Army targets waste threat

Cleanup to attack buried chemicals at Fort Detrick

By Timothy B. Wheeler
Sun Staff
Originally published February 18, 2001

FREDERICK – For decades, Army and civilian researchers at Fort Detrick have worked under tight safety precautions to protect American troops from deadly biological weapons and diseases, such as anthrax and the Ebola virus.

But the Army was not so careful with the hazardous chemicals it used on the post, home of the military's leading laboratory for developing biological warfare defenses. From the end of World War II to the early 1970s, it dumped tons of solvents, pesticides and other wastes in open pits.

Nine years after discovering potentially carcinogenic chemicals in the wells of homes and businesses around the 1,200-acre base, the Army is about to begin a $4.9 million cleanup of buried drums and containers that officials believe are a major source of ground-water contamination.

"This was – at the time – state of the art," Lt. Col. Jeffery C. Springer, chief of safety, environment and integrated planning, says of the waste burial." But we're in the process now of trying to clean up our act."

The planned cleanup employs the relatively novel technique of "freezing" the soil around the suspected wastes to prevent more chemicals from seeping into the ground during excavation.

The project requires an unusual degree of above-ground safety, with moon-suited workers laboring inside a nearly half-acre, air-filtered vinyl tent.

Such precautions are warranted, Army officials say, given the base's history and the continuing uncertainty about the hazardous materials that might be buried here.

With more than 6,000 civilian and military employees, Fort Detrick is Frederick County's largest employer. It is home to the Army's Medical Research Institute for Infectious Diseases, which studies some of the world's deadliest germs and viruses. The base also leases space to civilian government laboratories studying cancer and crop diseases.

Top-secret research The Army conducted top-secret research on germ warfare at Detrick from 1943 until 1970, when the United States scrapped its biological weapons to comply with an international treaty. Since then, the Army says, its focus has been strictly defensive, seeking to develop vaccines and control outbreaks of the disease.

In those early decades, however, Army personnel disposed of many wastes by burying them on the base's Area B, a 399-acre tract of open fields interspersed with groves of trees.

A 1977 Army report identified more than 20 pits, where everything from building debris to chemicals to dead lab animals were dumped.

Tainted water That early Army report raised the possibility that anthrax spores and diseased animals were buried in Area B in addition to chemical wastes, but officials insist there are no threats of disease because all biological refuse was either incinerated or sterilized before disposal.

In 1992, the Army discovered two potentially cancer-causing chemicals – trichloroethylene and perchloroethylene – contaminating ground water under Area B. Trichloroethylene was used as a refrigerant in Detrick's laboratories, and both chemicals are common cleaning solvents.

Records indicate at least several drums of each were buried in Area B.

The same year, testing found the chemicals tainting a spring and a handful of homeowners' wells on the southeastern fringe of Area B. Since then, the Army has paid to hook up the affected homes to city water lines or provide them with bottled water.

Lack of funding The cleanup effort has been slowed by a lack of Pentagon funding, as well as by uncertainty about what wastes are buried where.

Four years ago, a search dug up glass and metal containers and soil tainted by a variety of chemicals. But the project was abruptly halted because the excavation released noxious fumes – sending at least one person at the scene to the hospital and alarming nearby residents. The digging also apparently spilled more chemicals, causing contaminant levels to soar in wells.

Although some have advocated leaving the buried wastes alone, Army officials say the contamination could spread if nothing is done. "Our ground-water contamination doesn't pose a health threat [now]," says Springer. "But that plume [of underground pollution] is moving, and we're going to clean it up before it does" pose a threat.

'Freezing' the soil In the next few weeks, IT Corp., a contractor for the Army Corps of Engineers, will erect a vinyl tent in the field it plans to excavate. Wearing "moon suits" supplied with air, workers in the tent will probe the soil with a backhoe to locate as many as three buried piles of 55-gallon steel drums and glass containers likely to hold chemicals.

Then the contractor is to insert pipes into the ground beneath the wastes and "freeze" the soil, to prevent any chemicals spilled during the excavation from soaking down into the ground water. Once surrounded by frozen soil, more than 800 tons of soil, drums and other debris will be dug up and trucked to a hazardous-waste incinerator out of state, probably in New Jersey or Pennsylvania.

John Fairbank, Detrick cleanup project manager for the Maryland Department of the Environment, says he is pleased with the Army's progress to date.

‘Better late than never’ The cleanup can’t come too soon for some Frederick residents. “It’s been a long road, and we felt we could have done something earlier, but better late than never,” says Gerald Toomey, co-chairman of a group of residents and other experts that the Army asked to advise it on the cleanup.

Others remain skeptical that the Army knows what it’s doing. “I wouldn’t trust them son-of-a-guns as far as I can throw them,” says Robert Richey, 50, who lives in a rented frame house across Shookstown Road from Area B.

The Army supplies his household with bottled drinking water, says Richey, a warehouse manager in Gaithersburg. But his family uses well water to bathe and shower, he says, and he has never been told if it is contaminated.

The drums and contaminated soil are expected to be removed from the dump site within Area B this fall. The Army’s contractor proposes treating the ground-water contamination next year by injecting an oxidizing chemical compound into the soil.

Though relatively new, the technique has been successfully used in other ground-water cleanup efforts, according to Army and state environmental officials. Trichloroethylene is notoriously resistant to customary cleanup efforts to pump it out of the ground, they note.

A warning sounded Edward Bouwer, a professor of environmental engineering at the Johns Hopkins University, warns that pumping any liquid into the ground water could spread the contaminants farther out into the community. “I think there are problems with the oxidation process that have not been thoroughly evaluated,” Bouwer said.

For all the attention focused on the dump site that will be cleaned up this year, the Army continues to investigate a dozen other places within Area B where laboratory chemicals and other hazardous wastes might have been buried. There is no evidence that contamination from anywhere else is leaving the post, say officials.

“We’ve punched more holes in here than a seamstress has in her pincushion,” says Springer.

Copyright c2001, The Baltimore Sun