

Continued from cover

- Volatile Organic Compounds (VOCs): solvents from past disposal and industrial operations.

### NORTHEAST OPEN AREA

This approximately 20-acre area consists of grassy and lightly wooded land in the northeast section of Dunn Field. It includes the former asphalt burial site, a portion of the bauxite storage area, pistol range, and temporary pesticide storage area.

#### COPCs detected in this area include:

- Lead from the pistol range;
- Thallium from the application of rodenticide, and chromium and antimony that are naturally occurring metals detected slightly above background levels;
- Pesticide (dieldrin) from past application;
- One small area of VOCs in surface soil (this appears to be from a single occurrence rather than general operations).

The surface soil containing lead at the pistol range will be removed in advance of the remedial action phase.

### STOCKPILE AREA

This approximately 30-acre area includes the former bauxite and fluorspar storage areas in the southern section of Dunn Field.

COPCs detected in this area were:

- Metals associated with mineral ore storage: aluminum, barium, chromium, copper, lead, manganese, vanadium;
- Arsenic associated with pesticide application, which is similar to background levels;
- PAHs associated with asphalt roads and railroad tracks;
- Pesticide (dieldrin) from past application.

## New at the Information Repositories

The Depot's Information Repositories contain technical reports and documents related to the ongoing cleanup of Dunn Field and the Main Installation, including minutes from Restoration Advisory Board (RAB) and Base Realignment and Closure (BRAC) Cleanup Team (BCT) meetings.

The Depot's three Information Repositories are located at the Cherokee Library, Memphis/Shelby County Health Department and the Community Outreach Room in Building 144 at the former Memphis Depot. The Hillview Neighborhood Network Center is no longer an Information Repository for the Depot.

For a complete list of documents available in the Information Repositories, visit the website at [www.ddc.dla.mil/memphis](http://www.ddc.dla.mil/memphis). □

## GROUNDWATER

Tests of the shallow, intermediate and deep aquifers beneath Dunn Field have determined that the drinking water is safe. The groundwater in the shallow aquifer has been affected beneath Dunn Field and to the north and west of the site. Affected groundwater to the northeast of Dunn Field is from an unidentified source that is not related to Depot activities.

COPCs in the shallow aquifer include:

- VOCs under the disposal locations that have migrated from surface soil into the groundwater;
- Naturally occurring metals: aluminum, arsenic, barium, beryllium, cadmium, chromium, copper, iron, lead, manganese, mercury, nickel, and vanadium.

The Depot's Base Realignment and Closure Cleanup TEAM (BCT) will now use the RI data to develop cleanup alternatives to protect human

health and the environment. These alternatives will be detailed in the Feasibility Study (FS) for Dunn Field, scheduled for completion in the summer of 2002. The FS will provide the results of the pilot projects for soil vapor extraction (SVE) at Dunn Field and enhanced bioremediation at the Main Installation. It will also include information on the Dunn Field Groundwater Pumping System, which is reducing VOC levels in off-site monitoring wells.

A Proposed Plan for Dunn Field, which details the BCT's recommended cleanup actions, will be completed and presented to the public for comment later this year. The Depot anticipates submitting the Dunn Field Record of Decision to the EPA, TDEC and U.S. Department of Army for approval before the end of 2002.

For more information on the Dunn Field Remedial Investigation, please call the Depot's Community Relations Office at (901) 544-0613.

# Risk Assessment Overview

## How do we know it's safe?

The Depot recently completed a risk assessment as part of the Remedial Investigation (RI) for Dunn Field. This article describes the process that was followed, based on guidelines developed by the U.S. Environmental Protection Agency (EPA).

For a health risk to be present, two things must occur. First, a hazard must exist and be above acceptable levels. Second, exposure must take place. This means the presence of a substance in the environment is not considered to be an unacceptable risk if people are not exposed to it.

Performing a risk assessment is a complex process that involves four key areas of investigation:

### Hazard Identification

First, the Base Realignment and Closure Cleanup Team (BCT) identifies any potential hazards found in samples taken from the site. Scientists and technicians record the frequency and locations of these substances in the soil and groundwater. They compare these findings to 'background levels' that may be present in the natural or local urban environment and to 'screening levels' such as safe drinking water standards established by EPA. If the samples show higher concentrations than are normal for the area or higher than the screening levels, the risk assessment for that compound continues.

### Toxicity Assessment

After compiling a list of possible hazards, a toxicity assessment is used to compare the types

and levels of compounds identified at the site to accepted scientific standards, to measure the potential impact of environmental conditions on human health.

### Exposure Assessment

An exposure assessment identifies who might come into contact with the compound, the quantities, exposure pathways and the duration of exposure. Exposure pathways are the ways in which people may come into contact with the substances, including ingestion (eating or drinking affected soil and water), inhalation, or contact with the skin.

The exposure assessment also takes into account possible future land-use scenarios (residential, commercial, recreational uses) and determines the potential for exposure.

### Risk Characterization

The final step in the RA step combines the information from the exposure and toxicity assessments to determine the potential for increased risk and the conditions under which the risk may occur. It also defines the nature of any unacceptable risk and the risk management options that may be considered.

Once the risks at Dunn Field have been characterized, the BCT will determine the acceptable cleanup levels for the site. These levels are based on strict standards to protect human health and the environment, to ensure it is restored to safe levels for the intended future use.

The results of the Dunn Field Risk Assessment were presented at the Restoration Advisory Board meeting on April 18, 2002. □

