

Resampling and Groundwater Monitoring Notification Requirements

As part of the groundwater monitoring requirements of 40 CFR Part 264, Subpart F, owners/operators of permitted hazardous waste landfills, surface impoundments, waste piles, or land treatment units must implement a detection monitoring program. Under this program, an owner/operator samples the groundwater at least semi-annually for permit-specific indicator parameters and waste constituents, monitoring for statistically significant evidence of a release from the unit (264.98(a) and (b)). If the owner/operator determines that such evidence exists, she is required to notify the Regional Administrator in writing within seven days and immediately sample the groundwater for hazardous constituents listed in Part 264, Appendix IX, noting the concentration of any listed constituents detected (264.98(g)(1) and (2)). The owner/operator has the option to resample the groundwater within one month and repeat the analysis for the hazardous constituents (264.98(g)(3)). The owner/operator is required to submit to the Regional Administrator an application for a permit modification to establish a compliance monitoring program within 90 days (264.98(g)(4)). If the owner/operator chooses to resample, must she submit her permit modification within 90 days of the initial notification, or the resampling?

Because the determination of the existence of statistically significant evidence of a release may be affected by the resampling, the owner/operator must submit any required permit modification within 90 days of the resampling. However, if the resampling shows that no statistically significant evidence of a release exists, the owner/operator would not submit a permit modification and would continue detection monitoring. If the resampling confirms the presence of statistically significant evidence of a release, the owner/operator must then submit an application for permit modification within 90 days of the resampling.

Many statistical procedures written into permits to comply with the Part 264, Subpart F, groundwater monitoring requirements involve verification resampling and retesting procedures as a means to simultaneously control Type I, or "false negative," error rates and improve statistical power. With such procedures, statistically significant evidence of a release from a unit is not necessarily indicated by a single "statistically significant" exceedance. Instead, the results of the statistical test are not interpreted until all resampling and retesting activities have been completed. Thus, an initial exceedance of a prediction limit, for example, could be followed by a single or double independent resampling and retesting procedure. Should either the first or second independent retests lie below the prediction limit, then no statistically

significant increase should be inferred, and the owner/operator may resume detection monitoring without performing the complete Part 264, Appendix IX, analysis or conducting a permit modification. Details of these and other statistical procedures can be found in Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities & Addendum to Interim Final Guidance (EPA530-R-93-003).