

Kansas Department of Health and Environment
Bureau of Waste Management Policy 03-02

related to

Leachate Collection Systems at New Small Landfills

October 27, 2003

Purpose

This Bureau of Waste Management policy is intended to clarify the requirements for leachate collection systems at new small arid landfills, hereinafter termed "new small landfills."

Background

Kansas Statutes Annotated (K.S.A.) 65-3406(d) stipulates in part that:

"Any solid waste disposal area which qualifies for the exemption provided for by subsection (b) [subsection (f)(1) of 40 CFR 258.1, "Subtitle D"] and which successfully demonstrates that naturally occurring geological conditions provide sufficient protection against groundwater contamination shall not be required to construct a landfill liner or leachate collection system. The secretary shall adopt rules and regulations which establish criteria for performing this demonstration and standards for liner and leachate collection systems for exempt landfills which fail the demonstration."

Kansas Administrative Regulations (K.A.R.) 28-29-103 differentiates between the demonstration criteria for an "existing small landfill", and a "new small landfill." As defined in K.A.R. 28-29-103(c), "Each 'existing small landfill' for the purposes of K.A.R. 28-29-103, as amended, means any area permitted for municipal solid waste disposal on or before October 9, 1993 and any area permitted through a permit amendment prior to October 9, 1997 and contiguous to the area permitted before October 9, 1993." A "new small landfill" is one that does not meet that definition.

K.A.R. 28-29-103(d) then sets forth the criteria for the required demonstration. Essentially, the regulation stipulates that existing small landfills receiving waste on or after October 9, 1997 must either: (i) install and operate monitoring wells to demonstrate that groundwater contamination has not occurred; (ii) demonstrate through groundwater modeling (i.e., fate and transport analysis) that the liner and/or naturally occurring subsurface conditions provide sufficient protection against groundwater contamination; or (iii) demonstrate that the in situ material under the landfill meets specific liner performance standards. It is important to note that K.A.R. 28-29-103(g) and (h) require landfills that use the groundwater modeling or liner performance standard demonstrations to also install and operate groundwater monitoring wells consistent with K.A.R. 28-29-103(f).

Under K.A.R. 28-29-103(e), new small landfills must either: (i) construct a liner and leachate collection system; or (ii) demonstrate that an in situ or alternate liner meets the groundwater modeling or liner performance standards in 103(g) and 103(h), respectively. One distinction from existing small landfills is that new small landfills cannot demonstrate a history of groundwater protection simply through sampling and analysis of monitoring wells.

Action

The following interpretations and design criteria are established by the Bureau:

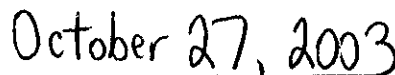
1. While leachate collection systems are required under K.A.R. 28-29-103(e) for new small landfills with

liners, the design criteria are not specified in the regulation. In fact, K.A.R. 28-29-103(a) specifically exempts existing or new small arid landfills from the design requirements in K.A.R. 28-29-104, which addresses design and operating criteria for leachate collection systems. Therefore, the Bureau generally limits the leachate collection system criteria to requiring a means of collecting and extracting leachate if and when detected. It is the permittee's responsibility, along with their engineer, to select appropriate design and performance standards. The Bureau strongly recommends that these standards be based on a site-specific evaluation of measures to address long-term operation of the landfill and protection of human health and the environment. At a minimum, leachate collection systems should include: landfill base sloped to a low point/sump; drainage medium on top of the liner (this could be the waste itself or more porous material such as sand/gravel or geotextile); riser pipe or some other means of checking the accumulation of leachate at the low point/sump; a means (e.g., portable pump) of removing leachate if it reaches a predetermined action level; and a method of disposal (e.g., recirculation, evaporation, haul to wastewater treatment plant). Design criteria and performance standards developed by the permittee and their engineer must be included in the design drawings and operations plans. Once those plans have been approved by the Bureau the criteria and standards become permit requirements. It is important to note that groundwater contamination due to the small landfill will result in the loss of the small landfill exemption status. This has occurred at more than a dozen small landfills in Kansas. Hence, it is in the permittee's best interest to implement sufficient controls and safeguards to protect the investment in the landfill.

2. As noted above, K.A.R. 28-29-103(a) specifically exempts existing or new small arid landfills from the design requirements in K.A.R. 28-29-104, which addresses design and operating criteria for leachate collection systems. The Bureau interprets K.A.R. 28-29-103(a) to exempt all small landfills from both the design and the operational requirements in K.A.R. 28-29-104. Also, while the exemption in K.A.R. 28-29-103(a) is written as "Any owner or operator of a new or existing municipal solid waste landfill may request an exemption...", the Bureau considers the demonstration of conformance with the small landfill exemption criteria as to satisfy the requirement for this request.
3. K.A.R. 28-29-103(e) includes the qualifier, "Each new small landfill or unit..." The Bureau has determined that the words "or unit" should be deleted from this phrase, in order to be consistent with the definitions in K.A.R. 28-29-103(c). As a result, only new small landfills will be held to this requirement.
4. When design and/or operations plans have been approved by the Bureau and the plans specify leachate collection facilities or procedures that differ from this policy, the plans shall govern if they meet or exceed the minimum requirements outlined in this policy.



William L. Bider
Director, Bureau of Waste Management



Date