NPL Site Narrative for Oak Ridge Reservation (USDOE)

OAK RIDGE RESERVATION (USDOE)
Oak Ridge, Tennessee

Conditions at proposal (July 14, 1989): The Oak Ridge Reservation (ORR), operated by the U.S. Department of Energy (USDOE), covers about 58,000 acres in Oak Ridge, in Anderson and Roane Counties, Tennessee. The area around the reservation is predominately rural except for the City of Oak Ridge (population 28,000). ORR consists of three major operating facilities: Oak Ridge National Laboratory, a research lab that includes nuclear reactors, chemical plants, and radiosotope production labs; Oak Ridge Gaseous Diffusion Plant, a production complex previously engaged primarily in the enrichment of uranium-235; and the Y-12 Plant, located immediately adjacent to the City of Oak Ridge, which produces nuclear weapon components, processes nuclear materials, and performs other related functions.

ORR operations generate a variety of radioactive, nonradioactive, and mixed (radioactive and nonradioactive) hazardous wastes, many of which in the past were disposed of or stored on-site. Leakage from inactive disposal and storage facilities, coupled with spills and other accidental releases, has contaminated many areas in and around ORR.

Metals, organics, and radionuclides have been detected in ORR soil, ground water, and surface water. At present, ground water contamination appears confined to ORR.

A 1983 study by USDOE estimates that 733,000 pounds of elemental mercury were released to the environment in the 1950s and 1960s around the Y-12 Plant. Most of the contamination around Y-12 is confined to the upper 10 feet of soils and fill. Additional studies revealed that some 170,000 pounds of mercury are contained in the sediments and floodplain of about a 15-mile length of East Fork Poplar Creek (EFPC), which has its headwaters at Y-12, and that some 500 pounds of mercury annually leave this watershed. Mercury and cesium-137 have been detected at higher than background levels in sediments of the Clinch River and the Tennessee River near Chattanooga, some 118 miles downstream of ORR. Seven water intakes in this 118-mile stretch provide drinking water to an estimated 43,200 people. Wetlands in the Blyth Ferry Water Fowl Management Area are also near the 118-mile stretch of the river.

EFPC flows through the City of Oak Ridge, exposing people to mercury-contaminated soils in the easily accessible areas of the floodplains of the creek. USDOE has removed soil at several locations along the creek where mercury concentrations were particularly high.

USDOE is investigating ORR under its Comprehensive Environmental Assessment and Response Program. Under the program, USDOE is conducting studies involving requirements of CERCLA and of permits issued under Subtitle C of the Resource Conservation and Recovery Act (RCRA). The permits call for closing some units on ORR, conducting postclosure monitoring, and evaluating over 500 solid waste management units under RCRA Sections 3004(u) and (v).

Status (November 21, 1989): USDOE investigations continue.

For more information about the hazardous substances identified in this narrative summary, including general information regarding the effects of exposure to these substances on human health, please see the Agency for Toxic Substances and Disease Registry (ATSDR) ToxFAQs. ATSDR ToxFAQs can be found on the Internet at ATSDR - ToxFAQs (http://www.atsdr.cdc.gov/toxfaqs/index.asp) or by telephone at 1-888-42-ATSDR or 1-888-422-8737.