

## Chapter NR 206

### LAND DISPOSAL OF MUNICIPAL AND DOMESTIC WASTEWATERS

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**NR 206.01 Purpose.** The purpose of this chapter is to establish effluent limitations and monitoring requirements to be used in permits for discharges of holding tank domestic wastewater from storage lagoons and wastewaters from publicly owned treatment works and privately owned domestic wastewater treatment works to land disposal systems. Section 147.02, Stats., requires a permit for the lawful discharge of any pollutant into the waters of the state. Section 147.015(13), Stats., defines "waters of the state" as including groundwater. Consequently, permits are required for the type of discharges to which this chapter applies. It is the intent of the department through this chapter to restore and maintain the physical, chemical and biological integrity of the groundwater of the state and to encourage the protection of this resource.

History: Cr. Register, March, 1985, No. 351, eff. 4-1-85.

**NR 206.02 Applicability.** (1) The provisions of this chapter are applicable to discharges to:

(a) Land disposal systems of liquid wastewaters from publicly owned wastewater treatment works and from privately owned domestic wastewater treatment works;

(b) Land disposal systems of septage from storage lagoons; and

(c) Land disposal systems of domestic wastewaters from holding tanks by persons other than private pumpers.

(2) The provisions of this chapter are not applicable to land disposal of:

(a) Industrial wastes and by-products approved and permitted under ch. NR 214;

(b) Sludge from publicly owned wastewater treatment works and privately owned domestic wastewater treatment works regulated under ch. NR 204;

(c) Domestic wastewater by "private pumpers" as defined and regulated under ch. NR 113;

(d) Septic tank effluent regulated under ch. ILHR 83;

(e) Septage disposal regulated under ch. NR 113; and

(f) Solid, liquid, and hazardous wastes at a disposal site licensed pursuant to ch. NR 180 or 181.

History: Cr. Register, March, 1985, No. 351, eff. 4-1-85.

**NR 206.03 Definitions.** The following definitions are applicable to terms used in this chapter. Definitions of other terms and the meanings of abbreviations are set forth in ch. NR 205.

(1) "Bedrock" means the rocks that underlie soil material. Bedrock may be present at the earth's surface when the weathered in place consolidated material, larger than 2 mm in size, is greater than 50% by volume.

(2) "Biological treatment" means a level of wastewater treatment accomplished through:

- (a) An activated sludge process,
- (b) Trickling filters,
- (c) An aerated lagoon,
- (d) Rotating biological contactors,
- (e) A stabilization pond, or
- (f) Other equivalent systems approved on a case-by-case basis.

(3) "Domestic wastewater" means the type of wastewater normally discharged from plumbing facilities in private dwellings or commercial domestic establishments and includes, but is not limited to, sanitary, bath, laundry, dishwashing, garbage disposal and cleaning wastes.

(4) "Groundwater" means any of the waters of the state as defined in s. 144.01(19), occurring in a saturated subsurface geological formation of rock or soil.

(5) "Groundwater monitoring" means measuring the groundwater level and/or analyzing samples of water taken from one or more wells.

(6) "Hazardous waste" means a waste identified by the department as hazardous under s. 144.62(2), Stats.

(7) "Holding tank" means any facility, designed to be watertight, which is used for the storage and decomposition of human excrement, domestic wastes or liquid industrial wastes.

(8) "Hydraulic loading rate" means the average daily volume of effluent discharged to a land disposal system during a calendar month or other period of time specified in a WPDES permit for the discharge. The average is calculated by dividing the total discharge volume for the month or period of time by the number of days in the month or period of time.

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

(10) "Land disposal system" means a facility for disposing of liquid wastes consisting of:

- (a) An absorption or seepage pond system,
- (b) A ridge and furrow system,

- (c) A spray irrigation system,
- (d) A subsurface field absorption system, or
- (e) Any other land area receiving liquid waste discharges.

(11) "Privately owned domestic wastewater treatment work" means facilities which treat domestic wastewater and which are owned and operated by non-municipal entities or enterprises such as mobile home parks, restaurants, hotels, motels, country clubs, etc., which are permitted under ch. 147, Stats.

(12) "Private pumper" has the meaning specified under s. NR 113.03(5).

(13) "Publicly owned treatment work" has the meaning specified under s. NR 211.03(8).

(14) "Soil" means the unconsolidated material which overlies the bedrock.

(15) "Toxic pollutants" has the meaning specified under s. NR 205.03(7).

(16) "WPDES permit" means a permit issued under the Wisconsin pollutant discharge elimination system.

(17) "Well" means a bored, drilled or driven shaft or a dug hole where the depth of the shaft or hole is greater than the largest surface dimension, and which is terminated above, within or below an aquifer. This does not include holes or openings in the land surface such as those made with normal agricultural equipment for tilling the soil or crop production.

History: Cr. Register, March, 1985, No. 351, eff. 4-1-85.

**NR 206.05 Compliance with effluent limitations and monitoring requirements.** (1) All new or modified land disposal systems approved on or after January 1, 1985 shall comply with the applicable effluent limits and monitoring requirements of this chapter.

(2) All systems approved prior to January 1, 1985 shall comply with the effluent limits described in s. NR 206.08 (1) (c) 3 and 4.

(3) All systems approved prior to January 1, 1985 shall comply with the groundwater monitoring well construction requirements in s. NR 110.25(5) and begin sampling by January 1, 1987.

(4) All systems approved prior to January 1, 1985 shall comply with the requirement of nitrogen and temperature monitoring of influent and effluent by January 1, 1989.

History: Cr. Register, March, 1985, No. 351, eff. 4-1-85.

**NR 206.06 Alternative requirements.** (1) If the owner of a proposed land disposal system feels that compliance with the monitoring requirements, discharge prohibitions and effluent limits of this chapter are impracticable, the reasons therefore shall be fully communicated in writing to the department. This communication shall set forth alternative requirements for which department approval is sought and all pertinent facts, data, reports and studies supporting the imposition of such alternative requirements.

(2) If the department determines that compliance with the monitoring requirements, discharge prohibitions and effluent limits of this chapter would be impracticable in specific cases, it may approve alternative requirements which, in its opinion, are in substantial compliance with the requirements of this chapter.

History: Cr. Register, March, 1985, No. 351, eff. 4-1-85.

**NR 206.07 General conditions required for all land disposal systems.** (1) DESIGN LIMITATIONS. (a) A land disposal system shall be constructed in accordance with the design criteria in ch. NR 110.

(b) Background groundwater monitoring data described in s. NR 206.10 (2) (d) shall be collected prior to the design of a land disposal system.

(2) OPERATIONAL REQUIREMENTS. (a) No discharge to a land disposal system may exceed the loadings specified in the WPDES permit for the system.

(b) No discharge to the system may have physical or chemical characteristics which prevent the proper operation of the land disposal system.

(c) The discharge of toxic or hazardous pollutants to land disposal systems is prohibited unless the applicant can demonstrate and the department determines that the discharge of such pollutants will be in such small quantities that no detrimental effect on groundwater or surface water will result. The criteria used shall include but not be limited to the toxicity of the pollutant, capacity of the soil to remove the pollutant, degradability, usual or potential presence of the pollutant in the existing environment, method of application and all other relevant factors.

(d) The underground injection of municipal and domestic wastewaters through a well is prohibited.

(e) All municipal and domestic wastewater land disposal systems shall be preceded by a biological treatment approved by the department. Industrial waste discharges tributary to the municipal treatment works shall be in compliance with applicable pretreatment standards under s. NR 211.30.

(f) Land disposal of holding tank domestic wastewater from storage lagoons shall be preceded by a treatment approved by the department.

(g) For a land disposal system located on a site where soil, geologic or other conditions may result in an increased possibility of groundwater contamination, the department may require additional treatment prior to discharge to such land disposal systems.

(h) Discharge to a land disposal system shall be limited so that the discharge and any precipitation which falls within the boundary of the disposal system during such discharge does not overflow the boundary of the system unless the WPDES permit authorizes collection and discharge of runoff to a surface water.

History: Cr. Register, March, 1985, No. 351, eff. 4-1-85; r. (2) (i) and (j), Register, September, 1987, No. 381, eff. 10-1-87.

**NR 206.08 Effluent limitations for specific types of land disposal systems.** (1) ABSORPTION POND SYSTEMS. (a) *Design limitations.* Absorption pond systems shall conform to the design requirement in s. NR 110.25(4).

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(b) *New systems discharge prohibitions.* No WPDES permit may be issued for:

1. An absorption pond system designed to be constructed in soils coarser than loamy sands (USDA soils classification) or with less than 5% passing a number 200 sieve.

2. An absorption pond system designed to be constructed in soils finer than clay loam (USDA soils classification) or with liquid limits greater than 50% (unified soil classification).

3. An absorption pond system designed to be constructed in soils with pH less than 6.5.

4. An absorption pond system where the total nitrogen concentration in the raw wastewater to the biological treatment system is greater than 25 mg/l unless the treatment system includes a denitrification process.

(c) *Effluent limitations.* 1. The discharge to the absorption pond shall have total nitrogen concentration of less than 20 mg/l in monthly average.

2. The discharge to the absorption pond shall be limited to a maximum hydraulic loading rate of 90,000 gallons per acre per day (1850 meters per second).

3. The discharge to the absorption pond shall be BOD<sub>5</sub> concentration of less than 50 mg/l in monthly average.

4. Absorption ponds shall be operated to provide alternately a 2 week dosing and a 2 week resting schedule or as specified in the WPDES permit.

(2) All other land disposal systems shall be evaluated by the department on a case-by-case basis.

History: Cr. Register, March, 1985, No. 351, eff. 4-1-85.

**NR 206.09 Wastewater monitoring requirements.** (1) Discharges to a land disposal system shall, at a minimum, be monitored for flow, pH, temperature, BOD<sub>5</sub> and total nitrogen. For spray irrigation systems fecal coliform bacteria monitoring shall be included. The frequency of flow monitoring and sampling and the type of samples shall be as specified in the WPDES permit.

(2) Influent to all treatment facilities subject to the monitoring provisions of sub. (1) shall be monitored for flow, pH, temperature, BOD<sub>5</sub> and total nitrogen. The frequency of flow monitoring and sampling and the type of samples shall be as specified in the WPDES permit. Any flow bypassing the treatment facility to the land disposal system shall be monitored continuously.

(3) Monitoring for other pollutants parameters may be required on a case-by-case basis dependent on waste characteristics and their potential for groundwater contamination.

(4) Unless otherwise specified in the WPDES permit for a land disposal system: (a) The procedures for measuring flow and taking samples of discharges shall be those set forth in ch. NR 218.

(b) The methods of analysis for substances contained in discharges shall be those set forth in ch. NR 219.

History: Cr. Register, March, 1985, No. 351, eff. 4-1-85.

**NR 206.10 Groundwater monitoring.** (1) **DESIGN CRITERIA.** The design criteria and construction standards for a groundwater monitoring well shall conform to s. NR 110.25(5).

(2) **MONITORING REQUIREMENTS.** (a) *Design flow less than .05 MGD.* The department may require monitoring of groundwater if there is reason to believe contamination of groundwater may occur or is occurring.

(b) *Design flow of .05 MGD to 1.0 MGD.* Groundwater shall be monitored at a single level, at locations specified in the WPDES permit, monthly for the first 3 months after the monitoring system is installed, and twice annually thereafter. The department may modify the twice annual requirement to once annually if the land disposal system is receiving liquid wastes for a period of not more than 4 months annually, or it may require more frequent monitoring on a case-by-case basis if there is reason to believe contamination may be occurring.

(c) *Design flow greater than 1.0 MGD.* Groundwater shall be monitored at 2 levels at locations specified in the WPDES permit at the same frequency as required in par. (b).

(d) The department may require groundwater monitoring for any or all of the following parameters in filtered and unfiltered samples: elevation, BOD<sub>5</sub>, specific conductance, COD, organic nitrogen, ammonia nitrogen, nitrate and nitrite nitrogen, chlorides, sulfates, dissolved solids, alkalinity, hardness and pH. Monitoring for other parameters may be required on a case-by-case basis if there is reason to believe contamination is occurring or if these contaminants are present in the wastewater.

History: Cr. Register, March, 1985, No. 351, eff. 4-1-85.