



environmental service

by Papineau, R.E.A. 791

September 14, 2001

Mr. Chuck Headlee  
California EPA  
Regional Water Quality Control Board  
1515 Clay Street Suite 1400  
Oakland, CA 94612

SEP 19 2001

**Subject: 1723 Fruitvale Avenue Oakland, California  
(Project 2000-033.03)**

Dear Mr. Headlee:

The owner and I understand that you have been consulted by Alameda County staff member, Mr. Don Hwang, in regard to the low-concentration perchloroethylene (PCE) ground water case at 1723 Fruitvale Avenue in Oakland (the "Site"). Therefore, the owner has directed me to forward this letter with selected information from the most recent ground water monitoring report dated June 29, 2001, and the soil and ground water investigation report dated March 5, 2001.

In summary, based upon i) water elevation measurements and well purging conducted in January and June 2001, ii) soil types logged at the time of well installation, and iii) interpreted geologic cross-sections, we have reason to believe that the affected ground water is perched in a thin confined sandy gravel lens having low potential yield. Geologic cross-sections are attached in Exhibit B.

From January 2001 to June 2001 the ground water elevation has dropped nearly 5 feet from 43.2 feet above mean sea level (msl, NGVD 1929) to 38.4 feet (msl, NGVD 1929). Well bottoms were set in a confining clay logged between 37 feet and 34 feet msl, and well screens were set through a saturated sandy gravel lens. Well bottoms are at approximately 34 feet msl. Overlying the water-bearing sandy gravel lens is silty clay soil, the bottom of which was logged between 40 feet and 42 feet msl. The water bearing lens, therefore, may be as thin as 3 feet, and the water column within the lens appears to be less than 3 feet in summer.

PCE concentrations in ground water samples collected from the three wells, shown on the enclosed Potentiometric Surface Maps, are 160 parts per billion (ppb) or lower. PCE concentrations in soil are 43 ppb or lower and are only detectable near location SB-5. You may wish to refer to the enclosed Sample Location Map, Potentiometric Surface Maps, Analytical Results for Ground Water Samples, and Analytical Results for Soil Samples.

As you and I previously discussed by telephone, low part-per billion concentrations of PCE in soil sometimes originate from volatilization of PCE dissolved in the adjacent ground water. This conversation caused me to reassess the possibility that no on-site release of PCE has occurred at the Site. A source of PCE is not otherwise known by the owner of 1723 Fruitvale Avenue.



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At 9.8 ppb at 10 feet below grade surface (bgs), 19 ppb at 15 feet bgs, and 43 ppb at 20 feet bgs, concentrations of PCE in on-site soil sampled in bore hole SB-5 may not indicate presence of on-site release or source of PCE, aged or otherwise. For a surface release to a hard clay soil, one would not expect this inverse pattern, but rather would expect the PCE concentrations to be highest near grade surface and gradually decrease with depth. Detectable concentrations of PCE in soil were not found at other locations except where former hydraulic ram penetrated into native soil near SB-5.

Mark Armstrong, R.G., and I have suggested a pump test to test two hypotheses: 1) That the ground water bearing formation in which the PCE has been detected has such a low yield that it would not be useful as a drinking water or irrigation supply, and 2) that the zone of ground water affected with the PCE is laterally extensive (*i.e.*, encompasses the zone of influence of well MWP-3), such that extended pumping would not alter PCE concentrations before and after the extended pumping. If PCE-affected ground water extends upgradient of well MWP-3, we would not expect extended pumping to reduce the final PCE concentration compared to the initial PCE concentration measured in the ground water sample collected from well MWP-3 before pumping.

We also have asked Alameda County staff for a list of conditions that would be sufficient for cessation of ground water monitoring. We have not received a list, but it would seem appropriate that, if the following conditions were met, there should not be a requirement for further action including, but not limited to, continued ground water monitoring:

1. Stable or declining PCE concentrations in ground water.
2. No practical beneficial use of the affected ground water. No sensitive environmental receptors.
3. No human health risk.
4. No PCE source in on-site soil.
5. No practical technology to clean up the detectable PCE concentrations in soil or ground water.

The owner of 1723 Fruitvale Avenue has performed all ground water monitoring so far required by Alameda County. In addition, he has expressed his willingness to prepare a Tier 1 risk assessment and file a Deed Notice to notify future owners of the presence of detectable low-concentrations PCE in soil and ground water within the lateral and vertical limits described on page 1 of this letter. If the case can lawfully be concluded without further investigation or ground water monitoring,--for example, in view of the i) stable PCE concentration in ground water, ii) absence of a productive ground water supply, and iii) absence of an exposure risk,--the owner naturally wishes to afford himself of the clear cost and time savings of this option.



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Please consider the totality of the information conveyed in this letter and in Exhibits A and B. We trust that the information enclosed herewith will assist you in completing the inter-agency consultation with Mr. Don Hwang, Alameda County.

Thank you for your continued guidance in this matter.

Sincerely,

Marc Papineau, R.E.A. 791  
Project Manager

enclosures:    EXHIBIT A, Extended Pump Test Protocol  
                  EXHIBIT B, Technical Data (see list below)  
                          Sample Location Map (1)  
                          Geologic Cross-Sections (2)  
                          Analytical Results for Soil Samples (1 Table)  
                          Analytical Results for Ground Water Samples (1 Table)  
                          Potentiometric Surface Maps (2)

cc.            Don Hwang  
                  R. Mark Armstrong, R.G. 6134  
                  Jack Sumski, Jr. (Owner, 1723 Fruitvale Avenue)



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## EXHIBIT A EXTENDED PUMP TEST PROTOCOL

The proposed pumping and sampling protocol is generally as outlined below:

- 1) Purge and sample the three wells, MW-1, MWP-2, and MWP-3.
- 2) Then continue pumping well MWP-3 at a low flow rate for 60 to 120 casing volumes (40 to 80 gallons).
- 3) Take periodic measurements of ground water depth in all three wells during the extended pumping.
- 4) Re-sample MWP-3 at the end of extended pumping.
- 5) Submit four samples for laboratory testing of PCE in accordance with U.S. EPA Method 601/8010.
- 6) Document the results in a quarterly monitoring report, with interpretation and statement regarding of the water-producing capacity of the water-bearing lens.

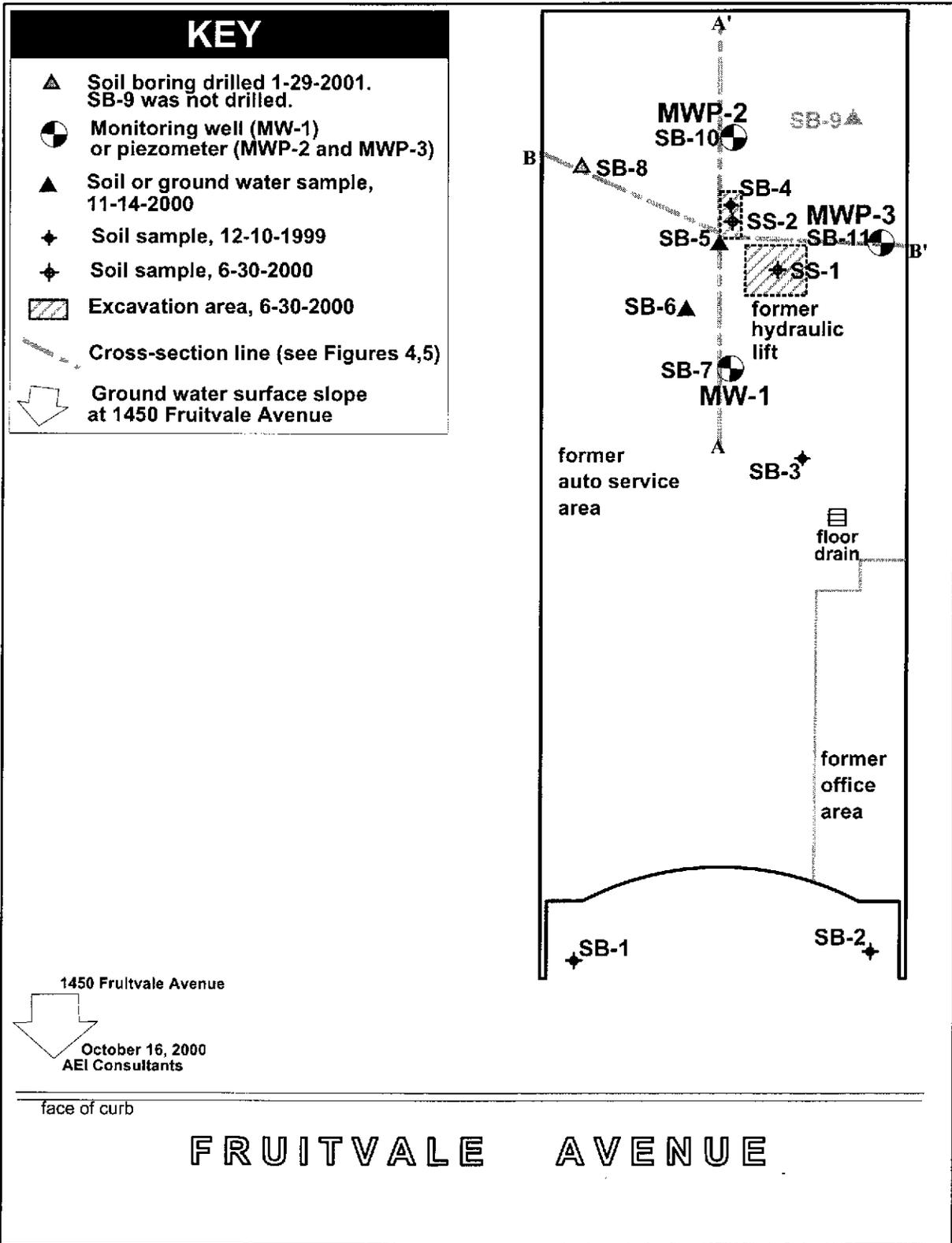
*Interpretation of Results.* If the source of PCE is off-site, extended pumping should not have a significant effect on initial and final PCE concentrations before and after the extended pumping. To the contrary, a final PCE concentration that is significantly reduced after extended pumping would suggest a localized source.



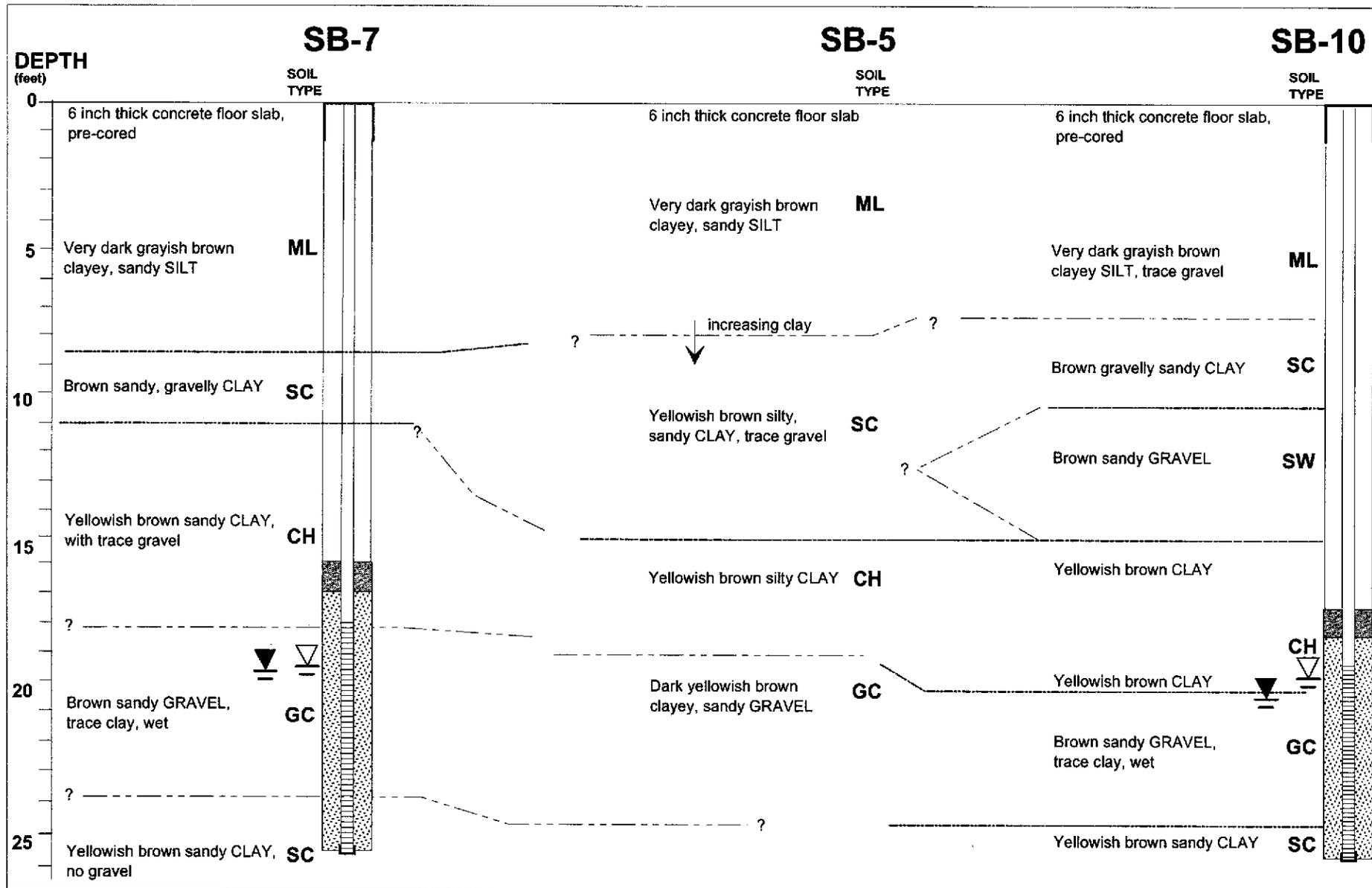
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**EXHIBIT B**  
**TECHNICAL DATA**



|  |  |  |  |
|--|--|--|--|
|  | <p>environmental service<br/>by Papineau, R.E.A. 791</p> |  | <p><b>Figure 2</b><br/>Sample Location Map<br/>1723 Fruitvale Avenue<br/>Oakland, California</p> |
|--|--|--|--|

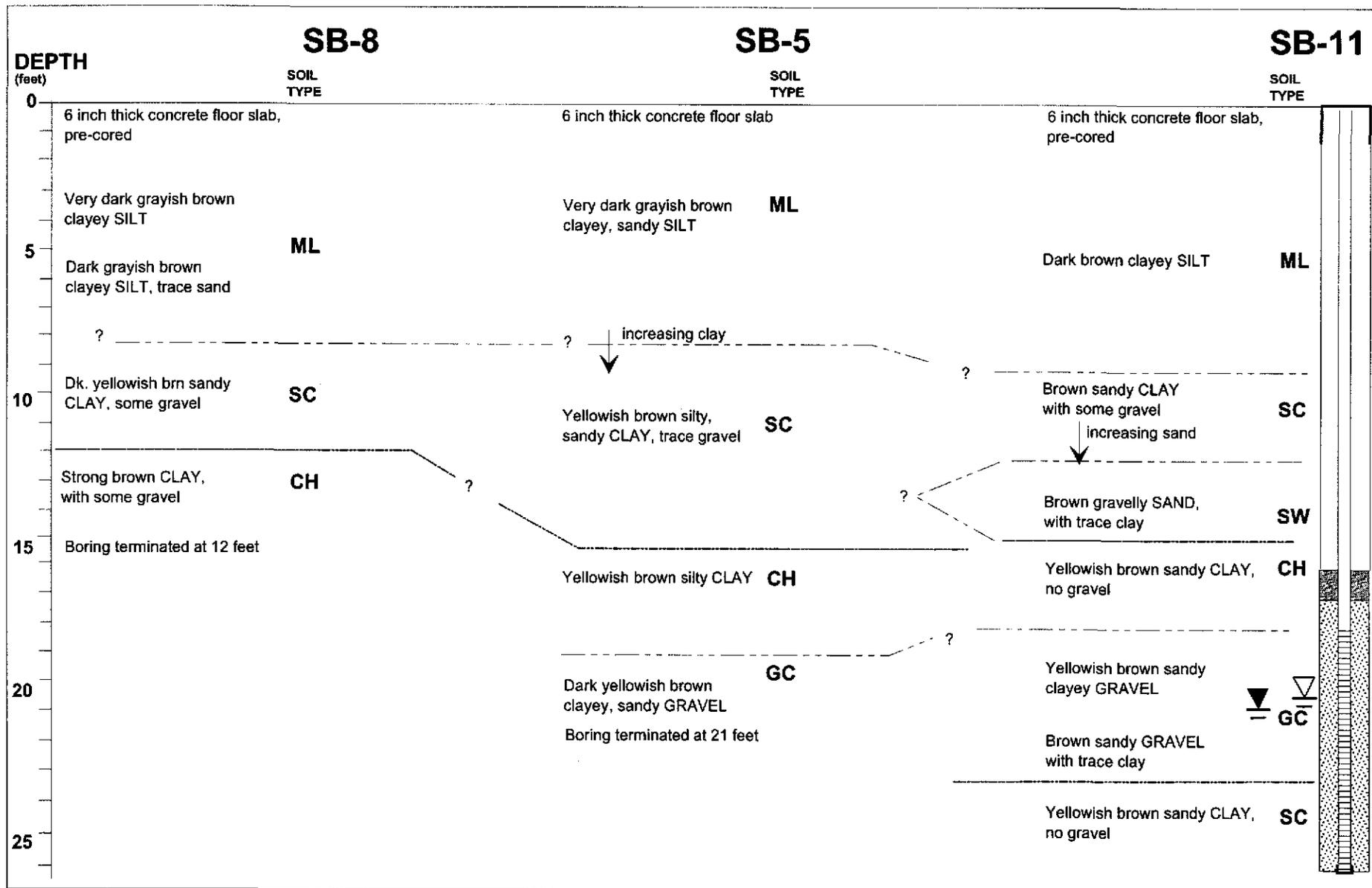


**Figure 4**  
**Geologic Cross-Section A-A'**  
 1723 Fruitvale Avenue, Oakland, California



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**Figure 5**  
**Geologic Cross-Section B-B'**  
 1723 Fruitvale Avenue, Oakland, California



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1723 Fruitvale Avenue, Oakland, California  
ES Project 2000-033.02

**TABLE 1**  
**ANALYTICAL RESULTS FOR SOIL SAMPLES**

Date of Last Revision: 3/5/2001 All Results in Parts per Million (mg/kg)<sup>a</sup>

| Soil Sample Identification | Sample Depth Interval (feet) | Volatile Halocarbons <sup>b</sup><br>PCE | Specified Petroleum Hydrocarbons <sup>c</sup> |                   |                   |                              |
|----------------------------|------------------------------|--|---|-------------------|-------------------|------------------------------|
|                            |                              |  | Gasoline                                      | BTEX <sup>d</sup> | MtBE <sup>d</sup> | Total Petroleum Hydrocarbons |
| <b>January 2001</b>        |                              |  |   |                   |                   |                              |
| SB7-10.5                   | 10 to 10.5                   | ND                                       | ND  | ND                | ND                | ND <sup>MO</sup>             |
| SB7-16                     | 15.5 to 16                   | ND                                       | nt  | nt                | nt                | nt                           |
| SB7-20.5                   | 10 to 20.5                   | ND                                       | nt  | nt                | nt                | nt                           |
| SB8-11                     | 10.5 to 11                   | ND                                       | ND  | ND                | ND                | ND <sup>MO</sup>             |
| SB10-10.5                  | 10 to 10.5                   | ND                                       | nt  | ND                | ND                | ND <sup>MO</sup>             |
| SB10-16                    | 15.5 to 16                   | ND                                       | nt  | nt                | nt                | nt                           |
| SB10-20.5                  | 20 to 20.5                   | ND                                       | nt  | nt                | nt                | nt                           |
| SB11-10.5                  | 10 to 10.5                   | ND                                       | ND  | ND                | ND                | ND <sup>MO</sup>             |
| SB11-15.5                  | 15 to 15.5                   | ND                                       | nt  | nt                | nt                | nt                           |
| SB11-20.5                  | 20 to 20.5                   | ND                                       | nt  | nt                | nt                | nt                           |
| <b>November 2000</b>       |                              |  |   |                   |                   |                              |
| SB5-11.5                   | 11 to 11.5                   | 0.0098                                   | nt  | nt                | nt                | nt                           |
| SB5-16.5                   | 16 to 16.5                   | 0.019                                    | ND  | ND                | nt                | ND <sup>DL, HO</sup>         |
| SB5-20.5                   | 20 to 20.5                   | 0.043                                    | ND  | ND                | nt                | ND <sup>DL, HO</sup>         |
| <b>December 1999</b>       |                              |  |   |                   |                   |                              |
| [S]B-1@5&10                | 5 & 10                       | ND(<0.010)                               | ND  | ND                | ND                | ND <sup>e</sup> (<10)        |
| [S]B-2@5&10                | 5 & 10                       | ND(<0.010)                               | ND  | ND                | ND                | ND <sup>e</sup> (<10)        |
| [S]B-3@5&10                | 5 & 10                       | ND(<0.010)                               | nt  | nt                | nt                | ND <sup>e</sup> (<10)        |
| [S]B-4@5&10                | 5 & 10                       | 0.024                                    | nt  | nt                | nt                | 68 <sup>e</sup>              |
| <b>Detection Limits</b>    |                              | 0.025                                    | 1.0   | 0.005             | 0.05              | 1/5/13 <sup>c</sup>          |

**NOTES:**

- PCE Tetrachloroethene, also perchloroethylene or PCE
- nt Not tested for the stated parameter
- ND None detected at or above the Detection Limits reported by the laboratory either in the bottom row of Table 1 or in parentheses "( )" if different.
- a Laboratory results for Volatile Halocarbons (HVOCs), and also for gasoline, diesel and Total Petroleum Hydrocarbons are all stated in parts per million for consistency.
- b HVOCs analyzed in accordance with U.S. EPA Method 8010.
- c Gasoline was analyzed in accordance with U.S. EPA Method 5030/8015M. Other specified petroleum hydrocarbons - diesel (DL), and motor oil (MO), or hydraulic oil (HO) - were analyzed in accordance with U.S. EPA Method 3550/8015M, unless noted specifically otherwise. Detection limits are 1 ppm (DL), 5 ppm (MO), and 13 ppm (HO).
- d Benzene, toluene, ethyl benzene, and xylenes (BTEX), and methyl tertiary butyl ether (MtBE) were analyzed in accordance with U.S. EPA Method 8020.
- e Tested in accordance with Standard Method 5520C&F, not U.S. EPA Method 8015M.

**SOURCE:** McCampbell Analytical Inc., (Cal/EPA ELAP #1644), February 7, 2001;  
Entech Analytical Labs, Inc. (Cal/EPA ELAP #2346), November 20, 2000;  
McCampbell Analytical Inc., (Cal/EPA ELAP #1644), December 17, 1999



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**TABLE 1**  
**ANALYTICAL RESULTS FOR GROUND WATER SAMPLES**  
 Date of Last Revision: 6/29/2001 All Results in Parts per Billion (µg/L)<sup>a</sup>

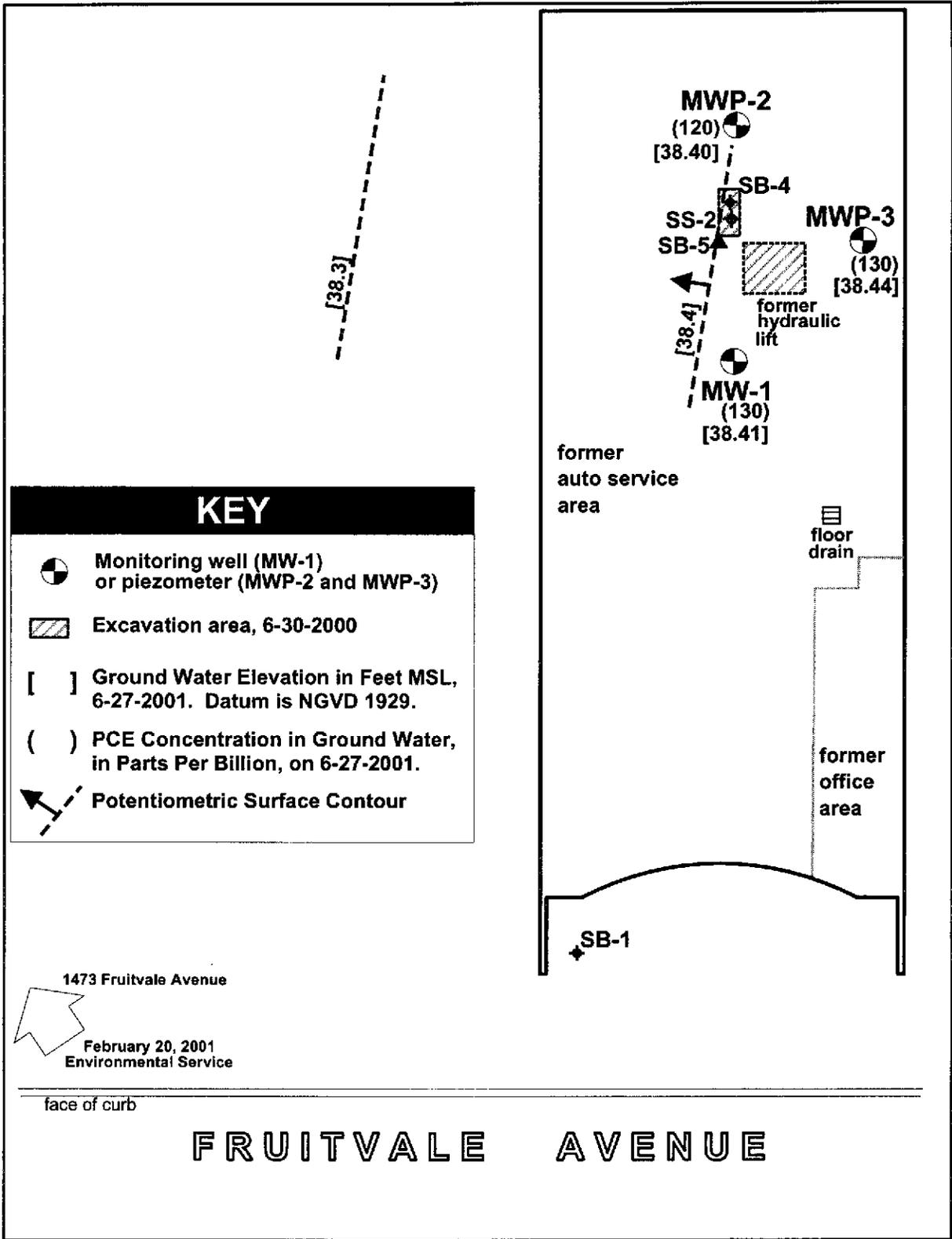
| Sample or Well Number   | Date of Sample Collection | Ground Water |                      | Volatile Halocarbons <sup>b</sup><br>PCE | Specified Petroleum Hydrocarbons |                   |                   |   |
|-------------------------|---------------------------|--------------|----------------------|--|----------------------------------|-------------------|-------------------|---|
|                         |                           | Depth (Feet) | Elevation (Feet msl) |  | Gasoline <sup>c</sup>            | BTEX <sup>d</sup> | MtBE <sup>d</sup> | Total Petroleum Hydrocarbons <sup>e</sup>             |
| MW-1                    | 6/27/2001                 | 21.53        | 38.41                | 130                                      | nt                               | nt                | nt                | nt  |
|                         | 2/20/2001                 | 16.69        | 43.25                | 160                                      | 68 <sup>g</sup>                  | ND                | ND                | ND  |
| MWP-2                   | 6/27/2001                 | 21.64        | 38.40                | 120                                      | nt                               | nt                | nt                | nt  |
|                         | 2/20/2001                 | 16.89        | 43.15                | 140                                      | 62 <sup>g</sup>                  | ND                | ND                | ND  |
| MWP-3                   | 6/27/2001                 | 21.55        | 38.44                | 130                                      | nt                               | nt                | nt                | nt  |
|                         | 2/20/2001                 | 16.75        | 43.24                | 140                                      | 64 <sup>g</sup>                  | ND                | ND                | ND  |
| SB6-GW                  | 11/14/2000                | 20           | 40                   | 290                                      | 65 <sup>g</sup>                  | ND                | nt                | ND (<74) <sup>f,DL</sup><br>ND (<368) <sup>f,HO</sup> |
| SB1-GW-1                | 12/10/1999                | 23.5         | 35                   | 42                                       | 270 <sup>h</sup>                 | 0.51(X)           | ND                | 2,100   |
| <b>Detection Limits</b> |                           |              |                      | 2.5                                      | 50                               | 0.5               | 5.0               | 1,000 <sup>e</sup>                                    |

**NOTES:**

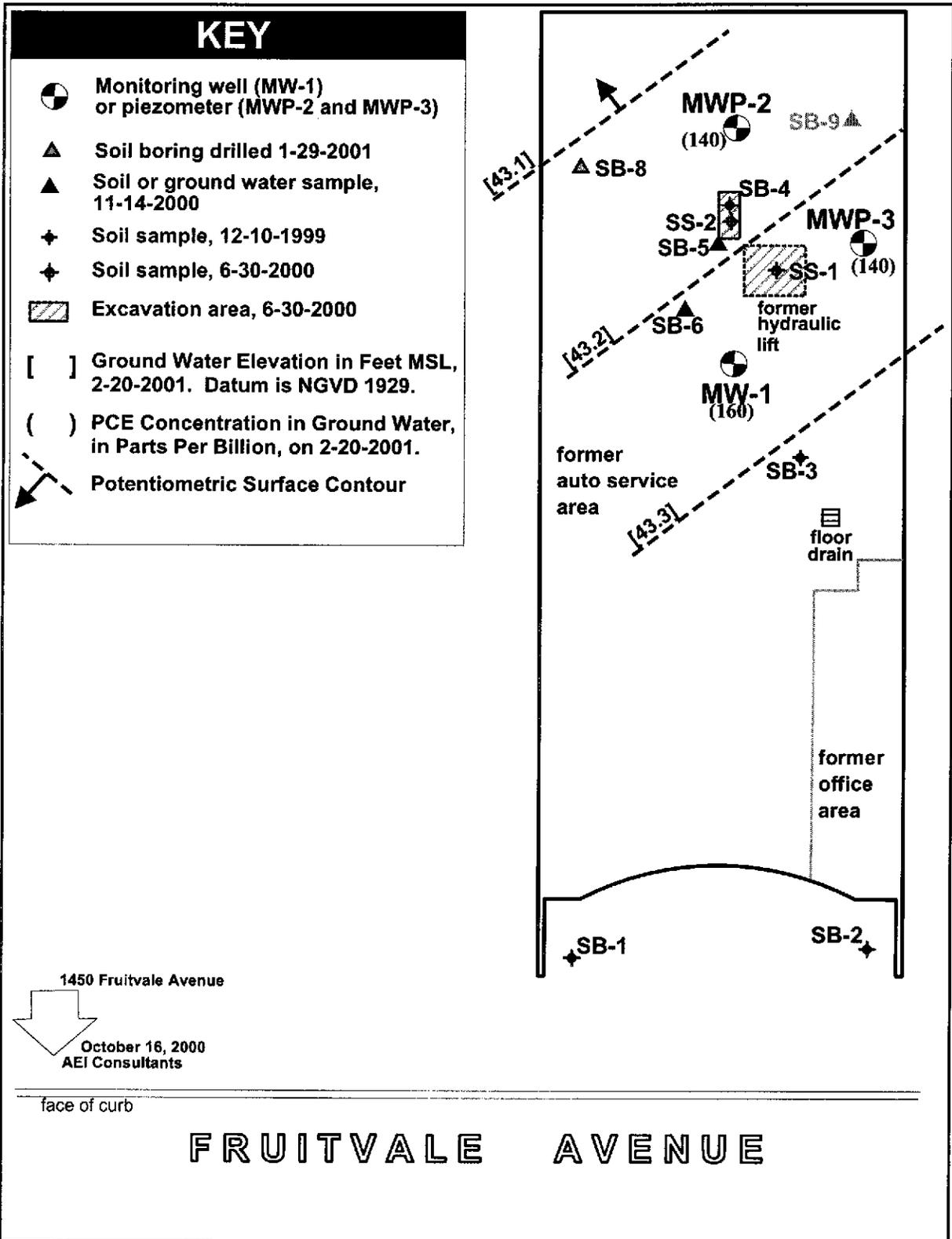
- PCE Tetrachloroethene, also perchloroethylene or PCE
- nt Not tested for the stated parameter or not available
- ND None detected at or above the Detection Limits reported by the laboratory either in the bottom row of Table 1 or in parentheses "( )" if different.
- <sup>a</sup> Laboratory results for Volatile Halocarbons (HVOCs), and also for gasoline; benzene, toluene, ethyl benzene, and xylenes (BTEX); methyl tertiary butyl ether (MtBE); and Total Petroleum Hydrocarbons are all stated in parts per billion (µg/L) for consistency.
- <sup>b</sup> HVOCs were analyzed in accordance with U.S. EPA Method 601/8010.
- <sup>c</sup> Gasoline was analyzed in accordance with U.S. EPA method 5030/8015M.
- <sup>d</sup> Benzene, toluene, ethyl benzene, and xylenes (BTEX), and methyl tertiary butyl ether (MtBE) were analyzed in accordance with U.S. EPA Method 8020.
- <sup>e</sup> Total petroleum hydrocarbons were analyzed as Total Recoverable Petroleum Hydrocarbons in accordance with U.S. EPA Method 418.1, unless noted specifically otherwise.
- <sup>f</sup> Tested in accordance with U.S. EPA Method 3550/8015M as diesel (DL) and also as hydraulic oil (HO).
- <sup>g</sup> Laboratory flagged the result and/or noted "one or more individual peaks."
- <sup>h</sup> Laboratory flagged result and noted "no recognizable pattern."

**SOURCE:**

McC Campbell Analytical Inc, (Cal/EPA ELAP # 1644), June 29, 2001  
 McC Campbell Analytical Inc, (Cal/EPA ELAP # 1644), February 26, 2001;  
 Entech Analytical Labs, Inc. (Cal/EPA ELAP #2346), November 20, 2000;  
 McC Campbell Analytical Inc., (Cal/EPA ELAP #1644), December 17, 1999



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|--|--|--|---|
|  | <p>environmental service<br/>by Papineau, R.E.A. 791</p> |  | <p><b>Figure 2</b><br/>Potentiometric Surface Map<br/>for June 27, 2001<br/>1723 Fruitvale Avenue<br/>Oakland, California</p> |
|--|--|--|---|



|  |   |  |   |
|--|---|--|---|
|  | <p>environmental service<br/>       by Papineau, R.E.A. 791</p> |  | <p><b>Figure 3</b><br/>       Potentiometric Surface Map<br/>       for February 20, 2001<br/>       1723 Fruitvale Avenue<br/>       Oakland, California</p> |
|--|---|--|---|