

Report From Agency

REPORT TO LEGISLATURE

NR 102, 105, 106 and 219, Wis. Adm. Code

Board Order No. WY-23-19
Clearinghouse Rule No. 21-083

Basis and Purpose of the Proposed Rule

Poly- and perfluoroalkyl substances (PFAS) are human-made, organic compounds that have been manufactured for use in non-stick coatings, waterproof fabrics, firefighting foams, food packaging, and many other applications since the 1940s. PFAS are highly resistant to degradation and have been detected globally in water, sediment, and wildlife. This global distribution is of concern as PFAS have documented toxicity to animals and because epidemiological studies have suggested probable links to several human health effects. In Wisconsin, PFAS have been detected in drinking and surface water near sources of industrial use or manufacture and near spill locations. Perfluorooctane sulfonate (PFOS) has been found in fish tissue resulting in the issuance of special fish consumption advisories for some surface waters in the state.

The proposed rules include a water quality standard for two types of PFAS: PFOS and perfluorooctanoic acid (PFOA). Under the Clean Water Act, surface water quality standards can include criteria that are numeric or narrative and designated uses (e.g. aquatic life use, recreational use, and public health and welfare).

Wisconsin's existing Administrative Codes contain both numeric and narrative criteria for toxic substances:

- Chapter NR 105, Wis. Adm. Code, contains specific numeric criteria for numerous toxic pollutants as well as formulas for calculating numeric criteria and secondary values for toxics that do not yet have promulgated criteria.
- Section NR 102.04(1)(d), Wis. Adm. Code, contains Wisconsin's narrative criteria for toxics. This existing rule states that 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* [emphasis added], nor shall substances be present in amounts which are acutely harmful to animal, plant or aquatic life.

The proposed PFOS and PFOA standard protects public health and recreational uses of surface waters by establishing criteria that contain both narrative provisions and numeric criteria. The narrative and numeric criteria interpret Wisconsin's existing narrative standards under ss. NR 105.04(4m) and 102.04, Wis. Adm. Code, with regard to two toxic substances, PFOS and PFOA. The proposed rule defines levels of public health significance for the two types of PFAS based on preventing adverse effects from contact with or ingestion of surface waters of the state, or from ingestion of fish taken from waters of the state.

- For PFOS, the proposed level of public health significance is 8 ng/L for all waters except those that cannot naturally support fish and do not have downstream waters that support fish.
- For PFOA, the proposed levels of public health significance are 20 ng/L in waters classified as public water supplies under ch. NR 104, Wis. Adm. Code, and 95 ng/L for other surface waters.

Related to the proposed PFOS and PFOA standards, the proposed rule also includes assessment protocols that clarify when a surface water that contains levels of PFOS or PFOA above the criteria in the narrative standard should be listed on the state's impaired waters list.

Additionally, this rule includes revisions to ch. NR 106, Wis. Adm. Code, that address Wisconsin pollutant discharge elimination system (WPDES) permit implementation procedures for the new PFOS and PFOA standard. With regard to permit implementation of the PFOS and PFOA criteria, the department is proposing source reduction as a first step toward reducing levels of PFOS and PFOA in the effluent rather than requiring treatment up front because source reduction is the most cost effective approach to reducing or eliminating PFOS and PFOA in wastewater discharges. Source reduction also avoids the generation of contaminated carbon filters from treatment systems which will contain higher levels of PFOA and PFOS that will have to be disposed of in a safe manner.

The proposed rule establishes WPDES permit requirements for PFOS and PFOA discharges to surface waters of the state, in ch. NR 106 – Subchapter VIII, Wis Adm. Code, including: the determination of the need for a PFOS and PFOA Minimization Plan based on data generation in a reissued permit, a general schedule for PFOS and PFOA Minimization Plan permit implementation procedures, and PFOS and PFOA Minimization Plan requirements. The proposed permit requirements include standard PFOS and PFOA sampling frequencies for categories of permitted dischargers. If the department does not believe that PFOS or PFOA is present in a permittee's discharged effluent, sampling may be waived. Based on the effluent data collected, the proposed rule establishes procedures for determining whether a permitted facility's discharge contains PFOS or PFOA at levels that have the reasonable potential to cause or contribute to an exceedance of the PFOS or PFOA standard. For permitted facilities that have the reasonable potential to exceed the PFOS or PFOA standard, the proposed rule requires that the permittee develop and implement a PFOS and PFOA Minimization Plan in accordance with the timelines in the rule and WPDES permit schedule. The permittee must also continue sampling for PFOS and PFOA.

The department expects that for nearly all WPDES permitted facilities with discharges to surface waters as well as industrial facilities that discharge wastewater to publicly owned treatment plants, source reduction actions outlined in minimization plans will reduce PFOS and PFOA discharges to levels that are below the public health based standard. The rule allows for up to 85 months of PFOS and PFOA minimization plan implementation. At subsequent permit reissuances after the department's initial determination that a permitted discharge may exceed the PFOS or PFOA standard, for a maximum period of up to 85 months, the department will evaluate progress in source reduction activities and proposed activities for the next permit term and also evaluate the effluent quality of the permitted facility. The proposed rule provides:

- If levels of PFOS or PFOA in the effluent have been eliminated or reduced to a concentration where there is no longer reasonable potential to exceed the standard, then the department may remove future scheduled actions, the permittee will be required to maintain effluent quality at levels that would not have the reasonable potential to cause or contribute to the exceedance of PFOS or PFOA standards, and continued monitoring may be required in the permit.
- If there is still reasonable potential to exceed the standard, the department may request updates be made to the PFOA and PFOS minimization plan and may include revised related terms and conditions, including revisions to the schedule in the reissued permit.

Because past pollutant minimization plans for other pollutants such as mercury have been shown to result in a 43 percent (median) reduction in effluent concentrations and based on relatively low initial concentrations of PFOS and PFOA observed in permittees' effluents, the department predicts that only a couple of industrial facilities (indirect dischargers) in the state will eventually have to install treatment to comply with the PFOS and PFOA standard. In these cases, the proposed rule allows a compliance schedule for installation of treatment technology.

In the event treatment becomes necessary for a WPDES permit holder, pursuant to s. 283.15, Wis. Stats., the permitted facility may apply for an economic variance if installation of treatment technology will cause substantial and widespread adverse social and economic impacts in the area where the permittee is located.

Finally, this rule adds specifications for the preservation and holding times of aqueous, biosolids (sludge), and tissue samples that will be analyzed for PFAS in ch. NR 219, Wis. Adm. Code.

Summary of Public Comments

See attached "Comments and DNR Responses Natural Resources Board Order WY-23-19."

Modifications Made

Standards Related

- Section NR 102.04(1m): proposed language was revised to remove references to the mixing zone.
- Section NR 102.04(1m)(b): proposed language was separated into paragraphs (b) and (c); par. (b) now refers only to PFOA criterion protective of incidental ingestion and par. (c) refers only to PFOA criterion protective of intentional consumption of surface waters.

- Section NR 102.04(1m): proposed language was relocated to s. NR 102.04(8)(d)1., and references to s. NR 102.04(1m) were revised to reference the appropriate section of s. NR 102.04(8)(d) throughout the proposed rule language.
- Section NR 105.04(4m): lengthy descriptions of PFOS and PFOA were revised to reference their definitions.

Permits Related

- Chapter NR 106 Subchapter VIII: the term “PFAS minimization plan” was changed to “PFOS and PFOA minimization plan” throughout the proposed rule language.
- Section NR 106.975: definitions were added for “Major municipal discharger” and “Minor municipal discharger” and the term “Best management practices” was renamed “Source reduction activities”.
- Section NR 106.98(2)(a) and (b): proposed language was updated to include influent monitoring for municipal dischargers on a case-by-case basis rather than blanket requirement for all municipal dischargers.
- Section NR 106.98(4): proposed language was updated under the determination of need to allow for mixing zones when determining reasonable potential as it relates to PFOA.
- Section NR 106.985: proposed language throughout this section was revised to provide further clarification on the timing of permit implementation steps, including the steps for incorporation of PFOS and PFOA minimization plans into permits after reasonable potential is determined, the timeline for submittal of plans, and the length of time allowed for implementation.

Analysis Related

- Section NR 219.04 Table F table footnote 1 was amended to include definitions for “HDPE”, “PE” and “PP”.
- Section NR 219.04(1) (Note) and s. NR 219.04 Table F (Note) were revised to clarify that the department recommends the use of final approved EPA methods.

See attached response to comments document for additional information.

Appearances at the Public Hearing

The following people provided testimony at the public hearing:

Jim Baumann, Wisconsin’s Green Fire
 Peter Buress, Wisconsin Conservation Voters
 Dave Dettman, member of the public
 Amy Domaszek, member of the public
 Lee Donahue, Supervisor on Town of Campbell Board
 Kayla Furton, Resident and Town Board Supervisor in Peshtigo
 Erik Kanter, Clean Wisconsin
 Jeff Lamont, member of the public
 Cheryl Nenn, Milwaukee Riverkeeper
 Laura Olah, Citizens for Safe Water Around Badger
 Jorge Ramon Romero, Midwest Environmental Advocates
 Vanessa Wishart, Municipal Environmental Group – Wastewater Division

The following people registered for the public hearing in support of the proposed rule:

Sarah Balgooyen, of Madison
 Jim Baumann, Wisconsin’s Green Fire
 Peter Burrese, of Madison
 Paul Dearlove, Clean Lakes Alliance
 Amy Domaszek, of Madison
 Lee Donahue, Town of Campbell Supervisor
 Becca Dymzarov, of Jefferson
 Kayla Furton, of Marinette
 Erik Kanter, of Madison

Jim Killian, of Stoughton
Tamara Knickmeier, Lake Waubesa Conservation Association
Jeff Lamont, of Marinette
Rob Lee, Midwest Environmental Advocates
Allan Levin, Yahara Lakes Association
Bradley Manning, of Monona
Cheryl Nenn, Milwaukee Riverkeeper
Jorge Roman Romero, Midwest Environmental Advocates
James St. Vincent, of McFarland
Dwight Swenson, of Hixton
Bill Verschay, of Porterfield
Vanessa Wishart, Municipal Environmental Group – Wastewater Division

The following people registered for the public hearing in opposition to the proposed rule:

Sue Gau, of Winneconne
Jason Wiesner, of Two Rivers

Changes to Rule Analysis and Fiscal Estimate

Text was added to the Plain Language Analysis to clarify that the proposed PFOS and PFOA standard is both narrative and numeric, in that it interprets Wisconsin's existing narrative criterion with numeric thresholds.

Several comments were received during the EIA public comment period. The following general categories of comments were received:

- Support for source reduction approach
- EIA should include costs related to pit trench dewatering and construction
- EIA should include additional costs associated with source investigation
- EIA should account for the benefits of regulations and/or the costs of inaction
- EIA should include costs associated with treatment if it is ultimately required

In response to these comments, the department updated the EIA to include source investigation costs tied to labor costs/staff time instead of estimating these costs based on mercury pollutant minimization plan costs. The EIA was also updated with more detailed sampling costs, tied to the first two years of pollutant minimization plan implementation to account for the higher anticipated costs during this timeframe. These sampling costs were also updated to include the maximum cost reported to the department from 4 labs, in addition to the inclusion of shipping costs and sampling blanks. Furthermore, the EIA was updated to include leachate hauling costs. These changes increased the estimated maximum two-year costs from \$4,271,304 to \$9,268,046.

The EIA was not updated with additional treatment costs because costs associated with treatment were already included, but only for those businesses where data showed that treatment would likely be necessary. Pit trench dewatering and construction activities were already accounted for as well.

In response to the comments requesting that the department account for the benefits of regulations and/or the costs of inaction, a section was added to EIA Attachment B outlining these benefits. However, these benefits were not subtracted from the maximum two-year compliance cost estimates because this estimate is required to be expressed as a gross, not net, cost.

Response to Legislative Council Rules Clearinghouse Report

The Legislative Council Rules Clearinghouse submitted comments on form, style and placement in administrative code; adequacy of reference; and clarity, grammar, punctuation and use of plain language. Changes to the proposed rule were made to address all recommendations by the Legislative Council Rules Clearinghouse (LCRC), except for those discussed below.

Comment: In comment 2.b., the LCRC concurred the department has authority to adopt both narrative and numeric criteria, but suggested using consistent terminology with regard the criteria for PFOA and PFOS and to remove duplicative language within the existing generally applicable narrative toxic substance standard.

Response: Some changes made. The department agrees the PFOA and PFOS criteria are both narrative and numeric. The proposed criteria are an interpretation of the narrative standard in s. NR 102.04(1)(d), Wis. Adm. Code, with respect to PFOS and PFOA. The language in the introductory paragraph has been revised in response to this comment and some changes were made to the text in response to other public comments (e.g. reference to mixing zones). A primary reason for maintaining some of the duplicative language in the PFOS and PFOA standard is that the department wants to make it clear that the PFOS and PFOA narrative and numeric criteria are an interpretation of what constitutes “levels of public health significance” in the narrative toxic substances standard in s. NR 102.04(1)(d), Wis. Adm. Code, with respect to discharges of PFOA and PFOS.

In addition, to address the comments in both 2.b. and 2.c., the department moved the proposed criteria to s. NR 102.04(8). Language throughout the analysis and rule text was also revised to be more consistent with regard to the expression of the criteria (both numeric and narrative).

Comment: In comment 2.h., the LCRC noted that s. NR 219.04 Table F note could be provided as a footnote to Table F, rather than a note.

Response: No change made. The department believes it is important to keep this text as a note instead of a table note, as it only provides a recommendation for the use of a final approved EPA method.

Comment: In comment 5.b., the LCRC recommends removing the amendment to ch. NR 105, stating that the purpose of the amendment is somewhat unclear.

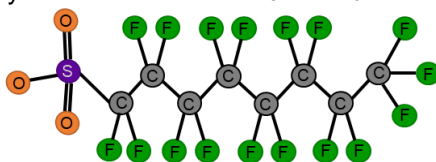
Response: No change made. The department believes it is important to keep the cross-reference to the PFOA and PFOS criteria in ss. NR 102.04 and 105.04(4m), Wis. Adm. Code, to make it clear that exceedances of these levels are “deemed to have adverse effects on public health” under ch. NR 105, Wis. Adm. Code. In other words, additional calculations using the procedures in ch. NR 105, Wis. Adm. Code, are not necessary to protect public health.

Comment: In comment 5.c. the LCRC recommends the language in the definition of “new discharger” within SECTION 4, under the phrase “which has never received a finally effective WPDES permit for discharges at that site” could be modified for better clarity. For example, the phrase could be replaced with “for which no current or prior WPDES permit has taken effect”. Also, within that definition, the “and” preceding “that did not” should be removed.

Response: No change made. The language is consistent with and parallels that which is found in federal regulations with the exception of the August 13, 1979 date. See s. 227.14(1m), Wis. Stats.

Comment: In comment 5.d. the LCRC states that the definition of “PFAS” should be modified to provide that PFAS means a perfluoroalkyl or polyfluoroalkyl substance, rather than a perfluoroalkyl and polyfluoroalkyl substance. Additionally, the molecular formula provided at the end of the definition should be modified to read “C_nF_{2n+1}”, rather than “C_nF₂₊₁”.

Response: Change made in part. The “and” was changed to “or.” However, the formula was not changed, as the “2n” in refers to the fact that the structure of PFAS can be represented by some number of carbon atoms (C_n) which are each attached to 2 fluorine atoms (F_{2n}), except for the last carbon atom which is attached to 3 fluorine atoms (hence the “+1”). For example, as shown in the diagram below, because PFOS has an 8 carbon chain and a total of 17 fluorine atoms are attached to the chain, it is thus represented by the nomenclature: C₈F₁₇SO₃



Comment: In comment 5.h. the LCRC recommends s. NR 106.985 (2) (d) 1. and 2. establish generally parallel requirements relating to PFOS and PFOA. As such, these subdivisions could be rewritten to make more effective use of parallel language.

Response: No change made. While the language establishes generally parallel requirements the two were intentionally kept separate because the limit calculation procedures are different between compounds and to combine the requirements could cause confusion or misinterpretation of the requirement. However, this part of the rule was revised in response to other public comments regarding limit calculations for PFOS and PFOA.

Final Regulatory Flexibility Analysis

The department has determined that there may be an impact on small businesses in Wisconsin. A breakdown of the statewide economic impact on small businesses is provided in the two tables below. The number of affected small businesses was determined based on the number of affected industries discussed in the narrative attached to the EIA (Attachment B). The facilities are all expected to either have reasonable potential to exceed the criteria or be discharging to a publicly owned treatment works (POTW) that has reasonable potential to exceed the criteria. Consequently, these facilities will, at a minimum, incur costs associated with sampling and development and implementation of a PFOS and PFOA minimization plan or just source reduction activities. See Attachment B to the EIA for further discussion and explanation of the expected treatment costs.

Estimated Number of Affected Small Businesses

Industry Type	Percentages of Small Businesses by Industry Type	Number of Affected Industries	Number of Affected Small Businesses
Metal Finishers	68%	37	25
Paper/Packaging	23%	21	5
CWTs	76%	7	5
Chemical Manufacturers	72%	10	7
Commercial Laundries	70%	8	6
Total			48

Estimated Statewide Impact on Small Businesses

Cost Type	Number of Small Businesses	Annual Costs
Treatment	1	\$428,126
PFAS Minimization Plan/Source Reduction Measures	48	\$658,944
Sampling	48	\$993,600
Total		\$2,080,670

In order to comply with this rule, affected small businesses will need to develop and implement a PFOS and PFOA minimization plan to reduce PFOA and PFOS concentrations from their effluents. In order to develop this plan, small businesses will need to research known sources of PFOA and PFOS as they apply to their specific processes and make efforts to eliminate or minimize those sources. This will require the affected small businesses to have knowledge of how to use the internet, communication skills to solicit information from other affected entities, and documentation skills to show what actions have been taken.

All affected small businesses will also need to learn how to obtain a representative sample from their discharge, whether it is a direct discharge to surface waters or an indirect discharge to a POTW. Although permitted small businesses are familiar with effluent sample collection, because of the high potential for cross-contamination when sampling for PFAS, these procedures may be different than how facilities currently sample their effluent. For small businesses that have a direct discharge, their sample results are submitted on monthly Discharge Monitoring Reports (DMR). Small businesses with WPDES permits are familiar with DMR reports. For small businesses that discharge to a POTW, the small business can submit the PFOS or PFOA results directly to the POTW consistent with existing standard reporting procedures.

The department estimates that there will potentially be one small business that may need to install treatment. This will require the small business's current treatment system operators to research the requirements to properly operate a granular activated-carbon treatment system. A compliance schedule may be granted to install treatment.

Although not expected, in the event a small business with a WPDES permit (direct discharger) had to install treatment to comply with the PFOS or PFOA standard, the small business could apply for an economic variance pursuant to s. 283.15, Wis. Stats., if treatment costs would result in widespread adverse social and economic impacts. Without specific financial and employment information for a small business variance applicant, it is impossible for the department to determine at this time whether any applicant would qualify for a variance.

The department has considered the methods outlined in s. 227.114(2)(a) to (e), Wis. Stats., and has concluded that, based on existing state and federal regulations, the department cannot exempt small businesses from sampling and reporting requirements or provide a relaxed schedule simply based on the size of a business. The department also cannot exempt small businesses from compliance with the water quality standard. Wisconsin's WPDES permit program is based on the requirements in ch. 283, Wis. Stats., and the state's permitting program must be consistent with federal NPDES permit requirements established in the Clean Water Act and applicable federal regulations. Federal regulations do not allow less stringent limitations or compliance schedules categorically for small businesses. Although not specific to small businesses, the proposed rule does allow for less-frequent sampling for permittees on a case-by-case basis, and if a small business is not expected to discharge PFOA or PFOS into surface waters, the business doesn't have to sample for these pollutants and would not be subject to the requirements of this proposed rule.

Response to Small Business Regulatory Review Board Report

The Small Business Regulatory Review Board did not prepare a report on this rule proposal.