

## Chapter NR 502

### SOLID WASTE STORAGE, TRANSPORTATION, TRANSFER, INCINERATION, AIR CURTAIN DESTRUCTORS, PROCESSING, WOOD BURNING, COMPOSTING AND MUNICIPAL SOLID WASTE COMBUSTORS

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**Note:** Corrections made under s. 13.93 (2m) (b) 7., Stats., Register, August, 1997, No. 500.

**NR 502.01 Purpose.** The purpose of this chapter is to help ensure that efficient, nuisance-free and environmentally accepted solid waste management procedures are practiced in this state and to outline the requirements regarding licensing and operational requirements for solid waste storage, transportation, transfer, incinerators, air curtain destructors, processing, woodburning, composting and municipal solid waste combustors. This chapter is adopted under s. 227.11, Stats., and ch. 289, Stats.

**History:** Cr. Register, January, 1988, No. 385, eff. 2-6-88; am. Register, May, 1992, No. 437, eff. 6-1-92; am. Register, June, 1996, No. 486, eff. 7-1-96.

**NR 502.02 Applicability. (1)** Except as otherwise provided, this chapter governs all solid waste storage, transportation, transfer, incinerators, air curtain destructors, processing, woodburning, composting and municipal solid waste combustors as defined in s. 289.01 (35), Stats., except hazardous waste facilities as defined in s. 291.01 (8), Stats., and regulated under chs. NR 600 to 690, and metallic mining operations as defined in s. 293.01 (5), Stats., and regulated under ch. NR 182.

**(2)** This chapter does not apply to the design, construction or operation of industrial wastewater facilities, sewerage systems and waterworks treating liquid wastes approved under s. 281.41, Stats., or permitted under ch. 283, Stats., nor to facilities used solely for the disposal of liquid municipal or industrial wastes which have been approved under s. 281.41, Stats., or permitted under ch. 283, Stats., except for facilities used for the disposal of solid waste.

**(3)** This chapter does not apply to the design, construction or operation of facilities used solely for the treatment of municipal wastewater sludge as defined and regulated under ch. NR 204.

**History:** Cr. Register, January, 1988, No. 385, eff. 2-6-88; am. (1), Register, May, 1992, No. 437, eff. 6-1-92; correction in (1) made under s. 13.93 (2m) (b) 7., Stats., Register, May, 1992, No. 437; am. (1), cr. (3), Register, June, 1996, No. 486, eff. 7-1-96.

**NR 502.03 Definitions.** The terms used in this chapter are defined in s. NR 500.03.

**History:** Cr. Register, January, 1988, No. 385, eff. 2-6-88.

**NR 502.04 General requirements.** All facilities regulated under this chapter shall comply with the following requirements:

**(1) PERFORMANCE STANDARDS. (a)** Unless an exemption is granted by the department under par. (b), no person may establish, construct, operate, maintain or permit the use of property for any facility regulated under this chapter, or any non-commercial soil borrow source designated to be used in the construction of a specific facility regulated under this chapter, within an area where there is reasonable probability that the facility will cause any of the following:

1. A detrimental effect on any surface water.

2. A significant adverse impact on wetlands as provided in ch. NR 103.

3. A detrimental effect on groundwater quality or will cause or exacerbate an attainment or exceedance of any preventative action limit or enforcement standard at a point of standards application as defined in ch. NR 140. For the purposes of design, the point of standards application is defined by s. NR 140.22(1).

4. A significant adverse impact on critical habitat areas.

5. The migration and concentration of explosive gases in any facility structures, excluding any leachate collection system or gas control or recovery system components or in the soils or air at or beyond the facility property boundary in excess of 25% of the lower explosive limit for such gases at any time.

6. The emission of any hazardous air contaminant exceeding the limitations for those substances contained in s. NR 445.04 or 445.05.

(b) Exemptions from the requirements of par. (a) 4. to 6. may be granted by the department only upon demonstration by the applicant of circumstances which warrant the exemption. Exemptions from compliance with par. (a) 3. may be granted only according to the procedures in ch. NR 140. Exemptions from compliance with par. (a) 2. may be granted only in accordance with the standards in ch. NR 103. Exemptions from compliance with par. (a) 1. may not be granted.

**(2) INITIAL SITE INSPECTION. (a)** Any person intending to establish or expand a solid waste facility listed in subds. 1. to 8. which is subject to locational criteria under this chapter or a soil borrow source listed in subd. 9. shall submit a written request to the department for an initial site inspection for the purpose of evaluating compliance with the performance standards listed in sub. (1) and the applicable locational criteria contained in this chapter:

1. Noncontainerized storage facilities.
2. Transfer facilities.
3. Processing facilities.
4. Incinerator facilities.
5. Air curtain destructor facilities.
6. Woodburning facilities.
7. Composting facilities.
8. Municipal solid waste combustor facilities.
9. Non-commercial soil borrow source designated to be used in the construction of a specific solid waste facility listed in subds. 1. to 8.

(b) The written request for initial site inspection shall comply with s. NR 500.05 (5) to (8) and shall contain a cover letter identifying all of the following:

1. The applicant and authorized contact.
2. Type of facility and operation proposed.
3. Property ownership.
4. Location by quarter - quarter section.

5. Present land use.

6. All potential conflicts with the performance standards listed in sub. (1).

(c) The written request for initial site inspection for solid waste facilities listed in par. (a) 1. to 8. shall contain all of the following additional information:

1. A letter from the department's bureau of endangered resources identifying the presence of any critical habitat areas and state or local natural areas within one mile of the proposed facility in accordance with ch. NR 29.

2. A letter from the Wisconsin state historical society identifying the presence of any historical, scientific or archaeological areas within the vicinity of the proposed solid waste facility in accordance with s. 44.40, Stats.

3. An enlarged 7.5 minute USGS map or other base map having a minimum scale of 1" = 500 feet. The map scale and contour intervals shall be revised as necessary to sufficiently show relief, surface waters, floodplains, existing land use conditions and all water supply wells and residences located within one mile of the property boundaries of the proposed facility.

**Note:** One copy of the information required by pars. (b) and (c) shall be submitted to the department's field office responsible for the area in which the facility is proposed to be located, and one copy shall be submitted to the department's solid waste management section in Madison.

(d) The department shall conduct an initial site inspection within 22 business days of receipt of a written request which complies with the requirements of this subsection. Depending on the season, follow up inspections may be necessary to identify any obscured features of the proposed property such as wetlands. Within 22 business days of completing the inspection, the department shall render a preliminary opinion regarding the suitability of the site location and identify any additional studies or information that is to be submitted to determine if a proposed solid waste facility or soil borrow source complies with the performance standards listed in sub. (1) and the applicable locational criteria contained in this chapter. A favorable opinion from the department under this paragraph does not guarantee that performance standards or locational criteria will be met.

**(3) CLOSURE.** Except as otherwise specified in this chapter or in a department issued approval, the owner or operator of any facility regulated under this chapter, or any person who permits the use of property for such purposes, shall at a minimum complete all of the following:

(a) Within 5 calendar days after ceasing to accept waste at the facility, remove all putrescible waste and containerize, properly utilize or dispose of all other waste.

(b) Within 60 days after ceasing to accept waste at the facility, remove all waste.

(c) Unless otherwise specified in a department issued approval, the following minimum requirements shall also be met by the owner or operator of a facility for which a plan of operation is required under this chapter:

1. At least 60 days prior to ceasing to accept waste at the facility for an extended period, the department shall be notified in writing and a sign shall be posted in a prominent location notifying users of the date on which the facility will cease to accept waste. In the case of ceasing to accept waste for an extended period due to unplanned and unforeseeable circumstances, such as fire or equipment failure, department notification and sign posting shall be completed as soon as practical. Alternatives to posting a sign may be implemented with department concurrence for facilities which are not open to the general public.

2. Within 60 days of ceasing to accept waste, the facility shall be closed in accordance with the approved plan of operation.

**Note:** Fees for plan review, license and other applicable items are charged in accordance with ch. NR 520. Licenses for facilities regulated under this chapter are transferrable.

**(4) ENVIRONMENTAL REVIEW.** The department may require an applicant for an initial license or for approval of expansion of an existing solid waste facility listed in the following pars. (a) to (f) to submit information with the plan of operation report as specified by the department to determine the need for an environmental impact report or environmental impact statement:

(a) Noncontainerized storage facilities.

(b) Transfer facilities.

(c) Processing facilities.

(d) Incinerator facilities.

(e) Composting facilities.

(f) Municipal solid waste combustor facilities.

**(5) ENVIRONMENTAL MONITORING.** The department may require the owner or operator of any facility for which a plan is required under this chapter, or any person who permits the use of property for such purposes, to conduct environmental monitoring in accordance with ch. NR 507 and plans approved by the department, including surface water, groundwater, unsaturated zone or gas monitoring. The department may require monitoring after closure of the facility.

**(6) FINANCIAL RESPONSIBILITY.** The department may require the owner or operator of any facility for which a plan is required under this chapter to provide proof of financial responsibility for the cost of closure of the facility. The department may require the owner or operator to submit closure cost estimates for removal, transport and ultimate disposal of the wastes. If proof of financial responsibility is required by the department, it shall be submitted prior to licensing of the facility, or as otherwise specified by the department.

**History:** Cr. Register, January, 1988, No. 385, eff. 2-6-88; r. and recr. Register, June, 1996, No. 486, eff. 7-1-96.

**NR 502.05 Storage facilities.** **(1) GENERAL.** (a) Unless exempt under sub. (2) or (3), owners and operators of solid waste storage facilities shall comply with all of the following:

1. The requirements specified under s. NR 502.04.

2. Obtain approval of a plan of operation as specified in sub. (8) and an operating license from the department.

3. Store all waste in containers in compliance with sub. (5) unless the waste volume precludes practical containerized storage in which case the storage shall comply with the noncontainerized storage requirements in sub. (6).

(b) Unless exempt under sub. (2) or (3), all new or expanded solid waste storage facilities shall demonstrate compliance with the applicable locational criteria listed in sub. (4).

(c) No person may operate or maintain a storage facility for municipal solid waste combustor residue except in compliance with sub. (7).

(d) No person may operate or maintain a storage facility for infectious waste unless the person complies with s. NR 526.09.

**(2) EXEMPTIONS FOR HOUSEHOLD WASTE.** Containers for household wastes, serving a single household and located on the property where the waste is generated are exempt from all requirements of this chapter.

**(3) OTHER EXEMPTIONS.** The following storage facilities are exempt from all requirements of this section, except as specified.

(a) Storage facilities utilizing containers such as lugger boxes or rolloffs for solid waste storage serving apartments, commercial establishments, business establishments and industries which are located on the premises served, provided the facility complies with the general requirements listed under s. NR 502.04 and the operational requirements listed under sub. (5).

(b) Pit silos used for the storage of by-products from fruit, vegetable or grain processing operations where the by-products

are to be used for animal feed, provided the facility is in compliance with applicable portions of ch. NR 213.

(c) Facilities for high volume industrial waste or wood residue where the waste is stored at the point of generation for less than 72 hours prior to being transported for disposal or beneficial reuse and the facility complies with the general requirements listed under s. NR 502.04 and is operated and maintained in an environmentally sound and nuisance-free manner.

(d) On site storage facilities at a solid waste processing facility, solid waste incinerator facility, or municipal solid waste combustor facility, provided the facility is in compliance with applicable portions of s. NR 502.08, 502.09 or 502.13.

(e) Facilities that store only used oil which is managed in compliance with ch. NR 590.

(f) Infectious waste storage facilities which are exempt from licensing under s. NR 526.09.

(g) Materials recovery facilities as defined in s. NR 544.03 (12).

(h) Contaminated soil storage facilities in compliance with ch. NR 718.

(i) Facilities for the storage of industrial byproducts which are managed in compliance with ch. NR 538.

(j) Noncontainerized storage facilities which meet all of the following criteria are exempt from all other requirements of this chapter:

1. The facility meets the performance standards and closure requirements specified in s. NR 502.04 (1) and (3) (a) and (b), and complies with the operational requirements for noncontainerized storage facilities listed under sub. (6).

2. The solid waste does not include putrescible waste such as garbage, municipal refuse or residue produced by the burning of municipal solid waste.

3. The waste is free of noxious odors and not readily transported by wind or water unless it is stored to prevent such transport.

4. The facility exists less than 9 months from the time of initial storage to the removal of all waste.

5. The volume of waste stored at the facility does not exceed 5,000 cubic yards at any time.

6. The combined total volume of waste stored at the facility over the allowable 9 month period does not exceed 10,000 cubic yards.

7. Waste storage does not occur within a floodplain, or within 100 feet of any public or private water supply well, navigable lake, pond, flowage, river or stream, or within 20 feet of the facility property boundary.

**(4) LOCATIONAL CRITERIA FOR STORAGE FACILITIES.** (a) Except as otherwise specified in this section, new or expanded solid waste storage facilities may not be located in any of the following areas, unless an exemption is granted under par. (b):

1. Within a floodplain.

2. Within 250 feet of any private water supply well, or within 1,200 feet of any public water supply well.

3. Within 250 feet of any navigable lake, pond or flowage.

4. Within 250 feet of any navigable river or stream.

5. Within 250 feet of land owned by a person other than the owner or operator of the facility, unless the facility is screened by natural objects, plantings, fences or other appropriate means so that it is not visible from the property boundary.

6. Within 1,000 feet of the nearest edge of the right-of-way of any state trunk highway, interstate or federal aid primary highway or the boundary of any public park, unless the facility is screened by natural objects, plantings, fences or other appropriate means so that it is not visible from the highway or park.

7. Within 10,000 feet of any airport runway used or planned to be used by turbojet aircraft or within 5,000 feet of any airport

runway used only by piston type aircraft or within other areas where a substantial bird hazard to aircraft would be created. This criterion is applicable only when the facility will be used for handling putrescible waste.

(b) The locational criteria listed under par. (a) 2. to 7. do not apply to containerized waste storage or storage within an enclosed building. However, the department may require containerized and enclosed solid waste storage facilities to meet specified locational criteria in par. (a) if there is significant potential for the facility to cause environmental pollution as defined in s. 283.01 (6m), Stats., nuisance conditions or bird hazard to aircraft. The department may grant exemptions from the requirements of par. (a) 2. to 7. only upon demonstration by the applicant of circumstances which warrant the exemption. Exemptions from compliance with par. (a) 1. may not be granted.

**(5) OPERATIONAL REQUIREMENTS FOR CONTAINERIZED STORAGE FACILITIES.** No person may operate or maintain a containerized storage facility except in conformance with the following minimum operational requirements:

(a) Storage containers shall be durable, rust resistant, nonabsorbent, leak-proof, easy to clean and able to effectively contain the stored waste. If garbage or similar putrescible wastes are stored, the containers shall have close-fitting, fly-tight covers and be constructed of light-weight durable material.

(b) Covers and containers shall be maintained in good condition.

(c) Containers handling municipal solid waste shall be removed and emptied at least once per week, or more often if conditions warrant. Containers handling nonputrescible industrial waste shall be removed and emptied as necessary, but at least once every 90 days.

(d) All weather access shall be provided and maintained.

(e) Effective means shall be provided to control flies, rodents and other vectors.

(f) Objects too large for the containers shall be stored in a nuisance-free manner.

(g) Periodic clean-up and maintenance of the storage container and surrounding area shall be conducted to keep it aesthetically pleasing and nuisance-free. This maintenance shall be the responsibility of the property owner where the containers are located as well as the owner of the containers.

(h) Gates, fencing and an attendant or other appropriate access restrictions shall be provided, as specified by the department, to prevent nuisance conditions or if mechanical compaction equipment is part of the facility.

(i) Disposal of solid waste is not allowed at a storage facility.

(j) Solid waste may not be burned.

(k) The facility shall be operated and maintained in a sanitary, nuisance-free manner so as to protect the environment and the public health.

(L) Adequate storm water drainage shall be maintained on and around the facility.

**(6) OPERATIONAL REQUIREMENTS FOR NONCONTAINERIZED STORAGE FACILITIES.** No person may operate or maintain a non-containerized storage facility except in conformance with an approved plan of operation and the following minimum operational requirements:

(a) All weather access shall be provided and maintained.

(b) Effective measures shall be taken to control flies, rodents and other vectors.

(c) Periodic maintenance or clean-up of the facility shall be conducted to keep it aesthetically pleasing and nuisance-free.

(d) Gates, fencing and an attendant shall be provided as specified by the department.

(e) Solid waste shall be disposed of at a licensed facility approved by the department.

(f) Solid waste may not be burned.

(g) The facility shall be operated and maintained in a sanitary, nuisance-free manner so as to protect the environment and the public health.

(h) Adequate drainage shall be maintained on and around the facility.

**(7) OPERATIONAL REQUIREMENTS FOR MUNICIPAL SOLID WASTE COMBUSTOR RESIDUE STORAGE FACILITIES.** Except for on site storage at a municipal solid waste combustor approved under s. NR 502.13, no person may maintain or operate a storage facility for residue produced by burning municipal solid waste unless the person has obtained an operating license under sub. (1), and written approval of a plan of operation under sub. (8), for the facility. Residue storage areas shall be designed, operated and maintained in compliance with the applicable operational requirements specified under sub. (5) or (6) and the following:

(a) The residue shall be wetted at all times during storage to prevent dust emissions. Alternative methods of dust control shall be approved by the department prior to implementation. Provisions shall be made to prevent the release of residue into the air in the residue handling areas.

(b) The storage area shall have an impervious surface on which the residue is stored and a collection system for any liquids coming into contact with the residue. All liquid that comes into contact with the residue shall be collected and treated at a wastewater treatment plant approved by the department.

(c) Access to the storage areas shall be restricted to authorized personnel only. Fencing or other means of access control acceptable to the department shall be maintained around the storage facility.

**(8) PLAN OF OPERATION.** No person may establish or construct a solid waste storage facility or expand an existing facility unless the person has obtained a plan of operation approval from the department. The plan of operation shall specify the intent and objectives of the proposal, indicate methods and procedures to minimize adverse environmental impacts, and provide a design which complies with the applicable operational requirements specified under subs. (5) to (7). Unless otherwise approved by the department in writing, the plan shall be submitted in accordance with s. NR 500.05 and shall contain, at a minimum, the following information:

(a) A legal description of the facility.

(b) The present ownership of the property.

(c) The proposed facility size, a description of the present land use of the facility and the area within 1/4 mile of the facility.

(d) The area served, including population and major industries.

(e) The consistency of facility development with areawide solid waste plans and land use plans.

(f) The predominant types of vegetation and wildlife within the proposed facility boundaries.

(g) A complete materials balance for the storage facility, specifying amounts and characteristics of solid waste.

(h) The types of vehicles and access routes used to transport solid waste to and from the facility including the traffic flow patterns within the facility, and an estimate of the increased quantities of traffic on access routes to and from the facility.

(i) The estimated quantities and characteristics of wastes containing free liquids resulting from facility operations and methods of their storage and disposal.

(j) The persons responsible for facility construction and operation.

(k) Provisions for protection of groundwater and surface water during facility construction and operation.

(L) A discussion of possible operational hazards and necessary safety precautions.

(m) A discussion of design features and logic including the equipment capacity or size. Information shall be included to justify the size and configuration of the receiving area; methods of handling wastes containing free liquids resulting from operations such as floor drains, sewers and water treatment facilities; sizing of storm water drainage control structures; design life of any building and facility equipment; and methods of screening the facility from the surrounding area.

(n) An operations and maintenance manual which specifies the operating and maintenance procedures; operating personnel responsibilities; hours of operation; daily operating schedule; equipment maintenance schedules; methods of controlling explosions, dust, fire, odors and windblown materials; special waste handling procedures; methods of controlling access; daily cleanup procedures; person responsible for operation; facility licensee and owner; record keeping procedures; emergency procedures for handling of frozen conditions during cold weather; methods to prevent solid waste from burning; any additional procedures for the handling of the waste in the case of major facility breakdown; and any other pertinent information.

**(9) ENGINEERING PLANS.** The plan of operation shall include a set of engineering plans and maps which contain the following information unless an exemption is granted in writing by the department:

(a) An existing conditions map, which shows the entire facility and the area within 1/4 mile. The minimum scale shall be 1" = 400'. This map shall include the proposed facility boundary, property lines, easements and right-of-way; building foundations, roads, utilities and other structures; topography, drainage swales, surface waters, wetlands, floodplains and similar drainage features; wooded areas; location of soil borings and test pits; features of historical and archaeological significance; and other features as appropriate.

(b) Proposed facility access roads and traffic patterns, buildings, scales, utility lines, drainage diversion, screening, means of access control, final topography, areas to be cleared of vegetation, and other design features. The extent of coverage and scale shall be the same as that for the existing conditions map.

(c) A proposed layout plan which shows the receiving, storage and loadout areas. The minimum scale shall be 1" = 20'. Plan details shall include conceptual designs for the receiving area configuration and traffic flow patterns, storage area and equipment configuration, loadout area and equipment configuration, and other design features.

(d) At least one cross section shall be drawn through the receiving, storage and loadout areas indicating existing topography, limits of excavation, proposed final grades and other pertinent design features. More cross sections may be necessary depending on the complexity of the facility design.

**(10) CONSTRUCTION DOCUMENTATION REPORT.** The department may require the applicant to submit a construction documentation report for any storage facility which is required to submit a plan of operation. When a documentation report is required, it shall be prepared in accordance with the approved plan of operation and s. NR 500.05. Operation of the facility may not commence until the construction documentation report is approved in writing by the department and a license is issued. The department may issue a license prior to facility construction or construction documentation approval.

**History:** Cr. Register, January, 1988, No. 385, eff. 2-6-88; am. (4) (a), renum. (1) (b) to be (1) (c), cr. (1) (b), (2) (e) and (13), Register, May, 1992, No. 437, eff. 6-1-92, cr. (1) (d), (2) (f), am. (5) (intro.), Register, October, 1994, No. 466, eff. 11-1-94; cr. (2) (g), Register, May, 1995, No. 473, eff. 6-1-95; r. and recr., Regis-

ter, June, 1996, No. 486, eff. 7-1-96; renum. (3) (i) to be (3) (j) and cr. (3) (i), Register, December, 1997, No. 504, eff. 1-1-98.

### NR 502.06 Collection and transportation services.

(1) GENERAL. (a) Owners and operators of solid waste collection and transportation services shall comply with s. NR 502.04.

(b) Unless exempt under sub. (2), no person may operate or maintain a collection or transportation service unless the person has obtained an operating license from the department.

(c) No person may transport or ship infectious waste or items mixed with infectious waste, unless the person complies with s. NR 526.10.

**Note:** Services for collection and transportation of asbestos waste are required to meet the minimum requirements of the applicable air management rules in chs. NR 400 to 499.

(2) EXEMPTIONS. The following collection or transportation services shall comply with the general requirements specified in s. NR 502.04, but are exempt from all other requirements of this chapter:

(a) Services for the collection and transportation of only gravel pit spoils, quarry materials, earth materials or salvageable materials other than those listed in s. 287.07 (3) or (4), Stats.

(am) Services for the collection and transportation of the materials listed in s. 287.07 (3) and (4), Stats., after the materials have been processed for reuse or recycling by conversion into a consumer product or a product which is used as a raw material in a commercial or industrial process.

(ar) Services for the collection and transportation of the materials listed in s. 287.07 (4), Stats., only from commercial, retail, industrial and governmental operations.

(b) Services for the collection and transportation of only ordinary solid waste from a single household or solid waste amounting to less than 20 tons per year.

(c) Services for the collection and transportation of sludge from municipal wastewater or water supply treatment plants provided it is handled in accordance with ch. 283, Stats.

(d) Services for the collection and transportation of only waste materials regulated and licensed under s. 281.48, Stats.

(e) Governmental services consisting solely of vehicles used to collect and transport roadside litter from town, village, city, county, state and federal highway right-of-way. Litter shall be disposed of at a licensed disposal facility.

(f) Services for the collection and transportation of dredge material regulated by permit or contract under s. 30.20, Stats.

(g) Services for the collection and transportation of wastes generated by an industrial company which do not travel on public roads and which utilize vehicles owned by the company.

(h) Services for the collection and transportation of whey or waste materials from fruit or vegetable processing operations.

(i) Services for the transportation of infectious waste or items mixed with infectious waste in compliance with s. NR 526.10.

(j) Services for the collection and transportation of contaminated soil in compliance with ch. NR 718.

(k) Services for the collection and transportation of industrial byproducts in compliance with ch. NR 538.

(3) OPERATIONAL REQUIREMENTS FOR TRANSPORTATION OF RESIDUE PRODUCED BY BURNING MUNICIPAL SOLID WASTE. (a) No person may operate or maintain a collection and transport service for the transportation of residue produced by burning municipal solid waste except in accordance with the applicable provisions of this section, and the following special requirements:

(b) The residue shall contain sufficient moisture during transportation to prevent dust emissions. Alternative methods of dust control shall be approved by the department prior to implementation. Provisions shall be made to prevent the release of residue into air in the residue handling areas.

(c) Prior to transportation of the residue, free liquids shall be drained until no more free liquids remain. All vehicles that transport the residue shall be designed and operated as necessary to prevent leakage during operation.

(d) Access to the residue transport vehicles shall be restricted to authorized personnel only.

(e) All transportation vehicles shall be covered to adequately prevent spillage and wind blown residue during transport.

(4) GENERAL OPERATIONAL REQUIREMENTS. No person may operate or maintain a solid waste collection and transportation service except in accordance with the following minimum requirements:

(a) Each vehicle shall have "WDNR" followed by the license number lettered on the driver's door. The letters shall be at least 2 inches high with a minimum 1/2 inch brush stroke. The lettering shall contrast with the background so it is easy to read.

(b) Solid waste shall be transported only to facilities which are licensed or approved by the department, or to facilities which are exempt from regulation by the department.

(c) Vehicles or containers used for the collection and transportation of solid waste shall be durable, easy to clean and leak-proof, if necessary, considering the type of waste and its moisture content. All vehicles and containers shall be cleaned as frequently as necessary to prevent nuisances or insect breeding and shall be maintained in good repair.

(d) Vehicles or containers used for the collection and transportation of solid waste shall be loaded and moved in such a manner that the contents do not fall, spill or leak. Covers shall be provided to prevent littering and spillage. If spillage does occur, the operator shall immediately return spilled materials to the vehicle and shall properly clean the spill area. In the event of a spill of a hazardous substance the department shall be notified under s. 292.11, Stats., and the spill material shall be collected and the environment restored as provided in ch. NR 158.

(e) Services for the collection and transportation of recyclable materials listed in s. 287.07, Stats., shall comply with the prohibitions on land disposal and incineration in that section.

(f) Services for the collection and transportation of recyclable materials shall maintain the cleanliness of those materials for recycling purposes.

(g) Upon the request of the department, a service for the collection and transportation of recyclable materials shall provide satisfactory documentation to the department that the recyclable materials have been delivered to brokers, processors or end users of the materials. Records shall be retained for a period of 3 years from the time of delivery.

(h) The owner or operator shall provide written notice of termination of service to the department at least 30 days prior to ceasing all transport services for an extended period. The owner or operator shall provide information to the department concerning service areas and disposal facilities used as specified in the license renewal application.

(5) RESPONSIBILITY. A person generating solid waste shall be responsible for the collection and transportation of the waste to a solid waste disposal facility licensed by the department unless the person contracts with a collection and transportation service licensed by the department for that purpose.

**History:** Cr. Register, January, 1988, No. 385, eff. 2-6-88; renum. (1) and (4) to (6) to be (1) (a) and (6) to (8), cr. (1) (b), (4) and (5), Register, May, 1992, No. 437, eff. 6-1-92; am. (2) (a), cr. (2) (am) and (6) (e) to (g), Register, September, 1993, No. 453, eff. 10-1-93, cr. (1) (c), (2) (i), Register, October, 1994, No. 466, eff. 11-1-94; r. and recr. (1) (a), (b), cr. (2) (ar), (j), (4) (h), am. (2) (intro.), (am), (i), r. (3), (4), (7), renum. (5) and (6) to be (3) and (4), (8) to be (5) and am. (3) (a), Register, June, 1996, No. 486, eff. 7-1-96; am. (2) (b), Register, August, 1997, No. 500, eff. 9-1-97; cr. (2) (k), Register, December, 1997, No. 504, eff. 1-1-98.

**NR 502.07 Transfer facilities.** (1) GENERAL. (a) Unless exempt under sub. (2m), owners and operators of solid

waste transfer facilities shall comply with the general requirements in s. NR 502.04.

(b) Unless exempt under sub. (2), (2f) or (2m), owners and operators of new or expanded solid waste transfer facilities shall demonstrate compliance with the locational criteria listed under sub. (3).

(c) Unless exempt under sub. (2), (2f) or (2m), no person may operate or maintain a solid waste transfer facility unless the person has received approval of a plan of operation as specified in sub. (4) and obtained an operating license from the department.

(d) No person may operate or maintain a transfer facility for infectious waste or items mixed with infectious waste unless the person complies with s. NR 526.09.

**(2) EXEMPTIONS.** Transfer facilities at which waste from individual users or from hand unloaded vehicles not exceeding one ton in capacity shall comply with the performance standards and closure requirements in s. NR 502.04(1) and (3) (a) and (b), but are exempt from all other requirements of this chapter, provided the facility is operated and maintained in conformance with the following practices:

(a) Containers shall be leak-proof and manufactured of non-degradable material such as metal, plastic or concrete.

(b) Where mechanical equipment is a part of the operation, access shall be limited to those times that an attendant is on duty. Access restrictions and an attendant may be required by the department for a nonmechanical facility.

(c) Containers shall be removed or emptied at least once per week and more frequently if conditions warrant.

(d) The transfer station and adjacent area shall be kept clean and free of litter.

(e) Burning of solid waste may not be conducted.

(f) Effective means shall be provided to control flies, rodents and other insects or vermin.

(g) An all-weather access road and parking area shall be provided and maintained.

(h) If recycling facilities are provided, they shall be clearly labeled and maintained in a nuisance-free manner.

**(2f) EXEMPT RECYCLING TRANSFER FACILITIES.** Facilities only for the transfer of items listed in s. 287.07 (3) or (4), Stats., shall comply with the performance standards and closure requirements in s. NR 502.04 (1) and (3) (a) and (b), but are exempt from all requirements of this chapter.

**(2m) EXEMPT USED OIL FACILITIES.** Transfer facilities for only used oil which is managed in compliance with ch. NR 590 are exempt from all requirements of this section.

**(3) LOCATIONAL CRITERIA.** (a) Except as otherwise specified in this section, new or expanded solid waste transfer facilities may not be located in any of the following areas, unless an exemption is granted under par. (b):

1. Within a floodplain.
2. Within 250 feet of any private water supply well, or within 1,200 feet of any public water supply well.
3. Within 250 feet of any navigable lake, pond or flowage.
4. Within 250 feet of any navigable river or stream.
5. Within 100 feet of land owned by a person other than the owner or operator of the facility, unless the waste handling operations are screened by natural objects, plantings, fences or other appropriate means so that it is not visible from the property boundary.
6. Within 1,000 feet of the nearest edge of the right-of-way of any state trunk highway, interstate or federal aid primary highway or the boundary of any public park, unless the facility is screened by natural objects, plantings, fences or other appropriate means so that it is not visible from the highway or park.
7. Within 10,000 feet of any airport runway used or planned to be used by turbojet aircraft or within 5,000 feet of any airport

runway used only by piston type aircraft or within other areas where a substantial bird hazard to aircraft would be created. This criterion is applicable only when the facility will be used for handling putrescible waste.

(b) The locational criteria listed under par. (a) 2. to 7., do not apply to waste transfer activities located within an enclosed building. However, the department may require enclosed solid waste transfer facilities to meet specified locational criteria in par. (a) if there is significant potential for the facility to cause environmental pollution as defined in s. 283.01 (6m), Stats., nuisance conditions or bird hazard to aircraft. The department may grant exemptions from the requirements of par. (a) 2. to 7., only upon demonstration by the applicant of circumstances which warrant the exemption. Exemptions from compliance with par. (a) 1. may not be granted.

**(4) PLAN OF OPERATION.** No person may establish or construct a transfer facility prior to obtaining approval in writing from the department of a plan of operation for the facility. The plan of operation shall specify the intent and objectives of the proposal, indicate methods and procedures to minimize adverse environmental impacts and provide a design which complies with the operational requirements in sub. (7). Unless an exemption is granted by the department in writing, the plan shall be submitted in accordance with s. NR 500.05 and shall contain engineering plans specified under sub. (5) and a report containing, at a minimum the following information:

(a) A legal description of the property and the facility boundaries.

(b) The present ownership of the proposed facility property.

(c) Land use within 1/4 mile of the proposed facility.

(d) The operator of the facility.

(e) The size of the facility.

(f) A USGS 7<sup>1</sup>/<sub>2</sub> minute or 15 minute quadrangle map of the facility property.

(g) The proposed methods of screening waste handling operations from the surrounding area.

(h) A discussion of the consistency of facility development with areawide solid waste management plans, land use plans or other areawide plans. Alternatives considered in the project planning phase shall be discussed.

(i) The population and area to be served by the facility and projections for changes in use in the future.

(j) The type and quantity of waste to be handled, and specific waste types which will not be accepted at the facility. The method for screening the incoming waste to eliminate unacceptable material such as asbestos, infectious waste, explosive wastes, hazardous waste or other materials from endangering the operators' safety shall be identified.

(k) The persons responsible for structural improvements, building maintenance and daily operation and control of the facility.

(l) The types of vehicles used to transport solid waste into and out of the facility.

(m) The vehicle traffic routing at the facility and provisions for access to connecting roadways.

(n) The source of the facility's water supply and the method of wastewater treatment.

(o) The methods of volume reduction to be used such as compacting, grinding, compression or tamping.

(p) The design criteria used to select equipment capacity and building configuration and sizing.

(q) Daily clean-up procedures.

(r) The names and locations of all solid waste disposal facilities to which waste from the transfer station may be hauled.

(s) The procedures for alternate routing of waste during inoperable periods at the facility.

(t) The procedures to handle heavy or bulky items and locations for storage of solid waste beyond the end of the working day.

(u) The equipment and procedures designed to control dust, odors, noise, fire and windblown paper.

(v) The proposed life expectancy of the facility.

(w) A detailed discussion of the safety equipment and procedures to be used at the facility.

**(5) ENGINEERING PLANS.** The plan of operation shall include a set of engineering plans and maps which contain the following information unless an exemption is granted in writing by the department:

(a) An existing conditions map, which shows the entire facility and the area within 1/2 mile. The minimum scale shall be 1" = 400'. This map shall include the facility boundary, property lines, easements and right-of-way; building foundations, roads, utilities and other structures; existing topography, drainage swales, surface waters, wetlands, floodplains and similar drainage features; wooded areas; location of soil borings and test pits; features of historical and archaeological significance; and other features as appropriate.

(b) A facility plan which shall include the proposed facility access roads and traffic patterns, buildings, scales, utility lines, drainage diversion, screening, means of access control, final topography, areas to be cleared of vegetation and other design features. The extent of coverage and scale shall be the same as that for the existing conditions map.

(c) A proposed process layout plan which shows the receiving, storage and loadout areas. The minimum scale shall be 1" = 20'. The plans shall include design details for the receiving area configuration and traffic flow patterns, storage area and equipment configuration, loadout area and equipment configuration, and other design features.

**(6) CONSTRUCTION DOCUMENTATION REPORT.** The department may require the applicant to submit a construction documentation report for any transfer facility required to submit a plan of operation. When a documentation report is required, it shall be prepared in accordance with the approved plan of operation and s. NR 500.05. Operation of the facility may not begin until the construction documentation report is approved in writing by the department and a license is issued. The department may issue a license prior to facility construction or construction documentation.

**(7) OPERATIONAL REQUIREMENTS FOR TRANSFER FACILITIES.** Unless exempt under sub. (2), (2f) or (2m), no person may operate or maintain a transfer facility except in conformance with an approved plan of operation and the following operational requirements:

(a) A sign shall be prominently posted at the entrance to the facility, which indicates the name, license number, the hours of operation, waste types accepted, necessary safety precautions and any other pertinent information specified by the department.

(b) A building, roofed and enclosed on at least 3 sides or otherwise enclosed to satisfactorily control dust, papers, and other waste materials, shall be provided.

(c) All wastewater shall be collected and treated at a wastewater treatment facility permitted to accept it.

(d) The facility shall be operated under the direct supervision of responsible individuals who are thoroughly familiar with the requirements and the operational procedures of the transfer facility.

(e) Access shall be restricted except when an attendant is on duty.

(f) There may be no storage of solid waste on the premises for a period greater than 24 hours except in conformance with s. NR 502.05 or unless the waste is contained in leak-proof vehicles or containers with impermeable tops used by a licensed col-

lection and transportation service. Longer storage periods may be authorized by the department for certain industrial and commercial waste depending on the design of the facility

(g) Unloading of solid waste may take place only within the enclosed structure and only in approved designated areas.

(h) Solid waste shall be confined to the unloading, loading and handling area.

(i) The transfer facility and adjacent area shall be kept clean and free of litter.

(j) Sewage solids, sludge, asbestos or wastes containing free liquids may not be accepted unless special handling plans for these wastes have been submitted to the department and approved in writing. Infectious or hazardous waste may not be accepted under any circumstances.

(k) Dust and odor generated by the unloading of solid waste and the operation of the transfer facility shall be controlled at all times.

(L) Burning of solid waste may not be conducted.

(m) Solid waste which is burning or is at a temperature likely to cause fire or is flammable or explosive may not be accepted.

(n) Equipment shall be provided to control accidental fires and arrangements shall be made with the local fire protection agency to provide immediate services when needed.

(o) Means shall be provided to control flies, rodents and other insects or vermin.

(p) Provisions shall be made for adequate maintenance of the transfer facility after each day of operation.

(q) Means of communication shall be provided for emergency purposes.

(r) An approved alternative method of waste processing or disposal shall be provided in the event that the transfer facility is rendered inoperable.

(s) Recyclable material may be separated from the incoming waste and stored provided that no fire hazard or nuisance conditions are created.

**History:** Cr. Register, January, 1988, No. 385, eff. 2-6-88; am. (1), (3) (j), Register, October, 1994, No. 466, eff. 11-1-94; am. (1), cr. (2m), Register, May, 1995, No. 473, eff. 6-1-95; r. and recr. (1), am. (2) (intro.), (2m), (7), (intro.), (c), (f), (g), cr. (2f), (3), r. (6), (8), renum. (3), (4) and (5) to be (4), (5) and (6) and am. (4) (intro.), (j), (6), Register, June, 1996, No. 486, eff. 7-1-96; am. (7) (j), Register, September, 1998, No. 513, eff. 10-1-98.

#### **NR 502.08 Solid waste processing facilities.**

**(1) GENERAL.** (a) Unless exempt under sub. (2), no person may operate or maintain a solid waste processing facility unless the person complies with the general requirements in s. NR 502.04, and has obtained a plan of operation approval as specified in sub. (4) and an operating license from the department.

(b) Unless exempt under sub. (2), owners and operators of new or expanded solid waste processing facilities shall demonstrate compliance with the applicable locational criteria in sub. (3).

**Note:** Persons treating infectious waste are required to submit a plan of operation and obtain a license for operating a solid waste processing facility under this section and shall comply with s. NR 526.12.

**(2) EXEMPTIONS.** The following facilities are exempt from all requirements of this chapter, except as specified:

(a) Incinerators, air curtain destructors, woodburning facilities, composting facilities and municipal solid waste combustors regulated under ss. NR 502.09 to 502.13.

(b) Materials recovery facilities.

(c) Facilities that process only used oil which is managed in compliance with ch. NR 590.

(d) Facilities for processing contaminated soil in accordance with ch. NR 718.

(e) Infectious waste treatment facilities which are exempt from licensing under s. NR 526.12(2).

(f) Facilities for the processing of scrap iron, steel or nonferrous metal using large machines to produce a principal product

of scrap metal for sale or use for remelting purposes and facilities which use large machines to sort, grade, compact, bale or process clean separate waste components consisting of waste paper, textiles, clean wood, glass, rubber, construction and demolition material, pavement or plastics, not mixed with each other or other solid waste, for sale or use for recycling purposes.

(g) Private alcohol fuel production systems provided the waste product is stored in an environmentally sound storage facility and disposed of using an environmentally safe land-spreading technique and the disposal is confined to the property of the owner.

(h) Facilities where solid wastes are generated as part of a manufacturing or industrial process and the solid wastes are processed within a building on the same property where the waste is generated, provided the solid waste generator complies with the performance standards and closure requirements in s. NR 502.04 (1) and (3) (a) and (b).

(i) Except for those facilities which are otherwise exempt under this subsection, facilities where solid wastes are processed for reuse or recycling by being incorporated into a structural material such as concrete or asphalt or converted into a consumer product, or used as a raw material in a commercial or industrial process are exempt from licensing and all other requirements of this chapter, provided the solid waste generator or processor obtains written approval from the department to use the waste for these purposes in accordance with the following:

1. Comply with the performance standards and closure requirements in s. NR 502.04(1) and (3) (a) and (b), and operate the facility in a nuisance-free and aesthetic manner.

2. Submit a process flow diagram and the necessary laboratory and field tests to show that the specific waste types to be used would not release quantities of contaminants into the environment such that a potential hazard to public health or the environment would be created.

**(3) LOCATIONAL CRITERIA FOR NONEXEMPT PROCESSING.** (a) Unless exempt under sub. (2), new or expanded processing facilities may not be located within any of the following areas, unless an exemption is granted under par. (b):

1. Within a floodplain.
2. Within 250 feet of any private water supply well, or within 1,200 feet of any public water supply well.
3. Within 250 feet of any navigable lake, pond or flowage.
4. Within 250 feet of any navigable river or stream.
5. Within 250 feet of land owned by a person other than the owner or operator of the facility, unless the facility is screened by natural objects, plantings, fences or other appropriate means so that it is not visible from the property boundary.
6. Within 1,000 feet of the nearest edge of the right-of-way of any state trunk highway, interstate or federal aid primary highway or the boundary of any public park, unless the facility is screened by natural objects, plantings, fences or other appropriate means so that it is not visible from the highway or park.
7. Within 10,000 feet of any airport runway used or planned to be used by turbojet aircraft or within 5,000 feet of any airport runway used only by piston type aircraft or within other areas where a substantial bird hazard to aircraft would be created. This criterion is applicable only when the facility will be used for handling putrescible waste.

(b) Processing facilities located within a building are not subject to par. (a) 2. to 7. However, the department may require containerized and enclosed solid waste processing facilities to meet specified locational criteria in par. (a) if there is significant potential for the facility to cause environmental pollution as defined in s. 283.01 (6m), Stats., nuisance conditions or bird hazard to aircraft. The department may grant exemptions from par. (a) 2. to 7., only upon demonstration by the applicant of cir-

cumstances which warrant the exemption. Exemption from compliance with par. (a) 1. may not be granted.

**(4) PLAN OF OPERATION - NONEXEMPT PROCESSING FACILITIES.** Unless exempt under sub. (2), no person may establish or construct a solid waste processing facility prior to obtaining approval in writing from the department of a plan of operation for the facility. Unless otherwise approved by the department in writing, the plan shall be submitted in accordance with s. NR 500.05, shall contain engineering plans specified under sub. (5), shall provide a design which complies with the operational requirements in sub. (6) and shall include a report containing, at a minimum, the following information:

(a) A legal description of the property and the facility boundaries.

(b) The present ownership of the proposed facility property.

(c) Land use within 1/4 mile of the proposed facility. Particular note shall be made of parks, hospitals, nursing homes and areas of archaeological and historical significance.

(d) The proposed service area, including population and major industries.

(e) The consistency of facility development with county solid waste plans and land use plans.

(f) The predominant types of vegetation and wildlife within the proposed facility boundaries.

(g) The persons responsible for facility construction and operation.

(h) A timetable for facility construction, shakedown and operation, and an operating schedule for the facility. All facilities operated more than 4 hours per day shall be equipped with a toilet and wash basin or have those facilities available within a reasonable distance.

(i) A complete materials balance for the facility, specifying amounts and characteristics of solid waste received and amounts and characteristics of products and wastes generated by the facility.

(j) The estimated quantities and characteristics of wastes containing free liquids resulting from facility operation and methods of their treatment or disposal. All wastewater resulting from the process shall be discharged into a sanitary sewer or other system approved by the department.

(k) The names and locations of all solid waste disposal facilities at which solid waste from the processing plant will be disposed, and potential contractual arrangements and distribution plans for recovered solid wastes or products produced.

(L) A proposed design providing enclosure for all installed processing equipment. Explosion-prone equipment such as primary shredders shall be placed in a separate room with explosion venting or explosion suppression equipment.

(m) A proposed design providing for shrouding and dust collection and removal equipment for the receiving area and all dry processing units such as shredders, screens, air classification devices, magnetic separators and similar equipment and all conveyor transfer points where dust is generated. Any air collected in this manner shall be directed through appropriate air pollution control equipment before being discharged.

(n) A discussion of any additional procedures for the control of dust, odors, fire, windblown materials and potential explosions and for the handling of the waste in the case of major processing facility breakdown. Dust within a facility shall be controlled so that operators are not exposed to undue health risk.

(o) A proposed design providing for all buildings enclosing processing equipment to have a sloped concrete floor with floor drains connected to a sanitary sewer or other system approved by the department.

(p) A proposed design providing for all processing, receiving or storage areas not enclosed by a building to be graded at a mini-



mum 1% slope and surfaced with a material which will adequately support heavy equipment, resist frost action, provide a wearing surface and prevent contamination of groundwater. Runoff from these areas shall be directed to a sanitary sewer or other system approved by the department.

(q) A discussion of the quality and quantity of air discharge from plant operations and the need for any permits. For thermal processing facilities, the report shall include a proposed design to provide adequate temperature and residence time in the reaction chambers to assure complete processing and necessary air pollution control equipment to meet state air pollution control regulations.

(r) A discussion of the types of vehicles and access routes used to transport solid waste to and from the facility, including the estimated increase in traffic, and traffic flow patterns within the facility.

(s) A proposed design providing for access roads of all-weather construction and a maximum 10% grade. The intersection of the access road with an existing highway shall be designed to provide sufficient sight distance and provide for minimum interference with traffic on existing highways.

(t) A proposed design limiting access to the processing facility by means of fencing, natural barriers or other methods.

(u) Information to document that the size and configuration of the facility grounds, building and equipment, including the facility layout, drainage structures, building design, and major facility equipment, as specified to be shown in the engineering plans, are adequate for management of the proposed waste quantities and processes.

(v) Provisions for protection of groundwater and surface water during facility construction and operation.

(w) A discussion of possible operational hazards and necessary safety precautions.

(x) Procedures for facility closure.

**Note:** These facilities may be subject to other regulations including OSHA requirements.

**(5) ENGINEERING PLANS.** The plan of operation shall include a set of engineering plans and maps which contain the following information unless an exemption is granted by the department in writing:

(a) An existing conditions map, which shows the entire facility and the area within 1/4 mile. The minimum scale shall be 1" = 400'. This map shall include the proposed facility boundary, property lines, easements and rights-of-way, buildings foundations, roads, utilities and other structures; topography, drainage swales, surface waters, wetlands, floodplains and similar drainage features; wooded areas; location of soil borings and test pits; features of historical and archaeological significance; and other features as appropriate.

(b) A facility plan which includes the proposed facility access roads and traffic patterns, buildings, scales, utility lines, drainage diversion, screening, means of access control, final topography, areas to be cleared of vegetation, and other design features. The extent of coverage and scale shall be the same as that for the existing conditions map.

(c) A proposed layout of each facility building including receiving, processing, and loadout areas. The minimum scale shall be 1" = 20'. The building layout shall also show the location of all major facility equipment, including material handling equipment, air handling and air pollution control equipment, floor drains and process sewers, and other pertinent design features.

(d) At least one cross section drawn through the receiving area, each process line, and the loadout area indicating existing topography, limits of excavation, proposed final grade, and other pertinent design features. More cross sections may be necessary depending on the complexity of the facility design.

**(6) MINIMUM OPERATIONAL REQUIREMENTS.** No person may operate or maintain a solid waste processing facility except in conformance with any approved plan of operation and the following minimum requirements:

(a) A sign, acceptable to the department, shall be posted at the entrance to the facility which indicates the name, license number, the hours of operation, a list of all prohibited wastes, the penalty for unauthorized use, all necessary safety precautions and other pertinent information.

(b) Access to the processing facility shall be limited to those times that an attendant is on duty.

(c) A processing facility shall be operated under the close supervision of responsible individuals who are thoroughly familiar with the requirements and operational procedures of the plant.

(d) Unloading of solid waste shall take place only in approved, designated areas. All solid waste, with the exception of that in the process line, shall be stored in conformance with s. NR 502.05.

(e) The operation shall be conducted in a manner to prevent public health hazards and nuisances, including keeping the processing facility and adjacent area clean and free from litter, and taking effective means to control flies, rodents and other insects or vermin.

(f) Waste containing free liquids, sludges or asbestos waste shall be excluded unless plans specifically addressing the handling of these materials have been submitted to the department and approved in writing. Solid waste which is flammable or explosive may not be accepted. Infectious waste may be accepted only in accordance with s. NR 526.12.

(g) Equipment shall be provided to control accidental fires and arrangements shall be made with the local fire protection agency to provide immediate services when needed.

(h) All operators shall be trained on the sources, quantities and characteristics of the wastes to be processed; process line start up procedures, routine monitoring and cleanup procedures; daily processing and equipment maintenance schedules; methods of controlling access, odors and windblown materials; methods of controlling fires and explosions, use of appropriate safety equipment; persons to contact concerning operational problems and emergencies. An operator training manual containing this and other pertinent operating information shall be prepared and maintained at the facility. Means of communication with emergency facilities shall be provided.

(i) Open burning of solid waste may not be conducted.

(j) Materials resulting from composting or similar processes and offered for sale or public distribution shall be:

1. Stabilized to eliminate pathogenic organisms and to ensure that the materials do not reheat upon standing.

2. Free of sharp particles which could cause injury to persons handling the compost.

3. Free of toxins which could cause detrimental impacts to public health or the environment.

(k) Dust generated by the unloading of solid waste and the operation of the processing facility shall be controlled in accordance with the state air management rules so as not to create nuisance conditions.

(L) If required by the department, permanent records of facility performance shall be maintained and submitted to the department with the relicensing application or as specified in the plan approval. Records shall indicate types, sources and amounts of solid waste processed, minor plant modifications performed, process monitoring data, amounts and characterization testing of process outputs, and other data as required by the department when granting the license.

(m) Arrangements shall be made with an approved solid waste disposal facility for use in the event that the processing

facility is rendered inoperable or is not able to completely process the solid waste.

(n) By-products or residues shall be disposed of in facilities approved to receive such waste or shall be handled by an alternative method approved by the department.

(o) All areas disturbed during facility construction or operation shall be graded to a maximum slope of 3 horizontal to 1 vertical, covered with 6 inches of topsoil and seeded or otherwise protected from soil erosion. All borrow areas shall be abandoned in accordance with Wisconsin department of transportation procedures.

**(7) CONSTRUCTION DOCUMENTATION.** The department may require that a registered professional engineer document facility construction and render an opinion whether the facility has been constructed in substantial conformance with the approved plan. When a documentation report is required, it shall be prepared in accordance with the approved plan of operation and s. NR 500.05. Operation of the facility may not commence until the construction documentation report is approved in writing by the department and a license is issued. The department may issue a license prior to facility construction or construction documentation.

**(8) MONITORING.** Specific monitoring requirements and testing procedures for new, expanded and existing processing facilities will be determined by the department based on a review of the potential for environmental pollution. The department may require the owner or operator of any processing facility or any person who permits the use of property for that purpose to conduct monitoring as follows:

(a) Air quality monitoring.

(b) Product testing and waste characterization. The frequency of testing and parameters to be analyzed will be determined based on a review of the proposal and complexity of the product. The quality control program will correlate with the nature of the waste to be processed and final uses proposed for the material.

(c) Groundwater and surface water monitoring. The frequency and type of monitoring and analysis will be determined based on a review of the project.

(d) Periodic assessments of plant operation, process feasibility and marketability analyses of processed materials.

**History:** Cr. Register, January, 1988, No. 385, eff. 2-6-88; am. (1), cr. (15), Register, May, 1992, No. 437, eff. 6-1-92; am. (1), (2) (f), (9) (l), Register, October, 1994, No. 466, eff. 11-1-94; cr. (2) (g), Register, May, 1995, No. 473, eff. 6-1-95; r. and recr., Register, June, 1996, No. 486, eff. 7-1-96; am. (2) (i) (intro.), Register, September, 1998, No. 513, eff. 10-1-98.

**NR 502.09 Incinerators. (1) GENERAL.** (a) Unless exempt under sub. (2), no person may operate a solid waste incinerator unless the person complies with the general requirements in s. NR 502.04 and has obtained a plan of operation approval as specified in sub. (4) and an operating license from the department.

(b) Unless exempt under sub. (2), owners and operators of new or expanded solid waste incinerators shall demonstrate compliance with the locational criteria in sub. (3).

**(2) EXEMPTIONS.** (a) Incinerators having a capacity of 500 pounds per hour or less are exempt from all requirements of this section except the disposal requirements in sub. (5) (n) and the ash characterization requirements in sub. (6). The facility shall be designed and operated in conformance with emission limitations of state air pollution control regulations in chs. NR 400 to 499.

(b) Incinerators burning only clean wood waste are exempt from all requirements of this section except the disposal requirements in sub. (5) (n) and the ash characterization requirements in sub. (6).

(c) Municipal solid waste combustors which are regulated under s. NR 502.13 are not subject to regulation under this section.

(d) Incinerators which burn only used oil which is managed in compliance with ch. NR 590 are exempt from all requirements of this section.

**(3) LOCATIONAL CRITERIA.** (a) Except as otherwise specified in this section, new or expanded solid waste incinerator facilities may not be located in any of the following areas, unless an exemption has been granted under par. (b):

1. Within a floodplain.

2. Within 250 feet of any private water supply well, or within 1,200 feet of any public water supply well.

(b) The department may require an incinerator facility meet additional locational criteria if there is significant potential for the facility to cause environmental pollution as defined in s. 283.01 (6m), Stats., nuisance conditions or bird hazard to aircraft. The department may grant exemptions from compliance with par. (a) 2. only upon demonstration by the applicant of circumstances which warrant such exemptions. Exemption from compliance with par. (a) 1. may not be granted.

**(4) PLAN OF OPERATION.** No person may establish or construct an incinerator or expand an existing incinerator prior to obtaining approval in writing from the department of a plan of operation for the facility. The plan of operation for an incinerator shall provide a design which complies with the operational requirements in sub. (5) and contain, at a minimum, the following information:

(a) A map or aerial photograph of the area showing land use and zoning within 1/4 mile of the site. The map or aerial photograph shall be of sufficient scale to show all homes, industrial buildings, roads and other applicable details and the details shall be identified and indicated on the map or aerial photograph.

(b) A plot plan of the incinerator site including means of limiting access such as fencing, gates, natural barriers; methods of acceptably screening the facility from the surrounding area; general layout of equipment and flow pattern; road access; and location of existing and proposed utilities serving the incinerator.

(c) A report which shall include the following information:

1. The legal description of the property where the incinerator will be located.

2. Population, area and facilities to be served by the incinerator.

3. Anticipated type and quantity of waste to be handled by the incinerator.

4. Persons responsible for incinerator operations.

5. Methods of collecting and treating or disposing of any liquid wastes or waste waters resulting from the operation of the incinerator.

(d) A description of all appurtenances and procedures intended to store refuse beyond the end of the working day and to control dust, odors, fire outside the burning chamber and windblown materials.

(e) A description of all methods of volume reduction including compaction, compression, baling, shredding, grinding, tamping, separating or classifying.

(f) A description of daily clean up procedures.

(g) A description of incinerator inspection and maintenance schedule and procedures.

(h) Detailed drawings and specifications of all structures, equipment and site.

(i) A report which includes furnace design criteria and expected performance data, including emission data.

(j) Identification of the site at which the ash residue will be disposed and alternative sites available for use when the primary site is inoperative.

**(5) OPERATIONAL REQUIREMENTS.** No person may operate or maintain an incinerator except in conformance with the following minimum requirements, unless an exemption is granted by the department in writing:

(a) The incinerator shall be equipped, operated and maintained in a nuisance-free manner.

(b) Adequate shelter and sanitary facilities shall be available for personnel.

(c) A sign shall be prominently posted at the entrance to the facility which indicates the name, license number, the hours of operation, necessary safety precautions and any other pertinent information.

(d) All incoming solid waste shall be confined to the designated storage area.

(e) Solid waste shall be stored in conformance with s. NR 502.05.

(f) Dust shall be controlled in the unloading and charging areas.

(g) Permanent records shall be maintained including the weights of material incinerated, the quantity of resulting residue, hours of plant operation, combustion temperatures, residence time and other pertinent information.

(h) Appropriate fire-fighting equipment shall be available in the storage and charging areas and elsewhere as needed.

(i) Arrangements shall be made with the local fire protection agency to provide adequate emergency fire-fighting forces.

(j) Means of communication with emergency facilities shall be provided.

(k) Adequate equipment shall be provided and used to clean the waste storage, waste handling, waste charging, and ash handling areas as may be required in order to maintain the facility in a sanitary condition.

(L) The charging openings as well as all equipment throughout the plant shall be provided with adequate safety equipment.

(m) The incinerator shall be designed and operated such that it will not cause a nuisance because of the emission of noxious odors, gases, contaminants or particulate matter or exceed emission limitations established by state air management rules.

(n) Ash shall be disposed of at a solid waste facility licensed by the department to accept the material or be handled by an alternate method approved in writing by the department. Approval will be issued on a case-by-case basis after review of the information specified in sub. (6).

(o) All wastewater from the incinerator shall be discharged into a sanitary sewer or other system approved in writing by the department.

(p) Upon completion of construction of a new incinerator and at least 10 days prior to initial operation, the department shall be notified to allow inspection of the incinerator both prior to and during any performance tests and initial operation.

(q) Open burning of solid waste may not be conducted.

(r) An approved alternative method shall be used for solid waste disposal during any time that the incinerator is inoperable.

(s) The incoming waste shall be screened to eliminate unacceptable material from entering the facility such as hazardous waste, asbestos, explosive materials or other materials which may endanger operator safety.

**(6) ASH CHARACTERIZATION.** The owner or operator of an incinerator shall undertake a testing program as follows and submit the test results to the department:

(a) An ash testing program shall be completed within 60 days after construction and shake-down of the incinerator. Representative samples of both fly ash and bottom ash shall be tested for

physical characteristics, bulk chemical composition, analysis using the appropriate leaching test and analysis using the toxicity characteristic leaching procedure as specified in s. NR 605.08(5). Sample collection methods, the number of tests, detection limits, and parameters to be tested for will be specified by the department.

(b) A long-term ash testing program shall be established. For the first year of operation, quarterly testing shall be performed using approved methods and procedures. Thereafter, annual sampling and testing shall be performed. At least one sample of bottom ash and one sample of fly ash, if the ashes are not mechanically combined, or one sample of combined bottom and fly ash, if the ashes are mechanically combined, shall be collected for the required testing. The department may specify an alternate testing program.

**History:** Cr. Register, January, 1988, No. 385, eff. 2-6-88; r. and recr. (1), renum. (4) and (5) to be (5) and (6), cr. (2) (c) and (4), Register, May, 1992, No. 437, eff. 6-1-92; cr. (2) (d), Register, May, 1995, No. 473, eff. 6-1-95; r. and recr. (1), (3), (4) (c), am. (2) (a) to (d), (4) (intro.), (d) to (g), (j), (5) (intro.), (a), (k), (n), (q), (6), (intro.), (a), (b), Register, June, 1996, No. 486, eff. 7-1-96.

**NR 502.10 Air curtain destructors. (1) GENERAL.** (a) No person may operate or maintain an air curtain destructor unless the person complies with the general requirements specified in s. NR 502.04 and has obtained a plan of operation approval as specified in sub. (3) and an operating license from the department.

(b) Owners and operators of new or expanded air curtain destructors shall demonstrate compliance with the locational criteria listed in sub. (2).

**(2) LOCATIONAL CRITERIA FOR AIR CURTAIN DESTRUCTOR FACILITIES.** (a) Except as otherwise specified in this section, new or expanded air curtain destructor facilities may not be located in any of the following areas, unless an exemption has been granted under par. (b):

1. Within a floodplain.
2. Within 250 feet of any private water supply well, or within 1,200 feet of any public water supply well.
3. Within 250 feet of any navigable lake, pond or flowage.
4. Within 250 feet of any navigable river or stream.
5. Within 100 feet of land owned by a person other than the owner or operator of the facility, unless the facility is screened by natural objects, plantings, fences or other appropriate means so that it is not visible from the property boundary.
6. Within 1,000 feet of the nearest edge of the right-of-way of any state trunk highway, interstate or federal aid primary highway or the boundary of any public park, unless the facility is screened by natural objects, plantings, fences or other appropriate means so that it is not visible from the highway or park.

(b) The standards listed under par. (a) 2. to 6. do not apply to above ground self contained air curtain destructors. The department may grant exemptions from the requirements of par. (a) 2. to 6. only upon demonstration by the applicant of circumstances which warrant the exemptions. Exemption from compliance with par. (a) 1. may not be granted.

**(3) PLAN OF OPERATION.** No person may establish or construct an air curtain destructor or expand an existing air curtain destructor prior to obtaining approval in writing from the department of a plan of operation for the facility. The plan of operation shall include a design which complies with the design and operational requirements in sub. (4) and contains at a minimum the following:

(a) Name, address and telephone number of the facility operator.

(b) A description of the types, quantity and sources of material proposed to be burned, and anticipated frequency of burning.

(c) Written consent to operate the facility from all adult residents and business owners within 1/4 mile of the burning pad,

except that consent is not required from any person who was not an adult resident or proprietor at the time the facility was initially licensed by the department, unless that person is a successor in interest to a person who was an adult resident or proprietor at the time. If a resident or proprietor who previously consented to operation of the facility withdraws the consent in writing, the withdrawal is not effective until the end of the current license period for the facility.

**(4) DESIGN AND OPERATIONAL REQUIREMENTS.** No person may construct, operate or maintain an air curtain destructor except in conformance with all local burning regulations and permits, state air management rules, with any approved plan of operation and the following minimum requirements:

(a) The burning pit shall be constructed of a material which will result in a pit of permanent dimensions. Unconsolidated soils are not an acceptable material for construction of the burning pit. Maintenance shall be performed on the pit to keep its dimensions constant to keep the air curtain destructor operating properly.

(b) The burning pit floor shall be constructed in a manner which provides for proper drainage.

(c) The burning pit shall be oriented perpendicular to the prevailing wind with the plenum chamber and blower on the downwind side.

(d) The charging area shall be paved with the concrete pad for a distance of at least 10 feet from the edge of the burning pit and sloped away from the chamber. Adequate safety devices shall be provided to prevent loading equipment from falling into the burning pit.

(e) Only clean wood and brush may be burned in an air curtain destructor. Brush shall be burned only in conformance with s. 287.07, Stats.

(f) The stockpile of waste material shall be kept a minimum of 100 feet from the burner. The total amount of stockpiled waste shall be limited to the amount that can be burned in 5 days.

(g) Charging shall be done to prevent damage to the pit wall and floor.

(h) Waste shall be placed so that it does not extend above the burning pit or interfere with air circulation.

(i) Start-up shall be accomplished by using wood kindling material to ignite larger materials. Where sufficient quantities of wood kindling materials are unobtainable, other methods approved by the department in writing may be used.

(j) Burning may be conducted only during daylight hours. Quantities of materials to be burned shall be restricted to allow for complete burnout while the facility is attended.

(k) Fire-fighting equipment shall be kept at the facility in case of emergency. Arrangements shall also be made with the local government to provide fire protection. Fire breaks shall be provided for a distance of at least 100 feet from the air curtain destructor. Greater setbacks may be specified by the department.

(L) The burning pit shall be cleaned out on a regular schedule. Ashes may not be allowed to accumulate to a depth of greater than 3 feet. The department may specify a lesser depth.

(m) The air curtain destructor shall be surrounded by a fence with a lockable gate. The gate shall be kept locked when no attendant is on duty.

(n) An attendant shall be on duty at all times when the blower unit is in operation. All fires shall be extinguished when the blower unit is shut off.

(o) Warning signs shall be posted at intervals around the entire air curtain destructor installation notifying people to keep out of the area.

(p) A sign acceptable to the department shall be posted at the entrance to the operation which indicates the name, acceptable wastes, license number, the hours of operation, penalty for non-

authorized use, necessary safety precautions and any other pertinent information.

(q) Surface water shall be diverted away from the active operating area, storage area and access areas.

(r) Ash resulting from the operation shall be disposed of at a facility approved by the department to receive such material.

(s) The facility shall be operated in a nuisance-free manner consistent with this chapter and in accordance with the state air management rules in chs. NR 400 to 499.

**Note:** Air curtain destructor facilities must obtain a burning permit during certain times of the year under s. 26.12, Stats., or may be required to obtain a burning permit from the township in which the burning will occur.

**History:** Cr. Register, January, 1988, No. 385, eff. 2-1-88; r. and recr. (1), (2), (3), am. (4) (intro.), (a), (e), (f), (h), (i), r. (4) (m), (n), (5), r. (4) (m), (n), (5), rn. (4) (o) to (u) to be (4) (m) to (s) and am. (4) (n), (p), (s), Register, June, 1996, No. 486, eff. 7-1-96.

**NR 502.11 Woodburning facilities. (1) GENERAL.** (a) Unless exempt under sub. (2), owners and operators of woodburning facilities shall comply with the general requirements in s. NR 502.04, comply with the design and operational requirements in sub. (5), and obtain a plan of operation approval as specified in sub. (4) and an operating license from the department.

(b) Unless exempt under sub. (2), owners and operators of new or expanded woodburning facilities shall demonstrate compliance with the locational criteria in sub. (3).

**(2) EXEMPTIONS.** The following woodburning facilities are exempt from licensing and all requirements of this section, although a burning permit from the department may still be required during certain times of the year in counties within a forest fire control area. These exempt facilities may not burn wet combustible rubbish, garbage, oily substances, asphalt, plastic or rubber products, unless these substances are exempt under s. NR 429.04.

(a) Burning of trees, limbs, stumps, brush or weeds, except for yard waste, as a result of agricultural or silvicultural activities, if the burning is conducted on the property where the waste is generated.

(b) Burning of trees, limbs, stumps, brush or weeds, except for yard waste, as a result of clearing or maintenance of highway, railroad or utility rights-of-way and other land clearing operations, if the burning is conducted on the property where the waste is generated.

(c) Burning existing structures for practice and instruction of fire fighters or testing of fire fighting equipment. If the burning includes a building, a demolition notification shall be submitted to the air management program of the department. Asphalt shingles and asphalt and plastic siding shall be removed from structures unless they are considered necessary to the fire practice. All material containing asbestos shall be removed in compliance with ch. NR 447. Ash from the burned structure shall be disposed of, when cool, in a landfill approved by the department. The department may approve alternate ash disposal sites if groundwater and surface water quality will not be affected.

(d) Burning of yard waste and small quantities of dry combustible household rubbish, including paper, cardboard and clean untreated wood from a single family or household, on property where it is generated, unless prohibited by local ordinance.

(e) In emergency situations such as natural disasters, brush and other yard waste can be disposed in a landfill or burned without energy recovery, with approval from the department.

(f) One time burning of dry, unpainted and untreated wood, stumps, trees and brush in conformance with s. 287.07, Stats. Department staff shall be notified prior to the burn to obtain concurrence that the burn is in accordance with this provision and that the amount of this wood to be burned on a one time basis and

the rate of burning comply with state air management rules in chs. NR 400 to 499.

**Note:** Woodburning facility license requirements do not apply to backfires set by fire control personnel to aid in controlling forest fires or fires set for forest, wildlife habitat or grassland management purposes.

**(3) LOCATIONAL CRITERIA.** (a) Except as otherwise specified in this chapter, new or expanded woodburning facilities may not be located in any of the following areas, unless an exemption is granted under par. (b):

1. Within a floodplain.
2. Within 250 feet of any private water supply well, or within 1,200 feet of any public water supply well.
3. Within 250 feet of any navigable lake, pond or flowage.
4. Within 250 feet of any navigable river or stream.
5. Within 100 feet of land owned by a person other than the owner or operator of the facility, unless the facility is screened by natural objects, plantings, fences or other appropriate means so that it is not visible from the property boundary.
6. Within 1,000 feet of the nearest edge of the right-of-way of any state trunk highway, interstate or federal aid primary highway or the boundary of any public park, unless the facility is screened by natural objects, plantings, fences or other appropriate means so that it is not visible from the highway or park.
7. Within 10,000 feet of any airport runway used or planned to be used by turbojet aircraft or within 5,000 feet of any airport runway used only by piston type aircraft or within other areas where a substantial hazard to aircraft would be created.
8. Within 1/4 mile of any residence unless a written consent is obtained from all adult residents within 1/4 mile of the burning pad.
9. Within the limits of fill of an existing or abandoned land-fill.

(b) The department may grant exemptions to par. (a) 2. to 7. only upon demonstration by the applicant of circumstances which warrant the exemptions. Exemptions from compliance with par. (a) 1., 8. and 9., may not be granted.

**(4) PLAN OF OPERATION.** No person may establish or construct a woodburning facility or expand an existing woodburning facility prior to obtaining approval in writing from the department of a plan of operation for the facility. Unless otherwise approved by the department in writing, the plan of operation shall include a design which complies with the design and operational requirements in sub. (5) and contains at a minimum the following:

- (a) Name, address and telephone number of facility operator.
- (b) A description of the types, quantity and sources of material proposed to be burned, and anticipated frequency of burning.
- (c) Written consent from all adult residents and business owners within 1/4 mile of the burning pad, except that consent is not required from any person who was not an adult resident or proprietor at the time the facility was initially licensed by the department, unless that person is a successor in interest to a person who was an adult resident or proprietor at the time. If a resident or proprietor who previously consented to operation of the facility withdraws the consent in writing, the withdrawal is not effective until the end of the current license period for the facility.

**(5) DESIGN AND OPERATIONAL REQUIREMENTS.** No person may construct, operate or maintain a woodburning facility except in conformance with all local burning regulations and permits, state air management rules in chs. NR 400 to 499, any approved plan of operation and the following minimum requirements:

(a) All burning shall be done on a burning pad or pit constructed of concrete, compacted gravel, compacted mineral soil or other materials approved in writing by the department. A fire-

break of mineral soil scraped free of vegetation for a minimum distance of 100 feet around the burning pad or pit shall be constructed. Greater setback distances may be required by the department.

(b) Only dry, unpainted and untreated wood, stumps or trees may be burned at a woodburning facility. Brush shall be burned only in conformance with s. 287.07, Stats.

(c) Waste material may be placed or stored on the burning pad, but may not exceed the amount of wood that can be burned in one day in conformance with ch. NR 445. Any additional accumulation of waste material shall be stockpiled a minimum of 100 feet from the burning pad. The total amount of stockpiled waste shall be limited to the amount that can be burned in 5 calendar days.

(d) Start-up shall be accomplished by using wood kindling material to ignite larger materials. Where sufficient quantities of wood kindling materials are unobtainable, other methods approved by the department in writing may be used.

(e) Burning shall be conducted only during daylight hours.

(f) Fire-fighting equipment shall be kept at the facility in case of emergency, unless the services of a local fire protection agency are arranged.

(g) The burning pad shall be surrounded by a fence with a lockable gate. The gate shall be kept locked when no attendant is on duty.

(h) An attendant shall be on duty at all times when burning is taking place. All fires shall be extinguished before the attendant leaves the facility. The fire shall be actively tended and maintained to promote complete combustion, ensure good fuel-flame contact and burndown.

(j) A sign acceptable to the department shall be posted at the entrance to the operation which indicates the facility name, acceptable wastes, license number, the hours of operation, penalty for unauthorized use, necessary safety precautions and any other pertinent information.

(k) Storm water shall be diverted away from the burning pad, storage area and access areas.

(L) Ash resulting from the operation shall be disposed of at a facility approved by the department to receive that material.

(m) The facility shall be operated in a nuisance-free manner.

**Note:** Woodburning facilities must obtain a burning permit during certain times of the year under s. 26.12, Stats., or may be required to obtain a burning permit from the township in which the burning will occur.

**History:** Cr. Register, January, 1988, No. 385, eff. 2-1-88; r. and recr., Register, June, 1996, No. 486, eff. 7-1-96.

### **NR 502.12 Yard, farm and vegetable food waste composting facilities.**

**(1) GENERAL.** No person may operate or maintain a solid waste composting facility for yard waste, clean chipped wood, farm crop residue, farm animal manure, animal carcasses or vegetable food waste, except in accordance with the following requirements:

(a) Unless exempt under sub. (2), comply with the performance standards in s. NR 502.04 (1) and operate the facility in a nuisance-free and environmentally sound manner.

(b) Unless exempt under sub. (2), (3) or (4), comply with the closure requirements in s. NR 502.04 (3) (a) and (b), and the minimum operational and design standards in subs. (10) and (11).

(c) Unless exempt under sub. (2), (3), (4) or (5), obtain an operating license from the department.

(d) Unless exempt under sub. (2), (3), (4) or (5), owners and operators of new or expanded facilities regulated under this section shall comply with the initial site inspection requirements in s. NR 502.04 (2) and demonstrate compliance with the locational criteria in sub. (8).

(e) Unless exempt under sub. (2), (3), (4), (5), (6) or (7), comply with all of the following:

1. The requirements in s. NR 502.04 (3) (c), (4), (5) and (6).
2. The additional operational and design standards in sub. (12).
3. Obtain a plan of operation approval and a construction documentation approval as specified in subs. (13) and (14).
4. The monitoring and reporting requirements specified in sub. (15).

(f) Unless exempt under sub. (2), (3), (4), (5), (6) or (7), owners and operators of new or expanded facilities regulated under this section shall comply with the initial site inspection requirements in s. NR 502.04 (2) and demonstrate compliance with the locational criteria in sub. (9).

**Note:** Facilities for composting waste types other than yard waste, clean chipped wood, farm crop residue, farm animal manure, animal carcasses or vegetable food waste 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.

**(2) HOUSEHOLD EXEMPTION.** Facilities for composting only solid waste 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.

**(3) EXEMPTION FOR YARD AND VEGETABLE FOOD WASTE COMPOSTING FACILITIES WITH CAPACITY OF 50 CUBIC YARDS OR LESS.** Facilities for composting yard waste, clean chipped wood waste, vegetable food waste or manure which do not exceed 50 cubic yards at one time 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 all of the following requirements are met:

- (a) The requirements specified in s. NR 502.04 (1).
- (b) The facility is operated in a nuisance-free and environmentally sound manner.

**(4) EXEMPTION FOR FARM CROP RESIDUE OR MANURE COMPOSTING FACILITIES.** Facilities for on site composting of farm crop residue or 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:

- (a) The performance standards in s. NR 502.04 (1).
- (b) The facility is operated in a nuisance-free and environmentally sound manner.
- (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.
- (d) 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).
- (e) If yard waste or clean chipped wood are accepted from off site, the following requirements shall be met:

1. The minimum operational and design standards in subs. (10) and (11).
2. The yard waste and clean chipped wood shall be mixed with manure to increase the carbon to nitrogen ratio and the porosity of the composting process.
3. The combined volume of farm crop residue, farm animal manure, yard waste and clean chipped wood on site at one time may not exceed 10,000 cubic yards, including collected feedstocks, the composting process and finished compost.

**Note:** Animal manure management is also regulated under ch. NR 243. Public distribution of the compost may be regulated by the department of agriculture, trade and consumer protection (DATCP). Local ordinances may apply to facilities regulated under this section. 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 resulting from the operation of a farm, including farm animal manure, are disposed.
- Landspreading of uncomposted yard waste.
- Landspreading composted leaves, grass, brush, vegetable food waste and other similar vegetable matter.

**(5) EXEMPTION FOR ON SITE FARM ANIMAL CARCASS COMPOSTING FACILITIES.** Facilities for on site farm composting of animal carcasses 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:

- (a) The performance standards in s. NR 502.04 (1).
- (b) The minimum operational and design standards in subs. (10) and (11).
- (c) Only animal carcasses, farm animal manure, farm crop residue, yard waste and clean chipped wood are composted at the facility.
- (d) All the farm wastes composted are generated from agricultural operations either under common ownership, common management or located adjacent to each other.
- (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).

(f) If yard waste or clean chipped wood are accepted from off site, the following requirements shall be met:

1. The yard waste or clean chipped wood shall be mixed with farm wastes to increase the carbon to nitrogen ratio and porosity of the composting process.
2. The combined volume of animal carcasses, farm animal manure, farm crop residue, yard waste and clean chipped wood on site at one time may not exceed 10,000 cubic yards, including collected feedstocks, the composting process and finished compost.

**(6) EXEMPTION FOR YARD WASTE COMPOSTING FACILITIES WITH CAPACITY OF 20,000 CUBIC YARDS OR LESS.** Facilities for composting yard waste and clean chipped wood waste which do not exceed 20,000 cubic yards at one time 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:

- (a) The performance standards and closure requirements in s. NR 502.04 (1) and (3) (a) and (b).
- (b) 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).
- (c) The minimum operational and design standards in subs. (10) and (11).
- (d) An operating license for the facility is issued by the department.
- (e) The compost is utilized for landspreading, either on site or off site, in accordance with s. NR 518.04 (1)(i).

**(7) EXEMPTION FOR VEGETABLE FOOD COMPOSTING FACILITIES OF 500 CUBIC YARDS OR LESS.** Facilities for composting vegetable food waste which do not exceed 500 cubic yards at one time 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, provided all of the following requirements are met:

- (a) The requirements in s. NR 502.04 (1) and (3) (a) and (b).
- (b) New or expanded facilities shall comply with s. NR 502.04 (2) and demonstrate compliance with the locational criteria in sub. (8).
- (c) The minimum operational and design standards in subs. (10) and (11).
- (d) An operating license for the facility is issued by the department.

(e) The compost is utilized for landspreading, either on site or off site, in accordance with s. NR 518.04 (1) (i).

(f) Only vegetable food waste, yard waste and clean chipped wood are composted at the facility.

**(8) LOCALONAL CRITERIA FOR EXEMPT YARD WASTE COMPOSTING FACILITIES AND EXEMPT VEGETABLE FOOD WASTE COMPOSTING FACILITIES.** (a) Facilities described in sub. (6) or (7) may not be located in any of the following areas unless an exemption has been granted in writing by the department under par. (b):

1. Within a floodplain.
2. Within 5 feet of the seasonal high groundwater table.
3. Within 250 feet of any private water supply well, or within 1,200 feet of any public water supply well.
4. Within 250 feet of any navigable lake, pond or flowage.
5. Within 250 feet of any navigable river or stream.
6. Within 100 feet of land owned by a person other than the owner or operator of the facility.
7. Within 1,000 feet of the nearest edge of the right-of-way of any state trunk highway, interstate or federal aid primary highway or the boundary of any public park, unless the facility is screened by natural objects, plantings, fences or other appropriate means so that it is not visible from the highway or park.

8. Within 10,000 feet of any airport runway used or planned to be used by turbojet aircraft or within 5,000 feet of any airport runway used only by piston type aircraft or within other areas where a substantial bird hazard to aircraft would be created. This criterion is applicable only when the facility will be used for handling putrescible waste.

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

**(9) LOCALONAL CRITERIA FOR NONEXEMPT COMPOSTING FACILITIES.** (a) Unless exempt under sub. (2), (3), (4), (5), (6) or (7), new or expanded composting 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):

1. Within a floodplain.
2. Within 5 feet of the seasonal high groundwater table.
3. Within 250 feet of any private water supply well, or within 1,200 feet of any public water supply well.
4. Within 500 feet of any navigable lake, pond or flowage.
5. Within 250 feet of any navigable river or stream.
6. Within 250 feet of land owned by a person other than the owner or operator of the facility.
7. Within 1,000 feet of the nearest edge of the right-of-way of any state trunk highway, interstate or federal aid primary highway or the boundary of any public park, unless the facility is screened by natural objects, plantings, fences or other appropriate means so that it is not visible from the highway or park.

8. Within 10,000 feet of any airport runway used or planned to be used by turbojet aircraft or within 5,000 feet of any airport runway used only by piston type aircraft or within other areas where a substantial bird hazard to aircraft would be created. This criterion is applicable only when the facility will be used for handling putrescible waste.

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

**(10) MINIMUM OPERATIONAL STANDARDS FOR COMPOSTING FACILITIES.** 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 accepted for composting shall be source separated at the point of generation so that the wastes have not been mixed or otherwise contaminated with nonapproved waste types, particularly materials which are not readily biodegradable. Prior to incorporation into the composting process, the wastes shall be sorted as needed to ensure that materials which are not readily biodegradable 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 heavy metals, may require controlled disposal under an approved landspreading plan or at a landfill.

(b) Wastes shall be debagged 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 from canned, frozen or preserved fruit or vegetable processing operations shall be incorporated into windrows or other composting process within 72 hours of receipt at the facility, unless odor becomes a problem at the facility in which case these wastes shall be incorporated within 24 hours.

2. Animal carcasses and food waste which is not from canned, frozen or preserved fruit or vegetable processing operations shall be incorporated into windrows or other composting process on the same operating day as received at the facility. Upon initial incorporation of animal carcasses or these food wastes, 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 shall be managed to prevent dogs and wild animals from reaching the wastes.

(c) Yard waste, wood waste, vegetable food waste, animal carcasses and crop residue 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 to ensure that adequate oxygen is available at all times within the waste 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 carbon to nitrogen ratio of 12:1.

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

(f) Maximum windrow size and minimum windrow spacing shall match the capability and requirements of the equipment utilized at the facility.

(g) Material within the composting process shall be wetted as needed to control dust and maintain a moisture content conducive to efficient composting.

**Note:** For aerobic composting, the optimum moisture content is 50 to 60% by weight.

(h) Materials resulting from composting shall be:

1. Stabilized to eliminate pathogenic organisms and to ensure that the materials do not reheat upon standing.
2. Free of sharp particles which could cause injury to persons handling the material.
3. Free of toxins which could cause detrimental impacts to public health or the environment.

**Note:** Pathogens are defined in ch. NR 204 as "disease causing organisms, including but not limited to certain bacteria, protozoa, viruses and viable helminth ova." Appropriate methods for pathogen elimination during composting are specified in 40 CFR, Part 257, Appendix II, Section B:

1. For in-vessel or static aerated pile composting, maintain a continuous minimum temperature of 55°C, or 131°F, for a minimum of 3 consecutive days.

2. For windrow composting, attain a minimum temperature of 55°C, or 131°F, on a minimum of 15 days, which are not required to be consecutive, and turn the windrow a minimum of 5 times during the high temperature periods.

(i) Compost product storage time shall be minimized to maintain the quality of the compost and the product shall be marketed as necessary to prevent excessive stockpiling.

(j) The facility shall be operated in a nuisance-free and environmentally sound manner.

**Note:** Landspreading of composted leaves, grass, brush, vegetable food waste and other similar vegetable matter 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).

**(11) MINIMUM DESIGN STANDARDS FOR COMPOSTING FACILITIES.** Unless exempt under sub. (2), (3) or (4), no person may construct or maintain a composting facility regulated under this section except in accordance with the following minimum design standards:

(a) Run-off from the composting area shall be discharged to a gentle sloping grassed area of sufficient size to prevent erosion and surface discharge from the composting area.

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

(c) Composting shall take place on an area sloped sufficiently to prevent ponding, and measures such as berms or ditches shall be used to prevent storm water run-on.

(d) The overall composting facility size shall be based on the process residence times for the materials to be composted.

**(12) ADDITIONAL OPERATIONAL AND DESIGN STANDARDS FOR NONEXEMPT COMPOSTING FACILITIES.** Unless exempt under sub. (2), (3), (4), (5), (6) or (7), new or expanded composting facilities regulated under this section shall comply with the following additional operational and design standards:

(a) All run-off that contacts waste 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.

(b) All composting, and storage of waste materials and compost, shall take place on a low permeability pad constructed of either asphalt, concrete, recompacted clay or other material approved by the department.

(c) At a minimum, the leachate collection capacity shall be designed for a 25 year, 24 hour storm event as defined in s. NR 205.05.

**(13) PLAN SUBMITTAL REQUIREMENTS FOR NONEXEMPT COMPOSTING FACILITIES.** Unless the facility is exempt under sub. (2), (3), (4), (5), (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, provide a design which complies with subs. (10), (11) and (12), and contain the following minimum information:

(a) The location of the property where the facility is proposed to be located.

(b) A brief description of the project, including the area served, an estimate of the total volume of material to be processed and the types of waste feedstocks to be composted.

(c) A description and drawing of the proposed facility, including location and size of windrows, or other composting process, on site traffic and process flow, the property boundaries, routes to transport feedstocks and finished compost to and from the facility and present land use within 1/4 mile of the facility.

(d) A description of the procedures for processing the material prior to incorporation into the windrow, or other composting process, such as de-bagging or size reduction.

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

(f) A proposed feedstock mix for composting, with calculations or laboratory data documenting the carbon, nitrogen, phosphorus and potassium 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 on site at any one time will exceed either 40,000 cubic yards of yard waste and clean chipped wood or 1,000 cubic yards of vegetable food waste, an estimate of closure costs shall be provided with the plan of operation report, and prior to licensure, proof of financial responsibility 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 to ensure the critical parameters are met. Critical parameters addressed shall include carbon to nitrogen ratio, temperature, moisture content, pH and stability. Actions to be taken in response to odors shall be specified. Frequency of turning and residence times shall be specified.

(i) A description of the type of vehicles used for transporting feedstocks and finished compost to and from the facility, and a description of the type of equipment for turning or mixing and screening.

(j) A discussion of potential markets for the compost and material specifications necessary to be met for these markets, such as nutrient content, pH, particle size, appearance, moisture holding capacity or other pertinent specifications.

(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.

(L) Specification of the design, construction and documentation to be used for the low permeability pad, including materials, thicknesses and testing.

**(14) CONSTRUCTION DOCUMENTATION FOR NONEXEMPT COMPOSTING FACILITIES.** (a) Unless exempt under sub. (2), (3), (4), (5), (6) or (7), owners and operators of new or expanded composting facilities regulated under this section shall submit a construction documentation report to the department and obtain department approval of the construction documentation report prior to operation of the facility.

(b) Unless an exemption is granted by the department in writing, the construction documentation report shall be prepared in accordance with the department's plan approval and the requirements in s. NR 500.05. The construction documentation report shall be approved by the department prior to obtaining a license and prior to accepting waste at the facility.

**(15) MONITORING AND REPORTING FOR NONEXEMPT COMPOSTING FACILITIES.** Unless exempt under sub. (2), (3), (4), (5), (6) or (7), owners and operators of new or expanded composting facilities regulated under this section shall complete monitoring and reporting in accordance with the plan of operation approval and the following requirements:

(a) Samples of the finished compost shall be collected each 1,000 cubic yards or 3 times per year, whichever is more frequent. The samples shall be tested for carbon, nitrogen, phosphorus, potassium and pH.



(b) Unfiltered leachate samples shall be taken from the collection basin or tank, and tested quarterly for the first 4 quarters and annually thereafter for BOD<sub>5</sub>, COD, field pH, field conductivity corrected to 25°C, nitrates, and total dissolved solids.

**Note:** Tables 1 and 2 summarize the requirements contained in this section for general information only and are not intended to replace the requirements contained in this chapter.

**Table 1.**  
**Summary of locational criteria for composting facilities**

Facility Type	Set back distance (feet)							
	Water Supply Wells				Property	Highways	Airport	
	Groundwater	Public	Private	Lake	River	Line		
Less than 20,000 c.y. yard waste	5	1200	250	250	250	100	1000	none
Less than 500 c.y. vegetable food waste	5	1200	250	250	250	100	1000	5,000/10,000
Greater or equal to 20,000 c.y. yard waste	5	1200	250	500	250	250	1000	none
Greater or equal to 500 c.y. vegetable food waste	5	1200	250	500	250	250	1000	5,000/10,000

**Note:** Composting facilities may not be located within a floodplain. Locational criteria do not apply to the following types of composting facilities: single family, less than 50 c.y. yard & food wastes, on site farm crop residue & manure, and on site farm animal carcasses.

**Table 2.**  
**Summary of requirements for composting facilities**

Facility Type	General s. NR 502.04	Operating License	Minimum Operation & Design s. NR 502.12 (10) & (11)
Single family	none	no	no
Less than 50 c.y. yard & food	sub. (1)	no	no
On site farm crop residue & manure	sub. (1)	no	no
On site farm animal carcasses	sub. (1)	no	yes
Less than 20,000 c.y. yard waste	subs. (1), (2), (3) (a) & (b)	yes	yes
Less than 500 c.y. vegetable food waste	subs. (1), (2), (3) (a) & (b)	yes	yes

**Note:** Additional operation and design, plan submittal, construction documentation and monitoring and reporting requirements in s. NR 502.12 (12) to (15) apply to the following composting facilities: greater or equal to 20,000 c.y. yard waste and greater or equal to 500 c.y. vegetable food waste.

**History:** Cr. Register, January, 1988, No. 385, eff. 2-1-88; r. and recr., Register, June, 1996, No. 486, eff. 7-1-96.

**NR 502.13 Municipal solid waste combustors.**

**(1) GENERAL.** (a) No person may operate or maintain a municipal solid waste combustor unless the person complies with the requirements in s. NR 502.04 and obtains a plan of operation approval under sub. (3) and an operating license from the department.

(b) Owners and operators of new or expanded municipal solid waste combustor facilities having a design capacity of greater than 100 tons per day shall provide proof of financial responsibility for closure prior to licensure. Closure costs shall include the costs of removal, transport and ultimate disposal of wastes.

(c) Owners and operators of new or expanded municipal solid waste combustor facilities shall demonstrate compliance with the applicable locational criteria listed in sub. (2).

**(2) LOCATIONAL CRITERIA.** (a) No person may establish, construct or expand a municipal waste combustor within the following areas, except as otherwise specified within this chapter.

1. Within a floodplain.
2. Within 250 feet of any private water supply well, or within 1,200 feet of any public water supply well.

(b) Exemptions from the requirements of par. (a) 2. may be granted only upon demonstration by the applicant of circumstances which warrant the exemptions. Exemptions from compliance with par. (a) 1. may not be granted. The department may impose additional locational criteria if there is a significant potential for the facility to cause environmental pollution as defined in s. 299.01 (4), Stats., nuisance conditions or bird hazard to aircraft.

**(3) PLAN OF OPERATION.** No person may establish, construct or operate a municipal solid waste combustor or expand an existing facility prior to obtaining approval in writing from the department of a plan of operation for the facility. The plan of operation for the municipal solid waste combustor shall provide a design which complies with the operational requirements in sub. (4) and contain, at a minimum, the following:

(a) A map or aerial photograph of the area showing land use and zoning within 1/4 mile of the site. The map or aerial photograph shall be of sufficient scale to show all homes, industrial buildings, roads and other applicable details and the details shall be identified and indicated on the map or aerial photograph.

(b) A plot plan of the municipal solid waste combustor site including access means of limiting access such as fencing, gates, natural barriers; methods of acceptably screening the facility from the surrounding area; general layout of equipment and flow pattern; road access; and location of existing and proposed utilities serving the municipal solid waste combustor.

(c) A report which shall include the following information:

1. The legal description of the property where the municipal solid waste combustor will be located.
2. Population, area and facilities to be served by the municipal solid waste combustor.
3. Anticipated type and quantity of waste to be handled by the municipal solid waste combustor.
4. Persons responsible for the municipal solid waste combustor operations.
5. Methods of treating or disposing of any liquid wastes or waste waters resulting from the operation of the combustor.

(d) A description of appurtenances and procedures intended to store refuse beyond the end of the working day and to control dust, odors, fire outside the burning chamber and windblown materials.

(e) A description of methods of volume reduction including compaction, compression, baling, shredding, grinding, tamping, separating or classifying.

(f) A description of daily clean up procedures.

(g) A description of municipal solid waste combustor inspection and maintenance schedule and procedures.

(h) Detailed drawings and specifications of all structures, equipment and site.

(i) A report which includes furnace design criteria and expected performance data.

(j) Identification of the site at which the residue will be disposed and alternative sites available for use when the primary site is inoperative.

(k) For all new or expanded facilities, the plan of operation shall also include:

1. The name of the emergency fire-fighting unit that will respond to fire calls at the facility.

2. A discussion of the anticipated sequence of required events for facility closure.

3. A detailed analysis in accordance with ch. NR 520 of the financial responsibility for facility closure. This shall include an itemized cost estimate for phased and final facility closure. All assumptions used in developing the cost estimates shall be justified.

**Note:** Municipal solid waste combustors must also have the air management permits required under s. 285.60, Stats.

**(4) OPERATIONAL REQUIREMENTS.** No person may operate or maintain a municipal solid waste combustor except in conformance with the following minimum requirements, unless an exemption is granted by the department in writing:

(a) The municipal solid waste combustor shall be situated, equipped, operated and maintained in a nuisance-free manner.

(b) Adequate shelter and sanitary facilities shall be available for facility personnel.

(c) A sign shall be prominently posted at the entrance to the facility which indicates name, license number, hours of operation, necessary safety precautions and any other pertinent information.

(d) All incoming solid waste shall be confined to the designated storage area.

(e) All solid waste, except residue, shall be stored in conformance with s. NR 502.05 (5) or (6).

(f) Dust shall be controlled in all waste handling areas.

(g) Permanent records shall be maintained in accordance with sub. (7).

(h) Appropriate fire-fighting equipment shall be available in the storage and charging areas and elsewhere as needed.

(i) Arrangements shall be made with the local fire protection agency to provide adequate emergency fire-fighting forces.

(j) Means of communication with emergency facilities shall be provided.

(k) Adequate equipment shall be provided and used to clean the waste storage, waste handling, waste charging, and ash handling areas as may be required in order to maintain the plant in a sanitary condition.

(L) The charging openings as well as all equipment throughout the plant shall be provided with adequate safety equipment.

(m) The municipal solid waste combustor shall be designed and operated so that it will not cause a nuisance because of the emission of noxious odors, gases, contaminants or particulate matter or exceed emission limitations established by state air management rules in chs. NR 400 to 499.

(n) Residue shall be disposed of at a solid waste facility licensed by the department to accept the material or be handled by an alternate method approved in writing by the department. Approval shall be issued on a case-by-case basis after review of the information contained in sub. (6).

(o) All wastewater from the combustor shall be discharged into a sanitary sewer or other system approved in writing by the department.

(p) Upon completion of construction of a new municipal solid waste combustor and at least 10 days prior to initial operation, the department shall be notified to allow inspection of the

combustor both prior to and during any performance tests and initial operation.

(q) Open burning of solid waste may not be conducted.

(r) An approved alternative method shall be used for solid waste disposal during any time that the municipal solid waste combustor is inoperable.

(s) The incoming waste shall be screened to eliminate unacceptable material from entering the municipal solid waste combustor such as hazardous waste, asbestos, explosive materials or other materials as defined in sub. (9).

(t) Residue storage at the municipal solid waste combustor shall be in accordance with the following:

1. The residue shall be wetted at all times during storage to prevent dust emissions. The facility may use alternative methods of dust control that are approved by the department prior to implementation. Provisions shall be made to prevent the release of residue into the air in the residue handling areas.

2. The storage area shall have an impervious surface on which the residue is stored and a collection system for any liquids coming into contact with the residue. All liquid that comes into contact with the residue which is not used as makeup water in the quench tank shall be collected and treated at a wastewater treatment plant approved by the department.

3. Access to the temporary storage areas shall be restricted to authorized personnel only. Fencing or other means of control acceptable to the department shall be maintained around the storage facility.

(u) All treatment or mixing of residue shall be performed in a manner which controls air and water emissions.

(v) Treatment or mixing of residue at a facility other than at the municipal solid waste combustor shall require a processing license under s. NR 502.08.

**(5) RESIDUE SAMPLING.** (a) The owner or operator shall collect representative samples of residues produced by burning municipal solid waste for characterization required in sub. (6). The samples shall be collected over a minimum one-week period every quarter within 2 weeks of March 15, June 15, September 15 and December 15, except as provided in par. (f). Minimum 2 gallon volume samples shall be obtained hourly by a procedure approved by the department. The hourly samples shall be composited daily. Each daily sample shall then be composited together at the end of the testing period to result in a minimum of one representative sample. Compositing shall be performed in a manner acceptable to the department.

(b) Unless the residues are mixed as part of an internal, mechanical process, air pollution control equipment residue samples shall be collected separately from bottom-ash samples. If the mixing is part of an internal mechanical process, then the sampling shall be performed after the residue is mixed. If an ash treatment process occurs at the municipal solid waste combustor, then the sample shall be collected after treatment.

(c) For a municipal solid waste combustor where the compositing methods established in par. (a) would be impractical, alternatives may be approved by the department.

(d) An adequate volume of each representative composite sample to be tested shall be retained to allow for confirmatory testing if any of the levels established under sub. (6) (g) are exceeded.

(e) In addition to the routine quarterly sampling required in par. (a), representative samples shall be collected within 2 weeks of initial startup and shakedown, and after any significant changes in plant design, operation or waste input, if the changes are expected to cause an increase or decrease in the number or concentrations of the residue parameters listed in sub. (6), Table 1. The operator shall identify, and submit to the department, the changes made and the anticipated effect the changes will have on the residues.

(f) An operator of a municipal solid waste combustor that has a design capacity of less than 10 tons per day shall:

1. Collect representative samples over a minimum one-week period every year within 2 weeks of June 15.
2. Collect representative samples quarterly to test for the 8 heavy metal parameters listed in sub. (6) (g) and within the 2 weeks of initial startup and shakedown and after any significant changes in plant design, operation or waste input, if the changes are expected to cause an increase or decrease in the number or concentrations of the listed parameters in the residue. The operator shall identify, and submit to the department, the changes made and the anticipated effect the changes will have on the residues. The sample volume collected and compositing procedures shall comply with par. (a).
3. Comply with all of the other provisions of this section.

**(6) RESIDUE CHARACTERIZATION.** (a) An operator of a municipal solid waste combustor with a design capacity of 10 tons per day or greater shall test its residue quarterly the first year after an approval has been issued. After the first year of quarterly testing the residues shall be tested on an annual basis, except as provided in par. (m). The testing program listed in Table 1 shall be applied to all samples collected as required by sub. (5) (a) to (d). The department may require dioxin and foran testing, if circumstances warrant. Test results shall be submitted to the department with the annual report specified under sub. (8).

(b) An operator of a municipal solid waste combustor with a design capacity of less than 10 tons per day shall:

1. Test residue samples collected under sub. (5)(f) in accordance with the testing program in par. (g).
2. Test its residue annually beginning the first June after an approval has been issued using the testing program listed in Table 1 for all samples collected under required by sub. (5)(f). The department may require dioxin/furan testing, if circumstances warrant.
3. Submit test results to the department with the annual report specified under sub. (8).
4. Comply with all of the other provisions of this section.

(c) A leachate sample from the monofill where the residue is disposed of may be substituted for the EPA Method 1312 leach procedure listed in Table 1, Section III, after the initial 4 rounds of testing. The leachate sample shall be tested for all of the parameters listed under the EPA Method 1312 leach requirements in Table 1, Section III, unless a reduction in the number of parameters tested for has been approved by the department. The municipal solid waste combustor using the leachate substitute shall be responsible for the testing. If significant levels of any of the listed parameters are detected in the leachate tested from a monofill that receives multiple sources of residue, the department may require all contributing municipal solid waste combustors to perform leach testing of their residue using EPA Method 1312.

**Note:** A copy of this test method can be obtained from the department of natural resources, bureau of waste management, 101 s. webster street, Madison, Wisconsin 53707. Copies of this test method are also available for inspection at the offices of the revisor of statutes and the secretary of state. Personal copies can be obtained from the U.S. environmental protection agency, office of solid waste, 401 m street sw, Washington D.C. 20460.

(d) The operator of the municipal solid waste combustor may apply to the department at the end of the initial 4 rounds of testing for elimination of those parameters listed in Table 1, Section II which do not appear in its residues at significant levels.

(e) The provisions of this subsection do not supersede the testing requirements for the 8 heavy metal parameters listed in par. (g) using the toxicity characteristic leaching procedure, EPA Method 1311.

(f) During the scheduled testing period, if any parameter in the bulk analysis is not detected at or above the specified detec-

tion limits, then that parameter may be eliminated from further leach testing for that test period.

(g) An operator of a municipal solid waste combustor shall test its residue for the parameters listed in this paragraph quarterly and within 2 weeks of completing initial startup and shakedown, and after any significant changes in plant design, operation or waste input that significantly affects or changes the residue characteristics by using the toxicity characteristic leaching procedure, EPA Method 1311. Multiple samples may be tested separately and the results combined to obtain an arithmetic mean for each parameter. The operator shall immediately notify the department if test results indicate that any of the following limits are exceeded:

- |                  |            |
|------------------|------------|
| 1. Arsenic (As)  | 5.0 mg/l   |
| 2. Barium (Ba)   | 100.0 mg/l |
| 3. Cadmium (Cd)  | 1.0 mg/l   |
| 4. Chromium (Cr) | 5.0 mg/l   |
| 5. Lead (Pb)     | 5.0 mg/l   |
| 6. Mercury (Hg)  | 0.2 mg/l   |
| 7. Selenium (Se) | 1.0 mg/l   |
| 8. Silver (Ag)   | 5.0 mg/l   |

**Note:** Copies of these test procedures can be obtained from the department of natural resources, bureau of waste management, 101 s. webster street, Madison, Wisconsin 53707. Copies of these test methods are also available for inspection at the offices of the revisor of statutes and the secretary of state. Personal copies can be obtained from the U.S. environmental protection agency, office of solid waste, 401 m street sw, Washington D.C. 20460.

(h) If any of the limits in par. (g) are exceeded, the operator may elect to complete confirmatory testing on the retained sample within 2 weeks of receiving the initial results. If the operator elects to perform the confirmatory testing, only the constituents exceeding the limits will require testing.

(i) If any of the limits in par. (g) are exceeded and confirmatory testing under par. (h) is not completed, or if the test results of par. (h) confirms the exceedance of the limits for the parameters listed in par. (g), the residue may be treated to reduce leachable constituents below the threshold values, prior to disposal, or the residue shall be managed in accordance with chs. NR 600 to 690 until a significant change to the facility design, operation or waste input can be demonstrated which produces consistent test results that meet the specified limits.

(j) If a significant change to the waste input can be demonstrated, the operator shall confirm this change by completing confirmatory testing of one new sample taken in accordance with sub. (5). In cases where the contributing waste input cannot be isolated, consistent test results meeting the specified limits shall be obtained from monthly testing according to the requirements of par. (g) for a minimum of 3 months. Only the constituents exceeding the limits in par. (g) will require retesting under this provision.

(k) If none of the limits in par. (g) are exceeded or the confirmatory testing defined in par. (h) is below the specified limits in par. (g), the residue may be disposed of in a single composite lined monofill in accordance with the provisions of s. NR 504.11(2)(a). In cases where limits in par. (g) were exceeded during initial testing, but were not exceeded in the confirmatory testing, additional testing in accordance with par. (g) shall be performed monthly for a minimum of 3 months to confirm that the initial exceedances were not representative of the residue characteristics. Only the constituents exceeding the limits require retesting under this provision. If there are any exceedances during this 3 month period, the residue shall be managed in accordance with the provisions of chs. NR 600 to 690.

(L) All treated residue shall be tested according to the requirements of this section.

(m) The department may require different testing frequency and parameters, if circumstances warrant.

**Table 1. Parameters and Detection Limits**

I. Toxicity Characteristic Leaching Procedure EPA Method 1311: (quarterly)					
Arsenic (As)	0.05	mg/l	Barium (Ba)	1.0	mg/l
Cadmium (Cd)	0.01	mg/l	Chromium, Total (Cr)	0.05	mg/l
Lead (Pb)	0.05	mg/l	Mercury (Hg)	0.002	mg/l
Selenium (Se)	0.01	mg/l	Silver (Ag)	0.05	mg/l
II. Bulk chemical analysis:					
Aluminum (Al)	0.1	mg/kg	Antimony (Sb)	1.0	mg/kg
Arsenic (As)	0.5	mg/kg	Barium (Ba)	5.0	mg/kg
Boron (B)	1.0	mg/kg	Cadmium (Cd)	0.5	mg/kg
Calcium (Ca)	1.0	mg/kg	Chromium, Total (Cr)	0.4	mg/kg
Iron (Fe)	0.1	mg/kg	Lead (Pb)	0.6	mg/kg
Magnesium (Mn)	0.02	mg/kg	Mercury (Hg)	0.04	mg/kg
Potassium (K)	0.01	mg/kg	Selenium (Se)	0.6	mg/kg
Silver (Ag)	1.0	mg/kg	Sodium (Na)	1.0	mg/kg
Zinc (Zn)	2.0	mg/kg	Total Organic Carbon (TOC)	1.0	mg/kg
			Total Organic Halogen (TOX)	0.25	mg/kg
III. Synthetic Precipitation Leach Test EPA Method 1312.					
A. All of the parameters detected in the bulk chemical analysis, reported in mg/l.					
<b>Note:</b> Copies of these test procedures can be obtained from the department of natural resources, bureau of waste management, 101 s. webster street, Madison, Wisconsin 53707. Copies of these test methods are also available for inspection at the offices of the revisor of statutes and the secretary of state. Personal copies can be obtained from the U.S. environmental protection agency, office of water regs & std's, 401 m street sw, Washington D.C. 20460.					
B. Alkalinity	1.0	mg/l	Chemical Oxygen Demand (COD)	5.0	mg/l
Chloride	4.0	mg/l	Fluoride	4.0	mg/l
pH	0.1	units	Specific Conductance	10.0	mhos/cm
Sulphate	1.0	mg/l	Total Dissolved Solids (TDS)	5.0	mg/l
Total Hardness	1.0	mg/l			
IV. Physical test:					
Dry Bulk Density			Percent Combustible		
Moisture Content as Generated			Grain Size Analysis:		
			Sieve test		
			Hydrometer test		

**(7) RECORD KEEPING.** Operators of municipal solid waste combustor facilities shall maintain a record at the facility available for inspection by department staff during normal business hours. Records shall be compiled on a monthly basis, at a minimum. The department may approve alternative record-keeping programs. The following shall be included in the records:

- (a) The hours of plant operation, combustion temperatures and residence time.
- (b) The weight of material coming into the facility.
- (c) The weight of material rejected by the facility and where it was sent. Where exact weights are not available, estimates shall be made of the weight of rejected hazardous waste, lead-acid batteries, the material sent to a recycler and the material sent to a landfill.
- (d) The weight of residue produced and where it was sent. Where exact weights are not available, the volume of residue produced shall be recorded.
- (e) A list of the states of origin of solid waste accepted at the facility in the previous year and the amount, by weight, originating in each state.
- (f) The recording person's initials and the date of each entry.

**(8) ANNUAL REPORT.** (a) The facility operator shall compile and submit to the department the records defined in sub. (7) as an annual report.

(b) The report shall cover the calendar year and be submitted no later than April 1 of the following year.

(c) The annual report shall include the results of all testing required under sub. (6) for the previous year.

**(9) WASTE SCREENING.** (a) The operator or designated agent of a municipal solid waste combustor shall screen the incoming waste to eliminate the materials identified in pars. (b) to (d), from entering the facility.

(b) The screening of materials from the combustion process may be accomplished at the facility or by the contributors of the waste from the area served by the facility that have an effective recycling program. Additional restrictions to waste acceptance for some facilities may exist as specified in s. 287.07, Stats. Alkaline batteries and similar heavy metal sources should not be accepted at municipal solid waste combustor facilities.

(c) Hazardous waste as defined by s. NR 600.03 (87) may not be accepted at a municipal solid waste combustion facility. This includes waste produced by small quantity generators. Household hazardous waste shall be excluded if separated from residential waste. Household hazardous waste may be accepted if not separated from residential waste.

(d) Major appliances, large metal objects, lead/acid batteries, building materials, and noncombustible furniture, office and farm equipment may not be fed into a municipal solid waste combustor.

(e) Waste oils may be burned only in compliance with state and federal regulations.

**(10) WASTE SCREENING PLAN.** The operator of a municipal solid waste combustion facility shall evaluate and submit to the department a waste screening and handling plan that contains the following:

- (a) Procedures for limiting the items listed in sub. (9) (c) and (d) from entering a combustor.

(b) Identification of other items that will not be accepted by the combustor due to heavy metal content or other reasons.

(c) Procedures for handling and disposing of screened items.

(d) Procedures and authority for enforcement of its requirements.

(e) The plan may include the effective recycling program under s. 287.11, Stats., developed by each responsible unit or units served by the municipal solid waste combustor. Other waste reduction plans, such as medical waste reduction plans,

may be included where appropriate.

(f) No municipal solid waste combustion facility may begin initial operation or continue operating unless a waste screening and handling plan under this section has been approved by the department.

**(11) OPERATOR QUALIFICATIONS.** The municipal solid waste combustion facility shall be operated by personnel meeting the operator qualification requirements established under s. 285.51, Stats.

**History:** Cr., Register, June, 1996, No. 486, eff. 7-1-96.