

Composting Facilities Eligible for Exemption



Waste & Materials Management
P .O. Box 7921
Madison, WI 53707-7921

PUB-WA 1025
Updated 2012

Compost facilities are a type of solid waste processing facility regulated under s. NR 502.12 Wis. Adm. Code. They are regulated less stringently than other processing facilities because of their limited potential risk to the environment. Certain types of compost facilities are exempt from most of the requirements of NR 502.12; these include households, small facilities taking 50 cubic yards or less, farms composting crop residue or manure and on-site farm animal carcass composting operations. Other compost facilities such as those taking less than 20,000 cubic yards of yard materials have limited requirements. Compost facilities taking less than 5,000 cubic yards of source-separated compostable material such as food have more requirements than the sites taking strictly yard materials but less than the larger non-exempt sites.

SUMMARY

This document summarizes requirements for certain composting facilities that, under ss. NR 502.12(2) through (7), Wis. Adm. Code, are exempt from many of the composting rule requirements.

FIRST STEP

The first step for anyone interested in developing an exempt compost facility is to submit a Composting Facility Application Form 4400-282 <http://dnr.wi.gov/files/PDF/forms/4400/4400-282.pdf> to the regional DNR recycling and composting contact listed at <http://dnr.wi.gov/staffdir/dynamic/recycling.asp>. Depending on the type of facility, you may also need to submit a Ch NR 502 Non-Landfill Solid Waste Initial Site Inspection Application Form 4400-209 <http://dnr.wi.gov/files/PDF/forms/4400/4400-209.pdf>. Contact the regional DNR recycling and composting contact before completing the forms to confirm which forms are required for the particular site you wish to operate.

DEFINITIONS

(See end of document)

SUMMARY OF REQUIREMENTS

(See table on following page)

Feedstocks (Number denotes code section in NR 502.12)	Facility Size or Type	General NR 502.04	Location NR 502.12(8)	License	Operation NR 502.12(10)	Design NR 502.12(11)	Record Keeping NR 502.12(15)
Source-separated compostable material (defined under "Definitions" at end of document) (3)	50 cy or less	performance standards, sub. (1); closure, subs. (3)(a) & (b)	no	no	yes	no	no
On-site farm crop residue & non-deer or elk manure (4)	On-site farm	performance standards, sub. (1)	no	no	no	no	no
Farm crop residue & manure Accepting off-site source-separated compostable material (4)(e)	Less than 10,000 cy	performance standards, sub. (1)	yes (unless only taking yd material or clean chipped wood)	no	yes	yes	yes record turning frequency & temperature par.(a)3 and discharge inspections par.(a)4
Farm animal carcasses (except deer & elk) (5)	On-site farm	performance standards, sub. (1)	no	no	yes	yes	no
Yard residuals & clean chipped wood (6)	20,000 cy or less	performance standards, sub. (1); initial site inspection, sub. (2); closure, subs. (3)(a) & (b);	yes	yes	yes	yes	yes report annual volumes; record turning frequency & temperature par.(a)3. and discharge inspections par.(a)4.
Source-separated compostable material (7)	5,000 cy or less	performance standards, sub. (1); initial site inspection, sub. (2); closure, subs. (3)(a) & (b)	yes	yes	yes	yes	yes report annual volumes; record turning frequency & temperature par.(a)3. and discharge inspections par.(a)4.

DESCRIPTION OF REQUIREMENTS

Performance standards, s. NR 502.04(1), Wis. Adm. Code:

The compost facility should be located and run so there are no impacts to surface water, groundwater, wetlands or critical habitat.

Initial site inspection, s. NR 502.04(2), Wis. Adm. Code: A Ch NR 502 Non-Landfill Solid Waste Initial Site Inspection Application Form 4400-209 <http://dnr.wi.gov/files/PDF/forms/4400/4400-209.pdf> must be completed for any new or expanded yard residuals composting facility that's greater than 1,000 cy and any source-separated compostable materials composting facility to provide the following information:

- Applicant and authorized contact;
- Type of facility and operation proposed;
- Property ownership and location by quarter by quarter section;
- Set-back distances such as to lakes, property line, private water supply wells;
- An indication of whether the performance standards above will be met.

Initial site inspections are not required at:

- single family;
- less than 50 cy at any one time;
- on-site farm crop residue, manure or carcass compost facilities;
- already operating less than 20,000 cy yard residuals compost facilities.

On-site farm crop residue, manure or animal carcasses, s. NR 502.12(4)&(5):

See Appendix A

Yard residuals composting facilities with capacities of less than 20,000 cubic yards of yard materials, s. NR 502.12(6) [see table above]

New or expansion sites greater than 1,000 cubic yards must have DNR perform an initial site inspection. In addition to meeting locational criteria and minimum operation and design requirements outlined below, the site operators must also keep records of how often the windrows are turned and the internal temperatures of the windrows. They must also inspect the site for storm event runoff and non-storm event runoff. If landspreading occurs it should be done according to NR 518.04(1)(i).

Source-separated compostable material composting facilities with capacities of 5,000 cubic yards or less, s. NR 502.12(7) [see table above].

New or expansion sites in this category must have an initial site inspection and meet locational criteria outlined below. In addition to meeting minimum operation and design requirements outlined below, the site operators must also keep records of how often the windrows are turned and the internal temperatures of the windrows. They must also inspect the site for storm event runoff and non-storm event runoff. A plan of how the facility will be run must be provided to the DNR. If landspreading occurs it should be done according to NR 518.04(1)(i) and if the site accepts animal manure, the compost must be sampled prior to providing it to others.

Locational criteria, s. NR 502.12(8), Wis. Adm. Code:

The facility should be located with a setback distance to certain activities which could potentially be impacted.

FACILITY TYPE		MINIMUM SEPARATION or SETBACK BACK DISTANCE (feet)							
feedstocks	size	groundwater table	public wells	private wells	lake	river	property line	highways	airports
Yard materials & clean chipped wood	20,000 cy or less	5	1,200	250	250	250	100	1,000	none
Source-separated compostable material	5,000 cy or less	5	1,200	250	250	250	100	1,000	5,000 or 10,000

Note: Compost facilities may not be located in a floodplain.

Locational criteria do not apply to:

- single family;
- on-site farm crop residue, manure or animal carcasses; or
- yard residuals, clean chipped wood, vegetable food residuals, and manure, less than 50 cubic yards (cy) at one time.

Minimum operational standards, s. NR 502.12(10):

Operate the facility in a nuisance free and environmentally sound manner. Consider how the material will be brought to the site and once there, stored, how soon various materials should be removed from bags and incorporated into windrows. Determine the most appropriate size of the material and windrows to ensure enough oxygen and to obtain an optimum C:N ratio. Plan to wet the pile to obtain optimum moisture, stabilize it to avoid reheating and keep out sharps and toxic materials and only store for short periods of time.

Manage animal carcasses, fish harvesting and processing residuals, manure and food residuals not from processing operations responsibly by incorporating into windrows on the same day as received, covering with at least 6 inches of high carbon material upon incorporation and preventing access by animals to carcasses and food residuals.

Minimum operational requirements do not apply to:

- single family;
- on-site farm crop residue or manure compost facilities.

Minimum design standards, s. NR 502.12 (11):

Use slope, vegetation, ditches and retention basins to minimize erosion. Slope area to prevent ponding, and use berms or ditches to prevent run on. Discharge run-off to a gently sloping vegetated area. Use best management practices to minimize erosion, prevent discharges from storm water runoff. If inspections determine storm water controls are needed, take steps to improve operations. Size operations to avoid nuisance conditions, provide adequate room for the entire process and to allow windrows of manageable size for maintaining aerobic conditions, curing piles, staging of finished compost and equipment.

Minimum design standards do not apply to:

- single family;
- less than 50 cy at any one time;
- on-site farm crop residue or manure compost facilities.

ADDITIONAL REQUIREMENTS FOR LARGE COMPOSTING FACILITIES

Composting facilities that are larger and not exempt are more likely to impact the environment so have additional requirements to help prevent that from occurring. These include submitting a plan of operation, meeting additional operation and design standards, providing construction documentation, and meeting additional monitoring and reporting requirements.

A facility that composts feedstocks not described in this guidance is normally regulated as a Solid Waste Processing Facility under s. NR 502.08, Wis. Adm. Code.

REFERENCES

Fact Sheets

Cornell University Waste Management Institute Composting Fact Sheets

<http://cwmi.css.cornell.edu/factsheets.htm>

Rules and Statutes

Ch. NR 502.04(1)

http://docs.legis.wi.gov/code/admin_code/nr/502/04

Ch. 95.50 Wis. Stats

<https://docs.legis.wisconsin.gov/statutes/statutes/95/50>

Ch. NR 518.04(1)

http://docs.legis.wi.gov/code/admin_code/nr/518/04

DEFINITIONS, s. NR 500.03 (44), (44m), (45), (88m), (219m), (253) and (262) Wis. Adm. Code

- **Compost** means a material which has been decomposed by composting to the extent that the material will not reheat due to action of microorganisms when subject to optimum oxygen, moisture, nutrients and temperature.
- **Compostable** means susceptible to complete decomposition by aerobic biological processes to yield carbon dioxide, water, inorganic compounds and organic matter, leaving no distinguishable or toxic residue.
- **Composting** means the biological degradation and transformation of organic solid waste under controlled conditions designed to promote aerobic decomposition (including vermicomposting or the use of live worms to convert organic matter into dark, fertile granular excrement.
- **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, but does not include rendering or slaughterhouse wastes or animal carcasses.
- **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, rendering or slaughterhouse wastes, animal carcasses, other solid waste or hazardous waste.
- **Vegetable food residuals (or discards)** means food residuals consisting of raw or cooked fruit and vegetable or fruit food waste, from residences, food establishments such as cafeterias, restaurants, food wholesalers and retailers, and food processors, and includes compostable packaging, utensils, tableware, kitchenware and containers that meet either the ASTM-D6400 or the D-6868 standard. This includes vegetable and fruit food containers of readily biodegradable materials, if the containers have been used and contaminated with food. (Doesn't include: agricultural crop residue, animal products, food containers composed of non-readily biodegradable materials, or process wastes from food container manufacturing.)
- **Yard residuals** means yard waste as defined in s. 287.01 (17), Wis. Stats., and may include incidental spoiled fruit and vegetables from noncommercial sources.

Contact 608/266-2111 or Waste.Materials@dnr.state.wi.us for further information.

Disclaimers: This document is intended solely as guidance and does not include any mandatory requirements except where requirements found in statute or administrative rule are referenced. This guidance does not establish or affect legal rights or obligations and is not finally determinative of any of the issues addressed. This guidance does not create any rights enforceable by any party in litigation with the State of Wisconsin or the Department of Natural Resources. Any regulatory decisions made by the Department of Natural Resources in any manner addressed by this guidance will be made by applying the governing statutes and administrative rules to the relevant facts.

The Wisconsin Department of Natural Resources provides equal opportunity in its employment, programs, services and functions under an Affirmative Action Plan. If you have any questions, please write to Equal Opportunity Office, Department of Interior, Washington, D.C. 20240. This publication is available in alternative format (large print, Braille, audio tape, etc.) upon request. Please call 608/266-2111 for more information.

Appendix A Farm Composting

The Department recognizes that composting is an essential part of many agricultural operations and experience indicates farm composting operations generally do not pose a substantial risk to public health and the environment. The new compost rule (effective June 1, 2012) exempts on-farm composting of material generated on the farm. However, bringing in material to compost from off-site, creates an increased risk of problems that could adversely affect public health and the environment and requires a higher degree of attention.

The University of Minnesota Extension provides excellent information about farm composting <http://www1.extension.umn.edu/dairy/manure/onfarm-composting-101/>

Composting at the farm site where the wastes are generated is exempt from all other solid waste rules (including some of the rules listed above), if all the following are met:

- Operate nuisance-free using environmentally sound practices.
- Meet performance standards in s. NR 502.04(1) (see References in main document).
- Land-spread the compost in accordance with s. NR 518.04(1)(b) or (i) (see References above).
- If composting animal carcasses, comply with s. 95.50(1), Stats. (see References above), and meet minimum operation and design standards in s. NR 502.12(10) & (11).
- If source-separated compostable material other than farm crop residue and manure are accepted from off site, meet all the following:
 - Do not exceed 10,000 cubic yards at one time, total combined wastes and compost.
 - Keep volume of food residuals added less than 25% of total volume of inputs
 - Mix the inputs to achieve an initial carbon to nitrogen ratio of at least 20 to 1.
 - Meet locational criteria in s. NR 502.12(8) unless taking only yard material and clean chipped wood.
 - Meet minimum operation and design standards in s. NR 502.12(10) & (11).
 - Record turning frequency and temperature of piles [NR 502.12(15)(a)3.]
 - Follow any storm water discharge requirements resulting from inspections [NR 502.12(15)(a)4.]

“On-site farm composting” is described in s. NR 502.12(5)(d) as follows: "All the farm wastes composted are generated from agricultural operations either under common ownership or management, or located adjacent to each other and the composting occurs on the property of one of these agricultural operations."

Agricultural wastes from large-scale animal operations may be subject to additional requirements under DNR's Watershed Management Program.