Chapter NR 102

WATER QUALITY STANDARDS FOR WISCONSIN SURFACE WATERS

History: Chapter NR 102 as it existed on September 30, 1973 was repealed and a new chapter NR 102 was created, effective October 1, 1973. Corrections made under s. 13.93 (2m) (b) 7., Stats., Register, August, 1997, No. 500.

NR 102.01 Purpose. (1) The purpose of this chapter is to establish, in conjunction with chs. NR 103 to 105, water quality standards for surface waters of the state pursuant to s. 281.15 (2) (b), Stats. This chapter describes the designated use categories for such waters and the water quality criteria necessary to support these uses. This chapter and chs. NR 103 to 105 constitute the water quality standards for the surface waters of Wisconsin.

(2) Water quality standards shall protect the public interest, which includes the protection of public health and welfare and the present and prospective uses of all waters of the state for public and private water supplies, propagation of fish and other aquatic life and wild and domestic animals, domestic and recreational purposes, and agricultural, commercial, industrial, and other legitimate uses. In all cases where the potential uses are in conflict, water quality standards shall protect the general public interest.

(3) Water quality standards serve as a basis for developing and implementing control strategies to achieve legislative policies and goals. Water quality standards are the basis for deriving water quality based effluent limitations. Water quality standards also serve as a basis for decisions in other regulatory, permitting or funding activities that impact water quality.

History: Cr. Register, February, 1989, No. 398, eff. 3–1–89.

NR 102.02 Applicability. The provisions of this chapter are applicable to surface waters of Wisconsin.

History: Cr. Register, February, 1989, No. 398, eff. 3–1–89.

NR 102.03 Definitions. (1) "Mixing zone" means a region in which a discharge of different characteristics than the receiving water is in transit and progressively diluted from the source to the receiving system.

(2) "Natural conditions" means the normal daily and seasonal variations in climatic and atmospheric conditions, and the existing physical and chemical characteristics of a water or the course in which it flows.

(3) "Natural temperature" means the normal existing temperature of a surface water including daily and seasonal changes outside the zone of influence of any artificial inputs.

(4) "Resource management" means the application of control techniques to enhance or preserve a surface water in accordance with statutory provisions and in the general public interest.

(5) "Sanitary survey" means a thorough investigation and evaluation of a surface water including bacteriological sampling to determine the extent and cause of any bacterial contamination.

(6) "Surface waters" means all natural and artificial named and unnamed lakes and all naturally flowing streams within the boundaries of the state, but not including cooling lakes, farm ponds and facilities constructed for the treatment of wastewaters (the term waters as used in this chapter means surface waters).

(7) "Unauthorized concentrations of substances" means pollutants or other chemicals introduced into surface waters without prior permit or knowledge of the department, but not including accidental or unintentional spills.

(8) "Best practicable control technology" means that level of treatment established by the department under s. 283.13 (2) (a), Stats., for categories and classes of point sources to be achieved by not later than July 1, 1977.

(9) "Best available control technology" means that level of treatment established by the department under s. 283.13 (2) (b) 1., Stats., for categories and classes of point sources to be achieved by not later than July 1, 1983.

(10) Class I and Class II trout waters are as defined in s. NR 1.02 (7).

History: Cr. Register, September, 1973, No. 213, eff. 10–1–73; r. (1), renum. from NR 102.01, Register, February, 1989, No. 398, eff. 3–1–89; cr. (10), Register, May, 1993, No. 449, eff. 6–1–93.

NR 102.04 Categories of standards. (1) GENERAL. To preserve and enhance the quality of waters, standards are established to govern water management decisions. Practices attributable to municipal, industrial, commercial, domestic, agricultural, land development or other activities shall be controlled so that all waters including the mixing zone and the effluent channel meet the following conditions at all times and under all flow conditions:

(a) Substances that will cause objectionable deposits on the shore or in the bed of a body of water, shall not be present in such amounts as to interfere with public rights in waters of the state.

(b) Floating or submerged debris, oil, scum or other material shall not be present in such amounts as to interfere with public rights in waters of the state.

(c) Materials producing color, odor, taste or unsightliness shall not be present in such amounts as to interfere with public rights in waters of the state.

(d) Substances in concentrations or combinations which are toxic or harmful to humans shall not be present in amounts found to be of public health significance, nor shall substances be present in amounts which are acutely harmful to animal, plant or aquatic life.

(2) REVISED STANDARDS. It should be recognized that these standards will be revised as new information or advancing technology indicate that revisions are in the public interest. Water used for hydropower and commercial shipping depends mainly on quantity, depth and elevation; consequently, no specific quality standards for these uses have been prepared.

(3) FISH AND OTHER AQUATIC LIFE USES. The department shall classify all surface waters into one of the fish and other aquatic life subcategories described in this subsection. Only those use subcategories identified in pars. (a) to (c) shall be considered suitable for the protection and propagation of a balanced fish and other aquatic life community as provided in the federal water pollution control act amendments of 1972, P.L. 92–500; 33 USC 1251 et seq.

(a) *Cold water communities.* This subcategory includes surface waters capable of supporting a community of cold water fish and other aquatic life, or serving as a spawning area for cold water

fish species. This subcategory includes, but is not restricted to, surface waters identified as trout water by the department of natural resources (Wisconsin Trout Streams, publication 6–3600 (80)).

(b) *Warm water sport fish communities.* This subcategory includes surface waters capable of supporting a community of warm water sport fish or serving as a spawning area for warm water sport fish.

(c) *Warm water forage fish communities.* This subcategory includes surface waters capable of supporting an abundant diverse community of forage fish and other aquatic life.

(d) *Limited forage fish communities.* (Intermediate surface waters). This subcategory includes surface waters of limited capacity and naturally poor water quality or habitat. These surface waters are capable of supporting only a limited community of forage fish and other aquatic life.

(e) *Limited aquatic life.* (Marginal surface waters). This subcategory includes surface waters of severely limited capacity and naturally poor water quality or habitat. These surface waters are capable of supporting only a limited community of aquatic life.

(4) STANDARDS FOR FISH AND AQUATIC LIFE. Except for natural conditions, all waters classified for fish and aquatic life shall meet the following criteria:

(a) *Dissolved oxygen.* Except as provided in par. (e) and s. NR 104.02 (3), the dissolved oxygen content in surface waters may not be lowered to less than 5 mg/L at any time.

(b) *Temperature.* 1. There shall be no temperature changes that may adversely affect aquatic life.

2. Natural daily and seasonal temperature fluctuations shall be maintained.

3. The maximum temperature rise at the edge of the mixing zone above the existing natural temperature shall not exceed 5º F for streams and 3º F for lakes.

4. The temperature shall not exceed 89º F for warm water fish.

(c) *pH.* The pH shall be within the range of 6.0 to 9.0, with no change greater than 0.5 units outside the estimated natural seasonal maximum and minimum.

(d) *Other substances.* Unauthorized concentrations of substances are not permitted that alone or in combination with other materials present are toxic to fish or other aquatic life. Surface waters shall meet the acute and chronic criteria as set forth in or developed pursuant to ss. NR 105.05 and 105.06. Surface waters shall meet the criteria which correspond to the appropriate fish and aquatic life subcategory for the surface water, except as provided in s. NR 104.02 (3).

(e) *Temperature and dissolved oxygen for cold waters.* Streams classified as trout waters by the department of natural resources (Wisconsin Trout Streams, publication 6–3600 (80)) or as great lakes or cold water communities may not be altered from natural background temperature and dissolved oxygen levels to such an extent that trout populations are adversely affected.

1. There shall be no significant artificial increases in temperature where natural trout reproduction is to be protected.

2. Dissolved oxygen in classified trout streams shall not be artificially lowered to less than 6.0 mg/L at any time, nor shall the dissolved oxygen be lowered to less 7.0 mg/L during the spawning season.

3. The dissolved oxygen in great lakes tributaries used by stocked salmonids for spawning runs shall not be lowered below natural background during the period of habitation.

(5) STANDARDS FOR RECREATIONAL USE. A sanitary survey and/or evaluation to assure protection from fecal contamination is the chief criterion in determining the suitability of a surface water for recreational use.

(a) *Bacteriological guidelines.* The membrane filter fecal coliform count may not exceed 200 per 100 ml as a geometric mean based on not less than 5 samples per month, nor exceed 400 per 100 ml in more than 10% of all samples during any month.

(b) *Exceptions.* Whenever the department determines, in accordance with the procedures specified in s. NR 210.06, that wastewater disinfection is not required to protect recreational uses, the recreational use criteria and classifications as established in this subsection and in chs. NR 103 and 104 do not apply.

(6) STANDARDS FOR PUBLIC HEALTH AND WELFARE. All surface waters shall meet the human threshold and human cancer criteria specified in or developed pursuant to ss. NR 105.08 and 105.09, respectively. The applicable criteria vary depending on whether the surface water is used for public drinking water supplies and vary with the type of fish and other aquatic life subcategory. All surface waters providing public drinking water supplies or classified as cold water or warm water sport fish communities as described in sub. (3) shall meet the taste and odor criteria specified in or developed pursuant to s. NR 102.14.

(7) STANDARDS FOR WILDLIFE. All surface waters shall be classified for wildlife uses and meet the wildlife criteria specified in or developed pursuant to s. NR 105.07.

History: Cr. Register, September, 1973. No. 213, eff. 10–1–73; am. (3), Register, December, 1977, No. 264, eff. 1–1–78; renum. from NR 102.02, r. (3) (d) 1. to 3., and (5), renum. (3) (intro.) to (d) (intro.) and (e) and (4) to be (4) (intro.) to (e) and (5) and am. (4) (a), (d), (e) (intro.) and (5), cr. (6) and (7), Register, February, 1989, No. 398, eff. 3–1–89; am. (3) (intro.), (6), (7), r. (3) (a), renum. (3) (b) to (f) to be (3) (a) to (e) and am. (3) (a), Register, August, 1997, No. 500, eff. 9–1–97.

NR 102.05 Application of standards. (1) ANTIDEGRADATION. (a) No waters of the state shall be lowered in quality unless it has been affirmatively demonstrated to the department that such a change is justified as a result of necessary economic and social development, provided that no new or increased effluent interferes with or becomes injurious to any assigned uses made of or presently possible in such waters.

(b) *Classification system.* For the purposes of this subsection, all surface waters of the state, or portions thereof, shall be classified as one of the following:

1. Outstanding resource waters as listed in s. NR 102.10,

2. Exceptional resource waters as listed in s. NR 102.11,

3. Great Lakes system waters as listed in s. NR 102.12 (1),

4. Fish and aquatic life waters as described in s. NR 102.13, or

5. Waters listed in tables 3 through 8 in ss. NR 104.05 to 104.10.

(2) STREAMFLOW. Water quality standards will not be maintained under all natural occurrences of flow, temperature, or other water quality characteristics. The determination of water quality based effluent limitations or other management practices shall be based upon the following conditions except as provided in ch. NR 106 for toxic and organoleptic substances and whole effluent toxicity:

(a) The average minimum 7–day low streamflow which occurs once in 10 years (7–day Q_{10}); or,

(b) In the case of dissolved oxygen and wherever sufficient data on streamflow and temperature are available, by application of a 0.274% level of nonattainment. This is equivalent to an expected nonattainment of the dissolved oxygen criterion of one day per year.

(3) MIXING ZONES. Water quality standards shall be met at every point outside of a mixing zone. The size of the mixing zone cannot be uniformly prescribed, but shall be based on such factors as effluent quality and quantity, available dilution, temperature, current, type of outfall, channel configuration and restrictions to fish movement. For toxic and organoleptic substances with water quality criteria or secondary values specified in or developed pursuant to chs. NR 102 and 105, allowable dilution shall be determined as specified in ch. NR 106 in addition to the requirements specified in this subsection. As a guide to the delineation of a mixing zone, the following shall be taken into consideration:

(a) Limiting mixing zones to as small an area as practicable, and conforming to the time exposure responses of aquatic life.

(b) Providing passageways in rivers for fish and other mobile aquatic organisms.

(c) Where possible, mixing zones being no larger than 25% of the cross–sectional area or volume of flow of the stream and not extending more than 50% of the width.

(d) Final acute criteria and secondary values specified in or developed pursuant to s. NR 105.05 for the fish and aquatic life subcategory for which the receiving water is classified not being exceeded at any point in the mixing zone.

(e) Mixing zones not exceeding 10% of a lake's total surface area.

(f) Mixing zones not interfering with spawning or nursery areas, migratory routes, nor mouths of tributary streams.

(g) Mixing zones not overlapping, but where they do, taking measures to prevent adverse synergistic effects.

(h) Restricting the pH to values greater than 4.0 s.u. and to values less than 11.0 s.u. at any point in the mixing zone for the protection of indigenous fish and fish food organisms.

(4) EXEMPTIONS. The thermal mixing zone provisions of this chapter are not applicable to municipal waste and water treatment plants, to vessels, or to discharges to enclosed harbors.

(5) RESOURCE MANAGEMENT EXEMPTIONS. Application of chemicals for water resource management purposes in accordance with statutory provisions is not subject to the requirements of the standards except in case of water used for public water supply.

(6) ANALYTICAL PROCEDURES. (a) The criteria in the Radiation Protection Code, s. HFS 157.44, shall apply to the disposal and permissible concentrations of radioactive substances.

(b) Methods used for analysis of samples shall be as set forth in ch. NR 219 unless alternative methods are specified by the department.

History: Cr. Register, September, 1973, No. 213, eff. 10–1–73; renum. (5) and (6) to be (6) and (7), cr. (5), Register, July, 1975, No. 235, eff. 8–1–75; r. and recr. (3), Register, August, 1981, No. 308, eff. 9–1–81; correction in (7) made under s. 13.93 (2m) (b) 7., Stats., cr. (4) (h), Register, September, 1984, No. 345, eff. 10–1–84; renum. from NR 102.03, r. (1), cr. (1) (b), renum. (2) to (7) to be (1) (a) to (6) and am. (2), (3) (intro.) and (d) and (6), Register, February, 1989, No. 398, eff. 3–1–89; am. (1) (b) 3., (3) (intro.) and (d), Register, August, 1997, No. 500, eff. 9–1–97; **correction in (6) (a) made under s. 13.93 (2m) (b) 7., Stats**.

NR 102.06 Phosphorus. In addition to the requirements established in ch. NR 217, any wastewater discharger, regardless of population, volume or type of waste discharge, or geographic location, may be required to remove excess amounts of phosphorus. Effluent limitations for total phosphorus based on surface water quality may be established where, in the best professional judgment of the department, such limitations will result in an improvement in water quality, or preserve the quality of surface waters where long–term discharges may result in impairment of water quality. Such limitations for phosphorus shall include an evaluation of the discharges from point sources, nonpoint sources, background sources, tributaries, and a consideration of a margin of safety.

History: Cr. Register, July, 1975, No. 235, eff. 8–1–75; am. Register, October, 1986, No. 370, eff. 11–1–86; renum. from NR 102.04, Register, February, 1989, No. 398, eff. 3–1–89; am. Register, November, 1992, No. 443, eff. 12–1–92.

NR 102.07 Lake Michigan and Lake Superior thermal standards. For Lake Michigan and Lake Superior the following thermal standards are established so as to minimize effects on the aquatic biota in the receiving waters.

(1) (a) Thermal discharges shall not raise the receiving water temperature more than 3ºF above the existing natural temperature at the boundary of mixing zones established in pars. (b) and (c).

(b) 1. The mixing zone for a shoreline thermal discharge shall be the area included within the perimeter of a rectangular figure extending 1,250 feet in both directions along the shoreline from the outfall and 1,250 feet into the lake.

2. The mixing zone for an offshore thermal discharge shall be the area within a 1,000–foot radius circle with its center at the point of discharge.

(c) The department may, upon request from the owner of a source of thermal discharge, adjust the boundaries of the mixing zone established in par. (b) for that source. In no case may any mixing zone so established include an area greater than 72 acres nor may it include more than 2,800 feet of shoreline.

(2) In addition to the limitation set forth in sub. (1), but excepting the Milwaukee Harbor, Port Washington Harbor and the mouth of the Fox River, thermal discharges to Lake Michigan shall not raise the temperature of the receiving waters at the boundary of the established mixing zone above the following limits:

January	45°F
February	45°
March	45°
April	55°
May	60°
June	70°
July	80°
August	80°
September	80°
October	65°
November	60°
December	50°

History: Cr. Register, September, 1973, No. 213, eff. 10–1–73; r. and recr. Register, July, 1975, No. 235, eff. 8–1–75; renum. from NR 102.05, Register, February, 1989, No. 398, eff. 3–1–89.

NR 102.08 Mississippi river thermal standards. In addition to the standards for fish and aquatic life, the monthly average of the maximum daily temperature in the Mississippi river outside the mixing zone shall not exceed the following limits:

January	40°F
February	40°
March	54°
April	65°
May	75°
June	84°
July	84°
August	84°
September	82°
October	73°
November	58°
December	48°

History: Cr. Register, July, 1975, No. 235, eff. 8–1–75; renum. from NR 102.06, Register, February, 1989, No. 398, eff. 3–1–89.

NR 102.09 Review of thermal standards. (1) Whenever the owner of any source of thermal discharges that existed on or before July 31, 1975, in compliance with department guidelines and after opportunity for public hearing, can demonstrate to the satisfaction of the department that the mixing zone established pursuant to this chapter is more stringent than necessary to assure the protection and propagation of a balanced, indigenous population of shellfish, fish and wildlife in and on the receiving water, the department may:

(a) Impose a mixing zone with respect to such thermal discharge that will assure the protection and propagation of such a population, or

(b) Exempt such thermal discharge from the thermal requirements of this chapter provided this exemption will not endanger the propagation of such a population.

(2) Any owner desiring a review pursuant to sub. (1) shall submit a demonstration to the department no later than June 30, 1976. The department shall reach a decision no later than December 31, 1976.

(3) In the event the owner fails to make a satisfactory demonstration pursuant to sub. (1), the department shall establish a compliance date for the thermal component to be achieved no later than July 1, 1979.

(4) Whenever the owner of any source of thermal discharges that commenced on or after August 1, 1975, in compliance with department guidelines and after opportunity for public hearing, can demonstrate to the satisfaction of the department that the mixing zone established pursuant to this chapter is more stringent than necessary to assure the protection and propagation of a balanced, indigenous population of shellfish, fish and wildlife in and on the receiving water, the department may:

(a) Impose a mixing zone with respect to such thermal discharge that will assure the protection and propagation of such a population, or

(b) Exempt such thermal discharge from the thermal requirements of this chapter provided this exemption will not endanger the propagation of such a population.

(5) In the event an owner fails to make a satisfactory demonstration pursuant to sub. (4), the discharge shall be in compliance with the thermal requirements of this chapter upon commencement of the discharge.

(6) The department may require the reduction of thermal discharges or the size and configuration of a mixing zone if it finds that environmental damage is imminent or existent.

History: Cr. Register, July, 1975, No. 235, eff. 8−1−75; am. Register, February, 1977, No. 254, eff. 3−1−77; renum. from NR 102.07, Register, February, 1989, No. 398, eff. 3−1−89.

NR 102.10 Outstanding resource waters. (1) The following surface waters are designated as outstanding resource waters:

(a) *National wild and scenic rivers.* All rivers designated under the national wild and scenic rivers act, as amended, 16 USC 1271 to 1287, except those portions flowing through Indian reservations, including:

1. St. Croix river between the northern boundary of the Hudson city limits and the St. Croix flowage dam in Douglas county except that the portion of the St. Croix river from the northern boundary of the St. Croix Falls city limits to a distance one mile below the STH 243 bridge at Osceola shall be classified exceptional resource waters under s. NR 102.11.

2. Namekagon river between its confluence with the St. Croix river and the outlet of Lake Namekagon in Bayfield county.

(b) *State wild and scenic rivers.* All state wild and scenic rivers designated under s. 30.26, Stats., including:

1. Pike river in Marinette county.

2. Pine river and its tributary Popple river in Florence and Forest counties.

(c) Wolf river upstream of the northern Menominee county line.

(d) The following Class I trout waters:

1. Adams county — Big Roche−a−Cri creek

2. Barron county — Yellow river

3. Bayfield county — Flag river, Sioux river

4. Burnett county — North Fork Clam river, South Fork Clam river

5. Chippewa county — Duncan creek, Elk creek, McCann creek

6. Door county — Black Earth creek above the easternmost CTY KP crossing

7. Door county — Logan creek

8. Douglas county — Bois Brule river and its tributaries

9. Dunn county — Elk creek

10. Florence county — Brule river including Montagne creek and Riley creek tributaries; tributaries to the Pine−Popple rivers including Chipmunk, Cody, Haley, Haymarsh, LaMontagne, Lepage, Lunds, Martin, Olson, Patten, Pine, Riley, Rock, Simpson, Seven Mile, Wakefield and Woods creeks; Little Popple river

11. Forest county — Brule river

13. Kewaunee county — Little Scarboro creek

14. Langlade county — Clearwater creek, Drew creek, Evergreen river, South Branch Oconto river

15. Lincoln county — Center fork New Wood creek, Little Pine creek, Prairie river

16. Marathon county — Holt creek, Spranger creek, Plover river

17. Marinette county — Cedarville creek, Otter creek, Holmes creek, East Thunder creek, North fork Thunder river, Eagle creek, Little Eagle creek, Plumadore creek, Meadow brook, Upper Middle Inlet creek, Middle Inlet creek, Wausaukee river, Little Wausaukee creek, Coldwater brook, Medicine brook, South Branch Miscauno river, Miscauno river, Swede John creek, South Branch Pemebonwon river, Spikehorn creek, Silver creek, Little Silver creek, Sullivan creek; tributaries to the Pike river including Little South Branch Pike river, Camp D creek, Camp F creek, Camp 9 creek, Cole creek, Glen creek, Harvey creek, North Branch Harvey creek, South Branch Harvey creek, Hemlock creek, Holloway creek, K.C. creek, Little Harvey creek, Lost creek, MacIntire creek, Phillips creek, Sackerson creek, Shinns creek, Sidney creek, Smeesters creek, Springdale brook, Whiskey creek

18. Marquette county — Chaffee creek, Lawrence creek, Tagatz creek

19. Monroe county — Rullands Coulee creek

20. Oconto county — First South Branch Oconto river, Second South Branch Oconto river, South Branch Oconto river, Hills Pond creek

21. Polk county — Clam river, McKenzie creek

22. Portage county — Emmons creek, Radley creek, Sannes creek, Tomorrow river, Trout creek

23. Richland county — Camp creek

24. Sheboygan county — Nichols creek

25. St. Croix county — Kinnickinnic river above STH "35"

26. Vernon county — Rullands Coulee creek, Spring Coulee creek, Timber Coulee creek

27. Vilas county — Deerskin river, Plum creek

28. Walworth county — Bluff creek, Potawatomi creek, Van Slyke creek

29. Waupaca county — Emmons creek, Griffin creek, Jackson creek, Leers creek, Peterson creek, Radley creek, Sannes creek, Spaulding creek, Trout creek, Whitcomb creek, North Branch Little Wolf river

30. Waushara county — Willow creek north of Redgranite, Mecan river north of Richford, Little Pine creek, West Branch White river

(e) The following Class II trout waters:

1. Barron county — Yellow river

2. Burnett county — North Fork Clam river

3. Forest county — Brule river, Peshtigo river

4. Grant county — Big Green river, Castle Rock creek

5. Marinette county — Peshtigo river

6. Polk county — McKenzie creek
7. Vilas county — Plum creek

(f) The following cold or warm water streams and rivers or portions thereof:

1.	Barron	Engle Creek	Class I & II Portions
		Hickey Creek	Class I & II Portions
		Upper Pine Creek	Above Dallas Flowage
2.	Bayfield	Bark River	All–Class I Portion
		Big Brook	All
		Cranberry River & Tribs.	All–Class I Portion
		East Fork Iron River & Tribs.	All–Class I Portion
		East Fork White River	All–Class I Portion
		Eighteen Mile Cr. & Tribs.	All–Class I Portion
		Fish Creek (Main)	All
		Long Lake Branch & Tribs.	From below Drummond Lake to White River
			All–Class I Portions
		No. Fork Fish Creek & Tribs.	All–Class I & II Portions
		Onion River & Tribs.	All–Class I Portions
		Pikes Creek & Tribs.	All–Class I Portion
		Sioux River & Tribs.	All–Class I & II Portions
		So. Fork White River	All–Class I Portion
		Thompson Creek	All–Class I Portion
		Twenty Mile Creek	All–Class I & II Portions
		White River	All–Class I Portion
		Whittlesey Creek & Tribs.	All–Class I Portions
3.	Burnett	Tributaries to the N. & S. Forks of the Clam River	All–Class I & II Portions
4.	Dane	Mt. Vernon Creek	All–Class I Portion
5.	Door	Mink River	All
6.	Forest	Allen Creek	All
		Brule Creek	All
		Elvoy Creek	All
		Jones Creek	Class I & II portions
		North Otter Creek	All
7.	Grant	Little Green River	All
8.	Iron, Ashland & Price	No. Fork Flambeau River	From Turtle–Flambeau Flowage Dam downstream to Park Falls
9.	LaCrosse	Berge Coulee Creek	All
10.	Langlade	Elton Creek	Class I Portion
		Little Evergreen Creek	All
		Mayking Creek	All
		Michelson Creek	All
		Mid Branch Embarrass River	Class I Portion
11.	Marathon	Falstad Creek	Class II Portion
		So. Branch Embarrass River	Class I Portion
12.	Marinette	No. Branch Beaver Creek	Entire River & tributaries
13.	Oneida	Noisy Creek	Class II Portion
14.	Pierce	Kinnickinnic River	From Powell Dam to St. Croix River
15.	Polk	Sand Creek & Tribs	All–Class I & II Portions
16.	Price, Rusk & Sawyer	So. Fork Flambeau River	All–Round L. Dam downstream to Jxn with No. Fork Flambeau R.
17.	Richland	Elk Creek	All
18.	Rusk	Devils Creek	All–Class I & II Portions
		So. Fork Main Creek	Class I & II Portions (T35N R3W S28 downstream to T34N R4W S11)
19.	Sauk	Otter Creek	From headwaters to southern section line of T11N R6E S33
		Parfrey's Glen	From headwaters to CTH DL
20.	Sawyer	Benson Creek	All–Class I Portion
		Eddy Creek	All–Class I Portion
		Grindstone Creek	All–Class I Portion
		Little Weirgor Creek & Tribs	All–Class I & II Portions
		McDermott Creek	All
		Mosquito Brook	All–Class I Portion
21.	Shawano	Middle Br. Embarrass R.	Origin to but not including Homme Pond
		No. Br. Embarrass R.	Origin to CTH J
		So. Br. Embarrass R.	Origin to but not including Tigerton Pond

22.	Vilas	Allequash Springs	Class I & II Portions
		Brule Creek	All
		East Br. Blackjack Cr.	All
		Elvoy Creek & Springs	Class I & II Portions
		Mishonagon Creek	Class I & II Portions
		Siphon Creek	All
		Spring Meadow Creek	Class I Portion
		Tamarack Creek	All
23.	Washburn	Beaver Brook	All–Class I Portion
		Sawyer Creek	All–Class I & II Portions
		So. Fork Bean Brook	All–Class I Portion

(1m) The following lakes are designated as outstanding resource waters:

1.	Ashland	Bad River Slough
		Kakagon Slough
2.	Barron	Bear Lake (T36N R12W S2)
		Red Cedar Lake
		Sand Lake
		Silver Lake
3.	Bayfield	Bark Bay Slough
		Diamond Lake
		Middle Eau Claire Lake
		Namekagon Lake
		Owen Lake
		Pike Chain of Lakes (Pike, Millicent, Buskey Bay, Hart, Twin Bear, Eagle, Flynn and Hildur Lakes)
		Star Lake
		Upper Eau Claire Lake
4.	Burnett	Big Mckenzie Lake
		Big Sand Lake
		Sand Lake (T40N R15W S25)
5.	Columbia	Crystal Lake
6.	Douglas	Bond Lake
		Lower Eau Claire Lake
		Nebagamon Lake
		St. Croix (Gordon) Flowage
		Upper St. Croix Lake
		Whitefish Lake (Bardon)
7.	Florence	Edith Lake
		Keyes Lake
		Lost Lake
		Perch Lake
		Riley Lake, South
8.	Forest	Butternut Lake
		Franklin Lake
		Lucerne Lake (Stone)
		Metonga Lake
9.	Iron	Catherine Lake
		Cedar Lake
		Gile Flowage
		Hewitt Lake
		Owl Lake
		Trude Lake
		Turtle–Flambeau Flowage
9m.	Marinette	Caldron Falls Flowage
10.	Oconto	Archibald Lake
		Bass Lake (T32N R15E S9)
		Bear Paw Lake
		Boot Lake
		Chain Lake
11.	Oneida	Big Carr Lake
		Clear Lake (T39N R7E S16)
		Little Tomahawk Lake
		Tomahawk Lake
		Two Sisters Lake
		Willow Flowage
12.	Polk	Pipe Lake
13.	Price	Cochram Lake
		Tucker Lake
14.	Rusk	Bass Lake (T34N R9W S16)
		Fish Lake
		Island Chains of Lakes (Chain, Clear, McMann, and Island Lakes)
		Three Lakes No. 1 (T36N R9W S25)
15.	St. Croix	Bass Lake (T30N R19W S23)
		Perch Lake
16.	Sauk	Devils Lake
17.	Sawyer	Barker Lake
		Blaisdell Lake
		Camp Smith Lake
		Evergreen Lake
		Grindstone Lake
		Lac Court Oreilles
		Lake Chippewa (Chippewa Flowage)
		Nelson Lake
		Osgood Lake
		Perch Lake (T42N R6W S25)
		Round Lake (Big Round)
		Sand Lake
		Spider Lake
		Teal Lake
		Whitefish Lake
18.	Vilas	Black Oak Lake
		Crab Lake
		Crystal Lake (T41N R7E S27)
		Lac Vieux Desert
		North Twin Lake
		Pallette Lake (Clear)
		Partridge Lake
		Plum Lake

		South Twin Lake
		Star Lake
		Stormy Lake
		Trout Lake
		White Sand Lake (T24N R7E S26)
19.	Walworth	Lulu Lake
20.	Washburn	Bass Lake (T40N R10W S17)
		Long Lake
		Middle McKenzie Lake
		Shell Lake
		Stone Lake (T39N R10W S24)
21.	Waukesha	Spring Lake (T5N R18E S9)
22.	Waupaca	Graham Lake (Nelson)
		North Lake
23.	Waushara	Gilbert Lake
		Lucerne Lake (Egans)
		Norwegian Lake
		Pine Lake (Springwater)

(2) The waters in sub. (1) and (1m) may not be lowered in quality.

(3) Surface waters, or portions thereof, may be added to, or deleted from, the outstanding resource waters designation through the rule making process under the provisions of ch. 227, Stats., and s. NR 2.03.

History: Cr. Register, February, 1989, No. 398, eff. 3–1–89; am. (1) (d), cr. (1) (e), Register, July, 1989, No. 403, eff. 8–1–89; cr. (1) (f) and (1m), am. (2), Register, May, 1993, No. 449, eff. 6–1–93; **am. (1m) 6., 9. and 11., cr. (1m) 9m., Register, February, 1998, No. 506, eff. 3–1–98.**

NR 102.11 Exceptional resource waters. (1) Surface waters which provide valuable fisheries, hydrologically or geologically unique features, outstanding recreational opportunities, unique environmental settings, and which are not significantly impacted by human activities may be classified as exceptional resource waters. All the following surface waters are designated as exceptional resource waters:

(a) Class I trout waters listed in Wisconsin Trout Streams publication 6–3600 (80) that are not listed in s. NR 102.10.

(b) Other Class I trout waters:

1. Abraham Coulee creek in section 29, township 20 north, range 8 west from its headwaters to the Abraham Coulee road bridge in Trempealeau county.

2. Bear creek originating in section 3, township 20 north, range 7 west in Trempealeau county.

3. Biser creek originating in section 19, township 12 north, range 3 west in Sauk county.

4. Bostwick creek from CTH M upstream 6.2 miles to the headwaters in LaCrosse county.

5. Bufton Hollow creek originating in section 23, township 12 north, range 2 west in Richland county.

6. Columbus creek originating in section 29, township 20 north, range 6 west in Jackson county.

7. Dutch creek originating in section 12, township 19 north, range 8 west in Trempealeau county.

8. Joe Coulee creek originating in section 1, township 20 north, range 7 west in Trempealeau county.

9. Little creek originating in section 21, township 20 north, range 6 west in Jackson county.

10. Marble creek originating in section 30, township 10 north, range 3 east in Sauk county.

11. Marshall creek originating in section 4, township 11 north, range 1 west in Richland county.

12. Martin creek originating in section 22, township 6 north, range 2 east in Iowa county.

13. South Bear creek originating in section 2, township 12 north, range 2 west in Richland county.

14. Spring brook downstream from CTH Y south of Antigo to its confluence with the Eau Claire river in Marathon county.

15. Spring Coulee creek from the headwaters to SE 1/4, SE 1/4, section 33, township 16 north, range 1 east in Monroe county.

16. Unnamed creek 2–12 originating in section 36, township 20 north, range 7 west of Trempealeau county.

17. Unnamed creek 4–9 originating in section 4, township 11 north, range 1 west in Richland county.

18. Unnamed creek 5–6 originating in section 6, township 19 north, range 8 west in Trempealeau county.

19. Unnamed creek 7–4 originating in section 6, township 20 north, range 7 west in Trempealeau county.

20. Unnamed creek 8–9 originating in section 5, township 20 north, range 7 west in Trempealeau county.

21. Unnamed creek 8–14 originating in section 1, township 20 north, range 8 west in Trempealeau county.

22. Unnamed creek 9–13 originating in section 4, township 20 north, range 6 west in Jackson county.

23. Unnamed creek 10–8 originating in section 10, township 11 north, range 1 west in Richland county.

24. Unnamed creek 10–10 originating in section 14, township 20 north, range 6 west in Jackson county.

25. Unnamed creek 11–4 originating in section 1, township 20 north, range 7 west in Trempealeau county.

26. Unnamed creek 11–7 originating in section 2, township 20 north, range 7 west in Trempealeau county.

27. Unnamed creek 13–3a originating in section 19, township 20 north, range 6 west in Trempealeau county.

28. Unnamed creek 13–3b originating in section 6, township 20 north, range 6 west in Trempealeau county.

29. Unnamed creek 15–13 originating in section 1, township 20 north, range 8 west in Trempealeau county.

30. Unnamed creek 15–4 originating in section 3, township 20 north, range 6 west in Trempealeau county.

31. Unnamed creek 16–2 originating in section 22, township 20 north, range 6 west in Jackson county.

32. Unnamed creek 17–5 originating in SE 1/4, section 5, township 20 north, range 6 west in Jackson county.

33. Unnamed creek 24–3a originating in section 24, township 11 north, range 1 west in Richland county.

34. Unnamed creek 26–7 originating in section 2, township 20 north, range 6 west in Jackson county.

35. Unnamed creek 34–2 originating in section 17, township 20 north, range 8 west in Trempealeau county.

36. Unnamed creek 34–15 originating in section 27, township 20 north, range 7 west in Trempealeau county.

37. Unnamed stream originating in section 29, township 10 north, range 3 east in Sauk county.

38. Washington Coulee creek originating in section 29, township 20 north, range 6 west in Jackson county.

(c) The following Class II trout waters:

1. Ashland county — White river above the Bad River Indian reservation

2. Bayfield county — White river

3. Dane county — Mt. Vernon creek

4. Forest county — North Branch Oconto river

5. Grant county — Blue river

6. Iowa county — Blue river

7. Langlade county — Prairie river, South Branch Oconto river

8. Lincoln county — Prairie river
9. Marquette county — Mecan river
10. Oconto county — North Branch Oconto river, South Branch Oconto river
11. Pierce county — Rush river
12. Portage county — Tomorrow river
13. Richland county — Willow creek
14. St. Croix county — Willow river, Race Branch
15. Waushara county — Mecan river

(d) The following cold or warm water streams and rivers or portions thereof:

1.	Barron	Brill River	All–Class II Portion
2.	Crawford	Copper Creek	All
		Plum Creek	All
		Sugar Creek	From headwaters to T10N R6W S10
		Tainter Creek	From Vernon County Line to CTH B
3.	Dane	Blue Mounds Branch	All
		Deer Creek	All
		Dunlap Creek	All
		Elvers Creek (Bohn Cr.)	All
		Flynn Creek	All
		Fryes Feeder Creek	All
		Garfoot Creek	All
		Milum Creek	All
		Rutland Branch	All
		Ryan Creek	All
		Schalpbach Creek	All
		Sixmile Creek	All
		Spring Creek (Lodi)	All
4.	Dane, Sauk, Iowa, Grant, Richland, Crawford	Wisconsin River	From below Prairie du Sac to Prairie du Chien
5.	Dane & Green	Little Sugar River	Above New Glarus
		Story Creek (Tipperary)	All, originating in T5N R8E S36
		Sugar Creek	All
6.	Dunn	Sand Creek	From Chippewa County Line to mouth
7.	Eau Claire	Lowes Creek	From Hwy 37 & 85 upstream to headwaters
8.	Fond du Lac	Feldner's Creek	From headquarters to Mischo's Millpond
		Lake Fifteen Creek	Entire Creek above & below Lake Fifteen
9.	Forest	Armstrong Creek	All
		Middle Br. Peshtigo R.	All
		North Br. Peshtigo R.	All
		North Br. Popple R.	All
		West Br. Armstrong Creek	Class II Portion
10.	Grant	Doc Smith Branch	All
		Little Platte River	From Arthur downstream to Platte River
11.	Grant & Iowa	Big Spring Branch	From Springhead to Blue River
12.	Green	Burgy Creek	All
		Gill Creek	All
		Hefty Creek, North Branch	All
		Hefty Cr., Center Branch	All
		Liberty Creek	All
		Norwegian Creek	All
		Richland Creek	All
		Ross Crossing	All
		Sylvester Creek	All
		Spring Valley Creek	All
		Ward Creek	All
13.	Green & Rock	Allen Creek	Below Evansville
14.	Iowa	Harker–Lee–Martin System	From headwaters to T6N R2ES10
15.	Iron	Maintowish River	All
16.	Jackson	Trempealeau River	From STH 95 at Hixton to CTHP at Taylor
17.	Jefferson	Allen Creek	All
18.	Kewaunee	Casco Creek	From T24N R24E S19 downstream of Rock Ledge to Kewaunee River
19.	La Crosse	Bostwick Creek	From headwaters to County Hwy 'O'
		Coon Creek	All
		Dutch Creek	From headwaters to Russian Coulee Road (section 8)
20.	Lafayette	Galena River	From headwaters to Buncombe Road
21.	Langlade	East Br. Eau Claire R.	From STH 64 upstream to firelane crossing in T33N R11E S35 SW1/4

		Hunting River	From Fitzgerald Dam Road downstream to T33N R11E S1
22.	Lincoln	North Br. Prairie River	From headwaters to CTHJ to T33N R8E
		Silver Creek	All
23.	Manitowoc	Branch River	All
24.	Monroe	Big Creek	From headwaters to Acorn Rd (S7)
		Farmers Valley Creek & Tribs	From headwaters to I–90 (S19)
		Soper Creek	All
25.	Oneida	Bearskin Creek	From Tomahawk River to Little Bearskin Lake
26.	Pierce	Big River	Class I Portion
		Cady Creek	From CTH P upstream
		Trimbelle River	All
27.	Richland	Babb Hollow	All–Trib to Mill Creek
		Hanzel Creek (Hansell)	All–Trib to Melancthon Cr.
		Melancthon Creek	Class II Section
		Coulter Hollow Creek	All–Trib to Mill Creek
		E. Branch Mill Creek	All
		Happy Hollow Creek	All–Trib to Willow Creek
		Higgins Creek	All–Trib to Mill Creek
		Hood Hollow Creek	All–Trib to Mill Creek
		Jacquish Hollow Creek	All–Trib to Willow Creek
		Kepler Branch	All–Trib to Mill Creek
		Mill Creek	From headwaters to above Boaz
		Miller Branch	All–Trib to Mill Creek
		Pine Valley Creek	All–Trib to Mill Creek
		Ryan Hollow	All–Trib to West Branch Mill Creek
		Wheat Hollow Creek	All
		W. Branch Mill Creek	All
28.	Rock	Bass Creek	All
		East Fork Raccoon Cr.	All
		Little Turtle Creek	All
		Raccoon Creek	All
		Spring Brook	All
		Turtle Creek	All
		Unnamed Creek T2N R14E S31	All
29.	Rusk	Big Weirgor Creek	All–Class III Portion
30.	Rusk, Taylor & Chippewa	Jump River	From Village of Jump River downstream to Holcombe Flowage
31.	Sauk	Beaver Creek (Trib to Dell Creek)	All
		Camels Creek (Trib to Dell Creek)	All
		Dell Creek	All
32.	Shawano	Kroenke Creek	Class II Portion
		Red River	From Lower Red Lake Dam to Wolf River
		West Br. Red River	Class II Portion
33.	Sheboygan	Ben Nutt Creek	Class II Portion to Junction with Mill Creek
34.	St. Croix	Apple River	From NSP plant below CTH I to Mouth
		Cady Creek	All
		Willow River	Extend Class II Portion into Delta in Lake Mallileau
35.	St. Croix & Pierce	St. Croix River	From No. Boundary of Hudson City limits to the river mouth in Pierce Co.
36.	Trempealeau	Buffalo River	From Hwy 53 to Strum Pond
37.	Vernon	Bishop Branch	All
		Cheyenne Valley Creek	All
		Coon Creek	From La Crosse county line to Chaseburg
		Frohock Valley Creek	All
		Hornby Creek	All
		Reads Creek	All
		Tainter Creek	All
38.	Vilas	Manitowish River	From Rest Lake Dam downstream to Iron County line
39.	Washington	E. Branch Milwaukee R.	From Long Lake outlet to STH 28
40.	Waukesha	Genesee Creek	Above STH 59
		Mukwonago River	From Eagle Springs Lake to Upper Phantom Lake

		Oconomowoc River	From below North Lake to Okauchee Lake
41.	Waupaca	Blake Brook & Branches	Class II Portion
		Little Wolf River	From junction with Wolf River upstream to Manawa Dam
		Waupaca River	Class II portion
42.	Waupaca & Shawano	Embarrass River	From Wolf River upstream to dam at Pella
43.	Waushara	Lower Pine River	From below Wild Rose Mill pond to dam at Poy Sippi

(2) The waters identified in sub. (1) may not be lowered in quality except as provided in ch. NR 207.

(3) Surface waters, or portions thereof, may be added to, or deleted from, the exceptional resource waters designation through the rule making process under the provisions of ch. 227, Stats., and s. NR 2.03.

History: Cr. Register, February, 1989, No. 398, eff. 3–1–89; cr. (1) (c), Register, July, 1989, No. 403, eff. 8–1–89; cr. (1) (d), Register, May, 1993, No. 449, eff. 6–1–93.

NR 102.12 Great Lakes system. (1) The Great Lakes system includes all the surface waters within the drainage basin of the Great Lakes.

(2) For the purpose of administering ch. NR 207 and consistent with chs. NR 105 and 106, the waters identified in sub. (1) are to be protected from the impacts of persistent, bioaccumulating toxic substances by avoiding or limiting to the maximum extent practicable increases in these substances.

History: Cr. Register, February, 1989, No. 398, eff. 3–1–89; r. and recr. (1), am. (2), Register, August, 1997, No. 500, eff. 9–1–97.

NR 102.13 Fish and aquatic life waters. All surface waters not included in s. NR 102.05 (1) (b) 1., 2., 3. or 5. are fish and aquatic life waters.

History: Cr. Register, February, 1989, No. 398, eff. 3–1–89.

NR 102.14 Taste and odor criteria. (1) At certain concentrations, substances may not be toxic to humans, but may impart undesirable taste or odor to water or aquatic organisms ingested by humans. The taste and odor criterion is derived to prevent substances from concentrating in surface waters or accumulating in aquatic organisms to a level which results in undesirable tastes or odors to human consumers.

(2) The taste and odor criterion is derived as follows:

(a) For substances which impart tastes and odors to waters, the taste and odor criterion shall equal that threshold concentration (TC_w) below which objectionable tastes or odors to human consumers do not occur. Threshold concentrations for substances imparting tastes and odors to water are listed in Table 1.

Table 1
Threshold Concentrations (TC_w) for Substances Causing Taste and Odor in Water

Substance	Threshold Concentration (ug/L)1
Acenaphthene	20
Chlorobenzene	20
2–Chlorophenol	0.1
3–Chlorophenol	0.1
4–Chlorophenol	0.1
Copper	1000
2,3–Dichlorophenol	0.04
2,4–Dichlorophenol	0.3
2,5–Dichlorophenol	0.5
2,6–Dichlorophenol	0.2
3,4–Dichlorophenol	0.3
2,4–Dimethylphenol	400
Hexachlorocyclopentadiene	1
2–Methyl–4–Chlorophenol	1800
3–Methyl–4–Chlorophenol	3000
3–Methyl–6–Chlorophenol	20
Nitrobenzene	30
Pentachlorophenol	30
Phenol	300
2,3,4,6–Tetrachlorophenol	1
2,4,5–Trichlorophenol	1
2,4,6–Trichlorophenol	2
Zinc	5000

[1] A threshold concentration expressed in micrograms per liter (ug/L) can be converted to milligrams per liter (mg/L) by dividing the threshold concentration by 1000.

(b) For substances which impart tastes or odors to aquatic organisms, the taste and odor criterion shall be calculated as follows:

$$TOC = \frac{TC^1}{BAF}$$

Where:
- TOC = Taste and odor criterion in milligrams per liter (mg/L).
- TC = Threshold concentration in milligrams of substance per kilogram of wet tissue weight (mg/kg) of the aquatic organism being consumed below which undesirable taste and odor is not detectable to human consumers as derived in par. (d).
- BAF = Aquatic life bioaccumulation factor with units of liter per kilogram (L/kg) as derived in s. NR 105.10.

(c) The lower of the taste and odor criteria derived as specified in pars. (a) and (b) is applicable to surface waters classified as public water supplies. The taste and odor criteria derived as specified in par. (b) are applicable to cold water and warm water sport fish communities.

(d) Threshold concentrations for substances imparting tastes or odors to water (TC_w) other than those listed in Table 1 and threshold concentrations for substances imparting tastes or odors to aquatic organisms (TC_f) shall be selected by the department using its best professional judgment.

History: Cr. Register, February, 1989, No. 398, eff. 3–1–89; am. (2) (b) and (c), Register, August, 1997, No. 500, eff. 9–1–97.