



Land Use Restriction Implementation Plan

SWMU 13

United States Naval Academy
Annapolis, Maryland
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1 Operational Basis

This document describes how the Navy will implement the proposed remedy for Solid Waste Management Unit 13 (SWMU 13), which was outlined in the Statement of Basis (SB) for the United States Naval Academy (USNA) issued by the United States Environmental Protection Agency (USEPA) on November 7, 2014. The Final Decision and Response to Comments (FDRTC) document was signed by the USEPA on January 8, 2015. The SB summarized the environmental conditions associated with surface and subsurface soil, groundwater, sediment, and surface water at SWMU 13 and proposed a remedy based on the fact that some contaminants will remain in the soil and groundwater at levels above what is deemed appropriate for residential exposure and domestic uses. No further action was proposed for sediment and surface water.

The proposed remedy for SWMU 13 consists of the continued maintenance of the soil cover system in accordance with this Land Use Restriction Implementation Plan, which meets the requirements of the Operation and Maintenance plan specified by EPA in the Final SB. This Land Use Restriction Implementation Plan addresses the implementation of and compliance with the following land and groundwater use restrictions:

- **Land Use Restrictions**
 - SWMU 13 shall not be used in a way that will adversely affect or interfere with the integrity and protectiveness of the soil cover, including a restriction on the disturbance of surface and subsurface soil within the SWMU 13 area, and a requirement to monitor and maintain the soil cover system in the northern portion of SWMU 13.
 - SWMU 13 shall not be used for residential purposes. Residential use refers to use for residential purposes, including single-family homes, town homes, apartment complexes and condominiums, and child/elder care facilities.
- **Groundwater Use Restriction**
 - Groundwater under SWMU 13 shall not be used for any purpose other than environmental monitoring and testing.

The SB also specified the following access and reporting requirements:

- An annual written certification that contains a statement that land use restrictions are in place and effective shall be submitted to the USEPA.
- USEPA, Maryland Department of the Environment (MDE), and/or their authorized agents and representatives, shall be provided access to SWMU 13 to inspect and evaluate the continued effectiveness of the final remedy and, if necessary, to conduct additional remediation to ensure the protection of the public health and safety and the environment based upon the final remedy selected by the USEPA in the FDRTC.

2 Land Use Restrictions

There are four key features associated with SWMU 13 to consider during implementation of the specified land use restrictions including: 1) SWMU 13 boundary, 2) Subsurface Ash Fill Limits, 3) Soil Cover Interim Measure (IM) Limits, and 4) fence line separating the shoreline area of Shady Lake from the developed area to the south (See attached map). The SWMU 13 boundary is representative of the area of post-filling surface use of the site (for example, scrap metal storage) whereas the Subsurface Ash Fill Limits represents what was done at the site prior to surface uses. The Subsurface Ash Fill Limits were defined by soil boring data collected during environmental investigations at SWMU 13. The IM was undertaken to address the potentially unacceptable ecological risk associated with elevated lead concentration in surface soil located in the northern portion of SWMU 13. The IM consisted of excavating and re-grading the existing steep and irregular slope along Shady Lake to create a stable slope with the placement of: 1) an engineered clean soil cover over designated areas with elevated lead concentration in surface soil; 2) a vegetative layer consisting of grass seeding; and 3) a temporary irrigation system. The USNA also added landscaped shrubs and trees for aesthetics. The fence line limits access to the shoreline area of Shady Lake, which incidentally protects the IM and maintains usage of this area consistent with how it was evaluated in the risk assessment (i.e., the fence limits access to recreational use along the shoreline of Shady Lake).

In relation to the land use restriction remedy proposed by the USEPA, the Navy will ensure that the integrity and protectiveness of the soil cover is maintained within the SWMU 13 boundary, Subsurface Ash Fill Limits, and the Soil Cover IM Limits. Residential use will also be prohibited within the SWMU 13 boundary. These land use restrictions will be implemented through use of the following institutional controls: 1) Periodic inspections performed by a representative from the Naval Support Activity (NSA) Annapolis EV Department. Inspections will include ensuring that the fence is still in place and in working order; that there is no indication of erosion degrading the soil cover; and that there are no trees taking root which could cause damage to the soil cover over time. 2) Naval Facilities Engineering Command (NAVFAC) Washington Real Estate/ Asset Management has been advised that this area is off limits for development and a GIS layer illustrating SWMU 13 has been added to the installation base map to ensure development does not occur at SWMU 13. 3) NSA Annapolis has established a dig permit process that takes place prior to any ground disturbance proposed on the installation. The dig permit process requires consultation with the NSA Annapolis EV Division, which will ensure that no ground disturbance occurs at SWMU 13.

3 Groundwater Use Restriction

The proposed groundwater use restriction is based on the fact that previous groundwater monitoring at SWMU 13 indicates that groundwater is contaminated within the boundaries of the SWMU. The constituents detected above the Maximum Contaminant Levels are mostly metals, specifically, lead, iron, and manganese. In general, the USEPA expects to return usable groundwater to its maximum beneficial use, generally selected to be levels acceptable for drinking; however, since waste will be left in place at SWMU 13 the final remedy should achieve groundwater cleanup levels at and beyond the waste unit boundary. The USEPA does not expect to clean up groundwater to drinking water levels within the boundaries of a waste management unit such as SWMU 13. Groundwater data collected within SWMU 13 indicates that the groundwater is contaminated where it is in contact with the waste material, but that groundwater is either not contaminated outside the waste boundary or that there are no beneficial uses for groundwater downgradient of the waste boundary. Groundwater from SWMU 13 flows northward into Shady Lake, but previous assessments indicate that there is no impact to the lake and that cleanup of groundwater to protect surface water is not needed.

The groundwater use restriction will be implemented through use of the following institutional controls: 1) NAVFAC Washington Real Estate/Asset Management has been advised that this area is NOT to be used for groundwater use and a GIS layer illustrating SWMU 13 has been added to the installation base map to ensure groundwater use is restricted in this area. 2) The installation or use of groundwater wells on NSA Annapolis would require consultation with the EV Division, which will ensure that this area is not used as a groundwater resource.

