Form 1100-001P (Rev. 01/21)

Wisconsin Department of Natural Resources
Natural Resources Board Agenda Item

Item No. 4.D.

SUBJECT:
Request adoption of Board Order DG-24-19, proposed rules affecting chapter NR 809, related to the promulgation of new drinking water maximum contaminant levels for Per- and Polyfluoroalkyl Substances (PFAS) including Perfluorooctanesulfonic acid (PFOS) and Perfluorooctanoic acid (PFOA)

FOR: February 2022 Board meeting

PRESENTER'S NAME AND TITLE: Steve Elmore, Drinking Water and Groundwater Program Director

SUMMARY:
The objective of the proposed rule is to amend ch. NR 809, Wis. Adm. Code, to establish drinking water standards, referred to as Maximum Contaminant Levels (MCLs), for certain Per- and Polyfluoroalkyl substances (PFAS) including the contaminant compounds perfluorooctanoic acid (PFOA) and perfluorooctane sulfonic acid (PFOS). The MCL standards for PFOS and PFOA are based on recommendations from the Wisconsin Department of Health Services (DHS) and are set at 0.000020 mg/L (20 parts per trillion (ppt)) for PFOA and PFOS individually and a combined standard of 0.000020 mg/L (20 ppt).

The proposed rule establishes initial and routine monitoring cycles for community and non-transient non-community public water systems to test for PFOA and PFOS and establishes approved methodology for PFOA and PFOS sampling. The proposed rule also creates a waiver application process for systems to waive routine monitoring under certain conditions. Systems that exceed the MCL standards for PFOA and PFOS will be required to take measures to return to compliance, which may include drilling a new well or installing a treatment system.

The U.S. Environmental Protection Agency (EPA) and numerous states, including Wisconsin, have identified PFAS as a persistent contaminant that threatens the environment, including surface water and groundwater resources. PFAS in surface water and groundwater sources is a threat to public health, welfare and safety in obtaining drinking water. Establishing drinking water standards for certain PFAS contaminants in this rule will protect public health by setting MCLs that may not be exceeded. If MCLs are exceeded, a corrective action plan must be implemented to maintain protection of public health, welfare and safety in drinking water.

The department expects the rule to have a moderate (level 2) economic impact on small businesses.

The Board last acted on this rule on January 22, 2020 when it approved the scope statement. The department has completed the external review process for Board Order DG-24-19, which includes holding a public hearing and review by the Legislative Council Rules Clearinghouse. Comments received have been considered in the draft final rule. If the final rule language of DG-24-19 is approved, the rule will be submitted to the Governor and, if the Governor approves, to the legislature for review and approval. The 30-month time frame for submission of a final rule to the legislature for approval expires on March 3, 2022.

RECOMMENDATION: That the Board adopt Board Order DG-24-19.

LIST OF ATTACHED MATERIALS (check all that are applicable):

- ☒ Background Memo
- ☒ Fiscal estimate and economic impact analysis (EIA) form
- ☒ Response summary
- ☐ Attachments to background memo
- ☒ Board order/rule
- ☐ (insert document name)

Approved by	Signature	Date
Steven B. Elmore, Drinking Water and Groundwater Program Director	DocuSigned by: Steven B. Elmore	1/31/2022 | 4:51 PM CST
Gail E. Good, Acting Environmental Management Division Administrator	DocuSigned by: Gail E. Good D9DB32F72A10468...	1/31/2022 | 6:28 PM CST
for Preston D. Cole, Secretary	DocuSigned by: Sarah Barry A7D70DC3770642F...	2/1/2022 | 8:49 AM CST

cc: Board Liaison - AD/8 DS LJR Program attorney – LS/8 by Sarah Barry Department rule officer – LS/8

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State of Wisconsin

CORRESPONDENCE/MEMORANDUM

DATE: January 31, 2022

TO: All Members of the Natural Resources Board

FROM: Preston D. Cole, Secretary

SUBJECT: Background memo on Board Order DG-24-19, proposed rules affecting chapter NR 809, related to the promulgation of new drinking water maximum contaminant levels for Per- and Polyfluoroalkyl Substances (PFAS) including Perfluorooctanesulfonic acid (PFOS) and Perfluorooctanoic acid (PFOA)

1. **Subject of Proposed Rule:**
   Revisions to ch. NR 809, Wis. Adm. Code, related to the promulgation of new drinking water maximum contaminant levels for Per- and Polyfluoroalkyl Substances (PFAS) including Perfluorooctanesulfonic acid (PFOS) and Perfluorooctanoic acid (PFOA).

2. **Background:**
   The objective of the proposed rule is to amend ch. NR 809, Wis. Adm. Code, to establish drinking water standards, referred to as Maximum Contaminant Levels (MCLs), for certain Per- and Polyfluoroalkyl substances (PFAS) including the contaminant compounds perfluorooctanoic acid (PFOA) and perfluorooctane sulfonic acid (PFOS). The Board last acted on this rule on January 22, 2020 when it approved the scope statement. The department has completed the external review process for Board Order DG-24-19, which includes holding a public hearing and review by the Legislative Council Rules Clearinghouse. Comments received have been considered in the draft final rule. External input was gathered, including a hearing on the scope statement with comment period (November 12, 2019); stakeholder meetings (winter, summer, fall 2020); soliciting comments on the economic impact analysis (EIA) (July 1 – 31, 2021); a public hearing on the proposed rule with comment period (December 1, 2021).

3. **Why is the rule being proposed?**
   The U.S. Environmental Protection Agency (EPA) and numerous states, including Wisconsin, have identified PFAS as a persistent contaminant that threatens the environment, including surface water and groundwater resources. PFAS in surface water and groundwater sources is a threat to public health, welfare and safety in obtaining drinking water. Establishing drinking water standards for certain PFAS contaminants in this rule will protect public health by setting MCLs that may not be exceeded. If MCLs are exceeded, a corrective action plan must be implemented to maintain protection of public health, welfare and safety in drinking water.

4. **Summary of the rule.**
   The objective of the proposed rule is to amend ch. NR 809, Wis. Adm. Code, to establish drinking water standards, referred to as Maximum Contaminant Levels (MCLs), for certain Per- and Polyfluoroalkyl substances (PFAS) including the contaminant compounds perfluorooctanoic acid (PFOA) and perfluorooctane sulfonic acid (PFOS). The MCL standards for PFOS and PFOA are based on recommendations from the Wisconsin Department of Health Services (DHS) and are set at 0.000020 mg/L (20 parts per trillion (ppt)) for PFOA and PFOS individually and a combined standard of 0.000020 mg/L (20 ppt).

   The proposed rule establishes initial and routine monitoring cycles for community and non-transient non-community public water systems to test for PFOA and PFOS and establishes approved

methodology for PFOA and PFOS sampling. The proposed rule also creates a waiver application process for systems to waive routine monitoring under certain conditions. Systems that exceed the MCL standards for PFOA and PFOS will be required to take measures to return to compliance, which may include drilling a new well or installing a treatment system.

5. **How does this proposal affect existing policy?**
   The proposal establishes two PFAS compound MCLs as part of regulated contaminants under ch. NR 809, Wis. Adm. code.

6. **Has Board dealt with these issues before?**
   Yes. The Board approved the scope statement and conditionally authorized hearings for DG-24-19 at its January 2020 meeting.

7. **Who will be impacted by the proposed rule? How?**
   Public water supply drinking water systems including community municipal systems, other-than-municipal community systems, and non-transient non-community systems will be regulated for PFOA and PFOS under the proposed rule. The regulated public water supply systems will need to perform routine PFAS monitoring for the two regulated PFOA and PFOS contaminants with the potential for reduced monitoring or waivers. Systems that exceed the MCL standards for PFOA and/or PFOS will be required to take measures to return to compliance, which may include drilling a new well or installing a treatment system.

8. **Soliciting public input on economic impact analysis**
   The department solicited comments on the economic impact of the rule from July 1 through July 31, 2021. Stakeholders contacted included:
   - Municipal community water systems (cities, townships, sanitary districts).
   - Other-than-municipal community water systems (mobile home parks, apartment buildings, condominium associations).
   - Non-transient non-community water systems (small businesses with 25 or more employees that are not on a municipal source).
   - Laboratories certified to perform PFOA and PFOS analysis in drinking water.
   - League of Wisconsin Municipalities.
   - Wisconsin Counties Association.

   Ten written comments were received. The department considered all comments received and incorporated comments where appropriate into its economic impact analysis.

9. **Small Business Analysis**
   Small businesses include non-transient non-community and other-than-municipal public water supply systems. These systems will need to monitor for PFOA and PFOS. The proposed rule spreads out the schedule for monitoring to reduce the initial impacts to public water systems as a whole. The department will allow for monitoring waivers to reduce the frequency of required monitoring at public water systems with no detection levels of PFAS. If a system exceeds the PFOA and/or PFOS MCLs, corrective action may be necessary. Potential corrective action may include drilling a new well.

Drafter: Adam DeWeese

Comments and DNR Responses
Natural Resources Board Order DG-24-19

January 5, 2022

This document presents a summary of public comments received on proposed rules affecting chapter NR 809, related to the promulgation of new drinking water maximum contaminant levels (MCLs) for Per- and Polyfluoroalkyl Substances (PFAS) including Perfluorooctanesulfonic acid (PFOS) and Perfluorooctanoic acid (PFOA).

OVERVIEW

The objective of the proposed rule is to amend ch. NR 809, Wis. Adm. Code, to establish drinking water standards, referred to as Maximum Contaminant Levels (MCLs), for certain Per- and Polyfluoroalkyl substances (PFAS) including the contaminant compounds perfluorooctanoic acid (PFOA) and perfluorooctane sulfonic acid (PFOS). The U.S. Environmental Protection Agency (EPA) and numerous states, including Wisconsin, consider PFAS contaminants a threat to the environment, including surface water and groundwater resources. The impacts to surface water and groundwater sources are threats to public health, welfare and safety in obtaining drinking water. Establishing drinking water standards for certain PFAS contaminants in this rule will protect public health by setting MCLs that may not be exceeded. A public water system that exceeds a PFAS MCL in its drinking water must implement a corrective action plan to ensure protection of public health, welfare and safety.

Public input

- **November, 2019 – Public hearing on scope statement**
- **December, 2019 – Technical Advisory group meeting**
- **February, 2020 – Stakeholder meeting**
- **March, 2020 - Stakeholder meeting**
- **July, 2020 - Stakeholder meeting**
- **September, 2020 - Stakeholder meeting**
- **July, 2021 – solicitation of comments on draft economic assessment**
- **December, 2021 – Public hearing on rule**
- **Comments at multiple Natural Resources Board Meetings**

ECONOMIC IMPACTS ANALYSIS
A public comment period on the draft EIA occurred from July 1 to July 31, 2021. The department received comments from 21 individuals and organizations on the EIA during this period. Those comments were taken into consideration for the Final EIA.

The final Environmental Impact Analysis can be found here EIA.

LEGISLATIVE COUNCIL RULES CLEARINGHOUSE
The Legislative Council Rules Clearinghouse submitted comments on statutory authority; form, style and placement; 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.

PUBLIC COMMENTS ON DRAFT RULE
A public comment period for the draft rule occurred from December 1 to December 8, 2021, with a public hearing held on December 1, 2021. The following is a summary of comments and the department's response.
The comments below are a condensed summary of the full comments received with a brief department response. A recording of the full oral comments can be found at Public Hearing Recording and the full written comments can be found at Written Comments.

Public Hearing December 1, 2021

Number attended: 118

Number in support: 34

Number in opposition: 2

Number attending for information only: 62

Oral Comments (none opposed)

In support

Name/Organization	Comment	DNR Response
Airport Neighborhood Association	Wells in Eau Claire have high PFAS. There is a past history of firefighting foam use. 20 ppt for PFOA and PFOS is a good place to start.	Thank you for your comment.

Citizens for Safe Water Around Badger (CSWAB)	The Badger Army Ammunition plant is a source of PFAS. CSWAB petitioned DNR for PFAS standards. Testing has been limited to 1% of public water systems in WI. Health impacts include cancer, reproductive and developmental problems, thyroid hormone disruption, high cholesterol, ulcerative colitis, and more. WI is behind other states in testing. Strongly support the draft rule is a critical first step for WI.	Thank you for your comment.
Paul Mathewson - Clean Wisconsin	We support MCLs. EPA is years away from promulgating standards. Other states have already created standards. WI cannot delay. Scientific evidence shows evidence of harmful health effects from PFAS. Standards must be grounded in science and not special interest groups. There are impacts to home values and disproportionately affects low income and minority communities.	Thank you for your comment.
League of Women Voters of Wisconsin	The league supports the establishment of the proposed MCLs of 20 ppt and monitoring requirements. PFAS has health impacts such as long low birth rate, hypertension. The economic benefits of avoided health impacts are very likely in the hundreds, if not thousands of millions of dollars for Wisconsin, and will outweigh the costs of the new rule. The league is disappointed that the rule only proposes two PFAS.	Thank you for your comment.
Rob Lee - Midwest Environmental Advocates (MEA)	PFAS is all around the state. MEA supports the creation of PFAS MCLs. The Federal government is lagging behind. It is good that WI doesn't wait. We must sample all public water supplies.	Thank you for your comment.

	MEA encourages DNR to stay the course to develop standards. We must follow the science. There are thousands of PFAS compounds. PFOA and PFOS are only part of the problem.	
Susan Davidson - WI Environmental Health Network	Many adult diseases can be traced to fetal development. The fetus is exposed to every environmental toxin the mother is exposed to. These include preeclampsia, low birth weight, impaired kidney and immune function, and adverse effects on neuro development. PFAS exposure occurs via breast milk. Economic impacts to children's health are also huge. It is both ethical and cost effective to create standards. The 20 ppt is in the midrange of states. Others are lower. Increased research will likely lower the acceptable levels.	Thank you for your comment.
Milwaukee Riverkeeper	In support of MCLs even stricter than 20 ppt. 100% of Milwaukee Riverkeeper samples had PFAS. Additional sampling will probably also find more PFAS. Adverse health effects are a concern. Waiting for EPA to create MCLs will take too long.	Thank you for your comment.
Lee Donahue - Town of Campbell Board Supervisor	97% of 555 wells tested positive for PFAS contamination on French Island and all municipal buildings. Firefighting foam near airport is a possible source. There are harmful health effects of PFAS. Europe has much lower PFAS standards already. Other states, including Michigan and Minnesota already have standards. We can't wait on EPA to create MCLs.	Thank you for your comment.
Harry Richardson	PFAS regulations are long overdue.	Thank you for your comment.

	20 ppt is not strict enough. Levels above 20ppt have been found in areas around the Air National Guard. Concerned about high levels in Stark weather Creek, and adverse health effects, especially in children.	
Lance Green	There are high levels of PFAS in Starkweather Creek on the east side of Madison. Adverse health effects from PFAS are a concern. High levels of PFAS have been released at the airport. Treatment is expensive. Standards and cleanup are important. Unhappy about delays in Clear Act. 20 ppt is a good place to start, but some organizations are pushing for 1ppt.	Thank you for your comment.
Duane Nessman	PFAS contamination can be found near air force bases. In support of creating standards. It is unclear what the EPA is going to do.	Thank you for your comment.
Doug Oitzinger	The health concerns of PFAS in children is high, and PFAS stay in the body for a long time. Standards are needed sooner rather than later. Saying the science is unsettled to delay, or waiting on EPA to promulgate MCLs puts children at risk.	Thank you for your comment.
Peter Burress – Wisconsin Conservation Voters	PFAS are forever chemicals. Standards are needed. Adverse health effects are known including testicular and kidney cancer, increased cholesterol levels, liver damage, and decreases in infant birth.	Thank you for your comment.

	People are paying for bottled water to avoid drinking PFAS contaminated water. We should not wait for EPA to create standards. Even stronger standards should be in place as we learn more.	
Kayla Fur – Town of Peshtigo	If people don't know they are being exposed they cannot protect themselves. We should not wait on the EPA to create MCLs. WI standards are overdue. The health and economic costs are of concern.	Thank you for your comment.
Ed Cohen	Health and property values depend on clean water. The DNR must create PFAS rules so that we know what's in the water and to protect people.	Thank you for your comment.
Abby Siakpere – Town of Campbell	Private wells are impacted on French Island. Sampling results in a June 2021 study revealed high PFAS in every location sampled in WI. Town of Campbell is no different. Maintaining bottled water is a hardship. Safe drinking water is a basic human right. WI should create these MCLs.	Thank you for your comment.

Written Comments

Number in support: 80

Number in opposition: 12

In support

Name/Organization	Comment	DNR Response
Wisconsin Conservation Voters	1. PFAS compounds are one of the most serious threats to our drinking water and are having a profound impact on our public health. 2. Every public water system in Wisconsin must begin testing for PFAS. Wisconsinites have a right to know the risk involved with turning on the tap in their own homes. 3. We cannot wait for the federal government. Public health-based standards for PFOA and PFOS are needed today, as an important first step toward tackling the larger issue.	Thank you for your comment.
Doug Oitzinger	The health concerns of PFAS in children is high, and PFAS stay in the body for a long time. Standards are needed sooner rather than later. Saying the science is unsettled to delay, or waiting on EPA to promulgate MCLs puts children at risk.	Thank you for your comment.
Cindy Boyle (Town of Peshtigo resident, Town of Peshtigo Chairperson)	The PFAS problem is real and will not disappear. It is important to put standards in place now and not wait.	Thank you for your comment.
Abby Siakpere – Town of Campbell	Private wells are impacted on French Island. Sampling results in a June 2021 study revealed high PFAS in every location sampled in WI. Town of Campbell is no different. Maintaining bottled water is a hardship. Safe drinking water is a basic human right. WI should create these MCLs.	Thank you for your comment.
Ann T Behrmann	Support the proposed standards of 20ppt, and the sampling requirements. These compounds are forever.	Thank you for your comment.
Steve Books	The standard should be 0.0 ppt. We can do better than other states.	Thank you for your comment.

	Environmental contamination affects children with disabilities. Starkweather Creek has PFAS fish Advisories. There are costs of not having PFAS standards.	
Audrey Boerner - Eau Claire City-County Health Department	Support the department of health conclusion on the recommended standards and the adoption of the proposed standards.	Thank you for your comment.
Satya Rhodes-Conway, Mayor – Madison	Support for the science based proposed standards. Utilities did not cause the contamination. They need grants and technical assistance to deal with it. PFAS producers should be responsible for remediation.	Thank you for your comment.
Janet Foust	There is concern about PFAS coming from CAFOs and land spreading. Stricter guidelines are needed.	Thank you for your comment.
Lee Donahue - Town of Campbell Board supervisor	97% of 555 wells tested positive for PFAS contamination on French Island and all municipal buildings. It is considered unsafe for consumption. Firefighting foam near airport is a possible source. There are harmful health effects of PFAS. Europe has much lower PFAS standards already. Other states, including Michigan and Minnesota already have standards. We can't wait on EPA to create MCLs.	Thank you for your comment.
Marian Celesnik	I live one mile west of the Madison Airport, and I know firefighting foams pollute groundwater. Groundwater pollution can affect a lot more people than just in my neighborhood, since groundwater travels for miles. We have no standards for PFAS, and we need to have our health protected. Delays will blight our future.	Thank you for your comment.
League of Women Voters of Wisconsin	The League agrees with DNR that the economic benefits will greatly outweigh the cost of implementing the rule and is therefore in support of DG-24-19. Given those benefits – which are costs incurred	Thank you for your comment.

	without enforceable drinking water standards - it makes little sense to wait until EPA establishes federal drinking water standards for PFAS. In January 2021, EPA decided to establish MCL for PFOA and PFOS but that federal process will take several years, and another 3 years after that for the Wisconsin process. The League is however disappointed that the rule addresses only two PFAS compounds. We will continue our strong support of rule DG-31-20 (SS 30-21) which addresses 12 individual and 4 combined PFAS compounds (Cycle 11) and which is currently being drafted.	
Glory Adams Jess Bernstein Darlene Bigari Joan Braune Buzz Davis, Carey M. Lee Julia Carvale Laurie Chagnon Susan Clapp ***Sami Clausen-Ruppert*** Karen Cornelius Colleen Cox Tracy Doreen Dietzel Robin Downs Dave Fallow Helen Findley J.C. Frieswijk Ned Gatzke Mark M Giese Hannah Lee Darcy Haber Eric Hansen Justin Hellickson Sherry Holcomb Paul Huset	Additional citizens in support.	Thank you for your support

Bob Israel Lewis Koch **Leigh M. Langford** Margaret Larson Cathy Loeb Ellen Magee, Mark Smith Lissa McLaughlin Paul McMahon Sheila Mitchell M.D. Jill Mitchler Clair Morud *Larry Nesper* JoAnn Nishiura, Barbara Olson Lynda Paasch John E. Peck, Martha Pings Tom Potter Pamela Richard Karen Samelson Robert Sander, MD Alice, David, Elizabeth, & Nikolai Schneiderman Ronald, Harriet, & Stephen Dinerstein Joe Shaffer Julie Schwarz Anne Steinberg Don and Roberta Thurstin Timmerman Anne Tigan, RN Susan Trier Bill and Cindy Verschay Tim and Karen White Jim Young		

Joshua C. Greene Corporate Vice President, Government and Industry Affairs A. O. Smith Corporation World Headquarters 11270 West Park Place Milwaukee, WI 53224	A. O. Smith appreciates the opportunity to provide this feedback to DNR on its proposed rule DG-24-19 and stands ready to work with DNR as a resource moving forward. We would encourage DNR to afford covered public/municipal water systems with flexibility on compliance pathways under any final rule while remaining cognizant that peer-reviewed data on human health effects continue to evolve and become more transparent for the purposes of regulatory action. Lastly, we look forward to working with DNR and stakeholders to assist homeowners, not on centralized water systems, address PFAS substances in their drinking water.	Thank you for your comment.
Clean Wisconsin	1. Wisconsin should not wait for federal standards to be promulgated 2. Wisconsin will join several other states who have already established drinking water standards for PFOA and PFOS to protect their residents. 3. The proposed standards are based on the best available science. 4. The economic impact analysis is sufficient for promulgating an MCL under state law 5. The proposed standards should only be a first step in protecting the public from harmful PFAS in their drinking water.	Thank you for your comment.
Wisconsin Green Fire	Wisconsin's Green Fire is in support of the proposed rule modifying NR 809 to include MCLs for PFOA and PFAS which is an important step in achieving the findings outlined in our report. The rule is based on science used by the Department of Health Services to propose standards in their transmission of Cycle 10 recommendations to the DNR. If the MCLs are exceeded, a corrective action plan must be implemented ensuring protection of public health and safety in drinking water.	Thank you for your comment.

Opposed

Name/Organization	Comment	DNR Response

3M Company, Saint Paul, MN	1) The 3M Company stated that the Proposed Rule does not cite any sources when describing the purported health effects of exposure to PFOA and PFOS, the text of the draft EIA, the text of the Proposed Rule, and the EPA webpage lack the analysis and quantification of the health impacts required by the Wisconsin Administrative Procedures Act, and DNR provides neither context nor support for its assertion that exposure to PFOS and PFOA cause developmental effects on fetuses during pregnancy or to breastfed infants. 2) The 3M Company stated that nowhere in the Proposed Rule or supporting documents does DNR explain why it selected 20 ppt for the MCL and why an MCL of 20 ppt is necessary to protect human health and the environment. They also stated that the draft EIA's conclusory statements on the potential health effects of PFOA and PFOS are unsupported and not based on the best available science. 3) The 3M Company stated that DNR's statement that exposure to PFOS and PFOA leads an increased risk of cancer is baseless. 4) The 3M Company stated that DNR mistakenly concludes that PFOS and PFOA adversely affect the liver, immune system, and thyroid.	1) The draft EIA and board order have been revised to include the following citations: ATSDR, Toxicological Profile for Perfluoroalkyls, 2021. U.S. EPA, Drinking Water Health Advisory for Perfluorooctanoic Acid (PFOA), 2016. U.S. EPA, Health Effects Support Document for Perfluorooctanoic Acid (PFOA), 2016. U.S. EPA, Drinking Water Health Advisory for Perfluorooctane Sulfonate (PFOS), 2016. U.S. EPA, Health Effects Support Document for Perfluorooctane Sulfonate (PFOS), 2016 2) The proposed MCLs for PFOA and PFOS are based on recommended groundwater public health enforcement standards developed by the Wisconsin Department of Health Services (DHS) in 2019. The board order has been revised to include reference to DHS' technical support documents for PFOA and PFOS. 3) The board order has been revised to state that "PFOA may cause an increased risk of certain cancers" and to cite the following documents: • ATSDR, Toxicological Profile for Perfluoroalkyls, 2021. • U.S. EPA, Drinking Water Health Advisory for Perfluorooctanoic Acid (PFOA), 2016. • U.S. EPA, Health Effects Support Document for Perfluorooctanoic Acid (PFOA), 2016. • IARC, Monograph on the Identification of Carcinogenic Hazards to Humans: Perfluorooctanoic Acid (PFOA), 2018.

		4) The agency respectfully disagrees with this statement. In their 2021 toxicological profile, the federal Agency for Toxic Substances and Disease Registry (ATDSR) describes both epidemiological and toxicological studies in which links between exposure to PFOS and PFOA and numerous health concerns including, but not limited it, effects on the liver, immune system, and thyroid, have been observed (ATSDR, Toxicological Profile for Perfluoroalkyls, 2021).
Wisconsin Rural Water Association	WRWA acknowledges the concerns of PFAS in the environment. It is better to wait on EPA to develop standards. This is especially true as EPA considers costs to small systems under 10,000 people.	While this is an option, it is notable that waiting on EPA may add more than six years to the process.
Wisconsin Manufacturers & Commerce Wisconsin Paper Council Wisconsin Civil Justice Council Wisconsin Water Alliance Midwest Food Products Association American Chemistry Council (WMC, et al.)	DNR lacks statutory authority for this rule: The DNR is proposing a combined standard, which is not permitted by state statute. Moreover, if any standard is to be proposed, the state should be following the U.S. Environmental Protection Agency (EPA)'s health advisory level of 70 ppt. The compliance costs for this rule exceed statutory limitations: The DNR is both underestimating the total costs of the rule and misapplying the estimated costs it included in its final EIA. If costs are properly estimated and applied, the rule exceeds statutory limitations under chapter 227 rulemaking requirements. The proposed standard lacks proper scientific justification: The suggested 20 ppt combined standard for PFOA and PFOS was proposed due to science that was, at best, misapplied. WMC, et al. stated that the DNR is misapplying research from DHS in proposing the 20 ppt combined standard for PFOA and PFOS. They state that the proposed recommendation has not been	WMC, et al.'s table is not an accurate portrait of current international regulations for PFOA and PFOS. The table at the end of this document includes a more complete view of the current state of PFOA and PFOS drinking water regulation. The values in WMC, et al.'s table are not regulatory standards but are guidance thresholds that were established between 2006 and 2018. Conversely, the department's proposed MCLs align closely with more recently proposed and adopted regulations across the US. **Source: ITRC. Water and Soil Value Table, October 2021.** The department is promulgating this rule under its authority in s. 281.17(8), which states that "the department may establish, administer and maintain a safe drinking water program no less stringent than the requirements of the safe drinking water act, 42 USC 300f to 300j-26." The proposed rule is no less stringent than the federal regulations. The department is not required to follow procedures in ch. 160, Wis. Stats., which applies to *ground*water, when promulgating *drinking* water standards. Regardless, ss. 160.07(4) and 160.13 provide the process and methodology for establishing groundwater standards for contaminants that

	peer-reviewed, that the critical study used to set the proposed MCLs does not rise to the level of technical and scientific rigor to be used to set a standard, and that exposure factors used do not align with the target group of the critical study. WMC, et al. stated that the proposed regulations for PFOA and PFOS are far more stringent than many other countries (specifically, Australia, Canada, Denmark, Germany, Sweden and the U.S. EPA). WMC, et al. stated that DNR lacks statutory authority to set a combined standard for PFOA and PFOS and that State Statute requires the agency to use the federal number.	do not have a federal standard and do not have a state drinking water standard.
Municipal Environmental Group (MEG)	MEG supports federal standards, but not state standards at this time. The state should wait on EPA. EPA considers feasibility and cost when developing standards. The department does not have statutory or regulatory authority to establish a state drinking water standard in the absence of a federal drinking water standard. The state proposed standards based on DHS recommendations without considering if similar protection can occur at higher levels and lower costs. Waiting on EPA to promulgate rules assures that these emerging contaminants get the same uniform methodology when considering promulgating rules.	While waiting for a federal standard is an option, it may add more than six years to the process. EPA standards do not go into effect immediately. If EPA promulgates federal standards, the department would have three years to promulgate state administrative code changes to adopt the federal standards. This is a long time to wait for a contaminant that threatens public health. The department respectfully disagrees with the interpretation of s. 281.17(8)(a) regarding the department's authority to promulgate the proposed rule.
Brian Hackman	1. The state should use money allocated under HR 2467 to continue to study the feasibility and	The agency respectively disagrees with this statement. The proposed MCLs are based on DHS' recommended

	health implications of promulgating PFAS MCLs. 2. The state hasn't had the benefit of federal studies on prevalence of PFAS and/or that there would be any benefit to setting standards. 3. The costs of new standards have not been adequately studied. 4. The advisory levels are based on limited and biased studies by DHS.	groundwater standards which take into account numerous peer-reviewed scientific studies. Additional information on the recommendations can be found in the technical support documents. The Department continues to examine all available funding sources to understand and mitigate the threat to public health that PFAS presents to the state
League of Wisconsin Municipalities	The League supports federal standards, but not State standards in advance of federal standards. The state should wait on the EPA to set standards. The costs associated with new standards have not been sufficiently studied. New UCMR5 results will provide a more complete data set to evaluate in the future.	While waiting for a federal standard is an option, waiting on EPA may add more than six years to the process. The department will continue to follow and respond to the most recent data and scientific evidence.
Water Quality Association of Wisconsin	The Water Quality Association of Wisconsin is concerned with Wisconsin establishing PFAS standards that differ from drinking water standards set by the Environmental Protection Agency (EPA) and surrounding states. WQAW supports establishing science-based, enforceable maximum contaminant level through the National Primary Drinking Water Regulations at the federal level to ensure consistent standards across the country. The WQAW supports incorporating recommendations that consumers use certified in-home filtration systems to remove or reduce any chemicals found. According to testimony recently submitted by the national Water Quality Association, it would be extremely expensive to	While waiting for a federal standard is an option, it may add more than six years to the process. EPA standards do not go into effect immediately. If EPA promulgates federal standards, the department would have three years to promulgate state administrative code changes to adopt the federal standards. This is a long time to wait for a contaminant that threatens public health.

	remove PFAS from our drinking water using centralized treatment. This would require upgrading drinking water treatment plants not currently designed to remove these chemicals. Many economically challenged communities already struggle to fund necessary maintenance and upgrades to their existing infrastructure for roads, bridges and drinking water pipes. Asking these communities to pay for additional upgrades to their drinking water treatment plant would only increase that burden. There are currently water treatment systems that can effectively reduce PFAS from drinking water and these systems, at either point-of-entry or point-of-use (POU), are the final barrier to ensure clean drinking water. The EPA acknowledges these technologies and recommends activated carbon adsorption, ion exchange resins, and high-pressure membranes to remove PFAS from drinking water. According to the EPA, these technologies can be used in drinking water treatment facilities, in water systems in hospitals or individual buildings, or even in homes at the point-of-entry, where water enters the home, or the point-of-use, such as in a kitchen sink or a shower.	

Drinking Water Regulations and Advisory Levels for PFOA and PFOS
(Source: ITRC. Water and Soil Value Table, October 2021)

State/ Country	PFOA (ng/L)	PFOS (ng/L)	Year Updated	Description
Illinois	2	14	2021	Regulatory action levels
Michigan	8	16	2021	Maximum contaminant levels
California	10	40	2021	Regulatory action levels
Maine	20		2021	Interim drinking water standard. Applies to PFOA, PFOS, PFHxS, PFNA, PFHpA, and PFDA
Rhode Island	20		2021	Interim drinking water standard. Applies to PFOA, PFOS, PFHxS, PFNA, PFHpA, and PFDA
New York	10	10	2020	Maximum contaminant levels
New Hampshire	12	15	2020	Maximum contaminant levels
New Jersey	14	13	2020	Maximum contaminant levels
Massachusetts	20		2020	Maximum contaminant level. Applies to PFOA, PFOS, PFHxS, PFNA, PFHpA, and PFDA
Vermont	20		2020	Maximum contaminant level. Applies to PFOA, PFOS, PFHxS, PFHpA, and PFNA
Canada	200	600	2018	Non-regulatory values
Australia	560	70	2017	Non-regulatory values.
US EPA	70		2016	Non-regulatory value that applies to the sum of PFOA and PFOS.
Denmark	100	100	2015	Non-regulatory values
Sweden	90		2014	Non-regulatory value. Applies to PFOA, PFOS, PFHxS, PFBS, PFHpA, PFHxA, and PFPeA.
Germany	300		2006	Non-regulatory value. Applies to PFOA and PFOS.

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STATE OF WISCONSIN
DEPARTMENT OF ADMINISTRATION
DOA-2049 (R09/2016)

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ADMINISTRATIVE RULES
Fiscal Estimate & Economic Impact Analysis

1. Type of Estimate and Analysis	2. Date
☒ Original ☐ Updated ☐ Corrected	10/12/2021

3. Administrative Rule Chapter, Title and Number (and Clearinghouse Number if applicable)
NR 809, Safe Drinking Water
(CR 21-088)

4. Subject
Promulgation of new drinking water maximum contaminant levels for Per- and Polyfluoroalkyl Substances (PFAS) including Perfluorooctanesulfonic acid (PFOS) and Perfluorooctanoic acid (PFOA). Board order DG-24-19

5. Fund Sources Affected	6. Chapter 20, Stats. Appropriations Affected
☒ GPR ☒ FED ☐ PRO ☐ PRS ☐ SEG ☐ SEG-S	401 and 441

7. Fiscal Effect of Implementing the Rule
☐ No Fiscal Effect ☐ Increase Existing Revenues ☐ Increase Costs ☐ Decrease Costs
☐ Indeterminate ☐ Decrease Existing Revenues ☒ Could Absorb Within Agency's Budget

8. The Rule Will Impact the Following (Check All That Apply)
☐ State's Economy ☒ Specific Businesses/Sectors
☒ Local Government Units ☐ Public Utility Rate Payers
☒ Small Businesses **(if checked, complete Attachment A)**

9. Estimate of Implementation and Compliance to Businesses, Local Governmental Units and Individuals, per s. 227.137(3)(b)(1).

The implementation and compliance cost of this rule is estimated to be $5,600,397.07 in the first year after rule promulgation. The estimated costs include monitoring costs and costs for systems that may be required to mitigate for an exceedance of the PFOA and PFOS drinking water standards. The ongoing costs of monitoring will fluctuate slightly from year to year based on when systems are required to conduct routine monitoring. The average annual compliance cost for years 2 through 6 is estimated to be $3,947,739.57. The maximum implementation and compliance cost in any two consecutive years is estimated to be $9,350,949.15.

The department assumes that nine municipal systems will exceed the PFOA and PFOS drinking water standards and will opt for treatment using granular activated carbon (GAC) treatment systems. For these nine systems, the department anticipates that municipalities will use the Safe Drinking Water Loan program to finance the cost of compliance. This is the regular practice of municipalities for such projects and is consistent with past experience for implementing similar regulatory changes. These systems are estimated to cost a total of $1,762,527.42 per year over a 20-year period ($35,250,548.50 including interest charged over the period) and a total annual maintenance cost of $1,980,893.33 per year.

10. Would Implementation and Compliance Costs Businesses, Local Governmental Units and Individuals Be $10 Million or more Over Any 2-year Period, per s. 227.137(3)(b)(2)?
☐ Yes ☒ No

The implementation and compliance cost estimates in any two consecutive years does not exceed $10 million. The first year and second year after the rule is promulgated will be the most costly, estimated at a total of $9,350,949.15. After that, each two-year period for years 2 to 6 are estimated to be $ 7,501,104.16. The cost is anticipated to further decrease after year 6.

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11. Policy Problem Addressed by the Rule

The objective of the proposed rule is to amend ch. NR 809, Wis. Adm. Code, to establish drinking water standards, referred to as Maximum Contaminant Levels (MCLs), for certain Per- and Polyfluoroalkyl substances (PFAS), including the contaminant compounds perfluorooctanoic acid (PFOA) and perfluorooctane sulfonic acid (PFOS). PFAS contaminants are human-made chemicals that are widespread and do not break down easily. PFAS contaminants are a threat to the environment and human health, including surface water and groundwater resources. PFAS in surface water and groundwater source that supplies Wisconsin's drinking water is a threat to public health, welfare, and safety. Establishing enforceable maximum contaminant levels for certain PFAS in drinking water is necessary to protect public health. If maximum contaminant levels are exceeded, a corrective action plan must be implemented to maintain protection of public health, welfare, and safety in drinking water.

Scientific studies show adverse health effects associated with exposure to PFOA and PFOS contaminants. Adverse health effects include an increase in cholesterol, liver damage, thyroid disease, and a decrease in fertility and birth weight. The EPA and international studies have classified PFOA and PFOS as possibly carcinogenic to humans.

PFOA and PFOS health effects references include the following:
- ATSDR, Toxicological Profile for Perfluoroalkyls, 2021.
- U.S. EPA, Drinking Water Health Advisory for Perfluorooctanoic Acid (PFOA), 2016.
- U.S. EPA, Health Effects Support Document for Perfluorooctanoic Acid (PFOA), 2016.
- U.S. EPA, Drinking Water Health Advisory for Perfluorooctane Sulfonate (PFOS), 2016.
- U.S. EPA, Health Effects Support Document for Perfluorooctane Sulfonate (PFOS), 2016
- IARC, Monograph on the Identification of Carcinogenic Hazards to Humans: Perfluorooctanoic Acid (PFOA), 2018.

12. Summary of the Businesses, Business Sectors, Associations Representing Business, Local Governmental Units, and Individuals that may be Affected by the Proposed Rule that were Contacted for Comments.

The proposed rule will affect the following entities:

- Municipal community water systems (cities, townships, sanitary districts).
- Other-than-municipal community (OTM) water systems (mobile home parks, apartment buildings, condominium associations).
- Non-transient non-community (NN) water systems (small businesses with 25 or more employees that are not on a municipal source).
- Laboratories certified to perform PFOS and PFOA analysis in drinking water.

The department has contacted these groups for comments on the economic impact.

13. Identify the Local Governmental Units that Participated in the Development of this EIA.

The department received comments from the League of Wisconsin Municipalities and the Wisconsin Counties Association.

14. Summary of Rule's Economic and Fiscal Impact on Specific Businesses, Business Sectors, Public Utility Rate Payers, Local Governmental Units and the State's Economy as a Whole (Include Implementation and Compliance Costs Expected to be Incurred)

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Promulgating PFOA and PFOS maximum contaminant levels will result in monitoring costs and mitigation costs. The department anticipates that first-year costs will be higher than ongoing costs due to initial monitoring costs and mitigation of initially discovered systems with a PFOA or PFOS maximum contaminant level exceedance.

The implementation and compliance cost of this rule is estimated to be $5,600,397.15 in the first year after rule promulgation. For subsequent years, the costs will be significantly lower, and will fluctuate slightly based when systems conduct routine monitoring (occurs every 3 to 6 years). For example, the estimated implementation and compliance costs for year 2 are expected to be $3,750,552. The average implementation and compliance cost per year for years 2 through 6 is estimated to be $3,947,739.57. The maximum in any two consecutive years for all compliance and implementation (monitoring and mitigation) is expected to occur in years 1 and 2 and is estimated to be $9,350,949.15.

The estimates include an annualized cost for GAC treatment systems of $1,762,527.42 per year over a 20-year period ($35,250,548.50 including interest charged over the period) and a total annual maintenance cost of $1,980,893.33 per year.

Under the revised rules, the department will require testing at a frequency similar to other synthetic organic compounds having Safe Drinking Water Act maximum contaminant levels. This testing would occur at least every six years but may be as often as every quarter for a small subset of public water systems, depending upon the levels of PFAS contaminants detected. This will affect approximately 2,000 public water systems. Currently, the cost of a sample analysis is $375 per sample.

Monitoring

The ongoing costs of monitoring will fluctuate slightly from year to year based on when systems are required to conduct routine monitoring. Following the same monitoring frequency requirements for other synthetic organic compounds, PFAS monitoring will fall into four basic categories:

- Initial monitoring – One-time entry point plus quarterly for detects.
- Routine monitoring – Entry Point (once every three years)
- Maximum contaminant level monitoring – (quarterly)
- Reduced monitoring – No detects (every six years)

To estimate the number of systems for each type of monitoring, the department used an average of national occurrence data gathered as part of the Unregulated Contaminant Monitoring Rule (UCMR) and data gathered in Michigan (2% and 0.63% results greater than 20 ppt respectively). This estimate assumes that 1.35% of Wisconsin systems will have results greater than the proposed standard of 20 ppt. For perspective, data gathered in Ohio also had 1.22% of entities sampled above 20ppt. The department estimates 10% of entry points will need to sample quarterly in the initial monitoring period.

Table 1. Estimated Wisconsin monitoring frequencies

Water System Type	Number of Entry Point Samples	Initial All systems
Community Water Systems	1,949	$950,250
Non-transient Non-community water systems	981	$478,125
Grand Total	2930	$1,428,375

The proposed initial monitoring schedule is as follows:

(a) Public water systems serving a population greater or equal to 50,000 [3 months after the rule becomes effective].
(b) Public water systems serving a population 10,000 to 49,999 [6 months after the rule becomes effective].
(c) Public water systems serving a population less than 10,000 [9 months after the rule becomes effective].

Impacted Stakeholders

Stakeholders that will be impacted by new PFAS safe drinking water requirements fall into two broad categories.

- Community water systems – Public water systems which serve at least 15 service connections used by year-round residents or regularly serve at least 25 year-round residents, including cities, some mobile home parks, apartment complexes, and subdivisions.
- Non-transient non-community – Public water systems that are usually smaller than community water systems but regularly serve at least 25 of the same people over 6 months per year, including schools and some small businesses.

Predicted Maximum Contaminant Level Exceedances

During the EPA's Unregulated Contaminant Monitoring Rule 3 (UCMR 3) from 2013 to 2015, the PFAS contaminants PFOA and PFOS were identified in the drinking water at several Wisconsin public water systems. Of the 90 systems that sampled during the UCMR 3 period for PFOA and PFOS in Wisconsin, three had detects and two had results over 20 for PFOA, PFOS, or combined (Appendix B). This ratio is similar to the national data from this sampling effort (Appendix B).

Note: Minimum Reporting Levels under UCMR 3 - PFOS = 40 ppt, PFOA = 20 ppt

Several states have completed sampling programs that provide occurrence data that can be referenced for comparison (Appendix A). For example, the Michigan study of over 1,700 public water systems from 2017 – 2019 indicated 0.63 % of sampled systems exceeded the 20 ppt PFAS level for PFOS, PFOA, or combined. Other states' drinking water sampling efforts have shown approximately 1% to 2% of water systems with PFAS detections above 20ppt (Appendix A).

Using the national occurrence data (UCMR3) and our closest state's data (MI), the department predicts that 1.35% of public water systems will exceed the PFOA or PFOS maximum contaminant levels.

Prediction of Detects and Non Detects:

Systems that have detected levels of PFOA or PFOS but have not exceeded the maximum contaminant levels will be required to conduct more frequent monitoring. In order to predict the percentage of entities that may have detects and non-detects of PFOA and PFOS in Wisconsin, the department used Michigan's testing data and conservatively skewed the data to account for the difference between the assumed 1.35% of entities in Wisconsin with PFOA and PFOS above 20 ppt. In other words, the department skewed its potential detects percentage higher and non-detects percentage lower compared to Michigan's data. As an example, Michigan found 92% of non-transient non-community entities to have non detect while the department skewed data used 83%. Using this scale, the tables below present the number of entities with PFOS or PFOA > 20ppt, PFOS or PFOA detects, PFOS or PFOA non-detects and the compliance cost for monitoring and routine testing.

Table 2: Estimated Number of Entities in Each Category of Compliance Cost

Water System Type	Detects Exceeds MCL (>20 ppt)	No Detect	Detects Less than MCL (<20 ppt)
Community	13	1891	58
Non-Transient Non-Community	13	814	167
Total	**26**	**2705**	**225**

Table 3: Estimated Compliance Cost of Monitoring

	Routine Testing Wells (wells with detects) Every 3 years	MCL (>20 ppt) (4 times per year)	Reduced (No detects) Every 6 years
Community Water Systems	$ 21,750	$ 39,467	$ 709,125
Non-transient Non-community water systems	$ 62,625	$19,865	$ 305,250
Grand Total	**$ 84,375**	**$ 59,333**	**$ 1,014,375**

Mitigation Costs

The three main options for mitigating PFOS and PFOA in drinking water are to: 1) drill a new well that is not affected by the contaminants, 2) abandon the affected source, or 3) install treatment. The department assumes that smaller systems would most likely drill a new well, while larger municipal systems would install treatment, or abandon contaminated sources if possible. The cost of abandoning an affected source is significantly lower than treatment. However, for the purposes of this economic analysis, the department had taken the conservative approach of assuming all large municipalities with exceedances of PFOA or PFOS will opt for treatment. Treatment costs for PFOS and PFOA depend on the type of treatment being used, maintenance costs, and the amount of water being treated.

Estimated Treatment Costs

In order to estimate mitigation cost for community water systems that will require treatment, the department relied on a study done by the State of New Hampshire. This study reported system installation costs and their associated maintenance costs based on the gallons of water needing to be treated.

- New Hampshire reported treatment installation sized by the number of gallons requiring treatment is between $2.90/gal and $8.10/gal with an average of $5.50/gal. For example, a system that treats 100,000 gallons of water per day is expected to cost approximately $550,000 to install. A plant treating 1 million gallons per day would cost approximately $5.5 million to install.
- The average daily pumping rate for municipal public water systems in Wisconsin is 668,000 gallons per day. (This average daily pumping rate excluded municipalities that have recently voluntarily sampled their water and have shown evidence of no potential PFAS).
- Installation of treatment plants for municipal public water systems is then expected to cost $30.3 million dollars for 5.5 million gallons of treated water per day for an estimated nine municipal systems. Annualized over 20 years, the cost is $1,762,527 per year. This assumes that entities will secure a loan from the Clean Water Fund Program (CWFP) and Safe Drinking Water Loan Program (SDWLP) fund with a 20-year loan interest rate from 0.00% to 1.485%. This analysis used a 1.485% interest rate (approximately $4,945,560 in interest is paid over 20 years).
- Maintenance of treatment is estimated at $0.000959/gal. This is estimated to be $1,928,692 per year (average gallons *$0.000959/gal *365days)

Table 4: Estimated GAC treatment costs for a municipal system

	Annual Cost
GAC Installation Cost	$1,762,527.42
GAC Maintenance Cost	$1,928,692.15
Total Estimate	**$3,691,219.57**

Small Community and Non-Community System Mitigation Cost:

A new well at a small community system is estimated to average $50,000. A new well at a small non-community system is estimated to average $15,000. Based on the estimate of 1.35% of systems over the proposed standard in these categories, the department estimates that 6 community systems and 13 non-community systems will be impacted respectively for one-time new well costs.

Table 5: Estimated new well costs

	One-time Cost
Community System	$292,275.00
Non-Community Systems	$188,527.50
Total Estimate	**$480,802.50**

Total Economic Impact

Promulgating PFOA and PFOS maximum contaminant levels will result in monitoring costs and mitigation costs. The department anticipates that first-year costs will be higher than ongoing costs due to initial monitoring costs (Table 6) and mitigation of initially discovered systems with a PFOA or PFOS maximum contaminant level exceedance.

Table 6. Estimated Compliance Cost

Cost	One-time Cost (Year 1)	Annual Year 2
Monitoring	$ 1,428,375	$ 59,333
Mitigation	$ 4,172,022	$ 3,691,220
Total Estimate	**$ 5,600,397**	**$ 3,750,552**

The department expects that municipal systems installing treatment will receive Safe Drinking Water Loan program funding to cover the one-time mitigation expense. The typical loan period is 20 years.

Impact on Local Government:
These costs are the same as the costs for municipal systems detailed above. The total implementation and compliance cost to all municipal community systems are expected to be $4,641,469.57 in the first year. The estimated average annual cost for years 2 through 6 is $3,856,124.32.

Public Utility Rate Payers:
Any cost to utility rate payers will be compliance and implementation costs that may be passed on from local government units. At this time, the department cannot anticipate if any of the compliance and implementation cost of local government units will be passed on to utility rate payers.

Impact on State Economy and Fiscal Impact:
The department does not anticipate an adverse impact of this rule to the state's economy.

The department anticipates additional staff time will be required to manage the additional workload with respect to monitoring follow-up, and treatment evaluation and approval. The department anticipates that an additional FTE position for a Water Supply Specialist will be required to absorb the additional workload created by this rule. Using the median hourly rate for a Water Supply Specialist ($35.09), including fringe and indirect benefits, at a total hourly rate of $52.037, the department estimates the cost of hiring additional staff to be $108,238 per year.

15. Benefits of Implementing the Rule and Alternative(s) to Implementing the Rule
The economic benefits of the avoided cost of impacts on human health may greatly outweigh the costs of monitoring and mitigating drinking water for PFOA and PFOS.

The PFOA and PFOS standards in the proposed rule are based on recommendations from the Wisconsin Department of Health Services (DHS). In making its recommendations, DHS considers health-based guidance values from national and international agencies, scientific literature, and studies with significant scientific certainty. For carcinogenic substances, DHS uses the cancer risk level established in ch. 160, Wis. Stat.

According to U.S. EPA study[1], the documented adverse health effect of PFOA and PFOS include:

- Developmental effects to fetuses during pregnancy or to breastfed infants (e.g., low birth weight, accelerated puberty, skeletal variations)
- Cancer (e.g., testicular, kidney)
- Liver effects (e.g., tissue damage)
- Immune effects (e.g., antibody production and immunity)
- Thyroid effects and other effects (e.g., cholesterol changes).

The data on these adverse effects and its link to PFOA and PFOS in Wisconsin are unknown at this time. Nevertheless, there are documented negative health effects caused by long-term exposure to PFOS and PFOA, the citizens of Wisconsin would be unprotected from risks of exposure from most discharges of PFOS and PFOA to Wisconsin's drinking water.

Two groups that may be particularly at risk are those residents who obtain their drinking water from municipal water systems that use surface water and ground water as their sources. Secondly, Wisconsin residents who own property near areas of known PFAS contamination may experience diminished property values, depressing their personal net worth as well as the wealth of local communities, as evidenced by Minnesota's experience with PFOS contamination from a 3M facility[5]. Thirdly, if PFOS and PFOA remain largely unregulated, Wisconsin's economy may be adversely affected.

Given that data specific to Wisconsin is not yet available, it is difficult to quantify in dollars the public health benefits from regulating PFOS and PFOA and reducing those contaminants in Wisconsin's drinking water.

Health Cost:
The proposed rule will have a significant economic benefit to Wisconsin as a result of reducing health problems caused by exposure to PFOA and PFOS in drinking water. To estimate the costs incurred to the State of Wisconsin as a result of *not* promulgating the proposed PFOS and PFOA rule, the department analyzed two reports with health data linked to exposure to PFAS that were submitted by commenters during the EIA solicitation process.

The first study estimated that the total cost of PFOA-attributable low birthweight births in the United States for 2003 through 2014 was $13.7 billion.[2] These costs included the direct hospital costs at the time of birth as well as lost economic productivity due to low birthweight births being associated with a variety of longer-term outcomes including lower lifetime earning potential.

The department does not have data on PFOS and PFOA- attributable health incidents in Wisconsin. Using a value transfer method, the department assumes a linear relationship between impacts of PFOA–attributable low birthweight births quantified by Malits et al. (2018) and the total United States population. The department estimates that, based on 1.8% of the US population living in Wisconsin, the total costs due to low birth weight from PFOA exposure for the period (2003 – 2014) studied by Malits et al. (2018) to be $246.6 million (approx. $ 276.2 million in 2021 dollars). This cost value is likely not robust, given that this is an extrapolation based on non-specific population data, and recognizing that promulgation of PFOA and PFOS drinking water standards alone will not alone end PFAS exposure. However, it shows that it is reasonable to expect significant economic health benefit (avoided cost) as a result of promulgation of these proposed thresholds of public health significance.

The second study examined background exposure to PFOA as it relates to widespread occurrence of hypertension. This study estimated that approximately 10.3 million Europeans would develop hypertension because of this exposure, which would cost Europe an estimated €10.7 – 35 billion[3] annually ($12.6 - $41.3 billion USD). Again, to use the value transfer method, the department assumed a linear relationship between European population and the estimated cost attributable to PFOA exposure. The department also assumed that the occurrence of PFOA-exposure related hypertension in the

European population is the same in Wisconsin. Applying this occurrence to Wisconsin, and taking the lower end of that range, it's estimated that it would cost the state $99.9 million annually (approx. $103.9 million in 2021 dollars) if PFOA is not regulated.

It is important to note that the two studies cited above were specific to PFOA and low birthweights and hypertension. Total health-related costs associated with total PFAS reported by Goldenman, Gretta, et al. (2019) were between €52 billion to €84 billion annually in Europe, which could be several billions of dollars for United States and hundreds of millions for Wisconsin if the quantified values are transferred.[4]

Housing Value:
In a study of the impact of PFAS groundwater contamination on property value in Oakdale Minnesota and other affected communities, Sunding (2017) found that the value of properties sold after PFAS contamination of groundwater decreased by 7.3% in Oakdale and 4.4% in other affected communities.[5] This translates to an annualized value of $288 per year (approx. $326 in 2021 dollars) in Oakdale and 231 per year (approx. $261 in 2021 dollars) in the other affected communities. In other words, households in the affected communities were willing to pay to avoid PFC contamination of groundwater.

The WDNR estimates that there are approximately 51 remediation sites in Wisconsin (within 25 communities) that have been discovered to date with PFAS contamination in groundwater. Hedonic models of property value are specific to a housing market. Nevertheless, this study gives us a sense of the potential impacts of PFAS contamination of groundwater on the property value for local communities in Wisconsin that rely on groundwater as a source of drinking water.

[1] United States Environmental Protection Agency. Drinking Water Health Advisories for PFOA and PFOS. https://www.epa.gov/ground-water-and-drinking-water/drinking-water-health-advisories-pfoa-and-pfos#:~:text=These%20studies%20indicate%20that%20exposure,)%2C%20liver%20effects%20(e.g.%2C
[2] Malits J, Blustein J, Trasande L, Attina TM. 2018. Perfluorooctanoic acid and low birth weight: estimate of US attributable burden and economic costs from 2003 through 2014. International Journal of Hygiene and Environmental Health 221: 269-275.
[3] Goldenman, Gretta, et al. 2019. The cost of inaction: A socioeconomic analysis of environmental and health impacts linked to exposure to PFAS. Nordic Council of Ministers.[4] Environmental Science and Technology. The True Cost of PFAS and the Benefits of Acting Now. https://pubs.acs.org/doi/10.1021/acs.est.1c03565
[5] Sunding DL. 2017. Damage to Minnesota's Natural Resources Resulting from 3M's Disposal of PFASs in Washington County, MN. Prepared for the State of Minnesota in the matter of the State of Minnesota v. 3M Company. September 22, 2017.

16. Long Range Implications of Implementing the Rule

The long-range implications of this rule will be the same as the short-range implications of protecting drinking water and human health.

17. Compare With Approaches Being Used by Federal Government

The process for the proposed amendment to ch. NR 809, Wis. Adm. Code, to establish certain maximum contaminant levels for PFAS, including PFOA and PFOS standards, is consistent with the process for establishing rules for other drinking water contaminants regulated under the federal EPA Safe Drinking Water Act, specifically Title 40 - Protection of the Environment; Chapter 1 - Environmental Protection Agency; Subchapter D - Water Programs. The department has a primacy agreement with the EPA to implement the Safe Drinking Water Act.

As a result of the PFOA and PFOS findings from EPA's UCMR 3 national monitoring of public water supply systems (Appendix B), the EPA issued a PFOA and PFOS Health Advisory Level (HAL) in 2016. The PFOA and PFOS HAL was established based upon laboratory animal and epidemiological human studies indicating adverse health effects

related to PFOA and PFOS exposure. Adverse health effects included developmental effects of fetuses during pregnancy or to breastfed infants, cancer, liver effects, immune effects, and thyroid effects, and other health effects.

In February 2019, the EPA released a Per- and Polyflouralkyl Substances (PFAS) Action Plan. One of the four primary actions in the PFAS Action Plan is initiating steps to evaluate the need for a maximum contaminant level as part of the Safe Drinking Water Act. The EPA is evaluating criteria to propose a national drinking water regulatory determination for PFOA and PFOS. The EPA is highlighting key PFOA and PFOS information gathered to date and additional data needs. The EPA issued a final determination in January 2021 that they will establish maximum contaminant levels for PFOA and PFOS. This federal regulatory process will take several years and Wisconsin will have three years after the EPA establishes the federal maximum contaminant level to incorporate the changes into state administrative code.

18. Compare With Approaches Being Used by Neighboring States (Illinois, Iowa, Michigan and Minnesota)

Other surrounding states have promulgated or proposed PFAS maximum contaminant levels or established Health Based Guidance Levels.

Illinois has proposed PFAS maximum contaminant levels for the following contaminants:
PFBS - 140,000 parts per trillion
PFHxS - 140 parts per trillion
PFNA - 21 parts per trillion
PFOA - 21 parts per trillion
PFOS - 14 parts per trillion
Total PFOA and PFOS - 21 parts per trillion

Iowa implements EPA's PFAS Health Advisory Level (HAL) for combined PFOA and PFOS at 70 parts per trillion.

Michigan has promulgated PFAS maximum contaminant levels for the following contaminants:
PFOA - 8 parts per trillion
PFOS - 16 parts per trillion
PFNA - 6 parts per trillion
PFHxS - 51 parts per trillion
PFBS - 420 parts per trillion
PFHxA - 400,000 parts per trillion
GenX - 370 parts per trillion

Minnesota has established the health based guidance levels for the following PFAS contaminants:
PFOA - 35 parts per trillion
PFOS - 15 parts per trillion
PFHxS - 47 parts per trillion

19. Contact Name	20. Contact Phone Number
Adam DeWeese	(608) 264-9229

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ADMINISTRATIVE RULES
Fiscal Estimate & Economic Impact Analysis

ATTACHMENT A

1. Summary of Rule's Economic and Fiscal Impact on Small Businesses (Separately for each Small Business Sector, Include Implementation and Compliance Costs Expected to be Incurred)

The costs for small businesses can be estimated by using the costs presented above, removing large municipality costs, and assuming replacement or abandonment of wells will be the preferred mitigation option. Small businesses likely represent approximately 70% of the public water systems that could be subject to the proposed maximum contaminant levels.

Based on these assumptions, we estimate that 70% of the Non-transient and Non-community water systems compliance cost can be assumed to be a small business cost. Table 1 below presents a detailed assessment of small Business cost derived from the Non-transient and Non-community water systems compliance cost in the first and second year.

Table 1: Total Cost for Non-transient Non-Community water systems & Other Than Municipal (OTM) community water systems.

	Initial Cost	Year 1+
Initial Monitoring Non-Transient Non-Community water systems	$ 478,125.00	
MCL Non-transient Non-Community water systems		$ 19,865.25
Non-Transient Non-community water systems - New Well Costs (1 time cost)	$ 188,527.50	
Other Than Municipal CWS (OTM) New Well Costs (1 time cost)	$ 292,275.00	
Total Cost	**$ 958,927.50**	**$ 19,865.25**
Small Business Cost (70% of Non-transient Non-Community water systems & OTM Cost)	**$ 671,249.25**	**$ 13,905.68**

2. Summary of the data sources used to measure the Rule's impact on Small Businesses

The data sources used to predict the economic impact on small businesses include the typical cost of drilling a new well in Wisconsin based on data obtained by the department ($15,000 for NR 812 wells and $50,000 for NR 811 wells), and the PFAS occurrence data detected in the neighboring state of Michigan and the National UCMR data.

3. Did the agency consider the following methods to reduce the impact of the Rule on Small Businesses?

☒ Less Stringent Compliance or Reporting Requirements
☒ Less Stringent Schedules or Deadlines for Compliance or Reporting
☐ Consolidation or Simplification of Reporting Requirements
☐ Establishment of performance standards in lieu of Design or Operational Standards
☐ Exemption of Small Businesses from some or all requirements
☐ Other, describe:

The department will allow for monitoring waivers to reduce the frequency of required monitoring at public water systems with no detection levels of PFAS.

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4. Describe the methods incorporated into the Rule that will reduce its impact on Small Businesses

The proposed rule spreads out the schedule for monitoring to reduce the initial impacts to public water systems as a whole:

(a) Public water systems serving a population greater or equal to 50,000 [3 months after the rule becomes effective].
(b) Public water systems serving a population 10,000 to 49,999 [6 months after the rule becomes effective].
(c) Public water systems serving a population less than 10,000 [9 months after the rule becomes effective].

Public water systems may also apply for a waiver to reduce the frequency of monitoring. The department will consider the following criteria for granting a waiver:

(a) Whether a contaminant has been used.
(b) Whether previous analytical results show PFOA or PFOS.
(c) The proximity of the public water system to a potential point source of contamination.

5. Describe the Rule's Enforcement Provisions

The enforcement process for this rule will be the same as other maximum contaminant levels in ch. NR 809, Wis. Adm. Code. The department will issue a notice of violation with the expectation that a corrective action be implemented according to a schedule spelled out in a consent order.

6. Did the Agency prepare a Cost Benefit Analysis (if Yes, attach to form)

☐ Yes ☒ No

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APPENDIX A
Other States Occurrence Data

State drinking water PFAS sampling program results

STATE	Number of systems sampled	Number of detections	Number >20ppt	%>20ppt
Ohio	1,478	67	18	1.22%
Michigan	1,754	70	11	0.63%
New Hampshire*	502	68	10	1.99%

*Note: New Hampshire sampling effort included additional PFAs contaminants besides PFOA and PFOS

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APPENDIX B
UCMR Data

National Data Summary

As part of the third Unregulated Contaminant Monitoring Rule (UCMR 3), the EPA required water systems to monitor for six PFAS. PFOS and PFOA were the most frequently detected PFAS; this is consistent with other reports on measured PFAS in finished drinking waters. During the UCMR 3 process, PFOS and PFOA were detected above the method reporting limit (40 and 20 ng/L, respectively) in drinking water in approximately 1.9% and 2.4% of Public Water Systems (PWSs), respectively.

WI Data Summary

As part of the EPA UCMR3 sampling, ninety systems were sampled. Three systems had PFAS detections. Two of the three systems with detects had levels of PFOA or PFOS above 20 ppt.

Number of Wisconsin Public Water Supply Systems with UCMR 3 PFAS Analytical Results				
System Population	# of Systems	System Size	# of Systems with PFAS Detections	# of Systems with NO PFAS Detections
PWS Population > 100,000	4	Large System	0	4
PWS Population > 10,000 and <99,999	71	Large System	1	70
PWS Population < 10,0000	15	Small System	2	13
Total	90		3	87

1/27/2022

The statement of scope for this rule, SS 089-19, was approved by the Governor on August 27, 2019, published in Register No. 765A1 on September 3, 2019, and approved by the Natural Resources Board on January 22, 2020. This rule was approved by the Governor on insert date.

ORDER OF THE STATE OF WISCONSIN NATURAL RESOURCES BOARD
RENUMBERING AND AMENDING, AMENDING AND CREATING RULES

The Wisconsin Natural Resources Board adopts an order to **renumber and amend** NR 809.205 (3), (4) and (5); to **amend** NR 809.20 (1) Table, 809.203 (1) Table, (2) Table CM and (4) Table D, 809.205 (2) (intro.), (a), (b) (intro.) and 1. and 2., and (6) (c), Appendix A to Subchapter V and Appendix A to Subchapter VII; and to **create** NR 809.04 (59h), 809.20 (2) (d), and 809.205 (1g) and (1r), relating to the promulgation of new drinking water maximum contaminant levels for Per- and Polyfluoroalkyl Substances (PFAS) including Perfluorooctanesulfonic acid (PFOS) and Perfluorooctanoic acid (PFOA) and affecting small business.

DG-24-19

Analysis Prepared by the Department of Natural Resources

1. Statute Interpreted: Chapters 280 and 281, Wis. Stats.

2. Statutory Authority: Chapters 280 and 281, Wis. Stats., including sections 280.11 and 281.17(8), Wis. Stats.

3. Explanation of Agency Authority: Section 280.11, Wis. Stats. – The department shall, after a public hearing, prescribe, publish, and enforce minimum reasonable standards and rules and regulations for methods to be pursued in the obtaining of pure drinking water for human consumption and the establishing of all safeguards deemed necessary in protecting the public health against the hazards of polluted sources of impure water supplies intended for human consumption.

Section 281.17(8), Wis. Stats. – The department may establish, administer, and maintain a safe drinking water program no less stringent than the requirements of the safe drinking water act, 42 USC 300f to 300j-26.

4. Related Statutes or Rules: Chapter NR 809, Wis. Adm. Code – Safe Drinking Water, establishes minimum standards and procedures for the protection of the public health, safety and welfare in the obtaining of safe drinking water.

5. Plain Language Analysis: The objective of the proposed rule is to amend ch. NR 809, Wis. Adm. Code, to establish drinking water standards, referred to as Maximum Contaminant Levels (MCLs), for certain Per- and Polyfluoroalkyl substances (PFAS) including the contaminant compounds perfluorooctanoic acid (PFOA) and perfluorooctane sulfonic acid (PFOS). The MCL standards for PFOS and PFOA are based on recommendations from the Wisconsin Department of Health Services (DHS) and are set at 0.000020 mg/L (20 parts per trillion (ppt)) for PFOA and PFOS individually and a combined standard of 0.000020 mg/L (20 ppt).

The proposed rule establishes initial and routine monitoring cycles for community and non-transient non-community public water systems to test for PFOA and PFOS and establishes approved methodology for PFOA and PFOS sampling. The proposed rule also creates a waiver application process for systems to

waive routine monitoring under certain conditions. Systems that exceed the MCL standards for PFOA and PFOS will be required to take measures to return to compliance, which may include drilling a new well or installing a treatment system.

The U.S. Environmental Protection Agency (EPA) and numerous states, including Wisconsin, have identified PFAS as a persistent contaminant that threatens the environment, including surface water and groundwater resources. PFAS in surface water and groundwater sources is a threat to public health, welfare and safety in obtaining drinking water. Establishing drinking water standards for certain PFAS contaminants in this rule will protect public health by setting MCLs that may not be exceeded. If MCLs are exceeded, a corrective action plan must be implemented to maintain protection of public health, welfare and safety in drinking water.

PFOA and PFOS health effects references include the following:

- ATSDR, Toxicological Profile for Perfluoroalkyls, 2021.
- U.S. EPA, Drinking Water Health Advisory for Perfluorooctanoic Acid (PFOA), 2016.
- U.S. EPA, Health Effects Support Document for Perfluorooctanoic Acid (PFOA), 2016.
- U.S. EPA, Drinking Water Health Advisory for Perfluorooctane Sulfonate (PFOS), 2016.
- U.S. EPA, Health Effects Support Document for Perfluorooctane Sulfonate (PFOS), 2016
- IARC, Monograph on the Identification of Carcinogenic Hazards to Humans: Perfluorooctanoic Acid (PFOA), 2018.

6. Summary of, and Comparison with, Existing or Proposed Federal Statutes and Regulations: The process for the proposed amendment to ch. NR 809, Wis. Adm. Code, to establish certain MCLs for PFAS, including PFOA and PFOS standards, is consistent with the process for establishing rules for other drinking water contaminants regulated under the federal EPA Safe Drinking Water Act, specifically Title 40 - Protection of the Environment; Chapter 1 - Environmental Protection Agency; Subchapter D - Water Programs. The department has a primacy agreement with the EPA to implement the Safe Drinking Water Act.

As a result of the PFOA and PFOS findings from EPA's Unregulated Contaminant Monitoring Rule 3 (UCMR 3) national monitoring of public water supply systems, the EPA issued a PFOA and PFOS Health Advisory Level (HAL) in 2016. The PFOA and PFOS HAL was established based upon laboratory animal and epidemiological human studies indicating adverse health effects related to PFOA and PFOS exposure. Adverse health effects included developmental effects of fetuses during pregnancy or to breastfed infants, cancer, liver effects, immune effects and thyroid effects and other health effects.

In February 2019, the EPA released a Per- and Polyflouralkyl Substances (PFAS) Action Plan. One of the four primary actions in the PFAS Action Plan is initiating steps to evaluate the need for an MCL as part of the Safe Drinking Water Act. The EPA is evaluating criteria to propose a national drinking water regulatory determination for PFOA and PFOS. The EPA is highlighting key PFOA and PFOS information gathered to date and additional data needs. The EPA issued a final determination in January, 2021 that they will establish an MCL for PFOA and PFOS, a federal regulatory process that will take several years and would not take effect in Wisconsin until three years after the federal MCL is established.

7. If Held, Summary of Comments Received During Preliminary Comment Period and at Public Hearing on the Statement of Scope:

Commenter	Sentiment	Notes
Al Bock, citizen	Support	

American Forest and Paper Association	Oppose	
Bill and Cindy Verschay, citizens	Support	
Bob and Anne Maley, citizens	Support	
Capital Area Regional Planning Commission	Support	
Casey Hicks, citizen	Support	
Christine Simpson, citizen	Support	
Cindy and Chuck Boyle Jr., citizens	Support	
Citizens for Safe Water Around Badger	Mixed	Support but expresses disagreements including need for regulation of PFAS as a class
Clean Wisconsin	Support	
Danika Brubaker, citizen	Support	
Darcy Lanz-Sage, citizen	Support	
Earl Witte, citizen	Support	
Fay Johnson-Lau, citizen	Support	
Gerald Peterson, citizen	Support	
Jeffrey Lamont, citizen	Support	
Kayla and Dean Furton, citizens	Support	
Lee Lamers, citizen	Support	
Louise Petering, citizen	Support	
Mark Sethne, citizen	Support	
Midwest Environmental Advocates	Support	
Midwest Food Products Association	Oppose	
Milwaukee Riverkeeper	Support	
Municipal Environmental Group (MEG)	Mixed	Supports regulation but wants front-end regulation of sources, involvement in advisory groups, and alternative compliance options
National Council for Air and Stream Improvement, Inc.	Mixed	Supports science-based effort but has technical issues with DHS toxicity value

Patrick Meyer, citizen	Support	
Ralph Kerler, citizen	Support	
Richard Upton, citizen	Support	
River Alliance of Wisconsin	Support	
Robert Elwell, citizen	Support	
Sam Warp, citizen	Mixed	Comment title is "I support PFAS rules" but comment body discusses regulating the source, not the "back end"
Sandy Gillum, citizen	Support	
Satya Rhodes-Conway, Mayor of the City of Madison	Support	
Vi Lamers, citizen	Support	
Virginia Geraghty, citizen	Support	
Water Quality Coalition	Oppose	
William Evans, citizen	Support	
Wisconsin Civil Justice Council, Inc.	Oppose	
Wisconsin Conservation Voters	Support	
Wisconsin Conservation Voters' members	Support	Letter includes support from 1103 individual members
Wisconsin Lakes	Support	
Wisconsin Manufacturers and Commerce	Oppose	
Wisconsin Paper Council	Oppose	
Wisconsin Rural Water Association	Oppose	
American Chemistry Council	Mixed	Supports some aspects and opposes others
Columbus Water and Light	Mixed	Supports MEG letter/comments
Glory Adams, citizen	Support	
La Crosse Water Utility	Mixed	Supports MEG letter/comments
MEG - Water Division	Oppose	

League of Wisconsin Municipalities	Mixed	Supports MEG letter/comments

8. Comparison with Similar Rules in Adjacent States: Other surrounding states have promulgated or proposed PFAS maximum contaminant levels (MCLs) or established Health Based Guidance Levels.

Illinois has proposed PFAS maximum contaminant levels for the following contaminants:

- PFBS - 140,000 parts per trillion
- PFHxS - 140 parts per trillion
- PFNA - 21 parts per trillion
- PFOA - 21 parts per trillion
- PFOS - 14 parts per trillion
- Total PFOA and PFOS - 21 parts per trillion

Iowa implements EPA's PFAS Health Advisory Level (HAL) for combined PFOA and PFOS at 70 parts per trillion.

Michigan has promulgated PFAS maximum contaminant levels for the following contaminants:

- PFOA - 8 parts per trillion
- PFOS - 16 parts per trillion
- PFNA - 6 parts per trillion
- PFHxS - 51 parts per trillion
- PFBS - 420 parts per trillion
- PFHxA - 400,000 parts per trillion
- GenX - 370 parts per trillion

Minnesota has established the health based guidance levels for the following PFAS contaminants:

- PFOA - 35 parts per trillion
- PFOS - 15 parts per trillion
- PFHxS - 47 parts per trillion

9. Summary of Factual Data and Analytical Methodologies Used and How Any Related Findings Support the Regulatory Approach Chosen: The proposed MCLs (20 ppt for PFOA and PFOS individually and combined) are based on the recommendations of DHS. An analysis of the available research informed the decision to recommend groundwater enforcement standards to be promulgated into ch. NR 140, Wis. Adm. Code. Generally, these standards are the same as the drinking water standards in ch. NR 809, Wis. Adm. Code. *See* ss. 160.04(4)(c) and 160.13, Wis. Stats.

An evaluation of the costs associated with the EPA HAL of 70 ppt was also studied and is presented in the economic impact analysis (EIA) for this proposed rule. The majority of states that are or have promulgated MCLs for PFOA and PFOS are similar or lower than the 20 ppt proposed in Wisconsin.

The proposed monitoring frequency and types of public drinking water systems subject to the proposed MCLs are consistent with the requirements of other Synthetic Organic Contaminants in the Safe Drinking Water Act and ch. NR 809, Wis. Adm. Code.

10. Analysis and Supporting Documents Used to Determine the Effect on Small Business or in Preparation of an Economic Impact Report: The department used data from Michigan's 2017 – 2019 study of over 1,700 public water systems as a proxy for PFOS/PFOA data that are not yet available in Wisconsin. We also used national data from EPA's Unregulated Contaminant Monitoring Rule (UCMR3) program to estimate an average number of systems that might exceed the proposed MCLs in Wisconsin. The average of these two data sets produced an estimate of 1.35% of systems in Wisconsin exceeding an MCL. Small business effects were determined by assuming that all entities that are not large community wells in the Wisconsin estimates in this analysis are potential small business. Detailed assessment of costs are in the economic impact analysis form attached. Sources of factual data used in the analysis include the following:

1. Data from Michigan Environment, Great Lakes and Energy on PFOS/PFAS testing at public water systems between 2017 and 2019. The percentage of wells found to have detections of these compounds, and the percentage of systems with results above 20 ppt.
2. Data from the EPA UCMR3 sampling between 2013 and 2015. The percentage of systems with results above 20 ppt.
3. The analysis cost of PFAS at the Wisconsin State Laboratory of Hygiene.
4. The average cost of drilling a new well in Wisconsin at Non-Community systems.
5. The average cost of drilling a new well in Wisconsin at small community systems.
6. The average cost of treatment for the control of PFAS in other states at municipal water systems.
7. The number of wells in Wisconsin that would be subject to the proposed standards.

11. Effect on Small Business (initial regulatory flexibility analysis): After removing large community water systems from the data set, the remaining small community water systems (other-than-municipal community systems) and non-transient non-community systems were considered to be small business entities for the purpose of this analysis. The department estimated the compliance cost of these entities to be 70% of the total public water systems that may be subject to these MCLs. Thus, the monitoring costs for this subgroup are also expected to be approximately 70% of the total. On average, monitoring costs for small community water systems and non-transient non-community systems are estimated to be $1 million in the first year.

The department will allow for monitoring waivers to reduce the frequency of required monitoring at public water systems with no detection levels of PFAS. A detailed assessment of regulatory flexibility is presented in Attachment A of the economic impact analysis, question #4. This includes waivers and staggered monitoring schedules.

12. Agency Contact Person: Adam DeWeese; 101 S. Webster Street, Madison, WI 53703; Adam.DeWeese@wisconsin.gov; (608) 264-9229

13. Place where comments are to be submitted and deadline for submission:
A comment period on the rule was held from November 1, 2021 to December 8, 2021. A public hearing was held on December 1, 2021.

RULE TEXT

SECTION 1. NR 809.04 (59h) is created to read:

NR 809.04 (59h) "Perfluoroalkyl and polyfluoroalkyl substances" or "PFAS" means a large group of human-made chemicals that are part of the synthetic organic contaminants classification.

SECTION 2. NR 809.20 (1) Table is amended to read:

NR 809.20 (1) Table

Contaminant	MCL (mg/L)
Alachlor	0.002
Atrazine	0.003
Benzo[a]pyrene	0.0002
Carbofuran	0.04
Chlordane	0.002
2,4-D	0.07
Dalapon	0.2
Dibromochloropropane	0.0002
Di(2-ethylhexyl)adipate	0.4
Di(2-ethylhexyl)phthalate	0.006
Dinoseb	0.007
Diquat	0.02
Endothall	0.1
Endrin	0.002
Ethylene Dibromide	0.00005
Glyphosate	0.7
Heptachlor	0.0004
Heptachlor epoxide	0.0002
Hexachlorobenzene	0.001
Hexachlorocyclopentadiene	0.05

Lindane	0.0002
Methoxychlor	0.04
Oxamyl	0.2
Pentachlorophenol	0.001
PFOS and PFOA	0.000020
Picloram	0.5
Polychlorinated biphenyls (PCBs)	0.0005
Simazine	0.004
2,3,7,8-TCDD (Dioxin)	$3x10^{-8}$
Toxaphene	0.003
2,4,5-TP	0.05

SECTION 3. NR 809.20 (2) (d) is created to read:

NR 809.20 (2) (d) Granular activated carbon, powdered activated carbon, ion exchange resins, nanofiltration, and reverse osmosis for PFOS and PFOA.

SECTION 4. NR 809.203 (1) Table is amended to read:

NR 809.203 (1) Table

Contaminant	Detection Limit (mg/L)
1. Alachlor	0.0002
2. Aldicarb	0.0005
3. Aldicarb sulfoxide	0.0005
4. Aldicarb sulfone	0.0008
5. Atrazine	0.0001
6. Benzo[a]pyrene	0.00002
7. Carbofuran	0.0009
8. Chlordane	0.0002
9. 2,4-D	0.0001

10. Dalapon	0.001
11. Dibromochloropropane	0.00002
12. Di(2-ethylhexyl)adipate	0.0006
13. Di(2-ethylhexyl)phthalate	0.0006
14. Dinoseb	0.0002
15. Diquat	0.0004
16. Endothall	0.009
17. Endrin	0.00001
18. Ethylene dibromide	0.00001
19. Glyphosate	0.006
20. Heptachlor	0.00004
21. Heptachlor epoxide	0.00002
22. Hexachlorobenzene	0.0001
23. Hexachlorocyclopentadiene	0.0001
24. Lindane	0.00002
25. Methoxychlor	0.0001
26. Oxamyl	0.002
27. Picloram	0.0001
28. Polychlorinated biphenyls (PCBs as decchlorobiphenyls)	0.0001
29. Pentachlorophenol	0.00004
~~30. Simazine~~	~~0.00007~~
~~31. Toxaphene~~	~~0.001~~
~~32. 2,3,7,8-TCDD (Dioxin)~~	~~0.000000005~~
~~33. 2,4,5-TP (Silvex)~~	~~0.0002~~
30. Perfluorooctane Sulfonic Acid (PFOS)	0.000002
31. Perfluorooctanoic Acid (PFOA)	0.000002
32. Simazine	0.00007
33. Toxaphene	0.001

34. 2,3,7,8-TCDD (Dioxin)	0.000000005
35. 2,4,5-TP (Silvex)	0.0002

SECTION 5. NR 809.203 (2) Table CM and (4) Table D are amended to read:

NR 809.203 (2) Table CM

Table CM **SDWA Approved Methodology for Synthetic Organic Contaminants**					
Contaminant	**EPA Methods[1]**	**SM[9]**	**SM Online[10]**	**ASTM**	**Other**
Regulated Parameters:					
Synthetic Organic Chemicals					
2,3,7,8-TCDD (dioxin)	1613				
2,4-D [2] (as acids, salts and esters)	515.2, 555, 515.1, 515.3, 515.4			D5317-93, 98 (Reapproved 2003)	
2,4,5-TP [2] (Silvex)	515.2, 555, 515.1, 515.3, 515.4	6640 B,	6640 B-01, B-06[11]	D5317-93, 98 (Reapproved 2003)	
Alachlor	507, 525.2, 525.3[2] 508.1, 505[8], 551.1				
Atrazine [3]	507, 525.2, 525.3 508.1, 505[8], 551.1, 536				Syngenta[4] AG-625
Benzo(a)pyrene	525.2, 525.3, 550, 550.1				
Carbofuran	531.1, 531.2	6610[5] 6610 B	6610 B-04		
Chlordane	508, 525.2, 525.3, 508.1, 505				
Dalapon	552.1 515.1, 552.2, 515.3, 515.4, 552.3, 557	6640 B	6640 B-01, 06		
Di(2-ethylhexyl)adipate	506, 525.2, 525.3				
Di(2-ethylhexyl)phthalate	506, 525.2, 525.3				

Dibromochloropropane (DBCP)	504.1, 551.1, 524.3[9]				
Dinoseb	515.2, 555, 515.1, 515.3, 515.4	6640 B	6640 B-01, 06		
Diquat	549.2				
Endothall	548.1				
Endrin	508, 525.2, 525.3, 508.1, 505, 551.1				
Ethylene dibromide (EDB)	504.1, 551.1, 524.3				
Glyphosate	547	6651[6] 6651 B	6651 B-01, B-06		
Heptachlor	508, 525.2, 525.3, 508.1, 505, 551.1				
Heptachlor Epoxide	508, 525.2, 525.3, 508.1, 505, 551.1				
Hexachlorobenzene	508, 525.2, 525.3, 508.1, 505, 551.1				
Hexachlorocyclopentadiene	508, 525.2, 525.3, 508.1, 505, 551.1				
Lindane	508, 525.2, 525.3, 508.1, 505, 551.1				
Methoxychlor	508, 525.2, 525.3, 508.1, 505, 551.1				
Oxamyl	531.1, 531.2	6610[5] 6610 B	6610 B-04		
PCBs (as decachlorobiphenyl)	508A[7]				
(as Aroclors)	508.1, 508, 525.2, 525.3, 505				
Pentachlorophenol	515.2, 525.2, 525.3, 555, 515.1, 515.3, 515.4			D5317-93, 98 (Reapproved 2003)	
Picloram [2]	515.2, 555, 515.1, 515.3, 515.4	6640 B	6640 B-01	D5317-93, 98 s (Reapproved 2003)	

Perfluorooctane Sulfonic Acid (PFOS)	537.1 Rev.2, 533				
Perfluorooctanoic Acid (PFOA)	537.1 Rev.2 533				
Simazine	507, 525.2, 525.3, 523, 536, 508.1, 505[8], 551.1				
Toxaphene	508, 508.1, 525.2, 525.3, 505				
Unregulated Parameters:					
Aldicarb	531.1, 531.2	6610[5] 6610 B	6610 B-04		
Aldicarb sulfone	531.1, 531.2	6610[5] 6610 B	6610 B-04		
Aldicarb Sulfoxide	531.1 , 531.2	6610[5] 6610 B	6610 B-04		
Aldrin	505, 508, 525.2, 525.3, 508.1				
Butachlor	507, 525.2, 525.3				
Carbaryl	531.1, 531.2	6610[5] 6610 B	6610 B-04		
Dicamba	515.1, 555, 515.2, 515.3, 515.4	6640 B	6640 B-01, B-06		
Dieldrin	505, 508, 525.2, 525.3, 508.1				
3-Hydroxcarbofuran	531.1, 531.2	6610[5] 6610 B	6610 B-04		
Methomyl	531.1, 531.2	6610[5] 6610 B	6610 B-04		
Metolachlor	507, 525.2, 525.3, 508.1				
Metribuzin	507, 525.2, 525.3, 508.1				
Propachlor	507, 525.2, 525.3, 508.1				

(4) Table D

Table D
Sample Preservation, Holding Times, and Sampling Containers for Organic Parameters

Metho d	Preservative[2]	Sample Holding Time	Extract Holding Time and Storage Conditions	Suggested Sample Size	Type of Container
502.2[2]	Sodium Thiosulfate or Ascorbic Acid, 4°C, HCl pH<2	14 days	NA	40 – 120 mL	Glass with PTFE[1] Lined Septum
504.1	Sodium Thiosulfate, Cool, 4°C	14 days	4°C, 24 hours	40 mL	Glass with PTFE[1] Lined Septum
505	Sodium Thiosulfate, Cool, 4°C	14 days (7 days for Heptachlor)	4°C, 24 hours	40 mL	Glass with PTFE[1] Lined Septum
506	Sodium Thiosulfate, Cool, 4°C, Dark	14 days	4°C, Dark 14 days	1 L	Amber Glass with PTFE[1] Lined Septum
507	Sodium Thiosulfate, Cool, 4°C, Dark	14 days (See method for exceptions.)	4°C, Dark 14 days	I L	Amber Glass with PTFE[1] Lined Cap
508	Sodium Thiosulfate, Cool, 4°C, Dark	7 days (See method for exceptions.)	4°C, Dark 14 days	I L	Glass with PTFE[1] Lined Cap
508A	Cool, 4°C	14 days	30 days	I L	Amber Glass with PTFE[1] Lined Cap
508.1	Sodium Sulfite, HCl pH<2, Cool, 4°C	14 days (See method for exceptions.)	30 days	I L	Glass with PTFE Lined Cap
515.1	Sodium Thiosulfate, Cool, 4°C, Dark	14 days	4°C, Dark 28 days	I L	Amber Glass with PTFE[1] Lined Cap
515.2	Sodium Thiosulfate or Sodium Sulfite, HCl pH<2 Cool, 4°C, Dark	14 Days	≤4°C, Dark 14 Days	I L	Amber Glass with PTFE[1] Lined Cap
515.3	Sodium Thiosulfate, Cool, 4°C, Dark	14 days	≤4°C, Dark 14 Days	50 mL	Amber Glass with PTFE[1] Lined Cap

515.4	Sodium Sulfite, Dark, Cool ≤10°C for First 48 hrs, ≤6°C thereafter	14 days	≤0°C 21 days	40 mL	Amber Glass with PTFE[1] Lined Cap
524.2[2]	Ascorbic Acid or Sodium Thiosulfate, HCl pH<2, Cool 4°C	14 days	NA	40 – 120 mL	Glass with PTFE[1] Lined Septum
524.3[2]	Maleic and Ascorbic Acids pH<2, ≤10°C for first 48 hrs., ≤6 thereafter. If only analyzing TTHM: Sodium Thiosulfate pH<2, ≤10°C for first 48 hrs., ≤6 thereafter	14 days	NA	40 – 120 mL	Amber Glass with PTFE[1] Lined Septum
525.2	Sodium Sulfite, Dark, Cool, 4°C, HCl pH<2	14 days (See method for exceptions)	≤4°C 30 days	1 L	Amber Glass with PTFE[1] Lined Cap
531.1, 6610	Sodium Thiosulfate, Monochloroacetic Acid pH<3, Cool, 4ºC	Cool 4°C from collection until storage at laboratory; <-10°C at the laboratory; 28 days	NA	60 mL	Glass with PTFE[1] Lined Septum
531.2	Sodium Thiosulfate, Potassium Dihydrogen Citrate Buffer pH<4, Dark ≤10°C for first 48 hrs., ≤6ºC thereafter	28 days	NA	40 mL	Glass with PTFE[1] Lined Septum
537.1	Trizma – 5.0 g/L Cool < 10° during first 48 hours after collection. 28 days. ≤6 ºC after 48 hours, not frozen	14 days, < 6°C	28 days, room temperature	250 mL	250- mL polypropylene bottle fitted with a polypropylene screw-cap

533	Ammonium acetate 1.0 g/L Cool <10°C during first 2 days after collection or received on ice, ≤6 ºC after 48 hours, not frozen	28 days < 6°C	28 days, room temperature	250 mL	250- mL polypropylene bottle fitted with a polypropylene screw-cap
547	Sodium Thiosulfate, Cool, 4°C	14 days; 18 mos. Frozen	NA	60 mL	Glass with PTFE[1] Lined Septum
548.1	Sodium Thiosulfate, HCl pH 1.5 -2 if High Biological Activity, Cool, 4°C, Dark	7 days	≤4°C 14 days	≥ 250 mL	Amber Glass with PTFE[1] Lined Septum
549.2	Sodium Thiosulfate, H_2SO_4 pH<2, if Biologically Active, Cool 4°C, Dark	7 days	21 days	≥ 250 mL	High Density Amber Plastic or Silanized Amber Glass
550	Sodium Thiosulfate, Cool, 4°C, HCl pH<2	7 days	4°C, Dark 30 days	1 L	Amber Glass with PTFE[1] Lined Septum
550.1	Sodium Thiosulfate, Cool, 4°C, HCl pH<2	7 days	4°C, Dark 40 days	1 L	Amber Glass with PTFE[1] Lined Septum
551.1	Sodium Sulfite, Ammonium Chloride, pH 4.5-5.0 with Phosphate Buffer, Cool, 4°C	14 days	14 days <-10°C	≥ 40 mL	Glass with PTFE[1] Lined Septum
552.1	Ammonium Chloride, Cool, 4°C, Dark	28 days	≤4°C, Dark 48 hrs.	250 mL	Amber Glass with PTFE[1] Lined Cap
552.2	Ammonium Chloride, Cool, 4°C, Dark	14 days	≤4°C, Dark, 7 days ≤-10°C, 14 days	50 mL	Amber Glass with PTFE[1] Lined Cap

555	Sodium Sulfite,HCl pH ≤2,Dark, Cool, 4°C	14 days	NA	≥ 100 mL	Glass wit PTFE[1] Lined Cap
1613	Sodium Thiosulfate,Cool, 0 - 4°C, Dark	1 year	40 days recommended	1 L	Amber Glass with PTFE[1] Lined Cap

SECTION 6. NR 809.205 (1g) and (1r) are created to read:

NR 809.205 (1g) SCHEDULE FOR PERFLUOROOCTANE SULFONIC ACID AND PERFLUOROOCTANOIC ACID MONITORING.

(a) Community and non-transient non-community public water systems serving a population of 50,000 or more shall comply with initial monitoring requirements under sub. (1r) (a) for perfluorooctane sulfonic acid and perfluorooctanoic acid beginning on [the first day of the 4th month beginning after publication of this rule – LRB inserts date].

(b) Community and non-transient non-community public water systems serving a population of 10,000 to 49,999 shall comply with initial monitoring requirements under sub. (1r) (a) for perfluorooctane sulfonic acid and perfluorooctanoic acid beginning on [the first day of the 7th month beginning after publication of this rule – LRB inserts date].

(c) Community and non-transient non-community public water systems serving a population of less than 10,000 shall comply with initial monitoring requirements under sub. (1r) (a) for perfluorooctane sulfonic acid and perfluorooctanoic acid beginning on [the first day of the 10th month beginning after publication of this rule – LRB inserts date].

(1r) MONITORING FREQUENCY FOR PERFLUOROOCTANE SULFONIC ACID AND PERFLUOROOCTANOIC ACID. Water suppliers shall monitor to determine compliance with the maximum contaminant level for perfluorooctane sulfonic acid and perfluorooctanoic acid at the following frequencies:

(a) *Initial monitoring.* Water suppliers for new community public water systems or for community public water systems with new sources shall demonstrate compliance with the MCLs prior to initiating water service. Water suppliers for each community and non-transient, non-community water system shall take 4 consecutive quarterly samples for perfluorooctane sulfonic acid and perfluorooctanoic

acid beginning on the dates specified under sub. (1g) or beginning with the year the public water system initiates water service, or a new source is put into service, and every compliance period thereafter unless the requirements of pars. (b) and (c) are met.

(b) *Initial waiver evaluation.* For perfluorooctane sulfonic acid and perfluorooctanoic acid the department may waive the final 2 quarters of initial monitoring for a sampling point if the results of the samples from the previous 2 quarters are below the detection limit.

(c) *Routine monitoring*. Sampling may be reduced to routine monitoring after the initial monitoring period as follows:

1. 'Public water systems serving greater than 3,300.' Public water systems serving more than 3,300 persons that do not detect a contaminant in the initial compliance period or during 3 consecutive years of annual monitoring may reduce the sampling frequency to a minimum of 2 quarterly samples in one year during each repeat compliance period.

2. 'Public water systems serving 3,300 or less.' Public water systems serving 3,300 persons or less that do not detect a contaminant in the initial compliance period or during 3 consecutive years of annual monitoring may reduce the sampling frequency to a minimum of one sample during each repeat compliance period.

(d) *Waiver request.* Water suppliers for community and non-transient non-community systems may apply to the department for a waiver from the requirements under pars. (a) and (c) for perfluorooctane sulfonic acid and perfluorooctanoic acid. A water supplier shall reapply for a waiver for each compliance period. The waiver period shall not exceed 2 compliance periods.

(e) *Waiver evaluation.* The department may grant a waiver from the requirements under par. (c) after evaluating all of the following factors:

1. 'Waiver evaluation when the department determines a contaminant has not been used.' The department may grant a waiver when the department determines a contaminant has not been used based on a system's previous use information, including transport, storage, or disposal of the contaminant within the watershed or zone of influence of the public water system, or the results of analysis of a system's water source.

2. 'Waiver evaluation when a contaminant has been used or its use is unknown.' If previous use of the contaminant is unknown or it has been used previously, all of the following factors shall be used to determine whether a waiver is granted:

a. Previous analytical results.

b. The proximity of the public water system to a potential point source of contamination. Point sources include spills and leaks of chemicals at or near a water treatment facility or at manufacturing, distribution, or storage facilities, or from hazardous and municipal waste landfills and other waste handling or treatment facilities; or at airports, military bases, and fire training facilities.

(f) *Waiver conditions and monitoring assessments*. As a condition of the waiver under par. (e), the water supplier for a groundwater system shall update the monitoring assessment considering the factors listed under par. (e). Based on this updated monitoring assessment, the department shall reconfirm that the public water system is non-vulnerable. If the department does not make this reconfirmation within 3 years of the initial determination or each subsequent determination, then the waiver is invalidated, and the public water system is required to sample during each compliance period as specified under par. (c).

SECTION 7. NR 809.205 (2) (intro.), (a) and (b) (intro.), 1. and 2. are amended to read:

NR 809.205 (2) MONITORING FREQUENCY FOR SYNTHETIC ORGANIC CONTAMINANTS OTHER THAN PERFLUOROOCTANE SULFONIC ACID AND PERFLUOROOCTANOIC ACID. Water suppliers shall monitor to determine compliance with the maximum contaminant level for synthetic organic contaminants ~~specified in~~ other than perfluorooctane sulfonic acid and perfluorooctanoic acid listed under s. NR 809.20 at the following frequencies:

(a) *Initial monitoring.* Water suppliers for new community public water systems or for community public water systems with new sources shall demonstrate compliance with the MCLs listed under s. NR 809.20 for synthetic organic contaminants other than perfluorooctane sulfonic acid and perfluorooctanoic acid prior to initiating water service. Water suppliers for each community and non-transient, non-community water system shall take 4 consecutive quarterly samples for each contaminant listed ~~in~~under s. NR 809.20, other than perfluorooctane sulfonic acid and perfluorooctanoic acid, beginning with the year the public water system initiates water service, or a new source is put into service, and every compliance period after that unless they meet the requirements ~~of~~under par. (b).

(b) *Routine monitoring*. ~~Sampling~~Initial quarterly sampling under sub. (2) (a) may be reduced to routine monitoring after the initial monitoring period as follows:

1. ‘Public water systems serving greater than 3,330.’ Public water systems serving more than 3,300 persons ~~which~~that do not detect a contaminant in the initial compliance period or during 3 consecutive years of annual monitoring may reduce the sampling frequency to a minimum of 2 quarterly samples in one year during each repeat compliance period.

2. ‘Public water systems serving 3,300 or less.’ Public water systems serving 3,300 persons or less that do not detect a contaminant in the initial compliance period or during 3 consecutive years of annual monitoring may reduce the sampling frequency to a minimum of one sample during each repeat compliance period.

SECTION 8. NR 809.205 (3) (4) and (5) are renumbered NR 809.205 (2) (c), (d) and (e) and NR 809.205 (2) (c), (d) (intro.), (d) 1. (intro.), (d) 1. a. and (e), as renumbered, are amended to read:

NR 809.205 (2) (c) *Waiver Request.* Water suppliers for community and non-transient non-community systems or groundwater systems with new sources may apply to the department for a waiver from the requirements of ~~sub. (2)~~ pars. (a) and (b) for the synthetic organic contaminants other than perfluorooctane sulfonic acid and perfluorooctanoic acid listed under s. NR 809.20. A water supplier shall reapply for a waiver for each compliance period.

(d) *Waiver Evaluation*. The department may grant a waiver from the requirements of ~~sub. (2)~~this subsection after evaluating all of the following factors ~~listed in this subsection~~:

1. ‘Waiver evaluation when the department determines a contaminant has not been used.’ The department may grant a waiver as described in subds. 1. to 3. of this paragraph under the following circumstances when the department determines a contaminant has not been used based on a system’s previous use information, including transport, storage, or disposal of the contaminant within the watershed or zone of influence of the public water system, or the results of analysis of a system’s water source:

a. When a groundwater system can demonstrate that a synthetic organic contaminant has not been used, the department may grant waivers for the contaminant based on results of the analysis of a minimum of one sample at the water source, except as noted ~~in~~under subd. ~~2 of this paragraph~~1. b.

(e) *Waiver conditions and monitoring assessments*. As a condition of the waiver under ~~sub. (4)~~par. (d), the water supplier for a groundwater system shall update the monitoring assessment considering the factors listed ~~in sub. (4)~~under par. (d). Based on this monitoring assessment, the department shall reconfirm that the public water system is non-vulnerable. If the department does not make this reconfirmation within 3 years of the initial determination or each subsequent determination, then the waiver is invalidated and the public water system is required to sample during each compliance period as specified ~~in sub. (2) (b)~~ under par. (b).

SECTION 9. NR 809.205 (6) (c) is amended to read:

NR 809.205 (6) (c) Water suppliers for public water systems ~~which~~that have 3 consecutive annual samples with no detection of a contaminant may apply to the department for reduced routine monitoring ~~under sub. (2) (a) or (b)~~ as specified under sub. (2) (b) or a waiver as specified ~~in sub. (3)~~ under sub. (2) (c) and (d).

SECTION 10. NR 809 Appendix A to Subchapter V is amended to read:

NR 809 Appendix A to Subchapter V

Appendix A to Subchapter V
Consumer Confidence Report Information

Contaminant (units)	**Traditional MCL in mg/L**	**To convert for CCR; multiply by**	**MCL in CCR units**	**MCLG**	**Major sources in drinking water**	**Health effects language**
Microbiological contaminants:						
Total Coliform Bacteria	TT	N/A	TT	NA	Naturally present in the environment.	Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful, waterborne pathogens may be present or that a potential pathway exists through which contamination may enter the drinking water distribution system. We found coliforms indicating the need to look for potential problems in water treatment or distribution. When this occurs, we are required to conduct assessment(s) to identify problems and to correct any problems that were found during these assessments.

E. coli	Routine and repeat samples are total coliform-positive and either is *E. coli*-positive or system fails to take repeat samples following *E. coli*-positive routine sample or system fails to analyze total coliform-positive repeat sample for *E. coli.*		Routine and repeat samples are total coliform-positive and either is *E. coli*-positive or system fails to take repeat samples following *E. coli*-positive routine sample or system fails to analyze total coliform-positive repeat sample for *E. coli*.	0	Human and animal fecal waste.	*E. coli* are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Human pathogens in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a special health risk for infants, young children, some of the elderly, and people with severely compromised immune systems.
Total organic carbon (ppm)	TT	N/A	TT	N/A	Naturally present in the environment.	Total organic carbon has no health effects. However, total organic carbon provides a medium for the formation of disinfection byproducts. Their byproducts include trihalomethanes and haloacetic acids. Drinking water containing these byproducts in excess of the MCL may lead to adverse health effects, liver or kidney problems, or nervous system effects, and may lead to an increased risk of getting cancer.
Turbidity (NTU)	TT	N/A	TT	N/A	Soil runoff.	Turbidity has no health effects. However, turbidity can interfere with disinfection and provide a medium for microbial growth. Turbidity may indicate the presence of disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea and associated headaches.
Fecal Indicators: enterococci or coliphage	TT		TT	N/A	Human and animal fecal waste	Fecal indicators are microbes whose presence indicates that the water may be contaminated with human or animal wastes. Microbes in these wastes can cause short-term health effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a special health risk for infants, young children, some of the elderly, and people with severely compromised immune systems

Radioactive contaminants:						
Beta/photon emitters (mrem/yr)	4 mrem/yr	N/A	4	N/A	Decay of natural and man-made deposits.	Certain minerals are radioactive and may emit forms of radiation known as photons and beta radiation. Some people who drink water containing beta and photon emitters in excess of the MCL over many years may have an increased risk of getting cancer.
Alpha emitters (pCi/l)	15 pCi/l	N/A	15	N/A	Erosion of natural deposits.	Certain minerals are radioactive and may emit a form of radiation known as alpha radiation. Some people who drink water containing alpha emitters in excess of the MCL over many years may have an increased risk of getting cancer.
Combined radium (pCi/l)	5 pCi/l	N/A	5	N/A	Erosion of natural deposits.	Some people who drink water containing radium 226 or 228 in excess of the MCL over many years may have an increased risk of getting cancer.
Uranium (ug/1)	30 ug/1	N/A	30	0	Erosion of natural deposits.	Some people who drink water containing uranium in excess of the MCL over many years may have an increased risk of getting cancer or kidney toxicity.
Inorganic contaminants:						
Antimony (ppb)	.006	1000	6	6	Discharge from petroleum refineries, fire retardants, ceramics, electronics, solder.	Some people who drink water containing antimony well in excess of the MCL over many years could experience increases in blood cholesterol and decreases in blood sugar.
Arsenic (ppb)	0.010[1]	1000	10[1]	0[1]	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes.	Some people who drink water containing arsenic in excess of the MCL over many years could experience skin damage or problems with their circulatory system, and may have an increased risk of getting cancer.
Asbestos (MFL)	7 MFL	N/A	7	7	Decay of asbestos cement water; Erosion of natural deposits.	Some people who drink water containing asbestos in excess of the MCL over many years may have an increased risk of developing benign intestinal polyps.

Barium (ppm)	2	N/A	2	2	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits.	Some people who drink water containing barium in excess of the MCL over many years could experience an increase in their blood pressure.
Beryllium (ppb)	.004	1000	4	4	Discharge from metal refineries and coal-burning factories; Discharge from electrical, aerospace, and defense industries.	Some people who drink water containing beryllium well in excess of the MCL over many years could develop intestinal lesions.
Bromate (ppb)	.010	1000	10	0	By-product of drinking water disinfection.	Some people who drink water containing bromate in excess of the MCL over many years may have an increased risk of getting cancer.
Cadmium (ppb)	.005	1000	5	5	Corrosion of galvanized pipes; Erosion of natural deposits; Discharge from metal refineries; Runoff from waste batteries and paints.	Some people who drink water containing cadmium in excess of the MCL over many years could experience kidney damage.
Chloramines (ppm)	MRDL = 4	N/A	MRDL = 4	MRDLG = 4	Water additive used to control microbes.	Some people who use water containing chloramines well in excess of the MRDL could experience irritating effects to their eyes and nose. Some people who drink water containing chloramines well in excess of the MRDL could experience stomach discomfort or anemia.
Chlorine (ppm)	MRDL = 4	N/A	MRDL = 4	MRDLG = 4	Water additive used to control microbes.	Some people who use water containing chlorine well in excess of the MRDL could experience irritating effects to their eyes and nose. Some people who drink water containing chlorine well in excess of the MRDL could experience stomach discomfort or anemia.

Chlorine dioxide (ppb)	MRDL = .8	1000	MRDL = 800	MRDLG = 800	Water additive used to control microbes.	Some infants and young children who drink water containing chlorine dioxide in excess of the MRDL could experience nervous system effects. Similar effects may occur in fetuses of pregnant women who drink water containing chlorine dioxide in excess of the MRDL. Some people may experience anemia.
Chlorite (ppm)	1	N/A	1	0.8	By-product of drinking water disinfection.	Some infants and young children who drink water containing chlorite in excess of the MCL could experience nervous system effects. Similar effects may occur in fetuses of pregnant women who drink water containing chlorite in excess of the MCL. Some people may experience anemia.
Chromium (ppb)	.1	1000	100	100	Discharge from steel and pulp mills; Erosion of natural deposits.	Some people who drink water containing chromium well in excess of the MCL over many years could experience allergic dermatitis.
Copper (ppm)	AL = 1.3	N/A	AL = 1.3	1.3	Corrosion of household plumbing systems; Erosion of natural deposits.	Copper is an essential nutrient, but some people who drink water containing copper in excess of the action level over a relatively short amount of time could experience gastrointestinal distress. Some people who drink water containing copper in excess of the action level over many years could suffer liver or kidney damage. People with Wilson's Disease should consult their personal doctor.
Cyanide (ppb)	.2	1000	200	200	Discharge from steel/metal factories; Discharge from plastic and fertilizer factories.	Some people who drink water containing cyanide well in excess of the MCL over many years could experience nerve damage or problems with their thyroid.

Fluoride (ppm)	4	N/A	4	4	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories.	Some people who drink water containing fluoride in excess of the MCL over many years could get bone disease, including pain and tenderness of bones. Fluoride in drinking water at half the MCL or more may cause mottling of children's teeth, usually in children less than 9 years old. Mottling, also known as dental fluorosis, may include brown staining and/or pitting of the teeth, and occurs only in developing teeth before they erupt from the gums.
Lead (ppb)	AL = .015	1000	AL = 15	0	Corrosion of household plumbing system; Erosion of natural deposits.	Infants and children who drink water containing lead in excess of the action level could experience delays in their physical or mental development. Children could show slight deficits in attentions span and learning abilities. Adults who drink this water over many years could develop kidney problems or high blood pressure.
Mercury [inorganic] (ppb)	.002	1000	2	2	Erosion of natural deposits; Discharge from refineries and factories; Runoff from landfills; Runoff from cropland.	Some people who drink water containing inorganic mercury well in excess of the MCL over many years could experience kidney damage.
Nitrate (ppm)	10	N/A	10	10	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.	Infants below the age of 6 months who drink water containing nitrate in excess of the MCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue baby syndrome. Females who are or may become pregnant should not consume water with nitrate concentrations that exceed the MCL. There is some evidence of an association between exposure to high nitrate levels in drinking water during the first weeks of pregnancy and certain birth defects.

Nitrite (ppm)	1	N/A	1	1	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.	Infants below the age of 6 months who drink water containing nitrite in excess of the MCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue baby syndrome.
Selenium (ppb)	.05	1000	50	50	Discharge from petroleum and metal refineries; Erosion of natural deposits; Discharge from mines.	Selenium is an essential nutrient. However, some people who drink water containing selenium in excess of the MCL over many years could experience hair or fingernail loss, numbness in fingers or toes, or problems with their circulation.
Thallium (ppb)	.002	1000	2	0.5	Leaching from ore-processing sites; Discharge from electronic, glass, and drug factories.	Some people who drink water containing thallium in excess of the MCL over many years could experience hair loss, changes in their blood, or problems with their kidneys, intestines, or liver.
Synthetic organic contaminants including pesticides and herbicides:						
2,4-D (ppb)	.07	1000	70	70	Runoff from herbicide used on row crops.	Some people who drink water containing the weed killer 2,4-D well in excess of the MCL over many years could experience problems with their kidneys, liver, or adrenal glands.
2,4,5-TP [Silvex] (ppb)	.05	1000	50	50	Residue of banned herbicide.	Some people who drink water containing silvex in excess of the MCL over many years could experience liver problems.
Acrylamide	TT	N/A	TT	0	Added to water during sewage/waste water treatment.	Some people who drink water containing high levels of acrylamide over a long period of time could have problems with their nervous system or blood, and may have an increased risk of getting cancer.
Alachlor (ppb)	.002	1000	2	0	Runoff from herbicide used on row crops.	Some people who drink water containing alachlor in excess of the MCL over many years could have problems with their eyes, liver, kidneys, or spleen, or experience anemia, and may have an increased risk of getting cancer.

Atrazine (ppb)	.003	1000	3	3	Runoff from herbicide used on row crops.	Some people who drink water containing atrazine well in excess of the MCL over many years could experience problems with their cardiovascular system or reproductive difficulties.
Benzo(a)-pyrene [PAH] (nanograms/l)	.0002	1,000,000	200	0	Leaching from lining of water storage tanks and distribution lines.	Some people who drink water containing benzo(a)pyrene in excess of the MCL over many years may experience reproductive difficulties and may have an increased risk of getting cancer.
Carbofuran (ppb)	.04	1000	40	40	Leaching of soil fumigant used on rice and alfalfa.	Some people who drink water containing carbofuran in excess of the MCL over many years could experience problems with their blood, or nervous or reproductive systems.
Chlordane (ppb)	.002	1000	2	0	Residue of banned termiticide.	Some people who drink water containing chlordane in excess of the MCL over many years could experience problems with their liver or nervous system, and may have an increased risk of getting cancer.
Dalapon (ppb)	.2	1000	200	200	Runoff from herbicide used on rights of way.	Some people who drink water containing dalapon well in excess of the MCL over many years could experience minor kidney changes.
Di(2-ethylhexyl) adipate (ppb)	.4	1000	400	400	Discharge from chemical factories.	Some people who drink water containing di (2-ethylhexyl) adipate well in excess of the MCL over many years could experience toxic effects such as weight loss, liver enlargement or possible reproductive difficulties.
Di(2-ethylhexyl) phthalate (ppb)	.006	1000	6	0	Discharge from rubber and chemical factories.	Some people who drink water containing di (2-ethylhexyl) phthalate well in excess of the MCL over many years may have problems with their liver, or experience reproductive difficulties, and may have an increased risk of getting cancer.
Dibromo-chloropropane (ppt)	.0002	1,000,000	200	0	Runoff/leaching from soil fumigant used on soybeans, cotton, pineapples, and orchards.	Some people who drink water containing DBCP in excess of the MCL over many years could experience reproductive problems and may have an increased risk of getting cancer.

Dinoseb (ppb)	.007	1000	7	7	Runoff from herbicide used on soybeans and vegetables.	Some people who drink water containing dinoseb well in excess of the MCL over many years could experience reproductive difficulties.
Diquat (ppb)	.02	1000	20	20	Runoff from herbicide use.	Some people who drink water containing diquat in excess of the MCL over many years could get cataracts.
Dioxin [2,3,7,8-TCDD] (ppq)	.00000003	1,000,000,000	30	0	Emissions from waste incineration and other combustion; Discharge from chemical factories.	Some people who drink water containing dioxin in excess of the MCL over many years could experience reproductive difficulties and may have an increased risk of getting cancer.
Endothall (ppb)	.1	1000	100	100	Runoff from herbicide use.	Some people who drink water containing endothall in excess of the MCL over many years could experience problems with their stomach or intestines.
Endrin (ppb)	.002	1000	2	2	Residue of banned insecticide.	Some people who drink water containing endrin in excess of the MCL over many years could experience liver problems.
Epichloro-hydrin	TT	N/A	TT	0	Discharge from industrial chemical factories; An impurity of some water treatment chemicals.	Some people who drink water containing high levels of epichlorohydrin over a long period of time could experience stomach problems, and may have an increased risk of getting cancer.
Ethylene dibromide (ppt)	.00005	1,000,000	50	0	Discharge from petroleum refineries.	Some people who drink water containing ethylene dibromide in excess of the MCL over many years could experience problems with their liver, stomach, reproductive systems, or kidneys, and may have an increased risk of getting cancer.
Glyphosate (ppb)	.7	1000	700	700	Runoff from herbicide use.	Some people who drink water containing glyphosate in excess of the MCL over many years could experience problems with their kidneys or reproductive difficulties.
Heptachlor (ppt)	.0004	1,000,000	400	0	Residue of banned pesticide.	Some people who drink water containing heptachlor in excess of the MCL over many years could experience liver damage and may have an increased risk of getting cancer.

Heptachlor-epoxide (ppt)	.0002	1,000,000	200	0	Breakdown of heptachlor.	Some people who drink water containing heptachlor epoxide in excess of the MCL over many years could experience liver damage, and may have an increased risk of getting cancer.
Hexachlorobenzene (ppb)	.001	1000	1	0	Discharge from metal refineries and agricultural chemical factories.	Some people who drink water containing hexachlorobenzene in excess of the MCL over many years could experience problems with their liver or kidneys, or adverse reproductive effects, and may have an increased risk of getting cancer.
Hexachlorocyclopentadiene (ppb)	.05	1000	50	50	Discharge from chemical factories.	Some people who drink water containing hexachlorocyclopentadiene well in excess of the MCL over many years could experience problems with their kidneys or stomach.
Lindane (ppt)	.0002	1,000,000	200	200	Runoff/leaching from insecticide used on cattle, lumber and gardens.	Some people who drink water containing lindane in excess of the MCL over many years could experience problems with their kidneys or liver.
Methoxychlor (ppb)	.04	1000	40	40	Runoff/leaching from insecticide used on fruits, vegetables, alfalfa and livestock.	Some people who drink water containing methoxychlor in excess of the MCL over many years could experience reproductive difficulties.
Oxamyl [Vydate] (ppb)	.2	1000	200	200	Runoff/leaching from insecticide used on apples, potatoes and tomatoes.	Some people who drink water containing oxamyl in excess of the MCL over many years could experience slight nervous system effects.
PCBs [Polychlorinated biphenyls] (ppt)	.0005	1,000,000	500	0	Runoff from landfills; Discharge of waste chemicals.	Some people who drink water containing PCBs in excess of the MCL over many years could experience changes in their skin, problems with their thymus gland, immune deficiencies, or reproductive or nervous system difficulties, and may have an increased risk of getting cancer.

PFOS and PFOA (ppt)	.000020	1,000,000	20	0	Discharges at manufacturing, distribution, or storage facilities, or from hazardous and municipal waste landfills and other waste handling or treatment facilities; or at airports, military bases and fire training facilities.	Some people who drink water containing PFOS and PFOA in excess of the MCL over many years could experience health issues including fetal development, thyroid and liver effects, and increase risk of certain cancers.
Pentachlorophenol (ppb)	.001	1000	1	0	Discharge from wood preserving factories.	Some people who drink water containing pentachlorophenol in excess of the MCL over many years could experience problems with their liver or kidneys, and may have an increased risk of getting cancer.
Picloram (ppb)	.5	1000	500	500	Herbicide runoff.	Some people who drink water containing picloram in excess of the MCL over many years could experience problems with their liver.
Simazine (ppb)	.004	1000	4	4	Herbicide runoff.	Some people who drink water containing simazine in excess of the MCL over many years could experience problems with their blood.
Toxaphene (ppb)	.003	1000	3	0	Runoff/leaching from insecticide used on cotton and cattle.	Some people who drink water containing toxaphene in excess of the MCL over many years could have problems with their kidneys, liver, or thyroid, and may have an increased risk of getting cancer.
Volatile organic contaminants:						
Benzene (ppb)	.005	1000	5	0	Discharge from factories; Leaching from gas storage tanks and landfills.	Some people who drink water containing benzene in excess of the MCL over many years could experience anemia or a decrease in blood platelets, and may have an increased risk of getting cancer.

Carbon tetrachloride (ppb)	.005	1000	5	0	Discharge from chemical plants and other industrial activities.	Some people who drink water containing carbon tetrachloride in excess of the MCL over many years could experience problems with their liver and may have an increased risk of getting cancer.
Chlorobenzene (ppb)	.1	1000	100	100	Discharge from chemical and agricultural chemical factories.	Some people who drink water containing chlorobenzene in excess of the MCL over many years could experience problems with their liver or kidneys.
0-Dichlorobenzene (ppb)	.6	1000	600	600	Discharge from industrial chemical factories.	Some people who drink water containing o-dichlorobenzene well in excess of the MCL over many years could experience problems with their liver, kidneys, or circulatory systems.
p-Dichlorobenzene (ppb)	.075	1000	75	75	Discharge from industrial chemical factories.	Some people who drink water containing p-dichlorobenzene in excess of the MCL over many years could experience anemia, damage to their liver, kidneys, or spleen, or changes in their blood.
1,2-Dichlorobenzene (ppb)	.005	1000	5	0	Discharge from industrial chemical factories.	Some people who drink water containing 1,2-dichlorobenzene in excess of the MCL over many years may have an increased risk of getting cancer.
1,1,-Dichlorobenzene (ppb)	.007	1000	7	7	Discharge from industrial chemical factories.	Some people who drink water containing 1,1-dichlorobenzene in excess of the MCL over many years could experience problems with their liver.
cis-1,2-Dichloroethylene (ppb)	.07	1000	70	70	Discharge from industrial chemical factories.	Some people who drink water containing cis-1,2-dichloroethylene in excess of the MCL over many years could experience problems with their liver.
trans-1,2-Dichloroethylene (ppb)	.1	1000	100	100	Discharge from industrial chemical factories.	Some people who drink water containing trans-1,2-dichloroethylene well in excess of the MCL over many years could experience problems with their liver.
Dichloro-methane (ppb)	.005	1000	5	0	Discharge from pharmaceutical and chemical factories.	Some people who drink water containing dichloromethane in excess of the MCL over many years could have liver problems and may have an increased risk of getting cancer.

1,2-Dichloropropane (ppb)	.005	1000	5	0	Discharge from industrial chemical factories.	Some people who drink water containing 1,2-dichloropropane in excess of the MCL over many years may have an increased risk of getting cancer.
Ethylbenzene (ppb)	.7	1000	700	700	Discharge from petroleum refineries.	Some people who drink water containing ethylbenzene well in excess of the MCL over many years could experience problems with their liver or kidneys.
Haloacetic Acids (pbb)	.060	1000	60	N/A	By-product of drinking water disinfection.	Some people who drink water containing haloacetic acids in excess of the MCL over many years may have an increased risk of getting cancer.
Styrene (ppb)	.1	1000	100	100	Discharge from rubber and plastic factories; Leaching from landfills.	Some people who drink water containing styrene well in excess of the MCL over many years could have problems with their liver, kidneys, or circulatory system.
Tetrachloroethylene (ppb)	.005	1000	5	0	Discharge from factories and dry cleaners.	Some people who drink water containing tetrachloroethylene in excess of the MCL over many years could have problems with their liver, and may have an increased risk of getting cancer.
1,2,4-Trichlorobenzene (ppb)	.07	1000	70	70	Discharge from textile-finishing factories.	Some people who drink water containing 1,2,4-trichlorobenzene well in excess of the MCL over many years could experience changes in their adrenal glands.
1,1,1-Trichloroethane (ppb)	.2	1000	200	200	Discharge from metal degreasing sites and other factories.	Some people who drink water containing 1,1,1-trichloroethane in excess of the MCL over many years could experience problems with their liver, nervous system, or circulatory system.
1,1,2-Trichloroethane (ppb)	.005	1000	5	3	Discharge from industrial chemical factories.	Some people who drink water containing 1,1,2-trichloroethane well in excess of the MCL over many years could have problems with their liver, kidneys, or immune systems.
Trichloroethylene (ppb)	.005	1000	5	0	Discharge from metal degreasing sites and other factories.	Some people who drink water containing trichoroethylene in excess of the MCL over many years could experience problems with their liver and may have an increased risk of getting cancer.

TTHMs [Total trihalomethanes] (ppb)	0.10/0.80	1000	100/80	N/A	By-product of drinking water disinfection.	Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous systems, and may have an increased risk of getting cancer.
Toluene (ppm)	1	N/A	1	1	Discharge from petroleum factories.	Some people who drink water containing toluene well in excess of the MCL over many years could have problems with their nervous system, kidneys, or liver.
Vinyl Chloride (ppb)	.0002	1000	.2	0	Leaching from PVC piping; Discharge from plastics factories.	Some people who drink water containing vinyl chloride in excess of the MCL over many years may have an increased risk of getting cancer.
Xylenes (ppm)	10	N/A	10	10	Discharge from petroleum factories; Discharge from chemical factories.	Some people who drink water containing xylenes in excess of the MCL over many years could experience damages to their nervous system.

SECTION 11. NR 809 Appendix A to Subchapter VII is amended to read:

NR 809 Appendix A to Subchapter VII

Appendix A to Subchapter VII
NPDWR Violations and Other Situations Requiring Public Notice[1]

Contaminant	MCL/MRDL/TT violations[2]		Monitoring & testing procedure violations	
	Tier of public notice required	Citation (Wis. Adm. Code)	Tier of public notice required	Citation (Wis. Adm. Code)
I. Violations of National Primary Drinking Water Regulations:[3]				
A. Microbiological Contaminants				
1. Total coliform: Monitoring or TT violations resulting from failure to perform assessments or corrective actions	2	NR 809.314	3	NR 809.31 (9)
1m. Total coliform: Seasonal system failure to follow department-approved start-up plan prior to serving water to the public	2	NR 809.314 (2)	3	Xx
2. *E. Coli* MCL	1	NR 809.30	1[4], 3	NR 809.31 (9)
2m. *E. coli*: TT violations resulting from failure to perform Level 2 assessments or corrective action	1	NR 809.30	3	Xx
3. Turbidity MCL	2	NR 810.29 (1)	3	NR 810.38 (1) b) NR 810.38 (2) (a),

				NR 810.38 (2) (b) NR 810.29
4. Turbidity MCL (average 2 days' samples >5 NTU)	2[5], 1	NR 810.29 (1)	3	NR 810.38 (1) (b) NR 810.38 (2) (a), NR 810.38 (2) (b), NR 810.29
5. Turbidity (for TT violations resulting from a single exceedance of maximum allowable turbidity level)	2[6], 1	NR 810.29 (1), NR 810.29 (2), NR 810.29 (3), NR 810.29 (4), NR 810.30 (1), NR 810.30 (4) (a), NR 810.30 (4) (b)	3	NR 810.38 (1) (b) NR 810.38 (2) (a), NR 810.38 (2) (b), NR 810.29
6. Surface Water Treatment Rule violations, other than violations resulting from single exceedance of max. allowable turbidity level (TT)	2	NR 810.27 – 810.33	3	NR 810.38
7. Interim Enhanced Surface Water Treatment Rule violations, other than violations resulting from single exceedance of max. turbidity level (TT)	2	NR 810 subch. 2	3	NR 810.29, NR 810.38
8. Filter Backwash Rule (FBWR)	2	NR 809.333 (3) NR 811.860 NR 811.862	3	NR 810.29
9. Long Term 2 Enhanced Surface Water Treatment Rule violations	2	NR 810.34 - 810.45	2[15],3	NR 809.331- NR 809.335 NR 810.32 (1) and (2)
10. Source water sample positive for Groundwater Rule (GWR) fecal indicators: *E. coli*, enterococci, or coliphage	1	NR 809.325(6)	3	NR 809.325 (5) NR 809.327 (6)
B. Inorganic Chemicals (IOCs)				
1. Antimony	2	NR 809.11 (2)	3	NR 809.115 (1) to (3) and (6) (a) and (c)
2. Arsenic	2	NR 809.11 (2)	3	NR 809.115 (1) to (3) and (6) (a) and (c)
3. Asbestos (fibers >10 μm)	2	NR 809.11 (2)	3	NR 809.115(1) to (3) and (6)(a)and (c)
4. Barium	2	NR 809.11 (2)	3	NR 809.115 (1) to (3) and (6) (a) and (c)
5. Beryllium	2	NR 809.11 (2)	3	NR 809.115 (1) to (3) and (6) (a) and (c)
6. Cadmium	2	NR 809.11 (2)	3	NR 809.115 (1) to (3) and (6) (a) and (c)
7. Chromium (total)	2	NR 809.11 (2)	3	NR 809.115 (1) to (3) and (6) (a) and (c)
8. Cyanide	2	NR 809.11 (2)	3	NR 809.115 (1) to (3) and (6) (a) and (c)
9. Fluoride	2	NR 809.11 (2)	3	NR 809.115 (1) to (3) and (6) (a) and (c)
10. Mercury (inorganic)	2	NR 809.11 (2)	3	NR 809.115 (1) to (3) and (6) (a) and (c)

11. Nitrate	1	NR 809.11 (2)	1[8], 3	NR 809.115 (4), (5) and (6) (b)
12. Nitrite	1	NR 809.11 (2)	1[8], 3	NR 809.115 (4), (5) and (6) (b)
13. Total Nitrate and Nitrite	1	NR 809.11 (2)	3	NR 809.115 (4) and (5)
14. Selenium	2	NR 809.11 (2)	3	NR 809.115 (1) to (3) and (6) (a) and (c)
15. Thallium	2	NR 809.11 (2)	3	NR 809.115 (1) to (3) and (6) (a) and (c)
C. Lead and Copper Rule (Action Level for lead is 0.015 mg/L, copper is 1.3 mg/L)				
1. Lead and Copper Rule (TT)	2	NR 809.541 – NR 809.55	3	NR 809.541 – NR 809.55
D. Synthetic Organic Chemicals (SOCs)				
1. 2,4-D	2	NR 809.20 (1)	3	NR 809.205
2. 2,4,5-TP (Silvex)	2	NR 809.20 (1)	3	NR 809.205
3. Alachlor	2	NR 809.20 (1)	3	NR 809.205
4. Atrazine	2	NR 809.20 (1)	3	NR 809.205
5. Benzo(a)pyrene (PAHs)	2	NR 809.20 (1)	3	NR 809.205
6. Carbofuran	2	NR 809.20 (1)	3	NR 809.205
7. Chlordane	2	NR 809.20 (1)	3	NR 809.205
8. Dalapon	2	NR 809.20 (1)	3	NR 809.205
9. Di (2-ethylhexyl) adipate	2	NR 809.20 (1)	3	NR 809.205
10. Di (2-ethylhexyl) phthalate	2	NR 809.20 (1)	3	NR 809.205
11. Dibromochloropropane	2	NR 809.20 (1)	3	NR809.205
12. Dinoseb	2	NR 809.20 (1)	3	NR 809.205
13. Dioxin (2, 3, 7, 8-TCDD)	2	NR 809.20 (1)	3	NR809.205
14. Diquat	2	NR 809.20 (1)	3	NR 809.205
15. Endothall	2	NR 809.20 (1)	3	NR 809.205
16. Endrin	2	NR 809.20 (1)	3	NR 809.205
17. Ethylene dibromide	2	NR 809.20 (1)	3	NR 809.205
18. Glyphosate	2	NR 809.20 (1)	3	NR 809.205
19. Heptachlor	2	NR 809.20 (1)	3	NR 809.205
20. Heptachlor epoxide	2	NR 809.20 (1)	3	NR 809.205
21. Hexachlorobenzene	2	NR 809.20 (1)	3	NR 809.205
22. Hexachlorocyclo-pentadiene	2	NR 809.20 (1)	3	NR 809.205
23. Lindane	2	NR 809.20 (1)	3	NR 809.205
24. Methoxychlor	2	NR 809.20 (1)	3	NR 809.205
25. Oxamyl (Vydate)	2	NR 809.20 (1)	3	NR 809.205
26. Pentachlorophenol	2	NR 809.20 (1)	3	NR 809.205
~~27. Picloram~~	~~2~~	~~NR 809.20 (1)~~	~~3~~	~~NR 809.205~~
~~28. Polychlorinated biphenyls~~	~~2~~	~~NR 809.20 (1)~~	~~3~~	~~NR 809.205~~
~~29. Simazine~~	~~2~~	~~NR 809.20 (1)~~	~~3~~	~~NR 809.205~~
~~30. Toxaphene~~	~~2~~	~~NR 809.20 (1)~~	~~3~~	~~NR 809.205~~
27. Perfluorooctane sulfonic acid (PFOS)	2	NR 809.20 (1)	3	NR 809.205
28. Perfluorooctanoic acid (PFOA)	2	NR 809.20 (1)	3	NR 809.205
29. Picloram	2	NR 809.20 (1)	3	NR 809.205
30. Polychlorinated biphenyls	2	NR 809.20 (1)	3	NR 809.205
31. Simazine	2	NR 809.20 (1)	3	NR 809.205
32. Toxaphene	2	NR 809.20 (1)	3	NR 809.205
E. Volatile Organic Chemicals (VOCs)	2	NR 809.24 (1)	3	NR 809.245
1. Benzene	2	NR 809.24 (1)	3	NR 809.245
2. Carbon tetrachloride	2	NR 809.24 (1)	3	NR 809.245
3. Chlorobenzene (monochlorobenzene)	2	NR 809.24 (1)	3	NR 809.245

4. o-Dichlorobenzene	2	NR 809.24 (1)	3	NR 809.245
5. p-Dichlorobenzene	2	NR 809.24 (1)	3	NR 809.245
6. 1,2-Dichloroethane	2	NR 809.24 (1)	3	NR 809.245
7. 1,1-Dichloroethylene	2	NR 809.24 (1)	3	NR 809.245
8. cis-1,2-Dichloroethylene	2	NR 809.24 (1)	3	NR 809.245
9. trans-1,2-Dichloroethylene	2	NR 809.24 (1)	3	NR 809.245
10. Dichloromethane	2	NR 809.24 (1)	3	NR 809.245
11. 1,2-Dichloropropane	2	NR 809.24 (1)	3	NR 809.245
12. Ethylbenzene	2	NR 809.24 (1)	3	NR 809.245
13. Styrene	2	NR 809.24 (1)	3	NR 809.245
14. Tetrachloroethylene	2	NR 809.24 (1)	3	NR 809.245
15. Toluene	2	NR 809.24 (1)	3	NR 809.245
16. 1,2,4-Trichlorobenzene	2	NR 809.24 (1)	3	NR 809.245
17. 1,1,1-Trichloroethane	2	NR 809.24 (1)	3	NR 809.245
18. 1,1,2-Trichloroethane	2	NR 809.24 (1)	3	NR 809.245
19. Trichloroethylene	2	NR 809.24 (1)	3	NR 809.245
20. Vinyl chloride	2	NR 809.24 (1)	3	NR 809.245
21. Xylenes (total)	2	NR 809.24 (1)	3	NR 809.245
F. Radioactive Contaminants				
1. Beta/photon emitters	2	NR 809.51	3	NR 809.52 (1), NR 809.53 (2)
2. Alpha emitters	2	NR 809.50 (2)	3	NR 809.52 (1), NR 809.53 (1)
3. Combined radium (226 & 228)	2	NR 809.50 (1)	3	NR 809.52 (1), NR 809.53 (1)
G. Disinfection Byproducts (DBPs), Byproduct Precursors, Disinfectant Residuals. Where disinfection is used in the treatment of drinking water, disinfectants combine with organic and inorganic matter present in water to form chemicals called disinfection byproducts. EPA sets standards for controlling the levels of disinfectants and disinfection byproducts in drinking water, including trihalomethanes and haloacetic acids. [9]				
1. Total trihalomethanes	2	NR 809.561 (1)	3	NR 809.565(1)-(2)
2. Haloacetic Acids	2	NR 809.561 (1)	3	NR 809.565(1)-(2)
3. Bromate	2	NR 809.561 (2)	3	NR 809.565(1), (3)
4. Chlorite	2	NR 809.561 (2)	3	NR 809.565(1), (3)
5. Chlorine (MRDL)	2	NR 809.561 (2) NR 809.566 (3) (a)	2	NR 809.565(1), (4) NR 809.566(3)(a)
6. Chloramine (MRDL)	[2]	NR 809.561 (2) NR 809.566 (3) (a)	3	NR 809.565(1), (4) NR 809.566(3)(a)
7. Chlorine dioxide (MRDL), where any 2 consecutive daily samples at entrance to distribution system only are above MRDL	2	NR 809.566(1), (3) (b)	2, 3[11]	NR 809.565(1), (4)
8. Chlorine dioxide (MRDL), where samples in distribution system the next day are also above MRDL	1[10]	NR 809.566 (1), (3) (b)	1	NR 809.565(1), (4)
9. Control of disinfection byproducts precursors – TOC (TT)	2	NR 809.569	3	NR 809.565(1),(5)
10. Bench marking and disinfection profiling	N/A	N/A	3	NR 810.32
11. Development of monitoring plan	N/A	N/A	3	NR 809.565 (6)
H. Other Treatment Techniques				
1. Acrylamide (TT)	2	NR 809.25 (4)	N/A	N/A
2. Epichlorohydrin (TT)	2	NR 809.25 (4)	N/A	N/A
II. Unregulated Contaminant Monitoring:[12]				

A. Unregulated contaminants	N/A	N/A	3	NR 809.25; 40 CFR Part 141, Section 141.40
B. Nickel	N/A	N/A	3	NR 809.115 (3) Table A
III. Public Notification for Conditional Waivers and Variances				
A. Operation under a conditional waiver or variance	3	NR 809.90, NR 809.91	N/A	N/A
B. Violation of a conditional waiver or variance	2	NR 809 Subch. VI	N/A	N/A
Contaminant	**MCL/MRDL/TT violations[2]**		**Monitoring & testing procedure violations**	
	Tier of public notice required	**Citation (Wis. Adm. Code)**	**Tier of public notice required**	**Citation (Wis. Adm. Code)**
IV. Other Situations Requiring Public Notification:				
A. Fluoride secondary maximum contaminant level exceedance	3	NR 809.70	N/A	N/A
B. Exceedance of nitrate MCL for non-community systems, as allowed by the department	1	NR 809.11 (3)	N/A	N/A
C. Availability of unregulated contaminant monitoring data	3	NR 809.956	N/A	N/A
D. Waterborne disease outbreak	1	NR 809.04 (90) NR 809.80 (6) (e), NR 809.951 (1) (b) 7.	N/A	N/A
E. Other waterborne emergency[13]	1	NR 809.951 (1) (b) 8.	N/A	N/A
F. Other situations as determined by the department	1, 2, 3[14]	N/A	N/A	N/A
G. Groundwater Rule TT violations for failure to complete corrective actions according to a state approved schedule	2	NR 809.328(2)	N/A	N/A

SECTION 12. EFFECTIVE DATE. This rule takes effect on the first day of the month following publication in the Wisconsin Administrative Register as provided in s. 227.22 (2) (intro.), Stats.

SECTION 13. BOARD ADOPTION. This rule was approved and adopted by the State of Wisconsin Natural Resources Board on [DATE].

Dated at Madison, Wisconsin _____.

STATE OF WISCONSIN

DEPARTMENT OF NATURAL RESOURCES

BY _____

For Preston D. Cole, Secretary

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