NR 151, 157, 181

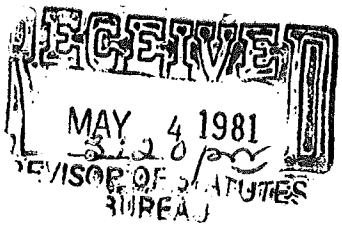
State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Carroll D. Besadny
Secretary

BOX 7921
MADISON, WISCONSIN 53707

IN REPLY REFER TO: _____

STATE OF WISCONSIN)
) ss
DEPARTMENT OF NATURAL RESOURCES)



TO ALL TO WHOM THESE PRESENTS SHALL COME, GREETINGS:

I, Carroll D. Besadny, Secretary of the Department of Natural Resources and custodian of the official records of said Department, do hereby certify that the annexed copy of Natural Resources Board Order No. SW-38-80 was duly approved and adopted by this Department on February 26, 1981. I further certify that said copy has been compared by me with the original on file in this Department and that the same is a true copy thereof, and of the whole of such original.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed the official seal of the Department at General Executive Facility #2 in the City of Madison, this 1st day of May, 1981.

Carroll D. Besadny
Carroll D. Besadny, Secretary

(SEAL)

8-1-81

ORDER OF THE STATE OF
WISCONSIN NATURAL RESOURCES BOARD

CREATING, AMENDING AND REPEALING RULES

. . . . . .

IN THE MATTER of repealing chapter NR 151; amending sections NR 157.01, NR 157.02(4), NR 157.02(5), NR 157.03(2)(b), NR 157.03(2)(d), NR 157.04(1), NR 157.05(1), NR 157.07(2)(a) and NR 157.07(3); and creating chapter NR 181 of the Wisconsin Administrative Code pertaining to hazardous waste management.

SW-38-80

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Analysis Prepared by the Department of Natural Resources

Chapter NR 181 is proposed pursuant to the Hazardous Waste Management Act, ss. 144.60 through 144.74, Wis. Stats. Chapter NR 181 is intended to replace ch. NR 151 as it relates to hazardous waste management. Since all hazardous waste is also solid waste, ch. NR 181 has been patterned after ch. NR 180, Solid Waste Management.

Chapter NR 181 is the comprehensive rule that will be used to implement Wisconsin's Hazardous Waste Management Act. The Department of Natural Resources is currently seeking authorization from the U.S. Environmental Protection Agency to administer the ch. NR 181 hazardous waste management program in Wisconsin in lieu of the federal hazardous waste management program under the Resource Conservation and Recovery Act of 1976, as amended.

Some of the highlights of ch. NR 181 are outlined below:

A. Identification of Hazardous Waste. The Hazardous Waste Management Act requires that criteria for identifying hazardous waste be identical to federal criteria. Wisconsin hazardous waste criteria and lists are therefore identical of those recently published in federal regulations. This will assist in assuring a consistent program nationwide.

B. Generator Requirements. Under the new rules, generators of hazardous waste have more responsibility than ever before to assure proper management. Generators are responsible for testing the wastes, for properly containerizing, labeling and marking the wastes, for selecting licensed transporters and storage, treatment and disposal facilities, for compliance with the manifest system and with requirements for recordkeeping and reporting.

C. Manifest System. The Hazardous Waste Management Act creates a manifest system which consists of a shipping paper that identifies the generator, transporter and storage, treatment or disposal facility as well as the amount and type of hazardous waste. This system will provide "cradle to grave" control because it must accompany each shipment of hazardous waste from point of generation through final disposal.

D. Transporters. Transporter requirements have been expanded from ch. NR 151 to require compliance with the manifest system, new recordkeeping requirements and rules regarding hazardous waste spills.

E. Standards for Storage, Treatment and Disposal. These standards are consistent with the standards adopted by the U.S. EPA. They include both general facility standards and specific facility standards. Underground injection of hazardous waste is prohibited. Contents for the initial site report, feasibility report and plan of operation are specified in this rule. Less stringent plan submittal requirements for small storage facilities are included.

F. Licensing. The site approval process for hazardous waste facilities parallels s. 144.44, Wis. Stats. The licensing procedure is outlined in detail and includes certain federal procedures now utilized in the WPDES discharge permit program. These are specifically included to be equivalent to and consistent with the federal program for purposes of delegation of the federal program to the state.

G. Fees. As with ch. NR 180, the fees have been substantially increased as required by ch. 377, Laws of 1977. These fees are slightly higher than comparable ch. NR 180 fees to reflect greater amounts of time needed for plan review and licensing.

H. Long-Term Care. Section 144.44(3)(c), Wis. Stats., requires applicants to submit assurance of financial responsibility to provide for the costs for closure and long-term care in order to obtain Department approval of a plan of operation. The means by which such assurance can be made are detailed in the rule.

Chapter NR 181 will increase the cost of hazardous waste management and affect industries, municipalities and private landfill operators as well as anyone else who manages hazardous waste. It will increase the cost of hazardous waste management for the reasons set forth in the attached fiscal note.

Pursuant to the authority vested in the State of Wisconsin Natural Resources Board by sections 144.01, 144.025, 144.60 through 144.74, 144.43 through 144.47, and 227.014, Wis. Stats., the State of Wisconsin Natural Resources Board hereby repeals, amends and creates rules interpreting sections 144.01, 144.60 through 144.74, and 144.43 through 144.47, Wis. Stats., as follows:

Section 1 - Chapter NR 151 of the Wisconsin administrative code is repealed.

Section 2 - Cross references in chapter NR 157 of the Wisconsin administrative code are amended as follows:

In the sections of chapter NR 157, Wisconsin administrative code,, listed in column A, the cross references shown in column B are changed to the cross references shown in column C:

A NR 157 sections	B Old Cross References	C New Cross References
s. NR 157.01	s. 144.50, Stats.	s. 144.79, Stats.
s. NR 157.02(4)	s. 144.50(1)(a), Stats.	s. 144.79(1)(a), Stats.
s. NR 157.02(5)	s. 144.50(1)(c), Stats.	s. 144.79(1)(c), Stats.
s. NR 157.02(5)	s. 144.50(3)(b), Stats.	s. 144.79(3)(b), Stats.
s. NR 157.02(5)	s. 144.50(3)(c), Stats.	s. 144.79(3)(c), Stats.
s. NR 157.02(5)	s. 144.50(7), Stats.	s. 144.79(7), Stats.
s. NR 157.03(2)(b)	section NR 151.08	ss. NR 181.31 and NR 181.55
s. NR 157.03(2)(d)	section NR 151.08	ss. NR 181.31 and NR 181.55
s. NR 157.04(1)	section NR 151.08	ss. NR 181.31 and NR 181.55
s. NR 157.05(1)	section NR 151.08	ss. NR 181.31 and NR 181.55
s. NR 157.07(2)(a)	chapter NR 151	chapter NR 181
s. NR 157.07(3)	section NR 151.12	s. NR 181.44(10)(b)
s. NR 157.07(3)	chapter NR 151	chapter NR 181
s. NR 157.07(3)	section NR 151.12(5)(f)	s. NR 181.44(11)(a)

Section 3 - Chapter NR 181 of the Wisconsin administrative code is created to read:

Chapter NR 181
HAZARDOUS WASTE MANAGEMENT

Subchapter I

General

NR 181.01 Purpose. The purpose of these rules is to establish criteria for identifying the characteristics of hazardous waste and to establish a list of solid wastes identified as hazardous based on the use of the critieria, which shall be used by a solid waste generator, transporter, or owner or operator of a solid waste treatment, storage, or disposal site or facility to determine if the waste handled is a hazardous waste subject to regulation; to establish minimum standards defining acceptable hazardous waste management practices applicable to owners or operators of facilities which treat, store, or dispose of hazardous waste; to establish standards for the transportation and labeling of hazardous waste; to establish standards for the review of plans, and the issuance of licenses; and to describe waste management fund contributions and the closure and long-term care responsibilities of the owners or operators of hazardous waste sites and facilities which will be utilized for the protection of health and the environment. These rules are adopted pursuant to ss. 144.01(15), 144.43 through 144.47, 144.60 through 144.74, and 227.014, Stats.

NR 181.02 Applicability. These rules are applicable to persons who generate, transport, store, treat or dispose of solid waste defined as hazardous waste under s. NR 181.12, with the following exceptions:

(1) The provisions of this chapter are not applicable to the design, construction or operation of industrial wastewater facilities, sewerage systems and waterworks treating liquid wastes which have been approved under s. 144.04, Stats., or permitted under ch. 147, Stats., nor to sites used solely for the disposal of liquid municipal or industrial wastes which have been approved under s. 144.04, Stats., or permitted under ch. 147, Stats.

(2) The provisions of this chapter are not applicable to the generation, transportation, storage, treatment or disposal of metallic mining wastes resulting from a mining operation as defined in s. 144.81(5), Stats., except where this chapter or portions of this chapter are referenced in rules adopted under s. 144.435(1m), Stats. Mining wastes will be regulated under ch. NR 180, Wis. Adm. Code, until the department adopts rules pursuant to s. 144.43(1m), Stats.

(3) The provisions of this chapter are not applicable to the generation, transportation, storage, treatment or disposal of polychlorinated biphenyls (PCBs) except where this chapter or portions of this chapter are referenced in ch. NR 157, Wis. Adm. Code, which has been adopted under s. 144.79, Stats., for the regulation of PCBs.

NR 181.03 Severability. Should any provision of this chapter be declared invalid or unconstitutional for any reason, the remainder of this chapter shall not be affected thereby.

Note: The provisions of this chapter are consistent with, and in some instances identical to, federal regulations found in 40 CFR parts 122, 123, 124 and 260 through 265, July 1, 1980, as created or amended by 45 FR 47832-47836, July 16, 1980, 45 FR 72024-72041, October 30, 1980, 45 FR 74884-74894, November 12, 1980, 45 FR 76074-76083, November 17, 1980, 45 FR 76618-76636, November 19, 1980, 45 FR 78524-78547, November 25, 1980, 45 FR 86966-86974, December 31, 1980, 46 FR 4614-4620, January 16, 1981, and 46 FR 7666-7690, January 23, 1981.

NR 181.04 Definitions. (1) "Active portion" means that portion of a storage, treatment, or disposal facility where operations are being or have been conducted after the effective date of these rules and is not a closed portion.

(2) "Alternate facility" means that hazardous waste facility which has been designated on a manifest pursuant to s. NR 181.23(2)(c) as the facility where the hazardous waste may be taken in the event an emergency prevents delivery of the waste to the designated facility.

(3) "Aquifer" means a geologic formation, part of a formation or connected group of formations which are saturated and can transmit groundwater.

(4) "ASTM" means the American society for testing and materials.

(5) "Authorized representative" means the person responsible for the overall operation of a site or facility, or part of a site or facility, such as a plant manager, superintendent or person of equivalent responsibility.

(6) "Authorized state" means a state that has been authorized by EPA under s. 3006 of the resource conservation and recovery act of 1976, P.L. 94-580, as amended, and federal regulations promulgated thereunder, to administer a hazardous waste program in lieu of the federal hazardous waste program.

(7) "CFR" means the code of federal regulations.

(8) "Closed portion" means that portion of a site or facility which an owner or operator has closed in accordance with the approved facility closure plan and all applicable closure requirements.

(9) "Closing" is defined in s. 144.43(1), Stats. For the purpose of this chapter, "closing" means the time at which a hazardous waste facility ceases to accept wastes, and includes those actions taken by the owner or operator of the facility to prepare the site for any required long-term care and make it suitable for other uses.

(10) "Closure" means those actions taken by the owner or operator of a hazardous waste facility to prepare the site for long-term care and to make it suitable for other uses.

(11) "Closure plan" means a written report, generally submitted with the plan of operation, detailing the measures that will be taken by a hazardous waste facility owner or operator to ensure and effect proper closure.

(12) "COD" means chemical oxygen demand.

(13) "Combustion zone" means that portion of the internal capacity of an incinerator where the gas temperatures of the materials being burned are within 100°C of the specified operating temperature, and there is oxygen present in excess of the theoretical amount necessary to completely oxidize any combustible materials.

(14) "Constituent" or "hazardous waste constituent" means a substance which caused the department to list a hazardous waste in s. NR 181.16, or a contaminant listed in table 1 in s. NR 181.15.

(15) "Construct" means to engage in a program of on-site construction including but not limited to the erection or building of new structures, replacement, expansion, remodeling, alteration or extension of existing structures, the acquisition and installation of initial equipment associated with the new or expanded, remodeled structures, and site clearing, grading, dredging or landfilling.

(16) "Construction observation report" means a written report submitted under the seal of a registered professional engineer advising that a hazardous waste facility has been constructed in substantial compliance with a department approved plan of operation.

(17) "Container" means any portable enclosure in which a material is stored, transported, treated, disposed of, or otherwise handled.

(18) "Contingency plan" means a document setting out an organized, planned, and coordinated course of action to be followed in the event of a fire, explosion, or discharge of hazardous wastes or hazardous waste constituents into the environment which has the potential for endangering human health or the environment.

(19) "Critical habitat areas" means any habitat determined by the department to be critical to the continued existance of any endangered species listed in ch. NR 27, Wis. Adm. Code.

(20) "Department" means the Wisconsin department of natural resources.

(21) "Design capacity" means the total design volume of a disposal facility and includes the volume of waste and daily or intermediate cover, but does not include final cover or topsoil.

(22) "Designated facility" means a hazardous waste facility which has been designated on a manifest by the generator pursuant to s. NR 181.23(2) as the facility where the hazardous waste must be taken unless an emergency prevents delivery to that facility.

(23) "Detrimental effect on ground or surface water" means having a significant damaging impact on ground or surface water quality for any present or future consumptive or nonconsumptive uses.

(24) "Discharge" means, but is not limited to, spilling, leaking, pumping, pouring, emitting, emptying or dumping into the air, soil or surface waters.

(25) "Disposal" is defined in s. 144.61(3), Stats., to mean "the discharge, deposit, injection, dumping, or placing of any hazardous waste into or on any land or water so that the hazardous waste or any constituent of the hazardous waste may enter the environment or be emitted into the air or discharged into any waters, including groundwaters, or the storage of any hazardous waste for a period longer than 18 months".

(26) "Disposal facility" means a site or facility or part thereof where hazardous waste disposal occurs and where the waste will remain after closure.

(27) "DOT" means the United States department of transportation.

(28) "DOT identification number" means the hazardous materials identification number assigned by the DOT, in 49 CFR 172.101 and 172.102, October 1, 1979, as amended by 45 FR 34588-34684, May 22, 1980.

(29) "Elementary neutralization unit" means a device which:

(a) Is used for neutralizing wastes which are hazardous wastes only because they exhibit the corrosivity characteristic defined in s. NR 181.15(3) or are listed in s. NR 181.16 only for this reason; and

(b) Meets the definition of tank, container, transport vehicle or vessel.

(30) "EPA" means the United States environmental protection agency.

(31) "EPA administrator" means the administrator of the EPA or anyone delegated authority to act for the administrator of the EPA.

(32) "Feasibility report" means a report for a specific hazardous waste facility that describes the site, surrounding area, and proposed operation in terms of land use, topography, soils, geology, groundwater, surface water, proposed waste quantities and characteristics, preliminary site or facility design concepts, and any anticipated environmental impacts.

(33) "Final cover" means cover material that is applied upon closure of a landfill and is permanently exposed at the surface.

(34) "Floodplain" means the land which nas been or may be hereafter covered by flood water during the regional flood as defined in ch. NR 116, Wis. Adm. Code, and includes the floodway and the flood fringe as defined in ch. NR 116, Wis. Adm. Code.

(35) "Fluid" means any material or substance which flows or moves whether in a semisolid, liquid, sludge, gas or any other form or state.

(36) "Food chain crops" means tobacco, crops grown for human consumption, and pasture, forage and feed grain for animals whose products are consumed by humans.

(37) "FR" means the federal register.

(38) "Freeboard" means the vertical distance between the top of a tank or surface impoundment dike and the surface of the waste contained therein.

(39) "Free liquids" means liquids which readily separate from the solid portion of a waste under ambient temperature and pressure.

(40) "Generation" is defined in s. 144.61(4), Stats., to mean "the act or process of producing hazardous waste but does not include any manufacturing process."

(41) "Generation site" means the contiguous site at or on which one or more hazardous wastes are generated. A generation site, such as a large manufacturing plant, may have one or more sources of hazardous waste but is considered a single generation site if the site is contiguous.

(42) "Generator" means any person, owning or operating a generation site, whose act or process produces a hazardous waste identified or listed in subch. II.

(43) "Groundwater" means water in the saturated zone beneath the land surface.

(44) "Hazardous waste" or "waste" means a solid waste that fits the definition of hazardous waste in s. NR 181.12.

(45) "Hazardous waste boundary" means, for disposal facilities, the outermost perimeter of the hazardous waste projected in the horizontal plane as would exist at the completion of the disposal activity or, for storage or treatment facilities, the outermost boundary of hazardous waste storage or treatment.

(46) "Hazardous waste facility" or "facility" means all contiguous land, structures, other appurtenances, and improvements on the land, used for treating, storing or disposing of hazardous waste. A facility may consist of several treatment, storage, or disposal operational units.

(47) "Hazardous waste management" is defined in s. 144.61(6), Stats., to mean "the systematic source reduction, collection, source separation, storage, transportation, exchange, processing, treatment, recovery and disposal of hazardous wastes".

(48) "Hazardous waste number" means the number assigned to each hazardous waste listed in s. NR 181.16 and to each characteristic identified in s. NR 181.15.

(49) "Hydraulic gradient" means the change in hydraulic pressure per unit of distance in a given direction.

(50) "Identification number" or "EPA identification number" means the unique number assigned to each generator, transporter, or treatment, storage or disposal facility. This identification number is identical to the EPA identification number assigned by the EPA to each generator, transporter, or treatment, storage or disposal facility.

(51) "Incinerator" means an enclosed device using controlled flame combustion to thermally break down hazardous waste. Examples of incineration devices include rotary kilns, controlled air incinerators, fluidized beds, liquid injection incinerators, cement kilns, and utility boilers.

(52) "Incompatible waste" means a hazardous waste which is unsuitable for:

(a) Placement in a particular device, site or facility because it may cause corrosion or decay of containment materials, such as the container, inner liners or tank walls.

(b) Commingling with another waste or material under uncontrolled conditions because the commingling might produce heat or pressure, fire or explosion, violent reaction, toxic dusts, mists, fumes or gases, or flammable fumes or gases.

(53) "Injection" means the subsurface emplacement of a fluid or waste.

(54) "Inner liner" means a continuous layer of material placed inside a tank or container which protects the construction materials of the tank or container from the contained waste or reagents used to treat the waste.

(55) "Landfill" means a disposal facility, or part of a disposal facility, where hazardous waste is placed in or on land and which is not a surface impoundment.

(56) "Landfill cell" means a discrete volume of a hazardous waste landfill which uses a liner to provide isolation of wastes from adjacent cells or wastes. Examples of landfill cells are trenches and pits.

(57) "LC_{50}" means the median lethal concentration which is the statistical estimate of the concentration of a substance in air or water necessary to kill 50% of test organisms within a specified time under standardized conditions.

(58) "LD_{50}" means the median lethal dose which is the statistical estimate of the dosage of a substance necessary to kill 50% of an infinite population of test animals as determined from exposure to the substance, by any route other than inhalation, of a significant number from that population.

(59) "Leachate" means any liquid, including any suspended components in the liquid, that has percolated through or drained from hazardous waste.

(60) "Leachate collection and removal system" means a system capable of collecting leachate or other liquids generated within a hazardous waste landfill, and removing the leachate or other liquids from the landfill. The system is placed or constructed above a landfill liner system.

(61) "Leachate monitoring system" means a system beneath a facility used to monitor water quality in the unsaturated zone as necessary to detect leaks from landfills and surface impoundments. One example is a pressure-vacuum lysimeter.

(62) "Liner" means a continuous layer of natural or man-made materials beneath and on the sides of a surface impoundment, landfill, or landfill cell, which restricts the downward or lateral escape of hazardous waste, hazardous waste constituents, or leachate.

(63) "Long-term care" is defined in s. 144.43(3), Stats. For the purpose of this chapter, "long-term care" means the routine care, maintenance and monitoring of a disposal facility following the closure of the facility.

(64) "Manifest" is defined in s. 144.61(8), Stats., to mean "a form used for identifying the quantity, composition and the origin, routing and destination of hazardous waste during its transport."

(65) "Marking" means applying the DOT descriptive name, instructions, cautions, weight or specification marks or combinations thereof required by this chapter to be placed upon the outside of containers of hazardous waste.

(66) "Monitoring" means all procedures used to systemmatically inspect and collect data on operational parameters of a facility or on the quality of the air, groundwater, surface water, or soils.

(67) "Nonpoint source" means a source from which pollutants emanate in an unconfined and unchannelled manner, including, but not limited to, the following:

(a) For nonpoint sources of water effluent, this includes those sources which are not controllable through permits issued pursuant to ch. 147, Stats. Nonpoint source water pollutants are not traceable to a discrete identifiable origin, but result from natural processes, such as nonchannelled run-off, precipitation, drainage, or seepage.

(b) For nonpoint sources of air contaminant emissions, this normally includes any landfills or surface impoundments.

(68) "On-site" means on the same or geographically contiguous property which may be divided by public or private right-of-way, provided the entrance and exit between the properties is at a cross-roads intersection, and access is by crossing, as opposed to going along, the right-of-way. Non-contiguous properties owned by the same person, but connected by a right-of-way which the person controls and to which the public does not have access, is also considered on-site property.

(69) "Open burning" means the combusion of any material without the following characteristics:

(a) Control of combustion air to maintain an adequate temperature for efficient combustion;

(b) Containment of the combustion reaction in an enclosed device to provide sufficient residence time and turbulence for complete combustion; and

(c) Control of emission of the gaseous combustion products.

(70) "Operator" means the person who is responsible for the overall operation of a hazardous waste facility, or part of a hazardous waste facility.

(71) "Owner" means the person who owns a hazardous waste facility or part of a hazardous waste facility.

(72) "Person" is defined in s. 144.61(9), Stats., to mean "an individual, owner or operator, corporation, partnership, association, municipality, interstate agency or state agency".

(73) "Pile" means any noncontainerized accumulation of solid, nonflowing hazardous waste that is used for treatment or storage.

(74) "Plan of operation" means a report submitted for a hazardous waste facility that describes its location, design, construction, operation, maintenance, closing and long-term care.

(75) "Point source" means any discernible, confined, and discrete conveyance, including, but not limited to, the following:

(a) For point sources of water effluent, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated feeding operation, vessel, or other floating craft from which pollutants are or may be discharged; and

(b) For point sources of air contaminant emissions, any stack, duct, or vent from which pollutants are or may be discharged.

(76) "Proof of financial responsibility" means a bond, deposit, or proof of an established escrow account, trust account or other proof of financial responsibility satisfactory to the department ensuring that sufficient funds will be available to comply with the closure and long-term care requirements of this chapter and the approved plan of operation.

(77) "Publicly owned treatment works" or "POTW" means any device or system used in the treatment, including recycling and reclamation, of municipal sewage or industrial wastes of a liquid nature which is owned by the state or a municipality. This definition includes sewers, pipes, or other conveyances only if they convey wastewater to a POTW providing treatment.

(78) "Recharge zone" means an area through which water enters an aquifer.

(79) "Registered professional engineer" means a professional engineer registered as such with the Wisconsin examining board of architects, professional engineers, designers and land surveyors.

(80) "Reporting quarter" means the 3 month time period covered by each quarterly report. The reporting quarters end on the last day of March, June, September, and December.

(81) "Representative sample" means any sample of a universe or whole, such as groundwater or hazardous waste, which can be expected to exhibit the average properties of the universe or whole. Methods for obtaining representative samples of hazardous wastes are given in appendix I.

(82) "Retention time" means the time hazardous waste is subjected to the combustion zone temperature in a incinerator.

(83) "Run-off" means any rainwater, leachate or other liquid that drains over land, from any part of a hazardous waste facility.

(84) "Run-on" means any rainwater, leachate, or other liquid that drains over land onto any part of a hazardous waste facility.

(85) "Saturated zone" means that part of the earth's crust in which all voids are filled with water.

(86) "Schedule of compliance" means a schedule of remedial measures including an enforceable sequence of interim requirements leading to compliance with the requirements of this chapter.

(87) "Site" means a contiguous piece of land occupied, having been occupied, or to be occupied by a hazardous waste facility.

(88) "Sludge" means any solid, semi-solid, or liquid waste generated from a municipal, commercial or industrial wastewater treatment plant, water supply treatment plant or air pollution control facility, exclusive of any of the treated effluent from a wastewater treatment plant.

(89) "Sole source aquifer" means those aquifers designated pursuant to s. 1424(e) of the safe drinking water act of 1974, P.L. 93-523, which solely or principally supply drinking water to a large percentage of a populated area.

(90) "Solid waste" is defined in s. 144.01(15), Stats., to mean "any garbage, refuse, sludge from a waste treatment plant, water supply treatment plant or air pollution control facility, and other discarded

or salvageable materials, including solid, liquid, semi-solid or contained gaseous materials resulting from industrial, commercial, mining and agricultural operations, and from community activities, but does not include solids or dissolved material in domestic sewage, or solid or dissolved materials in irrigation return flows or industrial discharges which are point sources subject to permits under ch. 147, Stats., or source, special nuclear or by-product material as defined under s. 140.52, Stats.

Note: The domestic sewage exemption applies to non-domestic wastes that mix with sanitary wastes in a sewer system leading to a POTW. An industrial waste stream that never mixes with sanitary wastes in the sewer prior to storage or treatment does not fall within the exemption.

(91) "Solid waste disposal sites and facilities" is defined in s. 144.43(5), Stats., to include "commercial and municipal establishments or operations such as, without limitation because of enumeration, sanitary landfills, dumps, land disposal sites, incinerators, auto junk yards, scrap metal salvage yards, transfer stations, storage facilities, collection and transportation services and other establishments or operations for the storage, collection, transportation, transfer, processing, treatment, recovery or disposal of solid waste. "Solid waste disposal sites and facilities" does not include a site or facility 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; nor does the term include a site or facility which uses large machines to sort, grade, compact or bale clean wastepaper, fibers or plastics, not mixed with other solid waste, for sale or use for recycling purposes."

(92) "Storage" is defined in s. 144.61(10), Stats. For the purpose of this chapter, "storage" means the containment of hazardous waste, other than containment of less than 10,000 gallons for less than one month, for a period of time not to exceed 18 months, in such a manner as not to constitute disposal of hazardous waste. Section 144.61(10), Stats., provides that containment of less than 10,000 gallons for less than one month shall not constitute storage.

(93) "Storage facility" means any site or facility, or part of a site or facility, which stores hazardous waste, except for generation sites where generators store their own waste in compliance with s. NR 181.21(5).

(94) "Surface impoundment" means a facility, or part of a facility, which is a natural topographic depression, man-made excavation, or dike area formed primarily of earthen materials although it may be lined with man-made materials, and which is designed to hold an accumulation of liquid wastes or wastes containing free liquids. Examples of surface impoundments are holding, storage, settling and aeration pits, ponds and lagoons.

(95) "Tank" means a stationary device, designed to contain an accumulation of hazardous waste which is constructed primarily of nonearthen materials. such as wood, concrete, steel, plastic, which provide structural support.

(96) "Topsoil" means natural loam, sandy loam, silt loam, silt clay loam or clay loam humus-bearing soils or other material that will easily produce and sustain dense growths of vegetation capable of preventing wind and water erosion of the topsoil itself and other soils and material beneath.

(97) "Termination" is defined in s. 144.43(8), Stats. For the purpose of this chapter, "termination" means the final action taken by an owner or operator of a disposal facility when formal responsibilities for long-term care cease.

(98) "Thermal treatment" means the treatment of hazardous waste in a device which uses elevated temperatures as the primary means to change the chemical or biological character or composition of the hazardous waste. Examples of thermal treatment processes are incineration, molten salt, pyrolysis, calcination, wet air oxidation and microwave discharge.

(99) "Totally enclosed treatment facility" means a facility for the treatment of hazardous waste which is directly connected to a production process and which is constructed and operated in a manner which is designed to prevent the discharge of any hazardous waste or constituent thereof into the environment during treatment. An example is a pipe in which acid is neutralized.

(100) "Transport" is defined in s. 144.61(12), Stats. For the purpose of this chapter, "transport" means the movement of hazardous wastes between generation sites or hazardous waste facilities which are subject to or require a license under this chapter or under the resource conservation and recovery act of 1976, P.L. 94-580, as amended.

(101) "Transport vehicle" means a motor vehicle or rail car, used for the transporation of cargo by any mode. Each cargo carrying body, such as a trailer or railroad car, is a separate transport vehicle.

(102) "Transportation service" means a service engaged in the off-site transport of hazardous waste by air, rail, highway or water.

(103) "Transporter" means the owner or operator of a transportation service licensed under this chapter.

(104) "Treatment" is defined in s. 144.61(13), Stats., to mean "any method, technique or process, including neutralization, which follows generation and is designed to change the physical, chemical or biological character or composition of any hazardous waste so as to neutralize the hazardous waste or so as to render such waste nonhazardous, safer for transport, amenable for recovery, amendable for storage or reduced in volume."

(105) "Treatment facility" is defined in s. 144.61(14), Stats., to mean "a location at which waste is subjected to treatment and may include a facility where waste has been generated. Such facilities shall not include wastewaster treatment facilities regulated under ch. 147, Stats."

(106) "Triple rinsed" refers to a container which has been flushed 3 times, each time using a volume of diluent at least equal to 10% of the container's capacity.

(107) "24-hour, 25-year storm" means a storm of 24-hour duration with a probable recurrence interval of once in 25 years as determined under s. NR 205.05, Wis. Adm. Code.

(108) "Unsaturated zone" means the zone between the land surface and the nearest saturated zone, in which the interstices are occupied partially by air.

(109) "USDA" means the United States department of agricultu

(110) "USGS" means the United States geological survey.

(111) "Vessel" means any description of watercraft, used or capable of being used as a means of transportation on the water.

(112) "Water table" means the upper surface of the saturation zone in groundwaters where the hydrostatic pressure is equal to atmospheric pressure.

(113) "Well" means a bored, drilled or driven shaft, or a dug hole where the depth of the dug hole is greater than the largest surface dimension, and which is terminated above, within or below an aquifer.

(114) "Well nest" means 2 or more wells installed within 10 feet of each other at the ground surface and constructed to varing depths.

(115) "Wetlands" means those areas where water is at, near or above the land surface long enough to be capable of supporting aquatic or hydrophytic vegetation, and which have soils indicative of wet conditions.

NR 181.05 Alternative requirements. Exemptions from the requirements of ss. NR 181.42 through NR 181.46 may be granted for hazardous waste facilities in relation to location, engineering design, and operations, except as otherwise provided in those sections. A person may apply for an exemption by providing the department with a request and documentation justifying the need for an exemption in writing. Such a request must be included in the applicant's feasibility report to allow the department to provide sufficient public notice as required by s. 144.44, Stats. A person applying for an exemption has the burden of showing and documenting that the proposed alternative requirement provides the same level of control and protection as the requirements of ss. NR 181.42 through NR 181.46. Prior to granting an exemption, the department shall make a determination that the proposed alternative requirement does not pose an increased threat to human health or the environment, taking into consideration such factors as the quantity, composition and degree of hazard of the waste to be managed, any potential degradation of the environment and potential nuisance conditions. All exemptions pertaining to a hazardous waste facility will be granted in writing by the department. Exemptions shall be reviewed periodically with regard to any potential nuisance, hazard to public health and safety, or potential degradation of the environment.

NR 181.06 Notification of hazardous waste activities. (1) Any person who on the effective date of these rules, generates or transports hazardous waste which is identified in subch. II, or owns or operates a facility for the treatment, storage or disposal of a hazardous waste which is identified in subch. II,

shall, within 90 days of the effective date of these rules, notify the department of such activities, unless that person has previously notified the EPA in compliance with the preliminary notification requirements of s. 3010 of the resource conservation and recovery act of 1976, P.L. 94-580, as amended, or is otherwise exempted from this requirement under s. NR 181.13.

(2) The notification form shall be provided by the department upon request and shall, at a minimum, contain the following information:

(a) The name of the generation site, transportation service or facility.

(b) The mailing address of the generation site, transportation service, or facility.

(c) The location of the generation site, transportation service or facility.

(d) The name and telephone number of a responsible individual at the generation site, transportation service or facility who can be contacted for clarification of information submitted in the notification.

(e) The name of the operator and the owner of the generation site, transportation service, or facility.

(f) The types of hazardous waste activity conducted, such as the generation, transportation, or treatment, storage or disposal of hazardous waste either on the site of hazardous waste generation or off-site.

(g) The mode of transportation.

(h) Whether this is the first, or a subsequent, notification of hazardous waste activities.

(i) A description of the hazardous wastes generated, transported, treated, stored or disposed.

1. For hazardous wastes from non-specific sources, the hazardous waste number from table II in s. NR 181.16(2)(a) for each listed hazardous waste.

2. For hazardous wastes from specific sources, the hazardous waste number from table III in s. NR 181.16(2)(b) for each listed hazardous waste.

3. For commercial chemical product hazardous wastes, the hazardous waste number from tables IV and V in s. NR 181.16(3) for each chemical substance listed.

4. For non-listed hazardous wastes, the hazardous waste number from s. NR 181.15 for each ignitable, corrosive, reactive or toxic waste as determined under s. NR 181.15.

(j) A certification stating "I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submittal information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment", must be signed by the owner or operator, or an authorized representative, of the generation site, transportation service or facility.

Note: The notification form may be obtained from the Department of Natural Resources, P.O. Box 8094, Madison, Wisconsin 53708 at no charge.

NR 181.07 Confidentiality. (1) Except as provided under sub. (2), any records, reports or other information furnished to or obtained by the department in the administration of ss. 144.60 through 144.64 and 144.69 through 144.74 are public records subject to the provisions of s. 19.21, Stats., and s. NR 2.195, Wis. Adm. Code.

(2) If confidential status is sought for records, reports or other information furnished to or obtained by the department under ss. 144.60 through 144.64 and 144.69 through 144.74, the procedures prescribed in s. NR 2.19, Wis. Adm. Code, shall be followed.

(3) The department shall treat as confidential any information which is entitled to protection as a trade secret, as that phrase is defined in s. 943.205(2)(a), Stats., if confidential status is requested in a timely manner by the person or organization requesting it.

(4) Records, reports and other information that have been granted confidential status:

(a) May be used by the department in compilation of summaries and reports provided that the summaries and reports do not identify any person or reveal any information otherwise confidential under this section; and

(b) May be disclosed by the department to the EPA, upon EPA's written request, if the EPA has entered into an agreement with the department under 40 CFR 2.215, July 1, 1980, to keep the records, reports or other information confidential.

Subchapter II

Identification of Hazardous Waste

NR 181.11 Applicability. This subchapter identifies those solid wastes which are subject to regulation as hazardous waste under this chapter.

NR 181.12 Definition of hazardous waste. (1) A solid waste, as defined in s. NR 181.04(90), is a hazardous waste if:

(a) It is not excluded from regulation as a hazardous waste under s. sub. (4); and

(b) It meets any of the following criteria:

1. It is listed in s. NR 181.16 and has not been excluded from the lists in s. NR 181.16 under s. NR 181.17.

2. It is a mixture of solid waste and one or more hazardous wastes listed in s. NR 181.16 and has not been excluded under s. NR 181.17.

3. It exhibits any of the characteristics of hazardous waste identified in s. NR 181.15.

4. It is generated from the treatment, storage or disposal of a hazardous waste, including any sludge, spill residue, ash, emission control dust or leachate, and:

a. It exhibits any of the characteristics of hazardous waste identified in s. NR 181.15, or

b. It is a waste which is listed under s. NR 181.16, contains a waste listed under s. NR 181.16, or is derived from a waste listed under s. NR 181.16, and it has not been excluded under s. NR 181.17.

(2) A solid waste which is not excluded from regulation under sub. (4) becomes a hazardous waste when any of the following events occur:

(a) In the case of a waste listed in s. NR 181.16, when the waste first meets the listing description set forth in s. NR 181.16.

(b) In the case of a mixture of solid waste and one or more listed hazardous wastes, when a hazardous waste listed in s. NR 181.16 is first added to the solid waste.

(c) In the case of any other solid waste, including a solid waste mixture, when the waste exhibits any of the characteristics identified in s. NR 181.15.

(3) A hazardous waste will remain a hazardous waste unless and until it:

(a) No longer exhibits any of the characteristics of a hazardous waste identified in s. NR 181.15; or

(b) In the case of a waste which is listed under s. NR 181.16, contains a waste listed under s. NR 181.16, or is derived from a waste listed under s. NR 181.16, the waste is excluded under s. NR 181.17.

(4) The following solid wastes are not hazardous wastes:

(a) Household waste, including household waste that has been collected, transported, stored, treated, disposed of, recovered or reused.

(b) Cement kiln dust waste.

(c) Solid wastes generated by any of the following and which are returned to the soils as fertilizers:

1. The growing and harvesting of agricultural crops.

2. The raising of animals.

(d) Discarded wood or wood products which fail the test for the characteristic of EP toxicity given in s. NR 181.15(5) and are not a hazardous waste for any other reason, if the waste is generated by persons who utilize arsenical-treated wood and wood products for the intended end use of these materials.

(e) Polychlorinated biphenyls (PCBs) regulated under ch. NR 157, Wis. Adm. Code.

(f) Fly ash waste, bottom ash waste, slag waste, and flue gas emission control waste generated primarily from the combustion of coal or other fossil fuels.

(g) Drilling fluids, produced waters, and other wastes associated with the exploration, development or production of crude oil, natural gas or geothermal energy.

(5) A hazardous waste which is generated in a product or raw material storage tank, a product or raw material vehicle, railroad freight car, vessel, a product or raw material pipeline, or in a manufacturing process unit or an associated non-waste-treatment manufacturing unit, is not subject to regulation under this chapter until it exits the unit in which it was generated, unless the hazardous waste remains in the unit more than 90 days after the unit ceases to be operated for manufacturing, or for storage or transportation of product or raw materials.

NR 181.13 Special requirements for hazardous waste generated by small quantity generators.

(1) Except as otherwise provided in sub. (2), a generator who generates in a calendar month a total of less than 1,000 kilograms of hazardous wastes, and does not accumulate at any time quantities of hazardous wastes greater than 1,000 kilograms, is exempt from the requirements of ss. NR 181.06, NR 181.21(3), (4) and (5), NR 181.23, NR 181.24 and NR 181.25, if the requirements of sub. (5) are met.

(2) Any generator who generates in a calendar month, or accumulates at any time, any of the following hazardous wastes in quantities greater than those set forth in pars. (a) or (b), is subject to regulation under subchs. III through VI and the notification requirements of s. NR 181.06.

(a) A total of one kilogram of those commercial products or manufacturing chemical intermediates listed in table IV in s. NR 181.16(3), which are discarded or are intended to be discarded, and those off-specification commercial chemical products or manufacturing chemical intermediates which, if they met specifications, would have a generic name listed in table IV in s. NR 181.16(3) which are discarded or are intended to be discarded.

(b) One hundred kilograms of any residue or contaminated soil, water or other debris resulting from the cleanup of a spill, into or on any land or water, of any commercial chemical product or manufacturing chemical intermediate listed in table IV in s. NR 181.16(3).

(3) In determining the quantity of hazardous waste generated:

(a) Hazardous waste which has already been counted to determine the quantity generated within the calendar month at the time of generation need not be counted again when it is removed from on-site storage; and

(b) Hazardous waste produced by on-site treatment of hazardous waste which was generated on-site need not be included.

(4) A small quantity generator may accumulate hazardous waste on-site. If a generator accumulates at any time more than a total of 1,000 kilograms of hazardous waste, or acutely hazardous wastes in quantities greater than those set forth in sub. (2), all of those accumulated wastes for which the accumulation limit was exceeded are subject to regulation under subchs. III through VI, and s. NR 181.06. The time period of s. NR 181.21(5) for accumulation of wastes on-site begins for a small quantity when the accumulated wastes exceed the applicable exclusion level.

(5) In order for hazardous waste generated by a small quanity generator to be excluded from full regulation, the generator shall:

(a) Comply with s. NR 181.22; and

(b) If hazardous waste is stored on-site, store it in compliance with s. NR 181.21(5) if the quantities accumulated exceed those specified in sub. (4).

(c) Either treat or dispose of the hazardous waste in an on-site facility, or ensure delivery to an off-site storage, treatment or disposal facility, either of which is:

1. Permitted by the EPA under s. 3005(e) of the resource conservation and recovery act of 1976, P.L. 94-580, as amended, or licensed as a hazardous waste facility under this chapter;

2. A facility with interim status under s. 3005(e) of the resource conservation and recovery act of 1976, P.L. 94-580, as amended, or an interim license under ss. NR 181.53 and NR 181.54;

3. Licensed as a solid waste disposal site or facility under ch. NR 180, Wis. Adm. Code, and has approved under sub. (7) to accept those wastes; or

4. A on-site facility which beneficially uses or reuses, or legitimately recycles or reclaims the waste in accordance with s. NR 181.19.

(d) Annually report to the department the types of hazardous waste generated, the name and identification of any transporter who transported the waste and the name and location of the facility where the wastes were treated, stored or disposed, if more than 100 kilograms of hazardous wastes are generated in any calendar month or accumulated at any time. This report shall be submitted by March 1 for the preceding calendar year.

(e) If a generator treats or disposes of a hazardous waste at a solid waste disposal site or facility in accordance with par. (c)3. the generator shall:

1. Provide the solid waste disposal site or facility operator with the results of the hazardous waste determination required by s. NR 181.22; and

2. Notify the solid waste disposal site or facility operator when the waste is delivered.

(6) Any person who operates or maintains a solid waste disposal site or facilty licensed under ch. NR 180, Wis. Adm. Code, that has approval under sub. (7) to accept small quantities of specific hazardous wastes is exempt from the requirements of subchs. V and VI if:

(a) Hazardous wastes that are excluded from regulation under this section are the only hazardous wastes treated, or disposed of by the facility;

(b) All the conditions of sub. (7) approval are met, including, but not limited to operational requirements and cumulative waste quantity limits;

(c) Quarterly reports are submitted to the department no later than April 15, July 15, October 15 and January 15 for each previous calendar quarter, listing the hazardous waste types and quantities of waste accepted at the facility in each quarter and the generators and transporters of that waste; and

(d) Waste management fund fees at the rate specified in s. NR 181.42(12) are paid for the hazardous waste quantities accepted at the facility at the same time and in the same manner as waste management fund fees required under s. NR 180.16, Wis. Adm. Code, are to be paid.

(7) Any person who operates or maintains a solid waste disposal site or facility licensed under ch. NR 180, Wis. Adm. Code, that accepts hazardous wastes which are excluded from regulation under this section shall apply for and obtain written departmental approval under this subsection. This approval shall constitute a license under subch. VI.

(8) Hazardous waste subject to the reduced requirements of this section may be mixed with non-hazardous waste and remain subject to these reduced requirements even though the resultant mixture exceeds the quantity limitations identified in this section, unless the mixture meets any of the characteristics of hazardous waste identified in s. NR 181.15.

NR 181.135 Residues of hazardous waste in empty containers. (1) Any hazardous waste that is remaining in either an empty container or an empty inner liner, as defined in subs. (2), (3) or (4), is not subject to regulation under this chapter.

(2) A container or inner liner removed from a container that has held any hazardous waste, except a waste that is a compressed gas or a commercial chemical product or manufacturing chemical intermediate listed in table IV in s. NR 181.16(3), is empty if:

(a) All wastes have been removed that can be removed using the practices commonly employed to remove materials from that type of container, such as pouring, pumping or aspirating, and

(b) No more than one inch of residue remains on the bottom of the container or inner liner.

(3) A container that has held a hazardous waste that is a compressed gas is empty when the pressure in the container approaches atmospheric pressure.

(4) A container or inner liner removed from a container that has held a commercial chemical product or manufacturing chemical intermediate listed in table IV in s. NR 181.16(3) is empty if:

(a) The container or inner liner has been triple rinsed using a solvent capable of removing the commercial chemical product or manufacturing chemical intermediate;

(b) The container or inner liner has been cleaned by another method that has been shown in scientific literature, or by tests conducted by the generator, to achieve equivalent removal; or

(c) In the case of a container, the inner liner, that prevented contact of the commercial chemical product or manufacturing chemical intermediate with the container, has been removed.

Note: The U.S. environmental protection agency (EPA) has adopted criteria for identifying the characteristics of hazardous waste and for listing hazardous wastes, lists of hazardous wastes and procedures for conducting toxicity tests as a part of comprehensive regulations applicable to the generation, transportation, storage, treatment and disposal of hazardous waste, under the resource conservation and recovery act of 1976, P.L. 94-580, as amended (RCRA).

In accordance with s. 144.62(2), Stats., which requires the department to promulgate, by rule, criteria for identifying the characteristics of hazardous waste identical to those promulgated by the U.S. EPA under s. 3001(b) of RCRA, the department has adopted s. NR 181.14 which contains criteria identical to those found in 40 CFR part 261, July 1, 1980. In addition, the department has adopted ss. 181.15, NR 181.16 and NR 181.18 which contain provisions identical to federal regulations in 40 CFR part 261, July 1, 1980, as amended in 45 FR 74884-74893, November 12, 1980, 45 FR 78524-78547, November 25, 1980, and 46 FR 4614-4620, January 16, 1981.

NR 181.14 Hazardous waste critieria. (1) Criteria for identifying the characteristics of hazardous waste. The department shall identify and define a characteristic of hazardous waste only upon determining that:

(a) A solid waste that exhibits the characteristic may:

1. Cause, or significantly contribute to, an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness, or

2. Pose a substantial present or potential hazard to human health or the environment when it is improperly treated, stored, transported, disposed of or otherwise managed; and

(b) The characteristic can be:

1. Measured by an available standardized test method which is reasonably within the capability of generators of solid waste or private sector laboratories that are available to serve generators of solid waste; or

2. Reasonably detected by generators of solid waste through their knowledge of their waste.

(2) Criteria for listing hazardous waste. (a) The department shall list a solid waste as a hazardous waste only upon determining that the solid waste meets one of the following criteria:

1. It exhibits any of the characteristics of hazardous waste identified in s. NR 181.15.

2. It has been found to be fatal to humans in low doses or, in the absence of data on human toxicity, it has been shown to have an oral LD_{50} toxicity (rat) of less than 50 milligrams per kilogram, an inhalation LC_{50} toxicity (rat) of less than 2 milligrams per liter, or a dermal LD_{50} toxicity (rabbit) of less than 200 milligrams per kilogram or is otherwise capable of causing or significantly contributing to an increase in serious irreversible, or incapacitating reversible, illness.

3. It contains any of the hazardous constituents listed in table VI in s. NR 181.16(4) unless, after considering any of the following factors, the department concludes that the waste is not capable of posing a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported or disposed:

a. The nature of the toxicity presented by the constituent.

b. The concentrations of the constituent in the waste.

c. The potential of the constituent or any toxic degradation product of the constituent to migrate from the waste into the environment under the types of improper management considered in subd. 3.g.

d. The persistence of the constituent or any toxic degradation product of the constituent.

e. The potential for the constituent or any toxic degradation product of the constituent to degrade into non-harmful constituents and the rate of degradation.

f. The degree to which the constituent or any degradation product of the constituent bioaccumulates in ecosystems.

g. The plausible types of improper management to which the waste could be subjected.

h. The quantities of the waste generated at individual generation sites or on a regional or statewide basis.

i. The nature and severity of the human health and environmental damage that has occurred as a result of the improper management of wastes containing the constituent.

j. Actions taken by other governmental agencies or regulatory programs based on the health or environmental hazard posed by the waste or waste constituent.

k. Such other factors as may be relevant in a specific case.

(b) The department may list classes or types of solid waste if there is reason to believe that individual wastes, within the class or type of waste, because their quantity, concentration, or physical, chemical or infectious characteristics, typically or frequently:

1. Cause, or significantly contribute to, an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness; or

2. Pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported or disposed of, or otherwise mismanaged.

(c) Hazardous wastes which have been listed in accordance with the criterion in par. (a)2. are designated as acute hazardous wastes and wastes which have been listed in accordance with the criterion in par. (a)3. are designated as toxic wastes.

NR 181.15 Characteristics of hazardous waste. (1) General. (a) A solid waste which is not excluded from regulation under s. NR 181.12(4) is a hazardous waste if it exhibits any of the characteristics identified in this section.

(b) A hazardous waste which is identified by a characteristic in this section, but is not listed as a hazardous waste in s. NR 181.16, is assigned the hazardous waste number set forth for that characteristic in this section. This number shall be used in complying with the notification requirements in s. NR 181.06 and record-keeping and reporting requirements under subchs. III, IV and V.

(c) For purposes of this section, the department will consider a sample obtained using any of the applicable sampling methods specified in appendix I to be a representative sample as defined in s. NR 181.04(81).

(2) Characteristic of ignitability. (a) A solid waste exhibits the characteristic of ignitability if a representative sample of the waste has any of the following properties:

1. It is a liquid, other than an aqueous solution containing less than 24% alcohol by volume, and has a flash point less than 60°C (140°F), as determined by a Pensky-Martens closed cup tester, using the test method specified in ASTM standard D-93-79, or a Setaflash closed cup tester, using the test method specified in ASTM standard D-3278-78.

Note: The publications containing these standards may be obtained from:

American Society for Testing and Materials

1916 Race St.

Philadelphia, Pa. 19103

The publications containing these standards are available for inspection at the offices of the department, the secretary of state and the revisor of statutes.

2. It is not a liquid and is capable, at a temperature of 0°C and a pressure of one atmosphere, of causing fire through friction, absorption of moisture or spontaneous chemical changes and, when ignited, burns so vigorously and persistently that it creates a hazard.

3. It is an ignitable compressed gas as defined in 49 CFR 173.300, Oct. 1, 1979, and as determined by the test methods described in that regulation, ASTM standard D-323.

Note: The publication containing this regulation may be obtained from:

The Superintendent of Documents

U.S. Government Printing Office

Washington, D.C. 20402

The publication containing this regulation is available for inspection at the offices of the department, the secretary of state and the revisor of statutes.

4. It is an oxidizer, such as a chlorate, permanganate, inorganic peroxide, nitro carbo nitrate or a nitrate, that yields oxygen readily to stimulate the combustion of organic matter.

(b) A solid waste that exhibits the characteristic of ignitability, but is not listed as hazardous waste in s. NR 181.16(2), has the hazardous waste number of D001.

(3) Characteristic of corrosivity. (a) A solid waste exhibits the characteristic of corrosivity if a representative sample of the waste has either of the following properties:

1. It is aqueous and has a pH less than or equal to 2 or greater than or equal to 12.5, as determined by a pH meter using the test method specified in the "Test Methods for the Evaluation of Solid Waste, Physical/Chemical Methods," SW-846, May 1980, EPA, Office of Solid Waste.

Note: This publication may be obtained from:

Solid Waste Information

U.S. Environmental Protection Agency

26 W. St. Clair St.

Cincinnati, Ohio 45268

This publication is available for inspection at the offices of the department, the secretary of state and the revisor of statutes.

2. It is a liquid and corrodes steel at a rate greater than 6.35 mm (0.250-inch) per year at a test temperature of 55°C (130°F) as determined by the test method specified in NACE (National Association of Corrosion Engineers) standard TM-01-69 as standardized in "Test Methods for the Evaluation of Solid Waste, Physical/Chemical Methods".

(b) A solid waste that exhibits the characteristic of corrosivity, but is not listed as a hazardous waste in s. NR 181.16(2), has the hazardous waste number of D002.

(4) Characteristic of reactivity. (a) A solid waste exhibits the characteristic of reactivity if a representative sample of the waste has any of the following properties:

1. It is normally unstable and readily undergoes violent change without detonating.

2. It reacts violently with water.

3. It forms potentially explosive mixtures with water.

4. When mixed with water, it generates toxic gases, vapors or fumes in a quantity sufficient to present a danger to human health or the environment.

5. It is a cyanide or sulfide bearing waste which, when exposed to pH conditions between 2 and 12.5, can generate toxic gases, vapors or fumes in a quantity sufficient to present a danger to human health or the environment.

6. It is capable of detonation or explosive reaction if it is subjected to a strong initiating source or if heated under confinement.

7. It is readily capable of detonation or explosive decomposition or reaction at a temperature of 0°C and a pressure of one atmosphere.

8. It is a forbidden explosive as defined in 49 CFR 173.51, October 1, 1979, as amended by 45 FR 34703, May 22, 1980, or a Class A explosive as defined in 49 CFR 173.53, Oct. 1, 1979, or a Class B explosive as defined in 49 CFR 173.88, Oct. 1, 1979.

Note: The publications containing these regulations may be obtained from:

The Superintendent of Documents

U.S. Government Printing Office

Washington, D.C. 20402

The publications containing these regulations are available for inspection at the offices of the department, the secretary of state and the revisor of statutes.

(b) A solid waste that exhibits the characteristic of reactivity, but is not listed as a hazardous waste in s. NR 181.16, has the hazardous waste number of D003.

(5) Characteristic of EP toxicity. (a) A solid waste exhibits the characteristic of extraction procedure (EP) toxicity if, using the test methods described in s. NR 181.18, the extract from a representative sample of the waste contains any of the contaminants listed in table I at a concentration equal to or greater than the respective value given in that table. Where the waste contains less than 0.5% filterable solids, the waste itself, after filtering, is considered to be the extract for the purpose of this section.

(b) A solid waste that exhibits the characteristic of EP toxicity, but is not listed as a hazardous waste in s. NR 181.16, has the hazardous waste number specified in table I which corresponds to the toxic contaminant causing it to be hazardous.

Table I

Maximum Concentration of Contaminants
for Characteristic of EP Toxicity

Hazardous Waste Number	Contaminant	Maximum Concentration (milligrams per liter)
D004	Arsenic	5.0
D005	Barium	100.0
D006	Cadmium	1.0
D007	Chromium (VI)	5.0
D008	Lead	5.0

D009	Mercury	0.2
D010	Selenium.	1.0
D011	Silver.	5.0
D012	Endrin (1,2,3,4,10,10-hexachloro-1.7-epoxy-1,4,4a,5,6,7,8, 8a-octahydro-1, 4-endo, endo-5, 8-dimethano naphthalene)	0.02
D013	Lindane (1,2,3,4,5,6-hexachlorocyclohexane, gamma isomer)	0.4
D014	Methoxychlor (1,1,1-Trichloro-2,2-bis (p-methoxyphenyl) ethane)	10.0
D015	Toxaphene ($C_{10}H_{10}Cl_8$, Technical chlorinated camphene, 67-69 percent chlorine)	0.5
D016	2,4-D, (2,4-Dichlorophenoxyacetic acid)	10.0
D017	2,4,5-TP Silvex (2,4,5-Trichlorophenoxypropionic acid). .	1.0

NR 181.16 Lists of hazardous wastes and hazardous waste constituents. (1) General. (a) A solid waste is a hazardous waste if it is listed in this section, unless it has been excluded from the lists under s. NR 181.17.

(b) The department has indicated the basis for listing the classes or types of wastes listed in this section by employing one or more of the following hazard codes:

1. Ignitable waste (I)
2. Corrosive waste (C)
3. Reactive waste (R)
4. EP Toxic waste (E)
5. Acute hazardous waste (H)
6. Toxic waste (T)

(c) Appendix II identifies the constituent which caused the department to list the waste as a EP toxic waste (E) or toxic waste (T) in subs. (2)(a) and (2)(b).

(d) Each hazardous waste listed in subs. (2) and (3) is assigned a hazardous waste number which precedes the name of the waste. This number shall be used in complying with the notification requirements of s. NR 181.06 and recordkeeping requirements under subchs. III, IV and V.

(e) Certain of the hazardous wastes listed in subs. (2)(a) and (2)(b) are subject to the small quantity exclusion limits in s. NR 181.13(2).

(2) Hazardous waste sources. (a) Solid waste from nonspecific sources is a hazardous waste if it is listed in table II.

Table II

Hazardous Waste from Nonspecific Sources

Hazardous Waste Number	Hazardous Waste	Hazard Code
Generic F001	The spent halogenated solvents used in degreasing: tetrachloroethylene, trichloroethylene, methylene chloride, 1,1,1-trichloroethane, carbon tetrachloride, and chlorinated fluorocarbons, and sludges from the recovery of these solvents in degreasing operations.	(T)
F002	The spent halogenated solvents: tetrachloroethylene, methylene chloride, trichloroethylene, 1,1,1-trichloroethane, chlorobenzene, 1,1,2-trichloro-1,2,2-trifluoroethane, ortho-dichlorobenzene, and trichlorofluoro methane, and the still bottoms from the recovery of these solvents.	(T)
F003	The spent non-halogenated solvents: xylene, acetone, ethyl acetate, ethyl benzene, ethyl ether, n-butyl alcohol, cyclohexanone, methanol, and methyl isobutyl Ketone, and the still bottoms from the recovery of these solvents.	(I)
F004	The spent non-halogenated solvents: cresols, cresylic acid, and nitrobenzene, and the still bottoms from the recovery of these solvents.	(T)
F005	The spent non-halogenated solvents: toluene, methyl ethyl ketone, carbon disulfide, isobutanol, and pyridine, and the still bottoms from the recovery of these solvents.	(I,T)
F006	Wastewater treatment sludges from electroplating operations, except from the following processes: (1) sulfuric acid anodizing of aluminum; (2) tin plating on carbon steel; (3) zinc plating (segregated basis) on carbon steel; (4) aluminum or zinc-aluminum	(T)

plating on carbon steel; (5) cleaning or stripping associated with tin, zinc and aluminum plating on carbon steel; and (6) chemical etching and milling of aluminum.

F007	Spent cyanide plating bath solutions from electroplating operations, except precious metals electroplating spent cyanide plating bath solutions.	(R,T)
F008	Plating bath sludges from the bottom of plating baths from electroplating operations where cyanides are used in the process, except for precious metals electroplating plating bath sludges.	(R,T)
F009	Spent stripping and cleaning bath solutions from electroplating where cyanides are used in the process, except for precious metals electroplating spent stripping and cleaning bath solutions.	(R,T)
F010	Quenching bath sludge from oil baths from metal heat treating operations cyanides are used in the process, except for precious metals heat-treating quenching bath sludges.	(R,T)
F011	Spent cyanide solutions from salt bath pot cleaning from metal heat treating operations, except for precious metals heat treating spent cyanide solutions from salt bath pot cleaning.	(R,T)
F012	Quenching wastewater treatment sludges from metal heat treating operations where cyanides are used in the process, except for precious metals heat treating quenching wastewater treatment sludges.	
F019	Wastewater treatment sludge from the industrial painting in the chemical conversion coating of aluminum.	(T)

(b) Solid waste from specific sources is a hazardous waste if it is listed in table III.

Table III

Hazardous Waste from Specific Sources

Hazardous Waste Number	Hazardous Waste	Hazard Code
Wood Preservation		
K001	Bottom sediment sludge from the treatment of waste-waters from wood preserving processes that use creosote or pentachlorophenol.	(T)
Inorganic Pigments		
K002	Wastewater treatment sludge from the production of chrome yellow and orange pigments.	(T)
K003	Wastewater treatment sludge from the production of molybdate orange pigments.	(T)
K004	Wastewater treatment sludge from the production of zinc yellow pigments.	(T)
K005	Wastewater treatment sludge from the production of chrome green pigments.	(T)
K006	Wastewater treatment sludge from the production of chrome oxide green pigments (anhydrous and hydrated).	(T)
K007	Wastewater treatment sludge from the production of iron blue pigments.	(T)
K008	Oven residue from the production of chrome oxide green pigments.	(T)

Organic Chemicals

K009	Distillation bottoms from the production of acetaldehyde from ethylene.	(T)
K010	Distillation side cuts from the production of acetaldehyde from ethylene.	(T)
K011	Bottom stream from the wastewater stripper in the production of acrylonitrile.	(R,T)
K013	Bottom stream from the acetonitrile column in the production of acrylonitrile.	(R,T)
K014	Bottoms from the acetonitrile purification column in the production of acrylonitrile.	(T)
K015	Still bottoms from the distillation of benzyl chloride.	(T)
K016	Heavy ends or distillation residues from the production of carbon tetrachloride.	(T)
K017	Heavy ends or still bottoms from the purification column in the production of epichlorohydrin.	(T)
K018	Heavy ends from fractionation in ethyl chloride production	(T)
K019	Heavy ends from the distillation of ethylene dichloride in ethylene dichloride production.	(T)
K020	Heavy ends from the distillation of vinyl chloride in vinyl chloride monomer production.	(T)
K021	Aqueous spent antimony catalyst waste from fluoromethanes production.	(T)

K022	Distillation bottom tars from the production of phenol or acetone from cumene.	(T)
K023	Distillation light ends from the production of phthalic anhydride from naphthalene.	(T)
K024	Distillation bottoms from the production of phthalic anhydride from naphthalene.	(T)
K093	Distillation light ends from the production of phthalic anhydride from ortho-xylene.	(T)
K094	Distillation bottoms from the production of phthalic anhydride from ortho-xylene.	(T)
K025	Distillation bottoms from the production of nitrobenzene by the nitration of benzene.	(T)
K026	Stripping still tails from the production of methyl ethyl pyridines.	(T)
K027	Centrifuge and distillation residues from toluene diisocyanate production.	(R,T)
K028	Spent catalyst from the hydrochlorinator reactor in the production of 1,1,1-trichloroethane.	(T)
K029	Waste from the product stream stripper in the production of 1,1,1-trichloroethane.	(T)
K095	Distillation bottoms from the production of 1, 1, 1-trichloroethane	(T)

K096	Heavy ends from the heavy ends column from the production of 1, 1, 1-trichloroethane.	(T)
K030	Column bottoms or heavy ends from the combined production of trichloroethylene and perchloroethylene.	(T)
K083	Distillation bottoms from aniline production.	(T)
K085	Distillation or fractionating column bottoms from the production of chlorobenzenes.	(T)

Pesticides

K031	By-products salts generated in the production of MSMA and cacodylic acid.	(T)
K032	Wastewater treatment sludge from the production of chlordane.	(T)
K033	Wastewater and scrub water from the chlorination of cyclopentadiene in the production of chlordane.	(T)
K034	Filter solids from the filtration of hexachloro-cyclopentadiene in the production of chlordane.	(T)
K097	Vacuum stripper discharge from the chlordane chlorination in the production of chlordane.	(T)
K035	Wastewater treatment sludges generated in the production of creosote.	(T)
K036	Still bottoms from toluene reclamation distillation in the production of disulfoton.	(T)
K037	Wastewater treatment sludges from the production of of disulfoton.	(T)

K038	Wastewater from the washing and stripping of phorate production.	(T)
K039	Filter cake from the filtration of diethylphosphorodithioic acid in the production of phorate.	(T)
K040	Wastewater treatment sludge from the production of phorate.	(T)
K041	Wastewater treatment sludge from the production of toxaphene.	(T)
K098	Untreated process wastewater from the production of toxaphene	(T)
K042	Heavy ends or distillation residues from the distillation of tetrachlorobenzene in the production of 2,4,5-T.	(T)
K043	2,6-Dichlorophenol waste from the production of 2,4-D.	(T)
K099	Untreated wastewater from the production of 2,4-D.	(T)

Explosives

K044	Wastewater treatment sludges from the manufacturing and processing of explosives.	(R)
K045	Spent carbon from the treatment of wastewater containing explosives.	(R)
K046	Wastewater treatment sludges from the manufacturing, formulation and loading of lead-based initiating compounds.	(T)
K047	Pink or red water from TNT operations.	(R)

Petroleum Refining		
K048	Dissolved air flotation (DAF) float from the petroleum refining industry.	(T)
K049	Slop oil emulsion solids from the petroleum refining industry.	(T)
K050	Heat exchanger bundle cleaning sludge from the petroleum refining industry.	(T)
K051	API separator sludge from the petroleum refining industry.	(T)
K052	Tank bottoms (leaded) from the petroleum refining industry.	(T)
Iron and Steel		
K060	Ammonia still lime sludge from coking operations.	(T)
K061	Emission control dust or sludge from the electric furnace production of steel.	(T)
K062	Spent pickle liquor from steel finishing operations.	(C,T)
Secondary Lead		
K069	Emission control dust or sludge from secondary lead smelting.	(T)
Inorganic Chemicals		
K071	Brine purification muds from the mercury cell process in chlorine production, where separately prepurified brine is not used.	(T)

K073	Chlorinated hydrocarbon wastes from the purification step of the diaphragm cell process using graphite anodes in chlorine production.	(T)

Ink Formulation

K086	Solvent washes and sludges, caustic washes and sludges, or water washes and sludges from cleaning tubs and equipment used in the formulation of ink from pigments; driers, soaps, and stabilizers containing chromium and lead.	(T)

Veterinary Phamaceuticals

K084	Wastewater treatment sludges generated during the production of veterinary pharmaceuticals from arsenic or organoarsenic compounds.	(T)
K101	Distillation tar residues from the distillation of aniline-based compounds in the production of veterinary pharmaceuticals from arsenic or organo-arsenic compounds.	(T)
K102	Residue from the use of activated carbon for decolorization in the production of veterinary pharmaceuticals from arsenic or organo-arsenic compounds.	(T)

Coking

K060	Amonia still lime sludge from coking operations.	(T)
K087	Decanter tank tar sludge from coking operations.	(T)

(3) Discarded commercial chemical products, off-specification species, containers residues, and spill residues thereof. (a) The following materials or items are hazardous wastes if and when they are discarded or intended to be discarded:

1. Any commercial chemical product or manufacturing chemical intermediate having the generic name listed in tables IV or V.

2. Any off-specification commercial chemical product or manufacturing chemical intermediate which, if it met specifications, would have a generic name listed in tables IV or V.

3. Any residue remaining in a container or an inner liner removed from a container that has held any commercial chemical product or manufacturing chemical intermediate having a generic name listed in table IV, unless the container is empty as defined in s. NR 181.135(4).

4. Any residue or contaminated soil, water or other debris resulting from the cleanup of a spill, into or on any land or water, of any commercial chemical product or manufacturing chemical intermediate having the generic name listed in tables IV or V.

Note: The phrase "commercial chemical product or manufacturing chemical intermediate" refers to a chemical substance which is manufactured or formulated for commercial or manufacturing use which consists of the commercially pure grade of the chemical, any technical grades of the chemical that are produced or marketed, and all formulations in which the chemical is the sole active ingredient. It does not refer to a waste, such as a manufacturing process waste, that contains any of the substances listed in tables IV or V. Where a manufacturing process waste is deemed to be a hazardous waste because it contains a substance listed in tables VI or V, such waste will be listed in sub. (2), or will be identified as a hazardous waste by the characteristics set forth in s. NR 181.15.

(b) Discarded commercial chemical products, off-specification species, containers, residues and spill residues of commercial chemical products and manufacturing chemical intermediates listed in table IV are identified as acute hazardous wastes (H) and are subject to the small quantity exclusion defined in s. NR 181.13(2).

Table IV

Acute Hazardous Commercial Chemical Products and

Manufacturing Chemical Intermediates

Hazardous Waste Number	Substance
	(Acetato)phenylmercury see P092
	Acetone cyanohydrin see P069
P001	3-(alpha-Acetonylbenzyl)-4-hydroxycoumarin and salts
P002	1-Acetyl-2-thiourea
P003	Acrolein
P004	Aldrin
P005	Allyl alcohol
P006	Aluminum phosphide (R,T)
P007	5-(Aminomethyl)-3-isoxazolol
P008	4-aAminopyridine
	Ammonium vanadate see P119
P009	Ammonium picrate (R)
P010	Arsenic acid
P011	Arsenic pentoxide
P012	Arsenic trioxide
	Athrombin see P001
	Aziridene see P054
	Azophos see P061
P013	Barium cyanide
P014	Benzenethiol
	Benzoepin see P050
P015	Beryllium dust
P016	Bis(chloromethyl) ether
P017	Bromoacetone
P018	Brucine
	Butaphene see P020
P020	2-sec-Butyl-4,6-dinitrophenol
P021	Calcium cyanide
P022	Carbon disulfide
P023	Chloroacetaldehyde
P024	p-Chloroaniline
P026	1-(ortho-Chlorophenyl)thiourea
P027	3-Chloropropionitrile
P028	alpha-Chlorotoluene
P029	Copper cyanides
	Coumadin see P001
	Coumafen see P001
P030	Cyanides (soluble cyanide salts) (not elsewhere specified)
P031	Cyanogen
P033	Cyanogen chloride
	Cyclodan see P050
P034	4,6-Dinitro-o-cyclohexylphenol
P036	Dichlorophenylarsine
	Dicyanogen see P031
P037	Dieldrin
P038	Diethylarsine
P039	O,O-Diethyl-S-(2-(ethylthio)ethyl) phosphorodithioate
P040	O,O-Diethyl-O-(2-pyrazinyl)phosphorothioate
P041	Diethyl-p-nitrophenyl phosphate
P042	Epinephrine
P043	Di-isopropylfluorophosphate
	1,4:5,8-Dimethanonaphthalene, 1,2,3,4,10,10-hexachloro-1,4,4a,5,8,8a-hexahydro endo, endo see P060

Hazardous Waste Number	Substance
P044	Dimethoate
P045	3,3-Dimethyl-1-(methylthio)-2-butanone-O-((methylamino)carbonyl) oxime
P046	alpha, alpha-Dimethylphenethylamine
	Dinitrocyclohexylphenol see P034
P047	4,6-Dinitro-o-cresol and salts
P048	2,4-Dinitrophenol
	Disulfoton see P039
P049	2,4-Dithiobiuret
P050	Endosulfan
P051	Endrin
	Epinephrine see P042
	Ethylcyanide see P101
P054	Ethyleneimine
P056	Fluorine
P057	Fluoroacetamide
P058	Fluoroacetic acid, sodium salt
	Fulminate of mercury see P065
P059	Heptachlor
P060	Hexachloro-hexahydro-exo exo-dimethanonaphthalene
P062	Hexaethyl tetraphosphate
	Hydrazomethane see P068
P063	Hydrocyanic acid
	Indomethacin see P025
	Isodrin see P060
P064	Isocyanic acid, methyl ester
P065	Mercury fulminate (R,T)
P066	Methomyl
P067	2-Methylaziridine
P068	Methyl hydrazine
	Methyl isocyanate see P064
P069	2-Methyllactonitrile
P070	2-Methyl-2-(methylthio) propionaldehyde-o-(methylcarbonyl) oxime
P071	Methyl parathion
P072	alphaNaphthylthiourea
P073	Nickeltetracarbonyl
P074	Nickel (II) cyanide
P075	Nicotine and salts
P076	Nitric oxide
P077	p-Nitroaniline
P078	Nitrogen dioxide
	Nitrogen peroxide see P078
P081	Nitroglycerine (R)
P082	N-Nitrosodimethylamine
P084	N-Nitrosomethylvinylamine
P085	Octamethylpyrophosphoramide
P087	Osmium tetroxide
P088	7-Oxabicyclo (2.2.1) heptane-2, 3-dicarboxylic acid
P089	Parathion
	Phenyl dichloroarsine see P036
	Phenyl mercaptan see P014
P092	Phenylmercury acetate
P093	N-Phenylthiourea
P094	Phorate
P095	Phosgene
P096	Phosphine

Hazardous Waste Number	Substance
P097	Phosphorothioic acid, O,O-dimethyl O-[p-((dimethylamino)-sulfonyl) phenyl] ester
	Phosphorothioic acid O,O-dimethyl-O-(p-nitrophenyl)ester see P071
P098	Potassium cyanide
P099	Potassium silver cyanide
	Propargyl alcohol see P102
P101	Propanenitrile
P102	2-Propyn-1-ol
P103	Selenourea
P104	Silver cyanide
P105	Sodium azide
	Sodium coumadin see P001
P106	Sodium cyanide
	Sodium fluoroacetate see P056
P107	Strontium sulfide
P108	Strychnine and salts
	Tetraethyldithiopyrophosphate
P110	Tetraethyl lead
P111	Tetraethylpyrophosphate
P112	Tetranitromethane (R)
	Tetraphosphoric acid, hexaethyl ester see P062
P113	Thallic oxide
	Thallium peroxide see P113
P114	Thallium (II) selenite
P115	Thallium (I) sulfate
P116	Thiosemicarbazide
	Thiosulfan tionel see P050
P123	Toxaphene
P118	Trichloromethanethiol
P119	Vanadic acid, ammonium salt
P120	Vanadium pentoxide
P121	Zinc cyanide
P122	Zinc phosphide (R,T)

(c) Discarded commercial chemical products, off-specification species, containers, and spill residues of commercial chemical products or manufacturing chemical intermediates, listed in table V are identified as toxic wastes (T) unless otherwise designated and are subject to the small quantity exclusion defined in s. NR 181.13(2). These wastes and their corresponding hazardous waste numbers are:

Table V

Toxic Commercial Chemical Products and

Manufacturing Chemical Intermediates

Hazardous Waste Number	Substance
U001	Acetaldehyde (I)
U002	Acetone (I)
U003	Acetonitrile (I,T)
U004	Acetophenone
U005	2-Acetylaminoflourene
U006	Acetyl chloride (C, K, T)
U007	Acrylamide
	Acetylene tetrachloride see U209
	Acetylene trichloride see U228
U008	Acrylic acid (I)
U009	Acrylonitrile
U010	Azirino (2',3':3,4) pyrrolo (1,2-a) indole-4,7-dione,6-amino-8-[((amino-carbonyl)oxy)methyl]-1,1a,2,8,8a,8b-hexahydro-8a-methoxy-5-methyl-,
U011	Amitrole
U012	Aniline (I, T)
U014	Auramine
U015	Azaserine
U016	3,4-Benzacridine
U017	Benzal chloride
U018	Benz(a)anthracene
U019	Benzene (I, T)
U020	Benzenesulfonyl chloride (C,R)
U021	Benzidine
	1,2-Benzisothiazolin-3-one, 1,1-dioxide see U202
	Benzo(a)anthracene see U018
U022	Benzo(a)pyrene
U023	Benzotrichloride (C,R,T)
U024	Bis(2-chloroethoxy)methane
U025	Bis(2-chloroethyl) ether
U026	N,N-Bis(2-chloroethyl)-2-naphthylamine
U027	Bis(2-chloroisopropyl) ether
U244	Bis(dimethyl thiocarbamoyl) disulfide
U028	Bis(2-ethylhexyl) phthalate
U029	Bromomethane
U030	4-Bromophenyl phenyl ether
	2-Butanone peroxide see U160
U031	n-Butyl alcohol (I)
U032	Calcium chromate
	Carbolic acid see U188
	Carbon tetrachloride see U211
U033	Carbonyl fluoride (R, T)
U034	Chloral
U035	Chlorambucil
U036	Chlordane
U037	Chlorobenzene
U245	1-(p-Chlorobenzoyl)-5-methoxy-2-methylindole-3-acetic acid
U038	Benzeneacetic acid, 4-chloro-alpha-(4-chlorophenyl)-alpha-hydroxy, ethyl ester
U039	p-Chloro-m-cresol
U041	1-Chloro-2,3-epoxypropane
U042	Chloroethyl vinyl ether
U043	Chloroethene
U044	Chloroform

Hazardous Waste Number	Substance
U045	Chloromethane (I, T)
U046	Chloromethyl methyl ether
U047	2-Chloronaphthalene
U048	2-Chlorophenol
U049	4-Chloro-o-toluidine hydrochloride
U050	Chrysene
	C.I. 23060 see U073
U051	Cresote
U052	Cresols and Cresylic acid
U053	Crotonaldehyde
U055	Cumene (I)
U246	Cyanogen bromide
	Cyanomethane see U003
U056	Cyclohexane (I)
U057	Cyclohexanone (I)
U058	Cyclophosphamide
U059	Daunomycin
U060	DDD
U061	DDT
U062	Diallate
U063	Dibenz(a,h)anthracene
	Dibenzo(a,h)anthracene see U063
U064	1,2:7,8-Dibenzopyrene
U066	1,2-Dibromo-3-chloropropane
U067	1,2-Dibromoethane
U068	Dibromomethane
U069	Di-n-butyl phthalate
U070	1,2-Dichlorobenzene
U071	1,3-Dichlorobenzene
U072	1,4-Dichlorobenzene
U073	3,3'-Dichlorobenzidine
U074	1,4-Dichloro-2-butene (I, T)
	3,3'-Dichloro-4,4'-diaminobiphenyl see U073

Hazardous Waste Number	Substance
U075	Dichlorodifluoromethane
U076	1,1-Dichloroethane
U077	1,2-Dichloroethane
U078	1,1-Dichloroethylene
U079	1,2-trans-Dichloroethylene
U080	Dichloromethane
	Dichloromethylbenzene see U017
U081	2,4-Dichlorophenol
U082	2,6-Dichlorophenol
U240	2,4-Dichlorophenoxyacetic acid, salts
	and esters
U083	1,2-Dichloropropane
U084	1,3-Dichloropropene
U085	1,2,3,4-Diepoxybutane (I,T)
U086	N,N-Diethylhydrazine
U087	O,O-Diethyl-S-methyl dithiophosphate
U088	Diethyl phthalate
U089	Diethylstilbestrol
U090	Dihydrosafrole
U091	3,3'-Dimethoxybenzidine
U092	Dimethylamine (I)
U093	p-Dimethylaminoazobenzene
U094	7,12-Dimethylbenz(a)anthracene
U095	3,3'-Dimethylbenzidine
U096	alpha, alpha-Dimethylbenzylhydro-
	peroxide (R)
U097	Dimethylcarbamoyl chloride
U098	1,1-Dimethylhydrazine
U099	1,2-Dimethylhydrazine
U101	2,4-Dimethylphenol
U102	Dimethyl phthalate
U103	Dimethyl sulfate
U105	2,4-Dinitrotoluene

Hazardous Waste Number	Substance
U106	2,6-Dinitrotoluene
U107	Di-n-octyl phthalate
U108	1,4-Dioxane
U109	1,2-Diphenylhydrazine
U110	Dipropylamine (I)
U111	Di-n-propylnitrosamine
	1,4-Epoxybutane see U213
U112	Ethyl acetate (I)
U113	Ethyl acrylate (I)
U114	Ethylenebis (dithiocarbamic acid)
U115	Ethylene oxide (I,T)
U116	Ethylene thiourea
U117	Ethyl ether (I)
U118	Ethylmethacrylate
U119	Ethyl methanesulfonate
	Ethylnitrile see U003 Firemaster T23P see U235
U120	Fluoranthene
U121	Methane, trichlorofluoro
U122	Formaldehyde
U123	Formic acid (C,T)
U124	Furan (I)
U125	Furfural (I)
U126	Glycidylaldehyde
U127	Hexachlorobenzene
U128	Hexachlorobutadiene
U129	Hexachlorocyclohexane
U130	Hexachlorocyclopentadiene
U131	Hexachloroethane
U132	Hexachlorophene
U243	Hexachloropropene
U133	Hydrazine (R,T)
U134	Hydrofluoric acid (C,T)

Hazardous Waste Number	Substance
U135	Hydrogen sulfide
	Hydroxybenzene see U188
U136	Hydroxydimethyl arsine oxide
	4,4'-(Imidocarbonyl)bis(N,N-dimethyl)aniline see U014
U137	Indeno(1,2,3-cd)pyrene
U138	Iodomethane
U139	Iron Dextran
U140	Isobutyl alcohol (I, T)
U141	Isosafrole
U142	Kepone
U143	Lasiocarpine
U144	Lead acetate
U145	Lead phosphate
U146	Lead subacetate
U147	Maleic anhydride
U148	Maleic hydrazide
U149	Malononitrile
U150	Melphalan
U151	Mercury
U152	Methacrylonitrile (I, T)
U153	Methanethiol (I, T)
U154	Methanol (I)
U155	Methapyrilene
	Methyl alcohol see U154
U156	Methyl chlorocarbonate (I, T)
	Methyl chloroform see U226
U157	3-Methylcholanthrene
	Methyl chloroformate see U156
U158	4,4'-Methylene-bis-(2-chloroaniline)
U159	Methyl ethyl ketone (MEK) (I,T)
U160	Methyl ethyl ketone peroxide (R, T)
	Methyl iodide see U138

Hazardous Waste Number	Substance
U161	Methyl isobutyl ketone (I)
U162	Methyl methacrylate (I,T)
U163	N-Methyl-N'-nitro-N-nitrosoguanidine
U164	Methylthiouracil
	Mitomycin C see U010
U165	Naphthalene
U166	1,4-Naphthoquinone
U167	1-Naphthylamine
U168	2-Naphthylamine
U169	Nitrobenzene (I,T)
	Nitrobenzol see U169
U170	4-Nitrophenol
U171	2-Nitropropane (I)
U172	N-Nitrosodi-n-butylamine
U173	N-Nitrosodiethanolamine
U174	N-Nitrosodiethylamine
	See Di-n-propylnitro-samine
U176	N-Nitroso-n-ethylurea
U177	N-Nitroso-n-methylurea
U178	N-Nitroso-n-methylurethane
U179	N-Nitrosopiperidine
U180	N-Nitrosopyrrolidine
U181	5-Nitro-o-toluidine
U182	Paraldehyde
U183	Pentachlorobenzene
U184	Pentachloroethane
U185	Pentachloronitrobenzene
U242	Pentachlorophenol
U186	1,3-Pentadiene (I)
	Perc see U210
	Perchlorethylene see U210
U187	Phenacetin
U188	Phenol
U189	Phosphorous sulfide (R)
U190	Phthalic anhydride
U191	2-Picoline
U192	Pronamide
U193	1,3-Propane sultone
U194	n-Propylamine (I,T)
U196	Pyridine
U197	p-Benzoquinone
U200	Reserpine
U201	Resorcinol
U202	Saccharin and Salts
U203	Safrole
U204	Selenious acid
U205	Selenium disulfide (R,T)
	Silvex see U233
U206	Streptozotocin
	2,4,5-T see U232
U207	1,2,4,5-Tetrachlorobenzene
U208	1,1,1,2-Tetrachloroethane
U209	1,1,2,2-Tetrachloroethane
U210	Tetrachloroethene
	Tetrachloroethylene see U210
U211	Tetrachloromethane
U212	2,3,4,6-Tetrachlorophenol
U213	Tetrahydrofuran (I)
U214	Thallium (I) acetate
U215	Thallium (I) carbonate
U216	Thallium (I) chloride
U217	Thallium (I) nitrate
U218	Thioacetamide
U219	Thiourea
U220	Toluene
U221	Toluenediamine

Hazardous Waste Number	Substance
U222	o-Toluidine hydrochloride
U223	Toluene diisocyanate (R,T)
	2,4,5-TP see U233
U225	Tribromomethane
U226	1,1,1-Trichloroethane
U227	1,1,2-Trichloroethane
U228	Trichloroethene
	Trichloroethylene see U228
U230	2,4,5-Trichlorophenol
U231	2,4,6-Trichlorophenol
U232	2,4,5-Trichlorophenoxyacetic acid
U233	2,4,5-Trichlorophenoxypropionic acid
	alpha, alpha, alpha-Trichlorotoluene
	see U023
U234	sym-Trinitrobenzene (R,T)
U235	Tris(2,3-dibromopropyl)phosphate
U236	Trypan blue
U237	Uracil mustard
U238	Ethyl carbamate (urethane)
	Vinyl chloride see U043
	Vinylidene chloride see U078
U239	Xylene (I)

(4) Hazardous constituents. A solid waste which contains any of the hazardous constituents listed in table VI shall be listed as a hazardous waste unless the department concludes, after considering the factors set forth in s. NR 181.14(2)(a)3., that the waste is not capable of posing a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported or disposed.

Table VI

Hazardous Constituents

Acetaldehyde	Acrolein
(Acetato)phenylmercury	Acrylamide
Acetonitrile	Acrylonitrile
3-(alpha-Acetonylbenzyl)-4-	Aflatoxins
hydroxycoumarin and salts	Aldrin
2-Acetylaminofluorene	Allyl alcohol
Acetyl chloride	Aluminum phosphide
1-Acetyl-2-thiourea	4-Aminobiphenyl

Note: The abbreviation N.O.S. signifies those members of the general class "not otherwise specified" by name in this listing.

6-Amino-1,1a,2,8,8a,8b-hexahydro-
8-(hydroxymethyl)-8a-methoxy-5-
methylcarbamate azirino(2',3': 3,4)
pyrrolo(1,2-a) indole-4, 7-dione (ester)
(Mitomycin C)

5-(Aminomethyl)-3-isoxazolol

4-Aminopyridine

Amitrole

Aniline

Antimony and compounds, N.O.S.

Aramite

Arsenic and compounds, N.O.S.

Arsenic acid

Arsenic pentoxide

Arsenic trioxide

Auramine

Azaserine

Barium and compounds, N.O.S.

Barium cyanide

Benz(c)acridine

Benz(a)anthracene

Benzene

Benzenearsonic acid

Benzenethiol

Benzidine

Benzo(a)anthracene

Benzo(b)fluoranthene

Benzo(j)fluoranthene

Benzo(a)pyrene

Benzotrichloride

Benzyl chloride

Beryllium and compounds, N.O.S.

Bis(2-chloroethoxy)methane

Bis(2-chloroethyl) ether

N,N-Bis(2-chloroethyl)-2-naphthylamine

Bis(2-chloroisopropyl) ether

Bis(chloromethyl) ether

Bis(2-ethylhexyl) phthalate

Bromoacetone

Bromomethane

4-Bromophenyl phenyl ether

Brucine

2-Butanone peroxide

Butyl benzyl phthalate

2-sec-Butyl-4, 6-dinitrophenol (DNBP)

Cadmium and compounds, N.O.S.

Calcium chromate

Calcium cyanide

Carbon disulfide

Chlorambucil

Chlordane (alpha and gamma isomers)

Chlorinated benzenes, N.O.S.

Chlorinated ethane, N.O.S.

Chlorinated naphthalene, N.O.S.

Chlorinated phenol, N.O.S.

Chloroacetaldehyde

Chloroalkyl ethers

p-Chloroaniline

Chlorobenzene

Chlorobenzilate

1-(p-Chlorobenzoyl)-5-methoxy-
2-methylindole-3-acetic acid

p-Chloro-m-cresol

1-Chloro-2, 3-epoxybutane

2-Chloroethyl vinyl ether

Chloroform

Chloromethane

Chloromethyl methyl ether

2-Chloronaphthalene

2-Chlorophenol

1-(o-Chlorophenyl)thiourea

3-Chloropropionitrile

alpha-Chlorotoluene

Chlorotoluene, N.O.S.

Chromium and compounds, N.O.S.

Chrysene

Citrus red No. 2

Copper cyanide

Creosote

Crotonaldehyde

Cyanides
(soluble salts and complexes), N.O.S.

Cyanogen

Cyanogen bromide

Cyanogen chloride

Cycasin

2-Cyclohexyl-4, 6-dinitrophenol

Cyclophosphamide

Daunomycin

DDD

DDE

DDT

Diallate

Dibenz(a, h)acridine

Dibenz(a, j)acridine

Dibenz(a, h)anthracene
(Dibenzo(a, h)anthracene)

7H-Dibenzo(c, g)carbazole

Dibenzo(a, e)pyrene

Dibenzo(a, h)pyrene

Dibenzo(a, i)pyrene

1,2-Dibromo-3-chloropropane

1,2-Dibromoethane

Dibromomethane

Di-n-butyl phthalate

Dichlorobenzene, N.O.S.

3,3'-Dichlorobenzidine

1,1-Dichloroethane

1,2-Dichloroethane

trans-1,2-Dichloroethene

Dichloroethylene, N.O.S.

1, 1-Dichloroethylene

Dichloromethane

2,4-Dichlorophenol

2,6-Dichlorophenol

2,4-Dichlorophenoxyacetic acid (2, 4-D)

Dichloropropane

Dichlorophenylarsine

1,2-Dichloropropane

Dichloropropanol, N.O.S.

Dichloropropene, N.O.S.

1,3-Dichloropropene

Dieldrin

Diepoxybutane

Diethylarsine

O,O-Diethyl-S-(2-ethylthio)ethyl ester of
phosphorothioic acid

1,2-Diethylhydrazine

O,O-Diethyl-S-methylester phosphorodithioic acid

Diethyl phthalate

O,O-Diethyl-O-(2-pyrazinyl)phosphorothioate

Diethylstilbestrol

Dihydrosafrole

3,4-Dihydroxy-alpha-(methylamino)-
methyl benzyl alcohol

Di-isopropylfluorophosphate (DFP)

Dimethoate

3,3'-Dimethoxybenzidine

p-Dimethylaminoazobenzene

7,12-Dimethylbenz(a)anthracene

3,3'-Dimethylbenzidine

Dimethylcarbamoyl chloride

1,1-Dimethylhydrazine

1,2-Dimethylhydrazine

3,3-Dimethyl-1-(methylthio)-2-butanone-
O-((methylamino) carbonyl) oxime

Dimethylnitrosoamine

alpha, alpha-Dimethylphenethylamine

2,4-Dimethylphenol

Dimethyl phthalate

Dimethyl sulfate

Dinitrobenzene, N.O.S.

4,6-Dinitro-o-cresol and salts

2,4-Dinitrophenol

2,4-Dinitrotoluene

2,6-Dinitrotoluene

Di-n-octyl phthalate

1,4-Dioxane

Diphenylamine

1,2-Diphenylhydrazine

Di-n-propylnitrosamine

Disulfoton

2,4-Dithiobiuret

Endosulfan

Endrin and metabolites

Epichlorohydrin

Ethyl cyanide

Ethylene diamine

Ethylenebisdithiocarbamate (EBDC)

Ethyleneimine

Ethylene oxide

Ethylenethiourea

Ethyl methanesulfonate

Fluoranthene

Fluorine

2-Fluoroacetamide

Fluoroacetic acid, sodium salt

Formaldehyde

Glycidylaldehyde

Halomethane, N.O.S.

Heptachlor

Heptachlor epoxide (alpha, beta,
and gamma isomers)

Hexachlorobenzene

Hexachlorobutadiene

Hexachlorocyclohexane (all isomers)

Hexachlorocyclopentadiene

Hexachloroethane

1, 2, 3, 4, 10, 10-Hexachloro-1, 4, 4a, 5,
8, 8a-hexahydro-1, 4: 5, 8-endo,
endo-dimethanonaphthalene

Hexachlorophene

Hexachloropropene

Hexaethyl tetraphosphate

Hydrazine

Hydrocyanic acid

Hydrogen sulfide

Indeno(1, 2, 3-c, d)pyrene

Iodomethane

Isocyanic acid, methyl ester

Isosafrole

Kepone

Lasiocarpine

Lead and compounds, N.O.S.

Lead acetate

Lead phosphate

Lead subacetate

Maleic anhydride

Malononitrile

Melphalan

Mercury and compounds, N.O.S.

Methapyrilene

Methomyl

2-Methylaziridine

3-Methylcholanthrene

4, 4'-Methylene-bis-(2-chloroaniline)

Methyl ethyl ketone (MEK)

Methyl hydrazine

2-Methyllactonitrile

Methyl methacrylate

Methyl methanesulfonate

2-Methyl-2-(methylthio)propionaldehyde-o-(methylcarbonyl) oxime

N-Methyl-N'-nitro-N-nitrosoguanidine

Methyl parathion

Methylthiouracil

Mustard gas

Naphthalene

1, 4-Naphthoquinone

1-Naphthylamine

2-Naphthylamine

1-Naphthyl-2-thiourea

Nickel and compounds, N.O.S.

Nickel carbonyl

Nickel cyanide

Nicotine and salts

Nitric oxide

p-Nitroaniline

Nitrobenzene

Nitrogen dioxide

Nitrogen mustard and hydrochloride salt

Nitrogen mustard N-oxide and hydrochloride salt

Nitrogen peroxide

Nitrogen tetroxide

Nitroglycerine

4-Nitrophenol

4-Nitroquinoline-1-oxide

Nitrosamine, N.O.S.

N-Nitrosodi-N-butylamine

N-Nitrosodiethanolamine

N-Nitrosodiethylamine

N-Nitrosodimethylamine

N-Nitrosodiphenylamine

N-Nitrosodi-N-propylamine

N-Nitroso-N-ethylurea

N-Nitrosomethylethylamine

N-Nitroso-N-methylurea

N-Nitroso-N-methylurethane

N-Nitrosomethylvinylamine

N-Nitrosomorpholine

N-Nitrosonornicotine

N-Nitrosopiperidine

N-Nitrosopyrrolidine

N-Nitrososarcosine

5-Nitro-o-toluidine

Octamethylpyrophosphoramide

Oleyl alcohol condensed with 2 moles ethylene oxide

Osmium tetroxide

7-Oxabicyclo(2.2.1)heptane-2, 3-dicarboxylic acid

Parathion

Pentachlorobenzene

Pentachloroethane

Pentachloronitrobenzene (PCNB)

Pentachlorophenol

Phenacetin

Phenol

Phenyl dichloroarsine

Phenylenediamine

Phenylmercury acetate

N-Phenylthiourea

Phosgene

Phosphine

Phosphorothioic acid, O,O-dimethyl ester, O-ester with N, N-dimethyl benzene sulfonamide

Phthalic acid esters, N.O.S.

Phthalic anhydride

Polychlorinated biphenyl, N.O.S.

Potassium cyanide

Potassium silver cyanide

Pronamide

1,2-Propanediol

1,3-Propane sultone

Propionitrile

Propylthiouracil

2-Propyn-1-ol

Pryidine

Reserpine

Saccharin

Safrole

Selenious acid

Selenium and compounds, N.O.S.

Selenium sulfide

Selenourea

Silver and compounds, N.O.S.

Silver cyanide

Sodium cyanide

Streptozotocin

Strontium sulfide

Strychnine and salts

1, 2, 4, 5-Tetrachlorobenzene

2, 3, 7, 8-Tetrachlorodibenzo-p-dioxin (TCDD)

Tetrachloroethane, N.O.S.

1, 1, 1, 2-Tetrachloroethane

1, 1, 2, 2-Tetrachloroethane

Tetrachloroethene (Tetrachloroethylene)

Tetrachloromethane

2, 3, 4, 6-Tetrachlorophenol

Tetraethyldithiopyrophosphate

Tetraethyl lead

Tetraethylpyrophosphate

Thallium and compounds, N.O.S.

Thallic oxide

Thallium (I) acetate

Thallium (I) carbonate

Thallium (I) chloride

Thallium (I) nitrate

Thallium selenite

Thallium (I) sulfate

Thioacetamide

Thiosemicarbazide

Thiourea

Thiuram

Toluene

Toluene diamine

o-Toluidine hydrochloride

Tolylene diisocyanate

Toxaphene

Tribromomethane

1, 2, 4-Trichlorobenzene

1, 1, 1-Trichloroethane

1, 1, 2-Trichloroethane

Trichloroethene (Trichloroethylene)

Trichloromethanethiol

2, 4, 5-Trichlorophenol

2, 4, 6-Trichlorophenol

2, 4, 5-Trichlorophenoxyacetic acid (2, 4, 5-T)

2, 4, 5-Trichlorophenoxypropionic acid (2, 4, 5-TP) (Silvex)

Trichloropropane, N.O.S.
1, 2, 3-Trichloropropane
O, O, O-Triethyl phosphorothioate
Trinitrobenzene
Tris(1-azridinyl) phosphine sulfide
Tris(2, 3-dibromopropyl) phosphate
Trypan blue
Uracil mustard
Urethane
Vanadic acid, ammonium salt
Vanadium pentoxide (dust)
Vinyl chloride
Vinylidene chloride
Zinc cyanide
zinc phosphide

NR 181.17 Amendments to the hazardous waste lists. (1) Any person seeking to exclude either a waste listed in s. NR 181.16 or a waste produced at a particular generation site from the hazardous waste lists in s. NR 181.16 shall petition the EPA to delist that waste from the hazardous waste lists contained in 40 CFR Part 261, July 1, 1980.

(2) If the EPA deletes a hazardous waste, or a hazardous waste from a particular generation site, from the hazardous waste lists in 40 CFR Part 261, July 1, 1980, or adds a hazardous wastes to those lists, the department shall not regulate under this chapter those wastes which have been deleted, and shall regulate under this chapter those wastes that have been added, provided that the federal regulatory changes are promulgated during the period July 1, 1980 through July 1, 1984.

(3) The department shall, as soon as possible after the promulgation of any federal regulation which changes the hazardous waste lists in 40 CFR Part 261, July 1, 1980, adopt identical changes in s. NR 181.16.

NR 181.18 EP toxicity test procedure. (1) Toxic extraction procedure (EP). (a) A representative sample of the waste to be tested, no less than 100 grams in size, shall be obtained using the methods specified in appendix I or any other method capable of yielding a representative sample within the meaning of s. NR 181.04(81).

Note: For detailed guidance on conducting the various aspects of the toxic extraction procedure see "Test Methods for the Evaluation of Solid Waste, Physical/Chemical Methods", SW-846. This publication is available from: Solid Waste Information, U.S. Environmental Protection Agency, 26 W. St. Claire Street, Cincinnati, Ohio 45268 and is available for inspection at the offices of the department, the secretary of the state and the revisor of statutes.

(b) The sample shall be separated into its component liquid and solid phases using the method described in sub. (2). If the percent solids obtained from using this method totals less than 0.5% of the original weight of the waste, the residue shall be discarded and the operator should treat the liquid phase as the extract and proceed to par. (h). The percent solids is determined by drying the filter pad at 80°C until it reaches a constant weight and then calculating the percent solids using the following equation:

$$\frac{\text{(weight of pad + solid) - (tare weight of pad)}}{\text{initial weight of sample}} \times 100 = \% \text{ solids}$$

(c) The solid material obtained from the separation procedure, set forth in sub. (2), shall be evaluated for its particle size. If the solid material has a surface area per gram of material equal to, or greater than, 3.1 cm^2 or passes through a 9.5 mm (0.375 inch) standard sieve, the operator shall proceed to par. (d). If the surface area is smaller or the particle size larger than specified above, the solid material shall be prepared for extraction by crushing, cutting or grinding the material so that it passes through a 9.5 mm (0.375 inch) sieve or, if the material is in a single piece, by subjecting the material to the structural integrity procedure described in sub. (3).

(d) The solid material obtained in par. (c) should be weighed and placed in an extractor with 16 times its weight of deionized water. Do not allow the material to dry prior to weighing. For purposes of this test, an acceptable extractor is one which will impart sufficient agitation to the mixture to not only prevent stratification of the sample and extraction fluid but also insure that all sample surfaces are continuously brought into contact with well mixed extraction fluid.

(e) After the solid material and deionized water are placed in the extractor, the operator shall begin agitation and measure the pH of the solution in the extractor. If the pH is greater than 5.0, the pH of the solution shall be decreased to 5.0 $\pm$ 0.2 by adding 0.5 N acetic acid. If the pH is equal to or less than 5.0, no acetic acid shall be added. The pH of the solution shall be monitored during the course of the extraction and if the pH rises above 5.2, 0.5N acetic acid should be added to bring the pH down to 5.0 $\pm$ 0.2. However, in no event shall the aggregate amount of acid added to the solution exceed 4 ml of acid per gram of solid. The mixture shall be agitated for 24 hours and maintained at 20° - 40°C (68°-104°F) during this time. It is recommended that the operator monitor and adjust the pH during the course of the extraction with a device such as the Type 45-A pH Controller manufactured by Chemtrix, Inc., Hillsboro, Oregon 97123 or its equivalent, in conjunction with a metering pump and reservoir of 0.5N acetic acid. If such a system is not available, the following manual procedure shall be employed:

1. A pH meter should be calibrated in accordance with the manufacturer's specifications.

2. The pH of the solution should be checked and, if necessary, 0.5N acetic acid should be manually added to the extractor until the pH reaches 5.0 $\pm$ 0.2. The pH of the solution should be adjusted at 15, 30 and 60 minute intervals, moving to the next longer interval if the pH does not have to be adjusted more than 0.5N pH units.

3. The adjustment procedure should be continued for at least 6 hours.

4. If at the end of the 24-hour extraction period, the pH of the solution is not below 5.2 and the maximum amount of acid (4 ml per gram of solids) has not been added, the pH should be adjusted to 5.0

± 0.2 and the extraction continued for an additional four hours, during which the pH should be adjusted at one hour intervals.

(f) At the end of the 24-hour extraction period, deionized water shall be added to the extractor in an amount determined by the following equation:

V = (20)(W) - 16(W) - A where,

V = ml deionized water to be added

W = weight in grams of solid charged to extractor

A = ml of 0.5N acetic acid added during extraction

(g) The material in the extractor should be separated into its component liquid and soild phases as described under sub. (2).

(h) The liquids resulting from pars. (b) and (g) shall be combined. This combined liquid (or the waste itself if it has less than 1/2% solids, as noted in par.(b), is the extract and shall be analyzed for the presence of any of the contaminants specified in Table I of s. NR 181.15(5)(b) using the analytical procedures designated in sub. (4).

(2) Separation procedure. (a) Equipment. A filter holder, designed for filtration media having a nominal pore size of 0.45 micrometers and capable of applying a 5.3 kg/cm^2 (75 psi) hydrostatic pressure to the solution being filtered shall be used. For mixtures containing nonabsorptive solids, where separation can be affected without imposing a 5.3 kg/m^2 pressure differential, vacuum filters employing a 0.45 micrometers filter media can be used.

Note: For further guidance on filtration equipment or procedures see "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods." This publication is available from the: Solid Waste Information, U.S. Environmental Protection Agency, 26 W. St. Claire Street, Cincinnati, Ohio 45268.

(b) Procedure. 1. Following manufacturer's directions, the filter unit shall be assembled with a filter bed consisting of a 0.45 micrometer filter membrane. For difficult or slow to filter mixtures a prefilter bed consisting of the following prefilters in increasing pore size (0.65 micrometer membrane, fine glass fiber prefilter, and coarse glass fiber prefilter) shall be used.

2. The waste shall be poured into the filtration unit.

3. The reservoir shall be slowly pressurized until liquid begins to flow from the filtrate outlet at which point the pressure in the filter shall be immediately lowered to 10-15 psig. Filtration shall be continued until liquid flow ceases.

4. The pressure shall be increased stepwise in 10 psi increments to 75 psig and filtration continued until flow ceases or the pressurizing gas begins to exit from the filtrate outlet.

5. The filter unit shall then be depressurized, the solid material removed and weighed and then transferred to the extraction apparatus, or, in the case of final filtration prior to analysis, discarded. Do not allow the material retained on the filter pad to dry prior to weighing.

6. The liquid phase should be stored at 4°C for subsequent use in sub (1)(h).

Note: This procedure is intended to result in separation of the "free" liquid portion of the waste from any solid matter having a particle size 0.45um. If the sample will not filter, various other separation techniques can be used to aid in the filtration. As described above, pressure filtration is employed to speed up the filtration process. This does not alter the nature of the separation. If liquid does not separate during filtration, the waste can be centrifuged. If separation occurs during centrifugation, the liquid portion (centrifugate) is filtered through the 0.45um filter prior to becoming mixed with the liquid portion of the waste obtained from the initial filtration. Any material that will not pass through the filter after centrifugation is considered a solid and is extracted.

(3) Structural intergrity procedure. (a) Equipment. A structural integrity tester having a 3.18 cm (1.25 in.) diameter hammer weighing 0.33 kg (0.73 lbs.) and having a free fall of 15.24 cm (6 in.) shall be used.

Note: Such a device may be obtained from Associated Design and Manufacturing Company, Alexandria, VA. 22314, as Part No. 125.

(b) Procedure. 1. The sample holder should be filled with the material to be tested. If the sample of waste is a large monolithic block, a portion should be cut from the block having the dimensions of 3.3 cm (1.3 in.) diameter X 7.1 cm (2.8 in.) cylinder. For a fixated waste, samples may be cast in the form of a 3.3 cm (1.3 in.) diameter X 7.1 cm (2.8 in.) cylinder for purposes of conducting this test. In such cases, the waste may be allowed to cure for 30 days prior to further testing.

2. The sample holder should be placed into the structural integrity tester, then the hammer should be raised to its maximum height and dropped. This should be repeated 15 times.

3. The material should be removed from the sample holder, weighed, and transferred to the extraction apparatus for extraction.

(4) Analytical procedures for analyzing extract contaminants. The test methods for analyzing the extract are as follows:

(a) For arsenic, barium, cadmium, chromium (VI), lead, mercury, selenium or silver: "Methods for chemical Analysis of Water and Wastes," as contained in "Test Methods for the Evaluation of Solid Waste, Physical/Chemical Methods," SW-846, May, 1980, EPA, Office of Solid Waste.

(b) For endrin; lindane; methoxychlor; toxaphene; 2,4-D; 2,4,5-TP Silvex: in "Methods for Benzidine, Chlorinated Organic Compounds, Pentachlorophenol and Pesticides in Water and Wastewater," as contained in "Test Methods for the Evaluation of Solid Waste, Physical/Chemical Methods."

(c) For all analyses, the method of standard addition shall be used for the quantification of species concentration. This method is described in "Test Methods for the Evaluation of Solid Waste, Physical/Chemical Methods."

Note: This publication may be obtained from:

Solid Waste Information

U.S. Environmental Protection Agency

26 W. St. Clair St.

Cincinnati, Ohio 45268

This publication is available for inspection at the offices of the department, the secretary of state, and the revisor of statutes.

NR 181.19 Hazardous waste which is used, reused, recycled or reclaimed. Any person generating hazardous waste which is beneficially used, reused, or legitimately recycled or reclaimed at a generation site owned or operated by that person is not subject to regulation under subchs. V and VI with respect to those wastes, provided that the generator complies with the requirements of s. NR 181.42(1)(a)5.

Subchapter III

Generators

NR 181.21 General. (1) Applicability. All generators of solid waste shall determine if that waste is hazardous using the procedures specified in s. NR 181.22. Generators of solid waste who find their waste to be hazardous following such evaluation, and who meet the definition of a generator in s. NR 181.04(42), shall comply with the requirements of this subchapter, except as provided in sub. (2). Any person who imports hazardous waste from abroad into Wisconsin shall comply with the requirements of this subchapter.

(2) Exemptions:

(a) Any generator who generates or accumulates hazardous waste in quantities less than those specified in s. NR 181.13 is exempt from the requirements of subs. (4) and (5) and ss. NR 181.23, NR 181.24 and NR 181.25, except as otherwise provided in s. NR 181.13.

(b) If the generator sends hazardous waste to an on-site storage, treatment or disposal site or facility, the generator shall comply with all the requirements of this subchapter with regard to the hazardous wastes which are managed on-site, including wastes which are beneficially used, reused or legitimately recycled or reclaimed on-site, except the requirements of s. NR 181.23(2).

(c) Persons who generate waste pesticide containers which are a hazardous waste and who triple rinse each emptied pesticide container in accordance with s. NR 181.135(4) and dispose of the pesticide rinsate on their own property in accordance with the prescribed dosage rate, in a manner which is consistent with its original use and which will not contaminate the waters of the state or create a hazard to persons or property, including fish and wildlife, are not required to comply with the requirements of subchapters V or VI or any of the requirements of this subchapter except s. NR 181.22.

(d) A person who generates metallic mining wastes resulting from a mining operation as defined in s. 144.81(5), Stats., is not required to comply with any of the requirements of this subchapter except s. NR 181.22.

(3) Information on hazardous characteristics. Generators shall identify the hazardous characteristics of the waste which must be known to enable the owner or operator of a storage, treatment or disposal site or facility to comply with the requirements of this chapter or with the conditions of the license issued under the provisions of s. NR 181.55, and shall supply this information to the designated facility before offering the hazardous waste to a transporter.

(4) Storage, treatment and disposal sites and facilities owned or operated by a generator. If the generator sends the hazardous waste to an on-site storage, treatment or disposal site or facility or an off-site storage, treatment or disposal site or facility within Wisconsin which the generator owns or operates, the generator shall be considered an owner or operator of a hazardous waste storage, treatment or disposal site or facility and shall comply with the requirements of subchapters V and VI, except as provided in sub. (5) and s. NR 181 42(1)(a).

(5) Accumulation of wastes by generators for 90 days or less. (a) A generator may accumulate hazardous waste on-site, without a storage license, for 90 days or less provided that:

1. Within 90 days, all such waste is either:

a. Shipped off-site to a designated facility which meets the requirements of s. NR 181.23(2)(b); or

b. Treated, stored or disposed of in an on-site facility that is either licensed under subch. VI or exempt from licensing under subch. V.

2. The waste is placed in containers which meet the packaging requirements of s. NR 181.26(1) and are managed in accordance with ss. NR 181.43(6)(a) and NR 181.43(8) except s. NR 181.43(8)(d), or is placed in tanks, provided the generator complies with ss. NR 181.43(6) except for ss. NR 181.43(6)(c) and (d), and s. NR 181.43(7) with the exception of s. NR 181.43(7)(e);

3. The date upon which each period of accumulation begins is clearly marked and visible for inspection on each container or tank;

4. Each container is properly labeled and marked according to ss. NR 181.26(2) and (3); and

5. The generator complies with the requirements for owners and operators in ss. NR 181.42(4) and (5).

(b) A generator who accumulates hazardous waste for more than 90 days is an operator of a storage facility and is subject to the facility requirements of subch. V and the licensing requirements of subch. VI.

NR 181.22 Hazardous waste determination. A person who produces a solid waste as defined in s. NR 181.04(90) shall determine if that waste is a hazardous waste using the following procedure:

(1) First determine if the solid waste is excluded from regulation under ss. NR 181.12(4) or NR 181.12(5).

(2) Then determine if the solid waste is listed as a hazardous waste in s. NR 181.16.

(3) If the waste is not listed as a hazardous waste in s. NR 181.16, it shall then be determined whether the waste is identified in s. NR 181.15 by either:

(a) Testing the waste according to the methods set forth in s. NR 181.15; or

(b) Applying knowledge of the hazard characteristic of the solid waste in light of the materials or the processes used.

(4) A generator shall keep records of any test results, waste analyses or other determinations made in accordance with the requirements of this section for at least 3 years from the date that the waste was last sent to an on-site or off-site storage, treatment or disposal facility. Upon written notice from the department to the generator, the period of retention may be extended beyond 3 years. The notice shall specify the records or types of records that are to be retained.

NR 181.23 Identification number and manifest system. (1) Identification number. (a) A generator shall not treat, store, dispose of, transport, or offer for transportation, hazardous waste without an identification number.

(b) A generator who has not received an identification number may obtain one by applying to the department using the notification form specified in s. NR 181.06.

(c) A generator shall not offer hazardous waste to transporters or to storage, treatment or disposal sites or facilities that have not received an identification number.

(2) Manifest system. (a) Any generator who transports, or offers for transportation, hazardous waste for off-site storage, treatment or disposal shall prepare a Wisconsin manifest before the waste is transported, on forms provided by the department.

Note: The manifest form may be obtained from the Department of Natural Resources, P.O. Box 8094, Madison, Wisconsin 53707 at no charge.

(b) A generator shall specify on the manifest one designated facility, which has received an operating license or interim license in accordance with subchapters V and VI, or an EPA permit or interim status under the resource conservation and recovery act of 1976, P.L. 94-580, as amended, or a permit from an authorized state, to handle the waste described on the manifest.

(c) A generator may also specify on the manifest one alternate facility, which has received an operating license or interim license in accordance with subchapters V and VI, or an EPA permit or interim status under the resource conservation and recovery act of 1976, P.L. 94-580, as amended, or a permit from an authorized state, to handle the waste in the event an emergency prevents delivery of the waste to the designated facility.

(d) If the transporter is unable to deliver the hazardous waste to the designated facility or the alternate facility, the generator shall either designate another facility or instruct the transporter to return the waste.

(e) The generator shall initiate the use of the manifest. The generator shall fill out all required information and sign the manifest. After the transporter signs and dates the manifest, the generator shall retain one copy, shall send the original to the department within 5 working days and shall give 4 copies to the transporter to accompany the hazardous waste shipment.

Note: An employe of the generator need not be an authorized representative to sign a manifest on behalf of the generator.

(f) The generator shall maintain on file the copy of the manifest retained in accordance with par. (e) and the copy received from the operator of the storage, treatment or disposal site or facility to which the hazardous waste is shipped. These copies shall be retained for a period of 3 years, and shall be available at reasonable times for inspection by the department. Upon written notice from the department to ghe generator, the period of retention may be extended beyond 3 years. The notice shall specify the records or types of records that are to be retained.

(g) The manifest form, which shall be provided by the department, shall contain, at a minimum, the following information:

1. A manifest document number.

2. The generator's identification number, name, address, telephone number, and the date of shipment.

3. The identification number, name, and address of each transporter.

4. The identification number, name, and address of the designated facility and alternate facility, if applicable.

5. A description of the waste including the proper shipping name, hazard class, and DOT identification number required by regulations of the DOT in 49 CFR 172.101, 172.102, 172.202 and 172.203, October 1, 1979, as amended by 45 FR 34588-34684, May 22, 1980.

Note: The publications containing these regulations may be obtained from:

The Superintendent of Documents

U.S. Government Printing Office

Washington, D.C. 20402

The publications containing these regulations are available for inspection at the offices of the department, the secretary of state and the revisor of statutes.

6. The hazardous waste number corresponding to the name of the waste being shipped.

7. The number and type of containers used to transport the waste.

8. The shipping weight in pounds (P) of the hazardous waste.

9. Certifications that the manifest is accurately filled out and that the material is properly described, classified, packaged, marked, labeled and in proper condition to be transported or has been received and accepted in accordance with this chapter.

(h) For bulk shipments of hazardous waste within the United States solely by railroad or solely by water, the generator shall send 3 copies of the manifest dated and signed in accordance with this section to the owner or operator of the designated facility. Copies of the manifest are not required for each transporter.

NR 181.24 Annual Reports. (1) Any generator who ships hazardous waste off-site shall fill an annual report form and file it with the department no later than March 1 for the preceding calendar year.

Note: This form may be obtained from the Department of Natural Resources, P.O. Box 8094, Madison, Wisconsin 53707 at no charge.

For off-site storage, treatment and disposal, the department intends to provide the generator with an annual report. This report shall be reviewed and certified by the generator and returned to the department. The department will inform generators when this service will begin.

(2) Any generator who treats, stores or disposes of hazardous wastes on-site shall submit quarterly reports, regarding all hazardous wastes managed, in accordance with s. NR 181.42(6)(c).

(3) The generator shall retain a copy of the annual report for a period of at least three years from the due date of the report. Upon written notice from the department to the generator, the period of

retention may be extended beyond 3 years. The notice shall specify the records or types of records to be retained.

NR 181.25 Exception reporting. (1) A generator who does not receive a copy of the manifest with the handwritten signature of the owner or operator of the designated facility within 35 days of the date the waste was accepted by the initial transporter shall contact the transporter or owner or operator of the designated facility to determine the status of the hazardous waste.

(2) A generator shall submit an exception report to the department if a copy of the manifest with the handwritten signature of the owner or operator of the designated facility is not received by the generator within 45 days of the date the waste was accepted by the initial transporter. The exception report shall include:

(a) A legible copy of the manifest for which the generator does not have confirmation of delivery; and

(b) A cover letter signed by the generator, or an authorized representative, explaining the efforts taken to locate the hazardous waste and the results of those efforts.

(3) Generators shall keep a copy of each exception report for a period of at least 3 years. Upon written notice from the department to the generator, the period of retention may be extended beyond 3 years. The notice shall specify the records or types of records to be retained.

NR 181.26 Packaging, labeling, marking and placarding. (1) Packaging. Every generator shall place the hazardous waste to be shipped in packages in accordance with DOT regulations on packaging in 49 CFR Parts 173, 178 and 179, October 1, 1979, as amended by 45 FR 34588-34704, May 22, 1980.

(2) Labeling. Before transporting or offering hazardous waste for transportation off-site, a generator shall label each package in accordance with applicable DOT regulations on hazardous materials in 49 CFR Part 172, October 1, 1979.

(3) Marking. (a) Before transporting, or offering hazardous waste for transportation off-site, a generator shall mark each package of hazardous waste in accordance with DOT regulations on hazardous materials in 49 CFR Part 172, October 1, 1979 as amended by 45 FR 34588-34704, May 22, 1980.

(b) Before transporting, or offering hazardous waste for transportation off-site, a generator shall mark each container used to transport hazardous waste with the following words: "HAZARDOUS WASTE" - state and federal law prohibits improper disposal. If found contact the nearest police department, division of emergency government, or department of natural resources. Generators Name and address _____ Manifest document number _____.

(4) Placarding. Before transporting hazardous waste, or offering hazardous waste for transportation off-site, a generator shall offer the initial transporter the appropriate placards required by DOT

regulations for hazardous materials in 49 CFR Part 172, Subpart F, October 1, 1979, as amended by 45 FR 34701-34702, May 22, 1980.

Note: The publications containing these regulations may be obtained from:

The Superintendent of Documents

U.S. Government Printing Office

Washington, D.C. 20402

The publications containing these regulations are available for inspection at the offices of the department, the secretary of state and the revisor of statutes.

NR 181.27 International shipments. (1) When shipping hazardous waste outside the United States, the generator shall:

(a) Notify the department and the EPA administrator in writing 4 weeks before the initial shipment of hazardous waste to each country in each calendar year.

(b) Require that the foreign consignee confirm the delivery of the hazardous waste in the foreign country. A copy of the manifest signed by the foreign consignee may be used for this purpose.

(c) Meet the requirements under s. NR 181.23(2) for the manifest, except that:

1. In place of the name, address, and identification number of the designated facility, the name and address of the foreign consignee shall be used.

2. The generator shall identify the point of departure from the United States through which the hazardous waste shall travel before entering a foreign country.

(2) The generator shall file an exception report with the department, pursuant to s. NR 181.24(2), if:

(a) The generator has not received a copy of the manifest signed by the transporter stating the date and place of departure from the United States within 45 days from the date it was accepted by the initial transporter; or

(b) Within 90 days from the date the hazardous waste was accepted by the initial transporter, the generator has not received written confirmation from the foreign consignee that the hazardous waste was received.

(3) When importing a hazardous waste, all the requirements of s. NR 181.23(2) for the manifest shall be met except that:

(a) In place of the generator's name, address and identification number, the importer's name, address and identi ication number shall be used.

(b) In place of the generator's signature on the certification statement, the U.S. importer or agent thereof shall sign and date the certification and obtain the signature of the original transporter.

Subchapter IV

Transportation

NR 181.31 General. (1) Except as otherwise provided in s. NR 181.32, no person shall transport hazardous waste in Wisconsin unless the person has obtained a transporation service license from the department, in accordance with the requirements of s. NR 181.55.

(2) A transporter of hazardous waste shall comply with subch. III if the transporter:

(a) Mixes wastes of different shipping descriptions by placing them in a single container; or

(b) Transports hazardous waste into Wisconsin from abroad.

(3) Transportation services collecting only hazardous wastes that do not require a manifest as specified in s. NR 181.13 shall comply with all the requirements of this subchapter except the manifest requirements specified in s. NR 181.34.

Note: Hazardous waste facilities may require the use of a manifest for recordkeeping purposes before accepting the hazardous waste.

NR 181.32 Exemptions. (1) A generator or owner or operator of a hazardous waste facility who transports hazardous waste solely to an on-site storage, treatment or disposal site or facility is exempt from all of the requirements of this subchapter.

(2) A person who transports metallic mining wastes resulting from a mining operation as defined in s. 144.81(5), Stats., is exempt from all of the requirements of this subchapter.

NR 181.33 Identification number. (1) A transporter shall not transport hazardous wastes in Wisconsin without an identification number.

(2) A transporter who has not received an identification number may obtain one by applying to the department using the notification form specified in s. NR 181.06.

NR 181.34 Manifest system. (1) Transporters collecting hazardous wastes subject to the special requirements of s. NR 181.13 are exempt from the provisions of this section for those wastes.

(2) Hazardous waste which was generated out of state and is being transported through Wisconsin for delivery to a out-of-state hazardous waste facility shall be accompanied by a manifest that meets the requirements of s. NR 181.23(2) with the exception of ss. NR 181.23(2)(g)6. and 8.

(3) The transporter shall be responsible for ensuring that a copy of a manifest meeting the requirements of s. NR 181.23(2)(g) or sub. (2), signed by the generator, accompanies the shipment of hazardous waste at all times, except as provided in sub. (1).

(4) Before transporting the hazardous waste, the transporter shall sign and date the manifest acknowledging acceptance of the hazardous waste from the generator. The transporter shall return the original and one signed copy of the manifest to the generator before leaving the generator's premises.

Note: An employe of a transporter need not be an authorized representative to sign a manifest on behalf of the transporter.

(5) If the hazardous waste shipment is transferred between different transporters, the original transporter is responsible for retaining a copy of the manifest in accordance with s. NR 181.35. The original transporter shall give the 3 remaining copies of the manifest, plus an extra copy needed to replace the copy retained in accordance with s. NR 181.35, to the new transporter. The new transporter shall sign and date the manifest acknowledging acceptance of the hazardous waste.

(6) The transporter shall, upon delivery of the hazardous waste to the designated facility, obtain the signature and date of acceptance from the owner or operator of the designated facility on the manifest. The transporter shall retain one copy of the manifest in accordance with s. NR 181.35, and shall give the remaining copies to the owner or operator of the designated facility.

(7) The transporter shall deliver the entire quantity of the hazardous waste that was accepted from the generator or transporter to:

(a) The designated facility on the manifest: or

(b) The alternate facility specified on the manifest, if the hazardous waste cannot be delivered to the designated facility because an emergency prevents delivery; or

(c) The next designated transporter, or

(d) The place outside the United States designated by the generator.

(8) If the hazardous waste cannot be delivered in accordance with sub.(7), the transporter shall contact the generator for further directions and shall revise the manifest according to the generator's instructions and shall, if necessary, return the waste to the generator as undeliverable.

(9) The requirements of subs. (3), (4), (5) and (6) do not apply to rail or water (bulk shipments) transporters if:

(a) The hazardous waste is delivered by rail or water (bulk shipments) to the designated facility; and

(b) A shipping paper containing all the information required on the manifest, excluding the identification numbers, generator certification and signatures, accompanies the hazardous waste; and

(c) The delivering transporter obtains the date of delivery and handwritten signature of the owner or operator of the designated facility on either a manifest or a shipping paper; and

(d) The person delivering the hazardous waste to the initial rail or water (bulk shipment) transporter obtains the date of delivery and signature of the rail or water (bulk shipment) transporter on a manifest and forwards it to the designated facility; and

(e) A copy of the shipping paper or manifest is retained by each rail or water (bulk shipment) transporter in accordance with s. NR 181.35.

(10) Transporters who transport hazardous waste out of the United States shall:

(a) Indicate on the manifest the date the hazardous waste left the United States; and

(b) Sign the manifest and retain one copy in accordance with s. NR 181.35(3); and

(c) Return a signed copy of the manifest to the generator.

NR 181.35 Recordkeeping. (1) A transporter of hazardous waste shall keep a copy of the manifest, if required by s. NR 181.34, signed by the generator, that transporter, and the next designated transporter or the owner or operator of the designated facility, for a period of 3 years from the date the hazardous waste was accepted by the initial transporter.

(2) For shipments delivered to the designated facility by rail or water (bulk shipment), each rail or water (bulk shipment) transporter shall retain a copy of a shipping paper containing all the information specified in s. NR 181.34(9)(b) for a period of 3 years from the date the hazardous waste was accepted by the initial transporter.

(3) A transporter who ships hazardous waste out of the United States shall keep a copy of the manifest indicating that the hazardous waste left the United States, for a period of 3 years from the date the hazardous waste was accepted by the initial transporter.

(4) The periods of retention referred to in this section may be extended beyond 3 years upon written notice from the department to the transporter, specifying the records or types of records that are to be retained.

NR 181.36 Hazardous waste discharges. (1) If a discharge of hazardous waste occurs during transportation, the transporter shall telephone the division of emergency government and comply with the requirements of s. 144.76, Stats., and ch. NR 158, Wis. Adm. Code.

Note: The division of emergency government's 24 hour number is (608) 266-3232, collect calls accepted.

(2) The removal and subsequent containerization, transportation and disposal of spilled hazardous waste shall be in compliance with the provisions of this chapter.

(3) If the department determines that immediate removal of the hazardous waste is necessary to protect human health or the environment, the department may authorize the removal of the hazardous waste by transporters who do not have transportation service licenses, identification numbers and without preparation of a manifest.

NR 181.37 Placarding. A transporter shall not move a transport vehicle containing hazardous waste, which is also a DOT hazardous material, unless it is placarded in accordance with 49 CFR Part 172,

October 1, 1979, as amended by 45 FR 34588-34702, May 22, 1980. This prohibition applies to both intrastate and interstate transportation.

Note: The publications containing these regulations may be obtained from:

The Superintendent of Documents

U.S. Government Printing Office

Washington, D.C. 20402

The publications containing these regulations are available for inspection at the offices of the department, the secretary and the revisor of statutes.

NR 181.38 Operational requirements. (1) Containerized hazardous waste shall be loaded onto the transport vehicle in such a manner that the containers are reasonably secure against movement within the transport vehicle.

(2) Tank transport vehicles shall not be left unattended during the loading or unloading of hazardous waste.

(3) No tools or equipment likely to damage the effectiveness of the closure of any container shall be used for the loading or unloading of nazardous waste.

(4) No container or tank containing hazardous waste shall be loaded on a transport vehicle unless the tank or container is labeled as required by s. NR 181.26(2).

Note: DOT regulations concerning operational aspects of transportation of hazardous materials on public highways are given in 49 CFR Part 177, October 1, 1979.

NR 181.39 Equipment operator qualifications. (1) Equipment operators for transportation services shall be properly trained in the utilization of the equipment they are authorized to operate. Each transportation service shall have a training program for handling and transportation vehicle operators. Topics shall include the problems and potential hazards posed by the transportation and disposal of hazardous waste, and equipment inspection techniques.

(2) Records of operator training and equipment inspections shall be kept for a period of 3 years by the transportation service. Upon written notice from the department to the transporter, the period of retention may be extended beyond 3 years.

(3) Transportation services shall have a viable program for inspecting equipment. The inspection program shall include a schedule for equipment inspection and a checklist of specific areas or items which are to be inspected. Each piece of hazardous waste handling and transportation equipment shall be inspected periodically by the owner or operator of the equipment. Records shall be maintained showing when the equipment was inspected, any problems observed during the inspection, and any maintenance performed on the equipment.

Subchapter V

Standards for Storage, Treatment and Disposal Sites and Facilities

NR 181.41 Environmental and health standards. (1) Groundwater human health and environmental standard. A hazardous waste storage, treatment or disposal site or facility shall not be located, designed, constructed or operated in such a manner that the department after investigation or review finds that there is a reasonable probability that management of hazardous waste within such an area will have a detrimental effect on groundwater quality.

(2) Surface water human health and environmental standard. A hazardous waste storage, treatment or disposal site or facility shall not be located, designed, constructed, or operated in such a manner as to allow any surface or sub-surface discharge from the site or facility into navigable waters to cause a violation of water quality standards established in chs. NR 102-NR 104, Wis. Adm. Code, or a violation of the hazardous substances spill act, s. 144.76, Stats., nor in such a manner that the department after investigation or review finds that there is a reasonable probability that the management of hazardous waste within such an area will have a detrimental effect on surface water quality.

(3) Air human health and environmental standard. A hazardous waste storage, treatment or disposal site or facility shall be located, designed, constructed, and operated in such a manner as to prevent air emissions from such facilities from causing a violation of standards or regulations in ch. NR 154, Wis. Adm. Code.

NR 181.415 Underground injection. Underground injection of any hazardous waste through a well is prohibited.

Note: Section NR 112.20, Wis. Adm. Code, prohibits the use of any well for the disposal of solid wastes, sewage or surface or wastewater.

NR 181.42 General facility standards. The requirements of this section apply to the owners or operators all facilities, except as provided in sub. (1)(a). Additional requirements for specific types of facilities are given in ss. NR 181.34 through NR 181.47.

(1) General standards. (a) Exemptions. The requirements of this section do not apply to the following, except to the extent they are specifically included:

1. The owners or operators of industrial wastewater facilities sewerage systems and waterworks treating liquid wastes which are approved under s. 144.04, Stats., or permitted under ch. 147, Stats. Such exemption does not apply to the storage or disposal of sludges or other hazardous waste produced during the treatment process.

2. The owner or operator of a solid waste disposal site or facility licensed under ch. NR 180, Wis. Adm. Code, provided that the only hazardous waste the facility treats, stores or disposes is excluded from regulation under this subchapter by s. NR 181.13 and the facility has been approved under s. NR 181.13(7) to accept small quantities of hazardous wastes. This exemption does not apply to incinerators that burn a hazardous waste identified in subch. II, except as provided in subd. 5.

3. A generator accumulating waste on-site in compliance with s. NR 181.21(5) except to the extent that the requirements are included in s. NR 181.21(5).

4. The owner or operator of a totally enclosed treatment facility, as defined in s. NR 181.04(99).

5. As provided in s. NR 181.19, any person generating hazardous wastes which is beneficially used, reused, or legitimately recycled or reclaimed at a generation site owned or operated by that person, provided that person complies with the following requirements:

a. The security requirements specified in s. NR 181.42(3)(a).

b. THe inspection requirements specified in s. NR 181.42(7).

c. Operation requirements specified in s. NR 181.42(1)(n).

d. Recordkeeping and reporting requirements specified in ss. NR 181.42(6)(b) and (c).

e. The hazardous waste discharge reporting requirements specified in s. NR 181.42(4)(c)3.

f. Incinerators burning hazardous wastes for the primary purpose of heat recovery shall comply with the operational requirements specified in NR 181.45(4).

g. Storage of hazardous waste shall not exceed 90 days from the date of generation and shall be in compliance with ss. NR 181.21(5)(a)2. through 5.

6. The owners or operators of facilities used for the storage, treatment or disposal of materials resulting from a mining operation as defined in s. 144.81(5), Stats., except where requirements in this subchapter are referenced in the rules adopted by the department under s. 144.435(1m), Stats.

7. The owner or operator of an elementary neutralization unit as defined in s. NR 181.04(29), provided the owner or operator of the elementary neutralization unit complies with the following requirements:

a. Obtains an identification number as specified in s. NR 181.42(1)(b).

b. The security requirements specified in s. NR 181.42(3)(a).

c. The inspection requirements specified in s. NR 181.42(7).

d. Operation requirements as specified in s. NR 181.42(1)(n).

e. Manifest, recordkeeping and reporting requirements specified in s. NR 181.42(6).

f. The hazardous waste discharge reporting requirement specified in s. NR 181.42(4)(c)3.

g. At closure, the owner or operator of an elementary neutralization unit must remove all hazardous waste and hazardous waste residue from the unit.

h. The elementary neutralization unit must be constructed of sturdy, leakproof material and must be designed, constructed and operated so as to prevent hazardous waste from being discharged during the operating life of the unit.

8. The owners or operators of facilities operating under interim licenses except to the extent that the requirements are listed in s. NR 181.53(3)(g).

(b) Identification numbers. A facility owner or operator who does not have an identification number shall obtain one by applying to the department using the notification form specified in s. NR 181.06. The identification number shall be included on the manifest and hazardous waste summary report.

(c) Required notices. 1. The owner or operator of a hazardous waste facility that has arranged to receive hazardous waste from a foreign source shall notify the department in writing at least 4 weeks in advance of the date of the waste is expected to arrive at the facility. Notice of subsequent shipments of the same waste from tne same foreign source is not required.

2. Before transferring ownership or operation of a hazardous waste facility during its operating life, or of a disposal facility during the long-term care period, the owner or operator shall notify the new owner or operator in writing of the requirements of this subchapter and subch. VI.

3. The owner or operator of a hazardous waste site or facility that receives hazardous waste from an off-site source, except where the owner or operator is also the generator, shall inform the generator in writing that the hazardous waste site or facility has the appropriate license for, and will accept, the waste the generator is shipping. The owner or operator shall keep a copy of this written notice as part of the operating record.

(d) General waste analysis. 1. Before an owner or operator treats, stores, or disposes of any hazardous waste, a detailed chemical and physical analysis of a representative sample of the waste shall be obtained from the generator. At a minimum, this analysis shall contain all the information which must be known to treat, store, or dispose of the waste in accordance with the requirements of this subchapter.

2. The analysis may include data developed under subch. II and existing published or documented data on the hazardous waste or on waste generated from similar processes.

3. The analysis shall be repeated as necessary to ensure that it is accurate and up to date. At a minimum, the analysis shall be repeated:

a. When the owner or operator is notified, or has reason to believe, that the process or operation generating the hazardous waste has changed; and

b. For off-site facilities, when tne results of the inspection required in subd. 4. indicate that the hazardous waste shipment received at the facility does not match the waste designated on the accompanying manifest or shipping paper.

4. The owner or operator of an off-site facility shall inspect and if necessary, analyze in accordance with waste analysis plan required by sub. (e), each hazardous waste shipment received at the facility to

determine whether it matches the identity of the waste specified on the accompanying manifest or shipping paper.

(e) Waste analysis plan. The owner or operator shall develop and follow a written waste analysis plan which describes the procedures which will be carried out to comply with par. (d). The owner or operator shall keep this plan at the facility. At a minimum, the plan shall specify:

1. The parameters for which each hazardous waste will be analyzed and the rationale for the selection of these parameters, and why analysis for these parameters will provide sufficient information on the waste's properties to comply with par. (d);

2. The test methods which will be used to test for these parameters;

3. The sampling method which will be used to obtain a representative sample of the waste to be analyzed;

4. The frequency with which the initial analysis of the waste will be reviewed or repeated to ensure that the analysis is accurate and up to date;

5. For off-site facilities, the waste analyses that hazardous waste generators have agreed to supply; and

6. Where applicable, the methods which will be used to meet the additional waste analysis requirements for specific waste management methods as specified in s. NR 181.46(5)(b) and NR 181.46(5)(c).

7. For off-site facilities, the procedures which will be used to inspect and, if necessary, analyze each shipment of hazardous waste received at the facility to ensure that it matches the identity of the waste designated on the accompanying manifest or shipping paper. At a minimum, the plan shall describe:

a. The procedures which will be used to determine the identity of each shipment of waste managed at the facility; and

b. The sampling method which will be used to obtain a representative sample of the waste to be identified, if the identification method includes sampling.

(f) Open burning and detonation of waste explosives. Open burning of hazardous waste is prohibited except for the open burning and detonation of waste explosives. Waste explosives include waste which has the potential to detonate and bulk military propellants which cannot safely be disposed of through other modes of treatment. Detonation is an explosion in which chemical transformation passes through the material faster than the speed of sound. Owners or operators choosing to open burn or detonate waste explosives shall do so in accordance with table VII and in a manner that does not threaten human health or the environment. The department may require distances greater than the minimum distances listed in table VII be used if, based on the specific material being burned or detonated and site specific conditions, it is determined that the burning or detonation may potentially endanger human health or the environment, or create nuisance conditions.

Table VII

Minimum Distance from Open Burning or Detonation of Waste Explosives or Propellants to the Property Line of Property Owned by Other Persons

Pounds of waste explosives or propellants	Minimum distance
0 to 100	204 meters (670 feet)
101 to 1,000	380 meters (1,250 feet)
1,001 to 10,000	530 meters (1,730 feet)
10,001 to 30,000	690 meters (2,260 feet)

(g) Point source discharges. All facilities with point source discharges to navigable waters, including discharges from leachate collection systems and surface water run-off collection systems, shall comply with all applicable regulations promulgated under ch. 147, Stats. Additionally, facilities with discharges to municipal sewer systems shall meet applicable pretreatment standards and have the approval of the municipal treatment system authority for that discharge.

(h) Surface water run-on and run-off. 1. All surface water run-on shall be diverted from active portions of a facility. At a minimum, dikes or equivalent structures shall be designed, constructed, and properly maintained to divert all run-on from a 24-hour, 25-year storm.

2. All surface water run-off from the active portions of the facility shall be collected and confined to a point source before discharge or treatment, as may be required by regulations promulgated under chs. 144 or 147, Stats. At a minimum, facilities shall be designed, constructed and operated to collect all run-off from active portions of the facility anticipated from the 24-hour, 25-year storm.

(i) Generation or removal of waste. Any person who generates or removes a hazardous waste from a hazardous waste facility shall comply with the requirements of subch. III.

(j) Closure of noncomplying portions of facilities. Owners or operators shall close, in accordance with the requirements of sub. (8), all portions of a facility which do not comply with the applicable requirements of this subchapter.

(k) Water quality. All owners or operators shall comply with applicable requirements of state water quality management plans approved under ch. 147, Stats.

(l) Non-point source discharges. Non-point source discharges from hazardous waste facilities into navigable waters shall not cause or contribute to the violation of water quality standards specified in chs. NR 102-NR 104, Wis. Adm. Code.

(m) General requirements for ignitable, reactive, or incompatible wastes: 1. The owner or operator shall take precautions to prevent accidental ignition or reaction of ignitable or reactive waste. This waste shall be separated and protected from sources of ignition or reaction including but not limited to: open flames, smoking, cutting and welding, hot surfaces, frictional heat, sparks, spontaneous ignition, and radiant heat. While ignitable or reactive waste is being handled, the owner or operator shall confine smoking and open flame to specially designated locations. "No Smoking" signs shall be conspicuously placed wherever there is a hazard from ignitable or reactive waste.

2. Where specifically required by other sections of this subchapter, the treatment, storage, or disposal of ignitable or reactive waste, and the mixture or commingling of incompatible wastes or materials, shall be conducted so that it does not:

a. Generate extreme heat or pressure, fire or explosion, or violent reaction;

b. Produce uncontrolled toxic mists, fumes, dusts, or gases in sufficient quantities to threaten human health;

c. Produce uncontrolled flammable fumes or gases in sufficient quantities to pose a risk of fire or explosions;

d. Damage the structural integrity of the device or facility containing the waste; or

e. Through other like means threaten human health or the environment.

(2) General site selection. (a) A hazardous waste facility shall not be located in a floodplain.

(b) A hazardous waste facility shall not be located in a wetland.

(c) A hazardous waste facility shall not be located in habitat determined by the department to be critical to the continued existance of any endangered species listed in ch. NR 27, Wis. Adm. Code.

(d) The department may require that active portions of a facility be located up to 200 feet away from the property line of the facility.

(3) Security. (a) The owner or operator shall prevent the unknowing entry, and minimize the possibility for the unauthorized entry, of persons or livestock onto the active portion of the facility, unless:

1. Physical contact with the waste, structures, or equipment within the active portion of the facility will not injure unknowing or unauthorized persons or livestock which may enter the active portion of a facility, and

2. Disturbance of the waste or equipment, by the unknowing or unauthorized entry of persons or livestock onto the active portion of a facility, will not cause a violation of the requirements of this subchapter.

(b) Unless exempt under pars. (a)1. and (a)2., a facility shall have:

1. A 24-hour surveillance system, such as television monitoring or surveillance by guards or facility personnel to continuously monitor and control entry onto the active portion of the facility; or

2. a. An artificial or natural barrier such as a fence in good repair or a fence combined with a cliff surrounding the active portion of the facility, and

b. A means to control entry, at all times, through the gates or other entrances to the active portion of the facility, such as an attendant, television monitor, locked entrance or controlled roadway access to the facility.

(c) Unless exempt under pars. (a)1. and (a)2. a sign with the legend, "Danger--Unauthorized Personnel Keep Out", shall be posted at each entrance to the active portion of a facility, and at other locations, in sufficient numbers to be seen from any approach to the active portion. The legend shall be legible from a distance of at least 25 feet. Existing signs with a legend other than "Danger--Unauthorized Personnel Keep Out" may be used if the legend on the sign indicates that only authorized personnel are allowed to enter the active portion, and that entry onto the active portion can be dangerous.

(4) Contingency plan and emergency procedures. (a) Contingency plan. 1. The owner or operator of a facility shall develop a contingency plan so as to prevent or minimize human health or environmental damage in the event of fire, explosion, or any unplanned sudden or nonsudden discharge of hazardous waste. The provisions of the plan shall be implemented immediately in the event of a discharge of hazardous waste.

2. Either a copy of the contingency plan and all revisions of the plan, or a letter stating that the contingency plan is kept at the facility office and available for review, shall be sent to all local police departments, fire departments, hospitals and emergency response teams who may be called on to provide emergency services. A copy of the contingency plan and all revisions of the plan shall be filed with the department. The plan shall be reviewed and immediately amended, if necessary, whenever:

a. The facility license is amended.

b. The contingency plan fails in an emergency.

c. The facility changes in its design, construction, operation, maintenance, or other circumstances in a way that materially increases the potential for fires, explosions, or discharge of hazardous waste or hazardous waste constituents, or changes the response necessary in an emergency.

d. The list of emergency coordinators changes; or

e. The list of emergency equipment changes.

3. At all times when the facility is in operation there shall be at least one person present with the responsibility of coordinating all emergency response measures. This facility emergency coordinator shall be thoroughly familiar with all aspects of the facility's contingency plan, all operations activities at the facility, the location and characteristics of waste handled, the location of manifests within the facility, and the facility layout.

4. The contingency plan shall, as a minimum, contain the following:

a. The name, position, address and phone number, office and home, of all persons qualified to act as facility emergency coordinator as described in subd. 3. Where more than one person is listed, one shall be

designated as the primary emergency coordinator and others shall be listed in the order in which they will assume responsibility as alternates.

b. A description of the facility layout, types of waste handled and their associated hazards, places where facility personnel would normally be working and entrances to and roads inside the facility.

c. An evacuation plan for facility personnel where there is a possibility that evacuation could be necessary. This plan shall describe signals to be used to begin evacuation, evacuation routes and alternate evacuation routes, in case the primary routes may be blocked.

d. Procedures for emergency shutdown of facility operations, and the actions facility personnel shall take to comply with par. (c) in response to fires, explosions or any unplanned sudden or non-sudden discharge of hazardous waste or hazardous waste constituents to the air, soil or surface water at the facility.

e. A description of the procedures that will be used to notify local police departments, fire departments, hospitals and emergency response teams of the discharge of hazardous waste or fire or explosion at the facility.

f. A list of all emergency equipment at the facility, such as fire extinguishing equipment, internal and external alarms, and decontamination equipment where this equipment is required. The list shall include the location, physical description, and description of the capabilities of each item.

5. Facility employees shall be familarized with all emergency procedures, equipment, and systems contained in the contingency plan.

6. If the owner or operator has already prepared a spill prevention, control, and countermeasures (SPCC) plan in accordance with 40 CFR Part 112, July 1, 1980, this plan need only be amended to incorporate hazardous waste management provisions that are sufficient to comply with the requirements of this subchapter.

Note: The publication containing this regulation may be obtained from:

The Superintendent of Documents

U.S. Government Printing Office

Washington, D.C. 20402

The publication containing this regulation is available for inspection at the offices of the department, the secretary of state and the revisor of statutes.

(b) Preparedness and prevention. 1. Facilities shall be designed, constructed, maintained and operated to minimize the possibility of a fire, or explosion, or any unplanned sudden or non-sudden discharge of hazardous waste or hazardous waste constituents to the air, land, or surface water which could be harmful to human health or the environment.

2. All facilities shall be equipped with the following:

a. An alarm, a telephone, a 2-way radio, or similar device capable of summoning emergency assistance from local police departments, fire departments, or state or local emergency response teams;

b. An internal communications system capable of providing immediate emergency instructions, voice or signal, to facility personnel;

c. Portable fire extinguishers, fire control equipment, including special extinguishing equipment, such as that using foam, inert gas, or dry chemicals, spill control equipment and decontamination equipment that is applicable to the type of hazardous waste handled at the facility; and

d. Extinguishing agents with adequate volume and adequate delivery systems.

3. At any time that hazardous waste is being poured, mixed, spread, or otherwise handled, all employees involved in the operation shall have immediate access to an internal or external alarm or emergency communication device, either directly or through visual or voice contact with another employee. If at any time during operation of the facility there is a sole employee on the premises, that person shall have immediate access to an alarm, a telephone which is immediately available at the scene of operation, a hand-held 2-way radio, or a similar device capable of summoning external emergency assistance.

4. All facility communication or alarm systems, fire protection equipment, spill control equipment, and decontamination equipment where required, shall be tested or maintained as applicable to ensure its proper operation in time of emergency.

5. The owner or operator shall maintain aisle space to allow the unobstructed movement of personnel, fire protection equipment, spill control equipment, and decontamination equipment to any area of facility operation in an emergency, unless it can be demonstrated to the department that aisle space is not needed for any of these purposes.

6. The owner or operator shall take precautions to prevent accidental ignition or reaction of ignitable or reactive wastes. This waste shall be separated and protected from sources of ignition or reaction including but not limited to: open flames, smoking, cutting and welding, hot surfaces, frictional heat, sparks, spontaneous ignition, and radiant heat. While ignitable or reactive waste is being handled, the owner or operator shall confine smoking and open flame to specifically designated locations. "No Smoking" signs shall be conspicuously placed whenever there is a hazard from ignitable or reactive waste.

7. The owner shall attempt to make the following arrangements, as appropriate for the type of waste handled at the facility and the potential need for the services of these organizations. Where state or local authorities decline to participate in these arrangements, the owner or operator shall document their refusal in the operating record.

a. Arrangements to familiarize police, fire departments, and emergency response teams with the layout of the facility, properties of the hazardous waste handled at the facility and associated hazards, places where facility personnel would normally be working, entrances to and roads inside the facility, and possible evacuation routes;

b. Where more than one police and fire department may respond to an emergency, agreements designating primary emergency authority to a specific police and a specific fire department, and agreements with any others to provide support to the primary emergency authority;

c. Agreements with state emergency response teams, emergency response contractors, and equipment suppliers; and

d. Arrangements to familiarize local hospitals with the properties of hazardous waste handled at the facility and the types of injuries or illnesses which could result from fires, explosions, or discharges at the facility.

(c) Emergency procedures. 1. In the event that a facility has a discharge of hazardous waste, a fire, or an explosion which has the potential for damaging human health or the environment, the facility's emergency coordinator shall:

a. Activate internal facility alarms or communication systems to notify all personnel of an imminent or actual emergency situation, where applicable.

b. Telephone the division of emergency government and comply with the requirements of s. 144.76, Stats., and ch. NR 158, Wis. Adm. Code.

Note: The division of emergency governments 24 hour number is (608)-266-3232, collect calls accepted.

c. Immediately identify the character, source, amount, and areal extent of any discharged materials. This may be done by observation or review of facility records or manifests, and, if necessary, by chemical analysis.

d. Assess possible hazards to human health or the environment that may result from the discharge, fire, or explosion. This assessment shall consider both direct and indirect effects of the discharge, fire or explosion such as the effects of any toxic, irritating, or asphyxiating gases that are generated, or the effects of any hazardous surface water run-off from water or chemical agents used to control fire and heat induced explosions.

e. Immediately notify appropriate local authorities, if an assessment indicates that a discharge, fire, or explosion could threaten human health or the environment outside the facility, and that evacuation of local areas may be advisable. The emergency coordinator shall be available to help appropriate officals decide whether local areas shall be evacuated.

f. Take all reasonable measures necessary to ensure that fires, explosions, and discharges do not occur, reoccur, or spread to other hazardous waste at the facility. These measures shall include, where applicable, stopping processes and operations, collecting and containing discharge waste, and removing or isolating containers.

g. Monitor for leaks, pressure buildup, gas generation, or ruptures in valves, pipes or other equipment, where appropriate, if the facility stops operation in response to a fire, explosion, or discharge.

h. Provide for treating, storing, or disposing of recovered waste, contaminated soil or surface water, or any other material that results from a discharge, fire, or explosion at the facility, immediately after an emergency.

i. Ensure that, in the affected areas of the facility, no waste that is incompatible with the discharged material is treated, stored, or disposed of until cleanup procedures are completed; and all emergency equipment listed in the contingency plan is clean and fit for its intended use before operations are resumed.

2. The owner or operator shall notify the department that the facility is in compliance with subd. 1.i. before operations are resumed in the affected areas of the facility.

3. The owner or operator shall note in the operating record the time, date, and details of any incident that requires implementing the contingency plan. Within 15 days after the incident, the owner or operator shall submit a written report on the incident to the department. The report shall include:

a. Name, address, and telephone number of the owner or operator;

b. Name, address, and telephone number of the facility;

c. Date, time, and type of incident, such as fire, explosion;

d. Name and quantity of materials involved;

e. The extent of injuries, if any;

f. An assessment of actual or potential hazards to human health or the environment, where this is applicable; and

g. Estimated quantity and disposition of recovered material that resulted from the incident.

h. A narrative describing the known or suspected causes of the incident and a statement describing the measures taken to investigate the incident to determine the cause.

(5) Personnel training. (a) Facility personnel shall successfully complete a program of classroom instruction or on-the-job training that teaches them to perform their duties in a way that ensures the facility's compliance with the requirements of this subchapter. The owner or operator shall ensure that this program includes all the elements described in the document required under par. (d)3.

1. This program shall be directed by a person trained in hazardous waste management procedures, and shall include instruction which teaches facility personnel hazardous waste management procedures, including contingency plan implementation, relevant to the positions in which they are employed.

2. At a minimum, the training program shall be designed to ensure that facility personnel are able to respond effectively to emergencies by familiarizing them with emergency procedures, emergency equipment, and emergency systems, including where applicable:

a. Procedures for using, inspecting, repairing, and replacing facility emergency and monitoring equipment;

b. Key parameters for automatic waste feed cut-off systems;

c. Communications or alarm systems;

d. Response to fires or explosions;

e. Response to groundwater contamination incidents; and

f. Shutdown of operations.

(b) Facility personnel employed at the facility as of the effective date of these rules shall successfully complete the program required in par. (a) within 6 months of the effective date of these rules. Personnel assigned to the facility or to a new position at the facility after the effective date of these regulations shall not work in unsupervised positions until they have completed the training requirements of par. (a).

(c) Facility personnel shall take part in an annual review of the initial training required in par. (a).

(d) The owner or operator shall maintain the following documents and records at the facility:

1. The job title for each position at the facility related to hazardous waste management, and the name of the employee filling each job;

2. A written job description for each position listed under subd. 1. This description may be consistent in its degree of specificity with descriptions for other similar positions in the same company, location or bargaining unit, but shall include the requisite skill, education, or other qualifications, and duties of facility personnel assigned to each position;

3. A written description of the type and amount of both introductory and continuing training that will be given to each person filling a position listed in subd. 1.

4. Records that document that the training or job experience required under par. (a), (b), and (c) has been given to, and completed by, facility personnel.

(e) Training records on current personnel shall be kept until closure of the facility. Training records on former employees shall be kept for at least 3 years from the date the employee last worked at the facility. Personnel training records shall accompany personnel transferred within the same company.

(6) Manifest system, recordkeeping, and reporting. (a) Manifest system. 1. The operator of a hazardous waste facility accepting out-of-state wastes is responsible for all the requirements of this section, including requiring the generator to initiate a Wisconsin manifest.

2. No hazardous waste facility operator shall accept a manifested shipment of hazardous waste that does not meet the following requirements:

a. The manifest is complete.

b. Each container and portable tank containing hazardous waste is properly labeled.

c. The manifests and the labels are consistent.

3. No hazardous waste facility operator shall accept a shipment of hazardous waste that the facility operator is not allowed to manage under that hazardous waste facility's license.

4. If a facility receives hazardous waste accompanied by a manifest, the owner, operator, or an employe shall:

a. Sign and date each copy of the manifest to certify that the hazardous waste covered by the manifest was received;

b. Note any significant discrepancies in the manifest as defined in subd. 6.a. on each copy of the manifest;

c. Immediately give the transporter at least one copy of the signed manifest;

d. Within 30 days after the delivery, send a copy of the manifest to the generator; and

e. Retain at the facility a copy of each manifest for at least 3 years from the date of delivery.

f. Send a copy of each manifest to the department within 5 working days.

5. If a hazardous waste facility receives, from a rail or water bulk shipment transporter, hazardous waste which is accompanied by a shipping paper containing all the information required on the manifest, but excluding the identification number, generator's certification, and signature, the owner or operator, or an employe shall:

a. Sign and date each copy of the shipping paper to certify that the hazardous waste covered by the shipping paper was received;

b. Note any significant discrepancies in the shipping paper as defined in subd. 6.a. on each copy of the shipping paper;

c. Immediately give the rail or water bulk shipment transporter at least one copy of the shipping paper;

d. Within 30 days after the delivery, send a copy of the shipping paper to the generator; however, if a manifest is received within 30 days after the delivery, the owner or operator, or an employe shall sign and date the manifest and return it to the generator in lieu of the shipping paper; and

e. Retain at the facility a copy of each shipping paper and manifest for at least 3 years from the date of delivery.

f. Send a copy of the shipping paper to the department.

6. a. Manifest discrepencies are differences between the quantity or type of hazardous waste designated on the manifest or shipping paper, and the quantity or type of hazardous waste a facility actually receives. Significant discrepencies in quantity are 10% in weight for bulk shipments or any variation in piece count, such as a discrepancy of one drum in a truckload for batch shipments of waste. Significant discrepencies in type are obvious differences which can be discovered by inspection or waste analysis, such as waste solvent substituted for waste acid, or toxic constituents not reported on the manifest or shipping paper.

b. Upon discovering a significant discrepency, the owner or operator shall attempt to reconcile the discrepancy with the waste generator or transporter, such as with telephone conversations. If the discrepancy is not resolved within 15 days after receiving the waste, the owner or operator shall submit to the department a letter describing the discrepency and attempts to reconcile it, and a copy of the manifest or shipping paper at issue.

(b) Recordkeeping. 1. The owner or operator shall keep a written operating record at the facility. The following information shall be recorded, as it becomes available, and maintained in the operating record until closure of the facility:

a. A description of the waste including its common name, hazardous waste number, physical form, and quantity;

b. The method and date of the waste's storage, treatment or disposal at the facility;

c. The location where each hazardous waste was placed within the facility and the quantity at each location. For disposal facilities, the location and quantity of each hazardous waste shall be recorded on a map or diagram of each cell or disposal area. For all facilities, this information shall include cross-references to specific manifest document numbers, if the waste was accompanied by a manifest;

d. Records and results of waste analyses performed as specified in sub. (1)(d);

e. Summary reports and details of all incidents that required implementing the contingency plan as specified in sub. (4)(c)3.

f. Records and results of inspections as required by sub. (7)(d), although this data need be kept only 3 years; and

g. For off-site facilities, notices to generators as specified in sub. (1)(c)3.

h. Monitoring, testing or analytical data where required by ss. NR 181.44(11), NR 181.45(4)(j) and NR 181.46(5)(m).

i. Closure or long-term care cost estimates required under s. NR 181.42(10)(d).

2.a. All records required under this subchapter shall be furnished upon request, and made available at all reasonable times for inspection, by any officer or employee of the department.

b. The retention period for all records required under the subchapter may be extended upon written notice from the department to the owner or operator of the facility, specifying the records or types of records that are to be retained.

c. A copy of records of waste disposal locations and quantities under subd. 1.c. shall be submitted to the department upon closure of the facility.

(c) Reporting. 1. Quarterly reports. The owner or operator shall prepare and submit a quarterly report to the department within 30 days of the close of each reporting quarter. The quarterly report shall cover facility activities during the previous reporting quarter and shall, at a minimum, contain the following information:

a. The identification number, name and address of the facility;

b. The closing date of the reporting quarter;

c. For off-site facilities, the identification number of each hazardous waste generator from which a hazardous waste was received during the reporting quarter. For imported shipments, the name and address of the foreign generator;

d. A description and the quantity of each hazardous waste the facility received during the reporting quarter. For off-site facilities, this information shall be listed by identification number of each generator;

e. The method of treatment, storage, or disposal for each hazardous waste; and

f. A certification signed by the owner or operator of the facility, or authorized representative as specified in s. NR 181.55(3), stating that "I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents and that based on my inquiry of those individuals immediately responsbile for obtaining the information, I believe that the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

2. Unmanifested waste report. If a facility accepts for treatment, storage or disposal any hazardous waste from an off-site source without an accompanying manifest, or without an accompanying shipping paper as described in s. NR 181.34(8)(b), and if the waste is not excluded from the manifest requirement by s. NR 181.13, then the owner or operator shall prepare and submit a report to the department within 15 days of receiving the waste. The report shall, at a minimum, contain the following information:

a. The identification number, name and address of the facility;

b. The date the facility received the waste;

c. The identification number, name, and address of the generator or transporter, if available;

d. A description and the quantity of each unmanifested hazardous waste received;

e. The method of treatment, storage or disposal for each hazardous waste;

f. A brief explanation of why the waste was unmanifested, if known; and

g. A certification signed by the owner, operator, or authorized representative of the facility as specified in s. NR 181.55(3) stating that "I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

3. Additional reports. In addition to submitting the quarterly reports and unmanifested waste reports described in subds. 1. and 2., the owner or operator shall also report to the department discharges, fires and explosions as specified in sub. (4)(c)3. Reports of monitoring data as specified in s. NR 181.44 shall be submitted within 30 days of the close of each calendar year for landfills surface impoundments and other sites or facilities where monitoring may be required.

(7) General inspection requirements. (a) The owner or operator shall inspect the facility for malfunctions and deterioration, operator errors, and discharges which may be causing, or may lead to, a discharge of hazardous waste or hazardous waste constituents to the environment or a threat to human

health. The owner or operator shall conduct these inspections often enough to identify problems in time to correct them before they harm human health or the environment.

(b) Inspection schedule. 1. The owner or operator shall develop and follow a written schedule for inspecting monitoring equipment, safety and emergency equipment, security devices, and operating and structural equipment, such as dikes and sump pumps, that are important to preventing, detecting, or responding to environmental or human health hazards.

2. The schedule shall be kept at the facility.

3. The schedule shall identify the types of problems, such as malfunctions or deterioration, which are to be looked for during the inspection, such as inoperative sump pump, leaking fitting, eroding dike, etc.

4. The frequency of inspection may vary for the items on the schedule. However, it should be based on the rate of possible deterioration of the equipment and the probability of an environmental or human health incident if the deterioration or malfunction or any operator error goes undetected between inspections. Areas subject to spills, such as loading and unloading areas, shall be inspected daily when in use.

(c) The owner or operator shall remedy any deterioration or malfunction of equipment or structures which the inspection reveals on a schedule which ensures that the problem does not lead to an environmental or human health hazard. Where a hazard is imminent or has already occurred, remedial action shall be taken immediately.

(d) The owner or operator shall record inspections in an inspection log or summary. These records shall be kept for at least 3 years from the date of inspection. At a minimum, these records shall include the date and time of the inspection, the name of the inspector, a notation of the observations made, and the date and nature of any repairs or other remedial actions.

(8) Closure. (a) The owner or operator of a facility shall close the facility in a manner that:

1. Minimizes the need for further maintenance, and

2. Controls, minimizes or eliminates, to the extent necessary to protect human health and the environment, post closure escape of wastes, leachate, contaminated rainfall, or waste decomposition products to ground or surface waters, or to the atmosphere.

3. Meets the additional closure requirements for landfills and surface impoundments as specified in s. NR 181.44(12), if applicable.

(b) The facility operator shall submit to the department for approval a closure plan demonstrating compliance with this paragraph at the time of and as part of the application for a license under s. NR 181.53 or s. NR 181.55 and shall amend the plan whenever changes in operating plans or facility design affect the closure plan. The closure plan shall include, but not be limited to:

1. A description of how the facility shall be closed.

2. A description of possible uses of the land after closure.

3. The anticipated time until closing, the estimated time required for closure and any anticipated partial closures.

4. An estimate of the maximum inventory of wastes in storage or in treatment at any given time during the life of the facility.

5. A description of the steps needed to decontaminate facility structures or equipment.

(c) At least 120 days prior to the closing of a facility, the owner or operator shall notify the department in writing of the intent to close the site. No later than this date, the owner or operator shall notify current users of the facility of intent to close the site.

(d) Within 60 days after ceasing to accept hazardous waste, all wastes shall be removed from storage and treatment operations and disposed of in accordance with requirements of subch. III and an approved closure plan as specified in par. (b).

(e) At completion of closure, all equipment and structures used in the operation of the facility shall be properly disposed of or decontaminated by removal of all hazardous waste and residues.

(f) At completion of closure, all required equipment shall be provided and arrangements shall be made to implement the long term care provisions contained in the approved plan of operation.

(g) At completion of closure, the owner or operator of a disposal facility shall submit to the department certification by the owner or operator and certification by a registered professional engineer that the facility has been closed in accordance with the requirements of this subchapter, the plan of operation and all applicable license conditions.

(9) Long-term care. (a) The owner of a disposal facility shall provide long-term care for a period of 20 or 30 years from the date of closure, under s. 144.441, Stats., unless the owner's responsibility is terminated earlier in accordance with s. 144.441(2)(d), Stats.

(b) Long-term care shall apply only to disposal facilities and consist of at least the following:

1. Monitoring and reporting in accordance with the requirements of ss. NR 181.44(11) and NR 181.44(12)(c).

2. Maintenance of facility monitoring and waste containment devices and security requirements necessary to prevent hazards to human health.

(c) The use of a site on or in which hazardous waste remains after closure shall never be allowed to disturb the integrity of the final cover, liner, or any other component of any containment system, or the facility's monitoring system, unless the owner or operator can demonstrate to the department that the disturbance:

1. Is necessary to the proposed use of the property and will not increase the potential hazard to human health or the environment; or

2. Is necessary to reduce a threat to human health or the environment.

(10) Financial requirements for closure and long-term care. (a) Applicability. 1. Closure financial requirements in par. (b) are applicable to all hazardous waste storage, treatment and disposal sites and facilities. Technical requirements for the closure of these facilities are given in s. NR 181.42(8) and, for specific types of facilities, in ss. NR 181.43 through NR 181.46.

2. Long-term care financial requirements in par. (c) apply only to disposal facilities. Technical requirements for the long-term care of disposal facilities are outlined in s. NR 181.44(13).

3. Any person acquiring rights of ownership, possession or operation of a licensed hazardous waste facility other than a hazardous waste disposal facility shall be responsible for the closure of the site or facility and shall provide such assurance as is required by par. (b) prior to the issuance of a new operating license. Any person acquiring rights of ownership, possession or operation of a licensed hazardous waste disposal facility shall be responsible for the closure and long-term care of the site or facility and shall provide such assurance as is required by pars. (b) and (c) prior to the issuance of a new operating license.

(b) Closure requirements. 1. The owner or operator shall provide proof of financial responsibility for closure of the facility as part of the initial license application. To provide proof of financial responsibility to assure compliance with the closure requirements of the plan of operation, the owner or operator shall either deposit into an escrow account or trust account, cash, certificates of deposit or government securities equal to the cost estimate for closure made in accordance with par. (d)1.a., or utilize a bond or a deposit with the department, in an amount equal to the cost estimate for closure made in accordance with par. (d)1.a. If the site or facility is to be closed in phases during the active site or facility life, the department shall not require proof of financial responsibility to assure compliance with the closure requirements in an amount exceeding that amount which will be necessary to complete closure of the most expensive phase to be closed.

2. As part of each license renewal application for the facility, the owner or operator shall submit proof of increased financial responsibility in accordance with pars. (d)1.b. or (d)1.c.

3. When an owner has completed closure of any portion of the site or facility other than a site or facility which is to be closed in phases over the active site or facility life, the owner may apply to the department for release of that portion of the bond or return of that amount of money held on deposit, in escrow, or in trust for closure of that portion of the site or facility. Such application shall be accompanied by an itemized list of costs incurred. Upon determination that a portion of the site or facility has been satisfactorily closed, the department shall authorize release of a portion of the funds or approve a reduction in the bond, provided however that the amount remaining shall not be reduced to less than 120% of the estimated cost to complete closure of the disposal facility. Upon determination by the department that complete closure has been accomplished, the department shall authorize release or return of

all funds accumulated in such accounts or give written permission for cancellation of the bond. Such determination shall be concluded within 90 days of such application.

(c) Long-term care requirements. 1. To provide proof of financial responsibility to assure compliance with the long-term care provisions of the plan of operation, the owner shall either deposit into an escrow account or trust account an initial annual cash payment in the amount specified in par. (d)2.a., or utilize a bond or a deposit with the department, in an amount equal to the initial annual payment as specified in par. (d)2.a. The initial annual payment shall be made as part of the initial license application.

2. The owner or operator shall adjust the amount of the bond or each annual payment after the initial one by multiplying the amount of the previous year's payment or increase in bond value by the inflation factor calculated in accordance with par. (d)2.d.

3. If a new long-term care cost estimate is prepared in accordance with par. (d)2.c., the next annual payment or increase in bond value shall be calculated as follows:

a. Divide the adjusted long-term care cost estimate by the site-life in years.

b. Multiply the result by the number of payment periods to date.

c. From the result of subd. b. subtract the current total of payments made to date or total bond value. The result is the amount that shall be distributed over the remaining site-life.

d. Divide the result of subd. c. by the number of years of site-life remaining.

e. Add the result of subd. d. to the result of subd. a. to obtain the new annual payment or increase in bond value.

4. One year after closure and annually, thereafter, for the period of owner responsibility, the owner, who has carried out all necessary long-term care during the preceding year, may make application to the department for release from the escrow account, trust account, or deposit with the department or for reduction in the bond equal to the estimated costs for long-term care for that year. Such application shall be accompanied by an itemized list of costs incurred. Upon determination that the expenditures incurred are in accordance with the long-term care requirements anticipated in the approved plan of operation, the department shall authorize release of the funds or approve a reduction in the bond, provided however that the amount remaining shall not be reduced to less than 20% of the total cost of long-term care during the period of owner responsibility until termination of that responsibility pursuant to s. 144.441, Stats. Such determination shall be concluded within 90 days of such application. Any funds remaining in the escrow account, trust account, or on deposit with the department at the termination of owner responsibility shall be released to the owner within 90 days.

(d) Cost estimates for closure and long-term care. 1. Closure cost estimate. a. The estimate for closure cost shall equal the cost of closure at the point in the facility's operating life when the extent and manner of its operation would make closure most expensive as indicated by it's closure plan.

b. The owner or operator shall prepare a new closure cost estimate whenever a change in the closure plan affects the cost of closure.

c. During the month of May preceding each licensing period as specified in s. NR 181.55(5)(b), the owner or operator shall adjust the latest closure cost estimate using an inflation factor derived from the annual implicit price deflator for gross national product as published by the U.S. department of commerce in its survey of current business. The inflation factor shall be calculated by dividing the latest published annual deflator by the deflator for the year during which the previous closure cost estimate was calculated. The result is the inflation factor. The adjusted closure cost estimate shall equal the latest closure cost estimate times the inflation factor.

2. Long-term care cost estimate. a. The long-term care cost for the site is calculated as follows. The estimate of the annual cost of long-term care is multiplied by either the 20 or 30 year period of responsibility, whichever was specified in the plan of operation for the site. The product is the long-term care cost of the site.

b. The initial annual payment or bond that is required under par. (c) to provide proof of financial responsibility to assure compliance with long-term care provision in the plan of operation shall be calculated as follows. The first annual payment or bond is equal to the long-term care cost of the site divided by the site life in years.

c. The owner or operator shall prepare a new annual long-term care cost estimate whenever a change in the long-term care aspect of the plan of operation affects the cost of long-term care.

d. During the month of May in each year following the initial long-term care payment, the owner or operator shall adjust the annual payment or bond using an inflation factor derived from the annual implicit price deflator for gross national product as published by the U.S. department of commerce in its survey of current business. The inflation factor shall be calculated by dividing the latest published annual deflator by the deflator for the previous year. The result is the inflation factor. The adjusted annual payment or increase in bond value for long-term care is equal to the previous annual payment or bond increase times the inflation factor.

(e) Forms of financial assurance. The owner or operator of a hazardous waste facility shall chose among the following options for establishing the financial assurance required under pars. (b) and (c).

1. Bonds. a. Bonds shall be issued by a surety company licensed to do business in this state. At the option of the owner or operator, a performance bond or a forfeiture bond may be filed. Surety companies may have the opportunity to complete the closure and long-term care of the site or facility in lieu of cash payment to the department. The obligee of the bond shall be the department.

b. Each bond shall provide that the bond shall not be cancelled by the surety company, except after not less than 90 days notice to the department in writing by registered or certified mail. Not less than 30 days prior to the expiration of the 90-day notice period, the owner or operator shall deliver to the

department a replacement bond, in absence of which all hazardous waste storage, treatment, or disposal operations shall immediately cease. If the surety company's license to do business is revoked or suspended, the site or facility owner or operator shall, within 30 days after receiving written notice thereof, deliver to the department a replacement bond, in the absence of which all hazardous waste storage, treatment or disposal operations shall immediately cease.

2. Deposit. The owner or operator may deposit cash, certificates of deposit, or government securities with the department in the amount determined according to this subsection. Deposits placed with the department will be segregated and, if applicable, invested in an interest bearing account. The department shall have the right to use part or all of the funds to carry out the closure and long-term care requirements of the approved plan of operation if the owner or operator fails to do so. The department shall mail notification of its intent to use funds for that purpose to the last known address of the owner or operator. If the owner or operator requests a hearing in writing within 60 days thereafter, the department shall prior to using the funds, hold a hearing pursuant to s. 227.064, Stats., for the purpose of determining whether or not the closure and long-term care requirements of the approved plan of operation have been carried out.

3. Escrow account. The owner or operator may establish an escrow account with a bank licensed to do business in this state in the amount determined according to this subsection. The escrow account shall consist of cash, certificates of deposit, or government securities. The department shall be a party to the escrow agreement, which shall provide that there shall be no withdrawals from the escrow account except as authorized in writing by the department. The escrow agreement shall further provide that the department shall have the right to withdraw and use part or all of the funds in the escrow account to carry out the closure and long-term care requirements of the approved plan of operation if the owner or operator fails to do so. The department shall mail notification of its intent to use funds for that purpose to the last known address of the owner or operator. If the owner or operator requests a hearing in writing within 60 days thereafter, the department shall prior to using the funds, hold a hearing pursuant to s. 227.064, Stats., for the purpose of determining whether or not the closure and long-term care requirements of the approved plan of operation have been carried out.

4. Irrevocable trust. The owner or operator may create an irrevocable trust exclusively for the purpose of ensuring that the owner and any successor in interest will comply with the closure and long-term care requirements of the approved plan of operation. The trust agreement shall designate a bank licensed to do business in this state as trustee and the department as sole beneficiary. The trust corpus shall consist of cash, certificates of deposit or government securities in the amount determined according to this subsection. The trust agreement shall further provide that sufficient monies shall be paid from the trust fund to the beneficiary in the event that the owner or any successor in interest fails to complete closure and long-term care requirements of the approved plan of operation. A copy of the trust agreement

shall be submitted to the department for approval prior to issuance of the initial license. The department shall mail notification of its intent to use funds to the last known address of the owner or operator. If the owner or operator requests a hearing in writing within 60 days thereafter, the department shall prior to using the funds, hold a hearing pursuant to s. 227.064, Stats., for the purpose of determining whether or not the closure and long-term care requirements of the approved plan of operation have been carried out.

(f) Access and default. Whenever on the basis of any reliable evidence and after opportunity for a hearing, the department determines that an owner or operator of a hazardous waste site or facility is in violation of any of the requirements for closure or for long-term care monitoring and maintenance in ss. NR 181.42(8) and (9), the department shall have the right to enter upon the facility and carry out the closure or the post-closure monitoring and maintenance requirements.

(11) Facility liability requirements. The owner or operator of a hazardous waste facility or group of facilities shall have and maintain liability insurance from an insurer licensed or eligible to insure facilities in the jurisdiction where the facilities are located, for sudden and accidental occurrences in the amount of $1 million per occurrence with an annual aggregate per firm of $2 million, exclusive of legal defense costs, for claims arising out of injury to persons or property from the operations of each such hazardous waste facility or group of facilities. The deductible written into the insurance policy shall not exceed 5% of the per incident limit of liability of the policy.

(12) Waste management fund. (a) Payment into the fund. All owners or operators of licensed hazardous waste disposal facilities shall pay to the department the fees specified in par.(c), for each ton of hazardous waste received and disposed of at the site from the effective date of these rules until the site is closed and no longer receives waste, except as otherwise provided in s. 144.441(3)(a), Stats. The department shall deposit all such fees into the waste management fund provided for in s. 25.45., Stats.

(b) Certification. The owner or operator of a licensed hazardous waste disposal facility shall certify, on a form provided by the department, the amount of hazardous waste received and disposed of during the preceeding reporting period. The department shall specify the term of the reporting period on the certification form. The certification form shall be completed and returned to the department with the appropriate fee within 30 days after mailing of the form by the department to the owner or operator.

(c) Fees. 1. For all disposal facilities with an approved plan of operation the owner may choose to be responsible for the long-term care of the facility for either 20 years or 30 years after site closure. The fees to be paid into the fund shall be at a rate of payment of 35¢ per ton for 20-year responsibility and 15¢ per ton for 30-year responsibility, except for ashes or sludges from electric or process steam generating facilities, sludges produced by waste treatment or manufacturing processes at pulp or paper mills, manufacturing process solid wastes from foundries, or sludges produced by municipal wastewater

treatment facilities for which the rate of payment shall be 3.5¢ per ton for 20-year responsibility and 1.5¢ per ton for 30-year responsibility.

2. For all disposal facilities without an approved plan of operation, the fees to be paid shall be those indicated in subd. 1. at the 30-year responsibility rate of payment.

(d) Use of fund. Only facilities with an approved plan of operation are eligible for use of the money accumulated in the waste management fund. The owner or operator of any hazardous waste disposal site or facility in existence on the effective date of these rules shall be required to seek approval of a plan of operation before an operating license is issued. The monies in the waste management fund shall be expended exclusively as set forth in s. 144.441(3)(g), Stats.

NR 181.43 Storage standards. (1) General. Except as otherwise provided in sub. (2), no person shall maintain or operate a hazardous waste storage facility unless the person has obtained an interim license or an operating license from the department, in accordance with the requirements of s. NR 181.53 or s. NR 181.55.

(2) Exemptions. (a) A generator may accumulate hazardous waste on-site without a storage license for 90 days or less provided that:

1. Within 90 days, all such waste is either:

a. Shipped off-site to a designated facility which meets the requirements of s. NR 181.23(2)(b); or

b. Treated, stored or disposed of in an on-site facility that is either licensed under subch. VI or exempt from licensing under s. NR 181.42(1)(a).

2. The waste is placed in containers which meet the packaging requirements of s. NR 181.26(1) and are managed in accordance with sub. (6)(a) and sub. (8) except for sub. (8)(d), or is placed in tanks, provided the generator complies with sub. (6), with the exception of subs. (6)(c) and (6)(d), and sub. (7), with the exception of sub. (7)(f);

3. The date upon which each period of accumulation begins is clearly marked and visible for inspection on each container or tank;

4. Each container is properly labeled and marked according to ss. NR 181.26(2) and (3); and

5. The generator complies with the contingency plan, security and personnel training requirements for owners and operators specified in s. NR 181.42(4) and (5).

(b) The owner or operator of industrial wastewater facilities sewerage systems and waterworks treating liquid wastes which are approved under s. 144.04, Stats., or permitted under ch. 147, Stats., are exempt from all the requirements of this section, except that this exemption does not apply to the storage or disposal of sludges or other hazardous waste produced during the treatment process.

(c) The owner or operator of a solid waste disposal site or facility licensed under ch. NR 180, Wis. Adm. Code, provided that the only hazardous waste the facility stores is excluded from regulation under

this subchapter by s. NR 181.13 and the facility has been approved under s. NR 181.13(7) to accept small quantities of hazardous waste.

(d) The owners or operators of facilities used for the storage of materials resulting from a mining operation as defined in s. 144.81(5), Stats., except where requirements in this section are referenced in the rules adopted by the department under s. 144.435(1m), Stats.

(3) Feasibility report. (a) Unless specifically exempted in sub. (2), no person shall establish, construct or expand a hazardous waste storage facility or be issued an initial operating license under s. NR 181.55 without first obtaining written approval of a feasibility report and subsequently obtaining approval of a plan of operation from the department. The purpose of the feasibility report is to determine whether the site has potential for use as a hazardous waste storage facility and to identify any conditions which the applicant shall include in the plan of operation. Favorable feasibility determination does not guarantee plan of operation approval and licensure. The feasibility report shall be submitted in accordance with the requirements of s. NR 181.51 and shall contain the applicable material required by s. NR 181.44(6). The applicant is encouraged to submit an initial site report as outlined in s. NR 181.44(5). The department may waive in writing any of the complete feasibility report requirements specified in s. NR 181.44(6). Feasibility report requirements for small storage facilities, as defined in s. NR 181.435(1), are specified in s. NR 181.435(2).

(b) Within 60 days after a feasibility report is submitted, the department shall either publish notice under s. 144.44(2)(d), Stats., that the report is complete or notify the applicant in writing that the report is not complete, specifying the information which must be submitted before the report is deemed complete. The department will determine whether or not the feasibility report is complete by determining whether or not the minimum requirements specified in par. (a) have been met. Additional feasibility information may be required of the applicant after a determination that the feasibility report is complete only if the department establishes that a detailed review of the feasibility report indicates that site feasibility cannot be determined in the absence of such additional information.

(4) Plan of operation. (a) Unless specifically exempted in sub. (2), no person shall establish, construct or expand a hazardous waste storage facility or be issued an initial operating license under s. NR 181.55 until a plan of operation has been submitted in accordance with the requirements of s. NR 181.51 and has been approved in writing by the department. The plan shall contain the applicable material required by s. NR 181.44(7). The department may waive in writing any of the plan requirements of s. NR 181.44(7) depending on the specific site or facility as outlined in the approved feasibility report for the facility. Plan of operation report requirements for small storage facilities as defined in s. NR 181.435(1), are specified in s. NR 181.435(3).

(b) Within 30 days after a plan of operation is submitted, the department shall notify the applicant in writing that the plan is either complete or not complete, specifying the information which must be

submitted before the report is deemed complete. The department will determine if the plan of operation is complete by determining whether or not the minimum requirements specified in par. (a) have been met. Additional plan of operation information may be required of the applicant after a determination that the plan of operation is complete only if the department establishes that a detailed review of the plan of operation indicates that the plan of operation is insufficient in the absence of such additional information.

(5) Construction observation report. The department may require submission by the applicant of a construction observation report in accordance with the requirements of s. NR 181.51. Factors that the department will consider before requiring the submission of a construction observation report include the types and quantities of hazardous wastes to be stored, the methods of storage and the potential for degradation of the environment and possible adverse human health effects should a discharge of hazardous waste occur. Where a report is required, operation of the facility shall not commence until the report is approved in writing by the department and until a license is issued.

(6) General operational requirements. (a) The owner or operator of a storage facility shall inspect all tanks and containers used for storing hazardous waste at least weekly for evidence of leakage, or corrosion or deterioration of the containers, tanks, or discharge confinement structures, such as dikes.

(b) Storage of hazardous waste shall be conducted in such a manner that no discharge of hazardous waste occurs.

(c) An owner or operator of a storage facility may be required by the department to comply with all or part of the groundwater and leachate monitoring requirements of s. NR 181.44(11), if the department determines that there is a potential for discharge of the hazardous material to the environment.

(d) Each storage area shall have a continuous base which is impervious to the material to be stored, and shall be designed and constructed so that any surface water run-on or hazardous waste discharges can be contained until the waste can be removed. A storage area shall have a discharge confinement structure with a minimum capacity equal to the contents of the largest tank, or 10% of the containerized waste, whichever is greater. If the storage area is not enclosed, the discharge confinement structure shall also provide sufficient freeboard to allow for containment of precipitation resulting from a 24-hour, 25-year storm.

(e) Incompatible wastes or materials shall not be placed in the same tank, container or pile unless s. NR 181.42(1)(m)2. is complied with.

(f) Hazardous waste shall not be placed in an unwashed tank or container that previously held an incompatible waste or material unless s. NR 181.42(1)(m)2. is complied with.

(g) The identity and location of all stored hazardous waste shall be known throughout the entire storage period.

(h) Final disposal of hazardous waste shall not be permitted at a hazardous waste storage facility, unless the facility has a separate license for disposal.

(7) Tank standards. (a) Storage tanks which contain volatile waste shall comply with s. NR 154.13, Wis. Adm. Code, regarding the control of organic compound emissions.

(b) Uncovered tanks shall be operated to ensure at least 2 feet of freeboard.

(c) Storage of hazardous waste in tanks shall comply with s. NR 181.42(1)(m)2.

(d) Hazardous wastes shall not be placed in a tank if they could cause the tank or its inner liner to rupture, leak, corrode or otherwise fail before the end of its intended life.

(e) In addition to the waste analysis required by s. NR 181.42(1)(d), whenever a tank is to be used to store a hazardous waste which is substantially different from waste previously stored in that tank, the owner or operator of the storage facility shall:

1. Conduct waste analyses and storage tests; or

2. Obtain written, documented information on storage of similar waste under similar operating conditions.

(f) Ignitable or reactive waste shall not be placed in a tank, unless:

1. The waste is treated, rendered, or mixed before or immediately after placement in the tank so that:

a. The resulting waste, mixture, or dissolution of material no longer meets the definition of ignitable or reactive waste under ss. NR 181.15(2) or NR 181.15(4); or

b. Compliance with s. NR 181.42(1)(m)2. is ensured; or

2. The waste is stored or treated in such a way that it is protected from any conditions which may cause the waste to ignite or react; or

3. The tank is used solely for emergencies.

(g) The owner or operator of a facility which stores ignitable or reactive waste in covered tanks shall comply with the buffer zone requirements for tanks set forth in ch. Ind. 8, Wis. Adm. Code.

(h) Where hazardous waste is continuously fed into a tank, the tank shall be equipped with a means to stop this inflow, such as a waste feed cutoff system or a bypass system to a stand-by tank.

(i) Tanks used to store hazardous wastes must be inspected at least once each operating day for the following:

1. Discharge control equipment, such as the waste feed cut-off, to ensure it is in good working order.

2. Data gathered from monitoring equipment, such as pressure or temperature guages, to ensure the tank is being operated according to its design.

3. The level of waste to ensure compliance with par.(b).

(8) Container standards. (a) If a container is not in good condition or if the contents of a storage container begin to leak, the hazardous waste in the container shall be recontainerized in a storage container in good condition.

(b) A container holding hazardous waste shall always be closed during storage, except when it is necessary to add or remove waste.

(c) A container holding hazardous waste shall not be opened, handled or stored in a manner which may rupture the container or cause it to leak.

(d) Containers holding ignitable or reactive waste shall be located at least 50 feet from the facility's property line.

(e) Storage containers holding a hazardous waste which is incompatible with any waste or other materials stored nearby in other containers, waste piles, open tanks or surface impoundments shall be separated from other wastes or materials or protected from them by means of a dike, berm, wall or other device.

(f) Hazardous waste shall not be placed in a unwashed container that previously held an incompatible waste or material, unless s. NR 181.42(1)(m)2. is complied with.

(g) The container shall be made or lined with materials which will not react with, and are otherwise compatible with, the hazardous waste to be stored.

(9) Waste pile standards. (a) Protection from wind. If a pile containing hazardous waste may be subject to dispersal by wind, the owner or operator of the facility shall cover the pile so that wind dispersal does not occur.

(b) Waste analysis. In addition to the waste analysis required by s. NR 181.42(1)(d), the owner or operator shall analyze a representative sample of waste from each incoming waste shipment before adding the waste to a existing pile if the compatibility of the incoming waste with the existing pile is not known. The analysis conducted shall be capable of differentiating between the types of hazardous waste the owner or operator places in piles, so that mixing of incompatible wastes does not inadvertently occur. The analysis shall include a visual comparison of color and texture.

(c) Containment. If leachate or run-off from a pile is a hazardous waste then either:

1. The pile shall be placed on a impermeable base that is compatible with the waste under the conditions of storage, run-on shall be diverted away from the pile, and any leachate and run-off from the pile shall be collected and managed as a hazardous waste; or

2. The pile shall be protected from precipitation by some other means; and

3. No liquids or wastes containing free liquids may be placed in the pile.

(d) Special requirements for ignitable or reactive waste. Ignitable or reactive wastes shall not be placed in a pile unless:

1. Addition of the waste to an existing pile results in:

a. The waste or mixture no longer meeting the definition of ignitable or reactive waste under s. NR 181.15(2) or s. NR 181.15(4); and

b. Compliance with s. NR 181.42(1)(m)2.

2. The waste is managed in such a way that it is protected from any material or conditions which may cause it to ignite or react.

(e) Special requirements for incompatible wastes. 1. A pile of hazardous waste that is incompatible with any waste or other material stored nearby in other containers, piles, open tanks or surface impoundments shall be separated from the other materials, or protected from them by means of a dike, berm, wall, or other device.

2. Hazardous waste shall not be piled on the same area where incompatible wastes or materials were previously piled, unless the area has been decontaminated sufficently to ensure compliance with s. NR 181.42(1)(m)2.

(10) Closure. Hazardous waste storage facilities shall meet the closure requirements specified in s. NR 181.42(8), unless specifically exempted in sub. (2).

NR 181.435 Small storage facilities. (1) Applicability. The feasibility report and plan of operation submittal requirements of this section may be met in lieu of the requirements of ss. NR 181.43(3) and (4) for storage facilities that have the following characteristics:

(a) The storage area is entirely in an enclosed and roofed structure having access limited or restricted to employees or other authorized personnel;

(b) Hazardous waste storage is confined to a floor area of 1500 sq. ft. or less;

(c) Hazardous waste storage does not exceed 10,000 gallons at any time;

(d) Hazardous waste is stored generally for the purpose of accumulating a sufficient quantity for a more economical transfer for treatment or disposal; and

(e) All hazardous waste is to be stored in either containers or tanks.

(2) Feasibility report. (a) Any person proposing to establish, construct, expand or obtain an initial operating license under s. NR 181.55 for a storage facility that has the characteristics specified in sub. (1) shall first obtain written approval of a feasibility report, and subsequent approval of a plan of operation from the department. The feasibility report shall be submitted in accordance with s. NR 181.51, and shall at a minimum, contain the following information:

1. A narrative description of the area proposed for storage of hazardous waste;

2. A general floor plan of the storage area and any pertinent adjacent areas;

3. A description of any existing or proposed fire prevention or control systems, communication equipment and security systems or arrangements at the facility.

4. A description of the hazardous or solid wastes, that will be stored at the proposed facility, along with projected volumes or weights and accumulation times.

5. An evaluation of the storage area's capability of containing spills;

6. A description of any past experience with storage of hazardous wastes at the facility.

(b) Within 60 days after a feasibility report is submitted, the department shall either publish notice under s. 144.44(2)(d), Stats., that the report is complete or notify the applicant in writing that the

report is not complete, specifying the information which must be submitted before the report is deemed complete. The department will determine whether or not the feasibility report is complete by determining whether or not the minimum requirements in par. (a) have been met. Additional feasibility information may be required of the applicant after a determination that the feasibility report is complete only if the department establishes that a detailed review of the feasibility report indicates that site feasibility cannot be determined in the absence of such additional information.

(3) Plan of operation. (a) Any person proposing to establish, construct, expand or obtain an initial operating license for a storage facility that has the characteristics specified in sub. (1) shall first obtain written approval of a plan of operation from the department. The plan of operation shall be submitted in accordance with s. NR 181.51 and shall at a minimum, contain the following information:

1. Storage and waste handling procedures;

2. An explanation of recordkeeping and container labeling procedures;

3. Training programs for employees responsible for handling hazardous waste in the storage area;

4. Contingency plans for unexpected occurrences including, but not limited to, discharges, fires and explosions;

5. Plans for periodic inspections of containers and tanks to detect and prevent containment deterioration or leakage; and

6. A discussion of the need for closure steps at the facility.

(b) Within 30 days after a plan of operation is submitted, the department shall notify the applicant in writing that the plan is either complete or not complete, specifying the information which must be submitted before the report is deemed complete. The department will determine if the plan of operation is complete by determining whether or not the minimum requirements of this subsection have been met. Additional plan of operation information may be required of the applicant after a determination that the plan of operation is complete only if the department establishes that a detailed review of the plan of operation indicates that the plan of operation is insufficient in the absence of such additional information.

(4) Review procedures. (a) The feasibility report required by sub. (2) and the plan of operation required by sub. (3) may be submitted concurrently by the applicant, but the department shall review and approve the feasibility report before considering the plan of operation.

(b) The department may conduct a site visit with the permission of the applicant.

(c) Based on the site visit under par. (b), the department may require additional information for the feasibility report as provided in ss. NR 181.44(5) and (6), or for the plan of operation under s. NR 181.44(7).

(5) Operation. A storage facility approved under this section shall meet all of the substantive and operating requirements of ss. NR 181.43(6) through (8).

(6) Closure. Closure requirements specified under ss. NR 181.42(8) are applicable to storage facilities approved under this section.

NR 181.44 Landfills and surface impoundments. (1) General. Except as otherwise provided in sub. (2), no person shall operate or maintain a landfill or surface impoundment unless the person has obtained an interim license or an operating license from the department, in accordance with the requirements of s. NR 181.53 or s. NR 181.55.

(2) Exemptions. (a) The owners or operators of industrial wastewater facilities, sewerage systems and waterworks treating liquid wastes which are approved under s. 144.04, Stats., or permitted under ch. 147, Stats., are exempt from all the requirements of this section, except that this exemption does not apply to the storage or disposal of sludges or other hazardous waste produced during the treatment process.

(b) The owner or operator of a solid waste disposal site or facility that is licensed under ch. NR 180, Wis. Adm. Code, provided that the only hazardous waste the facility disposes of is excluded from regulation under this subchapter by s. NR 181.13 and the facility has been approved under s. NR 181.13(7) to accept small quantities of hazardous waste.

(c) The owners or operators of facilities used for the disposal of materials resulting from a mining operation as defined in s. 144.81(5), Stats., except where requirements in this section are referenced in the rules adopted by the department under s. 144.435(1m), Stats.

(3) Location criteria. (a) In addition to general site selection criteria in s. NR 181.42(2), no person shall establish, construct, operate, or maintain a hazardous waste landfill or surface impoundment, or permit the use of property for a hazardous waste landfill or surface impoundment, within the following areas:

1. Within 1,000 feet of any navigable lake, pond or flowage.

2. Within 300 feet of a navigable river or stream.

3. 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 site is screened by natural objects, plantings, fences or other appropriate means so as not to be visible from the highway or park.

4. Within an area where the department after investigation finds that there is a reasonable probability that disposal of hazardous waste within such an area will have a detrimental effect on any surface water or groundwater quality.

5. 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 such other areas where a substantial potential bird hazard to aircraft may exist, unless a waiver is granted by the federal aviation administration.

6. Within 1,200 feet of any public or private water supply well as specified in ch. NR 112, Wis. Adm. Code.

7. The active portion of a facility shall be located a minimum of 200 feet away from the property line of the facility.

(b) An applicant for an initial operating license or for approval of the expansion of an existing hazardous waste landfill or surface impoundment shall demonstrate to the department that the proposed site will be in compliance with all of the locational standards of this section for which no exemption has been granted. No exemptions from compliance with par. (a)4. will be granted by the department. Pursuant to s. NR 181.05, exemptions from compliance with pars. (a)1., (a)2., (a)3., (a)5., (a)6. and (a)7. may be granted only upon demonstration by the applicant of circumstances which warrant such an exemption. The factors which will be considered by the department in determining whether or not to grant an exemption include waste types and characteristics, site or facility design and operational considerations, availability or other environmentally suitable alternatives, compliance with other state and federal regulations and the public health, safety and welfare.

(4) Initial site inspection. Unless specifically exempted in sub. (2), any person proposing to establish a hazardous waste landfill or surface impoundment or expand such an existing facility shall contact the department to arrange for an initial site inspection.

(5) Initial site report. (a) Any person, prior to submitting a feasibility report, may submit an initial site report to the department in accordance with s. NR 181.51. The purpose of submitting this report is to obtain a preliminary opinion from the department on the potential of the site for development and the advisability of spending additional time and funds to prepare a feasibility report. The department will review and respond to the initial site report within 90 days of receipt and at no cost to the applicant. A favorable determination under this section does not guarantee a favorable determination of site feasibility.

(b) An initial site report may be as detailed as the applicant chooses to make it. The greater the detail, the more certain the department can be in its response. For guidance purposes, the following indicates the type and extent of information as applicable that may be submitted in an initial site report:

1. General site information. Identify project title; name, address and phone number of primary contact persons for department correspondence; the consultant; present property owner; proposed facility owner and operator; site location by quarter section; total acreage of property and proposed licensed acreage; proposed site life and design capacity; municipalities, industries and collection and transportation agencies to be served; estimated waste types and characteristics and estimated weekly quantities to be disposed; anticipated base grades; possible design configuration anticipated covering frequency or mode of operation.

2. Regional geotechnical information. Include a discussion of the regional site setting to provide a basis for comparison and interpretation of any site specific information obtained through field investigations and for analyzing siting and environmental considerations. Limit the discussion to information available from publications, although some field verification and updating may be desirable. The term "regional" as utilized herein is intended to include that area which may affect or be affected by the proposed site. In most instances, this will be the proposed site and the area within a one-mile radius. Supplement discussions by maps or cross-sections, where appropriate. Address the following items:

a. Topography, including predominant topographic features.

b. Hydrology, including surface water drainage patterns and significant hydrologic features such as surface waters, springs, drainage basins and divides and wetlands.

c. Geology, including the nature and distribution of bedrock and unconsolidated deposits.

d. Hydrogeology, including depth to groundwater, groundwater flow direction, recharge and discharge areas, groundwater divides, aquifers and the identification of the aquifers use by public and private wells within one half mile of the proposed site.

e. Ground and surface water quality as described in available regional literature.

f. Climatology.

g. Identification of adjacent landowners.

h. Zoning.

i. Present land uses with particular emphasis on known recreational, historic or archaeological areas.

j. Present or proposed access roads and weight restrictions.

k. Factors identified in the locational criteria in sub. (3).

3. Site specific geotechnical information. Where the applicant chooses to gather site specific data:

a. Perform field investigations to define the site specific topography, soil types, and depth to bedrock and groundwater. Include the following:

1) A partial topographic survey of the area. On this map show the proposed fill area, property boundaries, proposed site boundary, soil borings performed and wells installed. The minimum scale should be one inch = 500 feet with the contour interval sufficient to show site relief. It is recommended that this map consist of a blowup of a USGS, map 7 1/2 or 15-minute topographical, with supplemental information added as appropriate.

2) Soil borings extending to bedrock or 25 feet below the anticipated site base grade, whichever is less. The borings should be distributed in a grid pattern throughout the area. A minimum of 5 borings is recommended.

3) Develop 3 of the borings into groundwater observation wells where groundwater is within 25 feet of the anticipated base grade. Otherwise, extend one of the borings to 50 feet below the anticipated base grade or to groundwater or bedrock whichever is less and an observation well shall be established.

4) Analyze each significant soil layer encountered during boring investigations for grain-size distribution and classify according to the unified soil classification system.

b. Summarize the results of the subsurface investigations utilizing a series of geologic sections which connect the soil borings performed. In each section show present topography, borings, wells, major soil layers, water table and bedrock.

4. Data analysis. From the results of the field investigations, regional geotechnical information and land use information analyze and make preliminary conclusions and recommendations on site development. Include a discussion of the potential for the site to meet the locational requirements in sub. (3) and potential limitations on site development.

5. Appendix. Show the site boundaries on all maps included in the appendix. In the appendix include:

a. All new data such as boring logs, soil tests, well construction data, water level measurements and test data and results.

b. A plat map of the area.

c. A USGS quadrangle of the area, updated with locations of applicable wells installed after preparation of the quadrangle.

d. A soil conservation service soil map and interpretation, if available.

e. References.

(6) Feasibility report. (a) Unless specifically exempted in sub. (2), no person shall establish, or construct a hazardous waste landfill or surface impoundment, expand an existing site or facility, or be issued an initial operating license under s. NR 181.55 without first obtaining approval of a feasibility report describing the physical conditions of the proposed site and subsequently obtaining approval of a plan of operation from the department. The purpose of the feasiblity report is to determine whether the site has potential for use as a hazardous waste disposal facility and to identify any conditions which the applicant must include in the plan of operation. The feasibility report shall be submitted in accordance with s. NR 181.51.

1. All information specified in sub. (5)(b) shall be submitted.

a. If an initial site report has been submitted, this information may be included by reference, although it is advisable to include the pertinent information in the feasibility report.

b. If an initial site report has been reviewed by the department, additional information addressing all department review comments shall be included.

2. An existing site condition plan sheet shall be prepared. This shall be a detailed topographic survey of the area of investigation. The minimum scale of this plan shall be one inch = 200 feet with a

maximum 2-foot contour interval. All elevations shall be related to USGS datum. The plan shall indicate the property boundaries, proposed site boundary, fill area, survey grid and north arrow, homes, buildings, water supply wells, utility lines, man-made features, well boring locations, observation well locations, previous fill areas and other pertinent information.

3. Field and laboratory investigations shall be performed to further define site physical characteristics including soils, bedrock and groundwater. At a minimum, these investigations shall include:

a. Sufficient soil borings to adequately define the soil, bedrock, and groundwater conditions at the site. At a minimum, 5 soil borings for the first 5 acres and 3 borings for each additional 5 acres or portion thereof shall be performed. The borings shall be located in a grid pattern such that there is a minimum of one boring in each major geomorphic feature, such as ridges, lowlands and drainage swales. All borings shall extend a minimum of 25 feet below the anticipated site base grade or to bedrock, whichever is less.

b. Where soil conditions permit, soil samples shall be collected utilizing standard undisturbed soil sampling techniques. Samples shall not be composited for testing purposes. Soil samples shall be collected from each soil layer encountered and at maximum 5-foot intervals. All soil samples shall be described and saved for the duration of the project.

c. Boring logs accurately recording soil, bedrock and groundwater conditions encountered at the site shall be submitted for all borings. Each log shall include soil and rock descriptions and method of sampling, sample depth, date of boring, water level measurements and dates, and soil test data. All elevations shall be corrected to USGS datum.

d. For each significant soil layer encountered, at least 3 soil samples shall be analyzed for grain size distribution, either mechanically or hydrometrically as appropriate to the soil type, and classified according to the unified soil classification system.

e. A minimum of 3 horizontal and 3 vertical permeability tests shall be conducted for each significant soil layer above and below the watertable. At least one of the 3 tests shall be performed utilizing infield testing procedures.

f. Estimates and, when necessary, field and laboratory tests shall be provided for porosity, effective porosity, transmissivity, storage capacity, secondary permeability, diffusion coefficient and dispersion coefficients, cation exchange capacity, soil buffering capacity, and any other physical or chemical soil characteristics that may be necessary to assess the environmental feasibility of the site.

g. Soil borings shall be converted to water table observation wells and well nests in accordance with the following schedule at a minimum:

1) Three water table observation wells and one well nest for the first 5 acres or portion thereof.

2) One observation well for each additional 5 acres or portion thereof.

3) One well nest for each additional 10 acres or portion thereof.

h. Well construction information shall include the elevations of the ground surface, top and bottom elevation of well pipe, the bottom of the boring, and well seals; length of screened interval; diameter of boring; a description of well construction and backfill materials and boring logs as specified in subd. 3.c. Where observation wells are intended to be used for future monitoring wells, conditions specified in s. NR 180.44(11) for monitoring wells shall be fulfilled.

i. Upon completion, each well shall be properly developed, such as successive pumpings and back flushings, until it produces as clear a water sample as obtainable under the specific hydrogeologic conditions.

j. Once developed, all wells shall be pumped and successive water level measurements shall be made until stabilized readings are obtained.

k. Successive water level measurements in each well shall be made until stabilized readings are obtained.

l. Where public or private wells are present within one half mile of the proposed site, the groundwater aquifer shall be evaluated based on well logs, well construction reports and available pump test results along with details on well location, ownership and well driller. The department may require the owner or operator to attempt to obtain stabilized water level readings from these wells.

m. Groundwater samples shall be analyzed for a minimum of 3 on-site observation wells for the parameters and characteristics specified in sub. (11)(a)8. The department may require the owner or operator to attempt to sample all public or private wells within one half mile of the proposed site and analyze for the parameters and characteristics specified in sub. (11)(a)8.

4. Data shall be presented as follows:

a. All raw data such as boring logs, well logs, soil tests and water level measurements shall be included in the report appendix.

b. A series of geologic cross-sections passing through all borings shall illustrate existing topography, soil borings, soil classification and other properties, interpreted soil stratigraphy, bedrock, well construction and stabilized water level readings for each well.

c. A water table map shall be constructed based on stabilized water level readings. The existing site conditions plan shall be used as a base for this map. Seasonal changes in groundwater levels shall be predicted.

d. When more than 2 well nests have been constructed, groundwater flow net sections shall be prepared to illustrate horizontal and vertical flow directions. Where appropriate, this information may be illustrated on the geologic sections.

5. A detailed hydrogeological analysis shall be provided, as appropriate, based on local hydrological and meteorological records, average and single event amounts of precipitation, storm reoccurrence

frequencies, wind direction and velocities, evaporation, evapotranspiration, temperature, runoff and infiltration.

6. The anticipated types, amounts and characteristics of the hazardous and solid waste to be disposed at the site shall be described and evaluated with respect to design, operation, and to impacts on air, surface water and groundwater quality. Chemical and physical tests shall be done on representative waste samples and on representative or simulated leachate samples using approved procedures. All testing shall be documented.

7. A water and chemical mass balance shall be prepared for the periods of time before construction, during active operations and after site closure. Factors to be considered in preparation of the mass balance are precipitation, evapotranspiration, infiltration, runoff, soil conditions, hazardous waste and solid waste physical and chemical characteristics, surface water and groundwater conditions, and proposed design concepts. The mass balance analysis shall address leachate generation rates and the effect of the site on surface water and groundwater water levels, quantity, and quality for worst, average and best case conditions.

8. Recommendations on design constraints for development of the site considering all available data, shall be made and reasons given for such recommendations. This shall include a discussion of the potential for the site to meet locational requirements in sub. (3) with particular attention given to assessing short and long-range effects of leachate on surface water and groundwater quality based on worst, average and best case conditions. For expansion of existing facilities, the report shall include sufficient information to assess the effectiveness of the existing facility design and operation in protecting air, surface water and groundwater quality.

9. Based on the conclusions resulting from site analysis, a proposed site design shall be prepared. This shall consist of preliminary engineering plans and a general discussion of proposed operating procedures. This section of the report shall include, at a minimum, the following information:

a. A plan sheet showing proposed access, lateral extent of filling, and phases of site development. The existing site conditions map shall be utilized as a base for this sheet.

b. A series of north-south and east-west cross-sections showing present topography, proposed base grades and final grades. This information may be displayed on the geologic sections.

c. Preliminary cover balance calculations.

d. Proposed methods for leachate and gas control including collection, containment and treatment. Preliminary agreements with wastewater treatment plants shall be included when applicable.

e. Proposed operating procedures including method of site development, method of access control, control of surface water, screening, covering frequency as applicable and other special design features.

f. Evaluation of proposed facility location and operation in terms of environmental soundness, safety and potential for accidental spills and other failures of environmental concern.

g. Proposed groundwater, leachate and other monitoring.

h. Proposed contingency plan and method of correcting accidents or potential failures of the proposed facility that may affect air, surface water and groundwater quality.

i. Proposed closure sequence.

j. Proposed final use.

k. Proposed method of demonstrating financial responsibility and long-term care requirements.

10. To aid in completing an environmental assessment and in determining the need for an environmental impact report or environmental impact statement, the feasibility report shall include a brief discussion of the following:

a. The purpose and need for the proposed project and for the recommended site.

b. The probable adverse and beneficial physical, biological, social, economic and other impacts of proposed site development.

c. The probable adverse impacts of site development that cannot be avoided.

d. The irreversible or irretrievable commitments of resources if the site is developed as proposed.

e. The alternatives to the proposed site development and alternate methods of waste disposal or recycling.

f. The direct, indirect and cumulative effects of the proposed site development.

g. Estimated construction, operation and long-term care costs for the entire project.

(b) Within 60 days after a feasibility report is submitted, the department shall either publish notice under s. 144.44(2)(d), Stats., that the report is complete or notify the applicant in writing that the report is not complete, specifying the information which shall be submitted before the report is deemed complete. The department shall determine whether or not the feasibility report is complete by determining whether or not the minimum requirements of this subsection have been met. Additional feasibility information may be required of the applicant after a determination that the feasibility report is complete only if the department establishes that a detailed review of the feasibility report indicates that site feasibility cannot be determined in the absence of such additional information.

(7) Plan of operation. (a) General. Unless specifically exempted in sub. (2), no person shall establish or construct a hazardous waste landfill or surface impoundment, expand an existing site or facility, or be issued an initial operating license under s. NR 181.55 until a plan of operation has been submitted in accordance with s. NR 181.51 and approved in writing by the department. No person shall establish, construct, operate, maintain, close, provide long-term care for, or terminate a hazardous waste landfill or surface impoundment except in accordance with this section and with the approved plan of operation. Only persons who have obtained a favorable determination of site feasibility from the department may submit a plan of operation for review and approval.

(b) Content. All plans of operation for hazardous waste landfills or surface impoundments shall contain complete plans and specifications necessary for the construction, operation, monitoring, closing, long-term care and termination of the project and any additional information the department may require for the analysis of environmental impacts of the project. Because these documents are to be used for the day to day operation of the site, it is imperative that the information be presented in a manner that is clear and understandable. The plan of operation shall contain, at a minimum, the following information:

1. Engineering plans consisting of the following:

a. A title sheet indicating the project title, who prepared the plans, the person for whom the plans were prepared, a table of contents, and a location map showing the location of the site and if applicable the area to be served.

b. An existing conditions plan sheet indicating site conditions prior to development. The details and extent of coverage shall be the same as that required for the existing site conditions map in sub. (6)(a)2.

c. A base grade plan sheet indicating site base grades or the appearance of the site if it were excavated in its entirety to the base elevation, before installation of any engineering modifications or the beginning of any filling.

d. An engineering modifications plan sheet indicating the appearance of the site after installation of engineering modifications. More than one plan sheet may be required for complicated sites. This plan is required only for those sites with engineering modifications.

e. A final site topography plan sheet indicating the appearance of the site at closing including the details necessary to prepare the site for long-term care.

f. A series of phasing plan sheets showing the progression of site development through time. At a minimum, a separate plan shall be provided for initial site preparations and for each subsequent major phase or new area where substantial site preparation shall be performed. Each such plan shall include a list of construction items and quantities necessary to prepare the phase indicated.

g. A site monitoring plan sheet showing the location of all devices for the monitoring of leachate production, groundwater quality and gas production and venting. This plan shall include a table indicating the parameters to be monitored for and the frequency of monitoring before, during and after site development.

h. A long-term care plan sheet showing the site at the completion of closing and indicating those items anticipated to be performed during the period of long-term care for the site as applicable. The plan shall include a table listing the items and the anticipated schedule for monitoring and maintenance. In many instances this information can be presented on the final site topography sheet.

i. When applicable, the following information shall be presented on the plan sheet:

1) All information required for the existing site conditions map as described in sub. (6)(a)2., unless including this information leads to confusion with the data intended for display. However, in all instances, existing site topography shall be sketched lightly or otherwise indicated on the plan sheets required in subds. 1.c., 1.d., 1.e. and 1.f.

2) A survey grid with base lines and monuments to be used for field control.

3) Limits of filling for each major or special waste type or fill area.

4) All drainage patterns and surface water drainage control structures both within the actual fill area and at the site perimeter. Such structures may include berms, ditches, sedimentation basins, pumps, sumps, culverts, pipes, inlets, velocity breaks, sodding, erosion matting, or other methods of erosion control.

5) The direction and sequence of filling within each phase.

6) Ground surface contours at the time represented by the drawing. Spot elevations shall be indicated for key features.

7) Areas to be cleared, grubbed and stripped of topsoil.

8) Borrow areas for liner materials, gas venting materials, berms, roadway construction, and cover materials.

9) All soil stockpiles including cover materials, topsoil, liner materials, gas venting materials and other excavation.

10) Access roads and traffic flow patterns to and within the active fill area.

11) All temporary and permanent fencing.

12) The methods of screening such as berms, vegetation or special fencing.

13) Leachate collection, control and treatment systems which may include pipes, manholes, trenches, berms, collection sumps or basins, pumps, risers, liners and liner splices.

14) Gas, leachate and groundwater monitoring devices and detection systems.

15) Severe weather operation plans.

16) Support buildings, scale, utilities, gates and signs.

17) Special waste handling areas.

18) Construction notes and references to details.

19) Other appropriate site features.

j. A series of site cross-sections shall be drawn perpendicular and parallel to the site base line at a maximum distance of 500 feet between cross-sections and at points of grade break and important construction features. The location of the cross-sections shall be shown on the appropriate plan sheet and the sections labeled using the site grid system. Where applicable, each cross-section shall show existing and proposed base and final grades; soil borings and monitoring wells which the section passes through or is adjacent to; soil types, bedrock and water table; leachate control, collection and monitoring systems; gas venting and monitoring systems; limits of filling for each major or special waste type; drainage control

structures; access roads and ramps on the site perimeter and within the active fill area; the filling sequence or phases; and other appropriate site features.

k. Detailed drawings and typical sections, as appropriate, for drainage control structures, access roads, fencing, leachate and gas control systems and monitoring devices, buildings and other construction details.

2. An operations manual consisting of the following information:

a. The manual shall identify the project title; engineering consultant; site owner, licensee and operator; proposed licensed acreage; site life and design capacity; municipalities, industries and collection and transportation agencies served; waste types and quantities to be disposed; and any exemptions applied for.

b. Specifications for site construction and operation shall be presented, including detailed instructions to the site operator for all aspects of site construction and operation. References to specifications on the plan sheets shall be pointed out as well as additional instructions included, where appropriate. The specifications shall include, as applicable, the following information:

1) Initial site preparations including specifications for clearing and grubbing, topsoil stripping, other excavations, berm construction, drainage control structures, liner construction, methods of soil compaction, leachate collection system, access roads and entrance, screening, fencing, groundwater monitoring and other special design features.

2) A plan for initial site preparations including a discussion of the field measurements, photographs to be taken, sampling and testing procedures to be utilized to verify that the infield conditions encountered were the same as those defined in the feasibility report, and to document that the site was constructed according to the engineering plans and specifications submitted for department approval.

3) Daily operations including, as appropriate, a discussion of the timetable for development, waste types accepted or excluded, typical waste handling techniques, hours of operation, traffic routing, drainage and erosion control, windy, wet and cold weather operations, fire protection equipment, manpower, methods for handling of unusual waste types and incompatible waste, methods for vector, dust and odor control, daily clean-up, direction of filling, recordkeeping, parking for visitors and employees, monitoring, abandonment of filled areas, gas and leachate control methods, methods for managing leachate which is collected, backup equipment with names and telephone numbers where equipment may be obtained and other special design features. This may be developed as a removable section to improve accessibility for the site operator.

4) Development of subsequent phases consisting of a discussion of those items in subds. 2.b. 1), 2.b. 2) and 2.b. 3), as related to the development of subsequent phases of the site.

5) Site closing information consisting of a discussion of the anticipated sequence of events for site closing to meet the requirements of sub. (12) and a discussion of those actions necessary to prepare the

site for long-term care and final use taking into account the following factors: Type and amount of hazardous waste and hazardous waste constituents in the landfill; the mobility and the expected rate of migration of the hazardous waste and hazardous waste constituents; site location, topography, and surrounding land use, with respect to the potential effects of pollutant migration, such as proximity to groundwater, surface water, and drinking water sources; climate, including amount, frequency, and pH of precipitation; characteristics of the cover including material, final surface contours, thickness, porosity and permeability, slope, length of run of slope, and type of vegetation on the cover; and geological and soil profiles and surface and subsurface hydrology of the site.

6) Long-term care information including a discussion of the procedures to be utilized for the inspection and maintenance of runoff control structures, settlement, erosion damage, gas and leachate control feasibilities, monitoring for gas, leachate and groundwater, and other long-term care measures as required by sub. (14), taking into account factors specified in sub. (5).

7) An economic analysis including an engineer's cost estimate for the construction of each major phase of site development and daily operation, site closing, and long-term care.

3. A design report shall be submitted which shall include supplemental discussions and design calculations to facilitate department review and provide supplemental information on financial responsibility for closure and long-term care as required by ss. 144.44 and 144.441, Stats., including the following information:

a. A discussion of the reasoning and logic behind the design of the major features of the site or facility as appropriate, such as traffic routing, base grade and relationships to subsurface conditions, anticipated waste types and characteristics, phases of development, liner design, facility monitoring, and similar design features shall be provided. A list of the conditions of site development as stated in the department determination of the feasibility and the measures taken to meet the conditions shall be included. A discussion of all calculations, cover balance computations, stockpile sizing estimates, estimate of site life and runoff and leachate volume estimates shall be included. The calculations shall be summarized with the detailed equations presented in the appendix.

b. A detailed analysis in accordance with s. NR 181.42(10) shall be made of the financial responsibility for closure and for long-term care from the time of site or facility closing to termination.

4. A contingency plan as specified in s. NR 181.42(4).

5. An appendix shall be submitted which shall include any additional data not previously presented, calculations, material specifications, operating agreements, leachate treatment agreements, documents related to long-term care funding and other appropriate information.

(c) Completeness. Within 30 days after a plan of operation is submitted, the department shall notify the applicant in writing that the plan is either complete or not complete, specifying the information which

shall be submitted before the report is deemed complete. The department will determine if the plan of operation is complete by determining whether or not the minimum requirements of this subsection have been met. Additional plan of operation information may be required of the applicant after a determination that the plan of operation is complete only if the department establishes that a detailed review of the plan of operation indicates that the plan of operation is insufficient in the absence of such additional information.

(d) Approval or disapproval of plan of operation. Within 90 days after a complete plan of operation is submitted, the department shall either approve or disapprove the plan in writing.

(8) Construction in substantial conformance with plan of operation. Based on the complexity of site or facility design, construction and operation, the department may require that a registered professional engineer document site or facility construction and render an opinion whether the site or facility has been constructed or operated in substantial conformance with the plan of operation.

(9) Recording of notice. Prior to licensing, the owner or operator shall submit proof that a notation of the existence of the site has been recorded for the property on which the facility is located, in the office of the register of deeds in each county in which a portion of the facility is located, that will in perpetuity notify any potential purchaser of the property that:

(a) The land has or will be used to dispose of hazardous waste; and

(b) Its use is restricted under s. NR 181.42(9)(c).

(10) Minimum design and operational requirements. The physical environment and engineering design of landfills and surface impoundments for hazardous waste defined and proposed in feasibility studies and plans of operation will be evaluated on a case and site specific basis. The department's evaluation of factors such as geology, hydrogeology, leachate collection systems, and liners will be based on best state of the art knowledge and experience taking into account the relative degree of hazard of waste.

(a) Unless specifically exempted in sub. (2), no person shall operate or maintain a new or existing landfill or surface impoundment except in conformance with the approved plan of operation and the minimum requirements of this subsection, in addition to general facility standards in s. NR 181.42.

(b) Only waste types and sources listed on the license or otherwise approved by the department in writing snall be accepted for disposal.

(c) Ignitable or reactive waste shall not be placed in a landfill or surface impoundment, unless the waste is placed in a surface impoundment that is used solely for emergencies or unless the waste is treated, rendered, or mixed before or immediately after placement in the landfill or surface impoundment so that:

1. The resulting waste, mixture, or dissolution of material no longer meets the definition of ignitable or reactive waste under ss. NR 181.15(2) or (4); and

2. Section NR 181.42(1)(m)2. is complied with.

(d) Incompatible wastes or materials shall not be placed in the same landfill cell or surface impoundment, unless s. NR 181.42(1)(m) is complied with.

(e) Bulk or non-containerized liquid waste or waste containing free liquids shall not be placed in a landfill, unless:

1. The landfill has a liner which is chemically and physically resistant to the added liquid, and a functioning leachate collection and removal system with a capacity sufficient to remove all leachate produced; and

2. Before disposal, the liquid waste or waste containing free liquids is treated or stabilized, chemically or physically, such as by mixing with an absorbent solid, so that free liquids are no longer present.

(f) 1. An empty container shall be crushed flat, shredded, or otherwise reduced in volume before it is buried beneath the surface of a landfill.

2. A container holding liquid waste or waste containing free liquids shall not be placed in a landfill, unless:

a. The requirements of pars. (e)1. and (e)2. are complied with; or

b. The container is designed to hold liquids or free liquids for a use other than storage, such as a battery or capacitor; or

c. The container is very small, such as an ampule.

(g) In addition to the waste analysis required by s. NR 181.42(1)(d), whenever a surface impoundment is to be used to chemically treat a hazardous waste which is substantially different from waste previously treated in that impoundment or is to be used to chemically treat hazardous waste with a substantially different process than any previously used in that impoundment, the owner or operator shall, before treating the different waste or using the different process:

1. Conduct waste analyses as specified in s. NR 181.42(1)(e) and trial treatment tests, such as bench scale or pilot plant scale tests; or

2. Obtain written, documented information on similar treatment of similar waste under similar operating conditions to show that this treatment can be accomplished in an environmentally sound manner and will comply with the requirements of this chapter.

(h) A landfill or surface impoundment shall be located, designed, constructed, and operated so that its liner system or natural inplace soil barrier is compatible with all of the waste to be contained.

(i) The exact location and the dimensions of each cell including depth with respect to permanently surveyed bench marks shall be recorded. The contents of each cell and approximate location of each hazardous waste type shall also be recorded. These records shall be handled as specified in s. NR 181.42(6)(b).

(j) Diversion structures shall be constructed such that surface water runon will be prevented from entering the site or facility.

(k) At a minimum, all surface water drainage ditches, culverts and other drainage control structures shall be designed for a 25-year, 24-hour rainfall event. The freeboard maintained in a surface impoundment shall be sufficient to prevent any overtopping of the dike by overfilling, wave action or a storm and shall be capable of containing a rainfall from a 24-hour, 25-year storm but shall be no less than 2 feet. The owner or operator shall inspect the freeboard level at least once each operating day to ensure compliance.

(l) Surface water which has been in contact with the active portions of a landfill shall be collected and treated or disposed of as a hazardous waste in accordance with requirements of ch. NR 181 unless it is analyzed and found not to be hazardous waste as identified or listed in subch. II or it is collected and discharged into a navigable water in compliance with a WPDES permit issued by the department.

(m) Provisions shall be made for leachate treatment for all sites designed to contain and collect leachate.

(n) Where gases are generated within a site or facility, a gas collection and control system shall be installed to control the vertical and horizontal escape of gases.

(o) All access roads shall be constructed with a maximum grade no greater than 10%. 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. All access roads to the active area of an operation shall be of all weather construction and shall be maintained in good condition.

(p) All topsoil within the site or facility construction limits shall be salvaged and stored on-site in a nuisance-free manner for use in site or facility closure. Topsoil in borrow areas shall also be salvaged. It shall be stripped off borrow areas and placed in stockpiles in sufficient quantities to cover all the surfaces of excavated borrow areas to a depth of from 4 to 6 inches, except where the depth of the topsoil in the borrow area was originally less than 4 inches, in which case, the topsoil shall be replaced to the original depth. After the topsoil has been replaced, excavated borrow areas and disturbed areas adjacent to them shall be fertilized and seeded.

(q) All earthen dikes shall have a protective cover, such as grass, shale, or rock, to minimize wind and water erosion and to preserve their structural integrity. The owner or operator shall inspect a surface impoundment, including dikes and vegetation surrounding the dike, at least once a week to detect any leaks, deterioration, or failures in the impoundment. The integrity of the natural in-place soil barrier or the liner system installed in a surface impoundment shall be maintained and repaired immediately upon detection of any failure, such as a liner puncture.

(r) Site or facility closure shall be accomplished in accordance with the approved plan of operation or, for those sites with no approved plan of operation, in accordance with sub. (12).

(s) The site or facility shall be surrounded with rapidly growing trees or shrubbery, fencing, or with other appropriate means to screen it from the surrounding area and to provide a wind break.

(t) All sites shall have a final cover designed to minimize infiltration and subsequent leachate production.

(u) Facility monitoring shall be performed in accordance with sub. (11).

(v) All soil borings and monitoring wells shall be backfilled with a chemically and physically stable sealant when such borings or wells are abandoned.

(w) All base grades for a landfill shall be designed and constructed with a minimum slope of 1%. The final slopes of a completed site or facility shall be no less than 2% and no greater than 3 horizontal to one vertical unless the site or facility is specifically designed for a final use compatible with other slopes.

(x) A minimum of 6 inches of cover material shall be applied daily on active portions of a landfill. Active portions which will not have additional waste placed on them for at least one week shall be covered with 12 inches of cover material. Wind dispersal of hazardous waste shall be controlled by covering or other means.

(11) Monitoring. (a) Groundwater and leachate monitoring. The department shall require installation of and maintenance of a groundwater and leachate monitoring system at all hazardous waste landfills and surface impoundments consisting of wells, well nests, lysimeters, moisture probes, and similar water quality monitoring devices, and a water quality sampling and analysis program to detect the effects of leachate on groundwater. The location of such monitoring devices and the water quality monitoring program shall be approved in writing by the department.

1. The number of required wells and other sampling devices shall be approved by the department based on the site size, waste type, site design and the hydrogeologic and geologic setting of the site and shall be capable of yielding groundwater samples for analysis. At a minimum, the system shall consist of:

a. Two or more upgradient monitoring points at locations and depths sufficient to yield groundwater samples that are representative of background water quality in the uppermost aquifer near the facility and not affected by the facility.

b. Four or more downgradient monitoring points at locations and depths to ensure immediate detection of any statistically significant amounts of hazardous wastes or leached constituents from the facility in the uppermost aquifer. These monitoring points shall be located between the hazardous waste boundary and the property boundary and include 2 monitoring points in a well nest configuration.

c. Two or more pore water sampling devices located vertically below the hazardous waste and in the unsaturated zone, where applicable, in such a way to ensure that they immediately detect any statistically significant amounts of leached hazardous wastes or leached constituents from the facility.

d. All groundwater wells and other groundwater sampling devices shall be properly developed in accordance with sub. (6)(b)3.i.

2. A leachate monitoring system shall be installed, when required, within the fill area and in such a manner so as to provide reliable measurements of leachate levels and a means of adequately sampling leachate quality, and shall be located and protected to minimize accidental damage during the operation.

3. All groundwater and leachate monitoring wells and other sampling devices shall be constructed of suitable inert and non-contaminating material and in such a manner as to prevent vertical movement of liquid along the well pipe, and shall be properly protected, secured and permanently labeled. All monitoring wells shall have a minimum 2-inch inside diameter.

4. The methods of groundwater and leachate sample collection, preservation, and analysis utilized by the owner or operator shall be in accordance with standard methods for the examination of water and wastewater or other methods approved in writing by the department.

5. The department may require the operator to attempt to sample public or private wells as part of a regular monitoring program or to determine the extent of groundwater contamination.

6. If for any reason a monitoring well or other monitoring device is destroyed or otherwise fails to properly function, the site operator shall immediately notify the department in writing. All such devices shall be properly abandoned in accordance with sub. (10)(v) and replaced, weather permitting, with another sampling device in accordance with sub. (11) within 60 days of notification to the department unless the operator is notified otherwise in writing by the department.

7. Sampling and analysis. The owner or operator shall obtain and analyze samples from the installed groundwater monitoring system. The owner or operator shall develop and follow a groundwater sampling and analysis plan and shall keep this plan at the facility. The plan shall include procedures and techniques for:

a. Sample collection;

b. Sample preservation and shipment;

c. Analytical procedures; and

d. Chain of custody control.

8. Sampling parameters. At a minimum, the owner or operator shall determine the concentration or value of the following parameters in groundwater samples in accordance with subds. 9. and 10:

a. Parameters characterizing the suitability of the groundwater as a drinking water supply, as specified in table VIII:

TABLE VIII

EPA Interim Primary Drinking Water Standards

Parameter	Maximum level (mg/l)
Arsenic	0.05
Barium	1.0
Cadmium	0.01
Chromium	0.05
Fluoride	1.4-2.4
Lead	0.05
Mercury	0.002
Nitrate (as N)	10
Selenium	0.01
Silver	0.05
Endrin	0.0002
Lindane	0.004
Methoxychlor	0.1
Toxaphene	0.005
2,4-D	0.1
2,4,5-TP Silvex	0.01
Radium	5 pCi/l
Gross Alpha	15 pCi/l
Gross Beta	4 millirem/yr
Turbidity	1/TU
Coliform Bacteria	1/100 ml

Note: Turbidity is applicable only to surface water supplies.

b. Parameters establishing groundwater quality including chloride, iron, manganese, phenols, sodium, and sulfate.

c. Parameters used as indicators of groundwater contamination, including pH, specific conductance, total organic carbon, and total organic halogen.

d. In all cases, the physical characteristics of the water sample including odor, color, and turbidity shall be recorded.

9. At a minimum, initial background water quality shall be established as follows:

a. For all monitoring devices, the owner or operator shall establish initial background concentrations or values of all parameters specified in subd. 8. The owner or operator shall do this by sampling each device quarterly for one year and analyzing samples for all parameters.

b. For each of the indicator parameters specified in subd. 8.c., at least 4 replicate measurements shall be obtained from each quarterly sample. The initial background arithmetic mean and variance shall be determined for each indicator parameter by pooling the replicate measurements for the respective parameter concentrations or values in samples obtained from upgradient wells during the first year.

10. After the first year, all monitoring wells and other sampling devices shall be sampled and the samples analyzed with the following minimum frequencies:

a. Samples collected to establish groundwater quality shall be obtained and analyzed for the parameters specified in subds. 8.b. and 8.d. at least semi-annually.

b. Samples collected to indicate groundwater contamination shall be obtained and analyzed for the parameters specified in subds. 8.c. and 8.d. of this section at least semi-annually.

11. Elevation of the groundwater surface at each monitoring well shall be determined on a quarterly basis and each time a sample is obtained. Leachate level elevations for any leachate monitoring system shall, at a minimum, be measured monthly and each time a sample is obtained.

12. Preparation, evaluation, and response. For each indicator parameter specified in subd. 8.c., the owner or operator shall calculate the arithmetic mean and variance, based on at least 4 replicate measurements on each sample, for each device monitored in accordance with subd. 10.b. and compare these results with the initial background arithmetic mean for that parameter. The owner or operator shall use the Student's t-test to determine statistically significant changes in the concentration or value of an indicator parameter in periodic groundwater samples when compared to the initial background concentration or value of that indicator parameter. The comparison shall consider individually each of the wells in the monitoring system. For 3 of the indicator parameters, specific conductance, total organic carbon, and total organic halogen, a single-tailed student's t-test shall be used to test at the 0.01 level of significance for significant increases over background. The difference test for pH shall be a 2-tailed student's t-test at the overall 0.01 level of significance. The department may require different

statistical tests and levels of significance based on site specific hydrogeologic conditions, groundwater quality, waste characteristics and site design and operation.

13. a. At a minimum, the comparisons for the downgradient and upgradient wells made under subd. 12. shall be submitted to the department by the owner or operator annually.

b. If the comparisons for downgradient and for upgradient wells made under subd. 12. show a significant increase, or pH decrease, the owner or operator shall then immediately obtain additional groundwater samples from the downgradient wells where a significant difference was detected, split the samples in 2, and obtain analyses of all additional samples to determine whether the significant difference was a result of laboratory error.

14. a. If the analyses performed under subd. 13.b. confirm the significant increase or pH decrease, the owner or operator shall provide written notice with appropriate documentation to the department within 7 days of the date of such confirmation that the facility may be affecting groundwater quality.

b. Within 15 days after the notification under subd. 14.a., the owner or operator shall develop and submit to the department a specific plan certified by a qualified geologist or geotechnical engineer, for a groundwater quality assessment program at the facility, based on determining: whether hazardous waste or hazardous waste constituents have entered the groundwater; the rate and extent of migration of hazardous waste or hazardous waste constituents in the groundwater; and the concentrations of hazardous waste or hazardous waste constituents in the groundwater.

c. The plan to be submitted under subd. 14.b. shall specify the number, location and depth of wells; the number and analysis frequency of water quality parameters for those hazardous wastes or hazardous waste constituents in the facility; evaluation procedures and groundwater quality, sampling, and analytical methods to be used for determining the source or cause of contamination, including use of any previously-gathered groundwater quality information; site design and construction reports, operating procedures and site history; and a schedule of implementation.

d. The owner or operator shall implement within 15 days of the department's response to this plan the groundwater quality assessment plan which satisfies the requirements of subd. 14.c. and department concerns and, at a minimum, determine: the source or cause of the contamination; the rate and extent of migration of the hazardous waste and hazardous waste constituents in the groundwater; the concentrations of the hazardous waste or hazardous waste constituents in the groundwater; and short and long-term potential impacts to drinking water supplies and the environment, and proposed conceptual solutions and action to bring under control and correct the environmental damage.

e. The owner or operator shall make the first determination under subd. 14.d. in accordance with the time schedule approved by the department, and, within 15 days after that determination, submit to the department a written report containing an assessment of the groundwater quality, cause and effect of contamination and conceptual solutions.

f. If the owner or operator determines, based on the results of the first determination under subd. 14.d. that no hazardous waste or hazardous waste constituents from the facility have entered the groundwater, then the the owner may reinstate the indicator evaluation program described in subds. 6., 7., 8., 9., 10., 11., and 12. If the owner or operator reinstates the indicator evaluation program, the department shall be notified in the report submitted under subd. 14.e.

g. If the owner or operator determines, based on the first determination under subd. 14.d., that hazardous waste or hazardous waste constituents from the facility have entered the groundwater, then the owner or operator shall continue to make the determinations required under subd. 14.d. on a quarterly basis until the end of the long-term care period for the facility, or until the groundwater quality problems at the site have been corrected; shall submit a final plan for solutions and corrective action to control and correct the environmental damage within 30 days after the department's review of submittals under subd. 14.e.; and shall implement the final plans for solutions and corrective actions and other emergency procedures including department review comments within 15 days after the department's review of the final plans.

h. Notwithstanding any other provision of par. (a), any groundwater quality assessment to satisfy the requirements of subd. 14.d. which is initiated prior to final closure of the facility shall be completed and reported in accordance with subd. 14.e.

i. At least annually the owner or operator shall evaluate the data on groundwater surface elevations obtained under subd. 11. to determine whether the requirements under subds. 1. and 2. for locating the monitoring wells continue to be satisfied. If the evaluation shows that subds. 1. and 2. are no longer satisfied, the owner or operator shall immediately notify the department and modify the number, location, or depth of the monitoring wells to bring the groundwater monitoring system into compliance with this requirement.

15. The owner or operator of the site or facility shall be required to periodically submit a report analyzing the effectiveness of the groundwater monitoring system and changes in groundwater quality during site operation and until termination of the long-term care period. The frequency of reporting shall be established as a part of the plan approval process and shall be at a minimum 5-year interval.

16. An owner or operator of a site or facility shall be required to retain, until the end of the long-term care period, all records of monitoring and analytical activities and data, including all original strip chart recordings and instrumentation, calibration, and maintenance records. The owner or operator shall inform the department prior to discarding any groundwater information.

(b) Gas monitoring. The department may require the installation of gas monitoring devices and sampling and analysis programs for protection against potential detrimental effects of gas production and to monitor the effectiveness of gas venting systems. Sample collection and analysis techniques shall be in accordance with standard methods.

(c) Surface water monitoring. The department may require monitoring of surface water runoff, leachate seeps, sump pumpings, sedimentation ponds and other surface water discharges resulting from site or facility operation and of surface waters which may be affected by such discharges. Sampling times and parameters shall be as specified by the department.

(d) Monitoring of physical features. The department may require monitoring of air quality, landfill settlement, berm stability, vegetation growth, drainage control structures, or other aspects of site or facility operation. Such a requirement will be based upon site characteristics and design features.

(e) Operations report. The department may request the owner or operator of any landfill or surface impoundment, to submit an operations report to assess the effectiveness and environmental acceptability of site operations. The contents of the report may include a discussion and analysis of entrance and access roads, confinement of active area, analysis of gas and leachate and other monitoring, cover to waste ratios, surface water control and erosion control, revegetation, settlement, volume utilized, site users, leachate quantity and quality, slope stability, equipment performance and volume and type of waste accepted.

(12) Closure. In addition to the closure requirements in s. NR 181.42(8), unless specifically exempted in sub. (2), any person who maintains or operates a hazardous waste landfill or surface impoundment, or who permits use of property for such purpose shall, when the fill area or a portion thereof reaches final grade or when the department determines that closure is required, cease to accept waste and close the site or portion thereof in accordance with any plan approval issued by the department and the following minimum practices:

(a) Within 60 days after ceasing to accept waste, weather permitting, closure shall be accomplished in the following manner:

1. The entire area previously used for disposal purposes shall be covered with a least 2 feet of compacted earth, sloped adequately to allow surface water runoff. Specific fine grain soil types needed to minimize infiltration may be required by the department for this 2-foot layer. Top slopes shall be no less than 2%. Side slopes shall be no steeper than 33%.

2. Surface water shall be diverted to limit the potential for erosion and sedimentation. Wherever possible, surface water shall be diverted around previously filled areas. Where it is necessary to divert drainage over previously filled areas, drainage shall be conveyed by lined drainage swales having a minimum of 2 feet of clay.

3. The finished surface of the filled area shall be covered with a minimum of 6 inches of topsoil.

(b) Within 90 days after ceasing to accept waste, seeding, fertilizing and mulching of the finished surface shall be accomplished in accordance with the final site use. The seed type and amount of fertilizer shall be selected depending on the type and quality of topsoil and compatability with native vegetation.

(c) Following closure, the site shall be inspected and maintained by the owner or operator until it becomes stabilized or until the responsibility of the owner or operator terminates. The department may require installation of groundwater and leachate monitoring wells or other devices, groundwater and leachate quality sampling and analysis programs, gas monitoring and sampling and provisions for the protection against detrimental effects of leachate and gas migration from any landfill and surface impoundment.

(d) Upon final closure, all hazardous waste and hazardous waste residues including standing liquids, the liner and underlying and surrounding contaminated soil shall be removed from surface impoundments not approved for final disposition of such wastes and shall be disposed of in accordance with this chapter. Closure of these facilities shall be accomplished in accordance with the provisions of the approved plan of operation and with all applicable requirements of this section. If necessary to support the final cover specified in the approved closure plan, the owner or operator shall treat remaining liquids, residues, and soils by removal of liquids, drying, or other means.

(13) Closure of existing facilities. Closure plans may be required by the department for sites and facilities without approved plans of operation. The department may require that the plans address any or all of the information outlined in subs. (6), (7), (10), and (11).

(14) Long-term care. (a) In addition to the long-term care requirements in ss. NR 181.42(9)(b)2. and (9)(c), the department may require the following:

1. Maintenance of surveyed benchmarks, drainage control features, monitoring devices, slopes and vegetative cover.

2. Control of site access, erosion, settlement, surface water drainage and land usage.

3. Implementation of measures needed to correct contamination caused by leachate or gases generated within the landfill.

(b) Within 90 days after completion of closure, the owner or operator of a landfill or surface impoundment shall file with the office of the register of deeds in each county in which a portion of the facility was located, a survey plat, indicating the location and dimension of landfill cells or other disposal areas with respect to permanently surveyed benchmarks. This plat shall be prepared and certified by a professional land surveyor. The plat filed in the office of the register of deeds shall contain a note, prominently displayed, which states the owner's or operator's obligation to restrict disturbance of the site as specified in sub. (9). In addition, the owner or operator shall submit to the department, and to the office of the register of deeds, a record of the type, location, and quantity of hazardous wastes disposed of within each cell or area of the facility. For wastes disposed of before these rules were promulgated, the owner or operator shall identify the type, location, and quantity of the wastes to the best of their knowledge, and in accordance with any records kept.

(15) Waste management fund. Landfills and surface impoundments utilized for disposal are required to contribute to the waste management fund as specified in s. NR 181.42(12), unless specifically exempted in sub. (2).

NR 181.45 Incineration. (1) General. (a) Except as otherwise provided in par. (b), no person shall operate or maintain an incinerator for the purpose of burning hazardous waste unless the person has obtained an interim license or an operating license from the department in accordance with the requirements of s. NR 181.53 or s. NR 181.55. Any person intending to establish or construct an incinerator for the purpose of burning hazardous waste shall contact the department to arrange for an initial site inspection.

(b) As provided in s. NR 181.42(1)(a)5., a person incinerating hazardous waste on-site for the primary purpose of heat recovery is exempt from all of the requirements of this section except sub. (4).

(2) Feasibility report. (a) Unless specifically exempted in sub. (1)(b), no person shall establish or construct a hazardous waste incinerator or be issued an initial operating license under s. NR 181.55 without first obtaining approval of a feasibility report and subsequently obtaining departmental approval of a plan of operation. The purpose of a feasibility report is to determine whether the site has potential for use as a hazardous waste incinerator and to identify any conditions which the applicant shall address in the plan of operation. Favorable feasibility determination under this subsection does not guarantee plan of operation approval and licensure. The feasibility report for a hazardous waste incinerator shall be submitted in accordance with s. NR 181.51 and shall contain, at a minimum, the following information:

1. 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 such details shall be identified and indicated on the map or aerial photograph.

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

3. A report which shall include the following information:

a. Population, area and entities to be served by the incinerator.

b. Composition and quantity of hazardous waste or mixtures of hazardous waste to be incinerated. The composition of each waste or mixture of wastes shall include an analysis for heating value, chlorine, sulfur content, and any hazardous consituent listed in table VI in s. NR 181.16(4) known or suspected to be present in the waste, unless the owner or operator has written documented data showing the hazardous constituent is not present in the waste. Based upon this analysis the department shall designate a

principle hazardous constituent for each waste or mixture of wastes which shall be subject to the destruction and removal efficiency requirement of s. NR 181.45(4)(m) and

c. Persons responsible for incinerator construction and operations.

d. Estimated quantities and characteristics of wastes resulting from facility operations and methods for their treatment or disposal.

e. Names and locations of all hazardous waste disposal sites and facilities at which hazardous and solid wastes resulting from incinerators operation will be disposed.

f. Incinerator specifications including the manufacturer, model, capacity, incinerator dimensions, expected combustion temperature, the flue gas flow rate, monitoring methods used to comply with s. NR 181.45(4)(k) and any air pollution control devices that will be used.

g. Expected operating schedule.

(b) Within 60 days after a feasibility report is submitted, the department shall either publish notice under s. 144.44(2)(d), Stats., that the report is complete or notify the applicant in writing that the report is not complete, specifying the information which must be submitted before the report is deemed complete. The department will determine whether or not the feasibility report is complete by determining whether or not the minimum requirements of this subsection have been met. Additional feasibility information may be required of the applicant after a determination that the feasibility report is complete only if the department establishes that a detailed review of the feasibility report indicates that site feasibility cannot be determined in the absence of such additional information.

(3) Plan of operation. (a) No person shall establish or construct an incinerator facility 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 contain, at a minimum, the following information:

1. Appurtenances and procedures intended to store hazardous waste beyond the end of the working day and to control dust, odors, and fire outside the burning chamber.

2. Waste changing methods during incinerator operation.

3. Provisions for interim waste storage or disposal when the incinerator is unavailable, including:

a. Type of storage or disposal.

b. Location of storage or disposal facility.

c. Capacity of the storage facility.

4. Daily clean-up procedures.

5. Incinerator inspection, maintenance and monitoring plans and procedures.

6. Detailed drawings and specifications of all structures, equipment and the site.

7. A report which includes furnace design criteria and expected performance data, including emission data.

8. A waste analysis plan that will ensure compliance with as specified in s. NR 181.42(1)(f).

9. A contingency plan as specified in s. NR 181.42(4)(a).

10. Proposed site closure plans addressing the items specified in s. NR 181.46(6).

(b) Within 30 days after a plan of operation is submitted, the department shall notify the applicant in writing that the plan is either complete or not complete, specifying the information which must be submitted before the report is deemed complete. The department will determine if the plan of operation is complete by determining whether or not the minimum requirements of this subsection have been met. Additional plan of operation information may be required of the applicant after a determination that the plan of operation is complete only if the department establishes that a detailed review of the plan of operation indicates that the plan of operation is insufficient in the absence of such additional information.

(4) Operational requirements. No person shall operate or maintain an incinerator except in conformance with the following minimum requirements and with the terms and conditions of any plan approval for the facility:

(a) The incinerator shall be so situated, equipped, operated, and maintained as to minimize interference with other activities in the area.

(b) A sign shall be posted at the entrance to the facility, which indicates the name, license number, and hours of operation of the facility.

(c) All hazardous waste shall be confined to the designated storage area.

(d) Hazardous waste, except for that in the process line shall be stored in storage tanks or containers as specified in ss.NR 181.43(7) and (8), respectively.

(e) Before adding hazardous waste, the owner or operator shall bring the incinerator to steady state, normal conditions of operation, including steady state temperature and air flow, using auxiliary fuel or other means.

(f) Records shall be maintained for a minimum of 3 years, including records of the weights of material incinerated, the quantity of resulting residue, hours of plant operation and other pertinent information.

(g) Adequate equipment shall be provided in the storage and charging areas and elsewhere as needed to allow cleaning after each day of operation or as may be required in order to maintain the plant in a sanitary condition.

(h) The charging openings, as well as all equipment throughout the plant, shall be provided with adequate safety equipment as prescribed in chapter Ind. 1, Wis. Adm. Code.

(i) 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.

(j) Monitoring and inspections. The owner or operator shall conduct, at a minimum the following monitoring and inspections when incinerating hazardous waste:

1. Combustion temperature, waste feed rate and air feed rate must be monitored on a continuous basis.

2. Carbon monoxide (CO) must be monitored on a continuous basis at a point downstream of the combustion zone and prior to release to the atmosphere.

3. Upon request by the department sampling and analysis of the waste and exhaust gas to verify the operating conditions required by par. (n).

4. The complete incinerator and associated equipment, such as pumps, valves, conveyors and pipes, shall be inspected at least daily for leaks, spills and fugitive emissions, and all emergency shutdown controls and system alarms shall be checked to assure proper operation.

(k) The incinerator shall be operated with a functioning device to automatically cut off waste feed to the incinerator when significant changes occur in flame combustion temperature, excess air, or scrubber water pressure.

(l) 1. An incinerator which burns a waste which contains a hazardous constituent listed in table VI in s. NR 181.16(4), shall be designed, constructed, and operated to maintain a destruction and removal efficiency of 99.99% as defined in the following equation:

$$DRE = \frac{W_{in} - W_{out}}{W_{in}} \times 100$$

Where: DRE = destruction and removal efficiency

W_{in} = mass feed rate of the principal hazardous constituent designated pursuant to s. NR 181.45(2)(a)3.b. or of waste going into the incinerator

W_{out} = mass emissions rate of the principal hazardous constituent designated pursuant to s. NR 181.45(2)(a)3.b. or in the waste exiting from the incinerator.

2. An incinerator used to thermally degrade hazardous waste containing more than 0.5% chlorine shall be equipped with emission control equipment capable of removing 99% of the chlorine from the exhaust gases.

3. The incinerator shall be operated in such a manner that emissions of particulate matter do not exceed the limits specified in s. NR 154.11(5)(a), Wis. Adm. Code.

(m) An incinerator must be operated in accordance with the operating requirements specified in the license. Each set of operating requirements will specify the composition of waste to which the operating requirements apply.

(n) Based upon the results of the analysis and trial burns required by par. (o) the department shall specify acceptable operating limits including the following conditions:

1. Carbon monoxide (CO) level in the stack exhaust gas;

2. Waste feed rate;

3. Combustion temperature;

4. Air feed rate to the combustion system;

5. Allowable variations in incinerator design; or operating procedures; and

6. Such other operating requirements as are necessary to ensure compliance with sub. (1).

(o) For any new wastes or mixtures of wastes not previously incinerated the owner or operator must fulfill the following requirements:

1. The owner or operator shall supply the following information to the department for any hazardous waste or mixture of hazardous waste not previously burned;

a. The heat value of the waste in the form and composition in which it will be burned;

b. Identification and quantification of any hazardous constituent listed in table VI in s. NR 181.16(4) except for any constituent which would not reasonably be expected to be present. Any constituent excluded from the analysis must be identified and the reason for its exclusion stated.

2. Based on the information submitted in accordance with subd. 1, the department shall specify the principle hazardous constituents for which the destruction and removal efficiency must be calculated as required in subd. 1.

3. Either:

a. The owner or operator shall conduct a trial burn to demonstrate compliance with s. NR 181.45(4)(1)1. Prior to the trial burn the owner or operator shall submit for departmental approval a trial burn plan specifying how the following required information will be obtained from the trial burn:

1) A quantitative analysis in the waste feed for any principle hazardous constituents designated by the department pursuant to subd. 2.

2) A quantitative analysis of the exhaust gas for the concentration and mass emissions of the principle hazardous constituents, carbon monoxide and oxygen.

3) A computation of the destruction and removal efficiency for each principle hazardous constituent.

4) A measurement of average, maximum and minimum combustion temperature and the air and waste feed rates.

5) A continuous measurement of carbon monoxide in the exhaust gas.

6) Any other information the department deems necessary to document compliance with s. NR 181.45(4)(1)1., or

b. Submit for departmental approval the results of a trial burn conducted on a similar waste burned under conditions the owner or operators incinerator can maintain. The trial burn must meet the requirements of par. a.

(5) Closure. Hazardous waste incinerators shall meet the closure requirements specified in s. NR 181.42(8), unless specifically exempted in sub. (1)(b).

NR 181.46 Treatment facility standards. (1) General. Treatment facility standards apply to facilities that thermally treat hazardous waste in devices other than incinerators and to facilities that treat hazardous wastes by some chemical, physical or biological means in other than surface impoundments. Except as provided in sub. (2), no person shall operate or maintain a hazardous waste treatment facility unless the person has obtained an interim license or an operating license from the department, in accordance with the requirements of s. NR 181.53 or s. NR 181.55. Any person intending to establish or construct a hazardous waste treatment facility shall contact the department to arrange for an initial site inspection.

(2) Exemptions (a) The owner or operator of a solid waste disposal site or facility that is licensed under ch. NR 180, Wis. Adm. Code, is exempt from the requirements of this section provided that the only hazardous waste the facility treats is excluded from regulation under this subchapter by s. NR 181.13 and the facility has been approved under s. NR 181.13(7) to accept small quantities of hazardous waste.

(b) The owner or operator of a POTW is excluded from regulation under this section.

(c) The owner or operator of an industrial wastewater facility, sewage system or waterworks treating liquid wastes approved under s. 144.04, Stats., or permitted under ch. 147, Stats., is exempt from the requirements of this section, except that this exemption does not apply to the storage or disposal of sludges or other hazardous waste produced during the treatment process.

(d) The owner or operator of a totally enclosed treatment facility as defined in s. NR 181.04(99) is exempt from the requirements of this section.

(e) The owner or operator of a site or facility at which hazardous waste is beneficially used, reused, or legitimately recycled or reclaimed is exempt from the requirements of this section, providing the requirements specified in s. NR 181.42(1)(a)5. are complied with.

(f) The owners or operators of facilities used for the treatment of materials resulting from a mining operation as defined in s. 144.81(5), Stats., are exempt from the requirements of this section except where these requirements are referenced in the rules adopted by the department under s. 144.435(1m), Stats.

(g) The owner or operator of an elementary neutralization unit is exempt from the requirements of this section, providing s. NR 181.42(1)(a)7. is complied with.

(3) Feasibility report. (a) Unless specifically exempted in sub. (2), no person shall establish, construct or expand a hazardous waste treatment facility or be issued an initial operating license under s. NR 181.55 without first obtaining approval of a feasibility report and subsequently obtaining approval of a plan of operation from the department. The purpose of the feasibility report is to determine whether the site has potential for use as a hazardous waste treatment facility and to identify any conditions which the applicant shall address in the plan of operation. Favorable feasibility determination under this

subsection does not guarantee plan of operation approval and licensure. The feasibility report shall be submitted in accordance with s. NR 181.51 and shall contain, at a minimum, the following information:

1. A narrative describing:

a. Legal description of the site.

b. Present ownership of the site.

c. Proposed site size and boundaries and present land use of the site and the area within 1/2 mile of the site. Particular note shall be made of parks, hospitals, nursing homes and areas of archaeological and historical significance.

d. Area served, including population and major industries.

e. A complete material balance for the facility, specifying the amounts and characteristics of hazardous waste to be received and the amounts and characteristics of products and wastes which will be generated by the facility.

f. Types of vehicles and access routes used to transport hazardous waste into and out of the site or facility, an analysis of estimated traffic flow patterns on access routes and within the site or facility, and an analysis of increased quantities of traffic on access routes into and out of the site or facility.

g. Estimated quantities and characteristics of wastes resulting from facility operations and methods of treatment or disposal.

h. Person responsible for plant construction and operation.

i. Quality and quantity of air discharge expected from plant operation.

j. Appurtenances and procedures for the storage of hazardous waste beyond the end of the processing day, for the control of dust, odors, fire, windblown materials and potential explosions and for the handling of hazardous waste in the case of major treatment facility breakdown.

k. Names and locations of all hazardous and solid waste disposal sites and facilities at which hazardous and solid wastes from the treatment plant will be disposed.

l. Overall site or facility layout including conceptual building design, sizing of receiving area, methods of processing, and sizing of major process equipment or process areas.

m. A timetable for site or facility construction, start up and operation.

n. Operating schedule.

o. Provisions for protection of groundwater and surface waters during site or facility construction and operation.

p. Conceptual design of equipment indicating its capacity and dimensions.

2. The narrative shall be supplemented by the following maps or plans:

a. USGS quandrangle map. This shall be a 7-1/2 minute, topographic map, if available. The radius of coverage shall be sufficient to show sources of waste for a minimum of 3 miles. If impractical to show the

site or facility locations relative to the source of waste, a separate location map displaying this information shall be provided.

b. Plat map. This shall indicate property boundaries and zoning within 1/2 mile of the proposed facility and anticipated traffic routes within 2 miles of the site or facility.

c. Existing site conditions map. The extent of coverage shall be the entire site and the area within 1/2 mile of the site boundaries. The minimum scale shall be one inch = 200 feet. Map details shall include proposed site boundary, property lines, easements and rights-of-way; buildings, foundations, roads, utilities and other structures, topography, for site only unless needed to define drainage patterns around facility, drainage swales, surface waters, wetlands, floodplains and similar drainage features; wooded areas; location of soil borings and test pits; features of historical and archaelogical significance; and other physical site features as appropriate.

d. Proposed facility plan. This plan shall include proposed site or 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 site conditions map.

e. Proposed process layout. The extent of coverage shall include the receiving, processing, and loadout areas. The minimum scale shall be one inch = 200 feet. Plan details shall include conceptual design for receiving area configuration and traffic flow patterns, treatment area and equipment configuration, loadout area and equipment configuration, traffic flow patterns, and other pertinent design features.

f. Cross-sections. At least one cross-section shall be drawn through the treatment, each process line where applicable, area indicating existing topography, limits of excavation, proposed final grades, conceptual design of building foundations and structure, major soil types, the water table and other pertinent design features. More cross-sections may be necessary depending on complexity of site or facility design.

(b) Within 60 days after a feasibility report is submitted, the department shall either publish notice under s. 144.44(2)(d), Stats., that the report is complete or notify the applicant in writing that the report is not complete, specifying the information which must be submitted before the report is deemed complete. The department will determine whether or not the feasibility report is complete by determining whether or not the minimum requirements of this subsection have been met. Additional feasibility information may be required of the applicant after a determination that the feasibility report is complete only if the department establishes that a detailed review of the feasibility report indicates that site feasibility cannot be determined in the absence of such additional information.

(4) Plan of operation. (a) Unless specifically exempted in sub. (2), no person may establish, construct or expand a treatment facility or be issued an initial operating license under s. NR 181.55 prior

to obtaining approval in writing from the department of a plan of operation for the facility. The plan of operation for the treatment facility shall be submitted in accordance with s. NR 181.51 and shall contain, at a minimum, the following information:

1. Complete construction plans and specifications detailing the exact configurations, locations, elevations, dimensions and construction and installation procedures for all structures, equipment and site modifications. Where practical the minimum scale utilized shall be one inch = 20 feet for buildings, equipment, and structures, and one inch = 100 feet for site plans. To facilitate review, the construction plans and specifications shall include separate engineering drawings for the following:

a. Existing site conditions. The extent of coverage and plan details shall be the same as required for an existing site conditions map in sub. (3)(a)2.c.

b. Construction conditions. A plot plan shall be submitted which indicates the appearance of the site during facility construction. The extent of coverage and scale shall be identical to those required for an existing site conditions map in sub. (3)(a)2.c. The plot plan shall show limits of construction areas to be cleared of vegetation and topsoil, demolition of existing structures, areas of borrow and fill, temporary or permanent drainage diversion, soil erosion protection measures, construction access roads, soil and stripped vegetation stockpiles or storage areas, equipment storage areas, and other details necessary to determine the impacts during facility construction.

c. Facility plan. A plot plan shall be submitted showing the facility at completion of construction. The extent of coverage and scale shall be the same as required for an existing site conditions map in sub. (3)(a)2.c. Plan details shall include those required for the existing site conditions map and any modifications thereto, plus means of limiting access such as fencing, gates or natural barriers; method of screening the facility from the surrounding area; general layout of receiving, processing and loadout areas and equipment; traffic flow patterns; access roads; and location of discrete air contaminant discharges.

2. Design report. The construction plans and specifications shall be supplemented with a design report providing a discussion of design features and logic not previously discussed in the feasibility report. The report shall discuss and, where applicable, show calculations for size and configuration of receiving area; size, configuration, and capacity of process treatment equipment, conveyors, blowers, or other transport equipment, air pollution control units and associated duct work, methods of handling liquid wastes resulting from operations such as floor drains, sewers and water treatment facilities; heat balances, residence time and process temperature, digestors, or other thermal processing equipment; size and configuration of loadout and storage facilities for process outputs; sizing of surface water drainage control structures; traffic queuing and flow patterns; design life of facility equipment, buildings and appurtenances; timetable for construction; methods of controlling windblown materials; and methods of screening the facility from the surrounding area.

3. Operations and maintenance manual. A manual shall be prepared with separate sections specifying operating and maintenance procedures for the following:

a. Facility startup and process line shakedown. This shall include a discussion of personnel training, quantities and characteristics of hazardous waste to be processed; process line startup procedures and equipment performance evaluations; fire, dust, and vapor control systems; performance evaluations; process raw materials on hand at startup; process outputs testing; and other appropriate startup procedures.

b. Normal operations. This shall include a discussion of operating personnel responsibilities; hours of operation; daily processing schedule; routine process monitoring including monitoring quantity and quality of hazardous waste input; process output testing; equipment maintenance schedules; methods of controlling explosions, fire, odors, and windblown materials; special waste handling procedures; method of controlling access; daily cleanup procedures; facility bypass procedures during major breakdowns and alternative means of disposal; person responsible for operation; site or facility licensee and owner; recordkeeping; emergency procedures for handling of freezeup during cold weather; methods to prevent hazardous waste from burning; and other pertinent information.

4. A contingency plan as required in s. NR 181.42(4)(a).

5. A closure plan as required in s. NR 181.42(8).

(b) Within 30 days after a plan of operation is submitted, the department shall notify the applicant in writing that the plan is either complete or not complete, specifying the information which must be submitted before the report is deemed complete. The department will determine if the plan of operation is complete by determining whether or not the minimum requirements of this subsection have been met. Additional plan of operation information may be required of the applicant after a determination that the plan of operation is complete only if the department establishes that a detailed review of the plan of operation indicates that the plan of operation is insufficient in the absence of such additional information.

(5) Minimum requirements for facility design and operation. (a) The materials used in construction of the treatment facility shall be compatible, under expected operating conditions, with the hazardous waste and any treatment chemicals or reagents used in the treatment process.

(b) Waste analyses for thermal treatment processes. In addition to the waste analysis required by s. NR 181.42(1)(d), the owner or operator shall sufficently analyze any waste which has not been previously treated in the thermal process to enable the establishment of steady state, or other appropriate operating conditions for a non-continuous process, including waste and auxiliary fuel feed, and to determine the type of pollutants which may be emitted. At a minimum, the analyses shall determine:

1. The heating value of the hazardous waste;

2. Halogen and sulfur content of the waste; and

3. Concentrations of heavy metals, such as lead, mercury, cadmium, and chromium, unless the owner or operator has written documented data to show that the element is not present.

(c) Waste analyses for chemical, physical or biological treatment processes. In addition to the waste analysis required by s. NR 181.42(1)(d), whenever a hazardous waste which is substantially different from waste previously treated in a treatment process or equipment at the facility is to be treated in that process or equipment, or a substantially different process than any previously used at the facility is to be used to chemically treat hazardous waste, the owner or operator shall:

1. Conduct waste analyses and trial treatment tests, such as bench scale or pilot plant scale tests; or

2. Obtain written, documented information on similar treatment of similar waste under similar operating conditions to show that this proposed treatment will meet all applicable requirements of sub. (5)(a) and s. NR 181.42(1)(m).

(d) All uncovered reaction vessels shall be sized to provide no less than 2 feet freeboard at any time to prevent splashing or spillage of hazardous waste during the treatment.

(e) A facility shall have the capacity to remove and store the emergency transfer of reactor contents, or shall have emergency storage capacity to be used in the event of an equipment breakdown or malfunction.

(f) Where hazardous waste is continuously fed into a treatment process or equipment, the process or equipment shall be equipped with an automatic waste feed cutoff or a by-pass system which is activated when a malfunction in the treatment process occurs.

(g) All residuals or by-products from a treatment process shall be analyzed to determine whether they are a hazardous waste as identified in subch. II or they shall be assumed to be a hazardous waste.

(h) All hazardous waste, with the exception of that in the process line, shall be stored in conformance with s. NR 181.43.

(i) Unloading of hazardous waste shall take place only in approved, designated areas.

(j) If for any reason the treatment facility is rendered inoperable or is not able to completely process the hazardous waste, an approved alternative method shall be used for hazardous waste disposal.

(k) Before adding hazardous waste to a thermal treatment process, the owner or operator shall bring the system to steady state, or normal, conditions of operation, including steady state operating temperature, using auxiliary fuel or other means, unless the process is a noncontinuous, or batch, thermal treatment process which requires a complete thermal cycle to treat a discrete quantity of hazardous waste.

(l) Thermal treatment facilities shall be designed and operated to provide adequate temperature and residence time in the combustion chamber to assure complete processing and be equipped with necessary air pollution control equipment to produce a noncombustible residue, result in an odor free operation and meet state air pollution control regulations found in ch. NR 154, Wis. Adm. Code.

(m) Inspections and monitoring. 1. The owner or operator of a facility that chemically, physically or biologically treats hazardous waste shall inspect, where present:

a. Discharge control and safety equipment, such as waste feed cut-off systems, by-pass systems, drainage systems, and pressure relief systems, at least once each operating day, to ensure that it is in good working order;

b. Data gathered from monitoring equipment, such as pressure and temperature gauges, at least once each operating day, to ensure that the treatment process or equipment is being operated according to its design;

c. The construction materials of the process equipment, at least weekly, to detect corrosion or leaking of fixtures or seams; and

d. The construction materials of, and the area immediately surrounding, discharge confinement structures, such as dikes, at least weekly, to detect erosion or obvious signs of leakage, such as wet spots or dead vegetation.

2. The owner or operator shall conduct, as a minimum, the following monitoring and inspections when thermally treating hazardous waste:

a. Instruments which relate to temperature and emission control shall be monitored at least every 15 minutes; appropriate corrections to maintain steady state or other appropriate thermal treatment conditions shall be made immediately either automatically or by the operator. Instruments which relate to temperature and emission control would normally include those measuring waste, feed, auxiliary fuel feed, treatment process temperature, and relevant process flow and level controls.

b. The stack plume, emissions, where present, shall be observed visually at least hourly for normal appearance, color and opacity. The operator shall immediately make any indicated operating corrections necessary to return any visual emissions to their normal appearance.

c. The complete thermal treatment process and associated equipment, such as pumps, valves, conveyors, pipes, shall be inspected at least daily for leaks, spills, and fugitive emissions, and all emergency shutdown controls, and system alarms shall be checked to assure proper operation.

(n) Records of operating conditions shall be retained as specified in s. NR 181.42(6)(b).

(o) Chemical, physical, or biological treatment of hazardous waste, shall comply with the general requirements for ignitable, reactive, or incompatable wastes in s. NR 181.42(1)(m)2.

(p) Incompatible wastes shall not be placed in the same process or equipment used for chemical, physical or biological treatment.

(q) Ignitable or reactive waste shall not be placed in a process or equipment used to chemically, physically or biologically treat a nazardous waste unless:

1. The waste is treated, rendered or mixed before or immediately after placement in the process or equipment so that the resulting mixture or dissolution of material no longer meets the definition of ignitable or reactive waste in ss. NR 181.15(2) or NR 181.15(4), and s. NR 181.42(1)(m)2. is complied with, or;

2. The waste is treated in such a way that it is protected from any material or conditions which may cause the waste to ignite or react.

(6) Closure. Unless specifically exempted in sub. (2), hazardous waste treatment facilities shall meet the closure requirements specified in s. NR 181.42(8), and in addition the department may require monitoring of ground or surface waters, if the operation or design of the facility in relation to the hazard of wastes handled at the facility warrants such monitoring.

NR 181.47 Standards for other facilities not specifically covered by this subchapter. Before any method of hazardous waste treatment or disposal not otherwise provided for in this subchapter is established, the department shall require the applicant to conduct a feasibility study. If the proposal is determined by the department to be feasible, a plan of operation including complete plans, specifications, and design data for the project detailing such information as site preparation, operation, monitoring closure and long-term care shall be submitted to and be approved in writing by the department prior to construction or operation. An initial plan review fee and operating license fee as specified in s. NR 181.55(5) shall be submitted for each proposal. Prior to operation of such a facility, an operating license is required. The facility and its operation shall conform to any department approved plan.

Subchapter VI

Plan Submittal and Licensing

NR 181.51 General report and plan submittal requirements. Unless otherwise specified, all submittals for review and approval of any initial site report, feasibility report, plan of operation, construction observation report or closure plan shall include the following:

(1) The review fee specified in s. NR 181.55(5) in check or money order payable to the department, to be sent to the appropriate district or area office of the department.

(2) A letter detailing the desired department action or response.

(3) Five copies of the plan or report prepared pursuant to the appropriate code section. Two copies shall be submitted to the appropriate department district or area office and 3 copies shall be submitted to the department's bureau of solid waste management. Review time starts when copies are received by the bureau. The plans and reports and all methods and procedures used to prepare them, shall conform to the following:

(a) Preparation. The submittal shall be under the seal of a registered professional engineer, unless a written exemption is granted by the department.

(b) Investigation. All technical procedures used to investigate a hazardous waste facility shall be the current standard procedures as specified by the ASTM or the USGS, standard methods for the examination of water and wastewater, or other equivalent or appropriate methods approved by the department. Test procedures used shall be specified. Any deviation from a standard method shall be explained in detail, with reasons provided.

(c) Format. All submittals shall include:

1. The required technical information as specified in this chapter.

2. Maps, figures, photographs and tables, where applicable, to clarify information or conclusions. The visuals shall be legible. All maps, plan sheets, drawings, isometrics, cross-sections and aerial photographs shall meet the following requirements:

a. Be no larger than 24 inches x 36 inches and no smaller than 8-1/2 inches x 11 inches.

b. Be of appropriate scale to show all required details in sufficient clarity.

c. Be numbered, referenced in the narrative, titled, have a legend of all symbols used, contain horizontal and vertical scales where applicable, and specify drafting or origination dates.

d. Use uniform scales as much as practical.

e. Contain a north arrow.

f. Use USGS datum as basis for all elevations.

g. Plan sheets showing site construction, operation or closure topography shall also show original topography.

h. Plan sheets for hazardous waste facilities shall indicate a survey grid based on monuments established in the field specifically for that purpose.

i. All cross-sections shall show survey grid location and be referenced to major plan sheets.

3. An appendix listing names of all references, all necessary data, procedures and calculations.

NR 181.52 Termination of regulated activity. (1) Any person who owns or operates a hazardous waste facility on the effective date of these rules and who wishes to terminate the regulated activity in lieu of obtaining an interim license or an operating license shall submit a closure plan containing the information specified in s. NR 181.42(8), as well as the information required in s. NR 181.43(9) for storage facilities, s. NR 181.44(12) for landfills and surface impoundments, s. NR 181.45(6) for incinerators, or s. NR 181.46(6) for treatment facilities, as appropriate.

(a) Written notice of the intention to terminate regulated activities shall be submitted to the department in a letter within 90 days of the effective date of these rules.

(b) The closure plan shall be submitted within 180 days of the effective date of these rules and in accordance with s. NR 181.51.

NR 181.53 Application for interim license. (1) Except as provided in sub. (2), any person who owns or operates, on the effective date of these rules, a hazardous waste treatment, storage or disposal site or facility which may be authorized by the department, under s. 144.64(3), Stats., to receive hazardous waste pending the issuance of a hazardous waste treatment, storage or disposal facility operating license, shall complete, sign and submit an interim license application to the department within 90 days of the effective date of these rules if that person wishes to continue the regulated activity prior to the issuance of an operating license.

(2) Any person who has submitted, to the EPA, part A of the application for an EPA hazardous waste permit, as required under the resource conservation and recovery act of 1976, P.L. 94-580, as amended, shall not be required to submit the interim license application. The EPA part A application will be used by the department to satisfy the requirements of the interim license application.

(3) The interim license application shall contain the following:

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

(b) A scale drawing of the facility showing the location of all past, present and future treatment, storage or disposal areas.

(c) Photographs of the facility clearly delineating all existing treatment, storage, or disposal areas; and sites of future treatment, storage or disposal areas.

(d) A description of the processes to be used for treating, storing or disposing of hazardous waste, and the capacity of these processes.

(e) A specification of the hazardous wastes listed or designated under subch. II to be treated, stored or disposed of at the facility, an estimate of the quantity of wastes to be treated, stored or disposed of annually, and a general description of the processes to be used for such wastes.

(f) Copies of all available drawings and specifications for the hazardous waste facility and its processes and equipment, any prior plan approval letters, and if applicable, the most recent solid waste license application and solid waste license.

(g) A description of how the facility meets the following interim requirements, if applicable:

1. Security requirements in s. NR 181.42(3)

2. Contingency plan requirements in s. NR 181.42(4)

3. Personnel training requirements in s. NR 181.42(5)

4. Manifest, recordkeeping and reporting requirements in s. NR 181.42(6)

5. General inspection requirements in s. NR 181.42(7)

6. Closure and long-term care requirements in ss. NR 181.42(8) and NR 181.42(9).

7. Groundwater and leachate monitoring interim requirements as specified by the department on a case-by-case basis, including sampling parameters, frequencies and requirements for preparation, evaluation, and response based on waste types accepted and site hydrogeological conditions. A schedule for satisfying the complete requirements of ss. NR 181.44(11)(a) within one year of the beginning of the interim license period shall be included in the interim license application.

8. Storage standards in ss. NR 181.43(6)(a), (e), and (f), s. NR 181.43(7) except ss. NR 181.43(7)(e), (f) and (h), s. NR 181.43(8) except ss. NR 181.43(8)(d) and s. NR 181.43(9).

9. Landfill and surface impoundment operational requirements in s. NR 181.44(10) and closure and long-term care requirements in ss. NR 181.44(12) and (14).

10. Incinerator standards in s. NR 181.45(4)(e) and (j)4.

11. Treatment facility standards in s. NR 181.46(5)(b), (c), (g) and (n).

(h) The signature of the owner or operator as specified in s. NR 181.55(3).

(4) An owner or operator who submits an interim license application to the department, or a part A application to EPA, shall submit to the department proof of financial responsibility for closure, and if applicable, long-term care, as required by s. NR 181.42(10), within 120 days after the effective date of these rules.

(5) The submission of an interim license application to the department, or a part A application to the EPA, within 90 days after the effective date of these rules, shall allow an existing hazardous waste facility to continue to operate until the applicant is advised that the interim license application has been approved or disapproved.

NR 181.54 Advisement of interim license. (1) The department shall advise the applicant of the receipt and approval or disapproval of the interim license application.

(2) Advisement of the approval of an interim license application shall signify the beginning of the interim license period, and shall, unless the interim license is later revoked, allow an existing hazardous waste facility to operate until a final determination on the issuance of an operating license under s. NR 181.55 is made by the department. A hazardous waste facility shall cease operations if its interim license application is disapproved or if its interim license is revoked prior to the issuance of an operating license under s. NR 181.55.

(3) The owner or operator of a hazardous waste disposal facility operating under an interim license shall pay to the department waste management fund fees as specified in s. NR 181.42(12).

(4) Dates for the submission of reports and plans needed for the issuance of an operating license as specified in subch. V may be established by the department in a compliance schedule at any time during the interim license period. However, the department shall provide at least 6 months notice for the submission of all plans and reports required in the compliance schedule.

NR 181.55 License requirements. (1) Application for a hazardous waste transportation service license. (a) An application for a transportation service license shall be submitted on forms supplied by the department and shall be accompanied by the fee specified in sub. (5).

(b) Each location at which a person transporting hazardous waste bases transport vehicles, such as one generation site at which transport vehicles are based which will transport hazardous wastes to or from other generation sites owned by the same person, or a centralized transport vehicle terminal, shall be licensed as a separate transportation service. An application form and fee shall be submitted to the district office of the department in the district where the transportation service is located. A person who transports hazardous waste into or through Wisconsin, but whose operation is based out-of-state, shall submit an application form and fee for a transportation service license in the district where the hazardous waste transportation activity is concentrated.

(2) Application for a hazardous waste treatment, storage or disposal facility operating license. (a) The initial operating license for a facility shall not be issued until all of the plans, reports and requirements of subch. V have been satisfied and approved by the department. Such plans, reports and requirements include, but are not limited to, items such as initial site reports, feasibility reports, plans of operation, construction observation reports, closure and long-term care plans, contingency plans and emergency procedures, financial requirements for closure and long-term care and facility liability requirements.

(b) An application for an operating license shall be submitted on forms supplied by the department and shall be accompanied by the fee specified in sub. (5).

Note: Application forms for licenses may be obtained from the Department of Natural Resources, Bureau of Solid Waste Management, 101 S. Webster St., P.O. Box 8094, Madison, Wisconsin 53707, at no charge.

(3) Signatories to license applications. (a) All license applications, including interim license applications, shall be signed as follows:

1. For a corporation, by a principal executive officer of at least the level of vice president;

2. For a partnership or sole proprietorship, by a general partner or the proprietor, respectively; or

3. For a municipality, state, federal or other public agency, by either a principal executive officer or ranking elected official.

(b) All reports required by the department, other than manifests, shall be signed by a person designated in par. (a), or by a duly authorized representative of such person if:

1. The authorization is made in writing by the person designated under par. (a);

2. The authorization specifies an individual or position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, superintendent, or position of equivalent responsibility; and

3. The written authorization is submitted to the department.

(c) Changes to authorization. If an authorization under par. (b) is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of par. (b) shall be submitted to the department prior to or together with any reports to be signed by an authorized representative.

(d) Certification. Any person signing a document under pars. (a) or (b) shall make the following certification: "I certify under penalty of law that I have examined and am familar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

(4) Effect of a license. (a) The issuance of a license does not authorize any injury to private property, any invasion of other private rights, or any infringement of federal, state, or local law.

(b) Compliance with a license during its term constitutes compliance with ss. 144.60 through 144.74, Stats.

(5) License periods and fees. (a) This subsection is not applicable to interim licenses issued under ss. NR 181.53 and NR 181.54.

(b) The license period shall be 2 years beginning on October 1 and terminating on September 30, 2 years later. The license period for disposal facilities shall begin on October 1 of even-numbered years. The

license period for storage or treatment facilities, transportation services and incinerators shall begin on October 1 of odd-numbered years.

(c) Application for initial licensing of a new hazardous waste facility may be submitted at any time during the year. Fees for initial licensing are proratable. The license period is divided into 4, 6-month periods, with 1/4 of the 2-year license fee applied to each period. The applicant for initial licensing of a facility shall submit the appropriate fees as shown in Table IX, "Fee Schedule". Proof of financial responsibility as specified in s. NR 181.42(10) shall be included with the initial license application for hazardous waste facilities with plans of operation approved under this chapter.

(d) Application for renewal of a license shall be submitted to the department by June 1 preceding the license period being applied for. Applicants failing to submit the renewal application by June 1 shall pay a late processing fee equal to 50% of the renewal fee or $150.00 whichever is less, in addition to the renewal fee. The department shall transmit application forms to renewal applicants by April 1. All applications for renewal of licenses for hazardous waste disposal facilities shall include the waste management fund payments as specified in s. NR 181.42(12).

(e) License fees for hazardous waste facilities are not refundable.

(f) Following closure of a hazardous waste disposal facility, the owner or any successor in interest shall be required to have a license during the period of owner responsibility indicated in s. 144.441, Stats. The license shall be issued in accordance which sub. (5)(a) through (5)(e), except that the fee shall be $100.00 per license period.

TABLE IX

Fee Schedule

NR 181	Facility Type	License Required	Plan Review Required	Plan Review Fees: Feasibility	Plan Review Fees: Operation	License Fee Schedule*: 0-6 months	6-12 months	12-18 months	18-24 months and all renewals
Part IV	Transportation	Yes	No	--	--	25.00	50.00	75.00	100.00
.43 and .435	Storage Facilities	Yes	Yes	100	100	50	100	150	200

.44	Landfills	Yes	Yes	1000	1000	375	750	1125	1500
.44	Surface Impoundments	Yes	Yes	500	500	187.5	375	562.5	750
.45	Incinerators	Yes	Yes	300	300	125	250	375	500
.46	Treatment Facilities	Yes	Yes	500	500	125	250	375	500
.47	Other	Yes	Yes	500	500	125	250	375	500
	Closure Plans		Yes	--	200	--	--	--	--

*Prior to October 1, 1981, contact the Bureau of Solid Waste Management to obtain the fee schedule.

(6) Review of licenses. The department shall review each license, other than interim licenses, every 2 years to determine whether the license shall be revoked for one or more of the causes listed in sub. (7).

(7) Revocation or denial of licenses. (a) A hazardous waste treatment, storage or disposal facility operating license may be revoked during its term, or its renewal may be denied, for any one of the following causes:

1. Failure of the licensee to pay the waste management fees specified in s. NR 181.42(12).

2. Grievous and continuous failure to operate the facility in accordance with the facility's approved plan of operation.

(b) A hazardous waste transportation service license may be revoked during its term, or its renewal may be denied, for grievous and continuous failure to comply with the requirements of subch. IV.

(c) An interim license may be revoked during its term for any of the following reasons:

1. Failure to comply with the interim license standards set forth in s. NR 181.53(3)(g).

2. Failure to submit plans or reports required by a compliance schedule within 14 days following the date on which they are due under the schedule.

3. Failure to pay the waste management funds fees specified in s. NR 181.42(12).

(8) Conditions applicable to all licenses. All of the conditions applicable to a license shall be incorporated into the license either expressly or by reference. The following conditions shall apply to all licenses, including interim licenses:

(a) The licensee shall comply with all conditions of the license, except as otherwise authorized by the department under subs. (10) or (11).

(b) If a licensee wishes to continue an activity regulated by a license after the expiration date of the license, the licensee shall apply for a new license. Section 227.14, Stats., provides: "When a licensee has made timely and sufficient application for the renewal of a license or a new license with reference to any activity of a continuing nature, the existing license does not expire until the application has been finally acted upon by the agency, and, if the application is denied or the terms of the new license are limited, until the last day for seeking review of the agency decision or a later date fixed by order of the reviewing court."

(c) It shall not be a defense for a licensee in an enforcement action that it would have been necessary to halt or reduce the licensed activity in order to maintain compliance with the conditions of the license.

(d) All renewal applications, and all reports or other information submitted to the department by the licensee shall be signed and certified as specified in sub. (3).

(e) For a new facility, the licensee may not commence treatment, storage, or disposal of hazardous waste, and for a facility being modified or expanded the licensee may not treat, store or dispose of hazardous waste in the modified or expanded portion of the facility, until the licensee has received written approval from the department.

(f) The licensee shall at all times maintain in good working order and operate efficiently all facilities and systems of treatment or control and related appurtenances which are installed or used by the licensee to achieve compliance with the terms and conditions of the license. Proper operation and maintenance includes, but is not limited to, effective performance based on designed facility removals, adequate funding, effective management, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance procedures.

(g) The licensee shall, upon the request of any officer or employe of the department, allow departmental personnel, at reasonable times and with notice no later than upon arrival, to:

1. Enter the licensee's premises where a regulated facility or activity is located or conducted or where hazardous waste records are kept.

2. Have access to and copy at reasonable times, any hazardous waste records or labels that are being kept.

3. Inspect at reasonable times any facility's equipment, including monitoring equipment, or operations regulated under the license; and

4. Sample or monitor any substance or parameters at any location where a regulated facility or activity is located or conducted, in compliance with the requirements of s. 144.69, Stats.

(h) The licensee shall report any noncompliance which may endanger human health or the environment. Any information shall be provided orally within 24 hours from the time the licensee becomes aware of the circumstances. A written report containing the following information shall be submitted within 15 days of the time the licensee becomes aware of the circumstances:

1. Name, address, and telephone number of the owner or operator.

2. Name, address, and telephone number of the facility.

3. A description of the noncompliance and the period of noncompliance, including exact date and time, and if the noncompliance has not been corrected, the anticipated time the noncompliance is expected to continue.

4. Name and quantity of material involved.

5. The extent of injuries, if any.

6. An assessment of actual or potential hazards to the environment and human health outside the facility, where this is applicable.

7. Estimated quantity and disposition of recovered material that resulted from the incident.

8. The known or suspected causes of the noncompliance and a statement describing the measures taken to investigate the noncompliance to determine its cause.

9. Steps taken, or planned, to reduce or eliminate and prevent recurrence of the noncompliance.

(i) The licensee shall notify the division of emergency government and comply with the requirements of s. NR 181.42(4)(c), s. 144.76, Stats., and ch. NR 158, Wis. Adm. Code, if a discharge of hazardous waste or a fire or explosion occurs on the licensed site or facility.

(j) The licensee shall take all necessary steps to minimize any adverse impact on the environment resulting from noncompliance with the license.

(k) Monitoring results shall be reported at the intervals and format specified in the plan of operation or license.

(l) Reports of compliance with, and any progress on, interim and final requirements contained in any compliance schedule under the license shall be submitted no later than 14 days following each schedule date.

(m) The licensee shall furnish information needed to determine compliance with the license. The licensee shall also furnish to the department, upon request, copies of records required by the license.

(n) The license does not convey any property rights of any sort, or any exclusive privilege. The privileges associated with the licensee attach only to the person authorized to conduct the licensed activity and the license is not inherently assignable or transferable when the ownership of a facility or transportation service is transfered.

(o) The following reports required in subch. V shall be submitted to the department:

1. Manifest discrepancy report. If a significant discrepency in a manifest is discovered, the licensee shall attempt to reconcile the discrepancy. If not resolved within 15 days, the licensee shall submit a report, including a copy of the manifest, to the department as required by s. NR 181.42(6)(a)6.

2. Unmanifested waste report. An unmanifested waste report shall be submitted to the department within 15 days of receipt of unmanifested waste as required by s. NR 181.42(6)(c)2.

3. Quarterly report. A quarterly report shall be submitted covering facility activities during the previous reporting quarter as specified in s. NR 181.42(6)(c)1.

4. Additional reports. Additional reports as specified in s. NR 181.42(6)(c)3. shall be submitted if necessary.

(p) In addition to the conditions required for all licenses, the department may establish conditions, as required on a case-by-case basis, to ensure compliance with all applicable requirements of this chapter.

(9) Emergency authorization. Notwithstanding any other provision in this chapter, in the event of an emergency condition threatening human health or the environment, the department may issue temporary authorization to an unlicensed facility or a facility licensed under ch. NR 180, Wis. Adm. Code, or this chapter to allow treatment, storage or disposal of hazardous waste not covered by a license. Such authorization:

(a) May be oral or written. If oral, it shall be followed within 5 days by written authorization.

(b) Shall not exceed 90 days in duration.

(c) Shall clearly specify wastes to be received, and the manner and location of their treatment, storage or disposal.

(d) May be revoked by the department at any time if it is determined that revocation is appropriate to protect human health and the environment.

(10) Variances. Notwithstanding any other provision of this chapter, where the application for, or compliance with the terms or conditions of, any license issued under this chapter would in the judgment of the department cause undue or unreasonable hardship to any person, the department may issue a variance from the requirements of this chapter and s. 144.64, Stats., if the variance does not result in undue harm to human health or the environment. Such a variance:

(a) shall be issued in written form.

(b) Shall not exceed one year in duration.

(c) May be renewed or extended only after opportunity for a public hearing on each variance renewal or extension.

(d) May be revoked by the department at any time if it is determined that revocation is appropriate to protect human health and the environment.

APPENDIX I

REPRESENTATIVE SAMPLING METHODS

The methods and equipment used for sampling waste materials will vary with the form and consistency of the waste materials to be sampled. Samples collected using the sampling protocols listed below, for sampling waste with properties similiar to the indicated materials, will be considered by the department to be representative of the waste:

(1) For extremely viscous liquid - ASTM Standard D140-70

(2) For crushed or powdered material - ASTM Standard D346-75

(3) For soil or rock-like material - ASTM Standard D420-69

(4) For soil-like material - ASTM Standard D1452-65

(5) For fly ash-like material - ASTM Standard D2234-76

Note: The publications containing these standards may be obtained from the:

American Society for Testing and Materials

1916 Race Street

Philadelphia, Pa. 19103

These publications are available for inspection at the offices of the department, the secretary of state, and the revisor of statutes.

(6) For containerized liquid wastes - "COLIWASA" described in "Test Methods for the Evaluation of Solid Waste, Physical/Chemical Methods" (SW-846).

(7) For liquid waste in pits, ponds, lagoons, and similar reservoirs. - "Pond Sampler" described in "Test Methods for the Evaluation of Solid Waste, Physical/Chemical Methods" (SW-846).

Note: This publication may be obtained from:

U.S. Environmental Protection Agency

26 W. St. Clair Street

Cincinnati, OH 45268

This publication is available for inspection at the offices of the department, the secretary of state and the revisor of statutes.

APPENDIX II
BASIS FOR LISTING HAZARDOUS WASTES

Hazardous Waste Number	Hazardous Constituents for Which Listed
F001	tetrachloroethylene, methylene chloride, trichloroethylene, 1,1,1-trichloroethane, chlorinated fluorocarbons, carbon tetrachloride
F002	tatrachloroethylene, methylene chloride, trichloroethylene, 1,1,1-trichloroethane, chlorobenzene, 1,1,2-trichloro-1,2,2-trifluoroethane, o-dichlorobenzene, trichlorofluoromethane
F003	N.A.
F004	cresols and cresylic acid, netrobenzene
F005	methanol, toluene, methyl ethyl ketone, methyl isobutyl ketone, carbon disulfide, isobutanol, pyridine
F006	cadmium, chromium, nickel, cyanide (complexed)
F007	cyanide (salts)
F008	cyanide (salts)
F009	cyanide (salts)
F010	cyanide (salts)
F011	cyanide (salts)
F016	cyanide (Complexed)
F017	Cadmium, chromium, lead, cyanides, toluene, tetrachloroethylene
F018	Cadmium, chromium, lead, cyanide, toluene, tetrachloroethylene
K001	benzene, benz(a)anthracene, benzo(a)pyrene, chrysene, 4-nitrophenol, toluene, naphthalene phenol, 2-chlorophenol, 2,4-dimethyl phenol, 2,4,6-trichlorophenol, pentachlorophenol, 2,6-dinitro-o-cresol, tetrachlorophenol
K002	chromium, lead
K003	chromium, lead
K004	chromium
K005	chromium, lead
K006	chromium
K007	cyanide (complexed), chromium
K008	chromium
K009	chloroform, formaldehyde, methylene chloride, methyl chloride, paraldehyde, formic acid
K010	chloroform, formaldehyde, methylene chloride, methyl chloride, paraldehyde, formic acid, chloroacetaldehyde
K011	acrylonitrile, acetonitrile, hydrocyanic acid
K012	acrylonitrile, acetonitrile, acrolein, acrylamide

K013	hydrocyanic acid, acrylonitrile, acetonitrile
K014	acetonitrile, acrylamide
K015	benzyl chloride, chlorobenzene, toluene, benzotrichloride
K016	hexachlorobenzene, hexachlorobutadiene, carbon tetrachloride, hexachloroethane, perchloroethylene
K017	epichlorohydrin, chloroethers (bis(chloromethyl) ether and bis (2-chloroethyl) eithers), trichloropropane, dichloropropanois
K018	1, 2-dichloroethane, trichloroethylene, hexachlorobutadiene, hexachlorobenzene
K019	ethylene dichloride, 1, 1, 1-trichloroethane, 1, 1, 2-trichloroethane, tetrachloroethanes (1, 1, 2, 2-tetrachloroethane and 1, 1, 1, 2-tetrachloroethane), trichloroethylene, tetrachloroethylene, carbon tetrachloride, chloroform, vinyl chloride, vinylidene chloride
K020	ethylene dichloride, 1, 1, 1-trichloroethane, 1, 1, 2-trichloroethane, tetrachloroethanes (1, 1, 2, 2-tetrachloroethane and 1, 1, 1, 2-tetrachloroethane), trichloroethylene, tetrachloroethylene, carbon tetrachloride, chloroform, vinyl chloride, vinylidene chloride
K021	antimony, carbon tetrachloride, chloroform
K022	phenol, tars (polycyclic aromatic hydrocarbons)
K023	phthalic anhydride, maleic anhydride
K024	phthalic anhydride, polynuclear tar-like materials, naphthoquinone
K025	meta-dinitrobenzene, 2, 4-dinitrotoluene
K026	paraldehyde, pyridines, 2-picoline
K027	toluene diisocyanate, toluene-2, 4-diamine, tars (benzidimidazapone)
K028	1, 1, 1-trichloroethane, vinyl chloride
K029	1, 2-dichloroethane, 1, 1, 1-trichloroethane, vinyl chloride, vinylidene chloride, chloroform
K030	hexachlorobenzene, hexachlorobutadiene, hexachloroethane, 1, 1, 1, 2-tetrachloroethane, 1, 1, 2, 2-tetrachloroethane, ethylene dichloride
K031	arsenic
K032	hexachlorocyclopentadiene
K033	hexachlorocyclopentadiene
K034	hexachlorocyclopentadiene
K035	creosote, benz(a)anthracene, benz(b)fluoroanthene, benzo(a)pyrene
K036	toluene, phosphorodithioic and phosphorothioic acid esters
K037	toluene, phosphorodithioic and phosphorothioic acid esters
K038	phorate, formaldehyde, phosphorodithioic and phosphorothioic acid esters
K039	phosphorodithioic and phosorothioic acid esters
K041	phorate, formaldehyde, phosphorodithioic and phosphorothioic acid esters
K042	toxaphene
K043	hexachlorobenzene; ortho-dichlorobenzene

K044	N.A.
K045	N.A.
K046	lead
K047	N.A.
K048	chromium (VI), lead
K049	chromium (III), lead
K050	chromium (VI)
K051	chromium (VI), lead
K052	lead
K060	cyanide, naphthalene, phenolic compounds, arsenic
K061	chromium (VI), lead, cadmium
K062	chromium (VI), lead
K063	chromium (VI), lead
K069	chromium (VI), lead, cadmium
K071	mercury
K073	chloroform, carbon tetrachloride, hexachloroethane, trichloroethane, tetrachlorethylene, dichloroethylene, 1,1,2,2-tetrachloroethane
K078	chromium (VI), lead
K079	lead, mercury, benzene, carbon tetrachloride, methylene, chloride, tetrachloroethylene, naphthanlene, di(2ethylhexyl)phthalate, dinbutylphthalate, toluene
K081	chromium (VI), lead, mercury, nickel, methylene, chloride, toluene
K082	antimony, cadmium, chromium (VI), lead, nickel, silver, cyanides, phenol, mercury, pentachlorophenol, vinyl chloride, 3,3dichlorobenzidene, naphthalate, benzene, toluene, carbon tetrachloride, methylene chloride, trichloroethylene
K083	aniline, nitrobenzene, diphenylamine, phenylenediamine.
K084	arsenic
K085	benzene, monochlorobenzene, dichlorobenzenes, trichlorobenzenes, tetrachlorobenzene, pentachlorobenzene, hexachlorobenzene, benzyl chloride.
K086	chromium (VI), lead
K087	phenol, naphtalene
K088	cyanide (complexes)
K090	chromium (VI)
K091	chromium (VI), lead
K092	chromium (VI), lead

N.A. - Waste is hazardous because it meets either the ignitability, corrosivity or reactivity characteristics.

The foregoing rules, amendments and repeals were approved and adopted by the State of Wisconsin Natural Resources Board on February 26, 1981.

The rules, amendments and repeals contained in this order shall take effect on the first day of the month following publication in the Wisconsin administrative register as provided in section 227.026(1) intro., Wis. Stats.

Dated at Madison, Wisconsin May 1, 1981

STATE OF WISCONSIN

DEPARTMENT OF NATURAL RESOURCES

By Carroll D Besadny

Carroll D. Besadny, Secretary