Kansas Administrative Regulations

Department of Health and Environment

Article 29.—Solid Waste Management—Part 7. Municipal Solid Waste Landfills.

28-29-103. Small landfills.

(a) Any owner or operator of a new or existing municipal landfill may request an exemption from the design requirements in K.A.R. 28-29-104, as amended, if these conditions are met:

(1) the MSWLF receives and disposes of less than 20 tons of municipal solid waste daily, based on an annual average;

(2) there is no evidence of groundwater contamination from the MSWLF;

(3) the MSWLF is in an area that annually receives less than or equal to 25 inches of precipitation; and

(4) the community or communities utilizing the MSWLF have no practicable waste management alternative.

(b) Each owner or operator requesting the small landfill exemption shall demonstrate compliance with the conditions in subsection (a) by submitting the following documentation to the department for review and approval:

(1) actual records of past operations or estimates of the amount of solid waste disposed on a daily basis to demonstrate that the MSWLF meets the condition in paragraph (a)(1);

(2) site-specific data demonstrating that the MSWLF meets the condition in paragraph (a)(2);

(3) climatic data obtained for a minimum 30-year averaging period demonstrating that the MSWLF meets the condition in paragraph (a)(3); and

(4) one of the following statements to demonstrate that the MSWLF meets the condition in paragraph (a)(4):

(A) a statement containing data showing to the department that the closest MSWLF is more than 75 miles away; or

(B) written certification, from the board of county commissioners in the county where the landfill is located, that a landfill located less than 75 miles away is not a practicable alternative.

(c) The owner or operator of each small landfill meeting the exemption criteria shall comply with the location restrictions, the operating standards, the closure and post-closure standards, and the financial assurance standards for municipal solid waste landfills.

(1) 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 for municipal solid waste disposal through a permit amendment prior to October 9, 1997 and contiguous to the area permitted before October 9, 1993.

(2) Each "new small landfill" means any area not permitted for municipal solid waste disposal prior to October 9, 1993 or not incorporated into an existing permit by amendment prior to October 9, 1997.

(d) Each existing small landfill meeting the exemption criteria in subsection (a) and receiving waste on or after October 9, 1997 shall comply with subsection (f), (g) or (h) of this regulation in order to demonstrate that naturally occurring geological conditions provide sufficient protection against groundwater contamination.

(e) Each new small landfill meeting the exemption criteria in subsection (a) shall comply with subsection (f) of this regulation and shall be constructed with the following:

(1) a liner consisting of the following:

(A) a minimum of two feet of compacted clay with a hydraulic conductivity of no more than 1×10^{-6} cm/sec; and

(B) a leachate collection system; or

(2) *in situ* material or an alternate, approved constructed liner meeting the demonstration standards for groundwater modeling prescribed in subsection (g) or the liner performance standard prescribed in subsection (h) of this regulation. Alternate constructed liners shall be considered for approval by the department when these conditions are met:

(A) the technology or material has been successfully utilized in at least one application similar to the proposed application;

(B) methods for ensuring quality control during the manufacture and construction of the liner can be implemented; and

(C) the owner or operator can provide documentation in the operating record that the provisions set forth in this subsection have been satisfied.

(f) Groundwater monitoring, sampling, and analysis.

(1) The owner or operator of each landfill meeting the exemption criteria shall install a groundwater monitoring system developed by a qualified groundwater scientist as defined in K.A.R. 28-29-111 and approved by the department. The groundwater monitoring system shall fulfill these requirements:

(A) have monitoring wells located on the property permitted for solid waste disposal, and yield groundwater samples from the uppermost aquifer representing the quality of groundwater passing the point of compliance as defined by K.A.R. 28-29-101(aa), as amended;

(B) consist of a sufficient number of wells to accurately determine the groundwater flow gradient, including a minimum of two down gradient wells;

(C) have monitoring wells located at a distance no greater than 150 meters or 492 feet from the planned edge of the unit; and

(D) have monitoring wells located at least 50 feet from the property boundary for all new small landfills. The "upper most aquifer," for the purposes of K.A.R. 28-29-103, as amended, means the first saturated zone able to fully recharge within 24 hours after one well volume is removed.

(2) The owner or operator of each small landfill meeting the exemption criteria shall maintain and operate the monitoring system in accordance with K.A.R. 28-29-111, paragraphs (f)(2) and (f)(3), as amended.

(3) The owner or operator of each small landfill meeting the exemption criteria shall perform the following:

(A) sample each down gradient monitoring well semiannually during the active site life and post-closure period to ensure that contaminant levels are within the parameters listed in Table 1 of this regulation;

(B) measure the water depth in all monitoring wells during the semiannual sampling to verify the groundwater flow gradient; and

(C) submit the results of analytical testing and verification of the groundwater flow gradient to the department within 45 days of receipt of the test results.

TABLE 1

Monitoring Constituents for Exempt Small Landfills

Constituent	Maximum Contaminant Level (MCL) (in milligrams per liter mg/l)
VOLATILE ORGANIC COMPOUNDS	
Benzene	0.005
1,2-Dichloroethane	0.005
1,1-Dichloroethene	0.007
1,2-Dichloropropane	0.005
Ethylbenzene	0.7
Styrene	0.1
Tetrachloroethene	0.005
Toluene	1.0
1,1,1-Trichloroethane	0.2
Trichloroethene	0.005
Vinyl Chloride	0.002
Total Xylenes	10.0

METALS (dissolved)	
Cadmium	0.005
Chromium (total)	0.05

(4) If the owner or operator of any existing small landfill demonstrates that naturally occurring geological conditions provide sufficient protection against groundwater contamination by compliance with subsection (g) or subsection (h) of this regulation, the owner or operator may reduce the sampling frequency established in paragraph (f)(3) from semiannual samples to annual samples.

(5) The groundwater monitoring program shall include consistent sampling and analysis procedures in accordance with K.A.R. 28-29-112, subsections (a), (b)(1) through (b)(4), (c), and (d), as amended.

(6) If any monitoring well exceeds the maximum contaminant level of any constituent listed in Table 1 in subsection (f) of this regulation, the owner or operator shall sample the well again, within 30 calendar days of the finding. If the second sample confirms that contamination levels exceed the maximum contaminant level of any constituent listed in Table 1, the exempt status of the landfill shall be revoked, and the owner or operator shall comply with K.A.R. 28-29-104 and K.A.R. 28-29-110 through 28-29-114, as amended.

(7) The groundwater sampling and analysis requirements of subsection (f) of this regulation may be suspended by the department at existing small landfills if the owner or operator demonstrates the following:

(A) naturally occurring geological conditions provide sufficient protection against groundwater contamination as evidenced by compliance with subsection (g) or (h) of this regulation;

(B) the uppermost aquifer does not exist within a depth of 150 feet below the lowest depth of the municipal solid waste; and

(C) no potential for migration of hazardous constituents exists from that MSWLF unit to the uppermost aquifer during the active life of the unit and the post-closure care period. This demonstration shall be certified by a qualified groundwater scientist and approved by the department.

(8) The groundwater monitoring, sampling, and analysis required in subsection (f) of this regulation may be reduced or suspended by the department based on site-specific data.

(g) Groundwater modeling.

(1) Each owner or operator of a small landfill meeting the exemption criteria shall demonstrate that a constructed liner at the site or naturally occurring strata prohibit contaminants from exceeding the concentration values listed in Table 1 of K.A.R. 28-29-104, subsection (e), as amended, in the uppermost aquifer at the point of compliance based on fate and transport modeling of predicted landfill leachate. The point of compliance shall be located as follows:

(A) within 150 meters or 492 feet of the edge of the planned unit boundary; and

(B) on the owner's or operator's property.

(2) When approving modeling demonstrations, the following factors may be considered by the department:

(A) the hydrogeologic characteristics of the facility and surrounding land;

(B) the climatic factors of the area; and

(C) the volume and physical and chemical characteristics of the leachate. The expected performance of the design shall be evaluated at maximum annual leachate flow conditions.

(3) Each model demonstration developed pursuant to subsection (g)(1) of this regulation shall be certified by a qualified groundwater scientist.

(4) Each owner or operator of a small landfill performing the groundwater modeling demonstration shall comply with the groundwater monitoring, sampling, and analysis requirements prescribed in subsection (f).

(h) Liner performance standard.

(1) Each owner or operator shall demonstrate that *in situ* material meets the liner performance standard by submitting the following information for each small landfill unit:

(A) certification from a professional engineer licensed in Kansas that the *in situ* material immediately below the bottom of the municipal solid waste layer but prior to encountering groundwater meets these conditions:

(i) has a permeability equivalent to two feet of 1×10^{-6} cm/sec material; and cm/sec material; and

(ii) within the equivalently permeable layer, has no soil layer or stratum with a permeability greater than 1×10^{-4} cm/sec and with sufficient continuity and thickness to allow groundwater to flow laterally off the owner's property; and
(iii) shows consistency in all boring data.
(B) data from a minimum of one centrally located boring that provides a soil profile to a depth of the following:
(i) the water table;
(ii) 46 meters or 150 feet; or
(iii) a point where a minimum of 10 feet of 1×10^{-9} cm/sec material is encountered;
(C) data from a minimum of four additional borings of sufficient depths to provide data supporting the certification in paragraph (h)(1)(A) of this regulation;
(D) laboratory soil or field permeability data sufficient to provide data supporting the certification in paragraph (h)(1)(A) of this regulation; and
(E) evidence that the highest water table of any underlying groundwater is a minimum of 1.5 meters or five feet below the bottom of the material used to make the demonstration that the *in situ* material meets the liner performance standard.
(2) When approving a liner demonstration for compliance with this subsection, the following minimum factors shall be considered by the department:
(A) the hydrogeologic characteristics of the facility and surrounding land;
(B) the climatic characteristics of the area; and
(C) the volume and physical and chemical characteristics of the leachate.
(3) Each owner or operator demonstrating the liner performance standard shall comply with the groundwater monitoring, sampling, and analysis requirements prescribed in subsection (f).
(i) Each owner or operator shall document in the operating record that the small landfill unit meets the requirements in subsections (f), (g) or (h) of this regulation.
(Authorized by K.S.A. 1995 Supp. 65-3406; implementing K.S.A. 65-3401; effective Oct. 24, 1994; amended Dec. 13, 1996.)

***** Authenticated Kansas Administrative Regulation *****