

ABERDEEN PROVING GROUND (APG)-EDGEWOOD AREA (MD-032)
Edgewood, Harford & Baltimore Counties, Maryland
(National Priorities List Site)

Site Location

The Edgewood Area of Aberdeen Proving Ground (Edgewood Area) includes the Gunpowder Neck in Harford County, Graces Quarters and Carroll Island in Baltimore County and the surrounding water bottoms. The Edgewood Area is situated adjacent to the towns of Edgewood and Joppatowne. There are currently nine major study areas in the Edgewood Area: Westwood, Lauderick Creek, Bush River, Canal Creek, O-Field, J-Field, Other Edgewood Areas, Graces Quarters, and Carroll Island.

The entire Edgewood Area lies in the Coastal Plain Physiographic Province and it is approximately 13,000 land acres. The boundaries of the area include Bush River to the east, Seneca Creek to the west of Graces Quarters and Carroll Island, Chesapeake Bay to the south, the AMTRAK Railroad Lines to the north of the Gunpowder Neck peninsula and Gunpowder Falls State Park to the north of Graces Quarters. The Gunpowder Neck Area is separated from Graces Quarters and Carroll Island by the Gunpowder River.

Site History

Since 1917, the Edgewood Area has been the site of laboratory research and full-scale manufacture of military-unique chemicals, field testing of these chemical materials and munitions, pilot-scale manufacturing, and related test and disposal operations. The Edgewood Area has also been a center for the storage of chemical warfare material and a major receiving center for waste handling operations, including low-level radiological waste.

Specific activities are associated with each of the nine major study areas. Westwood is a former test area and contains an active rubble landfill. Lauderick Creek is a testing/training area and includes a former Nike missile base. Bush River is a storage area but has been used as both a testing and disposal area for chemical agents. Canal Creek was used for manufacturing and experimental work with chemical agents. O-Field contains two munitions disposal facilities — Old O-Field is a former trench and fill dump site and New O-Field is a former thermal detoxification area. J-Field is a former open burning area for chemical agents, white phosphorous, high explosives, and riot control agents. Other Edgewood Areas is a collection of solid waste management units (SWMUs) which include test areas, training areas, and limited chemical warfare agent handling scattered over the southern half of the Edgewood peninsula. Graces Quarters is an area previously used for testing lethal and non-lethal chemical surety materials. Carroll Island is an area formerly used for open air testing of various chemical materials.

The chemicals produced and disposed of during these operations include napalm, white phosphorous, solvents, and military unique chemical agents. Incidental disposal of contaminated test material and excess chemicals occurred throughout the Edgewood Area. The exact quantities of chemicals used, manufactured, and disposed are not known.

Environmental Investigations

Since 1976, the Edgewood Area has participated in the Department of Defense's (DoD's) Installation Restoration Program (IRP), which enables DoD facilities to investigate and control migration from past hazardous waste disposal sites. Probable sources and locations of contaminants were identified in an Environmental Survey conducted by the Army Environmental Center and many areas of groundwater contamination were identified for further study by a U.S. Geological Survey investigation. While no significant off-post migration was reported from any of the studies, small amounts of surface water contamination (volatile organic compounds) were identified in on-post tributaries to the Chesapeake Bay.

The Resource Conservation and Recovery Act Facility Assessment identified SWMUs. These areas were incorporated into the nine study areas covered by IRP efforts as defined by the Federal Facility

Agreement (FFA) signed in 1990 between the U.S. Environmental Protection Agency (EPA) and the Army after the Edgewood Area was placed on the National Priorities List. Since 1990, the Army has initiated or finalized many studies, assessments, and investigations for each of the identified study areas as part of the remedial compliance process within the FFA and the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) process. Remedial investigations are underway or completed at all of the study areas.

Current Status

Investigations are performed, as required by CERCLA, in conjunction with interim remedial and removal actions, to delineate the areas of contamination. These investigations, which are part of the overall Remedial Investigation/Feasibility Study (RI/FS) include focused feasibility studies, treatability studies, sampling of soil, sediment, surface water, and groundwater, and removal actions. Monitoring wells have been installed along the facility boundary to further define the hydrologic conditions at Edgewood and potential off-site impacts. Threats of exposure to contaminants have been reduced by these precautionary measures.

Many sites within the nine study areas are in the RI/FS phase of the CERCLA process. Treatability studies are underway to evaluate the treatment of two areas where groundwater has been impacted by chlorinated solvents. Sampling is being performed at the Other Edgewood Areas and an RI/FS is underway at the Bush River Study Area. A removal action to address unexploded ordnance and potential chemical warfare materials along the Lauderick Creek Boundary has been completed.

Listed below are sites that have completed the RI/FS and have had Records of Decisions signed between the Army and EPA Region III:

Bush River	Bush River Road Dump (1999)
Canal Creek	Building 103 Dump (1995) Building 503 Burn Sites (1995) Beach Point Test Site (1997) Canal Creek Aquifer (2000)
Carroll Island	Operable Unit A – Disposal Pits (1996) Operable Unit B – UXO (2001)
Graces Quarters	Operable Unit B – UXO (2001)
J-Field	Soil Operable Unit (1996) Final Action (2001)
Lauderick Creek	Former Nike Site (1996) Cluster 5/Other Lauderick Creek Areas (2003)
O-Field	Groundwater Containment at Old O-Field (1991) Permeable Infiltration Unit at Old O-Field (1994) Watson Creek Sediments (1997)

Remedial Action is underway at many sites. At Old O-Field, a groundwater hydraulic containment system is in operation and a permeable infiltration unit has been placed over the exposed waste to limit future hazards from air releases. Landfill caps are complete at the Former Nike site and the Building 103 Dump, and soil covers have been placed on the Bush River Road Dump and the J-field Toxic Burn Pits. Furthermore, a groundwater pump and treat system remains in operation at the former Nike site. The contents of several former disposal pits at Carroll Island have been excavated and disposed off site. Shoreline stabilization measures have been placed at J-Field, and are being implemented at Graces Quarters, Carroll Island and Other Edgewood.

Future Activity

A non-time critical removal action is planned for the Radioactive Waste Management Facility Storage Yard (the RAD yard) in the Bush River Study Area. The RAD yard, which is approximately 1.6 acres, has operated under an NRC permit. The site is contaminated with cesium-137 and cobolt-60

radionuclides, and this action may result in the excavation and disposal of a significant volume contaminated soil as low-level radioactive waste.

As sources of contamination are discovered and evaluated, removal actions and interim remedial actions will be performed. The goal is to select a final remedy to clean up soils, groundwater, and surface water at the Edgewood Area.

Facility Contacts

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Site Repositories

Harford County Public Library
Aberdeen Branch
21 Franklin Street
Aberdeen, MD 21001

Harford County Library
Edgewood Branch
2205 Hanson Road
Edgewood, MD 21040

Kent County-Washington College
Miller Library
Chestertown, MD 21620