

SUBCHAPTER K: CLOSURE AND POST-CLOSURE
330.451, 330.453, 330.455, 330.457, 330.459, 330.461, 330.463, 330.465
Effective March 27, 2006

§330.451. Applicability.

(a) The requirements in this subchapter apply to all municipal solid waste (MSW) landfill units or MSW facilities as defined in §330.5 of this title (relating to Classification of Municipal Solid Waste Facilities).

(b) The owner or operator of all existing MSW landfill units or lateral expansions at a facility who is unable to comply with §330.545 of this title (relating to Airport Safety), §330.547 of this title (relating to Floodplains), or §330.559 of this title (relating to Unstable Areas), as applicable; shall complete final closure of the unit or facility by October 9, 1996, and conduct post-closure activities in accordance with §330.463(a) of this title (relating to Post-Closure Care Requirements).

(c) The deadline for closure required by subsection (b) of this section may be extended up to two years if the owner or operator of the MSW landfill unit or MSW facility submits to the executive director for review and approval a request for an extension of the closure deadline that demonstrates to the satisfaction of the executive director that there is no alternative disposal capacity and there is no immediate threat to human health and the environment from the unclosed MSW landfill unit or MSW facility.

(d) Permits that existed before the comprehensive rule revisions of this chapter adopted in 2006 became effective remain valid subject to the requirements of §330.401(b) of this title (relating to Applicability).

Adopted March 1, 2006

Effective March 27, 2006

§330.453. Closure Requirements for Municipal Solid Waste Landfill Units that Stopped Receiving Waste Prior to October 9, 1991, Type IV Landfills, and Municipal Solid Waste Sites.

(a) The final cover system shall be composed of no less than two feet of soil. The first 18 inches or more of cover shall be of clayey soil, classification sand clayey (SC) or low plasticity clayey (CL) as defined in the "Unified Soils Classification System" developed by the United States Army Corps of Engineers, compacted in layers of no more than six inches to minimize the potential for water infiltration. A high plasticity clayey (CH) soil may be used; however, this soil may experience excessive cracking and shall therefore be covered by a minimum of 12 inches of topsoil to retain moisture. Other types of soil may be used with prior written approval from the executive director.

(b) The final six inches of cover shall be of suitable topsoil that is capable of sustaining native plant growth and shall be seeded or sodded immediately following the application of the final cover in order to minimize erosion.

(c) Side slopes of the final cover for all above-ground disposal areas (aerial fills) shall not exceed a 25% grade (four feet horizontal to one foot vertical). Side slopes for the final cover in excess of 25% may be authorized by the executive director, provided that controlled drainage such as flumes, diversion terraces, spillways, or other acceptable methods are incorporated into the final cover system design in the site development plan and submitted to the executive director for review and approval. The final cover for the topmost portion of a unit or facility shall have a gradient of not less than 2.0% and not greater than 6.0%, and shall possess a sufficient minimum grade to preclude ponding of surface water when total fill height and expected subsidence are taken into consideration.

(d) The executive director may approve an alternative final cover design that:

(1) achieves an equivalent reduction in infiltration as the clayey soil cover infiltration layer specified in subsection (a) of this section; and

(2) provides equivalent protection from wind and water erosion as the topsoil layer specified in subsection (b) of this section.

(e) No later than 60 days prior to the initiation of closure activities, the owner or operator shall submit the design and specifications for the closure of these municipal solid waste (MSW) landfill units or MSW sites to the executive director for review and approval. The final cover shall be installed no later than October 9, 1993.

(f) After completion of closure, the owner or operator of these MSW landfill units or MSW sites shall comply with the post-closure care requirements for this final cover, as detailed in §330.463 (a) of this title for the duration of the post-closure period for these units or sites.

Adopted March 1, 2006

Effective March 27, 2006

§330.455. Closure Requirements for Municipal Solid Waste Landfill Units that Received Waste on or after October 9, 1991, but Stopped Receiving Waste Prior to October 9, 1993.

(a) The owner or operator of these units shall comply with all final cover requirements as specified in §330.457 of this title (relating to Closure Requirements for Municipal Solid Waste Landfill Units that Receive Waste on or after October 9, 1993).

(b) The final cover shall be completed by October 9, 1994. Owners or operators of municipal solid waste landfill units that fail to complete final cover installation within this 180-day period will be subject to all requirements of §330.463(b) of this title (relating to Post-Closure Care Requirements) unless otherwise specified.

(c) After completion of closure, the owner or operator of these municipal solid waste landfill units or facilities shall comply with all post-closure care requirements for the final cover of these units or facilities as specified in §330.463(a) of this title.

Adopted March 1, 2006

Effective March 27, 2006

§330.457. Closure Requirements for Municipal Solid Waste Landfill Units that Receive Waste on or after October 9, 1993.

(a) The owner or operator shall install a final cover system for the unit that is designed and constructed to minimize infiltration and erosion. The final cover system shall be composed of no less than two feet of soil and consist of a clay-rich soil cover layer overlain by an erosion layer as follows.

(1) For municipal solid waste landfill (MSW) units with a synthetic bottom liner, a synthetic membrane that has a permeability less than or equal to the permeability of any bottom liner system overlain by a clay-rich soil cover layer consisting of a minimum of 18 inches of earthen material with a coefficient of permeability no greater than 1×10^{-5} centimeters/second (cm/sec). The minimum thickness of the synthetic membrane shall be 20 mils, or 60 mils in the case of high-density polyethylene, in order to ensure proper seaming of the synthetic membrane.

(2) For MSW landfill units with no synthetic bottom liner, the clay-rich soil cover layer shall consist of a minimum of 18 inches of earthen material with a coefficient of permeability less than or equal to the permeability of any constructed bottom liner or natural subsoil present. The coefficient of permeability of the infiltration layer shall in no case exceed 1×10^{-5} cm/sec, even though the coefficient of permeability of the constructed bottom liner or natural subsoil is greater than 1×10^{-5} cm/sec or no data exist for the value(s) of the coefficient of permeability of the constructed bottom liner or natural subsoil.

(3) For all MSW landfill units, the erosion layer shall consist of a minimum of six inches of earthen material that is capable of sustaining native plant growth and shall be seeded or sodded immediately following the application of the final cover in order to minimize erosion.

(b) The final cover placed over a dedicated Class 1 industrial solid waste cell must consist of a minimum of 18 inches of uncontaminated topsoil overlying four feet of compacted clay-rich soil material with a coefficient of permeability no greater than 1×10^{-7} cm/sec unless waste is to be placed on top of the Class 1 industrial solid wastes. If waste is to be placed above Class 1 industrial solid wastes, the Class 1 industrial solid waste must first be covered with a four-foot layer of compacted clay-rich soil. The final cover over the aerial fill must meet the requirements of this subchapter and must include a flexible membrane component.

(c) Quality control testing documentation is as follows. The owner or operator shall test the 18 inches of compacted clay-rich soil cover for its coefficient of permeability at a frequency of no less than one test per surface acre of final cover. Permeability data shall be submitted to the executive director.

(d) The executive director may approve an alternative final cover design that:

(1) a cover achieves an equivalent reduction in infiltration as the clay-rich soil cover layer specified in subsection (a)(1) or (2) of this section; and

(2) provides equivalent protection from wind and water erosion as the erosion layer specified in subsection (a)(3) of this section.

(e) The owner or operator of all MSW landfill units or lateral expansions at a facility shall prepare a written closure plan that describes the steps necessary to close all MSW landfill units at any point during the active life of the unit. The closure plan, at a minimum, shall include the following information:

(1) a description of the final cover design, methods, and procedures to be used to install the cover;

(2) an estimate of the largest area of the MSW landfill unit or MSW facility ever requiring a final cover at any time during the active life of the unit or MSW facility;

(3) an estimate of the maximum inventory of wastes ever on-site over the active life of the unit or MSW facility;

(4) a schedule for completing all activities necessary to satisfy the closure criteria; and

(5) a final contour map depicting the proposed final contours, establishing top slopes and side slopes, proposed surface drainage features, and protection of any 100-year floodplain.

(f) Implementation of the closure plan is as follows.

(1) The owner or operator shall place a copy of the closure plan in the operating record by the initial receipt of waste.

(2) No later than 45 days prior to the initiation of closure activities for an MSW landfill unit, the owner or operator of the unit shall provide written notification to the executive director of the intent to close the unit and place this notice of intent in the operating record.

(3) The owner or operator of all MSW landfill units at a facility shall begin closure activities for each unit no later than 30 days after the date on which the unit receives the known final receipt of wastes or, if the unit has remaining capacity and there is a reasonable likelihood that the unit will receive additional wastes, no later than one year after the most recent receipt of wastes. A request for an extension beyond the one-year deadline for the initiation of closure may be submitted to the executive director for review and approval and shall include all applicable documentation necessary to demonstrate that the unit has the capacity to receive additional waste and that the owner or operator has taken and will continue to take all steps necessary to prevent threats to human health and the environment from the MSW landfill unit.

(4) The owner or operator of an MSW landfill unit shall complete closure activities for the unit in accordance with the approved closure plan within 180 days following the initiation of closure activities as specified in paragraph (3) of this subsection. A request for an extension for the completion of closure activities may be submitted to the executive director for review and approval and shall include all applicable documentation necessary to demonstrate that closure will, of necessity, take longer than 180 days and all steps have been taken and will continue to be taken to prevent threats to human health and the environment from the unclosed MSW landfill unit.

(5) Following completion of all closure activities for the MSW landfill unit, the owner or operator shall comply with the post-closure care requirements specified in §330.463(b) of this title (relating to Post-Closure Care Requirements). The owner or operator shall submit to the executive director by registered mail for review and approval a certification, signed by an independent licensed professional engineer, verifying that closure has been completed in accordance with the approved closure plan. The submittal to the executive director shall include all applicable documentation necessary for certification of closure. Once approved, this certification shall be placed in the operating record.

(6) Following receipt of the required closure documents, as applicable, and an inspection report from the agency's regional office verifying proper closure of the MSW landfill unit according to the approved closure plan, the executive director may acknowledge the termination of operation and closure of the unit and deem it properly closed.

(g) Within ten days after closure of all MSW landfill units, the owner and operator shall submit to the executive director by registered mail a certified copy of an "affidavit to the public" in accordance with the requirements of §330.19 of this title (relating to Deed Recordation) and place a copy of the affidavit in the operating record. In addition, the owner or operator shall record a certified notation of the deed to the facility property, or on some other instrument that is normally examined during title search, that will in perpetuity notify any potential purchaser of the property that the land has been used as a landfill facility and use of the land is restricted according to the provisions specified in §330.465 of this title (relating to Certification of Completion of Post-Closure Care). The owner or operator shall submit a certified copy of the modified deed to the executive director and place a copy of the modified deed in the operating record within the time frame specified in this subsection.

Adopted March 1, 2006

Effective March 27, 2006

§330.459. Closure Requirements for Municipal Solid Waste Storage and Processing Units.

(a) The owner or operator shall remove all waste, waste residues, and any recovered materials. Facility units shall either be dismantled and removed off-site or decontaminated.

(b) The owner or operator shall evacuate all material on-site (feedstock, in process, and processed) to an authorized facility and disinfect all leachate handling units, tipping areas, processing areas, and post-processing areas.

(c) If there is evidence of a release from a municipal solid waste unit, the executive director may require an investigation into the nature and extent of the release and an assessment of measures necessary to correct an impact to groundwater.

(d) A recycling facility that stores combustible material outdoors, or that poses a significant risk to public health and safety as determined by the executive director, must comply with the following closure requirements.

(1) Closure must include collecting processed and unprocessed materials, and transporting the materials to an authorized facility for disposition unless otherwise approved or directed in writing by the executive director.

(2) Closure of the facility must be completed within 180 days following the most recent acceptance of processed or unprocessed materials unless otherwise directed or approved in writing by the executive director.

Adopted March 1, 2006

Effective March 27, 2006

§330.461. Certification of Final Facility Closure.

(a) No later than 90 days prior to the initiation of a final facility closure, the owner or operator shall, through a public notice in the newspaper(s) of largest circulation in the vicinity of the facility, provide public notice for final facility closure. This notice shall provide the name, address, and physical location of the facility; the permit, registration, or notification number, as appropriate; and the last date of intended receipt of waste. The owner or operator shall also make available an adequate number of copies of the approved final closure and post-closure plans for public access and review. The owner or operator shall also provide written notification to the executive director of the intent to close the facility and place this notice of intent in the operating record.

(b) Upon notification to the executive director as specified in subsection (a) of this section, the owner or operator of a municipal solid waste management facility shall post a minimum of one sign at the main entrance and all other frequently used points of access for the facility notifying all persons who may utilize the facility of the date of closing for the entire facility and the prohibition against further receipt of waste materials after the stated date. Further, suitable barriers shall be installed at all gates or access points to adequately prevent the unauthorized dumping of solid waste at the closed facility.

(c) Within ten days after completion of final closure activities of a facility, the owner and operator shall submit to the executive director by registered mail the following:

(1) if wastes will remain at the closed facility, a certified copy of an "affidavit to the public" in accordance with the requirements of §330.19 and §330.457(g) of this title (relating to Deed Recordation and Closure Requirements for Municipal Solid Waste Landfill Units that Receive Waste on or after October 9, 1993). In addition, the owner or operator of the closed facility shall record a certified notation on the deed to the facility property, or on some other instrument that is normally examined during title search, that will in perpetuity notify any potential purchaser of the property that the land has been used as a landfill facility and use of the land is restricted according to the provisions specified in §330.465 of this title (relating to Certification of Completion of Post-Closure Care). The owner or operator shall submit a certified copy of the modified deed to the executive director and place a copy of the modified deed in the operating record within the time frame specified in this paragraph;

(2) a certification, signed by an independent licensed professional engineer, verifying that final facility closure has been completed in accordance with the approved closure plan. The submittal to the executive director shall include all applicable documentation necessary for certification of final facility closure; and

(3) for a facility that does not require post-closure care, a request for voluntary revocation of the facility permit or registration, as applicable.

(d) The owner or operator of the facility may request permission from the executive director to remove the notation from the deed if all wastes are removed from the facility in accordance with §330.7(a) of this title (relating to Permit Required).

Adopted March 1, 2006

Effective March 27, 2006

§330.463. Post-Closure Care Requirements.

(a) Post-closure care maintenance requirements for municipal solid waste management units subject to the applicable requirements of this subsection.

(1) For a minimum of the first five years after professional engineer certification of the completion of closure as accepted by the executive director, the owner or operator shall retain the right of entry to and maintain all rights-of-way of a closed municipal solid waste management unit in order to conduct periodic inspections of the closed unit. The owner or operator shall correct, as needed, erosion of cover material, lack of vegetative growth, leachate or methane migration, and subsidence or ponding of water on the unit. If any of these problems occur after the end of the five-year post-closure period or persist for longer than the first five years of post-closure care, the owner or operator shall be responsible for their correction until the executive director determines that all problems have been adequately resolved. The executive director may reduce the post-closure period for the unit if all wastes and waste residues have been removed during closure.

(2) Any monitoring programs (groundwater monitoring, resistivity surveys, methane monitoring, etc.) in effect during the life of the unit shall be continued during the post-closure care period.

(3) If there is evidence of a release from a municipal solid waste unit, the executive director may require an investigation into the nature and extent of the release and an assessment of measures necessary to correct an impact to groundwater.

(b) Post-closure care requirements for municipal solid waste management units subject to the requirements of this subsection.

(1) After professional engineer certification of the completion of closure requirements for a municipal solid waste management unit as accepted by the executive director, the owner or operator shall conduct post-closure care for the unit for 30 years, except as specified by paragraph (2)(A) or (B) of this subsection. Post-closure care shall consist, at a minimum, of the following.

(A) The owner or operator shall retain the right of entry to the closed unit and shall maintain all rights-of-way and conduct maintenance and/or remediation activities, as needed, in order to maintain the integrity and effectiveness of all final cover, facility vegetation, and drainage control system(s), to correct any effects of settlement, subsidence, ponded water, erosion, or other events or failures detrimental to the integrity of the closed unit and to prevent any surface run-on and run-off from eroding or otherwise damaging the final cover system.

(B) The owner or operator shall maintain and operate the leachate collection system in accordance with the requirements in §330.331 and §330.333 of this title (relating to Design Criteria and Leachate Collection System, respectively). The executive director may allow the owner or operator to stop managing leachate if the owner or operator demonstrates to the approval of the executive director that leachate no longer poses a threat to human health and the environment.

(C) The owner or operator shall monitor groundwater in accordance with the requirements of Subchapter J of this chapter (relating to Groundwater Monitoring and Corrective Action) and maintain the groundwater monitoring system, if applicable.

(D) The owner or operator shall maintain and operate the gas monitoring system in accordance with the requirements of Subchapter I of this chapter (relating to Landfill Gas Management).

(E) The owner or operator shall continue earth electrical resistivity surveys at the frequency stated in the approved site development plan.

(2) The length of the post-closure care period may be:

(A) decreased by the executive director if the owner or operator submits to the executive director for review and approval a documented certification, signed by a licensed professional engineer and including all applicable documentation necessary to support the certification, that demonstrates that the reduced period is sufficient to protect human health and the environment; or

(B) increased by the executive director if it is determined that the lengthened period is necessary to protect human health and the environment. If there is evidence of a release from a municipal solid waste unit, the executive director may require an investigation into the nature and extent of the release and an assessment of measures necessary to correct an impact to groundwater.

(3) The owner or operator shall place a copy of the post-closure plan in the operating record by the initial receipt of waste. The post-closure plan shall include, at a minimum, the following information:

(A) a description of the monitoring and maintenance activities required in paragraph (1) of this subsection for each unit, and the frequency at which these activities will be performed;

(B) the name, address, and telephone number of the office or person responsible for overseeing and/or conducting the post-closure care activities at the closed unit or facility during the post-closure period;

(C) a description of the planned uses of any portion of the closed unit during the post-closure period in accordance with §330.465 of this title (relating to Certification of Completion of Post-Closure Care); and

(D) a detailed written estimate, in current dollars, of the cost of post-closure care maintenance and any corrective action as described in the post-closure care plan or required by the executive director or the commission and which satisfies the requirements specified in Subchapter L of this chapter (relating to Closure, Post-Closure, and Corrective Action Cost Estimates).

Adopted March 1, 2006

Effective March 27, 2006

§330.465. Certification of Completion of Post-Closure Care.

(a) Following completion of the post-closure care maintenance period for each municipal solid waste landfill unit, the owner or operator shall submit to the executive director for review and approval a certification, signed by an independent licensed professional engineer, verifying that post-closure care has been completed in accordance with the approved post-closure plan. The submittal to the executive director shall include all applicable documentation necessary for the certification of completion of post-closure care.

(b) Upon completion of the post-closure care period for the final unit at a facility, the owner and operator shall also submit to the executive director a request for voluntary revocation of the facility permit.

Adopted March 1, 2006

Effective March 27, 2006