

EXECUTIVE SUMMARY

The objective of this Corrective Action Plan is to examine remedial alternatives for soil contamination beneath underground storage tank (UST) Site 40002 at the Utah Test and Training Range (UTTR), Hill Air Force Base (AFB), Utah. Site 40002 consists of one steel 30,000-gallon diesel UST, one steel 25,000-gallon regular gasoline UST, and one fiberglass-reinforced plastic (FRP) 12,000-gallon unleaded gasoline UST that were removed on June 3, 1992. During the removal procedures, a hole was observed in the FRP UST. Benzene, toluene, ethylbenzene, xylenes, and naphthalene (BTEXN) and Total Petroleum Hydrocarbons (TPH) were detected in closure soil samples indicating that a release had occurred. Approximately 45 cubic yards of soil were overexcavated to remove contaminated soils associated with the USTs and dispenser island piping.

Subsurface investigations were conducted in 1992 and 1993 to delineate the extent of hydrocarbon contamination beneath the site. During the 1992 subsurface investigation, eleven soil borings were drilled in and around the former UST excavation and fifteen soil samples were collected for BTEXN and TPH analysis. Elevated levels of BTEXN ranging from 13.4 milligrams per kilogram (mg/kg) benzene to 2,309 mg/kg xylenes, and TPH concentrations in excess of 60,600 mg/kg were detected in the 13.5 to 15.5-foot interval of soil borings SB-8 and SB-9 on the east side of the FRP UST. The deepest contamination was detected in the 45.5 to 47.5-foot interval of soil boring SB-8, which had a TPH concentration of 23.6 mg/kg. In anticipation of remediating hydrocarbon-contaminated soils, one air injection well and four soil vapor monitoring probes were installed in the area of highest contamination on the east side of the FRP UST. Ground water was not encountered in any of the borings.

A second subsurface investigation was conducted in 1993 to further delineate the extent of hydrocarbon contamination at Site 40002. Five soil borings were drilled at locations selected to supplement the initial subsurface investigation. Five soil samples were collected for analysis of BTEXN, Total Extractable Petroleum Hydrocarbons (TEPH), and Total Volatile Petroleum Hydrocarbons (TVPH). The only sample with detectable levels of contaminants was the 15 to 17-foot interval of soil boring T-40002-202, located near the southernmost corner of the former FRP UST. Three additional soil vapor monitoring probes were installed to supplement the previously installed probes. Ground water was not encountered during the second subsurface investigation.

In-situ bioventing is the preferred alternative for remediation of hydrocarbon-contaminated soils at Site 40002. A one-year pilot study was initiated on August 23, 1993 using the biovent system installed during the subsurface investigations. The biovent system should be monitored monthly for one year for carbon dioxide (CO₂), oxygen (O₂), and petroleum hydrocarbons to evaluate the progress of biodegradation. A decision for a full-scale biovent project will be based on results of the pilot study. Ground water was not encountered during the subsurface investigations but is estimated at 200 feet bgs. The deepest contamination detected at Site 40002 is 47.5 feet bgs. Therefore, ground water is separated from the deepest contamination at the site by over 150 feet of uncontaminated soils. It is highly unlikely that ground water has been impacted by hydrocarbon-contaminated soils beneath Site 40002, and ground-water remedial alternatives are unnecessary.