

**Chapter NR 104**

**INTRASTATE WATERS — USES AND DESIGNATED STANDARDS**

NR 104.01	General (p. 33)	NR 104.07	Variances and additions applicable in the Lake Michigan district (p. 44)
NR 104.02	Surface water classifications and effluent limitations (p. 34)	NR 104.08	Variances and additions applicable in the north central district (p. 48)
NR 104.03	Classification of surface waters and antidegradation (p. 37)	NR 104.09	Variances and additions applicable in the west central district (p. 50)
NR 104.04	Provision for changes (p. 38)	NR 104.10	Variances and additions applicable in the northwest district (p. 53)
NR 104.05	Variances and additions applicable in the southern district (p. 38)		
NR 104.06	Variances and additions applicable in the southeast district (p. 41)		

**Note:** Chapter NR 104 as it existed on September 30, 1976 was repealed and a new chapter NR 104 was created effective October 1, 1976.

**NR 104.01 General.** (1) "It is . . . the goal of the state of Wisconsin that, wherever attainable, an interim goal of water quality which provides for the protection and propagation of fish, shellfish and wildlife and provides for recreation in and on the water be achieved by 1983. . ." s. 147.01 (1) (b), Stats. The long-range goal of Wisconsin water quality standards is, therefore, to permit the use of water resources for all lawful purposes. Surface waters which because of natural conditions are not conducive to the establishment and support of the complete hierarchy of aquatic organisms shall not be degraded below present levels, but shall be upgraded as necessary to support assigned uses. Most surface waters within the state of Wisconsin already meet or exceed the goals specified above. However, certain waters of the state may not meet these goals for the following reasons:

- (a) The presence of in-place pollutants,
- (b) Low natural streamflow,
- (c) Natural background conditions, and
- (d) Irretrievable cultural alterations.

(1m) Where it is determined that one or more of these factors may interfere with the attainment of the statutory objectives, a variance from the criteria necessary to achieve those objectives is provided.

(2) Surface waters within the boundaries of the state shall meet the standards for fish and aquatic life and recreational use with the variances and additions listed below in sections NR 104.05 to NR 104.10. A system is provided within which small streams and other surface waters which cannot support high quality uses are granted a variance from the high quality criteria.

(3) Effluent limitations specified in this chapter shall be achieved by industrial, private and municipal dischargers by July 1, 1983 unless an



## NR 104

earlier date is otherwise provided in a permit issued under s. 147.02, Stats. Municipal dischargers eligible for state or federal grant-in-aid shall achieve the specified effluent limitations upon completion of construction or modification of facilities approved by the department of natural resources subsequent to adoption of this chapter unless otherwise provided in a permit issued under s. 147.02, Stats.

**History:** Cr. Register, September, 1976, No. 249, eff. 10-1-76; am. (1), Register, December, 1977, No. 264, eff. 1-1-78.

**NR 104.02 Surface water classifications and effluent limitations.**

(1) **HYDROLOGIC CLASSIFICATION.** "Surface waters" as defined in NR 102.01 (7), Wis. Adm. Code, may be classified according to their hydraulic or hydrologic characteristics. For purposes of this chapter, surface waters will be classified by the department into one of the following categories:

(a) *Lakes or flowages.* This classification includes bodies of water whose current is more or less stagnant or which lacks a unidirectional current.

(b) *Diffused surface waters.* This classification includes any water from rains, intermittent springs or melting snow which flows on the land surface, through ravines, etc., which are usually dry except in times of runoff. This category does not include waters at the land surface in the vicinity of agricultural or wastewater irrigation disposal systems.

(c) *Wetlands.* This classification includes areas where water is at or near the surface of the land much of the year, where soils are poorly drained, and where a significant portion of the plant cover is deemed aquatic in nature.

(d) *Wastewater effluent channels.* This classification includes discharge conveyances constructed primarily for the purpose of transporting wastes from a facility to a point of discharge. Drainage ditches (including those established under ch. 88, Stats.) constructed primarily for the purposes of relieving excess waters on agricultural lands shall not be construed as effluent channels. Modifications made to natural watercourses receiving wastewater effluents for the purpose of increasing or enhancing the natural flow characteristics of the stream shall not be classified as effluent channels.

(e) *Noncontinuous streams.* This classification includes watercourses which have a defined stream channel, but have a natural 7-day  $Q_{10}$  flow of less than 0.1 cfs and do not exhibit characteristics of being perpetually wet without wastewater discharges.

(f) *Continuous streams.* This classification includes watercourses which have a natural 7-day  $Q_{10}$  flow of greater than 0.1 cfs or which exhibit characteristics of a perpetually wet environment, are generally capable of supporting a diverse aquatic biota and flow in a defined stream channel.

**Note:** The application of this classification system is not dependent on the navigability properties of the watercourse, but is dependent upon the quantity-quality relationships of the surface water.

(2) **WATER QUALITY CLASSIFICATION.** (a) Whenever the goals as specified in s. 147.01 (1) (b), Stats., cannot be attained because of conditions



enumerated in NR 104.01 (1), a variance may be provided. Variances from a specific water quality criteria may be given in NR 104.05 et. seq. or a variance under one of the categories provided in this chapter may be specified.

(b) Practices attributable to municipal, industrial, commercial, domestic, agricultural, land development, or other activities shall be controlled so that waters regardless of their hydrologic and water quality classifications meet the general aesthetic and acute toxicity conditions in Wis. Adm. Code section NR 102.02 (1).

(3) VARIANCE CATEGORIES. (a) Surface waters not supporting a balanced aquatic community (intermediate aquatic life):

1. Applicability. This category of variance may be applied to either the continuous or noncontinuous stream hydrologic classification.

2. Surface water criteria. The following water quality criteria shall be met in all surface waters included in this variance category:

a. Dissolved oxygen shall not be less than 3 mg/1.

b. To protect the public health, bacteriological qualities specified in Wis. Adm. Code section NR 102.02 (4) shall be maintained.

c. Disinfectant sufficient to protect the public health is permitted.

d. Chlorine, when used as an effluent disinfectant, shall not be greater than 0.50 mg/1 at any point in the receiving water.

e. Ammonia nitrogen (as N) at all points in the receiving water shall not be greater than 3 mg/1 during warm temperature conditions nor greater than 6 mg/1 during cold temperatures to minimize the zone of toxicity and to reduce dissolved oxygen depletion caused by oxidation of the ammonia.

f. The pH shall be within the range of 6.0 to 9.0.

g. Other substances shall be controlled in accordance with Wis. Adm. Code section NR 102.02 (1).

3. Effluent criteria. a. The effluent limitations determined necessary to meet the surface water criteria listed above are enumerated in table 1.

Parameter	Table 1			Other (mg/1)
	Monthly Average (mg/1)	Daily Maximum (mg/1)	Weekly Average (mg/1)	
BOD <sub>5</sub>	15	30	-	-
Total Suspended Solids	20	30	-	-
NH <sub>3</sub> -N (May-October)	-	-	3	-
NH <sub>3</sub> -N (November-April)	-	-	6	-
Dissolved Oxygen	-	-	-	4 (minimum)
Total Residual Chlorine	-	-	-	0.50 (maximum)

b. Unless otherwise specified in table 1 above, effluent limitations for sewage treatment works shall be as adopted in Wis. Adm. Code chapter NR 210.



## NR 104

c. In addition to the effluent limitations enumerated in table 1 above, effluent limitations for these and any other substance necessary to protect assigned uses shall be met.

(b) Marginal surface waters: 1. Applicability. This variance category may be applied to the continuous or noncontinuous stream hydrologic classification, except that it shall be applied to all surface waters classified as effluent channel, wetland or diffuse surface water.

2. Surface water criteria. The following surface water quality criteria shall be met in all surface waters included in this variance category:

a. Dissolved oxygen shall not be less than 1 mg/l.

b. To protect the public health, bacteriological qualities specified in Wis. Adm. Code section NR 102.02 (4) shall be maintained.

c. Disinfectant sufficient to protect the public health is permitted. Chlorine, when used as an effluent disinfectant, shall not be greater than 0.50 mg/l at any point in the receiving water.

d. The pH shall be within the range of 6.0 to 9.0.

e. Other substances shall be controlled in accordance with Wis. Adm. Code section NR 102.02 (1).

3. Effluent criteria. a. The effluent limitations determined necessary to meet the surface water criteria listed above are enumerated in table 2.

Parameter	Monthly Average (mg/l)	Weekly Average (mg/l)	Other (mg/l)
BOD <sub>5</sub>	20	30	-
Total Suspended Solids	20	30	-
Dissolved Oxygen	-	-	4 (minimum)
Total Residual Chlorine	-	-	0.50 (maximum)

b. Unless otherwise specified in table 2 above, effluent limitations for sewage treatment works shall be as adopted in Wis. Adm. Code chapter NR 210.

c. In addition to the effluent limitations enumerated in table 2 above, effluent limitations for these and any other substance necessary to protect assigned uses shall be met.

(4) OTHER CLASSIFICATIONS AND EFFLUENT CRITERIA. (a) *Surface waters significant to the environmental integrity of the state or region.* Under all hydrologic categories, the department reserves the right to require other effluent limitations, including allocation of wasteloads for organic material, toxicants and chlorine residuals if it is determined that the specified surface water is important to the overall environmental integrity of the area. In waters identified as trout streams, located in scientific areas or wild and scenic areas, providing endangered species habitat or of high recreational potential, effluent criteria will be evaluated on a case-by-case basis.

(b) *Surface waters classified for fish and aquatic life.* 1. Streams. Where flowing streams or rivers are specified to achieve fish and aquatic

Register, November 1979, Vol. 286  
Environmental Protection

life criteria, wasteload allocation for organic material, toxicants and chlorine residuals shall determine effluent criteria necessary to achieve that standard.

2. Lakes and flowages. Effluent characteristics for discharges to lakes or flowages shall be based upon an evaluation of water quality necessary to protect fish and aquatic life taking into account mixing zone and nutrient removal criteria.

3. Minimum effluent criteria. If it can be reasonably demonstrated that the quality of the surface water is independent of a wastewater discharge, effluent limitations established under ss. 147.04 and 147.06, Stats., shall apply.

(c) *Wastewater treatment lagoons.* Effluents from fill-and-draw wastewater treatment lagoons or domestic waste stabilization ponds discharging to waters receiving a variance in this chapter may be permitted to vary from the limitations specified in table 1 or 2 provided the following conditions are met:

1. The discharge occurs only during the spring and fall of the year when the flow in the receiving water is normally high, and the temperature is low. The rate of discharge shall not exceed that specified in a permit under s. 147.02, Stats., or where no rate is indicated, the allowable discharge quantities shall be determined by the department based upon current evaluation of the receiving water.

2. In lieu of the previous conditions, the discharge from a fill-and-draw lagoon may occur at any time provided the rate does not exceed the assimilative capacity of the receiving water as specified in a permit under s. 147.02, Stats.

3. The dissolved oxygen in the effluent is maintained at a level greater than or equal to 4 mg/l, and the permitted rate of discharge shall be such that the dissolved oxygen and ammonia nitrogen criteria necessary to sustain fish and aquatic life are maintained in the stream during the period of discharge.

4. The effluent limitations do not exceed those established under ss. 147.04 and 147.06, Stats.

(5) **CHANGES IN CLASSIFICATION.** Surface waters which exhibit changing hydrologic and quality characteristics shall be classified accordingly. Effluent criteria for upstream discharges shall be based upon the most critical downstream classification and shall be specified by the department either on the basis of justified inference or by the application of a wasteload allocation analysis. Any subsequent changes in a stream's morphology or potential may necessitate the reevaluation of the classification.

**History:** Cr. Register, September, 1976, No. 249, eff. 10-1-76; am. Tables 1 and 2, (2), (3) (a) 2a and d, (3) (b) 2a and c, (4) (c), Register, December, 1977, No. 264, eff. 1-1-78; am. (3) (a) 2a, Register, June, 1978, No. 270, eff. 7-1-78.

**NR 104.03 Classification of surface waters and antidegradation.** In no case shall the effluent criteria specified herein cause degradation of surface water quality below present levels. Surface waters which, because of their hydrologic classification, are permitted to receive a new

## NR 104

effluent of a quality specified in NR 104.02 shall not receive such effluent unless it has been affirmatively demonstrated to the department that such degradation is necessary to protect the public health or to maintain or restore the environmental integrity of a higher value resource. In no case shall a new effluent interfere with or become injurious to any assigned uses made of or presently possible in any surface water.

**History:** Cr. Register, September, 1976, No. 249, eff. 10-1-76; am. Register, December, 1977, No. 264, eff. 1-1-78.

**NR 104.04 Provision for changes.** The surface waters specified in this chapter are not intended to be an exclusive listing nor do the specified effluent criteria purport to meet the 1983 water quality goals set forth in ch. 147, Stats. Additions to or deletions from these listings may be made based upon the accumulation of information necessary to make such determination and in accordance with the requirements of ch. 227, Stats.

**History:** Cr. Register, September, 1976, No. 249, eff. 10-1-76.

**NR 104.05 Variances and additions applicable in the southern district.** Subject to the provision of NR 104.04, intrastate surface waters in the southern district counties of Columbia, Dane, Dodge, Grant, Green, Iowa, Jefferson, Lafayette, Richland, Rock and Sauk shall meet the criteria for fish and aquatic life and recreational use with exceptions and additions as follows:

(1) ADDITION. The public water supply standard shall be met on the Wisconsin river in section 8, township 10 north, range 7 east.

(2) VARIANCE. Surface waters in the southern district subject to a variance under NR 104.02 (3) are listed in table 3.

TABLE 3  
SOUTHERN DISTRICT

Surface Water (Facility Affected)	Reach Description	Hydrologic Classification	Applicable Criteria (1)	Effluent Limitations (2)
1. Goose Lake Tributary (Arlington)	Tributary upstream from Goose Lake	Noncontinuous	II	Effluent limitations to be determined
2. Tributary - East Branch Pecatonica River (Barneveld)	From the Barneveld STP downstream to the East Branch Pecatonica River	Noncontinuous	II	B
3. Williams Creek (Blue Mounds)	From the Blue Mounds STP downstream to the east line of Sec. 14, T6N, R5E	Noncontinuous	I	A
4. Sanders Creek (Boscobel)	From the Boscobel STP downstream to the Wisconsin River	Continuous	I	A
5. Allen Creek (Brooklyn)	Upstream from Butts Corner Road	Continuous	I	A
6. Kummel Creek (Brownsville)	From Brownsville STP downstream to CTH "HH"	Noncontinuous	I	A
7. Spring Brook and Tributary (Clinton)	Tributary from the Clinton STP to Spring Brook	Effluent ditch	II	B
8. Tributary - Dead Creek (Clyman)	Spring Brook in Clinton Township	Continuous	II	NA
9. West Branch Pecatonica River (Cobb)	Tributary from Clyman STP downstream to Dead Creek	Noncontinuous	II	B
	From the Cobb STP downstream to confluence with an unnamed tributary NE¼, NW¼, Sec. 2, T5N, R1E.	Continuous	I	A