

EXECUTIVE SUMMARY

This report presents the results of the Phase II Resource Conservation and Recovery Act (RCRA) Facility Investigation (Phase II RFI) at two solid waste management units (SWMUs) at Tooele Army Depot-South Area (TEAD-S) near Tooele, Utah: (1) SWMU 13, the Chemical Agent Munitions Disposal System (CAMDS); and (2) SWMU 17, the Deactivation Furnace/Mercury Contamination Area (DF/MC). The Phase II RFI Report is a requirement of the Corrective Action Permit associated with the TEAD RCRA Part B Permit to construct and operate the Chemical Stockpile Disposal Plant at TEAD-S. The purpose of the report is to determine the extent of any contamination that may be present at the two SWMUs, to perform a Risk Assessment, and to determine whether a Corrective Measures Study (CMS) is necessary for any of the sites within SWMU 13 or SWMU 17. This investigation includes a compilation of historical, field, and chemical analytical data from previous environmental investigations along with data collected as part of this Phase II RFI. The two Phase II RFI field programs, based on approved work plans, were conducted in 1991 and 1993 to supplement the results from previous investigations.

The two SWMUs and their respective sites and areas of potential concern investigated by this Phase II RFI are as follows:

- SWMU 13 (which consists of 10 areas of potential concern)
 - Fuel Spill Site
 - Underground Storage Tank Site
 - 3X Yard
 - Boiler Blowdown Discharge Site
 - Drainage Ditch Site
 - Chemical Unload Site
 - Pavement Perimeter Site
 - Sodium Hydroxide Spill Site
 - Wastewater Lagoons Site
 - Groundwater

- SWMU 17 (which consists of 3 areas of potential concern)
 - Mercury Contamination Spill Site
 - Fuel Spill Site
 - Drum Storage Site

Soil borings were drilled and groundwater monitoring wells installed at SWMU 13 while only soil borings were drilled at SWMU 17. Soil, surface-water, and groundwater samples were collected and chemical analyses were performed by a U.S. Army Environmental Center (USAEC)- and State of Utah-certified laboratory, using USAEC performance-demonstrated methods. Both U.S. Environmental Protection Agency (USEPA) and USAEC quality control programs were followed to ensure data quality. All analytical data were screened and validated through the use of the USAEC Installation Restoration Data Management System

(IRDMIS) and internal data screening tools. Additional screening was performed according to USEPA risk assessment guidance to determine chemicals of potential concern (COPCs) for each of the sites at both SWMUs.

The screened data were evaluated to determine the nature and extent of any contamination at each of the sites. Following the nature-and-extent analysis, a quantitative human health and qualitative ecological risk assessment was performed for each of the sites to determine whether any adverse effects to human health or to the local ecology could occur as a result of past operations at any of the sites. This included contaminant fate and transport modeling to determine potential exposures to site- and SWMU-specific contaminants by both on-site and off-site receptors.

Based on the evaluation of the nature and extent of contamination and the risk assessment results, it is recommended that the following areas of potential concern be carried forward through the CMS process:

- SWMU 13
 - Fuel Spill Site
 - 3X Yard
 - Drainage Ditch Site
 - Chemical Unload Site
 - Pavement Perimeter Site
 - Sodium Hydroxide Spill Site
 - Wastewater Lagoons
 - Groundwater

- SWMU 17
 - Drum Storage Site

These sites were recommended primarily on the basis of containing contamination at levels that could pose a potential risk to human health or the environment or that exceed regulatory action levels. The remaining sites and areas of potential concern—the Boiler Blowdown Discharge Site and the Underground Storage Tank Site (SWMU 13), and the Mercury Contamination Spill Site and the Fuel Spill Site (SWMU 17)—were determined to require no further action. This determination was based primarily on the absence or lack of contamination and correspondingly low estimated risks to human health and the environment.

A review of the chemicals at the sites where a CMS is recommended showed that arsenic is the key analyte driving the risk. It is important to note that the arsenic occurrences are not a result of past operations at SWMUs 13 or 17. Indeed, some of the arsenic values that are driving risk are lower than some of the concentrations detected in the arsenic background population, indicating that naturally occurring arsenic in the soils is driving the risk at many of the sites.