

AQUIFER RESTORATION

The Fernald Preserve is located over the Great Miami Aquifer, one of the nation's largest sources of drinking water.

HOURS

Preserve Site: Monday – Sunday, 7 a.m. – dusk.

Visitors Center: Wednesday – Saturday, 9 a.m. – 5 p.m.



U.S. Department of Energy

Fernald Preserve

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Legacy
Management

www.lm.doe.gov

*meeting drinking water standards
for uranium*



Fernald Preserve



On October 29, 2006, the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) remediation of the Fernald, Ohio, former uranium-processing site was completed, with one exception: the groundwater remedy.

The Fernald Preserve is located over the Great Miami Aquifer, one of the nation's largest sources of drinking water. As a result of uranium-production operations at the site from 1952 to 1989, levels of uranium in the groundwater are above the U.S. Environmental Protection Agency's (EPA) health-protective concentration limit of 30 parts-per-billion. The affected area, defined as approximately 238 acres in 1997, was approximately 127 acres at the end of 2013. The entire site is 1,050 acres. The U.S. Department of Energy (DOE) is in the process of restoring the remaining portion of the affected aquifer by bringing the uranium-concentration level down to the drinking water limit (30 parts-per-billion).

With the exception of the ongoing aquifer restoration, the Fernald property has been cleaned to standards established by the site's neighbors. These cleanup standards were approved by the U.S. and Ohio EPAs as being protective of human health and the environment. DOE's commitment to restoring the aquifer is defined in the Record of Decision for Operable Unit 5, one of the five areas at Fernald that EPA designated for cleanup during the CERCLA remediation. As part of cleanup operations, the first extraction wells were installed and became operational in 1993. They are located at the leading edge of the affected area in the aquifer, which is off the Fernald Preserve property. The current groundwater remediation system consists of 20 extraction wells, operating to a target pumping rate of 5,075 gallons-per-minute. As portions of the aquifer meet cleanup requirements, the size of the remediation system will be reduced. Based on computer modeling predictions of when remediation will be complete, some extraction wells are scheduled to continue operating until 2035.

Water from the wells is treated as needed at the Converted Advanced Wastewater Treatment facility (CAWWT). The CAWWT has a treatment capacity of 600 gallons per minute. Leachate, the liquid that drains from the On-Site Disposal Facility, is also treated here. Treated water and bypassed (untreated) groundwater combine and are monitored at the east side of the site, forming Fernald Preserve's regulated discharge to the Great Miami River. Treatment is applied as needed so that the total mass of uranium discharged to the Great Miami River is less than 600 pounds-per-year. Treatment ensures that the total uranium concentration in the blended effluent does not exceed 30 parts-per-billion (measured as a monthly flow-weighted average) when it is discharged to the river.