

STATEMENT OF SCOPE

Department of Natural Resources

Rule No.: WY-09-18

Relating to: Site-specific phosphorus water quality criteria for Petenwell Lake located in Wood, Juneau, and Adams Counties, Castle Rock Lake located in Adams and Juneau Counties, and Lake Wisconsin located in Columbia and Sauk Counties.

Rule Type: Permanent

1. Finding/nature of emergency (Emergency Rule only):

The rules will be proposed as permanent rules.

2. Detailed description of the objective of the proposed rule:

This proposed rule will create phosphorus site-specific criteria (SSC) for three waterbodies, Petenwell Lake located in Wood, Juneau, and Adams Counties, Castle Rock Lake located in Adams and Juneau Counties, and Lake Wisconsin located in Columbia and Sauk Counties. Pursuant to s. NR 102.06 (7), Wis. Adm. Code, and s. 281.15, Wis. Stats., the Department of Natural Resources (department) has the authority to develop an SSC in place of the current applicable phosphorus criteria in s. NR 102.06, Wis. Adm. Code, where site-specific and scientifically defensible data and analysis demonstrate a different criterion is protective of the designated use of a specific surface waterbody.

The department is proposing rules to establish SSC for the three waterbodies because modeling and analysis of monitoring data conducted during the development of the legislative initiated Wisconsin River Basin Total Maximum Daily Load (TMDL) has concluded that the current statewide phosphorus criteria for Petenwell Lake and Castle Rock Lake are more restrictive than needed to protect the designated uses and that the current phosphorus criterion for Lake Wisconsin is not sufficiently protective of the designated uses. The designated uses associated with the phosphorus criteria for reservoirs and lakes are recreational uses and aquatic life uses. The current phosphorus criteria promulgated in s. NR 102.06 and recommended phosphorus SSC proposed as part of this rulemaking effort are shown in Table 1. In this document, phosphorus criteria are expressed in micrograms per liter ($\mu\text{g/L}$).

Table 1: Current and Recommended Phosphorus Criteria

Reservoir Name	Existing NR 102.06 TP Criterion ($\mu\text{g/L}$)	Recommended Site-Specific TP Criterion ($\mu\text{g/L}$)
Petenwell Lake	40	53
Castle Rock Lake	40	55
Lake Wisconsin	100	47

When the department promulgated the phosphorus criteria in s. NR 102.06, Wis. Adm. Code, it recognized that statewide phosphorus criteria could be revised for some waterbodies with unique physical features (e.g. different residence times). Section NR 102.06 (7), Wis. Adm. Code, allows phosphorus SSC to be promulgated by rule when scientifically defensible analysis demonstrates that a different criterion is

protective of the designated use. As part of the TMDL analysis for the Wisconsin River Basin, the department determined that different phosphorus criteria are appropriate to protect the recreational uses of Petenwell Lake, Castle Rock Lake, and Lake Wisconsin.

3. Description of the existing policies relevant to the rule, new policies proposed to be included in the rule, and an analysis of policy alternatives:

Existing rule language under s. NR 102.06 (7), Wis. Adm. Code, specifies that the department may promulgate phosphorus site-specific criteria by rule when scientifically defensible methods and rationale demonstrate that a different criterion is protective of the designated use. In addition to this existing rule provision, the department is currently working on a rule package (WT-17-12) that would establish a standard protocol and streamlined process for establishing phosphorus SSC for specific waterbodies in the state. The proposed rule (ch. NR 119) is established under s. 281.15, Wis. Stats. and s. NR 102.06 (7), Wis. Adm. Code. If the streamlined site-specific criterion procedures proposed in rule package WT-17-12 are adopted, then that process could be implemented to establish the site-specific criteria for the three waterbodies.

If the site-specific criteria for Petenwell and Castle Rock Lakes and Lake Wisconsin are promulgated and approved by U.S. Environmental Protection Agency (U.S. EPA), the SSC would serve as the water quality target for the three lakes in the Wisconsin River Basin TMDL. In the TMDL, the department has provided two sets of allocations for public comment and U.S. EPA review. One set of TMDL allocations is based on the existing criteria for the three lakes and the other set of allocations is based on the recommended SSC. The allocations based on recommended SSC criteria only take effect if the recommended SSC are promulgated and subsequently approved by U.S. EPA.

There are three policy alternatives. If the site-specific criteria are promulgated for all three lakes and approved by U.S. EPA, then the allocations in the Wisconsin River Basin TMDL based on the revised criteria would be the applicable effective allocations that apply to phosphorus pollution sources. This would affect phosphorus limitations in WPDES permits. Promulgating the higher phosphorus SSC for Petenwell and Castle Rock Lakes would be consistent with statutory requirement in s. 281.15 (2) (c), Wis. Stats., which states that criteria shall be only as stringent as needed to meet the designated uses. Promulgating a more restrictive SSC for Lake Wisconsin would be consistent with the statutory requirement in s. 281.15 (1), Wis. Stats., that criteria must be protective of the designated uses (aquatic life and recreational uses).

Another alternative is to proceed with SSC for one or two of the three waterbodies rather than all three lakes. However, proposing SSC for all three lakes is consistent with the statutory requirements in s. 281.15, Wis. Stats. The department recommends promulgating SSC for all three lakes because it is consistent with statutory requirements, allows attainment of water quality standards in all three lakes, and provides an overall net economic benefit as outlined in Section 8.

The third alternative is not to proceed with any SSC for any of the lakes. Under this alternative, permittees would receive TMDL based limitations that are more stringent than necessary to meet designated uses for Petenwell and Castle Rock Lakes. TMDL-based limits for Lake Wisconsin would not meet the designated uses for this waterbody.

4. Detailed explanation of statutory authority for the rule (including the statutory citation and language):

Section 281.15, Wis. Stats., authorizes the department to promulgate by rule water quality standards for surface waters or portions of surface waters in the state: "The department shall promulgate rules setting standards of water quality to be applicable to the waters of the state, recognizing that different standards

may be required for different waters or portions thereof.” Pursuant to s. 281.15, Wis. Stats., water quality standards are comprised of designated uses and criteria.

The department has promulgated designated uses and criteria for various pollutants and parameters in chs. NR 102 through 105, Wis. Adm. Code. The statewide criteria for phosphorus that were approved by U.S. EPA are promulgated in s. NR 102.06, Wis. Adm. Code. Site-specific criteria are criteria developed for individual waterbodies or groups of waterbodies with site specific characteristics that warrant different criteria from those promulgated statewide.

For the Petenwell and Castle Rock Lakes, the TMDL analysis revealed that the applicable phosphorus statewide criterion of 40 µg/L contained in s. NR 102.06 is more stringent than necessary to achieve the designated use (recreational and aquatic life uses). This is because the chlorophyll-phosphorus relationship for the lakes shows that the designated recreational use can be met at a higher phosphorus concentration, meaning less algae is produced at a higher phosphorus concentration for these lakes than is typically observed in lakes across the state. Revising the criteria is consistent with Wisconsin’s statutory provision that requires criteria be no more stringent than necessary to protect the designated use. s. 281.15 (2) (c), Wis. Stats.

For Lake Wisconsin, the TMDL analysis revealed that the phosphorus statewide criterion for impounded waters in s. NR 102.06, Wis. Adm. Code, is not protective enough to meet the recreational and aquatic life uses. This is because while the retention time in Lake Wisconsin is short, like that of a river, Lake Wisconsin responds to phosphorus loading in the same manner as a lake necessitating a more stringent phosphorus criterion to allow attainment of designated uses. The recommended SSC for Lake Wisconsin will satisfy the state statutory requirement and federal regulatory requirement that criteria be developed to protect the designated uses. s. 281.15 (1), Wis. Stats., and 40 CFR 131.11

5. Estimate of amount of time that state employees will spend developing the rule and of other resources necessary to develop the rule :

400 hours (total for all staff). This includes staff time spent drafting documentation for SSC, reviews by legal and management, public hearings, and rules coordination. As part of the TMDL development, the scientific analysis associated with the development of the SSC has already been completed.

6. List with description of all entities that may be affected by the proposed rule :

The recommended SSC will impact most of the Wisconsin River Basin located above Lake Wisconsin. This drainage area encompasses over 9,000 square miles including 21 counties and 85 cities and villages. As of March 2018, there are 109 individually permitted municipal and industrial dischargers in the basin, 14 permitted municipalities for urban storm water, and 26 CAFOs. There are also numerous permitted discharges covered under general permits and some individual permits that are characterized as pass through, meaning they utilized surface water for noncontact cooling water but have no phosphorus additives. In general, revising water quality criteria affects the calculation of water quality based effluent limitations for WPDES permit holders and can affect the calculation of wasteload and load allocations, in a TMDL. Other affected entities may include:

- Petenwell and Castle Rock Stewards (PACRS) and local residents and businesses: PACRS is a lake association and petitioned the legislature for the development of a TMDL to address water quality impairments due to phosphorus.
- Lake Wisconsin Alliance and local residents and businesses: The Lake Wisconsin Alliance is a lake association founded in 2014 that endeavors to balance the diverse interests of the Lake Wisconsin community while improving water quality, recreational opportunities, and sustaining a healthy ecosystem within the Lake Wisconsin watershed.

7. Summary and preliminary comparison with any existing or proposed federal regulation that is intended to address the activities to be regulated by the proposed rule :

40 CFR 131 Subparts A-C contain requirements for establishing state water quality standards.

40 CFR s. 131.4: States are responsible for establishing and revising water quality standards. U.S. EPA approves or disapproves standards under 40 CFR s. 131.5.

40 CFR 131.6: Water quality standards consist of designated uses and criteria to protect the designated uses.

40 CFR 131.11: States must adopt water quality criteria that protect designated uses. For waters with multiple uses, the criteria must protect the most sensitive use. 40 CFR 131.11(b)(1)(ii) authorizes states to adopt numeric water quality criteria that are “modified to reflect site-specific conditions.”

40 CFR 131.20: Revision of state water quality standards is subject to public participation procedures and U.S. EPA review and approval under 40 CFR 131.20.

Wisconsin has authority under s. 281.15, Wis. Stats. to promulgate and revise water quality standards. Promulgation of site specific criteria for the three lakes would provide consistency with the federal regulations in 40 CFR 131.6 and 131.11 that require that criteria be based on protecting the designated uses of a waterbody.

8. Anticipated economic impact of implementing the rule (note if the rule is likely to have a significant economic impact on small businesses):

Adoption of recommended SSC will impact allocations resulting from the TMDL and thus have an economic impact, both through changes in compliance costs and the positive economic benefits associated with improvements in water quality. Adoption of recommended SSC for these waterbodies will have conflicting impacts for dischargers and businesses. The anticipated increased compliance cost from establishing SSC for the three waterbodies is estimated to be moderate (\$1 million year in present worth). The estimated compliance costs reflect wastewater treatment cost (capital and O&M costs) at the facility. The cost savings (economic benefit) for facilities that will be associated with establishing SSC for the three waterbodies is estimated to be very significant (\$11.5 million per year). We assume a 20-year period for compliance cost and benefit estimations in this section. The positive economic benefits associated with improvements in water quality are not factored into the costs.

For the 109 individually permitted wastewater treatment facilities:

- 3 facilities are already installing treatment capable of meeting effluent limits under both the current criteria and recommended SSC so the SSC will have no economic impact.
- 2 facilities that discharge to large wetland complexes may not be impacted by the SSC as the department currently believes the discharges do not impact downstream waters, so the SSC will have no economic impact.
- 20 facilities are already meeting effluent limits under both the current criteria and recommended SSC so the SSC will have no economic impact.
- 32 facilities have no change in effluent limits so the SSC will have no economic impact.
- 16 facilities will have similar treatment options under both the current criteria and recommended SSC such that it is unlikely the recommended SSC will shift compliance costs much in either direction.

For the remaining 36 wastewater treatment facilities, 29 of the facilities are municipal wastewater treatment plants and 7 are industrial facilities. The economic impact for these 36 facilities is summarized in Table 2.

Table 2: Wastewater Compliance Costs

	# of Facilities	Total Present Worth Cost (\$) (20 years)	Annual Cost (\$) (20 years)
Municipal Facilities			
Reduced Costs	19	93,617,625	5,593,602
Increased Costs	10	8,951,719	534,860
Industrial Facilities			
Reduced Costs	5	86,115,333	5,895,862
Increased Costs	2	7,554,925	517,245

This equates to an estimated cost savings of \$180 million for the 24 wastewater facilities; however, 12 facilities see an estimated increased compliance cost totaling \$16.5 million.

Estimated compliance costs reflect wastewater treatment at the facility and do not consider alternative lower cost compliance options, such as water quality trading, adaptive management, or the multi-discharge variance, which if utilized could result in lower compliance costs. Cost estimates are expressed in present worth, assume a 20-year time period, and include both capital and O&M costs. An interest rate of 3.2% was used for industrial facilities and an interest rate of 1.76% was used for municipal facilities, reflecting the discounted rate available through the Clean Water Fund. Cost estimates utilize the analysis prepared by the Department of Administration for the multi-discharger variance.

For the 14 permitted municipalities with urban storm water permits, economic impacts cannot be estimated until municipalities conduct additional analysis; however, under the recommended SCC 12 permitted municipalities have less stringent reductions and 2 permitted municipalities (Baraboo and Portage) have more stringent reductions. The department reached out to municipal consultants for cost estimates; however, consultants were unable to provide compliance cost estimates. The department hopes to receive information on economic impacts from storm water sources during the rulemaking process. Factors such as capital costs, planning and design costs, and life-cycle costs cannot be estimated until municipalities evaluate potential compliance strategies. During the first permit term, municipalities are required to develop a compliance plan, including a timeline for compliance that varies based on needed reductions, redevelopment patterns, and economic resources. It is anticipated that estimated compliance costs will be generated over the next 5 years as municipalities evaluate their compliance options. In addition, municipalities have extended compliance timeframes that can extend over multiple permit terms making a present worth or annual cost estimate difficult to estimate.

This rule will not impose additional pollution reduction requirements for nonpoint sources and CAFOs as the establishment of the recommended SSC itself does not invoke any new regulatory requirements for nonpoint sources or CAFOs. Adoption of the TMDL does allow the Wisconsin River Basin to be eligible for additional federal funding to support implementation of nonpoint practices.

For Lake Wisconsin, the recommended SSC allows TMDL allocations to be assigned such that water quality and the designated uses can be attained for the lake. Attainment of the designated uses is anticipated to have economic benefits for recreational activities such as boating and fishing, small business involved in the service and tourism industry, and increased property values due to improved water quality.

9. Anticipated number, month and locations of public hearings:

The department anticipates holding 1 public hearing during or before the month of December 2018. The hearing will be held at the City of Portage public library to provide easy accessibility to those parties most directly affected within the watershed.

As part of the TMDL development process, public meetings have already been held outlining the impacts of the recommended SSC. Meetings were held in Rhineland on March 5, 2018, two meetings were held in Stevens Point on March 6, 2018, two meetings were held on March 14, 2018 in Portage, and a statewide webinar was held on February 21, 2018. An additional public hearing will be held regarding the TMDL during or before July 2018.

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