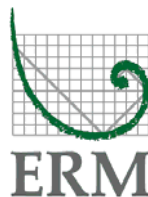


Mr. Daniel Helix and  
Union Pacific Railroad Company

Remedial Investigation Report  
*Hookston Station Site*  
*Pleasant Hill, California*

August 2004

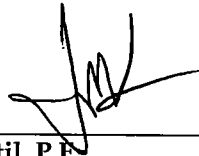
**Environmental Resources Management**  
1777 Botelho Drive, Suite 260  
Walnut Creek, CA 94596



Mr. Daniel Helix and  
Union Pacific Railroad Company

Remedial Investigation Report  
*Hookston Station Site*  
*Pleasant Hill, California*

August 2004



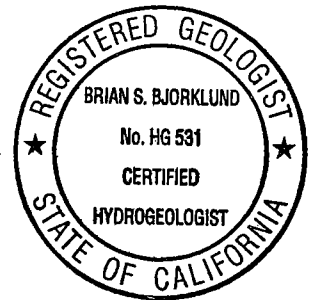
---

Jay N. Patil, P.E.  
*Principal-in-Charge*



---

Brian S. Bjorklund, R.G.  
*Project Manager*



Environmental Resources Management  
1777 Botelho Drive, Suite 260  
Walnut Creek, CA 94596

## TABLE OF CONTENTS

<b>LIST OF TABLES</b>	<i>v</i>
<b>LIST OF FIGURES</b>	<i>vi</i>
<b>LIST OF ACRONYMS</b>	<i>viii</i>
<b>EXECUTIVE SUMMARY</b>	<b>1</b>
<b>1.0 INTRODUCTION</b>	<b>1</b>
<b>1.1 DOCUMENT ORGANIZATION</b>	<b>1</b>
<b>1.2 REMEDIAL INVESTIGATION OBJECTIVES</b>	<b>2</b>
1.2.1 <i>Phase I Remedial Investigation</i>	2
1.2.2 <i>Phase II Remedial Investigation – Source Area Investigation</i>	2
1.2.3 <i>Phase II Remedial Investigation – Ground Water Characterization</i>	3
<b>1.3 PROJECT OVERVIEW</b>	<b>3</b>
<b>2.0 SITE DESCRIPTION</b>	<b>5</b>
<b>2.1 SITE LOCATION</b>	<b>5</b>
<b>2.2 SITE PHYSICAL CHARACTERISTICS</b>	<b>5</b>
<b>2.3 CURRENT USES OF THE PROPERTY</b>	<b>5</b>
<b>2.4 SURROUNDING PROPERTIES</b>	<b>6</b>
<b>2.5 PHYSICAL SETTING</b>	<b>6</b>
<b>3.0 SITE DEVELOPMENT HISTORY</b>	<b>7</b>
<b>4.0 PREVIOUS INVESTIGATIONS</b>	<b>8</b>
<b>4.1 MODIFIED PHASE I PRELIMINARY REPORT, HLA, 1990</b>	<b>9</b>
<b>4.2 REMEDIAL INVESTIGATION, HLA, 1990</b>	<b>9</b>
<b>4.3 PRELIMINARY SITE CHARACTERIZATION, ENGEO, 1991</b>	<b>9</b>

4.4	<b>REPORT ON GROUND WATER SAMPLING, ENGEO, 1992</b>	<b>10</b>
4.5	<b>INITIAL SOIL CHARACTERIZATION STUDY, ENGEO, 1992</b>	<b>10</b>
4.6	<b>SUBSURFACE INVESTIGATION, TREADWELL &amp; ROLLO, 1993</b>	<b>10</b>
4.7	<b>SUPPLEMENTAL SUBSURFACE INVESTIGATION, TREADWELL &amp; ROLLO, 1996</b>	<b>11</b>
4.8	<b>GROUND WATER MONITORING, ERM, 2000</b>	<b>11</b>
<b>5.0</b>	<b>REMEDIAL INVESTIGATION ACTIVITIES</b>	<b>12</b>
5.1	<b>PHASE I REMEDIAL INVESTIGATION</b>	<b>12</b>
5.1.1	<i>Passive Soil Vapor Sampling</i>	12
5.1.2	<i>Shallow Site Perimeter Borings</i>	13
5.1.3	<i>Multilevel Cone Penetrometer Testing Sampling</i>	14
5.1.4	<i>Well Survey</i>	15
5.1.5	<i>Ground Water Monitoring</i>	16
5.1.6	<i>Surface Water Monitoring</i>	16
5.1.7	<i>Surface Flux Chamber Sampling</i>	17
5.2	<b>PHASE II REMEDIAL INVESTIGATION</b>	<b>18</b>
5.2.1	<i>Source Area Soil and Ground Water Investigation</i>	18
5.2.2	<i>Private Well Survey</i>	20
5.2.3	<i>Active Soil Vapor Investigation</i>	21
5.2.4	<i>Ground Water Monitoring Wells</i>	22
5.2.5	<i>Indoor Air Quality Investigation</i>	23
5.2.6	<i>Ground Water Monitoring</i>	24
<b>6.0</b>	<b>GEOLOGY AND HYDROGEOLOGY</b>	<b>26</b>
6.1	<b>GEOLOGY</b>	<b>26</b>
6.1.1	<i>Regional Geologic Setting</i>	26
6.1.2	<i>Site Stratigraphy</i>	26
6.1.3	<i>Ground Water Monitoring Zones</i>	27
6.2	<b>GROUND WATER HYDROGEOLOGY</b>	<b>28</b>
6.2.1	<i>Ground Water Flow Patterns and Gradients</i>	28
6.2.2	<i>Aquifer Hydraulic Characteristics</i>	29
<b>7.0</b>	<b>CHEMICALS IN SOIL</b>	<b>30</b>
7.1	<b>CHLORINATED VOLATILE ORGANIC COMPOUNDS</b>	<b>30</b>

7.1.1	<i>Soil Vapor</i>	30
7.1.2	<i>Soil</i>	31
<b>7.2</b>	<b>PETROLEUM HYDROCARBONS</b>	<b>32</b>
<b>7.3</b>	<b>SVOCS</b>	<b>33</b>
<b>7.4</b>	<b>PCBS</b>	<b>33</b>
<b>7.5</b>	<b>METALS</b>	<b>34</b>
<b>8.0</b>	<b>CHEMICALS IN GROUND WATER</b>	<b>35</b>
<b>8.1</b>	<b>VOLATILE ORGANIC COMPOUNDS</b>	<b>35</b>
8.1.1	<i>On-Site A-Zone Ground Water</i>	35
8.1.2	<i>Downgradient A-Zone Ground Water</i>	37
8.1.3	<i>On-Site B-Zone Ground Water</i>	39
8.1.4	<i>Downgradient B-Zone Ground Water</i>	41
8.1.5	<i>C-Zone Ground Water</i>	43
8.1.6	<i>Additional VOCs</i>	44
8.1.7	<i>Off-Site Sources/Contributors</i>	44
<b>8.2</b>	<b>SEMIVOLATILE ORGANIC COMPOUNDS</b>	<b>45</b>
<b>8.3</b>	<b>PETROLEUM HYDROCARBONS</b>	<b>46</b>
<b>8.4</b>	<b>DISSOLVED METALS</b>	<b>47</b>
<b>8.5</b>	<b>GENERAL MINERALS, WATER QUALITY, AND NATURAL ATTENUATION PARAMETERS</b>	<b>47</b>
<b>9.0</b>	<b>CHEMICALS IN SURFACE WATER AND SEDIMENT</b>	<b>48</b>
<b>9.1</b>	<b>SURFACE WATER</b>	<b>48</b>
<b>9.2</b>	<b>SEDIMENT</b>	<b>48</b>
<b>10.0</b>	<b>CHEMICALS IN AIR</b>	<b>49</b>
<b>10.1</b>	<b>INDOOR AIR</b>	<b>49</b>
<b>10.2</b>	<b>AMBIENT AIR</b>	<b>50</b>
<b>11.0</b>	<b>RWQCB COMMENTS TO RISK ASSESSMENT</b>	<b>51</b>

11.1	<b>RWQCB COMMENT B - SOIL GAS AND INDOOR AIR SAMPLING SURVEYS</b>	<b>51</b>
11.2	<b>RWQCB COMMENT C - GROUND WATER RESULTS AND SURFACE WATER/DRINKING WATER STANDARDS</b>	<b>52</b>
12.0	<b>CONCEPTUAL SITE MODEL</b>	<b>55</b>
12.1	<b>CONTAMINATED MEDIA AND TRANSPORT MECHANISMS</b>	<b>55</b>
12.1.1	<i>Soil</i>	55
12.1.2	<i>Soil Vapor</i>	56
12.1.3	<i>Surface Water</i>	56
12.1.4	<i>Sediment</i>	56
12.1.5	<i>NAPL</i>	56
12.1.6	<i>Ground Water</i>	57
12.2	<b>POTENTIAL HUMAN EXPOSURES</b>	<b>57</b>
12.3	<b>CHLORINATED VOC CONTAMINANT FATE AND TRANSPORT</b>	<b>58</b>
12.3.1	<i>Volatilization</i>	58
12.3.2	<i>Adsorption</i>	59
12.3.3	<i>Dispersion</i>	60
12.3.4	<i>Degradation</i>	61
13.0	<b>CONCLUSIONS</b>	<b>62</b>
14.0	<b>REFERENCES</b>	<b>65</b>

**APPENDIX A – BORING LOGS**

**APPENDIX B – GEOPHYSICAL LOGS**

**APPENDIX C – MONITORING WELL COMPLETION REPORTS**

**APPENDIX D – WELL DEVELOPMENT FORMS**

**APPENDIX E – GEOTECHNICAL SOIL ANALYSES**

**APPENDIX F – QUALITY ASSURANCE/QUALITY CONTROL SUMMARY**

**APPENDIX G – LABORATORY REPORTS**

## LIST OF TABLES

5-1	<i>Private Well Completion Summary</i>
5-2	<i>Private Residence Building Design Details for Indoor Air Sampling Locations</i>
6-1	<i>Laboratory Geotechnical Tests</i>
6-2	<i>Ground Water Elevations</i>
6-3	<i>Vertical Ground Water Gradients</i>
7-1	<i>VOCs Detected in Passive Soil Gas Samples</i>
7-2	<i>VOCs Detected in Active Soil Gas Samples</i>
7-3	<i>VOCs Detected in Soil Samples</i>
7-4	<i>Petroleum Hydrocarbons in Soil Samples</i>
7-5	<i>SVOCs Detected in Soil Samples</i>
7-6	<i>PCBs in Soil Samples</i>
7-7	<i>Metals in Soil Samples</i>
8-1	<i>VOCs Detected in Ground Water Samples</i>
8-2	<i>SVOCs Detected in Ground Water Samples</i>
8-3	<i>Petroleum Hydrocarbons in Ground Water Samples</i>
8-4	<i>Dissolved Metals Detected in Ground Water Samples</i>
8-5	<i>General Inorganic Minerals Detected in Ground Water Samples</i>
9-1	<i>VOCs in Surface Water Samples</i>
9-2	<i>VOCs in Sediment Samples</i>
10-1	<i>VOCs in Air Samples</i>
12-1	<i>Fate and Transport Parameters</i>

## LIST OF FIGURES

- 1-1 *Site Location Map*  
1-2 *Site Map*
- 5-1 *Passive Soil Vapor Sample Location Map*  
5-2 *Soil Sample Location Map*  
5-3 *Ground Water Sample Location Map*  
5-4 *Surface Water and Sediment Sample Location Map*  
5-5 *Private Well Survey Results*  
5-6 *Active Soil Vapor Sample Location Map*  
5-7 *Air Sample Locations*
- 6-1 *Regional Geologic Map*  
6-2 *Ground Water Elevation Map - A-Zone*  
6-3 *Ground Water Elevation Map - B-Zone*  
6-4 *Ground Water Elevation Map - C-Zone*
- 7-1 *PCE in Soil Vapor, November 2001*  
7-2 *TCE in Soil Vapor, November 2001*  
7-3 *cis-1,2-DCE in Soil Vapor, November 2001*  
7-4 *TCE in Active Soil Vapor Samples, October 2003*  
7-5 *TCE Concentrations in Soil*  
7-6 *TCE in Soil Cross Section A-A'*
- 8-1 *PCE Concentrations in Ground Water - A-Zone*  
8-2 *TCE Concentrations in Ground Water - A-Zone*  
8-3 *cis-1,2-DCE Concentrations in Ground Water - A-Zone*  
8-4 *1,1-DCE Concentrations in Ground Water - A-Zone*  
8-5 *PCE Isoconcentration Map - A-Zone*  
8-6 *TCE Isoconcentration Map - A-Zone*  
8-7 *cis-1,2-DCE Isoconcentration Map - A-Zone*  
8-8 *1,1-DCE Isoconcentration Map - A-Zone*  
8-9 *PCE Concentrations in Ground Water - B-Zone*  
8-10 *TCE Concentrations in Ground Water - B-Zone*  
8-11 *cis-1,2-DCE Concentrations in Ground Water - B-Zone*  
8-12 *1,1-DCE Concentrations in Ground Water - B-Zone*  
8-13 *PCE Isoconcentration Map - B-Zone*  
8-14 *TCE Isoconcentration Map - B-Zone*  
8-15 *cis-1,2-DCE Isoconcentration Map - B-Zone*  
8-16 *1,1-DCE Isoconcentration Map - B-Zone*  
8-17 *PCE Concentrations in Ground Water - C-Zone*



8-18	<i>TCE Concentrations in Ground Water - C-Zone</i>
8-19	<i>cis-1,2-DCE Concentrations in Ground Water - C-Zone</i>
8-20	<i>1,1-DCE Concentrations in Ground Water - C-Zone</i>
8-21	<i>TCE Concentration Trends in A-Zone Monitoring Wells</i>
8-22	<i>TCE in Ground Water Cross Sections</i>
9-1	<i>VOCs in Surface Water Samples</i>
10-1	<i>VOCs in Air Samples</i>
11-1	<i>PCE Results - A-Zone Ground Water and Shallow Soil Vapor</i>
11-2	<i>TCE Results - A-Zone Ground Water and Shallow Soil Vapor</i>
11-3	<i>cis-1,2-DCE Results - A-Zone Ground Water and Shallow Soil Vapor</i>
11-4	<i>1,1-DCE Results - A-Zone Ground Water and Shallow Soil Vapor</i>
11-5	<i>PCE Ground Water Concentrations Compared to Chronic Surface Water Standards - A-Zone Ground Water</i>
11-6	<i>PCE Ground Water Concentrations Compared to Chronic Surface Water Standards - B-Zone Ground Water</i>
11-7	<i>TCE Ground Water Concentrations Compared to Chronic Surface Water Standards - A-Zone Ground Water</i>
11-8	<i>TCE Ground Water Concentrations Compared to Chronic Surface Water Standards - B-Zone Ground Water</i>
11-9	<i>cis-1,2-DCE Ground Water Concentrations Compared to Chronic Surface Water Standards - A-Zone Ground Water</i>
11-10	<i>1,1-DCE Ground Water Concentrations Compared to Chronic Surface Water Standards - A-Zone Ground Water</i>
11-11	<i>1,1-DCE Ground Water Concentrations Compared to Chronic Surface Water Standards - B-Zone Ground Water</i>
12-1	<i>Reductive Dechlorination Plume Pattern</i>

## *LIST OF ACRONYMS*

1,1-DCA	1,1-Dichloroethane
1,2-DCA	1,2-Dichloroethane
1,1-DCE	1,1-Dichloroethene
ARCH	Air-rotary casing hammer
ASTM	American Society for Testing and Materials
bgs	Below ground surface
C&T	Curtis & Tompkins, Ltd.
CCCRA	Contra Costa County Redevelopment Agency
COC	Compound of concern
COPC	Constituent of potential concern
CPT	Cone penetrometer testing
cis-1,2-DCE	cis-1,2-Dichloroethene
CSM	Conceptual Site Model
CTEH	Center for Toxicology and Environmental Health, L.L.C.
DNAPL	Dense nonaqueous-phase liquid
DWR	State of California Department of Water Resources
ERM	ERM-West, Inc.
ESL	Environmental Screening Level
FS	Feasibility Study
ft/day	Feet per day
ft/ft	Feet per foot
ft/yr	Feet per year
HLA	Harding Lawson Associates
IRM	Interim Remedial Measure
K	Hydraulic conductivity
LNAPL	Light nonaqueous-phase liquid
MCL	Maximum contaminant level
MTBE	Methyl tert-butyl ether
mg/kg	Milligram per kilogram

mg/L	Milligrams per liter
NAPL	Nonaqueous-phase liquid
PCB	Polychlorinated biphenyl
PCE	Tetrachloroethene
PDB	Passive diffusion bag
PID	Photoionization detector
PVC	Polyvinyl chloride
RI	Remedial Investigation
RWQCB	Regional Water Quality Control Board
S	Storativity
SAP	Sampling and Analysis Plan
SPTCo	Southern Pacific Transportation Company
STL	Severn Trent Laboratories
SVOC	Semivolatile organic compound
T	Transmissivity
T&R	Treadwell & Rollo, Inc.
TCE	Trichloroethene
TPH	Total petroleum hydrocarbons
TPH-D	Total petroleum hydrocarbons as diesel
TPH-G	Total petroleum hydrocarbons as gasoline
UPRR	Union Pacific Railroad Company
USEPA	United States Environmental Protection Agency
USCS	Unified Soil Classification System
USGS	United States Geological Survey
VC	Vinyl chloride
VOC	Volatile organic compound
µg/kg	Microgram per kilogram
µg/L	Microgram per liter
µg/m <sup>3</sup>	Microgram per cubic meter

## EXECUTIVE SUMMARY

This *Remedial Investigation Report* has been prepared for the Hookston Station site, located at the intersection of Hookston and Bancroft Roads in Pleasant Hill, California. This report has been developed in accordance with Regional Water Quality Control Board Order No. R2-2003-0035.

Volatile organic compounds were initially detected in ground water at the site in 1990. Several phases of environmental investigations have been performed, including the more recent Phase I and Phase II Remedial Investigations, which were completed in 2004. These investigations have studied chemical impacts to soil, soil vapor, ground water, indoor and outdoor air, and surface water. Trichloroethene (TCE) is the most widespread chemical detected at the site, although chemicals that are commonly associated with the natural breakdown of TCE are also present. TCE impacts to ground water appear to originate near the southwest corner of the property, beneath a building where TCE was once used as a degreasing solvent.

TCE has been detected in ground water at concentrations above drinking water standards both on and off the site to depths of approximately 70 feet. Ground water flows beneath the site in a north to northeast direction. Organic chemicals, including TCE and other chemicals that are not associated with the Hookston Station site, have been detected in surface water samples from this creek. Ground water impacts from other (non-Hookston) sources have also been observed within the study area, but these off-site chemical impacts were not specifically evaluated as part of the Hookston Station Remedial Investigation.

Other studies have been performed to address specific exposure pathways, including the identification of privately owned irrigation wells and indoor air analyses within homes that overlie the highest TCE concentrations in ground water. The results of these studies are included in this report.

At this time, we believe that the site characterization completed for this Remedial Investigation is sufficient for the purposes of preparing the Feasibility Study. Future efforts should focus on the completion of the Feasibility Study and the subsequent implementation of the selected remedy.

## 1.0

### INTRODUCTION

On behalf of Union Pacific Railroad Company (UPRR) and Mr. Daniel Helix, ERM-West, Inc. (ERM) has prepared this *Remedial Investigation Report* (report) for the Hookston Station site (site). The site is located at the intersection of Hookston and Bancroft Roads in Pleasant Hill, California (Figure 1-1). This report has been developed in accordance with Regional Water Quality Control Board (RWQCB) Order No. R2-2003-0035 (Order), dated 16 April 2003.

## 1.1

### DOCUMENT ORGANIZATION

Following this introduction, this report is divided into the following sections:

- Section 2 – Site Description;
- Section 3 – Site Development History;
- Section 4 – Previous Investigations;
- Section 5 – Remedial Investigation Activities;
- Section 6 – Geology and Hydrogeology;
- Section 7 – Chemicals in Soil;
- Section 8 – Chemicals in Ground Water;
- Section 9 – Chemicals in Surface Water and Sediment;
- Section 10 – Chemicals in Air;
- Section 11 – RWQCB Comments to Risk Assessment;
- Section 12 – Conceptual Site Model;
- Section 13 – Conclusions; and
- Section 14 – References.

Attached to this report are the following appendices:

- Appendix A – Boring Logs;
- Appendix B – Geophysical Logs;
- Appendix C – Monitoring Well Completion Reports;
- Appendix D – Well Development Forms;

- Appendix E - Geotechnical Soil Analyses;
- Appendix F - Quality Assurance/Quality Control Summary; and
- Appendix G - Laboratory Data Summary Tables (all compounds/laboratory-qualified data) and laboratory reports.

## 1.2 *REMEDIAL INVESTIGATION OBJECTIVES*

The goal of the overall Remedial Investigation (RI) program was to characterize the geology, hydrogeology, and chemical impacts to soil, soil vapor, indoor and outdoor air, and ground water beneath the site and impacted areas downgradient of the site sufficient to prepare a Feasibility Study (FS). The RI program has been completed during a series of phased investigations; the first phase was completed between 2001 and 2002, and was followed by a second phase, which was generally divided into an on-site source area investigation (completed in 2003) and an off-site investigation (completed in 2004). The specific objectives of each phase of RI fieldwork are presented below.

### 1.2.1 *Phase I Remedial Investigation*

The scope of the Phase I RI was developed to address data gaps identified with the investigations conducted previously by other consultants. A summary of these initial site investigations is presented in Section 4 of this report. To accomplish this goal, the objectives of the Phase I RI were to:

- Identify the sources of chemicals in shallow soil, soil vapor, and ground water to the extent necessary to guide future source area investigations; and
- Evaluate the lateral and vertical distribution of chemicals in off-site ground water.

### 1.2.2 *Phase II Remedial Investigation - Source Area Investigation*

The primary goal of the source area investigation of the Phase II RI was to further define the lateral and vertical extent of impacted soils on site to evaluate the need for and scope of source area interim remedial measures (IRMs). The specific objectives of the source area investigation were to:

- Characterize the geology beneath the source area, including the vadose (unsaturated) zone, and the A-Zone and B-Zone aquifers (the first and second water-bearing zones beneath the site);
- Evaluate ground water occurrence and flow beneath the site;

- Estimate the three-dimensional distribution of volatile organic compounds (VOCs) in soil and ground water; and
- Characterize the presence of secondary constituents of potential concern (COPCs) that may be present in shallow site soil, including heavy metals, total petroleum hydrocarbons (TPH), semivolatile organic compounds (SVOCs), and polychlorinated biphenyls (PCBs).

### 1.2.3 *Phase II Remedial Investigation - Ground Water Characterization*

The primary goal of the Phase II RI ground water characterization was to determine the distribution of trichloroethene (TCE) and related chemical breakdown products in A-Zone and B-Zone ground water that are the direct result of releases at the Hookston Station site. A secondary goal of the Phase II RI ground water characterization was to determine the impacts on the Hookston Station site from an apparent upgradient and off-site source area(s) identified during the Phase I RI fieldwork.

To accomplish these goals, the specific objectives of the Phase II RI were to:

- Complete a three-dimensional characterization of the Hookston Station ground water plume using fixed off-site monitoring wells; and
- Differentiate between Hookston Station impacts and off-site source impacts by installing two well clusters on Vincent Road.

## 1.3 *PROJECT OVERVIEW*

The site was previously occupied by the former Southern Pacific Transportation Company (SPTCo) and was used for a rail line and a station ("Hookston Station"). The property was transferred from SPTCo to Mr. Daniel Helix in 1983, and the Contra Costa County Redevelopment Agency (CCCRA) subsequently purchased the eastern portion of the site in 1989.

Environmental investigations were conducted between 1989 and 1996 by various environmental consulting firms on behalf of CCCRA and Mr. Helix. As described in Section 4, these investigations discovered the presence of both petroleum-based products and chlorinated solvents in the soil and ground water at the site.

The initial environmental investigations by Harding Lawson Associates (HLA, January and June 1990) were completed for the Contra Costa

County Public Works Department in support of the proposed purchase of the eastern portion of the property. Following the discovery of chemical impacts to soil and ground water at the site, Engeo, Inc. (1991 to 1992) and Treadwell & Rollo, Inc. (T&R) (1993 to 1996) performed additional investigations on behalf of Mr. Helix. UPRR became responsible for SPTCo's share of costs for this site following the merger with SPTCo in 1997.

UPRR and Mr. Helix contracted with ERM in April 2000 to perform environmental investigations at the site.

Regulatory oversight of this project is currently being performed by the RWQCB under the 16 April 2003 Order. The Order requires completion of the following 10 tasks:

- Task 1 - Source Area Investigation Workplan (completed);
- Task 2 - Community Relations Plan (completed);
- Task 3 - Risk Assessment Workplan (completed);
- Task 4 - Area Well Survey (completed);
- Task 5 - RI Workplan (completed);
- Task 6 - Source Area Investigation/IRM Workplan (completed);
- Task 7 - Implementation of Source Area IRM (completed [none required]);
- Task 8 - Risk Assessment (completed);
- Task 9 - RI (this report); and
- Task 10 - Feasibility Study.

The status of each task within the Order is described above. Tasks 1 through 6 and Task 8 have been completed. Based on the findings of the Source Area Investigation as presented in *Source Area Investigation and Interim Remedial Measures Analysis Report* (ERM, 2003h), it was determined that Task 7 was not warranted. This report fulfills the requirements of Task 9 of the Order.



## 2.0 *SITE DESCRIPTION*

### 2.1 *SITE LOCATION*

The site is located near the intersection of Hookston Road and Bancroft Road in Contra Costa County, Pleasant Hill, California. A Site Location Map is provided as Figure 1-1.

### 2.2 *SITE PHYSICAL CHARACTERISTICS*

The site covers approximately 8 acres, and the boundaries of the site form an elongated strip that runs north to south along the former railroad right-of-way. Four main structures are currently present at the site, which are situated at 199 Mayhew Way, 222 Hookston Road, 228 Hookston Road, and 230 Hookston Road (Figure 1-2). Two smaller structures, one of which is similar to a pole barn, are also present on the site, which are associated with the operations at 228 Hookston Road (currently hay bale and feed storage for a feed company). The eastern half of the site is mostly vacant, with only one structure present associated with a concrete batch plant operation at 230 Hookston Road.

The western portion of the site that is not covered by structures is covered with asphalt pavement and a few gravel areas. These areas are utilized for parking and driveways. The eastern portion of the site is mostly vacant and covered with gravel and overgrown vegetation; some asphalt pavement is present near 230 Hookston Road. The majority of the site is surrounded by chain-link fence, limiting pedestrian access. The City of Concord recently installed a pedestrian/bike path that extends the Iron Horse Trail along the eastern property boundary, and now diverts this local foot traffic away from the industrial and commercial operations on the site. Access to the site is limited to narrow alleyways that lead from Hookston Road to the north and Mayhew Way to the south.

### 2.3 *CURRENT USES OF THE PROPERTY*

Several business operations are present at the site. A feed and pet supply store occupies the majority of the northeast portion of the site, including the structures at 222 and 228 Hookston Road. The structure at

199 Mayhew Way is divided into several smaller suites, which are occupied by two automobile maintenance and body shops, a window and cabinet (woodworking) shop, and a wood recycling facility. Other spaces at 199 Mayhew Way are vacant. A concrete batch plant is present on a portion of the eastern half of the site. The vacant portions on the eastern half of the property were formerly operated as a lumberyard and a recycling facility.

## 2.4 *SURROUNDING PROPERTIES*

The properties surrounding the site include residential areas and mixed office/commercial/light industrial enterprises. Private residences, consisting of single-family homes, town homes, and apartment buildings, are located northeast, east, and south of the site. The site is bordered to the west by mixed-use operations, including business offices, commercial spaces, and some light-industry. A gasoline station (Haber Oil/Chevron Products) is also located immediately west of the site near the northwestern property boundary. A self-storage business and small community park are situated north of the site.

## 2.5 *PHYSICAL SETTING*

According to the Walnut Creek Quadrangle, California, United States Geological Survey (USGS) 7.5-minute series topographic quadrangle map, the site is situated at an approximate surface elevation of 65 to 70 feet. The ground surface gently slopes to the south at an approximate gradient of 0.007 feet vertical per foot horizontal (ft/ft).

The nearest surface water body is the Contra Costa County Flood Control District's Walnut Creek canal. The canal is located approximately 1,300 feet east of the site and flows in a northerly direction for several miles before emptying in to the Suisun Bay. The canal is unlined in the vicinity of the site.

### 3.0

#### SITE DEVELOPMENT HISTORY

The site was controlled by SPTCo from June 1891 until September 1983. SPTCo operated the site as a portion of the San Ramon Branch rail line until approximately 1965; this rail line once connected Avon to San Ramon, California. During that time, the site included a freight-loading platform with railroad sidings and was used as a station for loading fruit and lumber.

Between approximately 1965 and 1983, the land was developed into a mixed light-industrial business complex, and was occupied by auto-related businesses, lumber yards, furniture manufacturing and metal working shops, as well as masonry works. During this period, a company doing business as ET Mag Wheels operated out of the southern portion of 199 Mayhew Way, near the southwestern corner of the property. ET Mag Wheels reportedly used TCE as a cleaning solvent, and this former business operation is likely the primary contributor to the Hookston Station VOC plume. ET Mag Wheels is no longer in business; this portion of the building currently houses an auto body shop and woodworking and wood recycling shops. A summary of other historical business practices and chemical use on the property is described in the *Site History Data Summary* (ERM, 2003e).

The property was transferred from SPTCo to Mr. Daniel Helix in 1983, and the CCCRA subsequently acquired the eastern portion of the site from Mr. Helix in 1989. The western portion of the site has been sublet to various auto-related businesses including maintenance, repair, and body shops, as well as warehouse space, a lumber yard, an upholstery shop, a masonry shop, and a feed store. The eastern portion of the site was previously occupied by lumber yards, recycling facilities, auto-related businesses, machining repair shops, and a roofing company.

The first soil and ground water samples were collected from the site by HLA in January 1990. Three other environmental consultants have performed sampling at the site, including Engeo, T&R, and presently, ERM. Several of the previous sampling programs used duplicate sample identification for different data (i.e., multiple borings were labeled B-1 through B-13). To differentiate historical samples from each other, ERM adopted a sample naming convention that includes a short two- or three-letter extension that indicates the origin of the data (e.g., B-01-TR for T&R's boring B-1, and B-01-ENG for Engeo's boring B-1).

The data collected by other consultants during the previous investigations were used in the preparation of this report and may be found in the following documents:

- *Modified Phase I Preliminary Report* (HLA, 1990a).
- *Remedial Investigation* (HLA, 1990b).
- *Preliminary Site Characterization* (Engeo, 1991).
- *Report on Ground Water Sampling* (Engeo, 1992a).
- *Initial Soil Characterization Study* (Engeo, 1992b).
- *Subsurface Investigation* (T&R, 1993).
- *Supplemental Subsurface Investigation* (T&R, 1996).

It should be noted that this RI report relies on the data reported by HLA, Engeo, and T&R; however, ERM has not performed a quality control review of these historical field and laboratory data.

The subsections below summarize the scope of these previous environmental investigations. In addition, most of the Phase I/Phase II investigation data presented in this RI report have been previously reported in the following documents:

- *First Quarter 2001 Ground Water Monitoring Report* (ERM, 2001a).
- *Second Quarter 2001 Ground Water Monitoring Report* (ERM, 2001b).
- *Third Quarter 2001 Ground Water Monitoring Report* (ERM, 2002a).
- *Remedial Investigation Progress Report* (ERM, 2002c).
- *Preliminary Risk Evaluation* (ERM, 2002d).

- *Interim Data Submittal* (ERM, 2002e).
- *Second Quarter 2003 Ground Water Monitoring Report* (ERM, 2003c).
- *Third Quarter 2003 Ground Water Monitoring Report* (ERM, 2003g).
- *Source Area Investigation and Interim Remedial Measures Analysis Report* (ERM, 2003h).
- *Fourth Quarter 2003 Ground Water Monitoring Report* (ERM, 2004a).
- *Risk Assessment* (Center for Toxicology and Environmental Health, L.L.C. [CTEH], 2004).
- *First Quarter 2004 Ground Water Monitoring Report* (ERM, 2004b).

All of these documents have been placed within the project's information repository at the Pleasant Hill Public Library in Pleasant Hill, California, for public review.

#### **4.1 *MODIFIED PHASE I PRELIMINARY REPORT, HLA, 1990***

This October 1989 investigation consisted of the collection of 10 surface soil samples, and focused solely on the presence of petroleum hydrocarbons. As a result of the high concentrations of petroleum hydrocarbons found in these samples, HLA recommended that a ground water investigation be conducted and additional soil samples be collected.

#### **4.2 *REMEDIAL INVESTIGATION, HLA, 1990***

This April/May 1990 investigation consisted of the collection of soil and ground water samples. Four monitoring wells (MW-1, MW-2, MW-3 and MW-4) were installed on site and were subsequently sampled for petroleum hydrocarbons. The laboratory contracted for this investigation alerted HLA of the presence of VOCs, particularly TCE, in the ground water samples. Shallow soil samples collected during this investigation were not analyzed for VOCs, but HLA recommended additional soil and ground water samples be collected at the site.

#### **4.3 *PRELIMINARY SITE CHARACTERIZATION, ENGEO, 1991***

The purpose of the Preliminary Site Characterization investigation was to further investigate the source and extent of ground water VOC impacts. This investigation consisted of the collection of soil and ground water

samples and the installation of two shallow monitoring wells (MW-5 and MW-6). In addition, 76 passive soil vapor probes (SV-01 to SV-76) were installed and analyzed. The soil vapor survey served to locate the areas with elevated VOC concentrations at the site. Ground water and soil vapor sampling activities confirmed elevated concentrations of TCE and tetrachloroethene (PCE) in shallow site ground water and soil vapor. Based on these findings, Engeo recommended further soil and ground water investigation activities.

#### **4.4**      ***REPORT ON GROUND WATER SAMPLING, ENGEO, 1992***

This January 1992 investigation consisted of the collection of ground water samples from the six on-site monitoring wells. These samples provided further insight into the extent and concentration of PCE and TCE in ground water at the site.

#### **4.5**      ***INITIAL SOIL CHARACTERIZATION STUDY, ENGEO, 1992***

In June 1991, Engeo suggested that further vertical delineation of VOCs in soil was needed at the site. This January 1992 investigation consisted of the collection of soil and ground water samples to provide an on-site characterization of VOCs. During this investigation, 21 soil borings were advanced and one grab ground water sample was collected. The 1992 report also discusses sanitary sewer video inspections that were performed in three phases between June 1991 and January 1992. Engeo stated that data from the previous soil vapor study suggested that the most probable source for the VOCs reported in site ground water was leaks within the site sanitary sewer system.

#### **4.6**      ***SUBSURFACE INVESTIGATION, TREADWELL & ROLLO, 1993***

This investigation consisted of the collection of 14 off-site grab ground water samples and installation of two on-site (MW-01D and MW-7) and two off-site (MW-02D and MW-03D) monitoring wells. This was the first off-site investigation; the results indicated that the ground water VOC plume was present up to 2,000 feet downgradient of the site. Three monitoring wells (MW-1D, MW-2D, and MW-3D) were installed in the deeper aquifer zone. Sample results from these wells demonstrated that TCE was also present in the deeper aquifer. This report also identified

several off-site private domestic and municipal water wells in the vicinity of the site.

**4.7** *SUPPLEMENTAL SUBSURFACE INVESTIGATION, TREADWELL & ROLLO, 1996*

This November 1995 field investigation consisted of the collection of soil and ground water samples from numerous on- and off-site locations. Several shallow on-site soil samples were collected and analyzed for VOCs. In addition to collecting samples from the 10 existing monitoring wells, T&R advanced 10 shallow HydroPunch™ borings to further delineate the shallow ground water VOC plume. The report concluded that PCE and TCE were the most commonly detected VOCs in shallow ground water and that the presence of PCE in ground water at wells MW-1 and MW-7 might be caused by an off-site, upgradient contaminant source or unknown, on-site sources.

**4.8** *GROUND WATER MONITORING, ERM, 2000*

In June 2000, ERM began performing quarterly ground water monitoring of nine monitoring wells at the site. Monitoring well MW-02 was damaged some time between 1995 and 2000 and is no longer accessible for sampling. Quarterly monitoring events continue to be conducted at the site in accordance with a monitoring and reporting program described within the RWQCB Order.

## 5.0 *REMEDIAL INVESTIGATION ACTIVITIES*

RI activities were conducted at the site in a phased approach between October 2001 and April 2004. These are described in the following sections.

### 5.1 *PHASE I REMEDIAL INVESTIGATION*

The Phase I RI activities were conducted at the site between September 2001 and September 2002 in accordance with the *Phase I Remedial Investigation Sampling and Analysis Plan* (Phase I RI SAP) (ERM, 2000). It should be noted that ERM developed this sampling plan at the request of UPRR and Mr. Helix in advance of any agency involvement on this project. The Phase I RI fieldwork was therefore performed voluntarily to support the RI/FS process in advance of any site cleanup orders from the RWQCB.

The activities of the Phase I RI were provided to the RWQCB in the *Remedial Investigation Report* (Progress Report) (ERM, 2002c) and are described below.

#### 5.1.1 *Passive Soil Vapor Sampling*

A passive shallow soil vapor survey was conducted during October-November 2001 as a screening tool to identify the approximate limits of VOCs in site soil and ground water. During this survey, 122 soil vapor samples (V-01 through V-122) were collected in the following areas:

- Within and immediately south of the 199 Mayhew Way structure;
- The northeastern portion of the property, near the former Ashby Lumber and Tri-City Concrete leased areas; and
- Along Vincent Road for the purpose of identifying any upgradient VOC sources that may be contributing to the Hookston Station plume.

The locations of the passive soil vapor sampling points are shown in Figure 5-1.

To collect the passive soil vapor samples, an electric rotary hammer-drill was used to create a pilot hole approximately 1 inch in diameter and 3 feet in depth. Once the pilot hole was completed, a sampling module was tied



to nylon cord and inserted into the borehole using a stainless-steel insertion rod. The nylon cord was attached to a cork, which was then tamped flush with the ground surface to seal the annulus of the boring. Each sampling module was left in the borehole for approximately 23 days before being retrieved. The samples were submitted to W.L. Gore & Associates, Inc., in Elkton, Maryland, for laboratory analysis of 18 target VOCs by a modified United States Environmental Protection Agency (USEPA) Method 8260/8270.

The results of the passive soil vapor survey were submitted to the RWQCB in the Progress Report, and indicated that elevated levels of TCE were present in the soil vapor beneath the building located at 199 Mayhew (located on the southwestern portion of the site) and other areas toward the northeastern property boundary. The greatest concentrations of PCE in soil vapor were detected off site on Vincent Road, which appeared to be unrelated to any releases from the Hookston Station site. Section 7.1.1 provides a more complete discussion of all soil vapor analytical results collected to date.

### 5.1.2 *Shallow Site Perimeter Borings*

Between 24 September and 3 October 2001, ERM advanced 24 shallow soil borings (B-35 through B-58) around the perimeter of the site. The locations of the borings (Figure 5-2) were selected in order to identify the compounds of concern (COCs) in ground water and their sources and distribution, and to further investigate the on-site locations identified during the soil vapor survey with elevated levels of VOCs in soil vapor.

The borings were advanced with a direct-push sampling rig. Boring logs were prepared in the field by ERM geologists using the Unified Soil Classification System (USCS) to describe soils. The geologist recorded vertical changes in soil lithology, color, moisture content, grain size, and texture, as well as any observations of staining or odors. Boring logs are provided in Appendix A. Soil samples were screened in the field with a photoionization detector (PID) for the presence of VOCs to select samples for the chemical analyses. The field screening did not indicate that the soils were significantly impacted with VOCs; therefore, no soil samples were submitted for laboratory analysis during this task of the investigation, as specified in the Phase I RI SAP.

The borings were advanced into the first water-bearing zone and ground water samples were then collected with HydroPunch samplers. Ground water samples were submitted to Curtis & Tompkins, Ltd. (C&T) of

Berkeley, California, for laboratory analysis of VOCs by USEPA Method 8260. Once ground water samples were collected, the soil borings were abandoned by tremie grouting according to Contra Costa County regulations. All sampling activities were conducted in accordance with the Phase I RI SAP.

The results of this phase of the investigation indicated that elevated levels of PCE in ground water are present along the northwestern property boundary. TCE was the most widespread chemical detected, with the highest concentrations found along the eastern property boundary. The results were submitted to the RWQCB in the Progress Report and are also incorporated into the discussion provided below in Section 8.

### 5.1.3 *Multilevel Cone Penetrometer Testing Sampling*

Cone penetrometer testing (CPT) equipment was utilized to advance 17 boreholes (CPT-01 through CPT-17) at both on- and off-site locations between 23 October and 7 November 2001. The purpose of the CPT investigation was to further define site lithology and to vertically characterize the chemical impacts to water-bearing zones beneath the site. The CPT boreholes were therefore located approximately along, and perpendicular to, the presumed axis of the ground water VOC plume (Figure 5-3).

Several CPT borings were ultimately completed at each sampling location. The first CPT boring at a given location was advanced continuously to the total target depth of 100 feet below ground surface (bgs) for the purpose of characterizing the subsurface stratigraphy. The geophysical logs that were prepared for these boreholes are included in Appendix B. Based on the results of the stratigraphic analysis, selected water-bearing zones at each location were targeted for ground water sampling. To minimize the potential for cross contamination between sampling intervals, each of the ground water samples was collected from unique direct-push boreholes that were immediately sealed using retraction-grouting techniques once the aquifer zone was reached. Ground water samples were then sent to C&T for laboratory analysis of VOCs by USEPA Method 8260.

TCE and associated degradation products were detected in most of the CPT ground water samples, including concentrations of VOCs above the California maximum contaminant levels (MCLs) in the B-Zone aquifer at CPT-14, -15, -16, and -17.

Three additional CPT borings (CPT-18 through CPT-20) were advanced north of the Contra Costa Canal in March 2002 to evaluate the downgradient plume boundary. The borings were advanced following the same procedures described above. Ground water samples were submitted to C&T for VOC analysis by USEPA Method 8260. TCE was detected in two ground water samples collected at CPT-20 at concentrations of 1.1 and 1.8 micrograms per liter ( $\mu\text{g}/\text{L}$ ). Additional VOCs were not detected in the other CPT borings on the northern side of the canal. The ground water analytical results for samples collected at CPT-1 through CPT-20 were provided in the Progress Report and are discussed in Section 8.

During September 2002, 11 additional CPT borings (CPT-21 through CPT-29, CPT-31, and CPT-32) were advanced to further evaluate the western plume margin, to identify potential off-site source areas that were indicated by the passive soil vapor survey, and characterize the downgradient plume boundary. The borings were advanced following the same procedures described above. Ground water samples were submitted to C&T for VOC analysis by USEPA Method 8260. The significant findings of this sampling event identified VOCs, including PCE and TCE, in ground water samples that were collected on Vincent Road (CPT-22, CPT-23, and CPT-24) and other locations downgradient of Vincent Road (CPT-25 and CPT-26). The Vincent Road samples correlate with the elevated concentrations of VOCs that were detected in soil vapor samples in this area. The soil vapor and ground water data further supported that VOCs emanating from one or more off-site locations are likely migrating to the north and northeast in ground water, impacting portions of the Hookston Station site, as well as the downgradient residential neighborhoods. The analytical results for CPT samples collected during September 2002 were provided to the RWQCB in ERM's *Interim Data Submittal* dated 5 November 2002 and are incorporated into the discussion in Section 8.

#### 5.1.4

#### *Well Survey*

ERM completed a review of the existing well records on file with the State of California Department of Water Resources (DWR). The files were reviewed to identify water wells within a 1-mile radius of the site. The results of the survey indicated that one well, an irrigation well located at Len Hester Park, was present within the known footprint of the Hookston Station ground water plume. The well was used for landscape irrigation until 2000, when use was discontinued due to poor water quality that was unrelated to chemical releases at the site. The findings of the well survey

were documented in ERM's *Well Survey*, which was submitted to the RWQCB on 13 September 2002. This report has not been released to the public due to confidentiality requirements within the California Water Code, Division 7, Chapter 10, Article 3, Section 13752.

At the request of the RWQCB, a ground water sample was collected from the Len Hester Park well on 3 October 2002 and analyzed for VOCs by USEPA Method 8260 at Severn Trent Laboratories (STL) in Los Angeles, California. TCE and associated degradation compounds were detected in the ground water samples collected at this location. The results were provided to the RWQCB in the *Interim Data Submittal* (ERM, 2002e). The City of Concord abandoned this well in July 2003.

### 5.1.5 *Ground Water Monitoring*

During the Phase I RI fieldwork (First Quarter 2001 through the Second Quarter 2002), periodic ground water monitoring events were conducted at the site monitoring well network, which at the time consisted of nine site wells (MW-01, MW-03 through MW-07, and MW-01D through MW-03D). The locations of the monitoring wells are included on Figure 5-3. Note that well MW-02 was previously damaged and has not been sampled during recent quarterly events. Ground water elevation data were collected at each well prior to the collection of samples. All quarterly ground water monitoring events were conducted in accordance with the Phase I RI SAP.

The samples were submitted to C&T and STL for analysis by USEPA Method 8260. The results of the quarterly sampling events were submitted to the RWQCB in various quarterly reports and are discussed in Section 8.

### 5.1.6 *Surface Water Monitoring*

To support an evaluation of potential human health and ecological risks associated with the potential discharge of ground water to the Contra Costa County Flood Canal (an engineered segment of the Walnut Creek canal), surface water quality monitoring was conducted within the channel from June 2001 through June 2002. The activities and results associated with this task were previously documented in the *Preliminary Risk Evaluation* (ERM, 2002d).

The surface water samples were collected from 16 locations along an unlined portion of the channel; the locations are illustrated in Figure 5-4.

The samples are identified based on their downstream distance (in feet) from a fixed reference point (the start of the unlined portion of the stream near the Bancroft Road over crossing represents "FC-0"). At selected locations, two surface water samples were collected, one from the left bank and one from the right bank. An "L" or "R" suffix was added to the sample name to describe the bank from which the sample was collected, relative to the downstream heading.

The surface water samples were analyzed for VOCs by USEPA Method 8260 at both C&T and STL. The results of this phase of the investigation, which were provided to the RWQCB in the Progress Report, indicated low levels of VOCs were detected in surface water samples. The surface water sample results are discussed in greater detail in Section 8.

### 5.1.7 *Surface Flux Chamber Sampling*

Surface flux chamber sampling was conducted during 21 through 24 May 2002 as part of the preliminary risk evaluation to evaluate potential human health risks associated with vapor migration into indoor air and outdoor ambient air. The sampling activities and results were documented in the *Draft Technical Memorandum, Results of the Surface Flux Chamber Testing and Ambient Air Testing Conducted at the Hookston Station Site, Pleasant Hill, California* (Schmidt, 2002), which was included in as an appendix to the *Preliminary Risk Evaluation* (ERM, 2002d). The term "flux" is used to describe the mass of chemicals that rise up naturally from the subsurface soil vapor into the atmosphere per unit area per unit time.

Surface flux testing was conducted at seven on-site, open-soil locations and 20 off-site, open-soil locations. Two additional surface flux samples were collected from within two on-site structures with cement slab surface cover. The samples were tested for surface flux of selected VOCs by USEPA Method TO-15. Ambient air samples were also collected inside and outside the two structures in which cement slab surface flux samples were collected. The ambient air samples were tested for selected VOCs by USEPA Method TO-14. The flux testing was conducted using the USEPA-recommended *Measurement of Gaseous Emission Rates from Land Surfaces using an Emissions Isolation Flux Chamber, Users Guide* (USEPA, 1986). The results of the testing were presented to the RWQCB in the *Preliminary Risk Evaluation* (ERM, 2002d) and are discussed in Section 7.1.1.

## 5.2

### ***PHASE II REMEDIAL INVESTIGATION***

The RI activities described in this section were performed in accordance with the following RWQCB-approved documents:

- *Source Area Investigation Workplan* (ERM, 2003b), which was conditionally approved by the RWQCB in a letter dated 27 May 2003 in fulfillment of Task 1 of the Order;
- *Phase II Remedial Investigation Sampling and Analysis Plan* (ERM, 2003d);
- *Risk Assessment Workplan* (CTEH, 2003a) and *Risk Assessment Workplan Addendum* (CTEH, 2003b); and
- *Indoor Air Sampling Workplan* (ERM, 2003i) and *Indoor Air Sampling Workplan Addendum* (ERM, 2003j).

The Phase II RI fieldwork was completed after the adoption of the RWQCB Order.

### 5.2.1

#### ***Source Area Soil and Ground Water Investigation***

During the Source Area Soil and Ground Water Investigation, 45 soil boring locations (B-59 through B-100) were advanced between 6 September and 3 October 2003. The locations of the soil borings, which are shown in Figure 5-2, were selected to evaluate the lateral and vertical distribution of VOCs in soil beneath the areas of elevated soil vapor detections, evaluate the vadose soil above previously identified areas of ground water impact, and characterize shallow site soils for secondary COPCs.

The soil borings were advanced with a direct-push sampling rig. Soil samples were generally retained from ground surface (or immediately below a concrete foundation), 2.5 feet bgs, 5 feet bgs, and at 5-foot intervals thereafter until ground water was encountered. Boring logs were prepared in the field by ERM geologists using the USCS to describe soils. The geologist recorded vertical changes in soil lithology, color, moisture content, grain size, and texture, as well as any observations of staining or odors. Boring logs are provided in Appendix A. Soil samples were screened in the field with a PID for the presence of VOCs to select samples for the chemical analyses.

Soil samples were submitted to STL for laboratory analysis of VOCs by USEPA Method 8260. In addition to VOCs, selected soil samples were also analyzed by STL for the following:

- Total extractable petroleum hydrocarbons and total purgeable petroleum hydrocarbons by USEPA Method 8015 Modified;
- SVOCs by USEPA Method 8270;
- PCBs by USEPA Method 8082; and
- Title 22 metals by USEPA Method Series 6010/7000.

Note that only the samples that reported more than 100 milligrams per kilogram TPH were analyzed for SVOCs and PCBs, as indicated on Table 1 of the *Source Area Investigation Workplan* (ERM, 2003b).

Soil samples collected from three locations (B-73, B-88, and MW-13A) were also analyzed for the following geotechnical parameters by STL to provide site-specific soil parameters for use within the Risk Assessment.

- Grain size distribution by American Society for Testing and Materials (ASTM) Method D422;
- Soil density by ASTM Method D2937;
- Moisture, ash, and organic matter by ASTM Method D2974;
- Specific gravity by ASTM Method D854; and
- Porosity.

Ground water samples were collected during the Source Area Investigation from select soil borings with HydroPunch samplers. In addition to the HydroPunch locations, seven permanent monitoring wells (MW-08A, MW-11A/B to MW-13A/B) were installed at on- and off-site locations between 24 September and 1 October 2003. Note that as of October 2003, existing monitoring wells MW-01D, MW-02D, and MW-03D were renamed to MW-08B, MW-09B, and MW-10B, respectively, to minimize future confusion regarding water-bearing zones.

At locations where monitoring wells were installed, soil samples were collected with a direct-push sampling rig until the desired total depth was reached. The boring was then over-drilled to the desired total depth with 4.25-inch, inner-diameter, hollow-stem augers attached to the direct-push unit. The monitoring wells were constructed of 1-inch-diameter, polyvinyl chloride (PVC) riser pipe and pre-packed well screens (10 to 15 feet in length). The monitoring wells were manually developed several days after installation. Boring logs, well completion reports, and well development forms were prepared for these locations and are included in Appendices A, C, and D, respectively.

Ground water samples were collected at the new monitoring wells in October 2003. The ground water samples were submitted to STL for laboratory analysis of VOCs by USEPA Method 8260. The monitoring wells have been incorporated into the site's monitoring program and will be sampled on a quarterly basis.

All Source Area Investigation sampling activities were conducted in accordance with the *Source Area Investigation Workplan* (ERM, 2003b), except as noted below and in Section 3.3 of the *Source Area Investigation and Interim Remedial Measures Analysis Report* (ERM, 2003h). The *Source Area Investigation Workplan* specified that the monitoring wells would be installed within the direct-push unit boreholes. However, the soil conditions that were encountered prohibited the use of the dual-tube sampling device and the wells could not be installed within the small-diameter boreholes due to borehole collapse. Therefore, the borings were over-drilled with hollow-stem augers to create 8-inch-diameter boreholes and the well completion materials were installed through the hollow-stem augers.

## 5.2.2 *Private Well Survey*

Beginning in February 2003, ERM conducted a multi-phase private well survey in the vicinity of the Hookston Station site. On 14 February 2003, ERM distributed 456 questionnaires to property owners within the survey area. The survey area, as shown in Figure 5-5, is roughly bound by Lisa Lane and Contra Costa County flood canal to the north; the flood canal to the east; Mayhew Way to the south; and Vincent Road, Elmira Drive, and Buskirk Avenue to the west. It should be noted that this original well survey area was very broad and included large areas that are not associated with chemical impacts from the Hookston Station site.

On 28 February 2003, 125 additional survey mailers were issued to the owners of town homes or condominiums within the survey area. On 24 March 2003, a second set of survey mailers (310 total) was mailed to properties within the survey area in which no responses had been received. At the conclusion of that second mailing, a total of 231 survey questionnaires were returned with responses. Based on the survey responses, only a small fraction of the responding homeowners used a backyard well, and none of the well owners use their wells for drinking water. All of the wells that were identified are either not currently used or are used only for landscape irrigation.



In an effort to close the data gaps within the most critical portions of the well survey area, 40 additional survey mailers were sent via certified mail on 27 June 2003 to selected properties within the presumed boundaries of the Hookston Station TCE plume. These 40 properties had not responded during the previous two survey mailing events. The 27 June 2003 letter specifically requested a response within a 10-day period. A total of 23 of those 40 survey questionnaires were returned, each of them stating that there are no wells on the respective properties. Of the 17 survey questionnaires that were not completed, three mailers were refused by the homeowners, one was returned by the U.S. Postal Service as being undeliverable, and the remaining 13 recipients have not responded.

At the request of UPRR and Mr. Helix, ERM completed door-to-door surveys on 20 August, 29 August, and 31 August 2003. The responses to this phase of the survey were mixed. Several residents claimed that no wells existed, some admitted the presence of a well, two households refused to participate in the survey, and two households did not answer the door. As shown on Table 5-1 and Figure 5-5, there are four active and eight inactive landscape irrigation wells within of the footprint of the Hookston Station TCE plume. During June 2004, five of the inactive wells were abandoned in place by pressure grouting. Additional wells are currently scheduled for abandonment.

### 5.2.3 *Active Soil Vapor Investigation*

Active soil vapor sampling was completed at 12 locations (ASV-01 to ASV-12) during 10 through 21 October 2003 to support the Risk Assessment. Unlike the passive soil vapor probes that were installed as part of the Phase I RI, "active" soil vapor samples are collected by drawing subsurface soil gas into a laboratory-provided sampling canister. One ambient air sample, AA-01, was also collected during this time. The active soil vapor sampling points were located within the suspected on-site source area and along the axis of the ground water plume; the locations are shown in Figure 5-6. The active soil vapor survey was conducted to evaluate the soil vapor intrusion pathway.

The active soil vapor samples were collected with the use of a direct-push sampling rig equipped with 1-inch-diameter steel vapor probes with 1/8-inch flexible nylon tubing. At each location, the vapor probe was advanced to 5 feet bgs and then slightly withdrawn to open the sampling tip and expose the vapor sampling port. Soil vapor was then withdrawn from the tubing using a vacuum pump. Prior to soil vapor sample collection at each location, a vacuum check was performed, the syringe

was leak-checked, and the tubing was purged to fill it with soil vapor. Samples were collected into a 6-liter Summa canister. During sampling, leak tests were performed using butane gas in accordance with recommendations presented in the Los Angeles Regional Water Quality Control Board Advisory *Active Soil Gas Investigations*, dated 28 January 2003.

The soil vapor and ambient air samples were analyzed for VOCs by Method TO-15 at STL in Los Angeles, California, and Air Toxics, Ltd., in Sacramento, California.

All soil vapor samples were collected in accordance with the *Risk Assessment Workplan* (CTEH, 2003a) and *Risk Assessment Workplan Addendum* (CTEH, 2003b). The results were incorporated into CTEH's *Risk Assessment*, dated April 2004. The results are discussed in Section 7.1.1.

#### 5.2.4 *Ground Water Monitoring Wells*

Between January and June 2004, 28 permanent monitoring wells were installed at off-site locations during the Phase II RI activities. These wells included 12 A-Zone wells (MW-14A to MW-25A), 13 B-Zone wells (MW-14B to MW-26B), and 3 C-Zone wells (MW-15C, MW-19C, and MW-23C), as shown on Figure 5-3. The locations of these wells were primarily based on the analytical results for ground water samples collected during the Phase I RI activities from the shallow site perimeter soil borings and the CPT boreholes.

All monitoring wells completed within the A-Zone and B-Zone and one C-Zone well (MW-23C) were installed with hollow-stem auger drilling equipment. At these locations, soil samples were collected at 5-foot intervals with California-modified samplers until the aquifer zone was encountered; soil samples were collected continuously from the aquifer zones to determine the thickness of the unit. Boring logs were prepared in the field by ERM geologists using the USCS to describe soils. The geologist recorded vertical changes in soil lithology, color, moisture content, grain size, and texture, as well as any observations of staining or odors. Boring logs are provided in Appendix A. Soil samples were screened in the field with a PID for the presence of VOCs to select samples for the chemical analyses. Once the desired total depth was reached, monitoring well construction materials were installed in the boreholes through the hollow-stem augers. The wells were constructed of 2-inch-diameter PVC riser pipe and well screen (5- or 10-foot length, 0.010- or 0.020-inch slot size). The wells were completed at the surface with steel

protective covers and locking, expandable well caps. Well completion reports are provided in Appendix C.

C-Zone monitoring wells MW-15C and MW-19C were installed with air-rotary casing hammer (ARCH) equipment. Soil samples were not collected during the advancement of the C-Zone monitoring wells. Soil grab samples were collected with a wire basket held in the stream of cuttings at the base of the cuttings dispenser (cyclone). Grab samples were collected approximately every 5 feet to describe the soil lithology; the soil descriptions obtained from nearby A-Zone and B-Zone wells were also relied upon during advancement of C-Zone boreholes. Boring logs were prepared and are included in Appendix A. Once the desired depth was achieved, well construction materials were installed in the borehole through the ARCH drive casing. All C-Zone monitoring wells were completed with 2-inch-diameter PVC riser pipe and well screen (5- or 10-foot length, 0.020-inch slot size). The wells were completed at the surface with steel protective covers and locking, expandable well caps. Well completion reports are provided in Appendix C.

The monitoring wells were developed no sooner than 24 hours after well installation activities were completed. The wells were developed by a combination of surging and pumping. A minimum of 5 to 10 well volumes of ground water were removed during development activities and contained in 55-gallon drums for proper disposal.

During drilling activities at MW-15A, MW-15B, and MW-16A, soil samples were collected and analyzed for geotechnical soil parameters to obtain additional data needed for evaluation of human health risks for the Risk Assessment. These locations correspond to the active soil vapor sampling locations ASV-03 and ASV-06. These samples were analyzed for total organic carbon and grain-size distribution (by sieve and hydrometer analyses). Additional information is provided in Section 6.1.2.

### 5.2.5 *Indoor Air Quality Investigation*

On 12 December 2003, indoor air quality samples were collected from five on-site locations (IA-1 to IA-3, IA-5, and IA-6). All sampling activities were conducted in accordance with the *Indoor Air Sampling Workplan* (ERM, 2003i). The samples were collected within office and workspace areas of the building at 199 Mayhew; samples were collected from a height of 5 feet above the floor. The locations of these samples are shown on Figure 5-7. Samples were analyzed for VOCs by Method TO-15. Results

were presented in the *Risk Assessment* (CTEH, 2004a) and are discussed in Section 10.1.

Mr. Helix and UPRR requested permission to conduct indoor air sampling from the occupants of 41 private residences located along the axis of the A-Zone ground water plume. Indoor air samples and crawl space air samples were collected between January and March 2004 from the 16 residences for which access was granted. The locations are shown on Figure 5-7. Field data collected at the time of the indoor air sampling is presented on Table 5-2. For quality control purposes, indoor air samples were requested at residences that are not located above the footprint of the ground water plume; however, permission to access these selected off-plume residences was not granted by the occupants. All samples were collected in accordance with the *Indoor Air Sampling Workplan* (ERM, 2003i) and *Indoor Air Sampling Workplan Addendum* (ERM, 2003j). The results were included in the *Risk Assessment* (CTEH, 2004a) and are discussed in Section 10.1.

#### 5.2.6 *Ground Water Monitoring*

Since June 2000, ERM has been conducting periodic ground water monitoring events of the nine pre-existing monitoring wells at the site. During the Phase II RI activities, 35 new monitoring wells were installed during September 2003 through June 2004, as described in previous sections. These new wells have been incorporated into the quarterly ground water monitoring program. The monitoring wells have been sampled through Second Quarter 2004, the results of which are incorporated into this report.

Ground water sampling activities are conducted in accordance with the *Phase II Remedial Investigation Sampling and Analysis Plan* (Phase II SAP) (ERM, 2003d). However, ground water samples collected during Fourth Quarter 2001 through First Quarter 2004 were collected with passive diffusion bags (PDBs) rather than with disposable bailers, as specified in the Phase II SAP. During these events, PDBs were filled with distilled water and lowered into each well to the approximate depth of the well screen mid-points. Ground water samples were collected directly from the PDBs, without well purging, no sooner than 2 weeks after the PDBs were installed. PDBs are passive sampling devices, in which VOCs within ground water diffuse across a polyethylene membrane, thereby allowing deionized water within the bag to equilibrate with the ground water outside of the bag. This sampling method has the advantage of allowing the collection of long-term average concentration data from discrete

sampling depths, without the production of large volumes of wastewater that are commonly associated with standard purge-and-sample techniques. PDBs are applicable for the sampling of VOCs that are commonly associated with the Hookston Station VOC plume. A description of the applications of PDBs on VOC sites is provided in *Technical and Regulatory Guidance for Using Polyethylene Diffusion Bag Samplers to Monitor Volatile Organic Compounds in Groundwater* (Interstate Technology & Regulatory Council, 2004).

Ground water samples collected during the Second Quarter 2004 event were collected with disposable bailers in accordance with the Phase II SAP. The Third Quarter 2004 ground water monitoring event will also utilize disposable bailers for sample collection.

Ground water samples are collected for laboratory analysis of VOCs by USEPA Method 8260 during the quarterly monitoring events. Ground water samples were also analyzed for general inorganic minerals and water quality parameters during the First Quarter 2004 sampling event.

## 6.0 *GEOLOGY AND HYDROGEOLOGY*

A discussion of the regional and site-specific geology, as well as the site-specific hydrogeology, is presented in the following sections.

### 6.1 *GEOLOGY*

#### 6.1.1 *Regional Geologic Setting*

The site is situated approximately 3 miles west of the Briones Hills and approximately 1,200 feet west of the Walnut Creek canal. According to the *Preliminary Geologic Map of the Walnut Creek Quadrangle, Contra Costa County, California* (Dibblee, 1980), the site and immediate vicinity is underlain by geologically young alluvial (stream-derived) deposits (Figure 6-1). Sediments from the Briones Hills and other local hills derived from erosional activity were transported and deposited by streams to the valley floor where the site is situated. These deposits are generally composed of interbedded sands and gravels with fine-grained silts and clays.

#### 6.1.2 *Site Stratigraphy*

Soils have been characterized to depths as great as 100 feet bgs during drilling activities at the site and nearby off-site locations. The information provided below is based on the data collected during the drilling activities conducted during the RI. Soil boring logs and geophysical logs are included in Appendices A and B, respectively. Geotechnical soil samples were collected during the RI for additional soil characterization; the results are summarized on Table 6-1 and are discussed below. The geotechnical laboratory reports are included in Appendix E.

Unconsolidated deposits extend to at least 100 feet bgs. Fine-grained clays, silts, silty clays, and clayey silts are present from the ground surface (or immediately below the ground surface cover materials) to depths ranging from 25 to 50 feet bgs. These deposits have generally been described as brown to gray, damp to moist, low to high plasticity, and low to high density. Soil samples collected from the fine-grained deposits for geotechnical testing indicate the soils are rich in silt (38.9 to 43.1 percent) and clay (18.1 to 56 percent) with secondary amounts of sand (4.2 to 38.1 percent). Discontinuous lenses of sands, silty sands, and gravelly

sands are interbedded in the fine-grained deposits. These lenses range in thickness from a few inches to approximately 11 feet, but are more commonly only a few feet in thickness. One soil sample was collected for grain-size distribution from one of the sand stringers at MW-15A; the results indicated the sample consisted of 60.2 percent sand, 15.6 percent gravel, 14.9 percent silt, and 9.3 percent clay. This zone of fine-grained deposits interbedded with discontinuous sands has been identified by ERM as the A-Zone.

Beneath the fine-grained silts and clays, a relatively continuous sand unit is present between the approximate depths of 30 and 70 feet bgs. These sands range from well-sorted sands, clayey sands, to gravelly sands; a few gravel zones are also encountered in this unit. The sands are generally 5 to 10 feet in thickness and have been identified by ERM as the B-Zone. Silt and clay lenses are interbedded within the B-Zone. One geotechnical soil sample was collected from one of the fine-grained interbeds at MW-15B; the grain-size distribution results indicate the sample was 46.9 percent silt, 26.9 percent clay, 25.5 percent sand, and 0.7 percent gravel.

A deeper sand unit, identified by ERM as the C-Zone, is initially encountered at depths ranging from 65 to 97 feet bgs. The C-Zone is also a continuous sand unit and is isolated from the B-Zone by fine-grained clays. The C-Zone sands are interbedded with silt and clay lenses. The C-Zone extends to approximately 100 feet bgs; the soils beneath this zone have not been characterized.

### 6.1.3 *Ground Water Monitoring Zones*

Drilling activities conducted during the RI have identified three hydrostratigraphic zones. The A-Zone consists of thin, discontinuous sand stringers found above a depth of approximately 30 feet bgs. The B-Zone is a relatively continuous sand interval found between approximately 30 and 70 feet bgs. The C-Zone consists of deeper sand units observed between approximately 70 and 100 feet bgs. Because the study area is broad and many natural geologic variations exist in the subsurface, the depth ranges described above are approximate and may differ from one area of the site to another area of the site. It is also important to note that although these aquifer zones were developed based on our preliminary stratigraphic observations at the site, they simply represent a naming convention for samples collected from general depth ranges. Based on the extensive geologic data collected to date, it is likely that all three of these ground water monitoring zones are hydraulically interconnected within the study area.

The current monitoring network includes 23 A-Zone monitoring wells (MW-01 through MW-07, MW-08A, and MW-11A through MW-25A), 19 B-Zone monitoring wells (MW-08B through MW-26B), and three C-Zone monitoring wells (MW-15C, MW-19C, and MW-23C).

## 6.2 GROUND WATER HYDROGEOLOGY

### 6.2.1 *Ground Water Flow Patterns and Gradients*

Ground water in the A-Zone, B-Zone, and C-Zone flows in northeasterly directions. Ground water elevation maps for the A-Zone, B-Zone, and C-Zone presenting data from the most recent monitoring events are included as Figures 6-2, 6-3, and 6-4, respectively.

Ground water elevations measured in the A-Zone on 30 July 2004 are illustrated on Figure 6-2. Based on this information, ground water in the A-Zone flows in a northeasterly direction with an overall horizontal gradient of approximately 0.004 feet vertical/foot horizontal.

Ground water elevations measured on 30 July 2004 in the B-Zone are shown on Figure 6-3. Ground water in the B-Zone also flows in a general northeasterly direction with an overall horizontal gradient of 0.004 ft/ft. The gradient beneath the southern portion of the site is steeper (as great as 0.032 ft/ft between MW-11B and MW-12B) than the observed gradient of the remaining portion of the monitored zone.

Ground water elevations measured in the C-Zone on 30 July 2004 are shown on Figure 6-4. This map indicates that C-Zone ground water flows in a northeasterly direction with a horizontal gradient of 0.002 ft/ft.

Vertical gradients were calculated at the nested well locations from the ground water elevation data collected during March and April 2004 (Table 6-3). Ground water elevations were compared between A-Zone and B-Zone wells at 14 locations, and between B-Zone and C-Zone wells at two locations. In general, the ground water elevations are very similar between the adjacent monitored zones, and both upward and downward vertical gradients were observed. Vertical gradients will continue to be evaluated as additional ground water elevation data are collected during quarterly monitoring events.



## 6.2.2

### *Aquifer Hydraulic Characteristics*

Aquifer tests were performed at the site during T&R's 1993 subsurface investigation; aquifer testing has not been performed at the site by ERM. Constant-rate pumping tests were performed by T&R to evaluate hydraulic conductivity and ground water flow velocity of the shallow and deep aquifers, which have since been renamed by ERM to the A-Zone and B-Zone aquifers. The A-Zone aquifer test consisted of pumping ground water from MW-07 while monitoring the ground water response at wells MW-01 and MW-04. Ground water was pumped from MW-01D (now named MW-08B) while observing the ground water response at MW-03 and MW-07 during the B-Zone aquifer test. The methodology used by T&R was provided in the *Subsurface Investigation* (T&R, 1993), which was included as an appendix in the Phase I RI SAP.

According to T&R's report, the hydraulic conductivity of the A-Zone was estimated at 2.3 to 23 feet per day (ft/day) and the velocity was estimated to be 14 to 140 feet per year (ft/yr). The estimated B-Zone hydraulic conductivity ranged from 48 to 68 ft/day, while the estimated ground water velocity ranged from 320 to 450 ft/yr.

## 7.0 CHEMICALS IN SOIL

Soil and soil vapor samples were collected at the site during the RI and during previous investigations for laboratory analysis of VOCs, petroleum hydrocarbons, SVOCs, PCBs, and metals. The results are presented in the following sections. The analytical results of the samples have been compared to the RWQCB Environment Screening Levels (ESLs) for Commercial/Industrial Land Use for shallow and deep soils where ground water is a current or potential source of drinking water. Copies of the analytical reports are provided in Appendix G.

### 7.1 CHLORINATED VOLATILE ORGANIC COMPOUNDS

#### 7.1.1 Soil Vapor

A total of 122 passive soil vapor samples and 12 active soil vapor samples were collected at on- and off-site locations during the RI. Engeo also collected 76 passive soil vapor samples at the site in 1991. Passive soil vapor sampling results are summarized on Table 7-1 and active soil vapor sampling results are summarized on Table 7-2.

ERM's passive soil vapor survey focused on site-wide locations as well as off-site locations west of the site along Vincent Road. The distribution of PCE, TCE, and cis-1,2-dichloroethene (cis-1,2-DCE) concentrations detected during the passive soil vapor survey are illustrated on Figures 7-1 through 7-3, respectively. Elevated concentrations of TCE in soil vapor are found beneath the 199 Mayhew structure (located near the southwest corner of the property) and other areas toward the northeast property boundary. The greatest concentrations of PCE in soil vapor are found off site on Vincent Road, which appear to be unrelated to any releases from the Hookston Station site.

The surface flux testing results identified 11 VOCs, which included PCE and TCE, in the collected samples. The data, which were presented as an appendix to the *Preliminary Risk Evaluation* (ERM, 2002d), generally indicated low flux of VOCs in the downgradient residential area. The highest flux measurements were collected at the site (within the on-site

source area at 199 Mayhew Way), where known soil vapor impacts had previously been identified.

The active soil vapor survey focused on evaluating the concentrations of VOCs in soil vapor at locations with the greatest concentrations in ground water (i.e., the suspected on-site source area and the axis of the off-site ground water plume). Concentrations of TCE in soil vapor greater than the RWQCB ESLs for Commercial/Industrial Use were detected at ASV-01, ASV-05, ASV-07, and ASV-11. The ESL was also exceeded at ASV-06 for 1,1,1-trichloroethane. The results are summarized in Table 7-2 and on Figure 7-4. Note that butane gas was used for leak checking during the active soil vapor sampling activities and an elevated concentration of butane was reported at ASV-11. The detection of butane may indicate a leak was present during sample collection at this location. Therefore, the reported concentrations of detected VOCs may be artificially low and the presence of VOCs reported as not detected cannot be ruled out.

### 7.1.2 *Soil*

A total of 192 soil samples for VOC analysis were collected from 52 locations during the RI. Prior to the RI, 81 soil samples were collected by others for VOC analysis from 34 on-site locations. The soil sampling locations are shown on Figure 5-2 and a summary of the results is presented in Table 7-3.

In general, VOC concentrations in soil throughout the site are low, with only a few sample concentrations exceeding the RWQCB ESLs. TCE is the most prevalent and widespread chemical detected in soil samples. The highest concentrations of TCE detected in vadose zone soil are in the low (1 to 3) milligram per kilogram (mg/kg) range. A summary of the soil concentration data is provided below:

- The highest concentrations of TCE detected in soil samples were found in samples collected at a depth of 2 to 5 feet bgs underneath or immediately adjacent to the 199 Mayhew structure near the southwestern corner of the property (e.g., B-60, B-62, B-67, B-71, and B-05-ENG), as shown on Figure 7-5. The concentrations of TCE detected at these locations exceed the ESL of 460 µg/kg TCE; the concentrations of cis-1,2-DCE detected at B-71 also exceed the ESL of 190 µg/kg cis-1,2-DCE. These sample locations generally coincide with the elevated concentrations of TCE in soil vapor. Soil samples collected beneath these elevated detections (and above the first encountered ground water) decreased rapidly with depth, as

illustrated on Figure 7-5. At locations where elevated levels of TCE are not present in shallow soil, elevated concentrations of TCE were frequently detected in the samples collected from deeper intervals within the vadose (unsaturated) zone. This distribution suggests that deeper soil sample concentrations are most likely the result of offgassing vapors from the ground water plume, and not representative of a vadose zone source.

- One additional elevated TCE concentration (1,100 µg/kg at boring B-74) was collected at a depth of 30 feet bgs. This deeper detection is likely reflective of ground water impacts rather than TCE in the vadose zone. Elevated concentrations of cis-1,2-DCE, a breakdown product of TCE, were also detected at boring B-71, coincident with elevated TCE detections.
- PCE was generally not detected in site soils. For the few soil samples that did detect PCE, most were below 10 µg/kg, and all were below the ESL of 250 µg/kg.
- Concentrations of benzene and xylenes that exceed the ESLs of 44 µg/kg and 1,500 µg/kg, respectively, have been detected in areas near the northwestern corner of the site at B-21-ENG and B-22-ENG. These elevated concentrations were detected in samples collected at a depth of approximately 16 feet bgs, just above the static water level in this area. The upgradient Haber Oil site, a commercial fuel distribution facility located west of the site, is currently under a separate RWQCB Order to investigate hydrocarbon impacts to soil and ground water. These sample results are consistent with impacts from hydrocarbons released at the adjacent commercial fuel distribution facility.

## 7.2 *PETROLEUM HYDROCARBONS*

Out of 50 soil samples that were analyzed for TPH as diesel (TPH-D), only seven samples reported positive detections, and only three samples contained concentrations greater than 100 mg/kg, the ESL for TPH-D (Table 7-4). TPH-D concentrations ranging from 166 to 2,080 mg/kg were reported in the surface soil samples (0.5 foot bgs) in borings B-70, B-73, and MW-13A. The laboratory qualified these detections as estimated because the results did not match the typical chromatographic pattern for a diesel fuel. These TPH-D detections are from widely spaced sample locations, and are limited to the ground surface samples; results for samples collected at a depth of 2.5 feet bgs at each location were non-detect for TPH-D.

Of the 40 soil samples that have been analyzed for TPH as gasoline (TPH-G), positive detections were reported in only six samples, and only two samples contained concentrations greater than 100 mg/kg, the TPH-G ESL (Table 7-4). These samples (S-04 and S-08) were reportedly collected from areas with visible staining, and were located within the business area that previously operated as a recycling facility. This entire area has been demolished and the surface soils have been reworked since the 1989 investigation; any surface staining that was present at that time is no longer present. The widely spaced TPH-G data collected during the RI found very low to non-detect concentrations of TPH-G across the site.

Heavier residual hydrocarbons, such as “TPH as waste oil” and “oil and grease,” were detected during previous investigations. The concentrations detected at locations B-01-HLA, B-02-HLA, B-03-HLA, S-02, and S-04 through S-10 exceed the TPH-residual fuels ESL of 1,000 mg/kg. These samples were collected at depths less than 3 feet bgs. Most of these samples were collected from the former recycling facility, where isolated stained areas are no longer present.

Soil samples for motor oil analysis were collected during the RI and during previous investigations. Motor oil was detected at concentrations greater than 100 mg/kg in seven of 32 samples analyzed for motor oil. Concentrations ranged from 132 to 8,830 mg/kg in surface soil samples collected at B-69, B-70, B-73, B-75, B-94, B-95, and MW-13A. An ESL for motor oil has not been established.

### 7.3 **SVOCS**

Five soil samples were collected during the RI for SVOC analysis; soil samples were only analyzed for SVOCs at locations where TPH was detected at a concentration greater than 100 mg/kg. The results of the SVOC soil samples are summarized on Table 7-5. Concentrations of the detected SVOCs were generally low, with only one detection greater than the established ESL. Benzo(a)pyrene was detected at a concentration of 743 µg/kg in surficial soil at B-69; the benzo(a)pyrene ESL is 130 µg/kg.

### 7.4 **PCBS**

Five soil samples were collected during the RI for analysis of PCBs. Similar to the SVOC soil samples, samples were only analyzed for PCBs at locations where TPH was detected at a concentration greater than 100

mg/kg. PCBs were generally not detected in the soil samples. At locations where PCBs were detected, the concentrations were less than the ESL of 0.74 mg/kg. These results are summarized on Table 7-6.

## 7.5 *METALS*

Soils are composed of minerals that naturally contain metals. Nineteen soil samples were collected for metals analysis at the site during the RI and previous investigations. All samples for metals analysis were collected from the surficial soil. As shown in Table 7-7, most of the samples collected at the Hookston Station site contained concentrations of metals that are consistent with background concentrations of metals in California soils. A small number of soil samples exceeded the ESLs for arsenic, chromium, copper, and vanadium. It should be noted that although the arsenic ESL is 5.5 mg/kg, the ESL guidance document [RWQCB, 2003,p 2-12] notes that arsenic concentrations in soil ranging from 5 to 20 mg/kg are typical for much of the Bay Area. Only two of the soil samples collected throughout the site contained arsenic concentrations greater than 20 mg/kg.

## 8.0 CHEMICALS IN GROUND WATER

Ground water samples collected at the site have been analyzed for VOCs, SVOCs, petroleum hydrocarbons, dissolved metals, and general minerals/inorganic water quality parameters. Ground water samples have been collected from on-site locations as well as upgradient and downgradient locations. Sampling results are presented in the following sections.

### 8.1 VOLATILE ORGANIC COMPOUNDS

The most commonly detected VOCs in site ground water are chlorinated VOCs, particularly PCE, TCE, and associated degradation compounds (cis-1,2-DCE and 1,1-DCE). Additional VOCs, such as 1,2-dichloroethane (1,2-DCA), 1,1-dichloroethane (1,1-DCA), and benzene, have also been detected in select ground water samples above water quality goals. The following sections discuss the VOC detections in ground water during the RI and previous investigations. Because PCE, TCE, cis-1,2-DCE, and 1,1-DCE are the primary COCs identified at the site, Sections 8.1.1 through 8.1.5 focus primarily on these VOCs, while Section 8.1.6 presents the data for other VOCs detected at the site.

#### 8.1.1 On-Site A-Zone Ground Water

Elevated concentrations of PCE, TCE, cis-1,2-DCE, and 1,1-DCE are present in the on-site A-Zone ground water. The ground water data collected to date at the site for these constituents are posted on Figures 8-1 to 8-4. The maximum concentrations detected in on-site A-Zone ground water were:

- 1,400 µg/L PCE (MW-01, Fourth Quarter 1995),
- 8,860 µg/L TCE (B-63, 35 feet bgs, Third Quarter 2003),
- 670 µg/L cis-1,2-DCE (MW-13A, Second Quarter 2004), and
- 341 µg/L 1,1-DCE (B-63, 35 feet bgs, Third Quarter 2003).

The maximum concentrations detected in the on-site A-Zone during the most recent (Second Quarter 2004) monitoring event were 740 µg/L PCE (MW-01), 2,800 µg/L TCE (MW-13A), 670 µg/L cis-1,2-DCE (MW-13A), and 110 µg/L 1,1-DCE (MW-13A). Additional chlorinated VOCs, such as

trans-1,2-dichloroethene, vinyl chloride (VC), and 1,1-DCA have also been detected in on-site A-Zone ground water at concentrations exceeding the established drinking water ESLs (Table 8-1). These chlorinated VOCs have been detected at significantly fewer locations and at relatively lower concentrations than PCE, TCE, cis-1,2-DCE, and 1,1-DCE.

The maximum PCE detections reported during the Phase I and II RIs and quarterly monitoring events were detected in HydroPunch locations and monitoring wells in the northern portion of the site (B-41, B-42, B-96, MW-01, MW-04, and MW-07). With the exception of B-96 and MW-07, these locations are all along the western (upgradient) property boundary; B-96 and MW-07 are in the central portion of the northern half of the site (Figure 8-1). PCE concentrations are non-detect or below the ESL at all locations in the southern portion of the site, with the exception of MW-13A (Figure 8-1). PCE was detected in MW-13A at a concentration of 8.83 µg/L during the Fourth Quarter 2003 monitoring event. PCE was not detected at this location during other more recent monitoring events, however, the laboratory reporting level has been greater than the ESL due to the elevated concentrations of other VOCs in this sample.

The highest detections of TCE, cis-1,2-DCE, and 1,1-DCE in on-site A-Zone ground water have occurred in HydroPunch locations and monitoring wells in the southern portion of the site (B-63, B-67, B-68, B-74, B-79, B-81, and MW-13A) and along the northern portion of the eastern property boundary (B-48, B-52, B-53, B-54, B-85, B-90, B-92, B-93, and B-97) (Figures 8-2 through 8-4). TCE was also detected at elevated concentrations along the western property boundary at B-42, B-43, B-44, B-75, MW-01, and MW-4 (Figure 8-2).

Isoconcentration maps for the Second Quarter 2004 analytical results have been prepared for PCE, TCE, cis-1,2-DCE, and 1,1-DCE and are included as Figures 8-5 through 8-8, respectively. Note that the contours on these maps are primarily based on Second Quarter 2004 analytical results, but also take into consideration the ground water results obtained from HydroPunch locations advanced during the Phase I and II RIs. The minimum concentration contour line used on these maps corresponds to the drinking water ESL. Therefore, all monitoring wells located within the contour lines have reported data that exceed the drinking water ESL. Based on Second Quarter 2004 isoconcentration maps, the width of the on-site A-Zone ground water impacts where concentrations exceed the drinking water ESLs are:

- PCE plume (greater than 5 µg/L) - approximately 400 feet wide;



- TCE plume (greater than 5 µg/L) – approximately 550 feet wide;
- cis-1,2-DCE plume (greater than 6 µg/L) – approximately 550 feet wide; and
- 1,1-DCE plume (greater than 6 µg/L) – approximately 75 to 200 feet wide.

The contours illustrate that the ground water plume extends downgradient from the site and identifies ground water impacts from an apparent upgradient source. The upgradient impacts are further discussed in Section 8.1.7.

### 8.1.2 *Downgradient A-Zone Ground Water*

Concentrations of PCE, TCE, cis-1,2-DCE, and 1,1-DCE that exceed drinking water standards are present in the A-Zone ground water downgradient of the site. The ground water data collected to date for these constituents are posted on Figures 8-1 to 8-4. The maximum concentrations detected to date in downgradient A-Zone ground water are:

- 420 µg/L PCE (B-24TR, 21.5 feet bgs, Fourth Quarter 1995);
- 12,000 µg/L TCE (CPT-04, 34 feet bgs, Fourth Quarter 2001);
- 750 µg/L cis-1,2-DCE (MW-14A, Second Quarter 2004); and
- 898 µg/L 1,1-DCE (MW-14A, First Quarter 2004).

The maximum concentrations detected during the Second Quarter 2004 monitoring event in the downgradient A-Zone ground water were 1.2 µg/L PCE (MW-23A), 5,300 µg/L TCE (MW-14A), 750 µg/L cis-1,2-DCE (MW-14A), and 580 µg/L 1,1-DCE (MW-14A). VC and 1,1-DCA have also been detected in the downgradient A-Zone ground water at concentrations exceeding the established drinking water ESLs, but at significantly fewer locations and lower concentrations (Table 8-1).

PCE has been detected at a limited number of downgradient locations during the Phase I and II RI activities and quarterly monitoring events (Figure 8-1). With the exception of the PCE detection at MW-23A during the Second Quarter 2004 monitoring event, PCE was only reported in downgradient A-Zone ground water during Treadwell and Rollo's November 1995 investigation at borings B-23, -24, and -25. However, note that elevated laboratory reporting levels were reported during the RIs and quarterly monitoring events for several of the locations immediately downgradient of the site, such as MW-14A, MW-15A, and CPT-04. At

these locations, PCE has not been reported at concentrations greater than 200, 20, and 50 µg/L, respectively.

TCE has been detected downgradient of the site in A-Zone ground water at concentrations exceeding the drinking water ESL. The elevated TCE detections have been generally observed within samples collected northeast (hydraulically downgradient) of the site, at concentrations ranging from 35 (B-22TR) to 12,000 µg/L (CPT-04 (Figure 8-2).

Detections of cis-1,2-DCE and 1,1-DCE at concentrations greater than the drinking water ESLs were reported during the Phase I and II RI activities and quarterly monitoring events at downgradient locations. These samples were obtained from northeast of the site and concentrations ranging from 9.1 to 750 µg/L cis-1,2-DCE and 10.3 to 898 µg/L 1,1-DCE have been reported (Figures 8-3 and 8-4).

Isoconcentration maps for the Second Quarter 2004 analytical results have been prepared for PCE, TCE, cis-1,2-DCE, and 1,1-DCE and are included as Figures 8-5 through 8-8, respectively. The minimum concentration contour line used on these maps corresponds to the drinking water ESL. Therefore, all the monitoring wells located within the contour lines have reported data that exceed the drinking water ESL. Based on the Second Quarter 2004 isoconcentration maps, the extent of impacts that exceed the drinking water ESLs in the downgradient A-Zone ground water are:

- The PCE plume (concentrations greater than 5 µg/L) appears to originate from an upgradient site, and commingles with the Hookston Station TCE plume. The PCE detections appear to extend downgradient across the Hookston Station site to the northeastern property boundary, although it is important to note that PCE naturally degrades to TCE, which is found further downgradient within the residential neighborhood.
- The TCE plume (concentrations greater than 5 µg/L) ranges in width from approximately 550 feet immediately downgradient of the site to 1,400 feet, near the northern extent of the residential neighborhood.
- The cis-1,2-DCE plume (concentrations greater than 6 µg/L) extends approximately 1,100 feet downgradient from the site to MW-16A and has a maximum width of approximately 500 feet.
- The 1,1-DCE plume (concentrations greater than 6 µg/L) extends at least 300 feet downgradient from the site to MW-15A, but likely extends approximately 1,300 feet downgradient based on recent

HydroPunch analytical results. The maximum downgradient width of the 1,1-DCE plume appears to be approximately 200 feet.

### 8.1.3 *On-Site B-Zone Ground Water*

Concentrations of TCE, cis-1,2-DCE, and 1,1-DCE that exceed drinking water standards are present in the on-site B-Zone ground water. In contrast to the on-site A-Zone ground water, PCE has only been detected in on-site B-Zone ground water to a very limited extent. The ground water data collected to date for these constituents are posted on Figures 8-9 to 8-12. The maximum concentrations detected in on-site B-Zone ground water were:

- 40 µg/L PCE (MW-8B, First Quarter 2002);
- 11,000 µg/L TCE (MW-11B, Second Quarter 2004);
- 896 µg/L cis-1,2-DCE (MW-13B, First Quarter 2004); and
- 670 µg/L 1,1-DCE (MW-11B, Second Quarter 2004).

The maximum concentrations detected in the on-site B-Zone monitoring wells during the Second Quarter 2004 monitoring event were 11,000 µg/L TCE (MW-11B), 390 µg/L cis-1,2-DCE (MW-13B), and 670 µg/L 1,1-DCE (MW-11B). Note that PCE was not detected above the laboratory reporting levels, which ranged from 1 to 100 µg/L, in the on-site B-Zone ground water during the Second Quarter 2004 monitoring event. The following chlorinated VOCs have also been detected in on-site B-Zone ground water at concentrations higher than the drinking water ESLs: VC; 1,1-DCA; 1,2-DCA; 1,2-dichloropropane; and 1,1,2-trichloroethane (Table 8-1).

PCE was only detected in at a limited number of on-site locations (MW-08B, MW-11B, and MW-13B) in the B-Zone ground water during the Phase I and II RIs and previous quarterly monitoring events. These wells are all situated in the southern portion of the site (Figure 8-9). Detections of PCE that exceed the drinking water ESL have only been reported at MW-08B, with the most recent ESL exceedances reported during First Quarter 2002. However, note that the laboratory reporting levels for many of the quarterly samples collected at this location since then have been greater than the ESL due to elevated concentrations of other VOCs (Table 8-1).

Concentrations of TCE and 1,1-DCE that exceed the drinking water ESL have been detected site-wide in on-site B-Zone ground water. The

greatest concentrations have generally been detected in the southeastern portion of the site at B-66, MW-11B, MW-12B, MW-13B, and CPT-02. Elevated detections have also been reported in the northern portion of the site at B-87, B-94, and B-96 (Figures 8-10 and 8-12).

Detections of cis-1,2-DCE have been reported in the southeastern portion of the site at concentrations that exceed the drinking water ESL. The elevated detections have only been reported at MW-11B, MW-12B, and MW-13B. Cis-1,2-DCE has also been detected in the northern portion of the site but at concentrations less than the drinking water ESL (Figure 8-11).

B-Zone ground water isoconcentration maps for Second Quarter 2004 analytical results have been prepared for PCE, TCE, cis-1,2-DCE, and 1,1-DCE and are included as Figures 8-13 through 8-16, respectively. Note that the contours on these maps are primarily based on Second Quarter 2004 analytical results but also take into consideration the ground water results obtained from recent borings and HydroPunch locations advanced during the Phase I and II RIs. The minimum concentration contour line used on these maps corresponds to the drinking water ESL. Therefore, all the monitoring wells located within the contour lines have reported data that exceed the drinking water ESL. Based on the Second Quarter 2004 isoconcentration maps, the width of the on-site B-Zone ground water impacts where concentrations exceed the drinking water ESLs are:

- TCE plume (greater than 5 µg/L) – entire width of the site;
- cis-1,2-DCE plume (greater than 6 µg/L) – approximately 350 feet wide; and
- 1,1-DCE plume (greater than 6 µg/L) – approximately 450 feet wide.

The contours illustrate that the ground water VOC plume extends downgradient from the site. Section 8.1.4 presents the downgradient B-Zone ground water analytical results.

Note that the data indicate on-site PCE impacts are not currently present; historical on-site detections greater than the ESL have only been identified at MW-08B. B-Zone ground water impacts appear to only be present upgradient of the site. The contours illustrate that TCE, cis-1,2-DCE, and 1,1-DCE impacts are also present upgradient of the site where PCE impacts have been identified. The upgradient impacts are further discussed in Section 8.1.7.

#### 8.1.4

#### *Downgradient B-Zone Ground Water*

Concentrations of TCE and 1,1-DCE above drinking water standards are present in the down gradient B-Zone ground water. To a lesser extent than TCE and 1,1-DCE, elevated detections of cis-1,2-DCE and PCE have also been reported down gradient in the B-Zone ground water. The ground water data collected to date at the site for these constituents are posted on Figures 8-9 to 8-12. The maximum concentrations detected to date in downgradient B-Zone ground water are:

- 5.6 µg/L PCE (MW-10B, Second Quarter 2001);
- 4,600 µg/L TCE (CPT-04, 45 feet bgs, Fourth Quarter 2001);
- 120 µg/L cis-1,2-DCE (CPT-11, 43 to 73 feet bgs, Fourth Quarter 2001); and
- 310 µg/L 1,1-DCE (CPT-04, 45 feet bgs, Fourth Quarter 2001).

The maximum concentrations detected during Second Quarter 2004 monitoring event in downgradient B-Zone ground water were 1,400 µg/L TCE (MW-15B), 24 µg/L cis-1,2-DCE (MW-16B), and 92 µg/L 1,1-DCE (MW-15B). PCE was not detected downgradient of the site during the Second Quarter 2004 monitoring event; laboratory reporting levels ranged from 1 to 50 µg/L PCE. Detections of 1,1-DCA and 1,2-DCA have also been reported in downgradient B-Zone ground water at concentrations greater than drinking water ESLs; these chlorinated VOCs have each only been detected at elevated levels at one downgradient location (Table 8-1).

PCE has only been detected in one downgradient B-Zone location (MW-10B, previously named MW-03D) during the Phase I and II RI activities and quarterly monitoring events at a concentration greater than the drinking water ESL. Note that PCE has not been detected in downgradient wells above the ESL since Second Quarter 2001. Additionally, PCE has only been detected in one other downgradient B-Zone location at CPT-07, at an estimated concentration of 1.5 µg/L (Table 8-1). Well MW-10B is approximately 550 feet northeast of the northern property boundary and CPT-07 is approximately 250 feet east of the northeastern corner of the property (Figure 5-3). Note that during the Phase I and II RI activities and quarterly monitoring events, the laboratory reporting levels for PCE have ranged from 0.5 to 100 µg/L. Elevated concentrations of PCE in B-Zone ground water have also been observed upgradient and cross-gradient of the Hookston Station VOC plume. These off-site impacts are described in Section 8.1.7.

TCE has been detected downgradient of the site in B-Zone ground water at concentrations exceeding the drinking water ESL (5 µg/L TCE). Concentrations greater than 1,000 µg/L TCE have been reported at CPT-04, CPT-07, CPT-11, CPT-15, MW-10B (previously MW-03D), MW-14B, and MW-15B (Table 8-1, Figure 8-10). Downgradient B-Zone detections exceeding the TCE drinking water ESL have been reported at cross-gradient locations as far as MW-18B (south of the TCE plume) and MW-23B (north of the TCE plume) and as far downgradient as MW-17B and CPT-17. TCE has also been reported at a concentration of 5.9 µg/L on the eastern side of the Walnut Creek canal. However, based on historical ground water elevations measured at MW-26B and MW-17B, it appears that ground water east of the canal flows in a westerly direction, opposite of the ground water flow immediately downgradient of the site (Figure 6-3). Therefore, the TCE detections at MW-26B may be the result of a source located east of the canal (MW-26B also contained benzene, a chemical not associated with the Hookston Station VOC plume). It should be noted that MW-18B and MW-26B are new wells and have only been sampled twice; the first samples collected from these wells reported non-detectable concentrations of TCE. Continued monitoring of these plume perimeter wells will be necessary to confirm these results.

Few cis-1,2-DCE detections that exceed the drinking water ESL were reported during the Phase I and II RI activities and quarterly monitoring events at B-Zone locations downgradient of the site. The detections greater than the ESL were reported northeast of the site at CPT-07, CPT-11, CPT-15, and MW-16B and east of the site at MW-18B (Figure 8-11). The reported detection at MW-18B will need to be confirmed in future ground water monitoring events; the initial sample collected from this well reported non-detectable concentrations of cis-1,2-DCE.

During the Phase I and II RI activities and quarterly monitoring events, 1,1-DCE has been extensively detected at concentrations exceeding the ESL at downgradient B-Zone locations. The highest concentrations have been reported within 600 feet northeast of the property boundary at CPT-04, CPT-07, MW-10B, MW-14B, and MW-15B at concentrations ranging from 61 to 310 µg/L 1,1-DCE (Figure 8-12).

Isoconcentration maps for the Second Quarter 2004 analytical results have been prepared for PCE, TCE, cis-1,2-DCE, and 1,1-DCE and are included as Figures 8-13 through 8-16, respectively. The minimum concentration contour line used on these maps corresponds to the drinking water ESL. Therefore, all the monitoring wells located within the contour lines have

reported data that exceed the drinking water ESL. Based on Second Quarter 2004 isoconcentration maps, the extent of impacts that exceed the drinking water ESLs in the downgradient B-Zone ground water are:

- The PCE plume (concentrations greater than 5 µg/L) originates from an upgradient site on Vincent Road, and currently does not extend downgradient from the site beyond the nearest B-Zone monitoring wells: MW-22B, MW-15B, and MW-14B.
- The TCE plume (concentrations greater than 5 µg/L) extends approximately 1,800 feet downgradient from the site and is approximately 1,400 feet wide in the northern portion of the residential neighborhood.
- The cis-1,2-DCE plume (concentrations greater than 6 µg/L) extends approximately 1,200 feet downgradient from the site to MW-16B, and has a maximum width of approximately 600 feet (immediately downgradient from the site) that narrows to 150 feet wide downgradient of Hookston Road. As stated above, the recent detection of cis-1,2-DCE at MW-18B requires confirmation during future ground water monitoring events.
- The 1,1-DCE plume (concentrations greater than 6 µg/L) extends approximately 1,800 feet downgradient from the site and is approximately 800 feet wide.

### 8.1.5 *C-Zone Ground Water*

The C-Zone ground water at the site and downgradient from the site have relatively minor impacts of chlorinated VOCs. The ground water analytical results collected to date for C-Zone samples are posted on Figures 8-17 through 8-20. PCE has only been detected in one C-Zone location (MW-19C) at an estimated concentration of 0.33 µg/L in the Second Quarter 2004 (this was an estimated concentration below the laboratory's reporting limit) (Figure 8-17). TCE has only been detected above the drinking water ESL at MW-15C; TCE detections have also been reported on-site at CPT-02 and at four downgradient locations, but at concentrations less than 5 µg/L (Figure 8-18). Only one detection of cis-1,2-DCE has been reported in C-Zone ground water: in the Fourth Quarter 2004, cis-1,2-DCE was detected at 0.5 µg/L at CPT-02 (Figure 8-19). Detections of 1,1-DCE have not been reported in on-site or downgradient C-Zone ground water (Figure 8-20); however, 1,1-DCE was detected at one upgradient location (CPT-06) and is discussed in Section 8.1.7.

### 8.1.6 *Additional VOCs*

In addition to the chlorinated VOCs discussed in Sections 8.1.1 through 8.1.5, concentrations of benzene, toluene, and methyl tert-butyl ether (MTBE) above drinking water standards have been reported during the Phase I and II RI activities and quarterly monitoring events. These VOCs have only been reported at locations near the northwestern property boundary (B-01TR, B-45, MW-01, MW-04, and MW-22A). These additional petroleum-related VOCs at these locations appear to be unrelated to the Hookston Station site; note the proximity of these sample locations to the adjacent (and hydraulically upgradient) Haber Oil site. Benzene has also been reported on-site at MW-08B and downgradient at MW-26B (Table 8-1).

### 8.1.7 *Off-Site Sources/Contributors*

Elevated concentrations of PCE, TCE, cis-1,2-DCE, 1,1-DCE, and petroleum-related VOCs have been detected in the A-Zone and/or B-Zone aquifers at locations hydraulically upgradient and cross-gradient of the site.

The greatest PCE concentration detected to date was reported at MW-20B at a concentration of 10,000 µg/L during the Second Quarter 2004 monitoring event. Elevated PCE detections have also been reported at MW-20A and nearby locations MW-21A, MW-21B, CPT-22, and CPT-23. These locations have also reported elevated concentrations of PCE's breakdown products (TCE, cis-1,2-DCE, and 1,1-DCE) in the A-Zone or B-Zone. These monitoring wells and CPT locations are positioned approximately 200 feet west of the site and are hydraulically upgradient of the site based on historical ground water elevation data. The analytical data and elevation data indicate that an upgradient source is responsible for the PCE, TCE, cis-1,2-DCE, and 1,1-DCE concentrations reported at MW-20A/B, MW-21A/B, CPT-22, and CPT-23. Following a recent request from the RWQCB, the owners of the properties located at 3343-3355 Vincent Road are currently investigating the potential source of the ground water impacts in this area.

Significant chlorinated VOC impacts have also been identified during the RI activities at locations west and northwest of the site, at CPT-24, CPT-06, CPT-25, and CPT-26. For example, PCE was reported at a concentration of 460 µg/L in the B-Zone at CPT-25; TCE was also reported at 150 µg/L in the B-Zone at CPT-06. An elevated detection of cis-1,2-DCE (850 µg/L) was also noted during the 1993 T&R investigation at boring B-01, located



on Estand Way. Based on historical ground water elevation data, these locations are hydraulically cross-gradient to the site and it is unlikely that these concentrations are the result of impacts related to the site. It is presently unknown if the source(s) contributing to the impacts near 3343-3355 Vincent Road are associated with the impacts at CPT-24, CPT-06, CPT-25, or CPT-26, or if there are additional unknown sources closer to these sample locations.

Petroleum-related VOCs (primarily benzene, toluene, and MTBE) were identified in on-site ground water during the RI field investigation and previous investigations along the western property boundary at MW-01, MW-04, MW-22A, and additional boring locations. The property bordering this portion of the site has been operated as a bulk fueling facility since the 1950s; this property (220 Hookston Road) has been identified as the former Haber Oil Products site and is currently known as Pitcock Petroleum. Investigation activities conducted on behalf of the property owner at this site since approximately 1998 revealed significant soil and ground water impacts related to gasoline and diesel fuel. Additional investigation activities were conducted at the site in 2003 by GRIBI Associates on behalf of Pitcock Petroleum. The investigation was conducted in response to a 16 November 2001 RWQCB request for further investigation and revealed that ground water impacts, specifically MTBE, extend northeast from the former Haber Oil Products site (GRIBI, 2003b). Ground water sampling activities conducted at this site also reported elevated concentrations of PCE as great as 160 µg/L (GRIBI, 2003a); these PCE impacts are likely associated with the impacts along Vincent Road. The full characterization of ground water impacts associated with the Haber Oil Products site is currently incomplete.

The greatest TCE concentration detected to date within the A-Zone occurred at MW-14A. This well is immediately downgradient from the site along Bancroft Road near the northeast property boundary. Elevated concentrations of TCE at this location may be associated with the Hookston TCE plume that appears to originate at 199 Mayhew Way, or may be associated with other neighboring industrial properties that have not been fully investigated within the context of this RI.

## 8.2 *SEMIVOLATILE ORGANIC COMPOUNDS*

Ground water samples collected from MW-1, MW-2, MW-3, MW-4, and MW-10B (formerly MW-02D) were analyzed for SVOCs using USEPA Method 8270 during May 1990. No SVOCs were detected in any of these

wells. Selected SVOCs can also be detected during certain VOC analyses (e.g., USEPA Method 8260); these include naphthalene, hexachlorobutadiene, 1,2,4-trichlorobenzene, 1,2-dichlorobenzene, 1,3-dichlorobenzene, and 1,4-dichlorobenzene. Therefore, these SVOCs were analyzed during selected ground water VOC analyses during the RI and previous investigations.

Naphthalene was the only SVOC detected in site ground water samples; it was detected in monitoring well MW-4, CPT-18 (59 feet bgs), and CPT-16 (88 and 100 feet bgs) at concentrations ranging from 0.5 µg/L to 11 µg/L. A California MCL has not been established for naphthalene; therefore, the results were compared to the RWQCB ESL for drinking water (21 µg/L naphthalene). Table 8-2 summarizes the SVOC ground water results; note that this table only lists the SVOCs detected in at least one ground water sample. A table is provided in Appendix G that lists the results for all the SVOCs that were analyzed.

### 8.3 *PETROLEUM HYDROCARBONS*

Selected ground water samples collected during the RI and previous investigations were analyzed for the following ranges of petroleum hydrocarbons: diesel fuel, gasoline, gasoline C<sub>7</sub>-C<sub>12</sub>, kerosene, motor oil, oil and grease, Stoddard solvent, and TPH (some previous investigations did not specify a specific hydrocarbon range).

Petroleum hydrocarbons were detected at B-01TR, MW-1, MW-1D (since renamed MW-8B), MW-2, MW-3, MW-3D (since renamed MW-10B), MW-4, and MW-7. Detected concentrations ranged from 52 µg/L TPH-d at MW-1D to 5,900 µg/L TPH-g at MW-04. California MCLs have not been established for petroleum hydrocarbons; therefore, the results were compared to the RWQCB ESLs for drinking water (100 µg/L for gasoline, middle distillates, and residual fuels). The petroleum hydrocarbon ground water analytical results are summarized on Table 8-3. An additional elevated concentration of TPH-G was also reported in a 1993 T&R sample (B-01-TR), but this sample was located off site and downgradient of the Haber Oil site, and is unlikely associated with the Hookston Station ground water VOC plume.

#### 8.4 *DISSOLVED METALS*

Ground water samples were collected for dissolved metals analyses during the Second Quarter 2004 monitoring event and from wells MW-01, MW-01D (currently MW-08B), MW-02, MW-03, MW-05, and MW-06 during April 1993. The samples were analyzed for Title 22 metals (dissolved) by USEPA Method Series 6010/7000.

Each of the Title 22 metals was detected in at least one ground water sample. Metals are naturally present in soil and ground water, and low concentrations of dissolved metals in ground water at the site are expected. Samples from every well, except MW-12B, MW-13B, and MW-26B, contained at least one metal at a concentration above the California MCL. The results are summarized on Table 8-4.

It is important to note that the concentrations that exceed the MCLs typically do so by only a small margin. It is also important to note that many of the samples that exceed the MCLs were collected from areas outside of the Hookston Station VOC plume. For example, wells MW-19A/B, MW-18A/B, MW-6, MW-20A/B, and MW-21A/B may be considered background samples for reference to other samples collected within the Hookston Station VOC plume. Because the metals concentrations that are within the Hookston VOC plume are similar to those detected at background locations, the concentrations throughout this area can be attributed to naturally occurring levels of the metals in ground water rather than anthropogenic sources.

#### 8.5 *GENERAL MINERALS, WATER QUALITY, AND NATURAL ATTENUATION PARAMETERS*

Ground water samples were analyzed for select general minerals (e.g., total dissolved solids, hardness, and alkalinity), natural attenuation parameters (e.g., chloride, iron, sulfate, and ethane), and other selected inorganic water quality parameters during the First, Second, and Third Quarter 2001 monitoring events and during the Second Quarter 2004 monitoring event. The data, which are presented on Table 8-5, were collected for remedial technology and natural attenuation evaluations to be completed during the forthcoming Feasibility Study. A more detailed discussion of the data will be presented at that time.

## 9.0

### *CHEMICALS IN SURFACE WATER AND SEDIMENT*

Surface water and sediment samples were collected along the unlined portion of the Walnut Creek canal between June 2001 and June 2002. The results are presented in the following sections. Copies of the laboratory analytical reports are provided in Appendix G.

## 9.1

### *SURFACE WATER*

A total of 28 surface water samples were collected from 18 locations along the Walnut Creek canal and submitted for laboratory analysis for VOCs. VOC results are summarized on Table 9-1. Note that the VOCs included on the table are those most commonly detected in ground water and; not all the reported VOCs were detected in surface water samples. The data were compared to the RWQCB ESLs for freshwater surface water, RWQCB Chronic Freshwater Aquatic Habitat Goals, RWQCB Maximum (acute) Freshwater Aquatic Habitat Goals, and the RWQCB Surface Water Quality Standards for Bioaccumulation and Human Consumption of Aquatic Organisms. Figure 9-1 posts the surface water VOC results. Note that the VOCs included on the figure include only those that were detected in each individual sample.

Each surface water sample has been analyzed for VOCs by USEPA Method 8260. As shown on Table 9-1, low concentrations of PCE, TCE, cis-1,2-DCE, have been detected in the surface water samples. Concentrations of these constituents are below the criteria referenced in the previous paragraph. Toluene and MTBE were also detected in select surface water samples. Toluene and MTBE are both fuel-related hydrocarbons and are not associated with the Hookston Station ground water plume. MTBE was detected in one surface water sample at a concentration of 8.3 µg/L, which exceeds the RWQCB ESL of 5 µg/L MTBE.

## 9.2

### *SEDIMENT*

Seven sediment samples were collected from seven locations along the unlined portion of the Walnut Creek canal. Each sample was analyzed for VOCs. As shown on Table 9-2, VOCs were not detected in any of the sediment samples.

## 10.0 CHEMICALS IN AIR

Indoor air and ambient air samples for VOC analysis have been collected on-site and in nearby private residences. The results are summarized in the following sections and on Table 10-1. The results were compared to the RWQCB ESLs for commercial/industrial land use and residential land use. The laboratory analytical reports are included in Appendix G.

### 10.1 INDOOR AIR

Indoor air samples were collected at 5 locations within the structure at 199 Mayhew and from the living spaces at 17 private residences near the site. Indoor air samples were also collected from the crawl spaces in 15 of these homes; crawl spaces were not present in the two remaining residences. In accordance with the RWQCB-approved *Indoor Air Sampling Workplan Addendum* (ERM, 2003j), the crawl space indoor air samples were submitted to the laboratory under hold status and were analyzed only if elevated levels of VOCs were detected in the samples collected from the living spaces. The purpose of collecting crawl space samples was for use to potentially rule out false positive results if unusually elevated VOC concentrations were detected in indoor air.

TCE, cis-1,2-DCE, and 1,1-DCE were detected in the indoor air samples (Table 10-1 and Figure 10-1). The ESLs for cis-1,2-DCE and 1,1-DCE were not exceeded in any of the samples. Two of the samples collected on-site exceeded the commercial/industrial ESL for TCE. Seven of the samples collected from private residences contained concentrations of TCE in indoor air that exceed the residential land use ESL. The detected concentrations of TCE in the indoor air samples ranged from 1.2 micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ) to  $5 \mu\text{g}/\text{m}^3$ , as shown on Table 10-1. The results indicated no significant differences between crawl space samples and samples collected within the living spaces; four of the homes showed slightly greater concentrations within the indoor living spaces, while three of the homes showed slightly greater concentrations within the crawl spaces.

## 10.2

### *AMBIENT AIR*

Ambient air samples were collected from one on-site location and two off-site locations in the nearby residential neighborhood. TCE was detected at a concentration of 0.21  $\mu\text{g}/\text{m}^3$  in one of the residential ambient air samples; this sample was collected outside one of the residences that had elevated levels of TCE in both the living space and crawl space indoor air samples. VOCs were not detected in the two remaining samples.

## 11.0

### **RWQCB COMMENTS TO RISK ASSESSMENT**

On 2 June 2004, the RWQCB provided comments to CTEH and conditionally approved the *Risk Assessment* (CTEH, 2004a). CTEH indicated in their letter dated 1 July 2004 to the RWQCB that responses to two of the RWQCB's comments would be provided in the RI Report. The following subsections provide the requested information.

## 11.1

### **RWQCB COMMENT B - SOIL GAS AND INDOOR AIR SAMPLING SURVEYS**

As part of the RWQCB's Comment B, the following information was requested:

- Map showing an overlay of soil gas data and ground water data (including isoconcentration contours of primary chemicals of concern);
- Targeted homes and buildings;
- Brief description of each home building design containing information that would be useful in understanding vapor flow into the structures; and
- Recommendations for expanding the soil gas and indoor air studies.

Figures 11-1 to 11-4 present the concentrations of PCE, TCE, cis-1,2-DCE, and 1,1-DCE (respectively) reported in soil vapor samples and in A-Zone ground water samples. The soil vapor sampling results presented on these figures were collected during ERM's October 2003 active soil vapor investigation (Section 5.2.3); the results of this investigation were previously discussed in Section 7.1.1 and presented on Table 7-2. The ground water analytical results presented on Figures 11-1 to 11-4 were collected during the Second Quarter 2004 ground water monitoring event. These data are included on Table 8-1; the ground water isoconcentration contour lines were also presented on Figures 8-5 to 8-8.

The requested information regarding targeted homes and buildings as well as home building design relate to the indoor air sampling survey. The activities conducted during the indoor air sampling investigation are discussed in Section 5.2.5 and the results were presented in Section 10.1. Figure 5-5 illustrates the locations where indoor air samples were collected, as well as the locations where permission to collect samples was

requested but not granted. Table 5-2 also presented the information relating to residence design that was collected at each indoor air sampling location; the information included on this table was provided by occupants of each residence sampled via responses to questionnaires. The questionnaire form was included as Attachment 2 of the *Indoor Air Sampling Workplan* (ERM, 2003i).

Additional soil vapor and indoor air sampling will be scoped in the FS as a function of the need for indoor air mitigation.

## 11.2 **RWQCB COMMENT C - GROUND WATER RESULTS AND SURFACE WATER/DRINKING WATER STANDARDS**

The following information was requested in the RWQCB's Comment C:

*Provide maps that denote the extent of groundwater impacts which exceed drinking water goals, chronic surface water standards, and acute surface water standards; discuss the potential for chemicals of concern in ground water to exceed acute and/or chronic surface water goals at the point that the groundwater discharges into Walnut Creek. Based on water table elevation data, it is reasonable to assume that shallow groundwater is discharging into the creek...concentrations of chemicals of concern in groundwater should meet chronic surface water goals at the point that the groundwater discharges into a surface water body (i.e., dilution not considered). This is intended to protect benthic habitats that are not likely to receive the benefit of dilution as groundwater mixes with surface water. Upon mixing with surface water, concentrations of chemicals of concern should also meet aquatic habitat standards for bioaccumulation concerns if lower than chronic standards.*

The ground water isoconcentration maps presented as Figures 8-5 to 8-8 and Figures 8-13 to 8-16 denote the extent of PCE, TCE, cis-1,2-DCE, and 1,1-DCE concentrations reported during the Second Quarter 2004 ground water monitoring event in A-Zone and B-Zone ground water that exceed the established ESLs for current/potential drinking water sources. Note that the minimum isoconcentration contour used on each of these figures corresponds to the respective ESLs. Isoconcentration contour maps have not been prepared for C-Zone ground water because only a single TCE detection exceeding the drinking water ESL in the C-Zone (MW-15C, 6.6 µg/L) was reported during the Second Quarter 2004 ground water monitoring event.



The ground water analytical results were compared to chronic and acute freshwater surface water body habitat goals published in Tables F-4a and F-4b in Appendix 1 of the San Francisco Bay RWQCB's *Screening For Environmental Concerns At Sites With Contaminated Soil and Groundwater, Interim Final July 2003* (updated 4 February 2004). Acute (maximum concentration) freshwater aquatic habitat goals have not been established for PCE, TCE, cis-1,2-DCE, 1,1-DCE, and other COCs associated with the site. MTBE is the only compound detected in ground water for which the RWQCB has established an acute aquatic habitat goal. However, MTBE is not a COC associated with the site and detections of MTBE in site and downgradient ground water are likely due to off-site sources.

Chronic freshwater habitat goals have been established for many of the COCs associated with the site and detected in ground water. Detections of PCE, TCE, cis-1,2-DCE, and 1,1-DCE were reported at selected locations during Second Quarter 2004 at levels exceeding the chronic freshwater surface water body habitat goals. Figures 11-5 to 11-11 illustrate the extent to which the chronic goals were exceeded; the minimum isoconcentration contours used on these figures correspond to the respective chronic freshwater habitat goals. Note that the PCE, TCE, and 1,1-DCE goals were exceeded in both the A-Zone and B-Zone, while the cis-1,2-DCE goal was only exceeded in the A-Zone ground water. Therefore, only an A-Zone map has been prepared for cis-1,2-DCE (Figure 11-9).

Based on the Second Quarter 2004 ground water monitoring data, the chronic surface water standards for PCE, TCE, cis-1,2-DCE, and 1,1-DCE are not apparently exceeded at the point where ground water potentially discharges into the Walnut Creek canal (Figures 11-5 to 11-11).

The RWQCB Surface Water Standards for bioaccumulation for PCE, TCE, and 1,1-DCE are less than the RWQCB chronic surface water standards for these constituents; a bioaccumulation standard for cis-1,2-DCE has not yet been established by the RWQCB. During the Second Quarter 2004 ground water monitoring event, the bioaccumulation standard for TCE (81 µg/L) and 1,1-DCE (3.2 µg/L) were exceeded at the following monitoring wells located within 300 feet of the Walnut Creek canal:

- MW-17A - 170 µg/L TCE and 5.0 µg/L 1,1-DCE;
- MW-17B - 280 µg/L TCE and 9.6 µg/L 1,1-DCE; and
- MW-24B - 240 µg/L TCE and 12 µg/L 1,1-DCE.

Note that the RWQCB Final Surface Water Screening Levels, chronic habitat goals, and bioaccumulation/human consumption standards for these compounds were not exceeded in the surface water samples (Table 9-1).

## 12.0 *CONCEPTUAL SITE MODEL*

The previous subsections described the existing environmental data available for the site. This subsection presents an overall Conceptual Site Model (CSM) based on this existing data and the current understanding of site characteristics. The CSM describes the primary and secondary sources of contamination, potentially contaminated media and migration pathways, and potential exposure pathways. A summary of the environmental fate and transport mechanics for chlorinated VOCs that will be evaluated in the FS is also provided.

## 12.1 *CONTAMINATED MEDIA AND TRANSPORT MECHANISMS*

Sections 7 through 10 presented an overview of the chemicals detected in the various environmental media at the site. This overview is based on historical and current data for soil, soil vapor, surface water, sediment, ground water, and indoor and outdoor air. A summary of the contaminated media and type of chemical transport that may occur at the site is presented below.

### 12.1.1 *Soil*

Organic chemicals such as VOCs, SVOCs, PCBs, and petroleum hydrocarbons have been detected in soils at the site. The highest concentrations of VOCs were detected beneath the 199 Mayhew Way structure near the southwestern corner of the site, but are present in low concentrations throughout the site. SVOCs, PCBs, and petroleum hydrocarbons have been detected in soils at the site, but generally at low concentrations and very localized.

Heavy metals have been detected in soil at the site at concentrations that are generally consistent with expected background concentrations. Metals detected at elevated concentrations (above the ESLs) include arsenic, chromium, copper and vanadium.

Metals and SVOCs (including PCBs) tend to sorb to soil particles and primarily can be transported from surface soils at the site via dust generation or in surface water runoff. More volatile organic chemicals detected at the site (e.g., chlorinated solvents or gasoline-range petroleum hydrocarbons) would not be expected to be present in surface soils, but

can migrate downward from shallow soils to deeper soils under the force of gravity. These volatile chemicals could also migrate upward through soil gas into the atmosphere. In addition, these types of chemicals, along with the more soluble metals, can migrate to underlying groundwater through leaching.

#### **12.1.2**     *Soil Vapor*

VOCs detected in soil or ground water can migrate through the subsurface via soil vapor into ambient outdoor or indoor air.

#### **12.1.3**     *Surface Water*

Storm water runoff at the site is drained into the regional storm water sewer system and is therefore not available for exposure. Perennial surface water is present in the nearby Walnut Creek canal, which is part of the Contra Costa County Flood Control District's storm water management system. Organic chemicals have been detected in surface water in this channel.

VOCs in surface water may be available for direct contact as well as may volatilize into ambient air.

#### **12.1.4**     *Sediment*

Chemicals present in surface water or in the underlying ground water can sorb to fine-grained sediments within the creek bed. Sediment samples collected throughout this study area contained non-detectable concentrations of VOCs. If contaminants were present in creek sediments, they could be transported via natural downstream sediment migration (typically during flood stages when high volumes of water could perturb the underlying sediments). Chemicals in sediments could be available for direct contact to waders or swimmers in the creek; however, this portion of the creek is not open to the public as it is part of the regional storm water control system.

#### **12.1.5**     *NAPL*

Residual nonaqueous-phase liquids (NAPLs) are pure, non-dissolved remnants of former hydrocarbon or solvent sources (e.g., spills or leaks of pure-phase gasoline or solvent products) associated with waste discharge at the site. Residual NAPLs above the water table can migrate downward under the force of gravity, or could be held in place by capillary forces

exceeding those gravitational forces. NAPL properties such as density and interfacial tension with water will also affect flow and distribution of NAPL in the subsurface. Light nonaqueous-phase liquids (LNAPLs), such as gasoline or diesel fuel, are expected to migrate to the water table and spread laterally, because their specific gravities are less than the specific gravity of ground water. Dense nonaqueous-phase liquids (DNAPLs), such as TCE and other chlorinated solvents, have not been observed at the site. If sufficient amounts of DNAPL were present, DNAPL would migrate below the water table under the force of gravity until it reached an aquitard layer or until the combination of physical properties of the DNAPL was sufficient to overcome gravitational forces pulling it downward.

Measurable LNAPL has been observed at MW-04; however, in recent monitoring events, only a thin sheen has been noted. MW-04 is immediately adjacent to a former gasoline underground storage tank, and is also immediately adjacent to the Haber Oil site, which has previously reported the presence of LNAPL. All other known underground storage tanks at the site have been removed.

### 12.1.6 *Ground Water*

Sections 8.1 through 8.5 present in detail the ground water data that have been collected for the site. As discussed in these sections a variety of organic chemicals and metals have been detected in ground water.

Organic and inorganic chemicals detected in ground water have the potential of migrating off-site to downgradient locations through natural ground water flow processes. Chemicals that migrate as far as the Walnut Creek canal may discharge into the creek through the underlying ground water, or could "daylight" in the form of surface seeps along the creek bank during times of increased rainfall. Organic chemicals detected in ground water also have the potential of volatilizing through the subsurface into the atmosphere or into indoor air. Ground water could also be extracted from the impacted aquifers through the use of privately owned irrigation wells.

## 12.2 *POTENTIAL HUMAN EXPOSURES*

Using the assumed baseline conditions and potential transport mechanisms, a site-specific Risk Assessment has been developed to evaluate potential complete exposure pathways, including:

- Direct contact with chemicals in soil via incidental ingestion or dermal contact;
- Inhalation of volatile chemicals emanating from subsurface soils or ground water via soil vapor;
- Direct contact with surface water in the Walnut Creek canal;
- Inhalation of volatile chemicals in the Walnut Creek canal;
- Inhalation of volatile chemicals emanating from ground water used for irrigation and/or recreational purposes;
- Direct exposure and incidental ingestion of ground water via cleaning use;
- Ingestion of fish from Walnut Creek; and
- Ingestion of vegetables that have been watered with impacted ground water.

These exposure pathways have been evaluated in the Risk Assessment, which was submitted by CTEH in April 2004.

## **12.3** *CHLORINATED VOC CONTAMINANT FATE AND TRANSPORT*

This section summarizes fate and transport concepts that will be considered in the FS. The four concepts that are addressed include volatilization, adsorption, dispersion, and degradation. Table 12-1 presents applicable fate and transport parameters for VOCs detected at concentrations greater than ESLs at the site.

### **12.3.1** *Volatilization*

Volatilization is the process by which a chemical is transferred from soil or water into the vapor phase. The process of volatilization is an important mechanism for describing the partitioning of VOCs between soil vapor, soil, and ground water.

The equilibrium relationship between the concentration of a VOC in ground water and air can be described by the following equation (Olsen and Davis, 1990):

$$K = \frac{1}{H} = \frac{\text{Concentration in Water (mg/L)}}{\text{Concentration in air (mg/L)}}$$

Where  $H$  = Henry's constant

Henry's constants for the VOCs detected at concentrations greater than MCLs at the site are listed in Table 12-1. These data will be used in the FS to predict the effectiveness of remedial technologies.

### 12.3.2 *Adsorption*

Adsorption is the process by which chemicals from an aqueous solution or vapor phase adhere to the surfaces of vadose zone soil or aquifer materials (Fetter, 1994). The adsorptive properties of organic chemicals greatly affect their transport behavior. Chemicals with strong adsorptive properties with soil are relatively immobile and will not be transported large distances from the source. In contrast, chemicals that adhere weakly to soil can be transported large distances from the source. The degree of adsorption also affects other fate and transport reactions, including volatilization (Olsen and Davis, 1990).

Equilibrium relationships exist between VOC concentrations in ground water and soil. This ratio is referred to as the distribution or partition coefficient ( $K_d$ ), and can be quantified using the following equation (Olsen and Davis, 1990):

$$K_d = \frac{C_s}{C_w} = \frac{\text{Mass of solute on the solid phase per unit mass of solid phase}}{\text{Concentration of solute in solution}}$$

and

$$K_d = K_{oc} \times f_{oc} = \text{Soil Sorption Coefficient} \times \text{Fraction Organic Carbon}$$

Where  $C_s$  is expressed in mg/kg,  
 $C_w$  is expressed in mg/L  
 $f_{oc}$  is expressed in mg of organic carbon/mg of soil

These data will be used to predict the effectiveness of different remedial technologies in the FS.

### 12.3.3 *Dispersion*

Dispersion is the phenomenon that results as ground water flows along different flow paths at different rates (Fetter, 1994). This process is dependent upon ground water velocity and the porosity of the soil matrix. Although the calculation of dispersion involves two types of mixing (mechanical dispersion and molecular diffusion), mechanical dispersion is the dominant process involved.

Mechanical dispersion describes the mixing that occurs because the solute-containing water does not all travel at the same velocity, thus causing mixing along the flow path. This mixing results in dilution. The mixing that occurs along the path of the plume is referred to as longitudinal dispersion and the mixing that occurs as the plume spreads laterally is called transverse dispersion. Mathematically, mechanical dispersion can be described by the following two equations (Fetter, 1993):

Coefficient of longitudinal mechanical dispersion =  $\alpha_i v_i$

Where  $v_i$  = the average linear velocity in the i direction (L/T)  
 $\alpha_i$  = the dynamic dispersivity in the i direction (L)

and

Coefficient of transverse mechanical dispersion =  $\alpha_j v_i$

Where  $v_i$  = the average linear velocity in the j direction (L/T)  
 $\alpha_j$  = the dynamic dispersivity in the i direction (L)

Dispersion will be considered as an attenuation factor within the FS.



#### 12.3.4

#### *Degradation*

VOC transformation and degradation occur at many sites due to natural biotic and abiotic processes in the subsurface. These processes transform original VOC compounds to byproducts. Understanding degradation can be important to assessing plume migration and attenuation at sites where degradation rates are significantly high. In some cases, more harmful substances are created, such as the transformation of cis-1,2-DCE to VC. In other cases, complete destruction occurs and toxic chemicals are reduced to innocuous substances, such as the mineralization of VC to carbon dioxide and water.

The most common degradation process that influences chlorinated ethene plumes is reductive dechlorination. This process results in the sequential degradation of more chlorinated compounds to less chlorinated compounds, such as PCE to TCE (USEPA, 1998). Other processes, such as cometabolism and direct mineralization, can influence chlorinated ethene plumes as well (USEPA, 1998). If complete reductive dechlorination occurs, the following sequence of products occurs: PCE, TCE, 1,2-DCE, VC, ethene, carbon dioxide, and water. Each step leading to VC liberates chloride ions. Chlorinated ethene plumes with active degradation display characteristic patterns of compounds. In the case of complete reductive dechlorination, various configurations of the general pattern in Figure 12-1 may be observed. In many cases, the complete degradation sequence does not occur.

The Hookston Station VOC plume is predominantly TCE, with relatively low ratios of breakdown products. Based on the distribution of cis-1,2-DCE, it is evident that natural processes at the site are transforming TCE to cis-1,2-DCE. VC has only been detected at MW-04 (where petroleum hydrocarbons are also present), indicating that very limited reductive dechlorination of cis-1,2-DCE is occurring. Several samples were analyzed for ethene, which reflects VC degradation (Table 8-5). No ethene was detected, consistent with the lack of VC at the site.

This pattern of compounds within the Hookston Station VOC plume indicates that the natural system has played a limited role to transform, but not to completely destroy chlorinated VOCs. Other natural attenuation processes, such as adsorption and dispersion, have likely played a stronger role in limiting the extent of the plume.

Fourteen years ago, TCE was identified in ground water at the site. For approximately 6 years after this initial discovery, six different phases of preliminary investigations were completed to identify the probable sources and the impacted area of this ground water problem. A financial responsibility settlement was reached approximately 4 years later. None of the primary parties involved in the work on the property completed to date (Mr. Helix, UPRR, and the CCCRA) caused the chemical release. In advance of any regulatory orders to further investigate the environmental impacts at the site, in December 2000, a *Remedial Investigation Workplan* was prepared on behalf of Mr. Helix and UPRR. Mr. Helix and UPRR voluntarily requested oversight of the investigation from the RWQCB, and have been working cooperatively with the RWQCB to move the investigation and remediation program forward. Over the past 3.5 years, an extensive multi-phase, multi-media investigation has been carried out both on and off the site.

What we know about the site is detailed within the body of this report, but in summary, the key findings of the RI that will be used as the basis for the forthcoming FS are provided below:

- This is primarily a TCE in ground water issue. Daughter products produced by the natural breakdown of TCE are observed at the site, but the complete breakdown of these chemicals (to ethene) has not been observed. Other COPCs in both soil and ground water (e.g., metals, SVOCs, PCBs, and TPH) are limited in concentration and extent, do not add significantly to human health risk at the site, and will therefore not be considered in the FS.
- TCE in soils on the site are widespread, but the observed concentrations are generally low. During the Source Area Investigation phase of the Phase II RI, no obvious high-concentration source areas were identified that warranted immediate remedial action. The highest concentrations of TCE in soil (2,580 µg/kg) were found beneath the commercial building at 199 Mayhew Way.
- The TCE in ground water is primarily found within two monitoring zones at depths above approximately 70 feet bgs. The A-Zone represents thin, discontinuous sand units where ground water is first encountered. To date, the highest concentration of TCE reported in an A-Zone monitoring well was 8,480 µg/L at MW-14A, located near the northeastern property boundary along Bancroft Road, approximately

200 feet north of the machine shop that was formerly operated on Bancroft Road. These sandy layers are sandwiched between fine-grained silts and clays. The B-Zone represents the first laterally continuous sand and gravel deposit, and is generally found between 40 and 70 feet bgs. To date, the highest concentration of TCE reported in a B-Zone monitoring well was 11,000 µg/L at MW-11B, located near the southwestern property boundary. Ground water in both of these zones flows north to northeast beneath the site. The deeper C-Zone aquifer unit has not been significantly impacted by TCE.

- The high concentration core of the TCE plume in ground water is relatively narrow on site (e.g., the width of the central portion of the A-Zone plume with concentrations greater than 500 µg/L is only approximately 120 feet).
- The Hookston Station site is not the only contributor to chemicals in ground water within the study area. Based on ground water flow directions and chemical distribution data, VOCs found in ground water along Vincent Road, Estand Way, and within the Fair Oaks neighborhood northwest of the site are not associated with the Hookston Station VOC plume. These chemicals are attributable to one or more off-site (i.e., non-Hookston) sources. Some of these off-site chemical impacts, such as the PCE and TCE found along Vincent Road, have migrated onto the Hookston Station site, thereby creating a commingled VOC plume. The downgradient commingled VOC plume is wider than the on-site TCE plume.
- Vapors associated with ground water VOC impacts have been detected in indoor air samples within the commercial building at 199 Mayhew Way, as well as within homes in the downgradient residential neighborhood.
- Several privately owned irrigation wells have been identified within the footprint of the Hookston Station VOC plume. Mr. Helix and UPRR have offered (and in many cases, have already implemented) removal of these impacted wells to eliminate the potential for exposure to impacted ground water. This work is being performed in cooperation with the RWQCB and the Contra Costa County Environmental Health Department.
- Low concentrations of VOCs present in the Hookston Station VOC plume are also present within surface water of the Walnut Creek canal. However, other VOCs that are not associated with the Hookston Station VOC plume are also detected in the creek. The detected concentrations are below surface water quality goals.

Given the complexities of characterizing chemical impacts to all media that have been studied during the site investigations (soil, soil vapor, ground water, surface water, and air), and given the natural variations in the subsurface environment, small data gaps may remain. The site characterization that was completed for this RI is sufficient for the purposes of preparing the FS.

- Center for Toxicology and Environmental Health, L.L.C. (CTEH). 2003a. *Risk Assessment Workplan*. 14 May 2003.
- CTEH. 2003b. *Risk Assessment Workplan Addendum*. 15 August 2003.
- CTEH. 2004a. *Risk Assessment*. April 2004.
- CTEH. 2004b. Letter to Bruce Wolfe, San Francisco Regional Water Quality Control Board. Re: *Conditional Approval of the Risk Assessment Report* (Response to RWQCB Comments). 1 July 2004.
- Dibblee, T.W. 1980. *Preliminary Geologic Map of the Walnut Creek Quadrangle, Contra Costa County, California*. United States Geological Survey; Open File Report 80-351.
- Engeo, Inc. 1991. *Preliminary Site Characterization*. 7 May 1991.
- Engeo. 1992a. *Report on Ground Water Sampling*. 14 February 1992.
- Engeo. 1992b. *Initial Soil Characterization Study*. 3 March 1992.
- ERM-West, Inc. (ERM). 2000. *Phase I Remedial Investigation Sampling and Analysis Plan*. December 2000.
- ERM. 2001a. *First Quarter 2001 Ground Water Monitoring Report*. 19 July 2001.
- ERM. 2001b. *Second Quarter 2001 Ground Water Monitoring Report*. 4 October 2001.
- ERM. 2002a. *Third Quarter 2001 Ground Water Monitoring Report*. 29 January 2002.
- ERM. 2002b. *Well Survey*. 13 September 2002.
- ERM. 2002c. *Remedial Investigation Progress Report*. 19 October 2002.

- ERM. 2002d. *Preliminary Risk Evaluation*. 22 October 2002.
- ERM. 2002e. *Interim Data Submittal*. 5 November 2002.
- ERM. 2003a. *Area Well Survey Report*. May 2003.
- ERM. 2003b. *Source Area Investigation Workplan*. 15 April 2003.
- ERM. 2003c. *Second Quarter 2003 Ground Water Monitoring Report*.  
30 July 2003.
- ERM. 2003d. *Phase II Remedial Investigation Sampling and Analysis Plan*.  
15 August 2003.
- ERM. 2003e. *Site History Data Summary*. 5 September 2003.
- ERM. 2003f. *Well Survey Update*. 13 October 2003.
- ERM. 2003g. *Third Quarter 2003 Ground Water Monitoring Report*. 30  
October 2003.
- ERM. 2003h. *Source Area Investigation and Interim Remedial Measures  
Analysis Report*. 14 November 2003.
- ERM. 2003i. *Indoor Air Sampling Workplan*. 16 December 2003.
- ERM. 2003j. *Indoor Air Sampling Workplan Addendum*. 31 December 2003.
- ERM. 2004a. *Fourth Quarter 2003 Ground Water Monitoring Report*. 30  
January 2004.
- ERM. 2004b. *First Quarter 2004 Ground Water Monitoring Report*. 30 April  
2004.
- Fetter, C.W. 1993. *Contaminant Hydrogeology*. Macmillan Publishing  
Company. New York. 1993.
- Fetter, C.W. 1994. *Applied Hydrogeology*. Merrill Publishing Company.  
Columbus, Ohio. 1994.
- GRIBI Associates (GRIBI). 2003a. *Report of Groundwater Monitoring  
Conducted on January 6 and May 1, 2003*. 27 June 2003.

- GRIBI. 2003b. *Report of Soil and Groundwater Investigation, Pitcock Petroleum UST Site, 220 Hookston Road, Pleasant Hill, California*. 14 October 2003.
- Harding Lawson Associates (HLA). 1990a. *Modified Phase I Preliminary Report*. 5 January 1990.
- HLA. 1990b. *Remedial Investigation*. 26 June 1990.
- Interstate Technology & Regulatory Council, Diffusion Sampler Team. 2004. *Technical and Regulatory Guidance for Using Polyethylene Diffusion Bag Samplers to Monitor Volatile Organic Compounds in Groundwater*. February 2004.
- Lyman, Warren J., William F. Reehl, David H. Rosenblatt. 1990. *Handbook of Chemical Property Estimation Methods*. American Chemical Society, Washington DC. 1990.
- Olsen, Roger L., and Andy Davis. June 1990. *Predicting the Fate and Transport of Organic Compounds in Groundwater (Part 1)*. HMC May/June 1990.
- RWQCB. 2003. *Screening For Environmental Concerns At Sites With Contaminated Soil and Groundwater, Volume 1: Summary Tier I Lookup Tables*. July 2003 (updated 4 February 2004).
- Schmidt, Dr. C. E. 2002. *Draft Technical Memorandum, Results of the Surface Flux Chamber Testing and Ambient Air Testing Conducted at the Hookston Station Site, Pleasant Hill, California*. June 2002.
- Treadwell & Rollo, Inc. (T&R). 1993. *Subsurface Investigation*. 12 November 1993.
- T&R. 1996. *Supplemental Subsurface Investigation*. 12 February 1996.
- United States Environmental Protection Agency (USEPA). 1986. *Measurement of Gaseous Emission Rates from Land Surfaces Using an Emission Isolation Flux Chamber, Users Guide*. EPA Environmental Monitoring Systems Laboratory, Las Vegas, Nevada. February 1986.
- USEPA. 1991. *Ground Water Issue, Dense Nonaqueous Phase Liquids*. EPA/540/4-91-002. March 1991.

USEPA. 1998. *Technical Protocol for Evaluating Natural Attenuation of Chlorinated Solvents in Ground Water*. EPA/600/R-98/128. September 1998.

USEPA Region IX. 1996. *Preliminary Remediation Goals*. August 1996.

Verschueren, Karel. 1983. *Handbook of Environmental Data on Organic Chemicals (2<sup>nd</sup> Edition)*. Van Nostrand Reinhold Company, New York. 1983.



## *Tables*

Table 5-1  
Private Well Survey Data within Hookston Plume Area  
Hookston Station Remedial Investigation  
Pleasant Hill, California

ADDRESS	APN	WELLS ON PROPERTY YES/NO	NUMBER OF WELLS	WELL DIAMETER	WELL DEPTH	WELL MATERIAL	DATE OF INSTALLATION	FREQUENCY OF USE	USE OF WATER FROM WELL	COMMENTS/STATUS
<b>Properties with Active Wells within Hookston Plume Area:</b>										
1270 WATERLOO CT	148-323-003-1	Yes	Unknown	Unknown	Unknown	Unknown	Unknown	Once a week	Landscaping	Sampled from spigot on 3/24/04.
1001 STIMEL DR	148-322-013-1	Yes	1	4"	75'	PVC Plastic	Unknown	3 times a week	Landscaping	Owner collected sample, 0.25 mg/L TCE. Sample collected by ERM from spigot 3/29/04.
1000 STIMEL DR	148-323-027-0	Yes	1	8"	60'	PVC Plastic	Unknown	2x per week in summer	Landscaping	Well casing replaced 6 years earlier. Sampled from spigot 4/13/04.
1039 STIMEL DR	148-333-011-2	Yes	1	Unknown	Unknown	Unknown	Unknown	-	Landscaping/Pool	Sampled from spigot on 3/23/04.
<b>Properties with Inactive Wells within Hookston Plume Area:</b>										
1038 BERMUDA DR	148-331-016-3	Yes	1	Unknown	Unknown	Unknown	Unknown	Never Used	Unknown	Installed PDB 3/23/04. Sampled PDB 4/7/04.
1340 EDINBURGH CT	148-331-024-7	Yes	1	4"	30'	PVC Plastic	Unknown	Never	Unknown	Well abandoned 6/24/04
1313 GRAGG LN	148-331-069-2	Yes	1	Unknown	Unknown	Unknown	Unknown	None	N/A	Well abandoned 6/25/04
1013 BERMUDA DR	148-323-021-3	Yes	1	6"	5.5'	Unknown	1977	None	Landscaping	Well abandoned 6/25/04
1024 BERMUDA DR	148-331-029-6	Yes	1	4"	25'	Open Borehole	1977	None	N/A	Well abandoned 6/24/04
1200 THAMES DR	148-322-005-7	Yes	1	4"	30'	PVC Plastic	1976	None	Landscaping	Inspected 3/29/04. Sampled from spigot 4/2/04.
1321 HAMPSHIRE CT	148-331-031-2	Yes	1	6"	Unknown	Steel	Unknown	None	N/A	Well abandoned 6/25/04
1006 STIMEL DR	148-323-006-4	Yes	1	Unknown	Unknown	Unknown	Unknown	None	N/A	Wellhead buried beneath landscaping; unable to locate.
<b>Properties that Did Not Respond to Mailings and Home Visits:</b>										
1020 HAMPTON DR	148-325-013-8	No response to three mailings and home visits on 20 August, 29 August, and 31 August 2003.								
1025 STIMEL DR	148-333-004-7	Met with survey staff. Refused to state.								

*Table 5-2  
Private Residence Building Design for Indoor Air Sampling Locations  
Hookston Station Remedial Investigation  
Pleasant Hill, California*

Sample Location/Street Address	Number of Floors	Foundation Design	Heating System	Ventilation System	Sample Start Time	Sample End Time	Inside Temp.	Inside Relative Humidity	Outside Temp.	Outside Relative Humidity
1208 Hookston	2	Concrete Slab	Hot Air Circulation	Swamp Cooler in Summer	1/19/04 20:15	1/20/04 8:00	---	---	---	---
1009 Stimel	1	Crawl Space	Hot Air Circulation	Central AC, Kitchen range hood fan, bathroom ventilation fans	1/19/04 20:40	1/20/04 8:10	---	---	---	---
1000 Hampton	1	Crawl Space	Hot Air Circulation	Central AC	1/21/04 20:02	1/22/04 8:00	---	---	---	---
1006 Stimel	1	Crawl Space	Hot Air Circulation	Central AC, Kitchen range hood fan, bathroom ventilation fans	2/17/04 19:55	2/18/04 7:55	70	59	70	52
1005 Stimel	2	Crawl Space	Central Air	Central AC, Kitchen range hood fan, bathroom ventilation fans, mechanical fans	2/17/04 20:10	2/18/04 8:04	74	63	73	55
1204 Hookston	2	Concrete Slab	Radiator	Mechanical fans, Kitchen range hood fan, bathroom ventilation fans	2/19/04 19:40	2/20/04 7:40	64	46	63	37
1002 Hampton	2	Crawl Space	Hot Air Circulation- Forced Air	Kitchen range hood fan, bathroom ventilation fans	2/19/04 19:55	2/20/04 7:54	70	52	57	44
1006 Hampton	1	Crawl Space	No Information	Central AC, Kitchen range hood fan, bathroom ventilation fans, mechanical fans	2/19/04 20:10	2/20/04 8:00	70	50	57	44
1008 Hampton	1	Crawl Space	Hot Air Circulation	Central AC, Kitchen range hood fan, bathroom ventilation fans, mechanical fans	2/25/04 19:35	2/26/04 7:32	---	---	---	---
1220 Thames	2	Crawl Space	Hot Air Circulation	Central AC, bathroom ventilation fans	2/19/04 20:25	2/20/04 8:21	65	51	55	44
1007 Stimel	2	Crawl Space	Hot Air Circulation	Central AC, Kitchen range hood fan, bathroom ventilation fans	2/26/04 19:45	2/27/04 7:41	69	56	53	44
1260 Waterloo	2	Crawl Space	Central Heat, Gas	Central AC, Kitchen range hood fan, bathroom ventilation fans	2/26/04 20:05	2/27/04 8:00	68	49	53	64
1271 Hookston	2	Crawl Space	Hot Air Circulation	Kitchen range hood fan	3/3/04 19:30	3/4/04 7:30	68	46	58	43
1270 Waterloo	2	Crawl Space	F.A.F Natural Gas	One individual air conditioning unit	3/16/04 7:20	3/17/04 7:25	75	33	74	26
1011 Bermuda	1	Crawl Space	Hot Air Circulation	Central AC, kitchen range hood fan	3/16/04 19:40	3/17/04 7:40	68	35	76	31
1013 Bermuda	2	Crawl Space	Hot Air Circulation	Mechanical fans, Kitchen range hood fan, bathroom ventilation fans	3/16/04 19:55	3/17/04 7:50	74	33	72	32
1000 Stimel	1	Crawl Space	Hot Air Circulation	Central AC, bathroom ventilation fans	4/12/04 19:54	4/13/04 7:45	65	44	64	39

**Table 6-1**  
**Grain Size Distribution Analyses Results**  
**Hookston Station Remedial Investigation**  
**Pleasant Hill, California**

Sample Location	Sample Depth (ft)	Aquifer Zone	Grain Size Distribution				Organic Content (%)	Specific Gravity	In-Place Density (g/cm <sup>3</sup> )	Porosity (%)
			% gravel	% sand	%silt	% clay				
B-73	7.5-9	A-zone	0.0	11.2	41.3	47.5	4.6	2.60	1.51	41.9
B-88	9.5	A-zone	0.0	4.2	39.8	56.0	4.7	2.60	1.66	36.2
MW-13A	7	A-zone	0.0	19.2	38.9	41.9	3.7	2.62	1.23	53.1
MW-15A	15.5	A-zone	15.6	60.2	14.9	9.3	1.1	na	na	na
MW-15B	50	B-zone	0.7	25.5	46.9	26.9	1.7	na	na	na
MW-16A	16.5	A-zone	0.0	38.1	43.1	18.8	1.5	na	na	na

*Table 6-2  
Ground Water Elevations  
Hookston Station Remedial Investigation  
Pleasant Hill, California*

<b>Location</b>	<b>Date</b>	<b>Screen Interval (ft bgs)</b>	<b>Top of Casing Elevation (feet)</b>	<b>Depth to Water (feet)</b>	<b>Product Thickness (feet)</b>	<b>Ground Water Elevation (feet)</b>
<i>Shallow Monitoring Wells</i>						
MW-01	4/25/1990	10-20	64.52	15.07	--	49.45
	5/8/1990	10-20	64.52	15.22	--	49.30
	5/17/1990	10-20	64.52	15.33	--	49.19
	3/19/1991	10-20	64.52	14.69	--	49.83
	1/21/1992	10-20	64.52	16.04	--	48.48
	4/2/1993	10-20	64.52	13.46	--	51.06
	9/9/1993	10-20	64.52	16.26	--	48.26
	9/16/1993	10-20	64.52	15.42	--	49.10
	11/17/1995	10-20	64.52	15.29	--	49.23
	6/29/2000	10-20	64.52	14.79	--	49.73
	3/12/2001	10-20	64.52	14.24	--	50.28
	6/27/2001	10-20	64.52	15.37	--	49.15
	9/18/2001	10-20	64.52	15.90	--	48.62
	12/20/2001	10-20	64.52	14.38	--	50.14
	3/20/2002	10-20	64.52	14.47	--	50.05
	6/2/2002	10-20	64.52	15.04	--	49.48
	9/24/2002	10-20	64.52	15.65	--	48.87
	11/14/2002	10-20	64.52	15.43	--	49.09
	2/19/2003	10-20	64.52	14.1	--	50.42
	5/6/2003	10-20	64.52	13.91	--	50.61
7/22/2003	10-20	64.52	15.01	--	49.51	
10/24/2003	10-20	65.06	15.62	--	49.44	
3/10/2004	10-20	65.06	13.95	--	51.11	
4/19/2004	10-20	65.06	14.49	--	50.57	
7/30/2004	10-20	65.06	15.28	--	49.78	
MW-02	4/25/1990	11-21	68.48	17.43	--	51.05
	5/8/1990	11-21	68.48	17.69	--	50.79
	5/17/1990	11-21	68.48	17.82	--	50.66
	3/19/1991	11-21	68.48	17.02	--	51.46
	1/21/1992	11-21	68.48	18.39	--	50.09
	4/1/1993	11-21	68.48	15.19	--	53.29
	11/17/1995	11-21	68.48	17.76	--	50.72
	6/27/2001	11-21	68.48	NM	--	--
	9/18/2001	11-21	68.48	NM	--	--
	12/20/2001	11-21	68.48	NM	--	--
	3/20/2002	11-21	68.48	NM	--	--
	6/2/2002	11-21	68.48	NM	--	--
	9/24/2002	11-21	68.48	NM	--	--
	11/14/2002	11-21	68.48	NM	--	--
	2/19/2003	11-21	68.48	NM	--	--
	5/6/2003	11-21	68.48	NM	--	--
7/22/2003	11-21	68.48	NM	--	--	
10/24/2003	11-21	68.48	NM	--	--	
3/10/2004	11-21	68.48	NM	--	--	

*Table 6-2  
Ground Water Elevations  
Hookston Station Remedial Investigation  
Pleasant Hill, California*

<b>Location</b>	<b>Date</b>	<b>Screen Interval (ft bgs)</b>	<b>Top of Casing Elevation (feet)</b>	<b>Depth to Water (feet)</b>	<b>Product Thickness (feet)</b>	<b>Ground Water Elevation (feet)</b>
MW-03	4/25/1990	10-20	65.20	16.40	--	48.80
	5/8/1990	10-20	65.20	16.54	--	48.66
	5/17/1990	10-20	65.20	16.64	--	48.56
	3/19/1991	10-20	65.20	16.02	--	49.19
	1/21/1992	10-20	65.20	17.33	--	47.87
	4/2/1993	10-20	65.20	15.02	--	50.18
	9/9/1993	10-20	65.20	16.69	--	48.51
	9/16/1993	10-20	65.20	16.71	--	48.49
	11/17/1995	10-20	65.20	16.42	--	48.78
	6/29/2000	10-20	65.20	15.64	--	49.56
	3/12/2001	10-20	65.20	15.08	--	50.12
	6/27/2001	10-20	65.20	16.11	--	49.09
	9/18/2001	10-20	65.20	16.58	--	48.62
	12/20/2001	10-20	65.20	15.46	--	49.74
	3/20/2002	10-20	65.20	15.38	--	49.82
	6/2/2002	10-20	65.20	15.87	--	49.33
	9/24/2002	10-20	65.20	16.35	--	48.85
	11/14/2002	10-20	65.20	16.19	--	49.01
	2/19/2003	10-20	65.20	15.12	--	50.08
	5/6/2003	10-20	65.20	NM	--	--
	7/22/2003	10-20	65.20	NM	--	--
	10/24/2003	10-20	65.20	NM	--	--
	3/10/2004	10-20	65.56	14.94	--	50.62
4/19/2004	10-20	65.56	15.75	--	49.81	
7/30/2004	10-20	65.56	16.49	--	49.07	
MW-04	4/25/1990	11-21	64.67	15.93	--	48.74
	5/8/1990	11-21	64.67	16.04	--	48.63
	5/17/1990	11-21	64.67	16.13	--	48.54
	3/19/1991	11-21	64.67	15.65	--	49.02
	1/21/1992	11-21	64.67	16.90	0.03	47.77
	4/2/1993	11-21	64.67	15.01	0.34	49.93
	9/9/1993	11-21	64.67	16.87	0.34	47.80
	9/16/1993	11-21	64.67	16.34	0.39	48.33
	11/17/1995	11-21	64.67	16.23	0.33	48.44
	6/29/2000	11-21	64.67	15.57	--	49.10
	3/12/2001	11-21	64.67	15.15	--	49.52
	6/27/2001	11-21	64.67	13.83	--	50.84
	9/18/2001	11-21	64.67	16.23	--	48.44
	12/20/2001	11-21	64.67	15.42	0.01	49.25
	3/20/2002	11-21	64.67	15.29	--	49.38
	6/2/2002	11-21	64.67	15.70	0.01	48.97
	9/24/2002	11-21	64.67	15.99	0.01	48.68
	11/14/2002	11-21	64.67	15.91	0.01	48.76
	2/19/2003	11-21	64.67	15.09	0.01	49.58
	5/6/2003	11-21	64.67	14.94	0.01	49.73
	7/22/2003	11-21	64.67	15.61	0.01	49.06
	10/24/2003	11-21	64.95	16.05	0.01	48.90
	3/10/2004	11-21	64.95	14.95	--	50.00
4/19/2004	11-21	64.95	15.33	--	49.62	
7/30/2004	11-21	64.95	15.79	--	49.16	

*Table 6-2  
Ground Water Elevations  
Hookston Station Remedial Investigation  
Pleasant Hill, California*

<b>Location</b>	<b>Date</b>	<b>Screen Interval (ft bgs)</b>	<b>Top of Casing Elevation (feet)</b>	<b>Depth to Water (feet)</b>	<b>Product Thickness (feet)</b>	<b>Ground Water Elevation (feet)</b>
MW-05	3/19/1991	10-30	68.60	17.52	--	51.08
	1/21/1992	10-30	68.60	18.89	--	49.71
	4/1/1993	10-30	68.60	15.72	--	52.88
	9/16/1993	10-30	68.60	18.36	--	50.24
	11/17/1995	10-30	68.60	18.24	--	50.36
	6/28/2000	10-30	68.60	16.65	--	51.95
	3/12/2001	10-30	68.60	15.90	--	52.70
	6/27/2001	10-30	68.60	17.48	--	51.12
	9/18/2001	10-30	68.60	18.15	--	50.45
	12/20/2001	10-30	68.60	17.78	--	50.82
	3/20/2002	10-30	68.60	16.26	--	52.34
	6/2/2002	10-30	68.60	17.10	--	51.50
	9/24/2002	10-30	68.60	18.05	--	50.55
	11/14/2002	10-30	68.60	17.75	--	50.85
	2/19/2003	10-30	68.60	15.91	--	52.69
	5/6/2003	10-30	68.60	15.47	--	53.13
	7/22/2003	10-30	68.60	16.99	--	51.61
	10/24/2003	10-30	68.58	17.89	--	50.69
	3/10/2004	10-30	68.58	15.57	--	53.01
	4/19/2004	10-30	68.58	16.30	--	52.28
7/30/2004	10-30	68.58	17.58	--	51.00	
MW-06	3/19/1991	15-35	72.82	19.69	--	53.13
	1/21/1992	15-35	72.82	20.84	--	51.98
	4/1/1993	15-35	72.82	17.25	--	55.57
	9/16/1993	15-35	72.82	20.64	--	52.18
	11/17/1995	15-35	72.82	20.02	--	52.80
	6/28/2000	15-35	72.82	18.50	--	54.32
	3/12/2001	15-35	72.82	17.30	--	55.52
	6/27/2001	15-35	72.82	19.29	--	53.53
	9/18/2001	15-35	72.82	21.50	--	51.32
	12/20/2001	15-35	72.82	18.27	--	54.55
	3/20/2002	15-35	72.82	17.71	--	55.11
	6/2/2002	15-35	72.82	18.67	--	54.15
	9/24/2002	15-35	72.82	19.81	--	53.01
	11/14/2002	15-35	72.82	19.60	--	53.22
	2/19/2003	15-35	72.82	17.22	--	55.60
	5/6/2003	15-35	72.82	16.95	--	55.87
	7/22/2003	15-35	72.82	18.60	--	54.22
	10/24/2003	15-35	72.80	19.65	--	53.15
	3/10/2004	15-35	72.80	16.89	--	55.91
	4/19/2004	15-35	72.80	17.65	--	55.15
7/30/2004	15-35	72.80	19.38	--	53.42	

*Table 6-2  
Ground Water Elevations  
Hookston Station Remedial Investigation  
Pleasant Hill, California*

<b>Location</b>	<b>Date</b>	<b>Screen Interval (ft bgs)</b>	<b>Top of Casing Elevation (feet)</b>	<b>Depth to Water (feet)</b>	<b>Product Thickness (feet)</b>	<b>Ground Water Elevation (feet)</b>
MW-07	8/25/1993	15-35	65.09	17.54	--	47.55
	9/9/1993	15-35	65.09	17.05	--	48.04
	9/16/1993	15-35	65.09	16.56	--	48.53
	11/17/1995	15-35	65.09	16.46	--	48.63
	6/29/2000	15-35	65.09	15.68	--	49.41
	3/12/2001	15-35	65.09	15.29	--	49.80
	6/27/2001	15-35	65.09	16.11	--	48.98
	9/18/2001	15-35	65.09	16.45	--	48.64
	12/20/2001	15-35	65.09	15.58	--	49.51
	3/20/2002	15-35	65.09	15.46	--	49.63
	6/2/2002	15-35	65.09	15.88	--	49.21
	9/24/2002	15-35	65.09	16.31	--	48.78
	11/14/2002	15-35	65.09	16.15	--	48.94
	2/19/2003	15-35	65.09	15.26	--	49.83
	5/6/2003	15-35	65.09	15.08	--	50.01
	7/22/2003	15-35	65.09	15.75	--	49.34
	10/24/2003	15-35	65.18	16.25	--	48.93
3/10/2004	15-35	65.18	15.03	--	50.15	
4/19/2004	15-35	65.18	15.44	--	49.74	
7/30/2004	15-35	65.18	16.04	--	49.14	
MW-08A	10/9/2003	10-25	66.80	16.98	--	49.82
	3/10/2004	10-25	66.80	15	--	51.80
	4/19/2004	10-25	66.80	15.69	--	51.11
	7/30/2004	10-25	66.80	16.75	--	50.05
MW-11A	10/9/2003	10-25	70.05	18.80	--	51.25
	3/10/2004	10-25	70.05	15.35	--	54.70
	4/19/2004	10-25	70.05	16.12	--	53.93
	7/30/2004	10-25	70.05	17.72	--	52.33
MW-12A	10/9/2003	10-25	70.13	--	--	--
	3/10/2004	10-25	70.13	15.45	--	54.68
	4/19/2004	10-25	70.13	16.22	--	53.91
	7/30/2004	10-25	70.13	18.45	--	51.68
MW-13A	10/9/2003	18-33	67.67	17.06	--	50.61
	3/10/2004	18-33	67.67	14.62	--	53.05
	4/19/2004	18-33	67.67	15.50	--	52.17
	7/30/2004	18-33	67.67	16.80	--	50.87
MW-14A	3/10/2004	29-34	64.71	14.62	--	50.09
	4/19/2004	29-34	64.71	15.58	--	49.13
	7/30/2004	29-34	64.71	16.63	--	48.08
MW-15A	3/10/2004	14.5-24.5	63.68	14.72	--	48.96
	4/19/2004	14.5-24.5	63.68	15.67	--	48.01
	7/30/2004	14.5-24.5	63.68	16.41	--	47.27
MW-16A	3/10/2004	15-25	61.15	14.11	--	47.04
	4/19/2004	15-25	61.15	15.52	--	45.63
	7/30/2004	15-25	61.15	16.35	--	44.80



*Table 6-2  
Ground Water Elevations  
Hookston Station Remedial Investigation  
Pleasant Hill, California*

<b>Location</b>	<b>Date</b>	<b>Screen Interval (ft bgs)</b>	<b>Top of Casing Elevation (feet)</b>	<b>Depth to Water (feet)</b>	<b>Product Thickness (feet)</b>	<b>Ground Water Elevation (feet)</b>
MW-17A	3/10/2004	20.7-30.7	64.61	21.90	--	42.71
	4/19/2004	20.7-30.7	64.61	22.91	--	41.70
	7/30/2004	20.7-30.7	64.61	23.41	--	41.20
MW-18A	3/10/2004	14.7-24.7	69.10	17.35	--	51.75
	4/19/2004	14.7-24.7	69.10	18.48	--	50.62
	7/30/2004	14.7-24.7	69.10	19.81	--	49.29
MW-19A	3/10/2004	14-24	67.32	20.30	--	47.02
	4/19/2004	14-24	67.32	21.25	--	46.07
	7/30/2004	14-24	67.32	22.13	--	45.19
MW-20A	3/10/2004	10-20	66.47	11.89	--	54.58
	4/19/2004	10-20	66.47	12.73	--	53.74
	7/30/2004	10-20	66.47	14.19	--	52.28
MW-21A	3/10/2004	10-20	65.81	12.23	--	53.58
	4/19/2004	10-20	65.81	13.00	--	52.81
	7/30/2004	10-20	65.81	14.33	--	51.48
MW-22A	3/10/2004	15-25	64.11	14.51	--	49.60
	4/19/2004	15-25	64.11	14.90	--	49.21
	7/30/2004	15-25	64.11	15.31	--	48.80
MW-23A	7/30/2004	17-27	63.74	18.64	--	45.10
MW-24A	3/15/2004	19.5-29.5	61.04	16.55	--	44.49
	4/19/2004	19.5-29.5	61.04	17.38	--	43.66
	7/30/2004	19.5-29.5	61.04	18.05	--	42.99
MW-25A	7/30/2004	18-28	65.37	23.17	--	42.20
<b>Intermediate Monitoring Wells</b>						
MW-01D	4/27/1993	45-60	66.56	16.37	--	50.19
	9/16/1993	45-60	66.56	18.43	--	48.13
	11/17/1995	45-60	66.56	18.04	--	48.52
	6/29/2000	45-60	66.56	17.02	--	49.54
	3/12/2001	45-60	66.56	16.00	--	50.56
	6/27/2001	45-60	66.56	17.76	--	48.80
	9/18/2001	45-60	66.56	18.20	--	48.36
	12/20/2001	45-60	66.56	16.85	--	49.71
	3/20/2002	45-60	66.56	16.47	--	50.09
	6/2/2002	45-60	66.56	17.29	--	49.27
	9/24/2002	45-60	66.56	18.13	--	48.43
	11/14/2002	45-60	66.56	17.68	--	48.88
	2/19/2003	45-60	66.56	16.19	--	50.37
	5/6/2003	45-60	66.56	15.71	--	50.85
	7/22/2003	45-60	66.56	17.04	--	49.52
MW-08B*	10/24/2003	45-60	66.65	17.92	--	48.73
	3/10/2004	45-60	66.65	15.58	--	51.07
	4/19/2004	45-60	66.65	16.54	--	50.11
	7/30/2004	45-60	66.65	17.74	--	48.91

*Table 6-2  
Ground Water Elevations  
Hookston Station Remedial Investigation  
Pleasant Hill, California*

<b>Location</b>	<b>Date</b>	<b>Screen Interval (ft bgs)</b>	<b>Top of Casing Elevation (feet)</b>	<b>Depth to Water (feet)</b>	<b>Product Thickness (feet)</b>	<b>Ground Water Elevation (feet)</b>
MW-02D	8/25/1993	50.5-60.5	61.71	13.45	--	48.26
	9/16/1993	50.5-60.5	61.71	15.42	--	46.29
	11/17/1995	50.5-60.5	61.71	14.78	--	46.93
	6/28/2000	50.5-60.5	61.71	15.01	--	46.70
	3/12/2001	50.5-60.5	61.71	12.94	--	48.77
	6/27/2001	50.5-60.5	61.71	14.43	--	47.28
	9/18/2001	50.5-60.5	61.71	16.10	--	45.61
	12/20/2001	50.5-60.5	61.71	15.00	--	46.71
	3/20/2002	50.5-60.5	61.71	14.02	--	47.69
	6/2/2002	50.5-60.5	61.71	14.93	--	46.78
	9/24/2002	50.5-60.5	61.71	15.74	--	45.97
	11/14/2002	50.5-60.5	61.71	14.93	--	46.78
	2/19/2003	50.5-60.5	61.71	13.6	--	48.11
	5/6/2003	50.5-60.5	61.71	13.54	--	48.17
	7/22/2003	50.5-60.5	61.71	14.93	--	46.78
MW-09B*	10/24/2003	50.5-60.5	61.74	16.16	--	45.58
	3/10/2004	50.5-60.5	61.74	13.14	--	48.60
	4/19/2004	50.5-60.5	61.74	13.97	--	47.77
	7/30/2004	50.5-60.5	61.74	15.58	--	46.16
MW-03D	8/25/1993	40-50	64.10	9.47	--	54.63
	9/16/1993	40-50	64.10	19.49	--	44.61
	11/17/1995	40-50	64.10	19.18	--	44.92
	6/28/2000	40-50	64.10	18.17	--	45.93
	3/12/2001	40-50	64.10	17.09	--	47.01
	6/27/2001	40-50	64.10	18.72	--	45.38
	9/18/2001	40-50	64.10	19.20	--	44.90
	12/20/2001	40-50	64.10	17.87	--	46.23
	3/20/2002	40-50	64.10	17.68	--	46.42
	6/2/2002	40-50	64.10	18.34	--	45.76
	9/24/2002	40-50	64.10	19.08	--	45.02
	11/14/2002	40-50	64.10	18.65	--	45.45
	2/19/2003	40-50	64.10	17.51	--	46.59
	5/6/2003	40-50	64.10	16.95	--	47.15
	7/22/2003	40-50	64.10	18.08	--	46.02
MW10B*	10/24/2003	40-50	64.21	18.87	--	45.34
	3/10/2004	40-50	64.21	16.63	--	47.58
	4/19/2004	40-50	64.21	17.80	--	46.41
	7/30/2004	40-50	64.21	18.61	--	45.60
MW-11B	10/9/2003	40-50	70.22	17.80	--	52.42
	3/10/2004	40-50	70.22	15.35	--	54.87
	4/19/2004	40-50	70.22	16.19	--	54.03
	7/30/2004	40-50	70.22	17.70	--	52.52
MW-12B	10/9/2003	50-60	70.15	19.87	--	50.28
	3/10/2004	50-60	70.15	17.33	--	52.82
	4/19/2004	50-60	70.15	19.09	--	51.06
	7/30/2004	50-60	70.15	19.70	--	50.45

**Table 6-2**  
**Ground Water Elevations**  
**Hookston Station Remedial Investigation**  
**Pleasant Hill, California**

<b>Location</b>	<b>Date</b>	<b>Screen Interval (ft bgs)</b>	<b>Top of Casing Elevation (feet)</b>	<b>Depth to Water (feet)</b>	<b>Product Thickness (feet)</b>	<b>Ground Water Elevation (feet)</b>
MW-13B	10/9/2003	45-55	67.61	19.26	--	48.35
	3/10/2004	45-55	67.61	15.82	--	51.79
	4/19/2004	45-55	67.61	16.81	--	50.80
	7/30/2004	45-55	67.61	18.02	--	49.59
MW-14B	3/10/2004	40-50	64.69	14.58	--	50.11
	4/19/2004	40-50	64.69	15.58	--	49.11
	7/30/2004	40-50	64.69	16.68	--	48.01
MW-15B	3/10/2004	49-59	64.23	15.22	--	49.01
	4/19/2004	49-59	64.23	16.23	--	48.00
	7/30/2004	49-59	64.23	17.24	--	46.99
MW-16B	3/10/2004	35-45	61.06	14.35	--	46.71
	4/19/2004	35-45	61.06	15.66	--	45.40
	7/30/2004	35-45	61.06	16.46	--	44.60
MW-17B	3/10/2004	44-54	64.53	21.82	--	42.71
	4/19/2004	44-54	64.53	22.82	--	41.71
	7/30/2004	44-54	64.53	23.31	--	41.22
MW-18B	3/10/2004	32-42	69.27	17.61	--	51.66
	4/19/2004	32-42	69.27	18.71	--	50.56
	7/30/2004	32-42	69.27	20.02	--	49.25
MW-19B	3/10/2004	29-39	66.67	20.16	--	46.51
	4/19/2004	29-39	66.67	21.35	--	45.32
	7/30/2004	29-39	66.67	22.21	--	44.46
MW-20B	3/10/2004	30.5-40.5	66.46	11.87	--	54.59
	4/19/2004	30.5-40.5	66.46	12.70	--	53.76
	7/30/2004	30.5-40.5	66.46	14.12	--	52.34
MW-21B	3/10/2004	29-39	65.88	12.25	--	53.63
	4/19/2004	29-39	65.88	13.02	--	52.86
	7/30/2004	29-39	65.88	14.36	--	51.52
MW-22B	3/10/2004	40-50	64.44	15.56	--	48.88
	4/19/2004	40-50	64.44	16.45	--	47.99
	7/30/2004	40-50	64.44	17.55	--	46.89
MW-23B	7/30/2004	48-58	63.94	19.10	--	44.84
MW-24B	3/15/2004	39.5-49.5	61.09	16.82	--	44.27
	4/19/2004	39.5-49.5	61.09	17.62	--	43.47
	7/30/2004	39.5-49.5	61.09	18.30	--	42.79
MW-25B	7/30/2004	48-58	66.04	24.55	--	41.49
MW-26B	3/10/2004	40-50	63.13	14.95	--	48.18
	4/19/2004	40-50	63.13	16.58	--	46.55
	7/30/2004	40-50	63.13	17.57	--	45.56

*Table 6-2  
Ground Water Elevations  
Hookston Station Remedial Investigation  
Pleasant Hill, California*

<b>Location</b>	<b>Date</b>	<b>Screen Interval (ft bgs)</b>	<b>Top of Casing Elevation (feet)</b>	<b>Depth to Water (feet)</b>	<b>Product Thickness (feet)</b>	<b>Ground Water Elevation (feet)</b>
<i>Deep Monitoring Wells</i>						
MW-15C	3/10/2004	90-95	64.39	15.5	--	48.89
	4/19/2004	90-95	64.39	16.29	--	48.10
	6/14/2004	90-95	64.39	16.95	--	47.44
	7/30/2004	90-95	64.39	17.45	--	46.94
MW-19C	3/10/2004	70-80	66.86	18.29	--	48.57
	4/19/2004	70-80	66.86	19.40	--	47.46
	6/14/2004	70-80	66.86	20.16	--	46.70
	7/30/2004	70-80	66.86	20.57	--	46.29
MW-23C	6/14/2004	93-103	64.00	17.84	--	46.16
	7/30/2004	93-103	64.00	18.44	--	45.56

**Notes**

ft bgs = feet below ground surface

NM = not measured

\* = MW-01D, MW-02D and MW-03D were renamed MW-08B, MW-09B and MW-10B, respectively, as of October 2003.

The top of casing elevations for wells MW-01, MW-04, MW-05, MW-06, MW-07, MW-08A, MW-08B, MW-09B and MW-10B were resurveyed in October 2003 and new top of casing elevations are now being used.

*Table 6-3  
Vertical Ground Water Gradients  
2004 Ground Water Monitoring Events  
Hookston Station Remedial Investigation  
Pleasant Hill, California*

Well Designation	Date	Screened Interval	Screen Midpoint	Screen Midpoint Separation	Depth to Water	TOC Elevation	Ground Water Elevation	Head Difference	Vertical Gradient
<b>A-B Zone Well Clusters</b>									
MW-08A	3/10/2004	10-25	20.0		15.00	66.80	51.80		
MW-08B	3/10/2004	45-60	52.5	32.5	15.58	66.65	51.07	-0.73	-0.022
MW-08A	4/19/2004	10-25	20.4		15.69	66.80	51.11		
MW-08B	4/19/2004	45-60	52.5	32.2	16.54	66.65	50.11	-1.00	-0.031
MW-08A	7/30/2004	10-25	20.9		16.75	66.80	50.05		
MW-08B	7/30/2004	45-60	52.5	31.6	17.74	66.65	48.91	-1.14	-0.036
<b>Avg Vertical Gradient:</b>									<b>-0.030</b>
MW-11A	3/10/2004	10-25	20.2		15.35	70.05	54.70		
MW-11B	3/10/2004	40-50	45	24.8	15.35	70.22	54.87	0.17	0.007
MW-11A	4/19/2004	10-25	20.56		16.12	70.05	53.93		
MW-11B	4/19/2004	40-50	45	24.4	16.19	70.22	54.03	0.10	0.004
MW-11A	7/30/2004	10-25	21.4		17.72	70.05	52.33		
MW-11B	7/30/2004	40-50	45	23.6	17.70	70.22	52.52	0.19	0.008
<b>Avg Vertical Gradient:</b>									<b>0.006</b>
MW-12A	3/10/2004	10-25	20.23		15.45	70.13	54.68		
MW-12B	3/10/2004	50-60	55	34.8	17.33	70.15	52.82	-1.86	-0.053
MW-12A	4/19/2004	10-25	20.61		16.22	70.13	53.91		
MW-12B	4/19/2004	50-60	55	34.4	19.09	70.15	51.06	-2.85	-0.083
MW-12A	7/30/2004	10-25	21.70		18.45	70.13	51.68		
MW-12B	7/30/2004	50-60	55	33.3	19.70	70.15	50.45	-1.23	-0.037
<b>Avg Vertical Gradient:</b>									<b>-0.058</b>
MW-13A	3/10/2004	18-33	25.5		14.62	67.67	53.05		
MW-13B	3/10/2004	45-55	50	24.5	15.82	67.61	51.79	-1.26	-0.051
MW-13A	4/19/2004	18-33	25.5		15.50	67.67	52.17		
MW-13B	4/19/2004	45-55	50	24.5	16.81	67.61	50.80	-1.37	-0.056
MW-13A	7/30/2004	18-33	25.5		16.80	67.67	50.87		
MW-13B	7/30/2004	45-55	50	24.5	18.02	67.61	49.59	-1.28	-0.052
<b>Avg Vertical Gradient:</b>									<b>-0.053</b>
MW-14A	3/10/2004	29-34	31.5		14.62	64.71	50.09		
MW-14B	3/10/2004	40-50	45	13.5	14.58	64.69	50.11	0.02	0.001
MW-14A	4/19/2004	29-34	31.5		15.58	64.71	49.13		
MW-14B	4/19/2004	40-50	45	13.5	15.58	64.69	49.11	-0.02	-0.001
MW-14A	7/30/2004	29-34	31.5		16.63	64.71	48.08		
MW-14B	7/30/2004	40-50	45	13.5	16.68	64.69	48.01	-0.07	-0.005
<b>Avg Vertical Gradient:</b>									<b>-0.002</b>

*Table 6-3  
Vertical Ground Water Gradients  
2004 Ground Water Monitoring Events  
Hookston Station Remedial Investigation  
Pleasant Hill, California*

Well Designation	Date	Screened Interval	Screen Midpoint	Screen Midpoint Separation	Depth to Water	TOC Elevation	Ground Water Elevation	Head Difference	Vertical Gradient
MW-15A	3/10/2004	14.5-24.5	19.6		14.72	63.68	48.96		
MW-15B	3/10/2004	49-59	54	34.4	15.22	64.23	49.01	0.05	0.001
MW-15A	4/19/2004	14.5-24.5	20.1		15.67	63.68	48.01		
MW-15B	4/19/2004	49-59	54	33.9	16.23	64.23	48.00	-0.01	0.000
MW-15A	7/30/2004	14.5-24.5	20.5		16.41	63.68	47.27		
MW-15B	7/30/2004	49-59	54	33.5	17.24	64.23	46.99	-0.28	-0.008
<b>Avg Vertical Gradient:</b>									<b>-0.002</b>
MW-16A	3/10/2004	15-25	20		14.11	61.15	47.04		
MW-16B	3/10/2004	35-45	40	20.0	14.35	61.06	46.71	-0.33	-0.016
MW-16A	4/19/2004	15-25	20.3		15.52	61.15	45.63		
MW-16B	4/19/2004	35-45	40	19.7	16.23	61.06	44.83	-0.80	-0.041
MW-16A	7/30/2004	15-25	20.7		16.35	61.15	44.80		
MW-16B	7/30/2004	35-45	40	19.3	16.46	61.06	44.60	-0.20	-0.010
<b>Avg Vertical Gradient:</b>									<b>-0.022</b>
MW-17A	3/10/2004	20.7-30.7	26.3		21.90	64.61	42.71		
MW-17B	3/10/2004	44-54	49	22.7	21.82	64.53	42.71	0.00	0.000
MW-17A	4/19/2004	20.7-30.7	26.8		22.91	64.61	41.70		
MW-17B	4/19/2004	44-54	49	22.2	22.82	64.53	41.71	0.01	0.000
MW-17A	7/30/2004	20.7-30.7	27.1		23.41	64.61	41.20		
MW-17B	7/30/2004	44-54	49	21.9	23.31	64.53	41.22	0.02	0.001
<b>Avg Vertical Gradient:</b>									<b>0.000</b>
MW-18A	3/10/2004	14.7-24.7	21.0		17.35	69.10	51.75		
MW-18B	3/10/2004	32-42	37	16	17.61	69.27	51.66	-0.09	-0.006
MW-18A	4/19/2004	14.7-24.7	21.6		18.48	69.10	50.62		
MW-18B	4/19/2004	32-42	37	15.4	18.71	69.27	50.56	-0.06	-0.004
MW-18A	7/30/2004	14.7-24.7	22.3		19.81	69.10	49.29		
MW-18B	7/30/2004	32-42	37	14.7	20.02	69.27	49.25	-0.04	-0.003
<b>Avg Vertical Gradient:</b>									<b>-0.004</b>
MW-19A	3/10/2004	14-24	22.2		20.30	67.32	47.02		
MW-19B	3/10/2004	29-39	34	11.9	20.16	66.67	46.51	-0.51	-0.043
MW-19A	4/19/2004	14-24	22.6		21.25	67.32	46.07		
MW-19B	4/19/2004	29-39	34	11.4	21.35	66.67	45.32	-0.75	-0.066
MW-19A	7/30/2004	14-24	23.1		22.13	67.32	45.19		
MW-19B	7/30/2004	29-39	34	10.9	22.21	66.67	44.46	-0.73	-0.067
<b>Avg Vertical Gradient:</b>									<b>-0.059</b>
MW-20A	3/10/2004	10-20	15.9		11.89	66.47	54.58		
MW-20B	3/10/2004	30.5-40.5	35.5	19.6	11.87	66.46	54.59	0.01	0.001
MW-20A	4/19/2004	10-20	16.4		12.73	66.47	53.74		
MW-20B	4/19/2004	30.5-40.5	35.5	19.1	12.70	66.46	53.76	0.02	0.001
MW-20A	7/30/2004	10-20	17.1		14.19	66.47	52.28		
MW-20B	7/30/2004	30.5-40.5	35.5	18.4	14.12	66.46	52.34	0.06	0.003
<b>Avg Vertical Gradient:</b>									<b>0.002</b>

**Table 6-3**  
**Vertical Ground Water Gradients**  
**2004 Ground Water Monitoring Events**  
**Hookston Station Remedial Investigation**  
**Pleasant Hill, California**

Well Designation	Date	Screened Interval	Screen Midpoint	Screen Midpoint Separation	Depth to Water	TOC Elevation	Ground Water Elevation	Head Difference	Vertical Gradient
MW-21A	3/10/2004	10-20	16.1		12.23	65.81	53.58		
MW-21B	3/10/2004	29-39	34	17.9	12.25	65.88	53.63	0.05	0.003
MW-21A	4/19/2004	10-20	16.5		13.00	65.81	52.81		
MW-21B	4/19/2004	29-39	34	17.5	13.02	65.88	52.86	0.05	0.003
MW-21A	7/30/2004	10-20	17.2		14.33	65.81	51.48		
MW-21B	7/30/2004	29-39	34	16.8	14.36	65.88	51.52	0.04	0.002
<b>Avg Vertical Gradient:</b>									<b>0.003</b>
MW-22A	3/10/2004	15-25	20.0		14.51	64.11	49.60		
MW-22B	3/10/2004	40-50	45	25.0	15.56	64.44	48.88	-0.72	-0.029
MW-22A	4/19/2004	15-25	20.0		14.90	64.11	49.21		
MW-22B	4/19/2004	40-50	45	25.0	16.45	64.44	47.99	-1.22	-0.049
MW-22A	7/30/2004	15-25	20.2		15.31	64.11	48.80		
MW-22B	7/30/2004	40-50	45	24.8	17.55	64.44	46.89	-1.91	-0.077
<b>Avg Vertical Gradient:</b>									<b>-0.052</b>
MW-24A	3/10/2004	19.5-29.5	24.5		16.55	61.04	44.49		
MW-24B	3/10/2004	39.5-49.5	44.5	20.0	16.82	61.09	44.27	-0.22	-0.011
MW-24A	4/19/2004	19.5-29.5	24.5		17.38	61.04	43.66		
MW-24B	4/19/2004	39.5-49.5	44.5	20.0	17.62	61.09	43.47	-0.19	-0.009
MW-24A	7/30/2004	19.5-29.5	24.5		18.05	61.04	42.99		
MW-24B	7/30/2004	39.5-49.5	44.5	20.0	18.30	61.09	42.79	-0.20	-0.010
<b>Avg Vertical Gradient:</b>									<b>-0.010</b>
<b>B-C Zone Well Clusters</b>									
MW-15B	3/10/2004	49-59	54		15.22	64.23	49.01		
MW-15C	3/10/2004	90-95	92.5	38.5	15.50	64.39	48.89	-0.12	-0.003
MW-15B	4/19/2004	49-59	54		16.23	64.23	48.00		
MW-15C	4/19/2004	90-95	92.5	38.5	16.29	64.39	48.10	0.10	0.003
MW-15B	7/30/2004	49-59	54		17.24	64.23	46.99		
MW-15C	7/30/2004	90-95	92.5	38.5	17.45	64.39	46.94	-0.05	-0.001
<b>Avg Vertical Gradient:</b>									<b>-0.001</b>
MW-19B	3/10/2004	29-39	34.0		20.16	66.67	46.51		
MW-19C	3/10/2004	70-80	75	41.0	18.29	66.86	48.57	2.06	0.050
MW-19B	4/19/2004	29-39	34.0		21.35	66.67	45.32		
MW-19C	4/19/2004	70-80	75	41.0	19.40	66.86	47.46	2.14	0.052
MW-19B	7/30/2004	29-39	34.0		22.21	66.67	44.46		
MW-19C	7/30/2004	70-80	75	41.0	20.57	66.86	46.29	1.83	0.045
<b>Avg Vertical Gradient:</b>									<b>0.049</b>

Notes:

All measurements in feet.

Elevations relative to mean sea level.

Negative gradients indicate downward flow potential, positive gradients indicate upward flow potential.

Screen Midpoint = middle of the screen for wells with water levels above the top of the screen or is the midpoint between the water level and bottom of the screen for wells with water levels below the top of the well screen.





Table 7-1  
 Passive Soil Vapor Analytical Results  
 Hookston Station Remedial Investigation  
 Pleasant Hill, California

Location	Date	Depth	Laboratory	Analytical Method	CB	t-1,2-DCE	c-1,2-DCE	1,1-DCA	1,1,1-TCA	1,2-DCA	TCE	PCE	1,4-DCB	1,1-DCE	CF	CCL4	1,1,2-TCA	1,1,1,2-TETR	1,1,2,2-TCA	1,3-DCB	1,2-DCB	TOL	C4-C11 Aliphatic Hyd	C6, C8, C9, Aromatic Hyd	C6, C8-C10 NonAro Hyd	C6-C9 Aromatic Hyd
Passive Soil Vapor Survey (µg), ERM																										
V-01	11/15/2001	3 ft	WL Gore	8260/8270 *	ND	ND	ND	ND	ND	ND	0.164	0.049	ND	ND	ND	ND	ND	ND	ND	ND	ND	na	na	na	na	na
V-02	11/15/2001	3 ft	WL Gore	8260/8270 *	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	na	na	na	na	na
V-03	11/17/2001	3 ft	WL Gore	8260/8270 *	ND	ND	ND	ND	ND	ND	ND	0.159	ND	ND	ND	ND	ND	ND	ND	ND	ND	na	na	na	na	na
V-04	11/17/2001	3 ft	WL Gore	8260/8270 *	ND	ND	0.042	ND	ND	ND	2.194	0.285	ND	ND	ND	ND	ND	ND	ND	ND	ND	na	na	na	na	na
V-05	11/17/2001	3 ft	WL Gore	8260/8270 *	ND	0.63	1.496	ND	ND	ND	289.946	0.896	ND	ND	0.492	ND	ND	ND	ND	ND	ND	na	na	na	na	na
V-06	11/16/2001	3 ft	WL Gore	8260/8270 *	ND	ND	0.064	ND	ND	ND	11.968	0.086	ND	ND	0.058	ND	ND	ND	ND	ND	ND	na	na	na	na	na
V-07	11/16/2001	3 ft	WL Gore	8260/8270 *	ND	ND	ND	ND	ND	ND	4.666	0.056	ND	ND	ND	ND	ND	ND	ND	ND	ND	na	na	na	na	na
V-09	11/17/2001	3 ft	WL Gore	8260/8270 *	ND	0.256	2.681	0.107	0.495	ND	263.215	1.24	ND	0.519	0.365	ND	ND	ND	ND	ND	ND	na	na	na	na	na
V-10	11/17/2001	3 ft	WL Gore	8260/8270 *	ND	0.659	28.18	0.484	0.33	ND	226.872	0.438	ND	0.775	0.189	ND	0.089	ND	ND	ND	ND	na	na	na	na	na
V-11	11/17/2001	3 ft	WL Gore	8260/8270 *	ND	ND	0.176	ND	ND	ND	34.499	0.045	ND	0.061	0.123	ND	ND	ND	ND	ND	ND	na	na	na	na	na
V-12	11/17/2001	3 ft	WL Gore	8260/8270 *	ND	ND	0.609	ND	0.04	ND	100.66	0.26	ND	0.121	0.558	ND	ND	ND	ND	ND	ND	na	na	na	na	na
V-13	11/17/2001	3 ft	WL Gore	8260/8270 *	ND	ND	ND	ND	ND	ND	46.65	0.048	ND	0.096	0.096	ND	ND	ND	ND	ND	ND	na	na	na	na	na
V-15	11/17/2001	3 ft	WL Gore	8260/8270 *	ND	ND	ND	ND	0.124	ND	223.763	1.731	ND	0.253	0.083	ND	ND	ND	ND	ND	ND	na	na	na	na	na
V-16	11/17/2001	3 ft	WL Gore	8260/8270 *	ND	ND	ND	ND	ND	ND	4.462	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	na	na	na	na	na
V-17	11/17/2001	3 ft	WL Gore	8260/8270 *	ND	ND	ND	ND	ND	ND	7.226	0.035	ND	ND	0.054	ND	ND	ND	ND	ND	ND	na	na	na	na	na
V-19	11/17/2001	3 ft	WL Gore	8260/8270 *	ND	ND	ND	ND	ND	ND	0.713	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	na	na	na	na	na
V-20	11/17/2001	3 ft	WL Gore	8260/8270 *	ND	ND	ND	ND	ND	ND	0.877	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	na	na	na	na	na
V-21	11/17/2001	3 ft	WL Gore	8260/8270 *	ND	ND	ND	ND	ND	ND	0.066	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	na	na	na	na	na
V-22	11/17/2001	3 ft	WL Gore	8260/8270 *	ND	ND	0.036	ND	0.135	ND	101.377	0.106	ND	0.228	0.14	ND	ND	ND	ND	ND	ND	na	na	na	na	na
V-23	11/17/2001	3 ft	WL Gore	8260/8270 *	ND	0.112	0.117	ND	0.065	ND	131.757	0.094	ND	0.371	0.313	ND	ND	ND	ND	ND	ND	na	na	na	na	na
V-24	11/17/2001	3 ft	WL Gore	8260/8270*	ND	ND	ND	ND	ND	ND	17.223	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	na	na	na	na	na
V-25	11/17/2001	3 ft	WL Gore	8260/8270*	ND	0.686	2.571	0.438	0.055	ND	208.206	0.194	ND	0.307	0.145	ND	ND	ND	ND	ND	ND	na	na	na	na	na
V-27	11/17/2001	3 ft	WL Gore	8260/8270*	ND	0.105	0.307	0.091	ND	ND	124.52	0.109	ND	0.119	1.572	ND	ND	ND	ND	ND	ND	na	na	na	na	na
V-28	11/17/2001	3 ft	WL Gore	8260/8270*	ND	1.863	3.038	ND	ND	ND	48.948	0.07	ND	0.202	0.069	ND	ND	ND	ND	ND	ND	na	na	na	na	na
V-30	11/17/2001	3 ft	WL Gore	8260/8270*	ND	0.976	1.892	0.268	ND	ND	248.694	0.3	ND	0.13	1.044	ND	0.107	ND	ND	ND	ND	na	na	na	na	na
V-31	11/17/2001	3 ft	WL Gore	8260/8270*	ND	0.385	22.469	ND	ND	ND	7.049	ND	ND	0.04	ND	ND	ND	ND	ND	ND	ND	na	na	na	na	na
V-32	11/17/2001	3 ft	WL Gore	8260/8270*	ND	0.133	1.049	ND	ND	ND	12.749	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	na	na	na	na	na
V-33	11/15/2001	3 ft	WL Gore	8260/8270*	ND	ND	ND	ND	ND	ND	0.242	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	na	na	na	na	na
V-34	11/15/2001	3 ft	WL Gore	8260/8270*	ND	ND	ND	ND	ND	ND	12.032	0.081	ND	ND	0.095	ND	ND	ND	ND	ND	ND	na	na	na	na	na
V-36	11/15/2001	3 ft	WL Gore	8260/8270*	ND	ND	0.198	ND	ND	ND	0.918	0.036	ND	ND	ND	ND	ND	ND	ND	ND	ND	na	na	na	na	na
V-37	11/15/2001	3 ft	WL Gore	8260/8270*	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	na	na	na	na	na
V-39	11/15/2001	3 ft	WL Gore	8260/8270*	ND	0.043	ND	ND	0.035	ND	9.859	ND	ND	ND	0.061	ND	ND	ND	ND	ND	ND	na	na	na	na	na
V-40	11/15/2001	3 ft	WL Gore	8260/8270*	ND	0.562	4.106	0.099	0.117	ND	78.976	0.08	ND	0.348	0.043	ND	ND	ND	ND	ND	ND	na	na	na	na	na
V-41	11/16/2001	3 ft	WL Gore	8260/8270*	ND	11.482	217.393	1.066	ND	0.152	19.73	ND	ND	0.338	0.064	ND	0.193	ND	ND	ND	ND	na	na	na	na	na
V-42	11/16/2001	3 ft	WL Gore	8260/8270*	ND	5.57	248.577	0.723	ND	ND	1.714	ND	ND	1.635	0.414	ND	ND	ND	ND	ND	ND	na	na	na	na	na
V-43	11/16/2001	3 ft	WL Gore	8260/8270*	ND	0.323	0.739	0.141	0.063	ND	93.096	0.063	ND	0.811	0.144	ND	ND	ND	ND	ND	ND	na	na	na	na	na
V-44	11/16/2001	3 ft	WL Gore	8260/8270*	ND	0.459	0.764	0.21	0.059	ND	170.654	0.113	ND	0.202	0.599	ND	ND	ND	ND	ND	ND	na	na	na	na	na
V-45	11/17/2001	3 ft	WL Gore	8260/8270*	ND	0.249	1.369	0.172	0.036	ND	111.673	0.051	ND	0.457	0.462	ND	ND	ND	ND	ND	ND	na	na	na	na	na
V-46	11/16/2001	3 ft	WL Gore	8260/8270*	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	na	na	na	na	na
V-49	11/16/2001	3 ft	WL Gore	8260/8270*	ND	ND	ND	ND	ND	ND	ND	1.799	ND	ND	0.236	ND	ND	ND	ND	ND	ND	na	na	na	na	na
V-51	11/16/2001	3 ft	WL Gore	8260/8270*	ND	ND	0.085	ND	ND	ND	ND	0.241	ND	ND	ND	ND	ND	ND	ND	ND	ND	na	na	na	na	na
V-52	11/16/2001	3 ft	WL Gore	8260/8270*	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	na	na	na	na	na
V-53	11/16/2001	3 ft	WL Gore	8260/8270*	ND	ND	0.036	ND	ND	ND	ND	ND	ND	0.17	ND	ND	ND	ND	ND	ND	ND	na	na	na	na	na
V-54	11/16/2001	3 ft	WL Gore	8260/8270*	ND	ND	ND	ND	ND	ND	0.083	ND	ND	0.041	ND	ND	ND	ND	ND	ND	ND	na	na	na	na	na
V-55	11/16/2001	3 ft	WL Gore	8260/8270*	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	na	na	na	na	na
V-56	11/16/2001	3 ft	WL Gore	8260/8270*	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.08	ND	ND	ND	ND	ND	ND	ND	na	na	na	na	na
V-57	11/16/2001	3 ft	WL Gore	8260/8270*	ND	ND	ND	ND	ND	ND	ND	0.045	ND	ND	ND	ND	ND	ND	ND	ND	ND	na	na	na	na	na
V-58	11/17/2001	3 ft	WL Gore	8260/8270*	ND	ND	ND	ND	ND	ND	ND	0.527	ND	0.084	ND	ND	ND	ND	ND	ND	ND	na	na	na	na	na
V-59	11/17/2001	3 ft	WL Gore	8260/8270*	ND	ND	ND	ND	ND	ND	0.073	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	na	na	na	na	na
V-60	11/17/2001	3 ft	WL Gore	8260/8270*	ND	ND	0.924	0.327	0.659	ND	0.937	ND	ND	0.071	0.18	ND	ND	ND	ND	ND	ND	na	na	na	na	na
V-61	11/16/2001	3 ft	WL Gore	8260/8270*	ND	0.732	1.684	ND	ND	ND	0.641	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	na	na	na	na	na
V-63	11/16/2001	3 ft	WL Gore	8260/8270*	ND	ND	ND	ND	ND	ND	0.094	0.082	ND	ND	ND	ND	ND	ND	ND	ND	ND	na	na	na	na	na
V-65	11/16/2001	3 ft	WL Gore	8260/8270*	ND	0.098	1.03	ND	ND	ND	8.292	ND	ND	0.062	ND	ND	ND	ND	ND	ND	ND	na	na	na	na	na
V-66	11/16/2001	3 ft	WL Gore	8260/8270*	ND	ND	ND	ND	ND	ND	2.475	ND	ND	0.081	ND	ND	ND	ND	ND	ND	ND	na	na	na	na	na
V-67	11/16/2001	3 ft	WL Gore	8260/8270*	ND	ND	0.091	ND	ND	ND	23.468	0.111	ND	ND	0.049	ND	ND	ND	ND	ND	ND	na	na	na	na	na
V-68	11/16/2001	3 ft	WL Gore	8260/8270*	ND	1.217	54.615	ND	ND	ND	21.073	ND	ND	0.07	ND	ND	ND	ND	ND	ND	ND	na	na	na	na	na
V-69	11/16/2001	3 ft	WL Gore	8260/8270*	ND	ND	0.062	ND	0.764	ND	117.513	0.911	ND	0.108	0.043	ND	ND	ND	ND	ND	ND	na	na	na	na	na
V-70	11/16/2001	3 ft	WL Gore	8260/8270*	ND	ND	ND	ND	0.189	ND	67.184	2.296	ND	ND	ND	ND	ND	ND	ND	ND	ND	na	na	na	na	na
V-71	11/17/2001	3 ft	WL Gore	8260/8270*	ND	8.408	279.162	76.873	ND	ND	0.634	ND	ND	0.57	ND	ND	ND	ND								

Table 7-1  
Passive Soil Vapor Analytical Results  
Hookston Station Remedial Investigation  
Pleasant Hill, California

Location	Date	Depth	Laboratory	Analytical Method	CB	t-1,2-DCE	c-1,2-DCE	1,1-DCA	1,1,1-TCA	1,2-DCA	TCE	PCE	1,4-DCB	1,1-DCE	CF	CCL4	1,1,2-TCA	1,1,1,2-TETR	1,1,2,2-TCA	1,3-DCB	1,2-DCB	TOL	C4-C11 Aliphatic Hyd	C6, C8, C9, Aromatic Hyd	C6, C8-C10 NonAro Hyd	C6-C9 Aromatic Hyd
V-89	11/15/2001	3 ft	WL Gore	8260/8270*	ND	ND	ND	ND	0.136	ND	64.729	0.181	ND	ND	0.069	ND	ND	ND	ND	ND	ND	na	na	na	na	na
V-90	11/15/2001	3 ft	WL Gore	8260/8270*	ND	0.278	0.13	ND	0.088	ND	132.032	0.262	ND	ND	0.213	ND	ND	ND	ND	ND	ND	na	na	na	na	na
V-91	11/15/2001	3 ft	WL Gore	8260/8270*	ND	0.295	0.307	ND	ND	ND	174.832	0.26	ND	ND	0.636	ND	ND	ND	ND	ND	ND	na	na	na	na	na
V-92	11/16/2001	3 ft	WL Gore	8260/8270*	ND	0.666	0.317	ND	0.394	ND	412.1	2.511	ND	0.12	2.31	ND	0.707	0.023	ND	ND	ND	na	na	na	na	na
V-93	11/15/2001	3 ft	WL Gore	8260/8270*	ND	0.167	0.273	ND	0.385	ND	315.832	1.361	ND	0.086	2.502	ND	0.318	0.067	ND	ND	ND	na	na	na	na	na
V-94	11/16/2001	3 ft	WL Gore	8260/8270*	ND	ND	0.118	ND	0.334	ND	268.786	1.48	ND	0.064	1.351	ND	0.442	0.07	ND	ND	ND	na	na	na	na	na
V-95	11/16/2001	3 ft	WL Gore	8260/8270*	ND	ND	0.046	ND	0.288	ND	139.78	0.668	ND	ND	0.669	ND	0.248	0.111	ND	ND	ND	na	na	na	na	na
V-96	11/16/2001	3 ft	WL Gore	8260/8270*	ND	ND	ND	ND	0.406	ND	18.59	0.913	ND	0.064	0.046	ND	ND	0.257	ND	ND	ND	na	na	na	na	na
V-97	11/16/2001	3 ft	WL Gore	8260/8270*	ND	ND	0.11	ND	ND	ND	0.082	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	na	na	na	na	na
V-98	11/15/2001	3 ft	WL Gore	8260/8270*	ND	ND	ND	ND	ND	ND	0.034	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	na	na	na	na	na
V-99	11/15/2001	3 ft	WL Gore	8260/8270*	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.188	ND	ND	ND	ND	ND	ND	na	na	na	na	na
V-100	11/15/2001	3 ft	WL Gore	8260/8270*	ND	ND	ND	ND	ND	ND	0.615	6.347	ND	ND	ND	ND	ND	ND	0.208	ND	ND	na	na	na	na	na
V-101	11/15/2001	3 ft	WL Gore	8260/8270*	ND	ND	ND	ND	ND	ND	3.036	0.216	ND	ND	ND	ND	ND	ND	ND	ND	ND	na	na	na	na	na
V-102	11/15/2001	3 ft	WL Gore	8260/8270*	ND	ND	ND	ND	ND	ND	52.177	0.131	ND	ND	ND	ND	ND	ND	ND	ND	ND	na	na	na	na	na
V-104	11/15/2001	3 ft	WL Gore	8260/8270*	ND	ND	ND	ND	ND	ND	0.874	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	na	na	na	na	na
V-105	11/15/2001	3 ft	WL Gore	8260/8270*	ND	ND	ND	ND	ND	ND	4.228	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	na	na	na	na	na
V-106	11/15/2001	3 ft	WL Gore	8260/8270*	ND	ND	ND	ND	ND	ND	3.803	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	na	na	na	na	na
V-107	11/16/2001	3 ft	WL Gore	8260/8270*	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	na	na	na	na	na
V-108	11/16/2001	3 ft	WL Gore	8260/8270*	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	na	na	na	na	na
V-109	11/16/2001	3 ft	WL Gore	8260/8270*	ND	ND	ND	ND	2.156	ND	0.059	0.858	ND	0.483	0.04	ND	ND	ND	ND	ND	ND	na	na	na	na	na
V-110	11/17/2001	3 ft	WL Gore	8260/8270*	ND	ND	ND	ND	ND	ND	0.057	47.805	ND	ND	ND	ND	ND	ND	ND	ND	ND	na	na	na	na	na
V-111	11/16/2001	3 ft	WL Gore	8260/8270*	ND	ND	ND	ND	ND	ND	3.139	104.585	ND	ND	ND	ND	ND	ND	ND	ND	ND	na	na	na	na	na
V-112	11/16/2001	3 ft	WL Gore	8260/8270*	ND	ND	0.037	ND	ND	ND	3.045	162.124	ND	ND	ND	ND	ND	ND	ND	ND	ND	na	na	na	na	na
V-113	11/16/2001	3 ft	WL Gore	8260/8270*	ND	ND	ND	ND	ND	ND	2.497	191.292	ND	ND	ND	ND	ND	ND	ND	ND	ND	na	na	na	na	na
V-114	11/16/2001	3 ft	WL Gore	8260/8270*	ND	ND	ND	ND	ND	ND	ND	0.757	ND	ND	ND	ND	ND	ND	ND	ND	ND	na	na	na	na	na
V-115	11/16/2001	3 ft	WL Gore	8260/8270*	ND	ND	ND	ND	ND	ND	ND	4.431	ND	ND	ND	ND	ND	ND	ND	ND	ND	na	na	na	na	na
V-116	11/16/2001	3 ft	WL Gore	8260/8270*	ND	ND	ND	ND	ND	ND	ND	0.037	ND	ND	ND	ND	ND	ND	ND	ND	ND	na	na	na	na	na
V-117	11/16/2001	3 ft	WL Gore	8260/8270*	ND	ND	0.053	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	na	na	na	na	na
V-118	11/16/2001	3 ft	WL Gore	8260/8270*	ND	ND	0.034	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	na	na	na	na	na
V-119	11/17/2001	3 ft	WL Gore	8260/8270*	ND	0.893	4.446	ND	ND	ND	39.525	4.446	ND	0.126	0.038	ND	ND	ND	ND	ND	ND	na	na	na	na	na
V-120	11/17/2001	3 ft	WL Gore	8260/8270*	ND	0.859	4.15	ND	ND	ND	39.638	ND	ND	0.222	0.239	ND	ND	ND	ND	ND	ND	na	na	na	na	na
V-121	11/17/2001	3 ft	WL Gore	8260/8270*	ND	ND	ND	ND	ND	ND	0.721	2.315	ND	ND	1.657	ND	ND	ND	ND	ND	ND	na	na	na	na	na
V-122	11/17/2001	3 ft	WL Gore	8260/8270*	ND	0.651	2.493	ND	ND	ND	12.122	0.06	ND	ND	0.025	ND	ND	ND	ND	ND	ND	na	na	na	na	na

Notes:

Results for samples collected by Engeo reported in units of ion count.  
 Results for samples collected by ERM reported in units of micrograms (µg).  
 MDL = Method Detection Method Detection Limit  
 ND = Not Detected  
 na = Not Analyzed  
 \* = Modified EPA Method  
 NERI = NERI laboratory of Lakewood, Colorado  
 WL Gore = W.L. Gore & Associates laboratory of Elkton, Maryland.

Abbreviation: Chemical:

CB = Chlorobenzene  
 1,2-DCE = 1,2-Dichloroethene  
 t-1,2-DCE = trans-1,2-Dichloroethene  
 c-1,2-DCE = cis-1,2-Dichloroethene  
 1,1-DCA = 1,1-Dichloroethane  
 1,1,1-TCA = 1,1,1-Trichloroethane  
 1,2-DCA = 1,2-Dichloroethane  
 TCE = Trichloroethene  
 PCE = Tetrachloroethene  
 1,4-DCB = 1,4-Dichlorobenzene  
 1,1-DCE = 1,1-Dichloroethene  
 CF = Chloroform

Abbreviation: Chemical:

CCL4 = Carbon tetrachloride  
 1,1,2-TCA = 1,1,2-Trichloroethane  
 1,1,1,2-TETR = 1,1,1,2-Tetrachloroethane  
 1,1,2,2-TCA = 1,1,2,2-Tetrachloroethane  
 1,3-DCB = 1,3-Dichlorobenzene  
 1,2-DCB = 1,2-Dichlorobenzene  
 TOL = Toluene  
 C4-C11 Aliphatic Hyd = C4-C11 Aliphatic Hydrocarbons  
 C6, C8, C9, Aromatic Hyd = C6, C8, C9, Aromatic Hydrocarbons  
 C6, C8-C10 NonAro Hyd = C6, C8-C10 NonAro Hydrocarbons  
 C6-C9 Aromatic Hyd = C6-C9 Aromatic Hydrocarbons

Table 7-2  
Active Soil Vapor Analytical Results  
Hookston Station Remedial Investigation  
Pleasant Hill, California

Location	Date	Depth	Laboratory	Analytical Method	PCE (µg/m <sup>3</sup> )	TCE (µg/m <sup>3</sup> )	c-1,2-DCE (µg/m <sup>3</sup> )	t-1,2-DCE (µg/m <sup>3</sup> )	1,1-DCE (µg/m <sup>3</sup> )	1,1-DCA (µg/m <sup>3</sup> )	1,3-butadiene (µg/m <sup>3</sup> )	Hexane (µg/m <sup>3</sup> )	Cyclohexane (µg/m <sup>3</sup> )	Heptane (µg/m <sup>3</sup> )	CDS (µg/m <sup>3</sup> )	MC (µg/m <sup>3</sup> )	1,1,1-TCA (µg/m <sup>3</sup> )	Acetone (µg/m <sup>3</sup> )	Benzene (µg/m <sup>3</sup> )	Butane (µg/m <sup>3</sup> )	2-Butanone (µg/m <sup>3</sup> )	Chloroform (µg/m <sup>3</sup> )	Ethyl Benzene (µg/m <sup>3</sup> )	4-ethyltoluene (µg/m <sup>3</sup> )	Toluene (µg/m <sup>3</sup> )	m-&p-Xylenes (µg/m <sup>3</sup> )	o-Xylene (µg/m <sup>3</sup> )	Total Xylenes (µg/m <sup>3</sup> )		
<b>Commercial Land Use Samples</b>					RWQCB Commercial/Industrial ESL	1,400	4,100	20,000	41,000	120,000	5,100	-	-	-	-	-	8,200	130,000	200,000	280	-	580,000	1,500	7,400	-	230,000	-	-	58,000	
ASV-01	10/10/2003	5 ft	STL - LA	TO-15	53	11,000	<23	<23	<23	<23	na	na	na	na	<89	<47	<31	440	U	18	170	<84	68	34	440	120	35	155		
ASV-02	10/10/2003	5 ft	STL - LA	TO-15	<14	110	<9.1	<7.9	<7.9	<8.1	na	na	na	na	<31	<16	<11	440		8.3	52	54	U	<9.8	17	12	95	61	17	78
<b>Residential Land Use Samples</b>					RWQCB Residential ESL	410	1,200	7,300	15,000	42,000	1,500	-	-	-	-	-	2,400	46,000	73,000	84	-	2,400	460	2,200	-	83,000	-	-	21,000	
ASV-03	10/10/2003	5 ft	STL - LA	TO-15	<27	250	29	<16	<16	<16	na	na	na	na	<62	<33	<22	460	U	18	130	63	U	<19	79	21	200	290	96	386
ASV-04	10/17/2003	5 ft	ATL	TO-15	<5.6	8.5	<3.3	<13	<3.3	<3.4	na	na	4.7	U	na	<10	<2.9	81		4.1	33	22	U	<4.1	15	54	18	72		
ASV-05	10/17/2003	5 ft	ATL	TO-15	39	6,800	<14	<55	37	<14	32	32	<12	21	59	<12	<19	<200	U	16	88	51	U	<17	16	<68	25	68	97	
ASV-06	10/17/2003	5 ft	ATL	TO-15	<250	<200	<140	<580	850	<150	140	200	<120	<150	<450	140	U	56,000	<340	<120	<340	<430	<180	<160	<720	<140	230	<160	<390	
ASV-07	10/17/2003	5 ft	ATL	TO-15	<16	5,000	700	110	60	15	53	20	15	U	14	<30	<8.2	340		20	150	76	U	<12	<10	<720	11	<160	<171	
ASV-07(d)	10/17/2003	5 ft	ATL	TO-15	<16	5,000	710	110	61	14	54	20	15	U	16	<30	<8.2	340		19	150	80	U	<12	<10	<47	20	10	<10	<20
ASV-08	10/17/2003	5 ft	ATL	TO-15	13	5.5	<3.2	<13	<3.2	<3.3	24	18	18	U	11	25	<2.8	<4.5	160	9.4	100	33	U	<4	7	<16	12	30	14	44
ASV-09	10/21/2003	5 ft	ATL	TO-15	<5.8	<4.6	<3.4	<14	<3.4	<3.4	26	25	<2.9	21	<11	<3	<4.6	280	27	87	82	U	<4.2	38	32	89	130	49	179	
ASV-10	10/21/2003	5 ft	ATL	TO-15	<5.3	<4.2	<3.1	<12	<3.1	<3.2	11	12	<2.7	6.1	<8.9	<2.7	<4.3	110	8.2	120	30	U	<3.8	25	<15	19	100	56	156	
ASV-11	10/21/2003	5 ft	ATL	TO-15	<170	* 5,600 *	400 *	<400 *	<100 *	<100 *	<56 *	<89 *	150	U	<100 *	<310 *	<88 *	<140 *	<450	U	<81 *	12,000 *	<300 *	<120 *	<110 *	<500 *	<95 *	<110 *	<110 *	<220 *
ASV-12	10/21/2003	5 ft	ATL	TO-15	<6.6	7.6	<3.8	<15	<3.8	<3.9	8.4	95	6	U	11	<3.4	<5.3	320	7.9	68	87	U	4.7	110	<19	18	500	260	760	
ASV-12(d)	10/21/2003	5 ft	ATL	TO-15	<6.8	6.9	<3.9	<16	<3.9	<4.0	7.8	100	6.7	U	10	<12	<3.5	<5.4	320	8.5	70	85	U	<4.9	100	<20	16	500	250	750
AA-01	10/21/2003	ambient air	ATL	TO-15	<5.8	<4.6	<3.4	<14	<3.4	<3.4	<1.9	<3	<2.9		<11	<3	<4.6	<15	U	<2.7	9.3	<10	<4.2	<3.7	<17	4.4	<3.7	<3.7	<7.4	

Notes:

(µg/m<sup>3</sup>) = micrograms per cubic meter

STL - LA = Severn Trent Laboratory, Los Angeles

ATL = Air Toxics, Ltd.

ESL = Environmental Screening Level for evaluation of potential indoor air impacts (RWQCB, 2003)

Butane was used for detecting leaks within the sampling system.

U = Qualified as non-detect. Common laboratory contaminants at concentrations less than 10 times the practical quantitation limit.

na = Not Analyzed

(d) = duplicate sample

\* Butane gas was used for leak checking; elevated concentration of butane indicates possible leak during sample collection. Results may be considered estimates.

Abbreviation: Chemical:

PCE = tetrachloroethene

TCE = trichloroethene

c-1,2-DCE = cis-1,2-dichloroethene

t-1,2-DCE = trans-1,2-dichloroethene

1,1-DCE = 1,1-dichloroethene

1,1-DCA = 1,1-dichloroethane

MC = methylene chloride

1,1,1-TCA = 1,1,1-trichloroethene

CDS = carbon disulfide

Table 7-3  
 Volatile Organic Compounds Detected in Soil Samples  
 Hookston Station Remedial Investigation  
 Pleasant Hill, California

Sample Location	Sample Date	Analytical Depth	Analytical Laboratory	Analytical Method	PCE (µg/kg)	TCE (µg/kg)	C-1,2-DCE (µg/kg)	1,1-DCE (µg/kg)	VINYL CHLORIDE (µg/kg)	ACETONE (µg/kg)	BENZENE (µg/kg)	2-BUTANONE (µg/kg)	CARBON DISUL (µg/kg)	CHLOROFORM (µg/kg)	1,1-DCA (µg/kg)	T-1,2-DCE (µg/kg)	ETHYLBENZENE (µg/kg)	MC (µg/kg)	TOLUENE (µg/kg)	1,1,1-TCA (µg/kg)	1,1,2-TCA (µg/kg)	TOTAL XYLENES (µg/kg)	FREON-113 (µg/kg)	M-XYLENE (µg/kg)	O-XYLENE (µg/kg)
				RWQCB Commercial/Industrial (<9.8 ft) ESL: RWQCB Commercial/Industrial (>9.8 ft) ESL:	250 250	460 460	190 190	1,000 1,000	19 19	240 240	44 44	3,900 3,900	- -	270 270	200 200	670 670	3,300 3,300	77 77	2,900 2,900	7,800 7,800	70 70	1,500 1,500	- -	- -	- -
B-01-ENG	1/29/1992	19.5 ft	CHR	8010	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	NS	NS	NS	NS	< 2.5	< 2.5	< 2.5	NS	< 2.5	NS	< 2.5	< 2.5	NS	NS	NS	NS
B-02-ENG	1/29/1992	2 ft	CHR	8010	< 2.5	12	< 2.5	< 2.5	< 2.5	NS	NS	NS	NS	< 2.5	< 2.5	< 2.5	NS	< 2.5	NS	< 2.5	< 2.5	NS	NS	NS	NS
B-02-ENG	1/29/1992	19.5 ft	CHR	8010	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	NS	NS	NS	NS	< 2.5	< 2.5	< 2.5	NS	< 2.5	NS	< 2.5	< 2.5	NS	NS	NS	NS
B-03-ENG	1/29/1992	1.5 ft	CHR	8010	< 2.5	53	72	< 2.5	< 2.5	NS	NS	NS	NS	< 2.5	< 2.5	< 2.5	NS	< 2.5	NS	< 2.5	< 2.5	NS	NS	NS	NS
B-03-ENG	1/29/1992	5 ft	CHR	8010	< 2.5	11	4.9	< 2.5	< 2.5	NS	NS	NS	NS	< 2.5	< 2.5	< 2.5	NS	< 2.5	NS	< 2.5	< 2.5	NS	NS	NS	NS
B-03-ENG	1/29/1992	18.5 ft	CHR	8010	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	NS	NS	NS	NS	< 2.5	< 2.5	< 2.5	NS	< 2.5	NS	< 2.5	< 2.5	NS	NS	NS	NS
B-04-ENG	1/29/1992	2.5 ft	CHR	8010	< 2.5	86	26	< 2.5	< 2.5	NS	NS	NS	NS	< 2.5	< 2.5	< 2.5	NS	< 2.5	NS	< 2.5	< 2.5	NS	NS	NS	NS
B-04-ENG	1/29/1992	6 ft	CHR	8010	< 2.5	84	24	< 2.5	< 2.5	NS	NS	NS	NS	< 2.5	< 2.5	< 2.5	NS	< 2.5	NS	< 2.5	< 2.5	NS	NS	NS	NS
B-04-ENG	1/29/1992	19.5 ft	CHR	8010	< 2.5	65	12	< 2.5	< 2.5	NS	NS	NS	NS	< 2.5	< 2.5	< 2.5	NS	< 2.5	NS	< 2.5	< 2.5	NS	NS	NS	NS
B-05-ENG	1/30/1992	2 ft	CHR	8010	9.2	890	7.7	< 5	< 5	NS	NS	NS	NS	< 5	< 5	< 5	NS	< 5	NS	< 5	< 5	NS	NS	NS	NS
B-05-ENG	1/30/1992	13 ft	CHR	8010	< 2.5	140	11	< 2.5	< 2.5	NS	NS	NS	NS	< 2.5	< 2.5	< 2.5	NS	< 2.5	NS	< 2.5	< 2.5	NS	NS	NS	NS
B-05-ENG	1/30/1992	20 ft	CHR	8010	< 2.5	120	< 2.5	< 2.5	< 2.5	NS	NS	NS	NS	< 2.5	< 2.5	< 2.5	NS	< 2.5	NS	< 2.5	< 2.5	NS	NS	NS	NS
B-06-ENG	1/29/1992	2 ft	CHR	8010	< 2.5	220	20	< 2.5	< 2.5	NS	NS	NS	NS	< 2.5	< 2.5	< 2.5	NS	< 2.5	NS	< 2.5	< 2.5	NS	NS	NS	NS
B-06-ENG	1/29/1992	19.5 ft	CHR	8010	< 2.5	160	18	< 2.5	< 2.5	NS	NS	NS	NS	< 2.5	< 2.5	< 2.5	NS	< 2.5	NS	< 2.5	< 2.5	NS	NS	NS	NS
B-07-ENG	1/30/1992	2 ft	CHR	8010	< 2.5	310	38	< 2.5	< 2.5	NS	NS	NS	NS	2.7	< 2.5	< 2.5	NS	< 2.5	NS	< 2.5	< 2.5	NS	NS	NS	NS
B-07-ENG	1/30/1992	13 ft	CHR	8010	< 2.5	180	18	< 2.5	< 2.5	NS	NS	NS	NS	< 2.5	< 2.5	< 2.5	NS	< 2.5	NS	< 2.5	< 2.5	NS	NS	NS	NS
B-07-ENG	1/30/1992	19.5 ft	CHR	8010	< 2.5	130	8.1	< 2.5	< 2.5	NS	NS	NS	NS	< 2.5	< 2.5	< 2.5	NS	< 2.5	NS	< 2.5	< 2.5	NS	NS	NS	NS
B-08-ENG	1/30/1992	13 ft	CHR	8010	< 2.5	70	< 2.5	< 2.5	< 2.5	NS	NS	NS	NS	< 2.5	< 2.5	< 2.5	NS	< 2.5	NS	< 2.5	< 2.5	NS	NS	NS	NS
B-08-ENG	1/30/1992	19.5 ft	CHR	8010	< 2.5	69	< 2.5	< 2.5	< 2.5	NS	NS	NS	NS	< 2.5	< 2.5	< 2.5	NS	< 2.5	NS	< 2.5	< 2.5	NS	NS	NS	NS
B-09-ENG	1/30/1992	2 ft	CHR	8010	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	NS	NS	NS	NS	< 2.5	< 2.5	< 2.5	NS	< 2.5	NS	< 2.5	< 2.5	NS	NS	NS	NS
B-09-ENG	1/30/1992	19 ft	CHR	8010	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	NS	NS	NS	NS	< 2.5	< 2.5	< 2.5	NS	< 2.5	NS	< 2.5	< 2.5	NS	NS	NS	NS
B-09-ENG	3/1/1992	2 ft	CHR	602	NS	NS	NS	NS	NS	< 5	NS	NS	NS	NS	NS	< 5	NS	< 5	NS	NS	NS	< 5	NS	NS	NS
B-10-ENG	1/30/1992	17.5 ft	CHR	8010	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	NS	NS	NS	NS	< 2.5	< 2.5	< 2.5	NS	< 2.5	NS	< 2.5	< 2.5	NS	NS	NS	NS
B-11-ENG	1/30/1992	17.5 ft	CHR	8010	< 2.5	96	6.3	< 2.5	< 2.5	NS	NS	NS	NS	< 2.5	< 2.5	< 2.5	NS	< 2.5	NS	< 2.5	< 2.5	NS	NS	NS	NS
B-12-ENG	1/30/1992	4.5 ft	CHR	8010	< 2.5	120	< 2.5	< 2.5	< 2.5	NS	NS	NS	NS	< 2.5	< 2.5	< 2.5	NS	< 2.5	NS	< 2.5	< 2.5	NS	NS	NS	NS
B-12-ENG	1/30/1992	9.5 ft	CHR	8010	< 2.5	96	< 2.5	< 2.5	< 2.5	NS	NS	NS	NS	< 2.5	< 2.5	< 2.5	NS	< 2.5	NS	< 2.5	< 2.5	NS	NS	NS	NS
B-12-ENG	1/30/1992	17.5 ft	CHR	8010	4.2	140	8.4	< 2.5	< 2.5	NS	NS	NS	NS	< 2.5	5.2	< 2.5	NS	< 2.5	NS	< 2.5	< 2.5	NS	NS	NS	NS
B-12-ENG	3/1/1992	4.5 ft	CHR	602	NS	NS	NS	NS	NS	< 5	NS	NS	NS	NS	NS	< 5	NS	< 5	NS	< 5	NS	< 5	NS	NS	NS
B-12-ENG	3/1/1992	9.5 ft	CHR	602	NS	NS	NS	NS	NS	< 5	NS	NS	NS	< 5	NS	< 5	NS	< 5	NS	< 5	NS	< 5	NS	NS	NS
B-13-ENG	1/30/1992	1 ft	CHR	8010	< 2.5	150	< 2.5	< 2.5	< 2.5	NS	NS	NS	NS	< 2.5	< 2.5	< 2.5	NS	< 2.5	NS	< 2.5	< 2.5	NS	NS	NS	NS
B-13-ENG	1/30/1992	11 ft	CHR	8010	< 2.5	120	2.6	< 2.5	< 2.5	NS	NS	NS	NS	< 2.5	< 2.5	< 2.5	NS	< 2.5	NS	< 2.5	< 2.5	NS	NS	NS	NS
B-13-ENG	1/30/1992	16.5 ft	CHR	8010	< 2.5	150	7.1	< 2.5	< 2.5	NS	NS	NS	NS	< 2.5	< 2.5	< 2.5	NS	< 2.5	NS	< 2.5	< 2.5	NS	NS	NS	NS
B-13-ENG	3/1/1992	1 ft	CHR	602	NS	NS	NS	NS	NS	< 5	NS	NS	NS	NS	NS	< 5	NS	< 5	NS	< 5	NS	< 5	NS	NS	NS
B-13-ENG	3/1/1992	11 ft	CHR	602	NS	NS	NS	NS	NS	< 5	NS	NS	NS	NS	NS	< 5	NS	< 5	NS	< 5	NS	< 5	NS	NS	NS
B-14-ENG	1/30/1992	2 ft	CHR	8010	< 2.5	160	< 2.5	< 2.5	< 2.5	NS	NS	NS	NS	< 2.5	< 2.5	< 2.5	NS	< 2.5	NS	< 2.5	< 2.5	NS	NS	NS	NS
B-14-ENG	1/30/1992	12 ft	CHR	8010	< 2.5	100	< 2.5	< 2.5	< 2.5	NS	NS	NS	NS	< 2.5	< 2.5	< 2.5	NS	< 2.5	NS	< 2.5	< 2.5	NS	NS	NS	NS
B-14-ENG	1/30/1992	17.5 ft	CHR	8010	< 2.5	140	7.1	< 2.5	< 2.5	NS	NS	NS	NS	< 2.5	< 2.5	< 2.5	NS	< 2.5	NS	< 2.5	< 2.5	NS	NS	NS	NS
B-14-ENG	3/1/1992	2 ft	CHR	602	NS	NS	NS	NS	NS	< 5	NS	NS	NS	NS	NS	< 5	NS	< 5	NS	< 5	NS	< 5	NS	NS	NS
B-14-ENG	3/1/1992	12 ft	CHR	602	NS	NS	NS	NS	NS	< 5	NS	NS	NS	NS	NS	< 5	NS	< 5	NS	< 5	NS	< 5	NS	NS	NS
B-15-ENG	1/30/1992	6 ft	CHR	8010	< 2.5	120	< 2.5	< 2.5	< 2.5	NS	NS	NS	NS	< 2.5	< 2.5	< 2.5	NS	< 2.5	NS	< 2.5	< 2.5	NS	NS	NS	NS
B-15-ENG	1/30/1992	12 ft	CHR	8010	< 2.5	100	< 2.5	< 2.5	< 2.5	NS	NS	NS	NS	< 2.5	< 2.5	< 2.5	NS	< 2.5	NS	< 2.5	< 2.5	NS	NS	NS	NS
B-15-ENG	1/30/1992	17.5 ft	CHR	8010	< 2.5	150	5	< 2.5	< 2.5	NS	NS	NS	NS	< 2.5	< 2.5	< 2.5	NS	< 2.5	NS	< 2.5	< 2.5	NS	NS	NS	NS
B-16-ENG	1/31/1992	6 ft	CHR	8010	< 2.5	20	< 2.5	< 2.5	< 2.5	NS	NS	NS	NS	< 2.5	< 2.5	< 2.5	NS	< 2.5	NS	< 2.5	< 2.5	NS	NS	NS	NS
B-16-ENG	1/31/1992	12 ft	CHR	8010	< 2.5	29	< 2.5	< 2.5	< 2.5	NS	NS	NS	NS	< 2.5	< 2.5	< 2.5	NS	< 2.5	NS	< 2.5	< 2.5	NS	NS	NS	NS
B-16-ENG	1/31/1992	17.5 ft	CHR	8010	< 2.5	17	< 2.5	< 2.5	< 2.5	NS	NS	NS	NS	< 2.5	< 2.5	< 2.5	NS	< 2.5	NS	< 2.5	< 2.5	NS	NS	NS	NS
B-17-ENG	1/31/1992	2 ft	CHR	8010	< 2.5	180	< 2.5	< 2.5	< 2.5	NS	NS	NS	NS	< 2.5	< 2.5	< 2.5	NS	< 2.5	NS	< 2.5	< 2.5	NS	NS	NS	NS
B-17-ENG	1/31/1992	6 ft																							



Table 7-3  
 Volatile Organic Compounds Detected in Soil Samples  
 Hookston Station Remedial Investigation  
 Pleasant Hill, California

Sample Location	Date	Sample Depth	Analytical Laboratory	Analytical Method	PCE (µg/kg)	TCE (µg/kg)	C-1,2-DCE (µg/kg)	1,1-DCE (µg/kg)	VINYL CHLORIDE (µg/kg)	ACETONE (µg/kg)	BENZENE (µg/kg)	2-BUTANONE (µg/kg)	CARBON DISUL (µg/kg)	CHLOROFORM (µg/kg)	1,1-DCA (µg/kg)	T-1,2-DCE (µg/kg)	ETHYLBENZENE (µg/kg)	MC (µg/kg)	TOLUENE (µg/kg)	1,1,1-TCA (µg/kg)	1,1,2-TCA (µg/kg)	TOTAL XYLENES (µg/kg)	FREON-113 (µg/kg)	M-XYLENE (µg/kg)	O-XYLENE (µg/kg)												
			RWQCB Commercial/Industrial (<9.8 ft) ESL:		250	460	190	1,000	19	240	44	3,900	-	270	200	670	3,300	77	2,900	7,800	70	1,500	-	-	-												
			RWQCB Commercial/Industrial (>9.8 ft) ESL:		250	460	190	1,000	19	240	44	3,900	-	270	200	670	3,300	77	2,900	7,800	70	1,500	-	-	-												
B-93	10/3/2003	15 ft	STLSEA	8260B	< 1.78	u	17.3	< 1.78	u	< 1.78	u	< 1.78	u	< 1.78	u	< 1.78	u	2.17	bU	< 1.78	u	< 1.78	u	NS	NS	< 3.56	u	< 1.78	u								
B-94	9/29/2003	2.5 ft	STLSEA	8260B	< 1.81	u	7.53	< 1.81	u	< 1.81	u	< 1.81	u	< 1.81	u	< 1.81	u	< 1.81	u	8.03	U	1.01	j	< 1.81	u	< 1.81	u	NS	NS	< 3.63	u	< 1.81	u				
B-95	9/29/2003	2.5 ft	STLSEA	8260B	< 1.97	u	< 1.97	u	< 1.97	u	< 1.97	u	< 1.97	u	< 1.97	u	< 1.97	u	< 1.97	u	9.6	U	1.37	j	< 1.97	u	< 1.97	u	NS	NS	< 3.94	u	< 1.97	u			
B-96	9/29/2003	2.5 ft	STLSEA	8260B	< 1.87	u	< 1.87	u	< 1.87	u	< 1.87	u	< 1.87	u	< 1.87	u	< 1.87	u	< 1.87	u	8.62	U	< 1.87	u	< 1.87	u	< 1.87	u	NS	NS	< 3.74	u	< 1.87	u			
B-97	9/16/2003	2.5 ft	STLSEA	8260B	< 1.7	u	28.4	< 1.7	u	< 1.7	u	< 1.7	u	< 1.7	u	< 1.7	u	< 1.7	u	< 1.7	u	< 1.7	u	< 1.7	u	< 1.7	u	NS	NS	< 3.4	u	< 1.7	u				
B-98	9/22/2003	2.5 ft	STLSEA	8260B	< 1.7	uUJ	< 1.7	uUJ	< 1.7	uUJ	< 1.7	uUJ	< 1.7	uUJ	< 1.7	uUJ	< 1.7	uUJ	< 1.7	uUJ	2.57	bU	< 1.7	uUJ	< 1.7	uUJ	< 1.7	uUJ	NS	NS	< 3.41	uUJ	< 1.7	uUJ			
B-99	9/25/2003	2.5 ft	STLSEA	8260B	< 1.87	u	< 1.87	u	< 1.87	u	< 1.87	u	< 1.87	u	< 1.87	u	< 1.87	u	< 1.87	u	4.59	bU	< 1.87	u	< 1.87	u	< 1.87	u	NS	NS	< 3.73	u	< 1.87	u			
B-100	9/23/2003	2.5 ft	STLSEA	8260B	< 1.97	u	165	< 1.97	u	< 1.97	u	< 1.97	u	< 1.97	u	< 1.97	u	< 1.97	u	< 1.97	u	3.01	bU	< 1.97	u	< 1.97	u	< 1.97	u	NS	NS	< 3.95	u	< 1.97	u		
B-101	2/11/2003	0.5 ft	STLSEA	8260B	< 5		< 5			< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5			
B-101	2/11/2003	2.5 ft	STLSEA	8260B	< 5		< 5			< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5	
B-101	2/11/2003	5.5 ft	STLSEA	8260B	< 5		< 5			< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5	
B-101	2/11/2003	10.5 ft	STLSEA	8260B	< 5		< 5			< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5	
B-101	2/11/2003	15.5 ft	STLSEA	8260B	< 5		< 5			< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5	
B-102	2/11/2003	0.5 ft	STLSEA	8260B	< 5		< 5			< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5	
B-102	2/11/2003	2.5 ft	STLSEA	8260B	< 5		< 5			< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5	
B-102	2/11/2003	5.5 ft	STLSEA	8260B	< 5		< 5			< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5	
B-102	2/11/2003	10.5 ft	STLSEA	8260B	< 5		< 5			< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5	
B-102	2/11/2003	15.5 ft	STLSEA	8260B	< 5		< 5			< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5	
B-103	2/11/2003	0.5 ft	STLSEA	8260B	< 5		< 5			< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5	
B-103	2/11/2003	2.5 ft	STLSEA	8260B	< 5		< 5			< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5	
B-103	2/11/2003	5.5 ft	STLSEA	8260B	< 5		< 5			< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5	
B-103	2/11/2003	10.5 ft	STLSEA	8260B	< 5		< 5			< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5	
B-103	2/11/2003	15.5 ft	STLSEA	8260B	< 5		< 5			< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5	
B-103	2/11/2003	20.5 ft	STLSEA	8260B	< 5		< 5			< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5	
B-103	2/11/2003	25.5 ft	STLSEA	8260B	< 5		< 5			< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5	
B-104	2/12/2003	2.5 ft	STLSEA	8260B	< 5	UJ	< 5	UJ	< 5	UJ	< 5	UJ	< 5	UJ	< 5	UJ	< 5	UJ	< 5	UJ	< 5	UJ	< 5	UJ	< 5	UJ	< 5	UJ	< 5	UJ	< 5	UJ	< 5	UJ	< 5	UJ	< 5
B-104	2/12/2003	5.5 ft	STLSEA	8260B	< 5		< 5			< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5	
B-104	2/12/2003	10.5 ft	STLSEA	8260B	< 5		< 5			< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5	
B-104	2/12/2003	15.5 ft	STLSEA	8260B	< 5		< 5			< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5	
B-104	2/12/2003	20.5 ft	STLSEA	8260B	< 5		< 5			< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5	
B-104	2/12/2003	25.5 ft	STLSEA	8260B	< 5		< 5			< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5	
B-105	2/12/2003	0.5 ft	STLSEA	8260B	< 5		< 5			< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5	
B-105	2/12/2003	2.5 ft	STLSEA	8260B	< 5		< 5			< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5	
B-105	2/12/2003	5.5 ft	STLSEA	8260B	< 5		< 5			< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5	
B-105	2/12/2003	10.5 ft	STLSEA	8260B	< 5		< 5			< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5	
B-105	2/12/2003	15.5 ft	STLSEA	8260B	< 5		< 5			< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5		< 5	
MW-01	4/20/1990	11 ft	MTA	8020	NS																																

Table 7-4  
 Petroleum Hydrocarbons in Soil Samples  
 Hookston Station Remedial Investigation  
 Pleasant Hill, California

Location	Date	Sample Depth	Analytical Laboratory	DIESEL FUEL (mg/kg)	GASOLINE (mg/kg)	KEROSENE (mg/kg)	MOTOR OIL (mg/kg)	STOD SOLVENT (mg/kg)	OIL & GREASE (mg/kg)	TPH WASTE OIL (mg/kg)	TPH OIL (mg/kg)
				100	100	-	-	-	1,000	1,000	1,000
				100	100	-	-	-	1,000	1,000	1,000
B-01-HLA	4/20/1990	2.5 ft	MTA	NS	NS	NS	NS	NS	11000	NS	NS
B-01-HLA	4/20/1990	3.5 ft	MTA	NS	NS	NS	NS	NS	< 20000 u	NS	NS
B-02-HLA	4/20/1990	2 ft	MTA	NS	NS	NS	NS	NS	4800	NS	NS
B-02-HLA	4/20/1990	4 ft	MTA	NS	NS	NS	NS	NS	20	NS	NS
B-03-HLA	4/20/1990	2 ft	MTA	NS	NS	NS	NS	NS	4800	NS	NS
B-03-HLA	4/20/1990	4 ft	MTA	NS	NS	NS	NS	NS	< 20000 u	NS	NS
B-04-HLA	4/20/1990	2 ft	MTA	NS	NS	NS	NS	NS	70	NS	NS
B-04-HLA	4/20/1990	4 ft	MTA	NS	NS	NS	NS	NS	< 20000 u	NS	NS
B-09-ENG	1/31/1992	2 ft	CHR	< 10000 u	< 200 u	< 20000 u	< 20000 u	< 20000 u	NS	NS	NS
B-12-ENG	1/31/1992	4.5 ft	CHR	< 10000 u	< 200 u	< 10000 u	< 10000 u	< 10000 u	NS	NS	NS
B-12-ENG	1/31/1992	9.5 ft	CHR	< 10000 u	< 200 u	< 20000 u	< 20000 u	< 20000 u	NS	NS	NS
B-12-ENG	1/31/1992	11 ft	CHR	NS	NS	NS	NS	< 20000 u	NS	NS	NS
B-13-ENG	1/31/1992	1 ft	CHR	< 10000 u	< 200 u	< 20000 u	< 20000 u	< 20000 u	NS	NS	NS
B-13-ENG	1/31/1992	11 ft	CHR	< 10000 u	< 200 u	< 20000 u	NS	< 20000 u	NS	NS	NS
B-13-ENG	1/31/1992	12 ft	CHR	NS	NS	NS	< 20000 u	NS	NS	NS	NS
B-14-ENG	1/31/1992	2 ft	CHR	< 10000 u	< 200 u	< 20000 u	< 20000 u	< 20000 u	NS	NS	NS
B-14-ENG	1/31/1992	12 ft	CHR	< 10000 u	< 200 u	< 20000 u	< 20000 u	< 20000 u	NS	NS	NS
B-20-ENG	1/31/1992	15.5 ft	CHR	< 10000 u	< 200 u	< 20000 u	< 20000 u	< 20000 u	NS	NS	NS
B-21-ENG	1/31/1992	15.5 ft	CHR	< 10000 u	0.001	< 20000 u	NS	< 20000 u	NS	NS	NS
B-21-ENG	1/31/1992	16.5 ft	CHR	NS	NS	NS	< 20000 u	NS	NS	NS	NS
B-22-ENG	1/31/1992	16.5 ft	CHR	0.11	0.017	0.05	< 20000 u	< 20000 u	NS	NS	NS
B-59	9/16/2003	0.5 Ft	STLSEA	< 20 u	NS	NS	< 59.1 u	NS	NS	NS	NS
B-59	9/16/2003	2.5 Ft	STLSEA	< 20 u	< 2.36 u	NS	< 60.6 u	NS	NS	NS	NS
B-65	10/1/2003	0.5 Ft	STLSEA	< 27.4 u	< 4.52 u	NS	< 54.9 u	NS	NS	NS	NS
B-65	10/1/2003	2.5 Ft	STLSEA	< 25.3 u	< 4.42 u	NS	< 50.5 u	NS	NS	NS	NS
B-69	9/17/2003	0.5 Ft	STLSEA	70 NJ	NS	NS	320	NS	NS	NS	NS
B-69	9/17/2003	2.5 Ft	STLSEA	< 22.6 u	< 2.24 u	NS	< 56.5 u	NS	NS	NS	NS
B-70	9/17/2003	0.5 Ft	STLSEA	166 NJ	NS	NS	692	NS	NS	NS	NS
B-70	9/17/2003	2.5 Ft	STLSEA	< 23.5 u	< 2.37 u	NS	< 58.7 u	NS	NS	NS	NS
B-73	9/29/2003	0.5 Ft	STLSEA	985 NJ	NS	NS	8830	NS	NS	NS	NS
B-73	9/29/2003	2.5 Ft	STLSEA	< 25.7 u	2.31 j	NS	89	NS	NS	NS	NS
B-75	9/22/2003	0.5 Ft	STLSEA	18.9 j	NS	NS	228	NS	NS	NS	NS
B-75	9/22/2003	2.5 Ft	STLSEA	< 30.6 u	2.64 j	NS	< 61.3 u	NS	NS	NS	NS
B-83	9/17/2003	0.5 Ft	STLSEA	< 22.4 u	NS	NS	< 56.1 u	NS	NS	NS	NS
B-83	9/17/2003	2.5 Ft	STLSEA	< 24.5 u	< 2.35 u	NS	< 61.2 u	NS	NS	NS	NS
B-84	9/23/2003	0.5 Ft	STLSEA	< 22.8 u	NS	NS	67.2	NS	NS	NS	NS
B-84	9/23/2003	2.5 Ft	STLSEA	< 29.7 u	< 4.76 u	NS	< 59.3 u	NS	NS	NS	NS
B-94	9/29/2003	0.5 Ft	STLSEA	55.5 NJ	NS	NS	360	NS	NS	NS	NS
B-94	9/29/2003	2.5 Ft	STLSEA	< 30.1 u	< 4.9 u	NS	< 60.2 u	NS	NS	NS	NS
B-95	9/29/2003	0.5 Ft	STLSEA	< 26.7 u	NS	NS	132	NS	NS	NS	NS
B-95	9/29/2003	2.5 Ft	STLSEA	< 30.2 u	< 4.73 u	NS	< 60.3 u	NS	NS	NS	NS
MW-01	4/20/1990	11 ft	MTA	< 10000 u	< 200 u	NS	NS	NS	< 20000 u	NS	< 20000 u
MW-01	4/20/1990	16 ft	MTA	< 10000 u	< 200 u	NS	NS	NS	< 20000 u	NS	< 20000 u
MW-02	4/20/1990	6 ft	MTA	NS	NS	NS	NS	NS	< 20000 u	NS	NS
MW-02	4/23/1990	6 ft	MTA	< 10000 u	< 200 u	NS	NS	NS	NS	NS	< 20000 u
MW-02	4/23/1990	16 ft	MTA	< 10000 u	< 200 u	NS	NS	NS	< 20000 u	NS	< 20000 u
MW-03	4/23/1990	11 ft	MTA	< 10000 u	< 200 u	NS	NS	NS	< 20000 u	NS	< 20000 u
MW-03	4/23/1990	16 ft	MTA	< 10000 u	< 200 u	NS	NS	NS	< 20000 u	NS	< 20000 u
MW-04	4/23/1990	16 ft	MTA	< 10000 u	< 200 u	NS	NS	NS	< 20000 u	NS	< 20000 u
MW-04	4/23/1990	21 ft	MTA	< 10000 u	< 200 u	NS	NS	NS	< 20000 u	NS	< 20000 u
MW-13A	9/30/2003	0.5 Ft	STLSEA	2080 NJ	NS	NS	6770	NS	NS	NS	NS
MW-13A	9/30/2003	2.5 Ft	STLSEA	< 28.8 u	< 4.57 u	NS	44.4 j	NS	NS	NS	NS
S-01	10/27/1989	0.5 ft	MTA	< 10000 u	< 200 u	NS	NS	NS	NS	< 20000 u	NS
S-02	10/27/1989	0.5 ft	MTA	< 10000 u	< 200 u	NS	NS	NS	NS	48000	NS
S-03	10/27/1989	0.5 ft	MTA	< 10000 u	< 200 u	NS	NS	NS	NS	50	NS
S-04	10/27/1989	0.5 ft	MTA	< 10000 u	620	NS	NS	NS	NS	110000	NS
S-05	10/27/1989	0.5 ft	MTA	< 10000 u	< 200 u	NS	NS	NS	NS	76000	NS
S-06	10/27/1989	0.5 ft	MTA	< 10000 u	< 200 u	NS	NS	NS	NS	32000	NS
S-07	10/27/1989	0.5 ft	MTA	< 10000 u	< 200 u	NS	NS	NS	NS	76000	NS
S-08	10/27/1989	0.5 ft	MTA	< 10000 u	210	NS	NS	NS	NS	1800	NS
S-09	10/27/1989	0.5 ft	MTA	< 10000 u	< 200 u	NS	NS	NS	NS	102000	NS
S-10	10/27/1989	0.5 ft	MTA	< 10000 u	< 200 u	NS	NS	NS	NS	100000	NS

Notes:

u = Compound was analyzed for but not detected. Analyte result was below the Reporting Type Limit.

j = Estimated Value

NJ = Sample chromatogram does not resemble standard hydrocarbon pattern.

NS = Not Sampled

NA = Not Applicable

< = Not Detected at specified reporting limit.

(mg/kg) = Concentrations reported in milligrams per kilogram (mg/kg).

Laboratories:

CHR = Chromalab, Inc.  
 MTA = MED-TOX Associates, Inc.  
 STLSEA = Severn Trent Laboratories, Seattle

Abbreviation: Chemical:

STOD SOLVENT = STODDARD SOLVENT  
 TPH = TOTAL PETROLEUM HYDROCARBONS

Table 7-5  
Semivolatile Organic Compounds Detected in Soil Samples  
Hookston Station Remedial Investigation  
Pleasant Hill, California

Sample Location	Date	Sample Depth	Analytical Laboratory	Analytical Method	METHNAPHTH (µg/kg)	ACENAPHTHYLENE (µg/kg)	ANTHRACENE (µg/kg)	BENZO (B&K) (µg/kg)	BENZO(A)PYRENE (µg/kg)	BZ(GH)PERYL (µg/kg)	B(2-EH)PHTHL (µg/kg)	BTLBENPHTHL (µg/kg)	CHRYSENE (µg/kg)	DBZ(AH)ANTHR (µg/kg)	DI-N-BT PATH (µg/kg)	FLUORANTHENE (µg/kg)	FLUORENE (µg/kg)	INDENO PYREN (µg/kg)	NAPHTHALENE (µg/kg)	PHENANTHRENE (µg/kg)	PYRENE (µg/kg)	
		RWQCB Commercial/Industrial (≤9.8 ft) ESL			250*	13,000	2,800	1,300**	130	27,000	66,000	-	13,000	380	-	40,000	8,900	1,300	4,200	11,000	85,000	
B-69	9/17/2003	0.5 Ft	STLSEA		128	337	213	1040	743	885	< 264	u 425	U 705	269	< 264	u 536	51.9	j 563	162	357	1170	
B-70	9/17/2003	0.5 Ft	STLSEA		< 67.7	u < 67.7	u < 67.7	u < 67.7	u < 67.7	u < 67.7	u 390	U 339	jU < 67.7	u < 67.7	u 141	j < 67.7	u < 67.7	u < 67.7	u < 67.7	u < 67.7	u 45.6	j
B-73	9/29/2003	0.5 Ft	STLSEA		< 25.8	u < 25.8	u < 25.8	u < 25.8	u < 25.8	u < 25.8	u < 258	u NS	NS	< 25.8	u NS	< 25.8	u < 25.8	u < 25.8	u < 25.8	u < 25.8	u 72.4	73.9
B-94	9/29/2003	0.5 Ft	STLSEA		< 27.6	u < 27.6	u < 27.6	u 66.1	34.8	< 27.6	u < 276	u NS	NS	< 27.6	u NS	72.4	< 27.6	u 19.9	j < 27.6	u 64.1	82.5	
MW-13A	9/30/2003	0.5 Ft	STLSEA		< 644	u < 644	u < 644	u < 644	u < 644	u < 644	u < 2580	u < 3220	u < 644	u < 644	u < 2580	u < 644	u < 644	u < 644	u < 644	u < 644	u < 644	u

Notes:

Only the compounds detected in one or more samples are reported.  
 (µg/kg) = Concentrations reported in micrograms per kilogram (µg/kg).  
 \* = RWQCB ESL for total 1- & 2-methylnaphthalene  
 \*\* = RWQCB ESL for benzo(b)fluoranthene or benzo(k)fluoranthene  
 j = Estimated Value  
 u = Compound was analyzed for but not detected. Analyte result was below the Reporting Type Limit.  
 U = Compound detected in an associate blank & treated as Non-Detect  
 NS = Not Sampled  
 < = Not Detected  
 NA = Not Applicable

Abbreviation: Chemical:

METHNAPHTH = 2-METHYLNAPHTHALENE  
 ACENAPHTHYLENE = ACENAPHTHYLENE  
 ANTHRACENE = ANTHRACENE  
 BENZO (B&K) = BENZO (B & K) FLUORANTHENE  
 BENZO(A)PYRENE = BENZO(A)PYRENE  
 BZ(GH)PERYL = BENZO(G,H,I)PERYLENE  
 B(2-EH)PHTHL = BIS(2-ETHYLHEXYL)PHTHALATE  
 BTLBENPHTHL = BUTYLBENZYL PHTHALATE  
 CHRYSENE = CHRYSENE (1,2-BENZOPHENANTHRENE)  
 DBZ(AH)ANTHR = DIBENZO(A,H)ANTHRACENE  
 DI-N-BT PATH = DI-N-BUTYLPHTHALATE  
 FLUORANTHENE = FLUORANTHENE (IDRYL)  
 FLUORENE = FLUORENE (ALPHA-DIPHENYLENEMETHANE)  
 INDENO PYREN = INDENO(1,2,3-C,D)PYRENE  
 NAPHTHALENE = NAPHTHALENE  
 PHENANTHRENE = PHENANTHRENE  
 PYRENE = PYRENE

Laboratories:

STLSEA = Severn Trent Laboratory, Seattle



**Table 7-6**  
**Polychlorinated Biphenyls in Soil Samples**  
**Hookston Station Remedial Investigation**  
**Pleasant Hill, California**

Sample Location	Date	Sample Depth	Analytical Laboratory	Analytical Method	PCB-1016 (mg/kg)	PCB-1221 (mg/kg)	PCB-1232 (mg/kg)	PCB-1242 (mg/kg)	PCB-1254 (mg/kg)	PCB-1260 (mg/kg)
RWQCB Commercial/Industrial ( $\leq 9.8$ ft) ESL					0.74	0.74	0.74	0.74	0.74	0.74
B-69	9/17/2003	0.5 Ft	STLSEA		< 0.0985 u	< 0.197 u	< 0.0985 u	< 0.0985 u	< 0.0985 u	< 0.0985 u
B-70	9/17/2003	0.5 Ft	STLSEA		< 0.0973 u	< 0.195 u	< 0.0973 u	0.288	< 0.0973 u	0.0857 j
B-73	9/29/2003	0.5 Ft	STLSEA		< 0.0941 u	< 0.188 u	< 0.0941 u	< 0.0941 u	< 0.0941 u	< 0.0941 u
B-94	9/29/2003	0.5 Ft	STLSEA		< 0.1 u	< 0.201 u	< 0.1 u	< 0.1 u	< 0.1 u	< 0.1 u
MW-13A	9/30/2003	0.5 Ft	STLSEA		< 0.0962 u	< 0.192 u	< 0.0962 u	< 0.0962 u	< 0.0962 u	< 0.0962 u

**Notes:**

j = Estimated Value

u = Compound was analyzed for but not detected. Analyte result was below the Reporting Type Limit.

< = Not Detected

NA = Not Applicable

(mg/kg) = Results are reported in milligrams per kilogram (mg/kg).

**Laboratories:**

STLSEA = Severn Trent Laboratory, Seattle

Table 7-7  
Metals Detected in Soil Samples  
Hookston Station Remedial Investigation  
Pleasant Hill, California

Sample Location	Date	Sample Depth	Analytical Laboratory	Analytical Method	ANTIMONY (mg/kg)	ARSENIC (mg/kg)	BARIUM (mg/kg)	BERYLLIUM (mg/kg)	CADMIUM (mg/kg)	CHROMIUM (mg/kg)	COBALT (mg/kg)	COPPER (mg/kg)	LEAD (mg/kg)	MERCURY (mg/kg)	MOLYBDENUM (mg/kg)	NICKEL (mg/kg)	SELENIUM (mg/kg)	SILVER (mg/kg)	THALLIUM (mg/kg)	VANADIUM (mg/kg)	ZINC (mg/kg)							
				CA Background <sup>1</sup>	0.15 to 1.95	0.6 to 11.0	133 to 1,400	0.25 to 2.70	0.05 to 1.70	23 to 1,579	2.7 to 46.9	9.1 to 96.4	12.4 to 97.1	0.15 to 0.90	0.1 to 9.6	9 to 509	0.430	0.10 to 8.3	0.17 to 1.10	39 to 288	88 to 236							
				RWQCB Commercial/Industrial (≤9.8 ft) ESL	40	5.5	1,500	8	7.4	58	80	230	750	10	40	150	10	40	13	200	600							
S-01	10/27/1989	0.5 ft	MTA		< 5000	u	10	100	0.3	0.3	24	7	19	9	0.3	< 3000	u	27	< 1000	u	< 300	u	< 1000	u	23	41		
S-02	10/27/1989	0.5 ft	MTA		< 5000	u	4.8	97	< 200	u	0.8	24	5	30	59	< 200	u	< 3000	u	21	< 1000	u	< 300	u	< 1000	u	28	92
S-04	10/27/1989	0.5 ft	MTA		< 5000	u	3.2	120	< 200	u	0.4	38	5	15	16	< 200	u	< 3000	u	35	< 1000	u	< 300	u	< 1000	u	43	75
S-05	10/27/1989	0.5 ft	MTA		< 5000	u	5	120	< 200	u	3.4	24	6	59	95	0.2	6	42	< 1000	u	< 300	u	< 1000	u	< 1000	u	47	230
S-06	10/27/1989	0.5 ft	MTA		< 5000	u	3.4	56	< 200	u	0.6	36	16	37	1.4	< 3000	u	24	< 1000	u	< 300	u	< 1000	u	< 1000	u	65	150
S-07	10/27/1989	0.5 ft	MTA		< 5000	u	2.6	28	< 200	u	1.4	44	16	52	0.7	< 3000	u	26	< 1000	u	< 300	u	< 1000	u	< 1000	u	72	140
S-08	10/27/1989	0.5 ft	MTA		< 5000	u	3.4	92	0.2	0.9	43	9	53	220	< 200	u	< 3000	u	21	< 1000	u	< 300	u	< 1000	u	330	110	
S-09	10/27/1989	0.5 ft	MTA		< 5000	u	< 500	53	< 200	u	< 200	u	8	< 1000	u	3	2	< 1000	u	4	< 1000	u	< 300	u	< 1000	u	17	9
B-59	9/16/2003	0.5 Ft	STLSEA		< 1.16	u	3.8	172	0.488	0.136	34	12.2	19.4	10	< 0.0155	u	< 0.582	u	44.6	0.325	u	< 0.116	u	< 0.582	u	26.7	59.9	
B-65	10/1/2003	0.5 Ft	STLSEA		< 0.589	u	5.11	70.4	0.262	< 0.118	u	16.7	24.5	22.5	0.0506	0.698	25	< 0.236	u	< 0.118	u	0.133	u	< 0.133	u	34	45.4	
B-69	9/17/2003	0.5 Ft	STLSEA		5.16	u	211	46.9	0.127	0.583	33.3	19.2	109	40.7	0.0706	1.6	52.4	0.44	u	< 0.0975	u	1.03	u	< 0.0975	u	50.7	94.5	
B-70	9/17/2003	0.5 Ft	STLSEA		< 0.984	u	2.78	57.1	0.171	1.04	30.4	15.3	271	0.0644	1.11	33.2	0.366	0.805	u	< 0.492	u	< 0.492	u	< 0.492	u	62	143	
B-73	9/29/2003	0.5 Ft	STLSEA		< 0.468	u	1.09	13	0.108	< 0.0935	u	24.2	16.5	59.6	0.407	0.61	25.4	0.404	u	< 0.0935	u	< 0.0935	u	< 0.0935	u	62.9	35	
B-75	9/22/2003	0.5 Ft	STLSEA		< 10.2	u	4.14	94	< 0.406	u	1.95	42	29	99.3	59	0.303	< 2.03	u	25.3	< 10.2	u	< 2.03	u	< 10.2	u	105	133	
B-83	9/17/2003	0.5 Ft	STLSEA		< 0.986	u	9.57	155	0.43	0.265	54.5	13	36	7.25	0.693	0.629	0.229	u	< 0.0986	u	< 0.493	u	< 0.493	u	47.3	52		
B-84	9/23/2003	0.5 Ft	STLSEA		0.52	u	75.8	18	0.144	< 0.093	u	130	21.5	118	4	0.19	0.57	22.3	< 0.233	u	< 0.093	u	< 0.093	u	89	26.4		
B-94	9/29/2003	0.5 Ft	STLSEA		1.48	u	6.13	133	0.306	0.419	36	15.2	51.2	31	0.109	0.827	57.9	< 0.239	u	< 0.0957	u	< 0.0957	u	< 0.0957	u	48.5	265	
B-95	9/29/2003	0.5 Ft	STLSEA		0.606	u	5.57	121	0.482	< 0.106	u	15.5	8.52	33.2	8.82	15.5	0.0579	1.33	19.2	< 0.106	u	0.22	u	0.22	u	31.6	37	
MW-13A	9/30/2003	0.5 Ft	STLSEA		2.32	u	4.5	77	0.183	1.58	28	10.1	53.5	375	0.49	1.68	29.6	0.237	u	< 0.0899	u	< 0.0899	u	< 0.0899	u	40.6	218	

Notes:

u = Compound was analyzed for but not detected. Analyte result was below the Reporting Type Limit.

< = Not Detected

<sup>1</sup> = From Background Concentrations of Trace and Major Elements in California Soils, Kearny, et al., 1996.

(mg/kg) = Concentrations reported in milligrams per kilogram (mg/kg)

Laboratories:

MTA = MED-TOX Associates, Inc.

STLSEA = Severn Trent Laboratories, Seattle

Table 8-1  
 Volatile Organic Compounds Detected in Ground Water  
 Hookston Station Remedial Investigation  
 Pleasant Hill, California

Sample Location	Date	Sample Depth (ft)	Location	Analytical Laboratory	Analytical Method	PCE (µg/L)	TCE (µg/L)	C-1,2-DCE (µg/L)	T-1,2-DCE (µg/L)	1,1-DCE (µg/L)	VINYL CHLORIDE (µg/L)	ACETONE (µg/L)	BENZENE (µg/L)	BDCMETANE (µg/L)	BROMOMETHANE (µg/L)	2-MTHL-2-PRP (µg/L)	2-BUTANONE (µg/L)	CARBON DISUL (µg/L)	CHLORO BENZENE (µg/L)												
					CA MCL	5	5	6	10	6	0.5	-	1	-	-	-	-	-	70												
					RWQCB ESL	5	5	6	10	6	0.5	700	1	100	9.8	-	4,200	-	25												
<b>ON-SITE A-ZONE LOCATIONS</b>																															
<b>A-Zone Hydropunch Locations</b>																															
B-09-TR	3/25/1993	25 ft	on-site	CTL	8010	< 1	u	< 1	u	< 1	u	< 1	u	< 2	u	NS	NS	< 1	u	< 2	u	NS	NS	< 1	u						
B-12-TR	8/19/1993	25 ft	on-site	CTL	8010	< 1	u	< 1	u	< 1	u	< 1	u	< 2	u	NS	NS	< 1	u	< 2	u	NS	NS	< 1	u						
B-13-TR	8/19/1993	25 ft	on-site	CTL	8010	< 1	u	< 1	u	< 1	u	< 1	u	< 2	u	NS	NS	< 1	u	< 2	u	NS	NS	< 1	u						
B-20-TR	11/14/1995	21 ft	on-site	AEN	8010	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	< 2	u	NS	NS	< 0.5	u	< 2	u	NS	NS	< 0.5	u						
B-21-TR	11/15/1995	29 ft	on-site	AEN	8010	< 0.5	u	0.8	u	< 0.5	u	< 0.5	u	< 2	u	NS	NS	< 0.5	u	< 2	u	NS	NS	< 0.5	u						
B-24-TR	11/15/1995	21.5 ft	on-site	AEN	8010	420	u	< 0.5	u	< 0.5	u	< 0.5	u	< 2	u	NS	NS	< 0.5	u	< 2	u	NS	NS	< 0.5	u						
B-27-TR	11/16/1995	19 ft	on-site	AEN	8010	< 0.5	u	17	u	< 0.5	u	< 0.5	u	< 2	u	NS	NS	< 0.5	u	< 2	u	NS	NS	< 0.5	u						
B-30-TR	11/16/1995	17.5 ft	on-site	AEN	8010	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	< 2	u	NS	NS	< 0.5	u	< 2	u	NS	NS	< 0.5	u						
B-33-TR	11/16/1995	19 ft	on-site	AEN	8010	< 0.5	u	48	u	< 0.5	u	2	u	< 2	u	NS	NS	< 0.5	u	< 2	u	NS	NS	< 0.5	u						
B-35	9/24/2001	32 Ft	on-site	CTBERK	8260B	< 0.5	u	5.6	u	< 0.5	u	< 0.5	u	< 0.5	u	< 10	u	< 0.5	u	< 0.5	u	< 1	u	NS	< 10	u	< 0.5	u	< 0.5	u	
B-36	9/25/2001	28 Ft	on-site	CTBERK	8260B	< 0.5	u	1.9	u	< 0.5	u	< 0.5	u	< 0.5	u	< 10	u	< 0.5	u	< 0.5	u	< 1	u	NS	< 10	u	< 0.5	u	< 0.5	u	
B-37	9/25/2001	26 Ft	on-site	CTBERK	8260B	< 0.5	u	7.4	u	< 0.5	u	< 0.5	u	< 0.6	u	< 10	u	< 0.5	u	< 0.5	u	< 1	u	NS	< 10	u	< 0.5	u	< 0.5	u	
B-38	9/25/2001	28 Ft	on-site	CTBERK	8260B	< 0.5	u	3.7	u	< 0.5	u	< 0.5	u	< 0.5	u	< 10	u	< 0.5	u	< 0.5	u	< 1	u	NS	< 10	u	< 0.5	u	< 0.5	u	
B-39	9/25/2001	32 Ft	on-site	CTBERK	8260B	< 0.5	u	11	u	0.6	u	< 0.5	u	2.2	u	< 10	u	< 0.5	u	< 0.5	u	< 1	u	NS	< 10	u	< 0.5	u	< 0.5	u	
B-40	9/25/2001	24 Ft	on-site	CTBERK	8260B	2.2	u	2.1	u	< 0.5	u	< 0.5	u	< 0.5	u	< 10	u	< 0.5	u	< 0.5	u	< 1	u	NS	< 10	u	< 0.5	u	< 0.5	u	
B-41	9/26/2001	28 Ft	on-site	CTBERK	8260B	130	u	14	u	< 0.5	u	< 0.5	u	< 0.5	u	< 10	u	< 0.5	u	< 0.5	u	< 1	u	NS	< 10	u	< 0.5	u	< 0.5	u	
B-42	9/26/2001	20 Ft	on-site	CTBERK	8260B	330	u	43	u	< 1	u	< 1	u	< 1	u	< 20	u	< 1	u	< 1	u	< 2	u	NS	< 20	u	< 1	u	< 1	u	
B-43	9/26/2001	19 Ft	on-site	CTBERK	8260B	330	u	42	u	< 1.3	u	< 1.3	u	< 1.3	u	< 25	u	< 1.3	u	< 1.3	u	< 2.5	u	NS	< 25	u	< 1.3	u	< 1.3	u	
B-44	9/26/2001	28 Ft	on-site	CTBERK	8260B	9.4	u	18	u	9.4	u	0.9	u	< 0.5	u	< 10	u	< 0.5	u	< 0.5	u	< 1	u	NS	< 10	u	< 0.5	u	< 0.5	u	
B-45	9/26/2001	24 Ft	on-site	CTBERK	8260B	< 6.3	u	< 6.3	u	< 6.3	u	< 6.3	u	< 6.3	u	< 130	u	< 6.3	u	< 6.3	u	< 13	u	NS	< 130	u	< 6.3	u	< 6.3	u	
B-46	9/27/2001	20 Ft	on-site	CTBERK	8260B	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	11	u	< 0.5	u	< 0.5	u	< 1	u	NS	< 10	u	< 0.5	u	11	u	
B-47	10/3/2001	26 Ft	on-site	CTBERK	8260B	20	u	550	u	12	u	< 1.7	u	9.0	u	< 33	u	< 1.7	u	< 1.7	u	< 3.3	u	NS	< 33	u	< 1.7	u	< 1.7	u	
B-48	10/3/2001	22 Ft	on-site	CTBERK	8260B	3.8	u	920	u	22	u	< 2.5	u	16	u	< 50	u	< 2.5	u	< 2.5	u	< 5	u	NS	< 50	u	< 2.5	u	< 2.5	u	
B-49	9/27/2001	20 Ft	on-site	CTBERK	8260B	< 5	u	1600	u	51	u	< 5	u	29	u	< 100	u	< 5	u	< 5	u	< 10	u	NS	< 100	u	< 5	u	< 5	u	
B-50	9/27/2001	24 Ft	on-site	CTBERK	8260B	< 4.2	u	1300	u	72	u	< 4.2	u	28	u	< 83	u	< 4.2	u	< 4.2	u	< 8.3	u	NS	< 83	u	< 4.2	u	< 4.2	u	
B-50 Duplicate	9/27/2001	24 Ft	on-site	CTBERK	8260B	< 4.2	u	1200	u	68	u	< 4.2	u	28	u	< 83	u	< 4.2	u	< 4.2	u	< 8.3	u	NS	< 83	u	< 4.2	u	< 4.2	u	
B-51	10/3/2001	22 Ft	on-site	CTBERK	8260B	< 5	u	1500	u	87	u	< 5	u	32	u	< 100	u	< 5	u	< 5	u	< 10	u	NS	< 100	u	< 5	u	< 5	u	
B-52	10/3/2001	22 Ft	on-site	CTBERK	8260B	< 7.1	u	2000	u	74	u	< 7.1	u	38	u	< 140	u	< 7.1	u	< 7.1	u	< 14	u	NS	< 140	u	< 7.1	u	< 7.1	u	
B-52 Duplicate	10/3/2001	22 Ft	on-site	CTBERK	8260B	< 7.1	u	2000	u	73	u	< 7.1	u	35	u	< 140	u	< 7.1	u	< 7.1	u	< 14	u	NS	< 140	u	< 7.1	u	< 7.1	u	
B-53	10/1/2001	24 Ft	on-site	CTBERK	8260B	5.5	u	1700	u	78	u	< 5	u	51	u	< 100	u	< 5	u	< 5	u	< 10	u	NS	< 100	u	< 5	u	< 5	u	
B-54	10/1/2001	24 Ft	on-site	CTBERK	8260B	< 7.1	u	2500	u	90	u	< 7.1	u	65	u	< 140	u	< 7.1	u	< 7.1	u	< 14	u	NS	< 140	u	< 7.1	u	< 7.1	u	
B-55	10/1/2001	24 Ft	on-site	CTBERK	8260B	1.0	u	270	u	8.0	u	< 1	u	9.8	u	< 20	u	< 1	u	< 1	u	< 2	u	NS	< 20	u	< 1	u	< 1	u	
B-56	10/1/2001	32 Ft	on-site	CTBERK	8260B	1.0	u	63	u	< 0.5	u	< 0.5	u	6.1	u	< 10	u	< 0.5	u	< 0.5	u	< 1	u	NS	< 10	u	< 0.5	u	< 0.5	u	
B-57	9/24/2001	32 Ft	on-site	CTBERK	8260B	0.6	u	19	u	< 0.5	u	< 0.5	u	1.1	u	< 10	u	< 0.5	u	< 0.5	u	< 1	u	NS	< 10	u	< 0.5	u	< 0.5	u	
B-57 Duplicate	9/24/2001	32 Ft	on-site	CTBERK	8260B	0.6	u	19	u	< 0.5	u	< 0.5	u	1.0	u	< 10	u	< 0.5	u	< 0.5	u	< 1	u	NS	< 10	u	< 0.5	u	< 0.5	u	
B-58	9/24/2001	28 Ft	on-site	CTBERK	8260B	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	< 10	u	< 0.5	u	< 0.5	u	< 1	u	NS	< 10	u	< 0.5	u	< 0.5	u	
B-60	9/18/2003	35 Ft	on-site	STLSEA	8260B	< 1	u	20.9	u	< 1	u	0.643	j	< 1	u	< 5	u	< 1	u	< 1	u	< 2.5	u	< 10	u	< 5	u	< 1	u	< 1	u
B-63	9/19/2003	35 Ft	on-site	STLSEA	8260B	< 100	u	8860	u	452	u	< 100	u	341	u	< 500	u	< 100	u	< 100	u	< 250	u	< 1000	u	< 500	u	< 100	u	< 100	u
B-65	10/1/2003	24 Ft	on-site	STLSEA	8260B	0.989	j	391	d	1.05	u	0.701	j	< 1	u	< 5	u	< 1	u	< 1	u	< 2.5	u	< 10	u	< 5	u	< 1	u	< 1	u
B-66	9/19/2003	35 Ft	on-site	STLSEA	8260B	< 1	u	9.89	u	< 1	u	< 1	u	0.909	j	< 5	u	< 1	u	< 1	u	< 2.5	u	< 10	u	< 5	u	< 1	u	< 1	u
B-67	9/18/2003	35 Ft	on-site	STLSEA	8260B	< 100	u	1710	u	93	j	< 100	u	114	u	< 500	u	< 100	u	< 100	u	< 250	u	< 1000	u	< 500	u	< 100	u	< 100	u
B-68	9/30/2003	30 Ft	on-site	STLSEA	8260B	< 1000	u	6040	u	554	j	< 1000	u	< 1000	u	< 5000	u	< 1000	u	< 1000											



Table 8-1  
 Volatile Organic Compounds Detected in Ground Water  
 Hookston Station Remedial Investigation  
 Pleasant Hill, California

Sample Location	Date	Sample Depth (ft)	Location	Analytical Laboratory	Analytical Method	1,2,4-TMTHLB (µg/L)	1,2-DCE (µg/L)	1,3,5-TMTHLB (µg/L)	ISOPROPYLETHER (µg/L)	ISOP(CUMENE) (µg/L)	TOTAL XYLENES (µg/L)	M,P-XYLENE (µg/L)	O-XYLENE (µg/L)	N-BUTYLBENZENE (µg/L)	P-ISOPRLBENZ (µg/L)	PROPYLBENZENE (µg/L)	SEC-BTLBNZN (µg/L)	T-BEE (µg/L)	TERT-BTLBNZN (µg/L)							
					CA MCL	-	-	-	-	-	1,750	-	-	-	-	-	-	-	-							
					RWQCB ESL	-	-	-	-	-	13	-	-	-	-	-	-	-	-							
<b>ON-SITE A-ZONE LOCATIONS</b>																										
<b>A-Zone Hydropunch Locations</b>																										
B-09-TR	3/25/1993	25 ft	on-site	CTL	8010	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS							
B-12-TR	8/19/1993	25 ft	on-site	CTL	8010	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS							
B-13-TR	8/19/1993	25 ft	on-site	CTL	8010	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS							
B-20-TR	11/14/1995	21 ft	on-site	AEN	8010	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS							
B-21-TR	11/15/1995	29 ft	on-site	AEN	8010	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS							
B-24-TR	11/15/1995	21.5 ft	on-site	AEN	8010	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS							
B-27-TR	11/16/1995	19 ft	on-site	AEN	8010	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS							
B-30-TR	11/16/1995	17.5 ft	on-site	AEN	8010	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS							
B-33-TR	11/16/1995	19 ft	on-site	AEN	8010	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS							
B-35	9/24/2001	32 Ft	on-site	CTBERK	8260B	< 0.5	u	NS	< 0.5	u	NS	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	NS	< 0.5	u				
B-36	9/25/2001	28 Ft	on-site	CTBERK	8260B	< 0.5	u	NS	< 0.5	u	NS	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	NS	< 0.5	u				
B-37	9/25/2001	26 Ft	on-site	CTBERK	8260B	< 0.5	u	NS	< 0.5	u	NS	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	NS	< 0.5	u				
B-38	9/25/2001	28 Ft	on-site	CTBERK	8260B	< 0.5	u	NS	< 0.5	u	NS	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	NS	< 0.5	u				
B-39	9/25/2001	32 Ft	on-site	CTBERK	8260B	< 0.5	u	NS	< 0.5	u	NS	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	NS	< 0.5	u				
B-40	9/25/2001	24 Ft	on-site	CTBERK	8260B	< 0.5	u	NS	< 0.5	u	NS	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	NS	< 0.5	u				
B-41	9/26/2001	28 Ft	on-site	CTBERK	8260B	< 0.5	u	NS	< 0.5	u	NS	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	NS	< 0.5	u				
B-42	9/26/2001	20 Ft	on-site	CTBERK	8260B	< 1	u	NS	< 1	u	NS	< 1	u	< 1	u	< 1	u	< 1	u	NS	< 1	u				
B-43	9/26/2001	19 Ft	on-site	CTBERK	8260B	< 1.3	u	NS	< 1.3	u	NS	< 1.3	u	< 1.3	u	< 1.3	u	< 1.3	u	NS	< 1.3	u				
B-44	9/26/2001	28 Ft	on-site	CTBERK	8260B	3.4	u	NS	< 0.5	u	NS	< 0.5	u	< 0.5	u	7.4	u	3.3	u	NS	1.7	u				
B-45	9/26/2001	24 Ft	on-site	CTBERK	8260B	< 6.3	u	NS	< 6.3	u	NS	< 6.3	u	< 6.3	u	< 6.3	u	14	u	< 6.3	u	< 6.3	u			
B-46	9/27/2001	20 Ft	on-site	CTBERK	8260B	18	J	NS	< 0.5	u	NS	< 0.5	u	< 0.5	u	75	J	7.7	J	38	J	44	J	NS	< 0.5	u
B-47	10/3/2001	26 Ft	on-site	CTBERK	8260B	< 1.7	u	NS	< 1.7	u	NS	< 1.7	u	< 1.7	u	< 1.7	u	< 1.7	u	NS	< 1.7	u				
B-48	10/3/2001	22 Ft	on-site	CTBERK	8260B	< 2.5	u	NS	< 2.5	u	NS	< 2.5	u	< 2.5	u	< 2.5	u	< 2.5	u	NS	< 2.5	u				
B-49	9/27/2001	20 Ft	on-site	CTBERK	8260B	< 5	u	NS	< 5	u	NS	< 5	u	< 5	u	< 5	u	< 5	u	NS	< 5	u				
B-50	9/27/2001	24 Ft	on-site	CTBERK	8260B	< 4.2	u	NS	< 4.2	u	NS	< 4.2	u	< 4.2	u	< 4.2	u	< 4.2	u	NS	< 4.2	u				
B-50 Duplicate	9/27/2001	24 Ft	on-site	CTBERK	8260B	< 4.2	u	NS	< 4.2	u	NS	< 4.2	u	< 4.2	u	< 4.2	u	< 4.2	u	NS	< 4.2	u				
B-51	10/3/2001	22 Ft	on-site	CTBERK	8260B	< 5	u	NS	< 5	u	NS	< 5	u	< 5	u	< 5	u	< 5	u	NS	< 5	u				
B-52	10/3/2001	22 Ft	on-site	CTBERK	8260B	< 7.1	u	NS	< 7.1	u	NS	< 7.1	u	< 7.1	u	< 7.1	u	< 7.1	u	NS	< 7.1	u				
B-52 Duplicate	10/3/2001	22 Ft	on-site	CTBERK	8260B	< 7.1	u	NS	< 7.1	u	NS	< 7.1	u	< 7.1	u	< 7.1	u	< 7.1	u	NS	< 7.1	u				
B-53	10/1/2001	24 Ft	on-site	CTBERK	8260B	< 5	u	NS	< 5	u	NS	< 5	u	< 5	u	< 5	u	< 5	u	NS	< 5	u				
B-54	10/1/2001	24 Ft	on-site	CTBERK	8260B	< 7.1	u	NS	< 7.1	u	NS	< 7.1	u	< 7.1	u	< 7.1	u	< 7.1	u	NS	< 7.1	u				
B-55	10/1/2001	24 Ft	on-site	CTBERK	8260B	< 1	u	NS	< 1	u	NS	< 1	u	< 1	u	< 1	u	< 1	u	NS	< 1	u				
B-56	10/1/2001	32 Ft	on-site	CTBERK	8260B	< 0.5	u	NS	< 0.5	u	NS	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	NS	< 0.5	u				
B-57	9/24/2001	32 Ft	on-site	CTBERK	8260B	< 0.5	u	NS	< 0.5	u	NS	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	NS	< 0.5	u				
B-57 Duplicate	9/24/2001	32 Ft	on-site	CTBERK	8260B	< 0.5	u	NS	< 0.5	u	NS	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	NS	< 0.5	u				
B-58	9/24/2001	28 Ft	on-site	CTBERK	8260B	< 0.5	u	NS	< 0.5	u	NS	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	NS	< 0.5	u				
B-60	9/18/2003	35 Ft	on-site	STLSEA	8260B	NS	NS	NS	< 1	u	NS	< 2	u	< 1	u	NS	NS	NS	NS	< 1	u	NS				
B-63	9/19/2003	35 Ft	on-site	STLSEA	8260B	NS	NS	NS	< 100	u	NS	< 200	u	< 100	u	NS	NS	NS	NS	< 100	u	NS				
B-65	10/1/2003	24 Ft	on-site	STLSEA	8260B	NS	NS	NS	< 1	u	NS	< 2	u	< 1	u	NS	NS	NS	NS	< 1	u	NS				
B-66	9/19/2003	35 Ft	on-site	STLSEA	8260B	NS	NS	NS	< 1	u	NS	< 2	u	< 1	u	NS	NS	NS	NS	< 1	u	NS				
B-67	9/18/2003	35 Ft	on-site	STLSEA	8260B	NS	NS	NS	< 100	u	NS	< 200	u	< 100	u	NS	NS	NS	NS	< 100	u	NS				
B-68	9/30/2003	30 Ft	on-site	STLSEA	8260B	NS	NS	NS	< 1000	u	NS	< 2000	u	< 1000	u	NS	NS	NS	NS	< 1000	u	NS				
B-69	9/17/2003	35 Ft	on-site	STLSEA	8260B	NS	NS	NS	< 1	u	NS	< 2	u	< 1	u	NS	NS	NS	NS	< 1	u	NS				
B-70	9/18/2003	30 Ft	on-site	STLSEA	8260B	NS	NS	NS	< 1	u	NS	< 2	u	< 1	u	NS	NS	NS	NS	< 1	u	NS				
B-74	9/18/2003	35 Ft	on-site	STLSEA	8260B	NS	NS	NS	< 100	u	NS	< 200	u	< 100	u	NS	NS	NS	NS	< 100	u	NS				
B-75	9/22/2003	35 Ft	on-site	STLSEA	8260B	NS	NS	NS	< 2	u	NS	< 4	u	< 2	u	NS	NS	NS	NS	< 2	u	NS				
B-77	9/19/2003	35 Ft	on-site	STLSEA	8260B	NS	NS	NS	< 10	u	NS	< 20	u	< 10	u	NS	NS	NS	NS	< 10	u	NS				
B-78	9/23/2000	30 Ft	on-site	STLSEA	8260B	NS	NS	NS	< 2	uR	NS	< 4	uR	< 2	uR	NS	NS	NS	NS	< 2	uR	NS				
B-79	9/23/2003	30 Ft	on-site	STLSEA	8260B	NS	NS	NS	< 100	u	NS	< 200	u	< 100	u	NS	NS	NS	NS	< 100	u	NS				
B-80	9/25/2003	35 Ft	on-site	STLSEA	8260B	NS	NS	NS	< 2	u	NS	< 4	u	< 2	u	NS	NS	NS	NS	< 2	u	NS				
B-81	9/22/2003	30 Ft	on-site	STLSEA	8260B	NS	NS	NS	< 100	u	NS	< 200	u	< 100	u	NS	NS	NS	NS	< 100	u	NS				
B-81 Duplicate	9/22/2003	30 Ft	on-site	STLSEA	8260B	NS	NS	NS	< 100	u	NS	< 200	u	< 100	u	NS	NS	NS	NS	< 100	u	NS				
B-82	9/22/2003	25 Ft	on-site	STLSEA	8260B	NS	NS	NS	< 5	u	NS	< 10	u	< 5	u	NS	NS	NS	NS	< 5	u	NS				
B-85	9/16/2003	25 Ft	on-site	STLSEA	8260B	NS	NS	NS	< 100	u	NS	< 200	u	< 100	u	NS	NS	NS	NS	< 100	u	NS				
B-85 Duplicate	9/16/2003	25 Ft	on-site	STLSEA	8260B	NS	NS	NS	< 100	u	NS	< 200	u	< 100	u	NS	NS	NS	NS	< 100	u	NS				
B-90	9/16/2003	20 Ft	on-site	STLSEA	8260B	NS	NS	NS	< 100	u	NS	< 200	u	< 100	u	NS	NS	NS	NS	< 100	u	NS				
B-92	9/16/2003	25 Ft	on-site	STLSEA	8260B	NS	NS	NS	< 100	u	NS	< 200	u	< 100	u	NS	NS	NS	NS</							



Table 8-1  
 Volatile Organic Compounds Detected in Ground Water  
 Hookston Station Remedial Investigation  
 Pleasant Hill, California

Sample Location	Date	Sample Depth (ft)	Location	Analytical Laboratory	Analytical Method	CHLOROFORM (µg/L)	CHLOROMETHANE (µg/L)	DBC METHANE (µg/L)	1,1-DCA (µg/L)	1,2-DCA (µg/L)	1,2-DCPROPAN (µg/L)	ETHYLBENZENE (µg/L)	2-HEXANONE (µg/L)	DICHLMETHANE (µg/L)	4M2PENTANONE (µg/L)	MTBE (µg/L)	TOLUENE (µg/L)	1,1,1-TCA (µg/L)	1,1,2-TCA (µg/L)	
A-Zone Monitoring Wells						CA MCL RWQCB ESL	- 100	- 2.7	- 100	5 5	0.5 0.5	5 5	700 30	- -	- 5	13 5	150 40	200 62	5 5	
MW-01	4/25/1990	10-20	on-site	MTA	8010	< 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u NS	u NS	u < 0.5	u NS	NS	NS	< 0.5	u < 0.5	u < 0.5
MW-01	4/25/1990	10-20	on-site	MTA	8020	NS	NS	NS	NS	NS	NS	< 0.5	u NS	u NS	u NS	NS	NS	< 0.5	u NS	NS
MW-01	5/17/1990	10-20	on-site	MTA	8240	< 5	u < 10	u < 5	u < 5	u < 5	u < 5	u < 5	u < 50	u < 5	u < 50	u NS	NS	< 5	u < 5	u < 5
MW-01	3/13/1991	10-20	on-site	CHR	624	< 1	u < 1	u < 1	u < 1	u < 1	u < 1	u < 1	u NS	u < 1	u NS	NS	NS	< 1	u < 1	u < 1
MW-01	1/21/1992	10-20	on-site	CHR	624	< 1	u < 1	u < 1	u < 1	u < 1	u < 1	u < 1	u NS	u < 1	u NS	NS	NS	< 1	u < 1	u < 1
MW-01	4/2/1993	10-20	on-site	CTL	8020	NS	NS	NS	NS	NS	NS	< 0.5	u NS	u NS	u NS	NS	NS	< 0.5	u NS	NS
MW-01	4/2/1993	10-20	on-site	CTL	8240	< 5	u < 10	u < 5	u < 5	u < 5	u < 5	u < 5	u < 10	u < 20	u < 10	u NS	NS	< 5	u < 5	u < 5
MW-01	11/17/1995	10-20	on-site	MCA	8010	< 50	u < 200	u < 50	u < 50	u < 50	u < 50	u NS	u NS	u < 200	u NS	NS	NS	< 50	u < 50	u < 50
MW-01	6/29/2000	10-20	on-site	CTBERK	8021B	NS	NS	NS	NS	NS	NS	< 0.5	u NS	u NS	u NS	NS	NS	< 0.5	u NS	NS
MW-01	6/29/2000	10-20	on-site	CTBERK	8260B	< 2.5	u < 5	u < 2.5	u < 2.5	u < 2.5	u < 2.5	u < 2.5	u < 50	u < 50	u < 50	u < 2.5	u < 2.5	u < 2.5	u < 2.5	u < 2.5
MW-01	3/12/2001	10-20	on-site	CTBERK	8021B	NS	NS	NS	NS	NS	NS	< 0.5	u NS	u NS	u NS	NS	NS	< 0.5	u NS	NS
MW-01	3/12/2001	10-20	on-site	CTBERK	8260B	< 5	u < 5	u < 2.5	u < 2.5	u < 2.5	u < 2.5	u NS	u NS	u < 100	u NS	NS	NS	< 2.5	u < 2.5	u < 2.5
MW-01 Duplicate	3/12/2001	10-20	on-site	CTBERK	8260B	< 1	u < 1	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u NS	u NS	u < 20	u NS	NS	NS	< 0.5	u < 0.5	u < 0.5
MW-01	6/27/2001	10-20	on-site	CTBERK	8260B	< 2.5	u < 5	u < 2.5	u < 2.5	u < 2.5	u < 2.5	u < 2.5	u < 50	u < 50	u < 50	u < 2.5	u < 2.5	u < 2.5	u < 2.5	u < 2.5
MW-01	9/20/2001	10-20	on-site	CTBERK	8260B	< 2.5	u < 5	u < 2.5	u < 2.5	u < 2.5	u < 2.5	u < 2.5	u < 50	u < 50	u < 50	u < 2.5	u < 2.5	u < 2.5	u < 2.5	u < 2.5
MW-01	9/20/2001	17 ft	on-site	CTBERK	8260B	< 0.8	u < 1.7	u < 0.8	u < 0.8	u < 0.8	u < 0.8	u < 0.8	u < 17	u < 17	u < 17	u < 0.8	u < 0.8	u < 0.8	u < 0.8	u < 0.8
MW-01	12/19/2001	17 ft	on-site	CTBERK	8260B	< 1.3	u < 2.5	u < 1.3	u < 1.3	u < 1.3	u < 1.3	u < 1.3	u < 25	u < 25	u < 25	u < 1.3	u < 1.3	u < 1.3	u < 1.3	u < 1.3
MW-01	3/20/2002	17 Ft	on-site	CTBERK	8260B	< 1.3	u < 2.5	u < 1.3	u < 1.3	u < 1.3	u < 1.3	u < 1.3	u < 25	u < 25	u < 25	u < 1.3	u < 1.3	u < 1.3	u < 1.3	u < 1.3
MW-01	6/21/2002	17 Ft	on-site	STL Sac	8260B	< 5	u < 10	u < 5	u < 5	u < 5	u < 5	u < 5	u < 25	u < 5	u < 25	u < 5	u < 5	u < 5	u < 5	u < 5
MW-01	9/24/2002	17 Ft	on-site	STL Sac	8260B	< 10	u < 10	u < 10	u < 10	u < 10	u < 10	u < 10	u < 20	u < 10	u < 20	u < 20	u < 10	u < 10	u < 10	u < 10
MW-01	11/14/2002	17 Ft	on-site	STL Sac	8260B	< 10	uUJ < 20	uUJ < 10	uUJ < 10	uUJ < 10	uUJ < 10	uUJ < 10	uUJ < 50	uUJ < 10	uUJ < 10	uUJ < 10	uUJ < 10	uUJ < 10	uUJ < 10	uUJ < 10
MW-01	2/19/2003	17 ft	on-site	STL Sac	8260B	< 10	u < 10	u < 10	u < 10	u < 10	u < 10	u < 10	u < 20	u < 10	u < 20	u < 20	u < 10	u < 10	u < 10	u < 10
MW-01	5/6/2003	17 ft	on-site	STL Sac	8260B	< 10	u < 10	u < 10	u < 10	u < 10	u < 10	u < 10	u < 20	u < 10	u < 20	u < 20	u < 10	u < 10	u < 10	u < 10
MW-01	7/22/2003	17 ft	on-site	STL Sac	8260B	< 20	u < 20	u < 20	u < 20	u < 20	u < 20	u < 20	u < 40	u < 20	u < 40	u < 40	u < 20	u < 20	u < 20	u < 20
MW-01	10/24/2003	17 ft	on-site	STL Sac	8260B	< 20	u < 20	u < 20	u < 20	u < 20	u < 20	u < 20	u < 40	u < 20	u < 40	u < 40	u < 20	u < 20	u < 20	u < 20
MW-01	3/10/2004	17 Ft	on-site	STLSEA	8260B	< 20	u < 40	u < 20	u < 20	u < 20	u < 20	u < 20	u < 100	u < 40	u < 100	u < 20	u < 20	u < 20	u < 20	u < 20
MW-01	4/20/2004	10-20	on-site	STL Sac	8260B	< 50	u < 50	u < 50	u < 50	u < 50	u < 50	u < 50	u < 100	u < 50	u < 100	u < 100	u < 50	u < 50	u < 50	u < 50
MW-02	4/25/1990	11-21	on-site	MTA	8010	< 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u NS	u NS	u < 0.5	u NS	NS	NS	< 0.5	u < 0.5	u < 0.5
MW-02	5/17/1990	11-21	on-site	MTA	8240	< 5	u < 10	u < 5	u < 5	u < 5	u < 5	u < 5	u < 50	u < 5	u < 50	u NS	NS	< 5	u < 5	u < 5
MW-02	1/21/1992	11-21	on-site	CHR	624	< 1	u < 1	u < 1	u < 1	u < 1	u < 1	u < 1	u NS	u < 1	u < 1	u NS	NS	< 1	u < 1	u < 1
MW-02	4/1/1993	11-21	on-site	CTL	8020	NS	NS	NS	NS	NS	NS	< 0.5	u NS	u NS	u NS	NS	NS	< 0.5	u NS	NS
MW-02	4/1/1993	11-21	on-site	CTL	8240	< 10	u < 20	u < 10	u < 10	u < 10	u < 10	u < 10	u < 20	u < 40	u < 20	u NS	NS	< 10	u < 10	u < 10
MW-02	11/17/1995	11-21	on-site	MCA	8010	< 2	u < 8	u < 2	u < 2	u < 2	u < 2	u NS	u NS	u < 8	u NS	NS	NS	< 2	u < 2	u < 2
MW-03	4/25/1990	10-20	on-site	MTA	8010	< 5	u < 5	u < 5	u < 5	u < 5	u < 5	u NS	u NS	u < 5	u NS	NS	NS	< 5	u < 5	u < 5
MW-03	5/17/1990	10-20	on-site	MTA	8240	< 5	u < 10	u < 5	u < 5	u < 5	u < 5	u < 5	u < 50	u < 5	u < 50	u NS	NS	< 5	u < 10	9
MW-03	3/14/1991	10-20	on-site	CHR	624	4.5	< 1	u < 1	u < 1	u < 1	u < 1	u < 1	u NS	u < 1	u NS	NS	NS	< 1	u < 12	5.8
MW-03	1/21/1992	10-20	on-site	CHR	624	< 1	u < 1	u < 1	u < 1	u < 1	u < 1	u < 1	u NS	u < 1	u < 1	u NS	NS	< 1	u < 4.9	3.9
MW-03	4/2/1993	10-20	on-site	CTL	8020	NS	NS	NS	NS	NS	NS	< 0.5	u NS	u NS	u NS	NS	NS	< 0.5	u NS	NS
MW-03	4/2/1993	10-20	on-site	CTL	8240	< 300	u < 500	u < 300	u < 300	u < 300	u < 300	u < 300	u < 500	u < 1000	u < 500	u NS	NS	< 300	u < 300	u < 300
MW-03	11/17/1995	10-20	on-site	MCA	8010	< 100	u < 400	u < 100	u < 100	u < 100	u < 100	u NS	u NS	u < 400	u NS	NS	NS	< 100	u < 100	u < 100
MW-03	6/29/2000	10-20	on-site	CTBERK	8021B	NS	NS	NS	NS	NS	NS	< 0.5	u NS	u NS	u NS	NS	NS	< 0.5	u NS	NS
MW-03	6/29/2000	10-20	on-site	CTBERK	8260B	< 4.2	u < 8.3	u < 4.2	u < 4.2	u < 4.2	u < 4.2	u < 8.3	u < 83	u < 83	u < 83	u < 4.2	u < 4.2	u < 4.2	u < 4.2	u < 4.2
MW-03	3/13/2001	10-20	on-site	CTBERK	8021B	NS	NS	NS	NS	NS	NS	< 0.5	u NS	u NS	u NS	NS	NS	< 0.5	u NS	NS
MW-03	3/13/2001	10-20	on-site	CTBERK	8260B	< 17	u < 17	u < 8.3	u < 8.3	u < 8.3	u < 8.3	u NS	u NS	u < 330	u NS	NS	NS	< 8.3	u < 8.3	u < 8.3
MW-03	6/27/2001	10-20	on-site	CTBERK	8260B	< 8.3	u < 17	u < 8.3	u < 8.3	u < 8.3	u < 8.3	u < 8.3	u < 170	u < 170	u < 170	u < 8.3	u < 8.3	u < 8.3	u < 8.3	u < 8.3
MW-03	9/20/2001	10-20	on-site	CTBERK	8260B	< 4.2	u < 8.3	u < 4.2	u < 4.2	u < 4.2	u < 4.2	u < 4.2	u < 83	u < 83	u < 83	u < 4.2	u < 4.2	u < 4.2	u < 4.2	u < 4.2
MW-03	9/20/2001	17 ft	on-site	CTBERK	8260B	< 5	u < 10	u < 5	u < 5	u < 5	u < 5	u < 5	u < 100	u < 100	u < 100	u < 5	u < 5	u < 5	u < 5	u < 5
MW-03	12/19/2001	17 ft	on-site	CTBERK	8260B	< 4.2	u < 8.3	u < 4.2	u < 4.2	u < 4.2	u < 4.2	u < 4.2	u < 83	u < 83	u < 83	u < 4.2	u < 4.2	u < 4.2	u < 4.2	u < 4.2
MW-03	3/20/2002	17 Ft	on-site	CTBERK	8260B	< 7.1	u < 14	u < 7.1	u < 7.1	u < 7.1	u < 7.1	u < 140	u < 140	u < 140	u < 7					

**Table 8-1**  
**Volatile Organic Compounds Detected in Ground Water**  
**Hookston Station Remedial Investigation**  
**Pleasant Hill, California**

Sample Location	Date	Sample Depth (ft)	Location	Analytical Laboratory	Analytical Method	1,2,4-TMTHLB (µg/L)	1,2-DCE (µg/L)	1,3,5-TMTHLB (µg/L)	ISOPROPYLETHER (µg/L)	ISOP(CUMENE) (µg/L)	TOTAL XYLENES (µg/L)	M,P-XYLENE (µg/L)	O-XYLENE (µg/L)	N-BUTYLBENZENE (µg/L)	P-ISOPRLBENZ (µg/L)	PROPYLBENZENE (µg/L)	SEC-BTLBNZN (µg/L)	T-BEE (µg/L)	TERT-BTLBNZN (µg/L)
					CA MCL	-	-	-	-	-	1,750	-	-	-	-	-	-	-	-
					RWQCB ESL	-	-	-	-	-	13	-	-	-	-	-	-	-	-
<b>A-Zone Monitoring Wells</b>																			
MW-01	4/25/1990	10-20	on-site	MTA	8010	NS	< 0.5	u	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-01	4/25/1990	10-20	on-site	MTA	8020	NS	NS	NS	NS	NS	< 2	u	NS	NS	NS	NS	NS	NS	NS
MW-01	5/17/1990	10-20	on-site	MTA	8240	NS	< 5	u	NS	NS	< 10	u	NS	NS	NS	NS	NS	NS	NS
MW-01	3/13/1991	10-20	on-site	CHR	624	NS	< 1	u	NS	NS	< 1	u	NS	NS	NS	NS	NS	NS	NS
MW-01	1/21/1992	10-20	on-site	CHR	624	NS	NS	NS	NS	NS	< 1	u	NS	NS	NS	NS	NS	NS	NS
MW-01	4/2/1993	10-20	on-site	CTL	8020	NS	NS	NS	NS	NS	< 0.5	u	NS	NS	NS	NS	NS	NS	NS
MW-01	4/2/1993	10-20	on-site	CTL	8240	NS	NS	NS	NS	NS	< 5	u	NS	NS	NS	NS	NS	NS	NS
MW-01	11/17/1995	10-20	on-site	MCA	8010	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-01	6/29/2000	10-20	on-site	CTBERK	8021B	NS	NS	NS	NS	NS	< 0.5	u	NS	< 0.5	u	NS	NS	NS	NS
MW-01	6/29/2000	10-20	on-site	CTBERK	8260B	< 2.5	u	NS	< 2.5	u	< 2.5	u	NS	< 2.5	u	< 2.5	u	< 2.5	u
MW-01	3/12/2001	10-20	on-site	CTBERK	8021B	NS	NS	NS	NS	NS	NS	< 0.5	u	< 0.5	u	NS	NS	NS	NS
MW-01	3/12/2001	10-20	on-site	CTBERK	8260B	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-01 Duplicate	3/12/2001	10-20	on-site	CTBERK	8260B	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-01	6/27/2001	10-20	on-site	CTBERK	8260B	< 2.5	u	NS	< 2.5	u	NS	< 2.5	u	< 2.5	u	< 2.5	u	< 2.5	u
MW-01	9/20/2001	10-20	on-site	CTBERK	8260B	< 2.5	u	NS	< 2.5	u	NS	< 2.5	u	< 2.5	u	< 2.5	u	< 2.5	u
MW-01	9/20/2001	17 ft	on-site	CTBERK	8260B	< 0.8	u	NS	< 0.8	u	NS	< 0.8	u	< 0.8	u	< 0.8	u	< 0.8	u
MW-01	12/19/2001	17 ft	on-site	CTBERK	8260B	< 1.3	u	NS	< 1.3	u	NS	2.9	u	< 1.3	u	< 1.3	u	< 1.3	u
MW-01	3/20/2002	17 Ft	on-site	CTBERK	8260B	< 1.3	u	NS	< 1.3	u	NS	< 1.3	u	< 1.3	u	< 1.3	u	< 1.3	u
MW-01	6/21/2002	17 Ft	on-site	STL Sac	8260B	NS	NS	NS	< 10	u	NS	< 5	u	NS	NS	NS	NS	NS	< 10
MW-01	9/24/2002	17 Ft	on-site	STL Sac	8260B	NS	NS	NS	< 20	u	NS	< 10	u	NS	NS	NS	NS	NS	< 20
MW-01	11/14/2002	17 Ft	on-site	STL Sac	8260B	NS	NS	NS	< 20	uUJ	NS	< 20	uUJ	NS	NS	NS	NS	NS	< 20
MW-01	2/19/2003	17 ft	on-site	STL Sac	8260B	NS	NS	NS	< 20	u	NS	< 10	u	NS	NS	NS	NS	NS	< 20
MW-01	5/6/2003	17 ft	on-site	STL Sac	8260B	NS	NS	NS	< 20	u	NS	< 10	u	NS	NS	NS	NS	NS	< 20
MW-01	7/22/2003	17 ft	on-site	STL Sac	8260B	NS	NS	NS	< 40	u	NS	< 20	u	NS	NS	NS	NS	NS	< 40
MW-01	10/24/2003	17 ft	on-site	STL Sac	8260B	NS	NS	NS	< 40	u	NS	< 20	u	NS	NS	NS	NS	NS	< 40
MW-01	3/10/2004	17 Ft	on-site	STLSEA	8260B	NS	NS	NS	< 20	u	NS	< 40	u	< 20	u	NS	NS	NS	< 20
MW-01	4/20/2004	10-20	on-site	STL Sac	8260B	NS	NS	NS	< 100	u	NS	< 50	u	NS	NS	NS	NS	NS	< 100
MW-02	4/25/1990	11-21	on-site	MTA	8010	NS	< 0.5	u	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-02	5/17/1990	11-21	on-site	MTA	8240	NS	< 5	u	NS	NS	< 10	u	NS	NS	NS	NS	NS	NS	NS
MW-02	1/21/1992	11-21	on-site	CHR	624	NS	NS	NS	NS	NS	< 1	u	NS	NS	NS	NS	NS	NS	NS
MW-02	4/1/1993	11-21	on-site	CTL	8020	NS	NS	NS	NS	NS	< 0.5	u	NS	NS	NS	NS	NS	NS	NS
MW-02	4/1/1993	11-21	on-site	CTL	8240	NS	NS	NS	NS	NS	< 10	u	NS	NS	NS	NS	NS	NS	NS
MW-02	11/17/1995	11-21	on-site	MCA	8010	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-03	4/25/1990	10-20	on-site	MTA	8010	NS	15	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-03	5/17/1990	10-20	on-site	MTA	8240	NS	29	NS	NS	NS	< 10	u	NS	NS	NS	NS	NS	NS	NS
MW-03	3/14/1991	10-20	on-site	CHR	624	NS	5.3	NS	NS	NS	< 1	u	NS	NS	NS	NS	NS	NS	NS
MW-03	1/21/1992	10-20	on-site	CHR	624	NS	NS	NS	NS	NS	< 1	u	NS	NS	NS	NS	NS	NS	NS
MW-03	4/2/1993	10-20	on-site	CTL	8020	NS	NS	NS	NS	NS	< 0.5	u	NS	NS	NS	NS	NS	NS	NS
MW-03	4/2/1993	10-20	on-site	CTL	8240	NS	NS	NS	NS	NS	< 300	u	NS	NS	NS	NS	NS	NS	NS
MW-03	11/17/1995	10-20	on-site	MCA	8010	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-03	6/29/2000	10-20	on-site	CTBERK	8021B	NS	NS	NS	NS	NS	< 0.5	u	NS	< 0.5	u	NS	NS	NS	NS
MW-03	6/29/2000	10-20	on-site	CTBERK	8260B	< 4.2	u	NS	< 4.2	u	< 4.2	u	NS	< 4.2	u	< 4.2	u	< 4.2	u
MW-03	3/13/2001	10-20	on-site	CTBERK	8021B	NS	NS	NS	NS	NS	NS	< 0.5	u	< 0.5	u	NS	NS	NS	NS
MW-03	3/13/2001	10-20	on-site	CTBERK	8260B	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-03	6/27/2001	10-20	on-site	CTBERK	8260B	< 8.3	u	NS	< 8.3	u	NS	< 8.3	u	< 8.3	u	< 8.3	u	< 8.3	u
MW-03	9/20/2001	10-20	on-site	CTBERK	8260B	< 4.2	u	NS	< 4.2	u	NS	< 4.2	u	< 4.2	u	< 4.2	u	< 4.2	u
MW-03	9/20/2001	17 ft	on-site	CTBERK	8260B	< 5	u	NS	< 5	u	NS	< 5	u	< 5	u	< 5	u	< 5	u
MW-03	12/19/2001	17 ft	on-site	CTBERK	8260B	< 4.2	u	NS	< 4.2	u	NS	< 4.2	u	< 4.2	u	< 4.2	u	< 4.2	u
MW-03	3/20/2002	17 Ft	on-site	CTBERK	8260B	< 7.1	u	NS	< 7.1	u	NS	< 7.1	u	< 7.1	u	< 7.1	u	< 7.1	u
MW-03	6/21/2002	17 Ft	on-site	STL Sac	8260B	NS	NS	NS	< 50	u	NS	< 25	u	NS	NS	NS	NS	NS	< 50
MW-03	9/24/2002	17 Ft	on-site	STL Sac	8260B	NS	NS	NS	< 40	u	NS	< 20	u	NS	NS	NS	NS	NS	< 40
MW-03	11/14/2002	17 Ft	on-site	STL Sac	8260B	NS	NS	NS	< 50	uUJ	NS	< 25	uUJ	NS	NS	NS	NS	NS	< 50
MW-03	2/19/2003	17 ft	on-site	STL Sac	8260B	NS	NS	NS	< 50	u	NS	< 25	u	NS	NS	NS	NS	NS	< 50
MW-03	3/10/2004	17 Ft	on-site	STLSEA	8260B	NS	NS	NS	< 100	u	NS	< 200	u	< 100	u	NS	NS	NS	< 100
MW-03	4/20/2004	10-20	on-site	STL Sac	8260B	NS	NS	NS	< 100	u	NS	< 50	u	NS	NS	NS	NS	NS	< 100
MW-04	4/25/1990	11-21	on-site	MTA	8010	NS	< 0.5	u	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-04	5/17/1990	11-21	on-site	MTA	8240	NS	< 5	u	NS	NS	< 10	u	NS	NS	NS	NS	NS	NS	NS
MW-04	1/21/1992	11-21	on-site	CHR	602	NS	NS	NS	NS	NS	620	NS	NS	NS	NS	NS	NS	NS	NS
MW-04	1/21/1992	11-21	on-site	CHR	624	NS	NS	NS	NS	NS	910	NS	NS	NS	NS	NS	NS	NS	NS
MW-04	11/17/1995	11-21	on-site	MCA	8010	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-04	6/29/2000	11-21	on-site	CTBERK	8021B	NS	NS	NS	NS	NS	5.9	NS	NS	5.3	NS	NS	NS	NS	NS
MW-04	6/29/2000	11-21	on-site	CTBERK	8260B	45	NS	< 0.5	u	NS	9.5	NS	3.9	13	3.4	54	6.4	NS	2.5
MW-04	3/12/2001	11-21	on-site	CTBERK	8260B	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-04 Duplicate	3/12/2001	11-21	on-site	CTBERK	8021B	NS	NS	NS	NS	NS	NS	< 0.5	u	< 0.5	u	NS	NS	NS	NS





Table 8-1  
 Volatile Organic Compounds Detected in Ground Water  
 Hookston Station Remedial Investigation  
 Pleasant Hill, California

Sample Location	Date	Sample Depth (ft)	Location	Analytical Laboratory	Analytical Method	CHLOROFORM (µg/L)	CHLOROMETHANE (µg/L)	DBC METHANE (µg/L)	1,1-DCA (µg/L)	1,2-DCA (µg/L)	1,2-DCPROPAN (µg/L)	ETHYLBENZENE (µg/L)	2-HEXANONE (µg/L)	DICHLMETHANE (µg/L)	4M2PENTANONE (µg/L)	MTBE (µg/L)	TOLUENE (µg/L)	1,1,1-TCA (µg/L)	1,1,2-TCA (µg/L)	
					CA MCL	-	-	-	5	0.5	5	700	-	-	-	13	150	200	5	
					RIVQCB ESL	100	2.7	100	5	0.5	5	30	-	5	120	5	40	62	5	
MW-04 Duplicate	3/12/2001	11-21	on-site	CTBERK	8260B	< 1	u < 1	u < 0.5	u 1.8	< 0.5	u < 0.5	u NS	NS	< 20	u NS	NS	NS	< 0.5	u < 0.5	u
MW-04	6/27/2001	11-21	on-site	CTBERK	8260B	< 0.7	u < 1.4	u < 0.7	u 1.1	< 0.7	u < 0.7	u 180	< 14	u < 14	u < 14	u < 0.7	u < 0.7	u < 0.7	u < 0.7	u
MW-04	9/20/2001	11-21	on-site	CTBERK	8260B	< 0.5	u < 1	u < 0.5	u < 0.5	u	< 0.5	u 70	< 10	u < 10	u < 10	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u
MW-04	9/20/2001	17 ft	on-site	CTBERK	8260B	< 0.5	u < 1	u < 0.5	u 1.7	< 0.5	u < 0.5	u 49	< 10	u < 10	u < 10	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u
MW-04	12/19/2001	17 ft	on-site	CTBERK	8260B	< 0.5	u < 1	u < 0.5	u 0.6	< 0.5	u < 0.5	u 0.6	< 10	u < 10	u < 10	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u
MW-04	3/20/2002	17 Ft	on-site	CTBERK	8260B	< 0.5	u < 1	u < 0.5	u < 0.5	u	< 0.5	u < 0.5	u < 10	u < 10	u < 10	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u
MW-04	6/21/2002	17 Ft	on-site	STL Sac	8260B	< 1	u < 2	u < 1	u 0.68	j < 1	u < 1	u < 1	u < 5	u < 1	u < 5	u < 1	u < 1	u < 1	u < 1	u
MW-04	9/24/2002	17 Ft	on-site	STL Sac	8260B	< 1	u < 1	u < 1	u 0.96	j < 1	u < 1	u 22	< 2	u < 1	u < 2	u < 2	u 0.40	j < 1	u < 1	u
MW-04	11/14/2002	17 Ft	on-site	STL Sac	8260B	< 2	uUJ < 4	uUJ < 2	uUJ 0.56	jj < 2	uUJ < 2	uUJ 1.3	jj < 10	uUJ < 2	uUJ < 10	uUJ < 2	uUJ < 2	uUJ < 2	uUJ < 2	uUJ
MW-04	2/19/2003	17 ft	on-site	STL Sac	8260B	< 1	u < 1	u < 1	u 0.93	j < 1	u < 1	u 70	< 2	u 1	U < 2	u < 2	u 0.35	j < 1	u 0.51	j
MW-04	5/6/2003	17 ft	on-site	STL Sac	8260B	< 1	u < 1	u < 1	u 0.64	j < 1	u < 1	u 62	< 2	u < 1	u < 2	u < 2	u 0.32	j < 1	u < 1	u
MW-04	7/22/2003	17 ft	on-site	STL Sac	8260B	< 1	u < 1	u < 1	u 0.56	j < 1	u < 1	u 3.8	< 2	u < 1	u < 2	u < 2	u < 1	u < 1	u < 1	u
MW-04	10/24/2003	17 ft	on-site	STL Sac	8260B	< 1	u < 1	u < 1	u 0.37	j < 1	u < 1	u 0.48	j < 2	u < 1	u < 2	u < 2	u < 1	u < 1	u < 1	u
MW-04	3/10/2004	17 Ft	on-site	STLSEA	8260B	< 1	u < 2	u < 1	u 0.731	j < 1	u < 1	u 5.17	< 5	u < 2	u < 5	u < 1	u < 1	u < 1	u < 1	u
MW-04	4/21/2004	11-21	on-site	STL Sac	8260B	< 10	u < 10	u < 10	u < 10	u < 10	u < 10	u 93	< 20	u < 10	u < 20	u < 20	u < 10	u < 10	u < 10	u
MW-04 Duplicate	4/21/2004	11-21	on-site	STL Sac	8260B	< 10	u < 10	u < 10	u < 10	u < 10	u < 10	u 100	< 20	u < 10	u < 20	u < 20	u < 10	u < 10	u < 10	u
MW-05	3/13/1991	10-30	on-site	CHR	624	< 1	u < 1	u < 1	u < 1	u < 1	u < 1	u < 1	u NS	< 1	u NS	NS	< 1	u < 1	u < 1	u
MW-05	1/21/1992	10-30	on-site	CHR	624	< 1	u < 1	u < 1	u < 1	u < 1	u < 1	u < 1	u NS	< 1	u < 1	u NS	< 1	u < 1	u < 1	u
MW-05	3/31/1993	10-30	on-site	CTL	8020	NS	NS	NS	NS	NS	NS	< 0.5	u NS	NS	NS	NS	< 0.5	u NS	NS	NS
MW-05	3/31/1993	10-30	on-site	CTL	8240	< 5	u < 10	u < 5	u < 5	u < 5	u < 5	u < 5	u < 10	u < 20	u < 10	u NS	< 5	u 110	< 5	u
MW-05	11/17/1995	10-30	on-site	MCA	8010	< 0.5	u < 2	u < 0.5	u 1.2	< 0.5	u < 0.5	u NS	NS	< 2	u NS	NS	NS	< 1	u < 0.5	u
MW-05	6/28/2000	10-30	on-site	CTBERK	8021B	NS	NS	NS	NS	NS	NS	< 0.5	u NS	NS	NS	NS	< 0.5	u NS	NS	NS
MW-05	6/28/2000	10-30	on-site	CTBERK	8260B	< 0.5	u < 1	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 10	u < 10	u < 10	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u
MW-05	3/12/2001	10-30	on-site	CTBERK	8021B	NS	NS	NS	NS	NS	NS	< 0.5	u NS	NS	NS	NS	< 0.5	u NS	NS	NS
MW-05	3/12/2001	10-30	on-site	CTBERK	8260B	< 1	u < 1	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u NS	NS	< 20	u NS	NS	NS	< 0.5	u < 0.5	u
MW-05 Duplicate	3/12/2001	10-30	on-site	CTBERK	8260B	< 1	u < 1	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u NS	NS	< 20	u NS	NS	NS	< 0.5	u < 0.5	u
MW-05	6/27/2001	10-30	on-site	CTBERK	8260B	< 0.5	u < 1	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 10	u < 10	u < 10	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u
MW-05	9/20/2001	10-30	on-site	CTBERK	8260B	< 0.5	u < 1	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 10	u < 10	u < 10	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u
MW-05	9/20/2001	23 ft	on-site	CTBERK	8260B	< 0.5	u < 1	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 10	u < 10	u < 10	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u
MW-05	12/19/2001	23 ft	on-site	CTBERK	8260B	< 0.5	u < 1	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 10	u < 10	u < 10	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u
MW-05 Duplicate	12/19/2001	23 ft	on-site	CTBERK	8260B	< 0.5	u < 1	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 10	u < 10	u < 10	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u
MW-05	3/20/2002	23 Ft	on-site	CTBERK	8260B	< 0.5	u < 1	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 10	u < 10	u < 10	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u
MW-05	9/24/2002	23 Ft	on-site	STL Sac	8260B	< 1	u < 1	u < 1	u < 1	u < 1	u < 1	u < 1	u < 2	u < 1	u < 2	u < 2	u < 1	u < 1	u < 1	u
MW-05 Duplicate	9/24/2002	23 Ft	on-site	STL Sac	8260B	< 1	u < 1	u < 1	u < 1	u < 1	u < 1	u < 1	u < 2	u < 1	u < 2	u < 2	u < 1	u < 1	u < 1	u
MW-05	11/14/2002	23 Ft	on-site	STL Sac	8260B	< 1	uUJ < 2	uUJ < 1	uUJ < 1	uUJ < 1	uUJ < 1	uUJ < 1	uUJ < 5	uUJ < 5	uUJ < 5	uUJ < 1	uUJ < 1	uUJ < 1	uUJ < 1	uUJ
MW-05	2/19/2003	23 ft	on-site	STL Sac	8260B	< 1	u < 1	u < 1	u < 1	u < 1	u < 1	u < 1	u < 2	u < 1	u < 2	u < 2	u < 1	u < 1	u < 1	u
MW-05	5/6/2003	23 ft	on-site	STL Sac	8260B	< 1	u < 1	u < 1	u < 1	u < 1	u < 1	u < 1	u < 2	u < 1	u < 2	u < 2	u < 1	u < 1	u < 1	u
MW-05 Duplicate	5/6/2003	23 ft	on-site	STL Sac	8260B	< 1	u < 1	u < 1	u < 1	u < 1	u < 1	u < 1	u < 2	u < 1	u < 2	u < 2	u < 1	u < 1	u < 1	u
MW-05	7/22/2003	23 ft	on-site	STL Sac	8260B	< 1	u < 1	u < 1	u < 1	u < 1	u < 1	u < 1	u < 2	u < 1	u < 2	u < 2	u < 1	u < 1	u < 1	u
MW-05	10/24/2003	23 ft	on-site	STL Sac	8260B	< 1	u < 1	u < 1	u < 1	u < 1	u < 1	u < 1	u < 2	u < 1	u < 2	u < 2	u < 1	u < 1	u < 1	u
MW-05	3/10/2004	23 Ft	on-site	STLSEA	8260B	< 1	u < 2	u < 1	u < 1	u < 1	u < 1	u < 1	u < 5	u < 2	u < 5	u < 1	u < 1	u < 1	u < 1	u
MW-05	4/20/2004	10-30	on-site	STL Sac	8260B	< 1	u < 1	u < 1	u < 1	u < 1	u < 1	u < 1	u < 2	u < 1	u < 2	u < 2	u < 1	u < 1	u < 1	u
MW-06	3/13/1991	15-35	on-site	CHR	624	< 1	u < 1	u < 1	u < 1	u < 1	u < 1	u < 1	u NS	< 1	u NS	NS	< 1	u < 1	u < 1	u
MW-06	1/21/1992	15-35	on-site	CHR	624	< 1	u < 1	u < 1	u < 1	u < 1	u < 1	u < 1	u NS	< 1	u < 1	u NS	< 1	u < 1	u < 1	u
MW-06	4/1/1993	15-35	on-site	CTL	8020	NS	NS	NS	NS	NS	NS	< 0.5	u NS	NS	NS	NS	< 0.5	u NS	NS	NS
MW-06	4/1/1993	15-35	on-site	CTL	8240	< 5	u < 10	u < 5	u < 5	u < 5	u < 5	u < 5	u < 10	u < 20	u < 10	u NS	< 5	u < 5	u < 5	u
MW-06	11/17/1995	15-35	on-site	MCA	8010	< 0.5	u < 2	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u NS	NS	< 2	u NS	NS	NS	2.6	u < 0.5	u
MW-06	6/28/2000	15-35	on-site	CTBERK	8021B	NS	NS	NS	NS	NS	NS	< 0.5	u NS	NS	NS	NS	< 0.5	u NS	NS	NS
MW-06	6/28/2000	15-35	on-site	CTBERK	8260B	< 0.5	u < 1	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 10	u < 10	u < 10	u < 0.5	u < 0.5			

Table 8-1  
 Volatile Organic Compounds Detected in Ground Water  
 Hookston Station Remedial Investigation  
 Pleasant Hill, California

Sample Location	Date	Sample Depth (ft)	Location	Analytical Laboratory	Analytical Method	1,2,4-TMTHLB (µg/L)	1,2-DCE (µg/L)	1,3,5-TMTHLB (µg/L)	ISOPROPYLETHER (µg/L)	ISOP(CUMENE) (µg/L)	TOTAL XYLENES (µg/L)	M,P-XYLENE (µg/L)	O-XYLENE (µg/L)	N-BUTYLBENZENE (µg/L)	P-ISOPRLBENZ (µg/L)	PROPYLBENZENE (µg/L)	SEC-BTLBNZN (µg/L)	T-BEE (µg/L)	TERT-BTLBNZN (µg/L)				
					CA MCL	-	-	-	-	-	1,750	-	-	-	-	-	-	-	-				
					RWQCB ESL	-	-	-	-	-	13	-	-	-	-	-	-	-	-				
MW-04 Duplicate	3/12/2001	11-21	on-site	CTBERK	8260B	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS				
MW-04	6/27/2001	11-21	on-site	CTBERK	8260B	15	NS	< 0.7	u	NS	16	NS	4.7	2.5	10	2.1	43	4.7	NS	2.3			
MW-04	9/20/2001	11-21	on-site	CTBERK	8260B	3.2	NS	< 0.5	u	NS	7.6	NS	< 0.5	u	0.9	5.8	20	2.9	NS	1.3			
MW-04	9/20/2001	17 ft	on-site	CTBERK	8260B	< 0.5	u	NS	< 0.5	u	NS	3.8	NS	< 0.5	u	< 0.5	u	4.9	0.5	NS	0.9		
MW-04	12/19/2001	17 ft	on-site	CTBERK	8260B	< 0.5	u	NS	< 0.5	u	NS	< 0.5	u	0.7	1.2	< 0.5	u	< 0.5	u	1.0	NS	0.7	
MW-04	3/20/2002	17 Ft	on-site	CTBERK	8260B	< 0.5	u	NS	< 0.5	u	NS	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u
MW-04	6/21/2002	17 Ft	on-site	STL Sac	8260B	NS	NS	NS	< 2	u	NS	< 1	u	NS	NS	NS	NS	NS	< 2	u	NS	NS	
MW-04	9/24/2002	17 Ft	on-site	STL Sac	8260B	NS	NS	NS	< 2	u	NS	0.63	j	NS	NS	NS	NS	NS	< 2	u	NS	NS	
MW-04	11/14/2002	17 Ft	on-site	STL Sac	8260B	NS	NS	NS	< 4	uUJ	NS	< 2	uUJ	NS	NS	NS	NS	NS	< 4	uUJ	NS	NS	
MW-04	2/19/2003	17 ft	on-site	STL Sac	8260B	NS	NS	NS	< 2	u	NS	0.76	j	NS	NS	NS	NS	NS	< 2	u	NS	NS	
MW-04	5/6/2003	17 ft	on-site	STL Sac	8260B	NS	NS	NS	< 2	u	NS	0.47	j	NS	NS	NS	NS	NS	< 2	u	NS	NS	
MW-04	7/22/2003	17 ft	on-site	STL Sac	8260B	NS	NS	NS	< 2	u	NS	0.16	j	NS	NS	NS	NS	NS	< 2	u	NS	NS	
MW-04	10/24/2003	17 ft	on-site	STL Sac	8260B	NS	NS	NS	< 2	u	NS	< 1	u	NS	NS	NS	NS	NS	< 2	u	NS	NS	
MW-04	3/10/2004	17 Ft	on-site	STLSEA	8260B	NS	NS	NS	< 1	u	NS	NS	< 2	u	< 1	u	NS	NS	< 1	u	NS	NS	
MW-04	4/21/2004	11-21	on-site	STL Sac	8260B	NS	NS	NS	< 20	u	NS	< 10	u	NS	NS	NS	NS	NS	< 20	u	NS	NS	
MW-04 Duplicate	4/21/2004	11-21	on-site	STL Sac	8260B	NS	NS	NS	< 20	u	NS	< 10	u	NS	NS	NS	NS	NS	< 20	u	NS	NS	
MW-05	3/13/1991	10-30	on-site	CHR	624	NS	< 1	u	NS	NS	NS	< 1	u	NS	NS	NS	NS	NS	NS	NS	NS	NS	
MW-05	1/21/1992	10-30	on-site	CHR	624	NS	NS	NS	NS	NS	NS	< 1	u	NS	NS	NS	NS	NS	NS	NS	NS	NS	
MW-05	3/31/1993	10-30	on-site	CTL	8020	NS	NS	NS	NS	NS	NS	< 0.5	u	NS	NS	NS	NS	NS	NS	NS	NS	NS	
MW-05	3/31/1993	10-30	on-site	CTL	8240	NS	NS	NS	NS	NS	NS	< 5	u	NS	NS	NS	NS	NS	NS	NS	NS	NS	
MW-05	11/17/1995	10-30	on-site	MCA	8010	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
MW-05	6/28/2000	10-30	on-site	CTBERK	8021B	NS	NS	NS	NS	NS	NS	< 0.5	u	NS	< 0.5	u	NS	NS	NS	NS	NS	NS	
MW-05	6/28/2000	10-30	on-site	CTBERK	8260B	< 0.5	u	NS	< 0.5	u	NS	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u
MW-05	3/12/2001	10-30	on-site	CTBERK	8021B	NS	NS	NS	NS	NS	NS	< 0.5	u	< 0.5	u	NS	NS	NS	NS	NS	NS	NS	
MW-05	3/12/2001	10-30	on-site	CTBERK	8260B	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
MW-05 Duplicate	3/12/2001	10-30	on-site	CTBERK	8260B	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
MW-05	6/27/2001	10-30	on-site	CTBERK	8260B	< 0.5	u	NS	< 0.5	u	NS	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u
MW-05	9/20/2001	10-30	on-site	CTBERK	8260B	< 0.5	u	NS	< 0.5	u	NS	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u
MW-05	9/20/2001	23 ft	on-site	CTBERK	8260B	< 0.5	u	NS	< 0.5	u	NS	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u
MW-05	12/19/2001	23 ft	on-site	CTBERK	8260B	< 0.5	u	NS	< 0.5	u	NS	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u
MW-05 Duplicate	12/19/2001	23 ft	on-site	CTBERK	8260B	< 0.5	u	NS	< 0.5	u	NS	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u
MW-05	3/20/2002	23 Ft	on-site	CTBERK	8260B	< 0.5	u	NS	< 0.5	u	NS	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u
MW-05	9/24/2002	23 Ft	on-site	STL Sac	8260B	NS	NS	NS	< 2	u	NS	< 1	u	NS	NS	NS	NS	NS	< 2	u	NS	NS	
MW-05 Duplicate	9/24/2002	23 Ft	on-site	STL Sac	8260B	NS	NS	NS	< 2	u	NS	< 1	u	NS	NS	NS	NS	NS	< 2	u	NS	NS	
MW-05	11/14/2002	23 Ft	on-site	STL Sac	8260B	NS	NS	NS	< 2	uUJ	NS	< 1	uUJ	NS	NS	NS	NS	NS	< 2	uUJ	NS	NS	
MW-05	2/19/2003	23 ft	on-site	STL Sac	8260B	NS	NS	NS	< 2	u	NS	< 1	u	NS	NS	NS	NS	NS	< 2	u	NS	NS	
MW-05	5/6/2003	23 ft	on-site	STL Sac	8260B	NS	NS	NS	< 2	u	NS	< 1	u	NS	NS	NS	NS	NS	< 2	u	NS	NS	
MW-05 Duplicate	5/6/2003	23 ft	on-site	STL Sac	8260B	NS	NS	NS	< 2	u	NS	< 1	u	NS	NS	NS	NS	NS	< 2	u	NS	NS	
MW-05	7/22/2003	23 ft	on-site	STL Sac	8260B	NS	NS	NS	< 2	u	NS	< 1	u	NS	NS	NS	NS	NS	< 2	u	NS	NS	
MW-05	10/24/2003	23 ft	on-site	STL Sac	8260B	NS	NS	NS	< 2	u	NS	< 1	u	NS	NS	NS	NS	NS	< 2	u	NS	NS	
MW-05	3/10/2004	23 Ft	on-site	STLSEA	8260B	NS	NS	NS	< 1	u	NS	NS	< 2	u	< 1	u	NS	NS	< 1	u	NS	NS	
MW-05	4/20/2004	10-30	on-site	STL Sac	8260B	NS	NS	NS	< 2	u	NS	< 1	u	NS	NS	NS	NS	NS	< 2	u	NS	NS	
MW-06	3/13/1991	15-35	on-site	CHR	624	NS	< 1	u	NS	NS	NS	< 1	u	NS	NS	NS	NS	NS	NS	NS	NS	NS	
MW-06	1/21/1992	15-35	on-site	CHR	624	NS	NS	NS	NS	NS	NS	< 1	u	NS	NS	NS	NS	NS	NS	NS	NS	NS	
MW-06	4/1/1993	15-35	on-site	CTL	8020	NS	NS	NS	NS	NS	NS	< 0.5	u	NS	NS	NS	NS	NS	NS	NS	NS	NS	
MW-06	4/1/1993	15-35	on-site	CTL	8240	NS	NS	NS	NS	NS	NS	< 5	u	NS	NS	NS	NS	NS	NS	NS	NS	NS	
MW-06	11/17/1995	15-35	on-site	MCA	8010	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
MW-06	6/28/2000	15-35	on-site	CTBERK	8021B	NS	NS	NS	NS	NS	NS	< 0.5	u	NS	< 0.5	u	NS	NS	NS	NS	NS	NS	
MW-06	6/28/2000	15-35	on-site	CTBERK	8260B	< 0.5	u	NS	< 0.5	u	NS	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u
MW-06	3/13/2001	15-35	on-site	CTBERK	8021B	NS	NS	NS	NS	NS	NS	< 0.5	u	< 0.5	u	NS	NS	NS	NS	NS	NS	NS	
MW-06	3/13/2001	15-35	on-site	CTBERK	8260B	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
MW-06	6/27/2001	15-35	on-site	CTBERK	8260B	< 0.5	u	NS	< 0.5	u	NS	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u
MW-06	9/20/2001	15-35	on-site	CTBERK	8260B	< 0.5	u	NS	< 0.5	u	NS	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u
MW-06	12/19/2001	21 ft	on-site	CTBERK	8260B	< 0.5	u	NS	< 0.5	u	NS	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u
MW-06	3/20/2002	21 Ft	on-site	CTBERK	8260B	< 0.5	u	NS	< 0.5	u	NS	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u
MW-06	11/14/2002	21 Ft	on-site	STL Sac	8260B	NS	NS	NS	< 2	uUJ	NS	< 1	uUJ	NS	NS	NS	NS	NS	< 2	uUJ	NS	NS	
MW-06	2/19/2003	21 ft	on-site	STL Sac	8260B	NS	NS	NS	< 2	u	NS	< 1	u	NS	NS	NS	NS	NS	< 2	u	NS	NS	
MW-06	5/6/2003	25																					



Table 8-1  
 Volatile Organic Compounds Detected in Ground Water  
 Hookston Station Remedial Investigation  
 Pleasant Hill, California

Sample Location	Date	Sample Depth (ft)	Location	Analytical Laboratory	Analytical Method	CHLOROFORM (µg/L)	CHLOROMETHANE (µg/L)	DBC METHANE (µg/L)	1,1-DCA (µg/L)	1,2-DCA (µg/L)	1,2-DCPROPAN (µg/L)	ETHYLBENZENE (µg/L)	2-HEXANONE (µg/L)	DICHLMETHANE (µg/L)	4M2PENTANONE (µg/L)	MTBE (µg/L)	TOLUENE (µg/L)	1,1,1-TCA (µg/L)	1,1,2-TCA (µg/L)			
					CA MCL	-	-	-	5	0.5	5	700	-	-	-	13	150	200	5			
					RIVQCB ESL	100	2.7	100	5	0.5	5	30	-	5	120	5	40	62	5			
MW-07	6/29/2000	15-35	on-site	CTBERK	8260B	< 0.5	u < 1	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 10	u < 10	u < 10	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5		
MW-07	3/13/2001	15-35	on-site	CTBERK	8021B	NS	NS	NS	NS	NS	NS	< 0.5	u NS	NS	NS	NS	< 0.5	u NS	NS	NS		
MW-07	3/13/2001	15-35	on-site	CTBERK	8260B	< 2.5	u < 2.5	u < 1.3	u < 1.3	u < 1.3	u < 1.3	u NS	u NS	u < 50	u NS	NS	NS	< 1.3	u < 1.3	u < 1.3		
MW-07 Duplicate	3/13/2001	15-35	on-site	CTBERK	8021B	NS	NS	NS	NS	NS	NS	< 0.5	u NS	NS	NS	NS	< 0.5	u NS	NS	NS		
MW-07 Duplicate	3/13/2001	15-35	on-site	CTBERK	8260B	< 1	u < 1	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u NS	u NS	u < 20	u NS	NS	NS	< 0.5	u < 0.5	u < 0.5		
MW-07	6/27/2001	15-35	on-site	CTBERK	8260B	< 1.3	u < 2.5	u < 1.3	u < 1.3	u < 1.3	u < 1.3	u < 1.3	u < 25	u < 25	u < 25	u < 1.3	u < 1.3	u < 1.3	u < 1.3	u < 1.3		
MW-07	9/20/2001	15-35	on-site	CTBERK	8260B	< 1.7	u < 3.3	u < 1.7	u < 1.7	u < 1.7	u < 1.7	u < 1.7	u < 33	u < 33	u < 33	u < 1.7	u < 1.7	u < 1.7	u < 1.7	u < 1.7		
MW-07	9/20/2001	28 ft	on-site	CTBERK	8260B	< 1.7	u < 3.3	u < 1.7	u < 1.7	u < 1.7	u < 1.7	u < 1.7	u < 33	u < 33	u < 33	u < 1.7	u < 1.7	u < 1.7	u < 1.7	u < 1.7		
MW-07	12/19/2001	28 ft	on-site	CTBERK	8260B	< 1.7	u < 3.3	u < 1.7	u < 1.7	u < 1.7	u < 1.7	u < 1.7	u < 33	u < 33	u < 33	u < 1.7	u < 1.7	u < 1.7	u < 1.7	u < 1.7		
MW-07	3/20/2002	28 Ft	on-site	CTBERK	8260B	< 0.8	u < 1.7	u < 0.8	u < 0.8	u < 0.8	u < 0.8	u < 0.8	u < 17	u < 17	u < 17	u < 0.8	u < 0.8	u < 0.8	u < 0.8	u < 0.8		
MW-07	6/21/2002	28 Ft	on-site	STL Sac	8260B	< 5	u < 10	u < 5	u < 5	u < 5	u < 5	u < 5	u < 25	u < 5	u < 25	u < 5	u < 5	u < 5	u < 5	u < 5		
MW-07	9/24/2002	28 Ft	on-site	STL Sac	8260B	< 5	u < 5	u < 5	u < 5	u < 5	u < 5	u < 5	u < 10	u < 5	u < 10	u < 10	u < 5	u < 5	u < 5	u < 5		
MW-07	11/14/2002	28 Ft	on-site	STL Sac	8260B	< 12	uUJ < 25	uUJ < 12	uUJ < 12	uUJ < 12	uUJ < 12	uUJ < 12	uUJ < 62	uUJ < 12	uUJ < 12	uUJ < 62	uUJ < 12	uUJ < 12	uUJ < 12	uUJ < 12		
MW-07	2/19/2003	28 ft	on-site	STL Sac	8260B	< 10	u < 10	u < 10	u < 10	u < 10	u < 10	u < 10	u < 20	u < 10	u < 20	u < 10	u < 10	u < 10	u < 10	u < 10		
MW-07	5/6/2003	28 ft	on-site	STL Sac	8260B	< 10	u < 10	u < 10	u < 10	u < 10	u < 10	u < 10	u < 20	u < 10	u < 20	u < 10	u < 10	u < 10	u < 10	u < 10		
MW-07	7/22/2003	28 ft	on-site	STL Sac	8260B	< 10	u < 10	u < 10	u < 10	u < 10	u < 10	u < 10	u < 20	u < 10	u < 20	u < 10	u < 10	u < 10	u < 10	u < 10		
MW-07	10/24/2003	28 ft	on-site	STL Sac	8260B	< 10	u < 10	u < 10	u < 10	u < 10	u < 10	u < 10	u < 20	u < 10	u < 20	u < 10	u < 10	u < 10	u < 10	u < 10		
MW-07	3/10/2004	28 Ft	on-site	STLSEA	8260B	< 10	u < 20	u < 10	u < 10	u < 10	u < 10	u < 10	u < 50	u < 20	u < 50	u < 10	u < 10	u < 10	u < 10	u < 10		
MW-07 Duplicate	3/10/2004	28 Ft	on-site	STLSEA	8260B	< 1	u < 2	u < 1	u < 1	u < 1	u < 1	u < 1	u < 5	u < 1	u < 5	u < 1	u < 1	u < 1	u < 1	u < 1		
MW-07	4/20/2004	15-35	on-site	STL Sac	8260B	< 5	u < 5	u < 5	u < 5	u < 5	u < 5	u < 5	u < 10	u < 5	u < 10	u < 10	u < 5	u < 5	u < 5	u < 5		
MW-08A	9/25/2003	10-25	on-site	STLSEA	8260B	< 2	u < 4	u < 2	u 4.17	u < 2	u < 2	u < 2	u < 10	u < 4	u < 10	u < 2	u 1.62	j < 2	u 1.16	j		
MW-08A	10/10/2003	10-25	on-site	STLSEA	8260B	< 1	u < 2	u < 1	u < 1	u < 1	u < 1	u < 1	u < 5	u < 2	u < 5	u < 1	u < 1	u < 1	u < 1	u < 1		
MW-08A	3/10/2004	20.5 Ft	on-site	STLSEA	8260B	< 5	u < 10	u < 5	u < 5	u < 5	u < 5	u < 5	u < 25	u < 10	u < 25	u < 5	u < 5	u < 5	u < 5	u < 5		
MW-08A	4/21/2004	10-25	on-site	STL Sac	8260B	< 10	u < 10	u < 10	u < 10	u < 10	u < 10	u < 10	u < 20	u < 10	u < 20	u < 10	u < 10	u < 10	u < 10	u < 10		
MW-11A	10/10/2003	10-25	on-site	STLSEA	8260B	1.49	< 2	u < 1	u < 1	u < 1	u < 1	u < 1	u < 5	u < 2	u < 5	u < 1	u < 1	u < 1	u < 1	u < 1		
MW-11A	3/10/2004	21 ft	on-site	STLSEA	8260B	< 1	u < 2	u < 1	u < 1	u < 1	u < 1	u < 1	u < 5	u < 2	u < 5	u < 1	u < 1	u < 1	u < 1	u < 1		
MW-11A	4/27/2004	10-25	on-site	STL Sac	8260B	0.19	j < 1	u < 1	u < 1	u < 1	u < 1	u < 1	u < 2	u < 1	u < 2	u < 1	u < 1	u < 1	u < 1	u < 1		
MW-12A	11/4/2003	20 ft	on-site	STL Sac	8260B	2.3	j < 10	u < 10	u < 10	u < 10	u < 10	u < 10	u < 20	u < 10	u < 20	u < 10	u < 10	u < 10	u < 10	u < 10		
MW-12A	3/11/2004	20 ft	on-site	STLSEA	8260B	< 10	u < 20	u < 10	u < 10	u < 10	u < 10	u < 10	u < 50	u < 20	u < 50	u < 10	u < 10	u < 10	u < 10	u < 10		
MW-12A	4/27/2004	10-25	on-site	STL Sac	8260B	2.5	j < 10	u < 10	u < 10	u < 10	u < 10	u < 10	u < 20	u < 10	u < 20	u < 10	u < 10	u < 10	u < 10	u < 10		
MW-13A	10/10/2003	18-33	on-site	STLSEA	8260B	0.598	j < 2	u < 1	u 15.1	u < 1	u < 1	u < 1	u < 5	u < 2	u < 5	u < 1	u < 1	u 6.27	u 2.62			
MW-13A	3/10/2004	24 ft	on-site	STLSEA	8260B	< 200	u < 400	u < 200	u < 200	u < 200	u < 200	u < 200	u < 1000	u < 400	u < 1000	u < 200	u < 200	u < 200	u < 200	u < 200		
MW-13A	4/21/2004	18-33	on-site	STL Sac	8260B	< 50	u < 50	u < 50	u 20	u < 50	u < 50	u < 50	u < 100	u < 50	u < 100	u < 100	u < 50	u < 50	u < 50	u < 50		
MW-22A	3/11/2004	20 ft	on-site	STLSEA	8260B	< 20	u < 40	u < 20	u < 20	u < 20	u < 20	u < 20	u < 100	u < 40	u < 100	u 552	< 20	u < 20	u < 20	u < 20		
MW-22A	4/21/2004	15-25	on-site	STL Sac	8260B	< 25	u < 25	u < 25	u < 25	u < 25	u < 25	u < 25	u < 50	u < 25	u < 50	u 650	< 25	u < 25	u < 25	u < 25		
OFF-SITE A-ZONE LOCATIONS																						
A-Zone Hydropunch Locations																						
B-01-TR	3/24/1993	25 ft	off-site	CTL	8010	< 30	u < 50	u < 30	u < 30	u < 30	u < 30	u NS	NS	< 500	u NS	NS	NS	< 30	u < 30	u < 30	u	
B-01-TR	3/25/1993	25 ft	off-site	CTL	8020	NS	NS	NS	NS	NS	NS	530	NS	NS	NS	NS	NS	NS	NS	NS	NS	
B-02-TR	3/24/1993	25 ft	off-site	CTL	8010	< 50	u < 100	u < 50	u < 50	u < 50	u < 50	u NS	NS	< 1000	u NS	NS	NS	< 50	u < 50	u < 50	u	
B-02-TR	3/25/1993	25 ft	off-site	CTL	8020	NS	NS	NS	NS	NS	NS	< 0.5	u NS	NS	NS	NS	< 0.5	u NS	NS	NS	NS	
B-03-TR	3/24/1993	25 ft	off-site	CTL	8010	< 1	u < 2	u < 1	u < 1	u < 1	u < 1	u NS	NS	< 20	u NS	NS	NS	< 1	u < 1	u < 1	u	
B-03-TR	3/25/1993	25 ft	off-site	CTL	8020	NS	NS	NS	NS	NS	NS	< 0.5	u NS	NS	NS	NS	< 0.5	u NS	NS	NS	NS	
B-04-TR	3/24/1993	25 ft	off-site	CTL	8010	< 5	u < 10	u < 5	u < 5	u < 5	u < 5	u NS	NS	< 100	u NS	NS	NS	< 5	u < 5	u < 5	u	
B-04-TR	3/25/1993	25 ft	off-site	CTL	8020	NS	NS	NS	NS	NS	NS	< 0.5	u NS	NS	NS	NS	< 0.5	u NS	NS	NS	NS	
B-05-TR	3/24/1993	25 ft	off-site	CTL	8010	NS	< 50	u NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
B-05-TR	3/25/1993	25 ft	off-site	CTL	8010	< 30	u NS	u < 30	u < 30	u < 30	u < 30	u NS	NS	< 500	u NS	NS	NS	< 30	u < 30	u < 30	u	
B-05-TR	3/25/1993	25 ft	off-site	CTL	8020	NS	NS	NS	NS	NS	NS	< 0.5	u NS	NS	NS	NS	< 0.5	u NS	NS	NS	NS	
B-07-TR	3/25/1993	25 ft	off-site	CTL	8010	< 3	u < 5	u < 3	u < 3	u < 3	u < 3	u NS	NS	< 50	u NS	NS	NS	< 3	u < 3	u < 3	u	
B-07-TR	3/25/1993	25 ft	off-site	CTL	8020	NS	NS	NS	NS	NS	NS	< 0.5	u NS	NS	NS	NS	< 0.5	u NS	NS			

Table 8-1  
 Volatile Organic Compounds Detected in Ground Water  
 Hookston Station Remedial Investigation  
 Pleasant Hill, California

Sample Location	Date	Sample Depth (ft)	Location	Analytical Laboratory	Analytical Method	1,2,4-TMTHLB (µg/L)	1,2-DCE (µg/L)	1,3,5-TMTHLB (µg/L)	ISOPROPYLETHER (µg/L)	ISOP(CUMENE) (µg/L)	TOTAL XYLENES (µg/L)	M,P-XYLENE (µg/L)	O-XYLENE (µg/L)	N-BUTYLBENZENE (µg/L)	P-ISOPRLBENZ (µg/L)	PROPYLBENZENE (µg/L)	SEC-BTLBNZN (µg/L)	T-BEE (µg/L)	TERT-BTLBNZN (µg/L)					
					CA MCL	-	-	-	-	-	1,750	-	-	-	-	-	-	-	-	-				
					RWQCB ESL	-	-	-	-	-	13	-	-	-	-	-	-	-	-	-				
MW-07	6/29/2000	15-35	on-site	CTBERK	8260B	< 0.5	u	NS	< 0.5	u	NS	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	NS	< 0.5	u
MW-07	3/13/2001	15-35	on-site	CTBERK	8021B	NS	NS	NS	NS	NS	NS	< 0.5	u	< 0.5	u	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-07	3/13/2001	15-35	on-site	CTBERK	8260B	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-07 Duplicate	3/13/2001	15-35	on-site	CTBERK	8021B	NS	NS	NS	NS	NS	NS	< 0.5	u	< 0.5	u	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-07 Duplicate	3/13/2001	15-35	on-site	CTBERK	8260B	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-07	6/27/2001	15-35	on-site	CTBERK	8260B	< 1.3	u	NS	< 1.3	u	NS	< 1.3	u	< 1.3	u	< 1.3	u	< 1.3	u	< 1.3	u	NS	< 1.3	u
MW-07	9/20/2001	15-35	on-site	CTBERK	8260B	< 1.7	u	NS	< 1.7	u	NS	< 1.7	u	< 1.7	u	< 1.7	u	< 1.7	u	< 1.7	u	NS	< 1.7	u
MW-07	9/20/2001	28 ft	on-site	CTBERK	8260B	< 1.7	u	NS	< 1.7	u	NS	< 1.7	u	< 1.7	u	< 1.7	u	< 1.7	u	< 1.7	u	NS	< 1.7	u
MW-07	12/19/2001	28 ft	on-site	CTBERK	8260B	< 1.7	u	NS	< 1.7	u	NS	< 1.7	u	< 1.7	u	< 1.7	u	< 1.7	u	< 1.7	u	NS	< 1.7	u
MW-07	3/20/2002	28 Ft	on-site	CTBERK	8260B	< 0.8	u	NS	< 0.8	u	NS	< 0.8	u	< 0.8	u	< 0.8	u	< 0.8	u	< 0.8	u	NS	< 0.8	u
MW-07	6/21/2002	28 Ft	on-site	STL Sac	8260B	NS	NS	NS	< 10	u	NS	< 5	u	NS	NS	NS	NS	NS	NS	NS	NS	< 10	u	NS
MW-07	9/24/2002	28 Ft	on-site	STL Sac	8260B	NS	NS	NS	< 10	u	NS	< 5	u	NS	NS	NS	NS	NS	NS	NS	NS	< 10	u	NS
MW-07	11/14/2002	28 Ft	on-site	STL Sac	8260B	NS	NS	NS	< 25	uUJ	NS	< 12	uUJ	NS	NS	NS	NS	NS	NS	NS	NS	< 25	uUJ	NS
MW-07	2/19/2003	28 ft	on-site	STL Sac	8260B	NS	NS	NS	< 20	u	NS	< 10	u	NS	NS	NS	NS	NS	NS	NS	NS	< 20	u	NS
MW-07	5/6/2003	28 ft	on-site	STL Sac	8260B	NS	NS	NS	< 20	u	NS	< 10	u	NS	NS	NS	NS	NS	NS	NS	NS	< 20	u	NS
MW-07	7/22/2003	28 ft	on-site	STL Sac	8260B	NS	NS	NS	< 20	u	NS	< 10	u	NS	NS	NS	NS	NS	NS	NS	NS	< 20	u	NS
MW-07	10/24/2003	28 ft	on-site	STL Sac	8260B	NS	NS	NS	< 20	u	NS	< 10	u	NS	NS	NS	NS	NS	NS	NS	NS	< 20	u	NS
MW-07	3/10/2004	28 Ft	on-site	STLSEA	8260B	NS	NS	NS	< 10	u	NS	< 20	u	< 10	u	NS	NS	NS	NS	NS	NS	< 10	u	NS
MW-07 Duplicate	3/10/2004	28 Ft	on-site	STLSEA	8260B	NS	NS	NS	< 1	u	NS	< 2	u	< 1	u	NS	NS	NS	NS	NS	NS	< 1	u	NS
MW-07	4/20/2004	15-35	on-site	STL Sac	8260B	NS	NS	NS	< 10	u	NS	< 5	u	NS	NS	NS	NS	NS	NS	NS	NS	< 10	u	NS
MW-08A	9/25/2003	10-25	on-site	STLSEA	8260B	NS	NS	NS	< 2	u	NS	< 4	u	< 2	u	NS	NS	NS	NS	NS	NS	< 2	u	NS
MW-08A	10/10/2003	10-25	on-site	STLSEA	8260B	NS	NS	NS	< 1	u	NS	< 2	u	< 1	u	NS	NS	NS	NS	NS	NS	< 1	u	NS
MW-08A	3/10/2004	20.5 Ft	on-site	STLSEA	8260B	NS	NS	NS	< 5	u	NS	< 10	u	< 5	u	NS	NS	NS	NS	NS	NS	< 5	u	NS
MW-08A	4/21/2004	10-25	on-site	STL Sac	8260B	NS	NS	NS	< 20	u	NS	< 10	u	NS	NS	NS	NS	NS	NS	NS	NS	< 20	u	NS
MW-11A	10/10/2003	10-25	on-site	STLSEA	8260B	NS	NS	NS	< 1	u	NS	< 2	u	< 1	u	NS	NS	NS	NS	NS	NS	< 1	u	NS
MW-11A	3/10/2004	21 ft	on-site	STLSEA	8260B	NS	NS	NS	< 1	u	NS	< 2	u	< 1	u	NS	NS	NS	NS	NS	NS	< 1	u	NS
MW-11A	4/27/2004	10-25	on-site	STL Sac	8260B	NS	NS	NS	< 2	u	NS	< 1	u	NS	NS	NS	NS	NS	NS	NS	NS	< 2	u	NS
MW-12A	11/4/2003	20 ft	on-site	STL Sac	8260B	NS	NS	NS	< 20	u	NS	< 10	u	NS	NS	NS	NS	NS	NS	NS	NS	< 20	u	NS
MW-12A	3/11/2004	20 ft	on-site	STLSEA	8260B	NS	NS	NS	< 10	u	NS	< 20	u	< 10	u	NS	NS	NS	NS	NS	NS	< 10	u	NS
MW-12A	4/27/2004	10-25	on-site	STL Sac	8260B	NS	NS	NS	< 20	u	NS	< 10	u	NS	NS	NS	NS	NS	NS	NS	NS	< 20	u	NS
MW-13A	10/10/2003	18-33	on-site	STLSEA	8260B	NS	NS	NS	< 1	u	NS	< 2	u	< 1	u	NS	NS	NS	NS	NS	NS	< 1	u	NS
MW-13A	3/10/2004	24 ft	on-site	STLSEA	8260B	NS	NS	NS	< 200	u	NS	< 400	u	< 200	u	NS	NS	NS	NS	NS	NS	< 200	u	NS
MW-13A	4/21/2004	18-33	on-site	STL Sac	8260B	NS	NS	NS	< 100	u	NS	< 50	u	NS	NS	NS	NS	NS	NS	NS	NS	< 100	u	NS
MW-22A	3/11/2004	20 ft	on-site	STLSEA	8260B	NS	NS	NS	< 10	u	NS	< 20	u	< 10	u	NS	NS	NS	NS	NS	NS	< 10	u	NS
MW-22A	4/21/2004	15-25	on-site	STL Sac	8260B	NS	NS	NS	< 100	u	NS	< 50	u	NS	NS	NS	NS	NS	NS	NS	NS	< 100	u	NS
<b>OFF-SITE A-ZONE LOCATIONS</b>																								
<b>A-Zone Hydropunch Locations</b>																								
B-01-TR	3/24/1993	25 ft	off-site	CTL	8010	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
B-01-TR	3/25/1993	25 ft	off-site	CTL	8020	NS	NS	NS	NS	NS	230	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
B-02-TR	3/24/1993	25 ft	off-site	CTL	8010	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
B-02-TR	3/25/1993	25 ft	off-site	CTL	8020	NS	NS	NS	NS	NS	< 0.5	u	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
B-03-TR	3/24/1993	25 ft	off-site	CTL	8010	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
B-03-TR	3/25/1993	25 ft	off-site	CTL	8020	NS	NS	NS	NS	NS	< 0.5	u	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
B-04-TR	3/24/1993	25 ft	off-site	CTL	8010	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
B-04-TR	3/25/1993	25 ft	off-site	CTL	8020	NS	NS	NS	NS	NS	< 0.5	u	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
B-05-TR	3/24/1993	25 ft	off-site	CTL	8010	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
B-05-TR	3/25/1993	25 ft	off-site	CTL	8010	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
B-05-TR	3/25/1993	25 ft	off-site	CTL	8020	NS	NS	NS	NS	NS	< 0.5	u	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
B-07-TR	3/25/1993	25 ft	off-site	CTL	8010	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
B-07-TR	3/25/1993	25 ft	off-site	CTL	8020	NS	NS	NS	NS	NS	< 0.5	u	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
B-10-TR	8/17/1993	25 ft	off-site	CTL	8010	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
B-11-TR	8/17/1993	25 ft	off-site	CTL	8010	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
B-22-TR	11/14/1995	19.5 ft	off-site	AEN	8010	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
B-23-TR	11/14/1995	17.5 ft	off-site	AEN	8010	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
B-25-TR	11/15/1995	18 ft	off-site	AEN	8010	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
B-26-TR	11/15/1995	15 ft	off-site	AEN	8240	NS	NS	NS	NS	NS	< 10	u	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
B-91	10/3/2003	25 Ft	off-site	STLSEA	8260B	NS	NS	NS	< 2	u	NS	< 4</												

Table 8-1  
 Volatile Organic Compounds Detected in Ground Water  
 Hookston Station Remedial Investigation  
 Pleasant Hill, California

Sample Location	Date	Sample Depth (ft)	Location	Analytical Laboratory	Analytical Method	PCE (µg/L)	TCE (µg/L)	C-1,2-DCE (µg/L)	T-1,2-DCE (µg/L)	1,1-DCE (µg/L)	VINYL CHLORIDE (µg/L)	ACETONE (µg/L)	BENZENE (µg/L)	BDCMETANE (µg/L)	BROMOMETHANE (µg/L)	2-MTHL-2-PRP (µg/L)	2-BUTANONE (µg/L)	CARBON DISUL (µg/L)	CHLORO BENZENE (µg/L)										
B-105	12/12/2003	25 Ft	off-site	CHROMA	8260B	< 1	< 1	< 1	< 1	< 1	< 1	< 100	< 1	< 1	< 2	NS	< 100	< 10	< 1	70									
					CA MCL	5	5	6	10	6	0.5	-	1	-	-	-	-	-	-	70									
					RWQCB ESL	5	5	6	10	6	0.5	700	1	100	9.8	-	4,200	-	-	25									
<b>A-Zone Cone Penetrometer Locations</b>																													
CPT-04	10/22/2001	34 Ft	off-site	CTBERK	8260B	< 50	u	12000	< 50	u	< 50	u	< 50	u	< 100	u	< 50	u	< 50	u	< 50	u							
CPT-06	10/24/2001	18 Ft	off-site	CTBERK	8260B	< 0.5	uUJ	5.6	J	16	J	< 0.5	uUJ	1.2	J	< 0.5	uUJ	< 0.5	uUJ	NS	< 10	uUJ	< 0.5	uUJ	< 0.5	uUJ			
CPT-20	3/28/2002	21 Ft	off-site	CTBERK	8260B	< 0.5	u	1.1	u	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	NS	< 10	u	< 0.5	u	< 0.5	u			
CPT-22	9/18/2002	18 Ft	off-site	STL Sac	8260B	940	u	60	u	< 20	u	< 20	u	< 20	u	< 20	u	< 40	u	< 1000	u	< 40	u	< 40	u	< 20	u		
CPT-22 Duplicate	9/18/2002	18 Ft	off-site	STL Sac	8260B	1100	u	69	u	< 20	u	< 20	u	< 20	u	< 20	u	< 40	u	< 1000	u	< 40	u	< 40	u	< 20	u		
CPT-25	9/25/2002	16 Ft	off-site	STL Sac	8260B	< 1	u	< 1	u	< 1	u	< 1	u	< 1	u	< 1	u	< 2	u	< 50	u	< 2	u	< 2	u	< 1	u		
CPT-26	9/26/2002	20 Ft	off-site	STL Sac	8260B	< 1	u	< 1	u	< 1	u	< 1	u	< 1	u	< 1	u	< 2	u	< 50	u	< 2	u	< 2	u	< 1	u		
CPT-27	9/26/2002	19 Ft	off-site	STL Sac	8260B	< 1	u	< 1	u	< 1	u	< 1	u	< 1	u	< 1	u	< 2	u	< 50	u	< 2	u	< 2	u	< 1	u		
CPT-31	9/26/2002	37 Ft	off-site	STL Sac	8260B	< 1	u	< 1	u	< 1	u	< 1	u	< 1	u	< 1	u	< 2	u	< 50	u	< 2	u	< 2	u	< 1	u		
<b>A-Zone Monitoring Wells</b>																													
MW-14A	3/11/2004	28 ft	off-site	STLSEA	8260B	< 200	u	8480	< 200	u	< 200	u	< 200	u	< 200	u	< 200	u	< 500	u	< 2000	u	< 1000	u	< 200	u	< 200	u	
MW-14A	4/28/2004	29-34	off-site	STL Sac	8260B	< 290	u	5300	750	u	< 290	u	< 2900	uq	< 290	u	< 290	u	< 290	u	< 15000	u	< 590	u	< 590	u	< 290	u	
MW-15A	3/11/2004	18 ft	off-site	STLSEA	8260B	< 20	u	873	57.1	u	< 20	u	< 100	u	< 20	u	< 20	u	< 50	u	< 200	u	< 100	u	< 20	u	< 20	u	
MW-15A	4/22/2004	14.5-24.5	off-site	STL Sac	8260B	< 50	u	1500#	100#	u	< 50	u	< 500	u	< 50	u	< 50	u	< 50	u	< 2500	u	< 100	u	< 100	u	< 50	u	
MW-16A	3/10/2004	20 ft	off-site	STLSEA	8260B	< 10	u	284	9.34	u	< 10	u	< 10	u	< 10	u	< 10	u	< 25	u	< 100	u	< 50	u	< 10	u	< 10	u	
MW-16A Duplicate	3/10/2004	20 ft	off-site	STLSEA	8260B	< 10	u	279	8.84	u	< 10	u	< 10	u	< 10	u	< 10	u	< 25	u	< 100	u	< 50	u	< 10	u	< 10	u	
MW-16A	4/27/2004	15-25	off-site	STL Sac	8260B	< 10	u	440	9.1	u	< 10	u	< 100	uq	< 10	u	< 10	u	< 10	u	< 500	u	< 20	u	< 20	u	< 10	u	
MW-17A	3/10/2004	25 ft	off-site	STLSEA	8260B	< 2	u	68.6	< 2	u	< 2	u	10	uq	< 2	u	< 2	u	< 5	u	< 20	u	< 10	u	< 2	u	< 2	u	
MW-17A	4/27/2004	20.7-30.7	off-site	STL Sac	8260B	< 5	u	170	< 5	u	< 5	u	< 50	uq	< 5	u	< 5	u	< 5	u	< 250	u	< 10	u	< 10	u	< 5	u	
MW-18A	3/10/2004	20 ft	off-site	STLSEA	8260B	< 1	u	< 1	u	< 1	u	< 1	u	5	U	< 1	u	< 1	u	< 2.5	u	< 10	u	< 5	u	< 1	u	< 1	u
MW-18A	4/28/2004	14.7-24.7	off-site	STL Sac	8260B	< 1	u	< 1	u	< 1	u	< 1	u	< 10	u	< 1	u	< 1	u	< 1	u	< 50	u	< 2	u	< 2	u	< 1	u
MW-19A	3/10/2004	22 ft	off-site	STLSEA	8260B	< 1	u	< 1	u	< 1	u	< 1	u	5	U	< 1	u	< 1	u	< 2.5	u	< 10	u	< 5	u	< 1	u	< 1	u
MW-19A	4/28/2004	14-24	off-site	STL Sac	8260B	< 1	u	< 1	u	< 1	u	< 1	u	< 10	u	< 1	u	< 1	u	< 1	u	< 50	u	< 2	u	< 2	u	< 1	u
MW-20A	3/10/2004	16 ft	off-site	STLSEA	8260B	456	u	52.6	35.6	u	< 20	u	< 20	u	< 20	u	< 20	u	< 50	u	< 200	u	< 100	u	< 20	u	< 20	u	
MW-20A	4/22/2004	10-20	off-site	STL Sac	8260B	2500#	u	150#	79#	u	< 50	u	< 50	u	< 50	u	< 50	u	< 50	u	< 2500	u	< 100	u	< 100	u	< 50	u	
MW-21A	3/10/2004	16 ft	off-site	STLSEA	8260B	393	u	58.2	16.1	u	< 10	u	< 10	u	< 10	u	< 10	u	< 25	u	< 100	u	< 50	u	< 10	u	< 10	u	
MW-21A	4/21/2004	10-20	off-site	STL Sac	8260B	640	u	48	18	u	< 25	u	< 25	uq	< 25	u	< 25	u	< 25	u	< 1200	u	< 50	u	< 50	u	< 25	u	
MW-23A	6/4/2004	17-27	off-site	STL Sac	8260B	1.2	u	1.7	0.24	u	< 1	u	< 1	u	< 10	u	< 1	u	< 1	u	< 50	u	< 2	u	< 2	u	< 1	u	
MW-24A	3/15/2004	25 ft	off-site	STLSEA	8260B	< 2	u	127	< 2	u	< 2	u	< 10	u	< 2	u	< 2	u	< 5	u	< 20	u	< 10	u	< 2	u	< 2	u	
MW-24A	4/27/2004	19.5-29.5	off-site	STL Sac	8260B	< 2.5	u	57	0.36	u	< 2.5	u	25	U	< 2.5	u	< 2.5	u	< 2.5	u	< 120	u	< 5	u	< 5	u	< 2.5	u	
MW-25A	6/9/2004	18-28	off-site	STL Sac	8260B	< 1	u	< 1	u	< 1	u	< 1	u	10	U	< 1	u	< 1	u	< 50	u	< 2	u	< 2	u	< 1	u		
<b>ON-SITE B-ZONE LOCATIONS</b>																													
<b>B-Zone Hydropunch Locations</b>																													
B-66	9/19/2003	55 Ft	on-site	STLSEA	8260B	< 10	u	363	< 10	u	< 10	u	< 50	u	< 10	u	< 10	u	< 25	u	< 100	u	< 50	u	< 10	u	< 10	u	
B-67	9/19/2003	55 Ft	on-site	STLSEA	8260B	< 2	uUJ	9.99	J	< 2	uUJ	< 2	uUJ	4.24	J	< 2	uUJ	< 2	uUJ	< 5	uUJ	< 20	uUJ	< 10	uUJ	< 2	uUJ	< 2	uUJ
B-68	9/29/2003	55 Ft	on-site	STLSEA	8260B	< 2	u	99.5	4.25	u	< 2	u	< 10	u	< 2	u	< 2	u	< 5	u	< 20	u	< 10	u	< 2	u	< 2	u	
B-69	9/18/2003	55 Ft	on-site	STLSEA	8260B	< 1	u	< 1	u	< 1	u	< 1	u	13.2	U	< 1	u	< 1	u	< 2.5	u	< 10	u	< 5	u	< 1	u	< 1	u
B-70	9/17/2003	55 Ft	on-site	STLSEA	8260B	< 1	u	< 1	u	< 1	u	< 1	u	44.2	U	< 1	u	< 1	u	< 2.5	u	< 10	u	9.99	u	2.19	u	< 1	u
B-74	9/19/2003	55 Ft	on-site	STLSEA	8260B	< 2	u	5.01	< 2	u	< 2	u	< 2	u	< 2	u	< 2	u	< 5	u	< 20	u	< 10	u	< 2	u	< 2	u	
B-75	9/22/2003	55 Ft	on-site	STLSEA	8260B	< 5	u	99.8	< 5	u	< 5	u	< 5	u	< 25	u	< 5	u	< 12.5	u	< 50	u	< 25	u	< 5	u	< 5	u	
B-82	9/22/2003	55 Ft	on-site	STLSEA	8260B	< 2	u	< 2	u	< 2	u	< 2	u	< 2	u	< 2	u	< 2	u	< 5	u	< 20	u	< 10	u	< 2	u	< 2	u
B-87	9/24/2003	55 Ft	on-site	STLSEA	8260B	< 2	u	183	1.55	u	< 2	u	10	U	< 2	u	< 2	u	< 5	u	< 20	u	< 10	u	< 2	u	< 2	u	
B-94	9/29/2003	55 Ft	on-site	STLSEA	8260B	< 10	u	380	J	< 10	u	< 10	u	< 50	J	< 10	u	< 10	u	< 25	u	< 100	u	< 50	u	< 10	u	< 10	u
B-94 Duplicate	9/29/2003	55 Ft	on-site	STLSEA	8260B	< 10	u	473	< 10	u	< 10	u	< 50	u	< 10	u	< 10	u	< 25	u	< 100	u	< 50	u	< 10	u	< 10	u	
B-96	9/29/2003	55 Ft	on-site	STLSEA	8260B	< 1	u	182	d	1.8	< 1	u	23.4	U	< 1	u	< 1	u	< 2.5	u	< 10	u	< 5						

Table 8-1  
 Volatile Organic Compounds Detected in Ground Water  
 Hookston Station Remedial Investigation  
 Pleasant Hill, California

Sample Location	Date	Sample Depth (ft)	Location	Analytical Laboratory	Analytical Method	CHLOROFORM (µg/L)	CHLOROMETHANE (µg/L)	DBC METHANE (µg/L)	1,1-DCA (µg/L)	1,2-DCA (µg/L)	1,2-DCPROPAN (µg/L)	ETHYLBENZENE (µg/L)	2-HEXANONE (µg/L)	DICHLMETHANE (µg/L)	4M2PENTANONE (µg/L)	MTBE (µg/L)	TOLUENE (µg/L)	1,1,1-TCA (µg/L)	1,1,2-TCA (µg/L)																		
B-105	12/12/2003	25 Ft	off-site	CHROMA	CA MCL RIVQCB ESL 8260B	< 2	u	< 2	u	< 1	u	< 1	u	< 1	u	< 100	u	< 10	u	< 100	u	< 10	u	< 100	u	< 10	u	< 1	u	< 1	u	< 1	u	< 1	u	< 1	u
<b>A-Zone Cone Penetrometer Locations</b>																																					
CPT-04	10/22/2001	34 Ft	off-site	CTBERK	8260B	< 50	u	< 100	u	< 50	u	< 50	u	< 50	u	< 50	u	< 1000	u	< 1000	u	< 1000	u	< 50	u	< 50	u	< 50	u	< 50	u	< 50	u	< 50	u		
CPT-06	10/24/2001	18 Ft	off-site	CTBERK	8260B	< 0.5	uUJ	< 1	uUJ	< 0.5	uUJ	< 0.5	uUJ	< 0.5	uUJ	< 0.5	uUJ	< 10	uUJ	< 10	uUJ	< 10	uUJ	4.0	J	< 0.5	uUJ	< 0.5	uUJ	< 0.5	uUJ	< 0.5	uUJ	< 0.5	uUJ		
CPT-20	3/28/2002	21 Ft	off-site	CTBERK	8260B	< 0.5	u	< 1	u	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	< 10	u	< 10	u	< 10	u	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u
CPT-22	9/18/2002	18 Ft	off-site	STL Sac	8260B	< 20	u	< 20	u	< 20	u	< 20	u	< 20	u	< 20	u	< 40	u	< 40	u	< 40	u	< 40	u	< 40	u	< 40	u	< 40	u	< 40	u	< 40	u	< 40	u
CPT-22 Duplicate	9/18/2002	18 Ft	off-site	STL Sac	8260B	< 20	u	< 20	u	< 20	u	< 20	u	< 20	u	< 20	u	< 40	u	< 40	u	< 40	u	< 40	u	< 40	u	< 40	u	< 40	u	< 40	u	< 40	u	< 40	u
CPT-25	9/25/2002	16 Ft	off-site	STL Sac	8260B	< 1	u	< 1	u	< 1	u	< 1	u	< 1	u	< 1	u	< 2	u	< 1	u	< 2	u	< 2	u	< 2	u	< 2	u	< 2	u	< 2	u	< 2	u	< 2	u
CPT-26	9/26/2002	20 Ft	off-site	STL Sac	8260B	< 1	u	< 1	u	< 1	u	0.22	j	< 1	u	< 1	u	< 2	u	< 1	u	< 2	u	< 2	u	< 2	u	< 2	u	< 2	u	< 2	u	< 2	u	< 2	u
CPT-27	9/26/2002	19 Ft	off-site	STL Sac	8260B	< 1	u	< 1	u	< 1	u	< 1	u	< 1	u	< 1	u	< 2	u	< 1	u	< 2	u	< 2	u	< 2	u	< 2	u	< 2	u	< 2	u	< 2	u	< 2	u
CPT-31	9/26/2002	37 Ft	off-site	STL Sac	8260B	0.16	j	< 1	u	< 1	u	< 1	u	< 1	u	< 1	u	< 2	u	< 1	u	< 2	u	< 2	u	< 2	u	< 2	u	< 2	u	< 2	u	< 2	u	< 2	u
<b>A-Zone Monitoring Wells</b>																																					
MW-14A	3/11/2004	28 ft	off-site	STLSEA	8260B	< 200	u	< 400	u	< 200	u	< 200	u	< 200	u	< 200	u	< 1000	u	< 400	u	< 1000	u	< 200	u	< 200	u	< 200	u	< 200	u	< 200	u	< 200	u	< 200	u
MW-14A	4/28/2004	29-34	off-site	STL Sac	8260B	< 290	u	< 290	u	< 290	u	< 290	u	< 290	u	< 290	u	< 590	u	< 290	u	< 590	u	< 590	u	< 590	u	< 590	u	< 590	u	< 590	u	< 590	u	< 590	u
MW-15A	3/11/2004	18 ft	off-site	STLSEA	8260B	< 20	u	< 40	u	< 20	u	< 20	u	< 20	u	< 20	u	< 100	u	< 40	u	< 100	u	< 20	u	< 20	u	< 20	u	< 20	u	< 20	u	< 20	u	< 20	u
MW-15A	4/22/2004	14.5-24.5	off-site	STL Sac	8260B	< 50	u	< 50	u	< 50	u	< 50	u	< 50	u	< 50	u	< 100	u	< 50	u	< 100	u	< 20	u	< 20	u	< 20	u	< 20	u	< 20	u	< 20	u	< 20	u
MW-16A	3/10/2004	20 ft	off-site	STLSEA	8260B	< 10	u	< 20	u	< 10	u	< 10	u	< 10	u	< 10	u	< 50	u	< 20	u	< 50	u	< 10	u	< 10	u	< 10	u	< 10	u	< 10	u	< 10	u	< 10	u
MW-16A Duplicate	3/10/2004	20 ft	off-site	STLSEA	8260B	< 10	u	< 20	u	< 10	u	< 10	u	< 10	u	< 10	u	< 50	u	< 20	u	< 50	u	< 10	u	< 10	u	< 10	u	< 10	u	< 10	u	< 10	u	< 10	u
MW-16A	4/27/2004	15-25	off-site	STL Sac	8260B	< 10	u	< 10	u	< 10	u	< 10	u	< 10	u	< 10	u	< 20	u	< 10	u	< 20	u	< 20	u	< 20	u	< 20	u	< 20	u	< 20	u	< 20	u	< 20	u
MW-17A	3/10/2004	25 ft	off-site	STLSEA	8260B	< 2	u	< 4	u	< 2	u	< 2	u	< 2	u	< 2	u	< 10	u	< 4	u	< 10	u	< 2	u	< 2	u	< 2	u	< 2	u	< 2	u	< 2	u	< 2	u
MW-17A	4/27/2004	20.7-30.7	off-site	STL Sac	8260B	< 5	u	< 5	u	< 5	u	< 5	u	< 5	u	< 5	u	< 10	u	< 5	u	< 10	u	< 5	u	< 5	u	< 5	u	< 5	u	< 5	u	< 5	u	< 5	u
MW-18A	3/10/2004	20 ft	off-site	STLSEA	8260B	< 1	u	< 2	u	< 1	u	< 1	u	< 1	u	< 1	u	< 5	u	< 2	u	< 5	u	< 1	u	< 1	u	< 1	u	< 1	u	< 1	u	< 1	u	< 1	u
MW-18A	4/28/2004	14.7-24.7	off-site	STL Sac	8260B	< 1	u	< 1	u	< 1	u	< 1	u	< 1	u	< 1	u	< 2	u	< 1	u	< 2	u	< 2	u	< 2	u	< 2	u	< 2	u	< 2	u	< 2	u	< 2	u
MW-19A	3/10/2004	22 ft	off-site	STLSEA	8260B	< 1	u	< 2	u	< 1	u	< 1	u	< 1	u	< 1	u	< 5	u	< 2	u	< 5	u	< 1	u	< 1	u	< 1	u	< 1	u	< 1	u	< 1	u	< 1	u
MW-19A	4/28/2004	14-24	off-site	STL Sac	8260B	< 1	u	< 1	u	< 1	u	< 1	u	< 1	u	< 1	u	< 2	u	< 1	u	< 2	u	< 2	u	< 2	u	< 2	u	< 2	u	< 2	u	< 2	u	< 2	u
MW-20A	3/10/2004	16 ft	off-site	STLSEA	8260B	< 20	u	< 40	u	< 20	u	< 20	u	< 20	u	< 20	u	< 100	u	< 40	u	< 100	u	< 20	u	< 20	u	< 20	u	< 20	u	< 20	u	< 20	u	< 20	u
MW-20A	4/22/2004	10-20	off-site	STL Sac	8260B	< 50	u	< 50	u	< 50	u	< 50	u	< 50	u	< 50	u	< 100	u	< 50	u	< 100	u	< 20	u	< 20	u	< 20	u	< 20	u	< 20	u	< 20	u	< 20	u
MW-21A	3/10/2004	16 ft	off-site	STLSEA	8260B	< 10	u	< 20	u	< 10	u	< 10	u	< 10	u	< 10	u	< 50	u	< 20	u	< 50	u	< 10	u	< 10	u	< 10	u	< 10	u	< 10	u	< 10	u	< 10	u
MW-21A	4/21/2004	10-20	off-site	STL Sac	8260B	< 25	u	< 25	u	< 25	u	< 25	u	< 25	u	< 25	u	< 50	u	< 25	u	< 50	u	< 10	u	< 10	u	< 10	u	< 10	u	< 10	u	< 10	u	< 10	u
MW-23A	6/4/2004	17-27	off-site	STL Sac	8260B	< 1	u	< 1	u	< 1	u	0.54	j	< 1	u	< 1	u	< 2	u	< 1	u	< 2	u	< 2	u	< 2	u	< 2	u	< 2	u	< 2	u	< 2	u	< 2	u
MW-24A	3/15/2004	25 ft	off-site	STLSEA	8260B	< 2	u	< 4	u	< 2	u	< 2	u	< 2	u	< 2	u	< 10	u	< 4	u	< 10	u	< 2	u	< 2	u	< 2	u	< 2	u	< 2	u	< 2	u	< 2	u
MW-24A	4/27/2004	19.5-29.5	off-site	STL Sac	8260B	< 2.5	u	< 2.5	u	< 2.5	u	0.25	j	< 2.5	u	< 2.5	u	< 5	u	< 2.5	u	< 5	u	< 5	u	< 5	u	< 5	u	< 5	u	< 5	u	< 5	u	< 5	u
MW-25A	6/9/2004	18-28	off-site	STL Sac	8260B	0.33	j	< 1	u	< 1	u	< 1	u	< 1	u	< 1	u	< 2	u	< 1	u	< 2	u	< 2	u	< 2	u	< 2	u	< 2	u	< 2	u	< 2	u	< 2	u
<b>ON-SITE B-ZONE LOCATIONS</b>																																					
<b>B-Zone Hydropunch Locations</b>																																					
B-66	9/19/2003	55 Ft	on-site	STLSEA	8260B	< 10	u	< 20	u	< 10	u	10.7	j	< 10	u	< 10	u	< 50	u	< 20	u	< 50	u	< 10	u	< 10	u	< 10	u	< 10	u	< 10	u	< 10	u		
B-67	9/19/2003	55 Ft	on-site	STLSEA	8260B	< 2	uUJ	< 4	uUJ	< 2	uUJ	1.33	jj	< 2	uUJ	< 2	uUJ	< 10	uUJ	< 4	uUJ	< 10	uUJ	< 2	uUJ	< 2	uUJ	< 2	uUJ	< 2	uUJ	< 2	uUJ	< 2	uUJ	< 2	uUJ
B-68	9/29/2003	55 Ft	on-site	STLSEA	8260B	< 2	u	< 4	u	< 2	u	4.57	j	< 2	u	< 2	u	< 10	u	< 2	u																



Table 8-1  
Volatile Organic Compounds Detected in Ground Water  
Hookston Station Remedial Investigation  
Pleasant Hill, California

Sample Location	Date	Sample Depth (ft)	Location	Analytical Laboratory	Analytical Method	1,2,4-TMTHLB (µg/L)	1,2-DCE (µg/L)	1,3,5-TMTHLB (µg/L)	ISOPROPYLETHER (µg/L)	ISOP(CUMENE) (µg/L)	TOTAL XYLENES (µg/L)	M,P-XYLENE (µg/L)	O-XYLENE (µg/L)	N-BUTYLBENZENE (µg/L)	P-ISOPRLBENZ (µg/L)	PROPYLBENZENE (µg/L)	SEC-BTLBNZN (µg/L)	T-BEE (µg/L)	TERT-BTLBNZN (µg/L)								
B-105	12/12/2003	25 Ft	off-site	CHROMA	CA MCL RWQCB ESL 8260B	< 1	u	NS	< 1	u	NS	< 1	u	< 2	u	NS	NS	< 2	u	< 2	u	< 2	u	NS	< 2	u	
<b>A-Zone Cone Penetrometer Locations</b>																											
CPT-04	10/22/2001	34 Ft	off-site	CTBERK	8260B	< 50	u	NS	< 50	u	NS	< 50	u	NS	< 50	u	NS	< 50	u	< 50	u	< 50	u	NS	< 50	u	NS
CPT-06	10/24/2001	18 Ft	off-site	CTBERK	8260B	< 0.5	uUJ	NS	< 0.5	uUJ	NS	< 0.5	uUJ	< 0.5	uUJ	< 0.5	uUJ	< 0.5	uUJ	< 0.5	uUJ	< 0.5	uUJ	NS	< 0.5	uUJ	NS
CPT-20	3/28/2002	21 Ft	off-site	CTBERK	8260B	< 0.5	u	NS	< 0.5	u	NS	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	NS	< 0.5	u	NS
CPT-22	9/18/2002	18 Ft	off-site	STL Sac	8260B	NS	NS	NS	< 40	u	NS	< 20	u	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	< 40	u	NS	NS
CPT-22 Duplicate	9/18/2002	18 Ft	off-site	STL Sac	8260B	NS	NS	NS	< 40	u	NS	< 20	u	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	< 40	u	NS	NS
CPT-25	9/25/2002	16 Ft	off-site	STL Sac	8260B	NS	NS	NS	< 2	u	NS	< 1	u	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	< 2	u	NS	NS
CPT-26	9/26/2002	20 Ft	off-site	STL Sac	8260B	NS	NS	NS	< 2	u	NS	< 1	u	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	< 2	u	NS	NS
CPT-27	9/26/2002	19 Ft	off-site	STL Sac	8260B	NS	NS	NS	< 2	u	NS	< 1	u	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	< 2	u	NS	NS
CPT-31	9/26/2002	37 Ft	off-site	STL Sac	8260B	NS	NS	NS	< 2	u	NS	< 1	u	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	< 2	u	NS	NS
<b>A-Zone Monitoring Wells</b>																											
MW-14A	3/11/2004	28 ft	off-site	STLSEA	8260B	NS	NS	NS	< 200	u	NS	NS	< 400	u	< 200	u	NS	NS	NS	NS	NS	NS	< 200	u	NS	NS	NS
MW-14A	4/28/2004	29-34	off-site	STL Sac	8260B	NS	NS	NS	< 590	u	NS	< 290	u	NS	NS	NS	NS	NS	NS	NS	NS	NS	< 590	u	NS	NS	NS
MW-15A	3/11/2004	18 ft	off-site	STLSEA	8260B	NS	NS	NS	< 20	u	NS	< 40	u	< 20	u	NS	NS	NS	NS	NS	NS	NS	< 20	u	NS	NS	NS
MW-15A	4/22/2004	14.5-24.5	off-site	STL Sac	8260B	NS	NS	NS	< 100	u	NS	< 50	u	NS	NS	NS	NS	NS	NS	NS	NS	NS	< 100	u	NS	NS	NS
MW-16A	3/10/2004	20 ft	off-site	STLSEA	8260B	NS	NS	NS	< 10	u	NS	< 20	u	< 10	u	NS	NS	NS	NS	NS	NS	NS	< 10	u	NS	NS	NS
MW-16A Duplicate	3/10/2004	20 ft	off-site	STLSEA	8260B	NS	NS	NS	< 10	u	NS	< 20	u	< 10	u	NS	NS	NS	NS	NS	NS	NS	< 10	u	NS	NS	NS
MW-16A	4/27/2004	15-25	off-site	STL Sac	8260B	NS	NS	NS	< 20	u	NS	< 10	u	NS	NS	NS	NS	NS	NS	NS	NS	NS	< 20	u	NS	NS	NS
MW-17A	3/10/2004	25 ft	off-site	STLSEA	8260B	NS	NS	NS	< 2	u	NS	< 4	u	< 2	u	NS	NS	NS	NS	NS	NS	NS	< 2	u	NS	NS	NS
MW-17A	4/27/2004	20.7-30.7	off-site	STL Sac	8260B	NS	NS	NS	< 10	u	NS	< 5	u	NS	NS	NS	NS	NS	NS	NS	NS	NS	< 10	u	NS	NS	NS
MW-18A	3/10/2004	20 ft	off-site	STLSEA	8260B	NS	NS	NS	< 1	u	NS	< 2	u	< 1	u	NS	NS	NS	NS	NS	NS	NS	< 1	u	NS	NS	NS
MW-18A	4/28/2004	14.7-24.7	off-site	STL Sac	8260B	NS	NS	NS	< 2	u	NS	< 1	u	NS	NS	NS	NS	NS	NS	NS	NS	NS	< 2	u	NS	NS	NS
MW-19A	3/10/2004	22 ft	off-site	STLSEA	8260B	NS	NS	NS	< 1	u	NS	< 2	u	< 1	u	NS	NS	NS	NS	NS	NS	NS	< 1	u	NS	NS	NS
MW-19A	4/28/2004	14-24	off-site	STL Sac	8260B	NS	NS	NS	< 2	u	NS	< 1	u	NS	NS	NS	NS	NS	NS	NS	NS	NS	< 2	u	NS	NS	NS
MW-20A	3/10/2004	16 ft	off-site	STLSEA	8260B	NS	NS	NS	< 20	u	NS	< 40	u	< 20	u	NS	NS	NS	NS	NS	NS	NS	< 20	u	NS	NS	NS
MW-20A	4/22/2004	10-20	off-site	STL Sac	8260B	NS	NS	NS	< 100	u	NS	< 50	u	NS	NS	NS	NS	NS	NS	NS	NS	NS	< 100	u	NS	NS	NS
MW-21A	3/10/2004	16 ft	off-site	STLSEA	8260B	NS	NS	NS	< 10	u	NS	< 20	u	< 10	u	NS	NS	NS	NS	NS	NS	NS	< 10	u	NS	NS	NS
MW-21A	4/21/2004	10-20	off-site	STL Sac	8260B	NS	NS	NS	< 50	u	NS	< 25	u	NS	NS	NS	NS	NS	NS	NS	NS	NS	< 50	u	NS	NS	NS
MW-23A	6/4/2004	17-27	off-site	STL Sac	8260B	NS	NS	NS	< 2	u	NS	1.3	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	< 2	u	NS	NS	NS
MW-24A	3/15/2004	25 ft	off-site	STLSEA	8260B	NS	NS	NS	< 2	u	NS	< 4	u	< 2	u	NS	NS	NS	NS	NS	NS	NS	< 2	u	NS	NS	NS
MW-24A	4/27/2004	19.5-29.5	off-site	STL Sac	8260B	NS	NS	NS	< 5	u	NS	< 2.5	u	NS	NS	NS	NS	NS	NS	NS	NS	NS	< 5	u	NS	NS	NS
MW-25A	6/9/2004	18-28	off-site	STL Sac	8260B	NS	NS	NS	< 2	u	NS	0.67	j	NS	NS	NS	NS	NS	NS	NS	NS	NS	< 2	u	NS	NS	NS
<b>ON-SITE B-ZONE LOCATIONS</b>																											
<b>B-Zone Hydropunch Locations</b>																											
B-66	9/19/2003	55 Ft	on-site	STLSEA	8260B	NS	NS	NS	< 10	u	NS	NS	< 20	u	< 10	u	NS	NS	NS	NS	NS	NS	< 10	u	NS	NS	NS
B-67	9/19/2003	55 Ft	on-site	STLSEA	8260B	NS	NS	NS	< 2	uUJ	NS	NS	< 4	uUJ	< 2	uUJ	NS	NS	NS	NS	NS	NS	< 2	uUJ	NS	NS	NS
B-68	9/29/2003	55 Ft	on-site	STLSEA	8260B	NS	NS	NS	< 2	u	NS	NS	< 4	u	< 2	u	NS	NS	NS	NS	NS	NS	< 2	u	NS	NS	NS
B-69	9/18/2003	55 Ft	on-site	STLSEA	8260B	NS	NS	NS	< 1	u	NS	NS	< 2	u	< 1	u	NS	NS	NS	NS	NS	NS	< 1	u	NS	NS	NS
B-70	9/17/2003	55 Ft	on-site	STLSEA	8260B	NS	NS	NS	< 1	u	NS	NS	< 2	u	< 1	u	NS	NS	NS	NS	NS	NS	< 1	u	NS	NS	NS
B-74	9/19/2003	55 Ft	on-site	STLSEA	8260B	NS	NS	NS	< 2	u	NS	NS	< 4	u	< 2	u	NS	NS	NS	NS	NS	NS	< 2	u	NS	NS	NS
B-75	9/22/2003	55 Ft	on-site	STLSEA	8260B	NS	NS	NS	< 5	u	NS	NS	< 10	u	< 5	u	NS	NS	NS	NS	NS	NS	< 5	u	NS	NS	NS
B-82	9/22/2003	55 Ft	on-site	STLSEA	8260B	NS	NS	NS	< 2	u	NS	NS	< 4	u	< 2	u	NS	NS	NS	NS	NS	NS	< 2	u	NS	NS	NS
B-87	9/24/2003	55 Ft	on-site	STLSEA	8260B	NS	NS	NS	< 2	u	NS	NS	< 4	u	< 2	u	NS	NS	NS	NS	NS	NS	< 2	u	NS	NS	NS
B-94	9/29/2003	55 Ft	on-site	STLSEA	8260B	NS	NS	NS	< 10	u	NS	NS	< 20	u	< 10	u	NS	NS	NS	NS	NS	NS	< 10	u	NS	NS	NS
B-94 Duplicate	9/29/2003	55 Ft	on-site	STLSEA	8260B	NS	NS	NS	< 10	u	NS	NS	< 20	u	< 10	u	NS	NS	NS	NS	NS	NS	< 10	u	NS	NS	NS
B-96	9/29/2003	55 Ft	on-site	STLSEA	8260B	NS	NS	NS	< 1	u	NS	NS	< 2	u	< 1	u	NS	NS	NS	NS	NS	NS	< 1	u	NS	NS	NS
<b>B-Zone Cone Penetrometer Locations</b>																											
CPT-01	10/23/2001	57 Ft	on-site	CTBERK	8260B	< 0.5	u	NS	< 0.5	u	NS	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	NS	< 0.5	u	NS
CPT-02	10/22/2001	54 Ft	on-site	CTBERK	8260B	< 0.5	u	NS	< 0.5	u	NS	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	NS	< 0.5	u	NS
<b>B-Zone Monitoring Wells</b>																											
MW-01D	4/12/1993	45-60	on-site	CTL	8020	NS	NS	NS	NS	NS	< 0.5	u	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-01D	4/12/1993	45-60	on-site	CTL	8240	NS	NS	NS	NS	NS	< 100	u	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-01D	4/27/1993	45-60	on-site	CTL	8010	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-01D	11/17/1995	45-60	on-site	MCA	8010	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-01D	6/29/2000	45-60	on-site	CTBERK	8021B	NS	NS	NS																			

Table 8-1  
 Volatile Organic Compounds Detected in Ground Water  
 Hookston Station Remedial Investigation  
 Pleasant Hill, California

Sample Location	Date	Sample Depth (ft)	Location	Analytical Laboratory	Analytical Method	PCE (µg/L)	TCE (µg/L)	C-1,2-DCE (µg/L)	T-1,2-DCE (µg/L)	1,1-DCE (µg/L)	VINYL CHLORIDE (µg/L)	ACETONE (µg/L)	BENZENE (µg/L)	BDCMETANE (µg/L)	BROMOMETHANE (µg/L)	2-MTHL-2-PRP (µg/L)	2-BUTANONE (µg/L)	CARBON DISUL (µg/L)	CHLOROGENZENE (µg/L)	
					CA MCL	5	5	6	10	6	0.5	-	1	-	-	-	-	-	70	
					RWQCB ESL	5	5	6	10	6	0.5	700	1	100	9.8	-	4,200	-	25	
MW-01D Duplicate	3/13/2001	45-60	on-site	CTBERK	8201B	NS	NS	NS	NS	NS	NS	NS	< 0.5	u	NS	NS	NS	NS	NS	
MW-01D Duplicate	3/13/2001	45-60	on-site	CTBERK	8260B	< 0.5	uUJ 0.6	bj < 0.5	uUJ < 0.5	uUJ < 0.5	uUJ < 0.5	uUJ NS	NS	< 0.5	uUJ < 1	uUJ NS	NS	NS	< 0.5	uUJ
MW-01D	6/27/2001	45-60	on-site	CTBERK	8260B	< 1.3	u 300	< 1.3	u < 1.3	u < 1.3	u < 25	u < 1.3	u < 1.3	u < 1.3	u < 2.5	u NS	< 25	u < 1.3	u < 1.3	u
MW-01D Duplicate	6/27/2001	45-60	on-site	CTBERK	8260B	1.5	320	2.0	< 1.3	u 10	< 1.3	u < 25	u < 1.3	u < 1.3	u < 2.5	u NS	< 25	u < 1.3	u < 1.3	u
MW-01D	9/19/2001	45-60	on-site	CTBERK	8260B	< 2	u 520	9.6	< 2	u 16	< 2	u < 40	u 3.1	< 2	u < 4	u NS	< 40	u < 2	u < 2	u
MW-01D Duplicate	9/19/2001	45-60	on-site	CTBERK	8260B	< 2.5	u 530	9.0	< 2.5	u 17	< 2.5	u < 50	u 3.6	< 2.5	u < 5	u NS	< 50	u < 2.5	u < 2.5	u
MW-01D	9/19/2001	46 ft	on-site	CTBERK	8260B	4.6	460	9.7	< 2	u 28	< 2	u < 40	u 3.0	< 2	u < 4	u NS	< 40	u < 2	u < 2	u
MW-01D	9/19/2001	55 ft	on-site	CTBERK	8260B	< 8.3	u 1900	19	< 8.3	u 54	< 8.3	u < 170	u < 8.3	u < 8.3	u < 17	u NS	< 170	u < 8.3	u < 8.3	u
MW-01D	12/19/2001	46 ft	on-site	CTBERK	8260B	9.7	2700	26	3.4	u 42	< 2.5	u < 50	u < 2.5	u < 2.5	u < 5	u NS	< 50	u < 2.5	u < 2.5	u
MW-01D	12/19/2001	55 ft	on-site	CTBERK	8260B	< 0.5	u 6.2	< 0.5	u < 0.5	u < 0.5	u < 10	u < 0.5	u < 0.5	u < 0.5	u < 1	u NS	< 10	u < 0.5	u < 0.5	u
MW-01D	3/20/2002	46 Ft	on-site	CTBERK	8260B	40	3100	27	< 8.3	u < 8.3	u < 170	u < 8.3	u < 8.3	u < 17	u NS	< 170	u < 8.3	u < 8.3	u	
MW-01D	3/20/2002	55 Ft	on-site	CTBERK	8260B	< 0.5	u 3.5	< 0.5	u < 0.5	u < 0.5	u < 10	u < 0.5	u < 0.5	u < 0.5	u < 1	u NS	< 10	u < 0.5	u < 0.5	u
MW-01D	6/21/2002	46 Ft	on-site	STL Sac	8260B	< 25	u 1400	15	j < 25	u 46	< 25	u < 250	u 11	j < 25	u < 50	u < 620	u < 120	u < 25	u < 25	u
MW-01D	6/21/2002	51 Ft	on-site	STL Sac	8260B	< 50	u 3800	39	j < 50	u 120	< 50	u < 500	u < 50	u < 50	u < 100	u < 1200	u < 250	u < 50	u < 50	u
MW-01D	6/21/2002	56 Ft	on-site	STL Sac	8260B	< 5	u 400	3.4	j < 5	u 13	< 5	u < 50	u < 5	u < 5	u < 10	u < 120	u < 25	u < 5	u < 5	u
MW-01D	9/24/2002	51 Ft	on-site	STL Sac	8260B	< 50	u 2900	35	j < 50	u 120	< 50	u 500	U < 50	u < 50	u < 50	u < 2500	u < 100	u < 100	u < 50	u
MW-01D	11/14/2002	51 Ft	on-site	STL Sac	8260B	< 100	uUJ 3300	J < 100	uUJ < 100	uUJ 100	J < 100	uUJ < 1000	uUJ < 100	uUJ < 100	uUJ < 200	uUJ < 2500	uUJ < 500	uUJ < 100	uUJ < 100	uUJ
MW-01D	2/19/2003	46 ft	on-site	STL Sac	8260B	< 20	u 900	12	j < 20	u 32	< 20	u < 200	uq 5.2	j < 20	u 4.8	j Bju < 1000	u < 40	u < 40	u < 20	u
MW-01D	2/19/2003	51 ft	on-site	STL Sac	8260B	< 100	u 2400	30	j < 100	u 87	j < 100	u < 1000	uq < 100	u < 100	u < 20	u < 5000	u < 200	u < 20	u < 100	u
MW-01D	2/19/2003	56 ft	on-site	STL Sac	8260B	< 2	u 76	0.88	j < 2	u 2.7	< 2	u 20	U < 2	u < 2	u < 2	u < 100	u < 4	u < 4	u < 2	u
MW-01D	5/6/2003	46 ft	on-site	STL Sac	8260B	< 20	u 1000	14	j < 20	u 44	< 20	u < 200	uq 6.9	j < 20	u < 20	u < 1000	u < 40	u < 40	u < 20	u
MW-01D	5/6/2003	51 ft	on-site	STL Sac	8260B	< 100	u 2600	34	j < 100	u 110	< 100	u < 1000	uq < 100	u < 100	u < 5000	u < 200	u < 200	u < 100	u < 100	u
MW-01D	5/6/2003	56 ft	on-site	STL Sac	8260B	< 10	u 280	3.6	j < 10	u 12	< 10	u 100	U < 10	u < 10	u < 500	u < 20	u < 20	u < 10	u < 10	u
MW-01D	7/22/2003	51 ft	on-site	STL Sac	8260B	< 100	u 3000	51	j < 100	u 130	< 100	u 1000	U < 100	u < 100	u < 100	u < 5000	u < 200	u < 200	u < 100	u
MW-01D	10/24/2003	51 ft	on-site	STL Sac	8260B	< 100	u 2300	40	j < 100	u 90	j < 100	u < 1000	uq < 100	u < 100	u < 100	u < 5000	u < 200	u < 200	u < 100	u
MW-08B (prev. MW-01D)	3/10/2004	51 Ft	on-site	STLSEA	8260B	< 20	u 673	< 20	u < 20	u 36.9	< 20	u < 100	u < 20	u < 20	u < 200	u < 100	u < 200	u < 20	u < 20	u
MW-08B	4/20/2004	51 Ft	on-site	STL Sac	8260B	< 2.5	u 93	1.1	j < 2.5	u 1.8	j < 2.5	u 25	U 0.88	j < 2.5	u < 2.5	u < 120	u < 5	u < 5	u < 2.5	u
MW-08B Duplicate	4/20/2004	45-60	on-site	STL Sac	8260B	< 2.5	u 86	0.74	j < 2.5	u 1.9	j < 2.5	u 25	U 0.61	j < 2.5	u < 2.5	u < 120	u < 5	u < 5	u < 2.5	u
MW-11B	10/10/2003	40-50	on-site	STLSEA	8260B	4.66	7860	d 68.3	3.29	u 470	d < 1	u < 5	u < 1	u < 1	u < 2.5	u < 10	u < 5	u < 1	u < 1	u
MW-11B	11/4/2003	50 ft	on-site	STL Sac	8260B	< 200	u 3700	< 200	u < 200	u 230	< 200	u < 2000	uq < 200	u < 200	u < 200	u < 10000	u < 400	u < 400	u < 200	u
MW-11B	3/11/2004	45 ft	on-site	STLSEA	8260B	< 200	u 9950	188	j < 200	u 582	< 200	u < 1000	u < 200	u < 200	u < 500	u < 2000	u < 1000	u < 200	u < 200	u
MW-11B	4/27/2004	40-50	on-site	STL Sac	8260B	< 300	u 11000	380	u < 300	u 670	< 300	u < 3000	uq < 300	u < 300	u < 500	u < 15000	u < 600	u < 600	u < 300	u
MW-12B	10/10/2003	50-60	on-site	STLSEA	8260B	< 1	u 149	d 2.78	0.9	j 96.3	d < 1	u < 5	u < 1	u < 1	u < 2.5	u < 10	u < 5	u < 1	u < 1	u
MW-12B	3/10/2004	51 ft	on-site	STLSEA	8260B	< 1	u 161	J 196	0.864	j 83.4	0.537	j < 5	u < 1	u < 1	u < 2.5	u < 10	u < 5	u < 1	u < 1	u
MW-12B	4/27/2004	50-60	on-site	STL Sac	8260B	< 10	u 72	200	u < 10	u 110	< 10	u < 100	uq < 10	u < 10	u < 10	u < 500	u < 20	u < 20	u < 10	u
MW-13B	10/10/2003	45-55	on-site	STLSEA	8260B	0.873	j 807	d 58.5	1.28	u 49	< 1	u 6.88	U < 1	u < 1	u < 2.5	u < 10	u < 5	u < 1	u < 1	u
MW-13B	3/11/2004	50 ft	on-site	STLSEA	8260B	< 50	u 1990	896	u < 50	u 132	< 50	u < 250	u < 50	u < 50	u < 125	u < 500	u < 250	u < 50	u < 50	u
MW-13B	4/22/2004	45-55	on-site	STL Sac	8260B	< 100	u 1900	390	u < 100	u 140	< 100	u < 1000	u < 100	u < 100	u < 100	u < 5000	u < 200	u < 200	u < 100	u

OFF-SITE B-ZONE LOCATIONS

B-Zone Hydropunch Locations

B-91	10/3/2003	55 Ft	off-site	STLSEA	8260B	< 2	u 25.1	1.13	j < 2	u 1.32	j < 2	u 11.8	U < 2	u < 2	u < 5	u < 20	u < 10	u < 2	u < 2	u
B-101	12/12/2003	60 Ft	off-site	CHROMA	8260B	< 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 50	u < 0.5	u < 0.5	u < 1	u NS	< 50	u < 5	u < 0.5	u
B-102	12/11/2003	52 Ft	off-site	CHROMA	8260B	< 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 50	u < 0.5	u < 0.5	u < 1	u NS	< 50	u < 5	u < 0.5	u
B-103	12/12/2003	45 Ft	off-site	CHROMA	8260B	< 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 50	u < 0.5	u < 0.5	u < 1	u NS	< 50	u < 5	u < 0.5	u
B-104	12/12/2003	55 Ft	off-site	CHROMA	8260B	< 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 50	u < 0.5	u < 0.5	u < 1	u NS	< 50	u < 5	u < 0.5	u
B-105	12/12/2003	60 Ft	off-site	CHROMA	8260B	< 2	u < 2	u < 2	u < 2	u < 2	u < 2	u < 200	u < 2	u < 2	u < 4	u NS	< 200	u < 20	u < 2	u

B-Zone Cone Penetrometer Locations

CPT-04	10/22/2001	45 Ft	off-site	CTBERK	8260B	< 25	u 4600	< 25	u < 25	u 310	< 25	u < 500	u < 25	u < 25	u < 50	u NS	< 500	u < 25	u < 25	u
CPT-04	10/23/2001	65 Ft	off-site	CTBERK	8260B	< 1.3	u 240	1.3	u < 1.3	u 11	< 1.3	u < 25	u < 1.3	u < 1.3	u < 2.5	u NS	< 25	u < 1.3	u < 1.3	u
CPT-04 Duplicate	10/23/2001	65 Ft	off-site	CTBERK	8260B	< 1	u 230	1.2												

**Table 8-1**  
**Volatile Organic Compounds Detected in Ground Water**  
**Hookston Station Remedial Investigation**  
**Pleasant Hill, California**

Sample Location	Date	Sample Depth (ft)	Location	Analytical Laboratory	Analytical Method	CHLOROFORM (µg/L)	CHLOROMETHANE (µg/L)	DBC METHANE (µg/L)	1,1-DCA (µg/L)	1,2-DCA (µg/L)	1,2-DCPROPAN (µg/L)	ETHYLBENZENE (µg/L)	2-HEXANONE (µg/L)	DICHLMETHANE (µg/L)	4M2PENTANONE (µg/L)	MTBE (µg/L)	TOLUENE (µg/L)	1,1,1-TCA (µg/L)	1,1,2-TCA (µg/L)			
					CA MCL	-	-	-	5	0.5	5	700	-	-	-	13	150	200	5			
					RIVQCB ESL	100	2.7	100	5	0.5	5	30	-	5	120	5	40	62	5			
MW-01D Duplicate	3/13/2001	45-60	on-site	CTBERK	8021B	NS	NS	NS	NS	NS	NS	< 0.5	u	NS	NS	NS	< 0.5	u	NS	NS		
MW-01D Duplicate	3/13/2001	45-60	on-site	CTBERK	8260B	< 1	uUJ	< 1	uUJ	< 0.5	uUJ	< 0.5	uUJ	< 0.5	uUJ	NS	NS	< 0.5	u	NS	NS	
MW-01D	6/27/2001	45-60	on-site	CTBERK	8260B	< 1.3	u	< 2.5	u	< 1.3	u	< 1.3	u	< 1.3	u	< 25	u	< 1.3	u	< 1.3	u	
MW-01D Duplicate	6/27/2001	45-60	on-site	CTBERK	8260B	< 1.3	u	< 2.5	u	< 1.3	u	< 1.3	u	< 25	u	< 25	u	< 1.3	u	< 1.3	u	
MW-01D	9/19/2001	45-60	on-site	CTBERK	8260B	< 2	u	< 4	u	< 2	u	< 2	u	< 40	u	< 40	u	< 2	u	< 2	u	
MW-01D Duplicate	9/19/2001	45-60	on-site	CTBERK	8260B	< 2.5	u	< 5	u	< 2.5	u	< 2.5	u	< 50	u	< 50	u	< 2.5	u	< 2.5	u	
MW-01D	9/19/2001	46 ft	on-site	CTBERK	8260B	< 2	u	< 4	u	< 2	u	< 2	u	< 40	u	< 40	u	< 2	u	< 2	u	
MW-01D	9/19/2001	55 ft	on-site	CTBERK	8260B	< 8.3	u	< 17	u	< 8.3	u	< 8.3	u	< 170	u	< 170	u	< 8.3	u	< 8.3	u	
MW-01D	12/19/2001	46 ft	on-site	CTBERK	8260B	< 2.5	u	< 5	u	< 2.5	u	< 2.5	u	< 50	u	< 50	u	< 2.5	u	< 2.5	u	
MW-01D	12/19/2001	55 ft	on-site	CTBERK	8260B	< 0.5	u	< 1	u	< 0.5	u	< 0.5	u	< 10	u	< 10	u	< 0.5	u	< 0.5	u	
MW-01D	3/20/2002	46 Ft	on-site	CTBERK	8260B	< 8.3	u	< 17	u	< 8.3	u	< 8.3	u	< 170	u	< 170	u	< 8.3	u	< 8.3	u	
MW-01D	3/20/2002	55 Ft	on-site	CTBERK	8260B	< 0.5	u	< 1	u	< 0.5	u	< 0.5	u	< 10	u	< 10	u	< 0.5	u	< 0.5	u	
MW-01D	6/21/2002	46 Ft	on-site	STL Sac	8260B	< 25	u	< 50	u	< 25	u	< 25	u	< 120	u	< 25	u	< 25	u	< 25	u	
MW-01D	6/21/2002	51 Ft	on-site	STL Sac	8260B	< 50	u	< 100	u	< 50	u	< 50	u	< 250	u	< 50	u	< 50	u	< 50	u	
MW-01D	6/21/2002	56 Ft	on-site	STL Sac	8260B	< 5	u	< 10	u	< 5	u	< 5	u	< 5	u	< 5	u	< 5	u	< 5	u	
MW-01D	9/24/2002	51 Ft	on-site	STL Sac	8260B	< 50	u	< 50	u	< 50	u	< 50	u	< 100	u	< 50	u	< 100	u	< 50	u	
MW-01D	11/14/2002	51 Ft	on-site	STL Sac	8260B	< 100	uUJ	< 200	uUJ	< 100	uUJ	< 100	uUJ	< 500	uUJ	< 100	uUJ	< 500	uUJ	< 100	uUJ	
MW-01D	2/19/2003	46 ft	on-site	STL Sac	8260B	< 20	u	< 20	u	< 20	u	< 20	u	< 40	u	< 20	u	< 40	u	< 20	u	
MW-01D	2/19/2003	51 ft	on-site	STL Sac	8260B	< 100	u	< 100	u	< 100	u	< 100	u	< 200	u	< 100	u	< 200	u	< 100	u	
MW-01D	2/19/2003	56 ft	on-site	STL Sac	8260B	< 2	u	< 2	u	< 2	u	< 2	u	< 4	u	< 2	u	< 4	u	< 2	u	
MW-01D	5/6/2003	46 ft	on-site	STL Sac	8260B	< 20	u	< 20	u	< 20	u	< 20	u	< 40	u	< 20	u	< 40	u	< 20	u	
MW-01D	5/6/2003	51 ft	on-site	STL Sac	8260B	< 100	u	< 100	u	< 100	u	< 100	u	< 200	u	< 100	u	< 200	u	< 100	u	
MW-01D	5/6/2003	56 ft	on-site	STL Sac	8260B	< 10	u	< 10	u	< 10	u	< 10	u	< 20	u	< 10	u	< 20	u	< 10	u	
MW-01D	7/22/2003	51 ft	on-site	STL Sac	8260B	< 100	u	< 100	u	< 100	u	< 100	u	< 200	u	< 100	u	< 200	u	< 100	u	
MW-01D	10/24/2003	51 ft	on-site	STL Sac	8260B	< 100	u	< 100	u	< 100	u	< 100	u	< 200	u	< 100	u	< 200	u	< 100	u	
MW-08B (prev. MW-01D)	3/10/2004	51 Ft	on-site	STLSEA	8260B	< 20	u	< 40	u	< 20	u	< 20	u	< 100	u	< 40	u	< 20	u	< 20	u	
MW-08B	4/20/2004	51 Ft	on-site	STL Sac	8260B	< 2.5	u	< 2.5	u	< 2.5	u	< 2.5	u	< 5	u	< 2.5	u	< 5	u	< 2.5	u	
MW-08B Duplicate	4/20/2004	45-60	on-site	STL Sac	8260B	< 2.5	u	< 2.5	u	< 2.5	u	< 2.5	u	< 5	u	< 2.5	u	< 5	u	< 2.5	u	
MW-11B	10/10/2003	40-50	on-site	STLSEA	8260B	< 1	u	< 2	u	< 1	u	< 1	u	< 5	u	< 2	u	< 5	u	< 1	u	
MW-11B	11/4/2003	50 ft	on-site	STL Sac	8260B	< 200	u	< 200	u	< 200	u	< 200	u	< 400	u	< 200	u	< 400	u	< 200	u	
MW-11B	3/11/2004	45 ft	on-site	STLSEA	8260B	< 200	u	< 400	u	< 200	u	< 200	u	< 1000	u	< 400	u	< 200	u	< 200	u	
MW-11B	4/27/2004	40-50	on-site	STL Sac	8260B	< 300	u	< 300	u	< 300	u	< 300	u	< 600	u	< 300	u	< 600	u	< 300	u	
MW-12B	10/10/2003	50-60	on-site	STLSEA	8260B	< 1	u	< 2	u	< 1	u	< 1	u	< 5	u	< 2	u	< 5	u	< 1	u	
MW-12B	3/10/2004	51 ft	on-site	STLSEA	8260B	< 1	u	< 2	u	< 1	u	< 1	u	< 5	u	< 2	u	< 5	u	< 1	u	
MW-12B	4/27/2004	50-60	on-site	STL Sac	8260B	< 10	u	< 10	u	< 10	u	< 10	u	< 20	u	< 10	u	< 20	u	< 10	u	
MW-13B	10/10/2003	45-55	on-site	STLSEA	8260B	< 1	u	< 2	u	< 1	u	< 1	u	< 5	u	< 2	u	< 5	u	< 1	u	
MW-13B	3/11/2004	50 ft	on-site	STLSEA	8260B	< 50	u	< 100	u	< 50	u	< 50	u	< 250	u	< 100	u	< 250	u	< 50	u	
MW-13B	4/22/2004	45-55	on-site	STL Sac	8260B	< 100	u	< 100	u	< 100	u	< 100	u	< 200	u	< 100	u	< 200	u	< 100	u	
<b>OFF-SITE B-ZONE LOCATIONS</b>																						
<b>B-Zone Hydropunch Locations</b>																						
B-91	10/3/2003	55 Ft	off-site	STLSEA	8260B	< 2	u	3.2	j	< 2	u	< 2	u	< 2	u	< 10	u	< 4	u	< 10	u	
B-101	12/12/2003	60 Ft	off-site	CHROMA	8260B	< 1	u	< 1	u	< 0.5	u	< 0.5	u	< 0.5	u	< 50	u	< 5	u	< 50	u	
B-102	12/11/2003	52 Ft	off-site	CHROMA	8260B	< 1	u	< 1	u	< 0.5	u	< 0.5	u	< 0.5	u	< 50	u	< 5	u	< 50	u	
B-103	12/12/2003	45 Ft	off-site	CHROMA	8260B	< 1	u	< 1	u	< 0.5	u	< 0.5	u	< 0.5	u	< 50	u	< 5	u	< 50	u	
B-104	12/12/2003	55 Ft	off-site	CHROMA	8260B	< 1	u	< 1	u	< 0.5	u	< 0.5	u	< 0.5	u	< 50	u	< 5	u	< 50	u	
B-105	12/12/2003	60 Ft	off-site	CHROMA	8260B	< 4	u	< 4	u	< 2	u	< 2	u	< 200	u	< 20	u	< 200	u	< 20	u	
<b>B-Zone Cone Penetrometer Locations</b>																						
CPT-04	10/22/2001	45 Ft	off-site	CTBERK	8260B	< 25	u	< 50	u	< 25	u	< 25	u	< 25	u	< 500	u	< 500	u	< 500	u	
CPT-04	10/23/2001	65 Ft	off-site	CTBERK	8260B	< 1.3	u	< 2.5	u	< 1.3	u	< 1.3	u	< 1.3	u	< 25	u	< 25	u	< 25	u	
CPT-04 Duplicate	10/23/2001	65 Ft	off-site	CTBERK	8260B	< 1	u	< 2	u	< 1	u	< 1	u	< 1	u	< 20	u	< 20	u	< 20	u	
CPT-05	10/24/2001	37 Ft	off-site	CTBERK	8260B	< 0.5	uUJ	< 1	uUJ	< 0.5	uUJ	< 0.5	uUJ	< 0.5	uUJ	< 10	uUJ	< 10	uUJ	< 10	uUJ	
CPT-05	10/24/2001	44 Ft	off-site	CTBERK	8260B	< 0.5	uUJ	< 1	uUJ	< 0.5	uUJ	< 0.5	uUJ	< 0.5	uUJ	< 10	uUJ	< 10	uUJ	< 10	uUJ	
CPT-05	10/24/2001	63 Ft	off-site	CTBERK	8260B	< 0.5	uUJ	< 1	uUJ	< 0.5	uUJ	< 0.5	uUJ	< 0.5	uUJ	< 10	uUJ	< 10	uUJ	< 10	uUJ	
CPT-06	10/24/2001	53 Ft	off-site	CTBERK	8260B	< 0.5	uUJ	< 1	uUJ	< 0.5	uUJ	2.8	J	< 0.5	uUJ	< 0.5	uUJ	< 10	uUJ	< 10	uUJ	
CPT-06	10/24/2001	65 Ft	off-site	CTBERK	8260B	< 0.5	uUJ	< 1	uUJ	< 0.5	uUJ	1.8	J	< 0.5	uUJ	< 0.5	uUJ	< 10	uUJ	< 10	uUJ	
CPT-07	10/25/2001	53 Ft	off-site	CTBERK	8260B	< 2.5	uUJ	< 5	uUJ	< 2.5	uUJ	3.9	J	< 2.5	uUJ	< 2.5	uUJ	< 50	uUJ	< 50	uUJ	
CPT-07	10/25/2001	61 Ft	off-site	CTBERK	826																	

Table 8-1  
 Volatile Organic Compounds Detected in Ground Water  
 Hookston Station Remedial Investigation  
 Pleasant Hill, California

Sample Location	Date	Sample Depth (ft)	Location	Analytical Laboratory	Analytical Method	1,2,4-TMTHLB (µg/L)	1,2-DCE (µg/L)	1,3,5-TMTHLB (µg/L)	ISOPROPYLETHER (µg/L)	ISOP(CUMENE) (µg/L)	TOTAL XYLENES (µg/L)	M,P-XYLENE (µg/L)	O-XYLENE (µg/L)	N-BUTYLBENZENE (µg/L)	P-ISOPRLBENZ (µg/L)	PROPYLBENZENE (µg/L)	SEC-BTLBNZN (µg/L)	T-BEE (µg/L)	TERT-BTLBNZN (µg/L)							
					CA MCL	-	-	-	-	-	1,750	-	-	-	-	-	-	-	-							
					RWQCB ESL	-	-	-	-	-	13	-	-	-	-	-	-	-	-							
MW-01D Duplicate	3/13/2001	45-60	on-site	CTBERK	8021B	NS	NS	NS	NS	NS	NS	< 0.5	u	< 0.5	u	NS	NS	NS	NS	NS	NS	NS				
MW-01D Duplicate	3/13/2001	45-60	on-site	CTBERK	8260B	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS				
MW-01D	6/27/2001	45-60	on-site	CTBERK	8260B	< 1.3	u	NS	< 1.3	u	NS	< 1.3	u	< 1.3	u	< 1.3	u	< 1.3	u	< 1.3	u	NS	< 1.3	u		
MW-01D Duplicate	6/27/2001	45-60	on-site	CTBERK	8260B	< 1.3	u	NS	< 1.3	u	NS	< 1.3	u	< 1.3	u	< 1.3	u	< 1.3	u	< 1.3	u	NS	< 1.3	u		
MW-01D	9/19/2001	45-60	on-site	CTBERK	8260B	< 2	u	NS	< 2	u	NS	< 2	u	< 2	u	< 2	u	< 2	u	< 2	u	NS	< 2	u		
MW-01D Duplicate	9/19/2001	45-60	on-site	CTBERK	8260B	< 2.5	u	NS	< 2.5	u	NS	< 2.5	u	< 2.5	u	< 2.5	u	< 2.5	u	< 2.5	u	NS	< 2.5	u		
MW-01D	9/19/2001	46 ft	on-site	CTBERK	8260B	< 2	u	NS	< 2	u	NS	< 2	u	< 2	u	< 2	u	< 2	u	< 2	u	NS	< 2	u		
MW-01D	9/19/2001	55 ft	on-site	CTBERK	8260B	< 8.3	u	NS	< 8.3	u	NS	< 8.3	u	< 8.3	u	< 8.3	u	< 8.3	u	< 8.3	u	NS	< 8.3	u		
MW-01D	12/19/2001	46 ft	on-site	CTBERK	8260B	< 2.5	u	NS	< 2.5	u	NS	< 2.5	u	< 2.5	u	< 2.5	u	< 2.5	u	< 2.5	u	NS	< 2.5	u		
MW-01D	12/19/2001	55 ft	on-site	CTBERK	8260B	< 0.5	u	NS	< 0.5	u	NS	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	NS	< 0.5	u		
MW-01D	3/20/2002	46 Ft	on-site	CTBERK	8260B	< 8.3	u	NS	< 8.3	u	NS	< 8.3	u	< 8.3	u	< 8.3	u	< 8.3	u	< 8.3	u	NS	< 8.3	u		
MW-01D	3/20/2002	55 Ft	on-site	CTBERK	8260B	< 0.5	u	NS	< 0.5	u	NS	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	NS	< 0.5	u		
MW-01D	6/21/2002	46 Ft	on-site	STL Sac	8260B	NS	NS	NS	< 50	u	NS	< 25	u	NS	NS	NS	NS	NS	NS	NS	NS	< 50	u	NS		
MW-01D	6/21/2002	51 Ft	on-site	STL Sac	8260B	NS	NS	NS	< 100	u	NS	< 50	u	NS	NS	NS	NS	NS	NS	NS	NS	< 100	u	NS		
MW-01D	6/21/2002	56 Ft	on-site	STL Sac	8260B	NS	NS	NS	< 10	u	NS	< 5	u	NS	NS	NS	NS	NS	NS	NS	NS	< 10	u	NS		
MW-01D	9/24/2002	51 Ft	on-site	STL Sac	8260B	NS	NS	NS	< 100	u	NS	< 50	u	NS	NS	NS	NS	NS	NS	NS	NS	< 100	u	NS		
MW-01D	11/14/2002	51 Ft	on-site	STL Sac	8260B	NS	NS	NS	< 200	uUJ	NS	< 100	uUJ	NS	NS	NS	NS	NS	NS	NS	NS	< 200	uUJ	NS		
MW-01D	2/19/2003	46 ft	on-site	STL Sac	8260B	NS	NS	NS	< 40	u	NS	< 20	u	NS	NS	NS	NS	NS	NS	NS	NS	< 40	u	NS		
MW-01D	2/19/2003	51 ft	on-site	STL Sac	8260B	NS	NS	NS	< 200	u	NS	< 100	u	NS	NS	NS	NS	NS	NS	NS	NS	< 200	u	NS		
MW-01D	2/19/2003	56 ft	on-site	STL Sac	8260B	NS	NS	NS	< 4	u	NS	< 2	u	NS	NS	NS	NS	NS	NS	NS	NS	< 4	u	NS		
MW-01D	5/6/2003	46 ft	on-site	STL Sac	8260B	NS	NS	NS	< 40	u	NS	< 20	u	NS	NS	NS	NS	NS	NS	NS	NS	< 40	u	NS		
MW-01D	5/6/2003	51 ft	on-site	STL Sac	8260B	NS	NS	NS	< 200	u	NS	< 100	u	NS	NS	NS	NS	NS	NS	NS	NS	< 200	u	NS		
MW-01D	5/6/2003	56 ft	on-site	STL Sac	8260B	NS	NS	NS	< 20	u	NS	< 10	u	NS	NS	NS	NS	NS	NS	NS	NS	< 20	u	NS		
MW-01D	7/22/2003	51 ft	on-site	STL Sac	8260B	NS	NS	NS	< 200	u	NS	< 100	u	NS	NS	NS	NS	NS	NS	NS	NS	< 200	u	NS		
MW-01D	10/24/2003	51 ft	on-site	STL Sac	8260B	NS	NS	NS	< 200	u	NS	< 100	u	NS	NS	NS	NS	NS	NS	NS	NS	< 200	u	NS		
MW-08B (prev. MW-01D)	3/10/2004	51 Ft	on-site	STLSEA	8260B	NS	NS	NS	< 20	u	NS	< 40	u	< 20	u	NS	NS	NS	NS	NS	NS	< 20	u	NS		
MW-08B	4/20/2004	51 Ft	on-site	STL Sac	8260B	NS	NS	NS	< 5	u	NS	< 2.5	u	NS	NS	NS	NS	NS	NS	NS	NS	< 5	u	NS		
MW-08B Duplicate	4/20/2004	45-60	on-site	STL Sac	8260B	NS	NS	NS	< 5	u	NS	< 2.5	u	NS	NS	NS	NS	NS	NS	NS	NS	< 5	u	NS		
MW-11B	10/10/2003	40-50	on-site	STLSEA	8260B	NS	NS	NS	< 1	u	NS	< 2	u	< 1	u	NS	NS	NS	NS	NS	NS	< 1	u	NS		
MW-11B	11/4/2003	50 ft	on-site	STL Sac	8260B	NS	NS	NS	< 400	u	NS	< 200	u	NS	NS	NS	NS	NS	NS	NS	NS	< 400	u	NS		
MW-11B	3/11/2004	45 ft	on-site	STLSEA	8260B	NS	NS	NS	< 200	u	NS	< 400	u	< 200	u	NS	NS	NS	NS	NS	NS	< 200	u	NS		
MW-11B	4/27/2004	40-50	on-site	STL Sac	8260B	NS	NS	NS	< 600	u	NS	< 300	u	NS	NS	NS	NS	NS	NS	NS	NS	< 600	u	NS		
MW-12B	10/10/2003	50-60	on-site	STLSEA	8260B	NS	NS	NS	< 1	u	NS	< 2	u	< 1	u	NS	NS	NS	NS	NS	NS	< 1	u	NS		
MW-12B	3/10/2004	51 ft	on-site	STLSEA	8260B	NS	NS	NS	< 1	u	NS	< 2	u	< 1	u	NS	NS	NS	NS	NS	NS	< 1	u	NS		
MW-12B	4/27/2004	50-60	on-site	STL Sac	8260B	NS	NS	NS	< 20	u	NS	< 10	u	NS	NS	NS	NS	NS	NS	NS	NS	< 20	u	NS		
MW-13B	10/10/2003	45-55	on-site	STLSEA	8260B	NS	NS	NS	< 1	u	NS	< 2	u	< 1	u	NS	NS	NS	NS	NS	NS	< 1	u	NS		
MW-13B	3/11/2004	50 ft	on-site	STLSEA	8260B	NS	NS	NS	< 50	u	NS	< 100	u	< 50	u	NS	NS	NS	NS	NS	NS	< 50	u	NS		
MW-13B	4/22/2004	45-55	on-site	STL Sac	8260B	NS	NS	NS	< 200	u	NS	< 100	u	NS	NS	NS	NS	NS	NS	NS	NS	< 200	u	NS		
<b>OFF-SITE B-ZONE LOCATIONS</b>																										
<b>B-Zone Hydropunch Locations</b>																										
B-91	10/3/2003	55 Ft	off-site	STLSEA	8260B	NS	NS	NS	< 2	u	NS	< 4	u	< 2	u	NS	NS	NS	NS	NS	NS	< 2	u	NS		
B-101	12/12/2003	60 Ft	off-site	CHROMA	8260B	< 0.5	u	NS	< 0.5	u	NS	< 1	u	NS	NS	< 1	u	< 1	u	< 1	u	< 1	u	NS	< 1	u
B-102	12/11/2003	52 Ft	off-site	CHROMA	8260B	< 0.5	u	NS	< 0.5	u	NS	< 1	u	NS	NS	< 1	u	< 1	u	< 1	u	< 1	u	NS	< 1	u
B-103	12/12/2003	45 Ft	off-site	CHROMA	8260B	< 0.5	u	NS	< 0.5	u	NS	< 1	u	NS	NS	< 1	u	< 1	u	< 1	u	< 1	u	NS	< 1	u
B-104	12/12/2003	55 Ft	off-site	CHROMA	8260B	< 0.5	u	NS	< 0.5	u	NS	< 1	u	NS	NS	< 1	u	< 1	u	< 1	u	< 1	u	NS	< 1	u
B-105	12/12/2003	60 Ft	off-site	CHROMA	8260B	< 2	u	NS	< 2	u	NS	< 4	u	NS	NS	< 4	u	< 4	u	< 4	u	< 4	u	NS	< 4	u
<b>B-Zone Cone Penetrometer Locations</b>																										
CPT-04	10/22/2001	45 Ft	off-site	CTBERK	8260B	< 25	u	NS	< 25	u	NS	< 25	u	< 25	u	< 25	u	< 25	u	< 25	u	< 25	u	NS	< 25	u
CPT-04	10/23/2001	65 Ft	off-site	CTBERK	8260B	< 1.3	u	NS	< 1.3	u	NS	< 1.3	u	< 1.3	u	< 1.3	u	< 1.3	u	< 1.3	u	< 1.3	u	NS	< 1.3	u
CPT-04 Duplicate	10/23/2001	65 Ft	off-site	CTBERK	8260B	< 1	u	NS	< 1	u	NS	< 1	u	< 1	u	< 1	u	< 1	u	< 1	u	< 1	u	NS	< 1	u
CPT-05	10/24/2001	37 Ft	off-site	CTBERK	8260B	< 0.5	uUJ	NS	< 0.5	uUJ	NS	< 0.5	uUJ	< 0.5	uUJ	< 0.5	uUJ	< 0.5	uUJ	< 0.5	uUJ	< 0.5	uUJ	NS	< 0.5	uUJ
CPT-05	10/24/2001	44 Ft	off-site	CTBERK	8260B	< 0.5	uUJ	NS	< 0.5	uUJ	NS	< 0.5	uUJ	< 0.5	uUJ	< 0.5	uUJ	< 0.5	uUJ	< 0.5	uUJ	< 0.5	uUJ	NS	< 0.5	uUJ
CPT-05	10/24/2001	63 Ft	off-site	CTBERK	8260B	< 0.5	uUJ	NS	< 0.5	uUJ	NS	< 0.5	uUJ	< 0.5	uUJ	< 0.5	uUJ	< 0.5	uUJ	< 0.5	uUJ	< 0.5	uUJ	NS	< 0.5	uUJ
CPT-06	10/24/2001	53 Ft	off-site	CTBERK	8260B	< 0.5	uUJ	NS	< 0.5	uUJ	NS	< 0.5	uUJ	< 0.5												

Table 8-1  
 Volatile Organic Compounds Detected in Ground Water  
 Hookston Station Remedial Investigation  
 Pleasant Hill, California

Sample Location	Date	Sample Depth (ft)	Location	Analytical Laboratory	Analytical Method	PCE (µg/L)	TCE (µg/L)	C-1,2-DCE (µg/L)	T-1,2-DCE (µg/L)	1,1-DCE (µg/L)	VINYL CHLORIDE (µg/L)	ACETONE (µg/L)	BENZENE (µg/L)	BDCMETANE (µg/L)	BROMOMETHANE (µg/L)	2-MTHL-2-PRP (µg/L)	2-BUTANONE (µg/L)	CARBON DISUL (µg/L)	CHLOROBENZENE (µg/L)	
					CA MCL	5	5	6	10	6	0.5	-	1	-	-	-	-	-	70	
					RWQCB ESL	5	5	6	10	6	0.5	700	1	100	9.8	-	4,200	-	25	
CPT-08	10/30/2001	66 Ft	off-site	CTBERK	8260B	< 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 10	u < 0.5	u < 0.5	u < 1	u NS	< 10	u < 0.5	u < 0.5	u
CPT-08	10/30/2001	77 Ft	off-site	CTBERK	8260B	< 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 10	u < 0.5	u < 0.5	u < 1	u NS	< 10	u < 0.5	u < 0.5	u
CPT-09	11/2/2001	34 Ft	off-site	CTBERK	8260B	< 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 10	u < 0.5	u < 0.5	u < 1	u NS	< 10	u < 0.5	u < 0.5	u
CPT-09	11/2/2001	41 Ft	off-site	CTBERK	8260B	< 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 10	u < 0.5	u < 0.5	u < 1	u NS	< 10	u < 0.5	u < 0.5	u
CPT-09	11/2/2001	61 Ft	off-site	CTBERK	8260B	< 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 10	u < 0.5	u < 0.5	u < 1	u NS	< 10	u < 0.5	u < 0.5	u
CPT-10	11/2/2001	39 Ft	off-site	CTBERK	8260B	< 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 10	u < 0.5	u < 0.5	u < 1	u NS	< 10	u < 0.5	u < 0.5	u
CPT-10 Duplicate	11/2/2001	39 Ft	off-site	CTBERK	8260B	< 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 10	u < 0.5	u < 0.5	u < 1	u NS	< 10	u < 0.5	u < 0.5	u
CPT-10	11/2/2001	59 Ft	off-site	CTBERK	8260B	< 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 10	u < 0.5	u < 0.5	u < 1	u NS	< 10	u < 0.5	u < 0.5	u
CPT-11	11/7/2001	43 Ft	off-site	CTBERK	8260B	< 5	u 1100	120	6.2	18	< 5	u < 100	u < 5	u < 5	u < 10	u NS	< 100	u < 5	u < 5	u
CPT-11	11/7/2001	77 Ft	off-site	CTBERK	8260B	< 0.5	u 0.7	< 0.5	u < 0.5	u < 0.5	u < 0.5	u < 10	u < 0.5	u < 0.5	u < 1	u NS	< 10	u < 0.5	u < 0.5	u
CPT-12	10/29/2001	48 Ft	off-site	CTBERK	8260B	< 2	u 460	2.9	< 2	21	< 2	u < 40	u < 2	u < 2	u < 4	u NS	< 40	u < 2	u < 2	u
CPT-12	10/29/2001	62 Ft	off-site	CTBERK	8260B	< 0.5	u 110	< 0.5	u < 0.5	21	< 0.5	u < 10	u < 0.5	u < 0.5	u < 1	u NS	< 10	u < 0.5	u < 0.5	u
CPT-12	10/29/2001	77 Ft	off-site	CTBERK	8260B	< 1.7	u 390	< 1.7	u < 1.7	45	< 1.7	u < 33	u < 1.7	u < 1.7	u < 3.3	u NS	< 33	u < 1.7	u < 1.7	u
CPT-13	10/26/2001	52 Ft	off-site	CTBERK	8260B	< 2	u 500	< 2	u < 2	41	< 2	u < 40	u < 2	u < 2	u < 4	u NS	< 40	u < 2	u < 2	u
CPT-13	10/26/2001	63 Ft	off-site	CTBERK	8260B	< 3.6	u 640	4.1	< 3.6	50	< 3.6	u < 71	u < 3.6	u < 3.6	u < 7.1	u NS	< 71	u < 3.6	u < 3.6	u
CPT-14	10/30/2001	44 Ft	off-site	CTBERK	8260B	< 4.2	u 970	19	< 4.2	24	< 4.2	u < 83	u < 4.2	u < 4.2	u < 8.3	u NS	< 83	u < 4.2	u < 4.2	u
CPT-14	10/30/2001	54 Ft	off-site	CTBERK	8260B	< 2	u 600	25	< 2	13	< 2	u < 40	u < 2	u < 2	u < 4	u NS	< 40	u < 2	u < 2	u
CPT-14 Duplicate	10/30/2001	54 Ft	off-site	CTBERK	8260B	< 2	u 600	25	< 2	11	< 2	u < 40	u < 2	u < 2	u < 4	u NS	< 40	u < 2	u < 2	u
CPT-15	10/31/2001	56 Ft	off-site	CTBERK	8260B	< 5	u 1100	32	< 5	14	< 5	u < 100	u < 5	u < 5	u < 10	u NS	< 100	u < 5	u < 5	u
CPT-16	11/1/2001	52 Ft	off-site	CTBERK	8260B	< 1	u 260	< 1	u < 1	19	< 1	u < 20	u < 1	u < 1	u < 2	u NS	< 20	u < 1	u < 1	u
CPT-17	11/1/2001	47 Ft	off-site	CTBERK	8260B	< 2.5	u 650	3.0	< 2.5	33	< 2.5	u < 50	u < 2.5	u < 2.5	u < 5	u NS	< 50	u < 2.5	u < 2.5	u
CPT-17	11/1/2001	57 Ft	off-site	CTBERK	8260B	< 0.5	u 320	2.4	< 0.5	31	< 0.5	u < 10	u < 0.5	u < 0.5	u < 1	u NS	< 10	u < 1.7	u < 0.5	u
CPT-18	3/29/2002	43 Ft	off-site	CTBERK	8260B	< 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 10	u < 0.5	u < 0.5	u < 1	u NS	< 10	u < 0.5	u < 0.5	u
CPT-18	3/29/2002	59 Ft	off-site	CTBERK	8260B	< 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 10	u < 0.5	u < 0.5	u < 1	u NS	< 10	u < 0.5	u < 0.5	u
CPT-18	3/29/2002	72 Ft	off-site	CTBERK	8260B	< 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 10	u < 0.5	u < 0.5	u < 1	u NS	< 10	u < 0.5	u < 0.5	u
CPT-19	3/29/2002	36 Ft	off-site	CTBERK	8260B	< 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 10	u < 0.5	u < 0.5	u < 1	u NS	< 10	u < 0.5	u < 0.5	u
CPT-19	3/29/2002	53 Ft	off-site	CTBERK	8260B	< 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 10	u < 0.5	u < 0.5	u < 1	u NS	< 10	u < 0.5	u < 0.5	u
CPT-19 Duplicate	3/29/2002	53 Ft	off-site	CTBERK	8260B	< 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 10	u < 0.5	u < 0.5	u < 1	u NS	< 10	u < 0.5	u < 0.5	u
CPT-20	3/28/2002	44 Ft	off-site	CTBERK	8260B	< 0.5	u 1.8	< 0.5	u < 0.5	u < 0.5	u < 0.5	u < 10	u < 0.5	u < 0.5	u < 1	u NS	< 10	u < 0.5	u < 0.5	u
CPT-20	3/28/2002	67 Ft	off-site	CTBERK	8260B	< 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 10	u < 0.5	u < 0.5	u < 1	u NS	< 10	u < 0.5	u < 0.5	u
CPT-21	9/25/2002	50 Ft	off-site	STL Sac	8260B	< 1	u < 1	u < 1	u < 1	u < 1	u < 1	u 10	U 0.28	j < 1	u < 1	u < 50	u < 2	u < 2	u < 1	u
CPT-22	9/18/2002	64 Ft	off-site	STL Sac	8260B	< 1	u < 1	u < 1	u < 1	u < 1	u < 1	u 10	U 0.38	j < 1	u < 1	u < 50	u < 2	u < 2	u < 1	u
CPT-23	9/18/2002	30 Ft	off-site	STL Sac	8260B	330	J 24	3.4	j < 5	u < 5	u < 5	u 50	U < 5	u < 5	u < 5	u < 250	u < 10	u < 10	u < 5	u
CPT-23	9/18/2002	50 Ft	off-site	STL Sac	8260B	< 5	u 260	J 1.5	j < 5	u < 5	u < 5	u < 50	u < 5	u 2.7	j 5	U < 250	u < 10	u < 10	u < 5	u
CPT-23 Duplicate	9/18/2002	50 Ft	off-site	STL Sac	8260B	< 2	u 220	1.0	j 0.27	j 44	J < 2	u 50	U < 2	u < 2	u 2	U < 100	u < 4	u < 4	u < 2	u
CPT-24	9/18/2002	55 Ft	off-site	STL Sac	8260B	87	11	< 2	u < 2	u 1.3	j < 2	u 20	U 0.33	j < 2	u < 2	u < 100	u < 4	u < 4	u < 2	u
CPT-25	9/25/2002	52 Ft	off-site	STL Sac	8260B	460	J 60	1.1	j < 5	u < 5	u < 5	u 50	U 0.65	j < 5	u < 5	u < 250	u < 10	u < 10	u < 5	u
CPT-26	9/25/2002	49 Ft	off-site	STL Sac	8260B	< 1	u 46	0.46	j < 1	u 43	< 1	u < 10	u 0.21	j < 1	u < 1	u < 50	u < 2	u < 2	u < 1	u
CPT-27	9/26/2002	49 Ft	off-site	STL Sac	8260B	< 1	u < 1	u < 1	u < 1	u < 1	u < 1	u < 10	u < 1	u < 1	u < 1	u < 50	u < 2	u < 2	u < 1	u
CPT-28	9/27/2002	56 Ft	off-site	STL Sac	8260B	< 1	u < 1	u < 1	u < 1	u < 1	u < 1	u < 10	u 0.43	jU < 1	u < 1	u < 50	u < 2	u < 2	u < 1	u
CPT-29	9/27/2002	65 Ft	off-site	STL Sac	8260B	< 1	u < 1	u < 1	u < 1	u < 1	u < 1	u 6.5	j bU 1.0	< 1	u 0.40	j bU < 50	u < 2	u < 2	u < 1	u
CPT-31	9/26/2002	48 Ft	off-site	STL Sac	8260B	< 1	u < 1	u < 1	u < 1	u < 1	u < 1	u 10	U 0.25	j < 1	u < 1	u < 50	u < 2	u < 2	u < 1	u
CPT-32	9/26/2002	49 Ft	off-site	STL Sac	8260B	< 1	u < 1	u < 1	u < 1	u < 1	u < 1	u 10	U < 1	u < 1	u < 1	u < 50	u < 2	u < 2	u < 1	u
CPT-32 Duplicate	9/26/2002	49 Ft	off-site	STL Sac	8260B	< 1	u < 1	u < 1	u < 1	u < 1	u < 1	u 10	U < 1	u < 1	u < 1	u < 50	u < 2	u < 2	u < 1	u
<b>B-Zone Monitoring Wells</b>																				
MW-02D	8/25/1993	50.5-60.5	off-site	CTL	8010	< 1	u < 1	u < 1	u < 1	u < 1	u < 2	u NS	NS	< 1	u < 2	u NS	NS	NS	< 1	u
MW-02D	8/25/1993	50.5-60.5	off-site	CTL	8020	NS	NS	NS	NS	NS	NS	NS	< 0.5	u NS	NS	NS	NS	NS	NS	NS
MW-02D	11/17/1995	50.5-60.5	off-site	MCA	8010	< 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 2	u NS	NS	< 0.5	u < 2	u NS	NS	NS	< 0.5	u
MW-02D	6/28/2000	50.5-60.5	off-site	CTBERK	8021B	NS	NS	NS	NS	NS	NS	NS	< 0.5	u NS	NS	NS	NS	NS	NS	NS
MW-02D	6/28/2000	50.5-60.5	off-site	CTBERK	8260B	< 0.5	u < 0.5													



Table 8-1  
Volatile Organic Compounds Detected in Ground Water  
Hookston Station Remedial Investigation  
Pleasant Hill, California

Sample Location	Date	Sample Depth (ft)	Location	Analytical Laboratory	Analytical Method	1,2,4-TMTHLB (µg/L)	1,2-DCE (µg/L)	1,3,5-TMTHLB (µg/L)	ISOPROPYLETHER (µg/L)	ISOP(CUMENE) (µg/L)	TOTAL XYLENES (µg/L)	M,P-XYLENE (µg/L)	O-XYLENE (µg/L)	N-BUTYLBENZENE (µg/L)	P-ISOPRLBENZ (µg/L)	PROPYLBENZENE (µg/L)	SEC-BTLBNZN (µg/L)	T-BEE (µg/L)	TERT-BTLBNZN (µg/L)				
					CA MCL	-	-	-	-	-	1,750	-	-	-	-	-	-	-	-				
					RWQCB ESL	-	-	-	-	-	13	-	-	-	-	-	-	-	-				
CPT-08	10/30/2001	66 Ft	off-site	CTBERK	8260B	< 0.5	u	NS	< 0.5	u	NS	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	NS	< 0.5	u	
CPT-08	10/30/2001	77 Ft	off-site	CTBERK	8260B	< 0.5	u	NS	< 0.5	u	NS	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	NS	< 0.5	u	
CPT-09	11/2/2001	34 Ft	off-site	CTBERK	8260B	< 0.5	u	NS	< 0.5	u	NS	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	NS	< 0.5	u	
CPT-09	11/2/2001	41 Ft	off-site	CTBERK	8260B	< 0.5	u	NS	< 0.5	u	NS	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	NS	< 0.5	u	
CPT-09	11/2/2001	61 Ft	off-site	CTBERK	8260B	< 0.5	u	NS	< 0.5	u	NS	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	NS	< 0.5	u	
CPT-10	11/2/2001	39 Ft	off-site	CTBERK	8260B	< 0.5	u	NS	< 0.5	u	NS	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	NS	< 0.5	u	
CPT-10 Duplicate	11/2/2001	39 Ft	off-site	CTBERK	8260B	< 0.5	u	NS	< 0.5	u	NS	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	NS	< 0.5	u	
CPT-10	11/2/2001	59 Ft	off-site	CTBERK	8260B	< 0.5	u	NS	< 0.5	u	NS	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	NS	< 0.5	u	
CPT-11	11/7/2001	43 Ft	off-site	CTBERK	8260B	< 5	u	NS	< 5	u	NS	< 5	u	< 5	u	< 5	u	< 5	u	NS	< 5	u	
CPT-11	11/7/2001	77 Ft	off-site	CTBERK	8260B	< 0.5	u	NS	< 0.5	u	NS	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	NS	< 0.5	u	
CPT-12	10/29/2001	48 Ft	off-site	CTBERK	8260B	< 2	u	NS	< 2	u	NS	< 2	u	< 2	u	< 2	u	< 2	u	NS	< 2	u	
CPT-12	10/29/2001	62 Ft	off-site	CTBERK	8260B	< 0.5	u	NS	< 0.5	u	NS	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	NS	< 0.5	u	
CPT-12	10/29/2001	77 Ft	off-site	CTBERK	8260B	< 1.7	u	NS	< 1.7	u	NS	< 1.7	u	< 1.7	u	< 1.7	u	< 1.7	u	NS	< 1.7	u	
CPT-13	10/26/2001	52 Ft	off-site	CTBERK	8260B	< 2	u	NS	< 2	u	NS	< 2	u	< 2	u	< 2	u	< 2	u	NS	< 2	u	
CPT-13	10/26/2001	63 Ft	off-site	CTBERK	8260B	< 3.6	u	NS	< 3.6	u	NS	< 3.6	u	< 3.6	u	< 3.6	u	< 3.6	u	NS	< 3.6	u	
CPT-14	10/30/2001	44 Ft	off-site	CTBERK	8260B	< 4.2	u	NS	< 4.2	u	NS	< 4.2	u	< 4.2	u	< 4.2	u	< 4.2	u	NS	< 4.2	u	
CPT-14	10/30/2001	54 Ft	off-site	CTBERK	8260B	< 2	u	NS	< 2	u	NS	< 2	u	< 2	u	< 2	u	< 2	u	NS	< 2	u	
CPT-14 Duplicate	10/30/2001	54 Ft	off-site	CTBERK	8260B	< 2	u	NS	< 2	u	NS	< 2	u	< 2	u	< 2	u	< 2	u	NS	< 2	u	
CPT-15	10/31/2001	56 Ft	off-site	CTBERK	8260B	< 5	u	NS	< 5	u	NS	< 5	u	< 5	u	< 5	u	< 5	u	NS	< 5	u	
CPT-16	11/1/2001	52 Ft	off-site	CTBERK	8260B	< 1	u	NS	< 1	u	NS	< 1	u	< 1	u	< 1	u	< 1	u	NS	< 1	u	
CPT-17	11/1/2001	47 Ft	off-site	CTBERK	8260B	< 2.5	u	NS	< 2.5	u	NS	< 2.5	u	< 2.5	u	< 2.5	u	< 2.5	u	NS	< 2.5	u	
CPT-17	11/1/2001	57 Ft	off-site	CTBERK	8260B	< 0.5	u	NS	< 0.5	u	NS	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	NS	< 0.5	u	
CPT-18	3/29/2002	43 Ft	off-site	CTBERK	8260B	< 0.5	u	NS	< 0.5	u	NS	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	NS	< 0.5	u	
CPT-18	3/29/2002	59 Ft	off-site	CTBERK	8260B	< 0.5	u	NS	< 0.5	u	NS	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	NS	< 0.5	u	
CPT-18	3/29/2002	72 Ft	off-site	CTBERK	8260B	< 0.5	u	NS	< 0.5	u	NS	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	NS	< 0.5	u	
CPT-19	3/29/2002	36 Ft	off-site	CTBERK	8260B	< 0.5	u	NS	< 0.5	u	NS	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	NS	< 0.5	u	
CPT-19	3/29/2002	53 Ft	off-site	CTBERK	8260B	< 0.5	u	NS	< 0.5	u	NS	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	NS	< 0.5	u	
CPT-19 Duplicate	3/29/2002	53 Ft	off-site	CTBERK	8260B	< 0.5	u	NS	< 0.5	u	NS	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	NS	< 0.5	u	
CPT-20	3/28/2002	44 Ft	off-site	CTBERK	8260B	< 0.5	u	NS	< 0.5	u	NS	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	NS	< 0.5	u	
CPT-20	3/28/2002	67 Ft	off-site	CTBERK	8260B	< 0.5	u	NS	< 0.5	u	NS	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	NS	< 0.5	u	
CPT-21	9/25/2002	50 Ft	off-site	STL Sac	8260B	NS	NS	NS	< 2	u	NS	0.16	j	NS	NS	NS	NS	NS	NS	< 2	u	NS	
CPT-22	9/18/2002	64 Ft	off-site	STL Sac	8260B	NS	NS	NS	< 2	u	NS	0.23	j	NS	NS	NS	NS	NS	NS	< 2	u	NS	
CPT-23	9/18/2002	30 Ft	off-site	STL Sac	8260B	NS	NS	NS	< 10	u	NS	< 5	u	NS	NS	NS	NS	NS	NS	< 10	u	NS	
CPT-23	9/18/2002	50 Ft	off-site	STL Sac	8260B	NS	NS	NS	< 10	u	NS	< 5	u	NS	NS	NS	NS	NS	NS	< 10	u	NS	
CPT-23 Duplicate	9/18/2002	50 Ft	off-site	STL Sac	8260B	NS	NS	NS	< 4	u	NS	< 2	u	NS	NS	NS	NS	NS	NS	< 4	u	NS	
CPT-24	9/18/2002	55 Ft	off-site	STL Sac	8260B	NS	NS	NS	< 4	u	NS	< 2	u	NS	NS	NS	NS	NS	NS	< 4	u	NS	
CPT-25	9/25/2002	52 Ft	off-site	STL Sac	8260B	NS	NS	NS	< 10	u	NS	< 5	u	NS	NS	NS	NS	NS	NS	< 10	u	NS	
CPT-26	9/25/2002	49 Ft	off-site	STL Sac	8260B	NS	NS	NS	< 2	u	NS	< 1	u	NS	NS	NS	NS	NS	NS	< 2	u	NS	
CPT-27	9/26/2002	49 Ft	off-site	STL Sac	8260B	NS	NS	NS	< 2	u	NS	< 1	u	NS	NS	NS	NS	NS	NS	< 2	u	NS	
CPT-28	9/27/2002	56 Ft	off-site	STL Sac	8260B	NS	NS	NS	< 2	u	NS	0.11	jU	NS	NS	NS	NS	NS	NS	< 2	u	NS	
CPT-29	9/27/2002	65 Ft	off-site	STL Sac	8260B	NS	NS	NS	< 2	u	NS	0.16	jbU	NS	NS	NS	NS	NS	NS	< 2	u	NS	
CPT-31	9/26/2002	48 Ft	off-site	STL Sac	8260B	NS	NS	NS	< 2	u	NS	< 1	u	NS	NS	NS	NS	NS	NS	< 2	u	NS	
CPT-32	9/26/2002	49 Ft	off-site	STL Sac	8260B	NS	NS	NS	< 2	u	NS	< 1	u	NS	NS	NS	NS	NS	NS	< 2	u	NS	
CPT-32 Duplicate	9/26/2002	49 Ft	off-site	STL Sac	8260B	NS	NS	NS	< 2	u	NS	< 1	u	NS	NS	NS	NS	NS	NS	< 2	u	NS	
<b>B-Zone Monitoring Wells</b>																							
MW-02D	8/25/1993	50.5-60.5	off-site	CTL	8010	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-02D	8/25/1993	50.5-60.5	off-site	CTL	8020	NS	NS	NS	NS	NS	2.1	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-02D	11/17/1995	50.5-60.5	off-site	MCA	8010	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-02D	6/28/2000	50.5-60.5	off-site	CTBERK	8021B	NS	NS	NS	NS	NS	< 0.5	u	NS	< 0.5	u	NS	NS	NS	NS	NS	NS	NS	NS
MW-02D	6/28/2000	50.5-60.5	off-site	CTBERK	8260B	< 0.5	u	NS	< 0.5	u	NS	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u
MW-02D Duplicate	6/28/2000	50.5-60.5	off-site	CTBERK	8021B	NS	NS	NS	NS	NS	< 0.5	u	NS	< 0.5	u	NS	NS	NS	NS	NS	NS	NS	NS
MW-02D Duplicate	6/28/2000	50.5-60.5	off-site	CTBERK	8260B	< 0.5	u	NS	< 0.5	u	NS	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u
MW-02D	3/12/2001	50.5-60.5	off-site	CTBERK	8021B	NS	NS	NS	NS	NS	< 0.5	u	NS	< 0.5	u	NS	NS	NS	NS	NS	NS	NS	NS
MW-02D	3/12/2001	50.5-60.5	off-site	CTBERK	8260B	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-02D	6/27/2001	50.5-60.5	off-site	CTBERK	8260B	< 0.5	u	NS	< 0.5	u	NS	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u
MW-02D	9/19/2001	50.5-60.5	off-site	CTBERK	8260B	0.9	NS	NS	< 0.5	u	NS	2.8	NS	1.1	NS	< 0.5	u	< 0.5</					

Table 8-1  
 Volatile Organic Compounds Detected in Ground Water  
 Hookston Station Remedial Investigation  
 Pleasant Hill, California

Sample Location	Date	Sample Depth (ft)	Location	Analytical Laboratory	Analytical Method	PCE (µg/L)	TCE (µg/L)	C-1,2-DCE (µg/L)	T-1,2-DCE (µg/L)	1,1-DCE (µg/L)	VINYL CHLORIDE (µg/L)	ACETONE (µg/L)	BENZENE (µg/L)	BDCMETANE (µg/L)	BROMOMETHANE (µg/L)	2-MTHL-2-PRP (µg/L)	2-BUTANONE (µg/L)	CARBON DISUL (µg/L)	CHLORO BENZENE (µg/L)			
					CA MCL	5	5	6	10	6	0.5	-	1	-	-	-	-	-	70			
					RWQCB ESL	5	5	6	10	6	0.5	700	1	100	9.8	-	4,200	-	25			
MW-02D	3/20/2002	59 Ft	off-site	CTBERK	8260B	< 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 10	u < 0.5	u < 0.5	u < 1	u NS	u < 10	u < 0.5	u < 0.5	u		
MW-02D	9/24/2002	59 Ft	off-site	STL Sac	8260B	< 1	u < 1	u < 1	u < 1	u < 1	u < 1	u < 10	u < 1	u < 1	u < 1	u < 50	u < 2	u < 2	u < 1	u		
MW-02D	11/14/2002	59 Ft	off-site	STL Sac	8260B	< 1	uUJ < 1	uUJ < 1	uUJ < 1	uUJ < 1	uUJ < 1	uUJ < 10	uUJ < 1	uUJ < 1	uUJ < 2	uUJ < 25	uUJ < 5	uUJ < 1	uUJ < 1	uUJ		
MW-02D	2/19/2003	59 ft	off-site	STL Sac	8260B	< 1	u < 1	u < 1	u < 1	u < 1	u < 1	u 10	U < 1	u < 1	u 0.18	jbJL < 50	u < 2	u < 2	u < 1	u		
MW-02D	5/6/2003	59 ft	off-site	STL Sac	8260B	< 1	u < 1	u < 1	u < 1	u < 1	u < 1	u 10	U < 1	u < 1	u < 1	u < 50	u < 2	u < 2	u < 1	u		
MW-02D	7/22/2003	59 ft	off-site	STL Sac	8260B	< 1	u < 1	u < 1	u < 1	u < 1	u < 1	u 10	U 0.13	j < 1	u < 1	u < 50	u < 2	u < 2	u < 1	u		
MW-02D	10/24/2003	59 ft	off-site	STL Sac	8260B	< 1	u < 1	u < 1	u < 1	u < 1	u < 1	u 10	U < 1	u < 1	u < 1	u < 50	u 2	U < 2	u < 1	u		
MW-09B (prev. MW-02D)	3/10/2004	59 Ft	off-site	STLSEA	8260B	< 1	u < 1	u < 1	u < 1	u < 1	u < 1	u < 5	u < 1	u < 1	u < 2.5	u < 10	u < 5	u < 1	u < 1	u		
MW-09B	4/27/2004	50.5-60.5	off-site	STL Sac	8260B	< 1	u < 1	u < 1	u < 1	u < 1	u < 1	u 10	U < 1	u < 1	u < 1	u < 50	u < 2	u < 2	u < 1	u		
MW-03D	8/25/1993	40-50	off-site	CTL	8010	< 2	u	170	< 2	u < 2	u	15	< 4	u NS	< 2	u < 4	u NS	NS	NS	< 2	u	
MW-03D	8/25/1993	40-50	off-site	CTL	8020	NS	NS	NS	NS	NS	NS	NS	< 0.5	u NS	NS	NS	NS	NS	NS	NS	u	
MW-03D	11/17/1995	40-50	off-site	MCA	8010	< 5	u	280	< 5	u < 5	u	39	< 20	u NS	< 5	u < 20	u NS	NS	NS	< 5	u	
MW-03D	6/28/2000	40-50	off-site	CTBERK	8021B	NS	NS	NS	NS	NS	NS	NS	< 0.5	u NS	NS	NS	NS	NS	NS	NS	u	
MW-03D	6/28/2000	40-50	off-site	CTBERK	8260B	< 3.6	u	1300	< 3.6	u	91	< 3.6	u < 71	u < 3.6	u < 71	u NS	< 71	u < 3.6	u < 3.6	u	u	
MW-03D	9/7/2000	40-50	off-site	CTBERK	8260B	< 5	u	1500	< 5	u < 5	u	69	< 5	u < 100	u < 5	u < 10	u NS	< 100	u < 5	u < 5	u	
MW-03D	3/13/2001	40-50	off-site	CTBERK	8021B	NS	NS	NS	NS	NS	NS	NS	< 0.5	u NS	NS	NS	NS	NS	NS	NS	u	
MW-03D	3/13/2001	40-50	off-site	CTBERK	8260B	< 3.6	u	970	< 3.6	u	60	< 3.6	u NS	< 3.6	u < 7.1	u NS	NS	NS	NS	< 3.6	u	
MW-03D Duplicate	3/13/2001	40-50	off-site	CTBERK	8021B	NS	NS	NS	NS	NS	NS	NS	< 0.5	u NS	NS	NS	NS	NS	NS	NS	u	
MW-03D Duplicate	3/13/2001	40-50	off-site	CTBERK	8260B	< 5	u	1000#	< 5	u < 5	u	61#	< 5	u NS	NS	< 5	u < 10	u NS	NS	< 5	u	
MW-03D	6/27/2001	40-50	off-site	CTBERK	8260B	5.6	u	1400	< 5	u < 5	u	69	< 5	u < 100	u < 5	u < 10	u NS	< 100	u < 5	u < 5	u	
MW-03D	9/19/2001	40-50	off-site	CTBERK	8260B	< 1.7	u	480	2.6	u < 1.7	u	32	< 1.7	u < 33	u < 1.7	u < 3.3	u NS	< 33	u < 1.7	u < 1.7	u	
MW-03D	9/19/2001	44 ft	off-site	CTBERK	8260B	< 5	u	1100	< 5	u < 5	u	54	< 5	u < 100	u < 5	u < 10	u NS	< 100	u < 5	u < 5	u	
MW-03D	12/19/2001	44 ft	off-site	CTBERK	8260B	< 4.2	u	1100	5.2	u < 4.2	u	42	< 4.2	u < 83	u < 4.2	u < 8.3	u NS	< 83	u < 4.2	u < 4.2	u	
MW-03D	3/20/2002	44 Ft	off-site	CTBERK	8260B	< 3.6	u	1300	4.3	u < 3.6	u	50	< 3.6	u < 71	u < 3.6	u < 7.1	u NS	< 71	u < 3.6	u < 3.6	u	
MW-03D	9/24/2002	44 Ft	off-site	STL Sac	8260B	< 50	u	1300	6.6	u < 50	u	93	< 50	u 500	U < 50	u < 50	u < 2500	u < 100	u < 100	u < 50	u	
MW-03D	11/14/2002	44 Ft	off-site	STL Sac	8260B	< 50	uUJ	1400	J < 50	uUJ < 50	uUJ	81	J < 50	uUJ < 500	uUJ < 50	uUJ < 50	uUJ < 100	uUJ < 1200	uUJ < 250	uUJ < 50	uUJ	
MW-03D Duplicate	11/14/2002	44 Ft	off-site	STL Sac	8260B	< 50	uUJ	1400	J < 50	uUJ < 50	uUJ	79	J < 50	uUJ < 500	uUJ < 50	uUJ < 50	uUJ < 100	uUJ < 1200	uUJ < 250	uUJ < 50	uUJ	
MW-03D	2/19/2003	44 ft	off-site	STL Sac	8260B	< 25	u	1100	4.5	u < 25	u	74	< 25	u < 250	uq < 25	u < 25	u < 25	u < 2500	u < 100	u < 100	u < 50	u
MW-03D Duplicate	2/19/2003	44 ft	off-site	STL Sac	8260B	< 25	u	1100	5.3	u < 25	u	77	< 25	u < 250	uq < 25	u < 25	u 6.2	jbJL < 1200	u < 50	u < 50	u < 25	u
MW-03D	5/6/2003	44 ft	off-site	STL Sac	8260B	< 25	u	1200	3.3	u < 25	u	85	< 25	u < 250	uq < 25	u < 25	u < 25	u < 1200	u < 50	u < 50	u < 25	u
MW-03D	7/22/2003	44 ft	off-site	STL Sac	8260B	< 50	u	1200#	< 50	u < 50	u	96#	< 50	u < 500	uq < 50	u < 50	u < 50	u < 2500	u < 100	u < 100	u < 50	u
MW-03D	10/24/2003	44 ft	off-site	STL Sac	8260B	< 50	u	1300	< 50	u < 50	u	94	< 50	u < 500	uq < 50	u < 50	u < 50	u < 2500	u < 100	u < 100	u < 50	u
MW-10B (prev. MW-03D)	3/10/2004	44 Ft	off-site	STLSEA	8260B	< 50	u	1410	< 50	u < 50	u	68.6	< 50	u < 250	u < 50	u < 125	u < 500	u < 250	u < 50	u < 50	u < 50	u
MW-10B	4/26/2004	40-50	off-site	STL Sac	8260B	< 5	u	150	< 5	u < 5	u	8.1	< 5	u < 50	uq < 5	u < 5	u < 5	u < 250	u < 10	u < 10	u < 5	u
MW-10B Duplicate	4/26/2004	40-50	off-site	STL Sac	8260B	< 5	u	160	< 5	u < 5	u	8.8	< 5	u < 50	uq < 5	u < 5	u < 5	u < 250	u < 10	u < 10	u < 5	u
MW-14B	3/11/2004	43 ft	off-site	STLSEA	8260B	< 100	u	2270	< 100	u < 100	u	158	< 100	u < 500	u < 100	u < 100	u < 250	u < 1000	u < 500	u < 100	u < 100	u
MW-14B	4/28/2004	40-50	off-site	STL Sac	8260B	< 50	u	780	< 50	u < 50	u	48	< 50	u < 500	uq < 50	u < 50	u < 2500	u < 100	u < 100	u < 50	u	
MW-15B	3/10/2004	54 ft	off-site	STLSEA	8260B	< 20	u	627	< 20	u < 20	u	57.3	< 20	u < 100	u < 20	u < 20	u < 50	u < 200	u < 100	u < 20	u < 20	u
MW-15B	4/23/2004	49-59	off-site	STL Sac	8260B	< 50	u	1400	< 50	u < 50	u	92	< 50	u < 500	u < 50	u < 50	u < 2500	u < 100	u < 100	u < 50	u	
MW-16B	3/10/2004	40 ft	off-site	STLSEA	8260B	< 20	u	739	30.1	u < 20	u	15.5	< 20	u < 100	u < 20	u < 20	u < 50	u < 200	u < 100	u < 20	u < 20	u
MW-16B	4/26/2004	35-45	off-site	STL Sac	8260B	< 10	u	550	24	u < 10	u	11	< 10	u 100	U < 10	u < 10	u < 500	u < 20	u < 20	u < 10	u	
MW-17B	3/10/2004	50 ft	off-site	STLSEA	8260B	< 1	u	11.6	< 1	u < 1	u	0.689	< 1	u 6.2	U < 1	u < 1	u < 2.5	u < 10	u < 5	u < 1	u < 1	u
MW-17B	4/27/2004	44-54	off-site	STL Sac	8260B	< 10	u	280	< 10	u < 10	u	9.6	< 10	u < 100	uq < 10	u < 10	u < 10	u < 500	u < 20	u < 20	u < 10	u
MW-18B	3/10/2004	37 ft	off-site	STLSEA	8260B	< 1	u	< 1	u < 1	u < 1	u	< 1	u < 1	u 5	U < 1	u < 1	u < 2.5	u < 10	u < 5	u < 1	u < 1	u
MW-18B	4/28/2004	32-42	off-site	STL Sac	8260B	< 1	u	20	7.7	u < 1	u	1.8	< 1	u 10	U < 1	u < 1	u < 1	u < 50	u < 2	u < 2	u < 1	u
MW-19B	3/10/2004	34 ft	off-site	STLSEA	8260B	< 1	u	< 1	u < 1	u < 1	u	< 1	u < 1	u 5	U < 1	u < 1	u < 2.5	u < 10	u < 5	u < 1	u < 1	u
MW-19B	4/28/2004	29-39	off-site	STL Sac	8260B	< 1	u	< 1	u < 1	u < 1	u	< 1	u < 1	u < 10	U < 1	u < 1	u < 1	u < 50	u < 2	u < 2	u < 1	u
MW-20B	3/10/2004	35 ft	off-site	STLSEA	8260B	507	u	347	< 20	u < 20	u	< 20	u < 20	u < 100	u < 20	u < 20	u < 50					







Table 8-1  
 Volatile Organic Compounds Detected in Ground Water  
 Hookston Station Remedial Investigation  
 Pleasant Hill, California

Sample Location	Date	Sample Depth (ft)	Location	Analytical Laboratory	Analytical Method	PCE (µg/L)	TCE (µg/L)	C-1,2-DCE (µg/L)	T-1,2-DCE (µg/L)	1,1-DCE (µg/L)	VINYL CHLORIDE (µg/L)	ACETONE (µg/L)	BENZENE (µg/L)	BDCMETANE (µg/L)	BROMOMETHANE (µg/L)	2-MTHL-2-PRP (µg/L)	2-BUTANONE (µg/L)	CARBON DISUL (µg/L)	CHLOROBENZENE (µg/L)	
					CA MCL	5	5	6	10	6	0.5	-	1	-	-	-	-	-	70	
					RWQCB ESL	5	5	6	10	6	0.5	700	1	100	9.8	-	4,200	-	25	
CPT-01	10/23/2001	78 Ft	on-site	CTBERK	8260B	< 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 10	u < 0.5	u < 0.5	u < 1	u NS	< 10	u < 0.5	u < 0.5	u
CPT-01	10/23/2001	89 Ft	on-site	CTBERK	8260B	< 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 10	u < 0.5	u < 0.5	u < 1	u NS	< 10	u < 0.5	u < 0.5	u
CPT-02	10/22/2001	86 Ft	on-site	CTBERK	8260B	< 0.5	u 1.4	0.5	< 0.5	u < 0.5	u < 0.5	u < 10	u < 0.5	u < 0.5	u < 1	u NS	< 10	u < 0.5	u < 0.5	u

**Table 8-1**  
**Volatile Organic Compounds Detected in Ground Water**  
**Hookston Station Remedial Investigation**  
**Pleasant Hill, California**

Sample Location	Date	Sample Depth (ft)	Location	Analytical Laboratory	Analytical Method	CHLOROFORM (µg/L)	CHLOROMETHANE (µg/L)	DBC METHANE (µg/L)	1,1-DCA (µg/L)	1,2-DCA (µg/L)	1,2-DICPROPAN (µg/L)	ETHYLBENZENE (µg/L)	2-HEXANONE (µg/L)	DICHLMETHANE (µg/L)	4M2PENTANONE (µg/L)	MTBE (µg/L)	TOLUENE (µg/L)	1,1,1-TCA (µg/L)	1,1,2-TCA (µg/L)								
					CA MCL	-	-	-	5	0.5	5	700	-	-	-	13	150	200	5								
					RIVQCB ESL	100	2.7	100	5	0.5	5	30	-	5	120	5	40	62	5								
CPT-01	10/23/2001	78 Ft	on-site	CTBERK	8260B	< 0.5	u	< 1	u	< 0.5	u	< 0.5	u	< 10	u	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u
CPT-01	10/23/2001	89 Ft	on-site	CTBERK	8260B	< 0.5	u	< 1	u	< 0.5	u	< 0.5	u	< 10	u	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u
CPT-02	10/22/2001	86 Ft	on-site	CTBERK	8260B	< 0.5	u	< 1	u	< 0.5	u	< 0.5	u	< 10	u	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u

Table 8-1  
 Volatile Organic Compounds Detected in Ground Water  
 Hookston Station Remedial Investigation  
 Pleasant Hill, California

Sample Location	Date	Sample Depth (ft)	Location	Analytical Laboratory	Analytical Method	1,2,4-TMTHLB (µg/L)	1,2-DCE (µg/L)	1,3,5-TMTHLB (µg/L)	ISOPROPYLETHER (µg/L)	ISOP(CUMENE) (µg/L)	TOTAL XYLENES (µg/L)	M,P-XYLENE (µg/L)	O-XYLENE (µg/L)	N-BUTYLBENZENE (µg/L)	P-ISOPRLBENZ (µg/L)	PROPYLBENZENE (µg/L)	SEC-BTLBNZN (µg/L)	T-BEE (µg/L)	TERT-BTLBNZN (µg/L)					
					CA MCL	-	-	-	-	-	1,750	-	-	-	-	-	-	-	-					
					RWQCB ESL	-	-	-	-	-	13	-	-	-	-	-	-	-	-					
CPT-01	10/23/2001	78 Ft	on-site	CTBERK	8260B	< 0.5	u	NS	< 0.5	u	NS	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	NS	< 0.5	u
CPT-01	10/23/2001	89 Ft	on-site	CTBERK	8260B	< 0.5	u	NS	< 0.5	u	NS	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	NS	< 0.5	u
CPT-02	10/22/2001	86 Ft	on-site	CTBERK	8260B	< 0.5	u	NS	< 0.5	u	NS	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	NS	< 0.5	u

Table 8-1  
 Volatile Organic Compounds Detected in Ground Water  
 Hookston Station Remedial Investigation  
 Pleasant Hill, California

Sample Location	Date	Sample Depth (ft)	Location	Analytical Laboratory	Analytical Method	PCE (µg/L)	TCE (µg/L)	C-1,2-DCE (µg/L)	T-1,2-DCE (µg/L)	1,1-DCE (µg/L)	VINYL CHLORIDE (µg/L)	ACETONE (µg/L)	BENZENE (µg/L)	BDCMETANE (µg/L)	BROMOMETHANE (µg/L)	2-MTHL-2-PRP (µg/L)	2-BUTANONE (µg/L)	CARBON DISUL (µg/L)	CHLOROBYZENE (µg/L)	
					CA MCL	5	5	6	10	6	0.5	-	1	-	-	-	-	-	70	
					RWQCB ESL	5	5	6	10	6	0.5	700	1	100	9.8	-	4,200	-	25	
CPT-04	10/23/2001	83 Ft	off-site	CTBERK	8260B	< 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 10	u < 0.5	u < 0.5	u < 1	u NS	< 10	u < 0.5	u < 0.5	u
CPT-04	10/23/2001	95 Ft	off-site	CTBERK	8260B	< 0.5	u 1.3	< 0.5	u < 0.5	u < 0.5	u < 0.5	u < 10	u < 0.5	u < 0.5	u < 1	u NS	< 10	u < 0.5	u < 0.5	u
CPT-05	10/24/2001	97 Ft	off-site	CTBERK	8260B	< 0.5	uUJ < 0.5	uUJ < 0.5	uUJ < 0.5	uUJ < 0.5	uUJ < 0.5	uUJ < 10	uUJ < 0.5	uUJ < 0.5	uUJ < 1	uUJ NS	< 10	uUJ < 0.5	uUJ < 0.5	uUJ
CPT-06	10/24/2001	85 Ft	off-site	CTBERK	8260B	< 0.5	uUJ 7.7	J < 0.5	uUJ < 0.5	uUJ 1.7	J < 0.5	uUJ < 10	uUJ < 0.5	uUJ < 0.5	uUJ < 1	uUJ NS	< 10	uUJ < 0.5	uUJ < 0.5	uUJ
CPT-07	10/25/2001	97 Ft	off-site	CTBERK	8260B	< 0.5	uUJ < 0.5	uUJ < 0.5	uUJ < 0.5	uUJ < 0.5	uUJ < 0.5	uUJ < 10	uUJ < 0.5	uUJ < 0.5	uUJ < 1	u NS	< 10	uUJ < 0.5	uUJ < 0.5	uUJ
CPT-08	10/30/2001	88 Ft	off-site	CTBERK	8260B	< 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 10	u 0.6	< 0.5	u < 1	u NS	< 10	u < 0.5	u < 0.5	u
CPT-10	11/2/2001	75 Ft	off-site	CTBERK	8260B	< 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 10	u < 0.5	u < 0.5	u < 1	u NS	< 10	u < 0.5	u < 0.5	u
CPT-10	11/7/2001	87 Ft	off-site	CTBERK	8260B	< 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 10	u < 0.5	u < 0.5	u < 1	u NS	< 10	u < 0.5	u < 0.5	u
CPT-10	11/7/2001	98 Ft	off-site	CTBERK	8260B	< 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 10	u < 0.5	u < 0.5	u < 1	u NS	< 10	u < 0.5	u < 0.5	u
CPT-11	11/7/2001	84 Ft	off-site	CTBERK	8260B	< 0.5	u 1.1	< 0.5	u < 0.5	u < 0.5	u < 0.5	u < 10	u 0.7	< 0.5	u < 1	u NS	< 10	u < 0.5	u < 0.5	u
CPT-11	11/7/2001	96 Ft	off-site	CTBERK	8260B	< 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 10	u < 0.5	u < 0.5	u < 1	u NS	< 10	u < 0.5	u < 0.5	u
CPT-12	10/29/2001	87 Ft	off-site	CTBERK	8260B	< 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 10	u < 0.5	u < 0.5	u < 1	u NS	< 10	u < 0.5	u < 0.5	u
CPT-12 Duplicate	10/29/2001	87 Ft	off-site	CTBERK	8260B	< 0.5	u 0.6	< 0.5	u < 0.5	u < 0.5	u < 0.5	u < 10	u < 0.5	u < 0.5	u < 1	u NS	< 10	u < 0.5	u < 0.5	u
CPT-12	10/29/2001	99 Ft	off-site	CTBERK	8260B	< 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 10	u < 0.5	u < 0.5	u < 1	u NS	< 10	u < 0.5	u < 0.5	u
CPT-13	10/26/2001	86 Ft	off-site	CTBERK	8260B	< 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 10	u < 0.5	u < 0.5	u < 1	u NS	< 10	u < 0.5	u < 0.5	u
CPT-13	10/26/2001	99 Ft	off-site	CTBERK	8260B	< 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 10	u < 0.5	u < 0.5	u < 1	u NS	< 10	u < 0.5	u < 0.5	u
CPT-14	10/30/2001	86 Ft	off-site	CTBERK	8260B	< 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 10	u < 0.5	u < 0.5	u < 1	u NS	< 10	u < 0.5	u < 0.5	u
CPT-14	10/30/2001	98 Ft	off-site	CTBERK	8260B	< 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 10	u < 0.5	u < 0.5	u < 1	u NS	< 10	u < 0.5	u < 0.5	u
CPT-15	10/31/2001	88 Ft	off-site	CTBERK	8260B	< 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 10	u < 0.5	u < 0.5	u < 1	u NS	< 10	u < 0.5	u < 0.5	u
CPT-15	10/31/2001	101 Ft	off-site	CTBERK	8260B	< 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 10	u < 0.5	u < 0.5	u < 1	u NS	< 10	u < 0.5	u < 0.5	u
CPT-16	11/1/2001	76 Ft	off-site	CTBERK	8260B	< 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 10	u < 0.5	u < 0.5	u < 1	u NS	< 10	u < 0.5	u < 0.5	u
CPT-16	11/1/2001	88 Ft	off-site	CTBERK	8260B	< 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 10	u < 0.5	u < 0.5	u < 1	u NS	< 10	u < 0.5	u < 0.5	u
CPT-16	11/1/2001	100 Ft	off-site	CTBERK	8260B	< 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 10	u < 0.5	u < 0.5	u < 1	u NS	< 10	u < 0.5	u < 0.5	u
CPT-17	11/1/2001	95 Ft	off-site	CTBERK	8260B	< 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 10	u < 0.5	u < 0.5	u < 1	u NS	< 10	u < 0.5	u < 0.5	u
CPT-18	3/29/2002	98 Ft	off-site	CTBERK	8260B	< 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 10	u < 0.5	u < 0.5	u < 1	u NS	< 10	u < 0.5	u < 0.5	u
CPT-19	3/29/2002	84.5 Ft	off-site	CTBERK	8260B	< 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 10	u < 0.5	u < 0.5	u < 1	u NS	< 10	u < 0.5	u < 0.5	u
CPT-20	3/28/2002	85 Ft	off-site	CTBERK	8260B	< 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 10	u < 0.5	u < 0.5	u < 1	u NS	< 10	u < 0.5	u < 0.5	u
CPT-23	9/18/2002	72 Ft	off-site	STL Sac	8260B	< 1	u < 1	u < 1	u < 1	u < 1	u < 1	u 10	U < 1	u < 1	u < 1	u < 50	u < 2	u < 2	u < 1	u
<b>C-Zone Monitoring Wells</b>																				
MW-15C	3/10/2004	93 ft	off-site	STLSEA	8260B	< 1	u < 1	u < 1	u < 1	u < 1	u < 1	u 6.53	U < 1	u < 1	u < 2.5	u < 10	u < 5	u < 1	u < 1	u
MW-15C	4/22/2004	90-95	off-site	STL Sac	8260B	< 1	u 6.6	< 1	u < 1	u < 1	u < 1	u < 10	u < 1	u < 1	u < 1	u < 50	u < 2	u < 2	u < 1	u
MW-19C	3/10/2004	75 ft	off-site	STLSEA	8260B	< 1	u < 1	u < 1	u < 1	u < 1	u < 1	u 5	U < 1	u < 1	u < 2.5	u < 10	u < 5	u < 1	u < 1	u
MW-19C	4/27/2004	70-80	off-site	STL Sac	8260B	0.33	j < 1	u < 1	u < 1	u < 1	u < 1	u 10	U < 1	u < 1	u < 1	u < 50	u < 2	u < 2	u < 1	u
MW-19C Duplicate	4/28/2004	70-80	off-site	STL Sac	8260B	< 1	u < 1	u < 1	u < 1	u < 1	u < 1	u 10	U < 1	u < 1	u < 1	u < 50	u < 2	u < 2	u < 1	u
MW-23C	6/8/2004	93-103	off-site	STL Sac	8260B	< 1	u 0.68	j < 1	u < 1	u < 1	u < 1	u 10	U < 1	u 2.9	< 1	u < 50	u < 2	u < 2	u < 1	u

**Notes:**

(µg/L) = Concentrations reported in micrograms per liter (µg/L).  
 Only the VOCs detected in one or more sample are reported.  
 NS = Not Sampled  
 < = Not Detected  
 u = Compound was analyzed for but not detected. Analyte result was below the Reporting Type Limit.  
 # = Maximum of multiple analytical results  
 b = Analyte was detected in the associated method blank at a similar concentration  
 j = Estimated Value  
 b = ORG: Compound is found in the associated blank as well as in the sample. INORG: Value less than contract required detection limit but greater than or equal to instrument detection limit.  
 q = Elevated reporting limit due to high analyte levels  
 d = Result from an analysis at a secondary dilution factor.  
 e = ORG: Concentrations exceed the calibration range of the instrument. INORG: Reported value was estimated because of the presence of interference.  
 J = The result is an estimated value  
 R = Result is qualified as rejected  
 U = Compound detected in an associate blank & treated as Non-Detect  
 UJ = The compound not detected at an estimated limit

**Laboratories:**

AEN = American Environmental Network  
 CHROMA = Chromalab, Inc.  
 CTBERK = Curtis&Thompkins Berkley  
 CTL = Curtis & Thompkins,LTD  
 MCA = MCCampbell Analytical, Inc.  
 MTA = MED-TOX Associates, Inc.  
 STL Sac = Severn Trent Laboratory, Sacramento  
 STLSEA = Severn Trent Laboratory, Seattle

**Abbreviation Chemical**

ACETONE = ACETONE  
 BENZENE = BENZENE  
 BDCMETANE = BROMODICHLOROMETHANE  
 BROMOMETHANE = BROMOMETHANE  
 2-MTHL-2-PRP = 2-METHYL-2-PROPANOL  
 2-BUTANONE = 2-BUTANONE  
 CARBON DISUL = CARBON DISULFIDE  
 CHLOROBYZENE = CHLOROBYZENE  
 CHLOROFORM = CHLOROFORM  
 CHLOROMETHANE = CHLOROMETHANE  
 DBC METHANE = DIBROMOCHLOROMETHANE  
 1,1-DCA = 1,1-DICHLOROETHANE  
 1,2-DCA = 1,2-DICHLOROETHANE  
 C-1,2-DCE = CIS-1,2-DICHLOROETHYLENE  
 T-1,2-DCE = TRANS-1,2-DICHLOROETHYLENE  
 1,1-DCE = 1,1-DICHLOROETHYLENE  
 1,2-DCPROPAN = 1,2-DICHLOROPROPANE  
 ETHYLBENZENE = ETHYLBENZENE  
 2-HEXANONE = 2-HEXANONE  
 DICHLMETHANE = METHYLENE CHLORIDE  
 4M2PENTANONE = 4-METHYL-2-PETANONE (MET. ISOBUT. KET.)

**Abbreviation Chemical**

MTBE = METHYL TERT-BUTYL ETHER  
 PCE = TETRACHLOROETHYLENE  
 TOLUENE = TOLUENE  
 TCE = TRICHLOROETHYLENE  
 1,1,1-TCA = 1,1,1-TRICHLOROETHANE  
 1,1,2-TCA = 1,1,2-TRICHLOROETHANE  
 VINYL CHLORIDE = VINYL CHLORIDE  
 TOTAL XYLENES = TOTAL XYLENES  
 1,2,4-TMTHLB = 1,2,4-TRIMETHYLBENZENE  
 1,2-DCE = 1,2-DICHLOROETHENE  
 1,3,5-TMTHLB = 1,3,5-TRIMETHYLBENZENE  
 ISOPROPYLETHER = ISOPROPYL ETHER  
 ISOP(CUMENE) = ISOPROPYLBENZENE  
 M,P-XYLENE = M,P-XYLENE  
 N-BUTYLBENZENE = N-BUTYLBENZENE  
 O-XYLENE = O-XYLENE  
 P-ISOPRLBENZ = P-ISOPROPYLTOLUENE  
 PROPYLBENZENE = PROPYLBENZENE  
 SEC-BTLBNZN = SEC-BUTYLBENZENE  
 T-BEE = TERT-BUTYL ETHYL ETHER  
 TERT-BTLBNZN = TERT-BUTYLBENZENE

**Table 8-1**  
**Volatile Organic Compounds Detected in Ground Water**  
**Hookston Station Remedial Investigation**  
**Pleasant Hill, California**

Sample Location	Date	Sample Depth (ft)	Location	Analytical Laboratory	Analytical Method	CHLOROFORM (µg/L)	CHLOROMETHANE (µg/L)	DBC METHANE (µg/L)	1,1-DCA (µg/L)	1,2-DCA (µg/L)	1,2-DCPROPAN (µg/L)	ETHYLBENZENE (µg/L)	2-HEXANONE (µg/L)	DICHLMETHANE (µg/L)	4M2PENTANONE (µg/L)	MTBE (µg/L)	TOLUENE (µg/L)	1,1,1-TCA (µg/L)	1,1,2-TCA (µg/L)			
					CA MCL RWQCB ESL	- 100	- 2.7	- 100	5 5	0.5 0.5	5 5	700 30	- -	- 5	- 120	13 5	150 40	200 62	5 5			
CPT-04	10/23/2001	83 Ft	off-site	CTBERK	8260B	< 0.5	u < 1	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 10	u < 10	u < 10	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u
CPT-04	10/23/2001	95 Ft	off-site	CTBERK	8260B	< 0.5	u < 1	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 10	u < 10	u < 10	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u
CPT-05	10/24/2001	97 Ft	off-site	CTBERK	8260B	< 0.5	uUJ < 1	uUJ < 0.5	uUJ < 0.5	uUJ < 0.5	uUJ < 0.5	uUJ < 0.5	uUJ < 10	uUJ < 10	uUJ < 10	uUJ < 0.5	uUJ < 0.5	uUJ < 0.5	uUJ < 0.5	uUJ < 0.5	uUJ < 0.5	uUJ
CPT-06	10/24/2001	85 Ft	off-site	CTBERK	8260B	< 0.5	uUJ < 1	uUJ < 0.5	uUJ < 0.5	uUJ < 0.5	uUJ < 0.5	uUJ < 0.5	uUJ < 10	uUJ < 10	uUJ < 10	uUJ < 0.5	uUJ < 0.5	uUJ < 0.5	uUJ < 0.5	uUJ < 0.5	uUJ < 0.5	uUJ
CPT-07	10/25/2001	97 Ft	off-site	CTBERK	8260B	< 0.5	uUJ < 1	uUJ < 0.5	uUJ < 0.5	uUJ < 0.5	uUJ < 0.5	uUJ < 0.5	uUJ < 10	uUJ < 10	uUJ < 10	uUJ < 0.5	uUJ < 0.5	uUJ < 0.5	uUJ < 0.5	uUJ < 0.5	uUJ < 0.5	uUJ
CPT-08	10/30/2001	88 Ft	off-site	CTBERK	8260B	< 0.5	u < 1	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 10	u < 10	u < 10	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u
CPT-10	11/2/2001	75 Ft	off-site	CTBERK	8260B	< 0.5	u < 1	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 10	u < 10	u < 10	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u
CPT-10	11/7/2001	87 Ft	off-site	CTBERK	8260B	< 0.5	u < 1	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 10	u < 10	u < 10	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u
CPT-10	11/7/2001	98 Ft	off-site	CTBERK	8260B	< 0.5	u < 1	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 10	u < 10	u < 10	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u
CPT-11	11/7/2001	84 Ft	off-site	CTBERK	8260B	< 0.5	u < 1	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 10	u < 10	u < 10	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u
CPT-11	11/7/2001	96 Ft	off-site	CTBERK	8260B	< 0.5	u < 1	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 10	u < 10	u < 10	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u
CPT-12	10/29/2001	87 Ft	off-site	CTBERK	8260B	< 0.5	u < 1	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 10	u < 10	u < 10	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u
CPT-12 Duplicate	10/29/2001	87 Ft	off-site	CTBERK	8260B	< 0.5	u < 1	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 10	u < 10	u < 10	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u
CPT-12	10/29/2001	99 Ft	off-site	CTBERK	8260B	< 0.5	u < 1	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 10	u < 10	u < 10	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u
CPT-13	10/26/2001	86 Ft	off-site	CTBERK	8260B	< 0.5	u < 1	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 10	u < 10	u < 10	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u
CPT-13	10/26/2001	99 Ft	off-site	CTBERK	8260B	< 0.5	u < 1	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 10	u < 10	u < 10	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u
CPT-14	10/30/2001	86 Ft	off-site	CTBERK	8260B	< 0.5	u < 1	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 10	u < 10	u < 10	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u
CPT-14	10/30/2001	98 Ft	off-site	CTBERK	8260B	< 0.5	u < 1	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 10	u < 10	u < 10	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u
CPT-15	10/31/2001	88 Ft	off-site	CTBERK	8260B	< 0.5	u < 1	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 10	u < 10	u < 10	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u
CPT-15	10/31/2001	101 Ft	off-site	CTBERK	8260B	< 0.5	u < 1	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 10	u < 10	u < 10	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u
CPT-16	11/1/2001	76 Ft	off-site	CTBERK	8260B	< 0.5	u < 1	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 10	u < 10	u < 10	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u
CPT-16	11/1/2001	88 Ft	off-site	CTBERK	8260B	< 0.5	u < 1	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 10	u < 10	u < 10	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u
CPT-16	11/1/2001	100 Ft	off-site	CTBERK	8260B	< 0.5	u < 1	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 10	u < 10	u < 10	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u
CPT-17	11/1/2001	95 Ft	off-site	CTBERK	8260B	< 0.5	u < 1	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 10	u < 10	u < 10	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u
CPT-18	3/29/2002	98 Ft	off-site	CTBERK	8260B	< 0.5	u < 1	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 10	u < 10	u < 10	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u
CPT-19	3/29/2002	84.5 Ft	off-site	CTBERK	8260B	< 0.5	u < 1	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 10	u < 10	u < 10	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u
CPT-20	3/28/2002	85 Ft	off-site	CTBERK	8260B	< 0.5	u < 1	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 10	u < 10	u < 10	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u < 0.5	u
CPT-23	9/18/2002	72 Ft	off-site	STL Sac	8260B	< 1	u < 1	u < 1	u < 1	u < 1	u < 1	u < 1	u < 2	u < 1	u < 2	u < 2	u < 1	u < 1	u < 1	u < 1	u < 1	u
<b>C-Zone Monitoring Wells</b>																						
MW-15C	3/10/2004	93 ft	off-site	STLSEA	8260B	0.515	j < 2	u < 1	u < 1	u < 1	u < 1	u < 1	u < 5	u < 2	u < 5	u < 1	u 0.736	j < 1	u < 1	u < 1	u	
MW-15C	4/22/2004	90-95	off-site	STL Sac	8260B	0.30	j 0.27	j < 1	u < 1	u < 1	u < 1	u < 1	u < 2	u < 1	u < 2	u < 2	u < 1	u < 1	u < 1	u < 1	u	
MW-19C	3/10/2004	75 ft	off-site	STLSEA	8260B	< 1	u < 2	u < 1	u < 1	u < 1	u < 1	u < 1	u < 5	u < 2	u < 5	u < 1	u < 1	u < 1	u < 1	u < 1	u	
MW-19C	4/27/2004	70-80	off-site	STL Sac	8260B	< 1	u 0.28	j < 1	u < 1	u < 1	u < 1	u < 1	u < 2	u < 1	u < 2	u < 2	u < 1	u < 1	u < 1	u < 1	u	
MW-19C Duplicate	4/28/2004	70-80	off-site	STL Sac	8260B	< 1	u 0.28	j < 1	u < 1	u < 1	u < 1	u < 1	u < 2	u < 1	u < 2	u < 2	u < 1	u < 1	u < 1	u < 1	u	
MW-23C	6/8/2004	93-103	off-site	STL Sac	8260B	3.4	< 1	u 1.9	< 1	u < 1	u < 1	u < 1	u < 2	u < 1	u < 2	u < 2	u < 1	u < 1	u < 1	u < 1	u	

**Notes:**

(µg/L) = Concentrations reported in micrograms per liter (µg/L).

Only the VOCs detected in one or more sample are reported.

NS = Not Sampled

< = Not Detected

u = Compound was analyzed for but not detected. Analyte result was b

# = Maximum of multiple analytical results

b = Analyte was detected in the associated method blank at a similar conc

j = Estimated Value

b = ORG: Compound is found in the associated blank as well as in the sa

q = Elevated reporting limit due to high analyte levels

d = Result from an analysis at a secondary dilution factor.

e = ORG: Concentrations exceed the calibration range of the instrument.

J = The result is an estimated value

R = Result is qualified as rejected

U = Compound detected in an associate blank & treated as Non-Detect

UJ = The compound not detected at an estimated limit

**Laboratories:**

AEN = American Environmental Network

CHROMA = Chromalab, Inc.

CTBERK = Curtis&Thompkins Berkley

CTL = Curtis & Thompkins,LTD

MCA = MCCampbell Analytical, Inc.

MTA = MED-TOX Associates, Inc.

STL Sac = Severn Trent Laboratory, Sacramento

STLSEA = Severn Trent Laboratory, Seattle

**Abbreviation Chemical**

ACETONE = ACETONE

BENZENE = BENZENE

BDCMETANE = BROMODICHLOROMETHANE

BROMOMETHANE = BROMOMETHANE

2-MTHL-2-PRP = 2-METHYL-2-PROPANOL

2-BUTANONE = 2-BUTANONE (METHYL ETHYL KETONE)

CARBON DISUL = CARBON DISULFIDE

CHLOROBENZENE = CHLOROBENZENE

CHLOROFORM = CHLOROFORM

CHLOROMETHANE = CHLOROMETHANE

DBC METHANE = DIBROMOCHLOROMETHANE

Table 8-1  
Volatile Organic Compounds Detected in Ground Water  
Hookston Station Remedial Investigation  
Pleasant Hill, California

Sample Location	Date	Sample Depth (ft)	Location	Analytical Laboratory	Analytical Method	1,2,4-TMTHLB (µg/L)	1,2-DCE (µg/L)	1,3,5-TMTHLB (µg/L)	ISOPROPYLETHER (µg/L)	ISOP(CUMENE) (µg/L)	TOTAL XYLENES (µg/L)	M,P-XYLENE (µg/L)	O-XYLENE (µg/L)	N-BUTYLBENZENE (µg/L)	P-ISOPRLBENZ (µg/L)	PROPYLBENZENE (µg/L)	SEC-BTLBNZN (µg/L)	T-BEE (µg/L)	TERT-BTLBNZN (µg/L)				
					CA MCL	-	-	-	-	-	1,750	-	-	-	-	-	-	-	-				
					RWQCB ESL	-	-	-	-	-	13	-	-	-	-	-	-	-	-				
CPT-04	10/23/2001	83 Ft	off-site	CTBERK	8260B	< 0.5	u	NS	< 0.5	u	NS	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	NS	< 0.5	u	
CPT-04	10/23/2001	95 Ft	off-site	CTBERK	8260B	< 0.5	u	NS	< 0.5	u	NS	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	NS	< 0.5	u	
CPT-05	10/24/2001	97 Ft	off-site	CTBERK	8260B	< 0.5	uUJ	NS	< 0.5	uUJ	NS	< 0.5	uUJ	< 0.5	uUJ	< 0.5	uUJ	< 0.5	uUJ	NS	< 0.5	uUJ	
CPT-06	10/24/2001	85 Ft	off-site	CTBERK	8260B	< 0.5	uUJ	NS	< 0.5	uUJ	NS	< 0.5	uUJ	< 0.5	uUJ	< 0.5	uUJ	< 0.5	uUJ	NS	< 0.5	uUJ	
CPT-07	10/25/2001	97 Ft	off-site	CTBERK	8260B	< 0.5	uUJ	NS	< 0.5	uUJ	NS	< 0.5	uUJ	< 0.5	uUJ	< 0.5	uUJ	< 0.5	uUJ	NS	< 0.5	uUJ	
CPT-08	10/30/2001	88 Ft	off-site	CTBERK	8260B	< 0.5	u	NS	< 0.5	u	NS	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	NS	< 0.5	u	
CPT-10	11/2/2001	75 Ft	off-site	CTBERK	8260B	< 0.5	u	NS	< 0.5	u	NS	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	NS	< 0.5	u	
CPT-10	11/7/2001	87 Ft	off-site	CTBERK	8260B	< 0.5	u	NS	< 0.5	u	NS	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	NS	< 0.5	u	
CPT-10	11/7/2001	98 Ft	off-site	CTBERK	8260B	< 0.5	u	NS	< 0.5	u	NS	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	NS	< 0.5	u	
CPT-11	11/7/2001	84 Ft	off-site	CTBERK	8260B	< 0.5	u	NS	< 0.5	u	NS	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	NS	< 0.5	u	
CPT-11	11/7/2001	96 Ft	off-site	CTBERK	8260B	< 0.5	u	NS	< 0.5	u	NS	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	NS	< 0.5	u	
CPT-12	10/29/2001	87 Ft	off-site	CTBERK	8260B	< 0.5	u	NS	< 0.5	u	NS	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	NS	< 0.5	u	
CPT-12 Duplicate	10/29/2001	87 Ft	off-site	CTBERK	8260B	< 0.5	u	NS	< 0.5	u	NS	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	NS	< 0.5	u	
CPT-12	10/29/2001	99 Ft	off-site	CTBERK	8260B	< 0.5	u	NS	< 0.5	u	NS	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	NS	< 0.5	u	
CPT-13	10/26/2001	86 Ft	off-site	CTBERK	8260B	< 0.5	u	NS	< 0.5	u	NS	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	NS	< 0.5	u	
CPT-13	10/26/2001	99 Ft	off-site	CTBERK	8260B	< 0.5	u	NS	< 0.5	u	NS	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	NS	< 0.5	u	
CPT-14	10/30/2001	86 Ft	off-site	CTBERK	8260B	< 0.5	u	NS	< 0.5	u	NS	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	NS	< 0.5	u	
CPT-14	10/30/2001	98 Ft	off-site	CTBERK	8260B	< 0.5	u	NS	< 0.5	u	NS	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	NS	< 0.5	u	
CPT-15	10/31/2001	88 Ft	off-site	CTBERK	8260B	< 0.5	u	NS	< 0.5	u	NS	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	NS	< 0.5	u	
CPT-15	10/31/2001	101 Ft	off-site	CTBERK	8260B	< 0.5	u	NS	< 0.5	u	NS	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	NS	< 0.5	u	
CPT-16	11/1/2001	76 Ft	off-site	CTBERK	8260B	< 0.5	u	NS	< 0.5	u	NS	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	NS	< 0.5	u	
CPT-16	11/1/2001	88 Ft	off-site	CTBERK	8260B	2.1	u	NS	0.5	u	NS	< 0.5	u	1.2	u	< 0.5	u	< 0.5	u	NS	< 0.5	u	
CPT-16	11/1/2001	100 Ft	off-site	CTBERK	8260B	< 0.5	u	NS	< 0.5	u	NS	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	NS	< 0.5	u	
CPT-17	11/1/2001	95 Ft	off-site	CTBERK	8260B	< 0.5	u	NS	< 0.5	u	NS	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	NS	< 0.5	u	
CPT-18	3/29/2002	98 Ft	off-site	CTBERK	8260B	< 0.5	u	NS	< 0.5	u	NS	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	NS	< 0.5	u	
CPT-19	3/29/2002	84.5 Ft	off-site	CTBERK	8260B	< 0.5	u	NS	< 0.5	u	NS	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	NS	< 0.5	u	
CPT-20	3/28/2002	85 Ft	off-site	CTBERK	8260B	< 0.5	u	NS	< 0.5	u	NS	< 0.5	u	< 0.5	u	< 0.5	u	< 0.5	u	NS	< 0.5	u	
CPT-23	9/18/2002	72 Ft	off-site	STL Sac	8260B	NS	NS	NS	< 2	u	NS	< 1	u	NS	NS	NS	NS	NS	NS	< 2	u	NS	
<b>C-Zone Monitoring Wells</b>																							
MW-15C	3/10/2004	93 ft	off-site	STLSEA	8260B	NS	NS	NS	< 1	u	NS	NS	< 2	u	< 1	u	NS	NS	NS	NS	< 1	u	NS
MW-15C	4/22/2004	90-95	off-site	STL Sac	8260B	NS	NS	NS	< 2	u	NS	< 1	u	NS	NS	NS	NS	NS	NS	NS	< 2	u	NS
MW-19C	3/10/2004	75 ft	off-site	STLSEA	8260B	NS	NS	NS	< 1	u	NS	NS	< 2	u	< 1	u	NS	NS	NS	NS	< 1	u	NS
MW-19C	4/27/2004	70-80	off-site	STL Sac	8260B	NS	NS	NS	< 2	u	NS	< 1	u	NS	NS	NS	NS	NS	NS	NS	< 2	u	NS
MW-19C Duplicate	4/28/2004	70-80	off-site	STL Sac	8260B	NS	NS	NS	< 2	u	NS	< 1	u	NS	NS	NS	NS	NS	NS	NS	< 2	u	NS
MW-23C	6/8/2004	93-103	off-site	STL Sac	8260B	NS	NS	NS	< 2	u	NS	< 1	u	NS	NS	NS	NS	NS	NS	NS	< 2	u	NS

Notes:

(µg/L) = Concentrations reported in micrograms per liter (µg/L).  
Only the VOCs detected in one or more sample are reported.  
NS = Not Sampled  
< = Not Detected  
u = Compound was analyzed for but not detected. Analyte result was below  
# = Maximum of multiple analytical results  
b = Analyte was detected in the associated method blank at a similar concentration  
j = Estimated Value  
b = ORG: Compound is found in the associated blank as well as in the sample  
q = Elevated reporting limit due to high analyte levels  
d = Result from an analysis at a secondary dilution factor.  
e = ORG: Concentrations exceed the calibration range of the instrument.  
J = The result is an estimated value  
R = Result is qualified as rejected  
U = Compound detected in an associate blank & treated as Non-Detect  
UJ = The compound not detected at an estimated limit

Laboratories:

AEN = American Environmental Network  
CHROMA = Chromalab, Inc.  
CTBERK = Curtis&Thompkins Berkley  
CTL = Curtis & Thompkins,LTD  
MCA = MCCampbell Analytical, Inc.  
MTA = MED-TOX Associates, Inc.  
STL Sac = Severn Trent Laboratory, Sacramento  
STLSEA = Severn Trent Laboratory, Seattle

Abbreviation	Chemical	Abbreviation	Chemical
ACETONE	= ACETONE	MTBE	= METHYL TERT-BUTYL ETHER
BENZENE	= BENZENE	PCE	= TETRACHLOROETHYLENE
BDCMETANE	= BROMODICHLOROMETHANE	TOLUENE	= TOLUENE
BROMOMETHANE	= BROMOMETHANE	TCE	= TRICHLOROETHYLENE
2-MITHL-2-PRP	= 2-METHYL-2-PROPANOL	1,1,1-TCA	= 1,1,1-TRICHLOROETHANE
2-BUTANONE	= 2-BUTANONE	1,1,2-TCA	= 1,1,2-TRICHLOROETHANE
CARBON DISUL	= CARBON DISULFIDE	VINYL CHLORIDE	= VINYL CHLORIDE
CHLOROBENZENE	= CHLOROBENZENE	TOTAL XYLENES	= TOTAL XYLENES
CHLOROFORM	= CHLOROFORM	1,2,4-TMTHLB	= 1,2,4-TRIMETHYLBENZENE
CHLOROMETHANE	= CHLOROMETHANE	1,2-DCE	= 1,2-DICHLOROETHENE
DBC METHANE	= DIBROMOCHLOROMETHANE	1,3,5-TMTHLB	= 1,3,5-TRIMETHYLBENZENE
1,1-DCA	= 1,1-DICHLOROETHANE	ISOPROPYLETHER	= ISOPROPYL ETHER
1,2-DCA	= 1,2-DICHLOROETHANE	ISOP(CUMENE)	= ISOPROPYLBENZENE
C-1,2-DCE	= CIS-1,2-DICHLOROETHYLENE	M,P-XYLENE	= M,P-XYLENE
T-1,2-DCE	= TRANS-1,2-DICHLOROETHYLENE	N-BUTYLBENZENE	= N-BUTYLBENZENE
1,1-DCE	= 1,1-DICHLOROETHYLENE	O-XYLENE	= O-XYLENE
1,2-DCPROPAN	= 1,2-DICHLOROPROPANE	P-ISOPRLBENZ	= P-ISOPROPYLTOLUENE
ETHYLBENZENE	= ETHYLBENZENE	PROPYLBENZENE	= PROPYLBENZENE
2-HEXANONE	= 2-HEXANONE	SEC-BTLBNZN	= SEC-BUTYLBENZENE
DICHLMETHANE	= METHYLENE CHLORIDE	T-BEE	= TERT-BUTYL ETHYL ETHER
4M2PENTANONE	= 4-METHYL-2-PETANONE (MET. ISOBUT. KET.)	TERT-BTLBNZN	= TERT-BUTYLBENZENE



Table 8-2  
SemiVolatile Organic Compounds Detected in Ground Water  
Hookston Station Remedial Investigation  
Pleasant Hill, California

NAPHTHALENE					NAPHTHALENE					NAPHTHALENE					NAPHTHALENE				
Sample Location	Date	Sample Depth	Analytical Laboratory	CAS #: 91-20-3 (µg/L)	Sample Location	Date	Sample Depth	Analytical Laboratory	CAS #: 91-20-3 (µg/L)	Sample Location	Date	Sample Depth	Analytical Laboratory	CAS #: 91-20-3 (µg/L)	Sample Location	Date	Sample Depth	Analytical Laboratory	CAS #: 91-20-3 (µg/L)
CA MCL: NE RWQCB ESL for Drinking Water: 21					CA MCL: NE RWQCB ESL for Drinking Water: 21					CA MCL: NE RWQCB ESL for Drinking Water: 21					CA MCL: NE RWQCB ESL for Drinking Water: 21				
B-01-TR	3/24/1993	25 ft	CTL	NS	CPT-02	10/22/2001	54 Ft	CTBERK	< 0.5 u	CPT-27	9/26/2002	49 Ft	STL Sac	NS	MW-05	1/21/1992	10-30	CHR	NS
B-02-TR	3/24/1993	25 ft	CTL	NS	CPT-02	10/22/2001	86 Ft	CTBERK	< 0.5 u	CPT-28	9/27/2002	56 Ft	STL Sac	NS	MW-05	11/17/1995	10-30	MCA	NS
B-03-TR	3/24/1993	25 ft	CTL	NS	CPT-04	10/22/2001	34 Ft	CTBERK	< 50 u	CPT-29	9/27/2002	65 Ft	STL Sac	NS	MW-05	6/28/2000	10-30	CTBERK	< 0.5 u
B-04-TR	3/24/1993	25 ft	CTL	NS	CPT-04	10/22/2001	45 Ft	CTBERK	< 25 u	CPT-31	9/26/2002	37 Ft	STL Sac	NS	MW-05	3/12/2001	10-30	CTBERK	NS
B-05-TR	3/25/1993	25 ft	CTL	NS	CPT-04	10/23/2001	65 Ft	CTBERK	< 1.3 u	CPT-31	9/26/2002	48 Ft	STL Sac	NS	MW-05	6/27/2001	10-30	CTBERK	< 0.5 u
B-07-TR	3/25/1993	25 ft	CTL	NS	CPT-04	10/23/2001	83 Ft	CTBERK	< 0.5 u	CPT-32	9/26/2002	49 Ft	STL Sac	NS	MW-05	9/20/2001	10-30	CTBERK	< 0.5 u
B-09-TR	3/25/1993	25 ft	CTL	NS	CPT-04	10/23/2001	95 Ft	CTBERK	< 0.5 u	MW-01	4/25/1990	10-20	MTA	NS	MW-05	9/24/2002	10-30	STL Sac	NS
B-10-TR	8/17/1993	25 ft	CTL	NS	CPT-05	10/24/2001	37 Ft	CTBERK	< 0.5 uUJ	MW-01	5/17/1990	10-20	MTA	< 10 u	MW-05	11/14/2002	10-30	STL Sac	NS
B-11-TR	8/17/1993	25 ft	CTL	NS	CPT-05	10/24/2001	44 Ft	CTBERK	< 0.5 uUJ	MW-01	3/13/1991	10-20	CHR	NS	MW-05	2/19/2003	10-30	STL Sac	NS
B-12-TR	8/19/1993	25 ft	CTL	NS	CPT-05	10/24/2001	63 Ft	CTBERK	< 0.5 uUJ	MW-01	1/21/1992	10-20	CHR	NS	MW-05	5/16/2003	10-30	STL Sac	NS
B-13-TR	8/19/1993	25 ft	CTL	NS	CPT-05	10/24/2001	97 Ft	CTBERK	< 0.5 uUJ	MW-01	11/17/1995	10-20	MCA	NS	MW-05	7/22/2003	10-30	STL Sac	NS
B-20-TR	11/14/1995	21 ft	AEN	NS	CPT-06	10/24/2001	18 Ft	CTBERK	< 0.5 uUJ	MW-01	6/29/2000	10-20	CTBERK	< 2.5 u	MW-06	3/13/1991	15-35	CHR	NS
B-21-TR	11/15/1995	29 ft	AEN	NS	CPT-06	10/24/2001	53 Ft	CTBERK	< 0.5 uUJ	MW-01	3/12/2001	10-20	CTBERK	NS	MW-06	1/21/1992	15-35	CHR	NS
B-22-TR	11/14/1995	19.5 ft	AEN	NS	CPT-06	10/24/2001	65 Ft	CTBERK	< 0.5 uUJ	MW-01	6/27/2001	10-20	CTBERK	< 2.5 u	MW-06	11/17/1995	15-35	MCA	NS
B-23-TR	11/14/1995	17.5 ft	AEN	NS	CPT-06	10/24/2001	85 Ft	CTBERK	< 0.5 uUJ	MW-01	9/20/2001	10-20	CTBERK	< 2.5 u	MW-06	6/28/2000	15-35	CTBERK	< 0.5 u
B-24-TR	11/15/1995	21.5 ft	AEN	NS	CPT-07	10/25/2001	53 Ft	CTBERK	< 2.5 uUJ	MW-01	9/24/2002	10-20	STL Sac	NS	MW-06	3/13/2001	15-35	CTBERK	NS
B-25-TR	11/15/1995	18 ft	AEN	NS	CPT-07	10/25/2001	61 Ft	CTBERK	< 2.5 uUJ	MW-01	11/14/2002	10-20	STL Sac	NS	MW-06	6/27/2001	15-35	CTBERK	< 0.5 u
B-27-TR	11/16/1995	19 ft	AEN	NS	CPT-07	10/25/2001	67 Ft	CTBERK	< 1 uUJ	MW-01	2/19/2003	10-20	STL Sac	NS	MW-06	9/20/2001	15-35	CTBERK	< 0.5 u
B-30-TR	11/16/1995	17.5 ft	AEN	NS	CPT-07	10/25/2001	73 Ft	CTBERK	< 2.5 uUJ	MW-01	5/6/2003	10-20	STL Sac	NS	MW-06	12/19/2001	15-35	CTBERK	< 0.5 u
B-33-TR	11/16/1995	19 ft	AEN	NS	CPT-07	10/25/2001	97 Ft	CTBERK	< 0.5 uUJ	MW-01	7/22/2003	10-20	STL Sac	NS	MW-06	11/14/2002	15-35	STL Sac	NS
B-35	9/24/2001	32 Ft	CTBERK	< 0.5 u	CPT-08	10/29/2001	41 Ft	CTBERK	< 0.5 u	MW-01D	4/27/1993	45-60	CTL	NS	MW-06	2/19/2003	15-35	STL Sac	NS
B-36	9/25/2001	28 Ft	CTBERK	< 0.5 u	CPT-08	10/29/2001	50 Ft	CTBERK	< 0.5 u	MW-01D	11/17/1995	45-60	MCA	NS	MW-06	5/6/2003	15-35	STL Sac	NS
B-37	9/25/2001	26 Ft	CTBERK	< 0.5 u	CPT-08	10/30/2001	66 Ft	CTBERK	< 0.5 u	MW-01D	6/29/2000	45-60	CTBERK	< 1.3 u	MW-06	7/22/2003	15-35	STL Sac	NS
B-38	9/25/2001	28 Ft	CTBERK	< 0.5 u	CPT-08	10/30/2001	77 Ft	CTBERK	< 0.5 u	MW-01D	3/13/2001	45-60	CTBERK	NS	MW-07	8/25/1993	15-35	CTL	NS
B-39	9/25/2001	32 Ft	CTBERK	< 0.5 u	CPT-08	10/30/2001	88 Ft	CTBERK	< 0.5 u	MW-01D	6/27/2001	45-60	CTBERK	< 1.3 u	MW-07	11/17/1995	15-35	MCA	NS
B-40	9/25/2001	24 Ft	CTBERK	< 0.5 u	CPT-09	11/2/2001	34 Ft	CTBERK	< 0.5 u	MW-01D	9/19/2001	45-60	CTBERK	< 2 u	MW-07	6/29/2000	15-35	CTBERK	< 0.5 u
B-41	9/26/2001	28 Ft	CTBERK	< 0.5 u	CPT-09	11/2/2001	41 Ft	CTBERK	< 0.5 u	MW-01D	2/19/2003	45-60	STL Sac	NS	MW-07	3/13/2001	15-35	CTBERK	NS
B-42	9/26/2001	20 Ft	CTBERK	< 1 u	CPT-09	11/2/2001	61 Ft	CTBERK	< 0.5 u	MW-01D	2/19/2003	45-60	STL Sac	NS	MW-07	6/27/2001	15-35	CTBERK	< 1.3 u
B-43	9/26/2001	19 Ft	CTBERK	< 1.3 u	CPT-10	11/2/2001	39 Ft	CTBERK	< 0.5 u	MW-01D	2/19/2003	45-60	STL Sac	NS	MW-07	9/20/2001	15-35	CTBERK	< 1.7 u
B-44	9/26/2001	28 Ft	CTBERK	< 0.5 u	CPT-10	11/2/2001	59 Ft	CTBERK	< 0.5 u	MW-01D	5/6/2003	45-60	STL Sac	NS	MW-07	9/24/2002	15-35	STL Sac	NS
B-45	9/26/2001	24 Ft	CTBERK	< 6.3 u	CPT-10	11/2/2001	75 Ft	CTBERK	< 0.5 u	MW-01D	5/6/2003	45-60	STL Sac	NS	MW-07	11/14/2002	15-35	STL Sac	NS
B-46	9/27/2001	20 Ft	CTBERK	< 0.5 u	CPT-10	11/7/2001	87 Ft	CTBERK	< 0.5 u	MW-01D	5/6/2003	45-60	STL Sac	NS	MW-07	2/19/2003	15-35	STL Sac	NS
B-47	10/3/2001	26 Ft	CTBERK	< 1.7 u	CPT-10	11/7/2001	98 Ft	CTBERK	< 0.5 u	MW-01D	7/22/2003	45-60	STL Sac	NS	MW-07	5/6/2003	15-35	STL Sac	NS
B-48	10/3/2001	22 Ft	CTBERK	< 2.5 u	CPT-11	11/7/2001	43 Ft	CTBERK	< 5 u	MW-02	4/25/1990	11-21	MTA	NS	MW-07	7/22/2003	15-35	STL Sac	NS
B-49	9/27/2001	20 Ft	CTBERK	< 5 u	CPT-11	11/7/2001	77 Ft	CTBERK	< 0.5 u	MW-02	5/17/1990	11-21	MTA	< 10 u	MW-08	9/25/2003	10-25	STLSEA	NS
B-50	9/27/2001	24 Ft	CTBERK	< 4.2 u	CPT-11	11/7/2001	84 Ft	CTBERK	< 0.5 u	MW-02	1/21/1992	11-21	CHR	NS					
B-51	10/3/2001	22 Ft	CTBERK	< 5 u	CPT-11	11/7/2001	96 Ft	CTBERK	< 0.5 u	MW-02	11/17/1995	11-21	MCA	NS					
B-52	10/3/2001	22 Ft	CTBERK	< 7.1 u	CPT-11	11/7/2001	96 Ft	CTBERK	< 0.5 u	MW-02	8/25/1993	54.5 ft	CTL	NS					
B-53	10/1/2001	24 Ft	CTBERK	< 5 u	CPT-12	10/29/2001	48 Ft	CTBERK	< 2 u	MW-02D	11/17/1995	54.5 ft	CTL	NS					
B-54	10/1/2001	24 Ft	CTBERK	< 7.1 u	CPT-12	10/29/2001	62 Ft	CTBERK	< 0.5 u	MW-02D	6/28/2000	50.5-60.5	CTBERK	< 0.5 u					
B-55	10/1/2001	24 Ft	CTBERK	< 1 u	CPT-12	10/29/2001	77 Ft	CTBERK	< 1.7 u	MW-02D	3/12/2001	50.5-60.5	CTBERK	NS					
B-56	10/1/2001	32 Ft	CTBERK	< 0.5 u	CPT-12	10/29/2001	87 Ft	CTBERK	< 0.5 u	MW-02D	6/27/2001	50.5-60.5	CTBERK	< 0.5 u					
B-57	9/24/2001	32 Ft	CTBERK	< 0.5 u	CPT-13	10/26/2001	52 Ft	CTBERK	< 2 u	MW-02D	9/19/2001	50.5-60.5	CTBERK	< 0.5 u					
B-58	9/24/2001	28 Ft	CTBERK	< 0.5 u	CPT-13	10/26/2001	63 Ft	CTBERK	< 3.6 u	MW-02D	12/19/2001	50.5-60.5	CTBERK	< 0.5 u					
B-60	9/18/2003	35 Ft	STLSEA	NS	CPT-13	10/26/2001	86 Ft	CTBERK	< 0.5 u	MW-02D	2/19/2003	50.5-60.5	STL Sac	NS					
B-63	9/19/2003	35 Ft	STLSEA	NS	CPT-13	10/26/2001	99 Ft	CTBERK	< 0.5 u	MW-02D	5/6/2003	50.5-60.5	STL Sac	NS					
B-65	10/1/2003	24 Ft	STLSEA	NS	CPT-14	10/30/2001	44 Ft	CTBERK	< 4.2 u	MW-02D	7/22/2003	50.5-60.5	STL Sac	NS					
B-66	9/19/2003	55 Ft	STLSEA	NS	CPT-14	10/30/2001	54 Ft	CTBERK	< 2 u	MW-03	4/25/1990	10-20	MTA	NS					
B-66	9/19/2003	35 Ft	STLSEA	NS	CPT-14	10/30/2001	86 Ft	CTBERK	< 0.5 u	MW-03	5/17/1990	10-20	MTA	< 10 u					
B-67	9/18/2003	35 Ft	STLSEA	NS	CPT-14	10/30/2001	98 Ft	CTBERK	< 0.5 u	MW-03	3/14/1991	10-20	CHR	NS					
B-67	9/19/2003	55 Ft	STLSEA	NS	CPT-15	10/31/2001	56 Ft	CTBERK	< 5 u	MW-03	1/21/1992	10-20	CHR	NS					
B-68	9/29/2003	55 Ft	STLSEA	NS	CPT-15	10/31/2001	88 Ft	CTBERK	< 0.5 u	MW-03	11/17/1995	10-20	MCA	NS					
B-68	9/30/2003	30 Ft	STLSEA	NS	CPT-15	10/31/2001	101 Ft	CTBERK	< 0.5 u	MW-03	6/29/2000	10-20	CTBERK	< 4.2 u					
B-69	9/17/2003	35 Ft	STLSEA	NS	CPT-16	11/1/2001	52 Ft	CTBERK	< 1 u	MW-03	3/13/2001	10-20	CTBERK	NS					
B-69	9/18/2003	55 Ft	STLSEA	NS	CPT-16	11/1/2001	76 Ft	CTBERK	< 0.5 u	MW-03	6/27/2001	10-20	CTBERK	< 8.3 u					
B-70	9/17/2003	55 Ft	STLSEA	NS	CPT-16	11/1/2001	88 Ft	CTBERK	7.5	MW-03	9/20/2001	10-20	CTBERK	< 4.2 u					
B-70	9/18/2003	30 Ft	STLSEA	NS	CPT-16	11/1/2001	100 Ft	CTBERK	< 0.5 u	MW-03	9/24/2002	10-20	STL Sac	NS					
B-74	9/18/2003	35 Ft	STLSEA	NS	CPT-17	11/1/2001	47 Ft	CTBERK	< 2.5 u	MW-03	11/14/2002	10-20	STL Sac	NS					
B-74	9/19/2003	55 Ft	STLSEA	NS	CPT-17	11/1/2001	57 Ft	CTBERK	< 0.5 u	MW-03	2/19/2003	10-20	STL Sac	NS					
B-75	9/22/2003	35 Ft	STLSEA	NS	CPT-17	11/1/2001	95 Ft	CTBERK	< 0.5 u	MW-03D	8/25/1993	40-50	CTL	NS					
B-75	9/22/2003	55 Ft	STLSEA	NS	CPT-18	3/29/2002	43 Ft	CTBERK	< 0.5 u	MW-03D	11/17/1995	40-50	MCA	NS					
B-77	9/19/2003																		

Table 8-3  
**Petroleum Hydrocarbons in Ground Water**  
**Hookston Station Remedial Investigation**  
**Pleasant Hill, California**

Sample Location	Date	Sample Depth	Analytical Laboratory	DIESEL FUEL	GASOLINE	GAS C7-C12	KEROSENE	MOTOR OIL	OIL/GREASE	STOD SOLVENT	TPH
				CAS No. 68334-30-5 (ug/L)	CAS No. 86290-81-5 (ug/L)	CAS No. 8006-61-9 (ug/L)	CAS No. 8008-20-6 (ug/L)	(ug/l)	(ug/L)	CAS No. 8052-41-3 (ug/L)	CAS No. UDF-010 (ug/l)
CA MCL:				-	-	-	-	-	-	-	-
RWQCB ESL for Drinking Water:				100	100	100	-	-	100	-	-
B-01-TR	3/24/1993	25 ft	CTL	NS	10000	NS	NS	NS	NS	NS	NS
B-02-TR	3/24/1993	25 ft	CTL	NS	< 50	u	NS	NS	NS	NS	NS
B-03-TR	3/24/1993	25 ft	CTL	NS	< 50	u	NS	NS	NS	NS	NS
B-04-TR	3/24/1993	25 ft	CTL	NS	< 50	u	NS	NS	NS	NS	NS
B-05-TR	3/24/1993	25 ft	CTL	NS	< 50	u	NS	NS	NS	NS	NS
B-07-TR	3/24/1993	25 ft	CTL	NS	< 50	u	NS	NS	NS	NS	NS
MW-01	4/25/1990	10-20	MTA	< 50	u	< 100	u	NS	NS	800	NS
MW-01	4/2/1993	10-20	CTL	< 50	u	< 50	u	NS	< 50	u	NS
MW-01	6/29/2000	10-20	CTBERK	59#	NS	NS	390	NS	NS	NS	NS
MW-01	3/12/2001	10-20	CTBERK	NS	NS	NS	240	yzNJ	NS	NS	NS
MW-08B*	4/12/1993	45-60	CTL	< 50	u	< 50	u	NS	< 50	u	NS
MW-08B*	6/29/2000	45-60	CTBERK	52#	NS	NS	240	NS	NS	NS	NS
MW-08B*	3/13/2001	45-60	CTBERK	NS	NS	NS	320	yzNJ	NS	NS	NS
MW-08B* Duplicate	3/13/2001	45-60	CTBERK	NS	NS	< 50	u	NS	NS	NS	NS
MW-02	4/25/1990	11-21	MTA	NS	NS	NS	NS	NS	NS	500	NS
MW-02	4/1/1993	11-21	CTL	< 50	u	NS	NS	< 50	u	NS	NS
MW-02	8/25/1993	11-21	CTL	NS	< 50	u	NS	NS	NS	NS	NS
MW-02D	8/25/1993	50.5-60.5	CTL	NS	< 50	u	NS	NS	NS	NS	NS
MW-02D	6/28/2000	50.5-60.5	CTBERK	< 50	u	NS	< 50	u	NS	NS	NS
MW-02D	3/12/2001	50.5-60.5	CTBERK	NS	NS	NS	< 50	u	NS	NS	NS
MW-02D Duplicate	6/28/2000	50.5-60.5	CTBERK	< 50	u	NS	< 50	u	NS	NS	NS
MW-03	4/25/1990	10-20	MTA	NS	NS	NS	NS	NS	NS	500	NS
MW-03	4/2/1993	10-20	CTL	< 50	u	< 50	u	NS	< 50	u	NS
MW-03	6/29/2000	10-20	CTBERK	56#	NS	NS	890	NS	NS	NS	NS
MW-03	3/13/2001	10-20	CTBERK	NS	NS	NS	920	yzNJ	NS	NS	NS
MW-03D	8/25/1993	40-50	CTL	NS	< 50	u	NS	NS	NS	NS	NS
MW-03D	6/28/2000	40-50	CTBERK	< 50	u	NS	720	NS	NS	NS	NS
MW-03D	3/13/2001	40-50	CTBERK	NS	NS	NS	390	yzNJ	NS	NS	NS
MW-03D Duplicate	3/13/2001	40-50	CTBERK	NS	NS	NS	370	yzNJ	NS	NS	NS
MW-04	4/25/1990	11-21	MTA	NS	NS	NS	NS	NS	< 500	u	NS
MW-04	1/21/1992	11-21	CHR	NS	5900	NS	NS	2700	NS	NS	< 500
MW-04	1/24/1992	11-21	CHR	1600	NS	NS	NS	< 500	u	NS	NS
MW-04	6/29/2000	11-21	CTBERK	NS	NS	NS	2700	NS	NS	NS	NS
MW-04	3/12/2001	11-21	CTBERK	NS	NS	NS	240	NJ	NS	NS	NS
MW-04	6/27/2001	11-21	CTBERK	NS	NS	NS	4200	NS	NS	NS	NS
MW-05	3/31/1993	10-30	CTL	< 50	u	< 50	u	NS	< 50	u	NS
MW-05	6/28/2000	10-30	CTBERK	< 50	u	NS	< 50	u	NS	NS	NS
MW-05	3/12/2001	10-30	CTBERK	NS	NS	NS	< 50	u	NS	NS	NS
MW-06	4/1/1993	15-35	CTL	< 50	u	< 50	u	NS	< 50	u	NS
MW-06	6/28/2000	15-35	CTBERK	< 50	u	NS	< 50	u	NS	NS	NS
MW-06	3/13/2001	15-35	CTBERK	NS	NS	NS	< 50	u	NS	NS	NS
MW-07	8/25/1993	15-35	CTL	NS	< 50	u	NS	NS	NS	NS	NS
MW-07	6/29/2000	15-35	CTBERK	< 50	u	NS	190	NS	NS	NS	NS
MW-07	3/13/2001	15-35	CTBERK	NS	NS	NS	130	yzNJ	NS	NS	NS
MW-07 Duplicate	3/13/2001	15-35	CTBERK	NS	NS	NS	90	yzNJ	NS	NS	NS

**Notes:**

µg/L = Results reported in micrograms per liter  
 < = Not Detected  
 u = Compound was analyzed for but not detected. Analyte result was below the Reporting Type Limit.  
 y = Sample exhibits fuel pattern which does not resemble standard  
 z = Sample exhibits unknown single peak or peaks  
 NS = Not Sampled  
 # = Maximum of multiple analytical results  
 \* Previously MW-01D

**Abbr Chemical**

DIESEL FUEL = DIESEL FUEL  
 GASOLINE = GASOLINE  
 GAS C7-C12 = GASOLINE C7-C12  
 KEROSENE = KEROSENE  
 MOTOR OIL = MOTOR OIL  
 OIL/GREASE = OIL AND GREASE  
 STOD SOLVENT = STODDARD SOLVENT  
 TPH = TOTAL PETROLEUM HYDROCARBONS

**Laboratories:**

CHR = Chromalab, Inc.  
 CTBERK = Curtis&Thompkins Berkley  
 CTL = Curtis & Thompkins,LTD  
 MTA = MED-TOX Associates, Inc.

Table 8-4  
Dissolved Metals Detected in Ground Water  
Hookston Station Remedial Investigation  
Pleasant Hill, California

Sample Location	Date	Sample Depth	Analytical Laboratory	Preparation Fraction	ANTIMONY (mg/L)	ARSENIC (mg/L)	BARIUM (mg/L)	BERYLLIUM (mg/L)	CADMIUM (mg/L)	CHROMIUM (mg/L)	COBALT (mg/L)	COPPER (mg/L)	LEAD (mg/L)	MERCURY (mg/L)	MOLYBDENUM (mg/L)	NICKEL (mg/L)	SELENIUM (mg/L)	SILVER (mg/L)	THALLIUM (mg/L)	VANADIUM (mg/L)	ZINC (mg/L)				
				CA MCL	0.006	0.05	1.0	0.004	0.005	0.05	-	1.3*	0.015*	0.002	-	0.1	0.05	0.1	0.002	-	5				
MW-01	4/2/1993	10-20	CTL	Dissolved	< 60	u	< 5	u	NS	< 2	u	< 5	u	< 10	u	NS	< 10	u	< 5	u	NS	< 20	u		
MW-01	4/20/2004	10-20	STL Sac	Dissolved	0.0007	b	0.031	u	1.0	0.0029	u	0.032	u	< 10	u	0.070	0.19	j	0.078	u	< 0.005	b	0.0005	b	
MW-01D	4/12/1993	45-60	CTL	Dissolved	< 60	u	< 5	u	NS	< 2	u	< 5	u	< 10	u	NS	< 10	u	< 5	u	NS	< 20	u		
MW-08B (prev. MW-01D)	4/20/2004	45-60	STL Sac	Dissolved	0.003	u	0.0075	u	0.063	< 0.001	u	0.0042	u	0.025	u	0.0029	< 0.023	j	0.0077	u	< 0.0002	u	0.0022	u	
MW-08B Field Duplicate	4/20/2004	45-60	STL Sac	Dissolved	0.003	u	0.0066	u	0.060	< 0.001	u	0.004	u	0.022	u	0.0028	< 0.022	j	0.0077	u	0.0001	b	0.0016	u	
MW-02	4/1/1993	11-21	CTL	Dissolved	< 60	u	< 5	u	NS	< 5	u	< 5	u	< 10	u	NS	< 10	u	< 3	u	< 0.2	u	NS	< 20	u
MW-03	4/2/1993	10-20	CTL	Dissolved	< 60	u	< 5	u	NS	< 2	u	< 5	u	< 10	u	NS	< 10	u	< 3	u	< 0.2	u	NS	< 20	u
MW-03	4/20/2004	10-20	STL Sac	Dissolved	0.0003	b	0.081	u	2.9	0.0077	u	0.091	u	0.15	u	0.013	0.0029	u	0.57	u	0.015	u	0.0017	u	
MW-04	4/21/2004	11-21	STL Sac	Dissolved	0.0014	b	0.045	u	0.50	0.0016	u	0.031	u	0.14	u	0.038	< 0.002	u	0.025	u	0.0004	b	0.0007	b	
MW-04 Field Duplicate	4/21/2004	11-21	STL Sac	Dissolved	0.0012	b	0.04	u	0.47	0.0016	u	0.025	u	0.13	u	0.035	< 0.045	j	0.028	u	< 0.0002	u	0.024	u	
MW-05	3/31/1993	10-30	CTL	Dissolved	< 60	u	< 5	u	NS	0.1	u	< 5	u	< 10	u	NS	< 10	u	< 3	u	< 0.2	u	NS	< 20	u
MW-05	4/20/2004	10-30	STL Sac	Dissolved	0.0003	b	0.029	u	0.94	0.0033	u	0.029	u	0.31	u	0.053	< 0.13	j	0.03	u	0.0003	u	0.0027	u	
MW-06	4/1/1993	15-35	CTL	Dissolved	< 60	u	< 5	u	NS	< 0.5	u	< 5	u	< 10	u	NS	< 10	u	< 3	u	< 0.2	u	NS	< 20	u
MW-06	4/20/2004	15-35	STL Sac	Dissolved	0.0004	b	0.022	u	0.50	0.0015	u	0.003	u	0.12	u	0.025	0.063	j	0.015	u	0.0001	b	0.0025	u	
MW-07	4/20/2004	15-35	STL Sac	Dissolved	0.0006	b	0.0078	u	0.47	0.0007	u	0.0041	u	0.015	u	0.022	0.0081	j	< 0.0002	u	0.0025	u	0.064	u	
MW-08A	4/21/2004	10-25	STL Sac	Dissolved	0.0002	b	0.0043	u	0.22	0.0001	u	0.0002	u	0.015	u	0.0078	0.0015	j	< 0.0002	u	0.0037	u	0.012	u	
MW-09B	4/27/2004	50.5-60.5	STL Sac	Dissolved	0.024	u	0.0025	u	0.28	< 0.001	u	0.018	u	0.014	u	0.0087	0.0032	j	0.042	u	< 0.0002	u	0.0018	u	
MW-10B	4/26/2004	40-50	STL Sac	Dissolved	0.0024	u	< 0.002	u	0.085	< 0.001	u	0.013	u	0.0042	u	0.016	0.012	j	0.0056	u	< 0.0002	u	0.0026	u	
MW-10B Duplicate	4/26/2004	40-50	STL Sac	Dissolved	0.0029	u	< 0.002	u	0.082	< 0.001	u	0.014	u	0.0031	u	0.015	0.012	j	0.0061	u	< 0.0002	u	0.0026	u	
MW-11A	4/27/2004	10-25	STL Sac	Dissolved	0.0004	b	0.0046	u	0.26	0.0002	u	0.0004	u	0.022	u	0.0024	0.011	j	0.0028	u	< 0.0002	u	0.0058	u	
MW-11B	4/27/2004	40-50	STL Sac	Dissolved	0.0001	b	0.0074	u	0.23	< 0.001	u	0.001	u	0.005	u	0.0034	0.0029	j	0.0005	b	< 0.0002	u	0.010	u	
MW-12A	4/27/2004	10-25	STL Sac	Dissolved	0.0003	b	0.0048	u	0.24	0.0003	u	0.0003	u	0.028	u	0.0044	0.0094	j	< 0.0002	u	0.0042	u	0.018	u	
MW-12B	4/27/2004	50-60	STL Sac	Dissolved	0.0031	u	0.003	u	0.15	< 0.001	u	< 0.001	u	0.002	u	0.00048	0.002	j	< 0.001	u	< 0.0002	u	0.0037	u	
MW-13A	4/27/2004	18-33	STL Sac	Dissolved	0.0003	b	0.0032	u	0.17	< 0.001	u	0.0002	u	0.0017	u	0.0017	0.003	j	0.0003	b	< 0.0002	u	0.010	u	
MW-13B	4/21/2004	45-55	STL Sac	Dissolved	0.0002	b	0.0018	u	0.15	< 0.001	u	0.0001	u	< 0.002	u	0.0022	0.0025	j	0.001	u	< 0.0002	u	0.0072	u	
MW-14A	4/28/2004	29-34	STL Sac	Dissolved	0.0018	b	0.014	u	0.58	0.0018	u	0.0025	u	0.19	u	0.026	0.07	j	0.022	u	< 0.0002	u	0.0027	u	
MW-14B	4/28/2004	40-50	STL Sac	Dissolved	0.0031	u	0.0029	u	1.1	< 0.001	u	< 0.001	u	0.021	u	0.015	0.0035	j	0.0071	u	< 0.0002	u	0.0082	u	
MW-15A	4/22/2004	14.5-24.5	STL Sac	Dissolved	0.0002	b	0.061	u	2.9	0.0066	u	0.0045	u	0.45	u	0.11	0.25	j	0.079	u	0.0005	u	0.0034	u	
MW-15B	4/23/2004	49-59	STL Sac	Dissolved	0.0011	b	0.0037	u	2.0	< 0.001	u	0.0001	u	0.018	u	0.0016	0.0035	j	0.0026	u	< 0.0002	u	0.0046	u	
MW-15C	4/22/2004	90-95	STL Sac	Dissolved	0.0048	u	0.0032	u	4.6	0.0002	u	0.0002	u	0.045	u	0.0043	0.012	j	0.02	u	< 0.0002	u	0.0064	u	
MW-16A	4/27/2004	15-25	STL Sac	Dissolved	0.0057	u	0.0044	u	0.17	< 0.001	u	< 0.001	u	0.0091	u	0.00090	0.002	j	< 0.001	u	0.0001	b	0.0047	u	
MW-16B	4/26/2004	35-45	STL Sac	Dissolved	0.0069	u	0.0008	u	0.33	< 0.001	u	< 0.001	u	0.076	u	0.0019	0.0094	j	0.014	u	< 0.0002	u	0.041	u	
MW-17A	4/27/2004	20.7-30.7	STL Sac	Dissolved	0.0002	b	0.013	u	0.66	0.0026	u	0.0013	u	0.11	u	0.048	0.062	j	0.022	u	0.0002	u	0.012	u	
MW-17B	4/27/2004	44-54	STL Sac	Dissolved	0.002	b	0.0023	u	0.36	0.0001	u	0.0001	u	0.037	u	0.0023	0.0062	j	0.0035	u	< 0.0002	u	0.0040	u	
MW-18A	4/28/2004	14.7-24.7	STL Sac	Dissolved	0.0002	b	0.021	u	0.58	0.0028	u	0.001	u	0.17	u	0.046	0.1	j	0.021	u	< 0.0002	u	0.0011	u	
MW-18B	4/28/2004	32-42	STL Sac	Dissolved	0.0072	u	0.0021	u	0.45	0.0001	u	0.0001	u	0.016	u	0.0026	0.0094	j	0.0086	u	< 0.0002	u	0.0015	u	
MW-19A	4/28/2004	14-24	STL Sac	Dissolved	0.0002	b	0.012	u	1.8	0.0029	u	0.003	u	0.072	u	0.033	0.035	j	0.0082	u	< 0.001	u	0.015	u	
MW-19B	4/28/2004	29-39	STL Sac	Dissolved	0.0024	u	0.0085	u	16.1	0.0006	u	0.0012	u	0.045	u	0.012	0.024	j	0.022	u	< 0.0002	u	0.0013	u	
MW-19C	4/28/2004	70-80	STL Sac	Dissolved	0.0045	u	0.0017	u	36.7	< 0.001	u	0.0003	u	0.01	u	0.0030	0.015	j	0.013	u	< 0.0002	u	0.0031	u	
MW-19C Duplicate	4/28/2004	70-80	STL Sac	Dissolved	0.0051	u	0.0017	u	32.2	< 0.001	u	0.0002	u	0.01	u	0.0029	0.015	j	0.014	u	< 0.0002	u	0.0030	u	
MW-20A	4/22/2004	10-20	STL Sac	Dissolved	0.0001	b	0.042	u	2.0	0.0078	u	0.0028	u	0.55	u	0.14	0.23	j	0.072	u	0.001	u	0.0035	u	
MW-20B	4/22/2004	30.5-40.5	STL Sac	Dissolved	0.0007	b	0.014	u	0.53	0.0005	u	0.0006	u	0.047	u	0.0076	0.021	j	0.0049	u	< 0.0002	u	0.0094	u	
MW-21A	4/21/2004	10-20	STL Sac	Dissolved	0.0001	b	0.11	u	2.6	0.013	u	0.0085	u	0.76	u	0.21	0.38	j	0.12	u	0.0011	u	0.0048	u	
MW-21B	4/21/2004	29-39	STL Sac	Dissolved	0.0005	b	0.016	u	0.50	0.0012	u	0.001	u	0.12	u	0.019	0.043	j	0.012	u	< 0.0002	u	0.0095	u	
MW-22A	4/21/2004	15-25	STL Sac	Dissolved	0.0001	b	0.058	u	2.1	0.0089	u	0.018	u	0.58	u	0.16	0.39	j	0.088	u	0.0008	u	0.0051	u	
MW-22B	4/21/2004	40-50	STL Sac	Dissolved	0.0014	b	0.021	u	0.73	0.0018	u	0.0036	u	0.13	u	0.034	0.062	j	0.021	u	0.0001	b	0.0047	u	
MW-24A	4/27/2004	19.5-29.5	STL Sac	Dissolved	0.0004	b	0.0096	u	0.46	0.0025	u	0.0016	u	0.066	u	0.045	0.058	j	0.017	u	0.0002	u	0.00067	u	
MW-24B	4/27/2004	39.5-49.5	STL Sac	Dissolved	0.01	u	0.0038	u	8.6	0.0003	u														

**Table 8-5**  
**General Minerals, Water Quality, and Natural Attenuation Parameters in Ground Water**  
**Hookston Station Remedial Investigation**  
**Pleasant Hill, California**

Sample Location	Date	Sample Depth	Analytical Laboratory	Preparation Fraction	TDS	ALKALINITY, TOTAL AS CaCO3	CHLORIDE	BORON	CALCIUM	HARDNESS	POTASSIUM	SODIUM	MAGNESIUM	TOC	IRON	MANGANESE	NITRATE, NITROGEN	SULFATE	CARBON DIOXIDE	ETHANE	ETHENE	METHANE								
					(mg/L) MCAWW 160.1	(mg/L) MCAWW 310.1	(mg/L) MCAWW 300.0	(mg/L) SW846 6020	(mg/L) SW846 6010B	(mg/L) SM18 2340B	(mg/L) SW846 6010B	(mg/L) SW846 6010B	(mg/L) SW846 6010B	(mg/L) SW846 6010B	(mg/L) MCAWW 415.1	(mg/L) SW846 6010B	(mg/L) SW846 6010B	(mg/L) SW846 6010B	(mg/L) MCAWW 300.0	(mg/L) MCAWW 300.0	(mg/L) RSK 175	(ug/L) RSK 175	(ug/L) RSK 175	(mg/L) RSK 175						
MW-01	3/12/2001	10-20	CTBERK	Total	860	450	130	NS	NS	NS	NS	NS	NS	NS	14	0.19	2.6	150	57.7	d	< 0.5	u	< 1	u	< 0.5	u				
MW-01	6/27/2001	10-20	CTBERK	Total	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	< 100	u	0.02	NS	NS	NS	d	< 0.5	u	< 1	u	< 0.5	u			
MW-01	9/20/2001	10-20	CTBERK	Total	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	< 100	u	0.039	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS			
MW-01	4/20/2004	10-20	STL Sac	Total	NS	553	72.2	q	4.0	139	746	10.4	147	97.0	3.6	NS	NS	135	q	NS	NS	NS	NS	NS	NS	NS	NS			
MW-01D	3/13/2001	45-60	CTBERK	Total	1120	530	210	NS	NS	NS	NS	NS	NS	NS	< 100	u	< 10	u	1.7	170	39.9	d	21	d	< 1	u	0.0038	d		
MW-01D	6/27/2001	45-60	CTBERK	Total	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	< 100	u	< 10	u	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS		
MW-01D	9/19/2001	45-60	CTBERK	Total	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	< 100	u	< 10	u	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS		
MW-08B (previously MW-01D)	4/20/2004	45-60	STL Sac	Total	NS	64.8	62.4	q	0.20	46.8	198	2.3	12.3	19.7	2.5	0.064	b	0.0042	b	0.52	22.8	q	0.68	NS	NS	NS	0.001	U		
MW-08B dup (previously MW-01D)	4/20/2004	45-60	STL Sac	Total	NS	67.0	61.8	q	0.17	45.4	195	2.3	10.4	19.9	2.5	0.074	b	0.0065	b	0.54	22.2	q	0.65	NS	NS	NS	0.0011	U		
MW-02D	3/12/2001	50.5-60.5	CTBERK	Total	710	420	100	NS	NS	NS	NS	NS	NS	NS	< 100	u	< 10	u	1.5	59	1000	u	< 0.5	u	< 1	u	0.0005	d		
MW-02D	6/27/2001	50.5-60.5	CTBERK	Total	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	< 100	u	< 10	u	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS		
MW-02D	9/19/2001	50.5-60.5	CTBERK	Total	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	< 100	u	< 10	u	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS		
MW-09B (previously MW-02D)	4/27/2004	50.5-60.5	STL Sac	Total	NS	369	110	Qj	2.6	131	507	4.8	115	j	43.4	2.0	NS	NS	0.97	< 10	uq	NS	NS	NS	NS	NS	NS	NS		
MW-03	3/13/2001	10-20	CTBERK	Total	1360	690	190	NS	NS	NS	NS	NS	NS	NS	< 100	u	< 10	u	4.4	230	131	d	< 0.5	u	< 1	u	< 0.5	u		
MW-03	6/27/2001	10-20	CTBERK	Total	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	< 100	u	0.01	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS		
MW-03	9/20/2001	10-20	CTBERK	Total	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	< 100	u	0.016	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS		
MW-03	4/20/2004	10-20	STL Sac	Total	NS	719	177	q	3.6	331	1720	21.4	185	217	4.0	0.27	0.0072	2.2	q	190	q	82	NS	NS	NS	0.001	U			
MW-03D	3/13/2001	40-50	CTBERK	Total	1230	580	220	NS	NS	NS	NS	NS	NS	NS	< 100	u	0.16	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS		
MW-03D	6/27/2001	40-50	CTBERK	Total	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	< 100	u	0.37	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS		
MW-03D	9/19/2001	40-50	CTBERK	Total	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	< 100	u	0.064	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS		
MW-10B (previously MW-03D)	4/26/2004	40-50	STL Sac	Total	NS	153	29.2	q	0.49	39.0	155	21.1	53.5	j	14.0	17.2	NS	NS	4.0	qj	33.8	Qj	NS	NS	NS	NS	NS	NS		
MW-10B dup (previously MW-03D)	4/26/2004	40-50	STL Sac	Total	NS	160	31.5	q	0.41	36.9	143	21.0	49.6	j	12.4	16.7	NS	NS	4.1	qj	35.0	Qj	NS	NS	NS	NS	NS	NS		
MW-04	3/12/2001	11-21	CTBERK	Total	1420	720	170	NS	NS	NS	NS	NS	NS	NS	NS	3.3	1.8	1.8	180	163	d	< 0.5	u	< 1	u	0.34	d			
MW-04	6/27/2001	11-21	CTBERK	Total	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	0.12	1.9	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS		
MW-04	9/20/2001	11-21	CTBERK	Total	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	< 100	u	1.4	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS		
MW-04	4/21/2004	11-21	STL Sac	Total	NS	737	212	q	3.7	NS	J	893	9.0	235	j	116	4.4	NS	NS	1.6	NS	NS	NS	NS	NS	NS	NS	NS		
MW-04 Duplicate	4/21/2004	11-21	STL Sac	Total	NS	750	218	q	3.7	162	J	863	8.4	228	j	111	4.8	NS	NS	1.5	NS	NS	NS	NS	NS	NS	NS	NS		
MW-05	3/12/2001	10-30	CTBERK	Total	1480	640	NS	NS	NS	NS	NS	NS	NS	NS	9.2	0.28	2.5	210	126	d	< 0.5	u	< 1	u	< 0.5	u	u	u		
MW-05	6/27/2001	10-30	CTBERK	Total	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	< 100	u	0.25	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS		
MW-05	9/20/2001	10-30	CTBERK	Total	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	< 100	u	0.33	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS		
MW-05	4/20/2004	10-30	STL Sac	Total	NS	785	129	q	4.4	202	1010	8.9	221	NS	3.0	NS	NS	2.4	q	235	q	NS	NS	NS	NS	NS	NS	NS		
MW-06	3/13/2001	15-35	CTBERK	Total	1420	710	210	NS	NS	NS	NS	NS	NS	NS	< 100	u	0.27	5.9	260	114	d	< 0.5	u	< 1	u	< 0.5	u			
MW-06	6/27/2001	15-35	CTBERK	Total	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	< 100	u	0.34	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS		
MW-06	9/20/2001	15-35	CTBERK	Total	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	< 100	u	0.27	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS		
MW-06	4/20/2004	15-35	STL Sac	Total	NS	783	197	q	3.1	NS	1020	6.3	215	119	3.2	NS	NS	2.5	q	251	q	NS	NS	NS	NS	NS	NS	NS		
MW-07	3/13/2001	15-35	CTBERK	Total	1370	700	200	NS	NS	NS	NS	NS	NS	NS	< 100	u	< 10	u	1.8	260	106	d	< 0.5	u	< 1	u	< 0.5	u		
MW-07	6/27/2001	15-35	CTBERK	Total	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	< 100	u	0.03	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS		
MW-07	9/20/2001	15-35	CTBERK	Total	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	< 100	u	0.029	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS		
MW-07	4/20/2004	15-35	STL Sac	Total	NS	751	155	q	4.8	174	874	3.7	220	NS	2.6	NS	NS	0.83	262	q	NS	NS	NS	NS	NS	NS	NS	NS		
MW-08A	4/21/2004	10-25	STL Sac	Total	NS	786	195	q	4.9	g	178	J	869	1.5	240	j	103	3.0	0.06	b	0.095	1.7	289	q	110	NS	NS	0.001	U	
MW-11A	4/27/2004	10-25	STL Sac	Total	NS	743	158	qj	3.6	j	157	J	746	2.0	214	j	85.6	3.6	0.36	0.12	< 0.5	u	198	qj	97	NS	NS	0.03	b	
MW-11B	4/27/2004	40-50	STL Sac	Total	NS	536	347	qj	3.1	j	138	J	672	1.3	190	j	79.1	2.0	0.093	b	2.5	< 0.5	u	124	qj	61	NS	NS	0.0012	bU
MW-12A	4/27/2004	10-25	STL Sac	Total	NS	601	109	qj	2.5	j	145	J	667	2.2	144	j	74.1	2.4	< 0.1	u	0.077	5.2	q	171	qj	88	NS	NS	< 0.001	u
MW-12B	4/27/2004	50-60	STL Sac	Total	NS	498	277	qj	3.8	j	124	J	602	1.3	182	j	71.0	2.4	0.11	u	1	< 0.5	u	82.6	qj	60	NS	NS	0.0011	bU
MW-13A	4/21/2004	18-33	STL Sac	Total	NS	644	135	q	4.2	g	139	J	640	1.1	194	j	71.0	3.2	0.019	b	1	1.1	152	q	77	NS	NS	0.035	b	
MW-13B	4/22/2004	45-55	STL Sac	Total	NS	644	168	q	4.1	g	126	J	626	1.9	226	j	75.8	4.6	< 0.1	u	0.94	0.48	bj	198	q	57	NS	NS	0.024	b
MW-14A	4/28/2004	29-34	STL Sac	Total	NS	462	223	qj	3.2	NS	190	j	881	10.3	162	j	98.7	5.9	0.075	b	0.87	< 0.5	u	160	qj	25	NS	NS	0.0019	bU
MW-14B	4/28/2004	40-50	STL Sac	Total	NS	382	180	qj	3.1	NS	49.0	j	312	9.8	209	j	46.2	1.9	< 0.1	u	0.01	1.4	120	qj	4	NS	NS	0.0011	bU	
MW-15A	4/22/2004	14.5-24.5	STL Sac	Total	NS	781	228	q	3.4	g	212	J	1250	19.9	229	j	174	4.1	< 0.1	u	0.11	2.1	qj	227	q	110	NS	NS	0.011	U
MW-15B	4/23/2004	49-59	STL Sac	Total	NS	538	216	q	3.7	g	116	J	535	5.7	239	j	59.7	14.8	< 0.1	u	0.17	0.56	J	162	q	35	NS	NS	0.0018	U
MW-15C	4/22/2004	90-95	STL Sac	Total	NS	373	156	q	2.7	g	78.3	J	402	2.7	138	j	50.0	2.1	NS	NS	< 0.5	uK	61.7	q	NS	NS	NS	NS	NS	
MW-16A	4/27/2004	15-25	STL Sac	Total	NS	472	160	qj	3.0	j	222	J	877	12.5	180	j	78.6	4.1	0.035	b	0.19	1.8	q	164	qj	7.9	NS	NS	0.058	b
MW-16B	4/26/2004	35-45	STL Sac	Total	NS	150	174	q	1.9	NS	65																			

**Table 9-1**  
**Volatile Organic Compounds Detected in Surface Water Samples**  
**(Most Common VOCs)**  
**Hookston Station Remedial Investigation**  
**Pleasant Hill, California**

Sample Location	Sample Date	Sample Depth/ Screened Interval (ft bws)	Analytical Laboratory	PCE (µg/L)	TCE (µg/L)	c-1,2-DCE (µg/L)	t-1,2-DCE (µg/L)	1,1-DCE (µg/L)	VC (µg/L)	1,1,1-TCA (µg/L)	1,1,2-TCA (µg/L)	BENZENE (µg/L)	TOLUENE (µg/L)	ETHYLBENZENE (µg/L)	MTBE (µg/L)
RWQCB Final Surface Water Screening Level <sup>(A)</sup>				5	5	6	10	3.2	0.5	62	5	1	40	30	5
RWQCB Lowest (Chronic) Fresh Water Habitat Goal <sup>(B)</sup>				120	360	590	590	25	780	62	4,700	46	130	290	66,000
RWQCB Maximum (Acute) Fresh Water Habitat Goal <sup>(C)</sup>				NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	120,000
RWQCB Bioaccumulation and Human Consumption Standards <sup>(D)</sup>				8.9	81	NE	140,000	3.2	530	NE	42	71	200,000	29,000	NE
<b>Surface Water Samples</b>															
FC-154-L	6/20/2002	0-1 ft	STL	< 1.0	< 1.0	<1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
FC-1905-L ("FC-1")	6/25/2001	0-1 ft	CTBERK	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	N/A
FC-2210-L	9/14/2001	0-1 ft	CTBERK	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.7	< 0.5	N/A
FC-2210-R	9/14/2001	0-1 ft	CTBERK	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.7	< 0.5	N/A
FC-2270-L	9/14/2001	0 Ft	CTBERK	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.7	< 0.5	< 0.5
FC-2270-R	9/14/2001	0 Ft	CTBERK	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.7	< 0.5	< 0.5
FC-2630-L ("FC-2")	6/25/2001	0-1 ft	CTBERK	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	N/A
FC-2830-L	9/14/2001	0-1 ft	CTBERK	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.6	< 0.5	< 0.5
FC-3030-L	9/14/2001	0-1 ft	CTBERK	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.7	< 0.5	< 0.5
FC-3230-L	9/14/2001	0-1 ft	CTBERK	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
FC-3430-L	9/14/2001	0-1 ft	CTBERK	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.8	< 0.5	< 0.5
FC-3430-R	9/14/2001	0-1 ft	CTBERK	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.8	< 0.5	< 0.5
FC-3630-L	9/14/2001	0-1 ft	CTBERK	< 0.5	0.7	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.5	< 0.5	< 0.5
FC-3830-L	9/14/2001	0-1 ft	CTBERK	< 0.5	0.9	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.8	< 0.5	< 0.5
FC-3940-L ("FC-3")	6/25/2001	0-1 ft	CTBERK	< 0.5	3.3	1.4	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	N/A
FC-3940-L ("FC-3")	7/20/2001	0-1 ft	CTBERK	< 0.5	2.5	1.0	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	N/A
FC-3940-L ("FC-3") Dup	7/20/2001	0-1 ft	CTBERK	< 0.5	2.8	1.0	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	N/A
FC-3940-L	9/14/2001	0-1 ft	CTBERK	< 0.5	1.2	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.8	< 0.5	< 0.5
FC-3940-L	4/19/2002	0-1 ft	CTBERK	< 0.5	UJ	1.7	J	0.5	UJ	< 0.5	UJ	< 0.5	UJ	< 0.5	UJ
FC-3940-R	9/14/2001	0-1 ft	CTBERK	< 0.5	0.8	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.8	< 0.5	< 0.5
FC-4060-L ("FC-4")	7/20/2001	0-1 ft	CTBERK	< 0.5	2.7	1.0	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	N/A
FC-4095-L	6/20/2002	0-1 ft	STL	< 1.0	1.8	0.57 J	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1
FC-4630-L	9/14/2001	0-1 ft	CTBERK	< 0.5	0.8	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.7	< 0.5	< 0.5
FC-5041-L	6/20/2002	0-1 ft	STL	2.6	1.4	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	8.3
FC-5570-L	9/14/2001	0-1 ft	CTBERK	< 0.5	0.9	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.7	< 0.5	< 0.5
FC-5570-L	4/19/2002	0-1 ft	CTBERK	< 0.5	UJ	1.2	J	0.5	UJ	< 0.5	UJ	< 0.5	UJ	< 0.5	UJ
FC-5570-L	6/20/2002	0-1 ft	STL	< 1.0	1.7	0.60 J	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1
FC-7200-L	4/19/2002	0-1 ft	CTBERK	< 0.5	UJ	1	J	0.5	UJ	< 0.5	UJ	< 0.5	UJ	< 0.5	UJ
FC-8848-L	6/20/2002	0-1 ft	STL	< 1.0	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1

**Notes:**

Table includes results of most commonly detected VOCs in ground water; see Analytical Reports for complete results.

Concentrations are reported in micrograms per liter (µg/L).

(A) Freshwater Surface Water Bodies Environmental Screening Levels from Table F of the San Francisco Bay Regional Water Resources Quality Control Board's *Screening For Environmental Concerns At Sites With Contaminated Soil and Groundwater*, Interim Final July 2003 (updated 4 February 2004).

(B) Chronic Freshwater Aquatic Habitat Goals from Appendix 1, Table F-4a of the San Francisco Bay Regional Water Quality Control Board's *Screening For Environmental Concerns At Sites With Contaminated Soil and Groundwater*, Interim Final July 2003 (updated 4 February 2004).

(C) Maximum (acute) Freshwater Aquatic Habitat Goals from Appendix 1, Table F-4b of the San Francisco Bay Regional Water Quality Control Board's *Screening For Environmental Concerns At Sites With Contaminated Soil and Groundwater*, Interim Final July 2003 (updated 4 February 2004).

(D) Surface Water Quality Standards for Bioaccumulation and Human Consumption of Aquatic Organisms from Appendix 1, Table F-4d of the San Francisco Bay Regional Water Quality Control Board's *Screening For Environmental Concerns At Sites With Contaminated Soil and Groundwater*, Interim Final July 2003 (updated 4 February 2004).

J = The result is an estimated value

UJ = The compound was not detected at an estimated limit

N/A = Not available

(dup) = Duplicate sample

"<" = Less than; compound not detected at method detection limit

ft bws = feet below water surface

na = not applicable

CTBERK = Curtis & Tompkins, Berkeley

STL = Severn Trent Laboratories

PCE

TCE

c-1,2-DCE

t-1,2-DCE

1,1-DCE

VC

Tetrachloroethene

Trichloroethene

cis-1,2-Dichloroethene

trans-1,2-Dichloroethene

1,1-Dichloroethene

Vinyl chloride

1,1,1-TCA

1,1,2-TCA

BZ

TOL

EB

MTBE

1,1,1-Trichloroethane

1,1,2-Trichloroethane

Benzene

Toluene

Ethylbenzene

Methyl Tert-Butyl Ether

**Table 9-2**  
**Volatile Organic Compounds in Sediment Samples**  
**Hookston Station Remedial Investigation**  
**Pleasant Hill, California**

Location	Date	Sample Depth	Analytical Laboratory	PCE (µg/kg)	TCE (µg/kg)	c-1,2-DCE (µg/kg)	t-1,2-DCE (µg/kg)	1,1-DCE (µg/kg)	VC (µg/kg)	1,1,1-TCA (µg/kg)	1,1,2-TCA (µg/kg)	BZ (µg/kg)	TOL (µg/kg)	EB (µg/kg)
FC-154-L	6/20/2002	0-1 Ft	STL Sac	< 6.5	< 6.5	< 6.5	< 6.5	< 6.5	< 13	< 6.5	< 6.5	< 6.5	< 6.5	< 6.5
FC-1388-R	6/20/2002	0-1 Ft	STL Sac	< 7	< 7	< 7	< 7	< 7	< 14	< 7	< 7	< 7	< 7	< 7
FC-1851-R	6/20/2002	0-1 Ft	STL Sac	< 7.3	< 7.3	< 7.3	< 7.3	< 7.3	< 15	< 7.3	< 7.3	< 7.3	< 7.3	< 7.3
FC-1972-R	6/20/2002	0-1 Ft	STL Sac	< 6.6	< 6.6	< 6.6	< 6.6	< 6.6	< 13	< 6.6	< 6.6	< 6.6	< 6.6	< 6.6
FC-2210-R	6/20/2002	0-1 Ft	STL Sac	< 7.4	< 7.4	< 7.4	< 7.4	< 7.4	< 15	< 7.4	< 7.4	< 7.4	< 7.4	< 7.4
FC-2577-R	6/20/2002	0-1 Ft	STL Sac	< 7.2	< 7.2	< 7.2	< 7.2	< 7.2	< 14	< 7.2	< 7.2	< 7.2	< 7.2	< 7.2
FC-3338-R	6/20/2002	0-1 Ft	STL Sac	< 8.4	< 8.4	< 8.4	< 8.4	< 8.4	< 17	< 8.4	< 8.4	< 8.4	< 8.4	< 8.4

**Notes:**

VOCs were not detected in any of the sediment samples.

Only the VOCs most commonly detected in ground water, soil, soil vapor, and air are included on this table.

All samples collected from fluvial deposits within the Contra Costa Flood Canal.

Concentrations are reported in micrograms per kilogram (µg/kg)

< = not detected at specified detection limit

STL Sac = Severn Trent Laboratories

Abbr

PCE

TCE

c-1,2-DCE

t-1,2-DCE

1,1-DCE

VC

1,1,1-TCA

1,1,2-TCA

Chemical

Tetrachloroethene

Trichloroethene

cis-1,2-Dichloroethene

trans-1,2-Dichloroethene

1,1-Dichloroethene

Vinyl chloride

1,1,1-Trichloroethane

1,1,2-Trichloroethane

**Table 10-1**  
**Volatile Organic Compounds Detected in Air Samples**  
**Hookston Station Remedial Investigation**  
**Pleasant Hill, California**

Sampling Information										Results ( $\mu\text{g}/\text{m}^3$ )		
Sample ID	Address	Start Date	Sample Location	Sample Height (approx.)	Start Time	End Time	Temp. Indoor °F	Indoor Relative Humidity	Temp. Outdoor °F	TCE	c-1,2-DCE	1,1-DCE
<i>Commercial/Industrial Land Use ESL:</i>										2.0	10	58
<b>Commercial/Industrial Indoor Air Samples</b>												
IA-1	199 Mayhew	12/12/2003	Office - Evergreen	5 FT.	8:20	15:20	NA	NA	NA	1.9	<0.16	<0.081
IA-2	199 Mayhew	12/12/2003	Workspace - Evergreen	5 FT.	8:25	15:22	NA	NA	NA	4.9	1.4	<0.074
IA-3	199 Mayhew	12/12/2003	Workspace - Evergreen	5 FT.	8:27	15:24	NA	NA	NA	0.68	<0.15	<0.075
IA-5	199 Mayhew	12/12/2003	Workspace - Jack's Autobody	5 FT.	9:10	16:27	NA	NA	NA	1.8	0.78	<0.069
IA-6	199 Mayhew	12/12/2003	Office - Jack's Autobody	5 FT.	9:10	17:00	NA	NA	NA	2.4	<0.13	<0.066
AA-2 (ambient air)	199 Mayhew	12/12/2003	Ambient Air	4 FT.	9:00	16:58	NA	NA	NA	<0.18	<0.13	<0.065
<i>Residential Land Use ESL:</i>										1.2	7.3	42
<b>Residential Indoor Air Samples</b>												
1208 Hookston	1208 HOOKSTON RD	1/20/2004	Living Room	5 FT.	20:00	8:00	NA	NA	NA	0.19	<0.13	0.064
1208 Hookston DUP		1/20/2004	Living Room	5 FT.	20:00	8:00				0.18	<0.13	0.062 J
1009 Stimel	1009 STIMEL DR	1/20/2004	Kitchen	5 FT.	20:10	8:10	NA	NA	NA	3.5	<0.13	0.067
1009 Stimel DUP		1/20/2004	Kitchen	5 FT.	20:10	8:10				3.8	<0.13	0.075
1009 Stimel (crawl)		1/20/2004	Crawl Space	SUB FLOOR	20:10	8:10				6.7	<0.13	0.082
1000 Hampton	1000 HAMPTON DR	1/21/2004	Living Room	5 FT.	8:00	20:02	NA	NA	NA	1.2	<0.14	<0.068
1000 Hampton (crawl)		1/21/2004	Crawl Space	SUB FLOOR	8:00	20:05				1.6	<0.13	<0.066
1000 Hampton (ambient air)	1000 Hampton Dr	1/21/2004	Back Yard	5 FT.	8:00	20:00				<0.18	<0.14	<0.068
1006 Stimel	1006 STIMEL DR	2/17/2004	Master Bed	3 FT.	19:55	7:55	70	59%	NA	3.3	<0.13	<0.065
1006 Stimel (crawl)		2/17/2004	Crawl Space	SUB FLOOR	19:50	7:53				5.1	0.38	<0.064
1005 Stimel	1005 STIMEL DR	2/17/2004	Master Bed	3 FT.	20:10	8:04	74	63%	NA	0.38	<0.13	<0.064
1005 Stimel (crawl)		2/17/2004	Crawl Space	SUB FLOOR	20:05	8:08				hold	hold	hold
1204 Hookston	1204 HOOKSTON RD	2/19/2004	Living Room	5 FT.	19:40	7:40	64	46%	63	<0.18	<0.14	<0.068
1002 Hampton	1002 HAMPTON DR	2/19/2004	Master Bed	3 FT.	19:55	7:54	70	52%	57	5	<0.14	0.11
1002 Hampton (crawl)		2/19/2004	Crawl Space	SUB FLOOR	19:50	7:55				2	<0.12	0.1
1006 Hampton	1006 HAMPTON DR	2/19/2004	Master Bed	3 FT.	20:10	8:00	70	50%	57	4.3	<0.14	0.13
1006 Hampton (crawl)		2/19/2004	Crawl Space	SUB FLOOR	20:05	7:52				2.2	0.2	0.11
1008 Hampton	1008 HAMPTON DR	2/25/2004	Master Bed	3 FT.	19:35	7:32	70	50%	62	0.43	<0.12	<0.059
1008 Hampton (crawl)		2/25/2004	Crawl Space	SUB FLOOR	19:40	7:35				hold	hold	hold
1220 Thames	1220 THAMES DRIVE	2/19/2004	Master Bed	3 FT	20:25	8:21	65	51%	55	3.1	<0.12	<0.59
1220 Thames (crawl)		2/19/2004	Crawl Space	SUB FLOOR	20:20	8:22				1.4	<0.12	<0.059
1220 Thames (ambient air)	1220 Thames Dr	2/19/2004	Back Yard	5 FT	20:35	8:25				0.21	<0.12	<0.62
1007 Stimel	1007 STIMEL DR	2/26/2004	Master Bed	3 FT	19:45	7:41	69	56%	53	2	<0.14	<0.069
1007 Stimel (crawl)		2/26/2004	Crawl Space	SUB FLOOR	19:40	7:43				0.53	<0.13	<0.065
1260 Waterloo	1260 WATERLOO CT.	2/26/2004	Kid's Bed	3 FT	20:05	8:00	53	49%	53	0.42	<0.14	<0.069
1260 Waterloo (crawl)		2/26/2004	Crawl Space	SUB FLOOR	20:00	7:58				hold	hold	hold
1271 Hookston	1271 HOOKSTON RD	3/3/2004	Master Bed	3 FT	19:30	7:30	68	46%	58	<0.18	<0.14	<0.068
1271 Hookston (crawl)		3/3/2004	Crawl Space	SUB FLOOR	19:35	7:35				hold	hold	hold
1270 Waterloo	1270 WATERLOO CT.	3/16/2004	Living Room	5 FT	19:20	7:25	75	26%	74	<0.18	<0.14	<0.068
1270 Waterloo (crawl)			Crawl Space	SUB FLOOR	19:25	7:25				hold	hold	hold
1011 Bermuda	1011 BERMUDA DR	3/16/2004	Master Bed	3 FT	19:40	7:40	68	35%	76	<0.19	<0.14	<0.069
1011 Bermuda (crawl)			Crawl Space	SUB FLOOR	19:45	7:40				hold	hold	hold
1013 Bermuda	1013 BERMUDA DR	3/16/2004	Living Room	5 FT	19:55	7:50	74	33%	72	<0.19	<0.14	<0.070
1013 Bermuda (crawl)			Crawl Space	SUB FLOOR	20:00	7:50				hold	hold	hold
1000 Stimel	1000 STIMEL RD	4/12/2004	Master Bed	3 FT	19:54	7:45	65	44%	64	<0.19	<0.14	<0.069
1000 Stimel (crawl)			Crawl Space	SUB FLOOR	19:52	7:47				hold	hold	hold

Notes:

Results are reported in micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ).

Sample collected from IA-4 was not analyzed; suma canister had zero vacuum at time of arrival at laboratory.

*Table 12-1  
Fate and Transport Parameters  
Hookston Station Remedial Investigation  
Pleasant Hill, California*

Chemical Parameters				
Compound	Henry's Constant (atm-m <sup>3</sup> /mol)	Solubility mg/L 20° C	Specific Gravity 20° C/4° C	Molecular Weight
Tetrachloroethene	0.023	150	1.625	166
Trichloroethene	0.0089	1100 (25° C)	1.46	131.5
cis-1,2-Dichloroethene	0.0075	3500	1.248	96.95
trans-1,2-Dichloroethene	0.0067	6300	1.257	96.94
1,1-Dichloroethene	0.15	400	1.218	96.95
Vinyl chloride	0.7	1100 (25° C)	0.9121	62.5
1,1-Dichloroethane	0.0056	5500	1.174	98.96
1,2-Dichloroethane	0.0012	8690	1.25	99
1,1,2-Trichloroethane	0.0012	4500	1.4436	130
Benzene	0.0055	1780	0.8786	78.11
Toluene	0.0066	515	0.866	92
1,2-Dichloropropane	0.15	2700	1.16	112.99
MTBE	65.4	51,000	0.731	88.15

**Parameters compiled from:**

*Predicting the Fate and Transport of Organic Compounds in Groundwater (Part 1),*  
Roger L. Olsen and Andy Davis, HMC May/June 1990.

*Handbook of Chemical Property Estimation Methods*, Warren J. Lyman, William F. Reehl,  
David H. Rosenblatt, American Chemical Society, Washington DC, 1990.

*Handbook of Environmental Data on Organic Chemicals (2nd Ed)*, Karel Verschueren,  
Van Nostrand Reinhold Company, New York, 1983.

*Ground Water Issue*, "Dense Nonaqueous Phase Liquids," USEPA, EPA/540/4-91-002, March 1991.

*Preliminary Remediation Goals*, USEPA Region IX, August 1996.