



Beltsville Agricultural Research Center BARC 6: Biodegradable Site

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The U.S. Department of Agriculture's Agricultural Research Service (ARS) has completed a Remedial Investigation and Feasibility Study (RI/FS) at the Biodegradable Site (BARC 6), a portion of which is now part of the Metro Green Line storage and maintenance rail yard. 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

The Biodegradable Site is located within, and adjacent to, non-tidal wetlands along Indian Creek. Analysis of historical aerial photography and interviews with ARS personnel indicated that this site was used as a landfill as early as 1943. Regular disposal of used chemical containers, construction and household debris, and vegetative waste occurred at the site until 1975.

An RI/FS has been completed. Prior interpretations of site conditions were based on information about soil, surface water, and sediment, as well as several rounds of data from a number of groundwater monitoring wells. The former landfill, was the subject of a major removal action in 1993, during which more than 70,000 cubic yards of soil and debris were excavated and taken to proper disposal facilities.

Remedial Investigation Accomplishments

As part of the RI, the EPA recommended evaluating whether other sources of contaminants were also present from sources outside Beltsville Agricultural Research Center (BARC) property, including the general extent of any residual groundwater contamination in the underlying Patuxent Aquifer. The RI:

- Determined the extent of chlorinated volatile organic compound (VOC) contamination in groundwater, both upgradient (of BARC property) and downgradient of the site.
- Determined groundwater flow patterns and estimated rates of contaminant migration in the vicinity of the Biodegradable Site, based on information from groundwater monitoring.
- Determined that low-level contaminants have been released to soil in the wetlands along Indian Creek.
- Identified low concentration contaminant releases to surface water and sediment in Indian Creek, both upstream and downstream of the site.
- Determined potential risks to human health and the environment from groundwater, soil, and surface water/sediment contamination.

Completed Remedial Investigation Activities

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Advanced field screening tools (including Geoprobe® direct-push groundwater sampling and on-site sample analyses) were used to identify potential upgradient sources of contamination, and assess the distribution of contaminants both laterally and vertically in the underlying groundwater aquifer. Soil, surface water, and sediment samples were also collected around the Biodegradable/Metro Site to determine the extent of contamination attributable to the site and to offsite sources.

In particular, sampling was done to characterize a plume of chlorinated VOCs that originates from an industrial park upgradient of BARC property. Shallow and deep monitoring wells were installed to quantify both the vertical and horizontal extent of chlorinated VOC contamination.

Computer modeling of the movement and environmental fate of the groundwater contaminant plume both upgradient and downgradient of the Biodegradable/Metro Site was used to quantify potential risks to human and ecological receptors.

Baseline Risk Assessment and Feasibility Study

A Baseline Risk Assessment (BRA) was completed, in accordance with EPA guidance, using data generated from the field sampling portion of the RI. The BRA concluded that there were no current unacceptable risks to human health and the environment. However, the contaminated groundwater 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. The BRA results were used to help evaluate potential remedial (cleanup) actions in the FS.

A FS report was prepared (April 2008) that examined various remedial alternatives to address contaminated groundwater at the Biodegradable Site. Remedial alternatives under consideration include installation of additional “detection” wells, long-term monitoring of groundwater in the vicinity of the site, and land-use and groundwater use restrictions to prevent future population exposures.

Ongoing and Future Activities

A Proposed Plan (PP) will be publicly announced. The PP will identify ARS’ and EPA’s preferred alternative for addressing contaminated groundwater in the vicinity of the Biodegradable Site. It will outline pertinent information from the RI/FS and provide a summary of the alternatives that ARS and EPA evaluated. When the PP for the Biodegradable Site is issued, ARS and EPA will open a public comment period during which oral and written comments on the PP may be submitted. After public comments have been reviewed, ARS and EPA will make any changes necessary and complete a Record of Decision (ROD) that documents the selected remedial action at the Biodegradable Site.

For More Information...

Contact Kim Kaplan, ARS Information Staff, at 301-504-1637, by e-mail at 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.