

Closure

Federal

§ 258.16 Closure of existing municipal solid waste landfill units.

(a) Existing MSWLF units that cannot make the demonstration specified in §258.10(a), pertaining to airports, §258.11(a), pertaining to floodplains, or §258.15(a), pertaining to unstable areas, must close by October 9, 1996, in accordance with §258.60 of this part and conduct post-closure activities in accordance with §258.61 of this part.

(b) The deadline for closure required by paragraph (a) of this section may be extended up to two years if the owner or operator demonstrates to the Director of an approved State that:

- (1) There is no available alternative disposal capacity;
- (2) There is no immediate threat to human health and the environment.

Note to Subpart B:

Owners or operators of MSWLFs should be aware that a State in which their landfill is located or is to be located, may have adopted a state wellhead protection program in accordance with section 1428 of the Safe Drinking Water Act. Such state wellhead protection programs may impose additional requirements on owners or operators of MSWLFs than those set forth in this part.

§§ 258.17-258.19 [Reserved]

§ 258.60 Closure criteria.

(a) Owners or operators of all MSWLF units must install a final cover system that is designed to minimize infiltration and erosion. The final cover system must be designed and constructed to:

- (1) Have a permeability less than or equal to the permeability of any bottom liner system or natural subsoils present, or a permeability no greater than 1×10^{-5} cm/sec, whichever is less, and
- (2) Minimize infiltration through the closed MSWLF by the use of an infiltration layer that contains a minimum 18-inches of earthen material, and
- (3) Minimize erosion of the final cover by the use of an erosion layer that contains a minimum 6-inches of earthen material that is capable of sustaining native plant growth.

(b) The Director of an approved State may approve an alternative final cover design that includes:

- (1) An infiltration layer that achieves an equivalent reduction in infiltration as the infiltration layer specified in paragraphs (a)(1) and (a)(2) of this section, and

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

(3) The Director of an approved State may establish alternative requirements for the infiltration barrier in a paragraph (b)(1) of this section, after public review and comment, for any owners or operators of MSWLFs that dispose of 20 tons of municipal solid waste per day or less, based on an annual average. Any alternative requirements established under this paragraph must:

(i) Consider the unique characteristics of small communities;

(ii) Take into account climatic and hydrogeologic conditions; and

(iii) Be protective of human health and the environment.

(c) The owner or operator must prepare a written closure plan that describes the steps necessary to close all MSWLF units at any point during their active life in accordance with the cover design requirements in §258.60(a) or (b), as applicable. The closure plan, at a minimum, must include the following information:

(1) A description of the final cover, designed in accordance with §258.60(a) and the methods and procedures to be used to install the cover;

(2) An estimate of the largest area of the MSWLF unit ever requiring a final cover as required under §258.60(a) at any time during the active life;

(3) An estimate of the maximum inventory of wastes ever on-site over the active life of the landfill facility; and

(4) A schedule for completing all activities necessary to satisfy the closure criteria in §258.60.

(d) The owner or operator must notify the State Director that a closure plan has been prepared and placed in the operating record no later than the effective date of this part, or by the initial receipt of waste, whichever is later.

(e) Prior to beginning closure of each MSWLF unit as specified in §258.60(f), an owner or operator must notify the State Director that a notice of the intent to close the unit has been placed in the operating record.

(f) The owner or operator must begin closure activities of each MSWLF unit no later than 30 days after the date on which the MSWLF unit receives the known final receipt of wastes or, if the MSWLF unit has remaining capacity and there is a reasonable likelihood that the MSWLF unit will receive additional wastes, no later than one year after the most recent receipt of wastes. Extensions beyond the one-year deadline for beginning closure may be granted by the Director of an approved State if the owner or operator demonstrates that the MSWLF unit has the capacity to receive additional wastes and 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 unclosed MSWLF unit.

(g) The owner or operator of all MSWLF units must complete closure activities of each MSWLF unit in accordance with the closure plan within 180 days following the beginning of closure as specified in paragraph (f) of this section. Extensions of the closure period may be granted by the Director of an approved State if the owner or operator demonstrates that closure will, of necessity, take longer than 180 days and he has taken and will continue to take all steps to prevent threats to human health and the environment from the unclosed MSWLF unit.

(h) Following closure of each MSWLF unit, the owner or operator must notify the State Director that a certification, signed by an independent registered professional engineer or approved by Director of an approved State, verifying that closure has been completed in accordance with the closure plan, has been placed in the operating record.

(i)(1) Following closure of all MSWLF units, the owner or operator must record a notation on the deed to the landfill facility property, or some other instrument that is normally examined during title search, and notify the State Director that the notation has been recorded and a copy has been placed in the operating record.

(2) The notation on the deed must in perpetuity notify any potential purchaser of the property that:

(i) The land has been used as a landfill facility; and

(ii) Its use is restricted under §258.61(c)(3).

(j) The owner or operator may request permission from the Director of an approved State to remove the notation from the deed if all wastes are removed from the facility.

[56 FR 51016, Oct. 9, 1991; 57 FR 28628, June 26, 1992, as amended at 62 FR 40713, July 29, 1997]

Illinois

Section 807.501 Purpose, Scope and Applicability

a) This Subpart contains general provisions governing closure and post-closure care of waste management sites. These general provisions may be supplemented by more specific closure and post-closure care requirements for certain types of waste management sites, specifically the closure and post-closure care requirements for sanitary landfills contained in Subpart C.

b) This Subpart requires a closure plan and, for some sites, a post-closure care plan. These will become permit conditions pursuant to Section 807.206. Sites which are not required to have a permit pursuant to Section 21(d) of the Act are not required to prepare a closure or post-closure care plan.

c) The closure and post-closure care plan form the basis of the cost estimates and financial assurance required by Subpart F for disposal sites. The closure plan is also used for making the determination as to whether a unit is a disposal unit or indefinite storage unit, which must provide financial assurance.

(Source: Amended at 9 Ill. Reg. 18942, effective November 25, 1985)

Section 807.502 Closure Performance Standard

In addition to the specific requirements of this Part, an operator of a waste management site shall close the site in a manner which:

- a) Minimizes the need for further maintenance; and
- b) Controls, minimizes or eliminates post-closure release of waste, waste constituents, leachate, contaminated rainfall, or waste decomposition products to the groundwater or surface waters or to the atmosphere to the extent necessary to prevent threats to human health or the environment.

(Source: Amended at 9 Ill. Reg. 18942, effective November 25, 1985)

Section 807.503 Closure Plan

- a) An operator of a waste management site shall have prepared a written closure plan which shall be a condition of the site permit.
- b) The operator of an indefinite storage unit shall have prepared a written contingent closure plan which shall be a condition of the site permit. The contingent closure plan shall be the same as a closure plan, except as otherwise specifically provided.
- c) The closure plan shall include as a minimum:
 - 1) Steps necessary for the premature final closure of the site at the time during its intended operating life when the cost of closure will be the greatest;
 - 2) Steps necessary for the final closure of the site at the end of its intended operating life;
 - 3) Steps necessary to prevent damage to the environment during temporary suspension of waste acceptance if the operator wants a permit which would allow temporary suspension of waste acceptance at the site without initiating final closure;
 - 4) A description of the steps necessary to decontaminate equipment during closure;
 - 5) An estimate of the year in which the cost of premature closure will be the greatest;
 - 6) An estimate of the expected year of closure;
 - 7) Schedules for the premature and final closure which shall include at a minimum:
 - A) Total time required to close the site; and
 - B) Time required for closure activities which will allow tracking of the progress of closure; and
 - 8) A description of methods for compliance with all closure requirements of this Part.
- d) The closure plan shall be included in the permit application pursuant to Section 807.205.
- e) Until closure has been completed, the operator shall maintain a copy of the closure plan at the site or at a definite location, specified in the permit, so as to be available during inspection of the site.

(Source: Amended at 9 Ill. Reg. 18942, effective November 25, 1985)

Section 807.504 Amendment of Closure Plan

An operator of a waste management site shall file a permit application including a revised closure plan upon:

- a) Modification of operating plans or site design affecting the closure other than modifications authorized in the permit; or
- b) Modification of the operations of the site which affect the closure of the site or any portion of the site, other than modifications authorized in the permit, which include, but are not limited to:
 - 1) A temporary suspension of waste acceptance at the site; or
 - 2) A reduction or increase in the rate of waste acceptance at the site; or
 - 3) Change in the expected year of closure or the year in which the cost of premature closure will be the greatest.

(Source: Amended at 9 Ill. Reg. 18942, effective November 25, 1985)

Section 807.505 Notice of Closure and Final Amendment to Plan

- a) An operator of a waste management site shall send to the Agency a notice of closure within 30 days after the date the final volume of waste is received at a waste management site for treatment, storage or disposal.
- b) The operator of a waste management site shall not file an application to modify the closure plan less than 180 days before receipt of the final volume of waste. Failure to timely file shall not constitute a bar to consideration of such an application, but may be alleged in an enforcement action pursuant to Title VIII of the Act.

(Source: Amended at 9 Ill. Reg. 18942, effective November 25, 1985)

Section 807.506 Initiation of Closure

- a) An operator of a waste management site shall initiate the treatment, removal from the site or disposal of all wastes and waste residues other than those from indefinite storage units:
 - 1) Within 30 days after receipt of the final volume of waste; and
 - 2) In accordance with the closure plan.
- b) The operator of an indefinite storage unit shall, within 30 days after receipt of a final volume of waste, either initiate:
 - 1) Removal of all wastes and waste residues from the unit; or,
 - 2) Closure of the unit in accordance with the contingent closure plan.
- c) The operator must notify the Agency within 30 days after a temporary suspension. The operator must comply with the requirements of any temporary suspension plan in the permit.

(Source: Amended at 9 Ill. Reg. 18942, effective November 25, 1985)

Section 807.507 Partial Closure

- a) The requirements of Subparts E and F apply to the entire site unless the permit divides the site into definite areas which include one or more units, in which case the

operator may provide separate closure and post-closure care plans and cost estimates for each area. In such a case the Agency shall treat each area as a separate site for purposes of financial assurance.

b) If a site includes a disposal unit, then the operator must provide financial assurance for closure of associated treatment and storage units, even if the site is divided into areas as provided in paragraph (a).

c) Post-closure care of areas formed by dividing a site shall continue until post-closure care of the entire site is completed.

(Source: Amended at 9 Ill. Reg. 18942, effective November 25, 1985)

Section 807.508 Certification of Closure

- a) When closure is completed, the operator of a waste management site shall submit to the Agency:
 - 1) Plan sheets for the closed site; and
 - 2) An affidavit by the operator and by a professional engineer that the site has been closed in accordance with the closure plan.
- b) If the Agency finds that the site has been closed in accordance with the specifications of the closure plan, and the closure requirements of this Part, the Agency shall:
 - 1) Issue a certificate of closure for the site;
 - 2) Notify the operator in writing that any applicable post-closure period has begun; and
 - 3) Provide the date the post-closure care period begins.

(Source: Amended at 9 Ill. Reg. 18942, effective November 25, 1985)

Section 811.110 Closure and Written Closure Plan

- a) The final slopes and contours shall be designed to complement and blend with the surrounding topography of the proposed final land use of the area.
- b) All drainage ways and swales shall be designed to safely pass the runoff from the 100-year, 24-hour precipitation event without scouring or erosion.
- c) The final configuration of the facility shall be designed in a manner that minimizes the need for further maintenance.
- d) Written closure plan
 - 1) The operator shall maintain a written plan describing all actions that the operator will undertake to close the unit or facility in a manner that fulfills the provisions of the Act, of this Part and of other applicable Parts of 35 Ill. Adm. Code: Chapter I. The written closure plan shall fulfill the minimum information requirements of 35 Ill. Adm. Code 812.114.
 - 2) A modification of the written closure plan shall constitute a significant modification of the permit for the purposes of 35 Ill. Adm. Code 813.Subpart B.
 - 3) In addition to the informational requirements of subsection 811.100(d)(1), an owner or operator of a MSWLF unit shall include the following information in the written closure plan:
 - A) An estimate of the largest area of the MSWLF unit ever requiring a final cover, as required by Section 811.314, at any time during the active life; and
 - B) An estimate of the maximum inventory of wastes ever on-site over the active life of the landfill facility.

BOARD NOTE: Subsection 811.110(d)(3) is derived from 40 CFR 258.60(c)(1) and (c)(2) (1992).

- e) The owner or operator of a MSWLF unit shall begin closure activities for each MSWLF unit no later than the date determined as follows:
 - 1) 30 days after the date on which the MSWLF unit receives the final receipt of

wastes; or

- 2) If the MSWLF unit has remaining capacity and there is a reasonable likelihood that the MSWLF unit will receive additional wastes, no later than one year after the most recent receipt of wastes.
- 3) The Agency shall grant extensions beyond this one year deadline for beginning closure if the owner or operator demonstrates that:
 - A) The MSWLF unit has the capacity to receive additional wastes; and
 - B) 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 unclosed MSWLF unit

BOARD NOTE: Subsection (e) is derived from 40 CFR 258.60(f) (1992).

f) The owner or operator of a MSWLF unit shall complete closure activities for each unit in accordance with closure plan no later than the dates determined as follows:

- 1) Within 180 days of beginning closure, as specified in subsection (e) of this Section.
- 2) The Agency shall grant extension of the closure period if the owner or operator demonstrates that:
 - A) The closure will, of necessity, take longer than 180 days; and
 - B) The owner or operator has taken and will continue to take all necessary steps to prevent threats to human health and the environment from the unclosed MSWLF unit

BOARD NOTE: Subsection (e) is derived from 40 CFR 258.60(g) (1992).

g) Deed notation.

- 1) Following closure of all MSWLF units at a site, the owner or operator shall record a notation on the deed to the landfill facility property or some other instrument that is normally examined during title search. The owner or operator shall place a copy of the instrument in the operating record, and shall notify the Agency that the notation has been recorded and a copy has been placed in the operating record.
- 2) The notation on the deed or other instrument must be made in such a way that in perpetuity notify any potential purchaser of the property that:
 - A) The land has been used as a landfill facility; and
 - B) Its use is restricted pursuant to Section 811.111(d).

BOARD NOTE: Subsection (g) is derived from 40 CFR 258.60(i) (1992).

h) The Agency shall allow the owner or operator of a MSWLF unit to remove the notation from the deed only if the owner or operator demonstrates to the Agency that all wastes are removed from the facility.

BOARD NOTE: Subsection (h) is derived from 40 CFR 258.60(j) (1992).

(Source: Amended in R93-10 at 18 Ill. Reg. 1308, effective January 13, 1994)

Section 811.322 Final Slope and Stabilization

- a) All final slopes shall be designed and constructed to a grade capable of supporting vegetation and which minimizes erosion.
- b) All slopes shall be designed to drain runoff away from the cover and which prevents ponding. No standing water shall be allowed anywhere in or on the unit.

c) Vegetation

- 1) Vegetation shall be promoted on all reconstructed surfaces to minimize wind and water erosion of the final protective cover;
- 2) Vegetation shall be compatible with the climatic conditions;
- 3) Vegetation shall require little maintenance;
- 4) Vegetation shall consist of a diverse mix of native and introduced species that is consistent with the postclosure land use;
- 5) Vegetation shall be tolerant of the landfill gas expected to be generated;
- 6) The root depth of the vegetation shall not exceed the depth of the final protective cover system; and
- 7) Temporary erosion control measures, including but not limited to mulch straw, netting and chemical soil stabilizers, shall be undertaken while vegetation is being established.

d) Structures Constructed Over the Unit

- 1) Structures constructed over the unit must be compatible with the land use;
- 2) Such structures shall be designed to vent gases away from the interior; and
- 3) Such structures must in no way interfere with the operation of a cover system, gas collection system, leachate collection system or any monitoring system.

Section 807.509 Use of Waste Following Closure

After an operator initiates closure of a site the operator may accept waste for disposal or for use in closure and post-closure care only as authorized in the closure and post-closure care plans.

(Source: Amended at 9 Ill. Reg. 18942, effective November 25, 1985)

Kansas

28-29-12. Notification of closure, closure plans, and long term care.

(a) Notification of closure. All permittees shall notify the department in writing at least 60 days before closure.

(b) Closure plans. Persons desiring to obtain a permit shall file a site closure plan at the time a permit application is submitted. The closure plan shall delineate the finished construction of the processing facility or disposal area after closure. Closure plans for disposal areas shall also provide for long term care when wastes are to remain at the area after closure. The plan shall be updated at the time of permit renewal or at the time notice of modification is submitted in accordance with K.A.R. 28-29-8(a), or at the time the notice of closure is submitted.

(c) If wastes are to remain at the disposal area after closure the department may require the closure plan be prepared by a professional engineer licensed to practice in Kansas. Upon completion of all the procedures provided for in the closure plan, the engineer shall certify that the disposal area was closed in accordance with the plan.

(d) Closure plan contents. The closure plan shall include the following when determined applicable by the secretary:

- (1) Plans for the final contours, type and depth of cover material, landscaping, and access control;
- (2) final surface water drainage patterns and runoff retention basins;

- (3) plans for the construction of liners, leachate collection and treatment systems, gas migration barriers or other gas controls;
- (4) cross sections of the site that delineate the disposal or storage locations of wastes. The cross sections shall depict liners, leachate collection systems, the waste cover, and other applicable details;
- (5) plans for the post-closure operation and maintenance of liners, leachate and gas collection and treatment systems, cover material, runoff retention basins, landscaping, and access control;
- (6) removal of all solid wastes from processing facilities;
- (7) plans for monitoring and surveillance activities after closure;
- (8) recording of a detailed site description, including a plot plan, with the department. The plot plan shall include the summaries of the logs or ledgers of waste in each cell, depth of fill in each cell and existing conditions;
- (9) a financial plan for utilization of the surety bond or cash bond required by K.S.A. 65-3407; and
- (10) an estimate of the annual post closure and maintenance costs.

(e) Long-term care. The owner of a solid waste disposal area, where the wastes are not removed as a part of the closure plan, shall provide long-term care for a period of at least 30 years following approval by the department of completion of the procedures specified in the closure plan. At the time of application for, or at the time of closure of, a solid waste disposal area permit, additional periods of long-term care may be specified by the secretary as the secretary deems necessary to protect public health or welfare, or the environment.

(Authorized by K.S.A. 1996 Supp. 65-3406; as amended by L. 1997, Ch.139,Sec. 1; implementing K.S.A. 1996 Supp. 65-3406, as amended by L. 1997, Ch. 140, Sec. 4; effective, E-79-22, Sept. 1, 1978; effective May 1, 1979; amended, E-82-8, April 10, 1981; amended May 1, 1982; amended July 10, 1998.)

28-29-121. Closure requirements.

- (a)** Upon ceasing to receive waste, the unit shall be covered by a final cover consisting of a low permeability layer overlaid by a final protective layer constructed in accordance with the requirements of this regulation.
- (b)** Not later than 30 days after placement of the final lift of solid waste, closure activities shall begin, except as provided in subsection (c) of this regulation.
- (c)** The deadline for construction of the final cover may be extended by the director if:
 - (1) the unit has remaining capacity and there is a reasonable likelihood that the MSWLF unit will receive additional wastes;
 - (2) leachate is to be recirculated for a period after final receipt of waste in accordance with provisions in K.A.R. 28-29-104(i)(6); or
 - (3) the owner or operator demonstrates to the department that initiation of closure will, of necessity, take longer than 30 days.
- (d)** For any unit receiving an extension of the closure deadline as provided in subsection (c), it may be required by the director that the owner or operator comply with some or all of the provisions for intermediate cover in K.A.R. 28-29-108(c).
- (e)** For each MSWLF receiving waste after October 9, 1993, the low permeability layer shall consist of one of the following:

(1) a geomembrane underlaid by 0.45 meters (18 inches) of compacted soil with a permeability of 1×10^{-5} centimeters per second or less if geomembrane is used in the bottom liner system; or

(2) the lesser of:

(i) 0.45 meters (18 inches) of compacted soil with a permeability less than or equal to the bottom liner system or natural subsoils; or

(ii) 0.45 meters (18 inches) of compacted soil with a permeability of 1×10^{-5} centimeters per second or less.

(f) If a geomembrane is used in the low permeability layer, it shall be constructed in accordance with the following standards.

(1) The geomembrane shall have strength to withstand the normal stresses imposed by the waste stabilization process.

(2) The geomembrane shall be placed over a prepared base free from sharp objects and other materials that may caused damage.

(3) The effects of landfill gas below the geomembrane shall be addressed.

(4) The effect of drainage through the final protective cover onto the geomembrane shall be addressed.

(g) The final protective layer shall be constructed in accordance with the following standards.

(1) The final protective layer shall cover the entire low permeability layer.

(2) The thickness of the final protective layer shall be at least as thick as the frost penetration depth at the landfill site and shall minimize root penetration of the low permeability layer.

(3) The final protective layer shall consist of soil material capable of supporting vegetation.

(h) The final protective layer shall be placed as soon as possible after placement of the low permeability layer to prevent desiccation, cracking, freezing or other damage to the low permeability layer.

(i) The owner or operator shall prepare a written closure plan that describes the steps necessary to close each MSWLF unit at any point during its active life in accordance with the cover design requirements. The closure plan, at a minimum, shall include the following information:

(1) plans for the final contours, type and depth of cover material, landscaping, and access control;

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

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

(4) final surface water drainage patterns and run-off retention basins;

(5) plans for the construction of liners, leachate collection and treatment systems, gas migration barriers or other gas controls;

(6) cross-sections of the site that delineate the disposal or storage locations of wastes.

The cross-sections shall depict liners, leachate collection systems, the waste cover, and Other applicable details;

(7) removal of all solid wastes from processing facilities; and

(8) a schedule for completing all closure activities.

- (j) The closure plan shall be prepared not later than the effective date of this part, or by the initial receipt of waste, whichever is later, and shall be submitted to the department.
- (k) A minimum of 60 days prior to beginning closure of each MSWLF unit, an owner or operator shall notify the department of the intent to close a unit.
- (l) The owner or operator shall complete closure activities of each unit in accordance with the closure plan within 180 days following the beginning of closure. Extensions of the closure period may be granted by the director if the owner or operator demonstrates that:
- (i) closure will, of necessity, take longer than 180 days; and
 - (ii) all steps have been taken and will continue to be taken to prevent threats to human health and the environment from the unclosed unit.
- (m) Following closure of each MSWLF unit, the owner or operator shall submit a certification to the department. The certification shall be signed by an independent registered professional engineer, or approved by the director, and shall verify that closure has been completed in accordance with the closure plan.
- (n) Following closure of all MSWLF units in a facility, the owner or operator shall perform the following tasks.
- (1) The owner or operator shall file a restrictive covenant with the office of register of deeds for the county in which the property is located, pursuant to the requirements of K.A.R. 28-29-20. The restrictive covenant shall, in perpetuity, notify any potential purchaser of the property that:
 - (A) the property has been used as a MSWLF; and
 - (B) the use of the property is subject to the restricts of the post-closure plan in subsection (p) of this regulation.
 - (2) The owner or operator shall notify the director that a restrictive covenant has been recorded pursuant to the requirements of paragraph (1) of this subsection.
- (o) The owner or operator may request permission from the director to remove the restrictive covenant if all wastes are removed from the facility.

Minnesota

7035.2625 CLOSURE.

Subpart 1. **Closure.** The owner or operator of a solid waste management facility must cease to accept waste and must immediately close the facility in compliance with this part and parts 7035.2635 and 7035.2815 to 7035.2915, when:

- A. the owner or operator declares the solid waste management facility closed;
- B. for a land disposal facility, all fill areas reach permitted final grade;
- C. an agency permit held by the facility expires, and renewal of the permit is not applied for, or is applied for and denied;
- D. an agency permit for the facility is revoked;
- E. an agency order to cease operations is issued;
- F. the facility is an existing unpermitted land disposal site;
- G. the capacity for the county or facility certified under Minnesota Statutes, section 115A.917 or 473.823 is exceeded;
- H. the required financial assurance for closure, postclosure care, or corrective actions is not maintained with the proper payment or substitute instrument; or
- I. the facility is unpermitted, is not a land disposal site, or is required to be permitted under parts 7001.0010 to 7001.1220; 7001.1400 to 7001.3550; and 7023.9000

to 7023.9050 and the owner or operator has not applied for a permit within 180 days after November 15, 1988.

Subp. 2. **Closure performance standard.** The owner or operator must close the solid waste management facility in a manner that eliminates, minimizes, or controls the escape of pollutants to ground water or surface waters, to soils, or to the atmosphere during the postclosure period.

Subp. 3. **Submittal and contents of closure plan.** The owner or operator of a solid waste management facility shall submit a closure plan with the permit application, or as required by a closure document, or in order to establish financial assurance mechanisms in accordance with part 7035.2695. For unpermitted land disposal sites, the owner or operator shall submit a closure plan within 90 days after November 15, 1988. The agency shall approve the closure plan as part of the permit issuance procedure or as part of a submittal required by a closure document or other enforcement action. Compliance with the approved closure plan must be a condition of any permit, order, closure document, or stipulation agreement issued for the facility. Before approving the closure plan, the agency must ensure that the closure plan is consistent with subparts 2, 4, and 5, part 7035.2635, and the applicable closure requirements of parts 7035.2665; 7035.2815, subpart 16; and 7035.2825 to 7035.2915.

A copy of the approved closure plan and all revisions to the plan must be kept at the facility until closure is completed and certified under part 7035.2635. At the time of closure, the agency will issue a closure document in accordance with part 7001.3055. The plan must identify steps needed to close each fill phase, if appropriate, and the entire site at the end of its operating life. The closure plan must include:

- A. A description of how and when each fill phase and the entire facility will be closed. The description must identify how the requirements of subparts 2 and 5, parts 7035.2635; and 7035.2815 to 7035.2915 will be complied with. The description must include the estimated year of closure and a schedule for completing each fill phase.
- B. An estimate of the maximum quantity of wastes in storage at any time during the life of the facility.
- C. A cost estimate including an itemized breakdown for closure of each fill phase, for land disposal facilities and the total cost associated with closure activities at solid waste management facilities.

Subp. 4. **Amendment of plan.** The owner or operator may amend the closure plan any time during the life of the facility. The owner or operator must amend the plan whenever changes in the operating plan or facility design affect the closure procedures needed and whenever the expected year of closure changes. If a permit modification as authorized in part 7001.3550 is needed, the owner or operator shall submit an amended closure plan with the modification request. In all other cases, the owner or operator must request a modification of the plan within 60 days of any change or event that affects the closure plan.

Subp. 5. **Notification of final facility closure.** The owner or operator shall notify the commissioner at least 90 days before final facility closure activities are to begin. If the permit for the facility has been terminated and a closure document has been issued, this requirement does not apply. However, the owner or operator must close the facility in accordance with procedures established in the closure plan and closure document.

STAT AUTH: MS s 115.03; 115A.97; 116.07

HIST: 13 SR 1150; 16 SR 2321; 18 SR 614

Current as of 03/16/04

7035.2635 CLOSURE PROCEDURES.

Subpart 1. **Completion of closure activities.** Within 30 days after receiving the last shipment of waste, the owner or operator must begin the final closure activities outlined in the approved closure plan for the solid waste management facility or closure document. Closure activities must be completed according to the approved closure plan. The commissioner may approve a longer period if the owner or operator demonstrates that the closure activities will take longer due to adverse weather or other factors not in the control of the owner or operator.

Subp. 2. **Closure procedures.** If one or more of the conditions of part 7035.2625, subpart 1 exists, the owner or operator must:

- A. Complete the appropriate activities outlined in the approved closure plan, closure document, stipulation agreement, and parts 7035.2815 to 7035.2915, as appropriate.
- B. Complete final closure activities consisting of at least:
 - (1) posting a notice of closure at least 60 days before closure at the entrance by signs indicating the date of closure and alternative solid waste management facilities;
 - (2) publishing a notice of closure in a local newspaper 30 days before closure and providing a copy of the notice to the commissioner within ten days after the date of publication; and
 - (3) submitting to the county recorder and the commissioner a detailed description of the waste types, including mixed municipal, industrial, and demolition debris, accepted at the facility and what the facility was used for, together with a survey plat of the site. The plat must be prepared and certified by a land surveyor registered in Minnesota. The landowner must record a notation on the deed to the property or on some other instrument normally examined during a title search, that will in perpetuity notify any potential purchaser of the property of any special conditions or limitations for use of the site, as set out in the closure plan and closure document.

Subp. 3. **Certification of closure.** When final facility or fill phase closure is completed, the owner shall submit to the commissioner certification by the owner and an engineer registered in Minnesota that the facility or phase has been closed in accordance with subpart 2. The certification must contain: a completed and signed Site Closure Record and as-built plans showing changes from the original design plans; testing results

indicating compliance with final cover, waste removal, equipment decontamination, and other closure requirements; and other forms of documentation such as pictures showing the construction techniques used during closure. The final facility closure certification must include a copy of the notation filed with the county recorder and carrying the recorder's seal.

STAT AUTH: MS s 115.03; 115A.97; 116.07

HIST: 13 SR 1150; 16 SR 2321

Current as of 03/16/04

Subp. 16. **Closure and postclosure care.** Closure and postclosure care requirements are as follows:

- A. Closure of each fill phase must be started within 30 days after reaching final permitted waste elevations. After closure of each fill phase, the owner or operator shall submit a closure certification that complies with part 7035.2635, subpart 3, indicating that closure has been completed in accordance with parts 7035.2625 and 7035.2635.

Missouri

10 CSR 80-2.030 Solid Waste Disposal Area Closure, Post-Closure Care and Corrective Action Plans and Procedures with Associated Financial Assurance Requirements

PURPOSE: This rule establishes procedures for obtaining approval from the department to close a solid waste disposal area or to excavate, disrupt or remove solid waste from a solid waste disposal area and specifies closure, post-closure care and corrective action financial assurance requirements for solid waste disposal areas. PUBLISHER'S NOTE: The secretary of state has determined that the publication of the entire text of the material which is incorporated by reference as a portion of this rule would be unduly cumbersome or expensive. Therefore, the material which is so incorporated is on file with the agency who filed this rule, and with the Office of the Secretary of State. Any interested person may view this material at either agency's headquarters or the same will be made available at the Office of the Secretary of State at a cost not to exceed actual cost of copy reproduction. The entire text of the rule is printed here. This note refers only to the incorporated by reference material.

(1) To prevent a solid waste disposal area from being a blight on the land, a hazard to health and safety and air pollution problem or a source of pollution to any water course, the owner/operator of any solid waste disposal area shall obtain approval of the method of closure from the department prior to closure.

(2) Closure of Unpermitted Facilities and Open Dumps.

- (A) Any person found in violation of section 260.205.1 or 260.210.1, RSMo shall perform and complete any actions necessary to comply with these sections. These actions may include, but are not limited to, ceasing an act, action or operation, removing unlawfully deposited solid wastes, compacting or covering solid wastes with soil, or both, establishing vegetation and officially recording the existence of an open

dump, unpermitted solid waste disposal area or unpermitted solid waste processing facility in the office of the recorder of deeds in the county in which the property is located.

(B) When required by subsection (2)(A) of this rule, the person found in violation shall submit, for departmental approval, a survey plat or detailed description of the open dump, unpermitted solid waste disposal area or unpermitted solid waste processing facility prior to filing with the county recorder of deeds in the county where the open dump, unpermitted solid waste disposal area or unpermitted solid waste processing facility is located.

1. The survey and plat meeting the requirements of 10 CSR 30-2.010 Minimum Standards for Property Boundary Survey or detailed description shall also contain, as a minimum, the following information: the name of the property owner as it appears on the property deed, the legal description of the property, the location of the solid wastes within the property, types of solid waste disposed, depth of fill and any leachate or gas control or monitoring systems which are to be maintained and who is to maintain them.

2. After receiving approval from the department and before filing with the county recorder of deeds, the survey plat or detailed description shall be notarized by a notary public.

3. Filing the approved survey plat or detailed description with the county recorder of deeds shall be accomplished within thirty (30) days of departmental approval.

4. Two (2) copies of the properly recorded survey plat or detailed description showing the recorder of deeds' seal or stamp, the book and page numbers and the date of filing shall be submitted to the department within thirty (30) days of the date of filing.

(3) No person may excavate, disrupt or remove any deposited material from any active or discontinued solid waste disposal area without having received prior approval from the department. Requests for approval shall include:

(A) An operational plan identifying the area involved;

(B) Lines and grade defining limits of excavation;

(C) Estimated number of cubic yards and type of material to be excavated;

(D) Location where excavated material is to be deposited;

(E) Type equipment to be used to transport material;

(F) Estimated time required for excavation and disposal procedures; and

(G) Provisions for closing the excavated or disrupted area(s).

(4) Closure, Post-Closure Care and Corrective Action. Each application for a solid waste disposal area construction permit shall include a closure plan and a thirty (30)-year post-closure plan. Each application for a solid waste disposal area included as part of a permit issued under sections 444.500–444.905, RSMo is not required to include closure or post-closure plans as required by this section.

(A) Closure and Post-Closure Plans.

1. Requirement. Plans providing for closure and post-closure care of a solid waste disposal area shall be prepared and submitted with the application for a construction permit to the department for review and approval.

2. Satisfactory compliance—design. Closure and post-closure plans shall include all plans, designs, specifications and other relevant data which specify the methods

and schedules necessary to provide for closure and post-closure care in order to prevent or minimize potential or existing health hazards, public nuisance or environmental pollution. The closure and post-closure plans shall incorporate all reasonable construction and maintenance activities, as determined by site specific conditions and the necessary engineering design. The post-closure plans are not required to incorporate construction and maintenance activities to correct environmental problems which are unanticipated at the time of closure and are the result of failure of the properly implemented engineering design and operating procedures. The plans shall also include cost estimates and proposed financial assurance instrument(s) providing for closure and post-closure care as required in subsection (4)(B) of this rule.

A. Closure plans shall include a description of the methods and time schedules for closure of the permitted area, an estimate of the maximum daily inventory of uncovered wastes ever on-site over the active life of the solid waste disposal area and, in the case of phased development, a description of the methods and time schedules for closure of each phase of the permitted area during the operational life of the permitted area. Closure plans shall also include the name, address and telephone number of the person or office to contact about the facility during the postclosure care period. The following shall be performed as a part of closure of a solid waste disposal area and shall be included in the plans:

- (I) Placement of cover and establishment of vegetation in a manner to minimize erosion, control drainage and provide a pleasing appearance; and
- (II) Installation of any of the following, if deemed necessary, by the department and if not already present at the site: methane control systems, leachate collection systems and groundwater monitoring wells.

3. Satisfactory compliance—operations.

A. The owner/operator of a solid waste disposal area shall notify the department in writing at least one hundred eighty (180) days prior to the date the owner/operator expects to begin closure.

B. The owner/operator shall begin implementation of the closure plan required in subsection (4)(A) of this rule within thirty (30) days after the date on which the phase or permitted area receives the final volume of waste. However, if the solid waste disposal area has remaining capacity and there is a reasonable likelihood that the solid waste disposal area will receive additional wastes, implementation of the closure plan shall proceed no later than one (1) year after the most recent receipt of wastes. Extensions beyond the one (1)-year deadline for beginning of closure may be granted by the director if the owner/operator demonstrates that the solid waste disposal area has the capacity to receive additional wastes and the owner/operator has taken and will continue to take all steps necessary to prevent threats to health and the environment from the unclosed solid waste disposal area.

C. Upon the closing of a solid waste disposal area, the appropriate documents shall be recorded with the county recorder of deeds as required by 10 CSR 80-3.010 and 10 CSR 80-4.010. The owner/operator may request permission from the director to remove the notation from the deed if all wastes are removed from the

solid waste disposal area.

D. The owner/operator of any solid waste disposal area shall complete closure activities of each solid waste disposal area in accordance with the closure plan within one hundred eighty (180) days following the beginning of closure.

Extensions of the closure period may be granted by the director if the owner/operator demonstrates that, of necessity, closure will take longer than one hundred eighty (180) days and the owner/operator has taken and will continue to take all steps to prevent threats to public health and the environment from the unclosed solid waste disposal area. Following completion of closure, the owner/operator shall submit to the department for approval a certification from an independent registered professional engineer verifying that closure activities have been completed in accordance with the closure plan.

E. The owner/operator shall begin implementing the post-closure plan required in subsection (4)(A) of this rule immediately after closure is complete and continue implementing the plan over the entire post-closure care time period.

(I) Post-closure care of a solid waste disposal area shall be for a period of thirty (30) years; provided, however, that the director may shorten or extend the post-closure care period on the basis of site-specific conditions and the need to protect public health or the environment.

(II) During the one hundred eighty (180)-day period before the owner/operator expects to receive the final volume of waste, or at any time after that, the owner/operator may petition the department to reduce the post-closure care period to less than thirty (30) years. In order to reduce the post-closure care period, the operator shall demonstrate that the site does not and, in all likelihood, will not present a threat to public health or the environment.

F. If changes in the design, operation, or both, of a disposal area make Modifications in the closure or post-closure plans necessary, modified closure or post-closure plans shall be submitted to the department for approval prior to implementation of the changes.

G. Following completion of the postclosure care period for each sanitary landfill, the owner/operator shall obtain a certification from an independent registered professional engineer verifying that post-closure care has been completed in accordance with the postclosure plan; the department shall review the certification for approval.

(B) Financial Assurance Requirements for Closure and Post-Closure Care.

1. Permit issuance requirements.

A. A construction permit shall not be issued for solid waste disposal area applications received after January 1, 1996, until approvable closure and post-closure care plans and financial assurance instrument(s) for closure as required by sections 260.200 through 260.345, RSMo, and subsection (4)(B) of this rule have been submitted.

B. An operating permit shall not be issued in response to sanitary landfill applications received after January 1, 1996, until an approvable post-closure care financial assurance instrument has been submitted as required by subsection (4)(B) of this rule.

2. Permit maintenance requirements.

- A. Permitted operating sanitary landfills that accepted solid waste on or after April 9, 1994, shall provide and maintain approvable closure and post-closure care plans and financial assurance instruments according to the requirements of this rule.
 - B. Permitted closed sanitary landfills that stopped accepting solid waste prior to April 9, 1994, shall provide and maintain closure and post-closure care plans and financial assurance instruments according to the requirements of the Missouri Solid Waste Management Law and rules that were in effect at the time they ceased accepting solid waste.
 - C. Permitted operating demolition landfills shall provide and maintain approvable closure plans and financial assurance instrument(s). New demolition landfills permitted after the effective date of this rule shall provide and maintain approvable thirty (30)-year post-closure care plans.
 - D. Permitted operating utility waste and special waste landfills shall provide and maintain approvable closure plans and financial assurance instrument(s). New utility waste and special waste landfills permitted after the effective date of this rule shall provide and maintain approvable twenty (20)-year post-closure care plans.
3. Cost estimates. Closure and post-closure plans shall include estimates of the total costs of completing both closure and postclosure care to the satisfaction of the department and in accordance with the approved closure and post-closure plans.
- A. The closure cost estimate shall include an estimate, in current dollars, of the cost of hiring a third party to close the total permitted area and, in the case of phased development, an estimate of the cost of closing each phase of the permitted area during the operational life of the permitted area. The owner/operator shall demonstrate in the closure plan that the estimate represents the maximum closure costs at any time during the active operation of the solid waste disposal area. The estimate shall include the costs for the establishment of vegetation and for the control of erosion of the area. It shall also include, as applicable, costs for the installation of leachate collection systems, methane gas control or monitoring systems and groundwater monitoring systems, or any combination of these.
 - B. Post-closure care cost estimates shall include, but shall not be limited to, the total costs, in current dollars, of hiring a third party to maintain, monitor, or both, the following, as applicable: cover; leachate collection systems; methane gas control or monitoring systems and groundwater monitoring systems, or any combination of these. The cost estimate for post-closure care shall be based on the most expensive costs of postclosure care during the post-closure care period for the entire permitted area. In the case of phased development, the post-closure plan cost estimates shall itemize the estimated cost, in current dollars, of providing postclosure care for each phase of the disposal area. The cost estimates for specific maintenance and monitoring activities which are not distinct and separable from other phases shall be provided for thirty (30) years following closure of the disposal area.
 - C. The cost estimate(s) submitted with the application shall contain an estimate in current dollars. The adjusted cost estimate shall be used to determine the

amount of the financial assurance instrument. The rate of inflation used for this purpose shall be the latest percent change in the implicit price deflator for the Gross Domestic Product as determined by the United States Department of Commerce.

D. The closure and post-closure care cost estimates shall be adjusted every year by the permittee based upon the actual rate of inflation for the preceding year. The adjusted cost estimates shall be submitted to the department for review every year after the date of permit issuance. The rate of inflation used for this purpose shall be the latest percent change in the implicit price deflator for the Gross Domestic Product as determined by the United States Department of Commerce.

E. The permittee shall prepare and submit to the department new closure and post-closure care estimates whenever a substantial change in the closure or post-closure plans affect these cost estimates.

(C) Financial Assurance Requirements for Corrective Action.

1. An owner/operator of a sanitary or demolition landfill required to undertake a corrective action program under 10 CSR 80-3.010 or 10 CSR 80-4.010 shall have a detailed written bid or estimate, in current dollars, of the cost of hiring a third party to perform the corrective action in accordance with the program required under 10 CSR 80-3.010 or 10 CSR 80-4.010. The corrective action cost estimate shall account for the total costs of corrective action activities as described in the corrective action plan for the entire corrective action period. The owner/operator shall submit the estimate to the director and place a copy of the estimate in the facility operating record.

A. The owner/operator shall annually adjust the estimate for inflation until the Corrective action program is completed in accordance with 10 CSR 80-3.010 or 10 CSR 80-4.010.

B. The owner/operator shall adjust the corrective action cost estimate and the amount of financial assurance if substantial changes in the corrective action program or landfill conditions change the costs of corrective action.

2. The owner/operator of each sanitary or demolition landfill required to undertake a corrective action program under 10 CSR 80-3.010 or 10 CSR 80-4.010 shall establish, in a manner in accordance with 10 CSR 80-2.030(4)(D) financial assurance for the most recent corrective action program within one hundred twenty (120) days of selection of a remedy. The owner/operator shall provide continuous coverage for corrective action until released from financial assurance requirements by the director for corrective action after demonstrating compliance with 10 CSR 80-3.010 or 10 CSR 80-4.010.

(D) Financial Assurance Instruments. The requirements of subsections (4)(B) and (4)(C) of this rule for financial assurance instrument(s) for corrective action, closure, postclosure care, or any combination of these, may be satisfied by establishing a trust fund (or escrow account, securing a financial guarantee bond or a performance bond), obtaining an irrevocable letter of credit, insurance (for closure or post-closure care only), or a combination of these as outlined in this subsection. This requirement may also be satisfied by meeting a financial test and by using a corporate guarantee. A municipality or county may satisfy the requirements by signing a contract of obligation.

1. Trust fund or escrow account. The establishment of a trust fund or escrow account may be used to satisfy the requirement for a financial assurance instrument to provide for corrective action, closure, postclosure care, or any combination of these.

A. A bank or other financial institution which is authorized to administer trusts in Missouri and whose trust operations are regulated and examined by Missouri or a federal agency shall act as the trustee of the corrective action, closure or post-closure care trust fund(s), or both. An escrow account shall be established at a bank or financial institution which is located in Missouri and which is examined by Missouri or a federal agency.

B. The trust fund or escrow account shall consist of cash, certificates of deposit or United States government securities. United States government securities includes treasury bills, treasury bonds and treasury notes guaranteed by the federal government.

C. Wording of trust fund or escrow account agreements.

(I) The wording of the trust fund agreement shall be identical to the wording specified in the Appendix, Form 1a and the trust fund agreement shall be accompanied by a formal certification of acknowledgment (see the Appendix, Form 1b for an example). An originally signed duplicate of the trust fund agreement shall be submitted to the department.

(II) The wording of the escrow account agreement shall be identical to the wording in the Appendix, Form 2. An originally signed duplicate of the escrow account agreement shall be submitted to the department.

D. For a trust fund or escrow account used to demonstrate financial assurance for closure and/or post-closure care, the first payment into the fund shall be at least equal to the current cost estimate for closure or post-closure care divided by the number of years of the projected operating life of the solid waste disposal area plus the costs of the ongoing inseparable post-closure care as determined in 10 CSR 80-3.010, 10 CSR 80-4.010 and 10 CSR 80-11.010. Subsequent payments in the amount of the current cost estimate minus the current value of the fund divided by the remaining number of years of the projected operating life shall be made each year of the remaining operating life of the solid waste disposal area. For a trust fund or escrow account used to demonstrate financial assurance for corrective action, the first payment into the fund or escrow account shall be at least equal to one-half (1/2) the estimated corrective action cost. The subsequent payments into the fund or escrow account shall equal the required balance of the corrective action cost estimate minus the current value of the trust fund or escrow account, the sum of which shall be divided by the number of remaining years of the corrective action pay-in period. The pay-in period for subsequent payments to the corrective action trust fund or escrow account equals one-half (1/2) of the number of years of the corrective action. If the owner/operator establishes a trust fund or escrow account after having used one (1) or more alternate mechanisms specified in subsection (4)(D) of this rule, the first payment shall be in at least the amount that the trust fund or escrow account would contain if the trust fund or escrow account were established initially and annual payments were made to the trust fund or escrow account.

E. If an owner/operator substitutes other financial assurance as specified in subsection (4)(D) of this rule for all or part of the trust fund or escrow account, s/he may submit a written request to the department for release of the amount in excess of the current closure, post-closure care or corrective action cost estimate, or any combination of these, covered by the trust fund or escrow account.

F. Within sixty (60) days after receiving a request from the owner/operator for release of funds as specified in subparagraph (4)(D)1.E. of this rule, the director will instruct the trustee or escrow agent to release to the owner/operator funds as the director specifies in writing.

G. If the owner/operator does not properly implement the corrective action plan or closure or post-closure plan and does not comply with an order by the department to do so, the department will order the forfeiture of all or part of the trust fund or escrow account as specified in subsection (4)(G) of this rule.

H. The director will agree to termination of the trust fund or escrow account when—

(I) An owner/operator substitutes alternate financial assurance as specified in subsection (4)(D) of this rule; or

(II) The director releases the owner/operator from the requirements of subsections (4)(B) and (C) of this rule.

2. Financial guarantee bond. The requirement for a financial assurance instrument may be satisfied by securing a financial guarantee bond in the full amount of the cost estimate for closure, post-closure care, corrective action, or any combination of these.

A. The bond shall be executed by the permittee and a corporate surety licensed or approved as an excess and surplus lines carrier in Missouri. The surety company issuing the bond, at a minimum, shall be among those listed as acceptable sureties on federal bonds in Circular 570 of the United States Department of the Treasury.

B. The wording of the surety bond must be identical to the wording specified in the Appendix, Form 3.

C. The owner/operator who uses a surety bond to satisfy the requirements of subsections (4)(B) and (C) of this rule shall also establish a standby trust fund or escrow account. Under the terms of the bond, all payments made will be deposited by the surety directly into the standby trust fund or escrow account in accordance with instructions from the director. This standby trust fund or escrow account shall meet the requirements specified in paragraph (4)(D)1. of this rule except that—

(I) An originally signed duplicate of the standby trust fund or escrow account agreement shall be submitted to the department with the surety bond; and

(II) Unless the standby trust fund or escrow account is funded pursuant to the requirements of paragraph (4)(D)2. of this rule, the following are not required by these rules:

(a) Payments into the trust fund or escrow account as required by subparagraph (4)(D)1.B. of this rule;

(b) Annual valuations as required by the trust fund or escrow account agreement; and

(c) Notices of nonpayment as required by the trust fund or escrow account

agreement.

D. The bond shall guarantee that the owner/operator will—

(I) Fund the standby trust fund or escrow account in an amount equal to the penal sum of the bond which shall be equal to the cost estimate for closure, post-closure care, corrective action, or any combination of these, before the beginning of corrective action or final closure of the disposal area;

(II) Fund the standby trust fund or escrow account in an amount equal to the penal sum within thirty (30) days after an order to begin corrective action or closure is issued by the department; or

(III) Provide alternate financial assurance as specified in subsection (4)(D) of this rule and obtain the director's written approval of the assurance provided, within ninety (90) days after receipt by both the owner/operator and the department of a notice of cancellation of the bond from the surety.

E. Under the terms of the bond, the surety will become liable on the bond

Obligation when the owner/operator fails to perform as guaranteed by the bond.

F. Under the terms of the bond, the surety may cancel the bond by sending notice of cancellation by certified mail to the owner/operator and to the department.

Cancellation may not occur, however, during the one hundred twenty (120) days beginning on the date of receipt of the notice of cancellation by both the owner/operator and the director, as evidenced by the return receipts.

G. The owner/operator may cancel the bond if the director has given prior written consent based on receipt of evidence of alternate financial assurance as specified in subsection (4)(D) of this rule.

3. Performance bond. The requirement for a financial assurance instrument may be satisfied by securing a performance bond guaranteeing the full amount of the estimated costs of performing corrective action, closure, post-closure care, or any combination of these.

A. The bond shall be executed by the permittee and a corporate surety licensed or approved as an excess and surplus lines carrier in Missouri. The surety company issuing the bond, at a minimum, shall be among those listed as acceptable sureties on federal bonds in Circular 570 of the United States Department of the Treasury.

B. The wording of the surety bond shall be identical to the wording specified in the Appendix, Form 4.

C. The owner/operator who uses a surety bond to satisfy the requirements of subsections (4)(B) and (C) of this rule shall also establish a standby trust fund or escrow account. Under the terms of the bond, all payments made will be deposited by the surety directly into the standby trust fund or escrow account in accordance with instructions from the director. This standby trust fund or escrow account shall meet the requirements specified in paragraph (4)(D)1. of this rule, except that—

(I) An originally signed duplicate of the standby trust fund or escrow account agreement shall be submitted to the department with the surety bond; and

(II) Unless the standby trust fund or escrow account is funded pursuant to the requirements of paragraph (4)(D)3. of this rule, the following are not required by these rules:

(a) Payments into the trust fund or escrow account as specified in

subparagraph (4)(D)1.B. of this rule;

(b) Annual valuations as required by the trust fund or escrow account agreement; and

(c) Notices of nonpayment as required by the trust fund or escrow account agreement.

D. The bond shall guarantee that the owner/operator will—

(I) Perform corrective action, final closure, post-closure care, or any combination of these, in accordance with the corrective action plan, closure or post-closure plan, or both, and other requirements of the solid waste disposal area permit whenever required to do so; or

(II) Provide alternate financial assurance as specified in subsection (4)(D) of this rule and obtain the director's written approval of the assurance provided, within ninety (90) days after receipt by both the owner/operator and the department of a notice of cancellation of the bond from the surety.

E. Under the terms of the bond, the surety will become liable on the bond obligation when the owner/operator fails to perform as guaranteed by the bond. Following a determination that the owner/operator has failed to perform corrective action, final closure, postclosure care, or any combination of these, in accordance with the corrective action plan, the closure plan, post-closure plan, or any combination of these, when required to do so under the terms of the bond, the surety will perform corrective action, final closure, postclosure care, or any combination of these, as guaranteed by the bond or will deposit the amount of the penal sum into the standby trust fund or escrow account.

F. Under the terms of the bond, the surety may cancel the bond by sending notice of cancellation by certified mail to the owner/operator and to the department. Cancellation may not occur, however, during the one hundred twenty (120) days beginning on the date of receipt of the notice of cancellation by both the owner/operator and the department, as evidenced by the return receipts.

G. The owner/operator may cancel the bond if the director has given prior written consent. The director will provide written consent when—

(I) An owner/operator substitutes alternate financial assurance as specified in subsection (4)(D) of this rule; or

(II) The director releases the owner/operator from the requirements of subsections (4)(B) and (C) of this rule.

H. The surety will not be liable for deficiencies in the performance of corrective action, closure, post-closure care, or any combination of these, by the owner/operator after the director releases the owner/operator from the requirements of subsections (4)(B) and (C) of this rule.

4. Letter of credit. The requirement for a financial assurance instrument may be satisfied by obtaining an irrevocable standby letter of credit in the full amount of the cost estimate for closure, post-closure care or corrective action, or any combination of these.

A. The letter of credit shall be issued by a state- or federally-chartered and regulated bank or trust association. If the issuing institution is not located in Missouri, a bank or trust association located in Missouri shall confirm the letter of credit and the confirmation shall be filed with the department along with the letter

of credit.

B. The wording of the letter of credit shall be identical to the wording specified in the Appendix, Form 5.

C. An owner/operator who uses a letter of credit to satisfy the requirements of subsections (4)(B) and (C) of this rule shall also establish a standby trust fund or escrow account. Under the terms of the letter of credit, all amounts paid pursuant to a draft by the director will be deposited by the issuing institution directly into the standby trust fund or escrow account in accordance with instructions from the director. This standby trust fund or escrow account shall meet the requirements of the trust fund or escrow account specified in paragraph (4)(D)1. of this rule, except that—

(I) An originally signed duplicate of the standby trust fund or escrow account agreement shall be submitted to the department with the letter of credit; and

(II) Unless the standby trust fund or escrow account is funded pursuant to the requirements of paragraph (4)(D)4. of this rule, the following are not required by these rules:

(a) Payments into the trust fund or escrow account as specified in subparagraph (4)(D)1.B. of this rule; and

(b) Annual valuations as required by the trust fund or escrow account agreement; and

(c) Notices of nonpayment as required by the trust fund or escrow account agreement.

D. The letter of credit shall be accompanied by a letter from the owner/operator referring to the letter of credit by number, the issuing institution and date and providing the following information: the solid waste disposal area permit number, name and address of the solid waste disposal area; and the amount of funds assured for corrective action, closure or post-closure care, or any combination of these, of the solid waste disposal area by the letter of credit.

E. The letter of credit shall be irrevocable and issued for a period of at least one (1) year. The letter of credit shall provide that the expiration date will be automatically extended for a period of at least one (1) year unless, at least one hundred twenty (120) days before the current expiration date, the issuing institution notifies both the owner/operator and the department by certified mail of a decision not to extend the expiration date. Under the terms of the letter of credit, the one hundred twenty (120) days will begin on the date when both the owner/operator and the department have received the notice, as evidenced by the return receipts.

F. If the owner/operator does not establish alternate financial assurance as specified in subsection (4)(D) of this rule and obtain written approval of alternate assurance from the director within ninety (90) days after receipt by both the owner/operator and the department of a notice from the issuing institution that it has decided not to extend the letter of credit beyond the current expiration date, the director will draw on the letter of credit. The director may delay the drawing if the issuing institution grants an extension of the term of the credit. During the last thirty (30) days of any such extension the director will draw on the letter of credit if the owner/ operator has failed to provide

alternate financial assurance as specified in subsection (4)(D) of this rule and obtain written approval of assurance from the director.

G. Following a determination that the owner/operator has failed to perform corrective action, final closure, post-closure care, or any combination of these, in accordance with the corrective action plan, the closure, post-closure plan, or any combination of these, and other permit requirements when required to do so, the director may draw on the letter of credit.

H. The director will return the letter of credit to the issuing institution for termination when—

(I) An owner/operator substitutes alternate financial assurance as specified in subsection (4)(D) of this rule; or

(II) The director releases the owner/operator from the requirements of subsections (4)(B) and (C) of this rule.

5. Insurance. The requirement for a financial assurance instrument may be satisfied by obtaining insurance. The insurance policy shall be irrevocable and without provisions to transfer, loan/borrow, withdraw, make premium payments from or otherwise extract or encumber funds from the face amount or cash surrender value of the policy, except upon written approval by the director or his/her designee.

A. The insurer, at a minimum, shall be licensed to transact the business of insurance or be eligible to provide insurance as an admitted or an excess or surplus lines insurer, in one (1) or more states, and authorized to transact business in Missouri by law and by the Missouri Department of Insurance.

B. The wording of the certificate of insurance shall be identical to the wording specified in the Appendix, Form 6.

C. A pollution liability or environmental impairment liability insurance policy shall be issued for a face amount equal to the amount of the full cost estimate for closure or post-closure care, or both, except as provided in paragraph (4)(D)8. of this rule. The term “face amount” for a pollution or environmental impairment liability policy shall mean the total amount the insurer is obligated to pay under the policy. Actual payments by the insurer will not change the face amount, although the insurer’s future liability will be lowered by the amount of the payments.

D. The insurance policy shall guarantee that funds will be available to hire a third party to close the disposal area whenever final closure occurs, or provide for post-closure care whenever the post-closure care period begins, or both. The policy shall also guarantee that once the final closure, or post-closure care period, or both, begins; the insurer will be responsible for paying out funds, up to an amount equal to the face amount of the policy, upon the direction of the director, to the party(ies) as the director specifies. Release of funds will be authorized by the director according to subsection (4)(F) of this rule.

E. The owner/operator shall maintain the policy in full force and effect until the director consents to termination of the policy by the owner/operator as specified in subparagraph (4)(D)5.H. of this rule. Failure to pay the premium, without substitution of alternate financial assurance as specified in subsection (4)(D) of this rule, will constitute a significant violation of these rules, warranting such remedy as the director deems necessary. Violation will be deemed to begin

upon receipt by the department of a notice of future cancellation, termination or failure to renew due to nonpayment of the premium rather than upon the date of expiration.

F. Each policy shall contain provisions—

(I) Allowing assignment of the policy to a successor owner/operator. The assignment may be conditional upon consent of the insurer, provided the consent is not unreasonably refused;

(II) Providing that a pollution or environmental impairment liability policy issued on a claims-made basis shall provide retroactive coverage from the date of issuance of the first environmental impairment or pollution liability policy covering the facility and shall contain an extended claims reporting period of at least twelve (12) months; and

(III) Designating the director, Missouri Department of Natural Resources as the irrevocable primary beneficiary without collateral assignment(s).

G. The policy shall provide that the insurer may not cancel, terminate or fail to renew the policy except for failure to pay the premium. The automatic renewal of the policy, at a minimum, shall provide the insured with the option of renewal at the face amount of the expiring pollution or environmental impairment liability policy. If there is a failure to pay the premium, the insurer may elect to cancel, terminate or fail to renew the policy by sending notice by certified mail to the owner/operator and the department. Cancellation, termination or failure to renew may not occur, however, during the one hundred twenty (120) days beginning with the date of receipt of the notice by both the director and the owner/operator, as evidenced by the return receipts. Cancellation, termination or failure to renew may not occur and the policy will remain in full force and effect in the event that on or before the date of expiration—

(I) The director deems the disposal area abandoned;

(II) The permit is terminated or revoked or a new permit is denied;

(III) Closure is ordered by the director or a United States district court or other court of competent jurisdiction;

(IV) The owner/operator is named as debtor in a voluntary or involuntary proceeding under Title II (Bankruptcy), *United States Code*; or

(V) The premium due is paid.

H. The director will give written consent to the owner/operator that s/he may terminate the insurance policy when—

(I) An owner/operator substitutes alternate financial assurance as specified in subsection (4)(D) of this rule; or

(II) The director releases the owner/operator from the requirements of subsection (4)(B) of this rule.

6. Financial test and corporate guarantee. The requirements for a financial assurance instrument may be satisfied by passing a financial test. A corporate guarantee submitted by the parent corporation of the owner/operator as specified in subparagraph (4)(D)6.J. of this rule may also be used to satisfy the requirement for a financial assurance instrument.

A. To pass the financial test, the owner/operator shall meet the criteria of either part (4)(D)6.A.(I) or (II) of this rule.

- (I) The owner/operator shall have—
 - (a) Two (2) of the following three (3) ratios: a ratio of total liabilities to net worth less than two (2); a ratio of the sum of net income plus depreciation, depletion and amortization to total liabilities greater than 0.1; and a ratio of current assets to current liabilities greater than 1.5;
 - (b) Tangible net worth at least two (2) times the cost estimate of corrective action or two (2) times the sum of the current closure plan and post-closure plan cost estimates covered by the test, or both; and
 - (c) Assets in the United States amounting to at least ninety percent (90%) of his/her total assets or at least two (2) times the cost estimate of corrective action or two (2) times the sum of the current closure plan and post-closure plan cost estimates covered by the test, or both.
 - (II) The owner/operator shall have—
 - (a) A current rating for his/her most recent bond issuance of AAA, AA, A or BBB as issued by Standard and Poor's or Aaa, Aa, A or Baa as issued by Moody's;
 - (b) Tangible net worth at least two (2) times the cost estimate of corrective action or two (2) times the sum of the current closure plan and post-closure plan cost estimates covered by the test, or both; and
 - (c) Assets located in the United States amounting to at least ninety percent (90%) of his/her total assets or at least two (2) times the cost estimate of corrective action or two (2) times the sum of the current closure plan and post-closure plan cost estimates covered by the test, or both.
- B. The phrase current closure plan and post-closure plan cost estimates as used in subparagraph (4)(D)6.A. of this rule refers to the cost estimates required to be shown in paragraphs 1.–4. of the letter from the owner/operator's chief financial officer (Appendix, Form 7).
- C. To demonstrate that s/he meets this test, the owner/operator shall submit the following items to the department:
- (I) A letter signed by the owner/operator's chief financial officer and worded as specified in the Appendix, Form 7;
 - (II) A copy of the independent certified public accountant's report on examination of the owner/operator's financial statements for the latest completed fiscal year; and
 - (III) A special report from the owner/operator's independent certified public accountant to the owner/operator stating that—
 - (a) S/he has compared the data which the letter from the chief financial officer specifies as having been derived from the independently audited, year-end financial statements for the latest fiscal year with the amounts in the financial statements; and
 - (b) S/he should report an appropriate description of the findings using a summary of findings in accordance with the requirements of the American Institute of Certified Public Accountants as promulgated in Statement on Auditing Standards #75.
- D. After the initial submission of items specified in subparagraph (4)(D)6.C. of this rule, the owner/operator shall send updated information to the department

within ninety (90) days after the close of each succeeding fiscal year. This information shall consist of all three (3) items specified in subparagraph (4)(D)6.C. of this rule.

E. If the owner/operator no longer meets the requirements of subparagraph (4)(D)6.A. of this rule, s/he shall send notice to the department of intent to establish alternate financial assurance. The notice shall be sent by certified mail within ninety (90) days after the end of the fiscal year for which the year-end financial data show that the owner/operator no longer meets the requirements. The owner/operator shall provide the alternate financial assurance within one hundred twenty (120) days after the end of the fiscal year.

F. The director, based on a reasonable belief that the owner/operator may no longer meet the requirements of subparagraph (4)(D)6.A. of this rule, may require reports of financial condition at any time from the owner/operator in addition to those specified in subparagraph (4)(D)6.A. of this rule. If the director finds, on the basis of the reports or other information, that the owner/operator no longer meets the requirements of subparagraph (4)(D)6.A. of this rule, the owner/operator shall provide alternate financial assurance as specified in subsection (4)(D) of this rule within thirty (30) days after notification of such a finding.

G. The department may require and evaluate additional information which relates to financial status, including present or potential environmental liabilities and may deny the use of the financial test based upon the evaluation or the failure of an applicant to provide any additional information requested by the department within thirty (30) days from the date of the request. Pending approval of the use of the test by the director or pending appeal before any court of competent jurisdiction of the department's denial of the use of the test, the owner/operator shall comply with the financial assurance requirements through the use of an alternate financial assurance mechanism as described in subsection (4)(D) of this rule. The burden of proof shall be on the applicant in the event of any appeal of a denial. If the department rules that the firm's financial test is unacceptable, the firm shall have thirty (30) days from the date of notification of a decision to provide alternative financial assurances.

H. The department may disallow use of this test on the basis of qualifications in the opinion expressed by the independent certified public accountant in the report on examination of the owner/operator's financial statements. An adverse opinion or a disclaimer of opinion will be cause for disallowance. The department will evaluate other qualifications on an individual basis. The owner/operator shall provide alternate financial assurance as specified in subsection (4)(D) of this rule within thirty (30) days after notification of the disallowance.

I. The owner/operator is no longer required to submit the items specified in subparagraph (4)(D)6.C. of this rule when—

- (I) An owner/operator substitutes alternate financial assurance as specified in subsection (4)(D) of this rule; or
- (II) The director releases the owner/operator from the requirements of subsections (4)(B) and (C) of this rule.

J. An owner/operator may meet the requirements of subsections (4)(B) and (C) of this rule by obtaining a written guarantee, referred to in this rule as corporate

guarantee. The guarantor shall be the parent corporation of the owner/operator. The guarantor shall meet the requirements for owner/operators in subparagraphs (4)(D)6.A.–H. of this rule and shall comply with the terms of the corporate guarantee. The wording of the corporate guarantee shall be identical to the wording specified in the Appendix, Form 8. The corporate guarantee shall accompany the items sent to the department as specified in subparagraph (4)(D)6.C. of this rule. The terms of the corporate guarantee shall provide that—

(I) If the owner/operator fails to perform corrective action, final closure, postclosure care, or any combination of these, of a disposal area covered by the corporate guarantee in accordance with the closure or postclosure plan, or both, and other permit requirements whenever required to do so, the guarantor will do so or establish a trust fund as specified in paragraph (4)(D)1. of this rule in the name of the owner/operator;

(II) The corporate guarantee will remain in force unless the guarantor sends notice of cancellation by certified mail to the owner/operator and to the department. Cancellation may not occur, however, during the one hundred twenty (120) days beginning on the date of receipt of the notice of cancellation by both the owner/operator and the department, as evidenced by the return receipts; and

(III) If the owner/operator fails to provide alternate financial assurance as specified in subsection (4)(D) of this rule and obtain the written approval of this alternate assurance from the director within ninety (90) days after receipt of both the owner/operator and the department of a notice of cancellation of the corporate guarantee from the guarantor, the guarantor will provide alternative financial assurance in the name of the owner/operator.

7. Contract of obligation. Municipalities or counties may satisfy the requirements for a financial assurance instrument by entering into a contract of obligation for the full amount of the approved closure cost estimates for a construction permit and for the full amount of approved thirty (30)-year post-closure care cost estimates for an operating permit.

A. The contract of obligation shall be a binding agreement on the municipality or county, allowing the department to collect the required amount from any funds being disbursed or to be disbursed by Missouri to the municipality or county. A municipality or county which uses the contract of obligation annually shall submit a letter to the department from the governing body reaffirming the amount of their financial obligation. The wording of the contract of obligation shall be identical to the wording specified in the Appendix, Form 9.

B. Resolution. The Contract of Obligation shall be submitted to the department by the owner/operator with an attached Resolution or Ordinance specifying the name of the Signatory Agent having the designated authority to sign the Contract of Obligation. The Resolution or Ordinance shall contain wording similar to the wording specified in the Appendix, Form 9b.

C. Local Government Financial Test. The Contract of Obligation shall be submitted to the department annually by the owner/operator with an attached, accurate and complete Local Government Financial Test. The Local Government

Financial Test shall contain—

- (I) A letter signed by the owner/operator’s chief financial officer using wording identical to the wording specified in the Appendix, Form 10;
- (II) A copy of an independent certified public accountant’s report on examination of the owner/operator’s financial statements for the latest completed fiscal year;
- (III) A special report from an independent certified public accountant to the owner/operator stating that—
 - (a) S/he has compared the data which the letter from the chief financial officer specifies as having been derived from the independently audited, year-end financial statements for the latest fiscal year with the amounts in the financial statements;
 - (b) S/he should report an appropriate description of the findings using a summary of findings in accordance with the requirements of the American Institute of Certified Public Accountants Statement on Auditing Standards #75; and
 - (c) The special report procedure was performed in accordance with the definitions, standards and measurements specified in Statement Number 18 of the Government Accounting Standards Board (GASB), “Accounting for Municipal Solid Waste Landfill Closure and Postclosure Care Costs” and with Generally Accepted Accounting Principles (GAAP); and
- (IV) The owner/operator shall include a copy of the most recent comprehensive annual financial report (CAFR) disclosing, for public notice, all of the estimated landfill closure, post-closure care and corrective action financial obligations. The report shall conform with the Government Accounting Standards Board Statement 18 and include:
 - (a) The nature and source of the closure and post-closure care requirements;
 - (b) The costs recognized to date;
 - (c) The costs remaining to be incurred;
 - (d) The percentage of the total landfill capacity used to date; and
 - (e) The remaining landfill capacity (life) in years.

D. Definitions. The financial terms used in this rule shall be consistent with Generally Accepted Accounting Principles (GAAP) and the definitions and standards specified in Statement Number 18 of the Government Accounting Standards Board (GASB), “Accounting for Municipal Solid Waste Landfill Closure and Postclosure Care Costs.” A summary of those terms is referenced in the worksheet of the Appendix, Form 10.

E. Qualifications.

- (I) Local governments will not be qualified to utilize Contracts of Obligation and Local Government Financial Tests if they have been determined to—
 - (a) Be an enterprise fund, solid waste management district or organization other than a county or incorporated city, town or village, as classified in Article VI, Section 15, of the *Constitution of Missouri*. Two (2) or more qualified local governments may join in common to submit combined mechanisms;
 - (b) Currently be in default on any outstanding general obligation bonds;

- (c) Have any outstanding general obligation bonds having a Standard and Poor's rating less than BBB or a Moody's rating less than Baa;
- (d) Have operated at a deficit exceeding five percent (5%) of the total annual revenues in each of the past two (2) years, except as allowed in Article VI, Sections 26(a) through 26(g), of the *Constitution of Missouri*;
- (e) Have a Relative Size Threshold in excess of forty-three percent (43%) of the local government's total annual revenues. This rule allows the annual guaranteed environmental financial assurances to subtotal up to forty-three percent (43%) of the total annual revenues with additional secured financial assurance mechanism(s) being demonstrated for the remaining balance;
- (f) Have an adverse opinion or a disclaimer of opinion from an independent certified public accountant as reported under part (4)(D)7.C.(III) and subparagraph (4)(D)7.J. of this rule; and
- (g) Fail the ratio test criteria of part (4)(D)7.E.(II) of this rule.

(II) An owner/operator qualified under part (4)(D)7.E.(I) of this rule shall pass the Local Government Financial Test by meeting the criteria of either subparts (4)(D)7.E.(II)(a), Alternative I, or (4)(D)7.E.(II)(b), Alternative II, of this rule as follows:

- (a) Alternative I. The owner/operator shall have a Liquidity Ratio greater than or equal to 0.050 and a Debt Service Ratio less than or equal to 0.20; or
- (b) Alternative II. The owner/operator shall have a current rating for all outstanding general obligation bonds of AAA, AA, A or BBB as issued by Standard and Poor's or Aaa, Aa, A or Baa as issued by Moody's. Ratings from agencies other than Standard and Poor's or Moody's and ratings on expired bonds, refunding bonds, revenue bonds, insured bonds or structured financing (guaranteed or collateralized) are not acceptable.

F. Effective dates.

(I) All applicants and/or owners/ operators of active permitted solid waste disposal areas, choosing to use a Contract of Obligation to guarantee landfill financial assurance, shall submit a Local Government Financial Test and a Comprehensive Annual Financial Report, using the most recent fiscal financial statements, with each Contract of Obligation and Resolution submitted on or after April 9, 1998. After initial approval, each owner/operator shall annually submit an updated Contract of Obligation and Resolution, Local Government Financial Test and Comprehensive Annual Financial Report within one hundred eighty (180) days following the end of their fiscal year.

(II) All owners/operators of officially closed facilities, having properly executed Contracts of Obligation that were approved prior to April 9, 1998, are not required to submit a Local Government Financial Test nor a Comprehensive Annual Financial Report as long as they are in compliance with 10 CSR 80-2.030 at the time of closure. The cost estimates of the Contracts of Obligation for officially closed facilities may be annually adjusted for inflation, as specified in subparagraph (4)(B)2.C. of this rule, by using a cover letter amendment to the contract signed by the designated signatory agent.

G. If the owner/operator no longer meets the requirements of subparagraph

(4)(D)7.E. of this rule, they shall send notice to the department of their intent to establish an alternate financial assurance instrument. The notice shall be sent by certified mail within ninety (90) days after the end of the fiscal year for which the financial data demonstrates failure to meet the requirements of subparagraph (4)(D)7.E. of this rule, or within thirty (30) days of a bond default or unfavorable change in bond rating. The owner/operator shall provide the alternate financial assurance instrument within thirty (30) days of receipt of this notice by the department.

H. The director, based on a reasonable belief that the owner/operator may no longer meet the requirements of subparagraph (4)(D)7.E. of this rule, may require reports of financial condition at any time from the owner/operator in addition to those specified in subparagraph (4)(D)7.C. of this rule. If the director finds, on the basis of the reports or other information, that the owner/operator no longer meets the requirements of this rule, the owner/operator shall provide an alternate financial assurance within thirty (30) days after notification of such a finding.

I. The department may require and evaluate additional information which relates to financial status, including present or potential environmental liabilities, and may deny the use of the Contract of Obligation or Local Government Financial Test based upon this evaluation or the failure of an applicant to provide any additional information requested by the department within thirty (30) days from the date of the request. Pending the appeal of this denial before the director or court of competent jurisdiction, the owner/operator shall provide an alternate financial assurance instrument within thirty (30) days of receipt of notification. The burden of proof shall be on the owner/operator in the event of any appeal of a denial.

J. The department may disallow use of the Contract of Obligation on the basis of qualifications in the opinion expressed by the independent certified public accountant in the report on examination of the owner/operator's financial statements. An adverse opinion or a disclaimer of opinion will be cause for disallowance. The department will evaluate other qualifications on an individual basis. The owner/operator shall provide an alternate financial assurance instrument as specified in subsection (4)(D) of this rule within thirty (30) days of receipt of notification of the disallowance.

K. The owner/operator will no longer be required to submit the items specified in subparagraph (4)(D)7.C. of this rule when—

(I) The owner/operator substitutes an approved alternate financial assurance instrument as specified in subsection (4)(D) of this rule; or

(II) The owner/operator is officially released from the closure and/or post-closure care obligations.

8. Use of multiple financial assurance instruments. An owner/operator may satisfy the requirements of subsections (4)(B) and (C) of this rule for financial assurance instruments by establishing more than one (1) financial instrument per disposal area for corrective action, closure or post-closure care, or any combination of these. These instruments are limited to trust funds, escrow accounts, financial guarantee bonds, letters of credit and insurance. Each instrument shall be as specified in subsection (4)(D) of this rule except that it is the combination of instruments, rather

than the single instrument which shall provide financial assurance for an amount at least equal to the amount specified in subsection (4)(D) of this rule. If an owner/operator uses a trust fund or escrow account in combination with a surety bond or a letter of credit, s/he may use the trust fund or escrow account as the standby trust fund or escrow account for the other instruments. A single standby trust fund or escrow account may be established for two (2) or more instruments.

The director may use any of the instruments to provide for corrective action, closure or post-closure care, or any combination of these, of the disposal area.

(E) Filing, Increasing and Decreasing Financial Assurance Instruments. When increases in the financial assurance instrument are no longer being made and the estimated corrective action, closure, post-closure care cost, or any combination of these, increases the amount of the financial assurance instrument shall be adjusted to cover the increase in the cost estimate. The owner/operator shall increase the amount of the financial assurance instrument within sixty (60) days of the increase in the estimate and submit written evidence of the increase to the director or obtain other financial assurance as specified in subsection (4)(D) of this rule to cover the increase. If the current cost of corrective action, the current cost of closure or post-closure, or any combination of these, decreases and the owner/operator has received written approval from the director of a decrease, the owner/operator may decrease the amount of the corrective action, closure or post-closure care financial assurance instrument, or any combination of these.

(F) Release of Financial Assurance Instruments.

1. Closure. The department will inspect a permitted solid waste disposal area or a phase of a permitted solid waste disposal area when notified by the owner/operator that the closure plan has been implemented and certified by a professional engineer. If the inspection reveals that the approved closure plan has been properly effected, the director shall authorize the release or proportional release of, the financial assurance instrument submitted for closure and interest, if any.

2. Post-closure care.

A. After the sixth anniversary of the beginning of the post-closure care period, the department will annually allow the owner/operator to decrease the financial assurance instrument in an amount equal to the estimated post-closure care cost for the previous twelve (12) months, providing that the financial assurance instrument is sufficient to cover the costs for providing post-closure care for the remaining post-closure care period plus five (5) years. In the case of phased development, the amount potentially available for release by the department will only consist of the portion of the cost estimate designated for activities distinct and separable from the other phases. All decreases in the financial assurance instrument would be dependent upon the department's completion of an inspection of the solid waste disposal area to evaluate post-closure care and monitoring in accordance with the approved plans. The inspections shall have been completed within the previous twelve (12) months or shall be completed sixty (60) days after the anniversary of the beginning of the post-closure care period. Failure of the department to complete the inspection shall result in the release of the financial assurance instrument in the amount equal to the estimated post-closure care cost for the previous twelve (12) months. If the inspection

reveals that the approved post-closure plan has not been properly implemented, the department will issue a notice of violation to the permittee as to the noncompliance.

B. Within one (1) year of the end of the designated post-closure care period, and after receipt of a certification by a professional engineer, the department will make an inspection of the solid waste disposal area to determine if the approved post-closure plan has been properly implemented as well as assess the environmental and health impact of the solid waste disposal area. If the inspection reveals that the solid waste disposal area no longer poses a detrimental impact to either the environment or public health, the remaining amount of the financial assurance instrument will be released. If the inspection reveals that the post-closure plan has not been properly implemented or that the solid waste disposal area continues to pose a detrimental environmental or health impact, the department may retain all or part of the remaining financial assurance instrument or require an extension of the post-closure care period.

3. Corrective action. Within one (1) year of the completion of the corrective action plan, the department will inspect a permitted solid waste disposal area or a phase of a permitted area to determine if the approved corrective action plan has been properly implemented and completed, as well as assess the environmental and health impact of the solid waste disposal area. If the inspection reveals that the solid waste disposal area no longer poses a detrimental impact to either the environment or public health, the remaining amount of the financial assurance instrument will be released. If the inspection reveals that the corrective action plan has not been properly implemented or that the solid waste disposal area continues to pose a detrimental environmental or health impact, the department may retain all or part of the remaining financial assurance instrument or require that additional corrective actions be taken by the owner/operator.

(G) Forfeiture of Financial Assurance Instruments. If the owner/operator fails to properly implement the corrective action, closure, post-closure plan(s), or any combination of these, the director will give written notice of the violation and order the owner/operator to implement the corrective action, closure, post-closure plan(s), or any combination of these. If corrective measures approved by the director are not commenced within a specified and reasonable time, the director will order forfeiture of all or that part of the owner/operator's financial assurance instrument necessary to implement corrective action, closure, post-closure plan(s), or any combination of these. Any owner/operator aggrieved by a forfeiture order may appeal as provided in section 260.235, RSMo.

*AUTHORITY: section 260.225, RSMo (Cum. Supp. 1996). * Original rule filed Dec. 11, 1973, effective Dec. 21, 1973. Amended: Filed July 14, 1986, effective Jan. 1, 1987. Amended: Filed Jan. 5, 1987, effective June 1, 1987. Amended: Filed Jan. 29, 1988, effective Aug. 1, 1988. Emergency amendment filed Sept. 29, 1993, effective Oct. 9, 1993, expired Feb. 5, 1994. Amended: Filed May 3, 1993, effective Jan. 13, 1994. Amended: Filed Oct. 10, 1996, effective July 30, 1997.*

**Original authority 1972, amended 1975, 1986, 1988, 1990.*

10 CSR 80-2.031 Solid Waste Disposal Area Closure and Excavation Procedures

Emergency rule filed Sept. 29, 1993, effective Oct. 9, 1993, expired Feb. 5, 1994.

Emergency rule filed Jan. 28, 1994, effective Feb. 7, 1994, expired June 6, 1994.

Nebraska

005 Closure criteria. Owners or operators of solid waste disposal areas shall close according to the approved closure plan, and shall install the final cover within six months of the last receipt of waste.

005.01 Those solid waste disposal areas, receiving waste after October 1, 1993, shall close all areas which have not received final cover, in accordance with the requirements of sections 005.01A to 005.01E below.

005.01A A final cover system shall be installed which shall be comprised of an erosion layer underlain by an infiltration layer as follows:

005.01A1 The infiltration layer shall be comprised of a minimum of eighteen (18) inches of earthen material that has a permeability less than or equal to the permeability of the bottom liner system or natural subsoil present, or a permeability no greater than 1×10^{-5} centimeters per second, measured at the site, whichever is less; and

005.01A2 The erosion layer shall consist of a minimum of eighteen (18) inches of earthen material that is capable of sustaining adequate vegetative cover.

005.01B The applicant may request an alternate final cover design that includes:

005.01B1 An infiltration layer that achieves an equivalent reduction in infiltration as the infiltration layer specified in 005.01A1 of this chapter.

005.01B2 An erosion layer that provides equivalent protection from wind and water erosion as the erosion layer specified in 005.01A2 of this chapter.

005.01C Final surface grades and side slopes of the closed solid waste disposal area shall prevent run-on and runoff from eroding or otherwise damaging the final cover.

005.01D Appropriate vegetative cover shall be established and maintained as soon as practical after final grading.

005.01E Unauthorized public access, vehicular traffic, and illegal dumping shall be prevented by the use of artificial barriers, natural barriers, or both, along with signs prohibiting such access.

005.02 Owners or operators of a land application unit for repeated disposal or treatment of special waste shall close in accordance with the approved closure

plan as described in section 005.11.

005.03 The requirements of this section apply to solid waste disposal areas accepting waste after October 1, 1993. Within 90 days following the installation of the final cover system, the owner or operator shall record a permanent notation on the deed to the disposal area property, or some other permanent property record or instrument that is normally examined during the title search and shall notify the Department that such notation or instrument has been recorded in the permanent records of the county Register of Deeds. A copy of this record and notification shall be placed in the operating record. This notation or instrument must, in perpetuity, notify any potential purchaser of the following information:

005.03A The existence of a closed solid waste disposal area on the property;

005.03B The type, depth and location of the waste on the property, as well as the existence of any monitoring systems; and

005.03C Any restrictions on the use of the property which may be provided to protect the integrity of the final cover, liner, monitoring systems or any other components of the containment system.

005.04 The owner or operator of a permitted solid waste disposal area shall notify the Department, in writing, at least 180 days prior to the date the owner or operator expects to begin closure. Such notice shall also be placed in the operating record.

005.05 The owner or operator of a solid waste disposal area shall begin implementation of the closure plan required in 005.10 and 005.11 of this rule within thirty (30) days after the date on which the facility receives the final volume of waste. The owner or operator shall notify the Department, in writing, of the date of the receipt of the final volume of waste, the date of the initiation of closure, and the date of the installation of the final cover system, as applicable. Copies of these notices shall also be placed in the operating record.

005.06 The owner or operator of a solid waste disposal area shall complete closure activities in accordance with the closure plan within 180 days after the last receipt of waste. Extensions of the closure period may be granted by the Department if the owner or operator demonstrates that closure will, due to circumstances beyond the operator's control, take longer than 180 days and the owner or operator has taken, and will continue to take, all steps to prevent threats to human health and the environment from the unclosed solid waste disposal area.

005.07 Following the closure of a solid waste disposal area or any part of the area, the owner or operator shall submit a certification to the Department signed by an independent professional engineer registered in the State of Nebraska verifying that closure has been completed in accordance with the approved closure plan. This certification shall also be placed in the operating record.

005.08 Owners or operators shall not implement modifications to the design or operation of a solid waste disposal area which results in modifications to the closure plan without prior approval of the Department.

005.09 No person shall excavate, disturb the final cover, or remove any deposited materials from any active or closed solid waste disposal area without having received prior approval from the Department. Requests for approval shall demonstrate that disturbance of the final cover, liner, or other component of the containment system, including any removal of waste, will not increase the potential threat to human health and the environment and shall include:

005.09A An operational plan identifying the planned activities and the area involved;

005.09B A survey identifying the lines and grades defining the limits of the proposed excavation both vertically and horizontally;

005.09C Estimated number of cubic yards and type of material to be excavated;

005.09D Location where excavated material is to be deposited;

005.09E Type of equipment to be used to transport material;

005.09F Estimated time required for excavation and disposal procedure;
and

005.09G Provisions for closing the excavated or disturbed area.

005.10 Closure plan. Owners or operators of solid waste disposal areas accepting waste after October 1, 1993 shall prepare and submit a written closure plan that describes the steps necessary to close the solid waste disposal areas at any point during the active life of the area. This closure plan and any revisions shall be placed in the operating record, with copies of any such revisions forwarded to the Department. The closure plans shall include but not be limited to, a description of the methods of closure which comply with the requirements of 005 and the following:

005.10A A description of the final cover designed in accordance with the methods and procedures to be used to install the cover;

005.10B An estimate of the largest area of the solid waste disposal area ever requiring a final cover at any time during the active life of the solid waste disposal area;

005.10C An estimate of the maximum inventory of wastes ever on-site over the active life of the solid waste disposal area;

005.10D A schedule for the completion of all activities necessary to satisfy the closure criteria; and

005.10E Installation of any or all of the following, as required by the Department and not already present at the site: landfill gas control systems, leachate collection systems, and/or groundwater monitoring wells.

005.11 The owner or operator of a land application unit for repeated disposal or treatment of special waste shall prepare a written closure plan that describes the steps necessary to close the facility at any point during the active life of the facility. This closure plan and any revisions shall be placed in the operating record. The closure plans shall include, but are not limited to the following:

005.11A A description of the activities required to close the site in a manner protective of human health and the environment;

005.11B A description of the post-closure plans for the inactive site;

005.11C Methods or means for notifying facility users of the closure of the facility; and

005.11D A description of the location where all materials remaining at the site will be disposed, when applicable.

North Dakota

33-20-04.1-05. General closure standards. The requirements of this section apply to all solid waste management facilities, unless otherwise specified.

1. Each owner or operator shall close their facility in a manner that achieves the following:
 - a) Minimizes the need for further maintenance; and
 - b) Controls, minimizes, or eliminates any escape of solid waste constituents, leachate, fugitive emissions, contaminated runoff, or waste decomposition products.
2. Sequential partial closure must be implemented to minimize the working face of a landfill.
3. Closure must be implemented within thirty days after receipt of the final volume of waste and must be completed within one hundred eighty days following the beginning of closure activities, unless otherwise specified and approved under subsection 5. Prior to beginning closure, the owner or operator must notify the department in writing of the intent to close.
4. The owner or operator of a landfill for which closure is completed in part or whole shall enter into the operating record and submit to the department:
 - a) As-built drawings showing the topography, pertinent design features, extent of waste, and other appropriate information; and
 - b) Certification by the owner or operator and a professional engineer that closure has been completed in accordance with the approved closure plan and this article.

5. Each owner or operator shall prepare and implement a written closure plan approved by the department as part of the permitting process. The closure plan must:
 - a) Estimate the largest area ever requiring final cover at any time during the active life of the site;
 - b) Estimate the maximum inventory of solid waste onsite over the active life of the facility;
 - c) For landfills, describe the final cover and the methods to install the cover;
 - d) Project time intervals at which sequential partial closure or closure is to be implemented;
 - e) Describe the resources and equipment necessary for closure; and
 - f) Identify closure costs estimates and provide financial assurance mechanisms as required by chapter 33-20-14.

History: Effective December 1, 1992; amended effective October 1, 1994.

General Authority: NDCC 23-29-04

Law Implemented: NDCC 23-29-04, 23-29-07

33-20-06.1-03. Closure criteria. In addition to sections 33-20-04.1-05 and 33-20-04.1-09, at closure, an owner or operator shall cover an existing unit with a layer of compacted soil material having a thickness of eighteen inches [45.7 centimeters] or more and a hydraulic conductivity of 1×10^{-7} centimeters per second or less. The compacted layer must be free from cracks and extrusions of solid waste. A second layer of twelve inches [30.5 centimeters] or more of clay-rich soil material suitable for serving as a plant root zone must be placed over the compacted layer. At least six inches [15.2 centimeters] of suitable plant growth material must be placed over the covered landfill and the facility planted with adapted grasses. The total depth of final cover must be three feet [91.4 centimeters] or more, as required to achieve subsection 3 of section 33-20-06.1-02.

History: Effective December 1, 1992; amended effective August 1, 1995.

General Authority: NDCC 23-29-04

Law Implemented: NDCC 23-29-04

South Dakota

74:27:15:01. Applicability. This chapter applies to all MSWLFs. Rubble sites, construction demolition sites, and restricted-use sites must comply with the applicable provisions of subdivisions 74:27:15:03(2), (3)(b), and (4) to (7), inclusive, and §§ 74:27:15:05 to 74:27:15:09, inclusive.

Nonmunicipal solid waste monofills and other types of facilities not specifically listed must comply with the applicable provisions of §§ 74:27:15:02 to 74:27:15:11, inclusive.

Source: 17 SDR 8, effective July 26, 1990; 19 SDR 186, effective June 10, 1993.

General Authority: SDCL 34A-6-1.6.

Law Implemented: SDCL 34A-6-1.6, 34A-6-1.8, 34A-6-1.37.

74:27:15:02. Performance standard. The owner or operator of a facility must close the facility and each landfill unit in conformance with § 74:27:15:03 to minimize the need for

further maintenance and minimize the postclosure formation and release of leachate and explosive gases to groundwater, surface water, air, and soils in order to protect human health, to prevent degradation of the environment, and to provide productive postclosure land use. The owner or operator shall perform postclosure care activities to ensure that the closure of the facility and of each landfill unit of the facility meet the performance standard. Postclosure use of the property may not disturb the integrity of the final cover, liners, or any other components of the containment system or the functioning of the monitoring systems, unless, upon demonstration by the owner or operator, the secretary determines that the activities will not increase the potential threat to human health or safety and will not degrade the environment.

Source: 17 SDR 8, effective July 26, 1990; 19 SDR 186, effective June 10, 1993.

General Authority: SDCL 34A-6-1.6.

Law Implemented: SDCL 34A-6-1.6, 34A-6-1.8.

74:27:15:03. Closure requirements. Upon closing a landfill unit or other land disposal facility, the owner or operator shall commence closure activities within 30 days of the last receipt of wastes and shall complete closure activities within 180 days of the last receipt of wastes. The owner or operator must meet the following closure requirements:

- 1) Eliminate disease vectors;
- 2) Post the site to indicate that the site is closed to further dumping and to indicate where the new site is located;
- 3) Cover the site as follows:
 - a) The owner or operator of a MSWLF unit shall install a final cover system that is designed to minimize infiltration and erosion. The final cover system shall comprise a topsoil layer underlaid by an infiltration layer as follows:
 - (i) The infiltration layer shall consist of a minimum of 18 inches of earthen material that has a permeability less than or equal to the permeability of any bottom liner system or natural subsoils present or a permeability corresponding to § 74:27:12:21, whichever is less; and
 - (ii) The topsoil layer shall consist of a minimum of 6 inches of earthen material that is capable of sustaining perennial plant growth;
 - b) The owner or operator of another type of facility shall cover the facility with two feet of earth capable of sustaining perennial vegetation;
- 4) Maintain access control at the facility;
- 5) Fill, grade, and contour the site to eliminate slumping, settling, or ponding of water above any previous active disposal area;
- 6) Maintain and periodically inspect the site until it has settled and no further filling or draining problems exist; and
- 7) Maintain a cover of perennial vegetation to include mowing or grazing as necessary, that is adequate to prevent excessive erosion or runoff.

Source: SL 1975, ch 16, § 1; transferred from § 34:13:03:12, 7 SDR 4, effective July 31, 1980; transferred from § 44:11:03:11, effective July 1, 1981; 13 SDR 129, 13 SDR 141, effective July 1, 1987; 17 SDR 8, effective July 26, 1990; transferred from § 74:27:03:11, 19 SDR 186, effective June 10, 1993.

General Authority: SDCL 34A-6-1.6, 34A-6-5.

Law Implemented: SDCL 34A-6-1.6, 34A-6-1.8, 34A-6-12.

74:27:15:04. Closure plan. The owner or operator shall prepare a written closure plan that describes the steps necessary to close the facility at any point during its active life in accordance with the closure performance standard in § 74:27:15:02. The closure plan, at a minimum, must include:

- 1) An estimate of the maximum operational areas that will be open at any time during the active life of the facility;
- 2) An estimate of the maximum inventory of wastes that will be on-site over the active life of the facility;
- 3) A description of the anticipated future use of the disposal site property;
- 4) A description of the methods, procedures, and processes to be used to close the facility and each landfill unit of the facility;
- 5) A time schedule, including the anticipated dates for closure of the facility and progressive closure of each landfill unit of the facility;
- 6) Procedures for closure of the facility and of each landfill unit of the facility;
- 7) A description of the final contours and grading of the site and how slumping, settling, and ponding of water on the surface will be minimized;
- 8) A description of the final cover, including the soil type and source, depth, compaction specifications, topsoil, and revegetation plans;
- 9) A description of access control to the site, including signs posted indicating that the site is closed;
- 10) A description of surface water controls that will be established or maintained at the site; and
- 11) Cost estimates, including calculations, for hiring a third party to complete each closure activity.

Source: 17 SDR 8, effective July 26, 1990; 19 SDR 186, effective June 10, 1993.

General Authority: SDCL 34A-6-1.6.

Law Implemented: SDCL 34A-6-1.6, 34A-6-1.8.

74:27:15:05. Closure notification. The owner or operator shall notify the secretary in writing at least 90 days before the estimated date of closure of the facility or any MSWLF unit.

Source: 17 SDR 8, effective July 26, 1990; 19 SDR 186, effective June 10, 1993.

General Authority: SDCL 34A-6-1.6.

Law Implemented: SDCL 34A-6-1.6, 34A-6-1.8.

74:27:15:06. Closure certification. Upon completion of closure of the facility or any MSWLF unit, the owner or operator shall provide the secretary a certification on a form

provided by the secretary confirming that the provisions of the closure plan have been carried out and that the facility has been closed in accordance with the performance standard of § 74:27:15:02.

Source: 17 SDR 8, effective July 26, 1990; 19 SDR 186, effective June 10, 1993.

General Authority: SDCL 34A-6-1.6.

Law Implemented: SDCL 34A-6-1.6, 34A-6-1.8.

74:27:15:07. Notation on deed. Following closure of the facility, the owner or operator shall record a notation on the deed to the property or on some other instrument that is normally examined during a title search. The owner or operator may request permission from the secretary to remove the notation from the deed if all wastes have been removed from the facility. The notation on the deed notifies any potential purchaser of the property that the land has been used as a solid waste facility and its use is restricted under § 74:27:15:02.

Source: 17 SDR 8, effective July 26, 1990; 19 SDR 186, effective June 10, 1993.

General Authority: SDCL 34A-6-1.6.

Law Implemented: SDCL 34A-6-1.6, 34A-6-1.8.

Wisconsin

NR 506.08 Closure requirements. Any person who maintains or operates a landfill, or who permits use of property for such purpose shall, when the fill area or portion thereof reaches final grade, or when the department determines that closure is required, cease to accept solid waste and close the landfill or portion thereof in accordance with the plan approval issued by the department and the following minimum practices unless otherwise approved by the department in writing:

(1) NOTIFICATION PROCEDURES.

(a) At least 120 days prior to closing the landfill, the owner or operator shall notify the department in writing of the intent to close the landfill and the expected date of closure. Prior to this date, the owner or operator shall notify all users of the landfill of the intent to close the landfill so that alternative disposal options can be arranged.

(b) Signs shall be posted at all points of access to the landfill at least 30 days prior to closure indicating the date of closure and alternative disposal facilities. Facilities which are operated by and serve only a single waste generator and are not open to the public are exempt from this provision.

(c) Notice of the upcoming closure shall be published in a local newspaper at least 30 days prior to closure and a copy of the notice shall be provided to the department within 10 days of the date of publication. Facilities which are operated by and serve only a single waste generator and are not open to the public are exempt from this provision.

(2) GENERAL REQUIREMENTS. Within 10 days after ceasing to accept solid waste, the owner or operator shall restrict access by the use of gates, fencing or other appropriate means to insure against further use of the landfill. If the final use allows access, such access shall be restricted until closure has been completed and approved by the department.

(3) CLOSURE. Closure activities shall begin within 30 days after ceasing to accept solid waste. Closure shall be accomplished in the following manner for facilities without a closure plan or plan of operation approved in writing by the department. Placement of final cover in accordance with s. NR 504.07 may be required if the department determines that this type of final cover system is necessary to prevent or abate attainment or exceedance of the groundwater standards contained in ch. NR 140. Municipal solid waste landfills that accepted greater than 100 tons of solid waste per day on an annual basis and ceased accepting municipal solid waste on or before October 8, 1993 shall have final cover placement completed by July 1, 1996. Municipal solid waste landfills that accepted 100 tons or less of solid waste per day on an annual basis and ceased accepting municipal solid waste on or before April 8, 1994 shall have final cover placement completed by July 1, 1996.

(a) The entire area previously used for disposal purposes shall be covered with at least 2 feet of compacted earth having a hydraulic conductivity of no more than 1×10^{-5} cm/sec or if the hydraulic conductivity of the underlying soils or any base liner system is less than 1×10^{-5} cm/sec, then the 2 feet of compacted earth shall have a hydraulic conductivity that is equal to or less than the underlying soils or any base liner system. The final grades shall be sloped adequately to allow storm water runoff. A specific soil type may be required by the department for this 2-foot layer. The department may require the cover layer to be more than 2 feet thick.

(b) Storm water run-on shall be diverted around all areas used for solid waste disposal to limit the potential for erosion of the cover soils and increased infiltration. Drainage swales conveying storm water runoff over previous solid waste disposal areas shall be lined with a minimum thickness of 2 feet of clay.

(c) The final slopes of the landfill shall be greater than 5%, but may not exceed 4 horizontal to one vertical unless otherwise approved by the department.

(d) The finished surface of the disposal area shall be covered with a minimum of 6 inches of topsoil.

(4) ESTABLISHMENT OF VEGETATION. Within 180 days after ceasing to accept solid waste, or if solid waste termination is after September 15, by June 15 of the following year, the owner or operator shall complete seeding, fertilizing and mulching of the finished surface. The seed type and amount of fertilizer applied shall be selected depending on the type and quality of topsoil and compatibility with both native vegetation and the final use. Unless otherwise approved by the department in writing, seed mixtures and applications rates shall be those specified for right-of-ways in accordance with section 630, Wisconsin department of transportation standard specifications for road and bridge construction.

Note: Copies of Wisconsin department of transportation standard specifications for road and bridge construction can be obtained from the department of natural resources, bureau of waste management, 101 S. Webster street, Madison, Wisconsin 53707. Copies are also available for inspection at the offices of the revisor of statutes and the secretary of state.

(5) DEED NOTATION. Following closure of a landfill phase which accepted municipal solid waste after July 1, 1996, the owner or operator shall, within 90 days after closure, record a notation on the deed to the landfill property. The notation in the deed shall in perpetuity notify any potential purchaser of the property that the land has been used as a landfill and its use is restricted to prevent disturbing the integrity of the final cover, liner

or any other components of the containment system or the function of the monitoring systems.

(6) HAZARDOUS AIR CONTAMINANT CONTROL. All landfills which have a design capacity of greater than 500,000 cubic yards and have accepted municipal solid waste shall install a department approved system to efficiently collect and combust hazardous air contaminants emitted by the landfill within 18 months of February 1, 1988 unless the owner can demonstrate that the performance criteria of s. NR 504.04 (4) (f) can be achieved without implementing such a system. Control techniques other than combustion may be approved by the department.

History: Cr. Register, January, 1988, No. 385, eff. 2-6-88; am. (intro.), (1) (a), (b), (2), (3) (intro.), (a) to (c), (4), (6), r. and recr. (5), Register, June, 1996, No. 486, eff. 7-1-96.

NR 514.08 Closure plans. Closure plans may be required by the department for solid waste disposal facilities which do not have an approved plan of operation under s. 289.30, Stats., or which are required by order or approval to develop a closure plan, as remediation for groundwater or surface water contamination, or to control gas migration. Closure plans shall present the complete plans and engineering analysis necessary for evaluation of the design, remaining operation, monitoring, closure and post closure care of the facility. These closure plans shall address all the requirements of s. NR 506.08. The department may require that the plans address any or all of the information contained in chs. NR 504, 507, 508, 512, 514 and 516.

History: Cr. Register, May, 1992, No. 437, eff. 6-1-92; r. and recr., Register, June, 1996, No. 486, eff. 7-1-96; am., Register, August, 1997, No. 500, eff. 9-1-97.

NR 514.09 Expedited plan modifications.

(1) APPLICABILITY.

(a) If requested by the owner or operator, this section applies to all proposals to modify provisions in approved plans of operation, except those identified in par. (b), that would not result in a violation of a statute or administrative rule, or an existing written condition contained in a department approval document, and would not require issuance of an exemption by the department. Modifications to which this section applies include, but are not limited to the following:

1. Revisions to surface water control systems.
2. Revisions to gas extraction systems.
3. Use of alternate borrow sources following the department's performance of initial site inspections.
4. Soil daily cover.
5. Access roads within a landfill.
6. Waste filling sequence.
7. Replacement of damaged or nonfunctional features of gas extraction systems or leachate head wells that do not involve changes in design, location or materials of construction.
8. Groundwater, gas or leachate monitoring well additions.
9. Environmental sampling methods.
10. Installation or abandonment of non-required wells.
11. Self-initiated contaminant investigations.

12. Initiation of assessment monitoring.

13. Except as provided under par. (b), other modifications determined by the department to pose low potential risk of adverse impacts on public health or the environment.

(b) This section does not apply to proposals to modify approved plans of operation which would result in any of the following:

1. Enlargement, relocation or expansion of a landfill.
2. A change in the design or construction of landfill liners, final cover or leachate collection, transfer, recirculation or storage systems.
3. A change which would be less stringent than a federally-mandated requirement.

(2) PROCEDURE. A proposal to modify an approved plan of operation is deemed approved under s. 289.30 (6), Stats., if both of the following occur:

(a) The owner or operator submits a written proposal to the department which describes the proposed plan modification. The owner or operator shall indicate in the cover letter to the proposal which subdivision of sub. (1) (a) he or she believes the proposed plan modification falls under, and that he or she wishes for the proposal to be reviewed under the expedited process outlined in this section.

(b) Either the department does not object to the proposed modification within 30 days after receipt of the notice under par. (a), or the department withdraws its objection to the proposal. Notification by the department that it does not consider a proposed plan modification submitted under sub. (1) (a) 13. to pose a low potential risk of adverse impacts on public health or the environment shall be considered to be an objection, and therefore, subject to the dispute resolution process of sub. (3).

(3) DISPUTE RESOLUTION.

(a) If the department objects to a proposed modification under sub. (2), the following procedures apply:

1. Within 20 days after the department objects to the proposed modification, the owner or operator may file a request with the secretary of the department for a conference to discuss the reasonableness of the department's objection to the proposed modification.
2. The secretary may designate appropriate department personnel to confer with the owner or operator regarding the reasonableness of the objection. The designated department personnel shall include supervisory personnel who did not participate in the objection to the proposed modification.
3. The department personnel designated by the secretary shall make arrangements to confer with the owner or operator at the earliest practical time. The department shall promptly notify the owner or operator in writing whether or not the objection to the proposed modification will be withdrawn.

(b) This section does not affect in any manner any other provision of law authorizing administrative or judicial review of a department objection under this section.

History: Cr. Register, June, 199, No. 486, eff. 7-1-96; renum. (1) (a) 1. to 10. to be (1) (a) 4. to 13., am. (1) (a) (intro.) and (b) 2., cr. (1) (a) 1. to 3., Register, August, 1997, No. 500, eff. 9-1-97.

NR 516.06 Closure of landfill areas. In addition to the requirements of s. NR 516.04 (3), all construction documentation reports for the closure of landfill areas shall contain the following minimum information:

(1) ENGINEERING PLANS. A set of 24 inch by 36 inch engineering plan sheets, unless an alternative size is approved by the department in writing, prepared in accordance with s. NR 500.05 and including:

(a) A plan sheet documenting the final refuse grades, including daily or intermediate cover. Documentation of grades shall include spot elevations taken on a maximum 100-foot grid after grading has been performed to establish uniform slopes. Documentation of grades for landfills which primarily accept papermill sludge or other low strength wastes may be performed at the surface of the support layer, accompanied with documentation of the thickness of the support layer on a 100-foot grid and the orientation of any geosynthetics and pipe used for reinforcement, separation, filtration or drainage. For areas less than 4 acres, a 50-foot grid shall be used.

(b) A plan view drawing for each one-foot thickness of clay placed showing the locations of the various soil testing performed at each test location. Multiple plan views may be presented on a single engineering plan sheet if legibility is not compromised.

(c) A plan view drawing showing the location of all geomembrane tests, geomembrane panel layout, geomembrane patches and seam repairs, and geomembrane destructive samples.

(d) A plan sheet documenting the constructed final cap grades prior to topsoil placement on a maximum 100-foot grid. Approved final cap grades shall be shown for the same area in a clear and legible manner. For areas less than 4 acres, a 50-foot grid shall be used.

(e) A plan sheet documenting the gas and condensate transfer piping layout, top of header pipe elevation at each gas extraction well, at all major changes in slope and at the driplegs and the condensate tank, and the location of the anti-seep collar around pipes exiting the waste.

(f) Cross-sections through the closed area which are constructed parallel and perpendicular to the base line of the landfill. A minimum of 4 cross sections shall be submitted, 2 of which shall be in each direction. Each of the cross-sections shall show all surficial and subsurface features encountered including gas extraction wells or vents, leachate lines, and other landfill structures and shall be tied into the grades of adjacent previously filled areas. At a minimum, each cross section shall show actual sub-base grades, base grades, final refuse grades, and final topsoil grades.

(g) Detail drawings, plan view and cross-section, of typical gas extraction wells or gas vents, bedding and assembly of the lateral and header pipes, header pipe joining details, header pipe exiting the site, valves, driplegs, manholes, lift stations, collection tanks, and blower building and flare.

(h) Cross section details shall be included to illustrate all important construction features of the final cover, drainage systems for gas condensate, and sediment control and storm water management structures.

(i) Detail drawings shall be included for gas header and gas condensate drain lines outside the limits of waste in critical areas of below-ground piping such as where several pipes cross or meet to illustrate sufficient pipe location and invert information.

(2) REPORT PREPARATION. A comprehensive report containing a detailed narrative describing the closure of the area in a logical fashion shall be prepared. Particular emphasis shall be placed on any deviations from the approved plans. This report shall also include the following information at a minimum:

(a) An analysis and discussion of all soil and geomembrane testing work performed. All density and moisture content testing results shall clearly indicate which Proctor curve or line of optimums is applicable to the soil being compacted. Any changes in the referenced Proctor curve or line of optimums shall be identified as to when they occurred and why the change was made. All raw data from the soil and geomembrane testing performed shall be included in an appendix to the closure documentation report unless other arrangements were previously approved by the department. The raw data shall be summarized using a tabulated format. Also included shall be the make, model, weight and foot length of each piece of equipment used to compact clay.

(b) A table containing thicknesses of each layer in the cover system on a 100-foot grid pattern. When determining soil thickness by using surveying information, the table shall contain elevations before and after soil layer placement on the 100-foot grid. For areas less than 4 acres, a 50-foot grid shall be used. As an alternative to the survey method, soil thickness shall be controlled using settlement plates and grade stakes, and clay thickness shall be established on a 100-foot grid using auger borings. Boreholes shall be backfilled with a soil-bentonite mix such that the in-place permeability of the backfilled material is equal to or less than the surrounding clay cap.

(c) When the auger method is used to determine soil layer thicknesses, a discussion of how the auger boreholes were backfilled and the materials used.

(d) A table showing gas extraction well construction information including: location, surface elevation, depth of the borehole, top of casing elevation, elevation and length of the solid and perforated piping, elevation and length of the gravel backfill, bentonite seal and other backfill materials.

(e) Daily summary reports shall be prepared for each day that installation of geomembrane or other geosynthetics is either attempted or accomplished for composite-capped landfills and shall contain the information required in s. NR 516.05 (2) (e).

(f) The rates and types of fertilizer, seed and mulch applied. Liming requirements shall also be included along with the actual rate of application.

(g) A series of properly labeled 35 millimeter color prints which document all major aspects of facility closure. This shall include panoramic views of the closed area as well as close-up photos of the construction process and completed engineering structures such as gas extraction wells or vents, blower and flare stations, cleanout ports, manholes, gas condensate tanks and other pertinent structures.

History: Cr. Register, January, 1988, No. 385, eff. 2-6-88; r. (1) (d), (2) (e) renum.

(intro.), (1) (intro.), (a), (b), (d), (f), (2) (intro.), (a), (f), (g) from NR 516.07 (intro.), (1) (intro.), (a), (b), (c), (e), (2) (intro.), (a), (b), (c) and am. (intro.), (1) (a), (b), (f), (2) (intro.), (a), cr. (1) (c), (e), (g) to (i), (2) (b) to (e), Register, June, 1996, No. 486, eff. 7-1-96; am. (2) (e), Register, August, 1997, No. 500, eff. 9-1-97.