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## **BARC 27: Beaverdam Road Landfill Beltsville Agricultural Research Center**

**December 2008**

The U.S. Department of Agriculture's Agricultural Research Service (ARS) is undertaking a Remedial Investigation (RI) and Feasibility Study (FS) at a site designated as the Beaverdam Road Landfill (BARC 27), located in Central Farm. A Remedial Investigation is a carefully structured process of collecting samples from potentially contaminated media (including soil, surface water, sediment, groundwater, and/or air), analyzing them for environmental contamination, and evaluating the potential risks that any contaminants found in those samples may pose to human health and the environment. The FS evaluates possible alternatives for cleanup to address any risks that have been identified, taking into account regulatory requirements, effectiveness, implementability, cost, community acceptance, and other factors.

### **Background**

Beaverdam Road Landfill (BDRLF) is located approximately 1,700 feet east of the intersection of Beaverdam Road and Research Road, on the north bank of the Beaverdam Creek stream valley. The landfill is somewhat dome-shaped, with steeply sloped sides surrounded by woods to the east and south, and it is covered with vegetation. BDRLF is upstream of the floodplain of Beaverdam Creek.

BDRLF was reportedly used as a disposal site for non-hazardous substances such as construction rubble, furniture, and other debris. This site was active from the early 1940s through the 1980s, after which time the landfill was closed and capped.

Several environmental studies of BDRLF have been completed. These included a field reconnaissance study (1996), baseline groundwater sampling (1997), and a Site Screening Process (SSP) investigation (1999). These investigations identified the presence of chlorinated volatile organic compounds (VOCs) in the shallow groundwater system at the site. As a result, a more comprehensive RI/FS was begun in 2002. The RI/FS identified the types, quantities, and locations of contaminants and developed ways to address the contamination problems.

### **Completed Remedial Investigation Activities**

RI field activities included soil conductivity probing and field screening of soil gas samples; surface water, sediment, and shallow groundwater sampling; and advancing soil borings to collect surface and subsurface soil samples. Wetlands delineation of the floodplain south and east of the landfill has also been done to determine wetland boundaries. The RI identified a plume of groundwater contaminated with trichloroethylene (TCE) approximately 650 feet wide, by 450 feet long southeast (downgradient) of the BDRLF. However, the source of TCE is unknown.

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Chemical analyses of the soil borings were used to site five additional monitoring wells at various locations south of the landfill in 2004. Nine monitoring wells (four existing wells and five new wells) have been sampled on four separate occasions since their installation in 2004.

### **Baseline Risk Assessment and Feasibility Study**

As part of the RI/FS, ARS conducted a baseline risk assessment to determine current and future effects of contaminants on human health and the environment. There are no current residents at the BDRLF site, and no groundwater use within one mile of the site. The baseline risk assessment focused on health effects for people who could be exposed such as BARC workers, visitors, and trespassers and a future hypothetical residential setting where children and adults might be exposed

The baseline risk assessment indicates there are no significant risks to people who might currently be exposed to surface water or sediment in Beaverdam Creek and its associated tributaries, or surface soil at the BDRLF. However, the contaminated groundwater south of the BDRLF contains chemicals of concern found at concentrations that pose a significant risk if the groundwater were to be used in the future as source of potable water.

A baseline ecological risk assessment did not identify unacceptable risks to wildlife from exposure to constituents in surface water or sediment in Beaverdam Creek and its tributaries. As a result, a decision was made that no action was needed to address potential ecological risks at the BDRLF.

Following EPA acceptance of the RI report (March 2008), a FS report was prepared. The FS examined various remedial alternatives to address the contaminated groundwater. These included land use controls and groundwater monitoring; extraction, on-site treatment, and recharge; and groundwater treatment using a mulch biowall permeable reactive barrier. Biowalls are permeable trenches filled with biologically active materials, such as mulch, compost, and/or vegetable oil, and used to capture and remediate chlorinated VOCs in groundwater. The mulch biowall was selected as the remedy to treat contaminated groundwater, due to its relatively low cost, implementability, and effectiveness. Community acceptance of the preferred alternative will be evaluated after the public comment period ends and will be described in the ROD for the site.

### **For More Information...**

Contact Kim Kaplan, ARS Information Staff, at 301-504-1637, email [Kim.Kaplan@ars.usda.gov](mailto:Kim.Kaplan@ars.usda.gov), or visit the ARS Information Repository located in Room 014, Building 003, 10300 Baltimore Avenue, Beltsville, MD. The Information Repository is open to the public Monday through Friday, 8:30am to 4:30pm. The Information Repository is also available at the Prince George's County Memorial Library at 4319 Sellman Road. The library's hours of operation are Monday through Wednesday, 10 am to 9 pm; Thursday and Friday, 10 am to 6 pm; and Saturday, 10 am to 5 pm.