

Report From Agency

REPORT TO LEGISLATURE

Chapters NR 102 and 217 Wis. Adm. Code

NR 102 - Water Quality Standards for Wisconsin Surface Waters; and NR 217 - Effluent Standards and Limitations

Board Order No. WT-25-08 CR10-035

Basis and Purpose of the Proposed Rules

These rules are part of a comprehensive strategy to address one of the greatest remaining sources of water pollution in Wisconsin – excess nutrients, specifically phosphorus. Chapter NR 102 establishes phosphorus water quality criteria and ch. NR 217 provides for implementation of those criteria for point sources of phosphorus pollution through WPDES permits. The proposed rule revisions are based on recognition of phosphorus related water quality problems across the state, including algal mats on Lake Michigan beaches, nuisance algae conditions in many Wisconsin lakes, low dissolved oxygen in many Wisconsin streams, and “toxic” blue-green algae in a number of lakes. Presently, 172 lakes and streams are included on Wisconsin’s impaired waters list for phosphorus. The revisions are also in response to nationwide federal requirements to adopt nutrient criteria.

In late 2000, US EPA, under the authority of s. 304 (a) of the Clean Water Act, published two guidance documents for use by states in setting water quality standards nutrient criteria. Once US EPA publishes such guidance documents, states are generally required within a reasonable number of years to adopt water quality criteria that are protective of designated uses. Under s. 303 (c) (4) (B) of the Clean Water Act, US EPA may determine, in the absence of state adopted criteria, that a new or revised standard is needed to meet Clean Water Act requirements and pursue federal adoption of the criteria for the state. On November 23, 2009, seven groups notified US EPA of their intent to sue over the US EPA’s failure to promulgate phosphorus and nitrogen criteria for Wisconsin.

In 2001, the department, in concert with the US Geological Survey, initiated stream and river studies to determine the cause and effect relationship between phosphorus and nitrogen and stream biotic indices. The results of the stream study were published in 2006 and the results of the river study in 2008. Based on those studies and related studies both in Wisconsin and elsewhere, the department developed proposed phosphorus criteria for streams and rivers. In addition, using a wealth of experience and established lake management procedures, the department proposed phosphorus criteria for lakes and reservoirs. The department is not proposing nitrogen criteria at this time and will need to develop such criteria in the future.

These rules are being proposed to amend portions of our rules to adopt numeric phosphorus water quality standards criteria for lakes, reservoirs, streams and rivers per s. 281.15, Stats, and to adopt provisions for developing and implementing Wisconsin Pollutant Discharge Elimination

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System (WPDES) permit provisions based on the phosphorus criteria per ss. 283.11, 283.13 (5), 283.31, 283.55 and 283.84, Stats.

The other significant contributor of phosphorus pollution is from nonpoint source pollution, primarily from agricultural and urban storm water runoff. Nonpoint sources of phosphorus pollution are being addressed through a concurrent revision to ch. NR 151, Runoff Management, which establishes performance standards for nonpoint source pollution designed to meet water quality standards.

Summary of the Rules

1. NR 102 - Phosphorus Water Quality Standards Criteria

The proposed rule establishes phosphorus water quality criteria of 100 ug/L (parts per billion) for rivers specifically identified in the rule and of 75 ug/L for smaller streams and rivers. About half of Wisconsin's rivers and streams meet the proposed criteria. No criteria are proposed at this time for ephemeral streams or streams identified in ch. NR 104 – Uses and Designated Standards, as limited aquatic life waters. Both of the criteria are intended to prevent in-stream algae and other plant growth to the extent that is detrimental to fish and aquatic life. For example, extensive algae or macrophyte (large plants growing on the beds of streams) consume oxygen during the night to the extent that may leave too little oxygen for certain fish species and for certain aquatic insects.

For lakes and reservoirs, the proposed rule has a suite of criteria for five different types of lakes ranging from 15 ug/L for lakes supporting a coldwater fishery, such as lake trout or cisco in its bottom waters, to 40 ug/L for shallow drainage lakes and reservoirs. The criteria are intended to prevent or minimize nuisance algal blooms; prevent shifts in plant species in shallow lakes; maintain adequate dissolved oxygen in the bottom of “two-story” lakes with a warmwater fishery in top waters and coldwater fisheries in bottom waters; and to maintain fisheries. “Toxic” algae concerns may also be addressed. For millponds and similar impoundments, the upstream river or stream criteria would apply. More than half of Wisconsin's lakes meet the proposed criteria with the percent varying by lake type. No criteria are proposed at this time for marsh lakes and other wetlands since they will be part of future wetlands nutrient criteria adoption.

Phosphorus criteria for the Great Lakes are proposed for: 1) the open and nearshore waters of Lake Superior - 5 ug/L; and 2) the open and nearshore waters of Lake Michigan - 7 ug/L. These criteria are based upon the International Joint Commission's guidance for the Great Lakes. Presently, both Lake Michigan and Lake Superior open waters are meeting the proposed criteria. The nearshore waters of Lake Michigan and Lake Superior include the zone from the beaches to a depth of 10 meters. Cladophora algal mats have formed on some of the beaches in Lake Michigan; therefore, some areas in Lake Michigan nearshore waters may currently be exceeding the proposed criteria.

The table on page three shows the proposed phosphorus water quality standards criteria by type of water body. The specific water body types are defined in the proposed rules, and there are some exclusions based on size or flow conditions.

Proposed Phosphorus Criteria by Type of Water Body	Total Phosphorus in ug/L
Listed rivers	100
All other streams	75
Stratified reservoirs	30
Non-stratified reservoirs	40
Stratified “two-story” fishery lakes	15
Stratified drainage lakes	30
Non-stratified (shallow) drainage lakes	40
Stratified seepage lakes	20
Non-stratified (shallow) lakes	40
Impoundments	Same as inflowing river or stream
Lake Michigan open and nearshore waters	7
Lake Superior open and nearshore waters	5

2. NR 217 - Effluent Standards and Limitations

The current regulations for phosphorus establish specific procedures for including technology based limitations and standards in WPDES permits (existing ch. NR 217). There is also an existing rule (s. NR 102.06) that generally states the department may establish water quality based limits for phosphorus in permits on a case-by-case basis using an evaluation of phosphorus sources in a watershed, but this rule is being repealed and replaced with a proposed new subchapter in ch. NR 217 that includes detailed procedures for establishing water quality effluent limitations for phosphorus.

Specifically, there are provisions for determining when a water quality based effluent limitation is needed in a WPDES permit; equations and procedures for calculating effluent limits based on different types of waters and stream flow assumptions; and provisions for expressing permit compliance averaging periods, such as a monthly average. The rule requires concentration limits, as commonly used in permits. However, it also specifies where and how mass limits are required, such as for discharges to impaired waters, where there is a downstream lake and where there is a downstream outstanding or exceptional resource water. The rule also addresses the relationship and procedures for including various types of phosphorus limits in permits such as a phosphorus limit based on a total maximum daily load, a technology based phosphorus limit and a water quality based phosphorus limit calculated under the new procedures in chapter NR 217.

The proposed rule allows the department to include compliance schedules in permits. The compliance schedule provisions specify factors the department may consider when establishing the length of a compliance schedule. In addition to compliance schedules, the rule includes a

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watershed adaptive management option where interim limits may be phased in, if phosphorus concentrations improve in the receiving water over time, primarily through nonpoint source load reductions.

The proposed rule also includes provisions for processing variances to phosphorus water quality based effluent limitations for stabilization pond and lagoon systems. The inclusion of these procedures for stabilization pond and lagoon systems should not be interpreted to mean that these are the only types of systems that may obtain a variance. There are standard procedures for variances in statutory language and other administrative codes.

Summary of Public Comments

The department received written comments from 411 individuals and organizations. There were 217 comments in general support; 62 comments in opposition; 121 comments with neutral positions, questions, or statements with tangential information; and 11 comments that supported portions of the rule but opposed other portions.

Support for the rules came from lakes and river associations, environmental groups, conservation groups and individuals who want strong rules limiting phosphorus inputs to lakes and streams. Lakeshore property owners, small businesses, and municipalities that rely on tourism were concerned about excessive, unsightly green algae growth in the lakes that adversely affects the health of animals and humans. Opposition to the rules came from the paper industries, some wastewater utilities, some agricultural organizations, and some municipalities.

Testimony and comments received at the public hearings and during the comment period identified these issues that were of most significant concern:

- Costs to comply with low phosphorus effluent limits are not affordable by local communities and industries.
- Effluent limits would not need to be as stringent if nonpoint sources were controlled and the rule should not force the point sources to bear the entire phosphorus control burden.
- Effluent limits should only be based on the stream or river conditions at the facilities outfall and should not be based on downstream water quality conditions.
- The permit compliance averaging period of monthly is too short given the inherent variability in the treatment processes needed to meet low phosphorus effluent limits.
- Mass limits in addition to concentration limits are not warranted.
- Limits should not apply to combined sewer outfalls, storm water discharges, and non-contact cooling water discharges.
- Compliance schedules are too long.

In addition, there was support in general for control of phosphorus from all sources and for specific flexibility elements in the proposed rules, including:

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- Compliance schedules that may extend beyond one permit term, although many wanted longer compliance schedules than proposed.
- An Adaptive Management Option, but the concept needs greater detail.
- The variance provisions that apply to small communities with lagoon or stabilization ponds, but these provisions should be expanded to include industrial lagoons and mechanical wastewater treatment plants for small communities.

Germane comments and department responses to public comments are in Attachment 1 of this document.

Modifications Made to the Rule Based Upon Public Comments

Modifications made to the proposed rule as a result of public comments received are detailed below.

- For the phosphorus water quality standards criteria in s. NR 102.06, the department refined the definition of reservoir, extended the “river” portion of the Wisconsin River upstream to the Rhinelander Dam and rewrote the paragraph on site-specific criteria so that it is not tied to processes established for toxics.
- Through subchapter III of NR 217, the department made changes to assure greater consistency with the federal regulations to implement the Clean Water Act, including clarifying provisions for new dischargers, determining reasonable potential to cause or contribute to an exceedance of the criteria and further identifying the requirements of a compliance schedule.
- Extended the compliance averaging period in s. NR 217.14 beyond one month to a year for facilities with low phosphorus water quality based effluent limits; recognizing that the compliance with a one month averaging period may be impracticable.
- Moved the watershed Adaptive Management Option from within the compliance schedule section to s. NR 217.18 and elaborated on the content of the information needed for the facilities requesting use of this option.
- Revised and renumbered s. NR 217.19 on variances for municipal lagoon and stabilization ponds in response to concerns on consistency with the federal Clean Water Act regulations and to be more explicit that the streamlined aspect of the process relates to submittal on information necessary to determine whether there are widespread adverse social and economic impacts.

Appearances at the Public Hearing

The department conducted 4 public hearings in 2010 on the proposed rule revisions: Rhinelander, April 15; Green Bay, April 20; Oconomowoc, April 21; and Eau Claire, April 27. Over 238 attended the hearings, 224 registered by filing appearance slips and 62 provided verbal testimony. A list of attendees who filed appearance slips at the public hearings is in Attachment 2 of this report. Of those people who registered, 41 were in support, 134 were in opposition, and 49 registered as interest may appear (in favor or opposition to some provisions, but not others;

WT-25-08 Report to Legislature attending to get information). The attendance and testimony breakdown is shown in the table on page six.

	Attendance	Support		Opposition		As Interest May Appear		Total	
		Registered	Testified	Registered	Testified	Registered	Testified	Registered	Testified
Rhineland	19	4	3	8	3	6	2	18	8
Green Bay	75	10	4	51	6	10	3	71	13
Oconomowoc	56	12	8	24	6	17	10	53	24
Eau Claire	88	15	8	51	5	16	4	82	17
Totals	238	41	23	134	20	49	19	224	62

Changes to the Rule Analysis and Fiscal Estimate

Minor rule modifications were made to reflect public comments. The fiscal effect remains the same.

Response to Legislative Council Rules Clearinghouse Report

With the exception of comments discussed below, the comments included in the Wisconsin Legislative Council Clearinghouse Report to the department have either been incorporated into the proposed rules or are no longer applicable because subsequent revisions removed or significantly altered that portion of the rule.

- **Statutory Authority.** Section 283.15 (4) (a) 1. f., Stats., generally provides that the Secretary of the Department of Natural Resources must approve all or part of a requested variance, or modify and approve a requested variance, if the permittee demonstrates that attaining the water quality standard is not feasible because the standard will cause a substantial and widespread adverse social and economic impact in the area where the permittee is located. Section NR 217.18 (1) (b) 3. is a departmental finding that in many cases it will be necessary for owners of stabilization ponds and lagoons to construct a new wastewater treatment plant to comply with phosphorus effluent limitations; and construction of these facilities will result in substantial and widespread adverse social and economic impacts in the area served by the existing stabilization pond and lagoon system. Section NR 217.18 (3) (c) also provides that a permittee with a lagoon and stabilization pond that is denied a variance may not be granted a variance for phosphorus based on the criteria in s. 283.15 (4) (a) 1. f., Stats., and using the procedures in ch. NR 200 and s. 283.15, Stats. It appears, although it is not clear, that the rule provision voids the statutory provision regarding variances. If so, what statutory authority exists for the rule provisions?

Response: The statutory authority for this rule section is s. 283.15 (4) (a) 1. f., Stats. In s. NR 217.18 (3) (c), the rule language was intended to prohibit a person from applying for a variance

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from a limit for the same factor (widespread adverse social and economic hardship) twice – both before the permit is issued and immediately after issuance. The department made revisions to the variance rule procedures in s. NR 217.18 to clarify that the rule is implementing the statutory variance provision in s. NR 283.15 (4) (a) 1 .f.

- 2.1. In s. NR 217.15 (1) (c), the introductory material should be renumbered subd. 1., and the remaining subdivisions should be renumbered accordingly.

Response: The material in (1) (c) is introductory to the other two subdivisions. It has not been renumbered as suggested.

Final Regulatory Flexibility Analysis

Food processing facilities and cheese factories were identified as potential categories of small businesses that would most directly be affected by these rule revisions. Data on these types of facilities was analyzed and there are few, if any, small businesses that directly discharge wastewater containing phosphorus to lakes or streams. Many small cheese factories land apply their wastes and do not discharge wastewater containing phosphorus. Therefore, this rule revision does not anticipate any additional compliance or reporting requirements for small businesses.

If there is an impact on small businesses as a result of these rule revisions, it would likely be an indirect fiscal impact. Many small businesses discharge their wastes to a municipal wastewater treatment facility. If a municipal wastewater treatment plant's wastewater discharge permit is modified to require further removal of phosphorus, it is likely that the cost to provide additional treatment levels will be absorbed by increasing sewer use charges. Some small businesses may experience an increase in sewer service fees as these rule revisions are implemented statewide.

Some municipalities may also require specific small businesses to provide pretreatment for phosphorus removal if a wastewater discharge from a small business contributes significant loadings of phosphorus to the sanitary sewer system. Implementation of these rule revisions may result in additional costs for phosphorus pretreatment to a select subset of small businesses.

The department is unable to specifically estimate the indirect fiscal impact to small businesses as a result of implementation of this rule package because of the variability of each situation.

Attachment 1 – Summary of Public Comments and Department Responses

Attachment 2 – List of Attendees at Public Hearings

