NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION ACT (EXCERPT)
Act 451 of 1994

324.11512b Active gas collection and control system; prevention of the migration of explosive gases; system requirements; compliance with gas migration monitoring plan; alternative gas venting.

Sec. 11512b.

(1) A landfill that accepts waste with the potential to generate gas must be designed to prevent the migration of explosive gases generated by the waste.

(2) A landfill that accepts municipal solid waste must be designed with an active gas collection and control system. Except as otherwise provided for in this section or approved by the department, the active gas collection and control system shall include all of the following features:

(a) Vertical gas extraction wells that meet all of the following requirements:

(i) Are installed throughout the landfill with a maximum radius of influence of 150 feet per well and lesser radii for wells located near the perimeter of the landfill. The radii of influence of adjacent wells shall overlap. Alternate well spacings may be used for portions of a site or the entire site if approved by the department after a site-specific demonstration.

(ii) Have target depths of at least 75% of the waste depth at the well location. However, the wells should not extend closer than 10 feet above the leachate collection system.

(iii) Are constructed of pipe that meets all of the following requirements:

(A) Is at least 6 inches in diameter.

(B) Is manufactured from polyvinylchloride, high-density polyethylene, chlorinated polyvinyl chloride, or an alternate material approved by the department.

(C) Is designed to convey projected amounts of gas; withstand installation, static, and settlement forces; and withstand planned overburden and traffic loads.

(D) When constructed, is slotted or otherwise perforated and is screened in the lower 2/3 to 3/4 of its length in the borehole. The department may approve alternative perforated screened length requirements based on waste thickness or other factors.

(iv) Has boreholes that meet all of the following requirements:

(A) Are 36 inches in diameter. The department may approve alternate diameter boreholes as part of a design prepared by a licensed professional engineer and approved by the department.

(B) Are backfilled around the perforated pipe with 3/4- to 3- inch washed stone or an alternate material if approved by the department after a site-specific demonstration.

(C) The top 10 feet are sealed in a manner approved by the department.

(b) Horizontal gas extraction wells that are properly sloped to drain accumulated liquids and designed to withstand expected overburden pressures.

(c) A flow control valve and sampling access port on each gas extraction well.

(d) A gas header system that meets all of the following requirements:

(i) The entire gas header system is designed with a loop to allow alternative flow paths for the gas as soon as practicable during both the interim and final development phases of construction.

(ii) The slope on the header pipe over the waste mass is at least 2% wherever possible. The slope outside of the waste mass shall allow efficient removal of condensate and prevents sags.

(iii) The header and lateral pipes meet both of the following requirements:

(A) Are manufactured from polyethylene or another material approved by the department.

(B) Are designed to convey projected amounts of gas and liquids; withstand installation, static, and settlement forces; and withstand planned overburden and traffic loads.

(e) A blower, header, and laterals designed so that a vacuum of at least 10 inches of water column is available at the well located furthest from the blower. An available header vacuum of less than 10 inches of water column at the well located furthest from the blower complies with this subdivision if the owner or operator of the landfill demonstrates to the department that the available vacuum is adequate to meet performance criteria.

(f) A drip leg or equivalent installed immediately before the blower to separate condensate from gas while preserving the suction at the wells when under maximum operating vacuum.

(g) An approved secondary containment method for condensate and liquid transfer piping if the piping is located outside of the limits of the waste and installed after the effective date of the amendatory act that added this section.

(h) The ability to collect and manage all condensate, measure volumes of liquid removed from the gas extraction wells, and collect samples of landfill gas.

(i) A control device to which collected landfill gas is routed that meets all of the following requirements:

(i) Operates at all times gas is routed to it.

(ii) Is designed and operated to meet the requirements of part 55 or the new source performance standards under

40 CFR part 60.

(iii) Operates backup blower or control equipment required under subdivision (j).

(j) Available backup equipment to effectively control landfill gas emissions during an equipment breakdown.

(k) The active gas collection and control system shall not be inoperable or unable to maintain a vacuum required by subdivision (e) for more than 5 consecutive days.

(3) A landfill that has a potential to generate gas shall have and comply with a gas migration monitoring plan. The plan shall include at least 1 gas monitoring probe on each side of the landfill. The plan shall be based on all of the following factors:

(a) Soil conditions.

(b) Hydrogeologic conditions surrounding the landfill.

(c) Hydraulic conditions surrounding the landfill.

(d) The location of landfill structures and property boundaries.

(4) A landfill that accepts industrial waste or other nonmunicipal solid waste with the potential to generate gas and that does not utilize an active gas collection and control system shall be designed with a system that allows gas venting from the entire landfill surface. The owner or operator of the landfill shall perform an analysis to determine the spacing needed between gas venting trenches for an effective system. The system shall be designed with a continuous layer, which may be utilized as part of the infiltration layer that protects the final cover liner from the waste and minimizes the effect of settlement. The continuous layer shall meet all of the following requirements:

(a) Be located below the capping layer.

(b) Allow surficial venting from the waste final surface.

(c) Consist of at least 1 foot of granular soil with hydraulic conductivity of at least 1.0x10-3 cm/sec and a series of flexible, perforated pipes connected to a series of outlets or an alternative design approved by the department as providing equivalent performance.

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