATION 7-0238  
 2200 East 12th Street  
 Oakland, California

**EXPLANATION**

- MW9I  
 Groundwater Monitoring Well  
 30,300 TBA concentration (ug/L)
- TP2  
 Observation Well
- DPE4  
 Dual-Phase Extraction Well

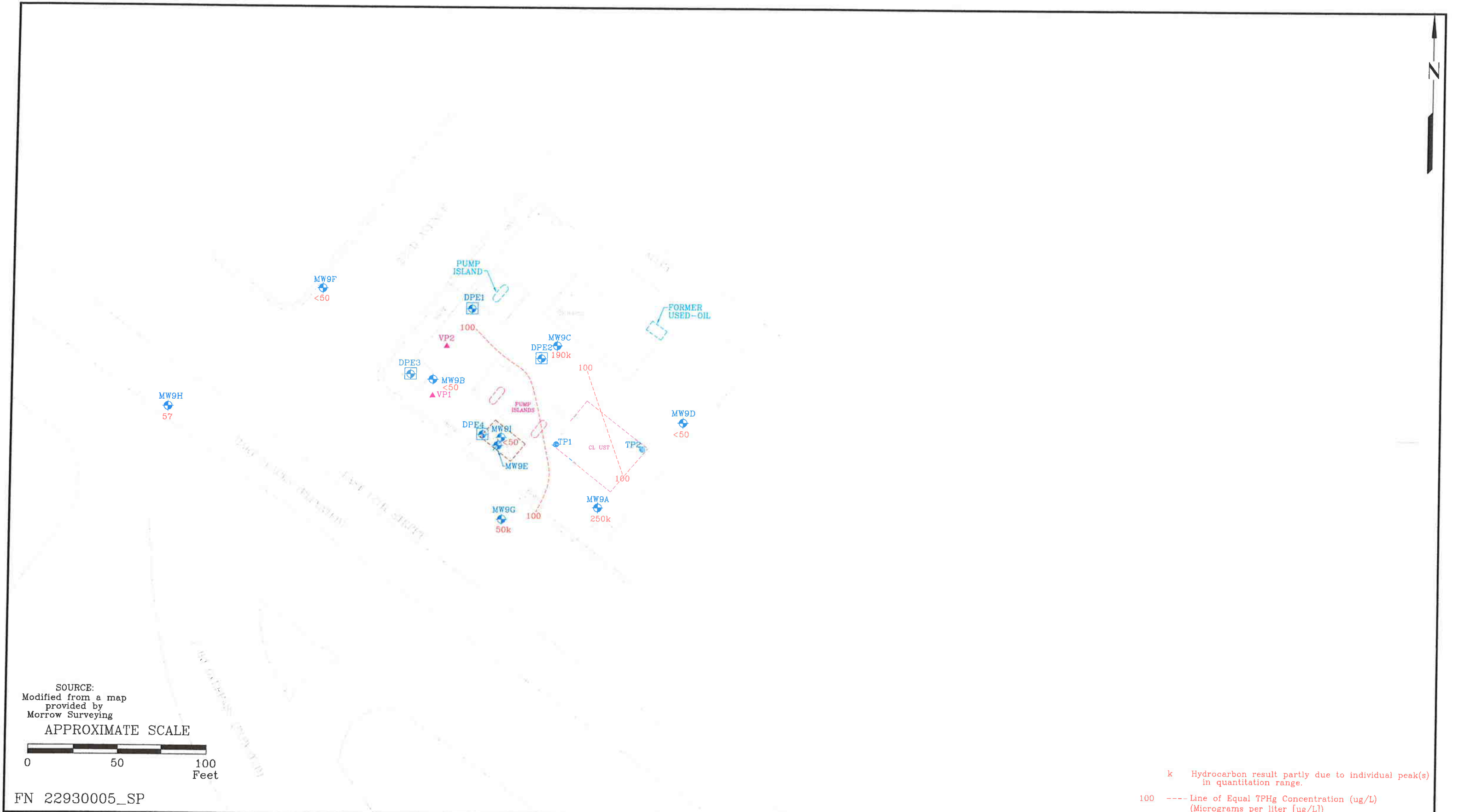
- VP2  
 Soil Vapor Extraction Well
- MW9E  
 Destroyed Groundwater Monitoring Well

**NOTE:**  
 Former Groundwater Monitoring Well  
 MW9E was in the current location  
 of MW9I.

Excavation

**PROJECT NO.**  
 2293

**PLATE**  
 18



k Hydrocarbon result partly due to individual peak(s) in quantitation range.

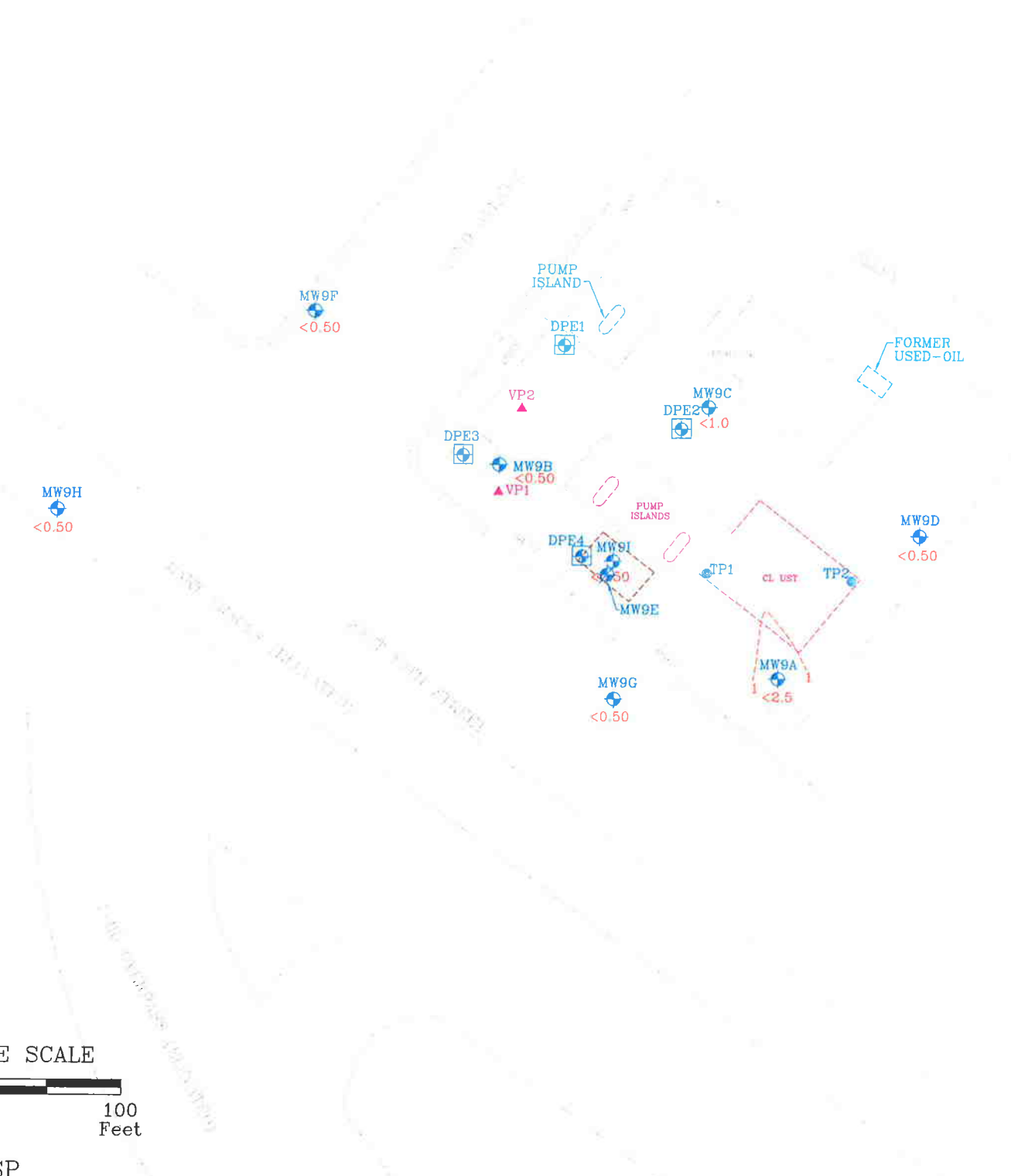
100 ---- Line of Equal TPHg Concentration (ug/L) (Micrograms per liter [ug/L])

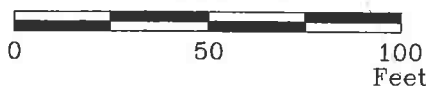


**THPg ISOCONCENTRATION MAP**  
**December 15, 2006**  
FORMER EXXON SERVICE STATION 7-0238  
2200 East 12th Street  
Oakland, California

EXPLANATION		NOTE: Former Groundwater Monitoring Well MW9E was in the current location of MW9I.	PROJECT NO. 2293
MW9I Groundwater Monitoring Well	VP2 Soil Vapor Extraction Well		
<50 TPHg concentration (ug/L)	MW9E Destroyed Groundwater Monitoring Well		
TP2 Observation Well			
DPE4 Dual-Phase Extraction Well			





SOURCE:  
 Modified from a map  
 provided by  
 Morrow Surveying  
 APPROXIMATE SCALE  





FN 22930005\_SP



1 - - - - Line of Equal Benzene Concentration (ug/L)  
 (Micrograms per liter [ug/L])



**BENZENE ISOCONCENTRATION MAP**  
**December 15, 2006**  
 FORMER EXXON SERVICE STATION 7-0238  
 2200 East 12th Street  
 Oakland, California

**EXPLANATION**

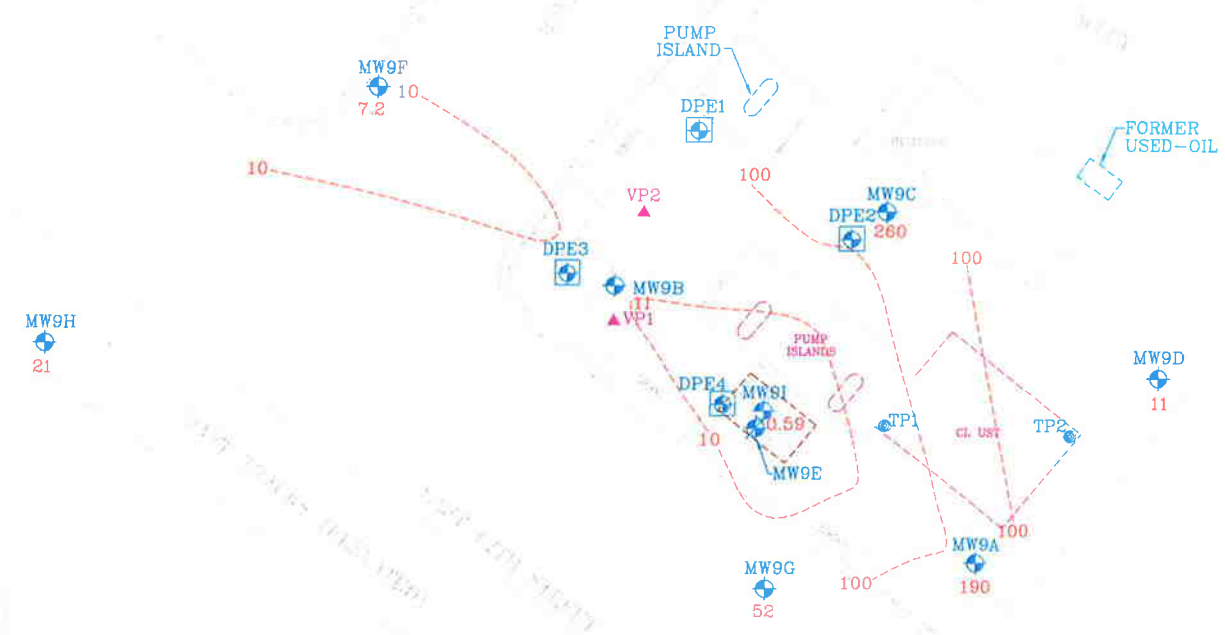
- MW9I  Groundwater Monitoring Well  
 <0.50 Benzene concentration (ug/L)
- TP2  Observation Well
- DPE4  Dual-Phase Extraction Well

- VP2  Soil Vapor Extraction Well
- MW9E  Destroyed Groundwater Monitoring Well

**NOTE:**  
 Former Groundwater Monitoring Well  
 MW9E was in the current location  
 of MW9I.

 Excavation

**PROJECT NO.**  
 2293  
**PLATE**  
 20



SOURCE:  
Modified from a map  
provided by  
Morrow Surveying

APPROXIMATE SCALE



FN 22930005\_SP

100 ---- Line of Equal MTBE Concentration (ug/L)  
(Micrograms per liter [ug/L])



**MTBE ISOCONCENTRATION MAP**  
**December 15, 2006**  
FORMER EXXON SERVICE STATION 7-0238  
2200 East 12th Street  
Oakland, California

**EXPLANATION**

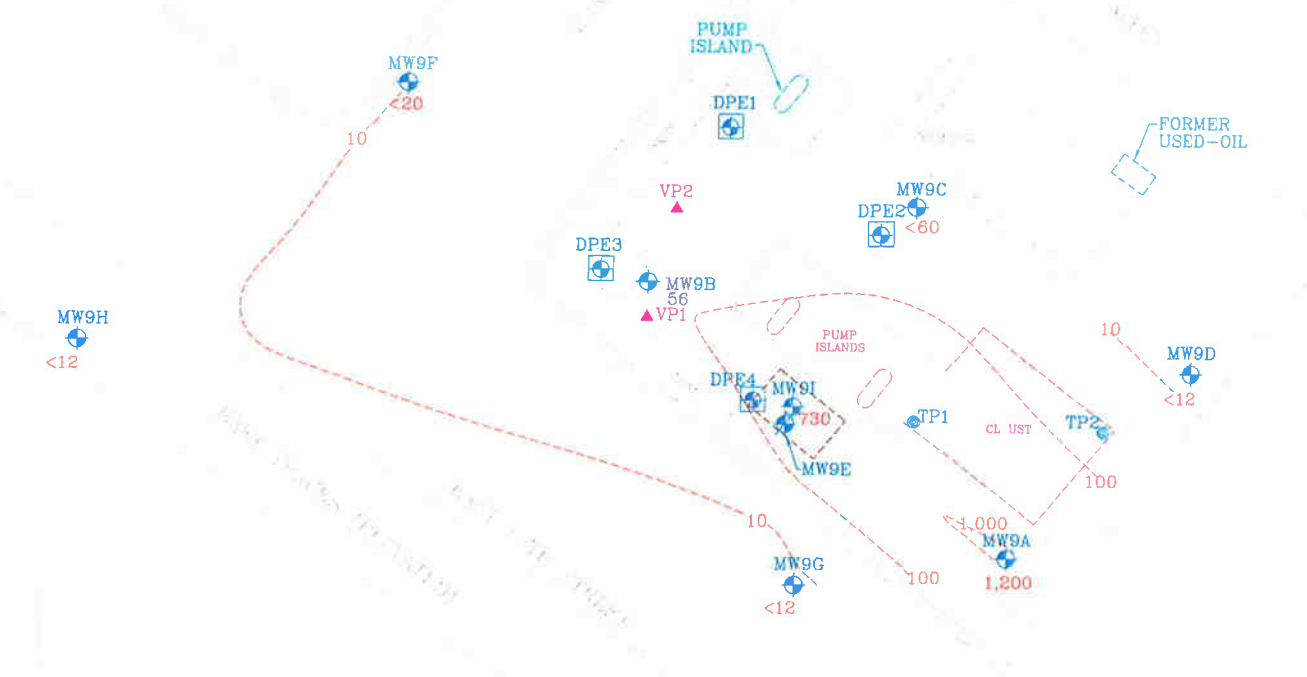
- MW9I Groundwater Monitoring Well
- 0.59 MTBE concentration (ug/L)
- TP2 Observation Well
- DPE4 Dual-Phase Extraction Well

- VP2 Soil Vapor Extraction Well
- MW9E Destroyed Groundwater Monitoring Well

**NOTE:**  
Former Groundwater Monitoring Well  
MW9E was in the current location  
of MW9I.

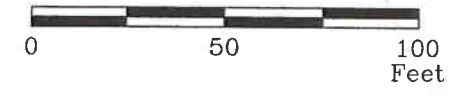
Excavation

**PROJECT NO.**  
2293  
**PLATE**  
21



SOURCE:  
Modified from a map  
provided by  
Morrow Surveying

APPROXIMATE SCALE



FN 22930005\_SP

1 - - - - Line of Equal TBA Concentration (ug/L)  
(Micrograms per liter [ug/L])



**TBA ISOCONCENTRATION MAP**  
**December 15, 2006**  
FORMER EXXON SERVICE STATION 7-0238  
2200 East 12th Street  
Oakland, California

**EXPLANATION**

- MW9I Groundwater Monitoring Well
- 730 TBA concentration (ug/L)
- TP2 Observation Well
- DPE4 Dual-Phase Extraction Well

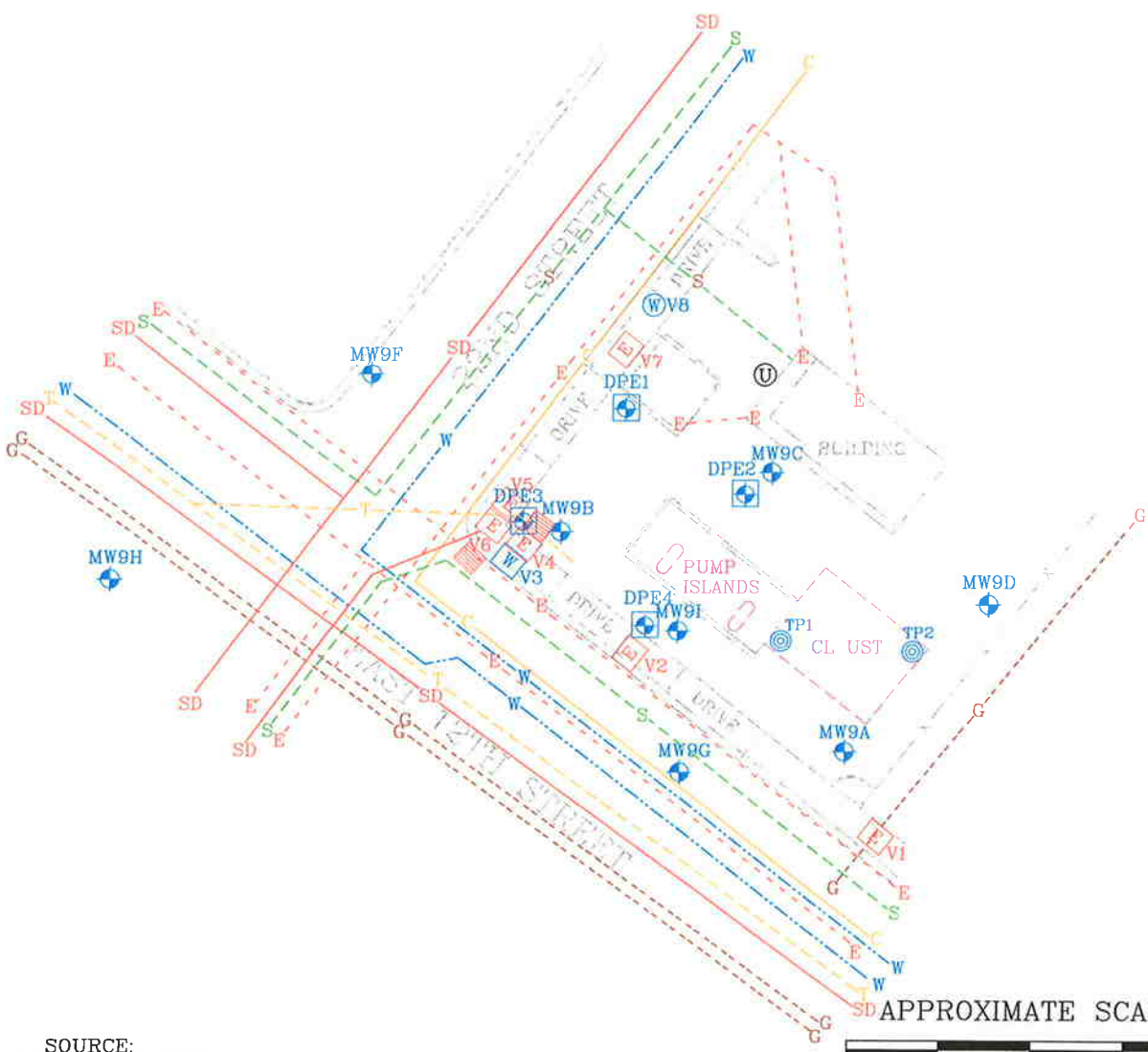
- VP2 Soil Vapor Extraction Well
- MW9E Destroyed Groundwater Monitoring Well

**NOTE:**  
Former Groundwater Monitoring Well  
MW9E was in the current location  
of MW9I.

Excavation

**PROJECT NO.**  
2293

**PLATE**  
22



SOURCE:  
Modified from a map  
provided by  
Morrow Surveying

APPROXIMATE SCALE  
0 60 120  
FEET

FN: 2293 SRS 06 UTILITY\_SP

**EXPLANATION**

- MW9I  
 Groundwater Monitoring Well
- DPE4  
 Dual-Phase Extraction Well

**UTILITY LEGEND**

- | UTILITY LINES |             | UTILITY VAULTS |             |
|---------------|-------------|----------------|-------------|
|               | ELECTRICAL  |                | ELECTRICAL  |
|               | SEWER       |                | WATER       |
|               | CABLE       |                | STORM DRAIN |
|               | WATER       |                | UNKNOWN     |
|               | STORM DRAIN |                |             |
|               | GAS         |                |             |
|               | TELEPHONE   |                |             |



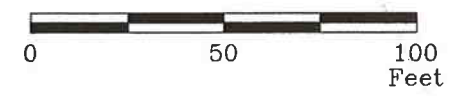
**VAULT/UTILITY MAP**  
FORMER EXXON SERVICE STATION 7-0238  
2200 East 12th Street  
Oakland, California

**PROJECT NO.**  
2293  
**PLATE**  
23



SOURCE:  
Modified from a map  
provided by  
Morrow Surveying

APPROXIMATE SCALE



FN 22930005\_SP



**PROPOSED SOIL BORING LOCATIONS**  
FORMER EXXON SERVICE STATION 7-0238  
2200 East 12th Street  
Oakland, California

**EXPLANATION**

- MW9I  
 Groundwater Monitoring Well
- TP2  
 Observation Well
- DPE4  
 Dual-Phase Extraction Well

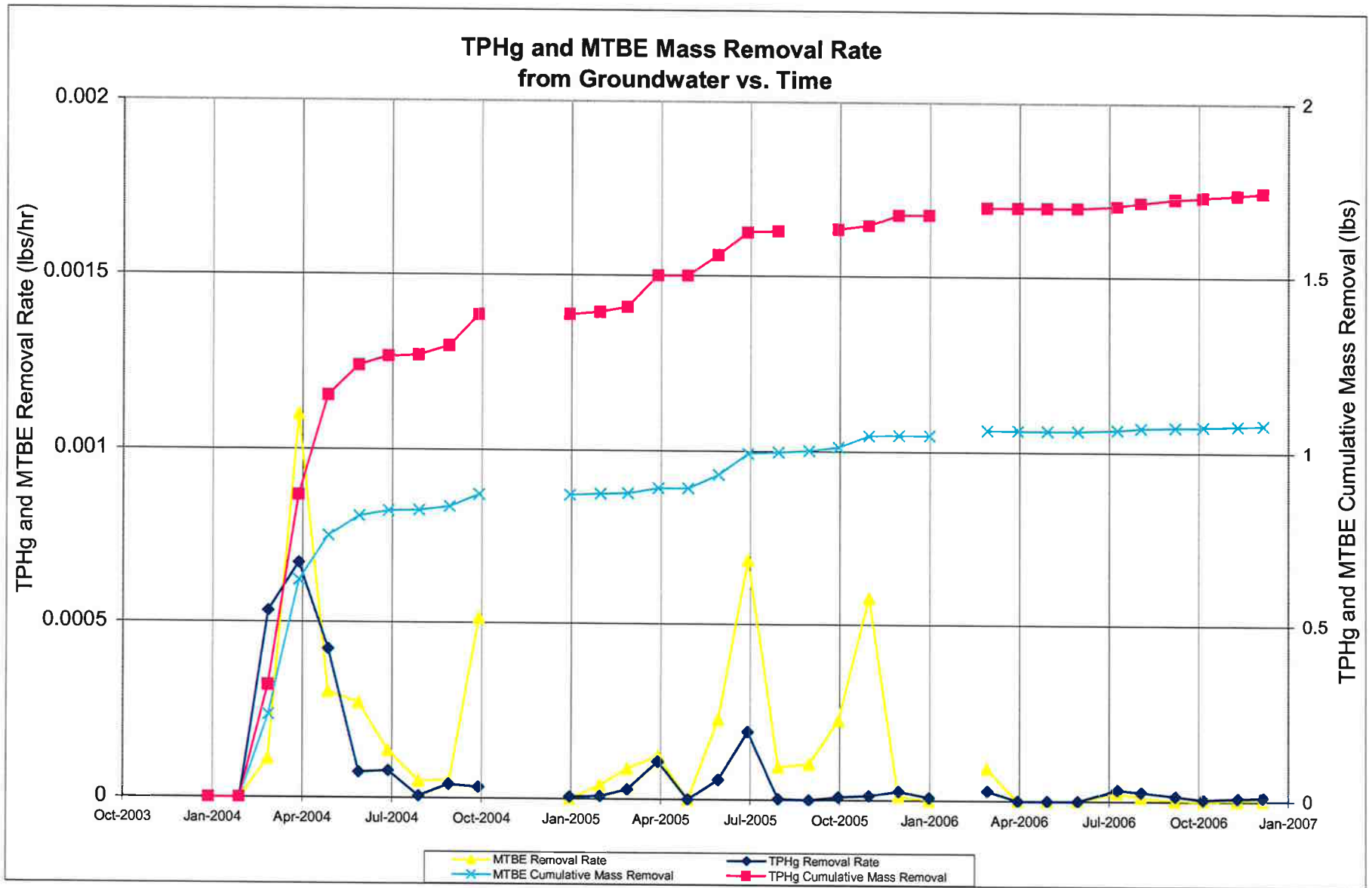
- VP2  
 Soil Vapor Extraction Well
- MW9E  
 Destroyed Groundwater Monitoring Well
- Proposed Soil Boring

**NOTE:**  
Former Groundwater Monitoring Well  
MW9E was in the current location  
of MW9I.

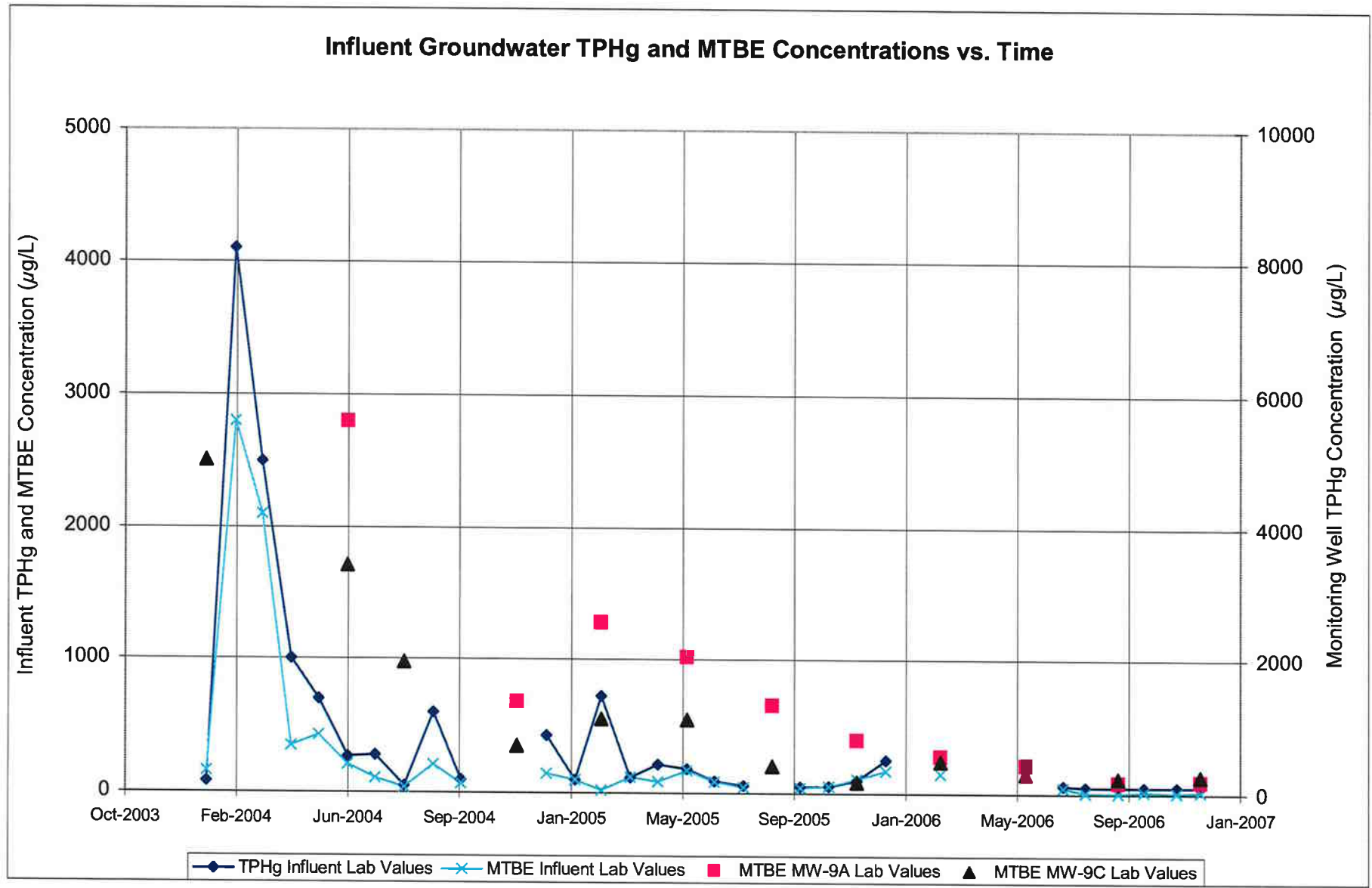


**PROJECT NO.**  
2293  
**PLATE**  
24

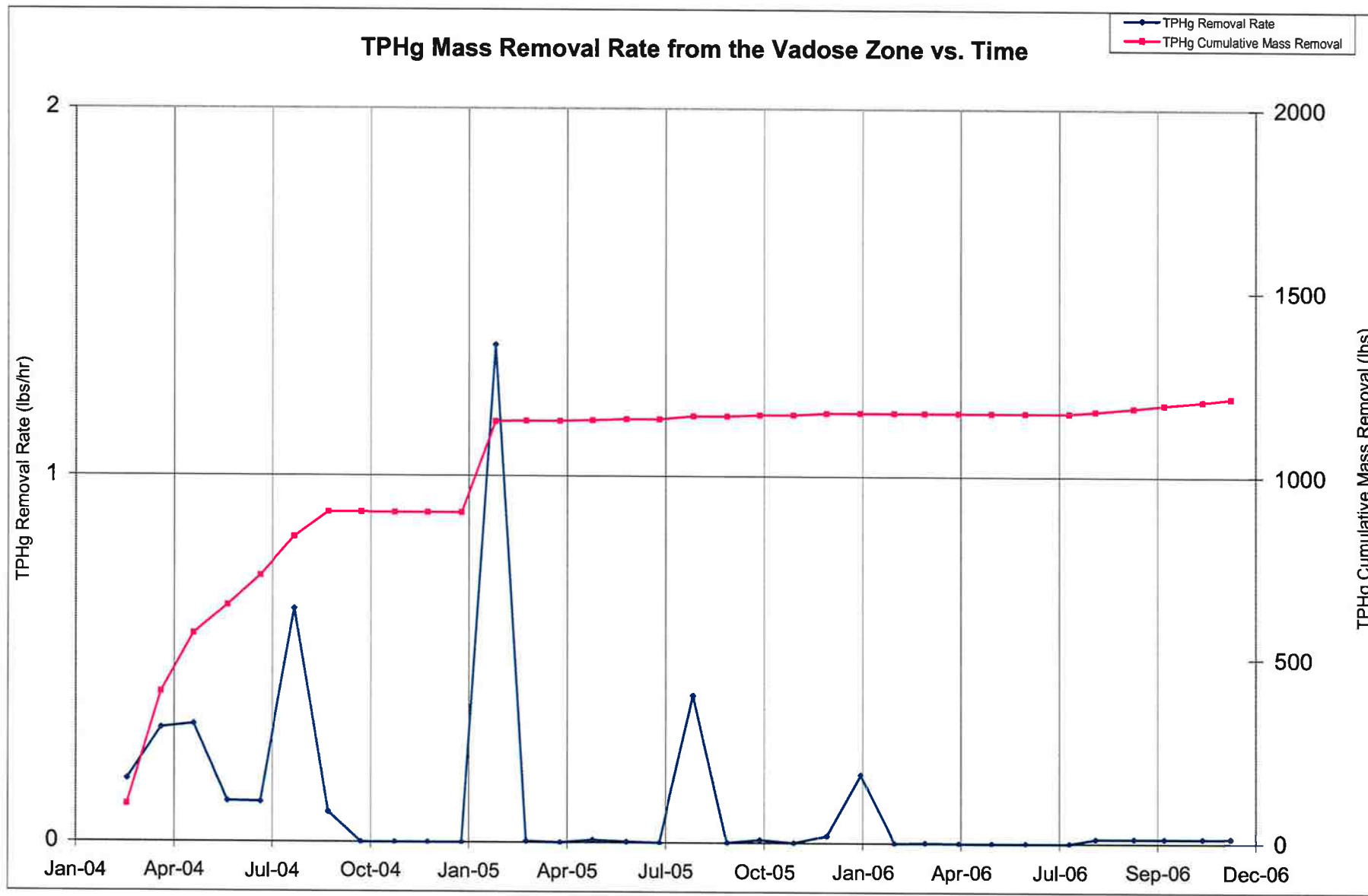
**GRAPH 1**  
 Former Exxon Service Station 7-0238  
 2200 East 12th Street  
 Oakland, California



**GRAPH 2**  
 Former Exxon Service Station 7-0238  
 2200 East 12th Street  
 Oakland, California

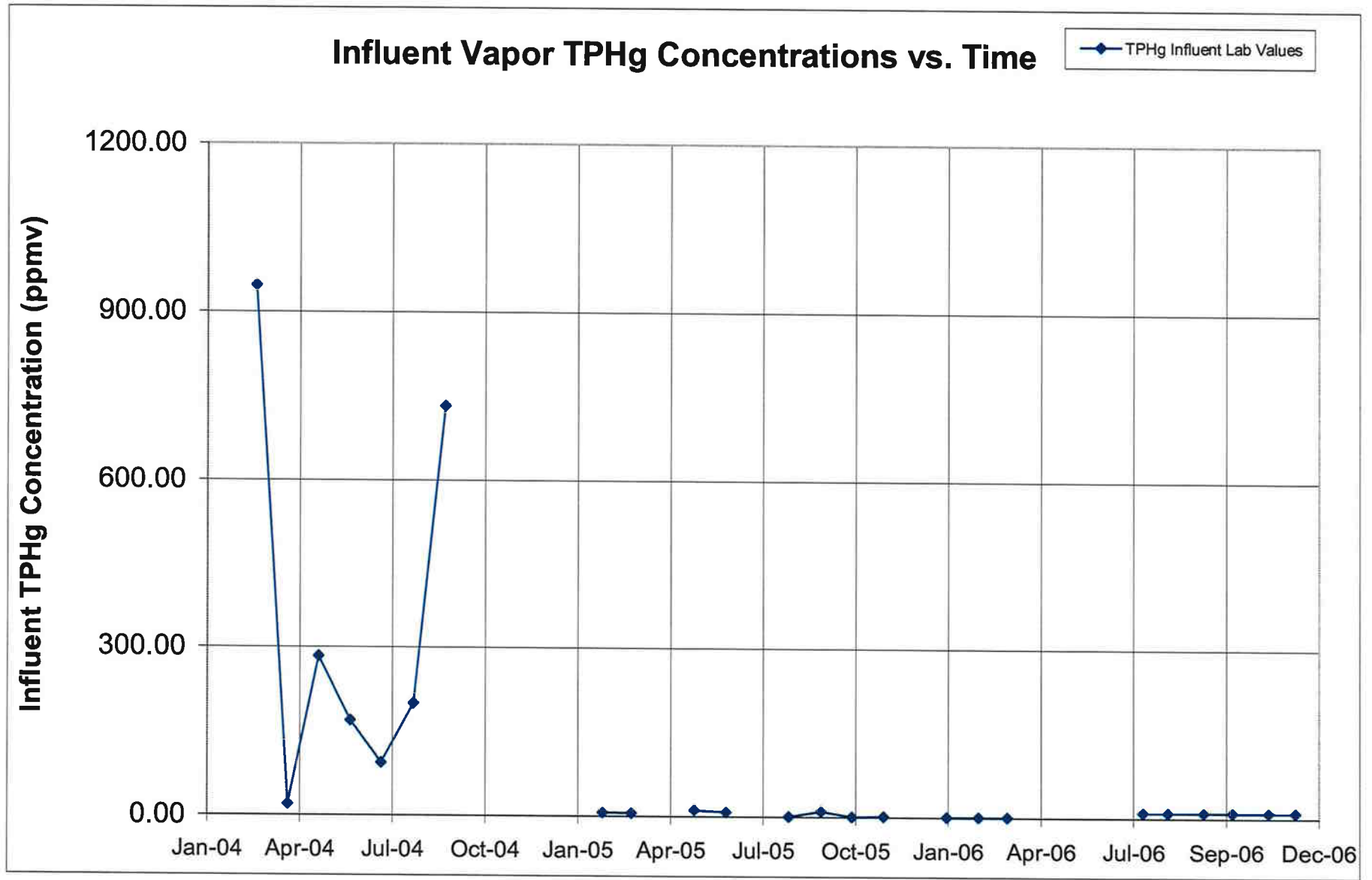


**GRAPH 3**  
 Former Exxon Service Station 7-0238  
 2200 East 12th Street  
 Oakland, California

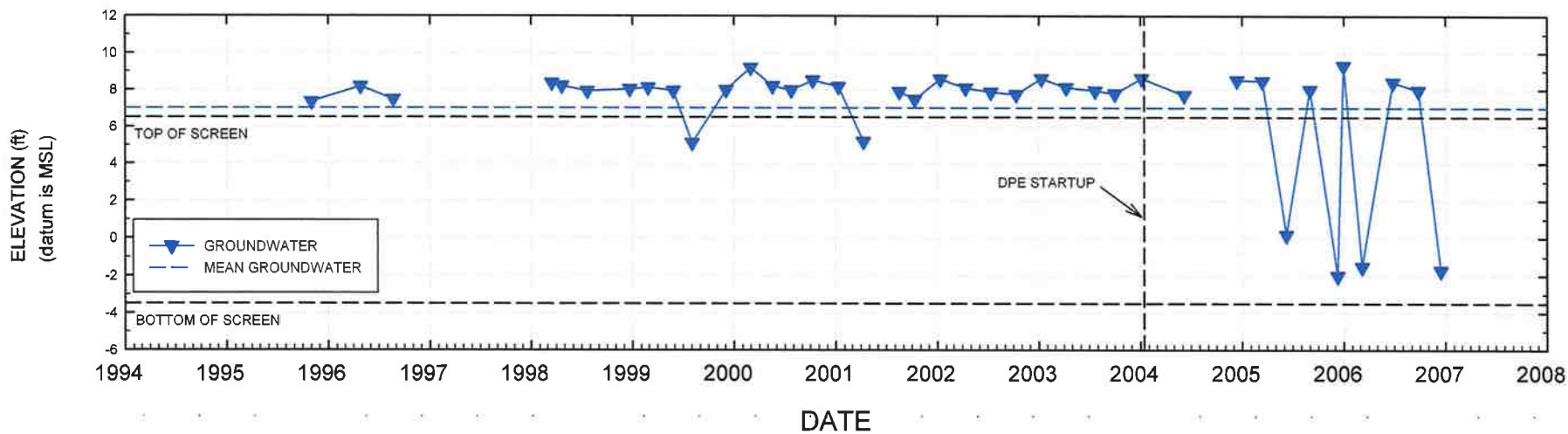
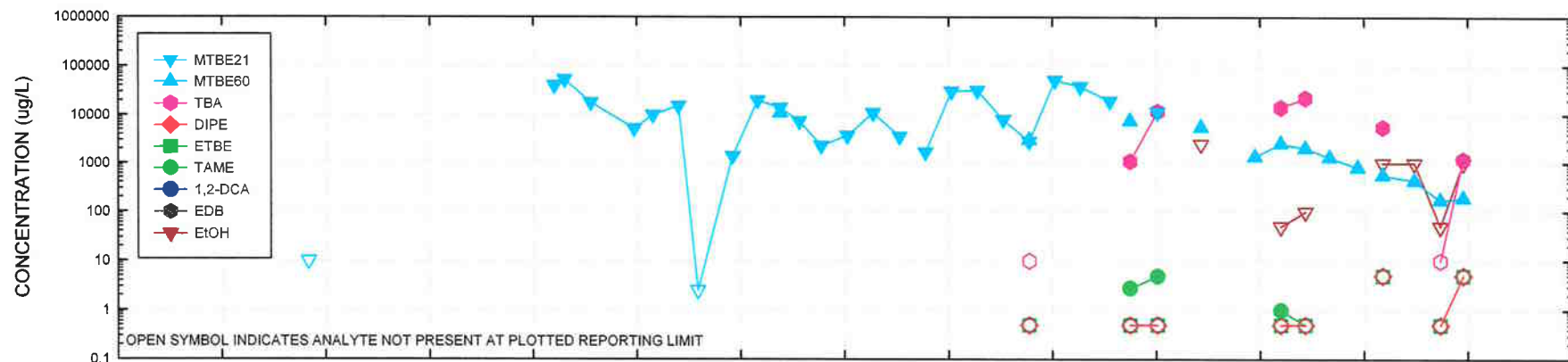
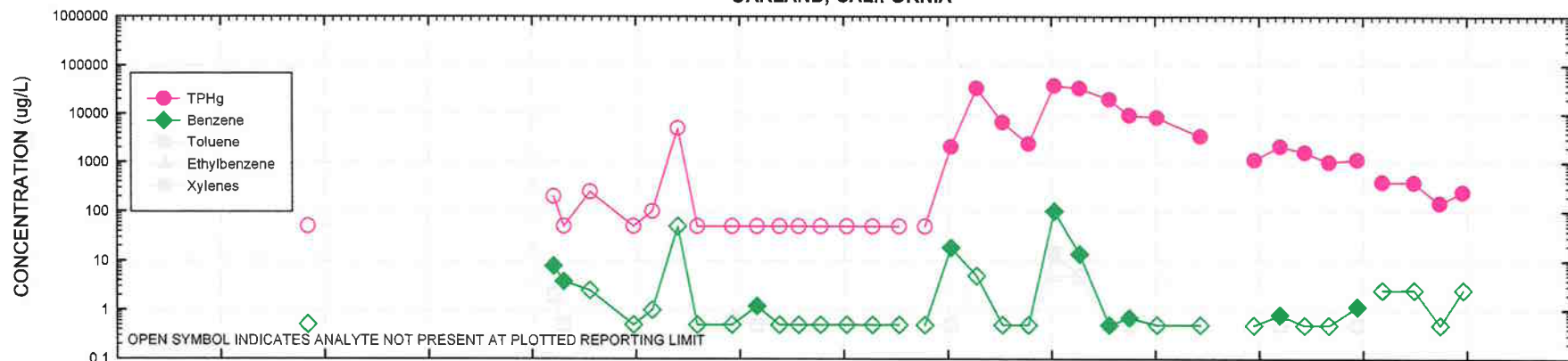




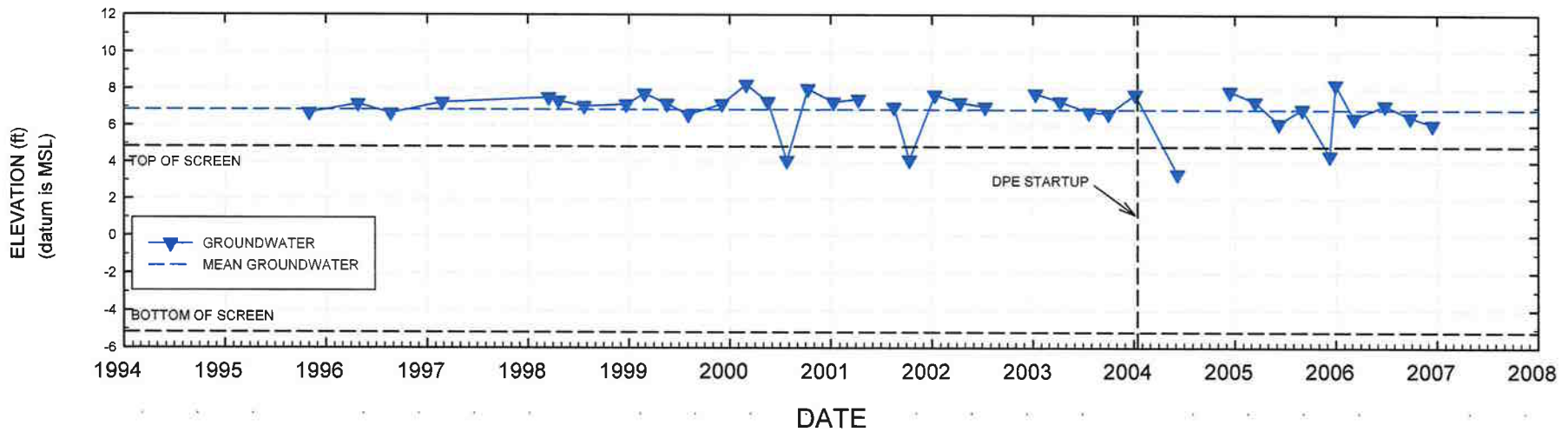
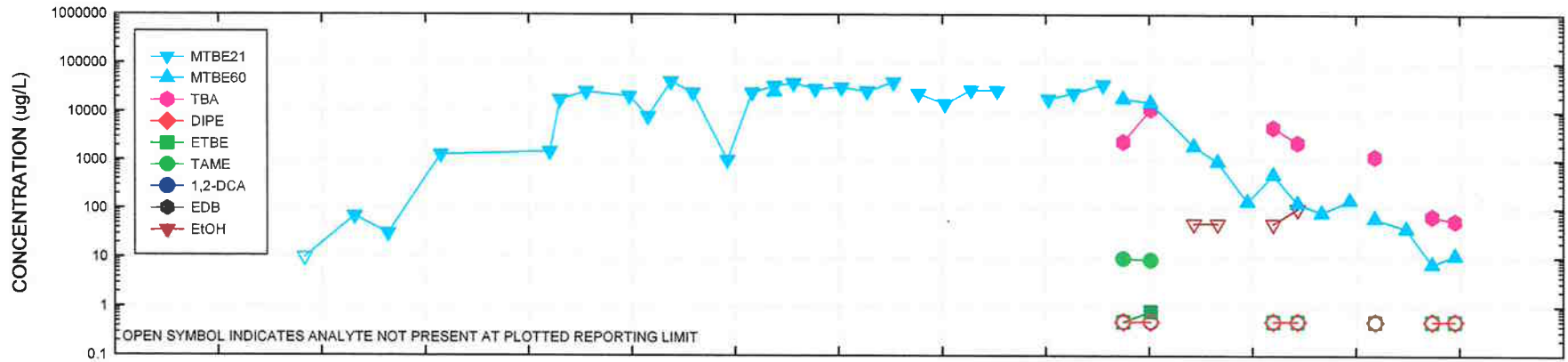
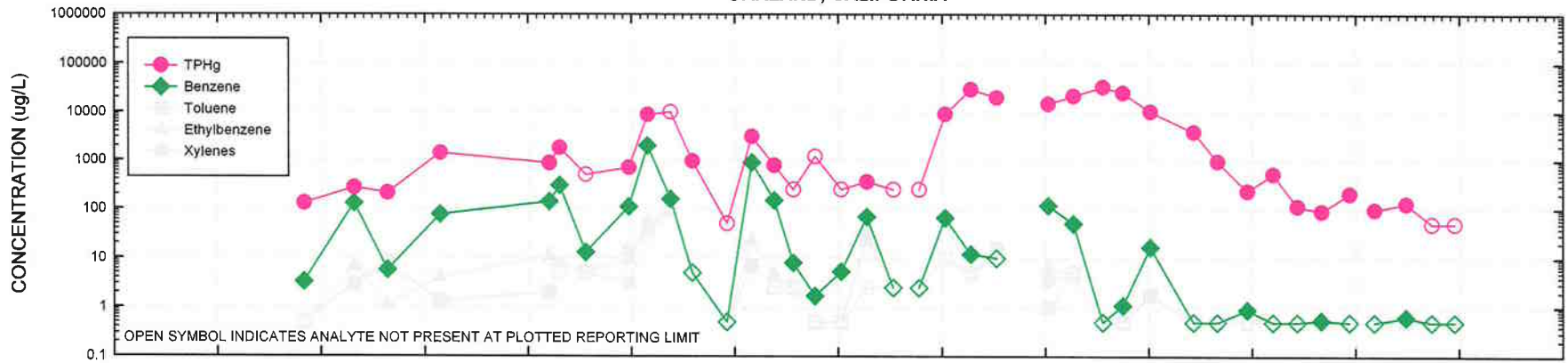
**GRAPH 4**  
Former Exxon Service Station 7-0238  
2200 East 12th Street  
Oakland, California



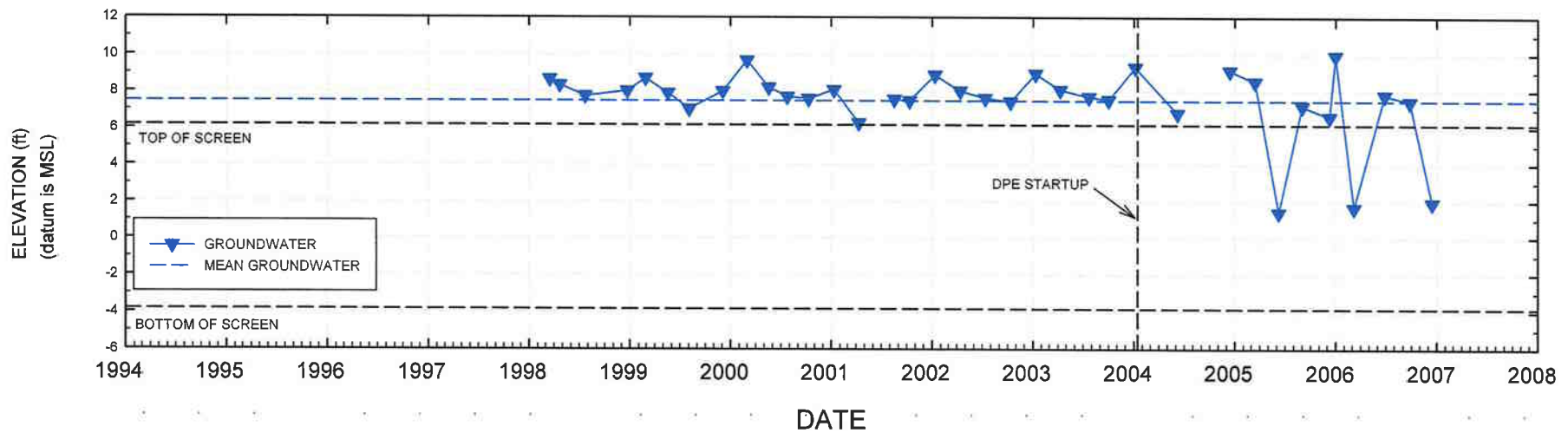
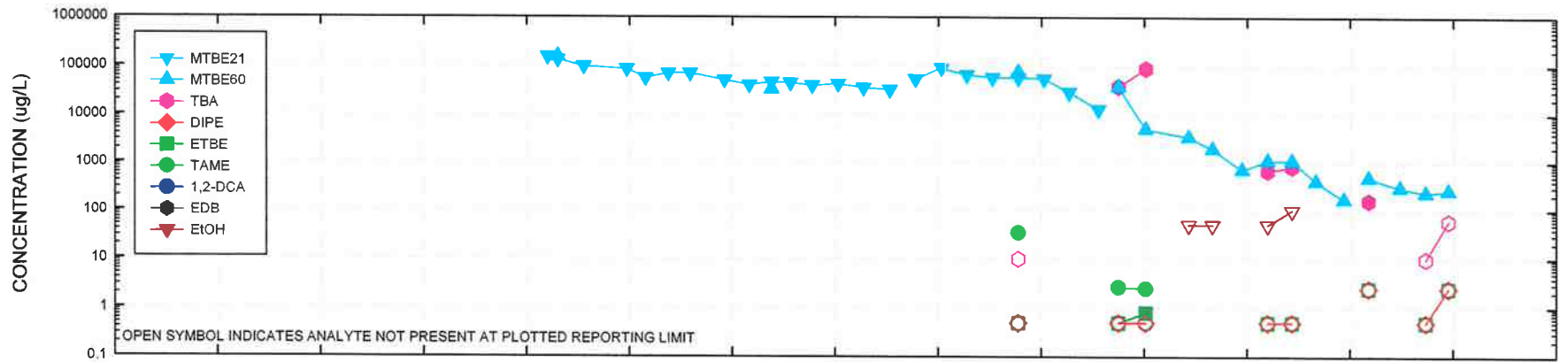
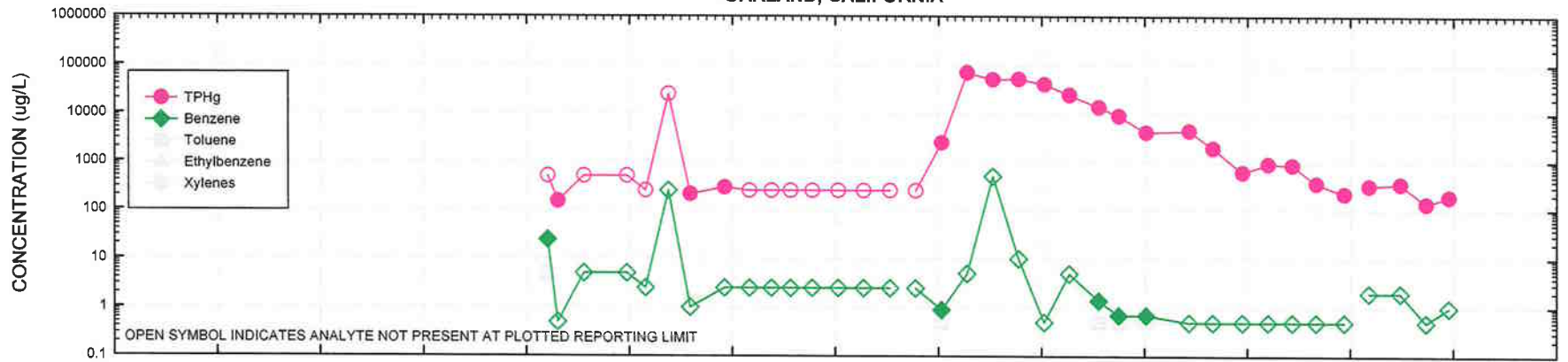
**HYDROGRAPH - WELL MW9A**  
**FORMER EXXON SERVICE STATION 7-0238**  
**220 EAST 12th STREET**  
**OAKLAND, CALIFORNIA**



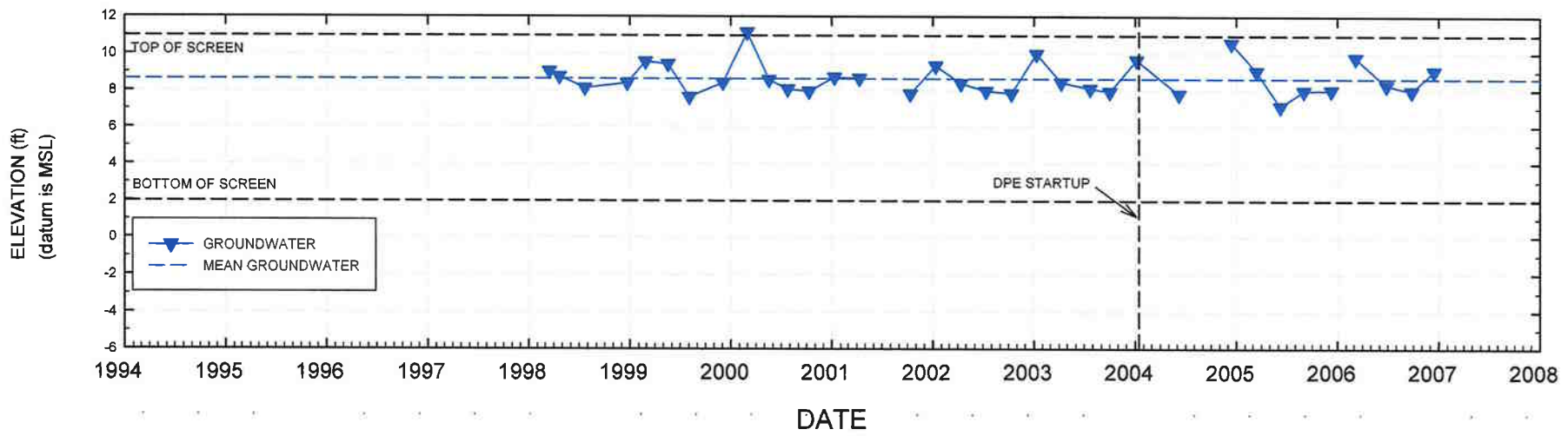
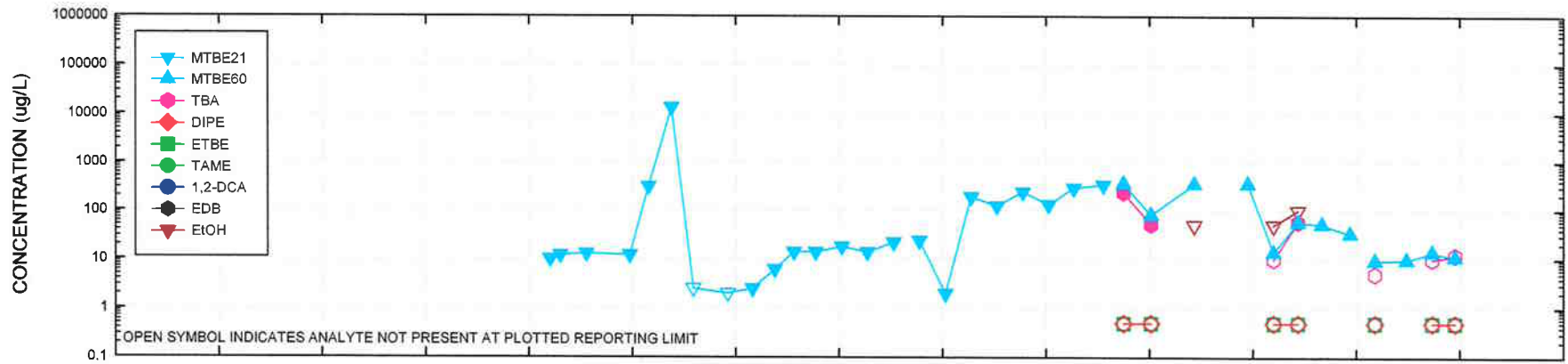
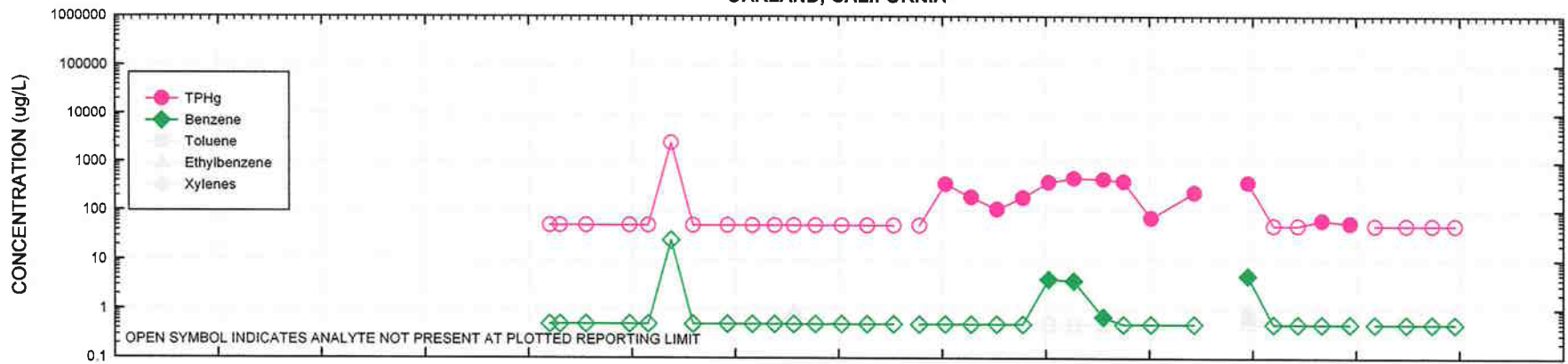
**HYDROGRAPH - WELL MW9B  
FORMER EXXON SERVICE STATION 7-0238  
220 EAST 12th STREET  
OAKLAND, CALIFORNIA**



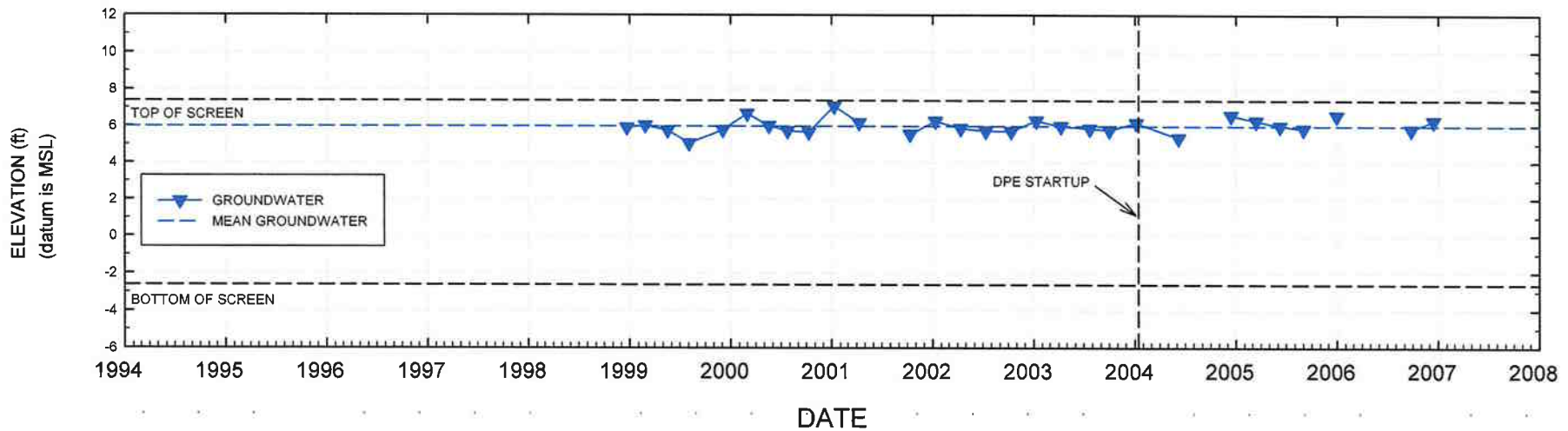
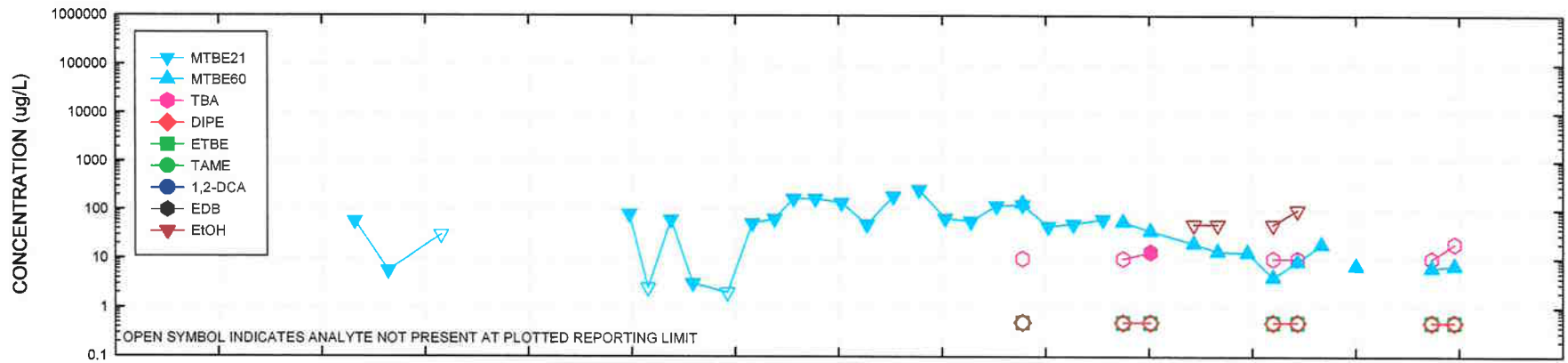
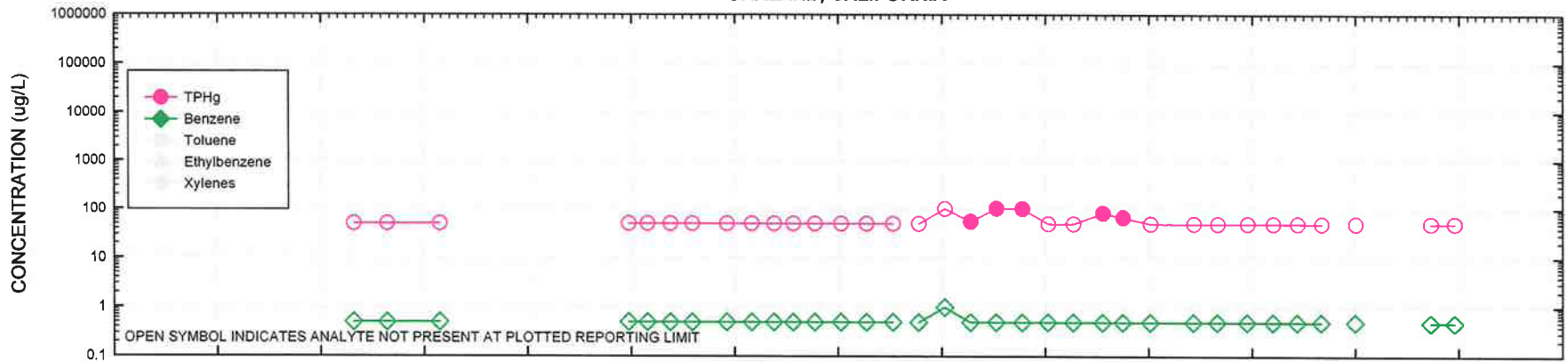
**HYDROGRAPH - WELL MW9C  
FORMER EXXON SERVICE STATION 7-0238  
220 EAST 12th STREET  
OAKLAND, CALIFORNIA**



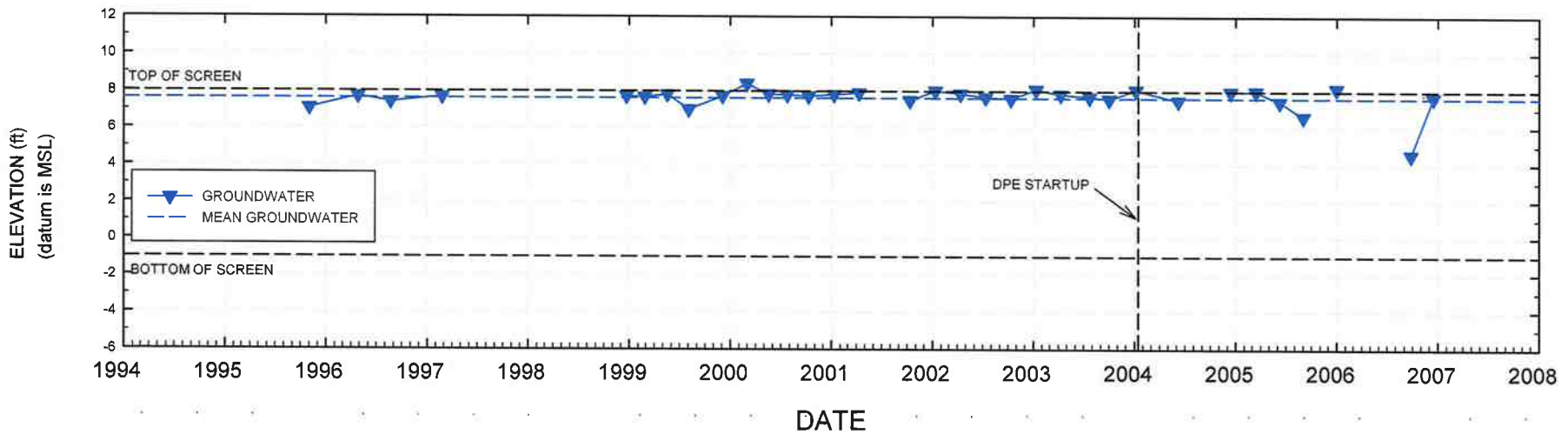
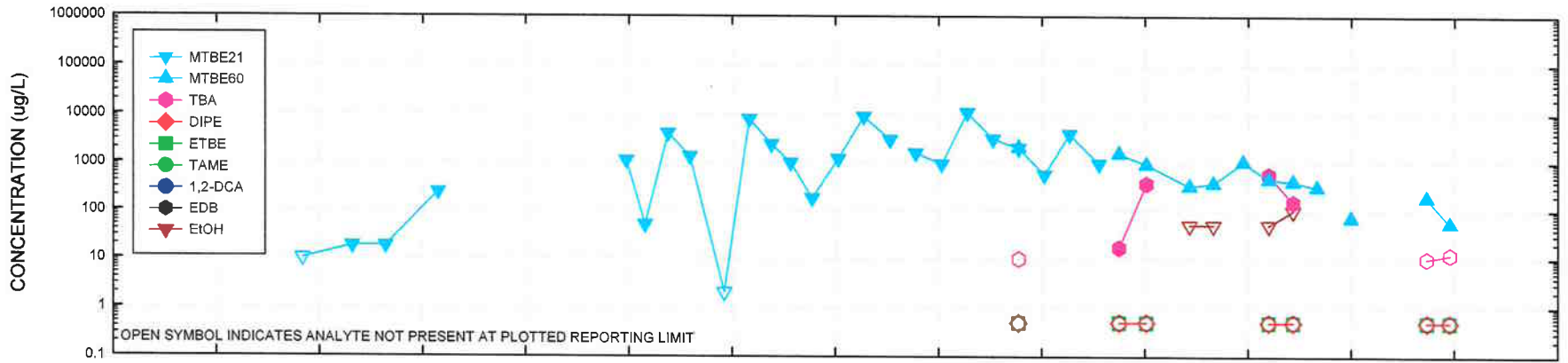
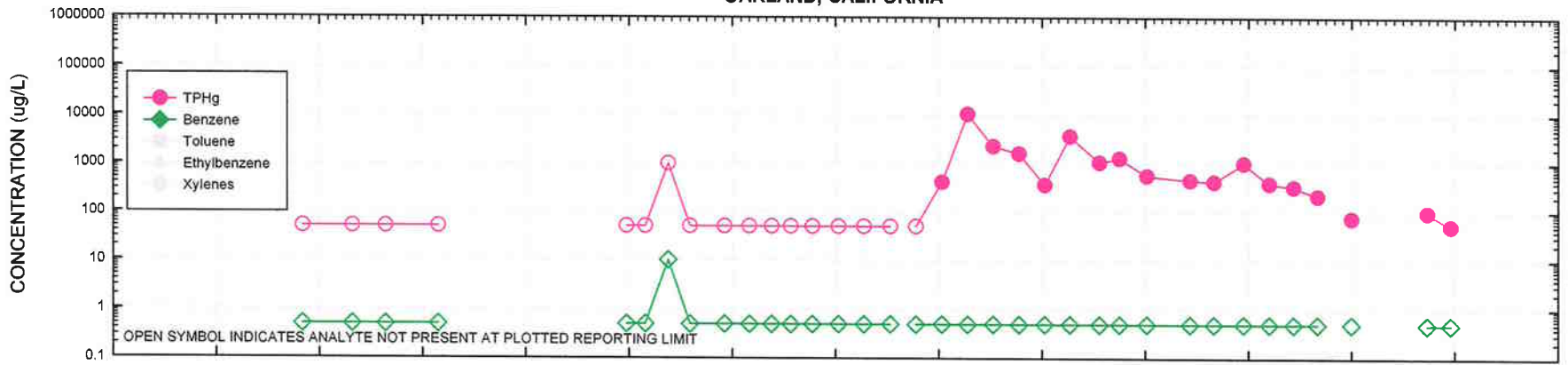
**HYDROGRAPH - WELL MW9D  
FORMER EXXON SERVICE STATION 7-0238  
220 EAST 12th STREET  
OAKLAND, CALIFORNIA**



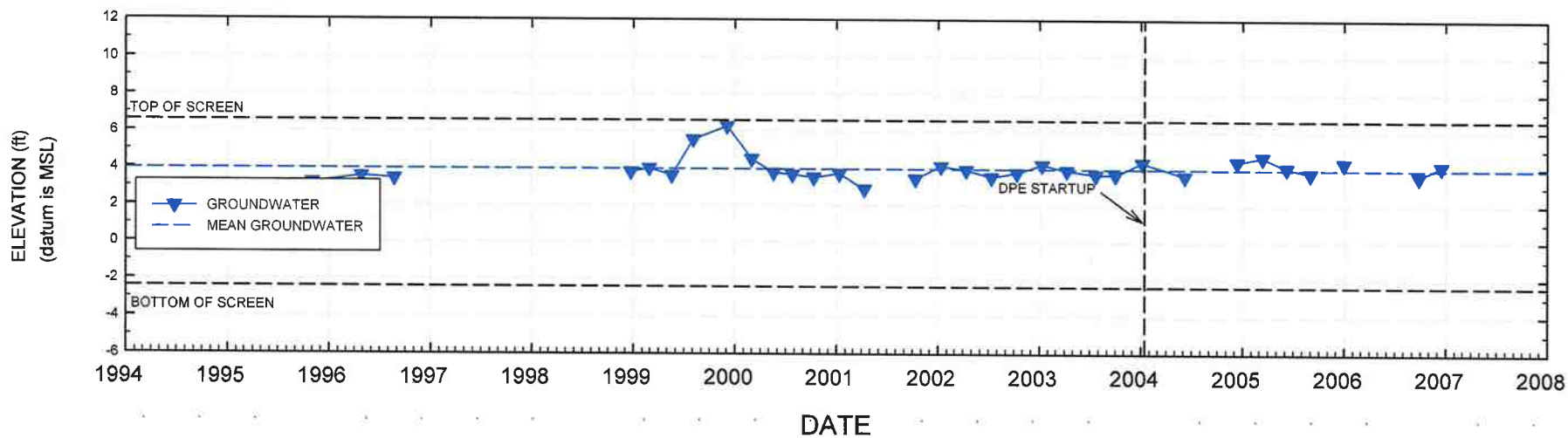
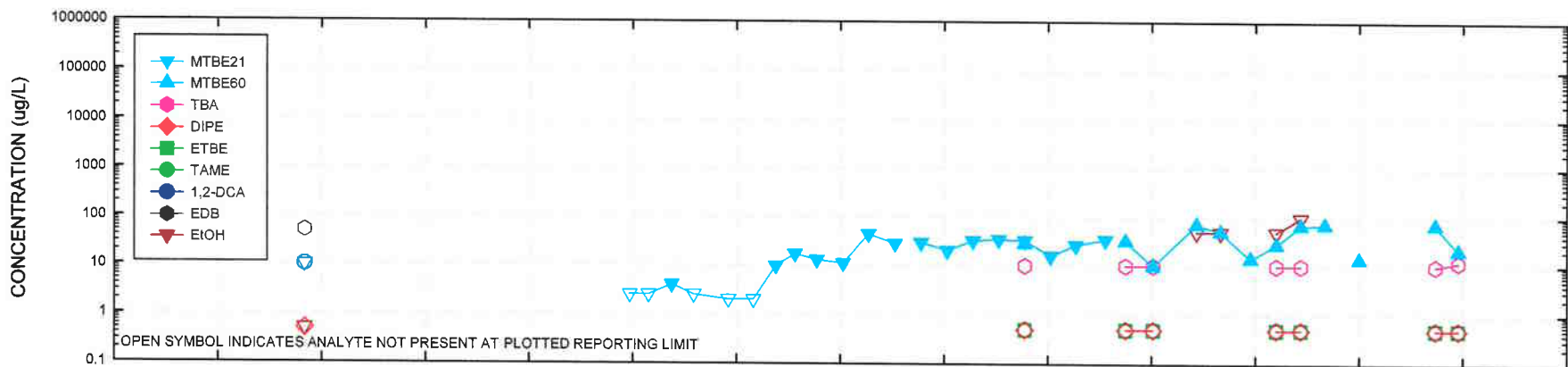
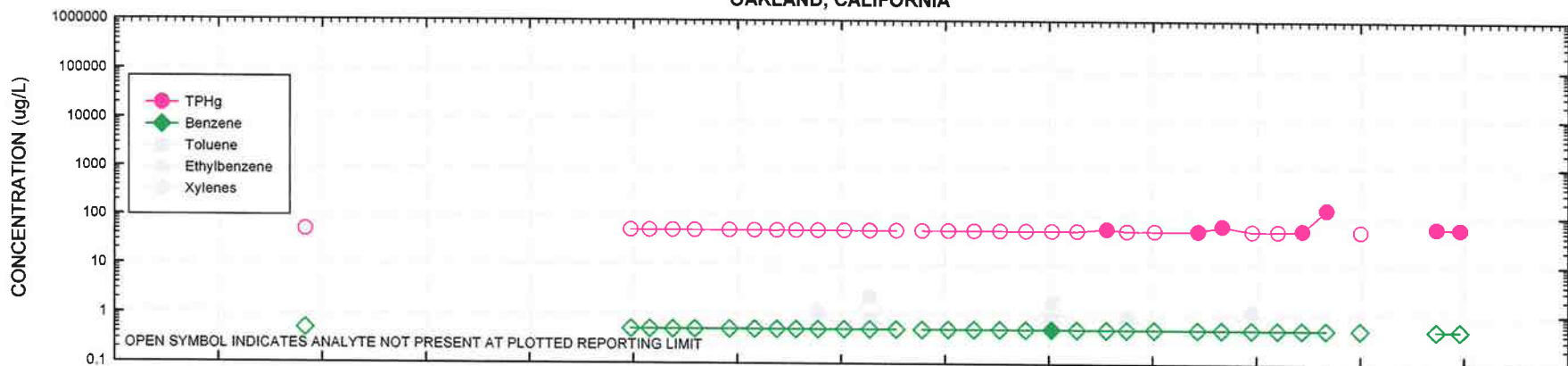
**HYDROGRAPH - WELL MW9F  
FORMER EXXON SERVICE STATION 7-0238  
220 EAST 12th STREET  
OAKLAND, CALIFORNIA**



**HYDROGRAPH - WELL MW9G**  
**FORMER EXXON SERVICE STATION 7-0238**  
**220 EAST 12th STREET**  
**OAKLAND, CALIFORNIA**

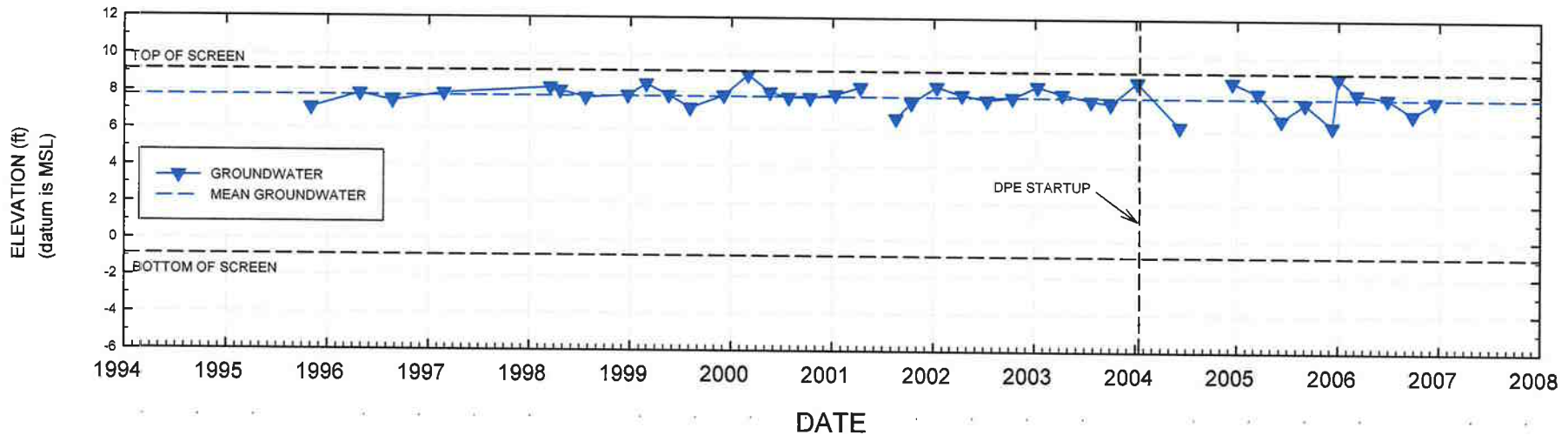
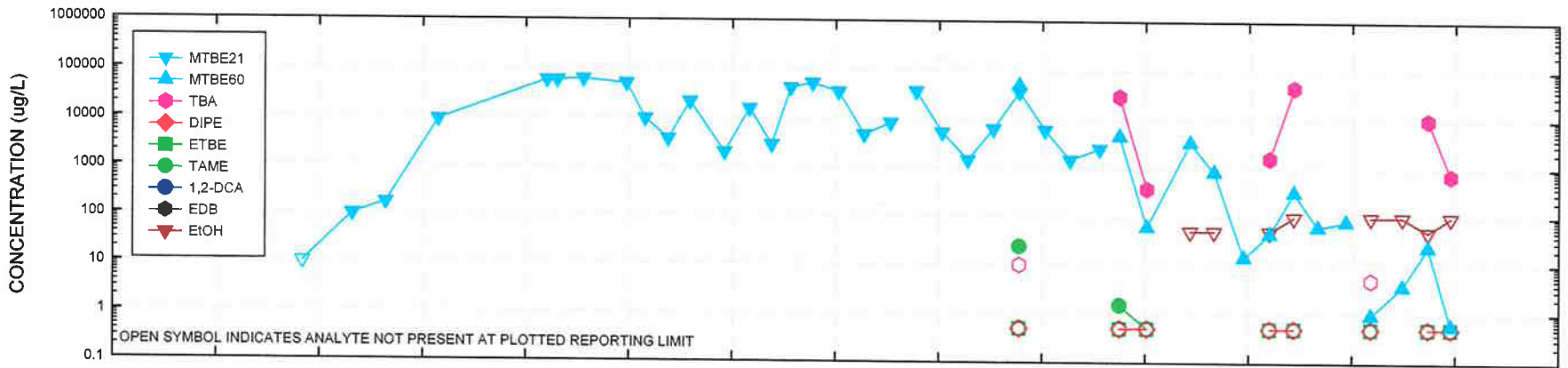
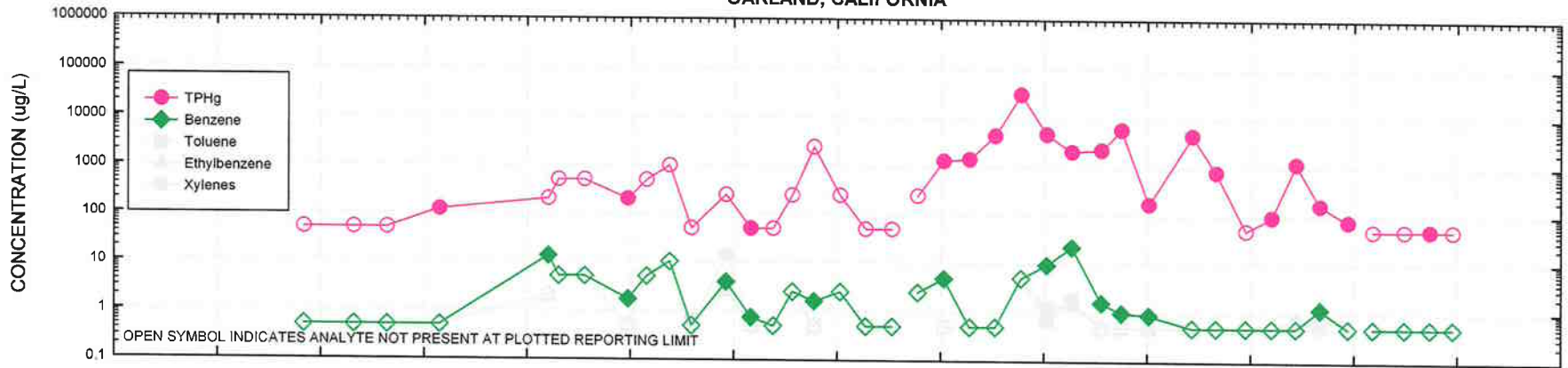


**HYDROGRAPH - WELL MW9H**  
**FORMER EXXON SERVICE STATION 7-0238**  
**220 EAST 12th STREET**  
**OAKLAND, CALIFORNIA**





**HYDROGRAPH - WELL MW9I  
FORMER EXXON SERVICE STATION 7-0238  
220 EAST 12th STREET  
OAKLAND, CALIFORNIA**



**ATTACHMENT A**  
**REGULATORY CORRESPONDENCE**

ALAMEDA COUNTY  
HEALTH CARE SERVICES

AGENCY  
DAVID J. KEARS, Agency Director



RECEIVED  
JAN 19 2007

BY:

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

January 17, 2007

Ms. Jennifer Sedlachek  
ExxonMobil Refining & Supply – Global Remediation  
4096 Piedmont Avenue #194  
Oakland, CA 94611

Mr. Arron Wong and Mr. Stanley Wong  
2200 East 12<sup>th</sup> Street  
Oakland, CA 94606-4325

Mr. Satya Sinha  
Chevron Environmental Management Company  
6001 Bollinger Canyon Rd. K2256  
San Ramon, CA 94583-2324

Subject: Fuel Leak Case No. RO0000390, Exxon #7-0238, 2200 E 12<sup>th</sup> Street, Oakland CA

Dear Ms. Sedlachek and Messrs. Wong and Sinha

Alameda County Environmental Health Department (ACEH) staff has reviewed the recently submitted report entitled, "Groundwater Monitoring Report, Second Quarter 2006". ACEH is concerned that tert-BUTYL ALCOHOL (TBA) present in groundwater monitoring wells MW-9A, MW-9B, MW-9C and MW-9I may indicate residual contamination in the source area is continuing to add mass to groundwater beneath the site.

Our review of historical water quality data indicates the presence of high concentrations of MtBE prior to installation of the Dual Phase Vapor Extraction (DPE) system in March 2004. In addition, recent water quality data for monitoring well MW-9I indicate the fluctuation in concentrations of TBA have varied by up to four orders of magnitude during one complete monitoring cycle, four quarterly monitoring events. The high concentrations of MtBE prior to the start up of the DPE system combined with more recent water quality data indicating high concentrations of TBA demonstrate that additional investigation downgradient of the site is warranted. Furthermore, the monitoring well array in its current configuration may not be adequate to properly characterize the contamination plume downgradient of the site.

We request that you prepare a work plan to address the following technical comments and send us the reports described below. Please provide 72-hour advance written notification to this office (e-mail preferred to [steven.plunkett@acgov.org](mailto:steven.plunkett@acgov.org)) prior to the start of field activities.

**TECHNICAL COMMENTS**

1. **MtBE and TBA Plume Migration.** Prior to the installation and startup of the DPE system in 2004, high concentrations of MtBE were present in monitoring wells MW-9A, MW-9B, MW-9C, MW-9G and MW-9I at up to 53,000 µg/L, 42,100 µg/L, 150,000 µg/L, 11,000 µg/L and 62,000 µg/L, respectively. ACEH is concerned that the extent of the MtBE/TBA plume is undefined at your site. Furthermore, recent water quality data suggest that residual

undefined at your site. Furthermore, recent water quality data suggest that residual contamination in the source area may be continuing to add mass to the groundwater contamination plume. In particular, TBA concentrations in monitoring wells MW-9A, MW-9B have seen a decrease in TBA concentration by up to two orders of magnitude. However, TBA concentrations in monitoring well MW-9I have increased by three orders of magnitude. Please present a plausible explanation as to the fluctuations of TBA in groundwater in the Work Plan requested below.

MTBE is highly soluble and very mobile in groundwater and is not readily biodegradable. Conventional monitoring well networks currently installed at fuel leak sites are generally insufficient to properly locate and define the extent of MTBE plumes. MTBE plumes can be long, narrow, and erratic (meandering). In addition, MTBE plumes can appear as discontinuous slugs particularly for those releases that occurred during the use of MTBE as a wintertime oxygenate (the period 1991 to 1995 in northern California). Thus, the positioning of current monitoring well networks can miss the MTBE plume core, and monitoring well design can incorrectly reflect the severity of the release. Therefore, we request that you perform a detailed assessment to define and quantify the full three-dimensional extent of MTBE, Total Petroleum Hydrocarbons, Benzene, and other contamination in groundwater.

Discuss your proposal for performing this work in the Work Plan requested below. Report the results of your investigation in the Soil and Water Investigation (SWI) Report requested below.

## 2. **Preferential Pathway Study**

The purpose of the preferential pathway study is to locate potential migration pathways and conduits and determine the probability of the NAPL and/or plume encountering preferential pathways or conduits that could spread contamination.

We request that you perform a preferential pathway study that details the potential migration pathways and potential conduits (wells, utilities, pipelines, etc.) for horizontal and vertical migration that may be present in the vicinity of the site. Discuss your analysis and interpretation of the results of the preferential pathway study (including the detailed well survey and utility survey requested below) and report your results in the report requested below. Include an evaluation of the probability of the dissolved phase and NAPL plumes for all constituents of concern encountering preferential pathways and conduits that could spread the contamination, particularly in the lateral direction downgradient of your site. The results of your study shall contain all information required by 23 CCR, Section 2654(b).

### a) **Utility Survey**

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

### b) **Well Survey**

The preferential pathway study shall include a detailed well survey of all wells (monitoring and production wells: active, inactive, standby decommissioned (sealed with concrete), abandoned, (improperly decommissioned or lost); and dewatering and cathodic protection wells) within a 2000 feet radius of the subject site. The well survey should include well data from California Department of Water Resource well database and Alameda County Department of Public Works. Submittal of map(s) showing the location of all wells identified in your study, and the use of tables to report the data collected as part of your survey are required. Please refer to the Regional Board's guidance for identification, location, and evaluation of potential deep well conduits when conducting your preferential pathway study. Present the result from the preferential pathway study in the report requested below.

### **3. Project Approach and Investigation Reporting – Site Conceptual Model**

We anticipate that characterization and remediation work in addition to what is requested in this letter will be necessary at and down gradient from your site. Considerable cost savings can be realized if your consultant focuses on developing and refining a viable Site Conceptual Model (SCM) for the project. A SCM is a set of working hypotheses pertaining to all aspects of the contaminant release, including site geology, hydrogeology, release history, residual and dissolved contamination, attenuation mechanisms, pathways to nearby receptors, and likely magnitude of potential impacts to receptors. The SCM is used to identify data gaps that are subsequently filled as the investigation proceeds. As the data gaps are filled, the working hypotheses are modified, and the overall SCM is refined and strengthened. Subsurface investigations continue until the SCM no longer changes as new data are collected. At this point, the SCM is said to be "validated." The validated SCM then forms the foundation for developing the most cost-effective corrective action plan to protect existing and potential receptors.

When performed properly, the process of developing, refining and ultimately validating the SCM effectively guides the scope of the entire site investigation. We have identified, based on our review of existing data, some initial key data gaps in this letter and have described several tasks that we believe will provide important new data to refine the SCM. We request that your consultant develop a SCM for this site, identify data gaps, and propose specific supplemental tasks for future investigations. There may need to be additional phases of investigations, each building on the results of the prior work, to validate the SCM. Characterizing the site in this way will improve the efficiency of the work and limit its overall cost.

Both industry and the regulatory community endorse the SCM approach. Technical guidance for developing SCMs is presented in API's Publication No. 4699 and EPA's Publication No. EPA 510-B-97-001 both referenced above; and "Guidelines for Investigation and Cleanup of MTBE and Other Ether-Based Oxygenates, Appendix C," prepared by the State Water Resources Control Board, dated March 27, 2000.

The SCM for this project shall incorporate, but not be limited to, the following:

- a) A concise narrative discussion of the regional geologic and hydrogeologic setting obtained from your background study. Include a list of technical references you reviewed,

and copies (photocopies are sufficient) of regional geologic maps, groundwater contours, cross-sections, etc.

- b) A concise discussion of the on-site and off-site geology, hydrogeology, release history, source zone, plume development and migration, attenuation mechanisms, preferential pathways, and potential threat to down gradient and above-ground receptors. Be sure to include the vapor pathway in your analysis. Maximize the use of large-scale graphics (e.g., maps, cross-sections, contour maps, etc.) and conceptual diagrams to illustrate key points. Geologic cross-sections, which include an interpretive drawing of the vertical extent of soil and groundwater contamination (i.e., an interpretive drawing—not a plot of laboratory results). The SCM report requested below is to include one cross section parallel and one cross section perpendicular to the contaminant plume axis. Each cross section should include, but not be restricted to, the following:
1. Subsurface geologic features, depth to groundwater and man-made conduits.
  2. Surface topography. The cross sections should be extended off-site where necessary to show significant breaks in slope.
  3. Soil descriptions for all borings and wells along the line of section.
  4. Screen and filter pack intervals for each monitoring well.
  5. Sampling locations and results for soil and grab groundwater samples.
  6. Site features such as the tank pit, dispensers, buildings etc. Where appropriate, monitoring well location and soil boring locations will be projected back to the strike of the cross section line.
- c) Identification and listing of specific data gaps that require further investigation during subsequent phases of work.
- d) Proposed activities to investigate and fill data gaps identified above.
- e) The SCM shall include an analysis of the hydraulic flow system at and down gradient from the site. Include rose diagrams for groundwater gradients. The rose diagram shall be plotted on groundwater contour maps and updated in all future reports submitted for your site. Include an analysis of vertical hydraulic gradients. Note that these likely change due to seasonal precipitation and pumping.
- f) Temporal changes in the plume location and concentrations are also a key element of the SCM. In addition to providing a measure of the magnitude of the problem, these data are often useful to confirm details of the flow system inferred from the hydraulic head measurements. Include plots of the contaminant plumes on your maps, cross-sections, and diagrams.
- g) Several other contaminant release sites exist in the vicinity of your site. Hydrogeologic and contaminant data from those sites may prove helpful in testing certain hypotheses for your SCM. Include a summary of work and technical findings from nearby release sites and incorporate the findings from nearby site investigations into your SCM.
- h) Plots of chemical concentrations vs. time and vs. distance from the source. Plots should be shown for each monitoring well, which has had detectable levels of contaminants

- i) Summary tables of chemical concentrations in each historically sampled media (including soil, groundwater and soil vapor).
- j) Boring and well logs (including construction/screening), and a summary table indicating construction specifications for each monitoring and extraction well.

Please report the information discussed above in your initial SCM and include it in the SCM Report requested below.

#### **TECHNICAL REPORT REQUEST**

Please submit technical reports to Alameda County Environmental Health (Attention: Mr. Steven Plunkett), according to the following schedule:

- **February 15, 2006** – Preferential Pathway Study with Site Conceptual Model
- **February 30, 2006** – Soil and Groundwater Investigation Work Plan

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

#### **ELECTRONIC SUBMITTAL OF REPORTS**

The Alameda County Environmental Cleanup Oversight Programs (LOP and SLIC) require submission of all reports in electronic form to the county's ftp site. Paper copies of reports will no longer be accepted. The electronic copy replaces the paper copy and will be used for all public information requests, regulatory review, and compliance/enforcement activities. Instructions for submission of electronic documents to the Alameda County Environmental Cleanup Oversight Program ftp site are provided on the attached "Electronic Report Upload (ftp) Instructions." Please do not submit reports as attachments to electronic mail. Submission of reports to the Alameda County ftp site is an addition to existing requirements for electronic submittal of information to the State Water Resources Control Board (SWRCB) Geotracker website. Submission of reports to the Geotracker website does not fulfill the requirement to submit documents to the Alameda County ftp site. In September 2004, the SWRCB adopted regulations that require electronic submittal of information for groundwater cleanup programs. For several years, responsible parties for cleanup of leaks from underground storage tanks (USTs) have been required to submit groundwater analytical data, surveyed locations of monitor wells, and other data to the Geotracker database over the Internet. Beginning July 1, 2005, electronic submittal of a complete copy of all necessary reports was required in Geotracker (in PDF format). Please visit the SWRCB website for more information on these requirements ([http://www.swrcb.ca.gov/ust/cleanup/electronic\\_reporting](http://www.swrcb.ca.gov/ust/cleanup/electronic_reporting)).

#### **PERJURY STATEMENT**

All work plans, technical reports, or technical documents submitted to ACEH must be accompanied by a cover letter from the responsible party that states, at a minimum, the following: "I declare, under penalty of perjury, that the information and/or recommendations contained in the

Jennifer Sedlachek  
January 13, 2007  
Page 6

attached document or report is true and correct to the best of my knowledge." This letter must be signed by an officer or legally authorized representative of your company. Please include a cover letter satisfying these requirements with all future reports and technical documents submitted for this fuel leak case.

PROFESSIONAL CERTIFICATION & CONCLUSIONS/RECOMMENDATIONS

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

UNDERGROUND STORAGE TANK CLEANUP FUND

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

AGENCY OVERSIGHT

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

Should you have any questions, please call me at (510) 383-1767.

Sincerely,



Steven Plunkett  
Hazardous Materials Specialist

cc: Ms. Paula Sime  
Environmental Resolutions Inc.  
601 North McDowell Boulevard  
Petaluma, CA 94954

Donna Drogos, ACEH, Steven Plunkett, ACEH, File



**Janice A. Jacobson**

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**From:** Plunkett, Steven, Env. Health [steven.plunkett@acgov.org]  
**Sent:** Wednesday, January 24, 2007 10:17 AM  
**To:** Janice A. Jacobson  
**Subject:** RE: Fuel Leak Case No. RO390 (7-0238)

Janice,

Regarding RO 390:

I will allow an extension for both the SCM and the Work Plan submission. However, a 30 day extension for the SCM should be adequate to prepare necessary documents. The time extension will place the date for submission of the SCM at March 15, 2006. In addition, I will provide an additional 30 day extension for the submission of a Work Plan, with the require submission on April 15, 2007

Regarding the site RO358:

The SCM is to be submitted after the completion of the offsite investigation, which has yet to be determined. If there are delays for the offsite investigation and access ACEH will grant an extension to May 1, 2007. However, if the offsite investigation moves forward without delay ACEH will require the SWI and SCM to be submitted by April 15, 2007.

ACEH understand the difficulties associated with offsite investigations and access issues. Should problems arise we will reconsider the reporting deadlines.

Best Regards,  
Steven Plunkett  
Hazardous Materials Specialist  
Alameda County Environmental Health  
1131 Harbor Bay Parkway, Suite 250  
Alameda, CA 94502-6577  
510-383-1767  
510-337-9355 Fax  
steven.plunkett@acgov.org

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**From:** Janice A. Jacobson [mailto:jjacobson@ERI-US.com]  
**Sent:** Tuesday, January 23, 2007 4:05 PM  
**To:** Plunkett, Steven, Env. Health  
**Cc:** Jim F. Chappell; jennifer.c.sedlachek@exxonmobil.com  
**Subject:** Fuel Leak Case No. RO390 (7-0238)

Former Exxon 7-0238  
2200 East 12th Street  
Oakland, CA

Steven:

Jim Chappell and I spoke to you today regarding your request, in a letter dated January 17, 2007, for a SCM report submittal by February 15, 2006, and a Work Plan submittal by February 30, 2006. You indicated in our conversation that you would be willing to grant an extension to the SCM and the Work Plan submittal. ERI is requesting an extension of April 15, 2007 for the SCM and an extension of May 15, 2007 for the Work Plan. Please respond to this

3/6/2007

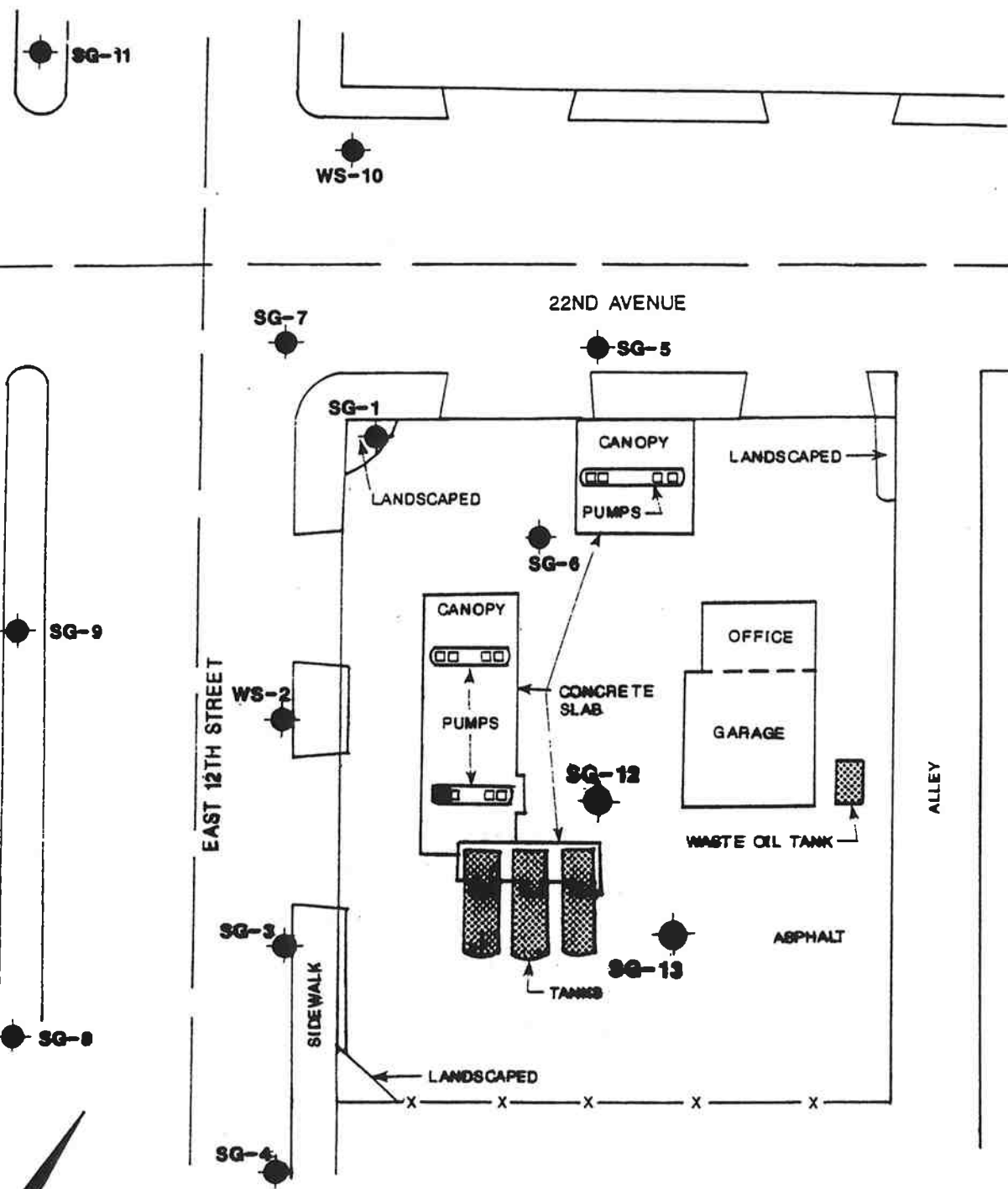
email so I have your approval for the extensions in writing.  
Please call me if you have any questions.  
Thank you,  
Janice

Janice A. Jacobson  
Project Manager  
[jjacobson@eri-us.com](mailto:jjacobson@eri-us.com)

phone: 707.766.2018  
fax: 707.789.0414  
cell: 707.975.0931

Environmental Resolutions, Inc.  
601 North McDowell Boulevard  
Petaluma, California 94954  
[www.eri-us.com](http://www.eri-us.com)

**ATTACHMENT B**  
**SOIL-GAS EXCAVATION MAPS**



**EXPLANATION**

● Soil-gas probe location

⊠ Bench mark (HLA datum El.=100 feet)



**HLA** **Harding Lawson Associates**  
Engineers and Geoscientists

**Soil-Gas Probe Locations**  
Former Texaco Service Station  
2200 East 12th Street  
Oakland, California

PLATE  
**5**

DRAWN  
YC

JOB NUMBER  
2251,082.03

APPROVED  
**G**

DATE  
6/89

REVISED

DATE

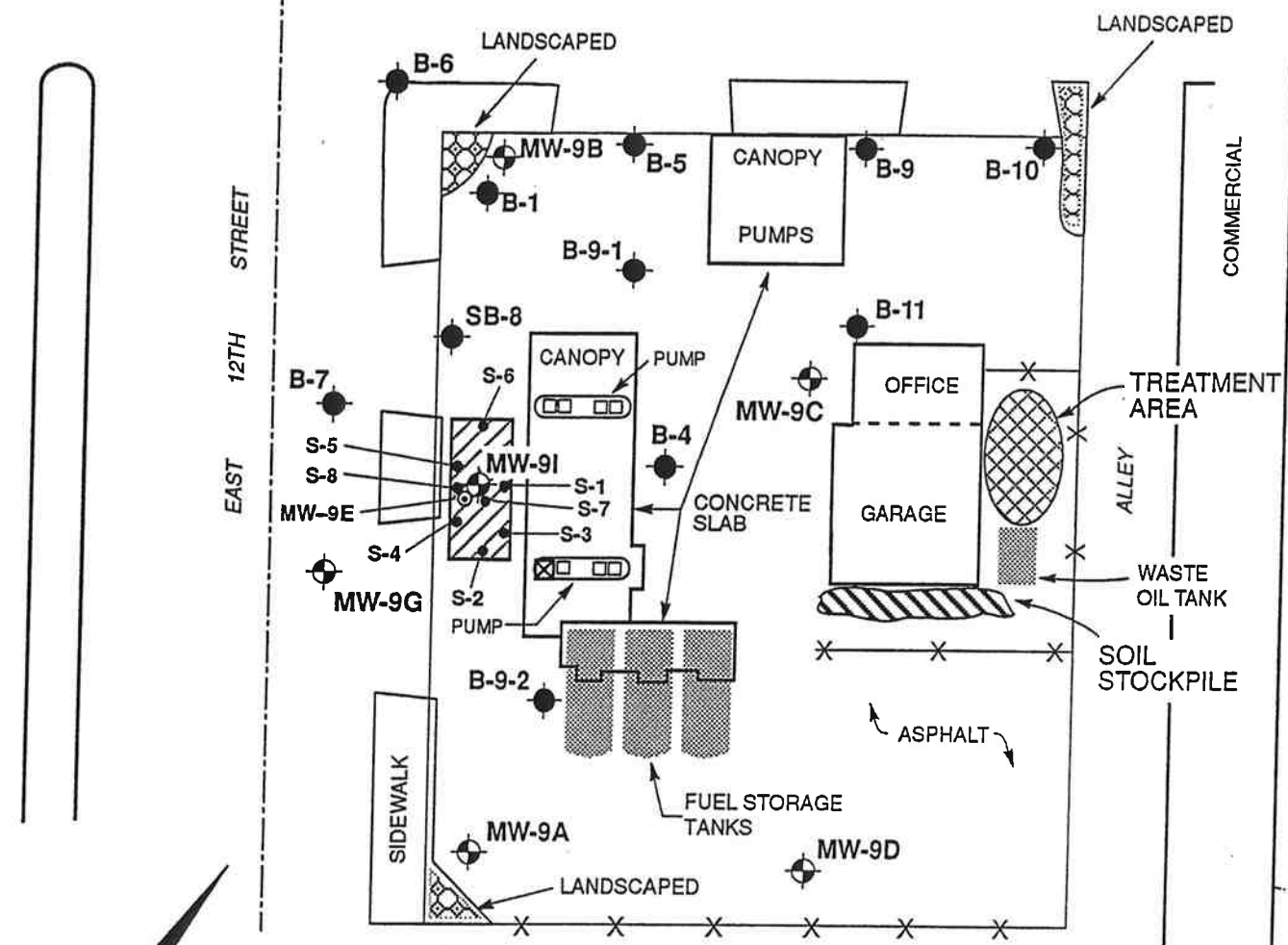
MW-9H

MW-9F







22ND AVENUE

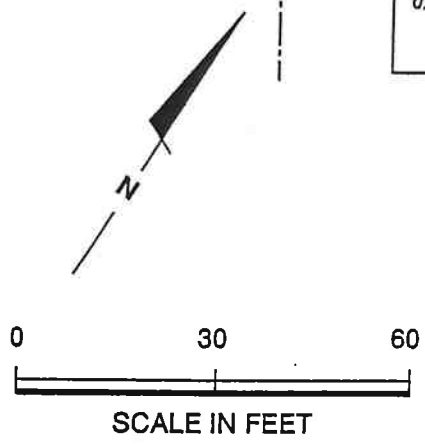
EAST 12TH STREET

COMMERCIAL



**EXPLANATION**

-  Monitoring well location and number
-  Boring location and number
-  Approximate location of soil sample taken during excavation
-  Excavation area
-  Benchmark (HLA datum El. = 100 ft.)
-  Abandoned Monitoring Well



**Harding Lawson Associates**  
 Engineering and Environmental Services

**Site Plan**  
 Former Texaco Service Station  
 2200 East 12th Street  
 Oakland, California

PLATE  
**3**

DRAWN: EH/RHC  
 JOB NUMBER: 2251,112.03

APPROVED: MKW

DATE: 1/21/91

REVISED DATE: 2/25/91

**ATTACHMENT C**

**BORING LOGS**



Project No.: 2293 Boring: DPE1 Plate: 1 OF 1  
 Site: Former Exxon Service Station 7-0238 Date: 6/5/03  
 Drill Contractor: Cascade

Sample Method: Split spoon sampler Geologist: John B. Bobbitt  
 Drill Rig: Hollow-stem auger Bore Hole Diameter: 10' Signature: \_\_\_\_\_  
 Location: 11 ft. southwest of northern most pump island Registration: R.G. 4313  
 Logged by: Paula Sime

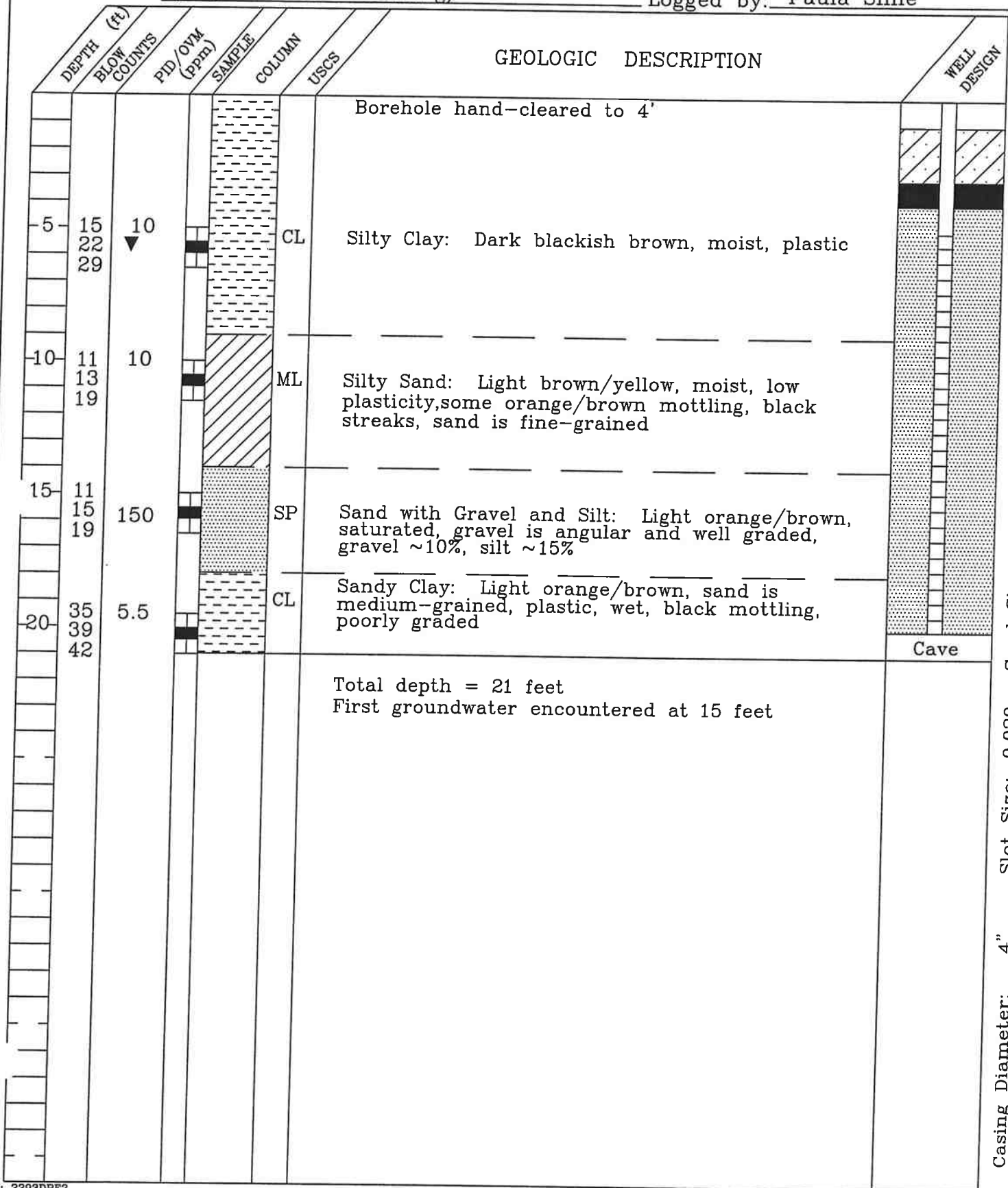
DEPTH (ft)	BLOW COUNTS	PTD/OVM (ppid)	SAMPLE	COLUMN	USCS	GEOLOGIC DESCRIPTION	WELL DESIGN
						Borehole hand-cleared to 5'	
-5	7 8 11	19.1			CL	Silty Clay: Dark gray, moist, very stiff	
-10	13 15 18	26.1				Sandy Clay: Greenish gray, streaked with light orange/brown, moist, very stiff. Sand is fine-grained and increases downward	
						Color changes to light orange/brown	
15	5 25 19	99.4			SP	Gravelly Sand: Well graded, light orange/brown mottled with green, moist, contains black flecks, sub-angular. Sand is coarse and sub-angular	
					CL	Sandy Clay: Coarse, moist, very plastic	
20	15 15 18	81.9			SM	Silty Sand: Fine grained with some coarse sand, light orange/brown, not plastic, black flecks and orange/brown streaks	
						Total depth = 21 feet Free Groundwater not encountered in borehole	
							Cave

Casing Diameter: 4" Slot Size: 0.020" Sand Size: #3, Grout: Portland I, II



Project No.: 2293 Boring: DPE2 Plate: 1 OF 1  
 Site: Former Exxon Service Station 7-0238 Date: 6/4/03  
 Drill Contractor: Cascade

Sample Method: Hollow-stem auger/Split-spoon sampler Geologist: John B. Bobbitt  
 Drill Rig: Hollow-stem auger Bore Hole Diameter: 10' Signature: \_\_\_\_\_  
 Location: 20' southwest of Station building entrance Registration: R.G. 4313  
(perpendicular to building) Logged by: Paula Sime



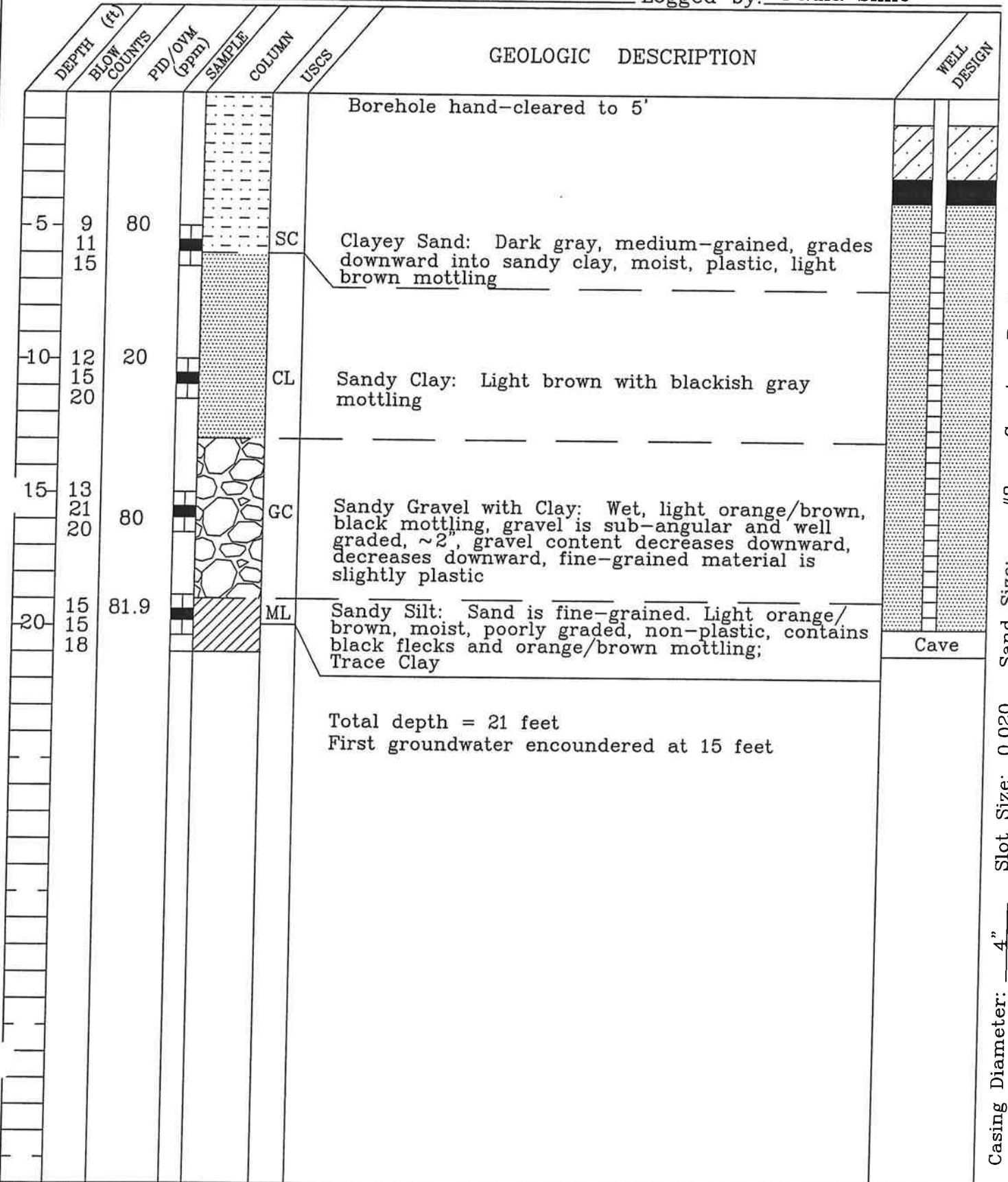
Casing Diameter: 4" Slot Size: 0.020, Sand Size: #3, Grout: Portland I, II





Project No.: 2293 Boring: DPE3 Plate: 1 OF 1  
 Site: Former Exxon Service Station 7-0238 Date: 6/4/03  
 Drill Contractor: Cascade

Sample Method: Split-spoon sampler Geologist: John B. Bobbitt  
 Drill Rig: Hollow-stem auger Bore Hole Diameter: 10' Signature: \_\_\_\_\_  
 Location: 6' southeast of southern planter boundary at north end of site Registration: R.G. 4313  
 Logged by: Paula Sime



Casing Diameter: 4" Slot Size: 0.020, Sand Size: #3, Grout: Portland I, II

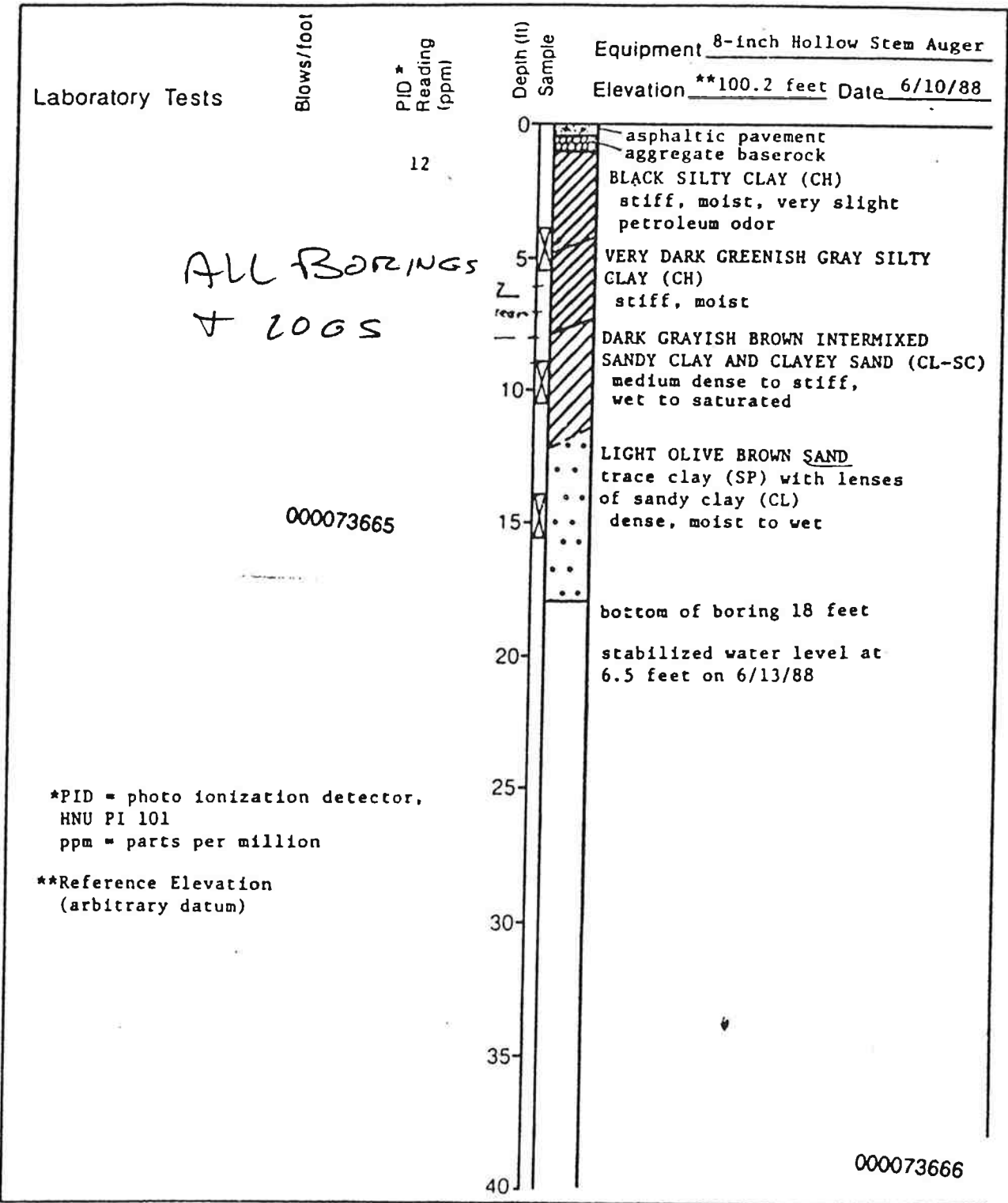


Project No.: 2293 Boring: DPE4 Plate: 1 OF 1  
 Site: Former Exxon Service Station 7-0238 Date: 6/5/03  
 Drill Contractor: Cascade

Sample Method: Split- spoon sampler Geologist: John B. Bobbitt  
 Drill Rig: Hollow-stem auger Bore Hole Diameter: 10' Signature: \_\_\_\_\_  
 Location: 16' south of the edge of the west pump island Registration: R.G. 4313  
and 27' west of the edge of the east pump island Logged by: Paula Sime

DEPTH (ft)	BLOW COUNTS	PID/OVM (ppid)	SAMPLE	COLUMN	USCS	GEOLOGIC DESCRIPTION	WELL DESIGN
						Borehole hand-cleared to 5'	
					CL	Silty Clay: Dark greenish gray, moist	
-5	7	5.2					
	13						
	15					Very stiff, very plastic when wetted, dark gray with greenish gray mottling	
-10	12	74.9					
	15						
	20				SM	Silty Sand with Clay: Fine-grained, light orange/brown, moist, poorly graded, somewhat plastic, black/gray blotches and flecks, ~5% coarse sub-rounded sand	
15	15						
	15					Clay content decreasing downward	
	23	66.8					
						Clay content increasing	
-20	18	1.7			GC	Sandy Gravel with Clay: Sand is coarse, light orange/brown, sand and gravel are sub-angular, clay is moderately plastic	
	21						
	25						Cave
						Total depth = 21 feet	
						Saturated sediments not encountered; groundwater in hole after 10 minutes	

Casing Diameter: 4" Slot Size: 0.020, Sand Size: #3, Grout: Portland I, II



\*PID = photo ionization detector,  
HNU PI 101  
ppm = parts per million

\*\*Reference Elevation  
(arbitrary datum)

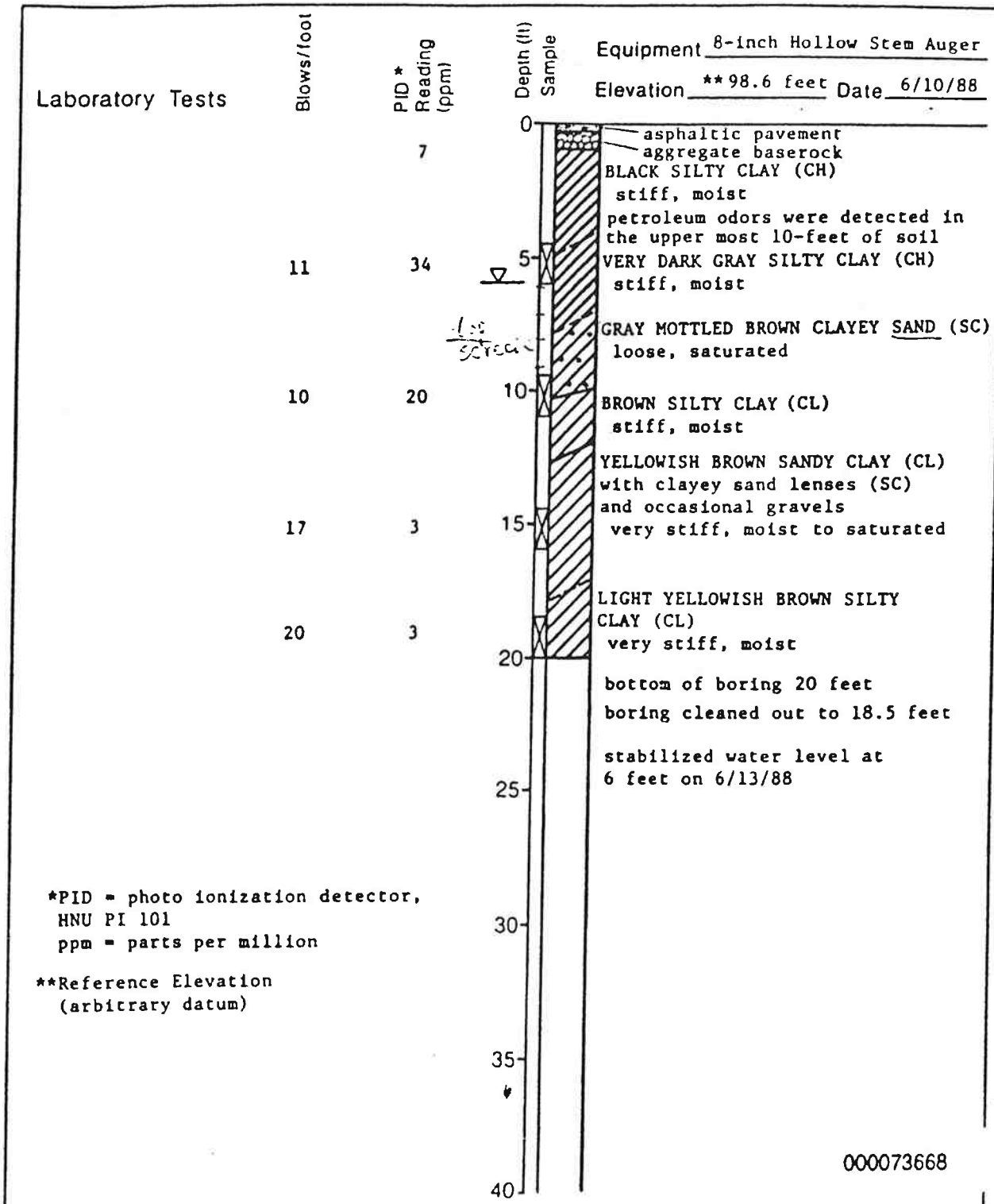


**Harding Lawson Associates**  
Engineers Geologists  
& Geophysicists

**Log of Boring MW-9A**  
Texaco Station - 6248800088  
2200 East 12th Street  
Oakland, California

PLATE

**3**



**Harding Lawson Associates**  
Engineers, Geologists  
& Geophysicists

**Log of Boring MW-9B**  
Texaco Station - 6248800088  
2200 East 12th Street  
Oakland, California

PLATE  
**4**

DRAWN  
RS

JOB NUMBER  
2251,055.04

APPROVED  
[Signature]

DATE  
7/88

REVISIONS

Laboratory Tests

Blows/foot

PID \*  
Reading  
(ppm)

Depth (ft)  
Sample

Equipment 8-inch Hollow Stem Auger

Elevation \*\*99.9 feet Date 6/10/88

12

2

5

2

14

1

10

42/10"

4

15

20

25

30

35

40

asphaltic pavement  
aggregate baserock  
BLACK SILTY CLAY (CH)  
stiff, moist

DARK GREENISH GRAY SILTY CLAY  
trace fine sand (CH)  
stiff, moist

LIGHT YELLOWISH BROWN CLAYEY  
SAND (SC)  
medium dense, wet

BROWNISH YELLOW SAND  
trace clay (SP)  
dense, saturated

bottom of boring 17 feet

stabilized water level at  
6.5 feet on 6/13/88

\*PID = photo ionization detector,  
HNU PI 101  
ppm = parts per million

\*\*Reference Elevation  
(arbitrary datum)

000073670



Harding Lawson Associates  
Engineers Geologists  
& Geophysicists

Log of Boring MW-9C  
Texaco Station - 6248800088  
2200 East 12th Street  
Oakland, California

PLATE:

5

DRAWN  
RS

JOB NUMBER  
2251,055.04

APPROVED  
[Signature]

DATE  
7/88

REVISED

DATE

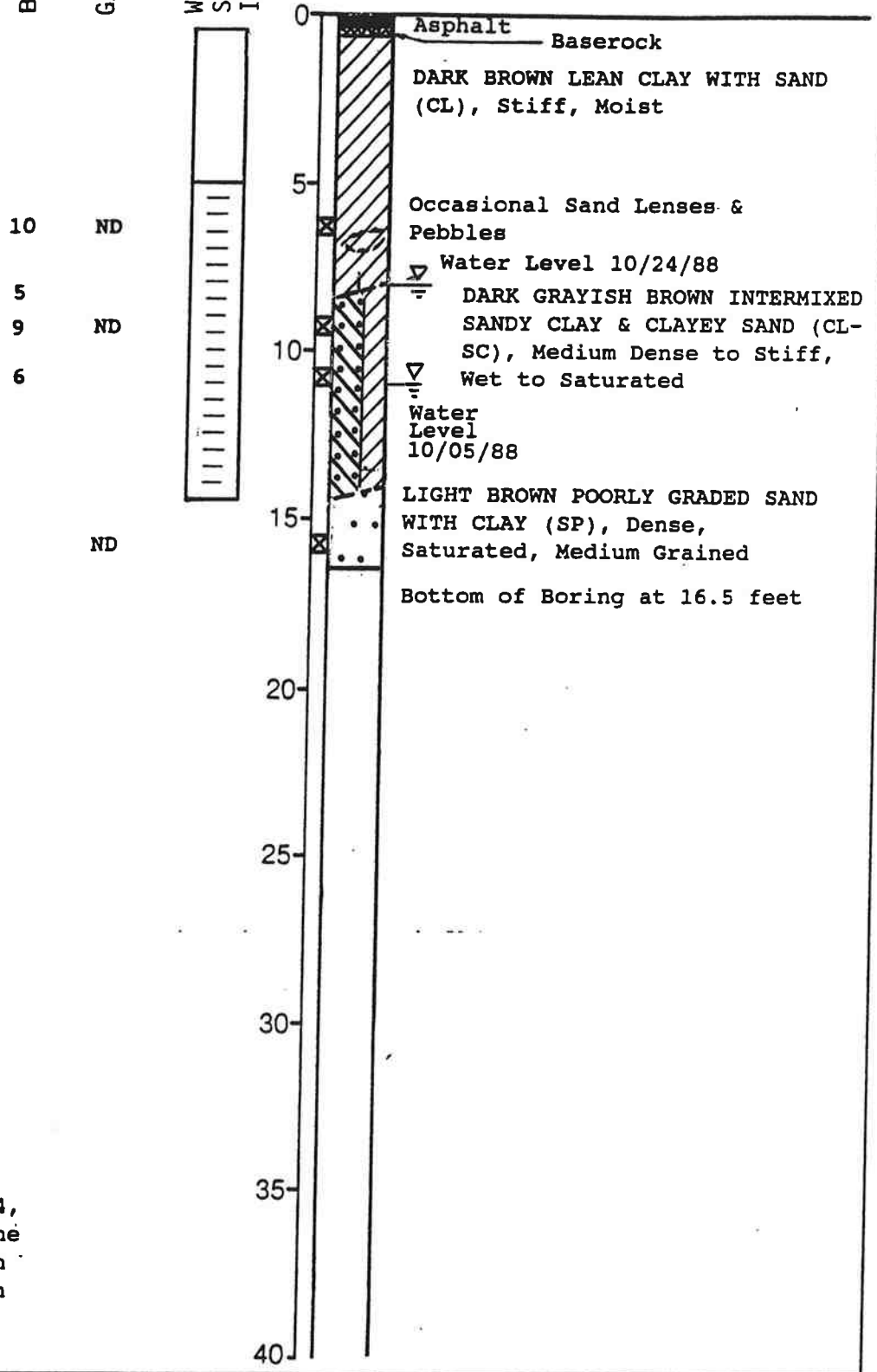
Laboratory Tests

Blows/foot  
GAS TECH  
(ppm)\*

Well  
Screen  
Interval

Depth (ft)  
Sample

Equipment 12" Hollow Stem Auger  
Elevation \*\*101.46' Date 10/05/88



\* Gas-Tech Model 1314, Calibrated to Hexane  
ppm - Parts per Million  
\*\* Reference Elevation (Arbitrary Datum)  
ND Non-Detectable



**Harding Lawson Associates**  
Engineers, Geologists  
& Geophysicists

**Log of Boring MW-9D**  
Former Texaco Service Station  
2200 East 12th Street  
Oakland, California

PLATE  
**4**

Laboratory Tests

Blows/foot

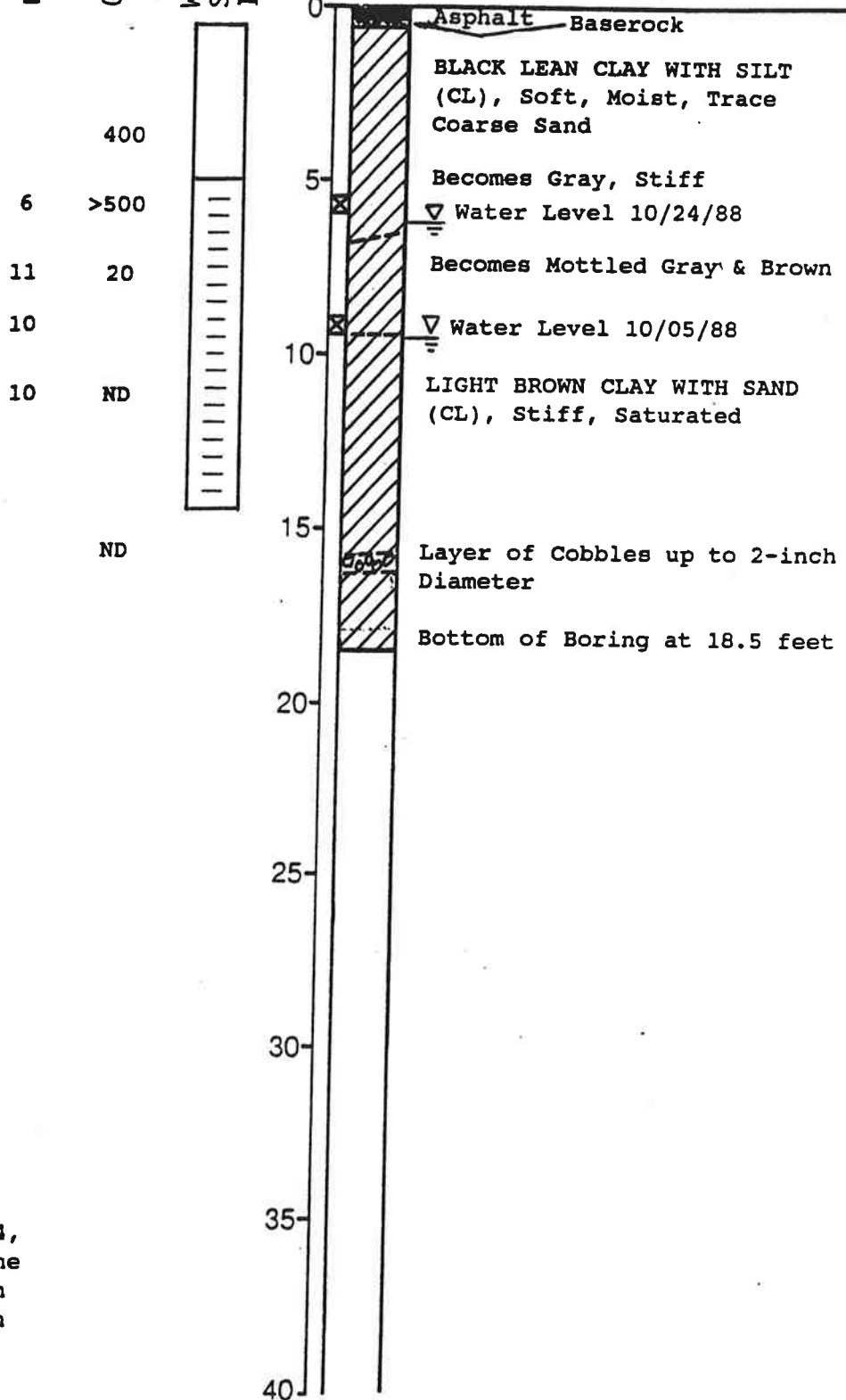
GAS TECH (ppm)\*

Well Screen Interval

Depth (ft)  
Sample

Equipment 12" Hollow Stem Auger

Elevation \*\*98.41' Date 10/05/88



\* Gas-Tech Model 1314,  
Calibrated to Hexane  
ppm - Parts per Million  
\*\* Reference Elevation  
(Arbitrary Datum)  
ND Non-Detectable

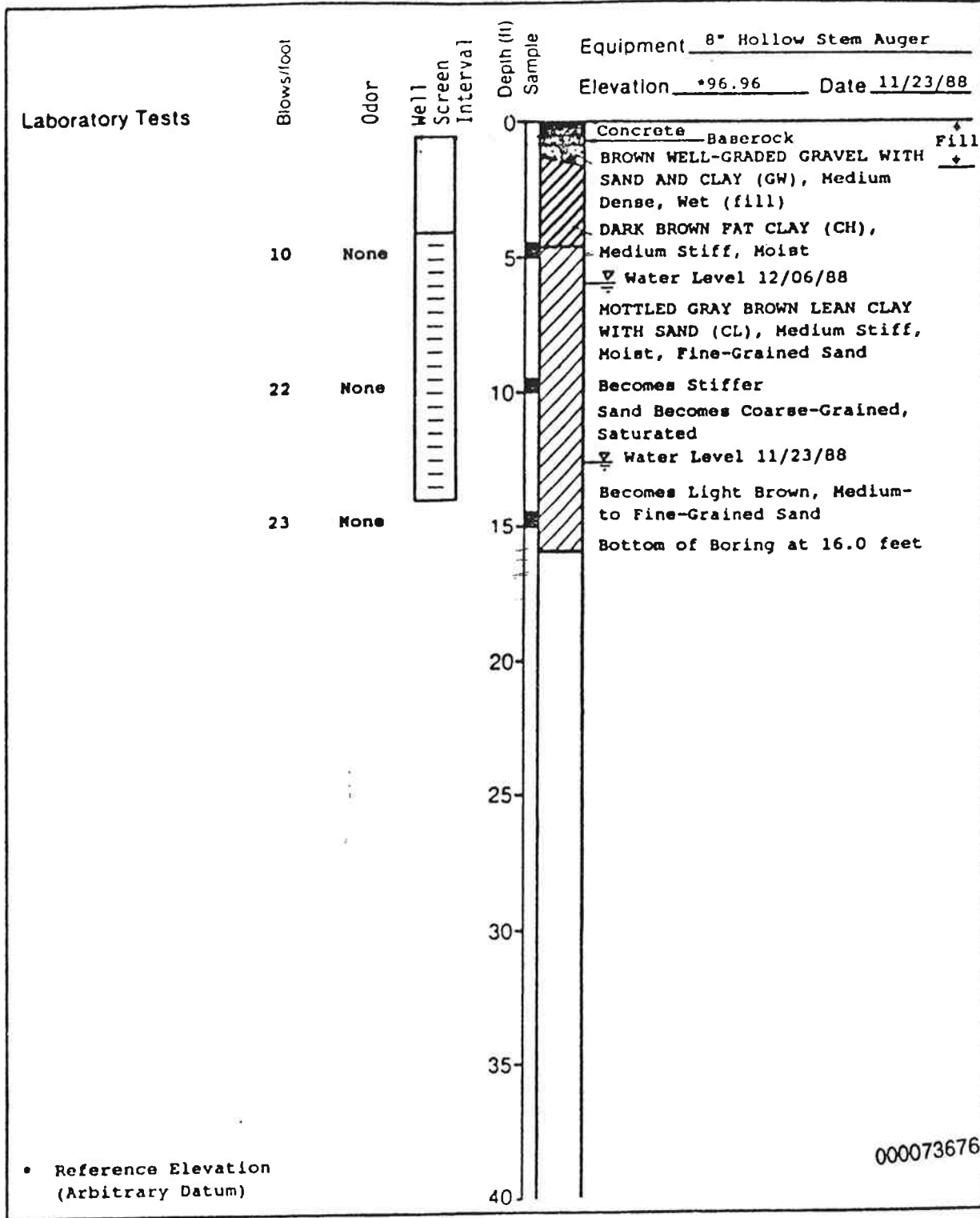


**Harding Lawson Associates**  
Engineers, Geologists  
& Geophysicists

**Log of Boring MW-9E**  
Former Texaco Service Station  
2200 East 12th Street  
Oakland, California

PLATE

**5**



000073676

• Reference Elevation (Arbitrary Datum)

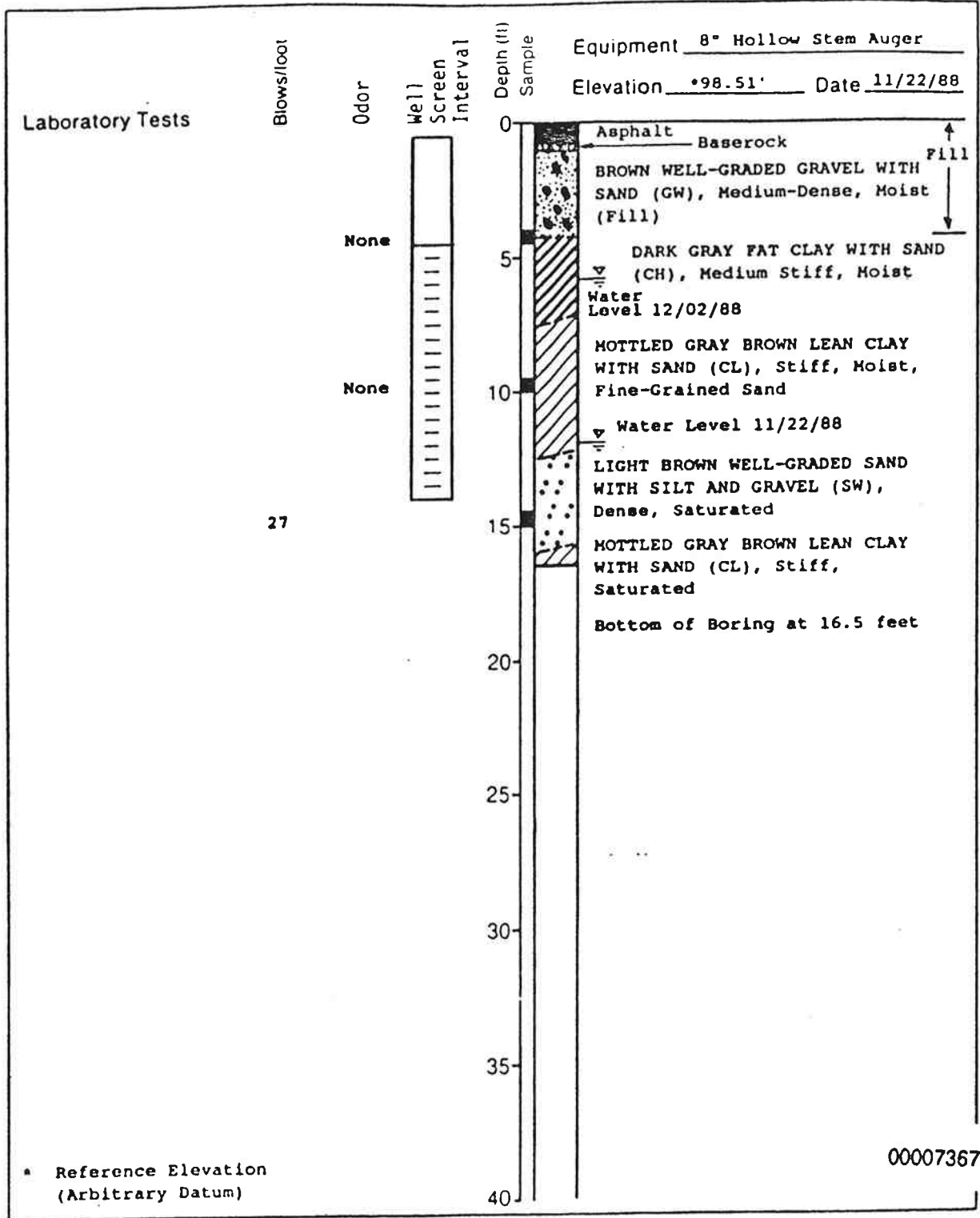


**Harding Lawson Associates**  
Engineers Geologists & Geophysicists

**Log of Boring MW-9F**  
Former Texaco Service Station  
2200 East 12th Street  
Oakland, California

PLATE  
**6**





\* Reference Elevation (Arbitrary Datum)

000073678

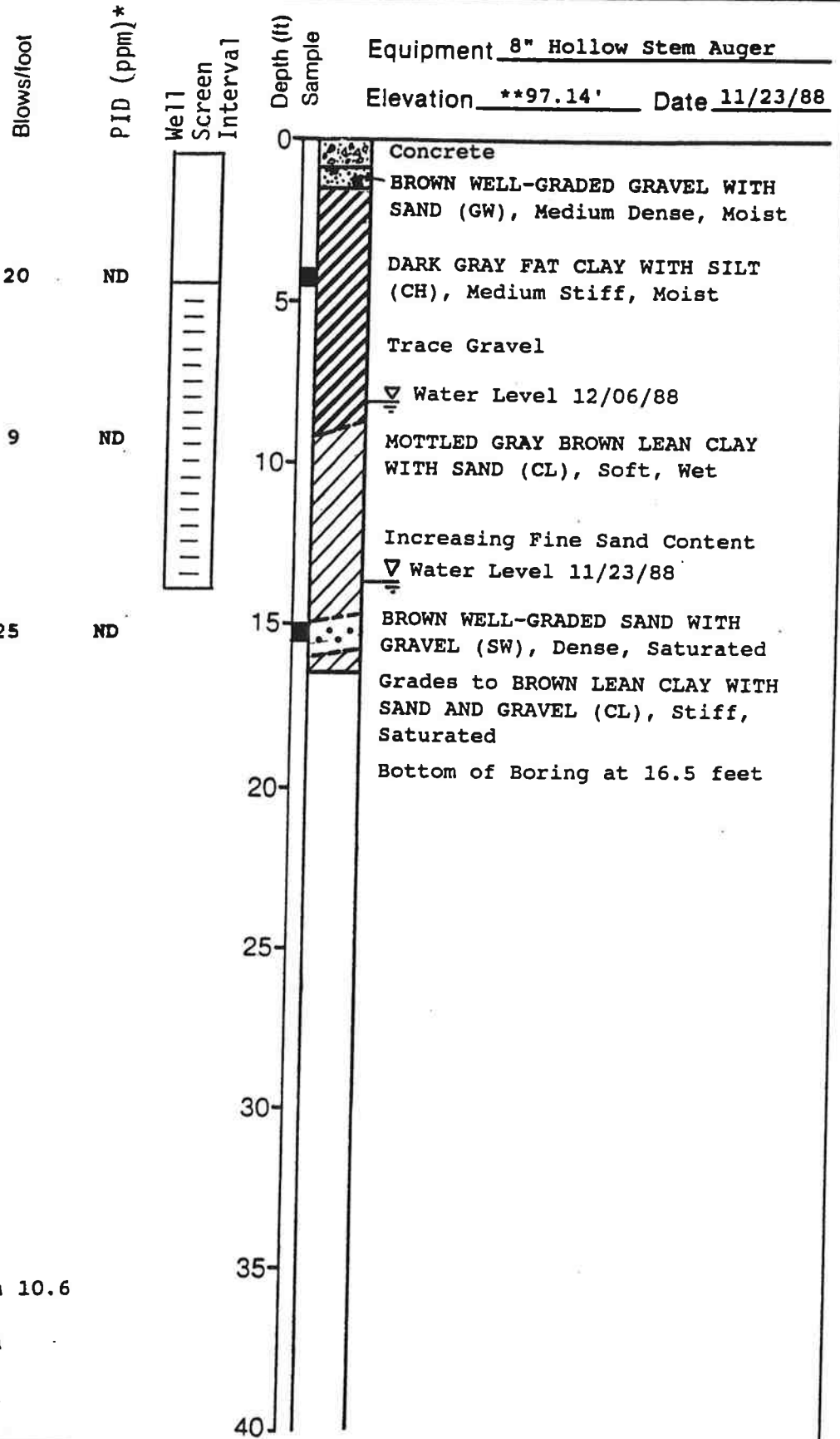


**Harding Lawson Associates**  
 Engineers Geologists & Geophysicists

**Log of Boring MW-9G**  
 Former Texaco Service Station  
 2200 East 12th Street  
 Oakland, California

PLATE  
**7**

Laboratory Tests



\* Photovac Tip-1 with 10.6 Electron Volt Lamp  
 \*\* Reference Elevation (Arbitrary Datum)  
 ppm - Parts Per Million

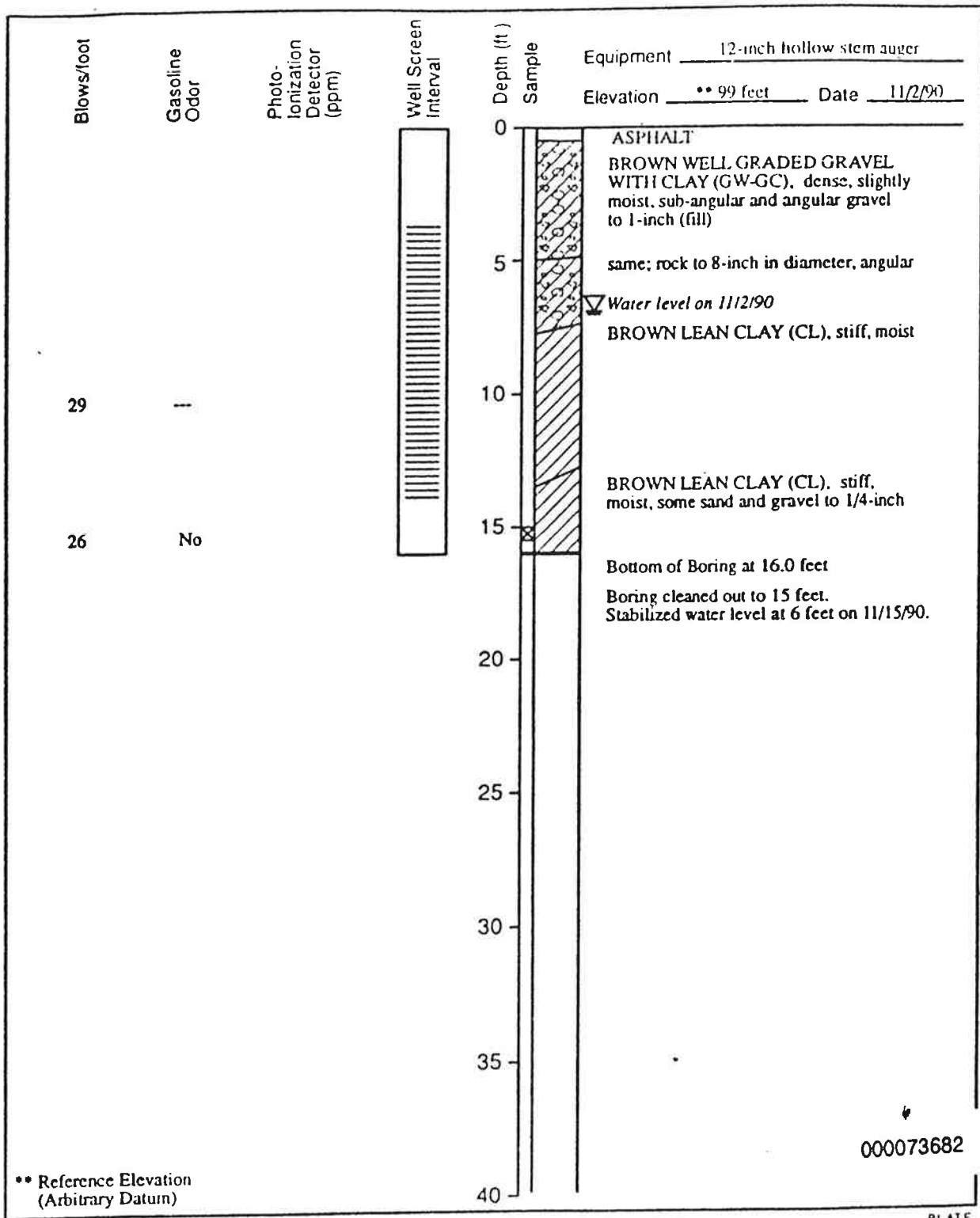


**Harding Lawson Associates**  
 Engineers, Geologists  
 & Geophysicists

**Log of Boring MW-9H**  
 Former Texaco Service Station  
 2200 East 12th Street  
 Oakland, California

PLATE

**8**



000073682

\*\* Reference Elevation (Arbitrary Datum)



**Harding Lawson Associates**  
Engineering and Environmental Services

Log of Boring MW-9I  
Former Texaco Service Station  
2200 East 12th Street  
Oakland, California

PLATE

**6**

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED DATE
RHC	2251.112.03	MKW	11/90	02/25/91

Laboratory Tests

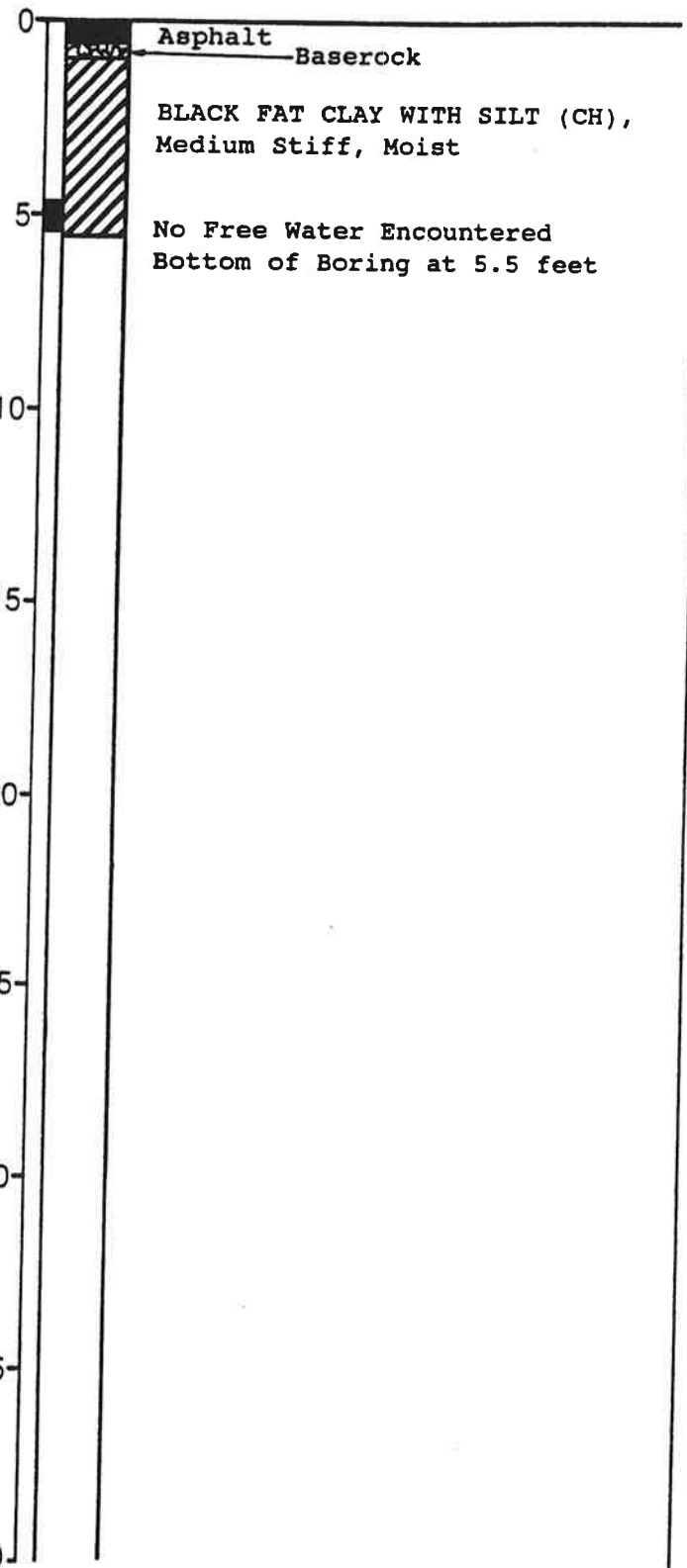
Blows/foot

Odor

Depth (ft)  
Sample

Equipment 8" Hollow Stem Auger

Elevation \*-99.0' Date 11/22/88



15

Strong  
Gas Odor

0  
5  
10  
15  
20  
25  
30  
35  
40

\* Reference Elevation  
(Arbitrary Datum)



**Harding Lawson Associates**  
Engineers, Geologists  
& Geophysicists

**Log of Boring SB-1**  
Former Texaco Service Station  
2200 East 12th Street  
Oakland, California

PLATE

**9**

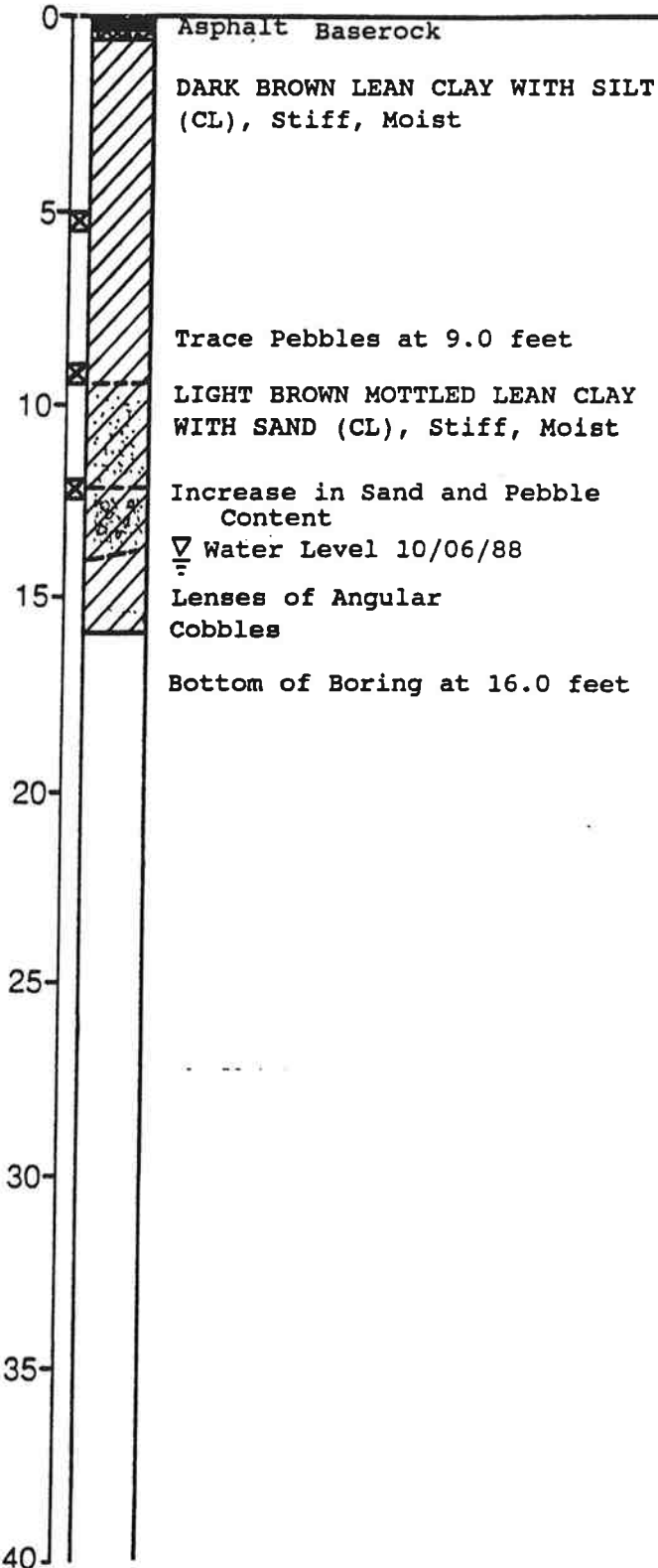
Laboratory Tests

Blows/foot  
GAS TECH  
(ppm)\*

12      50  
  
9      ND  
8      ND  
14  
21      ND  
36

Depth (ft)  
Sample

Equipment 8" Hollow Stem Auger  
Elevation \*\*99.10' Date 10/06/88



\* Gas-Tech Model 1314,  
Calibrated to Hexane  
ppm - Parts per Million  
\*\* Reference Elevation  
(Arbitrary Datum)  
ND Non-Detectable



**Harding Lawson Associates**  
Engineers, Geologists  
& Geophysicists

**Log of Boring B-9-1**  
Former Texaco Service Station  
2200 East 12th Street  
Oakland, California

PLATE

**10**

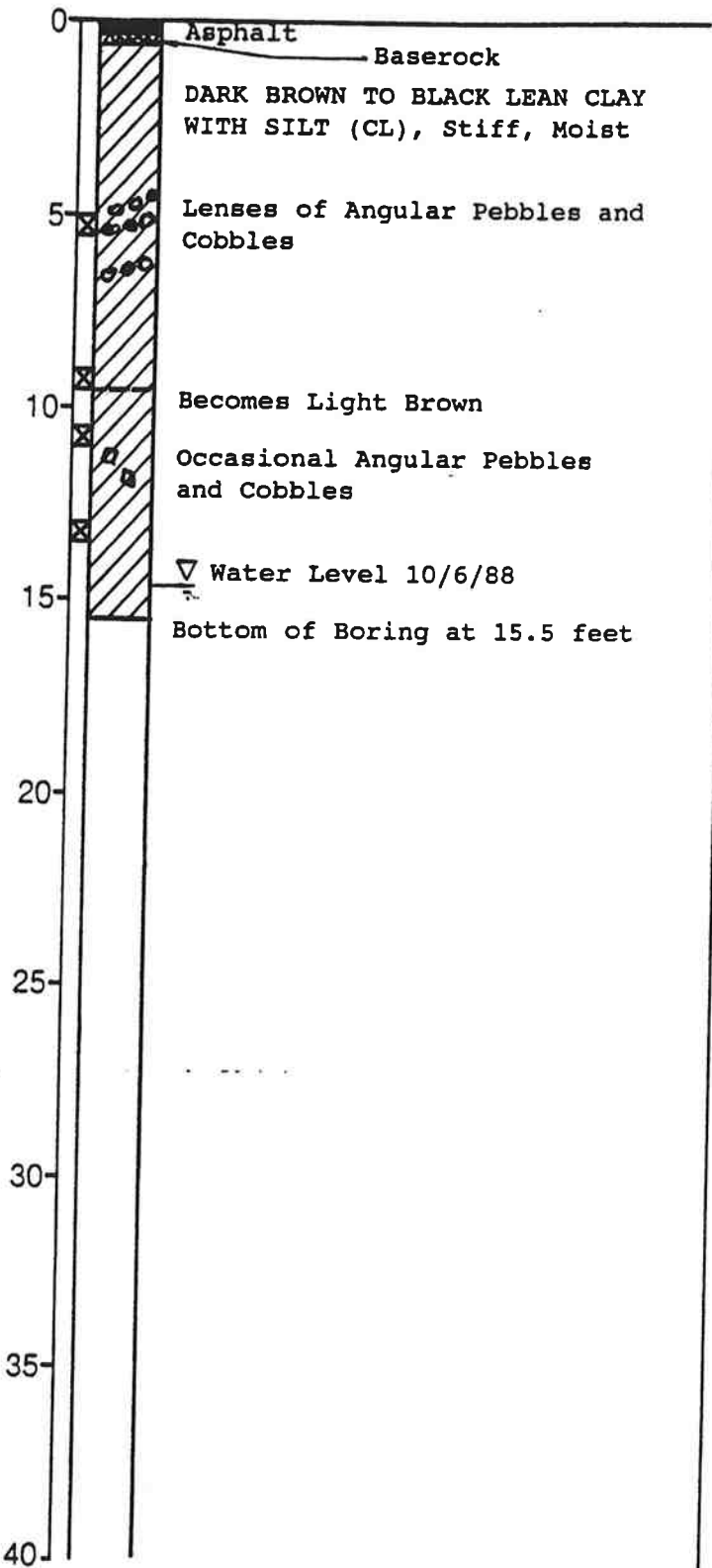
Laboratory Tests

Blows/foot  
GAS TECH  
(ppm)\*

10  
12 110  
25  
13 10  
14 10  
15 10  
22 10  
18

Depth (ft)  
Sample

Equipment 8" Hollow Stem Auger  
Elevation \*\*99.20' Date 10/06/88



\* Gas-Tech Model 1314  
Calibrated to Hexane  
\*\* Reference Elevation  
(Arbitrary Datum)  
ppm - Parts per Million



**Harding Lawson Associates**  
Engineers, Geologists  
& Geophysicists

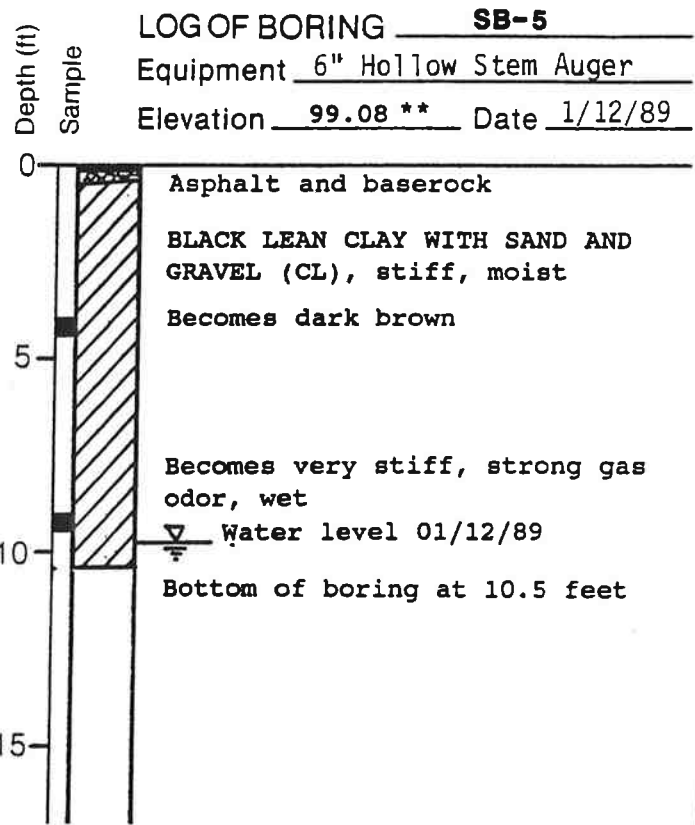
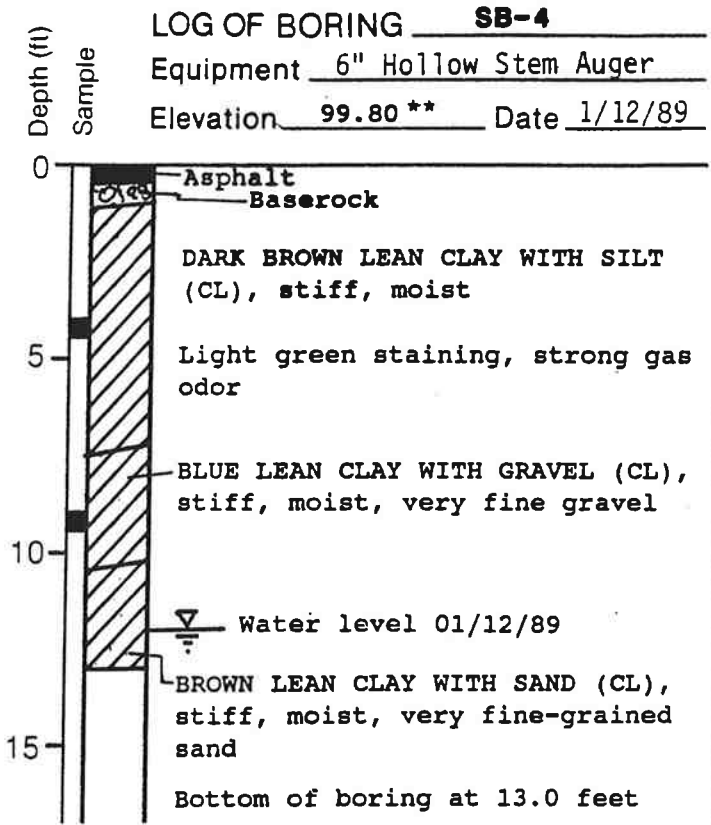
**Log of Boring B-9-2**  
Former Texaco Service Station  
2200 East 12th Street  
Oakland, California

PLATE  
**11**

Blows/  
foot      Gas \*  
Tech  
(ppm)

14      300

13      175



\* Gas-Tech Model 1314, calibrated to hexane  
 ppm - parts per million  
 \*\* Reference elevation (arbitrary datum)



**Harding Lawson Associates**  
 Engineers, Geologists  
 & Geophysicists

**Logs of Borings SB-4 and SB-5**  
 Former Texaco Service Station  
 2200 East 12th Street  
 Oakland, California

PLATE

**12**

**LOG OF BORING SB-6**

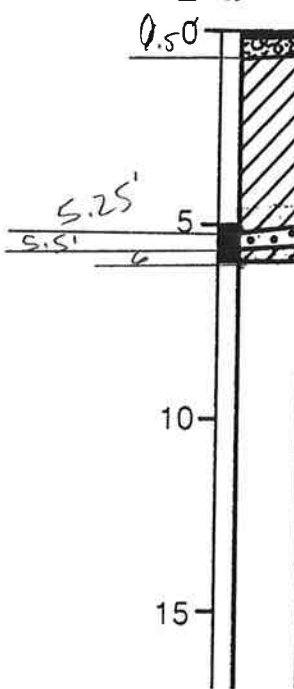
Equipment 6" Hollow Stem Auger

Elevation 98.05 Date 1/12/89

Blows/  
foot  
Gas  
Tech  
(ppm)

Depth (ft)  
Sample

6 60



Asphalt and baserock  
BROWN LEAN CLAY WITH SILT (CL),  
stiff, moist  
GRAY SAND (SW), well graded,  
loose, moist, medium grained  
BLUE FAT CLAY (CL), very stiff,  
moist  
Bottom of boring at 6.0 feet

**LOG OF BORING SB-7**

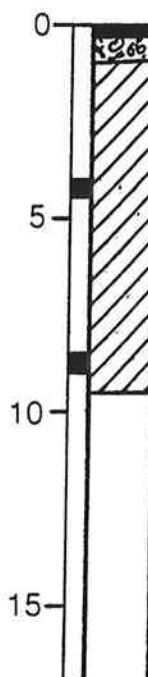
Equipment 6" Hollow Stem Auger

Elevation 98.42 Date 1/12/89

12 50

8 100

Depth (ft)  
Sample



Asphalt and baserock  
DARK BROWN LEAN CLAY WITH SILT  
(CL), stiff, moist, sample  
contains blue-gray staining  
Becomes mottled brown-blue  
sand, very stiff, very fine-  
grained sand  
Water level 01/12/89  
Bottom of boring at 9.5 feet



**Harding Lawson Associates**  
Engineers, Geologists  
& Geophysicists

**Logs of Borings SB-6 and SB-7**  
Former Texaco Service Station  
2200 East 12th Street  
Oakland, California

PLATE

**13**



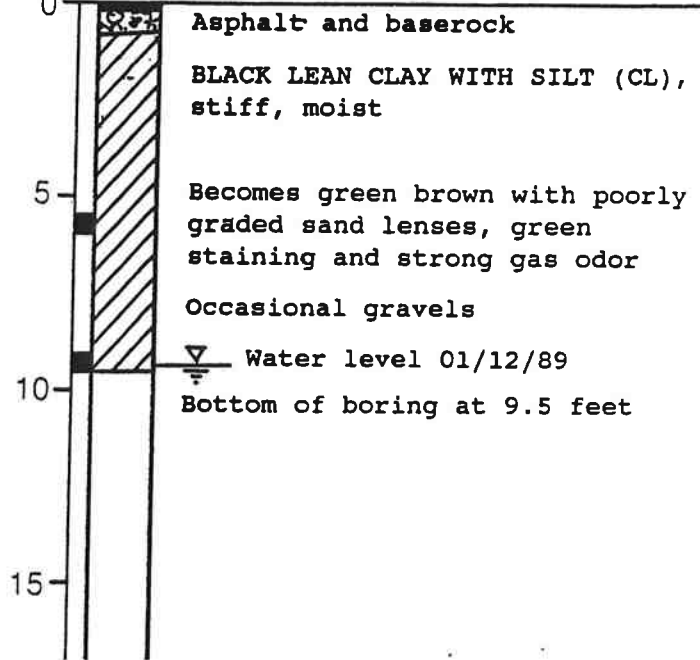
**LOG OF BORING SB-8**

Equipment 6" Hollow Stem Auger

Elevation 98.69 Date 1/12/89

Blows/  
foot  
Gas  
Tech  
(ppm)  
Well  
Screen  
Interval

Depth (ft)  
Sample



**LOG OF BORING SB-9**

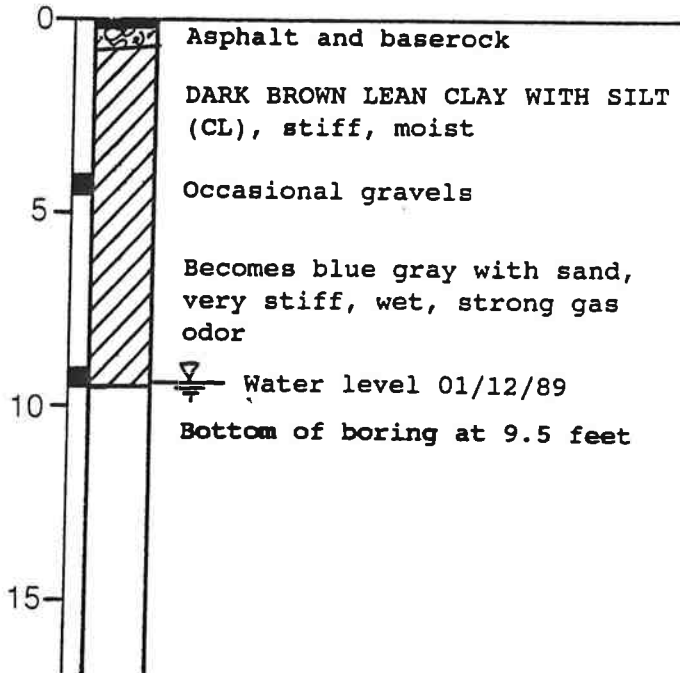
Equipment 6" Hollow Stem Auger

Elevation 99.49 Date 1/12/89

14 50

9 >500

Depth (ft)  
Sample



**Harding Lawson Associates**  
Engineers, Geologists  
& Geophysicists

**Logs of Borings SB-8 and SB-9**  
Former Texaco Service Station  
2200 East 12th Street  
Oakland, California

PLATE

**14**

DRAWN  
YC

JOB NUMBER  
2251,082.03

APPROVED  
G

DATE  
6/89

REVISED

DATE

Laboratory Tests

Blows/foot

HNU (ppm)

Odor

Depth (ft)  
Sample

Equipment 6" Hollow Stem Auger

Elevation \_\_\_\_\_ Date 03/02/89

Asphalt  
Baserock

MOTTLED GRAY BROWN SANDY LEAN CLAY (CL), medium stiff, moist

10 ND

MOTTLED GRAY SILTY SAND (SM), medium dense, moist, fine-grained

10 ND

Bottom of boring at 11.5 feet  
No free water encountered

15

20

25

30

35

40



**Harding Lawson Associates**  
Engineers, Geologists  
& Geophysicists

**Log of Boring SB-10**  
Former Texaco Service Station  
2200 East 12th Street  
Oakland, California

PLATE

**15**

Laboratory Tests

Blows/foot

HNU (ppm)

Odor

Depth (ft)

Sample

Equipment 6" Hollow Stem Auger

Elevation \_\_\_\_\_ Date 03/02/89

0  
5  
10  
15  
20  
25  
30  
35  
40

Asphalt  
 Baserock  
 DARK GRAY FAT CLAY (CH), stiff, moist  
 DARK GRAY SANDY LEAN CLAY (CL), medium stiff, moist  
 MOTTLED GRAY BROWN CLAYEY SAND (SC), medium dense, moist  
 Bottom of boring at 11.5 feet  
 No free water encountered

13 ND

13 ND



**Harding Lawson Associates**  
Engineers, Geologists  
& Geophysicists

**Log of Boring SB-11**  
Former Texaco Service Station  
2200 East 12th Street  
Oakland, California

PLATE

**16**



Project No.: 229305X Boring: VP1 Plate: 1 OF 1

Site: 7-0238 Date: 1-11-01

Drill Contractor: Gregg Drilling

Sample Method: every 5 feet Geologist: John B. Bobbitt

Drill Rig: B-57 Bore Hole Diameter: 8" Signature: \_\_\_\_\_

Location: West corner of station 12 ft. from planter Registration: R.G. 4313

5 ft. from SW sidewalk Logged by: Tom Culig

DEPTH (ft)	BLOW COUNTS	PD/OVM (ppm)	SAMPLE	COLUMN	USCS	GEOLOGIC DESCRIPTION	WELL DESIGN
						4" asphalt base	
						Clay with some silt, dark gray/green poorly graded	
						increasing silt content	
5	2				CL		
	2						
	3					clay with sand, pebbles up to 1 in.	
10	2						
	3					brown clayey silt, pebbles up to 1/4 in.	
	4						
15	5				ML		
	14					clayey silt with pebbles up to 1/2 in. subangular reddish-brown, very dense	
	17						
	5					increasing silt, organic material, tan color	
20	7						
	9						
						Total Depth = 20 feet	
25							
30							
35							
40							

Casing Diameter: 2" Slot Size: 0.020, Sand Size: #3, Grout: Portland Type I/II



Project No.: 229305X Boring: VP2 Plate: 1 OF 1

Site: 7-0238 Date: 1-11-01

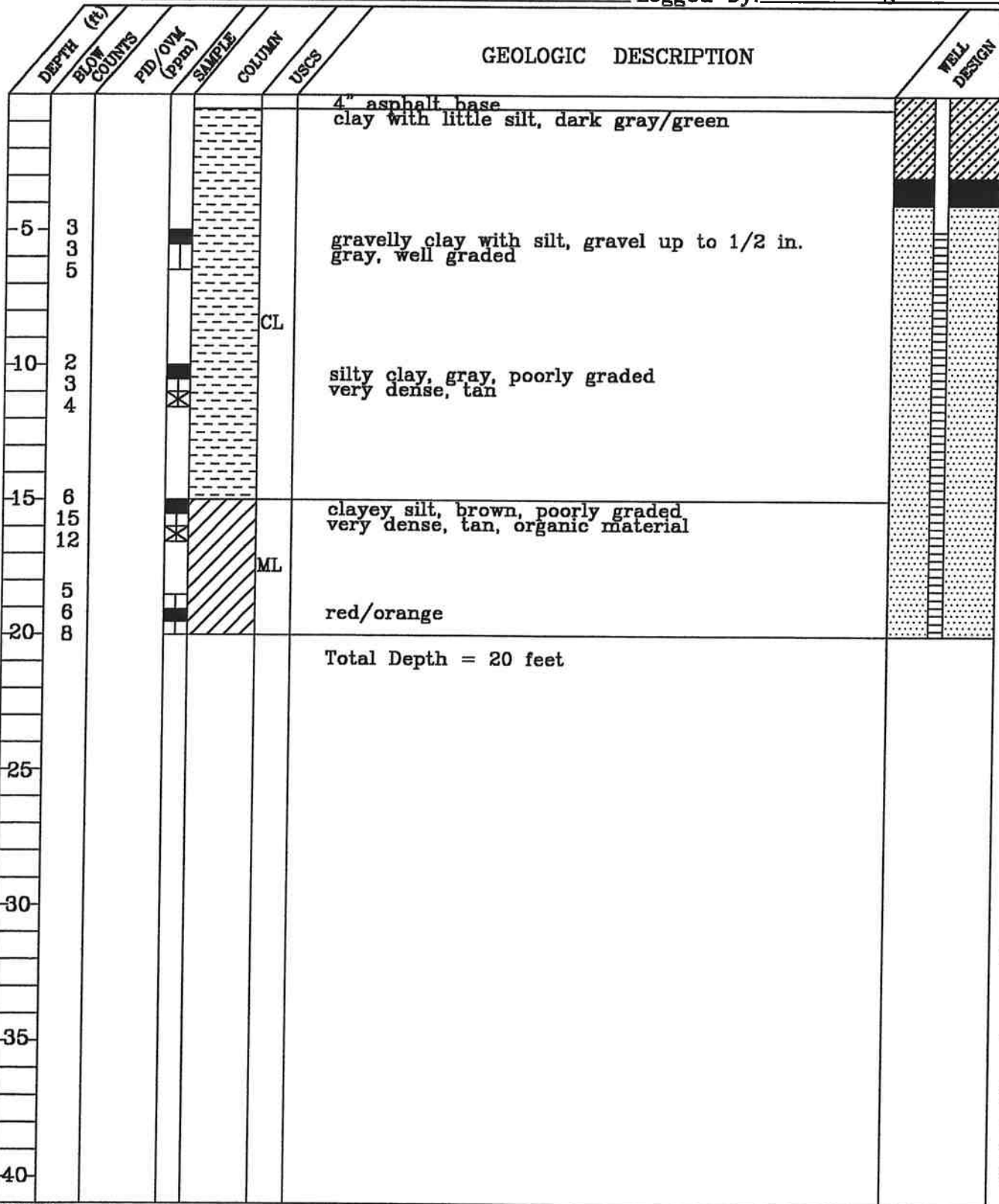
Drill Contractor: Gregg Drilling

Sample Method: every 5 feet Geologist: John B. Bobbitt

Drill Rig: B-57 Bore Hole Diameter: 8" Signature: \_\_\_\_\_

Location: West corner of station 13 ft. from planter Registration: R.G. 4313

5 ft. from NW sidewalk Logged by: Tom Culig



Casing Diameter: 2" Slot Size: 0.020, Sand Size: #3, Grout: Portland Type I/II