

SUBJECT: Request authorization for public hearings on Board Order WA-33-10, revisions to NR 500, 502 and 518, relating to composting facilities

FOR: OCTOBER 2010 BOARD MEETING

TO BE PRESENTED BY: Ann Coakley, Director, Bureau of Waste and Materials Management

SUMMARY:

Demand is increasing among generators of organic waste materials such as restaurants, food service facilities and grocery stores for non-landfill disposal methods such as composting. The proposed rule revisions expand the range of organic materials that can be accepted by municipal and commercial compost facilities to include additional types of food scraps as well as compostable, non recyclable paper and other source-separated compostable materials to meet this demand while maintaining appropriate environmental protections. The proposed rule revisions would also make it easier for farmers who operate compost facilities on their property to accept food scraps and related materials. In addition, compost producers have long advocated the development of state compost quality standards to help define in the marketplace the attributes of a high-quality compost product. Compost quality standards have the potential to expand the demand for compost, thereby facilitating the diversion of compostable material from landfills, where it decomposes to create methane, a global warming gas. The proposed rule would establish numerical limits on trace metals, pathogens, inert contaminants and compost maturity/stability; these limits would only apply to compost operators wishing to produce "Class A compost," a new optional category of compost defined in the rule. Class A compost could only be produced from source-separated compostable material such as yard residuals, food scraps, non-recyclable paper, manure, crop residues and other commonly composted and well-understood materials. The proposed rule would primarily affect municipal and commercial compost facility operators. Other affected parties would include generators of food scraps and other compostable materials, compost users such as transportation departments, landscapers, homeowners and public works agencies, and others in the waste management industry.

RECOMMENDATION: Authorize public hearings for Board Order WA-33-10, revisions to NR 500, 502 and 518 relating to composting facilities.

LIST OF ATTACHED MATERIALS:

- | | | | | | |
|----|-------------------------------------|---|-----|-------------------------------------|----------|
| No | <input type="checkbox"/> | Fiscal Estimate Required | Yes | <input checked="" type="checkbox"/> | Attached |
| No | <input checked="" type="checkbox"/> | Environmental Assessment or Impact Statement Required | Yes | <input type="checkbox"/> | Attached |
| No | <input type="checkbox"/> | Background Memo | Yes | <input checked="" type="checkbox"/> | Attached |

APPROVED:

Ann Coakley by Colin Staud
Bureau Director,

9/20/2010
Date

Suzanne Bangert
Administrator,

9/20/2010
Date

Matt Frank
Secretary, Matt Frank

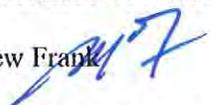
10-13-10
Date

- cc: Laurie J. Ross - AD/8
- Kate Cooper - WA/5
- Brad Wolbert - WA/5
- Dan Graff - LS/8

CORRESPONDENCE/MEMORANDUM

DATE: September 27, 2010

TO: Natural Resources Board

FROM: Matthew Frank 

SUBJECT: Request Authorization for Public Hearing for Board Order WA-33-10, Proposed Revisions to NR 500, 502 and 518, Relating to Composting of Solid Waste

I. WHY THE RULE IS BEING PROPOSED*A. Action or event that triggered the proposed rule?*

Large segments of the business community, local government and other organizations are increasingly interested in operating in an environmentally sustainable manner. Businesses and institutions that generate unwanted organic materials such as food scraps are seeking outlets for managing these materials that do not involve landfilling. Composting is the traditional way of managing organic discards in a manner that retains the productive value of these materials. However, Wisconsin's regulations governing compost facilities, contained in s. NR 502.12, Wis. Adm. Code, were developed primarily for the management of yard residuals. They do not adequately facilitate composting of mixed food scraps, compostable paper and other routine organic discards. In addition, because Wisconsin's administrative rules do not provide any standards for compost quality, commercial compost producers believe that they are not rewarded (in terms of market price) for manufacturing high-quality compost. This situation led a group of composters and recyclers, under the aegis of the Associated Recyclers of Wisconsin (AROW), to petition the department to promulgate administrative rules establishing compost quality standards for high-quality compost made from source-separated compostable materials. The department received the petition for rulemaking in the form of a letter from AROW dated March 5, 2008.

B. What issues are addressed by this rule?

The proposed rule defines a category of solid wastes called "source-separated compostable materials" that can be composted with relatively little risk to public health and the environment. It establishes the operating procedures, locational restrictions, design elements and other parameters under which these materials can be composted without full-scale plan review by department staff. This represents an expansion of the current system, which applies the same approach to a more limited set of compostable materials such as yard trimmings. In addition, the rule establishes standards for a new category of compost, "Class A compost," which could only be made from source-separated compostable materials. Compost producers choosing to make Class A compost would be subject to testing requirements and their product would have to meet numerical limits on metals, pathogens, inert contaminants and maturity/stability in order to be marketed as Class A compost.

II. SUMMARY OF PROPOSED RULE

The proposed rule expands the existing system of streamlined permitting for certain types of compost facilities. The permitting system is established in s. NR 502.12, Wis. Adm. Code, and is based on the facility's size and the risks associated with the raw materials being composted, in addition to general environmental protection provisions applying to all compost facilities. In addition, the proposed rule

introduces optional compost quality standards that compost producers and users can rely on to identify higher-quality compost products made using carefully controlled processes and low-risk feedstocks.

A. Expanded system of streamlined permitting: Compost facilities are considered to be solid waste processing facilities. Because composting limited quantities of certain natural materials such as yard trimmings, farm animal manure and crop residues carries such a low risk of significant harm to the environment and public health, the department, like its counterpart agencies in most other states, has for many years regulated these composting operations using a simplified set of requirements. The proposed rule would expand the list of permissible materials that could be composted in limited quantities without triggering the requirement for the composting facility to obtain a solid waste processing approval. The new list would include mixed food scraps, non-recyclable paper, fish processing residues, aquatic plants and greenhouse residuals. It would exclude more variable and potentially contaminated materials like biosolids or sewage sludge, municipal solid waste and high-volume industrial wastes.

The categories of composting facilities not subject to classification as solid waste processing facilities would also be expanded to reflect current demand for composting among a variety of businesses and institutions such as grocery stores, hospitals, schools and universities, restaurants and special events. Farms as well as yard material composting facilities would be allowed to accept food scraps for incorporation into the composting process without obtaining a processing facility license so long as they meet the general code requirements for composting facilities.

B. General environmental protection provisions applying to all compost facilities: The proposed rule clarifies and strengthens certain operating and design criteria that apply to compost facilities. These include increasing the minimum carbon-to-nitrogen ratio from 12:1 to 20:1, prohibiting the movement of composted livestock carcasses from farm to farm, requiring additional attention by compost site operators to stormwater pollution controls, and requiring most non-farm facilities to annually report compost volumes produced.

C. Voluntary compost quality standards: The proposed rule revisions define standards for a new category of compost product, "Class A compost." Class A compost could only be made from source-separated compostable materials. These are defined in the rule to include relatively benign and well-understood organic residuals such as yard trimmings, food residuals, non-recyclable paper, herbivorous animal manure, crop residues and other similar materials. Compost facility operators choosing to produce Class A compost must keep records showing compliance with temperature and residence time standards, and must demonstrate compliance with numerical criteria for pathogens, metals, inert contaminants and maturity/stability through a regimen of periodic sampling and testing in accordance with industry best practices. The metals standards in the rule are set at levels that would prevent any degradation of Wisconsin soil quality while reflecting the ability of composters to consistently produce compost with low concentrations of toxic metals.

III. HOW DOES THE RULE AFFECT EXISTING POLICY?

A 2009 study on the composition of wastes in Wisconsin landfills shows that more than 10 percent of the material Wisconsinites landfill is food scraps. In all, at least one-third of the waste that is landfilled could be composted and returned to the soil. Wisconsin's waste management hierarchy favors composting over landfilling, and it is department policy to reduce the adverse environmental impacts and risks of landfilling. The proposed rule would facilitate the diversion of organic material from landfilling by

reducing the regulatory impediments to composting food scraps and by increasing the marketability of high-quality compost. By making it easier and more economically rewarding to compost, the rule would reduce the overall environmental impacts of managing organic waste materials. The proposed rule would also enhance existing policy on the regulation of compost facilities by upgrading operational standards in the areas of stormwater management, acceptable carbon-to-nitrogen ratios (which affect the potential to cause unpleasant odors) and the speed with which newly received materials are incorporated into the composting process.

IV. HAS THE BOARD DEALT WITH THESE ISSUES BEFORE?

The current administrative rule governing compost facilities, s. NR 502.12, Wis. Adm. Code, dates back to 1996. This rule put into place the current system of graduated regulation for increasingly complex composting situations. The Board also dealt with the issue of organic material in landfills in 2006 with the approval of the landfill organic stability rule, s. NR 514.07(9), Wis. Adm. Code. This rule allows diversion to composting as one management approach for reducing the long-term risk of undecomposed organic material in Wisconsin's landfills.

V. WHO WILL BE IMPACTED BY THE PROPOSED RULES?

The parties most affected by the proposed rule are operators of municipal and commercial composting facilities. Others that might be affected include waste haulers, landfill owners, and businesses, institutions and organizations that generate compostable material, especially food scraps. The latter groups would include restaurants, groceries, schools and universities, hospitals and nursing homes, airports and other large food service providers. Users of compost may also be affected by the proposed rules, for example if the supply of compost is increased in the marketplace and it is easier to distinguish high-quality compost products.

The department worked closely with a Technical Advisory Committee comprised of commercial and municipal compost producers, environmental groups, University of Wisconsin soil scientists and representatives of the Wisconsin Department of Agriculture, Trade and Consumer Protection and the Wisconsin Department of Transportation (a major compost user). Department staff also provided information to, and solicited comments from, other potentially affected parties as the proposed rule was drafted.

VI. POTENTIAL CONTROVERSY

The department does not anticipate any significant controversy arising from the proposed rule. The main affected parties, the compost producers, petitioned the department to undertake this rulemaking and representatives from that group assisted the department as members of the Technical Advisory Committee. Generators of organic materials and potential high-volume users of compost have also expressed interest in having updated compost rules that make it easier to compost a variety of source-separated organic materials and that establish a set of standards for high-quality compost in the marketplace. Landfill operators have the potential to lose revenue as a result of this rule, because more organic material would be diverted from landfilling to composting. However, landfill operators have the option of operating their own composting facilities, and many Wisconsin operators have already taken advantage of this opportunity.

VII. INFORMATION ON ENVIRONMENTAL ANALYSIS

Under the provisions of s. NR 150.03(6)(b)3b., Wis. Adm. Code, Environmental Analysis and Review Procedures for Department Actions, this is a Type III action, since the rule will result in no material adverse impacts to the human environment. The rule is designed to increase the composting of organic materials and reduce the amount of material that is disposed of in landfills. The Waste and Materials Management program concludes, and the department's Integrated Science Services program confirms, that it is not necessary to prepare an environmental analysis for this proposed rule.

VIII. SMALL BUSINESS ANALYSIS

A. 1. *Describe the compliance and/or reporting requirements imposed on small business.*

The proposed rule maintains most of the existing compliance requirements for composting facilities that do not choose to produce Class A compost as defined in the rule. In addition, certain compliance requirements are eased:

- the proposed rule would make it possible to compost mixed food and a wider variety of source-separated compostable materials without obtaining a solid waste processing approval;
- farmers could incorporate food and other compostable materials into their manure and crop residue composting operations without a solid waste processing approval, and
- finished compost less than 6 months old would not count against a composting facility's capacity limits.

A few other compliance requirements would be somewhat more stringent under the proposed rule:

- the minimum carbon-to-nitrogen ratio would be increased from 12:1 to 20:1 (reflecting generally accepted composting practices);
- facility operators would have to comply with minimum requirements for stormwater control (in lieu of obtaining coverage under a stormwater permit under ch. NR 216, Wis. Adm. Code); and
- most commercial and municipal compost facilities would be required to submit a brief annual report to the department indicating the volume and type of material composted the previous year.

Compost producers opting to make Class A compost would also need to test compost samples a few times per year to ensure that their material meets the quality standards in the proposed rule for pathogens, metals, inert contaminants and maturity/stability.

2. *Can these compliance and/or reporting requirements be made less stringent for small business?*

The proposed rule is structured to minimize compliance and reporting requirements for small businesses as well as municipalities that operate composting facilities, as follows:

Almost all composting facilities are classified under both the current and proposed rules as "exempt" facilities. This means they do not have to comply with certain requirements that apply to the very largest compost facilities (e.g., yard residual composting facilities with a capacity greater than 20,000 cubic yards) or the more general category of solid waste processing facilities. Most composting facilities that would be covered under the proposed rule are exempted from managing liquids that contact materials

being composted as leachate, which requires collection into a basin or tank sized for a 24-hour storm event with a recurrence interval of 25 years, as well as sampling and testing. They are also exempt from having to construct an asphalt, concrete or recompacted clay pad on which to conduct composting operations. Exempt yard residual composting facilities, which make up the vast majority of exempt facilities, as well as exempt on-farm composting facilities, do not have to submit a plan of operation for department approval. Under both the current and proposed rules, operators of exempt composting facilities are not subject to requirements to provide proof of financial responsibility, do not have to provide the department with construction documentation ("as-builts") for approval prior to operation, and do not have to sample and test their compost unless (under the proposed rule) they wish to produce Class A compost.

In addition to the above, all composting facilities regulated under s. NR 502.12, Wis. Adm. Code are exempt by rule from plan review and licensing fees.

B. 1. Describe the schedules or deadlines for compliance or reporting imposed on small business.

To the extent there are new compliance requirements in the proposed rule, they would take effect upon publication of the rule. Most of the compliance requirements, such as operational standards and recordkeeping requirements, reflect current industry practices and are not expected to impose a burden on small businesses producing compost.

Reporting would be on an annual basis during the slack season for compost producers. It would involve the minimum information, such as material quantities, needed by the department to develop a statewide estimate of compost production.

2. Can these schedules or deadlines be made less stringent for small business?

The compliance requirements are designed to protect the environment from any risks associated with composting (e.g., odors, surface water or groundwater contamination) and need to be in effect upon promulgation of the rule. Therefore, they cannot be amended or relaxed for small business.

C. Can the compliance or reporting requirements for small business be consolidated or simplified?

The current and proposed composting facility rules represent a simplification of the general NR 502 rules for solid waste processing facilities, tailored to the particular characteristics of compost facility design and operation. A single-page form will be developed to ease any burden associated with the annual report that would be required of most facilities by the proposed rule.

D. Can performance standards be established for small businesses in lieu of design or operational standards?

The proposed rule relies primarily on performance standards for most farm composting operations. The operational standards that would apply to other exempt composting facilities reflect standard industry practices and include a number of qualitative measures proportional to the goal of preventing these facilities from causing nuisance conditions. The design standards in the current and proposed rules are performance-based, not prescriptive. Therefore, much of the proposed rule is performance-based already and it is not feasible to make it more so.

E. Can small business be exempted from any requirements of the rule?

The rule is structured around a series of graduated exemptions based on the capacity of the composting facility and the environmental risk posed by the materials to be composted at the facility. Most composting facilities would qualify for exemptions from full regulation under the proposed rule. Because most of the operations that will be governed by the rule are small businesses or municipalities, exempting small business from the rule would undermine the environmental protections the rule provides. It would create an uneven playing field for commercial facilities relative to municipal facilities.

F. Initial Regulatory Flexibility Analysis

1. Describe the type of small business that will be affected by the proposed rule.

The rule regulates compost facilities. Wisconsin has less than 250 licensed compost facilities, 75 percent of which are municipally owned facilities. The remainder are commercial facilities, of which some are owned by large waste disposal companies and the rest are small businesses of one to 10 employees. The rule would also affect farmers that wish to compost crop residues, manure or animal carcasses on their property. Some of these would be classified as small businesses.

2. Briefly explain the reporting, bookkeeping and other procedures required for compliance with the rule.

The reporting requirements in the rule would not require additional records to be kept by compost operators beyond those already necessary for conducting business (e.g., volume or tonnage records). For owners opting to make Class A compost, periodic sampling of the compost would be required, and records would need to be kept on windrow turning frequency and temperature patterns. The producers most likely to produce Class A compost are those who already keep such records and sample their compost for quality testing.

3. Describe the type of professional skills necessary for compliance with the rule.

The proposed rule would not require skills any different than those required by the current rule. Compost facility operators will need to understand the principles of composting, how to move large quantities of materials, how to control drainage and traffic, how to make basic physical measurements such as volume, temperature and bulk density, and how to calculate carbon-to-nitrogen ratios using standard recipe calculators. These skills are currently necessary in any case to the business of composting. Under both the current and proposed rules, operators of new or expanding non-exempt compost facilities would need to enlist the help of an engineer to for facility design and plan preparation.

**Technical Advisory Committee
for
Source-separated Organics Compost Quality Standards Rulemaking**

Name	Affiliation	Phone	Email	Interest
Brad Wolbert	WDNR	608-264-6286	Brad.Wolbert@wisconsin.gov	Agency staff
Kate Cooper	WDNR	608-267-3133	CatherineE.Cooper@wisconsin.gov	Agency staff
Joe Van Rossum	UW-Solid & Hazardous Waste Education Center	608-262-0936	vanrossum@epd.engr.wisc.edu	General Experience
Kathy Powell	Recycling Connections Corporation	715-345-5972	kathy@recyclingconnections.org	Recyclers
Sandy Syburg	White Oak Farm	920-355-4042	sandv.syburg@whiteoakfarmorganics.com	Commercial Composter- Eastern Wisconsin
Tom Dummer	Green Earth Compost Products	608-386-9532	tdumm@charter.net	Commercial Composter- Western Wisconsin
Michelle Gerrits	WDOT	608-264-8417	Michelle.Gerrits@dot.state.wi.us	Compost User
Dick Wolkowski	UW – Madison Soil Science Dep't	608-263-3913	rpwolkow@wisc.edu	Crop Nutrition
Tom Wright	UW – West Madison Ag Research Sta.	608-262-2257	thwright@wisc.edu	Composter
Robert Regan	Dane County Public Works Dep't	608-266-4139	regan@co.dane.wi.us	Municipal Composter
Eric Uram	Sierra Club	608-233-9022	eric.uram@sierraclub.org	Environment
Sara Walling	WDATCP	608-224-4524	Sara.Walling@wisconsin.gov	Ag Rules and Issues
Charlene Khazae	WDATCP	608-224-4541	Charlene.Khazae@wisconsin.gov	Ag Rules and Issues

4/22/09

Fiscal Estimate — 2009 Session

<input checked="" type="checkbox"/> Original	<input type="checkbox"/> Updated	LRB Number	Amendment Number if Applicable
<input type="checkbox"/> Corrected	<input type="checkbox"/> Supplemental	Bill Number	Administrative Rule Number NR 502.12

Subject
 Regulation of Composting Facilities and Compost Quality Standards

Fiscal Effect

State: No State Fiscal Effect
 Indeterminate

Check columns below only if bill makes a direct appropriation or affects a sum sufficient appropriation.

Increase Existing Appropriation Increase Existing Revenues
 Decrease Existing Appropriation Decrease Existing Revenues
 Create New Appropriation

Increase Costs — May be possible to absorb within agency's budget.
 Yes No
 Decrease Costs

Local: No Local Government Costs
 Indeterminate

1. Increase Costs
 Permissive Mandatory
 2. Decrease Costs
 Permissive Mandatory

3. Increase Revenues
 Permissive Mandatory
 4. Decrease Revenues
 Permissive Mandatory

5. Types of Local Governmental Units Affected:
 Towns Villages Cities
 Counties Others
 School Districts WTCS Districts

Fund Sources Affected
 GPR FED PRO PRS SEG SEG-S

Affected Chapter 20 Appropriations

Assumptions Used in Arriving at Fiscal Estimate

The proposed rule revisions would:

- (1) make it easier to compost food scraps and certain other compostable materials without having to obtain a solid waste processing license from the Department, and
- (2) provide voluntary standards for compost producers to use if they wish to make and market a higher quality compost from source-separated compostable materials.

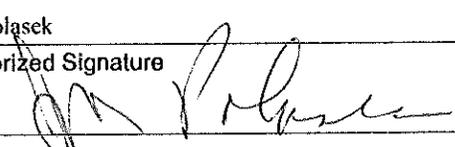
STATE REVENUES: One of the goals of the rule revisions is to promote more diversion of compostable food, paper and other materials from landfills. This would have a negative impact on revenues from state solid waste tonnage fes. Current fees total \$13/ton. A recent study of the amount of food material disposed of in landfills concluded that in 2009, some 456,000 tons of food scraps were landfilled. If the new rules resulted in the diversion of five percent of this material to composting by year 3 of the new rule, the result would be a revenue decrease of 22,800 tons x \$13/ton = \$296,000. Five percent reflects our belief that the proposed rule could have a noticeable impact on food diversion, but is unlikely to have a major impact without other factors being addressed such as the difficulty of organized collection of residential food and a significant increase in the demand for compost. Composting volumes are also driven by business decisions by individual compost facility operators and generators of compostable material such as institutions, restaurants and grocery stores. An additional future factor will be the choice between composting and anaerobic digestion for the processing of food scraps. Therefore, we believe five percent is an achievable reduction in landfill tonnage to project as a direct result of these proposed rule changes.

The Department does not charge review fees for compost facilities, and this would not change under the proposed rules, so no changes in program revenues are expected.

STATE COSTS: We do not anticipate significant changes in staff workload as a result of the proposed rules.

Long-Range Fiscal Implications

We anticipate that demand for organic materials, and interest by generators in diverting organics from landfills, will continue to increase in the long run with or without the proposed rule changes. Therefore the marginal fiscal impact of this rule would be minimal.

Prepared By: Joe Polasek	Telephone No. 266-2794	Agency Department of Natural Resources
Authorized Signature 	Telephone No. 266-2794	Date (mm/dd/ccyy) 09-20-10

Fiscal Estimate — 2009 Session

**Page 2 Assumptions Narrative
Continued**

LRB Number	Amendment Number if Applicable
Bill Number	Administrative Rule Number NR 502.12

Assumptions Used in Arriving at Fiscal Estimate – Continued

LOCAL GOVERNMENT EFFECTS: The proposed rule includes a minimal amount of required annual reporting on a DNR form for certain compost facility operators. Some local governments operate compost facilities, particularly for yard residuals collected from residents. The reporting is estimated to require one hour per year. Assuming there are approximately 150 local government compost facilities, @\$50/hour, we estimate aggregate local government costs totaling \$7,500 per year statewide for reporting. However, the ability of local government compost facilities to accept food residuals from local generators such as schools, university campuses, hospitals, institutions and local businesses would likely offset these costs in the aggregate, through fees and reduced waste hauling costs. It should be noted that many local government compost operators may not choose to accept additional materials beyond the yard residuals they already accept.

Some local governments may opt to produce Class A compost as defined and authorized under the proposed rule revisions. This option will require periodic testing of compost product. We estimate no more than 10 local governments will choose to produce Class A compost. Testing costs would total \$150/test x 4 tests/year x 10 producers = \$6,000. However, these costs should be more than offset by increased revenues to the compost producers because Class A compost will demand a higher price in the marketplace.

Fiscal Estimate Worksheet — 2009 Session
 Detailed Estimate of Annual Fiscal Effect

Original Updated
 Corrected Supplemental

LRB Number	Amendment Number if Applicable
Bill Number	Administrative Rule Number NR 502.12

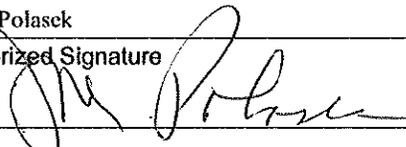
Subject
 Regulation of Composting Facilities and Compost Quality Standards

One-time Costs or Revenue Impacts for State and/or Local Government (do not include in annualized fiscal effect):
 None

Annualized Costs:		Annualized Fiscal Impact on State Funds from:	
		Increased Costs	Decreased Costs
A. State Costs by Category			
State Operations — Salaries and Fringes		\$ -	\$ -
(FTE Position Changes)		(FTE)	(FTE)
State Operations — Other Costs		-	-
Local Assistance		-	-
Aids to Individuals or Organizations		-	-
Total State Costs by Category		\$ -	\$ -
B. State Costs by Source of Funds			
GPR		\$ -	\$ -
FED		-	-
PRO/PRS		-	-
SEG/SEG-S		-	-
State Revenues	Complete this only when proposal will increase or decrease state revenues (e.g., tax increase, decrease in license fee, etc.)	Increased Revenue	Decreased Revenue
GPR Taxes		\$ -	\$ -
GPR Earned		-	-
FED		-	-
PRO/PRS		-	-
SEG/SEG-S		-	296,400
Total State Revenues		\$ -	\$ - 296,400

Net Annualized Fiscal Impact

	State	Local
Net Change in Costs	\$ -	\$ -
Net Change in Revenues	\$ -296,400	\$ -

Prepared By: Joe Polasck	Telephone No. 266-2794	Agency Department of Natural Resources
Authorized Signature 	Telephone No. 266-2794	Date (mm/dd/ccyy) 09-20-10

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

The Wisconsin Natural Resources Board proposes an order to **repeal** NR 502.12(1)(a) to (f), (8)(a)4. and 6. and (9); **renumber** NR 502.12(8)(a)5., 7. and 8.; to **renumber and amend** NR 502.12(4)(e)3.(note); to **amend** NR 500.03(45), (185), (253) and (262), NR 502.12(title), (1)(intro.) and (note), (2), (3)(title), (intro.) and (a), (4)(title), (intro.), (c), (e)(intro.) and 3., (5)(title), (intro.), (b) to (e) and (f)(intro.), 1. and 2., (6)(title), (intro.), (b), (c) and (e), (7)(title), (intro.), (a) to (c), (8)(title) and (a)(intro.), (10)(intro.) and (a) to (e), (h)3. and (j)(note), (11)(intro.), (a) and (b), (12)(a) and(b), (13)(title), (intro.), (b), (e), (f), (g), (h) and (k), (14)(a) and NR 518.04(1)(intro.), (b) and (i); to **repeal and recreate** NR 502.12(4)(e)2., (7)(e) and (f), (8)(b), (11)(d), (15), (table 1) and (table 2); and to **create** NR 500.03(20r), (29), (30g), (30r), (44m), (86m), (88m), (155m), (219m) and (253m), NR 502.12(4)(e)4., (8)(c), (11)(e), (13)(m), (n), (o) and (p), and (16) relating to composting of solid waste.

WA-33-10

Analysis prepared by the Department of Natural Resources

1. Statutes Interpreted

ss. 287.05, 289.30 and 289.31, Stats.

2. Statutory Authority

ss. 227.11, 289.05, 289.06, 289.07 and 289.43, Stats.

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

Section 227.11, Stats., confers general agency rule-making authority. Sections 289.05, 289.06 and 289.07, Stats., assign the duty and provide the authority to the Department to promulgate rules implementing ch. 289, Stats. Section 289.43, Stats., gives the Department the authority to specify by rule types of solid waste facilities that are not required to be licensed under ss. 289.21 to 289.32 or types of solid waste that need not be disposed of at a licensed solid waste disposal facility.

4. Related Rule or Statute

None

5. Plain Language Analysis of the Proposed Rule

Composting is regulated as a form of solid waste processing that converts decomposable organic materials to a substance with many beneficial uses and avoids the adverse environmental impacts of landfill disposal or incineration. The proposed rule revisions would (1) expand the types and quantities of decomposable organic materials that could be composted with minimal regulation, and (2) provide a voluntary set of quality standards for certain finished compost products,

allowing commercial and municipal composters to distinguish their high-quality compost products in the marketplace.

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

None.

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

Adjacent states' compost regulations have a number of basic similarities to those of Wisconsin, but vary significantly from each other in their details. Note that Michigan, Minnesota and Illinois, like Wisconsin, are in various stages of revising their composting regulations, in large part as a response to burgeoning interest among food residuals generators nationwide in diverting their material from landfills. Iowa's compost regulations are relatively new, and Iowa's DNR is considering proposals to revise them to facilitate larger-scale food residuals composting.

Minnesota regulations establish two categories of composting facilities: (a) yard material facilities, which are subject to a permit-by-rule system similar in effect to Wisconsin's exemption for yard material compost sites with less than 20,000 cubic yards' capacity, and (b) facilities for composting all other materials, which must obtain individual permits. Minnesota requires all composting facilities to file an annual report with the state regulatory agency. Facilities accepting decomposable material other than yard residuals for composting are subject to design and other permit requirements that were developed for municipal solid waste composting. These have been criticized as being overly strict when applied to materials like food scraps and non-recyclable paper—hence the effort underway to revise the composting rules to establish a “middle” category of composting facility that would avoid some of the current regulatory impediments to composting food and other source-separated decomposable materials. For non-yard facilities, Minnesota's rules require testing of the compost product, and imposes quality standards under a classification system that distinguishes between high quality (Class I) compost suitable for unrestricted use, and Class II compost, the use of which is restricted. The metals standards for the two compost classes are based on federal standards for landspreading sewage sludge, or biosolids, contained in Part 503 of the federal Clean Water Act. Minnesota does apply a more stringent limit to mercury content as well as a PCB limit.

In **Illinois**, composting is relatively highly restricted by the state. Composting facilities must be individually permitted similar to facilities such as landfills, except for facilities at which landscape material is composted and used on an agricultural crop farm. The practical implication of this regulatory system is that food scrap composting is not economically feasible in Illinois. Illinois legislators have recently proposed bills to remove the regulatory barriers to food scrap composting.

In **Michigan**, the composting rules are being revised to align composting of food scraps and other decomposable materials with composting of yard residuals. Current Michigan rules do not include general standards for composting materials other than yard residuals, and composters of more than 500 cubic yards are required to obtain a solid waste processing permit. The exception to this requirement is food scraps, which, because they are not considered solid waste in Michigan, are not subject to any composting requirements. In practice, Michigan has very few composting sites other than those for yard residuals in part because local authorities are hesitant to issue permits for food scrap composting in the absence of state rules. Michigan's proposed rules would allow source-separated compostable materials similar to Wisconsin's proposed

definition to be composted with yard residuals without plan review, a site-specific permit or an overall limit on the size of the site. The rule would impose operational standards on composting facilities that are comparable to Wisconsin's, with more stringent standards for liners and for control of liquids. Farm sites would be subject to fewer restrictions so long as they were not operating as a large commercial compost operation. The proposed compost facility standards include annual reporting requirements and requirements for testing and labeling of compost products, but do not impose numerical standards for chemical constituents in general-use composts made from yard residuals or source-separated compostable materials.

Iowa's compost regulations establish a tiered system similar to Wisconsin's in concept, with exemptions for small, on-premises and agricultural sites, a permit-by-rule provision for yard residual composting facilities, and an individual permit system for larger composting facilities accepting materials other than yard residuals. Permit-by-rule facilities as well as permitted facilities are required to report volumes annually. Iowa allows permit-by-rule composting of mixed food and yard materials up to 2 tons per week, as well as unlimited quantities of yard residuals and on-farm ag materials. Permit-by-rule and permitted facilities have operational and design requirements comparable to those in Wisconsin for exempt and non-exempt facilities, respectively. Compost from permitted facilities must be tested for pathogens and metals, and meet standards equivalent to federal Part 503 biosolids standards, in order to be applied to land or marketed. Permitted facilities receiving more than 5,000 cubic yards of feedstock annually are subject to financial assurance requirements.

8. Summary of the Factual Data and Analysis Methodologies that the Agency Used in Support of the Proposed Rule and How Any Related Findings Support the Regulatory Approach Chosen for the Proposed Rules

The Department developed the proposed rule in response to a petition for rulemaking brought by composters and recyclers through the Associated Recyclers of Wisconsin (AROW). To ensure sound and informed technical and policy analysis, the Department formed a technical advisory committee composed of stakeholders representing municipal and commercial composters, the University of Wisconsin, AROW, the environmental community, the Wisconsin Department of Transportation (a potential large-scale user of compost) and the Wisconsin Department of Agriculture, Trade and Consumer Protection. Department staff also consulted with a number of other external interested parties from municipal government, the waste disposal industry, compostable materials generators and other groups. Staff performed an extensive comparison of compost regulations and compost quality standards in other states, Canada and Europe, and reviewed the development of the current federal risk-based metals limits for biosolids.

9. Any Analysis and Supporting Documentation that the Agency Used in Support of the Determination of the Proposed Rule's Effect on Small Business

Small businesses were the driving force behind the petition for rulemaking that prompted the Department to develop these rules. The Department consulted directly with small businesses through the technical advisory committee during the development of the proposed rule language, and also worked closely with staff of the University of Wisconsin's Solid & Hazardous Waste Education Center, who are familiar with the concerns of small composting businesses and compostable materials generators.

10. Anticipated Cost Incurred by the Private Sector

Private sector impacts from the proposed rule revisions are expected to be neutral to positive. The proposed rules do not require generators of compostable materials to compost or to alter their current arrangements for waste disposal. However, many generators of compostable materials, including small-to-medium size groceries and large national food retailers, hospitals, event sponsors, restaurants and institutions, have encountered difficulties finding an outlet for diverting food scraps from landfill disposal. The proposed rule addresses this need. In facilitating the development of composting businesses and infrastructure, the proposed rule would provide generators with additional options for disposing of unwanted materials, some of which might cost less than landfill disposal. These generators believe it is in their long-term business interests to divert organic materials from landfilling.

Composters should benefit from being able to accept additional materials into their operations without complex permit requirements. Composters that choose to make Class A compost as defined under the proposed rule may incur additional costs for testing, although some of these composters already perform such testing on their own initiative. Private sector composters may also incur minor increased costs for recordkeeping and annual reporting, although these costs will be minimized by use of a simple, standard form, and may be mitigated by (1) the operational utility of the data that they will be generating, and (2) the larger array of materials that their facilities can accept under the rule while maintaining a relatively low level of regulatory oversight.

Waste hauling companies should still be able to enter into contracts and perform work hauling food and other compostable materials, even if the destination of those materials changes from the landfill to a composting facility. Waste disposal companies have expressed interest in operating their own compost facilities to accept yard and food materials, and several facilities in Wisconsin have already commenced operations. The economics of these waste disposal company activities are not clear, but the costs of operating a small compost facility are likely outweighed by the benefits to the landfill facility of the compost that is being produced to serve as topsoil, cover soils, or a marketable product.

11. Effect on Small Business

The proposed rule is expected to have a small and generally positive impact on small businesses. Small businesses potentially affected by the rule include commercial composters, farmers that compost material brought in from offsite, small businesses that generate food and other compostable material, and small waste hauling businesses.

The rule does not mandate composting. It would make it easier for commercial and municipal composters as well as farmers to accept a variety of source-separated compostable materials, which may enable them to expand their businesses and find new customers. Some composters, such as those producing Class A compost, will have to comply with additional regulations regarding product testing. Most commercial and municipal composters (but not farm composters using only farm-derived inputs) will need to submit an annual estimate of the amount of compost they produce. This reporting requirement has been minimized as much as possible while still providing information needed by the agency to quantify composting activity in Wisconsin.

Small waste hauling businesses may see changes or increases in their businesses if source-separation of organic materials becomes more commonplace. Food scrap generators and other small businesses generating compostable materials may benefit from having a broader choice of options for managing their unwanted organic materials. Keeping organic materials separate from the waste stream may require changes in hauling contracts for those generators that choose to

send their material to be composted, and less frequent pickup of non-putrescible material would partly offset the additional cost associated with separate organics pickup. Eventually, split collection trucks may allow both simultaneous pickup of materials destined for composting and for landfilling.

12. Agency Contact Person

Brad Wolbert
Brad.Wolbert@wisconsin.gov

13. Comments are Submitted to the Following Address and the Deadline for Submittal

Brad Wolbert
Bureau of Waste and Materials Management
Wisconsin Department of Natural Resources
P.O. Box 7921
Madison, WI 53707-7921
Attention: Proposed Compost Rule

Deadline for comments will be set as part of the public hearing process.

SECTION 1. NR 500.03(20r), (29), (30g), (30r), (44m), (86m), (88m), (155m), (219m) and (253m) are created to read:

NR 500.03(20r) "Botanical residuals" means compostable materials and associated mineral soils derived from commercial and noncommercial horticultural activities such as greenhouse and plant nursery operations.

NR 500.03(29) "Class A compost" means compost derived from source-separated compostable materials that has been produced according to the requirements of this subchapter and which meets the requirements of s. NR 502.12(16).

NR 500.03(30g) "Clean chipped wood" means unpainted, untreated and unlaminated wood that has been chipped, ground or shredded into small pieces and is free from contamination by bonding agents, dyes, finishes, chemical preservatives, or physical contaminants such as metal or plastic.

NR 500.03(30r) "Clean sawdust" means sawdust from processing of unpainted, untreated and unlaminated wood that is free from contamination by bonding agents, dyes, finishes, chemical preservatives or physical contaminants such as metal or plastic.

NR 500.03(44m) "Compostable" means susceptible to decomposition by biological processes during composting to yield carbon dioxide, water, inorganic compounds and biomass at a rate consistent with other compostable materials, leaving no visible, distinguishable or toxic residue.

NR 500.03(86m) "Finished compost" means compost that has been processed sufficiently to meet the maturity and stability criteria in Table 2 of s. NR 502.12, and that has been further screened or refined such that it is ready for sale, distribution or use.

NR 500.03(88m) "Food residuals" means unconsumed raw or cooked compostable material that results from handling, preparation, cooking, sale or consumption of food, and includes whole, ground and pulped food scraps, as well as compostable food packaging, utensils, tableware, kitchenware and food containers that meet either the ASTM – D-6400 (2004) or the D-6868 (2003) standard. "Food residuals" includes vegetable and non-vegetable food residuals.

Note: Copies of ASTM standards D-6400-04 and D-6868-03 may be obtained from ASTM International, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959, (610) 832-9585, www.astm.org. Copies of the standard are available for inspection at the offices of the department of natural resources, the secretary of state and the revisor of statutes.

NR 500.03(155m) "Nonrecyclable compostable paper" means paper that is unrecyclable because it has been soiled or is not of a grade that is acceptable to the local recycling program serving the place of generation.

NR 500.03(219m) "Source-separated compostable material" means compostable materials that are separated from non-compostable material at the point of generation for use in composting and are kept separate from municipal solid waste. Source-separated compostable material includes food residuals; farm and non-farm crop residues; botanical residuals; aquatic plants; vegetative food processing residues such as those from cannery and brewing activities; fish harvesting and processing residuals; yard residuals; farm and herbivorous animal manure, excluding deer and elk manure, and associated animal bedding; clean chipped wood; clean sawdust; non-recyclable compostable paper; and other similar materials approved in writing by the department. This term does not include biosolids, domestic wastewater, sewage sludge or septage, high-volume industrial waste, other solid waste or hazardous waste.

NR 500.03(253m) "Vermicomposting" means the controlled and managed process by which live worms convert organic matter into dark, fertile granular excrement.

SECTION 2. NR 500.03(45), (185), (253) and (262) are amended to read:

NR 500.03(45) "~~Composting" means an aerobic decomposition process by which microorganisms or soil invertebrates reduce materials into component compounds, producing carbon dioxide and water as primary by-products~~ the biological degradation and transformation of organic solid waste under controlled conditions designed to promote aerobic decomposition. "Composting" includes vermicomposting.

NR 500.03(185) "Putrescible waste" means solid waste which contains organic matter capable of being decomposed by microorganisms and of such a character and proportion as to be capable of supporting a disease vector population or attracting or providing food for birds. It does not include high-volume industrial waste.

NR 500.03(253) "Vegetable food waste residuals" means food residuals consisting of raw or cooked waste fruit and vegetable material from residences, food establishments such as cafeterias, restaurants, food wholesalers, food retailers and food processors. It also includes food containers which are composed entirely of readily biodegradable materials, such as waxed or unwaxed paper products or corn starch, if the containers have been contaminated with vegetable food by virtue of use. It does not include food containers composed of materials which are not readily biodegradable, such as metal, glass or petroleum derived plastic used in container coatings, layers, or other components, and includes compostable packaging, utensils, tableware, kitchenware and containers that meet either the ASTM - D6400 (2004) or the D-6868 (2003) standard.

Note: Copies of ASTM standards D-6400-04 and D-6868-03 may be obtained from ASTM International, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959, (610) 832-9585, www.astm.org. Copies of the standard are available for inspection at the offices of the department of natural resources, the secretary of state and the revisor of statutes.

NR 500.03(262) ~~“Yard waste residuals” has the meaning specified means yard waste as defined in s. 287.01 (17), Stats., as well as incidental spoiled fruit and vegetables from noncommercial sources.~~

Note: Section 287.01 (17), Stats., defines “yard waste” to mean “leaves, grass clippings, yard and garden debris and brush, including clean woody vegetation material no greater than 6 inches in diameter. This term does not include stumps, roots or shrubs with intact root balls”.

SECTION 3. NR 502.12(title) is amended to read:

NR 502.12(title) Yard, farm, vegetable food waste residuals and source-separated compostable material composting facilities.

SECTION 4. NR 502.12(1)(intro.) is amended to read:

NR 502.12(1) GENERAL. No person may operate or maintain a ~~solid-waste~~ composting facility for ~~yard waste, clean chipped wood residuals,~~ farm crop residue, farm animal manure, animal carcasses ~~or, food residuals including vegetable food waste residuals, or source-separated compostable material~~ except in accordance with the following requirements of this section:

SECTION 5. NR 502.12(1)(a) to (f) are repealed.

SECTION 6. NR 502.12(1)(note) is amended to read:

Note: Pursuant to s. NR 243.15(8), the Department may choose to regulate composting facilities associated with livestock operations that are subject to the requirements of ch. NR 243 under that operation’s Wisconsin Pollution Discharge Elimination System permit instead of under s. NR 502.12. Facilities for composting waste types other than ~~yard waste, clean chipped wood, residuals,~~ farm crop residue, farm animal manure, animal carcasses ~~or vegetable food waste, food residuals or source-separated compostable materials~~ are regulated under s. NR 502.08. Local ordinances may apply to facilities regulated under this section. ~~Tables summarizing applicable requirements are provided at the end of the section.~~

SECTION 7. NR 502.12(2) is amended to read:

NR 502.12(2) HOUSEHOLD EXEMPTION. Facilities for composting only ~~solid-waste~~ source-separated compostable material from a single family or household, a member of which is the owner, occupant or lessee of the property where the facility is located, are exempt from ~~the requirements of s. NR 502.04, the licensing requirement and~~ all requirements of this chapter, provided the facility is operated in a nuisance-free and environmentally sound manner.

SECTION 8. NR 502.12(3)(title), (intro.) and (a) are amended to read:

NR 502.12(3)(title) LIMITED EXEMPTION FOR YARD AND VEGETABLE FOOD WASTE SOURCE-SEPARATED COMPOSTABLE MATERIAL COMPOSTING FACILITIES WITH CAPACITY OF 50 CUBIC YARDS OR LESS.

NR 502.12(3)(intro.) Facilities for composting ~~yard waste, clean chipped wood waste, vegetable food waste or manure~~ source-separated compostable materials which ~~that~~ do not exceed 50 cubic yards at one time, including collected raw materials and compost being processed but excluding finished compost less than 6 months old, are exempt from the requirements specified in s. NR 502.04 (2) to (6), locational criteria, plan of operation submittal, licensing and all other requirements of this chapter provided the following are met:

NR 502.12(3)(a) The ~~requirements~~ performance standards specified in s. NR 502.04 (1) and the minimum operational standards specified in sub. (10).

SECTION 9. NR 502.12(4)(title), (intro.) and (c) are amended to read:

NR 502.12(4)(title) LIMITED EXEMPTION FOR FARM CROP RESIDUE OR MANURE COMPOSTING FACILITIES.

NR 502.12(4)(intro.) Facilities for on site composting of farm crop residue or manure, except deer and elk manure, directly from agricultural operations are exempt from the requirements of s. NR 502.04 (2) to (6), locational criteria, plan of operation submittal, licensing and all other requirements of this chapter, provided all of the following requirements are met:

NR 502.12(4)(c) All the farm crop residue and manure composted are generated from agricultural operations either under common ownership, common management or located adjacent to each other, and the composting occurs on the property of one of these agricultural operations.

SECTION 10. NR 502.12(4)(e)intro. and 3. are amended to read:

NR 502.12(4)(e)intro. ~~If yard waste or clean chipped wood are~~ Source-separated compostable material other than farm crop residue and manure may be accepted from off site for use in the composting process, if the following requirements ~~shall be~~ are met:

NR 502.12(4)(e)3. The combined volume of farm crop residue, farm animal manure, and ~~yard waste and clean chipped wood~~ source-separated compostable material on site at one time may not exceed 10,000 cubic yards, including collected feedstøcks raw materials, the composting process- and compost being processed but excluding finished compost less than 6 months old. The volume of food residual inputs to the composting process may not exceed 25 percent of the total combined volume of raw material inputs. Inputs shall be mixed to achieve an initial carbon to nitrogen ratio of at least 20 to 1.

SECTION 11. NR 502.12(4)(e)2. is repealed and recreated to read:

NR 502.12(4)(e)2. The recordkeeping requirements of sub. (15) (a) 3.

SECTION 12. NR 502.12(4)(e)3.(note) is renumbered NR 502.12(4)(e)4.(note) and amended to read:

Note: Animal manure management is also regulated under ch. NR 243. Composting facilities that accept manure or are located at a livestock operation may be subject to additional state requirements in chs. NR 151 and 243 and in ch. ATCP 51, as well as local regulations for manure storage and shoreland and floodplain zoning. Local Other local ordinances may apply to facilities regulated under this section. Public distribution of the compost may be regulated by the department of agriculture, trade and consumer protection (DATCP). The following landspreading operations are exempt under s. NR 518.04 (1) (b), (h) and (i), respectively, provided the material is applied as a soil conditioner or

fertilizer in accordance with accepted agricultural practices and the facility is operated and maintained in a safe, nuisance-free manner:

- Farms on which only nonhazardous agricultural ~~solid wastes~~ residuals resulting from the operation of a farm, including farm animal manure, are ~~disposed~~ landspread.
- Landspreading of uncomposted yard ~~waste~~ residuals.
- Landspreading composted ~~leaves, grass, brush, vegetable food waste and other similar vegetable matter~~ source-separated compostable material.

SECTION 13. NR 502.12(4)(e)4. is created to read:

NR 502.12(4)(e)4. The reporting requirements in sub. (15)(b).

SECTION 14. NR 502.12(5)(title), (intro.), (b), (c), (d), and (e) are amended to read:

NR 502.12(5)(title) LIMITED EXEMPTION FOR ON SITE FARM ANIMAL CARCASS COMPOSTING FACILITIES.

NR 502.12(5)(intro.) Facilities for on site farm composting of animal carcasses other than deer or elk are exempt from the requirements in s. NR 502.04 (2) to (6), locational criteria, plan of operation submittal, licensing and all other requirements of this section, provided they are in compliance with s. 95.50 (1), Stats., and all of the following:

NR 502.12(5)(b) The minimum operational and design standards in subs. (10) and (11), excluding the size reduction requirements in sub. (10) (c).

NR 502.12(5)(c) Only animal carcasses, farm animal manure, farm crop residue, yard ~~waste~~ residuals and clean chipped wood are composted at the facility.

NR 502.12(5)(d) All the farm wastes composted are generated from agricultural operations either under common ownership, common management or located adjacent to each other, and the composting occurs on the property of one of these agricultural operations.

NR 502.12(5)(e) The compost is utilized for agricultural landspreading, at the same farm or at another farm, in accordance with s. NR 518.04 (1) (b) or (i), except that compost made using ruminant animal carcasses may not be utilized at another farm.

SECTION 15. NR 502.12(5)(f)intro., 1. and 2. are amended to read:

NR 502.12(5)(f)intro. If yard ~~waste~~ residuals or clean chipped wood are accepted from off site, the following requirements shall be met:

NR 502.12(5)(f)1. The yard ~~waste~~ residuals or clean chipped wood shall be mixed with farm wastes to increase the carbon to nitrogen ratio and porosity of the composting process.

NR 502.12(5)(f)2. The combined volume of animal carcasses, farm animal manure, farm crop residue, yard ~~waste~~ residuals and clean chipped wood on site at one time may not exceed 10,000 cubic yards, including collected ~~feedstecks raw materials, the composting process and compost being processed but excluding finished compost less than 6 months old.~~

SECTION 16. NR 502.12(6)(title), (intro.), (b), (c) and (e) are amended to read:

NR 502.12(6)(title) LIMITED EXEMPTION FOR YARD WASTE RESIDUALS COMPOSTING FACILITIES WITH CAPACITY OF 20,000 CUBIC YARDS OR LESS.

NR 502.12(6)(intro.) Facilities for composting yard waste residuals and clean chipped wood waste which that do not exceed 20,000 cubic yards at one time, including raw materials and compost being processed, but excluding finished compost less than 6 months old, are exempt from the requirements in s. NR 502.04 (3) (c), (4), (5) and (6), plan of operation submittal and all other requirements of this chapter, provided all of the following requirements are met:

NR 502.12(6)(b) ~~New For new or expanded facilities, shall comply with the initial site inspection requirements in s. NR 502.04 (2) and demonstrate compliance with the locational criteria in sub. (8).~~ New or expanded facilities with a capacity greater than 1,000 cubic yards shall comply with the initial site inspection requirements in s. NR 502.04 (2).

NR 502.12(6)(c) The minimum operational and design standards in subs. (10) and (11), the recordkeeping requirements of sub. (15) (a) 3, and the reporting requirements in sub. (15) (b).

NR 502.12(6)(e) The compost is utilized for landspreading applied to land, either on site or off site, in accordance with s. NR 518.04 (1) (i), or is otherwise used for horticultural, landscaping or erosion control purposes.

SECTION 17. NR 502.12(7)(title), (intro.), (a), (b) and (c) are amended to read:

NR 502.12(7)(title) LIMITED EXEMPTION FOR VEGETABLE FOOD SOURCE-SEPARATED COMPOSTABLE MATERIAL COMPOSTING FACILITIES OF 500 5,000 CUBIC YARDS OR LESS.

NR 502.12(7)(intro.) Facilities for composting vegetable food waste source-separated compostable material ~~which that exceed 50 cubic yards but do not exceed 500 5,000 cubic yards at one time, including raw materials and compost being processed, but excluding finished compost less than 6 months old,~~ are exempt from the requirements in s. NR 502.04 (3) (c), (4), (5) and (6), plan of operation submittal and all other requirements of this section, subs. (12) and (14), and the monitoring requirements of sub. (15) (a) 1 and 2, provided all of the following requirements are met:

NR 502.12(7)(a) The performance standards and closure requirements in s. NR 502.04 (1) and (3) (a) and (b).

NR 502.12(7)(b) ~~New For new or expanded facilities, shall comply with the initial site inspection requirements in s. NR 502.04 (2) and demonstrate compliance with the locational criteria in sub. (8).~~

NR 502.12(7)(c) The minimum operational and design standards in subs. (10) and (11), the plan submittal requirements in sub. (13), the recordkeeping requirements of sub. (15) (a) 3, and the reporting requirements in sub. (15) (b).

SECTION 18. NR 502.12(7)(e) and (f) are repealed and recreated to read:

NR 502.12(7)(e) For facilities that use animal manure as a raw material, the testing requirements of sub. (15) (a) 1. and 2.

NR 502.12(7)(f) The compost is utilized for landspreading applied to land, either on site or off site, in accordance with s. NR 518.04 (1) (i), or is otherwise used for horticultural, landscaping or erosion control purposes.

SECTION 19. NR 502.12(8)(title) and (a)(intro.) are amended to read:

NR 502.12(8)(title) ~~LOCATIONAL CRITERIA FOR EXEMPT YARD WASTE COMPOSTING FACILITIES AND EXEMPT VEGETABLE FOOD WASTE COMPOSTING FACILITIES.~~

NR 502.12(8)(a)(intro.) ~~Facilities described in sub. (6) or (7)~~ Unless exempt under sub. (2), (3), (4) or (5), new or expanded compost facilities regulated under this section may not be located in any of the following areas unless an exemption has been granted in writing by the department under par. ~~(b)~~ (c):

SECTION 20. NR 502.12(8)(a)4. and 6. are repealed.

SECTION 21. NR 502.12(8)(a)5., 7. and 8. are renumbered to NR 502.12(8)(a)4., 5. and 6.

SECTION 22. NR 502.12(8)(b) is repealed and recreated to read:

NR 502.12(8)(b) In addition to the restrictions in par. (a):

1. Facilities exempt under sub. (6) or (7) may not be located within 250 feet of any navigable lake, pond or flowage, or within 100 feet of land owned by a person other than the owner or operator of the facility, and

2. Facilities not exempt under sub. (2), (3), (4), (5), (6) or (7) may not be located within 500 feet of any navigable lake, pond or flowage, or within 250 feet of land owned by a person other than the owner or operator of the facility.

SECTION 23. NR 502.12(8)(c) is created to read:

NR 502.12(8)(c) The department may grant exemptions from par. (a) 2. to 6. only upon demonstration by the applicant of circumstances which warrant the exemption. Exemption from compliance with par. (a) 1. may not be granted.

Note: Compost facilities associated with livestock operations that are required to have a wastewater discharge permit under the Wisconsin Pollution Discharge Elimination System and that handle manure, animal feed or other agricultural materials may be subject to additional locational requirements in chs. NR 151, NR 243 or ATCP 51.

SECTION 24. NR 502.12(9) is repealed.

SECTION 25. NR 502.12(10)(intro.) and (a) to (e) are amended to read:

NR 502.12(10)(intro.) ~~Unless exempt under sub. (2), (3) or (4),~~ no person may operate or maintain a composting facility regulated under this section except in accordance with the following minimum operational requirements:

(a) ~~Wastes~~ Raw materials accepted for composting shall be source separated at the point of generation so that ~~the wastes~~ they have not been mixed or otherwise contaminated with

nonapproved waste types, particularly materials which are not readily ~~biodegradable~~ compostable. Prior to incorporation into the composting process, the ~~wastes~~ raw materials shall be sorted as needed to ensure that materials which are not readily ~~biodegradable~~ compostable are removed unless alternate operational methods are used in conjunction with equipment to produce a compost product virtually free of physical and chemical contaminants.

Note: Compost product which contains physical or chemical contaminants of concern, such as plastic, glass, metal scraps or regulated concentrations of heavy metals or organic compounds, may require controlled disposal under an approved landspreading plan or at a landfill.

(b) ~~Wastes~~ Raw materials in noncompostable bags shall be debugged within 24 hours of receipt at the facility. Raw materials in compostable bags shall be processed such that the contents of the bags are exposed to air within 24 hours of receipt at the facility. Stored waste shall be managed in accordance with the requirements applicable to the composting process. The following operational standards shall also be met for the wastes specified:

1. Grass clippings, ~~manure~~ and food waste residuals from canned, frozen or preserved fruit or vegetable processing operations shall be incorporated into windrows or ~~other~~ another composting process within 72 hours of receipt at the facility, unless odor becomes a problem at the facility in which case these ~~wastes~~ materials shall be incorporated within 24 hours.

2. Animal carcasses, fish harvesting and processing residuals, manure and food waste residuals which ~~is~~ are not from canned, frozen or preserved fruit or vegetable processing operations shall be incorporated into windrows or another composting process on the same operating day as received at the facility. Upon initial incorporation of ~~animal carcasses or these food wastes~~ residuals, composting windrows or piles shall be covered with a minimum 6 inch layer of compost, high carbon material such as wood chips, or other suitable material to control odor and vectors.

3. All animal carcasses and food waste residuals shall be managed to prevent access by dogs and wild animals ~~from reaching the wastes.~~

(c) ~~Yard waste residuals, wood waste, vegetable food waste, animal carcasses and crop residue~~ Compost raw materials shall be size reduced if necessary to provide adequate particle surface area for effective composting.

(d) Materials within the composting process shall be thoroughly mixed and aerated as frequently as necessary, and windrow height, structure and porosity shall be designed and maintained, to ensure that adequate oxygen is available at all times within the ~~waste~~ windrow or pile to prevent the process from becoming anaerobic.

Note: To maintain aerobic composting and prevent odor, aeration is needed whenever the process temperature rises to 150°F or more, or when the oxygen level drops to 15% or less. Windrows consisting primarily of leaves and wood waste are likely to require turning at least monthly from spring through fall.

(e) Materials shall be mixed into the composting process to provide a minimum initial carbon to nitrogen ratio of ~~12:1~~ 20:1.

Note: For aerobic composting, the optimum carbon to nitrogen ratio ranges from approximately 20:1 to 40:1.

SECTION 26. NR 502.12(10)(h)3. is amended to read:

NR 502.12(10)(h)3. Free of toxins in amounts or concentrations which could cause detrimental impacts to public health or the environment.

SECTION 27. NR 502.12(10)(j)(note) is amended to read:

NR 502.12(10)(j)(note) **Note:** Landspreading of composted leaves, grass, brush, ~~vegetable food-waste~~ and other similar ~~vegetable-matter~~ source-separated compostable material is exempt from department landspreading regulations under s. NR 518.04(1)(i) provided the material is applied as a soil conditioner or fertilizer in accordance with accepted agricultural practices and the facility is operated and maintained in a safe, nuisance-free manner. Public distribution of the compost may be regulated by the department of agriculture, trade and consumer protection (DATCP).

SECTION 28. NR 502.12(11)(intro.), (a) and (b) are amended to read:

NR 502.12(11)(intro.) Unless exempt under sub. (2), ~~(3) or (4)~~ (3), no person may construct or maintain a composting facility regulated under this section except in accordance with the following minimum design standards:

NR 502.12(11)(a) Run-off from the composting area shall be discharged to a gentle ~~gently~~ sloping ~~grassed~~ vegetated area of sufficient size to prevent erosion and any discernible confined and discrete discharge of liquids or suspended solids to surface water ~~discharge~~ from the composting area.

NR 502.12(11)(b) Slope, vegetation and surface water containment ditches and retention basins shall be used at the facility as needed to minimize erosion and maintain diffused surface drainage.

SECTION 29. NR 502.12(11)(d) is repealed and recreated to read:

NR 502.12(11)(d) If inspections performed under sub. (15) (a) 4. indicate improvements in stormwater controls are needed to meet the requirements of pars. (a) through (c), the owner and operator of the facility shall make the needed improvements as soon as practicable.

SECTION 30. NR 502.12(11)(e) is created to read:

NR 502.12(11)(e) The overall composting facility shall be of sufficient size to allow processing of materials as necessary to avoid nuisance conditions, and shall have adequate room for material stockpiles, windrows of manageable dimensions for maintaining aerobic conditions, curing piles, staging of finished compost, and equipment.

Note: Composting facilities that accept manure or are located at a livestock operation may be subject to additional state requirements in chs. NR 151 and 243 and in ATCP 51, as well as local regulations for manure storage and shoreland and floodplain zoning. Other local ordinances may apply to facilities regulated under this section.

SECTION 31. NR 502.12(12)(a) and (b) are amended to read:

NR 502.12(12)(a) All run-off that contacts waste compost, materials being composted or raw materials staged for composting shall be managed as leachate and shall be directed to either a collection basin or a tank. Leachate may be used in the composting operation for moisture

addition. All other leachate shall be treated at a wastewater treatment facility permitted to accept it.

NR 502.12(12)(b) All composting, and all storage of waste uncomposted raw materials and compost, other than leaves, clean chipped wood, clean sawdust and other raw materials with initial carbon-to-nitrogen ratios greater than 30:1 shall take place on a low permeability pad constructed of either asphalt, concrete, recompacted clay or other material approved by the department.

SECTION 32. NR 502.12(13)(title), (intro.), (b), (e), (f), (g), (h) and (k) are amended to read:

NR 502.12(13)(title) PLAN SUBMITTAL REQUIREMENTS FOR NONEXEMPT AND CERTAIN EXEMPT COMPOSTING FACILITIES. Unless the facility is exempt under sub. (2), (3), (4), (5), or (6) or (7), applicants for all new or expanded composting facilities regulated under this section shall submit a plan of operation report and obtain department approval of the plan of operation report prior to construction of the new or expanded facility. Unless an exemption is granted by the department in writing, the plan shall be submitted in accordance with s. NR 500.05, except that facilities exempt under sub. (7) need not comply with s. NR 500.05 (4). The plan shall provide a design which complies with subs. (10), (11) and, as applicable, (12), and contain the following minimum information:

(b) A brief description of the project, including the area served, an estimate of the total annual tonnage and volume of material to be processed and identification of the types of waste feedstocks materials to be composted used in the compost process.

(e) For each ~~waste~~ raw material proposed to be composted, either laboratory or literature data documenting the carbon, nitrogen and moisture, ~~phosphorus and potassium~~ content and pH.

(f) A proposed raw material mix for composting, with calculations or laboratory data documenting the carbon, nitrogen, ~~phosphorus and potassium~~ moisture content and pH of the mix.

(g) A specification of the maximum size, including volume, height and width, for staging piles, composting windrows or other composting processes, curing piles, and finished compost storage. If the waste materials on site at any one time will exceed either 40,000 cubic yards of yard waste residuals and clean chipped wood, 10,000 cubic yards of source-separated compostable materials other than yard residuals and clean chipped wood, or ~~1,000~~ 5,000 cubic yards of vegetable food waste residuals, an estimate of closure costs shall be provided with the plan of operation report, and prior to licensure, proof of financial responsibility in accordance with ss. NR 520.06 through 520.13 shall be provided for the closure costs, including the removal, transport and ultimate disposal of all waste material and compost at the site.

(h) A specification of the methods of measuring critical parameters within the windrow and other composting processes, and a description of methods that will be used to ensure the critical parameters are met. Critical parameters addressed shall include carbon to nitrogen ratio, temperature, moisture content, oxygen content, pH and stability. Actions to be taken in response to odors, shall be specified. Frequency of turning and residence times shall be specified. The specification shall describe methods to be used for maintaining aerobic conditions during the composting process, including turning equipment and frequency for passive ventilation, and equipment and residence time for mechanical ventilation, as well as actions to be taken in response to odors and composting process upsets.

(k) Identification of any noncompostable waste, such as bags, which will be generated from the composting operation, and the name and location of solid waste disposal facilities at which any waste generated from the composting operation will be disposed of.

SECTION 33. NR 502.12(13)(m), (n), (o) and (p) are created to read:

NR 502.12(13)(m) A description of the planned sampling frequency and testing parameters for the finished compost.

(n) A stormwater pollution prevention plan that meets the requirements of s. NR 216.27 for a tier 2 facility and, if construction or expansion of a composting facility will involve one acre or more of land disturbance, a construction erosion control plan that meets the requirements of s. NR 216.46 to 216.49.

(o) Identification of local zoning and permit requirements that apply to the proposed facility.

(p) Proposed procedures for amending the plan in the event changes to the approved plan are needed.

SECTION 34. NR 502.12(14)(a) is amended to read:

NR 502.12(14)(a) ~~Unless exempt~~ For facilities other than those exempt under sub. (2), (3), (4), (5), (6) or (7), the department may require owners and operators of new or expanded composting facilities regulated under this section shall to submit a construction documentation report to the department and obtain department approval of the construction documentation report prior to operation of the facility.

SECTION 35. NR 502.12(15) is repealed and recreated to read:

NR 502.12(15) MONITORING, RECORDKEEPING AND REPORTING. (a) Unless exempt under sub. (2), (3), (4), (5), (6) or (7), owners and operators of composting facilities regulated under this section shall complete monitoring and reporting in accordance with the plan of operation approval and the following requirements:

1. Samples of the finished compost shall be collected every 2,000 tons or 4,000 cubic yards, with a minimum of one sample per year, unless a different frequency is approved in writing by the department. Samples of finished compost shall be tested for the parameters in Tables 1 and 2.

Note: Only class A compost under sub. NR 502.12 (16) is subject to the limits in Tables 1 and 2.

a. Samples shall be collected, handled and analyzed in accordance with methods listed in "Test Methods for Evaluation of Compost and Composting" published in 2002 by the United States Composting Council or other methods approved in writing by the department. Samples shall be tested at a laboratory certified under the United States Composting Council's Seal of Testing Assurance program or at another laboratory approved in writing by the department.

Note: "Test Methods for Evaluation of Compost and Composting" (2002) and a list of laboratories certified under the Seal of Testing Assurance program are available from the United States Composting Council, 1 Comac Loop 14 B1, Ronkonkoma, NY 11779, (631) 737-4931, www.compostingcouncil.org.

b. Test results shall be made available upon request to the department, potential users of the compost, and to the general public.

2. Unfiltered leachate samples shall be taken from the collection basin or tank, and tested quarterly for the first 4 quarters and annually thereafter for BOD₅, COD, field pH, field conductivity corrected to 25°C, nitrates+nitrite-nitrogen, and total dissolved solids.

3. Compost pile turning frequency and temperature readings as appropriate to the composting method used shall be documented and maintained to demonstrate pathogen reduction and odor control activities.

4. The facility shall be visually inspected by the owner or operator quarterly to evaluate stormwater discharge quality and performance of discharge controls, and twice per year to identify non-stormwater discharges.

(b) Unless exempt under sub. (2), (3), (4), or (5), the owner and operator of a composting facility regulated under this section shall prepare and submit an annual report to the department by March 1 on forms supplied by the department. The annual report shall include at least the following information:

1. Name and address of the facility.
2. Calendar year covered by the report.
3. Annual quantities and types of raw materials received and compost produced, in tons. Tonnage estimates may be based on volume records where scale weights are not available.
4. Annual quantity of compost sold, distributed or used, in tons.
5. Copies of laboratory analyses of composted material.
6. Any additional information required as a condition of the plan of operation approval.

Note: Copies of the annual reporting form may be obtained from the department of natural resources, bureau of waste and materials management, 101 South Webster Street, P.O. Box 7921, Madison, Wisconsin 53707-7921, (608) 266-2111, DNRwastematerials@wisconsin.gov, or online at <http://dnr.wi.gov/org/aw/wm/publications/>.

SECTION 36. NR 502.12(16) is created to read:

NR 502.12(16) CLASS A COMPOST. Finished compost may be designated and distributed as class A compost if it meets all of the following requirements:

(a) Composed entirely of materials meeting the definition of “source-separated compostable materials” in s. 500.03 (219m).

(b) Produced by one of the processes to reduce pathogens described in subd. 1 to 3, with temperature and retention time monitored and recorded each day until the temperature and retention time criteria are met:

1. Windrow method consisting of an unconfined composting process utilizing periodic aeration and mixing. Aerobic conditions shall be maintained during the composting process. A temperature of 55°C, or 131F shall be maintained in the windrow for at least fifteen days. The windrow shall be turned at least five times during the high-temperature period.

2. Mechanically aerated static pile method consisting of an unconfined composting process utilizing mechanically forced aeration of insulated compost piles. Aerobic conditions shall be maintained during the composting process. The temperature of the compost pile shall be maintained at a continuous minimum of 55°C, or 131°F, for at least three consecutive days.

3. In-vessel method consisting of a confined compost process utilizing mechanical mixing of compost under controlled conditions. The minimum retention time in the vessel shall be 72 hours with the temperature maintained at 55°C, or 131F.

(c) Tested in accordance with sub. (15) (a) 1. a. and b.

(d) Does not exceed any of the limits specified in Tables 1 or 2.

SECTION 37. NR 502.12 (table 1) and (table 2) are repealed and recreated to read:

Table 1.
Test parameters for nonexempt compost facilities and class A compost

Parameter	Limit for class A compost (mg/kg dry weight)
Arsenic	14
Cadmium	6.1
Chromium	120
Copper	400
Lead	95
Mercury	1.2
Molybdenum	15
Nickel	49
Selenium	4.9
Zinc	820
Physical contaminants	< 1 percent
Fecal Coliform	Either 1000 MPN/g of total solids (dry wt) fecal coliform or 3 MPN/4g of total solids (dry wt) salmonella
Salmonella	

Table 2.
Maturity and stability testing for nonexempt facilities and class A compost

Characteristic	Test procedure	Limit for Class A compost
Maturity (both methods)	Carbon:Nitrogen ratio Seedling emergence and vigor bioassay	10 – 20:1 Indices above 80%

Stability (one of the following methods)	Respirometry (carbon dioxide evolution) Dewar self-heating test Solvita test	Up to 5 mg CO ₂ -C/g volatile solids/day 0 – 20°C temperature rise Index value 6 or greater
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SECTION 38. NR 518.04(1)(intro.), (b) and (i) are amended to read:

NR 518.04(1)(intro.) GENERAL. The following landspreading facilities are exempt from the requirements of this chapter provided the solid waste or solid waste derived product is ~~applied~~ utilized as a soil conditioner or fertilizer in accordance with accepted agricultural practices and the facility is operated and maintained in a safe, nuisance-free manner:

NR 518.04(1)(b) Farms on which only nonhazardous agricultural solid wastes resulting from the operation of a farm, including farm animal manure, are disposed of.

NR 518.04(1)(i) Facilities used for the landspreading of composted ~~leaves, grass, brush, vegetable food waste and other similar composted vegetable matter~~ source-separated compostable material.

SECTION 39. Effective dates. 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 40. Board adoption. This rule order was approved and adopted by the State of Wisconsin Natural Resources Board on _____.

Dated at Madison, Wisconsin _____.

STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES

By _____
Matthew J. Frank, Secretary

(SEAL)