

Introduction

This report describes work performed by CH2M HILL for the U.S. Environmental Protection Agency (EPA), Region IX under work assignment (WA) 31-26-9959. 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 [LADWP], 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. Due to laboratory constraints, resulting from government shutdowns during federal budget negotiations, the quarterly sampling schedule was modified so that three sampling events were completed during 1996. The results of the first, third, and fourth quarter sampling events conducted from March 19 through March 28, July 23 through July 31, and December 5 through December 18, 1996, respectively, are described in this report.

1.1 Setting

In 1984, EPA proposed four sites within the SFV for inclusion on the National Priorities List (NPL): North Hollywood, Crystal Springs, Pollock, and Verdugo. Currently, EPA is managing the four areas as one large site referred to as the SFV Superfund Site. This site includes the four NPL sites and adjacent areas where groundwater contamination is known or presumed to have migrated (Figure 1-1). Eighty-seven RI monitoring wells are currently located in and adjacent to the four NPL sites. 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 do not have pumps installed (Figure 1-2). Thus, these wells have not been included in the sampling events described herein. Well completion details are presented in Appendix A.

1.2 Background

Trichloroethylene (TCE) and tetrachloroethylene (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 maximum contaminant levels (MCLs) were placed in the quarterly monitoring program (EPA, August 1991). A summary of RI wells sampled during the first, third, and fourth quarter 1996 sample events is presented in Table 1-1.

At the initiation of the program, EPA intended periodic reviews of the results to focus data gathering on the most critical wells. The primary criteria, for sampling frequency of a particular monitoring well, are previous contaminant data and potential for contaminant migration toward the well. The results through the end of 1992 were used for the initial reevaluation of the monitoring program. At this time, most wells had been sampled four to seven times with a minimum of three times. Subsequent re-evaluations have occurred with the sampling program in 1993, 1994, and 1995. Recommendations from Re-evaluation of 1996 sample events are presented in Section 5.

Based on this previously developed re-evaluation criteria, EPA modified the sampling frequency and number of wells per event. These additional changes divided the RI monitoring wells into these groups for the sample events conducted during 1996: 19 of the 84 monitoring wells are to be sampled once every three years (EPA, 1995c). The remaining

65 monitoring wells are to be included in the annual sampling program, and 52 of the 65 wells are to be included in the quarterly sampling program.

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, and analytical results of the first, third, and fourth quarter sampling events. Section 3 presents a comparison of the analytical data from the first, third, and fourth quarters. Included are relationships between water levels, TCE, PCE, other volatile organic compounds (VOCs), and nitrate (NO₃) data. Historical concentrations of TCE, PCE, and NO₃ are also presented graphically in this section. A summary of activities conducted during 1996 is presented in Section 4. Recommendations for reevaluating the sampling program are found in Section 5.

Completion data for RI monitoring wells are presented in Appendix A. Criteria for 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 first, third, and fourth quarter sampling events are in Appendix D. Summaries of all detected compounds for the three sampling events and quality assurance samples are presented in Appendixes E and F, respectively. Additional detail of the shallow zone TCE and PCE concentration contour maps along with well locations are located in Appendixes G and H.

Table 1-1

Figure 1-1

Figure 1-2