5.2.2 Groundwater Monitoring

A hydrogeologic assessment must be submitted as part of the Subpart X permit application to demonstrate compliance with environmental performance standards related to potential effects on groundwater and the subsurface environment (EPA 1986; 1992). Specific performance standards that must be addressed in the hydrogeologic assessment are set forth in 40 CFR §264.601(a).

Permit applicants may avoid conducting a detailed assessment for groundwater or the subsurface environment if the applicant can demonstrate through a preliminary assessment that releases to those media will not have adverse effects on human health and the environment. Preliminary assessments may be completed separately for each medium or conducted for a single medium only. The permit writer should evaluate the adequacy of preliminary assessments, using information submitted by the applicant to characterize the Subpart X unit.

A preliminary groundwater and subsurface assessment must describe the regional geology and hydrogeology, the depth to aquifers, yields of aquifers, locations and uses of regional aquifers, and locations of the nearest drinking water wells. There are numerous sources from which those data can be obtained. The permit writer should evaluate the data and the sources of the data to determine whether they are valid and representative of the site. In addition, the permit writer should evaluate the application for conformity with the following criteria:

- Will environmental controls (such as secondary containment) be used?

- Was sufficient information provided about the quantities of wastes and concentrations of hazardous waste constituents in the wastes entering the unit?

- Was adequate information provided about the process conducted at the unit, including reaction rates, temperatures, pressures, and residence time?

- Was adequate justification provided to support the conclusion that hazardous waste constituents will not be released from the unit?

- Were data supplied to support the conclusion that no release of hazardous waste constituents at levels above health-based standards has occurred from the facility?

- Is there evidence of complaints to the facility by neighbors about potential releases from the facility?

- Was adequate information provided about regional geology and hydrogeology?

If the answer to any of the above key questions is no, the permit writer should issue a NOD to require that the applicant conduct a detailed assessment of the groundwater and subsurface environment.

Once determined necessary, groundwater monitoring is a straightforward process. Monitoring systems similar to those of land disposal units (40 CFR Part 264, Subpart F) should be proposed because of the potential that OB/OD units will be closed with waste in place. The permit writer should review EPA's *Groundwater Monitoring Technical Enforcement Guidance Document* (EPA 1986) and *RCRA Groundwater Monitoring: Draft Technical Guidance (EPA, 1992)* documents. These documents provide extensive guidance for the placement and operation of such systems, when evaluating groundwater monitoring plans submitted by the permit applicant. These documents and the *Handbook of Groundwater Protection and Cleanup Policies for RCRA Corrective Action (September 2001)* are available via the internet at http://www.epa.gov/correctiveaction.

EPA's Handbook of Groundwater Protection and Clean-Up Policies for RCRA Corrective Action (September 2001) is posted at http://www.epa.gov/correctiveaction

This document provides general information on groundwater issues and contains links to many other guidance documents.