

SECTION 1

Introduction

This report describes work performed by CH2M HILL for the U.S. Environmental Protection Agency (EPA), Region IX under work assignment (WA) 046-RICO-0959. This WA authorizes CH2M HILL to assist EPA in conducting a quarterly groundwater monitoring program as part of the Remedial Investigation/Feasibility Study (RI/FS) in the San Fernando Valley (SFV). In addition, as an important component of this monitoring program, CH2M HILL collects and integrates all available water quality and water level data into the SFV Geographic Information System (GIS). Monitoring well data from local facilities in the SFV, transmitted through the California Regional Water Quality Control Board (RWQCB), California Department of Toxic Substances Control (DTSC), and Lockheed Aeronautical Systems Corporation (LASC) are included in the database. Data from production wells operated in the SFV are obtained from local groundwater purveyors (Los Angeles Department of Water and Power, the Cities of Glendale and Burbank, and Crescenta Valley County Water District) and were also incorporated in the GIS database. The SFV GIS is the primary data source for generation of concentration contour maps accompanying this report.

Previous reports for EPA's groundwater monitoring program were completed under the ARCSWEST contract, which was superseded by the Response Action Contract (RAC) program in January 1999. Work on this WA under the RAC program began in the fall of 1999 and has continued through 2000, 2001 and 2002. The results of the 1st, 2nd, 3rd, and 4th quarterly sampling events for 2002 conducted from March 6 through 13, 2002, June 3 through 11, 2002, September 9 through 16, 2002 and December 10 through 19, 2002, and January 6 through 8, 2003, are described in this report.

1.1 Setting

The SFV Superfund Site is a large area of groundwater contamination located in Los Angeles County, California (Figure 1-1). In 1984, EPA proposed four areas within the SFV for inclusion on the National Priority List (NPL) because trichloroethylene (TCE) and perchloroethylene (PCE) were found in groundwater production wells at levels exceeding the Maximum Contaminant Levels (MCLs) for these compounds. Currently, EPA is managing the four former NPL areas as one large site referred to as the SFV Superfund Site. Within this Site are: the North Hollywood Area (Area 1) containing the North Hollywood Operable Unit (OU) and the Burbank OU; the Crystal Springs Area (Area 2) containing the Glendale North and South OUs; the Verdugo Area (Area 3); and, the Pollock Area (Area 4) which was not established as an OU due to the Los Angeles Department of Water and Power's (LADWP) wellhead treatment plant in the Pollock Wellfield.

Currently, EPA's RI monitoring well network is composed of 87 RI monitoring wells located in the four Areas of the Superfund Site (Figure 1-2). Three of the shallow water table wells (vertical profile borings [or VPBs] PO-VPB-04, PO-VPB-09, and PO-VPB-11) are screened in bedrock and were never completed as monitoring wells. Thus, these wells have not been included in the sampling events described herein. Well completion details are presented in Appendix A.

1.2 Background

TCE and PCE data obtained from CH2M HILL's SFV GIS were used to separate the 84 RI wells into two categories prior to beginning the monitoring program in 1992: those recommended to be sampled quarterly and those recommended to be sampled annually. All 84 of the RI wells were originally included in the annual monitoring program. Of these 84, 41 wells historically having concentrations of TCE and/or PCE in excess of federal and state MCLs were placed into the quarterly monitoring program (EPA, August 1991). This sampling frequency has been modified by EPA during the history of the monitoring program based on observed concentrations of volatile organic compounds (VOCs) and/or other contaminants of concern. With the increased concern over hexavalent chromium, observed concentrations of this metal are also used to evaluate a monitoring wells sampling frequency. With the beginning of sampling activities under RAC, EPA has divided the RI monitoring wells into two categories: an annual sampling program including all 84 monitoring wells; and, a quarterly sampling program including a minimum of 45 of the 84 monitoring wells. A summary of RI wells sampled during the 1st, 2nd, 3rd, and 4th quarter sample events of 2001 is presented in Table 1-1.

1.3 Report Organization

This report is organized into sections that describe the activities and analytical results of the sampling events stated above. Section 2 describes the observations, procedures, activities, field measurements and analytical results of the 1st, 2nd, 3rd, and 4th quarter sample events. Section 3 presents a historic comparison of the analytical data from the 1st, 2nd, 3rd, and 4th quarter sample events. Included are relationships between water levels, TCE, PCE, other VOCs, and nitrate data. Historical concentrations of TCE, PCE, and nitrate are also presented graphically in this section. References are presented in Section 4.

Completion data for RI monitoring wells are presented in Appendix A. Criteria for the rationale used in selection of data representative of current conditions are presented in Appendix B. Appendix C contains information on submersible pump installation. Chain-of-custody forms from the 1st, 2nd, 3rd, and 4th quarter sample events are in Appendix D. Summaries of all detected compounds for these sampling events and quality assurance samples are presented in Appendixes E and F, respectively.

TABLE 1-1
Wells Sampled, 1st, 2nd, 3rd, and 4th Quarters 2002
San Fernando Valley Groundwater Monitoring Program

Well Name	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
CS-C01-105	03/08/2002	06/06/2002	09/11/2002	01/07/2003
CS-C01-285	03/08/2002	06/06/2002	09/11/2002	01/07/2003
CS-C01-558	(A)	(A)	(A)	01/07/2003
CS-C02-062	03/11/2002	06/10/2002	09/16/2002	12/16/2002
CS-C02-180	03/11/2002	06/10/2002	09/16/2002	12/16/2002
CS-C02-250	03/11/2002	06/10/2002	09/16/2002	12/16/2002
CS-C02-335	03/11/2002	06/10/2002	09/16/2002	12/16/2002
CS-C03-100	03/11/2002	06/10/2002	09/16/2002	12/19/2002
CS-C03-325	(A)	(A)	(A)	12/19/2002
CS-C03-465	03/11/2002	06/10/2002	09/16/2002	12/16/2002
CS-C03-550	(A)	(A)	(A)	12/16/2002
CS-C04-290	03/07/2002	06/05/2002	09/12/2002	12/19/2002
CS-C04-382	03/07/2002	06/05/2002	09/12/2002	12/19/2002
CS-C04-520	(A)	(A)	(A)	12/19/2002
CS-C05-160	03/07/2002	06/05/2002	09/12/2002	12/19/2002
CS-C05-290	03/07/2002	06/05/2002	09/12/2002	12/19/2002
CS-C06-185	03/07/2002	06/05/2002	09/12/2002	01/07/2003
CS-C06-278	(A)	(A)	(A)	NS
CS-VPB-01	Inop.	Inop.	Inop.	Inop.
CS-VPB-02	03/12/2002	06/03/2002	09/10/2002	12/12/2002
CS-VPB-03	03/07/2002	06/03/2002	09/10/2002	12/12/2002
CS-VPB-04	03/07/2002	06/05/2002	09/12/2002	12/19/2002
CS-VPB-05	03/07/2002	06/05/2002	09/12/2002	12/19/2002
CS-VPB-06	03/07/2002	06/05/2002	09/12/2002	01/07/2003
CS-VPB-07	03/07/2002	06/05/2002	09/12/2002	12/19/2002
CS-VPB-08	Inop.	Inop.	Inop.	Inop.
CS-VPB-09	03/11/2002	06/05/2002	09/10/2002	12/12/2002
CS-VPB-10	03/08/2002	06/06/2002	09/16/2002	01/06/2003
CS-VPB-11	03/08/2002	06/06/2002	09/16/2002	01/06/2003
NH-C01-325	03/08/2002	06/10/2002	09/09/2002	12/10/2002
NH-C01-450	(A)	(A)	(A)	Inop.

TABLE 1-1
Wells Sampled, 1st, 2nd, 3rd, and 4th Quarters 2002
San Fernando Valley Groundwater Monitoring Program

Well Name	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
NH-C01-660	(A)	(A)	(A)	12/10/2002
NH-C01-780	(A)	(A)	(A)	12/10/2002
NH-C02-220	Inop.	Inop.	Inop.	Inop.
NH-C02-325	NS	NS	09/11/2002	12/18/2002
NH-C02-520	03/06/2002	06/04/2002	09/11/2002	12/18/2002
NH-C02-681	(A)	(A)	(A)	12/18/2002
NH-C03-380	03/06/2002	06/04/2002	09/11/2002	12/18/2002
NH-C03-580	03/06/2002	06/04/2002	09/11/2002	12/18/2002
NH-C03-680	(A)	(A)	(A)	12/11/2002
NH-C03-800	(A)	(A)	(A)	12/11/2002
NH-C04-240	03/06/2002	06/04/2002	09/10/2002	12/11/2002
NH-C04-375	(A)	(A)	(A)	12/11/2002
NH-C04-560	(A)	(A)	(A)	12/11/2002
NH-C05-320	NS	NS	NS	NS
NH-C05-460	(A)	(A)	(A)	12/10/2002
NH-C06-160	03/13/2002	06/03/2002	09/10/2002	12/12/2002
NH-C06-285	(A)	(A)	(A)	12/12/2002
NH-C06-425	(A)	(A)	(A)	12/12/2002
NH-VPB-01	03/08/2002	06/06/2002	09/11/2002	NS
NH-VPB-02	(A)	(A)	(A)	12/10/2002
NH-VPB-03	NS	NS	NS	NS
NH-VPB-04	(A)	(A)	(A)	NS
NH-VPB-05	03/06/2002	06/04/2002	09/10/2002	12/11/2002
NH-VPB-06	Dry	Dry	Dry	Dry
NH-VPB-07	(A)	(A)	(A)	Inop.
NH-VPB-08	03/06/2002	06/04/2002	09/11/2002	12/18/2002
NH-VPB-09	NS	NS	NS	NS
NH-VPB-10	Dry	Dry	Dry	Dry
NH-VPB-11	Dry	Dry	Dry	Dry
NH-VPB-12	Dry	Dry	Dry	Dry
NH-VPB-13	Dry	Dry	Dry	Dry

TABLE 1-1
Wells Sampled, 1st, 2nd, 3rd, and 4th Quarters 2002
San Fernando Valley Groundwater Monitoring Program

Well Name	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
NH-VPB-14	Dry	Dry	Dry	Dry
PO-C01-195	(A)	(A)	(A)	01/07/2003
PO-C01-354	(A)	(A)	(A)	01/07/2003
PO-C02-053	03/12/2002	06/06/2002	09/13/2002	12/13/2002
PO-C02-205	(A)	(A)	(A)	12/13/2002
PO-C03-182	03/12/2002	06/07/2002	09/13/2002	01/06/2003
PO-C03-235	03/12/2002	06/07/2002	09/13/2002	01/06/2003
PO-VPB-01	03/12/2002	06/07/2002	09/13/2002	01/08/2003
PO-VPB-02	03/12/2002	06/07/2002	09/13/2002	01/07/2003
PO-VPB-03	03/12/2002	06/07/2002	09/13/2002	01/06/2003
PO-VPB-04	Inactive	Inactive	Inactive	Inactive
PO-VPB-05	03/12/2002	06/07/2002	09/13/2002	12/13/2002
PO-VPB-06	(A)	(A)	(A)	12/13/2002
PO-VPB-07	03/12/2002	06/07/2002	09/13/2002	01/08/2003
PO-VPB-08	03/12/2002	06/07/2002	09/13/2002	01/08/2003
PO-VPB-09	Inactive	Inactive	Inactive	Inactive
PO-VPB-10	(A)	(A)	(A)	Inop.
PO-VPB-11	Inactive	Inactive	Inactive	Inactive
VD-VPB-01	Inop.	Inop.	Inop.	Inop.
VD-VPB-02	03/13/2002	Dry	09/10/2002	Dry
VD-VPB-03	03/13/2002	06/11/2002	09/09/2002	12/13/2002
VD-VPB-04	03/13/2002	06/11/2002	09/09/2002	12/13/2002
VD-VPB-05	03/13/2002	06/11/2002	09/09/2002	Dry
VD-VPB-06	03/13/2002	06/11/2002	09/09/2002	12/13/2002
VD-VPB-07	03/13/2002	06/11/2002	09/09/2002	12/13/2002

(A) = wells included in annual sampling event only

Inop. = pump inoperable

Dry = water level below pump intake

Inactive = no pump installed, screened in bedrock

NS = surface location obstructed or pump removed for construction activities