

EXECUTIVE SUMMARY

This report documents the methodology and results for the Hill Air Force Base Operable Units (OUs) 5 and 12 active soil-gas survey source area investigation. Prior to this investigation, limited information was available about the sources of contamination at OUs 5 and 12 and even less was known about source mass or concentrations. Because increasing and/or highly variable trichloroethene (TCE) concentrations were observed in some monitoring wells in and downgradient of the OU 5 Tooele Army Rail Shop (TARS) and OU 12 source areas, ongoing sources may be present. Therefore, the purpose of the active soil-gas survey was to characterize the nature and extent of contamination by volatile organic compounds (VOCs) in the vadose zone and to determine if continuing sources of contamination are present in the vadose zone.

Two phases of soil-gas sampling were performed during this project, the first in October 2001 and the second in March 2002. A total of 26 soil-gas samples were collected from 26 locations in the TARS suspected source area, 55 soil-gas samples were collected from 30 locations (samples collected at one to two depths per location) in the Zone 16 suspected source area, and 196 soil-gas samples were collected from 64 locations (samples collected at three to four depths per location) in the OU 12 suspected source area.

Soil-gas investigations completed in the TARS showed a maximum TCE concentration in soil gas of 980 part per billion by volume (ppb_v), equivalent to 5.3 micrograms per liter (µg/l). Soil-gas investigations completed in the Zone 16 investigation area had no detections around the former Flash Pond, but rather had small TCE detections (maximum 5,600 ppb_v [30.1 µg/l]) in the central part of the investigation area. The TCE concentrations of soil gas from both the TARS and Zone 16 areas could be due to volatilization of TCE from underlying groundwater and indicate that there is not a significant source in the vadose zone. Soil-gas investigations indicate that the former Wastewater Treatment Plant is not the primary source of the OU 12 plume. Instead, the soil-gas investigation indicated that the source may be northwest of the former Wastewater Treatment Plant, as suggested by the presence of elevated TCE

concentrations (up to 68,000 ppb_v [365 µg/l]) in this area. Although these concentrations of TCE in soil gas are much greater than those detected in the TARS and Zone 16 areas, the values do not indicate a significant source in the vadose zone because they are near to what would be expected from volatilization from groundwater.