

**BEFORE THE  
DEPARTMENT OF NATURAL RESOURCES**

**NOTICE OF PUBLIC HEARINGS  
WT-25-08**

**NOTICE IS HEREBY GIVEN THAT** pursuant to ss. 227.11(2)(a), 281.15, 283.001(2), 283.13(5), 283.15, 283.31, 283.35 and 283.37, Stats., interpreting ss. 281.15, 283.13(5), 283.31, 283.55 and 283.84, Stats., the Department of Natural Resources will hold public hearings on proposed revisions to chs. NR 102 and NR 217, Wis. Adm. Code, relating to phosphorus water quality standards criteria and limitations and effluent standards.

**NOTICE IS HEREBY FURTHER GIVEN** that hearings will be held on:

April 15, 2010	Quality Inn, 668 W. Kemp St., Rhinelander at 1:00 p.m.
April 20, 2010	Green Bay City Hall, Council Chambers, Room 203, 100 N. Jefferson, St. Green Bay at 1:00 p.m.
April 21, 2010	Olympia Resort and Conference Center, Crown Room, 1350 Royale Mile Road, Oconomowoc at 1:00 p.m.
April 27, 2010	Ramada Inn, Lower Ballroom, 205 S. Barstow St, Eau Claire at 1:00 p.m.

The proposed rule revisions and supporting documents, including the fiscal estimate may be viewed and downloaded and comments electronically submitted at the following internet site: <https://health.wisconsin.gov/admrules/public/Home>. Written comments on the proposed rules may be submitted via U. S. mail to Jim Baumann, DNR-WT/3, P.O. Box 7921, Madison, WI 53707-7921 or by e-mail to [james.baumann@wisconsin.gov](mailto:james.baumann@wisconsin.gov). Comments may be submitted until April 30, 2010. Written comments whether submitted electronically or by U. S. mail will have the same weight and effect as oral statements presented at the public hearings. If you do not have internet access, a personal copy of the proposed rules and supporting documents, including the fiscal estimate may be obtained from Jim Baumann, DNR-WT/3, P.O. Box 7921, Madison, WI 53707-7921, or by calling (608) 266-9277.

**Related statute or rule:**

S. 283.11 (3) (am), chapters NR 106 and 200

**Plain language analysis of the rule:**

The proposed rule has two parts. The first is a set of phosphorus water quality standards criteria for rivers, streams, various types of lakes, reservoirs and Great Lakes. The second is procedures for determining and incorporating phosphorus water quality based effluent limitations into Wisconsin Discharge Pollutant Elimination System (WPDES) permits under chapter 283, Stats. Pursuant to 40 CFR 131.11, states are required to adopt water quality standards criteria that are protective of the designated uses of surface waters. Pursuant to section 303(c)(4) of the Clean Water Act, EPA may step in and promulgate the criteria for the state, if the state does not.

Development of point source permit procedures is required as part of the state’s point source permit delegation agreement. EPA approval of state water quality criteria is required under 40 CFR ss. 131.5, 131.6 and 131.21.

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. No criteria are proposed at this time for ephemeral streams or streams identified in ch. NR 104, Wis. Adm. Code 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. About half of Wisconsin’s rivers and streams meet the proposed criteria.

For lakes and reservoirs, the proposed rule has a suite of criteria for five different types of lake 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.

For the Great Lakes, phosphorus criteria are proposed for the open waters of Lake Superior (5 ug/l), the open waters of Lake Michigan (7 ug/l) and the nearshore waters of Lake Michigan (7 ug/l). Presently, for the open waters both Lake Michigan and Lake Superior are meeting the criteria. For the nearshore waters of Lake Michigan, the zone from the beaches to a depth of 10 meters, where there are concerns with the Cladophora algal mats forming on beaches, the criteria may be exceeded in some locations.

Below is a table showing 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

## WPDES Effluent Standards and Limitations

The current regulations for phosphorus establish specific procedures for including technology based limitations and standards in WPDES permits (existing chapter 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 chapter 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 a 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. One of the options for a compliance schedule provision for discharges to nonpoint source dominated waters includes an adaptive management option where interim limits may be phased in, if phosphorus concentrations improve in the receiving water.

There are also provisions for a streamlined approach for processing variances for stabilization pond and lagoon systems that mimic the procedures for ammonia variances in ch. NR 106. These special provisions are based on the knowledge that presently there are few means to control phosphorus being discharged from these systems and that the construction of a mechanical plant is not affordable for smaller municipalities. The inclusion of streamlined procedures for stabilization pond and lagoon systems should not be interpreted to mean that these are the only systems that may obtain a variance, where appropriate. There are standard procedures for variances in statutory language and other administrative codes.

### **Summary of, and comparison with, existing or proposed federal regulation:**

The proposed phosphorus criteria for streams of 75 ug/l and rivers of 100 ug/l are similar to EPA's guidance values for the southern half of Wisconsin. EPA recommended 70 ug/l of phosphorus for both rivers and streams in the southwestern driftless area of the state and 80 ug/l of phosphorus for both rivers and streams in the remainder of the southern half of the state. EPA, did however, recommend a criterion of 29 ug/l for a band or area stretching west to east though the middle of the state and 10 ug/l for the forested northern part of the state. All of the EPA guidance numbers are based on the 25th percentile of available data from a number of states and do not represent a cause-effect situation. We could not find concentrations as low at 10 ug/l even for pristine conditions in most of the forested northern portion of Wisconsin.

For lakes, the proposed criteria that range from 15 to 40 ug/l based on the type of lake are different than EPA's guidance values that range from 9.7 ug/l for northern lakes to 36 ug/l for driftless area lakes. EPA's guidance values are based on data from multiple states and represent the 25th percentile of available data. They do not differentiate based on the type of lake.

The proposed criteria for Lake Michigan and Lake Superior are the same as the values derived for the federal Great Lakes Water Quality Agreement.

The proposed WPDES permit procedures, including water quality based effluent limitations, are based on general EPA regulations and guidelines.

### **Comparison with similar rules in adjacent states:**

All states, including adjacent states, are required by EPA to promulgate nutrient water quality standards criteria under EPA's Clean Water Act authority. In addition, all states delegated National Pollutant Discharge Elimination System permit authority by EPA, including all adjacent states, are required to issue point source permits that will meet water quality standards.

To date, Minnesota has promulgated phosphorus criteria for lakes which are very similar to what is proposed in this rule. Minnesota is now in the process of developing proposed criteria for rivers and streams. Illinois has had phosphorus criteria for lakes and Lake Michigan in its water quality standards for some years, but is in the process of developing phosphorus criteria for streams and rivers. Michigan and Iowa are developing criteria, but to date have not publicly proposed criteria. None of the adjacent states or Wisconsin has proposed criteria for nitrogen, except for ammonia.

All adjacent states have provisions for developing water quality based effluent limits, but none to date have proposed rules that specifically deal with the issues uniquely related to phosphorus.

### **Summary of factual data and analytical methodologies used and how any related findings support the regulatory approach chosen:**

The proposed water quality standards phosphorus criteria for streams and rivers are based on results of a number of Wisconsin studies aimed at determining when biotic effects occur and how these effects relate to protection of designated uses. The primary studies were jointly conducted by department and USGS staff and their results are reported in "Nutrient Concentrations and Their Relations to the Biotic Integrity of Wadeable Streams in Wisconsin", USGS Professional Paper 1722, by Robertson, Graczyk, Garrison, Wang, LaLiberte and Bannerman, 2006; and "Nutrient Concentrations and Their Relations to the Biotic Integrity of Nonwadeable Rivers in Wisconsin", USGS Professional Paper 1754, by Robertson, Weigel and Graczyk, 2008. These studies identified a suite of breakpoints or thresholds for effects of phosphorus on algae, aquatic insects and fish. Based on discussions involving a number of experts in the scientific field, the department used an averaging method of the suite of breakpoints to derive the proposed criteria. These proposed criteria were compared to Department studies of trout streams in southwestern Wisconsin, the early 1980's Department study of phosphorus in streams and studies cited in EPA's "Nutrient Criteria Technical Guidance Manual: Rivers and Streams", EPA-822-B-00-002, 2000.

The proposed water quality standards phosphorus criteria for lakes and reservoirs are based on methods commonly used for decades in lake management in Wisconsin and adjacent states. Specifically, for most types of lakes, the proposed criteria are based on limiting the risk of

nuisance algae conditions (20 ug/l chlorophyll a) to no more than 5 percent of the time (e.g. less than one week per year from June through September) using work by Walmsley (Journal of Environmental Quality, 13:97-104, 1988) and Heiskary and Wilson (“Minnesota Lake Water Quality Assessment Report: Developing Nutrient Criteria”, Minnesota Pollution Control Agency, September 2005). These concentrations were also determined to be sufficient to protect sport fisheries in lakes again using information from Heiskary and Wilson (“Minnesota Lake Water Quality Assessment Report: Developing Nutrient Criteria”, Minnesota Pollution Control Agency, September 2005). For the relatively few lakes that support a cold water fishery in the lower waters, the department’s objective was to maintain 6 mg/l for dissolved oxygen in the lower waters. To determine the appropriate phosphorus concentrations, the Department examined sediment cores and current water concentrations to determine undisturbed conditions. The proposed criteria were compared to literature information summarized in EPA’s “Nutrient Criteria Technical Guidance Manual: Lakes and Reservoirs”, EPA-822-B-00-001, 2000.

For development of the water quality based effluent limitation procedures for permits, the department reviewed existing state and federal regulations and guidance for the point source discharge permit programs, consulted with EPA representatives, and received input from a technical advisory committee that met several times in 2008 through 2009. The technical advisory committee was comprised of representatives of municipal and industrial wastewater dischargers, municipal storm water dischargers, agricultural interests, water user groups and environmental groups. Staff from EPA and USGS also attended committee meetings as advisories to the committee and the Department.

#### **Analysis and supporting documents used to determine effect on small business**

The Department initially identified cheese and other dairy operations that discharge wastewater containing phosphorus to lakes and streams as small businesses potentially impacted by the proposed rules. With the assistance of the Wisconsin Cheese Makers, 11 businesses were identified for analysis. All 11 are likely to have more than \$5 million in annual revenue, but may have less than 25 employees. Of the 11, six apply wastes to the land through a variety of methods. Some may discharge non-contact cooling water without adding additives, which would not come under this rule. The other six discharge their wastes to municipal wastewater treatment plants.

Based on this analysis, the Department concluded that there are few, if any, small businesses that directly discharge of wastewater containing phosphorus to lakes or streams. If there is an effect, it would likely be an indirect affect on those small businesses that discharge their wastes to a municipal wastewater treatment facility. If the municipal wastewater treatment plant is required to further remove phosphorus, it is possible that the service fee may increase or the municipality may require some level of pretreatment.

#### **Effect on small business:**

The department has determined the rule will not have a significant impact on small businesses. Most of the fiscal impacts from the proposed rules will affect municipalities and industries (with phosphorus discharges to surface waters) that aren’t considered small businesses. The rule may have an effect on a few small businesses, but it is very difficult to estimate. As mentioned above, small cheese factories may be the best example. For those meeting the definition of a small business, many of the facilities land apply all or the majority of their wastewater, and therefore will not be impacted by these rules. If there are any businesses that discharge wastes directly to

surface waters that meet the definition of a small business, they may apply for a variance if compliance with water quality based effluent limits for phosphorus would cause significant economic hardship. The proposed rules do not provide for less stringent reporting, longer compliance schedules or completed exemptions for small businesses with phosphorus discharges to surface waters because it would not be allowed under federal regulations or state statutes. There is, however, a variance procedure which is allowed under both state and federal law for all point sources that qualify. Reporting and record keeping requirements are established through permit terms and conditions.

**NOTICE IS HEREBY FURTHER GIVEN** that the Department has made a preliminary determination that this action does not involve significant adverse environmental effects and does not need an environmental analysis under ch. NR 150, Wis. Adm. Code.

**NOTICE IS HEREBY FURTHER GIVEN** that pursuant to the Americans with Disabilities Act, reasonable accommodations, including the provision of information material in an alternative format, will be provided to qualified individuals with disabilities upon request. Please call Jim Baumann at (608) 266-9277 with specific information on your request at least 10 days before the date of the scheduled hearing.

**Agency contact:**

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Dated at Madison, Wisconsin \_\_\_\_\_.

STATE OF WISCONSIN  
DEPARTMENT OF NATURAL RESOURCES

By \_\_\_\_\_  
Matthew J. Frank, Secretary