

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

Related to

Landfill Leachate Analysis Reporting

November 25, 2003

Purpose

This Bureau of Waste Management policy is intended to clarify the requirements for reporting the results from Subtitle D municipal solid waste landfills (MSWLFs) when leachate is collected and analyzed.

Background

Kansas Administrative Regulation (K.A.R.) 28-29-104(i)(6) "Leachate Monitoring" requires the following for Subtitle D MSWLFs:

(A) Representative samples of leachate shall be collected annually from each unit and tested in accordance with paragraph (i)(6)(B) of this regulation at a frequency of once per year while the leachate management system is in operation.

(B) Discharges of leachate from MSWLFs shall be tested for the following constituents prior to treatment or pretreatment:

- (i) five-day biochemical oxygen demand (BOD(5));
- (ii) total suspended solids;
- (iii) total iron;
- (iv) pH;
- (v) each of the appendix I parameters listed in K.A.R. 28-29-113; and
- (vi) any other constituents as specified by the director.

(C) If it can be shown that the removed constituents are not reasonably expected to be contained in or derived from the waste contained in the unit, the list of constituents in (i)(6)(B) of this regulation may be modified by the director.

(D) An appropriate alternative frequency for repeated sampling and analysis for the constituents listed in paragraph (i)(6)(B) of this regulation, or the alternative list approved in accordance with paragraph (i)(6)(C) of this regulation, may be specified by the director during the active life, including closure, and the post-closure care period. The alternative frequency shall be based on consideration of the following factors:

- (i) leachate quantity; and
- (ii) long-term trends in leachate quality.

The Operating Standards under K.A.R. 28-29-108 also apply to Subtitle D MSWLFs. Part 108(q)(2) requires that “All information contained in the operating plan shall be furnished upon request to the department or made available at any reasonable times for inspection by the department.” Part 108(r)(3) requires that, “The owner or operator shall maintain and operate all systems and related appurtenances and structures in a manner that facilitates proper operations in compliance with this regulation.” These provisions authorize KDHE to require that any landfill records, including leachate analyses, be submitted to KDHE for the Department’s evaluation.

There are a number of reasons why leachate analysis is beneficial:

- ‘ To provide a “fingerprint” of the leachate, that is, a detailed characterization of the leachate by constituents and concentrations. This can help in determining the source of groundwater contamination, if any.
- ‘ To provide leachate characterization data to wastewater treatment facilities that accept leachate. This helps in determining appropriate mixing rates and whether the leachate will adversely affect the quality of the treated effluent.
- ‘ To enable a trend analysis that may generally indicate the effectiveness of operational procedures and integrated waste management in the service area. For example, a trend analysis could potentially show the long-term effects on leachate quality due to diversion of hazardous materials through limits on the quantities of hazardous wastes allowed in commercial/industrial solid waste, waste screening to ensure those limits are enforced, and use of household hazardous waste facilities which provide a voluntary alternative for residential customers.


Leachate analysis reports would also be helpful for the following reasons:

- T KDHE occasionally receives requests for this information from the general public, such as when a landfill expansion is proposed or if a release occurs.
- T KDHE occasionally receives requests for this information from the U.S. EPA, such as when that agency updates its database.
- T KDHE staff could evaluate whether additional constituents should be required in monitoring groundwater based on the leachate characteristics.
- T KDHE staff could be generally aware of trends at each facility and statewide.

Action

Based on the regulations and interpretations summarized above, the following requirements are established by the Bureau:

1. The owner/operator of each Subtitle D MSWLF shall analyze leachate annually per K.A.R. 28-29-104(i)(6). The analytical results shall be retained in the facility operating record and a copy of the results shall be submitted to the Bureau of Waste Management within 90 days after the sampling event.
2. Each set of analytical results shall be submitted with graphical plots of concentrations for each detected constituent from each leachate analysis during the past ten years (or less if the landfill has been in operation for a shorter period), including the most recent analysis. If relevant, supporting information should be included such as possible explanations for unexpected results.



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Date