

Kansas Department of Health and Environment Bureau of Waste Management Policy 02-02

Related to

Separation from and Monitoring of Groundwater at Solid Waste Landfills

effective March 6, 2002

revised March 20, 2008

Purpose

This Bureau of Waste Management (BWM) policy is intended to clarify the requirements for:

1. Providing a vertical buffer between solid waste landfills and underlying aquifers; and
2. Monitoring groundwater quality at solid waste landfill facilities located in complex hydrogeological settings.
3. Preventing design and construction of an inward gradient landfill.

Background

Kansas Statutes Annotated (K.S.A.) 65-3406(a)(1) authorizes and directs the Kansas Department of Health and Environment (KDHE) to "...adopt such rules and regulations, standards and procedures relative to solid waste management as necessary to protect the public health and environment...". K.S.A. 65-3407(b) requires KDHE to "...make an investigation of the proposed solid waste processing facility or disposal area and determine whether it complies with the provisions of this act and any rules and regulations and standards adopted there under." By precedent BWM has effectively established standards relative to groundwater protection at solid waste landfill facilities. Several key standards are discussed below.

Action

New solid waste disposal units must have a minimum vertical separation of 5 feet from the lowest point of a solid waste disposal area (e.g., bottom of the base of the sump) to the highest predicted groundwater elevation in the uppermost aquifer underlying the disposal area. The minimum vertical separation must be provided by naturally occurring, in-situ soil or geologic material, or approved alternative material. The "uppermost aquifer" means the first saturated zone able to fully recharge within 24 hours after one well volume is removed, and whose boundaries can be identified and mapped from hydrogeologic data. This term includes all hydraulically connected aquifers. It is inappropriate to permit a solid waste landfill where conditions would require groundwater to be pumped from the landfill in perpetuity in order to maintain the integrity of the landfill.

If groundwater monitoring is required at facilities where special conditions exist, the following issues may have to be considered:

1. Seasonal (intermittent) aquifers, that can not be monitored throughout the course of the year, may be excluded from designation as the uppermost aquifer subject to KDHE review and approval of supporting information. These aquifers must have seasonal monitoring devices installed unless otherwise excluded by KDHE.
2. Engineering measures may be used to intercept and divert seasonal groundwater flow around solid waste disposal areas subject to KDHE's review and approval of design plans and supporting information.
3. KDHE may require monitoring of multiple aquifers, whether seasonal or perennial, via wells or other means, as necessary to adequately safeguard human health and the environment at solid waste landfill facilities in accordance with the state regulations.

All groundwater monitoring occurring at solid waste landfill facilities must be performed in accordance with applicable Kansas Administrative Regulations 28-29-100 through 28-29-121.

Alternate criteria may be adopted by KDHE as necessary for compliance with state statutes and regulations, for consistency with approved plans, or due to site-specific conditions or unforeseen circumstances.



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