NPL Site Narrative for Brookhaven National Laboratory (USDOE)

BROOKHAVEN NATIONAL LABORATORY (USDOE)
Upton, New York

Conditions at proposal (July 14, 1989): Brookhaven National Laboratory (BNL) covers 5,265 acres in Upton, Brookhaven Township, Suffolk County, New York, approximately at the center of Long Island, about 60 miles east of New York City. Much of the area is wooded, although commercial and residential development is underway. Used by the Army as Camp Upton during World Wars I and II, BNL has been operated since 1947 by Associated Universities, Inc., under contract first to the Atomic Energy Commission and now to the U.S. Department of Energy (USDOE).

BNL is involved in design, construction, and operation of large facilities such as particle accelerators and nuclear reactors used for research in high energy nuclear physics, energy-related life and environmental sciences, and material, chemical, and biological sciences. Most of the principal facilities are near the center of the site. Outlying facilities occupy about 550 acres. Among them are the Hazardous Waste Management Facility (HWMF), current landfill, former landfill/chemical holes area, sewage treatment plant, and a former ash fill area near an old incinerator. Areas where some accidental contamination has occurred include the Building 650 sump, HWMF, and the Central Steam Facility. Soil in several small areas contains low levels of radioactivity resulting from past landscaping activities, according to BNL.

An estimated 3 tons per day of wastes were deposited in the former landfill, of which a small percentage was radioactive (including tritium) or hazardous waste. Among wastes were laboratory debris, unreclaimable partially decontaminated equipment, contaminated clothing, radioactive animal carcasses, and sanitary wastes. Sewage sludge was disposed of periodically. Since the landfill ceased operating in 1966, chemical wastes have been hauled off-site. The current landfill began operating in 1967, accepting putrescible, nonputrescible, and building materials. Since 1981, putrescible waste has been hauled to a municipal landfill. Limited quantities of low-level radioactive materials were accepted until 1978.

At HWMF, drum rinsing and spills of 1,1,1-trichloroethane and other volatile organic compounds resulted in a plume of contaminated ground water that is now being treated with an aeration process. In 1960, approximately 5 curies of radioactive slurry were pumped into a drinking water well near HWMF instead of into the fill pipe of a nearby underground tank. Monitoring indicates that the leading edge of this plume remains well within the site.

On-site monitoring wells contain strontium-90, tritium, chloroform, aromatic hydrocarbons, and 1,1,1-trichloroethane, according to BNL. An estimated 15,400 people obtain drinking water from BNL wells and Suffolk County Water Authority wells within 3 miles of BNL.

The nearest fresh water wetland is the headwaters of the Peconic River, which is on BNL property about 1,500 feet upgradient of the former landfill. Surface water within 3 miles downstream of BNL is used for recreational activities.

Status (November 21, 1989): Investigations and cleanup projects are included in USDOE's 5-year plan for Waste Management and Environmental Restoration.

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.