



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 5

77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590


REPLY TO THE ATTENTION OF:

NOV 09 2017

WN-15J

MEMORANDUM

SUBJECT: Wisconsin Legal Authority Review - Review and Recommendation of Resolution for Issue 28

FROM: Candice Bauer, Chief 
NPDES Permits Branch Section 2

TO: File

Issue 28 (Acute Limits)

In EPA's July 11, 2011 letter to the Wisconsin Department of Natural Resources (WDNR), Issue 28 stated the following:

To ensure that substances are not present in amounts that are acutely harmful to aquatic life in all surface waters, including those portions of mixing zones normally inhabitable by aquatic life, Wis. Admin. Code NR §§ 106.06(3)(b), 106.32(2)(b), and 106.87(1) provide that effluent limitations shall be set equal to the final acute value (FAV). The State rule as written appears to deviate from the federal requirement at 40 C.F.R. § 122.44(d)(1)(vii)(A), which provides that WQBELs must be derived from and comply with water quality standards, in the following three instances:

- (a) Acute water quality criteria will be exceeded in a stream or river when the effluent limit is equal to the FAV and the effluent flow rate is one-half or more of the flow rate in the receiving waters;
- (b) Limitations set equal to the FAV may not meet the requirements for mixing zones in Wis. Admin. Code NR § 102.05(3)(b); and
- (c) A discharge equal to the FAV may cause chronic toxicity absent companion limits based on chronic water quality criteria.

In its response to this letter, Wisconsin must explain how it will address the deficiencies noted in this comment. If Wisconsin asserts that it has the authority necessary to address these deficiencies, the State must provide a written opinion from the Attorney General specifically identifying what authority the State will use to set effluent limits less than the FAV in the situations identified in comment 25 (a) — (c). If the State lacks the authority to implement 40 C.F.R. § 122.44(d)(1)(vii)(A), then Wisconsin must include the State's plan, with a schedule and milestones, for correcting the deficiencies noted above.

Letter from Susan Hedman, Regional Administrator, U.S. EPA, to Cathy Stepp, Secretary, WDNR (July 11, 2011) (on file with U.S. EPA).

Analysis

The federal rules at 40 C.F.R. § 122.44(d)(1)(vii)(A) provide:

When developing water quality based effluent limits under this paragraph the permitting authority shall ensure that:

(A) The level of water quality to be achieved by limits on point sources established under this paragraph is derived from and complies with all applicable water quality standards . . .

Wisconsin amended its rules to establish new methodologies for calculating acute fish and aquatic life water quality based effluent limitations for toxic substances. The rule change at Wis. Admin. Code NR § 106.06(3)(b) creates a mass balance approach to calculate acute fish and aquatic life water quality based effluent limitations in low dilution conditions using 1-day 10-year hydrologic based low flow data (1Q10), as shown in Table 1 below.

Table 1: Revised Wisconsin Rules on Acute Limits

Rule Provision	Rule Text
<p>Wis. Admin. Code NR § 106.06(3)(a)-(b), Limitations for toxic and organoleptic substances</p>	<p>(a) The department shall establish water quality based effluent limitations to ensure that substances are not present in amounts which are acutely harmful to animals, plants or aquatic life in all surface waters including those portions of the mixing zone normally habitable by aquatic life and effluent channels as required by s. NR 102.04 (1).</p> <p>(b) To assure compliance with par. (a), the department shall calculate the water quality-based effluent limitation for a substance using the following procedures whenever the background concentration of the substance in the receiving water is less than the acute water quality criterion or secondary value:</p> <p>1. A limitation shall be calculated using the following conservation of mass equation whenever sufficient site-specific data exist:</p> $\text{Limitation} = \frac{(WQC) (Q_s + (1-f)Q_e) - (Q_s - fQ_e) (C_s)}{Q_e}$

	<p>Where:</p> <p>Limitation = Calculated limitation based on the acute toxicity criterion or secondary acute value (in units of mass per unit of volume).</p> <p>WQC = The acute toxicity criterion appropriate for the receiving water as specified in chs. NR 102 to 105 or the secondary acute value determined according to ch. NR 105 or as referenced in sub. (1)(a)</p> <p>Qs = Receiving water design flow (in units of volume per unit time) under par. (bm)</p> <p>Qe = Effluent flow (in units of volume per unit time) as specified in s. NR 106.06 (4) (d)</p> <p>f = Fraction of the effluent flow that is withdrawn from the receiving water, and</p> <p>Cs = Background concentration of the substance (in units of mass per unit volume) as specified in s. NR 106.06 (4) (e).</p> <p>2. A limitation shall be calculated equal to the final acute value or secondary value as determined in s. NR 105.05 for the respective fish and aquatic life subcategory for which the receiving water is classified.</p> <p>3. The department shall use the more restrictive calculated effluent limitation derived in subds. 1. and 2. as the water quality-based effluent limitation. If the background concentration of the substance in the receiving water is greater than the acute water quality criterion or secondary value for the substance, then the procedure in sub. (6) shall be used to calculate the limitation.</p>
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The equation of Wis. Admin. Code NR § 106.06(3)(b)(1) above, is the same equation found in Wis. Admin. Code NR § 106.06(4)(b)(1), which is used to calculate chronic limits. This rule change resolves the problems identified in Issue 28 by creating a methodology for determining acute water quality criteria in low flow conditions and eliminating the process of setting the effluent limit equal to the FAV.

Wisconsin also amended its rules to address the concern regarding mixing zones. The text of the rules amended, Wis. Admin. Code NR §§ 106.32(2)(b) and 106.87(1), are shown in Table 2 below.

Table 2:

<p>Wis. Admin. Code NR § 106.32(2)(b) and (e), Limitations based on Acute Toxicity</p>	<p>(b) To assure compliance with par. (a) and except as provided in pars. (c) and (e), water quality-based effluent limitations for ammonia shall equal the final acute value as determined in s. NR 105.05 for the respective fish and aquatic life subcategory for which the receiving water is classified. The water quality-based limitations based on acute toxicity shall be established using all of the following methods: . . .</p> <p>(e) To assure compliance with par. (a), the department may calculate acute water quality-based effluent limitations using the following procedure if the department concludes that limitations calculated in par. (b) or (c) are not sufficiently protective of fish and aquatic life. The department may include the calculated WQBEL in a permit if this limitation is more stringent than the limitation calculated in par. (b) or (c):</p> $\text{Limitation} = \frac{(\text{WQC}) (Q_s + (1-f)Q_e) - (Q_s - fQ_e) (C_s)}{Q_e}$ <p>Where:</p> <p>WQC = The acute ammonia toxicity criterion appropriate for the receiving water as specified in ch. NR 105 and par. (d).</p> <p>Q_s = Receiving water design flow (in units of volume per unit time) as defined ins. NR 106.06 (3)(bm).</p> <p>Q_e = Effluent flow (in units of volume per unit time) as specified ins. NR 106.06 (4) (d).</p> <p>f = Fraction of the effluent flow that is withdrawn from the receiving water, and</p> <p>C_s = Background concentration of the substance (in units of mass per unit volume) as specified in s. NR 106.06 (4) (e).</p>
<p>Wis. Admin. Code NR § 106.87(1), Establishment of Chloride Effluent Limitations</p>	<p>(1) Calculated limitations. If water quality-based effluent limitations for chloride are determined to be necessary, those limitations shall be derived under ss. NR 106.06 [calculation of water quality based effluent limitations for toxic and organoleptic substances] and 106.07 [application of and compliance with water quality based effluent limitations in permits], and for the purposes of this subchapter, shall be labeled "calculated limitations". [See also, Wis. Admin. Code</p>

<p>Wis. Admin. Code NR § 106.88(1), Application of and compliance with chloride effluent limitations in a permit</p>	<p>NR § 106.88(1), Application of and compliance with chloride effluent limitations in a permit, below]</p> <p>Chloride limitations in permits. If chloride water quality-based effluent limitations are deemed to be necessary under s. NR 106.85, the department shall use all of the following procedures to include the calculated limitations in the permit with an appropriate compliance schedule as necessary and appropriate:</p> <p>(a) Effluent limitations based on an acute criterion shall be expressed in permits as daily maximum limitations, and effluent limitations based on a chronic criterion shall be expressed in permits as weekly average limitations.</p> <p>(b) Effluent Limitations shall be expressed in a permit consistent with the protocols in NR 106.07 (3) to (5).</p> <p>(c) Mass limitations calculated under s. NR 106.07 (2) and (9) shall be included in the permit in addition to concentration based effluent limitations whenever water quality-based effluent limitations are determined to be necessary.</p> <p>(d) A compliance schedule for a water quality-based effluent for chloride may be granted in a permit if necessary and appropriate and shall be consistent with the requirements under s. NR 106.117.</p>
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The changes to Wis. Admin. Code NR §§ 106.32(2)(b) and 106.87(1) satisfactorily serve to further direct WDNR's use of methods consistent with 40 C.F.R. § 122.44(d)(1)(vii)(A) for mixing zones.

Rule Package 4, Public Notice, Hearing, and Comment

WDNR published a public hearing notice on proposed revisions to Wis. Admin. Code chapters NR 106, 205, and 212 on November 16, 2015 in the Wisconsin Administrative Register. 719A3 Wis. Admin. Register CR15-85 (November 16, 2015). The public comment period was open from November 17 through December 18, 2015, and a public hearing was held in Madison, Wisconsin on December 7, 2015. Wis. Nat. Res. Bd., Agenda Item No. 3.A.3 at 5, Jan. 4 2016, Correspondence/Memorandum, Attachment to Order WT-11-12. At the December 7, 2015 public hearing, two members of the public attended, one providing verbal testimony. Id. Additionally, during the comment period, written comments were received from the Wisconsin Legislative Council Rules Clearing House, EPA, Marshfield Wastewater Utility, Municipal Environmental Group – Wastewater Division, and Wisconsin Manufacturers and Commerce. Wis. Nat. Res. Bd., Agenda Item No. 3.A.3 at 1, Jan. 4 2016, Response to Comments on Rule Package WT-11-12 [Rule Package 4], Attachment to Order WT-14-12. WDNR responded to the written

comments in a written response summary, which adequately explained the reasons why certain rule changes were made in response to comments received and why other comments did not warrant changes. Id.

Conclusion

Based on EPA's review of Wisconsin's provisions above, EPA concludes that Issue 28 is resolved.