

Summary of 1997 RI Sampling Program

4.1 Quarterly Sampling Activities

4.1.1 Description of Activities

EPA's RI monitoring wells in the San Fernando Valley Basin (SFVB) were sampled during three quarterly events conducted by CH2M HILL during 1997 (Table 1-1). Two of the three events (June 2 through June 11 and September 9 through September 17) were quarterly sample events and consisted of collecting groundwater samples from 51 RI monitoring wells for VOCs and nitrate/nitrite analyses. MTBE was included in the analyte list for the September sampling event. The annual sampling event, December 2 through 17 involved collecting groundwater samples from 57 RI monitoring wells for VOCs, metals, nitrate/nitrite and general water chemistry analyses. During this event, samples were collected and submitted for 1,4-dioxane.

Water levels were measured at each of the RI monitoring wells prior to sampling. These data were incorporated into the GIS database and converted to elevations above MSL. A comparison of depth to water (bgs) and water level elevation (MSL) for the RI monitoring wells at the time of each sample event during 1997 is provided in Table 2-1.

During each sample event, each well was purged three to five well volumes prior to sampling. During purging, pH, temperature, electric conductivity, and turbidity of the groundwater were measured over time to ensure that these parameters stabilized prior to sampling. Table 2-2 presents a comparison of these parameters at each RI monitoring well during each sampling event conducted during 1997.

During the fourth quarter 1997 sampling event, six of the scheduled RI monitoring wells were not sampled. Monitoring wells CS-VPB-01, NH-VPB-13, PO-VPB-02, and PO-VPB-10 were not sampled due to inoperable pumps. One monitoring well, NH-VPB-10, was not located due to repaving operations conducted by the City of Los Angeles; and one monitoring well, PO-C02-53, was destroyed by construction of a new sidewalk. These monitoring wells were included in well repair activities scheduled for the first quarter of 1998.

Purge water, or investigative derived waste (IDW), was collected from each RI monitoring well in a vacuum truck and transported to purge water storage tanks located at LADWP's Headworks Spreading Grounds staging area. Approximately 33,754 gallons of IDW collected during the three sampling events completed in 1997 were transported to the LADWP's Headworks Spreading Grounds staging area. VOC concentrations in the IDW stored at the LADWP's Headworks Spreading Grounds staging area were monitored, and, when observed to be below MCLs, the purge water was discharged into the storm drains.

4.1.2 TCE Concentrations

Reported TCE concentrations at RI monitoring wells sampled during 1997 remained generally consistent (Table 4-1). The number of RI monitoring wells exhibiting concentrations of TCE greater than the MCL of 5 µg/L remained fairly consistent, ranging from 33 monitoring wells in the second quarter, 33 wells in the third quarter, to 31 wells in the fourth quarter.

Comparison of TCE concentrations at the RI monitoring wells shows three wells (CS-C03-465, PO-C03-182, and PO-VPB-01) exhibiting an increase to above the MCL during 1997 (5 to 7 µg/L, 5 to

8 µg/L and 4 to 6 µg/L, respectively). Seven wells exhibited a decrease; however, only three to below the MCL: NH-CO1-325 (9 to 5 µg/L); NH-CO4-240 (8 to 4 µg/L); and NH-VPB-05 (9 to 5 µg/L). Two monitoring wells, CS-C06-185 and NH-VPB-14, exhibited a significant variation during 1997 (11 µg/L to 130 µg/L to 10 µg/L for CS-C06-185 and 150 µg/L to ND to 210 µg/L for NH-VPB-14). These significant variations in TCE concentrations during 1997 appear to be artifacts of sampling or laboratory errors, creating an apparent anomalous concentration.

4.1.3 PCE Concentrations

PCE concentrations at RI monitoring wells sampled during 1997 also exhibited little change throughout the year (Table 4-2). The number of RI monitoring wells exhibiting concentrations of PCE greater than the MCL of 5 µg/L ranged from 26 wells in the second quarter to 25 wells in the third and fourth quarters.

A review of PCE data obtained from RI monitoring during 1997 shows two wells (NH-C03-380 and NH-C03-580) exhibiting an increase to above the MCL (0.5 to 6 µg/L and 0.3 to 6 µg/L, respectively). An additional monitoring well (NH-VPB-14) exhibited a significant increase (6 µg/L increasing to 16 µg/L then to 79 µg/L). No wells decreased in PCE concentrations to below the MCL during 1997.

4.1.4 Other VOCs

During 1997, VOCs other than TCE and PCE were observed above MCLs in 7 RI monitoring wells during the second and third quarters and at six monitoring wells in the fourth quarter. (Table 4-3). Compounds reported include: 1,1-dichloroethane at CS-CO3-100 and CS-VPB-07 (second quarter only); 1,1-dichloroethylene at CS-CO3-100, CS-VPB-04, CS-VPB-05, CS-VPB-06, CS-VPB-07, PO-VPB-02, and PO-VPB-08; 1,2-dichloroethane at CS-VPB-04 (fourth quarter only); and carbon tetrachloride at CS-CO3-100, CS-VPB-04, CS-VPB-06, and CS-VPB-07.

Additional sampling for MTBE showed detections at 2 monitoring wells. Results of sampling selected VPB and shallow cluster wells for 1,4-dioxane showed 6 detections, 5 of which were 5 µg/L or lower.

4.1.5 Nitrate

The number of RI monitoring wells exceeding the nitrate MCL of 45 mg/L (as NO₃) ranged from 11 to 18 during 1997 (Table 4-4). During the second quarter, there were 14 monitoring wells exceeding the MCL, with 11 in the third quarter, and 18 during the fourth quarter. Two wells (CS-VPB-09 and NH-VPB-02) sampled during the 1997 annual event exceeded the MCL and are comparable to values observed during previous annual events.

4.1.6 Other Analytical Parameters

During the fourth quarter sampling event, groundwater was analyzed for general water chemistry parameters including chloride, sulfate, total alkalinity, hardness, TDS and TOC (Table 2-8). TDS values ranged from 263 (CS-C03-100) to 1,200 mg/L (CS-VPB-09). The secondary MCL (500 mg/L) for TDS was exceeded in 34 of the 57 RI monitoring wells during the fourth quarter (Table 2-8). Total alkalinity ranged from 121 mg/L (VD-VPB-06) to a high of 564 mg/L (CS-VPB-09). All RI monitoring wells were below the secondary MCL for sulfate (250 mg/L), ranging from 33.7 mg/L (CS-VPB-03) to 229 mg/L (PO-VPB-07).

Analysis of dissolved metals was conducted during the fourth quarter 1997 sampling event. Metals that were reported above primary and secondary MCLs included dissolved iron, dissolved manganese, dissolved antimony, and dissolved chromium (Table 2-9). Antimony was the most common dissolved metal reported in RI monitoring wells during this event (18 monitoring wells exceeded 6 µg/L). The presence of dissolved chromium in monitoring well CS-VPB-04 remained comparable to the concentrations observed. Monitoring well PO-VPB-02, which also has previously exceeded the MCL for dissolved chromium, was not sampled due to an inoperable pump.