

ORDER OF THE STATE OF WISCONSIN NATURAL RESOURCES BOARD
REPEALING, RENUMBERING, RENUMBERING AND AMENDING, AMENDING AND
CREATING RULES

The Wisconsin Natural Resources Board proposes an order to repeal NR 514.10(1)(b)(intro.); to renumber NR 514.10(1)(a)1. and (b)1. to 3., 5. and 6.; renumber and amend NR 514.07(9) and 514.10(1)(a)2. and (b)4.; to amend NR 504.06(5)(dm) and (e), 504.095(1)(d) and (2)(b), 506.135(1)(a) to (e) and (h), (2)(a) to (c) and (e) to (f), 512.09(6)(a), 514.07(7)(c) and (i), 514.10(1)(title), 516.07(2)(c)2., 516.08(1) and 520.10; and to create NR 514.07(9)(b) to (f) pertaining to landfilling of solid waste.

WA-15-06

Analysis prepared by the Department of Natural Resources

Statutes Interpreted

ss. 289.24(1), 289.30(4), and 289.41, Wis. Stats.

Statutory Authority

ss. 289.05(1) and (3), 289.06(1), 289.24(1), 289.30(4), and 227.11, Wis. Stats.

Explanation of Agency Authority to Promulgate the Proposed Rule under the Statutory Authority

In ss. 289.05, 289.06 and 289.07, Wis. Stats., the department has the duty and authority to promulgate rules implementing ch. 289, Wis. Stats., and to conduct or direct investigations and studies related to solid waste disposal.

Related Statute or Rule

None.

Plain Language Analysis of the Proposed Rule

These proposed rule revisions applicable to municipal solid waste (MSW) landfills require that measures be taken by MSW landfill owners to reduce the long-term environmental and public health risks of their landfills. An additional proposed revision makes a technical change in the testing required for newly installed landfill liners. The proposed rules also include drafting format and style corrections to existing rules.

Summary of and Preliminary Comparison of Existing or Proposed Federal Regulations Intended to Address the Activity to be Regulated by the Proposed Rule

None.

Comparison of Similar Rules in Adjacent States (MN, IA, IL and MI)

None of surrounding states' rules address measures to explicitly reduce the long-term risk of MSW landfills. Minnesota's rule prohibiting the landfilling of unprocessed municipal solid waste originating

from the Twin Cities metropolitan area unless processing capacity is unavailable ensures that a significant amount of organic material will either be incinerated or taken out of Minnesota for disposal.

Summary of the factual data and analysis methodologies that the agency used in support of the proposed rules and how any related findings support the regulatory approach chosen for the proposed rule.

The proposals related to reducing the long-term risk of municipal solid waste landfills and the change in landfill liner testing were products of work groups composed of department staff and external stakeholders. Many of the members have experience in numerous other states and countries. The cumulative solid waste management experience of the groups' members was multiple hundreds of years.

Any analysis and supporting documentation that the agency used in support of the agency's determination of the proposed rule's effect on small business under s. 227.114, Stats., or that was used when the agency prepared an economic impact report.

In the past (pre-1985), there were a large number of small landfills in Wisconsin. With the enactment of the Federal RCRA sub-title D regulations, small landfills started to close due to the requirement and the cost of compliance. Presently, there are no active landfills that meet the definition of a small business.

Effect on Small Businesses

No small businesses are affected by this rule.

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SECTION 1. NR 504.06(5)(dm) is amended to read:

NR 504.06(5)(dm) A geotextile shall be used to line the base and sidewalls of all leachate collection trenches and shall be placed directly over the geomembrane component of a composite liner or the clay component of a clay liner. The geotextile shall have a minimum weight of 12 oz/yd², and ~~shall~~ may not be overlapped over the top of the trench. The geotextile specifications, including manufacturer's data for grab and puncture strength, shall be used to demonstrate that the geotextile can resist damage due to impact and puncture when aggregate is placed over the geotextile.

SECTION 2. NR 504.06(5)(e) is amended to read:

NR 504.06(5)(e) The bedding material utilized in backfilling the leachate collection pipe trenches shall have a uniformity coefficient of less than 4, a maximum particle diameter of 1½ inches, a maximum of 5% of the material which passes the number 4 sieve and consist of rounded to subangular gravel. A minimum depth of 4 inches of gravel shall be placed in the trenches prior to installation of the leachate pipes. The backfill shall also be placed such that a minimum of 6 inches of material exists above the top of the pipe and within the trenches. An additional 12 inches of material shall be mounded above the trench. In cases where the particle size of the drainage blanket is significantly less than the collection trench bedding, a properly designed graded soil filter or geotextile shall be utilized to minimize the

migration of the drainage blanket material into the collection trenches. Limestone and dolomite ~~shall~~ may not be used in the leachate collection system unless no other suitable material is reasonably available.

SECTION 3. NR 504.095(1)(d) is amended to read:

NR 504.095(1)(d) Leachate recirculation distribution systems ~~shall~~ may not discharge leachate within 100 lateral feet of the exterior sideslope final grades unless otherwise approved by the department in writing.

SECTION 4. NR 504.095(2)(b) is amended to read:

NR 504.095(2)(b) The leachate distribution system shall be designed to minimize evaporation of the leachate and volatilization of compounds in leachate. The leachate distribution system shall be designed to distribute the leachate in a manner that results in its absorption into the waste mass after application. Spray irrigation systems that are designed to promote evaporation ~~shall~~ may not be utilized.

SECTION 5. NR 506.135(1)(a) to (e) and (h) are amended to read:

NR 506.135(1)(a) Leachate recirculation distribution systems ~~shall~~ may not discharge leachate within 100 lateral feet of the exterior sideslope final grades, unless otherwise approved by the department in writing.

(b) Leachate ~~shall~~ may not be introduced in areas with less than 20 feet of waste over the leachate collection system.

(c) Leachate ~~shall~~ may not be recirculated in areas that do not have active gas extraction systems installed. The gas extraction systems shall be operated in accordance with the approved leachate recirculation plan to control any additional gas generated by leachate recirculation and minimize release of uncontrolled gas.

(d) Leachate recirculation shall be suspended upon discovery of warning symptoms, as identified in the approved leachate recirculation plan. Leachate recirculation ~~shall~~ may not resume in the area where the problem occurred until changes are made to the system or the warning symptoms have declined to acceptable levels. The operator shall notify the department in writing within 7 days of the discovery of warning symptoms and suspension of leachate recirculation. Alternative notification procedures may be approved by the department in writing.

(e) Leachate recirculation shall be suspended whenever any of the failure thresholds identified in the approved leachate recirculation plan are exceeded. Leachate recirculation ~~shall~~ may not resume until the department has reviewed and approved changes to the system that will result in meeting the thresholds. The operator shall notify the department within 3 days of the discovery of exceeding any failure threshold. Alternative notification procedures may be approved by the department in writing.

(h) Leachate ~~shall~~ may not be recirculated where daily or intermediate cover consists of low permeability clay soil or low permeability wastes, unless the daily or intermediate cover is removed or scarified.

SECTION 6. NR 506.135(2)(a) to (c) and (e) to (f) are amended to read:

NR 506.135(2)(a) Leachate ~~shall~~ may not be applied in a manner that results in ponding of leachate on the surface.

(b) Leachate ~~shall~~ may not be applied in a manner that allows runoff of leachate beyond the application area.

(c) Leachate ~~shall~~ may not be applied using a spray system or any other distribution system that promotes evaporation of leachate or volatilization of compounds in leachate. Spray systems such as spray bars on the back of a tanker truck may be acceptable if the spray is directed downward.

(e) Leachate ~~shall~~ may not be applied during wet or windy conditions that would prevent containment of the leachate to the application area.

(f) Truck traffic shall be routed around the application area until ~~such time as~~ the application area is covered to prevent tracking of leachate.

SECTION 7. NR 512.09(6)(a) is amended to read:

NR 512.09(6)(a) Landfills shall meet the requirements of pars. (b) ~~to~~ and (c) where they will accept municipal solid waste and contain leachate collection lines that exceed 1,200 feet from the end of each cleanout to the toe of the opposite slope. Where the requirements of this subsection differ from other requirements of this chapter, these requirements shall take precedence.

SECTION 8. NR 514.07(7)(c) and (i) are amended to read:

NR 514.07(7)(c) ~~Calculations of proposed loading rates.~~ Proposed loading rates for leachate recirculation shall be calculated for each leachate drainage basin. Calculation methods shall be defined so that supplemental calculations can be performed to accommodate changes due to field observations, waste characteristics, weather and other factors. Factors to be addressed shall include recirculated volumes of leachate, precipitation based on local records and on-site data, field capacities and absorptive capacities of the landfilled waste, waste filling rates, separation distances and elevations of distribution piping or wells, and loss of water by waste decomposition processes and water vapor in landfill gas.

(i) ~~Landfill gas extraction.~~ The plan of operation shall include diagrams and narrative concerning gas extraction equipment, fittings and devices to be used to extract gas produced as a result of leachate recirculation. The plan of operation shall contain a schedule of operation of the gas extraction system in those cells which are subject to leachate recirculation.

SECTION 9. NR 514.07(9) is renumbered NR 514.07(9)(a) and amended to read:

NR 514.07(9)(a) The plan of operation for all new and expanded municipal solid waste landfills submitted to the department after January 1, 2007 shall include a plan for significantly reducing the amount of degradable organic material remaining after site ~~closure~~ closing in order to materially reduce the amount of time the landfill will take to achieve landfill organic stability. All owners and operators of all municipal solid waste landfills that have a plan of operation approved between January 1, 2004 and January 1, 2007 shall submit a plan modification to the department no later than January 1, 2007 for significantly reducing the amount of degradable organic material remaining after site ~~closure~~ closing in order to materially reduce the amount of time the landfill will take to achieve landfill organic stability. Owners and operators of all other municipal solid waste landfills at which filling has not exceeded 50% of the landfill's approved capacity by January 1, 2012, shall submit a plan modification to the department no later than January 1, 2012, for significantly reducing the amount of degradable organic material remaining after site closing in order to materially reduce the amount of time the landfill will take to achieve landfill organic stability. Waste that has already been disposed of prior to the date the plan is

approved by the department is not subject to the planning requirement, but may be included in the plan at the discretion of the landfill operator.

Note: “Closing” is defined in s. 289.01(5), Stats., as “the time at which a solid or hazardous waste facility ceases to accept wastes, and includes those actions taken by the owner or operator to prepare the facility for long-term care and to make it suitable for other uses.”

SECTION 10. NR 514.07(9)(b) to (f) are created to read:

NR 514.07(9)(b) Landfill organic stability plans required by this subsection shall include the following information:

1. An overview of the plan.
2. An initial analysis of the composition and quantity of materials that will be accepted by the landfill, including a classification of organic materials and percentage of organically inert materials, and a description of how the analysis was performed.
3. A description of measures to be undertaken by the landfill owner or operator, or by others, including diversion to non-landfill management of organic material, pre-landfill mechanical or biological treatment of organic material, or in-landfill treatment of organic material, that will significantly reduce the amount of degradable organic material remaining after site closing and shorten the time the landfill will take to achieve landfill organic stability.
4. A schedule for implementing the plan.
5. The anticipated outcome of implementing the plan, relative to the landfill organic stability goals in par. (c) and the definition of landfill organic stability in s. NR 500.02(120g).
6. A description of how the effectiveness of the implemented plan will be monitored and evaluated. Plans shall include a description of the methods that will be used to monitor and evaluate the progress of the facility in implementing the plan, and measurements or milestones to be used in evaluating progress towards the goals in par. (c) and the plan’s anticipated outcome.
7. A contingency plan outlining measures to be taken if periodic evaluation of the landfill organic stability efforts indicate the facility is unlikely to achieve the goals in par. (c).

(c) The objective of landfill organic stability plans is achievement of all of the measured goals in subds. 1. to 4. The department may not interpret the goals in subds. 1. to 4. as enforceable environmental quality standards:

1. A monthly average total methane plus carbon dioxide gas production rate less than or equal to 5% of the maximum monthly average total gas production rate observed during the life of the facility, or less than 7.5 cubic feet of total gas per year for each cubic yard of waste in the facility.
2. A steady downward trend in the rate of total methane plus carbon dioxide gas production.
3. Production of total methane plus carbon dioxide gas cumulatively representing 75% or greater of the projected total gas production of the landfilled waste.

4. Reduction of the time necessary to reach landfill organic stability to 40 years or less after site closing.

(d) The landfill owner or operator shall continually evaluate the performance of the implemented landfill organic stability plan, and report progress, results, changes in waste composition and problems to the department no less frequently than annually. The first annual report is due 12 months after the department's approval of the landfill organic stability plan. The department may approve an alternative reporting schedule. Each annual report shall include an evaluation of whether changes are needed in the plan to correct problems or improve results. In addition, the landfill owner or operator may update the contingency plan.

(e) The landfill owner or operator shall examine progress against the approved plan every 5 years to evaluate the likelihood that the plan will enable the facility to reach the goals in par. (c), and determine whether the contingency plan in par. (b)7. will be implemented. A report describing the evaluation and determination shall be submitted to the department as part of the annual report for that year. The department may require that the contingency plan be implemented if its review finds that the progress the landfill has made is significantly different than the approved plan.

(f) If the landfill owner or operator submits the landfill organic stability plan as a modification to an existing plan of operation, the department shall either approve or disapprove the plan modification in writing within 90 days after submission of a complete plan. If the landfill organic stability plan is included by the operator as part of a new plan of operation, the review times in s. NR 514.04(5) shall apply.

SECTION 11. NR 514.10(1)(title) is amended to read:

NR 514.10(1) GENERAL REQUIREMENTS FOR RESEARCH, DEVELOPMENT AND DEMONSTRATION PLANS.

SECTION 12. NR 514.10(1)(b)(intro.) is repealed.

SECTION 13. NR 514.10(1)(a)1. and 2. and NR 514.10(1) (b)1. to 6. are renumbered NR 514.10(1)(a) to (h). NR 514.10(1)(b) and (f) as renumbered are amended to read:

NR 514.10(1)(b) No landfill owner or operator may continue to implement a research, ~~development,~~ development and demonstration plan beyond any time limit placed in the initial plan approval or any renewal without issuance of written approval by the department. Justification for renewals shall be based upon information in annual and final reports as well as research and findings in technical literature.

(f) An annual report shall be prepared for each year of the testing period and a final report shall be prepared for the end of the testing period. These reports shall assess the attainment of goals proposed for the process selected for testing, recommend changes, recommend further work, and summarize problems and their resolution. Reports shall include a summary of all monitoring data, testing data and observations of process or effects and shall include recommendations for continuance or termination of the process selected for testing. Annual reports and final reports shall be submitted to the department within 3 months after the anniversary date of the written approval by the department. ~~Final reports shall be submitted by the end of the testing period.~~

SECTION 14. NR 516.07(2)(c)2. is amended to read:

NR 516.07(2)(c)2. Destructive seam test samples shall be taken at the rate of one sample per 500 feet of fusion seam accomplished, unless another frequency or spacing is approved by the department. For landfills conducting leak location testing in accordance with par. (d), destructive seam test samples shall be taken at a rate of one sample per 1,000 feet of fusion seam accomplished, unless another frequency or spacing is approved by the department. A portion of the sample shall be tested both in the field and in the laboratory for shear and peel with a minimum of 5 samples for each test type. The quality assurance engineer or qualified technician shall choose the location of the destructive seam samples.

SECTION 15. NR 516.08(1) is amended to read:

NR 516.08(1) REQUIREMENTS. Landfills shall meet the requirements of subs. (2) ~~to~~ and (3) where they will accept municipal solid waste and contain leachate collection lines that exceed 1,200 feet from the end of each cleanout to the toe of the opposite slope. Where the requirements of this section differ from other requirements of this chapter, these requirements shall take precedence.

SECTION 16. NR 520.10 is amended to read:

NR 520.10 **Adjustment of financial responsibility.** Proof of the increase in the amount of all bonds, letters of credit, insurance policies, escrow accounts and trust accounts, or other approved methods established under this chapter shall be submitted annually to the department. The owner of a facility identified in Table 1 as being required to establish proof of financial responsibility shall prepare and submit new cost estimates whenever changes to the design or operation of the facility are proposed or otherwise occur which affect the cost of closure, long-term care or remedial actions. The owner of a facility may use information gathered in conjunction with the requirements of s. NR 514.07(9) to propose adjustments which affect the cost of long-term care or remedial actions. In addition, where trust accounts, escrow accounts or deposits with the department have been established to provide financial responsibility, revised proof of financial responsibility calculations shall be performed and submitted to the department any time waste acceptance rates have increased enough to lower the projected remaining operational life of the landfill by one year or more, or when the weighted average annual rate of return of any trust or escrow account has fallen by 1% or more.

SECTION 17. EFFECTIVE DATE. This rule shall take effect on the first day of the month following publication in the Wisconsin administrative register as provided in s. 227.22(2) (intro), Stats.

SECTION 18. BOARD ADOPTION. This rule was approved and adopted by the State of Wisconsin Natural Resources Board on June 28, 2006.

Dated in Madison, Wisconsin _____

STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES

By _____
Scott Hassett, Secretary

(SEAL)