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**PROGRESS REPORT OPERABLE UNIT 5
ENVIRONMENTAL MEDIA JULY 1991**

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PROGRESS REPORT**



Fernald Site

Remedial Investigation/ Feasibility Study 2330

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Operable Unit 5 ENVIRONMENTAL MEDIA

Introduction

The Remedial Investigation/Feasibility Study (RI/FS) is the blueprint for cleanup at the U.S. Department of Energy's Fernald Site. The nature and extent of contamination at the site and surrounding areas is being thoroughly investigated so that appropriate remedial actions can be formulated and implemented.

The Fernald Site has been divided into five sections, known as Operable Units, for environmental investigation and cleanup. The Operable Units were defined based on their location or the potential for similar technologies to be used in the ultimate cleanup.

During the course of the RI/FS effort, certain conditions are occasionally identified which call for more immediate action. These actions are called "Removal Actions" and are initiated when there is a need to accelerate cleanup activities to address releases or potential releases of hazardous substances. Removal Actions are coordinated with the U.S. EPA and the Ohio EPA.

Following is a progress report on Operable Unit 5 including its history, the current status of RI/FS activities, cleanup alternatives under consideration, and work being done to alleviate near-term concerns.

Background

Operable Unit 5 encompasses the environmental media on the Fernald Site and surrounding areas that could be impacted by the facility. While other operable units focus on specific waste facilities or defined areas, Operable Unit 5 is concerned with those environments that could be affected by the Fernald Site. "Environmental media" includes the groundwater, surface water, soils, sediments, air, flora and fauna throughout the Fernald Site and surrounding areas. The groundwater includes the Great Miami Buried Valley Aquifer, a source of water in the vicinity of the Fernald Site. Surface waters include the Great Miami River, Paddy's Run Creek, and the Fernald Site's storm sewer outfall ditch. Sediments in Operable Unit 5 include solid materials carried in storm water runoff or plant effluent discharges to surface waters or drainage

ditches. Soils on and off the Fernald Site boundaries also are being investigated for possible contamination due to past discharges or air emissions.

RI/FS Activities

- An investigation known as the Paddy's Run Seepage Investigation Study is currently in progress to determine how Paddy's Run Creek interfaces with the Great Miami Buried Valley Aquifer at points south of the South Groundwater Contamination Plume. Interfaces under evaluation include the impact on local groundwater flow due to the leakage of surface water through the bed of Paddy's Run Creek. This study involves the installation and sampling of a series of wells along Paddy's Run and the completion of a series of stream gauging measurements on the creek. Data collected over the next several months will be included in the final Remedial Investigation and Feasibility Study reports.
- RI/FS documents currently are on hold pending receipt of the needed characterization and treatability data.

Cleanup Alternatives

While a range of alternatives are under consideration for dealing with contaminated groundwater, the most viable alternative currently appears to be pumping it out of the ground and returning it to the Fernald Site for possible treatment and discharge to the Great Miami River.

Cleanup alternatives for soils and sediments include removing them for disposal either at the Fernald Site or an off-site disposal facility, or treating contaminated soils and sediments in place and isolating the materials from the environment with a protective covering system.

Removal Actions

The purpose of the *South Groundwater Contamination Plume Removal Action* is to protect public health by limiting access to the use of uranium-contaminated groundwater in an area south of the Fernald Site. This removal action, broken into five parts, also is designed to prevent further

southerly migration of the contamination plume.

Part 1 includes installation of an alternate water source to two industries affected by the contamination plume. The project involves the installation of production wells outside the plume area and a distribution system to the industries. Testing of the selected well field, to determine adequacy of the quality and quantity of the extracted water, will begin in July. Drawings and specifications for the project are nearing completion. Construction is scheduled to begin in late 1991.

Part 2 involves the installation of a groundwater recovery well system to pump groundwater from the leading edge of the South Plume back to the Fernald Site for monitoring and discharge to the Great Miami River. Drawings and specifications are currently under review. Construction is expected to begin in early 1992.

Part 3 involves construction of an Interim Advanced Wastewater Treatment (IAWWT) unit. The IAWWT unit will remove uranium from site wastewater streams and, by doing so, will reduce the current level of uranium discharged to the Great Miami River. The design of the IAWWT system has been approved and issued for bid. Construction is expected to begin in late 1991.

Part 4 of the removal action involves groundwater

monitoring and institutional controls to prevent the use of contaminated groundwater. This activity is being implemented through the existing Fernald Site Groundwater Monitoring Program. The program has been expanded to include more frequent monitoring of private wells located near areas of known contamination.

A recently added Part 5 involves groundwater modeling and geochemical investigations. This activity will determine the southernmost extent of uranium contamination. This study will also evaluate the location of the eastern and northern boundaries of the plumes associated with the Paddy's Run Road Site (PRRS) and the impact on these plumes from the planned pumping of the South Groundwater Contamination Plume Removal Action Part 2 wells. The PRRS is a separate environmental investigation being conducted by the Ohio EPA and industries in that area. The PRRS is unrelated to the Fernald Site RI/FS.

More information about Operable Unit 5 is available in the Public Environmental Information Center (PEIC), where Fernald Site cleanup documents are kept in the Administrative Record. The PEIC is located in the JAMTEK building, 10845 Hamilton-Cleves Highway, Harrison, Ohio, 45030. The telephone number is (513) 738-0164.