

Executive Summary

This Engineering Evaluation/Cost Analysis (EE/CA) addresses the rationale for selecting a removal action for the storm water retention pond, Pond 3, within Operable Unit (OU) 9 at Hill Air Force Base, Utah. Portions of the pond sediments are contaminated with arsenic at levels that exceed risk-based standards. The risk-based standards used for this assessment are the OU9 residential risk-based screening levels (RBSLs), which are equal to background levels for several metals. Previous investigations conducted from 1989 through 2002 have provided adequate sediment sampling to identify the contaminants of concern and define the extent of contaminant exposure.

Contaminated pond sediments are present in four areas within Pond 3. These areas are located adjacent to the south bank in the western portion of the pond. Both lateral and vertical extent of arsenic contamination was delineated by using the analytical data from various site investigations. The vertical extent of arsenic contamination exists in the top 4 feet of sediments/soil. Approximately 200 cubic yards (cy) of sediment contaminated with arsenic above background levels would require removal and/or remediation. If excavated, the final volume of sediment is expected to bulk to approximately 260 cy.

Three alternatives are presented in this EE/CA to address the contaminated sediments: no action, contaminated sediment removal with off-site disposal, and implementation of phytoremediation for arsenic removal. Alternative 1 (no action) is included as a baseline for comparison purposes. Alternative 2 involves excavating the arsenic-contaminated sediments, placing the excavated sediments in a staging area for composite sampling, confirmation sampling to assure adequate removal, disposal of the sediments at the appropriate disposal facility, and restoration of the disturbed pond surface. Alternative 3 includes construction of a 5,000-square-foot lined treatment cell within the pond boundary, excavation of the arsenic contaminated sediments, placement of the sediments within the treatment cell, confirmation sampling, planting of phytoremediation plants to extract arsenic from the sediments, and grading/restoration of the pond.

Each alternative was evaluated against the nine criteria defined in 40 CFR 300.430(e)(9), which provide grounds for comparing the relative performance of the alternatives and identifies the advantages and disadvantages of each alternative.

Based on the EECA conducted, it is recommended that the contaminated sediments be excavated and transported off-site to an approved disposal facility. The recommended alternative includes confirmation sampling to assure adequate contaminant removal. No long-term maintenance or monitoring will be required for this alternative. A period of 5 to 7 weeks is estimated for the completion of this removal action.