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11:00 am, Jan 15, 2009

Alameda County
Environmental Health

December 16, 2008

Mr. Jerry Wickham
Alameda County Environmental Health Department
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502

SUBJECT: SUBSURFACE INVESTIGATION WORK PLAN CERTIFICATION
County File # RO 387
Mel Senna Brake Service
2301 East 12th Street
Oakland, CA

Dear Mr. Wickham:

P&D Environmental, Inc. has prepared the following document:

- Subsurface Investigation Work Plan dated December 16, 2008 (document 0404.W1).

I declare under penalty of perjury that the contents and conclusions in the document are true and correct to the best of my knowledge.

Should you have any questions, please do not hesitate to contact me at (510) 834-9811.

Sincerely,

J.W. Silveira Realty

J.W. Silveira



P&D ENVIRONMENTAL, INC.

55 Santa Clara Avenue, Suite 240

Oakland, CA 94610

(510) 658-6916

December 16, 2008

Work Plan 0404.W1

Mr. Jerry Wickham

Alameda County Environmental Health

1131 Harbor Bay Parkway, Suite 250

Alameda, CA 94502

SUBJECT: SUBSURFACE INVESTIGATION WORK PLAN
(SB-7 THROUGH SB-13 AND SG-1 THROUGH SG-5)
County File # RO 387
Mel Senna Brake Service
2301 East 12th Street
Oakland, CA

Dear Mr. Wickham:

P&D Environmental, Inc. (P&D) is pleased to present this work plan for the drilling of seven soil borings for the collection of groundwater grab samples and five borings for the collection of soil gas samples in the vicinity of the subject site. The groundwater grab samples will be collected to evaluate the horizontal and vertical extent of petroleum and Halogenated Volatile Organic Compound (HVOC)-impacted groundwater in the vicinity of the subject site, and the soil gas samples will be collected to evaluate risk posed by petroleum and HVOC soil vapor at the subject site. This work plan is prepared in response to a request in a letter from Mr. Jerry Wickham at the Alameda County Environmental Health Department (ACDEH) dated January 31, 2006.

A Site Location Map is attached as Figure 1, and a Site Vicinity Map showing the proposed groundwater grab sample and soil gas sample borehole locations is attached as Figure 2. Additionally, Site Vicinity Maps showing isoconcentration contours for TPH-G, TPH-D, benzene and HVOCs are attached as Figures 3 through 6, respectively, and a Site Vicinity Map showing the locations of underground utilities and Total Petroleum Hydrocarbon (TPH) isoconcentration contours is attached as Figure 7.

BACKGROUND

The subject site was previously a gas station and vehicle repair facility, and is currently a tire and brake repair facility. The subject site is located in an industrially zoned area and bordered to the northeast by East 12th Street, to the southeast by railroad property, to the northwest by 23rd Avenue and a public park, and to the southwest by a furniture restoration facility.

Review of available reports prepared by others has identified the following historic activities and investigations at the subject site.

- Removal of one gasoline UST, one diesel UST, and two waste oil USTs from December 1990 through March 1991, and excavation of contaminated soil to a depth of approximately 17 to 18 feet below the ground surface. A total of 16 soil samples were collected from beneath USTs, a total of 6 UST pit sidewall samples were collected, and 2 UST pit water samples were collected. Some of the soil excavated during UST removal was reportedly used to backfill the UST pit. Maximum soil concentrations of 13,000 mg/kg Total Petroleum Hydrocarbons as Gasoline (TPH-G) and 46 mg/kg benzene were detected in samples collected from the UST pit at a depth of 9 feet. Documentation of the activities and sample results is provided in the Tank Closure Report for 2301 East 12th Street, Oakland prepared by Epigene Consultants, dated August 31, 1993.
- Installation of wells MW-1, MW-2, and MW-3 in June, 1991. Documentation of the well installation is reported to be presented in a Subsurface Investigation Report prepared by Artesian Environmental Consultants dated August, 1992 and submitted with a cover sheet by Bernabe and Brinker, Inc. dated October 15, 1992.
- Installation of wells MW-4, MW-5, MW-6, and EW-1, and drilling of two soil borings (B-1 and B-2), and the quarterly monitoring and sampling of wells MW-1, MW-2, and MW-3 from July 1992 through December 1993. Documentation of the sampling and associated results is presented in a Progress Report for Soil and Groundwater Contamination Investigations for Site Located at 2301 East 12th Street, Oakland prepared by Epigene Consultants dated May 10, 1994.
- Weekly and other periodic bailing of wells MW1, MW2 and MW3 at the site during April, May, October and November 1993 as an interim remedial measure to remove separate phase petroleum hydrocarbons from well MW-2 and reduce petroleum hydrocarbon concentrations in the groundwater monitoring wells. Documentation of the purging volumes and liquid removal is presented in various documents with cover sheets from Bernabe and Brinker, Inc. with various dates in 1993.
- Collection of groundwater grab samples from boreholes SB-1 through SB-6 on March 31 and April 1, 1999 and quarterly groundwater monitoring well monitoring and sampling from June 1994 through April 1999 is documented in a Draft Summary Reports for Additional Site Characterization Work, prepared by Tetra Tech dated November 10, 1999. Although Table 1 in the report identifies detected petroleum hydrocarbons and HVOCs at location SB-6, review of the laboratory report shows that none of the analytes were detected.
- The results of a Tier 1 screening level human health risk assessment and well sampling events in May 2000 and August 2001 are documented in a Tier 1 Screening Level Human Health Risk Assessment, prepared by Tetrattech that is undated and was received by the county on December 20, 2005.

Most recently, investigations at the site performed by P&D have included the following.

- Monitoring and sampling of all of the groundwater monitoring wells (MW-1 through MW-6 and EW-1) on June 4, 2007. Samples collected from all of the wells were analyzed for TPH-G, TPH-D, and for EPA Method 8260B compounds which included MBTEX compounds and HVOCs. Well head Mean Sea Level elevations were calculated for all of the groundwater monitoring wells based on historic information provided in reports prepared by others and the groundwater flow direction at the site on June 4, 2007 was calculated to be westerly to southwesterly. Water quality results showed that TPH-G and TPH-D concentrations continue to exceed 1,000 ug/L for all of the wells, benzene concentrations continue to exceed 100 ug/L in 4 of the 7 wells, and although HVOCs were detected, none were detected at concentrations exceeding their respective May 2008 SFRWQCB Table A ESL values. Documentation of the well sampling is provided in P&D's Groundwater Monitoring and Sampling Report (June 4, 2007 Sampling Event) dated December 8, 2008 (document 0404.R1).
- Preparation of a sensitive receptor survey report that evaluated the presence of wells and other sensitive receptors within ½ mile of the subject site. The survey identified historic groundwater flow direction information for two nearby sites with groundwater monitoring wells that showed that the groundwater flow direction at 2200 East 12th Street (located approximately 800 feet northwest of the subject site) has historically been to the west-southwest, and the groundwater flow direction at 2345 International Boulevard (located approximately 500 feet northeast of the subject site) has historically been to the southwest. The closest well to the subject site that is not a groundwater monitoring well that was identified during the well search is located at 1091 Calcot Street. The property with the offsite well is located approximately 235 feet to the west-southwest of the subject site, in the downgradient groundwater flow direction. The report concluded that the presently known extent of impacted groundwater shows TPH-G and TPH-D concentrations exceeding 100 ug/L and detectable concentrations of HVOCs in groundwater extending to the west and southwest of the subject site UST pit approximately 75 feet, and recommended that proposed boreholes SB-9 and SB-10 located to the southwest and west of the subject site (see Figures 2, 3, 4 and 5) be sampled to verify that the extent of impacted groundwater has been adequately defined at the subject site to confirm that there is not an unacceptable level of risk from impacted groundwater or associated vapors originating from the subject site for the property at 1091 Calcot Street. The survey identified no other sensitive receptors within ½ mile of the subject site in the downgradient groundwater flow direction that might be impacted by the known extent of impacted groundwater. Documentation of the survey is provided in P&D's Sensitive Receptor Survey Report dated December 8, 2008 (document 0404.R2).
- Preparation of a preferential pathway survey report for underground utilities in the vicinity of the subject site. The report compared historic water levels for groundwater monitoring wells at the site with the depth of the bottom of nearby

utility trenches and also discussed the trench backfill materials. The report identified utility trenches to the northwest and west of the subject site where groundwater levels are above the bottom of the trenches during the entire year and impacted groundwater has extended from the site at least as far the utility trench. Most notable was the sanitary sewer utility trench located on the south side of E 12th Street adjacent to the former UST pit where TPH-G and TPH-D groundwater concentrations were 10,000 ug/L or greater in well MW1 in the most recent well sampling event on June 4, 2007 (see Figure 7). Based on the results of the investigation, P&D recommended that groundwater grab samples be collected from utility trenches at locations SB-7, SB-8 and SB-11. Documentation of the investigation results are provided in P&D's Preferential Pathway Survey Report dated December 15, 2008 (document 0404.R3).

The highest concentrations of petroleum hydrocarbons in soil at the site have been detected at depths ranging from 8 to 12 feet below the ground surface. The highest concentrations of petroleum hydrocarbons in groundwater at the site have been detected in well MW-2 (the well where separate phase petroleum hydrocarbons were detected in 1993), MW-3 (located near well MW-2), and in well MW-1 (located at one end of the former UST pit). The highest concentrations of HVOCs detected in groundwater have been at well MW-6, with trichloroethene, cis-1,2-dichloroethene, trans-1,2-dichloroethene and vinyl chloride detected in groundwater. It is possible that impacted soil could be a continuing source for groundwater degradation in the vicinity of these wells.

The measured depth to groundwater at the site has typically ranged from approximately 5 to 9 feet. Historic groundwater levels for all of the wells are summarized in Appendix A, Table 1. The calculated groundwater flow direction at the site has historically been reported to be predominantly northwesterly. Separate phase hydrocarbons were historically reported to be present in well MW2, and groundwater sample results have consistently shown the presence of TPH-G, TPH-D, and BTEX in all of the wells at the site. TPH-G and TPH-D concentrations for all of the wells have almost invariably exceeded 1,000 ug/L during all sampling events, and have shown little evidence of decline since the beginning of monitoring. Groundwater benzene concentrations have ranged up to 5,200 ug/L in well MW-2, and have shown a decline with time for all of the wells. HVOCs have also been intermittently detected in groundwater samples at the site, with TCE ranging up to 160 ug/L, and vinyl chloride up to 230 ug/L. MTBE was not detected in any of the groundwater samples. Historic groundwater organic compound concentrations are summarized in Appendix A, Table 2, and historic groundwater metals concentrations are summarized in Appendix A, Table 3.

Groundwater isoconcentration contours for TPH-G, TPH-D, and benzene, that include the April 1999 groundwater grab sample results and the June 2007 well sample results are shown in Figures 3, 4, and 5, respectively, and selected HVOCs (TCE, cis-1,2-DCE and trans-1,2-DCE) that include the April 1999 groundwater grab sample results and the historic well sample results are shown on Figure 6. A review of laboratory reports for historic groundwater monitoring well sampling events shows that three of the last four

sampling events where laboratory reports were available for review and the laboratory reported the presence of sheen on the laboratory report identified sheen as present in almost all of the samples. A summary of sheen reported on samples in laboratory reports is provided in Appendix A as Table 4.

SCOPE OF WORK

To evaluate the horizontal and vertical extent of petroleum and HVOC-impacted groundwater in the vicinity of the subject site, and to evaluate risk posed by petroleum and HVOC soil vapor at the subject site, P&D proposes to perform the following activities.

- Obtain permits.
- Prepare a health and safety plan and mark drilling locations for Underground Service Alert.
- Oversee groundwater grab sample collection at seven locations.
- Oversee soil gas sample collection at 5 locations.
- Arrange for sample analysis.
- Prepare a subsurface investigation report.

Each of these is discussed below.

Obtain Permits

A permit will be obtained from the Alameda County Public Works Agency for borehole drilling. In addition, encroachment and excavation permits will be obtained from the City of Oakland for drilling at locations in the public right-of-way. Based on the difficulty of obtaining a permit from the City of Oakland for drilling in sidewalks, it may be necessary to obtain a letter from the ACDEH supporting a request to drill through the sidewalk and proposed location SB-8 to investigate the possibility of of the sanitary sewer located on the south side of E 12th Street from performing as preferential pathway for impacted groundwater. All necessary permit-related notifications will be made prior to drilling. Notification will also be provided to the ACDEH at least 72 hours prior to drilling.

Prepare a Health and Safety Plan

A health and safety plan will be prepared for the scope of work identified in this work plan. In addition, Underground Service Alert will be notified for underground utility location, and traffic control and pedestrian control plans will be prepared. Utility maps used for preparation of the Preferential Pathway Survey Report for the subject site will also be used for identification of underground utilities at the time of drilling.

Groundwater Grab Sample Collection

Groundwater grab samples will be collected from first encountered groundwater at locations SB-7 through SB-13 shown on Figure 2 to further define the horizontal extent of impacted groundwater in the vicinity of the subject site. Boreholes SB-7, SB-8 and SB-11 will be collected from utility trenches using air knife drilling technology (see Figure 7). The remaining boreholes will be drilled using GeoProbe direct push technology to drive a 2.5-inch outside diameter Geoprobe macrocore lined with transparent PVC sleeves. The soil from the borings will be logged in the field in accordance with standard geologic field techniques and the Unified Soil Classification System. All soil from the boreholes will be evaluated with a Photoionization Detector (PID) equipped with a 10.6 eV bulb and calibrated using a 100 ppm isobutylene standard. Based on the measured depth to groundwater in the existing groundwater monitoring wells at the site, the maximum depth of exploration anticipated to obtain first encountered groundwater is 15 feet.

Groundwater samples collected from utility trenches will be collected by exposing the top of the buried pipe followed by excavation on one side of the pipe to the bottom of the pipe, or until groundwater is encountered in the trench. In the event that the presence of trench fill materials such as crushed rock prevent removal of the trench fill material, a location immediately adjacent to the trench will be excavated using air knife technology for groundwater sample collection. Once groundwater is encountered in the excavated area, a hand auger will be used to deepen the excavation below the water table for groundwater sample collection so that the air from the air knife does not aerate the groundwater.

Soil conductivity probes will be pushed to a depth of 60 feet at each of locations SB-12 and SB-13 to identify permeable zones for Hydropunch groundwater sample collection. Immediately following withdrawal of each soil conductivity probe the soil conductivity probe borehole will be grouted using neat cement and a tremie pipe to minimize the potential for vertical movement of shallow impacted groundwater. Hydropunch sample collection intervals will be determined based on the depths of permeable zones identified in the soil conductivity logs. The Hydropunch samples will be collected at locations approximately 5 feet away from the soil conductivity probe locations to define the vertical extent of impacted groundwater. Prior to retracting the Hydropunch rods to expose the Hydropunch screen, the interior of the Hydropunch rods will be evaluated with an electric water level indicator to verify that water is not present inside the drill rods. Borehole SB-13 will also be continuously cored for visual correlation of the soil conductivity logs with subsurface materials.

First encountered groundwater samples will be collected from the boreholes by placing temporary 1-inch diameter slotted PVC pipe into the boreholes and using disposable polypropylene tubing with a stainless steel footvalve. The Hydropunch groundwater samples will be collected from the Hydropunch rods using polypropylene tubing with a stainless steel footvalve. Groundwater samples will be transferred to 40-milliliter VOAs and 1-liter glass amber bottles, all of which will be supplied by the laboratory and contain hydrochloric acid preservative. The sample bottles will be labeled and placed in a cooler

with ice pending delivery to the laboratory. Chain of custody procedures will be observed for all sample handling.

All drilling and sampling equipment will be cleaned by steam cleaning with an Alconox solution followed by a clean water rinse prior to use in each borehole. Following completion of logging and sample collection activities, the boreholes will be filled with neat cement grout. All soil and water generated during subsurface investigation will be stored in 55-gallon drums at the site and labeled pending characterization and proper disposal.

Soil Gas Sample Collection

Soil gas samples will be collected at locations SG-1 through SG-5 shown on Figure 2 to evaluate risk posed by petroleum and HVOC soil vapor at the subject site. The soil gas samples will be collected in accordance with general procedures set forth in the Department of Toxic Substances Control (DTSC) January 13, 2003 Advisory - Active Soil Gas Investigations.

All of the soil gas samples will be collected using temporary soil gas sampling wells. The temporary wells will be constructed by driving a hollow 1-inch diameter Geoprobe rod with an expendable tip to a depth of 5 feet and then inserting a 7-foot length of 0.250-inch outside diameter (0.187-inch inside diameter) Teflon tube to the bottom of the hollow rod. Prior to inserting the Teflon tubing the lowermost 6 inches of the Teflon tube will be perforated at several locations by notching the sides of the tube with a clean razor blade. A #2/16 Lonestar sack sand will then be added to the annular space between the hollow rod and the Teflon tube as the hollow rod is withdrawn from the ground until the lowermost 8 inches of the hole is filled with sand. Granular bentonite (with grains the size of kitty litter) will be placed in the annular space above the sand to the ground surface. The bentonite will be hydrated and the temporary well will be undisturbed for a minimum of 30 minutes prior to purging for sample collection to allow soil gas equilibration.

Prior to purging the soil gas from the temporary soil gas sampling well, the sample canister will be checked for vacuum with a vacuum gauge, followed by a 10 minute leak check of the sampling manifold. The leak check will be performed by closing the valve located between the filter and the pressure gauge and opening the purge canister and recording the manifold system vacuum (see Figure 8 for a picture of a typical soil gas sample collection manifold). Following successful verification of the manifold leak check, the purge volume will be calculated. No purge testing will be done because no mobile laboratory will be at the site. A default of three purge volumes will be extracted prior to sample collection. All purge volume calculation information will be provided in the report documenting field activities. Based on the temporary well construction information provided in this work plan, purge volume calculations are provided in Appendix B of this work plan.

Following completion of purging 3 purge volumes, the valve to the purge canister will be closed and a tracer gas (2-Propanol) will be placed in a dish adjacent to the purge canister and a clear Rubbermaid bin will be placed over the top of the temporary well, the sampling manifold, and the 1-liter sample canister. The vapor concentration of the 2-Propanol will be monitored with a photoionization detector until 2-Propanol vapor concentrations appear to have equilibrated. The Rubbermaid bin will then be temporarily and partially lifted long enough to open the sample canister valve and the bin will then be replaced over the sampling equipment and the 2-Propanol vapor concentrations will then again be monitored with the PID. Once the vacuum for the sample canister decreases to 6 inches of Mercury, the Rubbermaid lid will be removed and the sample canister valve closed.

One duplicate soil gas sample will be collected into a one-liter Summa canister using procedures described above immediately after the collection of one original sample. The void space and tubing will not be purged of three purge volumes prior to collection of the duplicate sample. Following soil gas sample collection, the soil gas samples will be stored in a box and promptly shipped to the laboratory for extraction and analysis. The requested laboratory analysis will include the tracer gas 2-Propanol. Soil gas sampling will not be performed during or following a precipitation event.

All drilling rods and associated drilling fittings will be cleaned with an Alconox solution wash and clean water rinse followed by a clean water rinse using steam distilled water. New Teflon tubing will be used at each sample collection location. Clean, unused vacuum gages and stainless steel tee and valve assemblies will be used at each sample collection location. Following soil gas sample collection the Teflon tubing will be pulled from each temporary soil gas sampling well and a 1-inch diameter solid steel rod will be driven through the bentonite and sand to a total depth of 5 feet. The solid steel rod will then be removed, and the borehole filled with neat cement.

Sample Analysis

All of the groundwater samples will be analyzed at McCampbell Analytical, Inc. (McCampbell) in Pittsburg, California for TPH-G by EPA Method 5030 in conjunction with modified EPA Method 8015; TPH-D by EPA Method 3510 in conjunction with modified EPA Method 8015; and for VOCs, including MBTEX, TCE, cis-1,2-DCE, trans-1,2-DCE, and vinyl chloride by EPA Method 8260B. McCampbell is a State-accredited hazardous waste testing laboratory. Chain of custody documentation will accompany the samples to the laboratory.

All of the soil gas samples will be analyzed at Air Toxics Limited of Folsom California for TPH-G, MBTEX, TCE, cis-1,2-DCE, trans-1,2-DCE, vinyl chloride and 2-Propanol (the tracer gas) using EPA Method TO-15.

Subsurface Investigation Report Preparation

Upon receipt of the laboratory analytical results, a report will be prepared. The report will document soil gas sample collection procedures and sample results. The report will include a site vicinity map showing the drilling locations, tables summarizing the sample results, recommendations based on the results, and the stamp of an appropriately registered professional.

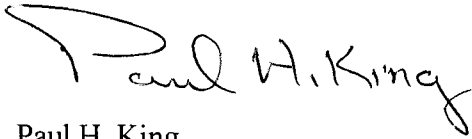
In accordance with the California Code of Regulations Sections 2729 and 2729.1, P & D will submit analytical data, survey coordinates of permanent monitoring points, and an electronic copy of the summary report in PDF format to the State Water Resources Control Board GeoTracker system.

December 16, 2008
Work Plan 0404.W1

Should you have any questions, please do not hesitate to contact us at (510) 658-6916.

Sincerely,

P&D Environmental, Inc.



Paul H. King
Professional Geologist #5901
Expires: 12/31/09



Attachments:

- Figure 1 - Site Location Map
- Figure 2 - Site Vicinity Map Showing Locations of Existing Wells and Borings and Proposed Borings
- Figure 3 - Site Vicinity Map Showing TPH-G Groundwater Isoconcentration Contours
- Figure 4 - Site Vicinity Map Showing TPH-D Groundwater Isoconcentration Contours
- Figure 5 - Site Vicinity Map Showing Benzene Groundwater Isoconcentration Contours
- Figure 6 - Site Vicinity Map Showing TCE and DCE Groundwater Isoconcentration Contours
- Figure 7 - Site Vicinity Map Showing Underground Utility and Cross Section Locations and TPH Isoconcentration Contours
- Figure 8 – Typical Soil Gas Sample Collection Manifold

Appendix A – Historic Site Information

- Historic Groundwater Level Measurements – Table 1
- Historic Groundwater Organic Compound Concentrations – Table 2
- Historic Groundwater Metals Concentrations – Table 3
- Historic Laboratory Report Sheen Summary – Table 4

Appendix B – Soil Gas Purge Volume Calculations

Cc: J.W. Silveira, J.W. Silveira Realty

PHK
0404.W1

FIGURES

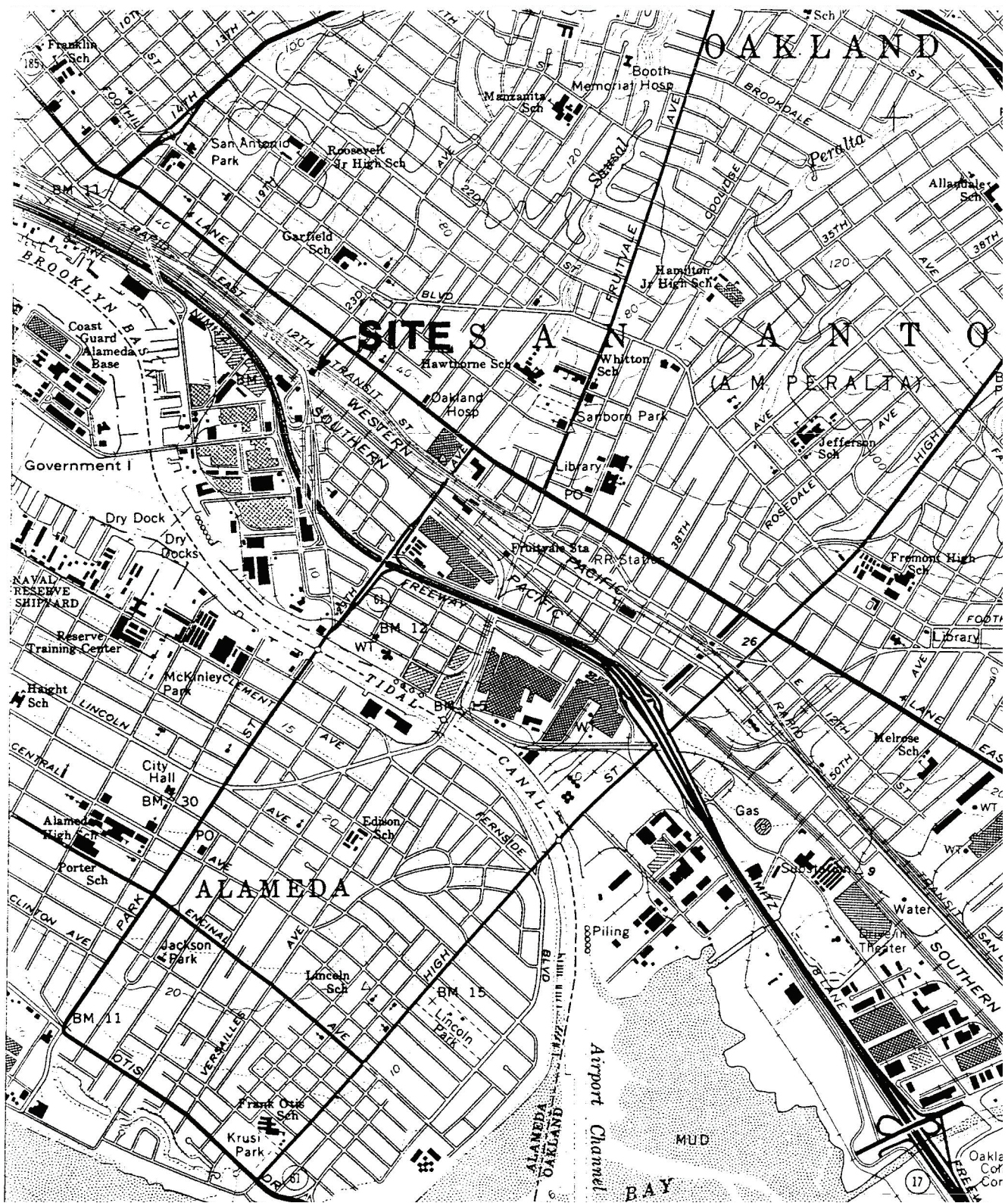
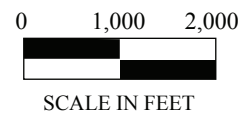


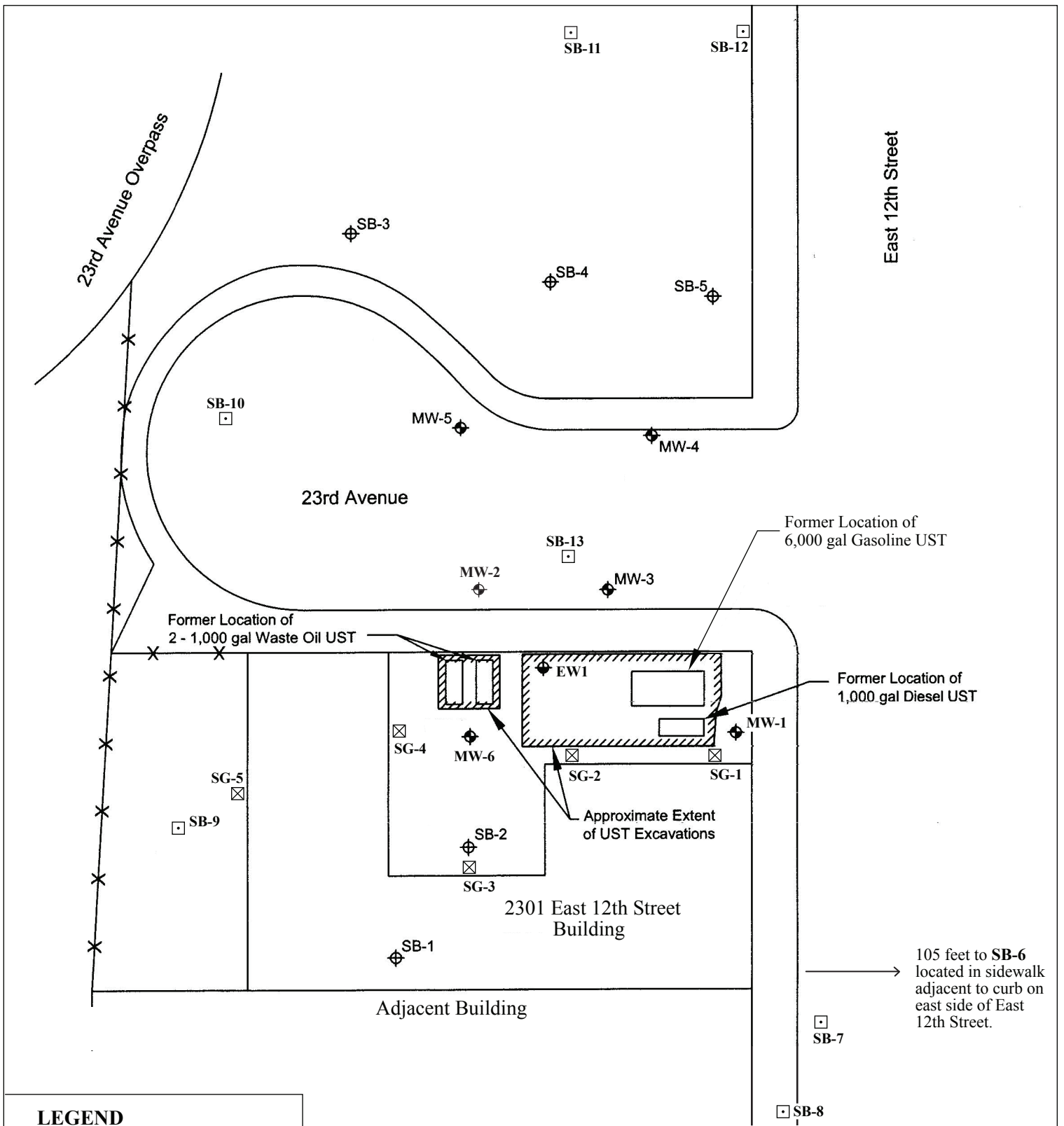
Figure 1
 Site Location Map
 J.W. Silveira Co.
 2301 East 12th Street
 Oakland, California



Base Map From:
 U.S. Geological Survey
 Oakland East, California
 7.5 Minute Quadrangle
 Photorevised 1980

P&D Environmental, Inc.
 55 Santa Clara Ave., Suite 240
 Oakland, CA 94610





LEGEND

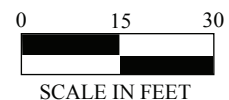
- ◆ MW-6 Existing Monitoring Well
- ◆ EW-1 Existing Extraction Well
- ⊕ SB-6 Existing Soil Boring
- SB-13 Proposed Soil Boring
- ⊠ SG-5 Proposed Soil Gas Sample Location

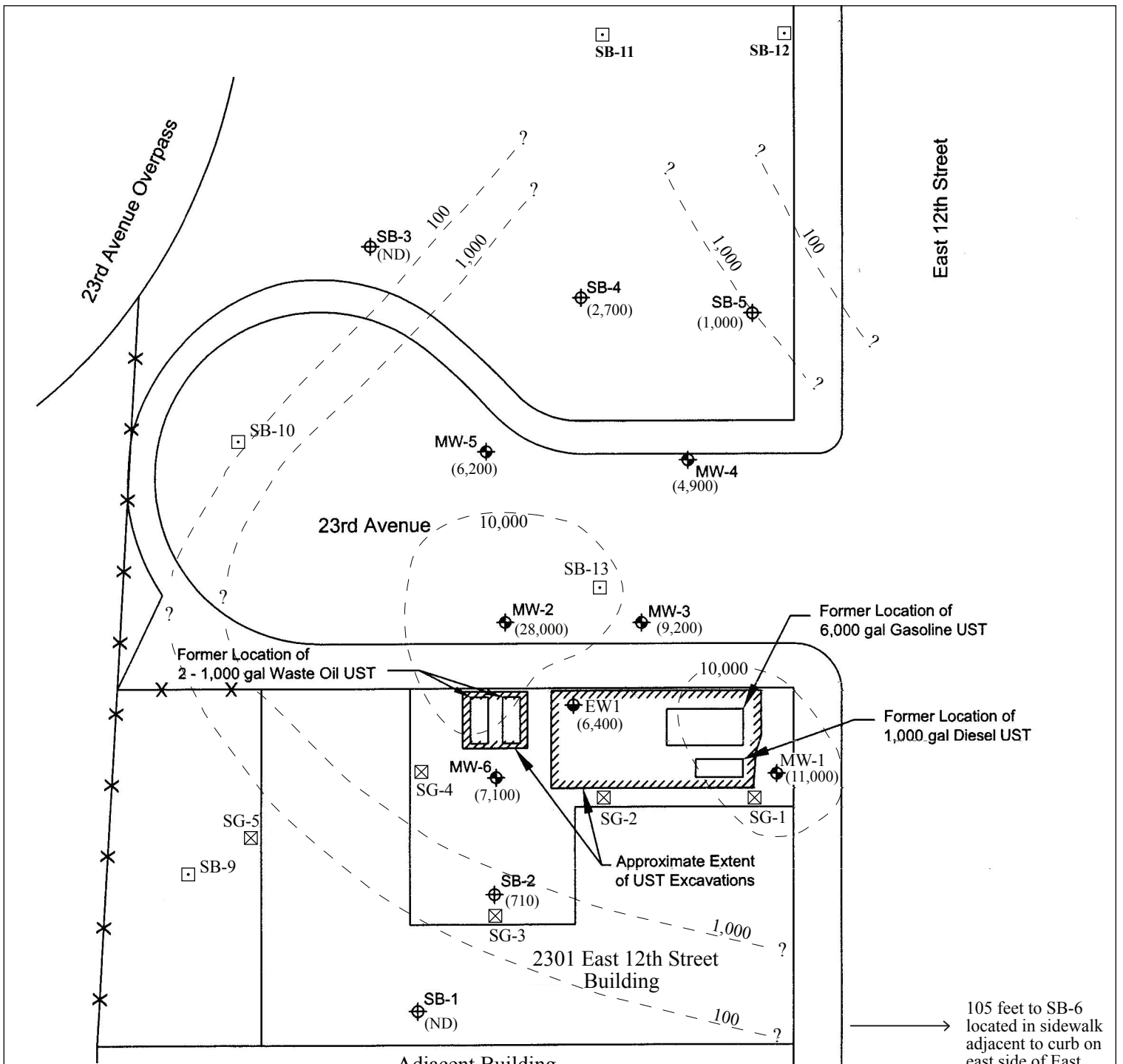
Figure 2
 Site Vicinity Map Showing Locations of Wells
 and Borings and Proposed Borings
 Mel Senna Brake Service
 2301 East 12th Street
 Oakland, California



Base Map From:
 Tetra Tech EM, Inc., Draft Summary
 Reports for Additional Site
 Characterization Work, dated
 November 10, 1999

P&D Environmental, Inc.
 55 Santa Clara Ave., Suite 240
 Oakland, CA 94610





LEGEND

- ◆ MW-6 Existing Monitoring Well
- ◆ EW-1 Existing Extraction Well
- ⊕ SB-6 Existing Soil Boring
- SB-13 Proposed Soil Boring
- ⊠ SG-5 Proposed Soil Gas Sample Location
- (28,000) TPH-G Concentration in Groundwater (ug/L)
- - - TPH-G Isoconcentration Contour (ug/L)

Figure 3
 Site Vicinity Map Showing TPH-G
 Groundwater Isoconcentration Contours
 Mel Senna Brake Service
 2301 East 12th Street
 Oakland, California

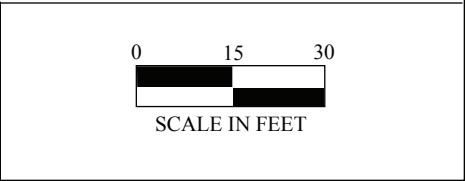
105 feet to SB-6 located in sidewalk adjacent to curb on east side of East 12th Street.

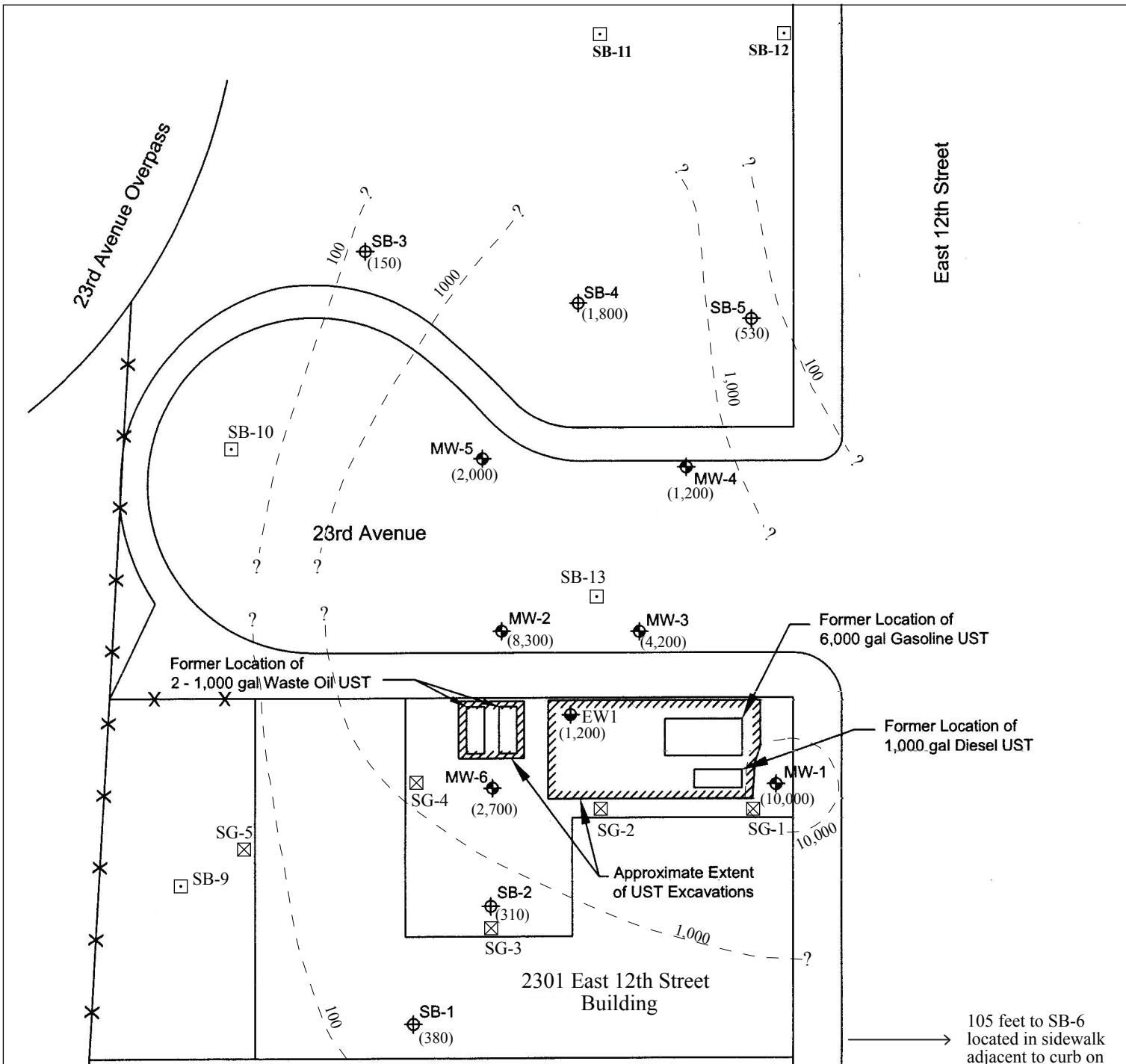
Note:
 Groundwater concentrations from 4/99 (SB samples) and 6/07 (MW, EW samples).



Base Map From:
 Tetra Tech EM, Inc., Draft Summary Reports for Additional Site Characterization Work, dated November 10, 1999

P&D Environmental, Inc.
 55 Santa Clara Ave., Suite 240
 Oakland, CA 94610

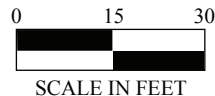




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- ◆ MW-6 Existing Monitoring Well
- ◆ EW-1 Existing Extraction Well
- ◆ SB-6 Existing Soil Boring
- SB-13 Proposed Soil Boring
- ⊠ SG-5 Proposed Soil Gas Sample Location
- (10,000) TPH-D Concentration in Groundwater (ug/L)
- - - TPH-D Isoconcentration Contour (ug/L)

Figure 4
 Site Vicinity Map Showing TPH-D
 Groundwater Isoconcentration Contours
 Mel Senna Brake Service
 2301 East 12th Street
 Oakland, California

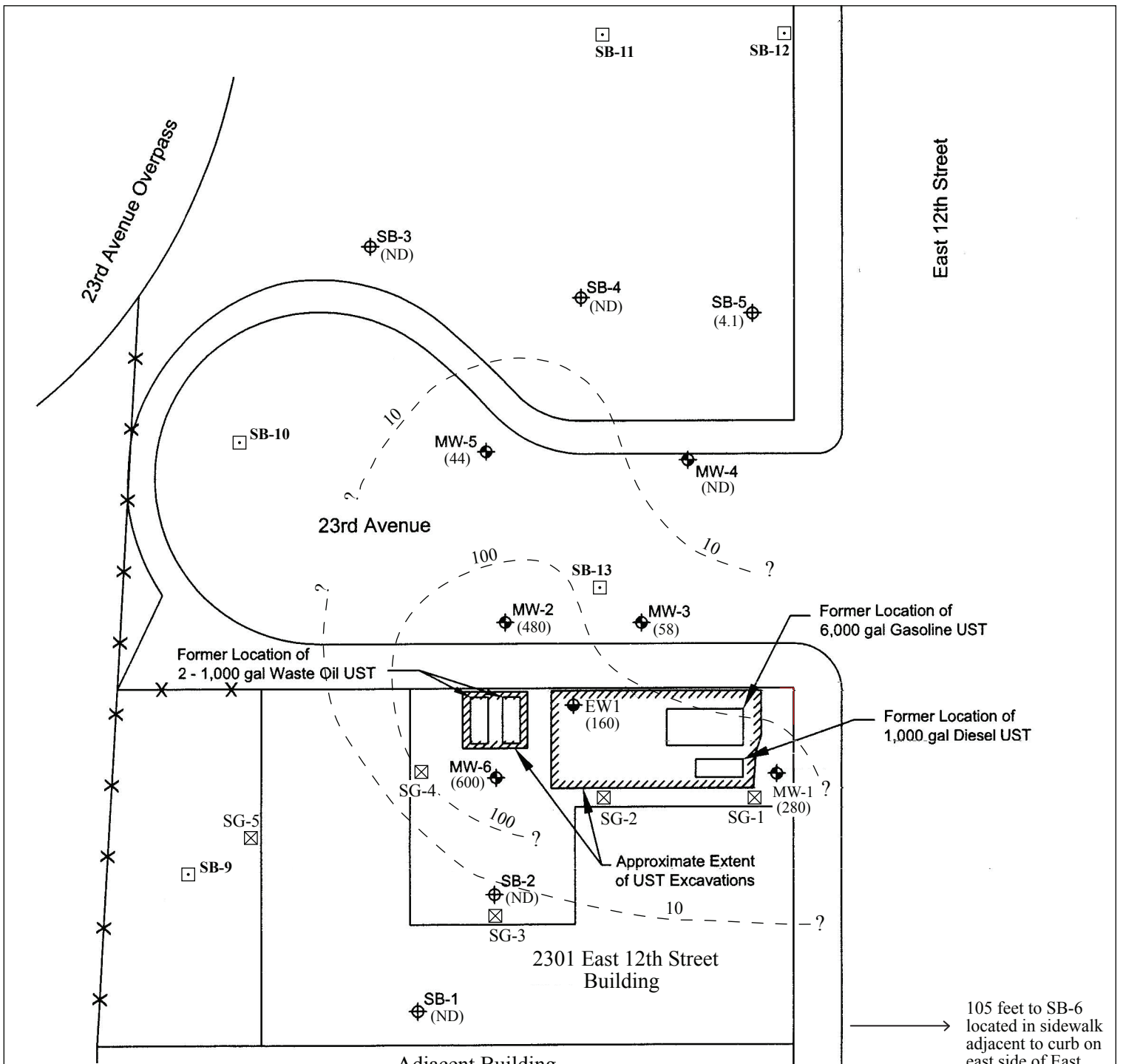


Base Map From:
 Tetra Tech EM, Inc., Draft Summary
 Reports for Additional Site
 Characterization Work, dated
 November 10, 1999

P&D Environmental, Inc.
 55 Santa Clara Ave., Suite 240
 Oakland, CA 94610

105 feet to SB-6
 located in sidewalk
 adjacent to curb on
 east side of East
 12th Street.

Note:
 Groundwater concentrations
 from 4/99 (SB samples)
 and 6/07 (MW, EW samples).



105 feet to SB-6 located in sidewalk adjacent to curb on east side of East 12th Street.

Note: Groundwater concentrations from 4/99 (SB samples) and 6/07 (MW, EW samples).

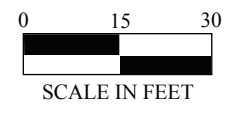
LEGEND	
	MW-6 Existing Monitoring Well
	EW-1 Existing Extraction Well
	SB-6 Existing Soil Boring
	SB-13 Proposed Soil Boring
	SG-5 Proposed Soil Gas Sample Location
(600)	Benzene Concentration in Groundwater (ug/L)
- - -	Benzene Isoconcentration Contour (ug/L)

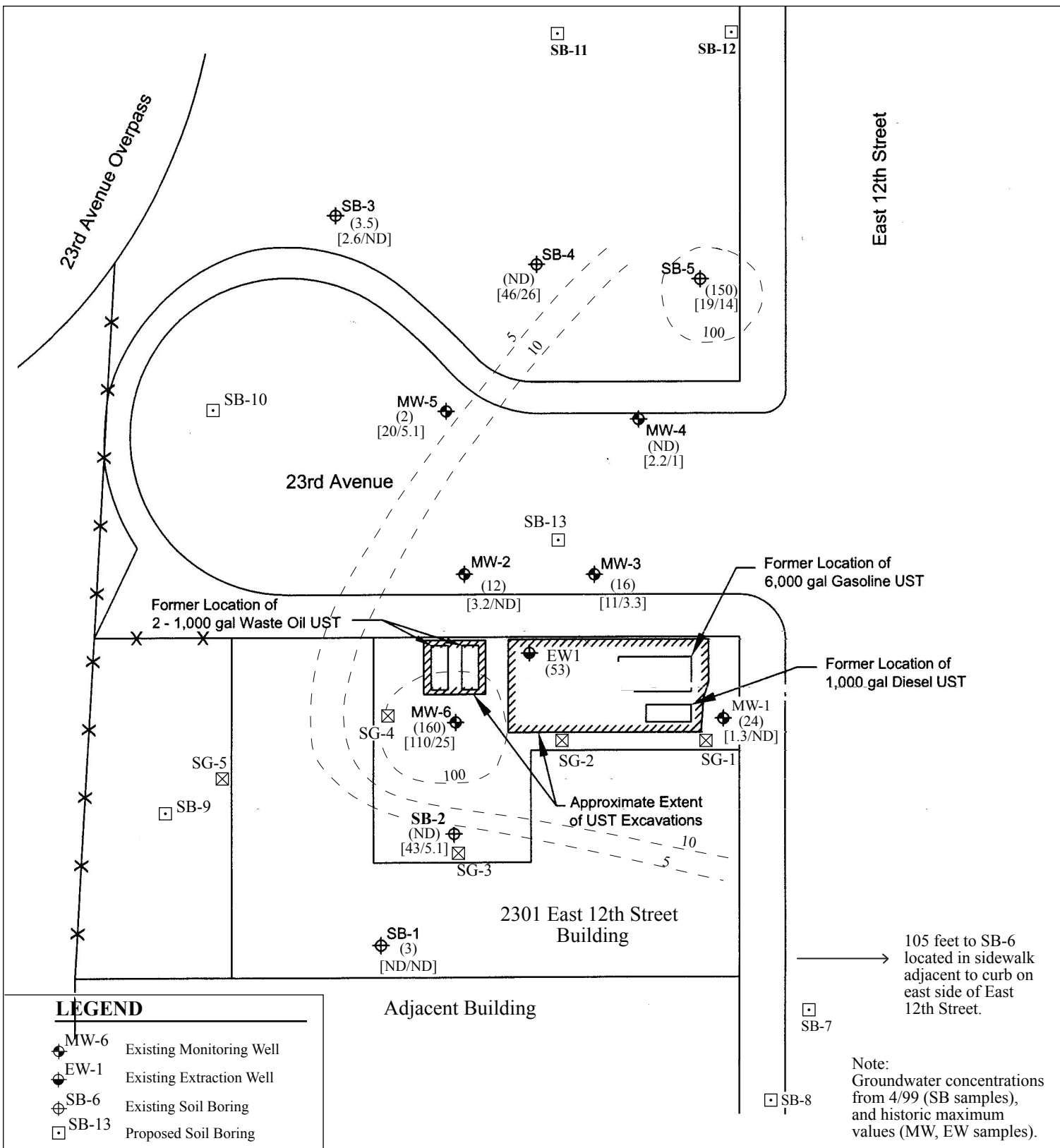
Figure 5
 Site Vicinity Map Showing Benzene Groundwater Isoconcentration Contours
 Mel Senna Brake Service
 2301 East 12th Street
 Oakland, California



Base Map From:
 Tetra Tech EM, Inc., Draft Summary Reports for Additional Site Characterization Work, dated November 10, 1999

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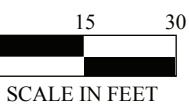




LEGEND

- ◆ MW-6 Existing Monitoring Well
 - ◆ EW-1 Existing Extraction Well
 - ◆ SB-6 Existing Soil Boring
 - SB-13 Proposed Soil Boring
 - ⊠ SG-5 Proposed Soil Gas Sample Location
- TCE and DCE Concentrations in Groundwater (ug/L)
- (160) (TCE)
- [110/25] [cis-1,2-DCE/trans-1,2-DCE]
- - - TCE Isoconcentration Contour (ug/L)

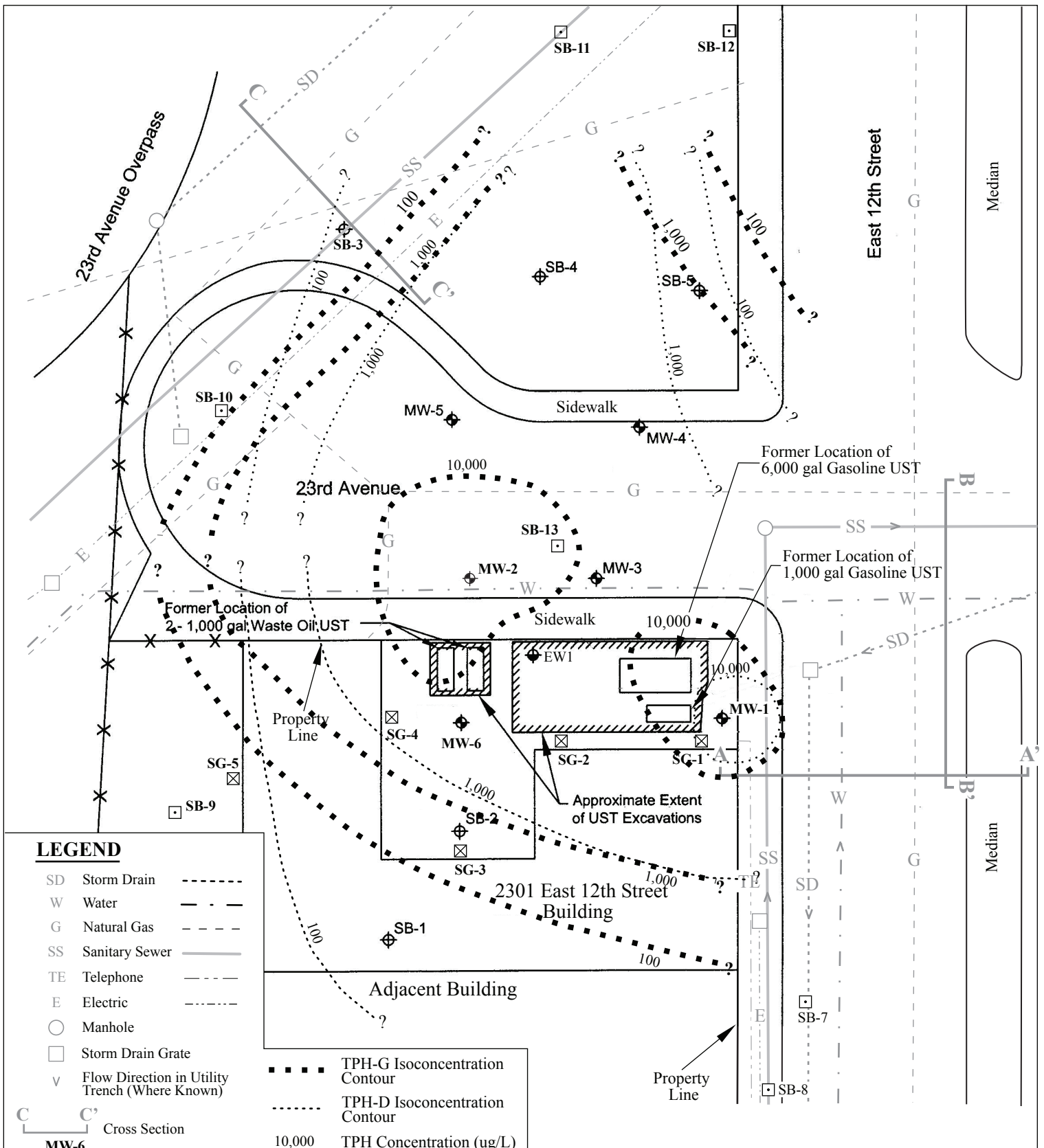
Figure 6
 Site Vicinity Map Showing TCE and DCE Groundwater Isoconcentration Contours
 Mel Senna Brake Service
 2301 East 12th Street
 Oakland, California



Base Map From:
 Tetra Tech EM, Inc., Draft Summary Reports for Additional Site Characterization Work, dated November 10, 1999

P&D Environmental, Inc.
 55 Santa Clara Ave., Suite 240
 Oakland, CA 94610

Note:
 Groundwater concentrations from 4/99 (SB samples), and historic maximum values (MW, EW samples).



LEGEND

- SD Storm Drain - - - - -
- W Water - - - - -
- G Natural Gas - - - - -
- SS Sanitary Sewer - - - - -
- TE Telephone - - - - -
- E Electric - - - - -
- Manhole
- Storm Drain Grate
- ∇ Flow Direction in Utility Trench (Where Known)

C-C' Cross Section

- ◆ MW-6 Existing Monitoring Well
- ◆ EW-1 Existing Extraction Well
- ⊕ SB-6 Existing Soil Boring
- SB-13 Proposed Soil Boring
- ⊠ SG-5 Proposed Soil Gas Sample Location

- TPH-G Isoconcentration Contour
- ⋯ TPH-D Isoconcentration Contour
- 10,000 TPH Concentration (ug/L)

Figure 7
 Site Vicinity Map Showing Underground Utility
 and Cross Section Locations and TPH Isoconcentration Contours
 Mel Senna Brake Service
 2301 East 12th Street
 Oakland, California



Base Map From:
 Tetra Tech EM, Inc., Draft Summary
 Reports for Additional Site
 Characterization Work, dated 11/10/99

P&D Environmental, Inc.
 55 Santa Clara Ave., Suite 240
 Oakland, CA 94610





Figure 8. Typical Soil Gas Sample Collection Manifold

APPENDIX A

Historic Site Information

- **Table 1** **Historic Groundwater Level Measurements**
- **Table 2** **Historic Groundwater Organic Compound Concentrations**
- **Table 3** **Historic Groundwater Metals Concentrations**
- **Table 4** **Historic Laboratory Report Sheen Summary**

APPENDIX A
TABLE 1
Historic Groundwater Level
Measurements

Mel Senna Brake Service
RO 387
2301 East 12th Street
Oakland, CA

MW1

Date Monitored	* Top of Casing Elevation (ft-msl.)	Depth to Water (ft)	Water Table Elevation (ft-msl.)	
7/27/1992	16.21	12.85	3.36	SEE NOTES
11/6/1992	16.21	9.15	7.06	
3/2/1993	16.21	7.45	8.76	
5/26/1993	16.21	8.05	8.16	
8/27/1993	16.21	9.06	7.15	
12/23/1993	16.21	7.73	8.48	
3/27/1994	16.21	7.94	8.27	SEE NOTES
6/24/1994	16.21	8.22	7.99	
10/16/1994	16.21	9.11	7.10	
2/13-14/1995	16.21	7.67	8.54	
6/20/1995	16.21	7.74	8.47	NRA
10/16/1995	16.21	8.95	7.26	NR
2/15/1996	16.21	7.20	9.01	NR
6/13/1996	16.21	7.91	8.30	NR
9/17/1996	16.21	8.63	7.58	NR
1/16/1997	16.21	6.87	9.34	NR
5/1/1997	16.21			NRA
12/12/1997	16.21	6.77	9.44	NRA
3/21/1998	16.21	7.12	9.09	NRA
6/14/1998	16.21	7.60	8.61	NRA
3/31-4/1/1999	16.21			NR SEE NOTES
5/22/2000	16.21	7.40	8.81	
6/4/2007	16.21	8.07	8.14	

NOTES:

NR = Depth to water measurements Not Reported.

NS = Not Sampled

WNC = Well not yet constructed.

NRA = No Report Available. No lab or consultant reports. Sampling known by summary table, or site plan.

Results for 7/27/92 and 3/27/94 are from well installation reports.

Results for 3/31-4/1/99 are from Hydropunch investigation and well sampling report.

Unless otherwise identified, laboratory reports are from periodic well sampling reports.

Mel Senna Brake Service
RO 387
2301 East 12th Street
Oakland, CA

MW2

Date Monitored	* Top of Casing Elevation (ft-msl.)	Depth to Water (ft)	Water Table Elevation (ft-msl.)	
7/27/1992	14.43	7.95	6.48	SEE NOTES
11/6/1992	14.43	7.30	7.13	
3/2/1993	14.43	5.71	8.72	
5/26/1993	14.43	6.28	8.15	
8/27/1993	14.43	7.98	6.45	
12/23/1993	14.43	8.10	6.33	
3/27/1994	14.43	5.95	8.48	SEE NOTES
6/24/1994	14.43	7.70	6.73	
10/16/1994	14.43	7.77	6.66	
2/13-14/1995	14.43	5.31	9.12	
6/20/1995	14.43	5.56	8.87	NRA
10/16/1995	14.43	7.52	6.91	NR
2/15/1996	14.43	6.00	8.43	NR
6/13/1996	14.43	6.04	8.39	NR
9/17/1996	14.43	7.65	6.78	NR
1/16/1997	14.43	4.93	9.50	NR
5/1/1997	14.43			NRA
12/12/1997	14.43	4.94	9.49	NRA
3/21/1998	14.43	5.10	9.33	NRA
6/14/1998	14.43	5.84	8.59	NRA
3/31-4/1/1999	14.43			NR
5/22/2000	14.43	5.89	8.54	SEE NOTES
6/4/2007	14.43	6.77	7.66	

NOTES:

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Mel Senna Brake Service
RO 387
2301 East 12th Street
Oakland, CA

MW3

Date Monitored	* Top of Casing Elevation (ft-msl.)	Depth to Water (ft)	Water Table Elevation (ft-msl.)	
7/27/1992	14.95	8.00	6.95	SEE NOTES
11/6/1992	14.95	7.59	7.36	
3/2/1993	14.95	6.07	8.88	
5/26/1993	14.95	7.22	7.73	
8/27/1993	14.95	8.21	6.74	
12/23/1993	14.95	6.70	8.25	
3/27/1994	14.95	6.93	8.02	SEE NOTES
6/24/1994	14.95	7.21	7.74	
10/16/1994	14.95	8.23	6.72	
2/13-14/1995	14.95	6.52	8.43	
6/20/1995	14.95	6.50	8.45	NRA
10/16/1995	14.95	7.93	7.02	NR
2/15/1996	14.95	6.57	8.38	NR
6/13/1996	14.95	7.07	7.88	NR
9/17/1996	14.95	7.86	7.09	NR
1/16/1997	14.95	6.03	8.92	NR
5/1/1997	14.95			NRA
12/12/1997	14.95	6.00	8.95	NRA
3/21/1998	14.95	6.10	8.85	NRA
6/14/1998	14.95	6.61	8.34	NRA
3/31-4/1/1999	14.95			NR
				SEE NOTES
5/22/2000	14.95	6.46	8.49	
6/4/2007	14.95	7.04	7.91	

NOTES:

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Results for 3/31-4/1/99 are from Hydropunch investigation and well sampling report.

Unless otherwise identified, laboratory reports are from periodic well sampling reports.

Mel Senna Brake Service
RO 387
2301 East 12th Street
Oakland, CA

MW4

Date Monitored	* Top of Casing Elevation (ft-msl.)	Depth to Water (ft)	Water Table Elevation (ft-msl.)	
7/27/1992	WNC	WNC	WNC	SEE NOTES
11/6/1992	WNC	WNC	WNC	
3/2/1993	WNC	WNC	WNC	
5/26/1993	WNC	WNC	WNC	
8/27/1993	WNC	WNC	WNC	
12/23/1993	WNC	WNC	WNC	
3/27/1994	14.66	7.57	7.09	SEE NOTES
6/24/1994	14.66	7.53	7.13	
10/16/1994	14.66	8.37	6.29	
2/13-14/1995	14.66	6.99	7.67	
6/20/1995	14.66	7.17	7.49	NRA
10/16/1995	14.66	8.00	6.66	NR
2/15/1996	14.66	6.54	8.12	NR
6/13/1996	14.66	7.32	7.34	NR
9/17/1996	14.66	7.96	6.70	NR
1/16/1997	14.66	6.37	8.29	NR
5/1/1997	14.66			NRA
12/12/1997	14.66	6.17	8.49	NRA
3/21/1998	14.66	6.74	7.92	NRA
6/14/1998	14.66	7.10	7.56	NRA
3/31-4/1/1999	14.66			NR
5/22/2000	14.66	7.27	7.39	SEE NOTES
6/4/2007	14.66	7.45	7.21	

NOTES:

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Unless otherwise identified, laboratory reports are from periodic well sampling reports.

Mel Senna Brake Service
 RO 387
 2301 East 12th Street
 Oakland, CA

MW5

Date Monitored	* Top of Casing Elevation (ft-msl.)	Depth to Water (ft)	Water Table Elevation (ft-msl.)	
7/27/1992	WNC	WNC	WNC	SEE NOTES
11/6/1992	WNC	WNC	WNC	
3/2/1993	WNC	WNC	WNC	
5/26/1993	WNC	WNC	WNC	
8/27/1993	WNC	WNC	WNC	
12/23/1993	WNC	WNC	WNC	
3/27/1994	14.67	7.99	6.68	SEE NOTES
6/24/1994	14.67	7.83	6.84	
10/16/1994	14.67	8.81	5.86	
2/13-14/1995	14.67	7.40	7.27	
6/20/1995	14.67	7.59	7.08	NRA
10/16/1995	14.67	8.40	6.27	NR
2/15/1996	14.67	7.15	7.52	NR
6/13/1996	14.67	7.91	6.76	NR
9/17/1996	14.67	8.75	5.92	NR
1/16/1997	14.67	7.08	7.59	NR
5/1/1997	14.67			NRA
12/12/1997	14.67	6.87	7.8	NRA
3/21/1998	14.67	7.35	7.32	NRA
6/14/1998	14.67	7.71	6.96	NRA
3/31-4/1/1999	14.67			NR
5/22/2000	14.67	7.82	6.85	SEE NOTES
6/4/2007	14.67	8.62	6.05	

NOTES:

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Results for 3/31-4/1/99 are from Hydropunch investigation and well sampling report.

Unless otherwise identified, laboratory reports are from periodic well sampling reports.

Mel Senna Brake Service
RO 387
2301 East 12th Street
Oakland, CA

MW6

Date Monitored	* Top of Casing Elevation (ft-msl.)	Depth to Water (ft)	Water Table Elevation (ft-msl.)	
7/27/1992	WNC	WNC	WNC	SEE NOTES
11/6/1992	WNC	WNC	WNC	
3/2/1993	WNC	WNC	WNC	
5/26/1993	WNC	WNC	WNC	
8/27/1993	WNC	WNC	WNC	
12/23/1993	WNC	WNC	WNC	
3/27/1994	15.28	6.34	8.94	SEE NOTES
6/24/1994	15.28	7.22	8.06	
10/16/1994	15.28	8.20	7.08	
2/13-14/1995	15.28	5.39	9.89	
6/20/1995	15.28	5.79	9.49	NRA
10/16/1995	15.28	7.65	7.63	NR
2/15/1996	15.28	5.13	10.15	NR
6/13/1996	15.28	6.13	9.15	NR
9/17/1996	15.28	7.52	7.76	NR
1/16/1997	15.28	4.62	10.66	NR
5/1/1997	15.28			NRA
12/12/1997	15.28	4.62	10.66	NRA
3/21/1998	15.28	4.86	10.42	NRA
6/14/1998	15.28	5.77	9.51	NRA
3/31-4/1/1999	15.28			NR
5/22/2000	15.28	5.90	9.38	SEE NOTES
6/4/2007	15.28	7.88	7.40	

NOTES:

NR = Depth to water measurements Not Reported.

NS = Not Sampled

WNC = Well not yet constructed.

NRA = No Report Available. No lab or consultant reports. Sampling known by summary table, or site plan.

Results for 7/27/92 and 3/27/94 are from well installation reports.

Results for 3/31-4/1/99 are from Hydropunch investigation and well sampling report.

Unless otherwise identified, laboratory reports are from periodic well sampling reports.

Mel Senna Brake Service
RO 387
2301 East 12th Street
Oakland, CA

EW1

Date Monitored	* Top of Casing Elevation (ft-msl.)	Depth to Water (ft)	Water Table Elevation (ft-msl.)	
7/27/1992	WNC	WNC	WNC	SEE NOTES
11/6/1992	WNC	WNC	WNC	
3/2/1993	WNC	WNC	WNC	
5/26/1993	WNC	WNC	WNC	
8/27/1993	WNC	WNC	WNC	
12/23/1993	WNC	WNC	WNC	
3/27/1994	15.36	6.70	8.66	SEE NOTES
6/24/1994	15.36	7.46	7.90	
10/16/1994	15.36	8.46	6.90	
2/13-14/1995	15.36	5.88	9.48	
6/20/1995	15.36	5.93	9.43	NRA
10/16/1995	15.36	7.96	7.40	NR
2/15/1996	15.36	5.53	9.83	NR
6/13/1996	15.36	6.52	8.84	NR
9/17/1996	15.36	7.85	7.51	NR
1/16/1997	15.36	5.14	10.22	NR
5/1/1997	15.36			NRA
12/12/1997	15.36	5.20	10.16	NRA
3/21/1998	15.36	5.50	9.86	NRA
6/14/1998	15.36	6.14	9.22	NRA
3/31-4/1/1999	15.36			NS
5/22/2000	15.36			NS
6/4/2007	15.36	7.23	8.13	SEE NOTES

NOTES:

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NRA = No Report Available. No lab or consultant reports. Sampling known by summary table, or site plan.

Results for 7/27/92 and 3/27/94 are from well installation reports.

Results for 3/31-4/1/99 are from Hydropunch investigation and well sampling report.

Unless otherwise identified, laboratory reports are from periodic well sampling reports.

APPENDIX A
TABLE 2
Historic Groundwater Organic Compound
Concentrations



Tetra Tech EM Inc.

135 Main Street, Suite 1800 ♦ San Francisco, CA 94105 ♦ (415) 543-4880 ♦ FAX (415) 543-5480

November 7, 2000

J. W. Silveira Company
499 Embarcadero
Oakland, California 94606

Subject: May 2000, Groundwater Monitoring report for the Sited Located at
2301 East 12th Street, Oakland

#71
- Includes TPH-G
- Does not include Aug 2001 Sample Results.
- Does not include EW-1 results.

INTRODUCTION

The purpose of this report is to provide the results of the groundwater sampling at 6 monitoring wells conducted on May 22, 2000. The site is located at 2301 East 12th Street at the south corner of the intersection of East 12th Street and 23rd Avenue in Oakland, California (Figure 1).

SITE BACKGROUND

Four underground storage tanks (USTs) were previously located at the site. Two of the USTs were 1,000-gallon tanks and were used for waste oil storage; one of the USTs was a 6,000-gallon tank that contained gasoline; and one of the USTs was a 1,000-gallon tank that contained diesel fuel. The gasoline and diesel tanks were removed on December 21, 1990, and the 2 waste oil tanks were removed on February 11, 1991. It was reported that contamination was discovered at both ends of the 1,000-gallon waste oil tanks and at the northern end of the 6,000-gallon gasoline tank. As part of the UST removal action activities, six groundwater monitoring wells and one extraction well were installed at the site. The wells were sampled approximately two to four times a year from 1992 through 1999.

GROUNDWATER SAMPLING ACTIVITIES

As part of the additional site characterization, the six monitoring wells at the site were sampled on May 22, 2000. The depth of groundwater was measured at each well with an electronic depth probe. The depth to the monitoring well caps were removed from the tops of the well and the groundwater

TABLE 2
DETECTED VOC AND TPH COMPOUNDS IN GROUNDWATER
FROM MONITORING WELLS MAY 22, 2000
2301 EAST 12TH STREET

Assume shallow is not a drinking water source

Analyte	Monitoring Well Locations					
	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6
VOC (µg/L)						
1,1-Dichloroethane	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene*	ND	ND	ND	ND	ND	ND
1,2,4-Trimethylbenzene	5.4	110	0.5	ND	0.8	ND
1,3,5-Trimethylbenzene	6.4	100	ND	ND	ND	ND
Benzene	1,300	970	73	ND	53	320
Chlorobenzene	ND	4.6	ND	ND	1.1	ND
Ethylbenzene	98	560	18	ND	5.6	61
Isopropylbenzene	17	63	41	10	43	20
Naphthalene	16	600	3.9	ND	26	ND
Propylbenzene	17	120	48	9.4	61	17
Toluene	30	84	6.3	ND	3.4	3.8
Trichloroethene	ND	ND	3.9	ND	ND	ND
cis-1,2-Dichloroethene	1.0	ND	3.4	ND	3.6	44
m,p-Xylenes	24	230	5.4	ND	8.1	1.9
o-Xylene	1.9	27	0.6	ND	1.5	ND
n-Butylbenzene	10	43	20	4.6	11	5.8
para-Isopropyl Toluene	9.6	21	21	2.8	6.3	3.9
sec-Butylbenzene	7.2	13	13	7.0	6.8	4.0
tert-Butylbenzene	ND	ND	1.3	1.0	ND	ND
trans-1,2-Dichloroethene*	ND	ND	2.6	ND	3.6	18
TPH (µg/L)						
Gasoline	5,600	14,000	7,600	2,400	4,500	3,000
Diesel	3,300	6,900	9,700	580	1,000	730
Motor Oil	720	840	390	ND	ND	ND

46 surface water
30 odor
21 odor
40 odor
300 ug per
3000 ug per
10 ug per
200 odor

Notes:

- µg/L micrograms per Liter
- Not Analyzed
- ND Not Detected
- TPH Total Petroleum Hydrocarbons
- VOC Volatile Organic Compound

TABLE 3
VOC AND TPH COMPOUNDS IN GROUNDWATER
MW-1 FROM JULY 1992 TO MAY 2000
2301 EAST 12TH STREET

Date	TPH (µg/L)		VOC (µg/L)							
	Diesel	Gasoline	Benzene	Toluene	Ethylbenzene	Xylenes	Chloroethane	Tetrachloroethene	Trichloroethene	Cis 1,2 Dichloroethene
07/27/92	360	1,800	600	5.1	13	18	--	--	--	--
11/06/92	670	8,000	2,400	6.1	41	ND	--	--	--	--
03/02/93	1,100	5,600	3,800	ND	120	ND	ND	ND	5.8	ND
05/26/93	1,170	4,800	3,400	44	140	150	ND	ND	6.8	ND
08/27/93	1,200	8,400	2,300	35	180	57	ND	5.4	ND	1.1
12/23/93	ND	7,800	29	16	5.8	26	--	--	--	--
03/27/94	2,600	10,000	2,400	84	310	280	--	--	--	--
06/24/94	1,500	9,000	2,300	44	260	170	--	--	--	--
10/16/94	2,000	10,000	2,100	35	250	140	--	--	--	--
02/13/95	2,500	16,000	3,200	110	460	260	ND	ND	ND	1.3
06/20/95	3,500	18,000	2,600	87	450	220	1.1	ND	6.5	1.1
10/16/95	2,700	13,000	2,200	63	220	110	ND	ND	2.5	0.84
02/15/96	16,000	11,000	1,400	25	130	81	ND	ND	24	0.82
06/18/96	8,000	12,000	2,500	72	190	130	ND	ND	ND	ND
09/17/96	3,100	7,000	1,200	29	86	55	ND	ND	11	ND
01/16/97	11,000	14,000	1,500	47	190	130	ND	ND	13	0.71
05/01/97	4,300	10,000	2,200	56	170	110	ND	ND	2.7	0.81
12/12/97	3,400	9,800	2,000	46	81	94	--	--	--	--
03/24/98	8,600	12,000	2,600	74	280	100	--	--	--	--
07/20/98	6,800	11,000	2,100	57	220	83	ND	ND	3.4	1.4
04/01/99	4,300	4,100	1,300	30	93	36	ND	ND	20	ND
05/22/00	3,300	5,600	1,300	ND	98	24	ND	ND	ND	1.0

Notes:

µg/L micrograms per Liter
 -- Not Analyzed
 ND Not Detected
 TPH Total Petroleum Hydrocarbons
 VOC Volatile Organic Compound

TABLE 4
VOC AND TPH COMPOUNDS IN GROUNDWATER
MW-2 FROM JULY 1992 TO MAY 2000
2301 EAST 12TH STREET

Date	TPH (µg/L)		VOC (µg/L)								
	Diesel	Gasoline	Benzene	Toluene	Ethylbenzene	Xylenes	Chlorobenzene	Chloroethane	Trichloroethene	Vinyl Chloride	cis-1,2-Dichloroethene
07/27/92	1,500	20,000	110	6	37	39	--	--	--	--	--
11/06/92	17,000	19,000	2,800	120	790	1100	--	--	--	--	--
03/02/93	37,000	14,000	3,800	110	950	1100	ND	ND	ND	ND	ND
05/26/93	6,000	11,000	5,200	140	1,000	990	9.8	ND	ND	ND	2.7
08/27/93	54,000	16,000	1,700	120	640	710	10	1.3	ND	2.2	3.2
12/23/93	720	18,000	87	79	42	400	4.3	ND	ND	1.5	1
03/27/94	6,100	17,000	2,100	100	630	750	ND	ND	ND	ND	ND
06/24/94	3,000	15,000	2,000	72	550	520	6.5	ND	ND	ND	ND
10/16/94	53,000	15,000	1,500	81	410	520	5.7	1.1	ND	1	0.73
02/13/95	49,000	18,000	2,000	120	660	900	12	ND	ND	ND	ND
06/20/95	6,600	30,000	1,300	85	510	520	7.9	1.5	ND	2.1	1
10/16/95	31,000	19,000	1,500	92	400	330	5.1	ND	ND	ND	ND
02/15/96	11,000	25,000	1,700	93	490	440	4.8	ND	ND	ND	ND
06/13/96	5,500	13,000	1,400	75	460	410	5.6	ND	ND	ND	ND
09/17/96	13,000	15,000	1,600	66	480	460	8.2	ND	ND	ND	ND
01/16/97	30,000	20,000	1,800	150	670	780	ND	ND	12	ND	0.69
05/01/97	24,000	11,000	1,300	96	400	410	5.2	ND	ND	ND	ND
12/12/97	24,000	14,000	1,200	76	460	420	--	--	--	--	--
03/24/98	9,500	11,000	1,200	74	430	350	--	--	--	--	--
07/20/98	490,000	38,000	890	160	490	850	1.9	1.4	ND	0.76	ND
04/01/99	5,800	7,200	1,100	100	540	370	5.2	ND	ND	ND	ND
05/22/00	6,900	14,000	970	84	560	230	4.6	ND	ND	ND	ND

Notes:

µg/L micrograms per Liter
-- Not Analyzed
ND Not Detected
TPH Total Petroleum Hydrocarbons
VOC Volatile Organic Compound

TABLE 5
VOC AND TPH COMPOUNDS IN GROUNDWATER
MW-3 FROM JULY 1992 TO MAY 2000
2301 EAST 12TH STREET

Date	TPH (µg/L)		VOC (µg/L)						
	Diesel	Gasoline	Benzene	Toluene	Ethylbenzene	Xylenes	Trichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene
07/27/92	4,000	8,800	150	8.6	88	13	--	--	--
11/06/92	21,000	10,000	78	3.1	830	13	--	--	--
03/02/93	9,300	3,900	120	nd	240	37	ND	ND	ND
05/26/93	4,400	7,400	570	4.1	640	8.4	--	--	--
08/27/93	8,200	7,100	180	15	110	9.4	16	ND	ND
12/23/93	230	7,900	30	14	12	62	--	--	--
03/27/94	4,300	5,700	180	10	100	24	6	ND	ND
06/24/94	1,500	8,400	230	13	93	7.6	ND	6	1.5
10/16/94	2,700	6,300	140	8.7	68	25	12	8.4	2.1
02/13/95	1,600	7,500	220	17	110	22	5.1	4.3	1.3
06/20/95	13,000	11,000	310	23	160	63	5.7	4.9	1.7
10/16/95	1,900	4,700	120	6.7	32	16	7.8	7.1	2
02/15/96	9,400	8,100	62	13	50	33	9.3	7.3	2.6
06/18/96	5,000	30,000	110	65	130	160	ND	6.9	2.5
09/17/96	15,000	10,000	68	20	61	42	13	11	ND
01/16/97	57,000	9,700	64	19	38	60	3.9	4.9	2
05/01/97	30,000	7,300	67	13	51	20	ND	4.9	2.4
12/12/97	16,000	10,000	63	22	68	48	--	--	--
03/24/98	10,000	7,900	ND	1.5	53	21	--	--	--
07/20/98	17,000	6,200	87	13	44	25	ND	1.1	0.81
04/01/99	3,200	5,600	73	7	29	6.3	6.7	ND	3.3
05/22/00	9,700	7,600	73	6.3	18	5.4	3.9	3.4	2.6

Notes:

µg/L micrograms per Liter
 -- Not Analyzed
 ND Not Detected
 TPH Total Petroleum Hydrocarbons
 VOC Volatile Organic Compound

TABLE 6
VOC AND TPH COMPOUNDS IN GROUNDWATER
MW-4 FROM JULY 1992 TO MAY 2000
2301 EAST 12TH STREET

Date	TPH (µg/L)		VOC (mg/L)					
	Diesel	Gasoline	Benzene	Toluene	Ethylbenzene	Xylenes	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene
03/27/94	1,800	2,200	19	1.2	2.9	12	--	--
06/24/94	420	2,300	2.9	1.6	2.8	4.6	--	--
10/16/94	900	3,500	3.8	2	5.2	24	0.71	ND
02/13/95	630	2,600	100	100	3.8	7.1	ND	ND
06/20/95	1,100	3,000	31	3.4	6.1	12	2.2	1
10/16/95	1,100	2,000	43	2.3	8.4	6.9	1.3	ND
02/15/96	940	3,400	ND	ND	ND	ND	1.8	0.79
06/13/96	1,100	1,900	12	5.7	3.4	9.6	ND	ND
09/17/96	2,500	3,100	ND	15	78	12	ND	ND
01/16/97	13,000	4,000	ND	7	3	15	0.76	ND
05/01/97	6,200	2,900	ND	5.1	3.4	5.7	ND	ND
12/12/97	650	1,800	41	13	14	20	--	--
03/24/98	1,300	3,100	ND	5	3.7	6.2	--	--
07/20/98	1,000	950	2.2	1.5	2	2.1	ND	ND
04/01/99	2,500	3,900	ND	ND	0.8	ND	ND	ND
05/22/00	580	2,400	ND	ND	ND	ND	ND	ND

Notes:

- µg/L micrograms per Liter
- Not Analyzed
- ND Not Detected
- TPH Total Petroleum Hydrocarbons
- VOC Volatile Organic Compound

TABLE 7
 VOC AND TPH COMPOUNDS IN GROUNDWATER
 MW-5 FROM JULY 1992 TO MAY 2000
 2301 EAST 12TH STREET

Date	TPH (µg/L)		VOC (µg/L)							
	Diesel	Gasoline	Benzene	Toluene	Ethylbenzene	Xylenes	Chlorobenzene	Vinyl Chloride	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene
03/27/94	870	2,900	71	ND	27	15	--	--	--	--
06/24/94	950	6,100	220	12	38	24	0.53	7.5	11	3.1
10/16/94	1,100	4,300	120	5.1	27	13	0.66	9.6	16	4.2
02/13/95	1,200	4,600	130	7.9	38	29	ND	8.4	20	5.1
06/20/95	1,000	6,000	140	6.7	27	29	0.95	10	12	4.1
10/16/95	940	2,000	43	2.3	8.4	6.9	0.54	7.6	9.8	2.9
02/15/96	2,200	4,400	61	5.3	34	ND	0.57	5.3	7.7	ND
06/18/96	--	7,400	94	11	32	40	ND	ND	2.9	ND
09/17/96	1,600	5,200	140	7.5	18	21	0.83	7.3	4.5	2.7
01/16/97	2,500	4,500	64	8.7	23	26	0.71	9.1	6.1	3.8
05/01/97	3,400	4,300	120	7.6	21	23	ND	1.1	0.55	ND
12/12/97	2,400	4,000	66	8.7	15	25	--	--	--	--
03/24/98	1,200	4,100	48	7.2	14	21	--	--	--	--
07/20/98	1,600	3,400	69	6	11	15	0.68	5.3	1.8	2
04/01/99	1,500	5,200	73	5	13	13	ND	ND	ND	2.7
05/22/00	1,000	4,500	53	3.4	5.6	8.1	1.1	ND	3.6	3.6

Notes:

- µg/L micrograms per Liter
- Not Analyzed
- ND Not Detected
- TPH Total Petroleum Hydrocarbons
- VOC Volatile Organic Compound

TABLE 8
VOC AND TPH COMPOUNDS IN GROUNDWATER
MW-6 FROM JULY 1992 TO MAY 2000
2301 EAST 12TH STREET

Date	TPH (µg/L)		VOC (µg/L)									
	Diesel	Gasoline	Benzene	Toluene	Ethylbenzene	Xylenes	1,2-Dichloroethane	Chloroethane	Trichloroethene	cis-1,2-Dichloroethene	Vinyl Chloride	trans-1,2-Dichloroethene
03/27/94	1,000	5,000	1,100	17	180	41	--	--	--	--	--	--
06/24/94	660	8,000	1,200	21	210	54	--	--	--	--	--	--
10/16/94	850	6,300	870	14	140	49	--	--	--	--	--	--
02/13/95	1,000	5,500	1,000	17	210	55	ND	ND	99	40	87	13
06/20/95	1,400	9,100	1,300	24	240	79	ND	ND	29	26	130	17
10/16/95	770	3,000	590	8.8	84	24	ND	ND	110	75	54	16
02/15/96	1,500	3,900	460	11	110	23	ND	ND	160	110	46	25
06/13/96	1,300	4,800	630	14	140	37	ND	ND	83	72	33	20
09/17/96	1,300	4,700	550	14	120	38	ND	2.7	59	73	48	25
01/16/97	2,200	5,600	850	17	190	43	1.1	1.1	82	81	29	21
05/01/97	3,500	5,400	450	9.1	38	35	0.92	2	52	50	26	17
12/12/97	1,200	4,900	530	13	130	38	--	--	--	--	--	--
03/24/98	1,200	5,300	630	11	120	25	--	--	--	--	--	--
07/20/98	1,600	2,900	420	7	60	14	ND	2.5	34	54	12	16
04/01/99	3,400	4,000	280	4.4	66	6.4	ND	ND	75	72	ND	21
05/22/00	730	3,000	320	3.8	61	1.9	ND	ND	46	44	ND	18

Notes:

µg/L micrograms per Liter
 -- Not Analyzed
 ND Not Detected
 TPH Total Petroleum Hydrocarbons
 VOC Volatile Organic Compound

ENVIRONMENTAL
PROTECTION

97 MAR -7 PM 3:48



Epigene International

CONSULTING GEOLOGISTS

February 7, 1997

Mr. J.W. Silveira

J.W. Silveira Company

499 Embarcadero

Oakland, CA 94606

EW-1
Results
only

Subject: Quarterly Monitoring Report for Site Located at 2301 East 12th Street, Oakland

The purpose of this report is to provide the results of the site investigations carried out in the first quarter of 1997 at the subject site. The site is located at the southwest corner of the intersection of East 12th Street and 23rd Avenue in Oakland. The site location is shown on Figure 1. A site plan is presented on Figure 2. The site is presently occupied by Discount Brake and Tire.

There are six monitoring wells and one extraction well located on or adjacent to the site. The well locations are shown on Figure 2. Gauging of the depth to groundwater was carried out for each project well on January 16, 1997 prior to any purging of the wells. An electronic probe was used to measure the depth to groundwater from the survey mark on the top of the casing. The probe is calibrated to hundredths of a foot. Several of the wells had significant vapor pressure and up to 2 hours were required for the water levels in the wells to stabilize. The groundwater elevations were calculated and are presented on Figure 3. Groundwater elevation contours are also plotted on Figure 3.

In addition to the contouring, a direction and slope of the gradient was also calculated by a graphical

Table 7A-Summary of Hydrocarbon Concentrations (in PPB) Detected in EW-1

Sampling Date	TPH Diesel	TPH Gasoline	Benzene	Toluene	Ethylbenzene	Xylenes	TRPH*
3/27/94	920	1200	270	6.2	30	13	ND
6/24/94	1200	4600	410	5.6	78	22	NA
10/16/94	1200	4900	310	5.2	30	32	6.4
2/13/95	1000	3900	380	5.9	41	22	ND
6/20/95	1800	7800	710	14	260	52	6.5
10/16/95	940	3200	310	3.3	32	16	5.5
2/15/96	2400	5000	270	7.5	50	20	4.2
6/13/96	1800	5700	450	11	75	19	8.3
9/17/96	1300	5300	300	15	67	29	7.2
1/16/97	2100	5800	480	8.6	100	30	99

EW-1 is a 4 inch PVC well installed 3/16/94 to a total depth of 30 feet.

NOTE: NA is not analyzed; ND is not detected above detection limits which are typically 50 PPB for diesel and gasoline and 0.5 PPB for BTEX; *TRPH is Total Recoverable Petroleum Hydrocarbons as oil and grease. Results for TRPH is presented in PPM with a detection limit of 5 PPM.

Table 7B-Summary of Volatile Halocarbons Concentrations (in PPB) Detected in EW-1

Sampling Date	Chloro-benzene	Chloro-ethane	1,2-D4 Chloro-ethane	Cis 1,2 Dichloro-ethene	Trans 1,2 Dichloro-ethene	PCE	TCE	Vinyl Chloride
3/27/94	ND	ND	ND	ND	ND	ND	40	ND
6/24/94	ND	ND	1.3	42	11	ND	68	3.2
10/16/94	ND	ND	ND	36	ND	ND	74	ND
2/13/95	ND	ND	ND	13	4.4	ND	53	ND
6/20/95	ND	2.0	ND	4.3	2.0	ND	6.0	2.8
10/16/95	ND<2	ND<2	ND<2	24	7.1	ND<2	46	ND<2
2/15/96	ND	1.0	ND	17	6.4	ND	33	2.3
6/13/96	ND<1	ND<1	ND<1	25	9.8	ND<1	38	4.9
9/17/96	ND<2	2.3	ND<2	25	9.0	ND<2	39	5.4
1/16/97	ND	0.87	ND	14	5.2	ND	14	3.7

NOTE: Table presents only those compounds that have been detected in any of the site wells; data from EPA Method either 8010 or 8240; NA is not analyzed; ND is not detected above detection limits which are typically 2.0 PPB for this well.

**TIER I SCREENING LEVEL HUMAN
HEALTH RISK ASSESSMENT
2301 EAST 12TH STREET
OAKLAND, CA
DRAFT FINAL**

- Does not include TPH-G results.

APPROVED
DEC 20 2005

- Does not include FEW-1 results.

- Includes Aug 2001 Results.

**PREPARED BY:
TETRA TECH EM INC.
135 MAIN STREET SUITE 1800
SAN FRANCISCO, CA 94105**

TABLE A-1
CHEMICAL CONCENTRATIONS IN GROUNDWATER
MONITORING WELL MW-1
FROM JULY 1992 TO AUGUST 2001
2301 EAST 12TH STREET

ANALYTE	SAMPLE DATE																						
	7/92	11/92	3/93	5/93	8/93	12/93	3/94	6/94	10/94	2/95	6/95	10/95	2/96	6/96	9/96	1/97	5/97	12/97	3/98	7/98	4/99	5/00	8/01
VOC (µg/L)																							
1,2,4-Trimethylbenzene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	5.4	ND
1,3,5-Trimethylbenzene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	6.4	ND
Benzene	600	2,400	3,800	3,400	2,300	29	2,400	2,300	2,100	3,200	2,600	2,200	1,400	2,500	1,200	1,500	2,200	2,000	2,600	2,100	1,300	1,300	1,000
Chlorobenzene	--	--	ND	ND	ND	--	--	--	--	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	--	--	ND	ND	1.1	--	--	--	--	1.3	1.1	0.84	0.82	ND	ND	0.71	0.81	--	--	1.4	ND	1.0	ND
Ethylbenzene	13	41	120	140	180	5.8	310	260	250	460	450	220	130	190	86	190	170	81	280	220	93	98	92
Isopropylbenzene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	17	20
m,p-Xylenes	18	ND	ND	150	57	26	280	170	140	260	220	110	81	130	55	130	110	94	100	83	36	24	20
n-Butylbenzene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	10	10
Naphthalene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	16	17
o-Xylene	a	ND	ND	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	ND	1.9	ND
para-Isopropyl Toluene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	9.6	12
Propylbenzene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	17	19
sec-Butylbenzene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	7.2	7.6
tert-Butylbenzene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	ND	ND
Toluene	5.1	6.1	ND	44	35	16	84	44	35	110	87	63	25	72	29	47	56	46	74	57	30	30	19
trans-1,2-Dichloroethene	--	--	ND	ND	ND	--	--	--	--	ND	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND	ND	ND
Trichloroethene	--	--	5.8	6.8	ND	--	--	--	--	ND	6.5	2.5	24	ND	11	13	2.7	--	--	3.4	20	ND	ND
Vinyl Chloride	--	--	ND	ND	ND	--	--	--	--	ND	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND	ND	ND
TPH (µg/L)	7/92	11/92	3/93	5/93	8/93	12/93	3/94	6/94	10/94	2/95	6/95	10/95	2/96	6/96	9/96	1/97	5/97	12/97	3/98	7/98	4/99	5/00	8/01
Diesel (TPH-d)	360	670	1,100	1,170	1,200	ND	2,600	1,500	2,000	2,500	3,500	2,700	16,000	8,000	3,100	11,000	4,300	3,400	8,600	6,800	4,300	3,300	8,800
Motor Oil (TPH-o)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	850	720	2,600

Notes:

- a Laboratory analytical report only lists total xylenes
- µg/L Micrograms per liter
- Not analyzed
- ND Not detected
- TPH Total petroleum hydrocarbons
- VOC Volatile organic compound

TABLE A-2
CHEMICAL CONCENTRATIONS IN GROUNDWATER
MONITORING WELL MW-2
FROM JULY 1992 TO AUGUST 2001
2301 EAST 12TH STREET

ANALYTE	SAMPLE DATE																						
	7/92	11/92	3/93	5/93	8/93	12/93	3/94	6/94	10/94	2/95	6/95	10/95	2/96	6/96	9/96	1/97	5/97	12/97	3/98	7/98	4/99	5/00	8/01
VOC (µg/L)																							
1,2,4-Trimethylbenzene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	200	110	240
1,3,5-Trimethylbenzene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	120	100	190
Benzene	110	2,800	3,800	5,200	1,700	87	2,100	2,000	1,500	2,000	1,300	1,500	1,700	1,400	1,600	1,800	1,300	1,200	1,200	890	1,100	970	630
Chlorobenzene	--	--	ND	9.8	10	4.3	ND	6.5	5.7	12	7.9	5.1	4.8	5.6	8.2	ND	5.2	--	--	1.9	5.2	4.6	ND
cis-1,2-Dichloroethene	--	--	ND	2.7	3.2	1.0	ND	ND	0.73	ND	1.0	ND	ND	ND	ND	0.69	ND	--	--	ND	ND	ND	ND
Ethylbenzene	37	790	950	1,000	640	42	630	550	410	660	510	400	490	460	480	670	400	460	430	490	540	560	340
Isopropylbenzene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	50	63	64
m,p-Xylenes	39	1,100	1,100	990	710	400	750	520	520	900	520	330	440	410	460	780	410	420	350	850	370	230	260
n-Butylbenzene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	39	43	88
Naphthalene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	570	600	910
o-Xylene	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	38	27	31
para-isopropyl Toluene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	22	21	42
Propylbenzene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	86	120	110
sec-Butylbenzene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	13	21
tert-Butylbenzene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	ND	ND
Toluene	6	120	110	140	120	79	100	72	81	120	85	92	93	75	66	150	96	76	74	160	100	84	49
trans-1,2-Dichloroethene	--	--	ND	2.7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND	ND	ND
Trichloroethene	--	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	12	ND	ND	--	--	ND	ND	ND	ND
Vinyl Chloride	--	--	ND	ND	2.2	1.5	ND	ND	1.0	ND	2.1	ND	ND	ND	ND	ND	ND	--	--	0.46	ND	ND	ND
TPH (µg/L)																							
Diesel (TPH-d)	1,500	17,000	37,000	6,000	54,000	720	6,100	3,000	53,000	49,000	6,600	31,000	11,000	5,500	13,000	30,000	24,000	24,000	9,500	490,000	5,800	6,900	28,000
Motor Oil (TPH-o)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	750	840	3,800

Notes:

- a Laboratory analytical report only lists total xylenes
- µg/L Micrograms per liter
- Not analyzed
- ND Not detected
- TPH Total petroleum hydrocarbons
- VOC Volatile organic compound

TABLE A-3
CHEMICAL CONCENTRATIONS IN GROUNDWATER
MONITORING WELL MW-3
FROM JULY 1992 TO AUGUST 2001
2301 EAST 12TH STREET

ANALYTE	SAMPLE DATE																							
	7/92	11/92	3/93	5/93	8/93	12/93	3/94	6/94	10/94	2/95	6/95	10/95	2/96	6/96	9/96	1/97	5/97	12/97	3/98	7/98	4/99	5/00	8/01	
VOC (µg/L)																								
1,2,4-Trimethylbenzene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	0.5	ND	
1,3,5-Trimethylbenzene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	ND	ND	
Benzene	150	78	120	570	180	30	180	230	140	220	310	120	62	110	68	64	67	63	ND	87	73	0.5	59	
Chlorobenzene	--	--	ND	--	ND	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND	ND	ND	
cis-1,2-Dichloroethene	--	--	ND	--	ND	--	ND	6.0	8.4	4.3	4.9	7.1	7.3	6.9	11	4.9	4.9	--	--	1.1	ND	3.4	ND	
Ethylbenzene	88	830	240	640	110	12	100	93	68	110	160	32	50	130	61	38	51	68	53	44	29	18	13	
Isopropylbenzene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	41	41	41
m,p-Xylenes	13	13	37	8.4	9.4	62	24	7.6	25	22	63	16	33	160	42	60	20	48	21	25	6.3	5.4	4.6	
n-Butylbenzene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	17	20	21
Naphthalene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3.4	3.9	3
o-Xylene	a	ND	ND	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	ND	0.6	ND
para-Isopropyl Toluene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	18	21	22
Propylbenzene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	45	48	47
sec-Butylbenzene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	12	13	14
tert-Butylbenzene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3.3	1.3	1.3
Toluene	8.6	3.1	ND	4.1	15	14	10	13	8.7	17	23	6.7	13	65	20	19	13	22	1.5	13	7.0	6.3	5.8	
trans-1,2-Dichloroethene	--	--	ND	--	ND	--	ND	1.5	2.1	1.3	1.7	2.0	2.6	2.5	ND	2.0	2.4	--	--	0.81	3.3	2.6	ND	
Trichloroethene	--	--	ND	--	16	--	6.0	ND	12	5.1	5.7	7.8	9.3	ND	13	3.9	ND	--	--	ND	6.7	3.9	4.4	
Vinyl Chloride	--	--	ND	--	ND	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND	ND	ND	
TPH (µg/L)	7/92	11/92	3/93	5/93	8/93	12/93	3/94	6/94	10/94	2/95	6/95	10/95	2/96	6/96	9/96	1/97	5/97	12/97	3/98	7/98	4/99	5/00	8/01	
Diesel (TPH-d)	4,000	21,000	9,300	4,400	8,200	230	4,300	1,500	2,700	1,600	13,000	1,900	9,400	5,000	15,000	57,000	30,000	16,000	10,000	17,000	3,200	9,700	9,800	
Motor Oil (TPH-o)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	280	390	750	

Notes:

- a Laboratory analytical report only lists total xylenes
- µg/L Micrograms per liter
- Not analyzed
- ND Not detected
- TPH Total petroleum hydrocarbons
- VOC Volatile organic compound

TABLE A-4
CHEMICAL CONCENTRATIONS IN GROUNDWATER
MONITORING WELL MW-4
FROM MARCH 1994 TO AUGUST 2001
2301 EAST 12TH STREET

ANALYTE	SAMPLE DATE																
	3/94	6/94	10/94	2/95	6/95	10/95	2/96	6/96	9/96	1/97	5/97	12/97	3/98	7/98	4/99	5/00	8/01
VOC (µg/L)																	
1,2,4-Trimethylbenzene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	ND	ND
1,3,5-Trimethylbenzene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	ND	ND
Benzene	19	2.9	3.8	100	31	43	ND	12	ND	ND	ND	41	ND	2.2	ND	ND	ND
Chlorobenzene	--	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND	ND	ND
cis-1,2-Dichloroethene	--	--	0.71	ND	2.2	1.3	1.8	ND	ND	0.76	ND	--	--	ND	ND	ND	ND
Ethylbenzene	2.9	2.8	5.2	3.8	6.1	8.4	ND	3.4	78	3.0	3.4	14	3.7	2.0	0.8	ND	ND
Isopropylbenzene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	18	10	10
m,p-Xylenes	12	4.6	24	7.1	12	6.9	ND	9.6	12	15	5.7	20	6.2	2.1	ND	ND	ND
n-Butylbenzene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	11	4.6	5.9
Naphthalene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	ND	ND
o-Xylene	a	a	a	a	a	a	ND	a	a	a	a	a	a	a	ND	ND	ND
para-Isopropyl Toluene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	7.9	2.8	3.6
Propylbenzene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	18	9.4	9.1
sec-Butylbenzene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	13	7.0	8.2
tert-Butylbenzene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	1.0	1.2
Toluene	1.2	1.6	2.0	100	3.4	2.3	ND	5.7	15	7.0	5.1	13	5.0	1.5	ND	ND	ND
trans-1,2-Dichloroethene	--	--	ND	ND	1.0	ND	0.79	ND	ND	ND	ND	--	--	ND	ND	ND	ND
Trichloroethene	--	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND	ND	ND
Vinyl Chloride	--	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND	ND	ND
TPH (µg/L)																	
Diesel (TPH-d)	1,800	420	900	630	1,100	1,100	940	1,100	2,500	13,000	6,200	650	1,300	1,000	2,500	580	28,000
Motor Oil (TPH-o)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	300	ND	3,000

Notes:

- a Laboratory analytical report only lists total xylenes
- µg/L Micrograms per liter
- Not analyzed
- ND Not detected
- TPH Total petroleum hydrocarbons
- VOC Volatile organic compound

TABLE A-5
CHEMICAL CONCENTRATIONS IN GROUNDWATER
MONITORING WELL MW-5
FROM MARCH 1994 TO AUGUST 2001
2301 EAST 12TH STREET

ANALYTE	SAMPLE DATE																
	3/94	6/94	10/94	2/95	6/95	10/95	2/96	6/96	9/96	1/97	5/97	12/97	3/98	7/98	4/99	5/00	8/01
VOC (µg/L)																	
1,2,4-Trimethylbenzene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	0.8	ND
1,3,5-Trimethylbenzene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	ND	ND
Benzene	71	220	120	130	140	43	61	94	140	64	120	66	48	69	73	53	44
Chlorobenzene	--	0.53	0.66	ND	0.95	0.54	0.57	ND	0.83	0.71	ND	--	--	0.68	ND	1.1	1.4
cis-1,2-Dichloroethene	--	11	16	20	12	9.8	7.7	2.9	4.5	6.1	0.55	--	--	1.8	ND	3.6	3.1
Ethylbenzene	27	38	27	38	27	8.4	34	32	18	23	21	15	14	11	13	5.6	5.2
Isopropylbenzene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	55	43	44
m,p-Xylenes	15	24	13	29	29	6.9	ND	40	21	26	23	25	21	15	13	8.1	7.3
n-Butylbenzene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	14	11	12
Naphthalene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	42	26	23
o-Xylene	a	a	a	a	a	a	ND	a	a	a	a	a	a	a	ND	1.5	1.3
para-Isopropyl Toluene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	9.9	6.3	6.3
Propylbenzene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	80	61	63
sec-Butylbenzene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	8.3	6.8	7.7
tert-Butylbenzene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	ND	ND
Toluene	ND	12	5.1	7.9	6.7	2.3	5.3	11	7.5	8.7	7.6	8.7	7.2	6.0	5.0	3.4	3.1
trans-1,2-Dichloroethene	--	3.1	4.2	5.1	4.1	2.9	ND	ND	2.7	3.8	ND	--	--	2.0	2.7	3.6	5.3
Trichloroethene	--	ND	ND	ND	ND	2.0	ND	ND	ND	ND	ND	--	--	ND	ND	ND	ND
Vinyl Chloride	--	7.5	9.6	8.4	10	7.6	5.3	ND	7.3	9.1	1.1	--	--	5.3	ND	ND	13
TPH (µg/L)																	
Diesel (TPH-d)	870	950	1,100	1,200	1,000	940	2,200	--	1,600	2,500	3,400	2,400	1,200	1,600	1,500	1,000	2,100
Motor Oil (TPH-o)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	290	ND	340

Notes:

- a Laboratory analytical report only lists total xylenes
- µg/L Micrograms per liter
- Not analyzed
- ND Not detected
- TPH Total petroleum hydrocarbons
- VOC Volatile organic compound

TABLE A-6
CHEMICAL CONCENTRATIONS IN GROUNDWATER
MONITORING WELL MW-6
FROM MARCH 1994 TO AUGUST 2001
2301 EAST 12TH STREET

ANALYTE	SAMPLE DATE																
	3/94	6/94	10/94	2/95	6/95	10/95	2/96	6/96	9/96	1/97	5/97	12/97	3/98	7/98	4/99	5/00	8/01
VOC (µg/L)																	
1,2,4-Trimethylbenzene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	ND	ND
1,3,5-Trimethylbenzene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	ND	ND
Benzene	1,100	1,200	870	1,000	1,300	590	460	630	550	850	450	530	630	420	280	320	240
Chlorobenzene	--	--	--	ND	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND	ND	ND
cis-1,2-Dichloroethene	--	--	--	40	26	75	110	72	73	81	50	--	--	54	72	44	43
Ethylbenzene	180	210	140	210	240	84	110	140	120	190	38	130	120	60	66	61	34
Isopropylbenzene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	17	20	15
m,p-Xylenes	41	54	49	55	79	24	23	37	38	43	35	38	25	14	6.4	1.9	ND
n-Butylbenzene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	5.8	6.7
Naphthalene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	ND	ND
o-Xylene	a	a	a	a	a	a	a	a	a	a	a	a	a	a	ND	ND	ND
para-Isopropyl Toluene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	3.9	2.8
Propylbenzene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	15	17	14
sec-Butylbenzene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	4.0	3.9
tert-Butylbenzene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	ND	ND
Toluene	17	21	14	17	24	8.8	11	14	14	17	9.1	13	11	7	4.4	3.8	2.5
trans-1,2-Dichloroethene	--	--	--	13	17	16	25	20	25	21	17	--	--	16	21	18	15
Trichloroethene	--	--	--	99	29	110	160	83	59	82	52	--	--	34	75	46	33
Vinyl Chloride	--	--	--	87	130	54	46	33	48	29	26	--	--	12	ND	ND	13
TPH (µg/L)																	
Diesel (TPH-d)	1,000	660	850	1,000	1,400	770	1,500	1,300	1,300	2,200	3,500	1,200	1,200	1,600	3,400	730	1,400
Motor Oil (TPH-o)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	280	ND	300

Notes:

- a Laboratory analytical report only lists total xylenes
- µg/L Micrograms per liter
- Not analyzed
- ND Not detected
- TPH Total petroleum hydrocarbons
- VOC Volatile organic compound

APPENDIX A
TABLE 3
Historic Groundwater Metals
Concentrations

Mel Senna Brake Service
RO 387
2301 East 12th Street
Oakland, CA

MW1

<u>Date</u>	<u>Cadmium</u>	<u>Total Chromium</u>	<u>Lead</u>	<u>Nickel</u>	<u>Zinc</u>	
7/27/1992	NA	NA	NA	NA	NA	SEE NOTES
11/6/1992	NA	NA	NA	NA	NA	
3/2/1993	NA	NA	NA	NA	NA	
5/26/1993	NA	NA	NA	NA	NA	SEE NOTES
8/27/1993	ND<0.05	ND<0.25	<u>0.005</u>	<u>0.37</u>	<u>0.12</u>	
12/23/1993	NA	NA	NA	NA	NA	
3/27/1994	NA	NA	NA	NA	NA	SEE NOTES
6/24/1994	NA	NA	NA	NA	NA	
10/16/1994	NA	NA	NA	NA	NA	
2/13-14/1995	NA	NA	NA	NA	NA	
10/16/1995	NA	NA	NA	NA	NA	
2/15/1996	ND<0.01	0.007	<u>0.049</u>	<u>0.061</u>	<u>0.025</u>	
6/13/1996	NA	NA	NA	NA	NA	
9/17/1996	NA	NA	NA	NA	NA	
1/16/1997	NA	NA	NA	NA	NA	
5/1/1997	NRA	NRA	NRA	NRA	NRA	
12/12/1997	NRA	NRA	NRA	NRA	NRA	
3/24/1998	NRA	NRA	NRA	NRA	NRA	
7/20/1998	NRA	NRA	NRA	NRA	NRA	
3/31-4/1/99	NA	NA	NA	NA	NA	SEE NOTES
5/22/2000	NA	NA	NA	NA	NA	
ESL	0.00025	0.050	0.0025	0.0082	0.0081	

NOTES:

ND = Not Detected.

NA= Not Analyzed.

NS = Not Sampled

WNC = Well not yet constructed.

NRA = No Report Available. No lab or consultant reports. Sampling known by TPH summary table.

ESL₁ = Environmental Screening Level, developed by San Francisco Bay – Regional Water Quality Control Board (SF-RWQCB) updated May 2008, from Table A–Groundwater Screening Levels, Groundwater is a current or potential source of drinking water.

Results in bold indicate detected concentrations.

Underlined results exceed their respective ESL value.

No lab reports are available for 5/26/93 results. Results obtained from report text.

Results for 7/27/92 and 3/27/94 are from well installation reports.

Results for 3/31-4/1/99 are from Hydropunch investigation and well sampling report.

Unless otherwise identified, laboratory reports are from periodic well sampling reports.

All results are in milligrams per liter (mg/L), unless otherwise specified.

Mel Senna Brake Service
RO 387
2301 East 12th Street
Oakland, CA

MW2

<u>Date</u>	<u>Cadmium</u>	Total <u>Chromium</u>	<u>Lead</u>	<u>Nickel</u>	<u>Zinc</u>	
7/27/1992	NA	NA	NA	NA	NA	SEE NOTES
11/6/1992	NA	NA	NA	NA	NA	
3/2/1993	NA	NA	NA	NA	NA	
5/26/1993	ND	ND	ND	ND	<u>0.050</u>	SEE NOTES
8/27/1993	ND<0.05	ND<0.25	ND<0.005	ND<0.10	ND<0.05	
12/23/1993	NA	NA	NA	NA	NA	
3/27/1994	NA	NA	NA	NA	NA	SEE NOTES
6/24/1994	ND<0.05	ND<0.25	ND<0.05	ND<0.10	ND<0.05	
10/16/1994	<u>0.015</u>	<u>0.014</u>	<u>0.010</u>	<u>0.21</u>	<u>0.049</u>	
2/13-14/1995	ND<0.01	ND<0.005	<u>0.008</u>	<u>0.032</u>	ND<0.05	
10/16/1995	ND<0.01	<u>0.010</u>	ND<0.005	ND<0.05	ND<0.05	
2/15/1996	NA	NA	NA	NA	NA	
6/13/1996	<u>0.023</u>	ND<0.005	<u>0.020</u>	ND<0.05	<u>0.078</u>	
9/17/1996	NA	NA	NA	NA	NA	
1/16/1997	ND<0.005	ND<0.005	<u>0.076</u>	<u>0.10</u>	ND<0.05	
5/1/1997	NRA	NRA	NRA	NRA	NRA	
12/12/1997	NRA	NRA	NRA	NRA	NRA	
3/24/1998	NRA	NRA	NRA	NRA	NRA	
7/20/1998	NRA	NRA	NRA	NRA	NRA	
3/31-4/1/99	NA	NA	NA	NA	NA	SEE NOTES
5/22/2000	NA	NA	NA	NA	NA	
ESL	0.00025	0.050	0.0025	0.0082	0.0081	

NOTES:

ND = Not Detected.

NA= Not Analyzed.

NS = Not Sampled

WNC = Well not yet constructed.

NRA = No Report Available. No lab or consultant reports. Sampling known by TPH summary table.

ESL₁ = Environmental Screening Level, developed by San Francisco Bay – Regional Water Quality Control Board (SF-RWQCB) updated May 2008, from Table A–Groundwater Screening Levels, Groundwater is a current or potential source of drinking water.

Results in bold indicate detected concentrations.

Underlined results exceed their respective ESL value.

No lab reports are available for 5/26/93 results. Results obtained from report text.

Results for 7/27/92 and 3/27/94 are from well installation reports.

Results for 3/31-4/1/99 are from Hydropunch investigation and well sampling report.

Unless otherwise identified, laboratory reports are from periodic well sampling reports.

All results are in milligrams per liter (mg/L), unless otherwise specified.

Mel Senna Brake Service
RO 387
2301 East 12th Street
Oakland, CA

MW3

<u>Date</u>	<u>Cadmium</u>	<u>Total Chromium</u>	<u>Lead</u>	<u>Nickel</u>	<u>Zinc</u>	
7/27/1992	NA	NA	NA	NA	NA	SEE NOTES
11/6/1992	NA	NA	NA	NA	NA	
3/2/1993	NA	NA	NA	NA	NA	
5/26/1993	NA	NA	NA	NA	NA	SEE NOTES
8/27/1993	ND<0.05	ND<0.25	ND<0.005	ND<0.10	ND<0.05	
12/23/1993	NA	NA	NA	NA	NA	
3/27/1994	NA	NA	NA	NA	NA	SEE NOTES
6/24/1994	NA	NA	NA	NA	NA	
10/16/1994	NA	NA	NA	NA	NA	
2/13-14/1995	ND<0.01	0.016	ND<0.005	0.053	ND<0.05	
10/16/1995	ND<0.01	0.014	ND<0.005	ND<0.05	ND<0.05	
2/15/1996	ND<0.01	0.018	0.009	0.059	0.021	
6/13/1996	ND<0.005	0.008	ND<0.005	ND<0.05	ND<0.05	
9/17/1996	NA	NA	NA	NA	NA	
1/16/1997	ND<0.005	0.020	0.14	ND<0.05	0.069	
5/1/1997	NRA	NRA	NRA	NRA	NRA	
12/12/1997	NRA	NRA	NRA	NRA	NRA	
3/24/1998	NRA	NRA	NRA	NRA	NRA	
7/20/1998	NRA	NRA	NRA	NRA	NRA	
3/31-4/1/99	NA	NA	NA	NA	NA	SEE NOTES
5/22/2000	NA	NA	NA	NA	NA	
ESL	0.00025	0.050	0.0025	0.0082	0.0081	

NOTES:

ND = Not Detected.

NA= Not Analyzed.

NS = Not Sampled

WNC = Well not yet constructed.

NRA = No Report Available. No lab or consultant reports. Sampling known by TPH summary table.

ESL₁ = Environmental Screening Level, developed by San Francisco Bay – Regional Water Quality

Control Board (SF-RWQCB) updated May 2008, from Table A–Groundwater Screening Levels,

Groundwater is a current or potential source of drinking water.

Results in bold indicate detected concentrations.

Underlined results exceed their respective ESL value.

No lab reports are available for 5/26/93 results. Results obtained from report text.

Results for 7/27/92 and 3/27/94 are from well installation reports.

Results for 3/31-4/1/99 are from Hydropunch investigation and well sampling report.

Unless otherwise identified, laboratory reports are from periodic well sampling reports.

All results are in milligrams per liter (mg/L), unless otherwise specified.

Mel Senna Brake Service
RO 387
2301 East 12th Street
Oakland, CA

MW4

<u>Date</u>	<u>Cadmium</u>	<u>Total Chromium</u>	<u>Lead</u>	<u>Nickel</u>	<u>Zinc</u>	
7/27/1992	WNC	WNC	WNC	WNC	WNC	SEE NOTES
11/6/1992	WNC	WNC	WNC	WNC	WNC	
3/2/1993	WNC	WNC	WNC	WNC	WNC	
5/26/1993	WNC	WNC	WNC	WNC	WNC	SEE NOTES
8/27/1993	WNC	WNC	WNC	WNC	WNC	
12/23/1993	WNC	WNC	WNC	WNC	WNC	
3/27/1994	NA	NA	NA	NA	NA	SEE NOTES
6/24/1994	NA	NA	NA	NA	NA	
10/16/1994	NA	NA	NA	NA	NA	
2/13-14/1995	NA	NA	NA	NA	NA	
10/16/1995	NA	NA	NA	NA	NA	
2/15/1996	NA	NA	NA	NA	NA	
6/13/1996	NA	NA	NA	NA	NA	
9/17/1996	NA	NA	NA	NA	NA	
1/16/1997	NA	NA	NA	NA	NA	
5/1/1997	NRA	NRA	NRA	NRA	NRA	
12/12/1997	NRA	NRA	NRA	NRA	NRA	
3/24/1998	NRA	NRA	NRA	NRA	NRA	
7/20/1998	NRA	NRA	NRA	NRA	NRA	
3/31-4/1/99	NA	NA	NA	NA	NA	SEE NOTES
5/22/2000	NA	NA	NA	NA	NA	
ESL	0.00025	0.050	0.0025	0.0082	0.0081	

NOTES:

ND = Not Detected.

NA= Not Analyzed.

NS = Not Sampled

WNC = Well not yet constructed.

NRA = No Report Available. No lab or consultant reports. Sampling known by TPH summary table.

ESL₁ = Environmental Screening Level, developed by San Francisco Bay – Regional Water Quality Control Board (SF-RWQCB) updated May 2008, from Table A–Groundwater Screening Levels, Groundwater is a current or potential source of drinking water.

Results in bold indicate detected concentrations.

Underlined results exceed their respective ESL value.

No lab reports are available for 5/26/93 results. Results obtained from report text.

Results for 7/27/92 and 3/27/94 are from well installation reports.

Results for 3/31-4/1/99 are from Hydropunch investigation and well sampling report.

Unless otherwise identified, laboratory reports are from periodic well sampling reports.

All results are in milligrams per liter (mg/L), unless otherwise specified.

Mel Senna Brake Service
RO 387
2301 East 12th Street
Oakland, CA

MW5

<u>Date</u>	<u>Cadmium</u>	<u>Total Chromium</u>	<u>Lead</u>	<u>Nickel</u>	<u>Zinc</u>	
7/27/1992	WNC	WNC	WNC	WNC	WNC	SEE NOTES
11/6/1992	WNC	WNC	WNC	WNC	WNC	
3/2/1993	WNC	WNC	WNC	WNC	WNC	
5/26/1993	WNC	WNC	WNC	WNC	WNC	SEE NOTES
8/27/1993	WNC	WNC	WNC	WNC	WNC	
12/23/1993	WNC	WNC	WNC	WNC	WNC	
3/27/1994	NA	NA	NA	NA	NA	SEE NOTES
6/24/1994	NA	NA	NA	NA	NA	
10/16/1994	NA	NA	NA	NA	NA	
2/13-14/1995	NA	NA	NA	NA	NA	
10/16/1995	NA	NA	NA	NA	NA	
2/15/1996	NA	NA	NA	NA	NA	
6/13/1996	NA	NA	NA	NA	NA	
9/17/1996	NA	NA	NA	NA	NA	
1/16/1997	NA	NA	NA	NA	NA	
5/1/1997	NRA	NRA	NRA	NRA	NRA	
12/12/1997	NRA	NRA	NRA	NRA	NRA	
3/24/1998	NRA	NRA	NRA	NRA	NRA	
7/20/1998	NRA	NRA	NRA	NRA	NRA	
3/31-4/1/99	NA	NA	NA	NA	NA	SEE NOTES
5/22/2000	NA	NA	NA	NA	NA	
ESL	0.00025	0.050	0.0025	0.0082	0.0081	

NOTES:

ND = Not Detected.

NA= Not Analyzed.

NS = Not Sampled

WNC = Well not yet constructed.

NRA = No Report Available. No lab or consultant reports. Sampling known by TPH summary table.

ESL₁ = Environmental Screening Level, developed by San Francisco Bay – Regional Water Quality Control Board (SF-RWQCB) updated May 2008, from Table A–Groundwater Screening Levels, Groundwater is a current or potential source of drinking water.

Results in bold indicate detected concentrations.

Underlined results exceed their respective ESL value.

No lab reports are available for 5/26/93 results. Results obtained from report text.

Results for 7/27/92 and 3/27/94 are from well installation reports.

Results for 3/31-4/1/99 are from Hydropunch investigation and well sampling report.

Unless otherwise identified, laboratory reports are from periodic well sampling reports.

All results are in milligrams per liter (mg/L), unless otherwise specified.

Mel Senna Brake Service
RO 387
2301 East 12th Street
Oakland, CA

MW6

<u>Date</u>	<u>Cadmium</u>	<u>Total Chromium</u>	<u>Lead</u>	<u>Nickel</u>	<u>Zinc</u>	
7/27/1992	WNC	WNC	WNC	WNC	WNC	SEE NOTES
11/6/1992	WNC	WNC	WNC	WNC	WNC	
3/2/1993	WNC	WNC	WNC	WNC	WNC	
5/26/1993	WNC	WNC	WNC	WNC	WNC	SEE NOTES
8/27/1993	WNC	WNC	WNC	WNC	WNC	
12/23/1993	WNC	WNC	WNC	WNC	WNC	
3/27/1994	NA	NA	NA	NA	NA	SEE NOTES
6/24/1994	NA	NA	NA	NA	NA	
10/16/1994	NA	NA	NA	NA	NA	
2/13-14/1995	NA	NA	NA	NA	NA	
10/16/1995	NA	NA	NA	NA	NA	
2/15/1996	NA	NA	NA	NA	NA	
6/13/1996	NA	NA	NA	NA	NA	
9/17/1996	NA	NA	NA	NA	NA	
1/16/1997	NA	NA	NA	NA	NA	
5/1/1997	NRA	NRA	NRA	NRA	NRA	
12/12/1997	NRA	NRA	NRA	NRA	NRA	
3/24/1998	NRA	NRA	NRA	NRA	NRA	
7/20/1998	NRA	NRA	NRA	NRA	NRA	
3/31-4/1/99	NA	NA	NA	NA	NA	SEE NOTES
5/22/2000	NA	NA	NA	NA	NA	
ESL	0.00025	0.050	0.0025	0.0082	0.0081	

NOTES:

ND = Not Detected.

NA= Not Analyzed.

NS = Not Sampled

WNC = Well not yet constructed.

NRA = No Report Available. No lab or consultant reports. Sampling known by TPH summary table.

ESL₁ = Environmental Screening Level, developed by San Francisco Bay – Regional Water Quality Control Board (SF-RWQCB) updated May 2008, from Table A–Groundwater Screening Levels, Groundwater is a current or potential source of drinking water.

Results in bold indicate detected concentrations.

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No lab reports are available for 5/26/93 results. Results obtained from report text.

Results for 7/27/92 and 3/27/94 are from well installation reports.

Results for 3/31-4/1/99 are from Hydropunch investigation and well sampling report.

Unless otherwise identified, laboratory reports are from periodic well sampling reports.

All results are in milligrams per liter (mg/L), unless otherwise specified.

Mel Senna Brake Service
RO 387
2301 East 12th Street
Oakland, CA

EW1

<u>Date</u>	<u>Cadmium</u>	<u>Total Chromium</u>	<u>Lead</u>	<u>Nickel</u>	<u>Zinc</u>	
7/27/1992	WNC	WNC	WNC	WNC	WNC	SEE NOTES
11/6/1992	WNC	WNC	WNC	WNC	WNC	
3/2/1993	WNC	WNC	WNC	WNC	WNC	
5/26/1993	WNC	WNC	WNC	WNC	WNC	SEE NOTES
8/27/1993	WNC	WNC	WNC	WNC	WNC	
12/23/1993	WNC	WNC	WNC	WNC	WNC	
3/27/1994	ND<0.05	<u>0.25</u>	<u>0.008</u>	<u>0.35</u>	<u>0.099</u>	SEE NOTES
6/24/1994	ND<0.05	ND<0.25	ND<0.05	<u>0.14</u>	ND<0.05	
10/16/1994	ND<0.05	<u>0.070</u>	ND<0.005	<u>0.21</u>	<u>0.049</u>	
2/13-14/1995	ND<0.01	<u>0.085</u>	ND<0.005	<u>0.17</u>	ND<0.05	
10/16/1995	ND<0.01	ND<0.005	ND<0.005	<u>0.078</u>	ND<0.05	
2/15/1996	ND<0.01	<u>0.005</u>	ND<0.005	<u>0.052</u>	ND<0.01	
6/13/1996	ND<0.005	ND<0.005	ND<0.005	ND<0.05	ND<0.05	
9/17/1996	NA	NA	NA	NA	NA	
1/16/1997	ND<0.005	ND<0.005	ND<0.005	ND<0.05	ND<0.05	
5/1/1997	NRA	NRA	NRA	NRA	NRA	
12/12/1997	NRA	NRA	NRA	NRA	NRA	
3/24/1998	NRA	NRA	NRA	NRA	NRA	
7/20/1998	NRA	NRA	NRA	NRA	NRA	
3/31-4/1/99	NS	NS	NS	NS	NS	SEE NOTES
5/22/2000	NS	NS	NS	NS	NS	
ESL	0.00025	0.050	0.0025	0.0082	0.0081	

NOTES:

ND = Not Detected.

NA= Not Analyzed.

NS = Not Sampled

WNC = Well not yet constructed.

NRA = No Report Available. No lab or consultant reports. Sampling known by TPH summary table.

ESL₁ = Environmental Screening Level, developed by San Francisco Bay – Regional Water Quality Control Board (SF-RWQCB) updated May 2008, from Table A–Groundwater Screening Levels, Groundwater is a current or potential source of drinking water.

Results in bold indicate detected concentrations.

Underlined results exceed their respective ESL value.

No lab reports are available for 5/26/93 results. Results obtained from report text.

Results for 7/27/92 and 3/27/94 are from well installation reports.

Results for 3/31-4/1/99 are from Hydropunch investigation and well sampling report.

Unless otherwise identified, laboratory reports are from periodic well sampling reports.

All results are in milligrams per liter (mg/L), unless otherwise specified.

APPENDIX A
TABLE 4
Historic Laboratory Report
Sheen Summary

Appendix A - Table 4
 Laboratory Report Sheen Summary

0404 Laboratory Sample Sheen Reporting									
Mel Senna Brake Service									
2301 East 12th Street, Oakland, CA									
Sample Collection									
Date	MW1	MW2	MW3	MW4	MW5	MW6	EW1	Laboratory	
7/27/1992	N	N	N	WNC	WNC	WNC	WNC	McC Campbell Analytical, Inc.	see notes
11/6/1992	NR	NR	NR	WNC	WNC	WNC	WNC	Trace Analysis, Laboratory, Inc.	
3/2/1993	NR	NR	NR	WNC	WNC	WNC	WNC	Trace Analysis, Laboratory, Inc.	
5/26/1993	NR	NR	NR	WNC	WNC	WNC	WNC	Trace Analysis, Laboratory, Inc.	
8/27/1993	N	N	Y	WNC	WNC	WNC	WNC	McC Campbell Analytical, Inc.	
12/23/1993	NR	NR	NR	WNC	WNC	WNC	WNC	Onsite Environmental Laboratories, Inc.	
3/27/1994	Y	Y	Y	N	N	N	N	McC Campbell Analytical, Inc.	see notes
6/24/1994	N	N	N	N	N	N	N	McC Campbell Analytical, Inc.	
10/16/1994	N	Y	Y	N	N	N	N	McC Campbell Analytical, Inc.	
2/13-14/1995	N	Y	N	N	N	N	N	McC Campbell Analytical, Inc.	
10/16/1995	Y	N	N	N	N	N	N	McC Campbell Analytical, Inc.	
2/15/1996	Y	Y	Y	Y	Y	Y	Y	McC Campbell Analytical, Inc.	
6/13/1996	Y	N	Y	N	N	N	N	McC Campbell Analytical, Inc.	
9/17/1996	Y	Y	Y	Y	N	N	Y	McC Campbell Analytical, Inc.	
1/16/1997	Y	Y	Y	Y	N	Y	Y	McC Campbell Analytical, Inc.	
5/1/1997								No lab reports	
12/12/1997								No lab reports	
3/24/1998								No lab reports	
7/20/1998								No lab reports	
3/31-4/1/99	NR	NR	NR	NR	NR	NR	NS	Curtis & Tompkins	see notes
5/22/2000	NR	NR	NR	NR	NR	NR	NR	Curtis & Tompkins	
NOTES:									
N = No sheen identified by laboratory on sample.									
Y = Sheen identified by laboratory on sample									
WNC = Well not yet constructed.									
NR = Not Reported by laboratory as part of laboratory protocol									
NS = Not Sampled									
Results for 7/27/92 and 3/22/94 are from well installation reports.									
Results for 3/31-4/1/99 are from Hydropunch investigation and well sampling report.									
Unless otherwise identified, laboratory reports are from periodic well sampling reports.									

APPENDIX B
Soil Gas Purge
Volume Calculations

Soil Gas Purge Volume Calculations

One purge volume is calculated as the volume of the tubing interior plus the volume of the sand interval of the borehole.

The tubing interior volume is calculated as follows.

$V_{\text{tubing}} = \pi \times (r \times r) \times h$, where $\pi = 3.14$, $r = 0.187 \text{ in./2}$, and $h = 7 \text{ ft}$.

$V_{\text{tubing}} = 3.14 \times (0.0935 \times 0.0935) \times (7 \text{ ft.} \times 12 \text{ in./ft.}) = 2.31 \text{ cubic inches}$.

The sand interval volume is calculated as follows.

$V_{\text{sand interval}} = \pi \times (r \times r) \times h \times \text{porosity}$, where $\pi = 3.14$, $r = 1.0 \text{ in./2}$, $h = 8 \text{ in.}$, and porosity = 0.35.

$V_{\text{sand interval}} = 3.14 \times (0.5 \times 0.5) \times 8 \text{ in.} \times 0.35 = 2.20 \text{ cubic inches}$.

The total volume for one purge volume is $V_{\text{tubing}} + V_{\text{sand interval}}$, where

$V_{\text{total}} = 2.31 \text{ cubic inches} + 2.20 \text{ cubic inches} = 4.51 \text{ cubic inches}$.

To convert to cubic centimeters,

$V_{\text{total}} = 4.51 \text{ cubic inches} \times 16.39 \text{ cubic centimeters/cubic inches} = 73.9 \text{ cubic centimeters}$.

The total volume to be purged is 3 purge volumes.

$V_{\text{purge total}} = 73.9 \text{ cubic centimeters} \times 3 = 222 \text{ cubic centimeters}$.

The flow controller has a nominal flow rate of 200 cubic centimeters per minute.

The purge time is calculated as follows.

$T_{\text{purge}} = 222 \text{ cubic centimeters} / 200 \text{ cubic centimeters per minute} = 1.11 \text{ minutes}$.

Converting the purge time to seconds, $1.11 \text{ minutes} \times 60 \text{ seconds/minute} = 67 \text{ seconds}$.