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Written Comments – Scope Statements SS 089-19, SS 090-19 and SS 091-19

The preliminary public comment period for the following scope statements closed on November 19, 2019. Attached are written comments received during the comment period.

DG-24-19 – Statement of Scope SS 089-19 – Proposed revisions to ch. 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).

Contact person: Adam DeWeese; (608) 264-9229; Adam.DeWeese@wisconsin.gov

DG-15-19 – Statement of Scope SS 090-19 – Proposed revisions to ch. NR 140 to set numerical standards to minimize the concentration of polluting substances in groundwater.

Contact person: Bruce Rheineck; (608) 266-2104; BruceD.Rheineck@wisconsin.gov

WY-23-19 – Statement of Scope SS 091-19 – Proposed revisions to chapters NR 105, NR 106, and NR 219 and other related regulations to add surface water quality criteria and analytical methods for poly- and perfluoroalkyl substances (PFAS) including PFOS, PFOA, and any other PFAS for the purpose of protecting public health as well as revisions to the procedures in the Wisconsin Pollutant Discharge Elimination System ("WPDES") permitting program to implement the new water quality criteria.

Contact person: Meghan Williams; (608) 267-7654; meghanc3.williams@wisconsin.gov

Additional comments were received during the preliminary public hearing on November 12, 2019. A video recording of the hearing is available at: https://p.widencdn.net/bvu2w6/WQ-Public-Hearing---Tuesday-November-12-2019-1.00.16-PM

Wisconsin Conservation Voters

Protect Our Drinking Water
Testimony of Wisconsin Conservation Voters to Wisconsin DNR Board
In support of Setting Standards for PFAS & PFOS (Board Orders DG 24-19, WY 23-19, & DG-15-19)
November 12, 2019

Good afternoon. I am Jennifer Giegerich, Government Affairs Director for Wisconsin Conservation Voters. Wisconsin Conservation Voters is a nonprofit, nonpartisan organization dedicated to encouraging decision makers to champion conservation policies that effectively protect Wisconsin's public health and natural resources. Thank you for this opportunity to testify in support of the Statement of Scope for Board Orders DG-24-19, WY-23-19, and DG 15-19.

No matter where you live in Wisconsin – or who you are – water is one of the strongest bonds you share with your neighbors. Unfortunately, water in Wisconsin is suffering, and as it suffers so do our communities. Without clean drinking water, no community can thrive.

We appreciate that the Wisconsin Department of Natural Resources Board (WDNR) is currently soliciting input from the public about whether they should begin rule-making to set standards for PFAS and PFOS chemicals in our drinking water, surface waters, and groundwater.

Over the last several years that has been a growing awareness throughout our state that we need to address pollution from these 'forever chemicals'. These are a class of chemicals that build up in our environment and our bodies and do not breakdown. This makes them extremely difficult to remediate once we find them in our water. Truth is, we don't know how widespread the exposure to these dangerous chemicals might be.

The U.S. Center for Disease Control has advised doctors that PFAS have been linked to increased rates of testicular and kidney cancer. Exposure can also lead to liver lesions, kidney degeneration, and damage to liver function. In addition, a number of large epidemiological studies have related higher maternal exposure to these chemicals to lower birth weight.

There are no state or federal guidelines establishing what levels of these chemicals are acceptable in our drinking water. That is why it is necessary for the state to move forward with a rulemaking process that involves all stakeholders and brings science and data to inform the process.

Wisconsinites would like to see the DNR Board authorize a rule-making process to address water pollution from PFAS and PFOS. We will be submitting to you the names of citizens from around Wisconsin who are calling on you to support the original scoping statement for these rules. Citizens see this Board as the last line of defense for our drinking water and our lakes and rivers. They implore you to direct the Department of Natural Resources to approve the original scope of these rules and not let politics trump sound policy. Thank you for your time and service.

For more information, contact Jennifer Giegerich at Jennifer@conservationvoters.org or 608-208-1130.

Science · Conservancy · Cooperation

TO: Members, Wisconsin Natural Resources Board

FROM: Water Quality Coalition

DATE: November 12, 2019

RE: Scope Statements DG-15-19, DG-24-19, and WY-23-19

DNR has introduced three scope statements related to regulating PFAS in water: A groundwater standard (DG-15-19), a surface water standard (WY-23-19), and a drinking water standard (DG-24-19). Our coalition recognizes the importance of setting reasonable, science-based regulatory criteria for compounds that are shown to be harmful to human health. However, we cannot support these scope statements as proposed, and urge the board to either amend them or send them back to DNR for amendment.

PFAS are a group of more than 4,000 compounds. In order to be classified as PFAS, a compound need only have a carbon-fluorine bond. The strength of the carbon fluorine bond prevents compounds from breaking down as quickly, which is also what gives these substances the valuable properties for which they were created such as water and grease resistance. It is important to understand that not all PFAS compounds are health hazards. In fact, the FDA has approved many for use in food packaging based on scientific studies that support the benign nature of these chemicals.

Some scientific studies have shown that exposure to very high levels of two legacy compounds – PFOS and PFOA – can be *associated with* adverse health impacts. We are not here to debate the proper level of regulation – that will be discussed during the actual rulemaking. We do want to address the proposed scope statements, and explain why this rulemaking should be focused on those two compounds: PFOA and PFOS, rather than encompassing the more than 4,000 compounds in the broad PFAS category.

Chapter 227, which governs Wisconsin's rulemaking process, envisions use of a narrow scope statement, which sets clear and specific expectations for the Legislature and the public on what regulations will be developed, and identifies clear authority of the regulators to determine those standards. In this instance, by including the ability to regulate as many as 4,000 PFAS compounds, it is unclear which substances the final rule will regulate. This lack of clarity and specificity is contrary to both the letter and spirit of Wisconsin's administrative rulemaking requirements.

Groundwater Standards (DG-15-19):
With respect to the groundwater standard, DNR must first receive a recommended enforcement standard from the Department of Health Services (DHS) prior to promulgating rules to set a standard. Wisconsin Statutes Chapter 160 lays out an extensive process for the health experts to determine a

recommendation. Currently, DHS has recommended standards for only two PFAS substances, PFOA and PFOS, which were requested along with several non-PFAS substances in the Cycle 10 request from DNR to DHS. However, the scope statement fails to mention PFOA, PFOS, or any of the other Cycle 10 substances studied by DHS for establishment of a groundwater standard. It merely mentions nondescript changes to groundwater rules in Chapter NR 140. This lack of specificity and detail does not give the public or the Legislature adequate notice as to the standards and regulations envisioned by the Department, and is therefore legally deficient as currently drafted. The scope statement must be rejected, or sent back to DNR staff for inclusion of a list of the specific substances intended for regulation under NR 140.

We are also concerned that DNR has recently requested several more recommendations from DHS, including 36 additional PFAS compounds, as part of Cycle 11. As previously noted, we believe that this rulemaking and this scope statement must state with specificity the compounds the Department intends to regulate, and therefore should be explicitly limited to the Cycle 10 compounds for which DNR already has recommendations from DHS. Cycle 11 recommendations should be handled in a new and separate rulemaking, assuming that DHS has credible scientific findings that justify regulating PFAS compounds other than PFOS and PFOA.

Surface Water Standards (WY-23-19):
Similar to our concerns with respect to the groundwater scope statement, the surface water standard scope statement contemplates the agency making rules to set enforcement limits for PFOA, PFOS, and "***any other PFAS which the department determines may be harmful to human health***." This is troubling for two reasons. First, we do not believe it is appropriate for the DNR to establish health-based standards for PFAS substances that DHS has not studied from a human health standpoint. Second, this language in the scope statement gives the Department an open-ended wildcard to regulate literally thousands of new compounds in a single rulemaking. Again, scope statements are supposed to be specific enough to give the public and the Legislature meaningful advance notice of what and how a proposed rule will regulate. As drafted, the scope statement fails to provide such notice, and in fact raises more questions than it answers by reserving the right to regulate potentially thousands of new substances in a single rule. It is therefore imperative that this scope statement be rejected for its failure to meaningfully describe what will be regulated, or amended to include only the two compounds which have been evaluated by DHS: PFOA and PFOS.

Drinking Water Standard (DG-24-19):
The Drinking water scope statement is equally troubling, because it envisions DNR promulgating rules for a limitless list of PFAS compounds that could reach the thousands. The resulting standards would go far beyond impacting industry and municipal treatment facilities. They would apply to apartment buildings and mobile home parks, impacting low and lower middle-class citizens, as well as small businesses. The treatment and testing technology for these compounds is in the very early stages of development, and the cost of testing for and controlling any number of PFAS compounds will cripple small businesses, raise rents on the state's most vulnerable, and have a ripple effect through our municipalities.

As noted, our coalition does not object to reasonable, science-based regulation of PFOA and PFOS. However, we believe the only PFAS compounds that should be regulated right now are those two compounds. We also believe that a scope statement that fails to reference the regulation of other PFAS compounds lacks the requisite detail and specificity necessary to comply with Chapter 227

rulemaking requirements. The scope statement should therefore be rejected, or amended to limit the rule to establishing standards only for PFOS and PFOA.

Chapter 227:
In addition, we believe that rules promulgated according to these scope statements are vulnerable to legal challenge based on the administrative laws found in Wisconsin Statutes Chapter 227. Chapter 227 supports the concept of specific and detailed scope statements, and requires agencies to abandon a rulemaking and start over with a new scope statement if the regulatory approach changes in a material way. This policy decision by the Legislature is a clear rejection of the approach taken by the Department in these three scope statements, which utilize very broad and vague descriptions of what the agency proposes to do.

The statutes also envision one rule per scope statement. Presuming that these scope statements authorize only one rule each, the breadth of proposed regulation will lead to an unworkable rulemaking process. By leaving the door open to regulating literally thousands of PFAS substances for new surface water and drinking water standards, the scope statements could lead to rules that make it impossible for the general public and legislature to participate in a meaningful way.

For example, businesses, local governments and the general public would not be able to provide meaningful estimates of the cost of a rule that establishes hundreds or even thousands of new regulatory standards for surface water or drinking water. Although PFOA and PFOS have been studied at great length from a human health standpoint, other PFAS substances have not. Those impacted by resulting rules would have little ability to understand their impact, or comment on the cost or appropriateness of new standards for potentially thousands of new substances. Nor would it be practical for the Legislature to perform its important oversight of proposed agency rules if the Department sent lawmakers a rule that proposes hundreds or even thousands of new regulatory standards. For these reasons, the three scope statements should be narrowed to focus on the known concerns related to public health and the environment – PFOA and PFOS.

Natural Resources Board Authority & Duties
The Legislature has given the Natural Resources Board the authority to establish policy for the Department, not staff. It is important that far-reaching regulatory decisions be made by this Board. By proposing to establish water quality standards for hundreds or thousands of PFAS compounds *en* masse, Department staff are circumventing the deliberative process that the Natural Resources Board has historically used to establish environmental standards on a case-by-case basis. Many costly regulatory burdens attach when water quality standards are enacted, which is why it is so important that the Natural Resources Board weighs these policy decisions judiciously. Rather than being swamped by an enormous rule with hundreds or thousands of new standards to consider, reviewing PFAS standards on a case-by-case basis in individual rules will better enable the Natural Resources Board to perform its duties to review the science, cost, benefit and appropriateness of regulating any given substance.

Agency Authority
It is worth noting that each of the three scope statements cite s. 281.12 of the Wisconsin statutes as the authority to promulgate each of the three rules. This is incorrect. Section 281.12 is titled "General Department Powers and Duties," and essentially describes the role the Department plays with respect to regulating water, but is not itself a grant of authority to develop groundwater standards, drinking water standards, or surface water standards. In fact, 2011 Act 21 makes clear that these types of broad policy statements in the statutes to not confer rulemaking authority. Specifically, s. 227.11(2)(a)2. states

very explicitly that a statute "describing the agency's general powers or duties does not confer rule-making authority on the agency." Consequently, s. 281.12, titled "General Department Powers and Duties," does not and cannot be cited as a lawful basis for rulemaking authority. As a result, each of the three scope statements must be amended to remove s. 281.12 as a citation to legal authority for the rule.

Finally, we would like to go on record to note the conspicuous absence of a scope statement to regulate PFAS compounds as a "hazardous substance" under Chapter 292. DNR staff appears to already be regulating PFAS compounds as hazardous substances under the Spills Law, and appears to have established what it considers to be enforceable soil cleanup standards for PFAS substances in remediation cases. However, the Department has failed to promulgate any rules placing businesses or municipalities on notice that it interprets PFAS compounds to meet the definition of "hazardous substance" under Chapter 292, nor has it promulgated any soil cleanup standards placing the regulated community on notice as to their cleanup obligations in the event of a release. Yet the Department continues to regulate in the absence of promulgated rules and standards, which is unlawful.

The Legislature did not exempt the Department's remediation program from Chapter 227 rulemaking requirements. Just as the Department is required to promulgate air quality and water quality standards as rules, so too must the Department promulgate rules establishing PFAS compound standards for soil cleanup and remediation purposes. It has not done so. As a result, the Department does not have the requisite legal authority to regulate PFAS compounds under Chapter 292, and will continue to be unable to enforce standards for remediation and violations of the Spills Law unless and until the Department complies with the law and promulgates standards following the Chapter 227 rulemaking process.

Conclusion:
For the reasons previously stated, we respectfully request that the Natural Resources Board reject these scope statements, amend them to cover only PFOA and PFOS, or remand them to DNR staff with direction to do so.

cleanwisconsin
your environmental voice since 1970

Carly Michiels
Government Relations Director, Clean Wisconsin
Preliminary Public Hearing
Written Testimony
Statement of Scopes SS 091-19, SS 090-19, SS 089-19
Natural Resources Building (GEF 2), Madison, WI
November 12, 2019

My name is Carly Michiels, and I am Clean Wisconsin's Government Relations Director. I strongly urge the Wisconsin Department of Natural Resources to move forward with the proposed rulemaking process relating to PFAS contamination in surface, drinking, and groundwater. Clean Wisconsin is a non-profit environmental advocacy organization working on clean water, clean air, and clean energy issues. We were founded almost fifty years ago and have over 20,000 members and supporters around the state. We employ scientists, policy experts, and legal staff to protect and improve Wisconsin's air and water resources.

Clean Wisconsin was pleased with Governor Evers' direction prioritizing PFAS water contamination and initiating this rulemaking process. We look forward to working with DNR and other agencies and stakeholders to develop rules and standards that will start to address the issue of PFAS contamination. We recognize this will be a lengthy process, and it is imperative we begin immediately.

Per- and polyfluoroalkyl substances (PFAS) is an umbrella term for a family of thousands of different chemical compounds. PFAS are an emerging human-made contaminant that many communities are still learning about and not yet testing for. They are harmful "forever chemicals" that build up in the body and environment over time. PFAS have serious known health effects and are already contaminating Wisconsin's waterways. Other states like Michigan have made concerted efforts and significant investments to identify all contamination sites and coordinate comprehensive solutions to this problem.

We have learned more about PFAS pollution as communities like Marinette struggle with contamination issues and the cleanup process. In Marinette, one source of drinking water tested above 1,900 ppt, which is 95 times higher than the proposed state public health standard. People in Marinette are still relying on bottled water deliveries for access to safe drinking water. This is why action to address PFAS contamination of our water must begin immediately. The growing attention to PFAS contamination across the nation has been community driven, as outreach and education efforts, and demands for action have come from people in places just like Marinette. As testing for PFAS increases, there will likely be more communities that find themselves with a new water contamination problem to confront. These rules will be an important step forward in setting standards, reducing exposure, and protecting vulnerable communities. Delaying this rulemaking process further only puts more families at risk and postpones our day of reckoning on this complex and too long ignored issue.

We look forward to seeing rules and standards put in place that protect our water resources and those people who are affected most by this contamination. Public health and access to clean, safe drinking water should not be pitted against industries and the economy. We will have to work together in our efforts to effectively address PFAS pollution.

SS 089-19 is about maintaining protection of public health, welfare and safety in Wisconsin's drinking water. Everyone deserves access to clean, safe drinking water. We need to start testing for and better understanding where PFAS contamination is and cleaning it up immediately. People should no longer be unaware that they are drinking unsafe levels of PFAS.

SS 090-19 establishes enforceable PFAS standards for groundwater quality. This is the first major step toward understanding and controlling PFAS contamination. DHS already went through a rigorous science-based process to develop a recommended public health groundwater standard of 20 ppt. This standard took an extensive amount of time, research, and collaboration among state agencies to develop. We feel the standard meets all statutory requirements, is supported with ample technical information, and reflects the primary responsibility of the state agency to protect public health. This standard is modest amongst other states that have gone forward and set their own state PFAS standards. Because the federal EPA does not regulate PFAS, it is imperative Wisconsin move this rule forward to protect our citizens' health.

SS 091-19 establishes a surface water standard for PFAS contamination. A surface water standard is important for controlling PFAS pollution of our state's rivers, lakes, and streams. These are places where people may not be aware of their risk of exposure. The main source of exposure of PFAS in people is through ingestion of food and water. Further, protecting our wildlife and fisheries from PFAS pollution is also important to reduce human exposure and to preserve the health of these natural resources.

The three scope statements are important to start a coordinated effort in addressing PFAS contamination in Wisconsin. This comprehensive approach transects multiple programs and environmental media including drinking, surface, and ground water, soil and sediment, waste management, and wildlife and fisheries. It addresses the two most prevalent types of PFAS – PFOA and PFOS – as well as any other PFAS that may be harmful to human health.

This is the first step in getting all stakeholders involved in the process of crafting meaningful rules to address PFAS contamination. Clean Wisconsin supports all three scope statements. There should be no more delay in moving this rulemaking process forward.

Thank you for the opportunity to comment.

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608-251-7020 | www.cleanwisconsin.org
Action Network

Casey Hicks

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De Pere, WI

54115

I first became aware of PFAs about 9 months ago from a news article detailing how Tyco Fire Products had not disclosed right away the spread of PFAs from their testing facility into the nearby community of Marinette. At the time I had no clue what the acronym could have meant or just how dangerous these chemicals are to human health. Then what seemed to be an avalanche of information about poly-flouroalkyl and per-flouroalkyl substances began. I found out how PFAs can cause cancer, thyroid conditions, immune deficiencies, and decreased fertility. I found out how there are many more communities than just Marinette identifying PFAs either in their wells or in their wastewater treatment plants, including West Bend which is about 10 miles away my hometown of Random Lake. Since then, I've spent time with people directly affected by PFAs from the Marinette area. I've seen and heard how the chemicals have affected their drinking water, the pond or creek behind their house, their health, and their overall livelihoods. During the Water Quality Task Force hearing in Marinette in August there was a deafening silence throughout the room when it was presented that some private wells were testing two or even three times the EPA recommendation of 75 ppt.

I was elated to see that Governor Evers and DNR Secretary Cole were taking this issue seriously with the introduction of the CLEAR Act and now the scope statement for rulemaking that the Natural Resources Board will be voting to approve. Wisconsinites face enough barriers to clean water and we shouldn't let PFAs continue to be another barrier. We can't wait for a federal rulemaking process that will take between 8-10 years, the DNR needs to begin setting standards as soon as possible.

I urge the board to approve the scoping statements for rules DG-24-29, WY-23-19, and DG-15-19 because there must be a comprehensive approach to address PFAs contamination and set the proper standards to protect our health before more communities are affected.

Sincerely,

Casey Hicks

Date: November 12, 2019

TO: Adam DeWeese, Department of Natural Resources

FROM: Iain Kelly, Ph.D, Director Regulatory Policy, Bayer CropScience
Amy Winters, President, Capitol Strategies, LLC

RE: SS 090--19 NR 140 Cycle 10 - Proposed Standard for Imidacloprid

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Bayer appreciates the opportunity to comment on the Statement of Scope SS 090-19 related to Cycle 10 revisions to NR 140. Bayer fully supports Wisconsin's goal of protecting groundwater resources and ensuring the safety of drinking water and we have no objection with scientifically sound, health-based groundwater quality standards. However, we strongly oppose the Wisconsin Department of Health's recommendation to establish a public health enforcement standard for Imidacloprid of 0.2 ug/L as it does not reflect the most recent federal number available from EPA or utilize studies that are relevant and science based.

The enforcement standard of (0.2 µg/L) and Preventative Action Limit of 0.02 µg/L recommended by the Wisconsin DHS is largely based on Sun and Clark, 2016 and Sun et al., 2017. The conclusions drawn by the authors from these studies are appropriately tentative and they do not speculate on the relevance of these findings to human health. We firmly believe the evidence is far too limited to support their use and it is inconsistent with standard scientific or regulatory practices.

In addition, the WI DHS Scientific Support Document for Imidacloprid references an earlier EPA assessment (USEPA. Imidacloprid: Revised Human Health Risk Assessment: 2010). This has now been superseded by Imidacloprid: Human Health Draft Risk Assessment for Registration Review in 2017 (Link) which was not utilized by DHS or referenced in the Cycle 10 recommended standard for Imidacloprid. This 2017 EPA document was subject to an open public comment period. EPA's schedule for the Registration Review of Imidacloprid (Link) lists release of the Proposed Interim Decision (PID) for the first quarter of FY2020.

As pointed out in both the Scope Document and Chapter 160, Wis. Stats., requires that DHS *"use the most recent federal number as the recommended enforcement standard unless one does not exist or there is significant technical information that was not considered when the federal number was established and that indicates a different number should be used."* The DHS recommended standard for Imidacloprid is not consistent with this mandate.

The proposed enforcement standard and PAL are unreasonably low and would, if promulgated, unnecessarily alarm the public if detections occurred in their water supply. To put it in

perspective, a calculation of the daily allowed intake for a 22 lb child drinking 1 liter or about 4 cups of water per day based on EPA's 0.08 mg/kg/d allowed exposure (8 mg/kg/d with 100x uncertainty factor) would calculate to an allowable 800 ppb in water. Wisconsin's 0.2 ppb limit is therefore 4,000 times less, and would require someone to drink 4,000 L or 16,907 8 oz. glasses of water per day for life to reach the EPA allowable limit. For a 150 lb adult, it would be 27,000 liters per day or 114,122 8oz. glasses of water at 0.2 ppb to reach the EPA limit.

We are also concerned that the Wisconsin Department of Health's *Recommended Public Health Groundwater Quality Standards Scientific Support Documents for Cycle 10 Substances* document submitted to DNR on June 21, 2019 was apparently sent as a final document to the EPA who uploaded it to the Imidacloprid docket on August 16th 2019, more than one year after the docket was last closed and before the Wisconsin proposed standards have gone through any regulatory review, including the approval of this scope statement and public comment. We believe this action was extremely disingenuous and does not follow Wisconsin's open government regulatory process of public review and legislative oversight before enactment.

Bayer requests that the Imidacloprid NR 140 standard be delayed until completion of the federal process. This will be both a better use of public resources and ensure that there is not confusion in the public domain based on divergent parallel processes. It will also ensure that the best available science is utilized to set a standard.

Please contact Amy Winters at (608) 235-8443 amywinters@capitol-strategies.net or Iain Kelly at iain.kelly@bayer.com (919) 280-7646 with any questions or for additional information.

Thank you.

Director, Regulatory Policy and Issue Management, North America, Crop Science

President, Capitol Strategies, LLC

November 12, 2019

Wisconsin Department of Natural Resources
Adam.DeWeese@wisconsin.gov
BruceD.Rheineck@wisconsin.gov
MeghanC3.Williams@wisconsin.gov

RE: Public Comment on the Wisconsin DNR Statement of Scope SS 089-19, SS 090-19, and SS 091-19 relevant to PFAS and other Contaminants of Concern

SENT BY ELECTRONIC MAIL

Citizens for Safe Water Around Badger (CSWAB) was organized in 1990 when rural residents learned that private drinking water wells near Wisconsin's Badger Army Ammunition Plan had been contaminated with high levels of cancer-causing chemicals for decades. Nearly 30 years later, CSWAB continues its work to unify and strengthen citizens working for a healthy and sustainable future free of military and industrial toxins. CSWAB currently coordinates the PFAS Community Campaign – a statewide network of 34 Wisconsin organizations working together to prevent exposures to PFAS via drinking water and other pathways.

On behalf of CSWAB, I am writing today to voice our strong support for the three scope statements and the rulemaking process moving forward. We support the State's proposed steps to identify and protect communities from exposure to PFAS and to prevent harm to all natural systems including air, water, soil and biodiversity. Several specific recommendations are noted at the end of our comments, with emphasis on immediate testing of all public water supplies for PFAS – **of the more than 11,000 public water systems in Wisconsin, only 90 have been tested for PFAS.**

Per- and polyfluoroalkyl substances (PFAS) are a group of toxic man-made chemicals that are very persistent and mobile in the environment, creating huge groundwater contaminant plumes that readily migrate miles from source areas. PFAS contamination from the 3M facility in Woodbury, Minnesota, has reached four underlying drinking water aquifers, contaminating groundwater in an area exceeding 100 square miles.

Approximately two-thirds of the people living in Wisconsin rely on groundwater for their drinking water. Adequate supplies of uncontaminated groundwater are crucial to the health of all residents and their families, particularly expectant mothers and newborns. The major types of human exposure sources for PFAS include contaminated drinking water and food contaminated with PFAS, including fish and shellfish. Other human exposure pathways include incidental soil/dust ingestion, dermal exposure and inhalation.

Human health studies have shown that exposure to certain PFAS may affect growth, learning, and behavior of infants and older children, lower a woman's chance of getting pregnant, interfere with the body's natural hormones, increase cholesterol levels, affect the immune system, and increase the risk of cancer.

There are currently no enforceable federal standards for PFAS in groundwater or drinking water. The U.S. EPA has established a lifetime Health Advisory Level for PFOA and PFOS in drinking water however it is not applicable to the complex mixture of PFAS found in Wisconsin's groundwater and affected drinking water wells. Moreover, ATSDR's recently-released draft toxicological profile for perfluoroalkyls provides strong evidence that the current federal HAL is not sufficiently protective.

There is growing evidence that babies, even before they are born, are particularly vulnerable to harm. PFAS in a mother's body can move from her blood into her unborn child and from her breastmilk into her breastfed baby. Therefore we ask that this population in particular be a priority consideration in the State's efforts.

The reality is that human exposures are invariably a mixture of PFAS compounds and the State must address total exposure to all PFAS as opposed to the focus on one substance in isolation. Approaching PFAS as a class for assessing exposure and health effects is the best way to protect public health.

PFAS chemicals never occur alone. They are present in complex mixtures within products, the environment, and people. The PFAS family is incredibly large – numbering in the thousands, with more than 600 in active commercial

use. Assessing risks of chemicals having a similar mechanism of toxicity is not unusual and is similar to how other chemical groups such as dioxins, PAHs and PCBs have been assessed and regulated.

A class approach is also consistent with environmental field data which consistently finds PFAS as a mixture of widely varying relative ratios and combinations which, in turn, may shift in response to other factors such as aerobic conditions. And further, a class approach is made necessary by the fact that manufacturers and responsible parties uniformly refuse to disclose PFAS product content and composition, arguing that such information is proprietary.

Finally, the class approach should be straightforward because the precedent has already been set by the U.S. Environmental Protection Agency. Pursuant to the Toxic Substances Control Act (TSCA), chemical industry agreed to cooperate with the EPA and end the production and use of a **group** of PFAS substances, often referred to as long-chain PFAS.

Altogether, 28 environmental and social justice organizations representing communities from all corners of Wisconsin have formally endorsed the assessment and regulation of PFAS as a class. *(See attached.)*

Specific recommendations for all Scopes of Statement, as applicable:

- Assessment and regulation of PFAS as a class or subclasses must be clearly retained as a goal.
- Background summaries should include drinking water/groundwater testing by the Department of Defense and the detection of significant PFAS contamination at a number of military/National Guard sites in Wisconsin.
- Protection of the Great Lakes should be identified as a goal – both as a significant source of drinking water and fisheries for Wisconsin residents and as an aquatic system.
- Under steps to protect the ecological health of aquatic systems, specific mention of wetlands, natural springs and estuaries is recommended.
- Language referring to consultation and cooperation with tribal government is recommended to provide clarity of intent.
- **The State of Wisconsin should require that all public water supplies are immediately tested for PFAS** to identify and STOP current exposures that may pose a serious risk to public health. Similar statewide testing has been accomplished in neighboring Michigan, to the benefit of healthy mothers and families.

Thank you for the opportunity to provide comment and to participate in this important decision-making process.

Sincerely,

Laura Olah, Executive Director
Citizens for Safe Water Around Badger (CSWAB.org)
E12629 Weigand's Bay South, Merrimac, WI 53561
P: 608 643 3124 E: info@cswab.org

Enclosures (as three .pdf files)

- PFAS Community Campaign, *Joint Position Statement Supporting Regulation of PFAS as a Class*, Signed by 28 Wisconsin organizations, April 2019.
- Inside EPA Publications, *National Academies of Sciences Backs Subclass Review For Flame Retardants, Highlighting PFAS Method*, May 21, 2019.
- Citizens for Safe Water Around Badger (CSWAB), *PFAS Community Campaign Timeline – 2006 to 2019*, May 28, 2019.

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NAS Backs Subclass Review For Flame Retardants, Highlighting PFAS Method

May 21, 2019

A recent National Academy of Sciences (NAS) report proposing a clustering approach of grouping flame retardant chemicals into subclasses for risk assessment is highlighting the emerging consensus that EPA and others are considering for addressing per- and polyfluoroalkyl substances (PFAS), another large group of ubiquitous chemicals that are also subject to high-profile public scrutiny.

NAS' **May 15 report**, "A Class Approach to Hazard Assessment of Organohalogen Flame Retardants," recommends that the Consumer Product Safety Commission (CPSC) group organohalogen flame retardants used in some consumer products into a dozen subgroups to assess their risks.

The CPSC had asked NAS for the advice, after receiving a 2015 petition seeking bans on four groups of flame retardants, based on the consumer products where they are used.

The NAS committee praises the class-based approach for risk assessment generally, writing that "[o]ne of the biggest challenges for the risk-assessment community is how to move from the traditional chemical-by-chemical approach to analyses that evaluate multiple chemicals together. . . . Although it is challenging to evaluate chemical groups, the number of chemicals in use today demands a new approach to risk assessment, and the class approach is a scientifically viable option."

The report notes that there are three primary problems with the traditional approach of assessing chemicals one-by-one: "chemicals on which data are insufficient are typically treated as not hazardous, that untested chemicals are often substituted for hazardous chemicals, and that cumulative exposure and risk are often ignored."

The report also notes precedent for using a class-based approach for the flame-retardant chemicals, specifically pointing to phthalates and cholinesterase-inhibiting pesticides as examples.

The NAS report comes amid increasing calls from many lawmakers, environmental groups, state agencies and other stakeholders for EPA to assess PFAS -- a class of thousands of chemicals in widespread use -- in a class or subclasses, to address exactly the concerns the NAS report describes.

But their calls are facing strong pushback from industry groups and Republican lawmakers, who charge that some bills that seek to regulate PFAS as a class bypass EPA's statutory practices and will impose unnecessary burdens on manufacturers and others.

As Congress gears up to address PFAS, the question of whether to assess PFAS as a class is a major topic of debate.

For example, during **a May 15 hearing** on PFAS legislation before a key House panel, lawmakers debated a bill, H.R. 2600 that would amend TSCA to regulate PFAS as a class. Democrats sought to make the case for the bill by comparing it to TSCA's original provision that regulated PCBs as a class.

"Even when we first passed TSCA in 1976, Congress recognized the statute might not work for some classes of chemicals. "That's why PCBs were dealt with quickly and comprehensively, and as a class through a separate TSCA subsection," said Rep. Jan Schakowsky (D-IL).

But Rep. John Shimkus (R-IL), the panel's top Republican, pushed back, cautioning that lawmakers cannot back "the use of good science or public input" only when they know that will lead to endorsing policy solutions they favor -- something that was a major principle in amending TSCA in 2016.

Whether PFAS is assessed and regulated as a class or not "will be the central question" as lawmakers move forward with legislation, said Rep. Paul Tonko (D-NY), the panel's chairman.

Chemical Subclasses

While the NAS report calls generally for a class-based approach, it recommends in the case of the flame retardant chemicals breaking them into 14 subclasses. NAS' press release explains that the chemicals "cannot be treated as a single class for hazard assessment . . . but they can be divided into subclasses based on chemical structure, physical and chemical properties, and predicted biologic activity."

NAS notes that using a class approach to assess chemicals' toxicity is relatively new, explaining that there "is no consensus in the literature on exactly what constitutes a class approach, and there are few examples of the use of such an approach, although the list is growing. The committee concluded that a science-based class approach does not necessarily require one to evaluate a large chemical group as a single entity for hazard assessment. That is, an approach that divides a large group into smaller units (or subclasses) to conduct the hazard assessment is still a class approach for purposes of hazard or risk assessment."

As one example, the report points to a recent publication from researchers with EPA's research office and the National Toxicology Program, who are researching ways **to test PFAS in subclasses**.

NAS notes that PFAS "are a large class of chemicals defined by structural features and chemical properties," and identifies the researchers' "challenge [as] to identify a subset of PFAS for testing with the goals of supporting read-across within structure-based subgroups and capturing

PFAS Community Campaign Timeline

CSWAB
Citizens for Safe Water Around Badger

2006	❖ CSWAB successfully petitioned the State of Wisconsin for **drinking water standards for perchlorate** – a toxic compound found in munitions. Today, Wisconsin has one of the most protective standards in the U.S. at 1 part per billion.
2010	❖ The organization successfully petitioned the State for **groundwater standards for the explosive DNT.** Today, Wisconsin is the only state with health-based standards for all six forms of this chemical mixture. Wisconsin's health-based standard for the summed total concentration of DNT is 0.05 parts per billion.
2011	❖ CSWAB successfully petitioned for **enforceable standards for degradation products of DNT** which were then unregulated by Wisconsin, EPA or any other state in the nation. The request was made after these compounds were detected in groundwater under the Badger Army Ammunition Plant in Sauk County.
2015	❖ We successfully petitioned for Health Advisory Levels for five (5) previously unregulated degradation products of the **explosives DNT and TNT**, establishing the first such standards in Wisconsin and setting a national precedent in the United States.
2017	❖ **CSWAB turned its attention to PFAS** (per- and polyfluoroalkyl substances) when environmental testing by the Department of Defense found high concentrations of these chemicals at military bases around the U.S. and here in Wisconsin. ❖ The organization successfully petitioned the State of Wisconsin for drinking water standards for the two most common forms of PFAS – **PFOA and PFOS.** ❖ We submitted a formal open records request to the DNR for information about all known PFAS sites in Wisconsin, revealing PFAS problems at **military and industrial sites** around the state.
2018	❖ The Wisconsin DNR finally issued responsible party letters to military sites with PFAS contamination including **Volk Field, Truax ANG, and Fort McCoy**. ❖ CSWAB formally organized the **PFAS Community Campaign** -- a coalition of organizations based in Wisconsin working together to prevent exposures to PFAS via drinking water and other pathways. ❖ CSWAB formally petitioned the Wisconsin DNR for a Health Advisory Level (HAL) for the **summed-total concentration of all PFAS** – including precursors – detected in the State's groundwater and/or having a reasonable probability of entering groundwater such as presence in soils. Among them are 19 PFAS detected in soils and groundwater at the Tyco/Johnson Controls Fire Systems in Marinette, Wisconsin. ❖ A joint letter organized by CSWAB and co-signed by 17 organizations called on the Wisconsin DNR to develop **Surface Water Quality Criteria** for more than only two of thousands of known PFAS chemicals.
2019	❖ The DNR granted CSWAB's formal **petition to regulate 26 PFAS** and to consider regulation as a class. The decision included an additional 10 PFAS compounds posing a threat to Wisconsin's groundwater as a source of drinking water, bringing the **total to 36 PFAS**. ❖ CSWAB organized a statewide statement, co-signed by 13 organizations, that **cleanup methods and remedies should be fully protective** of human and ecological health, prevent toxic emissions/releases, be readily and properly monitored, and provide permanent solutions. ❖ Formal comments to state legislators organized by CSWAB and co-signed by 28 Wisconsin-based organizations supported the **assessment of exposure and biological impact of PFAS as a class.** ❖ **A formal complaint by CSWAB** ended the previously-permitted direct discharge of PFAS-contaminated groundwater to the Black River by the City of La Crosse. ❖ CSWAB organized formal comments to the EPA co-signed by more than **50 organizations objecting to proposed federal site screening levels** and preliminary remedial goals for PFAS as the proposed thresholds are not protective of human health particularly infants, children and expectant mothers.

May 28, 2019

PFAS Community Campaign – April 2019

Joint Position Statement Supporting **Regulation of PFAS as a Class**

Per- and polyfluoroalkyl substances (PFAS) are a large group of man-made toxic chemicals used to make consumer products resistant to water, grease or stains. Human health studies have shown that exposure to certain PFAS may affect growth, learning, and behavior of infants and older children, lower a woman's chance of getting pregnant, interfere with the body's natural hormones, increase cholesterol levels, affect the immune system, and increase the risk of cancer.[1]

The major types of human exposure sources for PFAS include contaminated drinking water and food contaminated with PFAS, including fish and shellfish. Other human exposure pathways include incidental soil/dust ingestion, dermal exposure and inhalation.

Approaching PFAS as a class for assessing exposure and biological impact is the best way to protect public health.[2] Assessing risks of chemicals having a similar mechanism of toxicity is not unusual and is similar to how other chemical groups such as dioxins and PCBs have been assessed and regulated.

A class approach is also consistent with environmental field data which consistently finds PFAS as a mixture of widely varying relative ratios and combinations which, in turn, may shift in response to other factors such as aerobic conditions. And further, a class approach is made necessary by the fact that manufacturers and responsible parties uniformly refuse to disclose PFAS product content and composition, arguing that such information is proprietary.

So far, 26 PFAS chemicals have been detected in or pose a threat to the Wisconsin's groundwater,[3] and as analytical methods for PFAS continue to evolve and improve, this number will quickly escalate.

For these reasons, we are unable to support regulations or corresponding legislation that address only a very few PFAS compounds and that address only one pathway of exposure such as groundwater.

ENDORSED by the following 28 Wisconsin organizations:

Casa Maria Community
Code PFAS
Citizens for Safe Water Around Badger
Clean Water Action Council of Northeast Wisconsin
Concerned Friends and Neighbors
Crawford Stewardship Project
Family Farm Defenders
Farms Not Factories
Fire Fighter Cancer Foundation
Friends of Lake Wingra*
Four Lakes Green Party
Headwater LLC
Midwest Environmental Advocates
Midwest Environmental Justice Organization
Nukewatch
PFAS Community Campaign
People Empowered Protect the Land (PEPL) of Rosendale*
Physicians for Social Responsibility Wisconsin
Protect Wood County and Its Neighbors*
Sierra Club – John Muir Chapter
Sustain Rural Wisconsin Network
Twin Ports Action Alliance
Wisconsin Conservation Voters
Wisconsin Environmental Health Network (WEHN)
Wisconsin Environment
Wisconsin Network for Peace, Justice & Sustainability
Wisconsin Resources Protection Council
Wisconsin Wildlife Federation

*Added after April 4, 2019

For more information, contact:
Laura Olah, Coordinator, PFAS Community Campaign – 608.643.3124 – info@cswab.org – www.CSWAB.org

[1] CDC/ATSDR to Assess PFAS Exposure in Communities Near U.S. Military Bases, Press Release, February 21, 2019.
[2] Dr. Birnbaum (Director of the National Institute of Environmental Health Sciences and National Toxicology Program of the National Institutes of Health) in testimony before the Senate Committee on Homeland Security and Governmental Affairs, Subcommittee on Federal Spending Oversight and Emergency Management, Sept. 26, 2018.
[3] S. Elmore, Wisconsin DNR, January 17, 2019 correspondence to Laura Olah, Executive Director, Citizens for Safe Water Around RE: Public Petition for Health Advisory Levels for PFAS in Groundwater and Drinking Water with Emphasis on the Tyco/Johnson Controls PFAS site - BRRTS Activity No. 02-38-580694.

the diversity of the broader PFAS class. . . . The investigators finally selected a set of 75 members of the class that represented 34 subclasses. Those substances are undergoing testing with an array of new approach methodologies."

Just as NAS backs an approach that examines flame retardant chemicals in a subclass, so too do many involved in the debate over PFAS. For example, in **a May 14 letter** to the House subcommittee, the American Chemistry Council (ACC) appeared to leave the door open to consideration of addressing PFAS in subclasses even as it strongly opposed review of the chemicals in a single class.

"Our industry supports examining alternatives to a one-size-fits-all class scheme for substances using a more deliberate approach that acknowledges the differences within the chemical family," the group said.

ACC's North American Flame Retardant Alliance (NAFRA) also appears to specifically support the clustering approach recommended in NAS' recent report on flame retardants. "By recommending a subclass approach, [NAS'] findings are consistent with other chemical assessment agencies," the group said in a statement.

Environmentalists generally agree though some say that emerging monitoring and other technologies could drive the debate on how to assess and regulate PFAS in the future.

The Environmental Working Group's David Andrews urges the adoption of two classes for PFAS: one including the older, long-chain PFAS which were included in the 2010 phaseout agreement and a second class containing their short-chain replacement chemicals.

"There's a recognition the single chemical approach is failing and we need a different approach," Andrews tells *Inside EPA* in a May 20 interview. But whether the chemicals are assessed in two classes or more, he thinks will end up being a "messy" debate. "It may just be different stakeholders have a different . . . risk tolerance."

Citing the pending federal research, Andrews suggests that may indicate how EPA might move forward on PFAS through the use of subclasses.

But, he says, methods to detect and treat PFAS in drinking water and sources may reinforce the idea of PFAS as a class. Because all PFAS contain fluorine-carbon bonds, a universal method of detecting aggregate organic fluorine in water could be used to detect all PFAS, Andrews says, adding that methods to treat water containing multiple PFAS is also in the works. -- *Maria Hegstad* (**mhegstad@iwpnews.com**)

Related News | Congress | Federal Facilities | Toxics | Water |
220044

From: hummingbirdandhive@everyactioncustom.com
To: Williams, Meghan C - DNR
Subject: I support PFAS rules.
Date: Wednesday, November 13, 2019 6:52:56 PM

Dear Michelle Williams,

I support all three PFAS rules (SS 089-19, SS 090-19, SS 091-19) going forward. They are needed to allow the state to protect our surface and drinking waters from PFAS contamination, which is a public health issue.

Sincerely,
Danika Brubaker
4410 Wakefield St Madison, WI 53711-1406
hummingbirdandhive@gmail.com

From: fayjlau@everyactioncustom.com
To: Williams, Meghan C - DNR
Subject: I support PFAS rules.
Date: Thursday, November 14, 2019 2:38:59 PM

Dear Michelle Williams,

Please do what you can to protect our water, the people of Wisconsin and future generations.

Enforce standards to protect our water from PFAS contamination.

Sincerely,
Fay Johnson-Lau
5594 S County Road T Denmark, WI 54208-9428
fayjlau@gmail.com

From: sethne@everyactioncustom.com
To: Williams, Meghan C - DNR
Subject: I support PFAS rules.
Date: Thursday, November 14, 2019 1:49:10 PM

Dear Michelle Williams,

I support all three PFAS rules (SS 089-19, SS 090-19, SS 091-19) going forward. They are needed to allow the state to protect our surface and drinking waters from PFAS contamination, which is a public health issue.

Sincerely,
Mark Sethne
1971 Fountain Bluff Ln Platteville, WI 53818-9502
sethne@uwplatt.edu

From:	Earl Witte
To:	Rheineck, Bruce D - DNR
Cc:	Ellen Balthazor
Subject:	Ground Water Rulemaking
Date:	Saturday, November 16, 2019 1:25:07 PM

I stand in favor of pursuing the three proposed rules pertinent to keeping our water clean and safe from harmful chemicals.

By way of copying this to others I ask those copied to do likewise and forward to additional associates prior to Nov. 19th 2019.

From: p.meyer@everyactioncustom.com
To: Williams, Meghan C - DNR
Subject: I support PFAS rules.
Date: Thursday, November 14, 2019 4:06:00 PM

Dear Michelle Williams,

I support all three PFAS rules (SS 089-19, SS 090-19, SS 091-19) going forward. They are needed to allow the state to protect our surface and drinking waters from PFAS contamination, which is a public health issue. I am a retired pediatrician and feel strongly that this is vital for everyone, but especially infants, children, and pregnant women. Thank you.

Sincerely,
Patrick Meyer
6914 Frank Lloyd Wright Ave Middleton, WI 53562-5115
p.meyer@att.net

From:	Bill
To:	Rheineck, Bruce D - DNR; DeWeese, Adam D - DNR; Williams, Meghan C - DNR; Rep.Quinn - LEGIS; Sen.Bewley - LEGIS
Cc:	Will E
Subject:	Fwd: ACTION ALERT - Keep Pollutants Out of Our Waters
Date:	Monday, November 18, 2019 11:08:07 AM

I am strongly in favor of protecting our natures resources including any activities that help protect them such as limiting PFAS pollutants in our wateers;

Scope Statement SS 089-19
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)

Scope Statement SS 090-19
Related to: Numerical standards to minimize the concentration of polluting substances in groundwater

Scope Statement SS 091-19
Related to: Surface water quality criteria and analytical methods for poly- and perfluoroalkyl substances (PFAS) including PFOS, PFOA, and any other PFAS for the purpose of protecting public health, and the procedures in the Wisconsin Pollutant Discharge Elimination System ("WPDES") permitting program to implement the new water quality criteria

As a Clean Boats Clean Waters coordinator for the Bear Lake Association I understand the need for diligence in protecting our resources. Let me know if there is anything I can do to help you to help us.

Thanks,

William Evans P.E.
2870 17 3/4 Street
Rice Lake, WI 54868

715.600.3481

---------- Forwarded message ---------
From: **Wisconsin Lakes** <info@wisconsinlakes.org>
Date: Sat, 16 Nov 2019 at 11:42
Subject: ACTION ALERT - Keep Pollutants Out of Our Waters
To: <willevans2870@gmail.com>

Action Alert

November 16, 2019

Wisconsin Lakes Supports DNR Rulemaking to Limit Levels of "PFAS" in Wisconsin's Waters

Public Comments Due Tuesday, November 19

Public comments are due to DNR next Tuesday on three proposed rulemakings that would allow DNR to write rules establishing limits for the amount of a range of poisonous chemicals collectively called “PFAS” in our surface, drinking, and groundwater. **Wisconsin Lakes supports the state’s efforts to regulate these chemicals and it’s important that DNR hears that citizens want these rules to move forward.**

PFAS are dangerous man-made chemicals that don’t disappear and build up in the environment - and the bodies of animals, including humans - *and cause serious health problems, including risks to developing fetuses and infants.* Used in numerous products and for many purposes, PFAS are being found in waters all over the state, including Marinette, Milwaukee, Rhinelander, La Crosse, and Madison.

Wisconsin has never set water quality standards for PFAS and that’s what these rulemaking intend to do. The standards and rules implementing them have not yet been drafted - right now the agency is simply pursuing the authority to write the rules (called a “scope statement”).

Wisconsin Lakes knows the people of Wisconsin and those that enjoy its lakes want to know that the water they recreate on, as well as the water that comes out of their taps, is clean and safe. That’s why it’s imperative these rules move forward.

What can I do?

While three related rulemakings are being proposed, you can submit one comment relating to all three proposals. And *you do not need a detailed understanding of PFAS or the standards being proposed* - at this point in the process the question is simply whether we should move forward as a state to develop standards to protect us from harmful levels of these dangerous chemicals in our surface, ground, and drinking water.

Comments are due on Tuesday, November 19, 2019 and should be either emailed to:

BruceD.Rheineck@wisconsin.gov, Adam.DeWeese@wisconsin.gov, and meghanc3.williams@wisconsin.gov.

Or mailed to:

Department of Natural Resources
Attn: Meghan Williams, Bruce Rheineck, and Adam DeWeese
P.O. Box 7921
101 S. Webster Street
Madison, WI 53707-7921

You can find the "scope statements' for each rulemaking at the following links:

Drinking water. (SS 089-19)

Groundwater. (SS 090-19)

Surface water. (SS 091-19)

And for general info from DNR on PFAS, click here.

Check out the sidebar to see how you can weigh in on this important issue for clean water and public safety.

716 Lois Dr / Sun Prairie WI 53590
info@wisconsinlakes.org / 608.663-4313

From: Mike Rupiper <miker@capitalarearpc.org>
Sent: Monday, November 18, 2019 9:04 AM
To: Sen.Erpenbach - LEGIS <Sen.Erpenbach@legis.wisconsin.gov>; Fitzgerald, Scott - LEGIS <Sen.Fitzgerald@legis.wisconsin.gov>; Sen.Miller - LEGIS <Sen.Miller@legis.wisconsin.gov>; Sen.Olsen - LEGIS <Sen.Olsen@legis.wisconsin.gov>; Sen.Ringhand@legis.wi.gov; Risser, Fred - LEGIS <Sen.Risser@legis.wisconsin.gov>; Rep.Anderson - LEGIS <Rep.Anderson@legis.wisconsin.gov>; Rep.Considine - LEGIS <Rep.Considine@legis.wisconsin.gov>; Rep.Dittrich - LEGIS <Rep.Dittrich@legis.wisconsin.gov>; Rep.Hebl - LEGIS <Rep.Hebl@legis.wisconsin.gov>; Rep.Hesselbein - LEGIS <Rep.Hesselbein@legis.wisconsin.gov>; Rep.Jagler - LEGIS <Rep.Jagler@legis.wisconsin.gov>; Rep.Plumer - LEGIS <Rep.Plumer@legis.wisconsin.gov>; Rep.Pope - LEGIS <Rep.Pope@legis.wisconsin.gov>; Rep.Sargent@legis.wisconsin.gov; Rep.Stubbs - LEGIS <Rep.Stubbs@legis.wisconsin.gov>; Rep.Subeck - LEGIS <Rep.Subeck@legis.wisconsin.gov>; Rep.Taylor - LEGIS <Rep.Taylor@legis.wisconsin.gov>; Rep.Vruwink@legis.wisconsin.gov
Cc: Cole, Preston D - DNR <preston.cole@wisconsin.gov>; Palm, Andrea J - DHS <andrea.palm@dhs.wisconsin.gov>; DeWeese, Adam D - DNR <Adam.DeWeese@wisconsin.gov>; Capital Area Regional Planning Commission <Commission@capitalarearpc.org>
Subject: CARPC Resolution No. 2019-11 Supporting the Development of PFAS Standards

Dear State Senators and State Representatives representing Dane County:

On behalf of the Capital Area Regional Planning Commission, attached is Resolution No. 2019-11 which was adopted by the Commission on November 14, 2019.

This resolution supports the development of science-based PFAS standards (for surface, ground, and drinking water) by the Department of Health Services and the Department of Natural Resources to protect the health of humans, fish and wildlife and the incorporation of those standards into DNR regulatory programs as soon as feasible .

Please contact me if you have any questions or need any additional information regarding the Commission's resolution.

Regards,

Mike Rupiper, PE, ENV SP
Director of Environmental Resources Planning

Capital Area Regional Planning Commission
100 State Street, Suite 400
Madison, WI 53703
608.474.6016

Sign up for our newsletter

Please note our new address and my new phone number.

100 State Street, Suite 400 Madison, WI 53703 www.CapitalAreaRPC.org

CARPC Resolution No. 2019-11

Supporting the Development of PFAS Standards

WHEREAS, in March 1975, Dane County was designated by the Governor of Wisconsin as an area having substantial and complex water quality control problems, and certified such designation to the federal Environmental Protection Agency; and

WHEREAS, the Capital Area Regional Planning Commission is a duly created regional planning commission under Wis. Stats. § 66.0309, and has an agreement with the Wisconsin Department of Natural Resources to provide water quality management planning assistance; and

WHEREAS, perfluoroalkyl and polyfluoroalkyl substances (PFAS) are synthetic chemicals that do not occur naturally in the environment. These chemicals, of which there are thousands, have been used in industry and consumer products such as non-stick cookware, water-resistant clothing, food packaging, stain-resistant upholstery and carpeting, and firefighting foams, since the 1950's; and

WHEREAS, PFAS are degradation resistant, therefore remaining persistent in the environment and bio accumulating in the food chain. These chemicals exist in surface and groundwater, accumulating in fish, wildlife, and humans, and have been shown to be harmful to human health; and

WHEREAS, PFAS were found in several Madison Water Utility Wells, with PFOA and PFOS measured at 12 ppt at Well 15; and

WHEREAS, the West Branch of Starkweather Creek, in close proximity to Well 15, had high concentrations of PFOA (43 ppt) and PFOS (360 ppt), and fish tissue concentrations are forthcoming; and

WHEREAS, former testing sites known as "burn pits" at the Dane County Regional Airport, in the Starkweather Creek Watershed, have been determined to be a source of PFAS because of firefighting foam use. Firefighting foams containing PFAS continue to be used, such as at a utility substation fire in July 2019; and

WHEREAS, the Department of Natural Resources has requested multiple local municipal wastewater treatment facilities to voluntarily sample and analyze PFAS in their influent and effluent

WHEREAS, there are currently no federal or Wisconsin water quality standard for PFAS, though developments at the state level are underway. The Wisconsin Department of Health Services has recommended a groundwater standard of 20 parts per trillion (ppt) for the combination of

perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS), two of the most common PFAS chemicals, and is developing standards for 34 other PFAS chemicals; and

WHEREAS in order to protect public health and water quality, it is important for the State of Wisconsin to develop ground, surface, and drinking water quality standards and fish consumption advisory standards for PFAS and incorporate those standards into water regulatory programs in the state; and

WHEREAS, Governor Tony Evers has issued Executive Order #40 directing the Department of Natural Resources to create a PFAS Coordinating Council what will develop a multi-agency PFAS action plan; and

WHEREAS, The State Legislature has introduced Senate Bill 302 and Assembly Bill 321, which would require the Department of Natural Resources to establish and enforce various standards PFAS chemicals; and

NOW, THEREFORE, BE IT RESOLVED that the Capital Area Regional Planning Commission supports the development of science-based PFAS standards (surface, ground, and drinking water) by the Department of Health Services and the Department of Natural Resources to protect the health of humans, fish and wildlife and the incorporation of those standards into DNR regulatory programs as soon as feasible.

BE IT FURTHER RESOLVED that the Capital Area Regional Planning Commission supports the development of a PFAS Coordinating Council and action plan at the state level.

BE IT FURTHER RESOLVED that, the Capital Area Regional Planning Commission offers its assistance with these efforts, if desired.

November 14, 2019
Date Adopted

Larry Palm, Executive Chairperson

Kris Hampton, Secretary

100 State Street, Suite 400 Madison, WI 53703 www.CapitalAreaRPC.org

CARPC Resolution No. 2019-11

Supporting the Development of PFAS Standards

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November 14, 2019
Date Adopted

Larry Palm, Executive Chairperson

Kris Hampton, Secretary

Midwest Environmental Advocates

DELIVERED VIA ELECTRONIC MAIL

November 15, 2019

Wisconsin Department of Natural Resources
P.O. Box 7921
101 S. Webster Street
Madison, WI 53707-7921
Adam.DeWeese@wisconsin.gov
BruceD.Rheineck@wisconsin.gov
Meghan3.williams@wisconsin.gov

Mr. DeWeese, Mr. Rheineck, and Ms. Williams:

Please find enclosed comments supporting Statements of Scope SS 089-19, SS 090-19, and SS 091-19, which respectively propose to set drinking water, groundwater, and surface water standards for certain per- and polyflouroalkyl substances.

Sincerely,

Rob Lee
Staff Attorney / Shaffer Fellow

612 W MAIN STREET, SUITE 302 P 608.251.5047
MADISON, WISCONSIN 53703 F 608.268.0205

COMMENTS ON STATEMENTS OF SCOPE SS 089-19, 090-19, AND 091-19

The Natural Resources Board (NRB) should approve Statements of Scope SS 089-19, SS 090-19, and SS 091-19. These rulemakings will allow the Department of Natural Resources (DNR) to establish drinking water, groundwater, and surface water standards necessary to protect human health from per- and polyflouroalkyl substances (PFAS) and provide certainty to regulated entities. Without these standards, DNR will be unable to require public water systems to regularly test for PFAS and ensure that concentrations in drinking water are below acceptable levels. DNR will also be unable to monitor and limit the discharge of PFAS to waters of the state through the Wisconsin Pollution Discharge Elimination System (WPDES) Program. Finally, DNR will be unable to provide responsible parties with cleanup standards and thus the regulatory certainty needed to accomplish the full remediation of contaminated sites.

WHAT ARE PFAS?

PFAS are a class of thousands of man-made toxic chemicals that have been produced since the 1940s. PFAS are highly resistant to oil, water, and heat, making them useful in a wide variety of consumer applications. Those applications include dental floss, non-stick cookware, food packaging, water-repellant clothing, stain resistance fabrics and carpet, cleaning products, cosmetics, firefighting foams, and much more.

Due to the widespread, unregulated proliferation of these chemicals for decades, nearly every person in the United States has a detectable level of PFAS in their blood. PFAS bioaccumulate in the human body and have been linked to increased risks of cancer, reproductive and developmental problems, thyroid hormone disruption, high cholesterol, ulcerative colitis, and can affect the immune system. Exposure to PFAS can occur through drinking contaminated water, eating contaminated fish and deer, contacting contaminated soil, breathing contaminated air near industrial facilities, eating food packaged in certain materials, wearing water-repellant clothing, and using common household items. Infants and small children are particularly vulnerable to exposure, as they often come in direct contact with potentially contaminated carpet and dust while crawling, have a larger surface area relative to their mass, and drink disproportionate amounts of water.

PFAS have been found all over the world, not just Wisconsin. These chemicals are introduced into the environment primarily through the discharge of contaminated air and water from manufacturing facilities, leachate from landfills where PFAS-containing products have been thrown away, and leachate from fields where biosolids from wastewater treatment plants are applied. Another major source of PFAS contamination comes from firefighting training exercises that have historically involved spraying large amounts of firefighting foam directly onto the ground without cleanup. Once in the environment, PFAS are extremely

persistent and highly mobile, meaning they do not break down and can travel long distances from the source of contamination.

THE SCOPE OF THESE RULEMAKINGS SHOULD NOT BE LIMITED TO PFOA & PFOS

The object of each proposed rulemaking is to establish standards for certain PFAS, including but not limited to perflourooctanoic acid (PFOA) and perflourooctane sulfonic acid (PFOS). Although PFOA and PFOS are the two most studied PFAS, the Agency for Toxic Substances and Disease Registry's toxicological profile clearly indicates that other PFAS pose serious threats to human health. Several of these other PFAS have already been detected in Wisconsin. At least 12 other states have developed enforceable standards or guidance values for three or more PFAS. A table of all enforceable standards and guidance values in the United States is appended to these comments.

Much is unknown about the vast majority of PFAS, but what is certain is that they all have similar characteristics. Proper application of the precautionary principle therefore requires regulating these chemicals as a class. Piecemeal regulation simply enables manufacturers to pivot to PFAS with slightly different chemical compositions and unnecessarily continues to put the public health at risk. As drafted, the Statements of Scope provide DNR with the flexibility to regulate all PFAS with demonstrable adverse human health impacts. Such flexibility is particularly important because the Wisconsin Department of Health Services is expected to make groundwater recommendations to DNR on up to 34 additional PFAS in 2020.

DRINKING WATER STANDARDS

Drinking water is the most prominent PFAS exposure pathway for humans, making the establishment of Maximum Contaminant Levels (MCLs) of the utmost importance. Wisconsin cannot wait for the federal government to take action. According to the U.S. Environmental Protection Agency's (EPA) PFAS Action Plan, the federal government has yet to decide whether to establish MCLs pursuant to the Safe Drinking Water Act. Even if the EPA does decide to develop MCLs, any rulemaking will be limited to PFOA and PFOS and take longer than five years to complete. The rulemaking process in Wisconsin typically takes less than three years and will give the state at least a two-year head start. In the meantime, PFAS are increasingly being detected in municipal wells across the state. Establishing MCLs will require widespread periodic testing, enabling DNR to determine the full extent of PFAS contamination in public water systems and require the installation of treatment technologies.

GROUNDWATER STANDARDS

Most people in Wisconsin obtain their drinking water from groundwater, which considered alone warrants the establishment of groundwater standards. However, groundwater standards are also necessary to provide regulatory certainty to responsible parties that must remediate

contaminated sites. PFAS already qualify under the definition of "hazardous substance" contained in Wisconsin's Spills Law. When sites contaminated with hazardous substances are identified, the Spills Law requires responsible parties to complete full on- and off-site investigations, which include determining the extent of groundwater contamination. After that investigation, responsible parties must remediate the site such that it no longer poses a threat to human health. Without groundwater standards, it is difficult to determine both when a contaminated site poses a threat to human health and when that site has been adequately remediated. This lack of certainty may result in a moving target and risk the duplication of costly cleanup efforts, potentially grinding the redevelopment of brownfields with known PFAS contamination to a halt.

SURFACE WATER STANDARDS

Developing water quality standards for PFAS will provide DNR with the authority necessary to protect the designated uses of Wisconsin's surface waters, including drinking water, recreation, and the propagation of fish and aquatic life. Based on those standards, DNR will be able to include water quality based effluent limitations for PFAS in WPDES permits, which regulate discharges of pollution to waters of the state. Calculating water quality based effluent limitations typically involves determining the background concentration of the pollutant in the receiving waterbody, which will likely expedite surface water monitoring throughout the state. DNR will then be able to take important additional steps if background concentrations reveal that surface water bodies are impaired for PFAS, from the simple, such as issuing fish consumption advisories, to the more complex, such as developing total maximum daily loads. The development of water quality standards will also enable DNR to require permitted facilities to monitor influent and effluent for PFAS. When DNR recently requested municipal wastewater treatment facilities to voluntarily conduct such monitoring, nearly every facility refused.

Standards and Guidance Values for PFAS in Drinking Water, Groundwater, and Surface Water/Effluent—current as of June 2019

Location	*Standard	**Type	PFOA	PFOS	PFNA	PFBA	PFBS	PFHxS	PFHxA	PFPeA	PFHpA	PFOSA	PFDA	PFDS, PFUnA, PFDoA, PFTrDA, PFTeDA	Gen-X Chemicals
USEPA	HA	DW	*70*	*70*											
AK	CL AL	**GW** DW/GW/SW	400 *70*	400 *70*											
CA	NL	DW	14	13											
CO	GQS	**GW**	*70*	*70*											
CT	AL	DW/GW	*70*	*70*	*70*			*70*			*70*				
DE	RL/SL	GW	*70*	*70*			38,000								
IA	SS	**Protected GW** **Non-protected GW**	*70* 50,000	*70* 1,000			14,000 70,000								
ME	MEG RAG SL SL	DW GW GW SW	*70* 400 120 170	*70* 400 120 300			 400,000 140,000 7,914,000								
MA	GV CS	DW GW	*70* *20*	*70* *20*	*70* *20*		2,000	*70* *20*			*70* *20*		*70* *20*		
MI	HNV GCC SL HBV	**SW** **DW/GW** DW DW	420 *70* 9 8	11 *70* 8 16	 9 6		 420	 51	 400,000						 370,000
MN	HBV	DW/GW	35	15		7,000	3,000	47							
MT	WQS	**GW**	*70*	*70*											
NV	BCL	DW	667	667			667,000								
NH	AGQS MCL	**GW** **DW**	12	15	11			18							
NJ	GWQS MCL ISGWQC	**GW** **DW** **GW**	 14 10	 13 10	13										
NC	IMAC HG	**GW** DW	2,000												 140
OR	IL	**SW**	24	300	1,000						300,000	200			
PA	MSC	GW	*70*	*70*											
RI	GQS	**DW/GW**	*70*	*70*											
TX	Tier 1 PCL	**GW**	290	560	290	71,000	34	93	93	93	560	290	370	290	
VT	HA PAL	**DW/GW** **GW**	*20* *10*	*20* *10*	*20* *10*				*20* *10*		*20* *10*				
WI	ES PAL	GW GW	*20* *2*	*20* *2*											

Notes. Data collected from Interstate Technology & Regulatory Council factsheets and state government websites. Alabama (AL), Arizona (AZ), Colorado (CO), and West Virginia (WV) use the USEPA Health Advisories. All units are in parts per trillion. Enforceable standards are in bold. Concentrations that represent the sum of more than one compound are in italics.

*Standard acronyms: AGQS (ambient groundwater quality standards, AL (action level), BCL (basic comparison level), CL (groundwater cleanup level), CS (cleanup standard), ES (enforcement standard), GC (generic cleanup criteria), GQS (site-specific groundwater quality standard), GV (guidance values), GWQS (groundwater water quality standard), HA (lifetime health advisory), HBV (health-based value), HG (health goal), HNV (human non-cancer value for surface drinking water), IL (initiation level), IMAC (interim maximum allowable standard), ISGWQS (interim specific ground water quality standard), MCL (maximum contaminant level), MEG (maximum exposure guideline), MSC (medium-specific concentration), NL (notification level), PAL (preventive action level), PCL (protective concentration level), RAG (remedial action guideline), RL (reporting level), SL (screening level), SS (state-wide standards), WQS (water quality standard)

**Type acronyms: DW (drinking water), GW (groundwater), SW (surface water and/or effluent)

From: Al Bock
To: Rheineck, Bruce D - DNR
Subject: PFAS
Date: Monday, November 18, 2019 12:35:09 PM

I am writing to express my opinion that we should move forward as a state to develop standards to protect us from harmful levels of these dangerous chemicals in our surface, ground, and drinking water.

Sent from Al Bock, 1880 Abby Rd., Cumberland, Wi.

From: verschay@gmail.com
To: DeWeese, Adam D - DNR
Subject: Marinette county water contamination
Date: Sunday, November 17, 2019 8:01:22 PM

Thank you for taking public comment and input.

As residents of the Town of Peshtigo for 32 years and the Town of Porterfield for 2 years we are extremely invested in factual and thorough investigation of the PFAS contamination through groundwater, surface water and biosolid contamination.

We urge the DNR Board to approve the scoping statements for DG-24-29 , WY-23-19, and DG-15-19

We are counting on the WI DNR for a complete and thorough investigation and treatment plan.
Thank you
Bill and Cindy Verschay
W3490 Hardwood Rd
Porterfield WI 54159

Sent from my iPhone

To: WI DNR, Water Division

From: Louise Petering, state resident since 1971, 7229 N. Santa Monica Blvd., Milwaukee, WI 53217

RE: Scope: Maximum Contaminant Levels (MCLs), for certain Per and Polyfluoroalkyl substances (PF AS) including… **Contaminants of Emerging Concern**

Date: November 19, 2019

Thank you for the opportunity to share my perspective on the Scope statement proposing to amend Ch. NR 809, Wis. Adm. Code. and concerns for our drinking water.

1. Establishing MCLs: While I greatly appreciate the goal of preventing harmful effects of drinking PFOA- and PFOS-contaminated water, I ask that the scope be expanded to address all the approximately 5000 PFAS possibly present in our drinking water. Establishing a general Maximum Contaminant Level (MCL) for all compounds in the PFAS group of chemicals would put in place protective measures that would help assure all living in and visiting Wisconsin protection from the negative health consequences of exposure to unhealthful levels of PFAS.

This approach provides relief from an impossible, piece-meal approach to regulation. Relief from a strict limit of 10ppt PFAS, for example, could be granted when thorough, independent research on one of the members of the PFAS family demonstrates "no harm" from exposure to a higher level of contamination. Moving to this Precautionary Principle approach to regulating PFAS would assure public protection and producer responsibility, and it would reduce the long-term health and liability costs incurred with less protective, weaker regulation. This is preferable to MCLs that provide minimum standards for the protection of public health, safety and welfare when drinking our water.

2. I cheer development of standards for groundwater and surface water in addition to drinking water. This approach is ecologically and ecosystem relevant and recognizes that water moves, taking with it other materials, like PFAS. In fact PFAS plumes of contaminated water have been shown to be quite extensive.[1.] WI DNR data on PFAS Fate and Transport[2.] is valuable and quite informative. Thank you.

3. Remaining concern: With over 70,000 chemicals in production in the US, I ask what possible negative synergistic health effects result from exposure – continued exposure - to multiple contaminants. That Wisconsin currently regulates 90 of many possible contaminants to our drinking water emphasizes the seriousness and importance of addressing PFAS chemicals collectively.

Finally, please use "contaminants of emerging concern" rather than "emerging contaminants" when discussing PFAS as at https://dnr.wi.gov/topic/Contaminants/. PFAS have been in our environment since their manufacture and marketing in the 1940s. They were found in human blood - as documented by 3M - in 1968.

1. https://www.michigan.gov/documents/pfasresponse/DEQ_now_EGLE_Geologic_Review__Primary_House_Street_Plume_Evaluation__March_2019_656316_7.pdf
2. https://dnr.wi.gov/topic/Contaminants/documents/pfas/Presentation20190418.pdf

BY ELECTRONIC MAIL

November 19, 2019

Mr. Adam DeWeese (DG/5)
Wisconsin Department of Natural Resources
P.O. Box 7921
101 South Weber Street
Madison, WI 53707-7921

Re: Scope Statement SS089-19, revision of chapters NR 809 related to promulgation of drinking water maximum contaminant levels for perfluorooctane sulfonic acid and perfluorooctanoic acid (DG-24-19)

Mr. DeWeese:

The Chemical Products and Technology Division of the American Chemistry Council (ACC/CPTD) submits the following comments on the Department's proposal to promulgate maximum contaminant levels (MCLs) for perfluorooctane sulfonic acid (PFOS) and perfluorooctanoic acid (PFOA). ACC/CPTD encourages the Department to ensure that the MCLs it develops be based on the best available science and are technically and economically feasible.

Drinking Water Standards Must be Based on the Best Available Science

In developing MCLs it is critical that DNR consider the best available science for PFOS and PFOA and that the Department make that information available for stakeholder input. Although the Department of Health Sciences has recommended a groundwater standard for these two substances, this value is not appropriate as the basis for developing surface water criteria. DHS has not provided any information on how its recommendation was developed. Before moving ahead with criteria, DNR should clearly identify what toxicity values it proposes to use and what exposure assumptions it plans to make.

There is a wealth of information available on PFOS and PFOA that has been reviewed by agencies around the world. In addition to those conducted by the federal Environmental Protection Agency (EPA) and some states, recent reviews have been conducted by Health Canada, the French Agency for Food, Environmental and Occupational Health & Safety (ANSES), and an expert panel convened by the Australian government. These reviews have reached varied, and sometimes conflicting, conclusions about the potential for these two substances to

cause health effects in humans. While we recognize the state's interest in moving quickly to the development of standards for PFOS and PFOA, we urge DNR to take a thoughtful scientific approach to assessing the available information prior to proposing MCLs for these substances.

The Concentrations of PFOS and PFOA Should Not be Combined

As DNR is aware, a few states have developed guidance or standards that combine the concentrations for multiple PFAS into a single value. This approach is based on EPA's suggestion that the 2016 Health Advisory can be applied to the combined levels of PFOS and PFOA. ACC does not believe that there is a sufficient scientific basis to support the development of a combined standard for PFOS and PFOA**,** and EPA has provided little rationale for its suggestion to combine the values. Concentrations of substances are only combined when they are known to cause harm by a common mechanism of action. Although the EPA health advisories for both PFOS and PFOA are based on developmental effects in laboratory animal tests, it is not clear whether the effects in animals result from a common mechanism.

The grouping of substances under a single value is justified only when the substances are believed to cause health effects by the same ***mechanism*** of action, which is not equivalent to "similarity in effect".[1] Although EPA has indicated that the LHAs for PFOA and PFOS can be combined for screening purposes, combination should not be applied to regulatory standards. The LHAs are based on the lowest doses at which EPA identified developmental effects, these effects are unlikely to be biologically related.[2] The developmental endpoint for PFOS was decreased body weight in rat pups. This differs from the developmental endpoints for PFOA in mouse pups of reduced ossification in males and females (a skeletal effect) and accelerated puberty in males. As such, the critical developmental endpoints identified by EPA do not suggest a common ***mechanism***.[3] Whatever surface water criteria are developed for PFOS and PFOA, therefore, they should be applied separately to each substance.

Drinking Water Standards Must be Technically and Economically Feasible

The Department has provided limited data on the number of public water systems potentially affected by establishment of MCLs for PFOS and PFOA. While the compliance costs will depend on where the MCLs are set, these capital and maintenance costs will ultimately be

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1 EPA. Guidance for identifying pesticide chemicals and other substances that have a common mechanism of toxicity. Office of Pesticide Programs (January 26, 1999). https://www.epa.gov/pesticide-science-and-assessing-pesticide-risks/guidance-identifying-pesticide-chemicals-and-other

2 DHS has not indicated the basis for its recommended groundwater limits for PFOS and PFOA, so it is not possible to comment on the potential for the underlying health effects to be biologically related.

3 In addition, EPA's selection of the point of departure (POD) for developmental effects for both PFOS and PFOA are not consistent with the conclusions of the authors of the papers from which they are derived.

passed onto the customers of the water systems. It is imperative that DNR evaluate how these costs would impact the households served by the systems. In addressing the costs for individual households, USEPA's National Drinking Water Advisory Council (NDWAC) recommends that a given drinking water standard be considered affordable if the annual cost per customer to meet the standard does not exceed 1.0% of the median household income for the median system in each drinking water system size category.[4] Without estimating the increased cost to households served by the affected water systems, the Department cannot determine whether its proposed MCLs are affordable, and thus whether they can be considered economically feasible.

Based on the information provided above, ACC-CPTD encourages the Agency to reconsider the proposed groundwater standard and PAL. Please contact me if you have questions about the above information or wish to discuss any of the issues further.

Sincerely,

Steve

Stephen P. Risotto
Senior Director

[4] https://www.epa.gov/ndwac

BY ELECTRONIC MAIL

November 19, 2019

Mr. Bruce Rheineck (DG/5)
Wisconsin Department of Natural Resources
P.O. Box 7921
101 South Weber Street
Madison, WI 53707-7921

Re: Scope Statement SS090-19, revisions to NR chapter NR 140 to set numerical standards for perfluorooctane sulfonic acid and perfluorooctanoic acid in groundwater (DG-15-19)

Mr. Rheineck:

The Chemical Products and Technology Division of the American Chemistry Council (ACC/CPTD) submits the following comments on the Department's proposal to establish a groundwater standard of 20 parts per trillion (ppt) for perfluorooctane sulfonic acid (PFOS) and perfluorooctanoic acid (PFOA), combined, and a preventive action limit (PAL) at 10 percent of the standard (2 ppt). ACC/CPTD opposes the proposal for the following reasons --

- The Department has not provided adequate justification for the proposed groundwater enforcement standards for PFOS and PFOA,
- The concentrations of PFOS and PFOA should not be combined in the standard,
- The PAL of 2 ppt is not technologically feasible, and
- DNR has not provided an estimate for the cost of compliance with the proposal.

The Department has Provided No Justification for the Proposed Standard

The proposed groundwater standard of 20 ppt is well below the lifetime health advisories (LHAs) established by the US Environmental Protection Agency (EPA) for PFOS and PFOA of 70 ppt. Chapter 160.13 authorizes DHS to use a value other than EPA's when "there is significant technical information which is scientifically valid and which was not considered when the federal value was established." The Department has provided no indication, however, what new information it has identified that justify a lower limit. Prior to moving ahead with the proposal, DNR must make the details of the DHS evaluation available to stakeholders for their review and comment.

The EPA LHAs for PFOA and PFOS were developed as health-based guidelines for assessing potential exposure in drinking water. They are based on a number of conservative assumptions regarding levels of water consumption, exposures among sensitive populations, and exposure to sources other than drinking water.[1] Consequently, they indicate a level of conservatism that is inappropriate and unnecessary for groundwater cleanup standards. Cleaning up groundwater to the levels proposed by DEP, moreover, is not the most effective approach to protecting public health.

Using EPA's tool for developing regional screening levels (RSLs) for chemical contaminants under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA, or Superfund) and an oral reference dose of 0.00002 mg/kg-day from the EPA Office of Water's derivation of the LHAs, generates RSLs of 400 parts per trillion (0.4 micrograms per liter) for PFOA and PFOS.[2] These values are more appropriate as groundwater standards for the two substances.

Although PFOA and PFOS can be removed from water, treatment of groundwater for these substances can be challenging. Removal requires that the water comes in contact with granular activated carbon (GAC) or adsorbent resins. ACC-CPTD is not aware of an effective means for treating PFAS contamination in-situ. DEP's proposal to require cleanup of groundwater to the LHA generally would require "pump and treat" systems whereby the groundwater is brought to the surface, pumped through GAC beds, and subsequently discharged. Such systems are cumbersome and disruptive and generally must operate for extended periods of time to achieve target levels.

The Concentrations of PFOS and PFOA Should Not be Combined

DNR has proposed to apply the groundwater standard and PAL to the combined concentration of PFOA and PFOS. The grouping of substances under a single value, however, is justified only when the substances are believed to cause health effects by the same ***mechanism*** of action, which is not equivalent to "similarity in effect".[3] Although EPA has indicated that the LHAs for PFOA and PFOS can be combined for screening purposes, combination should not be applied to regulatory standards. The LHAs are based on the lowest doses at which EPA

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1 https://www.epa.gov/risk/regional-screening-levels-rsls

2 Based on a Hazard Quotient of 1.0.

3 EPA. Guidance for identifying pesticide chemicals and other substances that have a common mechanism of toxicity. Office of Pesticide Programs (January 26, 1999). https://www.epa.gov/pesticide-science-and-assessing-pesticide-risks/guidance-identifying-pesticide-chemicals-and-other

identified developmental effects, these effects are unlikely to be biologically related.[4] The developmental endpoint for PFOS was decreased body weight in rat pups. This differs from the developmental endpoints for PFOA in mouse pups of reduced ossification in males and females (a skeletal effect) and accelerated puberty in males. As such, the critical developmental endpoints identified by EPA do not suggest a common ***mechanism***.[5] Whatever levels are used, therefore, should be applied separately to each substance.

The Proposed PAL of 2 ppt is not Technologically Feasible

Chapter 160 specifies that the Department establish by rule a PAL for each substance for which a groundwater standard is established. For substances that have carcinogenic, mutagenic, teratogenic properties, the PAL shall be 10 percent of the enforcement standard, except when compliance with the PAL "is not technically and economically feasible." While detection techniques continue to improve, it is not clear that levels of PFOA and PFOA can be reliably detected at 2 ppt. For its latest national sampling of finished drinking water under the Unregulated Contaminant Monitoring Rule (UCMR3), for example, USEPA listed minimum reporting limits of 10 ppt or higher for the two substances.[6] The most recent version of USEPA's methodology for measuring PFAS in drinking water (Method 537.1)[7] indicates that, while detection limits for the five substances range from 0.53 to 1.4 ppt, "accurate quantification is not expected at [these] levels."[8]

It is impractical to expect that the owner or operator of a permitted activity can monitor for exceedance of the proposed PAL of 2 ppt. Mandating such a low PAL may have the intended consequence of encouraging laboratories to used unverified methods that can produce erroneous results and cause unnecessary activity.

DNR has not Provided an Estimate for the Cost of Compliance with the Proposal

While suggesting that the cost of compliance with the proposal may be significant, DNR has not attempted to quantify compliance costs nor to assess the likely impacts on

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4 DHS has not indicated the basis for its recommended groundwater limits for PFOS and PFOA, so it is not possible to comment on the potential for the underlying health effects to be biologically related.

5 In addition, EPA's selection of the point of departure (POD) for developmental effects for both PFOS and PFOA are not consistent with the conclusions of the authors of the papers from which they are derived.

6 EPA has not developed validated methods for water other than finished drinking water.

7 https://www.epa.gov/newsreleases/epa-releases-new-tools-test-and-treat-additional-pfas-including-genx-drinking-water

8 As a result of a recent assessment of the practical quantification limits (PQLs) PFOS and PFOA, the New Jersey Department of Environmental Protection has proposed a PQL of 4 ppt for PFOA and 6 ppt for PFOA. https://www.nj.gov/dep/dsr/ISGWQC_Public_Comment_PFOS_PFOA.html

municipalities and other entities in the state. Based on data developed by other states, a significant percentage of landfills and hazardous waste sites may exceed the proposed groundwater standards.[9] Many of the landfills are likely owned by municipalities who will be required to bear the cost of compliance with the standards. They will, in turn, be required to pass those higher costs onto residents through higher local taxes or fees. Such pass-through of costs also may occur at some percentage of waste sites where the state or local entity may be required to bear the cost of compliance. Given the diverse and diffuse nature of the historic use of the four subject PFAS, it often may not be possible to identify a responsible party.

Based on the information provided above, ACC-CPTD encourages the Agency to reconsider the proposed groundwater standard and PAL. Please contact me if you have questions about the above information or wish to discuss any of the issues further.

Sincerely,

Steve Risotto

Stephen P. Risotto
Senior Director

[9] New Hampshire's Department of Environmental Services estimates that 44 percent of the landfills and 53 percent of the hazardous waste sites in the state would exceed their proposed ambient groundwater quality standards. [add link to summary report]

BY ELECTRONIC MAIL

November 19, 2019

Ms. Meghan Williams (WY/5)
Wisconsin Department of Natural Resources
P.O. Box 7921
101 South Weber Street
Madison, WI 53707-7921

Re: Scope Statement SS091-19, revision of chapters NR 105, NR 106, and NR 219 and other related regulations to add surface water quality criteria and analytical methods for PFOS, PFOA (Rule WY-23-19)

Ms. Williams:

The Chemical Products and Technology Division of the American Chemistry Council (ACC/CPTD) submits the following comments on the Department's proposal to establish surface water quality criteria for perfluorooctane sulfonic acid (PFOS) and perfluorooctanoic acid (PFOA). ACC/CPTD encourages the Department to ensure that such criteria incorporate the best available science and are consistent with validated measurement methodology.

Surface Water Criteria Must be Based on the Best Available Science

In developing surface water criteria it is critical that DNR consider the best available science for PFOS and PFOA and that the Department make that information available for stakeholder input. Although the Department of Health Sciences has recommended a groundwater standard for these two substances, this value is not appropriate as the basis for developing surface water criteria. DHS has not provided any information on how its recommendation was developed. Before moving ahead with criteria, DNR should clearly identify what toxicity values it proposes to use and what exposure assumptions it plans to make.

The Concentrations of PFOS and PFOA Should Not be Combined

The grouping of substances under a single value is justified only when the substances are believed to cause health effects by the same ***mechanism*** of action, which is not equivalent

to "similarity in effect".[1] Although EPA has indicated that the LHAs for PFOA and PFOS can be combined for screening purposes, combination should not be applied to regulatory standards. The LHAs are based on the lowest doses at which EPA identified developmental effects, these effects are unlikely to be biologically related.[2] The developmental endpoint for PFOS was decreased body weight in rat pups. This differs from the developmental endpoints for PFOA in mouse pups of reduced ossification in males and females (a skeletal effect) and accelerated puberty in males. As such, the critical developmental endpoints identified by EPA do not suggest a common ***mechanism***.[3] Whatever surface water criteria are developed for PFOS and PFOA, therefore, they should be applied separately to each substance.

Standard Methodology for Measuring PFAS in Surface Water is Under Development

Currently no EPA-approved analytical methods exist for measuring PFAS in industrial wastewater and other non-drinking water. As a result the Agency is working to develop validated methods.[4] We urge DNR to await the results of the EPA effort before proceeding with development of surface water levels for these substances. Establishing criteria in the absence of validated methods may have the intended consequence of encouraging laboratories to used unverified methods that can produce erroneous results and cause unnecessary activity.

Establishing surface water criteria also must consider the effectiveness of available treatment technology to achieve the criteria. While some treatment processes have been effective at treating PFAS in drinking water including reverse osmosis, nanofiltration, ion exchange, and granular activated carbon filtration, little data are available on their efficacy on industrial wastewater.

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1 EPA. Guidance for identifying pesticide chemicals and other substances that have a common mechanism of toxicity. Office of Pesticide Programs (January 26, 1999). https://www.epa.gov/pesticide-science-and-assessing-pesticide-risks/guidance-identifying-pesticide-chemicals-and-other

2 DHS has not indicated the basis for its recommended groundwater limits for PFOS and PFOA, so it is not possible to comment on the potential for the underlying health effects to be biologically related.

3 In addition, EPA's selection of the point of departure (POD) for developmental effects for both PFOS and PFOA are not consistent with the conclusions of the authors of the papers from which they are derived.

4 EPA. Preliminary Effluent Guidelines Program Plan 14. Office of Water. EPA-821-R-19-005 (October 2019)

Based on the information provided above, ACC-CPTD encourages DNR to postpone development of surface water criteria until validated analytical methods have been developed. Please contact me if you have questions about the above information or wish to discuss any of the issues further.

Sincerely,

Steve Risotto

Stephen P. Risotto
Senior Director

700 Second St., NE | Washington, DC 20002 | (202) 249.7000

American Forest & Paper Association

November 19, 2019

(Submitted via email to BruceD.Rheineck@wisconsin.gov)

Department of Natural Resources
Attn: Bruce Rheineck – DG/5
P.O. Box 7921
101 S. Webster Street,
Madison, WI 53707-7921

Re: AF&PA Comments on PFAS - NRB Scope Statement Hearing

Dear Mr. Rheineck:

The American Forest & Paper Association (AF&PA) appreciates the opportunity to comment on three specific scope statements related to regulating Perfluoroalkyl Substances (PFAS) in water. The Department of Natural Resources (DNR) has introduced: a groundwater standard (DG-15-19), a surface water standard (WY-23-19), and a drinking water standard (DG-24-19). AF&PA recognizes and supports the need for setting reasonable, science-based regulatory criteria for compounds that are shown to be harmful to human health. However, we urge rejection of these scope statements as proposed as being too broad and unworkable and recommend the board to either amend them or send them back to DNR for amendment.

The American Forest & Paper Association (AF&PA) serves to advance a sustainable U.S. pulp, paper, packaging, tissue and wood products manufacturing industry through fact-based public policy and marketplace advocacy. AF&PA member companies make products essential for everyday life from renewable and recyclable resources and are committed to continuous improvement through the industry's sustainability initiative - *Better Practices, Better Planet 2020*. The forest products industry accounts for approximately four percent of the total U.S. manufacturing GDP, manufactures over $200 billion in products annually, and employs approximately 900,000 men and women. The industry meets a payroll of approximately $50 billion annually and is among the top 10 manufacturing sector employers in 45 states.

AF&PA's sustainability initiative - *Better Practices, Better Planet 2020* - comprises one of the most extensive quantifiable sets of sustainability goals for a U.S. manufacturing industry and is the latest example of our members' proactive commitment to the long-term success of our industry, our communities and our environment. We have long been responsible stewards of our planet's resources. We are proud to report that our

members have already achieved the greenhouse gas reduction and workplace safety goals. Our member companies have also collectively made significant progress in each of the following goals: increasing paper recovery for recycling; improving energy efficiency; promoting sustainable forestry practices; and reducing water use.

The Scope Statements Should be Specific to PFOA and PFOS

As a critical first step in the state's outreach, the scope statements must be more specific in clarifying which PFAS are included. Although the term PFAS refers to several thousand substances, most of the information available about the occurrence and potential hazards of PFAS is based on substances that are no longer manufactured - primarily perfluorooctanoic acid (PFOA) and perfluorooctane sulfonic acid (PFOS). Over the past two decades, manufacturing has shifted to shorter-chain PFAS that have very different physical, chemical, and toxicological properties that can significantly reduce their potential to bioconcentrate and to cause harm. We recommend that the scope statements be limited to these two chemistries.

For example, currently manufactured PFAS chemistry such as perfluorohexanoic acid (PFHxA) show low and infrequent human exposure, it does not bioaccumulate, is not carcinogenic, genotoxic, a selective reproductive or developmental toxicant, or an endocrine disruptor. In terms of chronic toxicity, it is 10,000 times less toxic than the US Environmental Protection Agency's PFOA reference safe dose.[1] Such differences in both hazard identification and potency do not allow PFAS to be regulated as a class.

Related to the need for specificity in identifying the substances to be addressed is the importance of focusing on validated testing method for the sampling activities recommended by the Task Force. While the number is likely to increase, the US Environmental Protection Agency's (EPA) Method 537.1 is applicable to only 18 PFAS in drinking water. Validated methods do not currently exist for measuring these substances in other environmental media (such as groundwater and surface water, the subject of two of the scope statements), but are likely to be available in the future. Whatever sampling is contemplated as part of the scope, it is critical that the DNR work closely with EPA, academic institutions, commercial laboratories, and others to ensure the validity and credibility of the data to be collected.

The Scoping Should Acknowledge Current Capacity Limitations

Where validated test methods are available, the capacity for commercial laboratories to conduct the testing contemplated by DNR is limited and should be considered in

[1] J. Anderson, A. Luz, P. Goodrum, and J. Durda, (April 2019), "Perfluorohexanoic acid toxicity, part I: Development of a chronic human health toxicity value for use in risk assessment," *Regulatory Toxicology and Pharmacology*, vol. 103. 41-55; J. Anderson *et al*., (April 2019), "Perfluorohexanoic acid toxicity, part II: Application of human health toxicity value for risk characterization," *Regulatory Toxicology and Pharmacology*, vol. 103. 10-20.

discussing the timing of the activities to be conducted under the scoping. Although state and university lab capacity likely can be expanded, it will not be sufficient to address the demand for sample analysis – particularly as other states in the region implement similar sampling programs. Overstating the speed at which data can be generated may lead to public confusion and mistrust.

Groundwater Standards (DG-15-19):

Under this scope statement, DNR would likely promulgate the Department of Health Service's (DHS) recommended standards of 20 ppt combined for PFOA and PFOS and a 2 ppt preventive action limit. This rule would apply to all regulated facilities that may impact groundwater.

The proposed standards are based on inappropriate and overly conservative assumptions about the toxicity and potential for exposure to these two substances, and disregard the conclusions reached by the US Environmental Protection Agency and Health Canada.

Conclusion:

For the reasons previously stated, we respectfully request that the Natural Resources Board reject these scope statements, amend them to cover only PFOA and PFOS, or remand them to DNR with direction to do so.

Sincerely,

Paul Noe
Vice President, Public Policy
American Forest & Paper Association

From: Joe Hammer <jhammer@columbuswaterandlight.com>
Sent: Monday, November 18, 2019 9:52 AM
To: DeWeese, Adam D - DNR <Adam.DeWeese@wisconsin.gov>
Cc: Michelle Kaltenberg <mkaltenberg@columbuswaterandlight.com>; Jake Tanner <jtanner@columbuswaterandlight.com>
Subject: DNR Statement of Scope SS 089-19

Dear Adam,

As a member of Meg-Water, we fully support their comments on the DNR Statement of Scope SS 089-19.

We urge the DNR to follow the SDWA standard setting process used by the EPA for all established MCL's. We also urge the DNR to perform a cost-benefit analysis to ensure the MCL's for PFAS are set at technically and economically feasible levels.

Thank you for your consideration of this issue.

Joe Hammer
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Comments on Wisconsin's Department of Natural Resources' (DNRs')
proposed groundwater standards
for perfluorooctanoic acid (PFOA) and perfluorooctane sulfonic acid (PFOS)

Laura C. Green, Ph.D., D.A.B.T. and Edmund A.C. Crouch, Ph.D.
November 19, 2019

Introduction and Overview

The Wisconsin Department of Natural Resources (DNR, 2019) has proposed an allowable upper limit, for groundwater, of a concentration of 20 nanograms per liter (20 ng/L) for the sum of two perfluoroalkyl substances (PFAS). These two PFAS are:

- perfluorooctanoic acid (PFOA), and
- perfluorooctane sulfonic acid (PFOS)

Unfortunately, DNR's proposed PFAS standard for groundwater, like the Wisconsin Department of Health Services (DHS) recommended standard for drinking water on which it is based, is not grounded in current scientific evidence: accordingly, it should be revised.

In what follows, we offer technical suggestions for such revision. We hope that they prove helpful to the Department; and would, of course, be pleased to engage in conversation *re* same.

* * * * *

Among other issues, DNR's and DHS's suggested standards for PFOA and PFOS:

- Are based almost entirely on a draft and provisional, rather than a final, PFOS guideline-value (termed a "minimal risk level," or MRL; which is not, even were it a final value, an enforceable standard) that was proposed in 2018, for public comment, by the federal Agency for Toxic Substances and Disease Registry (ATSDR);
- Are thus based almost entirely on dose-response data from one, and only one, laboratory-rodent study, which is a study of PFOS in rats (Luebker et al., 2005) that reported "delayed eye opening" and reduced birth weights in neonates;
- Do not reflect well-established, marked differences in sensitivities to PFOA and to PFOS between and among laboratory rats, mice, monkeys, and humans;
- Ignore reliable, relevant evidence from controlled studies of PFOA and PFOS in laboratory monkeys; and
- Fail to account for relevant clinical and epidemiological studies of PFOA.

With regard to the first point, not only is toxicologic value (that is, ATSDR's MRL) merely a draft, presumably temporary, value: ATSDR received numerous, thoughtful, critical comments on this

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and other PFAS draft values — some of which comments provided reliable, scientific bases for different guideline-values.[1] Given this flux, should not DHS and DNR holistically evaluate, for themselves, the current, relevant, toxicologic evidence on PFOA and PFOS?

More broadly, is it DHS and/or DNR policy to rely on draft, as opposed to final, federal non-enforceable guidelines when regulating toxic substances? And if/when such provisional guidelines are revised/finalized, whether to become more stringent or less stringent, is it DHS and/or DNR policy to merely follow suit?

Regarding the second point, it remains the case that epidemiologic and/or clinical evidence has so far failed to establish that any PFAS harms human health at or near environmental exposure-levels (ATSDR, 2018). Notably, cancer patients in a phase 1 trial have been dosed with massive amounts of PFOA (up to 1.2 grams per patient per week), as an experimental chemotherapeutic drug, with no apparent harm to their livers (the organ most clearly and adversely affected by PFOA in laboratory rodents) or other organs (Convertino et al., 2018).[2]

High-level, experimental exposures to some PFAS do harm the health of laboratory animals, and it is entirely appropriate to base health-protective guidelines on exposure-response data derived from laboratory animal studies (in the absence of, or in addition to, usable exposure-response data from studies of humans).

Ideally, health-based guidelines and standards should be based on controlled studies of (i) humans, (ii) monkeys, and/or (iii) other laboratory mammals known to mimic humans with regard to relevant biological responses. Unfortunately, the rodent studies on which DHS and DNR rely are in none of these three categories.

In what follows, we present constructive criticisms of DHS and DNR's approach, and offer alternate bases for regulation.

In particular, we show that the results from studies of PFOS and PFOA in laboratory monkeys can, and should, be used to derive highly protective, evidence-based "reference doses" (essentially, acceptable daily intakes), which in turn should be used to fashion regulations intended to protect public health, with an ample margin of safety.

[1] Docket ATSDR-2015-0004 on https://www.regulations.gov.

[2] As is typical for cancer chemotherapeutic drugs, these large doses of PFOA did cause fatigue, nausea, vomiting, and diarrhea, which were considered tolerable by the patients. PFOS also has anti-tumor activity (Wimsatt et al., 2016), although to our knowledge, clinical trials using PFOS have not been undertaken.

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The evidence-based, highly conservative, reference doses that we derive herein are:

- For PFOA, 89 ng per kg body weight per day, and
- For PFOS, 240 ng/kg-day.

Health-risks from PFOS

The toxicology of PFOS has been studied in laboratory rats, rabbits, and monkeys (Case et al., 2001; Seacat et al., 2002; Chang et al., 2012 and 2017).

In developmental toxicity studies in both rabbits and rats (Case et al., 2001), the highest dose rates of PFOS caused frank maternal toxicity, which in turn led to some fetal losses and reversible, delayed ossification. However, per the study-authors, "detailed external gross, soft tissue, and skeletal fetal examinations failed to reveal any compound-related malformations in either species," giving a NOEL for developmental toxicity of 1 mg/kg-d. Moreover, "[t]he finding that PFOS was not a selective developmental toxicant to rabbit fetuses concurs with results of previously conducted rat developmental toxicology studies."

Chang et al. (2017) dosed male and female cynomolgus monkeys with one, two, or three doses of PFOS at various times during a 422 day experiment, examining clinical chemistry parameters and measuring serum PFOS concentrations. PFOS serum concentrations at the highest extreme reached values close to those demonstrating overtly toxic effects in an earlier bioassay (Seacat et al., 2002): nonetheless, all clinical chemistry parameters remained within normal biological limits during the experiment. As expected, serum concentrations of two exposure-markers, total thyroxine (TT4) and high density lipoprotein (HDL), did decrease with PFOS treatment, although these varied only within the normal range. Moreover, again as expected, the PFOS-associated decreases in serum TT4 (due presumably to competitive binding) were not accompanied by alterations in serum concentrations of thyroid stimulating hormone (TSH), thus indicating no toxicologically significant effect of PFOS on thyroid function (Chang et al., 2017).

A benchmark concentration (BMC) analysis using individual animal data, based on the conservative assumption that the slight decrements in serum HDL were adverse, yielded a BMCLo (1 SD) of 74,259 and 76,373 ng/ml for males and females respectively. Once again, as in the case of PFOA, evaluation using individual animal data is essential since standard analyses (not shown) based on the published grouped data provide substantially different results (both higher and lower, depending on the assumptions made), presumably because of the large variation in serum concentration to dose ratios.

Extrapolating an average point of departure of 75,300 ng/ml to humans, using an interspecies factor of 3 and an intraspecies factor of 10 (again, larger than the expected major component of such intraspecies factor, the dose-to-serum concentration ratio, which is approximately a factor of 3 between 5th and 95th percentiles, Li et al., 2017, 2018), leads to a human plasma concentration of 2,510 ng/ml. All potential effects of PFOS exposure in animal models are seen

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with short induction times, so no factor is required for extrapolation from subchronic to chronic exposure. Assuming a distribution volume of 0.2 L/kg (ATSDR 2018, Table A-4) and a human half-life of 3.4 years (Li et al., 2017, 2018) gives a reference dose for PFOS of 280 ng/kg-day.

We recommend that DHS and DNR consider using this more reliable and relevant value for PFOS as it continues to refine its approach for the regulation of this chemical. MassDEP should also note that this most sensitive effect — a slight reduction in serum HDL — was, as noted by the study-authors, *of no significance to the health of the test-animals*. Indeed, serum lipid levels decreased overall with PFOS-exposure, and this is not adverse.

Health-risks from PFOA

Based on minor, transient, developmental effects in newborn CD-1 mice exposed to high doses of PFOA (Lau et al., 2006), U.S. EPA, California EPA, and others (Goeden et al., 2019), and now Wisconsin also, assume that PFOA poses a risk of developmental toxicity to humans as well. ATSDR (2018) choses a different set of studies in mice (Onishchenko et al., 2011, and Koskela et al., 2016) which are, nominally, studies of developmental toxicity as well.[3]

As it happens, as explained below, the fundamental uncertainties in this assumption render all of these mouse bioassay results unsuitable for purposes of assessing risks to human health. Fortunately, as for PFOS, controlled, reliable, and relevant studies of the toxicity of PFOA in monkeys have been peer-reviewed, published (Butenhoff et al., 2002, 2004a, and 2004b), and can serve as a predictor of effects in humans.

Importantly, the developmental (and many other) effects of PFOA in mice are mediated via the cell-nuclear hormone receptor, peroxisome proliferator-activated receptor alpha (PPARα; Abbott et al., 2012; Albrecht et al., 2013).[4] However, the activity-levels, structures, and functions of PPARα vary substantially among rodent-species and other animal-species; and, importantly, vary substantially between laboratory, "wild-type" mice (such as CD-1 mice) and humans (Bell et al., 1998; Corton et al., 2018). Abundant evidence indicates that rats and mice are highly susceptible to the effects (both adverse and beneficial) of chemicals (both endogenous and exogenous) that act via PPARα, while humans and other mammals — including guinea pigs, hamsters, rabbits, and monkeys — are relatively resistant to these effects (Klaunig et al., 2003 and 2012; Hoivik et al., 2004; Corton et al., 2018).

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[3] In addition to being inappropriate, as detailed below, the studies chosen by ATSDR are technically so flawed as to be inadequate a basis for any evaluation (Crouch and Green, 2018)

[4] PPARs are present in all animal-species, although with different forms in different species. As explained by Hall et al. (2012):

> PPARs regulate lipid and cholesterol metabolism through induction of (peroxisome proliferator response element (PPRE)) containing target genes resulting in increased beta-oxidation of fatty acids (Xu, Li, and Kong 2005). Natural ligands for PPARα include

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In addition to mice, laboratory rabbits have been used to assess the developmental effects of PFOA (Gortner et al., 1982). As just noted, rabbits can serve as faithful models for humans with regard to the actions of peroxisome proliferators on PPARα (Staels & Auwerx, 1998). In the relevant study, pregnant New Zealand White/Minikin rabbits were dosed with the ammonium salt of PFOA at 0, 1.5, 5, and 50 mg/kg-day on gestational days 6 through 18 (Gortner et al., 1982). The highest dose-rate, as expected, caused significant, temporary weight loss in the pregnant rabbits; but their fetuses at gestational day 29 showed zero indications of reproductive toxicity, embryotoxicity, or gross, skeletal, or internal malformations, or any other adverse effects, in *any* PFOA dose-group, including the highest.

DHS and DNR take no notice of this important study. U.S. EPA also did not even mention this rabbit bioassay in its draft assessment of PFOA (U.S.EPA, 2016), which is surprising, since the rabbit study-report is in fact included in U.S. EPA's Administrative Record for PFOA.

Standard regulatory guidance (and common sense) dictates that when extrapolating results from developmental studies, health risk-assessors should rely on laboratory animal-species *that best mimic humans with regard to relevant biological mechanisms*. *Per* ICH (2017):

> The rabbit has proven to be useful in identifying human teratogens that have not been detected in rodents; and the rabbit is routinely used as the non-rodent species based on the extensive historical background data, availability of animals, and practicality.

Importantly, the epidemiology on PFOA does not indicate that this chemical harms human development. As noted by ATSDR (2018):

> . . . most [epidemiological] studies found *no association* between maternal serum PFOA levels and the risk of low birth weight infants (typically defined as <2,500 g) . . . or found a *decreased* risk of low birth weight infants . . . [*emphasis* added]

And summarizing the literature on infant birth-weights *in the normal range*, ATSDR (2018) notes that although three sets of studies on women exposed to background concentrations *did* report inverse associations between maternal serum PFOA and birth weight, another *twelve similar studies found no such associations.*

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saturated and unsaturated fatty acids, eicosinoids, and linoleic acid metabolites. However, a diverse range of xenobiotics from many classes and structures are also able to activate PPARα such as the fibrate hypolipidaemic agents (clofibrate, fenofibrate, gemfibrozil amongst others), methaphenilene, thromboxane synthetase inhibitors, dehydroepiandosterone, non-steroidal anti-oestrogens, ibuprofen, Wy-14,643, diphenyl ether herbicides, and phenoxy herbicides (Greaves, 2007).

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Thus, although the CD-1 mouse data on the biological and toxicological effects of PFOA are of little-to-no relevance with regard to effects of PFOA on humans, more reliable and relevant data on the biological and toxicological effects of PFOA have been generated in laboratory monkeys (Butenhoff et al., 2002,[5] 2004a, and 2004b); and these primate data, combined with information from studies in humans, can be used to generate estimates of risks to human health from PFOA. We do so as follows.

Butenhoff and co-workers (2002, 2004a, and 2004b) examined the effects of the ammonium salt of PFOA (APFO) in male cynomolgus monkeys, during and after oral dosing for 6 months. The dose-rates were 3, 10, and 30 mg of APFO/kg body weight/day, although because the monkeys in the high dose-rate reduced their food intake and failed to gain weight, this highest dose-rate was reduced 20 mg/kg-day.

Doses of 30 and/or 20 mg/kg-day were plainly toxic, with evidence of liver injury in the highest dosed monkeys, but doses of 10 mg/kg-day and 3 mg/kg-day were not: no histopathologic evidence of liver injury was observed in monkeys in these middle and low dose-groups, and concentrations of liver enzymes in their blood-sera were normal.

All doses of APFO did increase the relative weights of the monkeys' livers, due to proliferation of liver mitochondria. This effect was expected, since statin drugs and other peroxisome proliferators (which act like PFOA in the liver) also cause increased biosynthesis of mitochondria. Although this is clearly a chemically-induced (and drug-induced) effect, it is not clear that it is an *adverse* effect, as opposed to merely an adaptive effect (Berthiaume and Wallace, 2002; Butenhoff et al., 2002; Hall et al., 2012; Convertino et al, 2018).

Nonetheless, the authors (Butenhoff et al., 2004b) erred on the side of safety by using the relative increase in liver weight (expressed as the ratio of animals' liver weight to brain weight) to derive a benchmark concentration (BMC) for PFOA that could be used for purposes of human health risk assessment.

Their BMC analysis used mean values by dose group of concentration and liver-to-brain weight ratio, and omitted the high-dose group. However, there is substantial intraspecies variation in concentrations at fixed dose rates; for example, the two animals in the high dose group differed by almost a factor of 3 in their plasma concentrations of PFOA (averaged over weeks 20 to 26, as used by Butenhoff et al., 2004b; see Butenhoff et al., 2004a or 3M Environmental Laboratory, 2001 for individual animal concentrations in this experiment). The same sort of variation in the ratio of plasma concentration to dose can be expected in humans, since the weight-specific volume of distribution is unlikely to vary substantially between individuals while the half-life varies substantially, as seen in a cohort in Sweden and in the C8 study (Li et al., 2017, 2018).

[5] Individual animal data for this study are available in Thomford (2001) and 3M Medical Department (2001).

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A BMC analysis using individual animal data is sensitive to inclusion/exclusion of the monkey with highest concentration or inclusion/exclusion of the high dose animals (**Figure 1**, **Table 1**).

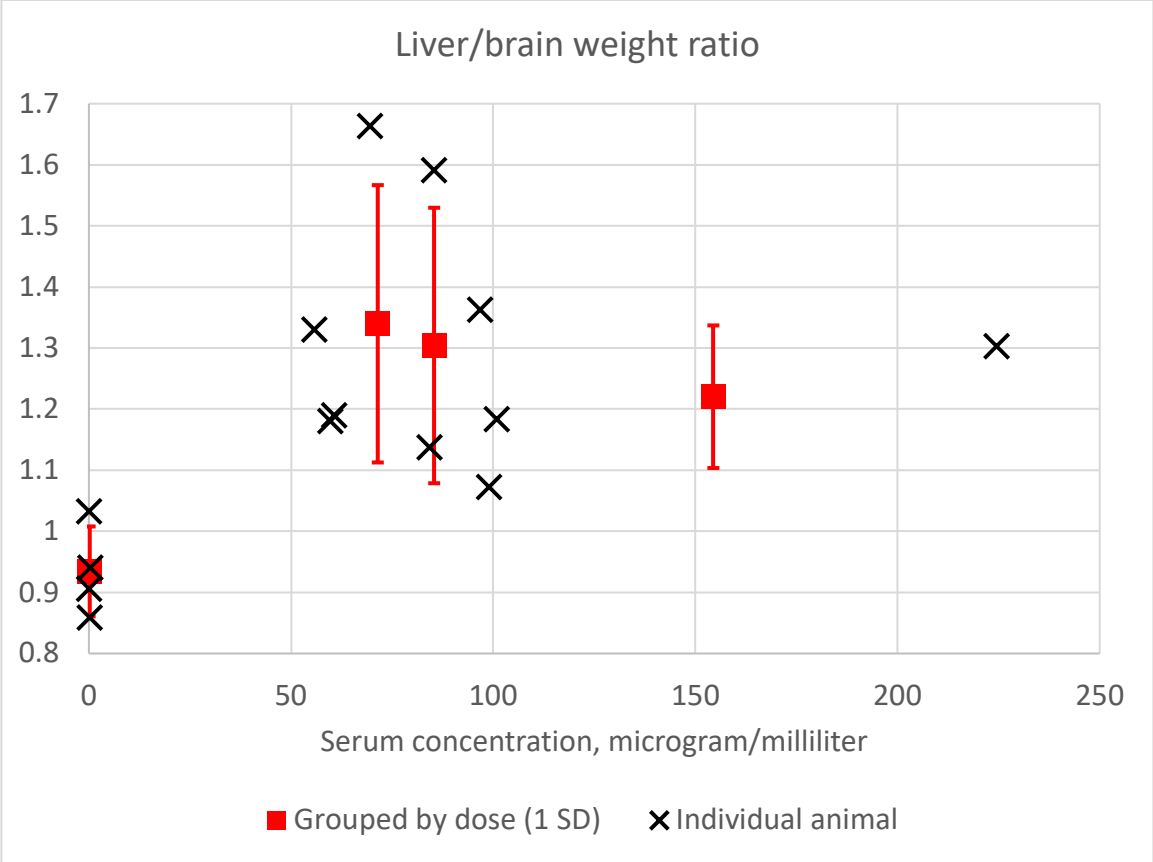

Figure 1 Liver/brain weight ratio in Butenhoff et al. (2002)

	BMCLo	BMC	BMCHi
Grouped, all doses	45.0	79.7	343.9
Grouped, omit high dose	22.6	35.5	79.8
Individual, all animals	57.5	113.2	3099.8
Individual, omit high concentration	29.9	52.4	205.1
Individual, omit high dose	28.3	49.1	178.4

Table 1 BMC estimates (serum concentrations, μg/ml) using liver/brain weight (95% confidence limits, 1 SD, linear model, constant variance)

In fact, in this experiment, the liver/bodyweight ratio provides a more sensitive endpoint (**Figure 2**, **Table 2**). The BMCLo obtained using the individual animal data is the most appropriate for cross-species extrapolation using serum concentration as the relevant metric, so we use that as the point of departure (POD).

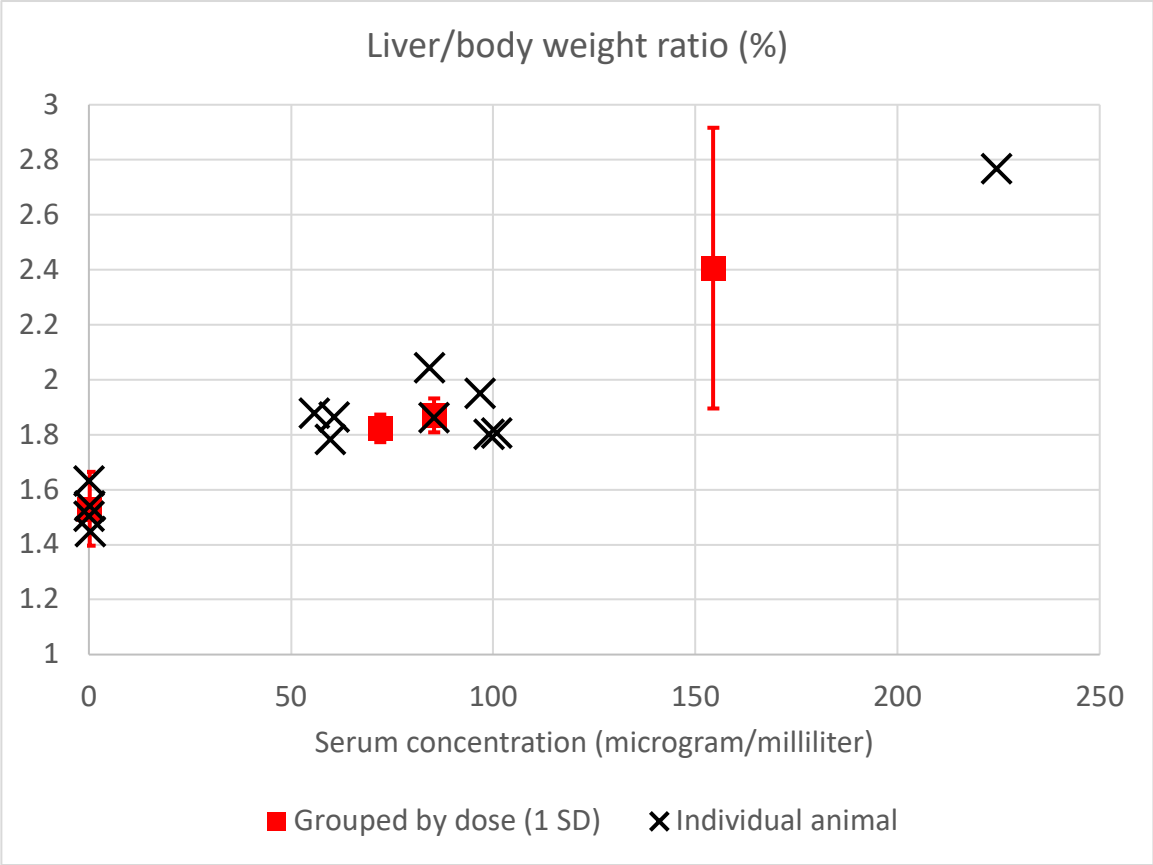

Figure 2 Liver/bodyweight ratio in Butenhoff et al. (2002).

	BMCLo	BMC	BMCHi
Grouped, all doses	26.0	50.9	88.5
Individual, all animals	19.0	32.5	57.4

Table 2 BMC estimates (serum concentrations, μg/ml) using liver/body weight ratio (95% confidence limits, 1 SD, restricted power model, constant variance)

Extrapolating this POD to humans using an interspecies factor of 3 and an intraspecies factor of 10 (compared with the 3-fold difference from 5th to 95th percentile expected solely from the variation in half-lives, Li et al., 2017, 2018), leads to a human plasma concentration of 633 ng/ml. The potential effects of PFOA exposure are seen with short induction times, so no factor is required for extrapolation from subchronic to chronic exposure. Assuming a distribution

volume of 0.2 L/kg (ATSDR 2018, Table A-4) and a median half-life of 2.7 years for humans (Li et al., 2017, 2018) gives a reference dose of 89 ng/kg-day.

This primate results-based, reference dose is highly conservative, since, as noted, it assumes that liver weight gain in PFOA-exposed monkeys, in the absence of any indication of liver damage, is an adverse, as opposed to simply adaptive, effect.

Of course, risk assessment is intended to err on the side of safety, so this conservatism is, we believe, appropriate. We recommend that DHS and DNR consider using this more reliable and relevant value for PFOA as it continues to refine its approach for the regulation of this chemical.

We would add that we think it quite important for risk assessors to communicate that chemicals, such as PFOA, with very small reference doses based on laboratory animal study-results (with multiple safety factors applied) are *not necessarily* highly toxic to humans. Indeed, analysts should make plain that PFAS are *categorically* different from chemicals such as arsenic, lead, mercury, benzene, 2,3,7,8-TCDD, and a multitude of other environmental contaminants for which adverse effects in humans have long been well-established.

As noted above, PFOA has been found to combat certain tumor-types, and has actually, perhaps surprisingly, been administered at extremely large dose-rates — up to 1.2 grams per patient per week, which is about 2,300,000 ng PFOA/kg-day! — to cancer patients in a phase I trial (Convertino et al., 2018). The resulting blood-serum concentrations of PFOA in these phase I study patients were, as noted by Convertino et al. (2018) "the highest ever reported in humans." Yet their serum liver enzyme levels remained normal, and there was otherwise no indication of organ toxicity.

Finally, we note that Wisconsin DHS is, from a scientific point of view, mis-using the results of Kieskamp et al. (2018). Those authors explicitly evaluated the dose-rate to human mothers that would give a defined plasma concentration *in their fetuses*, and not a dose-rate producing that plasma concentration in a 10 kg child drinking 1 L/day, as is used in the Wisconsin derivation.

Moreover, Wisconsin Statutes c 160.13(2)(c) does not strictly call for the approach used in the proposed enforcement standard, which is in fact scientifically meritless. The groundwater enforcement standard could clearly (and scientifically correctly) be derived using the Kieskamp et al. (2018) model such that the dose-rate to the mother (and child) produces the appropriate, protective, serum concentrations in the fetus and also in the child when that child reaches an age corresponding to 10 kg weight.

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Concluding remarks

Assessing risks to public health from PFAS is not straightforward, and there is no one best approach. Nonetheless, we believe that DHS and DNR can and hopefully will improve upon their assessments.

The currently proposed PFAS regulations are both inordinately stringent and unusually poorly justified. We believe that when DHS and DNR take the time needed to evaluate the relevant scientific evidence, from studies in humans and non-human primates alike, the Department will conclude that these two PFAS do not pose the extreme health-threat implied by the currently proposed standards.

Acknowledgements

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Note: Copies of the EPA Administrative Record AR-226 may be requested on CD-ROM from the EPA Docket Office by calling 202-566-0280 or sending an email request to: oppt.ncic@epa.gov .

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From: sam.warp@everyactioncustom.com
To: Williams, Meghan C - DNR
Subject: I support PFAS rules.
Date: Tuesday, November 19, 2019 2:57:43 PM

Dear Michelle Williams,

I feel that the only method to control PFAS is the same method used to control PCB's. They were band from production, use, and importation into the USA. That eliminated the PCB's and ultimately the toxic Dioxin they produced.
PFAS are forever chemicals because they don't breakdown. If we keep producing and using them, the issue will continue to get worse. Legislatures need to get on the front end of this and stop the problem. Regulating it on the back end is too late because they won't disappear or degrade.
How often are PCB's or Dioxin in the news today. Exactly, they aren't, because the source was taken care of. Just like DDT, cyclamates, thalidomide and the list goes on of compounds that were banded and now almost out of our vocabulary.
Do the right thing, get rid of the source.

Sincerely,
sam warp
2601 E 34th St Marshfield, WI 54449-8433
sam.warp@ci.marshfield.wi.us

SIERRA CLUB
John Muir Chapter

Sierra Club - John Muir Chapter
754 Williamson St., Madison, Wisconsin 53703-3546
Telephone: (608) 256-0565
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November 19, 2019

WI Department of Natural Resources
ATTN: Meghan Williams WY/3
PO Box 7921
101 South Webster
Madison, WI 53707-7921
Meghanc3.williams@wisconsin.gov

VIA EMAIL

RE: Item 4.G. of NRB Agenda Items October 23, 2019 for authorizing a preliminary public hearing and comment period on the Statement of Scope for Board Order WY-23-19

To Board Chair Dr. Frederick C. Prehn and Natural Resources Board Members;

The Sierra Club - John Muir Chapter (SC-JMC) supports the initiatives outlined by the WDNR for approval by the Natural Resources Board in their Rule Number WY-23-19, a Revision of chapters NR 105, NR 106, and NR 219 and other related regulations to add surface water quality criteria and analytical methods for poly- and perfluoroalkyl substances (PFAS) including PFOS, PFOA, and any other PFAS for the purpose of protecting public health as well as revisions to the procedures in the Wisconsin Pollutant Discharge Elimination System ("WPDES") permitting program to implement the new water quality criteria.

The SC-JMC supports the WDNR and WDHS in their efforts to expeditiously establish water quality standards for PFAS chemicals – beginning with PFOA and PFOS. While we support the WDNR efforts to address these two synthetic chemical pollutants, we are concerned that additional problematic PFAS chemicals are not being addressed as promptly and putting off actions on additional PFAS chemicals will exacerbate problems with PFAS pollution. New research indicates some short-chain PFAS (<6 carbon) are just as toxic, precursor production chemicals for individual molecule and polymer forms are just as (if not more) toxic than PFOS and PFOA, and environmental releases of various forms of PFAS ultimately result in the creation of PFOS and PFOA after their release or while present in various formulations.

There is ample evidence PFAS chemicals need regulation. This includes three documents referencing the persistence, toxicity and mobility of these chemicals that demonstrate this need.

- Helsingør Statement on poly- and perfluorinated alkyl substances (PFASs)[1]
- The Madrid Statement on Poly- and Perfluoroalkyl Substances (PFASs)[2]
- Zürich Statement on Future Actions on Per- and Polyfluoroalkyl Substances (PFASs)[3]

There is ample evidence the levels should be even lower than those proposed. The Agency for Toxic Substances and Disease Registry (ATSDR) at the Centers for Disease Control (CDC) found a minimal risk level to be 7 parts per trillion for PFOS and 11 parts per trillion for PFOA. Other internationally-recognized epidemiologists researching this issue have called for even lower levels – 1 ppt or less.[4] (and attached)

The USEPA PFAS initiative is inadequate at this time to assist WI in their efforts and WI cannot wait for a federal action to take place. Federal actions to address PFAS have been voluntary or unenforceable to date. Existing efforts to address PFOS[5] and PFOA have a long history in the EPA. Under the Lautenberg Chemical Safety Act, USEPA currently requires companies using about 300 PFAS chemicals to register if they create a significant new use.[6] [7] [8] [9]These approaches do not impose sufficient limits or restrictions.

In January 2006, EPA launched the 2010/2015 PFOA Stewardship Program in partnership with eight companies: DuPont, Solvay Solexis, Asahi Glass Company, Daikin America, Inc., Clariant International Ltd., 3M/Dyneon, Arkema Inc., and BASF (formerly Ciba Specialty Chemicals Corporation). Effectively ending the production of PFOA. Yet, we still have an insurmountable problem with PFOA and no federal regulations to address disposal or remediation of PFOA.

Perfluorooctane sulfonic acid (PFOS) is commonly used in a wide range of industrial processes and is found in many consumer products. The 3M Company was once a major manufacturer of PFOS and products containing PFOS, but production was phased out in 2002. PFOS production has been phased out nationwide, but continues in other countries.[10] Given the proximity to 3M production of PFOS, WI is a downwind recipient of the residual PFOS and any attempts to incinerate or dispose of PFOS in MN.

It should be noted, products containing PFOS, PFOA and other PFAS chemicals of concern may be imported into the United States and will remain a disposal problem for many years to come..

Globally, agencies are seeking to address this problem, but some are not moving with expediency. The Stockholm Convention on Persistent Organic Pollutants (SCPOPs) recognizes some forms of PFAS – including PFOS[11] and PFOA[12] as globally-threatening pollutants that due to their very persistent, very bio-accumulative and toxic nature, threaten the health of people and wildlife miles away from where they are produced or used. This recognition has

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[1] Chemosphere 114 (2014) 337–339 http://dx.doi.org/10.1016/j.chemosphere.2014.05.044

[2] Environmental Health Perspectives 123(5) May 2015 http://dx.doi.org/10.1289/ehp.1509934

[3] Environmental Health Perspectives 126(8) August 2018 https://doi.org/10.1289/EHP4158

[4] Reade, Anna, Tracy Quinn, and Judith S Schreiber. 2019. "Scientific and Policy Assessment for Addressing Per-and Polyfluoroalkyl Substances (PFAS) in Drinking Water - MI 2019."

[5] 65 FR 62319 October 18, 2000 - Perfluorooctyl Sulfonates (PFOS) Proposed SNUR https://www.govinfo.gov/content/pkg/FR-2000-10-18/pdf/00-26751.pdf

[6] 67 FR 10088 March 11, 2002 13 Additional PFAS to TSCA SNUR

[7] 67 FR 72854 December 19, 2002 75 Additional PFAS to TSCA SNUR

[8] 72 FR 57222 November 2007 183 Additional PFAS to TSCA SNUR

[9] 80 FR 2885 January 21, 2015 Additional LCPFAC to TSCA SNUR

[10] https://www.health.state.mn.us/communities/environment/risk/docs/guidance/gw/pfosinfo.pdf

[11] UNEP http://www.pops.int/Implementation/IndustrialPOPs/PFOS/Overview/tabid/5221/Default.aspx and http://www.pops.int/Portals/0/download.aspx?d=UNEP-POPS-PUB-factsheet-PFOS-201907.English.pdf

[12] UNEP http://www.pops.int/Portals/0/download.aspx?d=UNEP-POPS-PUB-factsheet-PFOA-201907.English.pdf

led to a ban on production and use of PFOA and PFOS in parties to SCPOPs. The SCPOPs also recognizes additional forms of PFAS as problematic and WDNR needs to recognize there is an urgency to addressing additional PFAS chemicals[13] beyond the chemical forms of PFAS identified as PFOA and PFOS. The OECD has also stepped in on this. The USA, while not a party to SCPOPs, is a member of the OECD and is attempting to influence international policy through their presence in the OECD. OECD members are not compelled to comply nor do recommendations initiated there carry the weight of an international treaty.

Because PFAS haven't been designated "hazardous substances" under the federal Superfund law, nobody is required to clean up PFAS contamination – even though companies have produced and knowingly released toxic PFAS chemicals for decades. Affected landowners, including Marinette residents and potentially many others, are unable to access federal and state resources for toxic cleanup because regulations currently do not recognize these chemicals as contaminating pollutants. The Defense Department has cited the absence of a "hazardous substance" designation to delay cleanup of its own contamination sites. Wisconsin needs to act in order to prevent further degradation of its waters and impacts to the environment and those who rely on our land and water for food and livelihood.

Because developments to address this pollutant are ongoing and the Department of Defense has initiated their financial and technical resources to address this issue, Sierra Club feels the information presented in the anticipated economic impact in the scoping document is insufficient to reference regarding potential solutions to the issues related to prevention and treatment. In addition, the use of treatment technologies will serve to improve the overall water quality and minimize all forms of pollutants present in drinking water provided to the public.

> **8. Anticipated economic impact of implementing the rule (note if the rule is likely to have a significant economic impact on small businesses):**
> The economic impact to sources of PFOS and/or PFOA that will have to provide treatment as a result of this rule is expected to be significant. However, exact concentrations of PFOS and PFOA in surface waters of the state and wastewater effluents are unknown at this time, although monitoring efforts are scheduled to begin in summer 2019. Should monitoring results identify effluents that are exceeding the proposed criteria, there are currently three treatments that effectively remove PFAS from wastewater: granular activated carbon, anion exchange resins, and reverse osmosis (RO) combined with granular activated carbon treatment of RO reject water. There are costs associated with installation, operation, and maintenance with each of these treatment technologies, so permitted facilities whose effluent has the reasonable potential to cause or contribute to an exceedance of the water quality standard would be expected to incur costs. Treatment costs, however, could be reduced or avoided altogether through source reduction measures. A permittee may apply for a variance using the procedures outlined under Wis. Stat. s. 283.15 if its treatment costs are expected to result in substantial and widespread adverse economic impacts.

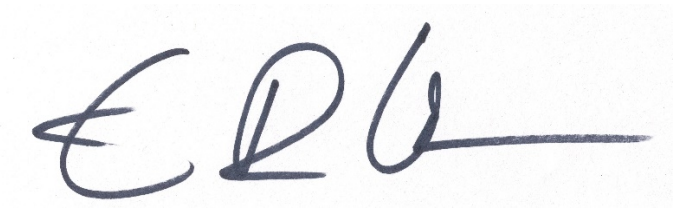
We commend the WDNR for taking action to address these chemicals, but feel there are a number of additional actions that are required to address the lack of regulations on these chemicals and look to WDNR to ensure proactive actions to deal with the associated problems Wisconsin faces from PFAS chemicals throughout their lifecycle.

Additional issues need localized solutions given the variability in water and soil chemistry as well as differentiated uses based on the industries present in the region/state. Additional issues will result from community management of waste – biosolids from wastewater treatment as well as composted materials and leachate from landfills. Therefore, it will require the State of Wisconsin to play a large role in the identification of sources of PFAS and best options for solutions. The recent National Academies of Sciences, Engineering and Medicine undertook a

[13] http://www.pops.int/Portals/0/download.aspx?d=UNEP-POPS-PUB-factsheet-PFHxS-201907.English.pdf

workshop for *Identifying Opportunities to Understand, Control, and Prevent Exposure to PFAS.*[14] Sierra Club recommends WDNR and WDHS follow this process as well.

Sincerely,



Eric Uram
Chair
Sierra Club National Toxics Team
For the Sierra Club - John Muir Chapter of Wisconsin

[14] https://www8.nationalacademies.org/pa/projectview.aspx?key=51721

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Perfluorinated alkyl substances: emerging insights into health risks

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Abstract

Perfluorinated alkyl substances have been in use for over sixty years, and these highly stable substances were at first thought to be virtually inert and of low toxicity. Toxicity information slowly emerged on perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS). More than 30 years ago, early studies reported immunotoxicity and carcinogenicity effects. The substances were discovered in blood samples from exposed workers, then also in the general population and in community water supplies near U.S. manufacturing plants. Only recently has research publication on PFOA and PFOS intensified. While the toxicology data base is still far from complete, carcinogenicity and immunotoxicity now appear to be relevant risks at prevalent exposure levels. Existing drinking water limits are based on less complete evidence that was available before 2008 and may be more than 100-fold too high. As risk evaluations assume that untested effects do not require regulatory attention, the greatly underestimated health risks from PFOA and PFOS illustrate the public health implications of assuming safety of incompletely tested industrial chemicals.

Keywords

Carcinogen; Exposure limit; Immunotoxicant; Perfluorinated octanoic acid; Perfluorooctane sulfonate; Risk assessment

Introduction

Poly- and perfluorinated alkyl substances (PFASs) have been in use for over 60 years [1]. First manufactured by the 3M Company in Cottage Grove, Minnesota, perfluorooctanoic acid (PFOA) was a primary PFAS product, but perfluorooctane sulfonate (PFOS) and other PFASs were also produced. By about 2000, their global environmental dispersion became publicly known. A phase-out of commercial PFOS production by the end of 2002 was announced by 3M in 2000, and eight major US producers have agreed to phase out PFOA no later than 2015. Recent reports on adverse effects [2, 3] suggest that the toxicity of these substances has long been underestimated.

List of authors' contributions to the work

Both authors reviewed the literature and contributed to the manuscript and critical evaluation of the contents.

The PFAS show high thermal, chemical and biological inertness – properties that make them useful for certain industrial purposes, but persistence may also create an environmental hazard [4]. The strong carbon-fluorine bond renders the PFASs highly persistent in the environment and in the human body. However, the functional group at the end of the perfluorinated carbon chain made the PFASs far from inert. By the 1970s, the physical and chemical properties were well known [5, 6]. Thus, many PFASs can leach through soil to reach the groundwater, while some PFASs may evaporate and disseminate via the atmosphere [7]. Although most of them are oleophobic and do not accumulate in fatty tissues (unlike dioxins and other persistent halogenated compounds), they were later found to bioaccumulate in aquatic and marine food chains, especially PFOS [8]. Thus, as criteria for persistent, bioaccumulative and toxic chemicals were developed and refined in the 1990s [9], the PFAS physical and chemical properties should have raised warning signs.

Little was published in scientific journals on PFAS toxicology until the 1980s, perhaps because compounds resistant to breakdown were erroneously considered inert [10]. The present overview relies on recent reviews, such as the ATSDR draft Toxicological Profile [7], a draft risk assessment developed by the US Environmental Protection Agency, and recent overviews [2, 11–13]. Our objective is to illustrate the problems that can result from the regulatory assumption that untested chemicals are safe. We focus on PFOS and PFOA as the substances with the best available information to review the emergence of new insight into carcinogenicity and immunotoxicity as potential critical effects [2, 14]. We focus our comments on these two effects because of their long history of scientific study, while recognizing that other adverse health effects have recently been documented (C8SciencePanel, 2013). Although mainly relying on published information, we are aware that a major chemical company was fined by the U.S.EPA for failing to comply with the legal requirement of reporting information to the EPA about substantial risk of injury to human health or the environment due to PFAS [15]. A chronology of important events in understanding PFAS health risks is provided in Table 1 [16].

Human exposure to perfluorinated compounds

The existence of PFASs in the human body was first suspected in the late 1960s when fluoride in blood samples was found to be partially bound to organic compounds of unknown structure [17]. High concentrations in exposed workers were documented in the 1970s [18], and specific PFASs were later identified in serum samples from workers at production facilities [19] in accordance with the ready absorption of the compounds in laboratory animals after oral or inhalation exposure [20].

Multiple sources play a role for exposures of the general population, and human exposures include precursor compounds that may be broken down into PFOA and PFOS [1]. In the Mid-Ohio Valley of the US, drinking water supplies were contaminated with PFOA in the 1980s from an industrial facility [21], and aquifers in Minnesota were also contaminated from a production plant [22]. Concentrations of PFOA in many water samples exceeded 1 μg/L (1,000 ng/L), with concentrations of PFOS being almost as high [7]. Other routes of human exposure are primarily from consumer product use, and degradation or improper disposal of PFAS-containing materials, including food-wrapping [1, 23, 24].

Analysis of serum samples from the National Health and Nutrition Examination Survey (NHANES) about year 2000 showed that PFOS and PFOA were detectable in all Americans [25]. Median concentrations in serum were about 30 ng/mL (PFOS) and 5 ng/mL (PFOA). The average had decreased 8–10 years later to less than half for PFOS, while PFOA had changed much less [26, 27]. PFASs are transferred through the human placenta and via human milk [28, 29]. Overall, serum concentrations in children tend to be higher than in adults [30].

Serial analyses of serum samples from former 3M production workers after retirement suggested elimination half-lives for long-chain PFASs to be ~3years (PFOA) and ~5years (PFOS) [31]. Declines in serum-PFOA concentrations after elimination of the water contamination suggest a median elimination half-life of 2.3 years [32], thus confirming the persistence of PFAS in the human body.

Adverse health effects

The main evidence on adverse effects in humans comes from observational studies of cohorts of production workers and community studies of subjects exposed either at background levels or through contaminated drinking water. Some studies are hampered by imprecise estimates of long-term PFAS exposures and may for this reason have underestimated the effects [33]. Follow-up studies of workers have largely shown an overall mortality deficit [34–36], thus most likely reflecting the presence of a ‘healthy worker’ effect [37].

New evidence has emerged, as a settlement agreement in 2005 established the C8 Health project, where data on approximately 70,000 exposed Ohio and West Virginia residents provided information on drinking water intake, measured and calculated serum-PFOA concentrations, and a variety of possible clinical outcomes [38, 39]. Additional evidence on associations between PFAS exposure and disease parameters in the general population comes from the NHANES data base, which provides national data for exposures to environmental chemicals that can be linked to concurrent health information on the study participants [25].

In regard to experimental toxicity studies, most published reports are based on the rat, which eliminates PFAS much more rapidly than humans and therefore is not an ideal species [12]. Even today, chronic toxicity studies in other species are lacking, and a formal cancer bioassay has not yet been completed. In addition, insufficient attention had been paid to exposures during sensitive developmental stages.

Cancer

The rodent cancer bioassay has long served as a key component of carcinogenicity assessment [40]. Evidence on cancer risks in rodents exposed to PFASs and other peroxisome proliferating substances, which promote rapid cell division, originates from the late 1970s, specifically in regard to pancreatic tumors and hepatocellular carcinomas [41–43]. For Leydig cell tumors, the first evidence describing the tumor mechanisms was

published in 1992 [44], and further review of cancer mechanisms appeared in the late 1990s [45].

The Dupont cancer surveillance system has been monitoring cancer incidence in workers as far back as 1956 [46], and an internal report showed increased leukemia incidence in employees at a PFOA production plant. As a result of the 3M findings (see below) and animal carcinogenicity studies showing increased male reproductive organ cancer, prostate cancer has been monitored in DuPont workers from 1998, although the results have apparently not been released. An updated cancer surveillance report covered the years 1956–2002 showed excess kidney cancer (SIR=2.3, 95% confidence interval [CI] 1.36–3.64), bladder cancer (SIR=1.93, 95% CI 1.14–3.06), and myeloid leukemia (SIR=2.25, 95% CI 1.03–4.28) in the employees, and an elevated, but not statistically significant, risk of testicular cancer (SIR=1.46, 95% CI 0.47–3.41) [47].

Initially the most important 3M worker study was Frank Gilliland's thesis project on retrospective mortality of 2788 male and 749 female production workers during 1947–1984. Based on four cases, an excess occurrence of prostate cancer was found (SMR=3.3, 95% CI 1.02–10.6) in PFOA-exposed workers with greater than ten years of employment [34]. There were subsequent analyses of cancer in 3M workers after reported further evidence of increased prostate cancer risk, but not for other cancers [48, 49]. The key epidemiologic studies are summarized in Table 2. Incomplete follow-up, uncertainties in exposure assessment, and incomplete ascertainment of cancer mortality limit the conclusions that can be drawn from this evidence.

The EPA draft risk assessment of PFOA reviewed the published animal and human epidemiologic studies up to 2005 and concluded that the evidence was "suggestive" of a cancer risk in humans. When reviewing the same evidence a year later, the majority of an expert committee recommended that PFOA be considered "likely to be carcinogenic to humans" [50].

This conclusion is supported by the recent C8 Health Project results [51]. Thus, two different epidemiological approaches [52, 53] support the association between PFOA exposure and both kidney and testicular cancer and suggest associations with prostate and ovarian cancer and non-Hodgkin lymphoma. The C8 Science Panel specifically listed kidney cancer and testicular cancer as having a "probable link" to C8. Although PFOA should therefore be considered a "likely" human carcinogen based on sufficient evidence in experimental animals and limited evidence in human epidemiology studies, current regulations of PFASs are based not on carcinogenicity but on developmental toxicity and changes in liver weight.

Mechanisms of cancer development are now being explored [2, 54]. Among possible mechanisms, induction of hormone-dependent cancer has been suggested in rodent studies [55]. Developmental exposure to PFOA induces effects that are not necessarily seen in response to exposures during adulthood [55], as reflected by endocrine disruption effects in humans exposed to PFASs during early development [56, 57].

Immunotoxicity

Among early toxicology studies [20], immunotoxicity was considered a main effect in a rhesus monkey study sponsored by 3M [58], although the report was not published in the open literature. Four monkeys exposed to subacute toxicity from the ammonium PFOA salt showed atrophied thymus, diffuse atrophy of lymphoid follicles of the spleen, and other signs of immunotoxicity. Researchers at the time were well aware of the adverse effects to the “reticuloendothelial system”, and increasing attention was being paid to adverse effects on immune functions [59]. However, these findings did not lead to further exploration of immunotoxic risks associated with PFAS exposure until decades later. Routine parameters, such as spleen microscopy and general clinical chemistry, failed to show any significant effects in non-human primates [60].

In recent years, immunotoxicity of PFCs has been demonstrated in a wide variety of species and models [14]. In the mouse, PFOA exposure caused decreased spleen and thymus weights, decreased thymocyte and splenocyte counts, decreased immunoglobulin response, and changes in specific populations of lymphocytes in the spleen and thymus [7, 14]. Reduced survival after influenza infection was reported in mice as an apparent effect of PFOS exposure [61]. When injection of sheep erythrocytes was used as antigen exposure in the mouse model, the lowest observed effect level (LOEL) for a deficient antibody response corresponded to average serum concentrations of 92 ng/g and 666 ng/g for male and female mice, respectively [62]. These serum concentrations are similar to or slightly exceed those prevalent in residents exposed to contaminated drinking water [21, 63, 64]. Although a 3M-supported study reported no immunological effects at a high dietary PFOS exposure in the same strain of mice [65], another study of gestational exposure confirmed that male pups were more sensitive than females and that developmental exposure can result in functional deficits in innate and humoral immunity detectable at adulthood [66].

In human studies, childhood vaccination responses can be applied as feasible and clinically relevant outcomes, because children have received the same antigen doses at the same ages [67]. In the fishing community of the Faroe Islands, PFOS in maternal pregnancy serum showed a strong negative correlations with antibody concentrations in 587 children at age 5 years, where a doubling in exposure was associated with a difference of −41% ($p = 0.0003$) in the diphtheria antibody concentration [3]. PFCs in the child’s serum at age 5 showed negative associations with antibody levels at age 7, and a doubling in PFOS and PFOA concentrations was associated with differences in antibody levels between −24 and −36% (joint effect of −49%, $p = 0.001$). For doubled concentrations at age 5, PFOS and PFOA showed odds ratios between 2.4 and 4.2 for falling below a clinically protective antibody level of 0.1 IU/mL for tetanus and diphtheria at age 7 [3]. Serum concentrations of both PFASs are similar to, or lower than, those reported from the US population.

A study of 99 Norwegian children at age 3 years found that maternal serum PFOA concentrations were associated with a decreased vaccine responses, especially toward rubella vaccine, and increased frequencies of common cold and gastroenteritis [68]. In a larger study, PFOS and PFOA concentrations in serum from 1400 pregnant women from the Danish National Birth Cohort were not associated with the hospitalization rate for infectious disease (including such diagnoses as pneumonia or appendicitis) in 363 of the children up to

an average age of 8 years [69]. In adults, PFOA exposure was associated with lower serum concentrations of total IgA, IgE (females only), though not total IgG [70]. In the exposed Ohio Valley population, elevated serum-PFOA concentrations were associated with reduced antibody titer rise after influenza vaccination [71]. Taking into account the likely sensitivity of the various outcome measures as indication of PFAS immunotoxicity, the combined human and experimental evidence is in strong support of adverse effects on immune functions at current exposure levels.

In regard to mechanisms of immunotoxicity, PPAR receptor activation may play a role [7, 14]. However, experimental evidence suggests independence of PPARα for at least some of PFOA's immunotoxic effects, as shown in PPARα knockout models [72]. White blood cells from human volunteers showed effects even at the lowest *in vitro* PFOS concentration applied, i.e., 0.1 μg/mL (or 100 ng/mL) [73]. This level is similar to concentrations seen both in affected male mice [62] and in US residents exposed to contaminated drinking water [21, 63, 64].

Implications for prevention

The U.S.EPA first issued a draft risk assessment of PFOA in 2005, but a final, quotableversion has yet to appear. While a Reference Dose (RfD) is not available, the EPA in 2009 published provisional drinking water health advisories of 0.4 μg/L (400 ng/L) for PFOA and 0.2 μg/L (200 ng/L) for PFOS [4]. EPA used calculations of benchmark dose level (BMDL) from experimental toxicology studies and concluded at the time that '[e]pidemiological studies of exposure to PFOA and adverse health outcomes in humans are inconclusive at present'. The same toxicology data published by the end of the last decade were used for derivation of drinking water limits authorized by US states and EU countries as well as the EU Tolerable Daily Intakes for PFOA and PFOS [74], although different default assumptions and uncertainty factors were applied.

BMDL is recommended by the EPA and other regulatory agencies as a basis for calculations of safe levels of exposures [75, 76]. As the BMDL is not a threshold, this lower 95% confidence limit is applied as a point of departure, and the guidelines proscribe a default 10-fold uncertainty factor to be used for calculation of an exposure limit.

Table 3 lists relevant BMDL results in terms of serum concentrations. A sensitive outcome at first appeared to be the increase in liver weight; Leydig cell tumor formation was considered as a dose-dependent outcome and appeared to be less sensitive [77]. The same was truef or immune system toxicity that was generally evaluated by differential leukocyte counts and microscopic examination of lymphoid tissues, sometimes complemented with a cell proliferation test [78]; functional tests were not conducted. In terms of serum concentrations, the BMDLs were 23 μg/mL serum for PFOA and 35μg/mL for PFOS [22]. Expression of the BMDL in terms of the serum concentration is particularly useful, as it facilitates interspecies comparisons by taking into account toxicokinetic differences.

Recent data on mammary gland development in mice suggest that clear effects may result from much lower developmental exposures [2]. Benchmark dose calculations using a variety

of models correspond to a serum concentration of 23–25 ng/mL [12], i.e., one-thousandth of the BMDL based on liver toxicity. Benchmark calculations are not available in regard to immunotoxic effects in mice and cannot easily be estimated from published data [14], but would likely be orders of magnitude below previously calculated BMDLs.

Using the data from the recent study of immunotoxicity in children [3] and assuming a linear dose-dependence of the effects, BMDLs were calculated to be approximately 1.3 ng/mL for PFOS and 0.3 ng/mL for PFOA, both in terms of the serum concentration [79]. Using an uncertainty factor of 10 to take into account individual susceptibility, the BMDLs would therefore result in a Reference Dose (RfD) serum concentration of about or below 0.1 ng/mL. The experimental data require at least an additional interspecies 3-fold uncertainty factor for interspecies differences in toxicodynamics [76]. Thus, using a total uncertainty factor of 30, the RfD based on mammary gland development in mice would correspond to a serum-PFOA concentration of 0.8 ng/mL. As the experimental studies that the regulatory agencies have relied upon so far correspond to serum concentrations 1000-fold higher, current limits for water concentrations of PFOS and PFOA appear to be too high by at least two orders of magnitude.

For comparison, an approximate limit for drinking water can be estimated by an independent calculation. PFOA concentrations in drinking water and in the serum of residents are highly correlated [21, 80], and the calculated ratio of one-hundred-fold between the concentrations in the two media could therefore be used to calculate a concentration in drinking water that would correspond to the RfD expressed in terms of the serum concentration. Assuming no other sources of exposure, a serum concentration of 0.1 ng/mL would correspond to a water concentration of approximately 1 ng/L, or 0.001 μg/L. Although neither of the two sets of calculations in any way represents a formal risk evaluation, it is noteworthy that current limits are generally several hundred-fold higher than recent BMDL results would seem to justify.

Discussion

The PFASs have been in use for many decades, but their otherwise useful properties unfortunately result in persistence and dissemination in the environment. The toxic properties were initially explored in the 1970s, but the toxicological data base has expanded only after environmental dissemination recently became known.

In the United States, the Toxic Substances Control Act (TSCA) has been in force since the late 1970s, but did not require testing of substances, such as PFASs, already in commerce at the time. Perhaps the TSCA even discouraged chemicals producers from testing substances that had already received blanket approval [81]. The voluntary decision in 2000 to phase-out PFOS production in the US coincided with the first demonstration of environmental persistence and dissemination of PFASs.

Although comparatively few articles on PFASs were published in scientific journals prior to 2008 [82], our understanding of the toxicity of these compounds has its roots in studies already carried out in the late 1970s. Thus, more than 30 years ago, possible carcinogenicity

and immunotoxicity had already been demonstrated in experimental studies, and they were complemented by internal company surveillance of birth defects, mortality and clinical findings in workers. These reports could have inspired in-depth studies, but apparently did not.

Thus, as judged from available publications, the early leads were not followed up with the focused research that in today's perspective would have seemed appropriate. Of note is also the EPA decision to fine a company for violation of the duty to report adverse effects of PFAS and the subsequent court-mandated health studies [15, 39]. Had the first suspicions of health risks from PFAS exposures been explored in systematic research and testing, they could perhaps have triggered earlier and more vigorous efforts to control exposures to workers and to prevent community contamination and global dissemination.

The PFASs therefore provide an example of the "untested-chemical assumption" that the lack of documentation means that no regulatory action is required [83]. In this case, the assumption ignored preliminary evidence on plausible effects and did not inspire further exploration. The present overview suggests that these assumptions resulted in continued PFAS dissemination and exposure limits that may be more than 1,00-fold too high to adequately protect the general population against adverse health effects. Clearly, the absence of documentation from epidemiological studies should not be considered as a reason to conclude that adverse effects have not and will not occur [84]. Thus, the PFASs represent an example of a failed scientific and regulatory approach [83], and thereby also document the need for better linkage between research and risk assessment to inspire prudent chemicals control policies.

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Abbreviations:

BMDL	benchmark dose level
CI	confidence interval
EFSA	European Food Safety Authority
EPA	Environmental Protection Agency
LOEL	lowest observed effect level
NHANES	National Health and Nutrition Examination Survey
PFAS	Poly- and Perfluorinated alkyl substances
PFOA	perfluorooctanoic acid (PFOA)
PFOS	perfluorooctane sulfonate
TSCA	Toxic Substances Control Act

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Table 1.

Time course of important developments regarding PFAS exposure and health risks.*

Year	Event
1947	PFAS production starts at 3M plant in Cottage Grove, MN
1962	Internal Dupont document raises concern about health risks
1970s	PFAS vapor pressures and water solubilities in chemical handbooks
1978	Unpublished monkey study reveals immunotoxicity and other adverse effects due to PFOA
1980	Organic fluoride determined in serum from production workers
1981	Concern about birth defects in children of female production workers
1987	PFOA carcinogenicity reported in rat study
1993	3M begins to monitor PFOA in serum from production workers
	Mortality study shows excess occurrence of prostate cancer
1998	Serum from US blood donors shown to contain PFAS
2000	Global dissemination of environmental PFAS contamination documented
	3M announces plan to phase out commercial production of PFOS
2005	Extensive drinking water contamination discovered in Minnesota
2008	Health Risk Limits for PFAS in drinking water are issued
	Mouse study shows immunotoxicity at serum PFAS concentrations similar to human exposures
2010	Decrease of PFOA emissions by 95% said to be completed
2011	PFOA induces delayed mammary gland development in mice at low exposures
2012	PFAS immunotoxicity reported in children

Adapted from Grandjean and Clapp[16]

Table 2.

Summary of main cancer epidemiology studies.

Reference	Study population	Main results	Comments
[34]	2788 male and 749 female workers in PFOA production plant	Male all cause SMR=0.77 (95% CI 0.69–0.86); Prostate cancer SMR=3.3 (CI 1.02–10.6) with 10+ years employment	Likely healthy worker effect; six prostate cancer deaths overall
[48]	2083 production workers employed at least one year in Alabama PFOS fluoride production plant	All cause SMR=0.63 (95% CI 0.53–0.74); Bladder cancer SMR=16.12 (95% CI 3.32–47.14) in those with high exposure jobs	Likely healthy worker effect; small number of cancer deaths, only three bladder cancer deaths
[35]	6027 workers who worked in DuPont West Virginia plant between 1948 and 2002	All cause SMR=67 (95% CI 62–72); All cancer SMR=74 (95% CI 65–84); Kidney SMR=152 (95% CI 78–265)	Likely healthy worker effect; comparison to other DuPont Region I workers unremarkable
[49]	3993 workers employed at least a year in Minnesota PFOA plant between 1947 and 1997	All cause SMR=0.9 (95% CI 0.7–1.1); Prostate cancer SMR=2.1 (95% CI 0.4–6.1); Moderate/high exposed SMR=3.2 (95% CI 1.0–10.3)	Suggestive increased mortality from bladder cancer and cerebrovascular disease
[51]	5791 workers exposed to PFOA in DuPont West Virginia plant	All cause SMR=0.98 (95% CI 0.92–1.04); Kidney cancer SMR=2.66 (95% CI 1.15–5.24) in most highly exposed quartile	Detailed exposure estimates, additional results with lagged analyses for mesothelioma and chronic renal disease deaths
[52]	Cancer cases and controls from five West Virginia and Ohio counties diagnosed 1996–2005	Kidney cancer OR=2.0 (95% CI 1.0–3.9) for very high exposure category; Testis cancer OR=2.8 (95% CI 0.8–9.2) for very high exposure category	Community water contamination estimates showed suggestive associations with several types of cancer

Table 3.

Benchmark dose level (BMDL) results in terms of serum concentrations of PFOA and PFOS.

Reference	Study type	BMDL	Outcome parameter
		PFOA	
[77]	Adult rats with subchronic exposure	23,000 ng/mL	10% increase in liver weight
[2, 12]	Developmental exposure in mice	23–25 ng/mL	10% delay in mammary gland development
[3]	Prospective human birth cohort study	0.3 ng/mL	5% decrease in serum concentration of specific antibodies
		PFOS	
[78, 85]	Adult cynomolgus monkeys with subchronic exposure	35,000 ng/mL	10% change in liver function and thyroid function
[3]	Prospective human birth cohort study	1.3 ng/mL	5% decrease in serum concentration of specific antibodies

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November 19, 2019

Filed via Email
Adam.DeWeese@wisconsin.gov

Department of Natural Resources
Attn: Adam DeWeese – DG/5
P.O. Box 7921
101 S. Webster Street
Madison, WI 53707-7921

Re: Comments on Statement of Scope SS 089-19
Revisions to Ch. NR 809 related to PFAS

Dear Department Reviewer:

These comments are filed on behalf of the La Crosse Water Utility (La Crosse). La Crosse supports the comments submitted by the Municipal Environmental Group – Water Division (MEG – Water) on November 15, 2019. MEG-Water is an association of municipal water systems that provides input on legislative and regulatory issues involving the public water supply.

The La Crosse Water Utility is one of the three water systems that detected one or more of the six PFAS; first in our well 23 during the 2014-15 UCMR3 sampling, and then again in well 24 in 2018 in follow-up sampling initiated by the Utility. Both wells have been taken out of daily production pending better guidance from EPA and/or WDNR on the health risks of these compounds. We also have initiated a study to identify the source and develop a clean-up plan. However, these wells need to be available for use in our system to augment pressure and supply in the event of a large fire.

Our number one goal is to provide safe reliable drinking water to the residents of La Crosse. Our second is to provide adequate water supply and pressure for fire protection. We try to do both in an efficient and cost-effective manor. Finding that balance between cost and safety is critical in all aspects of running a City. Such as hiring a firefighter to camp out on every porch in the city would reduce fires and increase response time, but obviously would not be cost effective. Nor would having two guys and a bucket, while very cost effective, by consider a safe fire department by anyone.

Requiring La Crosse to treat PFAS to an artificially extremely low drinking water standard would substantially increase the costs to our customers. If we need to add a PFO/PFA treatment train to our wells just so the wells can still be available for fire protection, our customers will suffer. Instead, we support and voluntarily have minimized the use of our wells with PFAs and PFOS detections until the science and analysis can be done to assess the acceptable concentrations of these contaminates in the water supply.

We strongly support the MEG suggestion that the Department wait on this rule-making until the end of the year, allowing time for standard process for setting MCL's to occur, as setting extremely low water quality standards without sufficient science and analysis is as imprudent as putting a fire fighter on every porch.

Thank you for this opportunity to provide the Department with additional input. If you have any questions, please do not hesitate to contact us.

City of La Crosse Utilities

Bernard Lenz
La Crosse Utilities Manager

Tina Erickson
La Crosse Utilities Accounting &
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November 21, 2019

Wisconsin Department of Natural Resources
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RE: Comments on Statement of Scope SS 091-19, related to revisions to chapters NR 105, NR 106, and NR 219, and Statement of Scope SS 089-19, related to revisions to chapter NR 140

Dear Department Reviewer:

The League of Wisconsin Municipalities (League) submits these comments on behalf of its 593 member cities and villages, nearly all of whom own and operate drinking water systems and wastewater treatment facilities, which serve 70 percent of the state's population.

The League supports the development of science-based standards for PFOA and PFOS that consider relative cost, benefit, and feasibility of PFAS removal and treatment options.

In response to proposed state legislation and administrative rules regulating PFAS compounds, the League helped create the Municipal Water Coalition, an alliance of groups representing municipal water and wastewater utilities. The Coalition consists of the League, the Wisconsin Rural Water Association, Municipal Environmental Group – Wastewater Division, the Municipal Environmental Group – Water Division, and the Wisconsin Section of the American Water Works Association. The group's goals are:

- To work collaboratively with DNR on developing science based PFAS standards that consider relative cost, benefit, and feasibility of different PFAS removal and treatment options.
- To work collaboratively with DNR and industry stakeholders to find ways to reduce sources of PFAS before they enter public water or sewer systems.
- To educate the public about the background presence of PFAS in our homes and environment from common household products and make clear that

drinking water systems and wastewater treatment facilities are not producers or users of PFAS, but only recipients of the compounds.

We write to express our support for comments submitted by two Municipal Water Coalition members. The League fully endorses the comments on Statement of Scope SS 089-19 submitted by Municipal Environmental Group – Water Division (MEG--Water). We also fully endorse the comments on the same Statement of Scope and Statement of Scope SS 091-19 submitted by the Municipal Environmental Group – Wastewater Division (MEG--Wastewater). The comments submitted by these two groups accurately express the concerns of the League's full membership of 593 municipalities.

Thank you for the opportunity to underscore the remarks and recommendations provided by MEG – Water and MEG – Wastewater.

Best Regards,

Curt Witynski

Curt Witynski, J.D.
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November 18, 2019

Meghan Williams
Department of Natural Resources -WY/3
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Dear Ms. Williams:

Thank you for the opportunity to comment on Statement of Scope SS 091-19 related to regulations to add surface water quality criteria and analytical methods for poly- and perfluoroalkyl substances (PFAS) for the purpose of protecting public health, as well as revisions to the procedures in the WPDES permitting program.

We are encouraged that the Department is undertaking the rulemaking process, as consistent rules and regulations provide the District a clearly defined goal to attain. It also creates an even playing field for all utilities and sets clear targets that the District can use when looking toward reduction of these compounds within our own operations and the operations of our permitted industrial and commercial customers.

The District looks forward to a science-based rulemaking process that takes a complete look at PFAS. In the rule-making process, the District asks that the Department holistically consider potentially affected parties and the economic impacts these parties can anticipate; this is especially true for WPDES permitees, such as the District, that have industrial pretreatment programs and may be asked to install pretreatment for PFAS or be required to undertake product substitution or elimination. This is one example of how the creation of a surface water standard for certain PFAS compounds may not only affect WPDES permitees that discharge to surface waters, but also entities that are part of the wastewater cycle.

We fully believe that rules based in science can help in understanding PFAS beyond the water utility sector and should be part of the conversation as decisions are being made regarding how to manage these compounds. Science can further help our response to PFAS if we better understand what different levels of PFAS mean in surface water and other media (wastewater, biosolids, etc.) in relation to the context of the various pathways of PFAS exposure in our lives (e.g. homes, etc.). Acknowledging that different pathways may have different risk and exposure levels will help maintain a balanced approach to solutions while attempting to address concerns around PFAS.

Please feel free to contact me at marting@madsewer.org or 608-222-1201 if you would like any more information or to discuss this any further.

Regards,

Martin Griffin
MMSD Director of Ecosystem Services

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November 19, 2019

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RE: MEG-Wastewater Comments on Statement of Scope SS 091-19, related to revisions to chapters NR 105, NR 106, and NR 219, and Statement of Scope SS 089-19, related to revisions to chapter NR 140

Dear Department Reviewer:

We are filing these comments on behalf of the Municipal Environmental Group – Wastewater Division (MEG). MEG is an association of approximately 100 municipalities throughout the state of Wisconsin who own and operate wastewater treatment facilities. For more than 25 years, MEG has been an advocate for municipalities in wastewater matters.

The mission of our MEG members is to protect public health and the environment through the treatment and reclamation of wastewater. Publicly owned treatment works are the boots on the ground that make clean water happen. On behalf of our members, we share the Department's concern about PFAS compounds, and we support the regulation of these compounds based on due deliberation and credible science.

As the Department's scope statement acknowledges options for end-of-pipe treatment for PFOA and PFOS at a POTW are limited. These options are also very costly. For example, we are aware a reverse osmosis (RO) system was evaluated for a 20 mgd wastewater flow and the costs ranged from the hundreds of millions to $2 billion dollars. In addition, these treatment options all result in the creation of highly concentrated waste products, for which there are currently few disposal options. Chief among

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these disposal options is the containment of these waste products at landfill sites, which could result in the recycling of PFOA and PFOS containing wastes back into POTWs through landfill leachate. Solutions to PFAS issues need to be holistic and systemic. Ultimately, the solution to addressing PFAS compounds must be at the front end where they are manufactured and used, not at the back end where they are disposed into municipal treatment plants. This was how the country dealt with PCBs and a similar systemic approach should be undertaken here.

Given these extremely limited and costly options for treatment and eventual disposal of waste byproducts of treatment, it is essential that the Department engage in a rule making process that is guided and supported by sound science and fully assesses potential costs to municipalities.

At this time, we have the following preliminary comments on the scope statements. First, as currently written, SS 091-19, in particular, would authorize the Department to develop standards for PFOA and PFOS "as well as any other PFAS which the department determines may be harmful to human health." The inclusion of "any other PFAS" in this scope statement makes it very difficult to assess the potential cost impact of the development of standards. Further, we understand the science regarding health impacts of PFOA and PFOS to be well ahead of the science regarding other PFAS compounds. For these reasons, the scope statements regarding PFAS regulations should be amended to limit the creation of standards to PFOA and PFOS at this time. Typically, water quality standards under NR 105 and NR 106 follow from federally developed studies. That is clearly the preferred approach. However, if that process is not followed here, there needs to be comparable and rigorous scientific support and appropriate risk analysis undertaken for any new surface water quality standard.

Second, MEG also requests that the Department establish an active advisory committee for development of rules regarding PFOA and PFOS. The regulation of these compounds will affect a large number of stakeholders and will have a system-wide impact on municipalities across the state. Convening an advisory committee is vital to ensuring that the Department develops rules that take into account this system wide impact.

Third, given the limited treatment options, any water quality standard process must include alternative compliance options such as those developed for phosphorus and chlorides.

MEG supports the development of science-based standards for PFOA and PFOS that consider relative cost, benefit, and feasibility of PFAS removal and treatment options, and appreciates the opportunity to work with the Department in development of such standards.

Best Regards,

Vanessa D. Wishart
Paul G. Kent
Attorneys for MEG Wastewater

MEG Water Division
Municipal Environmental Group

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November 15, 2019

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RE: Comments on Statement of Scope SS 089-19
Revisions to Ch. NR 809 related to PFAS

Dear Department Reviewer:

These comments are filed on behalf of the Municipal Environmental Group - Water Division (MEG - Water). MEG - Water is an association of 65 municipal water systems that provides input on legislative and regulatory issues involving water supply.

Municipal water systems — water systems owned and operated by cities, villages, sanitary districts and other governmental entities — exist in order to provide their residents with safe drinking water. There are approximately 577 municipal water systems in Wisconsin. They test the water for more than 90 regulated contaminants to ensure the protection of public health. During 2018, more than ***99%*** of Wisconsin's public water systems provided water that met **all** health-based maximum contaminant level (MCL) standards.

To date, all drinking water MCLs have been first established by EPA pursuant to the Safe Drinking Water Act (SDWA) standard-setting process and then adopted by the State of Wisconsin. To our knowledge, Wisconsin has never adopted a drinking water MCL without there being a comparable federal drinking water MCL in place.

We understand that concerns about the widespread presence of PFAS compounds in the environment and the potential health effects from these compounds have led the Department to initiate this rule-making to establish drinking water MCLs for PFAS compounds, even though no federal MCLs exist.

Although no federal MCLs for PFAS compounds yet exist, EPA has taken steps to gather information about the presence of PFAS compounds in drinking water. EPA included six PFAS compounds, including PFOA and PFOS, in the third cycle of the Unregulated Contaminant Monitoring Rule (UCMR) and gathered PFAS sampling data from 4,900 public water systems nationally between 2013 and 2015. In Wisconsin, 91 municipal water systems, roughly 16% of Wisconsin's municipal water systems and including **all** systems serving over 10,000 people, sampled for the six PFAS compounds between 2013 and 2015. Only three Wisconsin municipal

water systems detected one or more of the PFAS sampled. Only one Wisconsin municipal water system detected a PFAS substance (PFOS) above EPA's health advisory level of 70 ppt, and only at one well. EPA will be gathering more information in the next round of the UCMR (UCMR5). In UCMR5, EPA intends to propose monitoring for additional PFAS compounds and require the use of newer testing methods available to detect different PFAS at lower minimum reporting levels.

The information gathered from UCMR sampling will be used by EPA to make its initial decision on whether to regulate any PFAS compounds. EPA has recently stated in a November 7 press release that it will issue its proposed regulatory determination for two PFAS compounds, PFOA and PFOS, by the end of the year. This is the next step in the MCL standard-setting process outlined in the SDWA.

MEG - Water strongly supports the SDWA standard-setting process. This process ensures that drinking water standards are based on credible science and developed after due deliberation. Under the SDWA standard-setting process, a health goal is set that considers risks to the most sensitive populations including infants, pregnant women, and the immuno-compromised. The next step sets the enforcement standard (the MCL) to be as close to the health goal as feasible, considering available treatment technologies and costs. This cost-benefit analysis is a critical component of the SDWA standard-setting process. In order to evaluate the cost of achieving a proposed standard, the relative cost, benefit, and feasibility of different pollutant removal and treatment options must be considered. In order to evaluate the benefit of a proposed standard, the human health problems associated with the presence of the contaminant in drinking water must be understood, along with the degree of harm, if any, expected from various levels of exposure to the contaminant.

Inherent in every MCL established under the SDWA is a determination that the marginal benefit of a stricter standard is outweighed by the additional cost to achieve that standard. If an MCL is set too low, the cost of achieving the standard will be greater than the additional health benefits provided.

The American Water Works Association (AWWA) recently provided the Congressional Budget Office with its estimate of the national cost to treat PFOA and PFOS at differing MCLs using different treatment processes. AWWA estimated a greater than 1,000% increase in both capital costs and annual operation and maintenance (O&M) costs between a 70 ppt MCL and a 20 ppt MCL.

National Capital Cost to Install Treatment

Treatment Objective	Capital Costs ($ millions)		
	Granular Activated Carbon	Ion Exchange	Reverse Osmosis
< 70 ng/L	$2,100 - $4,400	$1,900 - $4,100	$5,700 - $12,000
< 40 ng/L	$5,600 - $12,000	$5,400 - $12,000	$15,000 - $33,000
< 20 ng/L	$23,000- $50,000	$22,000 - $48,000	$63,000 - $140,000
Treatment Technique	$140,000 - $290,000	$130,000 - $280,000	$370,000 - $800,000

National Annual Operating and Maintenance Cost for Installed Treatment

Treatment Objective	Annual Recurring Costs ($ millions)		
	Granular Activated Carbon	Ion Exchange	Reverse Osmosis
≤ 70 ng/L	$44 - $90	$210 -$460	$190 - $410
≤ 40 ng/L	$110 - $240	$540 - $1,200	$480 -$1,000
≤ 20 ng/L	$460 - $980	$2,200 - $4,800	$2,000 - $4,200
Treatment Technique	$2,700 - $5,800	$13,000 - $28,000	$12,000 - $25,000

Source: https://www.awwa.org/Portals/0/AWWA/ETS/Resources/AWWAInformationforCBOforPFASTreatmentCosts.pdf?ver=2019-10-23-113359-787

Another example of the exponential increase in short-term and long-term costs associated with lower PFAS MCLs is provided by the State of New Hampshire. The New Hampshire Department of Environmental Services (NHDES) proposed initial standards for four PFAS substances and then promulgated lower standards for those substances. The final standards lowered the MCLs to between 20% and 48% of the initial standards. But the estimated capital costs for public water systems to meet these lowered standards increased between 2,700% and 3,500%, while the estimated annual O&M costs increased roughly 6,000%.

	Initial Standards	Final Standards
PFOA	38 ppt	12 ppt
PFOS	70 ppt	15 ppt
PFHxS	85 ppt	18 ppt
PFNA	23 ppt	11 ppt
Initial Treatment Costs	$1,851,354 - $ 5,171,022	$ 65,046,987 - $ 142,822,884
Annual O&M Costs	$ 114,912 - $ 223,439	$ 6,914,552 - $13,444,963

Sources: https://www4.des.state.nh.us/nh-pfas-investigation/?p=918; https://www4.des.state.nh.us/nh-pfas-investigation/?p=1044; https://www4.des.state.nh.us/nh-pfas-investigation/wp-content/uploads/Summary-of-Comments-Responses-with-Attachments.pdf

Wisconsin's public water systems already face costs of $8.5 billion over the next 15 years to meet existing drinking water priorities, like the elimination of lead service lines, according to Wisconsin's 2018 Annual Drinking Water Report. New PFAS drinking water standards could substantially increase that cost. The Statement of Scope estimates that the cost of adding PFAS treatment at one large municipal public water system could be at least $25 million.

It is clear that the numerical level set by the Department will significantly impact the public dollars that must be spent to achieve the standard. Consequently, it is vital that the public health protections achieved from new standards justify the costs of meeting the numerical standards set.

MEG - Water's strong preference would be for the Department to wait on this rule-making until the end of the year, which is when EPA indicated it will announce whether it will proceed with standard setting for PFOA and PFOS. We support having consistent drinking water standards

throughout the United States. Consistent national standards also have appeared to be important to the State of Wisconsin. To our knowledge Wisconsin has always adopted drinking water MCLs based on comparable federal standards.

If the Department determines to proceed with the rule-making, we ask that the Department amend the Scope Statement to make clear that the Department will follow the SDWA standard-setting process and perform the necessary cost-benefit analysis for proposed MCLs. This means the Department will not just find that health benefits exist from reduced PFAS exposure generally. It means the Department will analyze whether the health benefits provided by a stricter MCL are justified by the costs to achieve the proposed MCL ***and*** whether those benefits could still be attained with a less strict MCL that has lower costs.

Wisconsin's municipal water systems face many challenges that require significant public investment. The State of Wisconsin needs to ensure that this investment is directed to the greatest need and will provide the greatest benefit. It is critical in this rule-making process that PFAS contamination be given the same scrutiny and analysis that all contaminants of concern receive, and that PFAS be prioritized relative to its actual risk.

Thank you for this opportunity to provide the Department with additional input. If you have any questions, please do not hesitate to contact us.

MUNICIPAL ENVIRONMENTAL GROUP
-- WATER DIVISION

/s/ Lawrie J. Kobza

Lawrie J. Kobza
Legal Counsel

cc: MEG - Water Members
(via email)

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TO: **Adam DeWeese**
Bruce Rheineck
Meghan Williams
Administrative Rule Coordinators
Wisconsin Department of Natural Resources

FROM: **Jason Culotta**
President
Midwest Food Products Association

DATE: **November 19, 2019**

RE: **Comments on PFAS-Related Scope Statements**

The Midwest Food Products Association (MWFPA) appreciates the opportunity to offer comments on scope statements SS 089-19, SS 090-19, and SS 091-19 relating to proposed regulations of PFAS compounds in water.

MWFPA is the trade association representing food processors and their allied industries throughout Illinois, Minnesota, and Wisconsin. Many of our food processors and their contract growers will be impacted by the proposed rules outlined by these scope statements.

Water is an essential ingredient for the agriculture and food industries. Food manufacturers use water in many products but also utilize it to clean, peel, heat, and steam raw products. Purchasing, pumping, and treating water represents a major cost to food manufacturers. While we support efforts to manage and ensure access to clean, healthy water, we recognize the need to proceed carefully to ensure new regulations are effective in addressing problems where they exist.

We agree with the concerns raised by the Wisconsin Water Quality Coalition, of which MWFPA is a member. The Department of Natural Resources (DNR) should properly collect and analyze the science and data before proceeding with an administrative rulemaking process without a science-based framework to base the proposed standards on. To the greatest degree practical, we recommend that the DNR work in conjunction with the federal government, especially considering the PFAS action plan released by the Environmental Protection Agency (EPA) only one week ago.

The EPA is investing significant resources into studying the science surrounding these compounds. Specifically, EPA is following a statutory process for evaluating PFAS – particularly perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS), two of the most well-studied substances – and has established health advisory levels in drinking water at 70 parts per trillion (separately or combined) for these two compounds.

Studies of the actual health effects of PFAS compounds are inconclusive, except for high cholesterol found in people exposed to elevated levels of PFOA or PFOS. Scientists agree we have at best limited information on most of the 4,000-plus compounds encompassed in the PFAS family. It is imperative that the DNR proceed in a manner based on sound science and methodology.

It would be beneficial to all interested parties if the proposed scope statements were limited to PFOA and PFOS, as those are the most studied of these compounds. As drafted, the scope statements appear open-ended in not only seeking set enforcement limits for PFOA and PFOS, but "*any other PFAS which the department determines to be harmful to human health*" mentioned in SS 091-19.

Additionally, the rapidly and disparately evolving PFAS legal and regulatory landscape among states and communities implementing individual regulations increases the risk of a patchwork of differing requirements. This creates an uncertain regulatory environment for our membership and is even more reason to adopt workable, scientifically based regulations in coordination with the federal government. Any action taken by the State of Wisconsin should be consistent with and not more stringent than regulations established by the federal government.

MWFPA strongly recommends the Wisconsin Legislature and state agencies including the DNR work in concert with the federal EPA rather than attempting to promulgate administrative rules that exceed standards established by the federal government. It is especially important that the State allows the research on these compounds to develop and takes appropriate time to review the scientific body of evidence before adopting excessively stringent standards that lack a science-based approach to regulation.

MWFPA respectfully urges the Natural Resources Board to not approve these scope statements as written but rather direct DNR staff to narrow the proposed scope of the rules currently contemplated to address only PFOA and PFOS.

NCASI
IMPACT. SCIENCE. SOLUTIONS.

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Sent via e-mail:
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November 19, 2019

Re: DNR Scope Statements for Groundwater Standards (DG-15-19), Surface Water Standards (WY-23-19), and Drinking Water Standards (DG-24-19)

On behalf of its members, NCASI appreciates the opportunity to comment on the Scope Statements for Groundwater Standards (DG-15-19), Surface Water Standards (WY-23-19), and Drinking Water Standards (DG-24-19).

NCASI conducts research and technical studies on behalf of forest products companies across the US, and its members represent nearly 90% of pulp and paper and two-thirds of wood panels produced nationwide. Most forest products facilities operating in Wisconsin are NCASI members. NCASI has been an active participant at the state and federal levels in technical and scientific aspects of water quality criteria development for many years.

These comments relate specifically to the statement of scope and proposed activity for PFAS and the need to further evaluate the recommendations from the Department of Health Services regarding proposed criteria for PFOA and PFOS. NCASI and its members support the DNR's desire to carefully consider the best science available for managing the ground-, surface, and drinking water in the state of Wisconsin. To that effect, we have the following technical comments regarding the scope statements related to PFAS in general and PFOS and PFOA in particular:

1. Broadly grouping PFAS compounds to develop regulatory criteria or using a single criterion to regulate all PFAS compounds is not scientifically defensible. PFAS, as a group, includes thousands of substances with unique physio-chemical properties, unique fate and transport properties, and unique toxicological profiles. Using a single criterion or broadly inclusive criteria is unlikely to produce a standard with a well characterized margin of safety or that accurately reflects the

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hazard posed by individual substances within the group. This has been evidenced in the scientific literature, even in studies that have evaluated PFAS of relatively similar chemical structure. As an example, Pizzurro et al. 2019 examined the toxicokinetics of several PFAS compounds and came to the following conclusions (bolding added):

> "Overall, our analysis provides one of the first syntheses of available empirical PFAS toxicokinetic data to facilitate interpreting human relevance of findings observed in animal studies and developing health-based criteria for PFAS from such studies. Our analysis highlighted **several notable differences among the different PFAS regarding species and substance-specific tissue partitioning, half-life, and transfer to developing offspring via the placenta or lactation**, as well as highlighted data gaps for certain substances."
>
> "Lastly, the results of this analysis indicate that there are toxicokinetic differences among the different PFAS based on chain length, and **these substances should not be regulated as a group without careful consideration of how the substance-specific toxicokinetics may impact potential toxicity, including differing specific target organ toxicity and overall body burden.**"
>
> --Pizzurro et al. 2019

2. The scope should consider further evaluation of the recommendations from DHS. When deriving a human equivalent dose (HED), the appropriate assumption for a relevant dose metric must be made in order to achieve a scientifically defensible value. For developmental outcomes, a serum peak, or Cmax value, may be most appropriate as it relates to the specific time period at which the underlying developmental change occurs. Using the Area Under the Curve approach (AUC) may unnecessarily drive down criteria by inaccurately characterizing a relationship between lower human doses and the health endpoint observed in animals (at higher doses). An HED using the most appropriate extrapolation approach, which in the case of developmental endpoints, is Cmax or a limited timeframe average, should be used to extrapolate animal toxicity data to human risk assessment as noted in Dourson et al. 2019.

As well, the kinetics data relied upon by DHS is not the best science available for estimating the half-life of PFAS in humans. Some PFAS are retained in the bloodstream by the kidney, which treats these molecules like fatty acids and uses a similar receptor-based mechanism to prevent their loss from the blood. However, when the concentration of PFAS becomes high enough, this retention system becomes saturated, and the elimination rate of PFAS becomes much higher, shortening the half-life. In animal studies, our observations occur at relatively 'high' concentrations of PFAS compared to observations in humans that are typically much lower. Therefore, the elimination rate we observe in animal studies is faster (because the retention mechanism is saturated) than what we observe in human studies that observe much lower doses. However, Elcombe et al. 2013 studied PFAS as a component of a chemotherapeutic regimen for cancer patients and determined that higher doses of PFAS in humans resulted in faster elimination rates. Therefore, DHS should be relying on the most relevant data, human data, for developing an HED

value.

We appreciate your consideration of these technical comments when evaluating the proposed Scope Statements for Groundwater Standards (DG-15-19), Surface Water Standards (WY-23-19), and Drinking Water Standards (DG-24-19).

Submitted Respectfully,

Giffe Johnson, PhD
Principal Scientist: Toxicology, Epidemiology, Risk Analysis
402 SW 140th Terrace
Newberry, FL 32669
(813) 734-4385
gjohnson@ncasi.org

References:

Pizzurro, Daniella M.; Seeley, Mara; Kerper, Laura E.; Beck, Barbara D. 2019. Interspecies differences in perfluoroalkyl substances (PFAS) toxicokinetics and application to health-based criteria. Regulatory Toxicology and Pharmacology 106 239–250.

Dourson, Michael L.; Gadagbui, Bernard; Onyema, Chijioke; McGinnis, Patricia M.; York, Raymond G. 2019. Data derived Extrapolation Factors for developmental toxicity: A preliminary research case study with perfluorooctanoate (PFOA). Regulatory Toxicology and Pharmacology. 108 https://doi.org/10.1016/j.yrtph.2019.104446

Elcombe, C.R., Wolf, C.R., Westwood, A.L., 2013. US Patent Application Publication. Pub. No.: US 2013/0029928. Available at: https://patentimages.storage.googleapis.com/24/ee/73/f58267c7d70dde/WO2011101643A1.pdf

From: Cheryl Nenn <cheryl_nenn@milwaukeeriverkeeper.org>
Sent: Tuesday, November 19, 2019 2:10 PM
To: DNR Administrative Rules Comments <DNRAdministrativeRulesComments@wisconsin.gov>
Cc: Jennifer Bolger Breceda <jennifer@milwaukeeriverkeeper.org>
Subject: Milwaukee Riverkeeper Comments on PFAS Scope Statements

To Whom It May Concern:

On behalf of Milwaukee Riverkeeper, we support efforts by the WDNR to set guidelines and develop rules to protect Wisconsin residents from PFAS pollution. PFAS, including PFOA and PFOS, are an emerging class of chemicals that have alarming impacts on water, aquatic life, and public health. PFAS are a class of over 5,000 man-made chemicals that are found in many everyday products, including nonstick pans, cleaning products, paints, and firefighting foam. PFAS have been found in the groundwater at General Mitchell International Airport, and have now been documented to be entering into local streams, including Wilson Creek and Oak Creek, which discharge to Lake Michigan, which is the source of drinking water for over one million people in southeast Wisconsin.

Given the industrial history in Milwaukee and other nearby cities, it is likely with more testing of water and sediment that we will find more hot spots of these pollutants. In addition, we are undergoing major efforts to remove contaminated sediment from our Milwaukee Estuary Area of Concern, and it is important that if we are going to spend hundreds of millions of dollars to remove sediments contaminated with PCBs, PAHs, and other heavy metals, that we are also planning to address any PFAS contamination. In our area, many people could be exposed to PFAS in our waters and in our fish, and suspected heath impacts are very concerning. These chemicals, like PCBs, are deemed “forever chemicals” and will not readily breakdown in the environment.

We support the scope statements below that outline the DNR’s intent to develop standards for groundwater, surface water, and drinking water. The scope statements would:

1. Adopt groundwater standards. (SS 090-19). Under this scope statement, DNR would likely promulgate the Department of Health Services’s (DHS) recommended standards of 20 ppt

combined for PFOA and PFOS and a 2 ppt preventive action limit. This rule would apply to all regulated facilities that may impact groundwater.

2. Adopt surface water quality standards for PFAS. (SS 091-19). Under the scope statement, DNR could also change Wisconsin Pollution Discharge Elimination System (WPDES) permit implementation procedures related to PFAS chemicals, including additional monitoring and new effluent limitations. Currently, DNR can address PFAS discharges in WPDES permits on a case-by-case basis. The proposed rule would set a uniform standard and procedures.
3. Adopt maximum contaminant levels (MCLs) for drinking water. (SS 089-19). MCLs for drinking water would mostly affect municipal water systems.

PFAS poses a serious threat to our waterways, our drinking water, and out public health. It is imperative that we pass regulations for PFAS as soon as possible. Thank you for your consideration of these comments.

Sincerely,

Cheryl Nenn

Cheryl Nenn
Riverkeeper
Milwaukee Riverkeeper
main: 414.287.0207 direct: 414.431.0903
find me at: 600 E. Greenfield Ave. | Milwaukee, WI 53204
Follow us:

From: Al Bock
To: Williams, Meghan C - DNR
Subject: PFAC
Date: Monday, November 18, 2019 12:43:17 PM

I am writing to express my opinion that we should move forward as a state to develop standards to protect us from harmful levels of these dangerous chemicals in our surface, ground, and drinking water.

Sent from Al Bock, 1880 Abby Rd., Cumberland, Wi.

-----Original Message-----
From: Al Bock <al_bock@yahoo.com>
Sent: Monday, November 18, 2019 12:43 PM
To: DeWeese, Adam D - DNR <Adam.DeWeese@wisconsin.gov>
Subject: PFAS

I am writing to express my opinion that we should move forward as a state to develop standards to protect us from harmful levels of these dangerous chemicals in our surface, ground, and drinking water.

Sent from Al Bock, 1880 Abby Rd., Cumberland, Wi.

From: Ralph Kerler
To: Williams, Meghan C - DNR
Subject: PFAS
Date: Saturday, November 16, 2019 12:10:37 PM

I strongly support the Wisconsin DNR establishing tight standards on PFAS. This has quickly become a huge problem especially as it relates to ground water and drinking water which is a deteriorating critical resource. It's apparent that this chemical is building up in Humans, Animals, and the Environment. The primary point sources seem to be understood and Federal standards exist. I live on a lake in Vilas County and have my own water source. If the level of PFAS's continue to increase, it's impossible to clean up everyone's municipal and private water sources.

We all need your help Ralph Kerler Lac du Flambeau, WI

From: Leo G Lamers
To: Williams, Meghan C - DNR
Subject: PFAS
Date: Sunday, November 17, 2019 4:15:47 PM

I am writing to support allowing the DNR to write rules to establish limits on "PFAS" in our waters.

Lee Lamers
6967 Hamilton Dr.
Wabeno, WI 54566

715-473-2633

WMC

TO: Meghan Williams, Wisconsin DNR
Bruce Rheineck, Wisconsin DNR
Adam DeWeese, Wisconsin DNR
Members, Wisconsin Natural Resources Board

FROM: Scott Manley, Executive Vice President of Government Relations

DATE: November 19, 2019

RE: Scope Statements SS 091-19, SS 090-19, and –SS 089-19

Wisconsin Manufacturers & Commerce appreciates the opportunity to provide comments on three scope statements related to regulating PFAS, including a groundwater standard (SS 090-19), a surface water standard (SS 091-19), and a drinking water standard (SS 089-19).

WMC is the state's largest general business association, with roughly 3,800 members representing manufacturing, retail, insurance, energy, financial institutions, agriculture, healthcare, and other service sectors of our economy. Since our founding in 1911, WMC's mission has been to make Wisconsin the most competitive state in the nation to do business. Our members have a substantial interest in the administrative rulemaking process, including ensuring that agencies follow all legal requirements associated with promulgating rules. In addition, our members have both a direct and indirect interest in the establishment of water quality standards.

The business community recognizes the importance of setting reasonable, science-based regulatory criteria for compounds that are shown to be harmful to human health. However, we cannot support these scope statements as proposed, and urge the Board to either amend them or send them back to DNR staff for amendment.

PFAS are a group of more than 4,000 compounds. In order to be classified as PFAS, a compound need only have a carbon-fluorine bond. The strength of the carbon fluorine bond prevents compounds from breaking down as quickly, which is also what gives these substances the valuable properties for which they were created such as water and grease resistance. It is important to understand that not all PFAS compounds are health hazards. In fact, the FDA has approved many for use in food packaging based on scientific studies that support the benign nature of these chemicals.

Some scientific studies have shown that exposure to very high levels of two legacy compounds – PFOS and PFOA – can be *associated with* adverse health impacts. WMC does not wish to comment on the appropriate standard or level of regulation at this step of the rulemaking process – we will comment on those issues in later stages of the rulemaking. The purpose of these comments is to address the proposed scope statements, and explain why we believe they should be focused on regulating PFOA and PFOS, rather than encompassing the expansive list of 4,000 compounds in the broad PFAS category.

Chapter 227, which governs Wisconsin's rulemaking process, envisions use of a narrow scope statement, which sets clear and specific expectations for the Legislature and the public on what regulations will be

developed. A scope statement is just as its name suggests – it defines the scope of the rulemaking an agency proposes to undertake. In this instance, by leaving the door open to regulating as many as 4,000 PFAS compounds, the Department has failed to meaningfully define the scope of these rules. This lack of clarity and specificity is contrary to both the letter and spirit of Wisconsin's administrative rulemaking requirements.

The failure to properly scope a rule is incredibly consequential, and will ultimately result in the invalidation of the rule itself. Specifically, state law prohibits agency staff from doing *any* work on a rule unless and until a proper scope statement is approved. That is, s. 227.135(2) provides that "No state employee or official may perform any activity in connection with the drafting of a proposed rule, except for an activity necessary to prepare the statement of the scope of the proposed rule until the governor and the individual or body with policy−making powers over the subject matter of the proposed rule approve the statement." Failure to follow this proscription is, on its face, a failure to follow procedural requirements for promulgating a rule. The exclusive remedy for failing to follow administrative rulemaking procedures is invalidation of the rule. For example, section 227.40(4)(a) makes clear that a court *shall* invalidate a rule if it "was promulgated or adopted without compliance with statutory rule-making or adoption procedures."

WMC strongly encourages the Department to adequately and precisely scope these three rules to prevent them from being invalidated at a later date because of a failure to correctly follow the first step of the rulemaking process. In doing so, we strongly suggest that the scope of these rules be limited to the two PFAS substances that have undergone rigorous scientific research and study: PFOS and PFOA.

Groundwater Standards (SS 090-19)

With respect to the groundwater standard, DNR must first receive a recommended enforcement standard from the Department of Health Services (DHS) prior to promulgating rules to set a standard. Wisconsin Statutes Chapter 160 lays out an extensive process for the health experts to determine a recommendation. Currently, DHS has recommended standards for only two PFAS substances, PFOA and PFOS, which were requested along with several non-PFAS substances in the Cycle 10 request from DNR to DHS.

However, this scope statement fails to mention the possibility of regulating PFOA, PFOS, or any of the other Cycle 10 substances studied by DHS for establishment of a groundwater standard. It merely mentions nondescript changes to groundwater rules in Chapter NR 140. This lack of specificity and detail does not give the public or the Legislature adequate notice as to the standards and regulations envisioned by the Department, and is therefore legally deficient as currently drafted. As noted above, doing any work on groundwater standards that are not properly scoped exposes the rules to invalidation because of a failure to follow Chapter 227 rulemaking procedural requirements. To be compliant, this particular scope statement must be sent back to DNR staff for inclusion of a list of the specific substances intended for regulation under NR 140, which must be limited to the universe of Cycle 10 compounds.

WMC wishes to go on record to further note that the DNR has recently requested several more recommendations from DHS, including 36 additional PFAS compounds, as part of the Cycle 11 request. As previously noted, we believe that this rulemaking and this scope statement must state with specificity the compounds the Department intends to regulate, and therefore should be explicitly limited to the Cycle 10 compounds for which DNR already has recommendations from DHS. Cycle 11

recommendations must be handled in a new and separate rulemaking, assuming for the sake of argument that DHS has credible scientific findings that justify regulating PFAS compounds other than PFOS and PFOA.

Surface Water Standards (SS 091-19)

Similar to our concerns with respect to the groundwater scope statement, the surface water standard scope statement contemplates the agency making rules to set enforcement limits for PFOA, PFOS, and "***any other PFAS which the department determines may be harmful to human health***." This is troubling for two reasons. First, we do not believe it is appropriate for the DNR to establish health-based standards for PFAS substances that DHS has not studied from a human health standpoint. Water quality standards should be driven by sound science – nothing more and nothing less. Like other water quality standards that are promulgated on a case-by-case basis, water quality standards for PFAS substances should be done individually, and only promulgated when sound, credible, and peer-reviewed science justifies the regulation.

Second, this broad language in the scope statement gives the Department an open-ended regulatory wildcard to regulate literally thousands of new compounds in a single rulemaking. Again, scope statements are supposed to be specific enough to give the public and the Legislature meaningful advance notice of what and how a proposed rule will regulate. As drafted, the scope statement fails to provide such notice, and in fact raises more questions than it answers by reserving the right to regulate potentially thousands of new substances in a single rule. It is therefore imperative that this scope statement be amended to meaningfully describe what will be regulated, and thereby provide an actual scope of what is proposed for surface water quality standards. As noted previously, we strongly encourage the Department to limit the scope of this rule to include only the two PFAS substances that have undergone rigorous scientific research and study: PFOS and PFOA.

Drinking Water Standard (SS 089-19)

The drinking water scope statement is equally troubling, because it too envisions DNR promulgating rules for an unlimited list of PFAS compounds that could reach the thousands. The resulting standards would go far beyond impacting industry and municipal treatment facilities. They would apply to apartment buildings and mobile home parks, impacting low and middle-income citizens, as well as small businesses. The treatment and testing technology for these compounds is in the very early stages of development, and the cost of testing for and controlling any number of PFAS compounds will cripple small businesses, raise rents on the state's most vulnerable, and have a ripple effect through our municipalities.

As noted, WMC does not object to reasonable, science-based and cost-effective regulation of PFOA and PFOS. However, we believe the only PFAS compounds that should be regulated right now are those two compounds. We also believe that a scope statement that fails to reference the specific PFAS compounds proposed for drinking water standards lacks the requisite detail and specificity necessary to comply with Chapter 227 rulemaking requirements. In essence, such a rule would fail to define any meaningful scope for the proposed rule. The scope statement should therefore be amended to limit the rule to establishing standards only for PFOS and PFOA.

Chapter 227 Rulemaking Requirements

As noted previously, we believe that any rules promulgated according to these three scope statements are vulnerable to legal challenge based on requirements in Chapter 227. In addition to the requirement

to properly articulate the scope of the rulemaking, and the prohibition against doing any work on a rule until the scope statement has been approved, Chapter 227 places another significant restriction on the content of scope statements. That is, an agency is required to abandon a rulemaking and start over with a new scope statement if the regulatory approach changes "in any meaningful or measureable way." (See s. 227.135(4)) This statute reflects a policy decision by the Legislature that scope statements must provide the general public with a clear and specific understanding of the contents of a proposed rule, and any change by the agency requires the entire rulemaking process to reset from the very beginning with a new scope statement. The approach taken by the Department in these three scope statements, which utilize very broad and vague descriptions of what the agency proposes to do, runs directly contrary to the Legislature's policy directive requiring clarity and specificity. This is yet another reason that WMC urges the Department to provide an actual scope for these proposed rules, and narrow them to regulation of PFOS and PFOA.

The statutes also envision one rule per scope statement. Presuming that these scope statements authorize only one rule each, the breadth of proposed regulation will lead to an unworkable rulemaking process. By leaving the door open to regulating literally thousands of PFAS substances for new surface water and drinking water standards, the scope statements will lead to rules that make it impossible for the general public and Legislature to participate in a meaningful way.

Legislative review of proposed agency rules is not just a legal requirement – it's a constitutional requirement. In order for a legislative delegation of policymaking to an Executive Branch agency to be constitutional, the Legislature must maintain meaningful oversight over how the agency exercises that delegation. See for example *Martinez v. DILHR*, 165 Wis. 2d 687, 698, 478 N.W.2d 582 (1992) and *J.F. Ahern Co. v. Wisconsin State Building Commission*, 114 Wis. 2d 69, 104-05, 336 N.W.2d 679 (Wis. App., 1973).

By burdening the legislative review process with rules that contemplate hundreds or even thousands of new water quality standards, the Department would make it impossible for lawmakers to adequately exercise their constitutionally-required due diligence and oversight functions. When reviewing rules, lawmakers must consider many factors, including the legal authority of the rule, its cost, its benefits, its practicality, its feasibility, its impact on the economy, its impact on homeowners, its impact on businesses, its impact on consumers, its impact on local government, etc. Lawmakers cannot possibility consider these factors with any kind of meaningful analysis if forced to do so by reviewing a single rule covering hundreds or thousands of new PFAS substances.

The same concerns exist for businesses, local governments, and the general public. The people of Wisconsin, including the regulated community, would not be able to provide meaningful estimates of the cost or day-to-day impact of a rule that establishes hundreds or even thousands of new regulatory standards for surface water or drinking water. Although PFOA and PFOS have been studied at great length from a human health standpoint, other PFAS substances have not. Those impacted by resulting rules would have little ability to understand their impact, or provide meaningful comment on the cost or appropriateness of new standards for potentially thousands of new substances. For these reasons, the three scope statements should be narrowed to focus on the two PFAS substances that have undergone rigorous scientific research and study: PFOS and PFOA.

Natural Resources Board Authority & Duties

The Legislature has given the Natural Resources Board, not DNR staff, the authority to establish environmental regulatory policy for the Department. It is critically important that far-reaching

regulatory decisions be made by the Natural Resources Board. By proposing to establish water quality standards for hundreds or thousands of PFAS compounds *en masse*, Department staff are circumventing the deliberative process that the Natural Resources Board has historically used to establish environmental standards on a case-by-case basis. Many costly regulatory burdens attach when water quality standards are enacted, which is why it is so important that the Natural Resources Board weighs these policy decisions judiciously. Rather than being swamped by an enormous rule with hundreds or thousands of new standards to consider, reviewing PFAS standards on a case-by-case basis in individual rules will better enable the Natural Resources Board to perform its duties to review the science, cost, benefit and appropriateness of regulating any given substance.

Agency Authority

Section 227.135(1)(c) requires that scope statements cite the statutory authority for the proposed rules. WMC wishes to note that each of the three scope statements cite s. 281.12 of the Wisconsin statutes as the authority to promulgate each of the three rules. This is legally incorrect. Section 281.12 is titled "General Department Powers and Duties," and essentially describes the role the Department plays with respect to regulating water, but is not itself a grant of authority to develop groundwater standards, drinking water standards, or surface water standards.

On the contrary, 2011 Act 21 makes clear that these types of broad policy statements in the statutes *do not* confer rulemaking authority. Specifically, s. 227.11(2)(a)2. states very explicitly that a statute "describing the agency's *general powers or duties* does not confer rule-making authority on the agency." Consequently, s. 281.12, titled "General Department Powers and Duties," does not confer rulemaking authority on the DNR, and therefore cannot be cited as a lawful basis for rulemaking authority. As a result, each of the three scope statements must be amended to remove s. 281.12 as a citation to legal authority for the rule.

Finally, WMC wishes to use these comments as an opportunity to go on record to note the conspicuous absence of a scope statement to regulate PFAS compounds as a "hazardous substance" under Chapter 292. DNR staff appears to already be regulating PFAS compounds as hazardous substances under the Spills Law, and appears to have established what it considers to be enforceable soil cleanup standards for PFAS substances in remediation cases. However, the Department has failed to promulgate any rules placing businesses or municipalities on notice that it interprets PFAS compounds to meet the definition of "hazardous substance" under Chapter 292, nor has it promulgated any soil cleanup standards placing the regulated community on notice as to their cleanup obligations in the event of a release. Yet the Department continues to regulate in the absence of promulgated rules and standards, which is unlawful. Doing so also creates confusion and chaos among businesses who, in the absence of clearly-defined published regulations, are left to guess what the Department intends to require of them.

The Legislature did not exempt the Department's remediation program from Chapter 227 rulemaking requirements. Just as the Department is required to promulgate air quality and water quality standards as rules, so too must the Department promulgate rules establishing PFAS compound standards for soil cleanup and remediation purposes. It has not done so. As a result, the Department does not have the requisite legal authority to regulate PFAS compounds under Chapter 292 at this time, and will continue to be unable to enforce standards for remediation and violations of the Spills Law unless and until the Department complies with the law and promulgates standards following the Chapter 227 rulemaking process.

Conclusion

For the reasons previously stated, WMC respectfully requests that the Natural Resources Board amend these scope statements to limit the regulation of PFAS compounds to only PFOA and PFOS, or in the alternative, remand them to DNR staff with direction to do so. We are grateful for the opportunity to provide this input, and thank you for your thoughtful consideration.

From:	Kayla Furton
To:	DeWeese, Adam D - DNR; Williams, Meghan C - DNR
Subject:	PFAS Rule-making
Date:	Monday, November 18, 2019 8:15:37 PM

Dear Chairman Prehn and members of the Department of Natural Resources Board,

We are adding our names to the list of citizens in Wisconsin who want to see the board authorize a rule-making process to set standards for PFAS and PFOS chemicals in our drinking water, surface waters, and groundwater. My family and I live in the Town of Peshtigo, WI and are facing extreme contamination issues resulting from PFOA and PFOS migrating onto our property and into our wells and drinking water. We have experienced first hand the extreme stress of this reality and have been actively advocating for protections against these frightening contaminants.

We, the citizens, NEED your support and protection, PFAS are a dangerous class of chemicals linked to serious negative health effects like cancer, liver damage, decreased fertility, increased risk of asthma, increased risk of thyroid disease, as well as growth, learning, and behavior impairment. Our family has been exposed to this threat far too long and I fear for the health of my children as well as my husband and myself -- I have recently been diagnosed with thyroid disease and I want to protect myself, my husband, and my young children from any other possible health impacts or associations.

In the absence of federal action, it is necessary for the state to move forward with setting health-based standards for our waters. We have been advocating for state legislative protections through SB302 CLEAR ACT, but if that should prove impassable we need YOUR help and can not wait. Both paths need to be launched in an effort to provide us protection as soon as possible.

We urge you to approve Board Orders DG-24-19 (drinking water standards), WY-23-19 (surface water standards), and DG-15-19 (groundwater standards), as proposed at your December 2019 meeting.

Thank you for your consideration.

Kayla and Dean Furton

715.579.2293

From:	Cindy BDG
To:	DeWeese, Adam D - DNR; Williams, Meghan C - DNR
Subject:	PFAS Rulemaking Hearing
Date:	Monday, November 18, 2019 2:12:13 PM
Attachments:	e-signature-logo.jpg

Dear Chairman Prehn and members of the Department of Natural Resources Board,

I am adding my name to the list of citizens in Wisconsin who want to see the board authorize a rule-making process to set standards for PFAS and PFOS chemicals in our drinking water, surface waters, and groundwater. My family and I live in the Town of Peshtigo, WI and own several businesses in Marinette, WI, both facing extreme contamination issues resulting from PFOA and PFOS migrating into our wells and drinking water. We have experienced first hand the extreme stress of this reality and have been actively advocating for the past 2 years for protections against these frightening contaminants.

We, the citizens, NEED your support and protection, PFAS are a dangerous class of chemicals linked to serious negative health effects like cancer, liver damage, decreased fertility, increased risk of asthma, increased risk of thyroid disease, as well as growth, learning, and behavior impairment. Our family has been exposed to this threat far too long and I fear for the health of my children as well as my husband and myself.

In the absence of federal action, it is necessary for the state to move forward with setting health-based standards for our waters. We have been advocating for state legislative protections through SB302 CLEAR ACT, but if that should prove impassable we need YOUR help and can not wait. Both paths need to be launched in an effort to provide us protection as soon as possible.

We urge you to approve Board Orders DG-24-19 (drinking water standards), WY-23-19 (surface water standards), and DG-15-19 (groundwater standards), as proposed at your December 2019 meeting.

Thank you for your consideration.

Cindy and Chuck Boyle Jr.
920-246-5919

From: Christine Simpson
To: Rheineck, Bruce D - DNR
Subject: PFAS- set limits
Date: Sunday, November 17, 2019 9:19:01 AM

Dear Mr. Rheineck,

Please help to keep the ground, drinking & surface waters clean & safe in Wisconsin. Allow the DNR the authority to set limits on PFAS. Thank you.

Sincerely,

Christine Simpson
6570 Mordvinoff Drive
Manitowish Waters, WI 5545

Sent from my iPhone

From: Christine Simpson <csimpson737@icloud.com>
Sent: Sunday, November 17, 2019 9:26 AM
To: DeWeese, Adam D - DNR <Adam.DeWeese@wisconsin.gov>
Subject: PFAS- set limits

Dear Mr. DeWeese,

Please help to keep the ground, drinking & surface waters clean & safe in Wisconsin. Allow the DNR the authority to set limits on PFAS. Thank you.

Sincerely,

Christine Simpson
6570 Mordvinoff Drive
Manitowish Waters, WI 5545

Sent from my iPhone

From: Christine Simpson
To: Williams, Meghan C - DNR
Subject: PFAS- set limos
Date: Sunday, November 17, 2019 9:22:51 AM

Dear Ms. Williams,

Please help to keep the ground, drinking & surface waters clean & safe in Wisconsin. Allow the DNR the authority to set limits on PFAS. Thank you.

Sincerely,

Christine Simpson
6570 Mordvinoff Drive
Manitowish Waters, WI 5545

Sent from my iPhone

Sent from my iPhone

November 19, 2019

WI Dept. of Natural Resources
ATTN: Adam DeWeese
Bruce Rheineck
Meghan Williams

SUBMITTED VIA EMAIL

Re: Proposed PFAS Rulemaking Scope Statements
• Statement of Scope 089-19, Rule No. DG-24-19 relating to maximum contaminant levels (MCLs) for drinking water
• Statement of Scope 090-19, Rule No. DG-15-19 relating to groundwater standards for PFAS
• Statement of Scope 091-19, Rule No. WY-23-19 relating to surface water quality standards for PFAS

Dear Ms. Williams, Mr. DeWeese and Mr. Rheineck,

On behalf of the members of the River Alliance of Wisconsin, we support all three scope statements (SS 089-19, SS 090-19, SS 091-19) to allow the rulemaking process to move forward to address PFAS in our drinking water, surface water, and groundwater.

We appreciate the attention the Department of Natural Resources has given this emerging issue that is a threat to public health, surface water quality, and to wildlife. It is important for these rules to move forward to allow for a coordinated effort amongst all stakeholders to comprehensively address contamination in drinking, surface and groundwater, soil and sediment, wildlife and fisheries.

As you are aware, PFAS contamination has not only been discovered in drinking water, but also surface waters across the state. Wisconsinites need to know where PFAS are and what amounts cause health risks, so they can make informed decisions about the water they use.

We strongly support the scope statements for all three PFAS rules. PFAS contamination is an urgent issue that requires immediate action by the state.

Sincerely,

Allison Werner

Allison Werner
Policy & Advocacy Director

RIVER ALLIANCE of WISCONSIN
147 S. Butler Street, Suite 2
Madison, WI 53703
info@wisconsinrivers.org
608.257.2424
wisconsinrivers.org

From: Sandy Gillum
To: Rheineck, Bruce D - DNR
Subject: PFAS
Date: Saturday, November 16, 2019 1:21:43 PM

I support the State of Wisconsin moving forward with establishing limits for poisonous chemicals in ground, surface, and drinking waters.

Sandy Gillum
Mobile/Text 715-617-0031
Hortonville, WI 54944

From: Richard Upton
To: Rheineck, Bruce D - DNR
Subject: PFAS
Date: Saturday, November 16, 2019 10:02:00 PM

It is imperative that rules regulating surface drinking and groundwater's be established to minimize damages caused by PFAS. Thank you.

Sent from my iPhone

From: Robert Elwell
To: Williams, Meghan C - DNR
Subject: Please set water quality standards for PFAS
Date: Monday, November 18, 2019 6:37:34 PM

Please set water quality standards for PFAS
Thanks,
Rob

Sent from my iPhone

From: Robert Elwell
To: Rheineck, Bruce D - DNR
Subject: Please set water quality standards for PFAS
Date: Monday, November 18, 2019 6:37:17 PM

Please set water quality standards for PFAS
Thanks,
Rob

Sent from my iPhone

Office of the Mayor
Satya Rhodes-Conway, Mayor
City-County Building, Room 403
210 Martin Luther King, Jr. Boulevard
Madison, Wisconsin 53703
Phone: (608) 266-4611
Fax: (608) 267-8671
mayor@cityofmadison.com
www.cityofmadison.com

November 19, 2019

Wisconsin Department of Natural Resources
Attn: Adam DeWeese – DG/5
P.O. Box 7921
101 S. Webster St.
Madison, WI 53707-7921

RE: Proposed Water Quality Standards for PFAS in SS 089-19, SS 090-19, and SS 091-19

Dear Mr. DeWeese,

Thank you for this opportunity to comment on the proposals to revise state drinking water, groundwater, and surface water standards to include standards and monitoring requirements for poly- and perfluoroalkyl substances (PFAS).

I am writing to express my support for the development of standards. These substances are documented to pose hazards to human health and warrant a regular monitoring program, with follow-up actions informed by clear standards. I am hopeful that the standards development process will incorporate the key elements for regulatory determination listed in the federal Safe Drinking Water Act and other regulations – in short, that the standards are informed by occurrence, public health risk, treatability, and cost of treatment.

In Madison, I see a clear and immediate need for standards on the Air National Guard property at Truax Field. This is an area where high levels of PFAS contamination have been detected, and yet the Air National Guard has stated that any remediation activities will follow the Comprehensive Environmental Response, Compensation, and Liability Act (CERLCA) process and that Truax Field be prioritized relative to all military bases nationwide. Given that no PFAS have been designated as hazardous substances under CERCLA, I believe the possibility for a near-term remediation of the site is low.

The most promising opportunity for remediation at the Air National Guard site on Truax Field may be in conjunction with future construction at the site, which is contemplated in the draft Environmental Impact Statement to locate F-35 Fighter Jets at Truax Field. If this construction occurs, the Air National Guard would be required to obtain Wisconsin Department of Natural Resources (WDNR) approval of a material management plan prior to the start of construction, which must address the management of any soil and groundwater contamination. This is a tangible opportunity for new state PFAS standards to improve public health in Madison. Without new PFAS standards, this opportunity for environmental remediation may be at risk.

Again, thank you for this opportunity to comment. The City of Madison staff look forward to engaging

in the standards development process. Please contact Christie Baumel at cbaumel@cityofmadison.com with any questions.

Sincerely,

Mayor Satya Rhodes-Conway

-----Original Message-----
From: Software-Notification@legis.wisconsin.gov <Software-Notification@legis.wisconsin.gov>
Sent: Friday, November 1, 2019 8:27 PM
To: DNR Administrative Rules Comments <DNRAdministrativeRulesComments@wisconsin.gov>
Cc: simon.stumpf@gmail.com
Subject: Public comment on SS 091-19

Name: Simon Stumpf
Address: E8317 E Smith Rd, Viroqua WI 54665
Email: simon.stumpf@gmail.com

Organization:

Comments: I'm so excited to see this proposal. We live in rural Viroqua. It's is a very sensitive [and special, fragile] area. Recognizing it and designating it as such feels like a no-brainer. If it's hard to protect our water from nitrates and other pollutants, so be it. If it's easier for certain kinds of ag or industry to operate elsewhere, so be it. There things that are unique and special [and yes, sensitive] about our area as is, and that we need to protect.

From: ROBERT ANNE MALEY
To: Williams, Meghan C - DNR
Subject: Regulations of PFAs
Date: Saturday, November 16, 2019 4:47:13 PM

Our family owns lake property in Bayfield County Wisconsin and wanted to communicate our support for the state's efforts to regulate PFAs
in our surface, drinking, and groundwater.

Thank you,
Bob and Anne Maley
2830 Jones Road
Barnes WI

From: Leo G Lamers
To: Williams, Meghan C - DNR
Subject: Rules
Date: Sunday, November 17, 2019 4:14:15 PM

I am writing to support allowing the DNR to write rules to establish limits on "PFAS" in our waters.

Vi Lamers
6967 Hamilton Dr.
Wabeno, WI 54566

715-473-2633

From: Leo G Lamers
To: Rheineck, Bruce D - DNR
Subject: Rules to Limit Levels of "PFAS"
Date: Sunday, November 17, 2019 4:12:53 PM

I am writing to support allowing the DNR to write rules to establish limits on "PFAS" in our waters.

Vi Lamers
6967 Hamilton Dr.
Wabeno, Wi 54566

715-473-2633

From: jeff lamont
To: Williams, Meghan C - DNR
Cc: Jeff Lamont
Subject: Ruling Making Process for PFAS
Date: Monday, November 18, 2019 11:23:48 AM

I would like to go on the record for supporting all three scope statements related to each rule to let the DNR know they should begin the rulemaking process for PFAs.

Thank you

Jeffrey Lamont
N2981 Cooke Lane
Marinette, WI 54143

Sent from my iPhone

From:	Virginia Geraghty
To:	DeWeese, Adam D - DNR; Rheineck, Bruce D - DNR; meghanc3.williams@wisconsin.gove
Subject:	SS-091-19 Comment Letter
Date:	Tuesday, November 19, 2019 12:53:31 PM

I was recently appointed by the Wilke Lake Advancement Association officers to investigate how we can make our Manitowoc County Lake safer for pets/humans for recreational purposes. This started when my dogs contracted a rash that the vet said was from bacteria in the water, which led to discussions with others on the lake that had other pet/human reactions after swimming in the water. During my investigation, I discovered there was no "safe water" testing routinely performed for inland lakes in Manitowoc County, and very limited (e-coli) testing performed at public beaches and certain inland lakes in other counties. None of this testing was for chemicals, such as PFAS, and when I inquired if the testing was even available for us to perform on our lake, both UW-Stevens Point and the state lab in Madison told me there was not.

In conjunction with writing the rule on standards, one in which I am surprised that has no “federal standard,” as all state water bodies eventually flow together, I would hope a review of other state standards be performed rather than writing these standards from scratch. I applaud the efforts for “testing at the source,” that being companies, and hopefully agricultural farms included. Additionally, I would hope a routine, standardized testing be adopted for all inland lakes, beaches, etc., where recreational activities take place in order to mitigate human health issues, or at least, to place proper warning signs when and where appropriate. At a minimum, this testing should be made available to various lake associations, sanitation districts, or individuals to have performed, even if for an additional cost.

Thanks for your consideration,
Virginia Geraghty

From: Darcy Sage
To: DeWeese, Adam D - DNR
Subject: Standards for PFAS
Date: Tuesday, November 19, 2019 10:37:35 AM

I wholeheartedly support efforts that we should move forward as a state to develop standards to protect us from dangerous chemicals(collectively called PFAS) in our surface, ground , and drinking water.

Darcy Lanz-Sage

From: Darcy Sage
To: Williams, Meghan C - DNR
Subject: Standards for PFAS
Date: Tuesday, November 19, 2019 10:34:15 AM

I wholeheartedly support efforts that we should move forward as a state to develop standards to protect us from dangerous chemicals(collectively called PFAS) in our surface, ground , and drinking water.

Darcy Lanz-Sage

From: Glory Adams <gloryaec@att.net>
Sent: Wednesday, November 13, 2019 6:54 PM
To: DeWeese, Adam D - DNR <Adam.DeWeese@wisconsin.gov>
Subject: Statement of Scope SS 089-19

Adam,
During the discussion of Chapter NR 809, there was mention of a policy alternative for incorporating PFAS contaminants. Please do not wait for the EPA to promulgate MCLs for PFAS substances. Obviously that would take years to accomplish. A day ago I heard talk of the military budget excluding PFAS. To me that means the military may well not be held accountable for past PFAS contamination. Wisconsin needs to go ahead on its own to ensure the development of limits for this deadly substance.

The time estimate to develop the rules is given. Looking ahead my greatest concern is to what extent there will be follow-up with testing and enforcement. It seems to

me all city well waters and treated water requires testing ASAP. Biosolids being spread on farm land also need to be tested. I would hope that as the rules are being created there is encouragement to city water treatment plants and well systems to test for PFAS, including PFOA and PFOS.

The need for measuring metrics is understandable for phosphorus. As I am sure you are aware, the greatest downfall of measuring both nitrate and phosphorus is the lack of non-point contamination rules. Looking at a lake or waterway is fine, but that is after the fact.

Thank you for your time.

Glory Adams
1216 S Farwell St
Eau Claire, WI 54701
715-834-8796

From:	G Petersen
To:	Rheineck, Bruce D - DNR
Subject:	Three proposed rulemakings that would allow DNR to write rules establishing limits for the amount of a range of poisonous chemicals collectively called “PFAS” in our surface, drinking, and groundwater.
Date:	Saturday, November 16, 2019 5:21:32 PM

As a long time advocate of clean water and the environment via a Lake Association, Lake District, and a Land Trust, I encourage DNR to further evaluate PFAS and consider recomendations for their control.

Gerald Petersen

N7622 Pleasant Point Circle

Elkhorn, WI 53121

From:	G Petersen
To:	Williams, Meghan C - DNR
Subject:	Three proposed rulemakings that would allow DNR to write rules establishing limits for the amount of a range of poisonous chemicals collectively called “PFAS” in our surface, drinking, and groundwater.
Date:	Saturday, November 16, 2019 5:27:49 PM

As a long proponent of clean water via a Lake Association, Lake District, and Land Trust, I encourage your further evaluation of PFAS contamination and consideration of ways Wisconsin can be better protected.

Gerald Petersen

N7622 Pleasant Point Circle

Elkhorn, WI 53121

WISCONSIN CIVIL JUSTICE COUNCIL, INC.

Promoting Fairness and Equity in Wisconsin's Civil Justice System

To: Bruce Rheineck, Wisconsin Department of Natural Resources

From: R.J. Pirlot, Executive Director

Date: November 19, 2019

Re: Scope Statements 089-19, 090-19 & 091-19

WCJC opposes Scope Statements and 089-19, 090-19 & 091-19 and recommends DNR redraft the Scope Statements to only authorize regulation of chemicals for which there is accurate, reliable science.

PFAS are a group of more than 4,000 compounds, each of which has different chemical properties. These chemicals are found in many everyday products, including nonstick pans, cleaning products, paints, medical equipment and firefighting foam.

The most extensively studied PFAS compounds are PFOA and PFOS, which have been phased out of domestic manufacturing over the past decade. The federal Environmental Protection Agency (EPA) has set a health advisory limit of 70 ppt for PFOA and PFOS but is still studying the potential health effects of the thousands of other PFAS compounds. Similarly, the Wisconsin Department of Health Services has thus far studied and issued health recommendations only on PFOA and PFOS. Few other jurisdictions have regulated PFAS chemicals other than PFOA and PFOS.

Despite the little science available on PFAS compounds besides PFOA and PFOS, Scope Statements 089-19, 090-19 & 091-19 provide an extremely broad scope for DNR to regulate thousands of other PFAS compounds. Scope Statement 089-19 allows DNR to establish maximum contaminant levels for "certain Per- and Polyfluoroalkl substances" including but not limited to PFOA and PFOS. Scope Statement 090-19 vaguely provides that DNR may amend groundwater rules in NR 140, and does not explicitly refer to PFOA, PFOS, or any other specific substances for which the Department of Health Services has issued health recommendations according to the statutory process for setting groundwater standards in Wis. Stat. Ch. 160. Scope Statement 091-19 provides that DNR may establish water quality criteria for PFOA, PFOS, and "any other PFAS which the department determines may be harmful to human health."

DNR should clarify these three scope statements to specifically focus the rulemaking on PFOA and PFOS. Including thousands of other compounds in the scope of the rulemaking creates regulatory uncertainty and potentially massive liability for Wisconsin businesses. Even with most jurisdictions regulating only PFOA and PFOS, estimates of total PFAS liability are in the billions. The federal Department of Defense alone estimates its liability for PFAS at $2 billion. Entities

taking on this massive liability include not just Wisconsin businesses, but also municipal water and sewage treatment agencies, hospitals, farmers, airports, and any other entities disposing of everyday products that contain PFAS chemicals.

If DNR regulates under the scope statements as written, these entities in Wisconsin could face millions of dollars in cleanup costs, legal enforcement action by state agencies, and lawsuits by plaintiff attorneys for the existence of potentially thousands of chemicals that have not yet been shown by federal or state agencies to cause negative human health effects. Setting any enforcement standards creates legal evidence of a significant public health threat, giving plaintiff attorneys the opportunity to successfully sue industry based on these standards without proving any actual occurrence of illness. DNR should not have the broad scope to regulate PFAS chemicals other than PFOA and PFOS and thereby allow these types of private actions to proceed before thorough research has established public health concerns for each individual PFAS chemical.

Wisconsin was recently ranked the 13th best lawsuit climate in the nation. Our state's positive legal climate makes it an attractive place to do business and create good-paying, family-sustaining jobs. Regulations proposed and enforced under these overly broad scope statements could undo Wisconsin's reputation as a reliable place to do business and instead turn the state into a haven for plaintiff attorneys filing unwarranted lawsuits against businesses. For potentially little to no public health benefit, imposing burdensome regulations under these broad scope statements would have a significant negative impact on Wisconsin's economy.

Overall, Scope Statements 089-19, 090-19 & 091-19 provide DNR far too broad a scope to regulate chemicals for which there is little established science confirming negative human health effects. The proposed regulations would impose billions of dollars in compliance and liability costs, crippling Wisconsin industry. WCJC respectfully requests DNR redraft these overly broad and burdensome scope statements and promulgate science-based enforcement standards for only chemicals that have actual, established negative human health effects.

The Wisconsin Civil Justice Council's mission is to promote fairness and equity in Wisconsin's civil justice system, with the ultimate goal to make Wisconsin a better place to work and live.

Contact: R.J. Pirlot, pirlot@hamilton-consulting.com, 608-310-5329.

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To: Adam DeWeese, Wisconsin Department of Natural Resources

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Promoting Fairness and Equity in Wisconsin's Civil Justice System

To: Meghan Williams, Wisconsin Department of Natural Resources

From: R.J. Pirlot, Executive Director

Date: November 19, 2019

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Contact: R.J. Pirlot, pirlot@hamilton-consulting.com, 608-310-5329.

Wisconsin Conservation Voters

Nov. 18, 2019

Dear Chairman Prehn and members of the Department of Natural Resources Board,

I am adding my name to the list of citizens in Wisconsin who want to see the board authorize a rule-making process to set standards for PFAS and PFOS chemicals in our drinking water, surface waters, and groundwater.

PFAS are a dangerous class of chemicals linked to serious negative health effects like cancer, liver damage, decreased fertility, increased risk of asthma, increased risk of thyroid disease, as well as growth, learning, and behavior impairment.

In the absence of federal action, it is necessary for the state to move forward with setting health-based standards for our waters.

We urge you to approve Board Orders DG-24-19 (drinking water standards), WY-23-19 (surface water standards), and DG-15-19 (groundwater standards), as proposed at your December 2019 meeting.

Thank you for your consideration.

Sandra	Abitz	406 Maple Ave	Madison	WI
Dennis	Ace	3402 Niebler Ln	Middleton	WI
Karen	Ackroff	904 Newbury Dr	Eagle	WI
Tamara	Adams	1422 S Coachlight Dr	New Berlin	WI
Linda	Adams	205 Hillcrest Ct	Sheboygan Falls	WI
Joann	Adkinson	2869 N 90th St	Milwaukee	WI
Cecilia	Alexander	820 University Dr	Eau Claire	WI
Maggie	Alk	410 Porlier St	Green Bay	WI
Nancy	Allen	2077 Uphoff Rd	Cottage Grove	WI
Wendy	Allen	2521 Golden Rd	Plover	WI
Gwendolyn	Allen	4731 N 52nd St	Milwaukee	WI
Joanne	Allen	W12866 River Rd	Black River Falls	WI
Janet	Almond	2721 Pheasant Ridge Trl Apt 1	Madison	WI
Rebecca	Alwin	1422 N Westfield Rd	Middleton	WI
Eric	Andersen	419 Pheasant Run	Kaukauna	WI
Mary	Anderson	13136 8th St	Osseo	WI
Janet	Anderson	2516 N 86th St	Wauwatosa	WI
Edna	Anderson	812 Moore St	Beloit	WI
Barb	Anderson	832 N 6th St Unit 413	Sheboygan	WI
Judith	Anderson	9141 N 70th St	Milwaukee	WI

Melissa	Anglin	3649 Sequoia Trl	Verona	WI
Rose	Annett	939 Winter Ct	River Falls	WI
Paul	Anshus	2630 A N Weil St	Milwaukee	WI
Linea	Anthony	1341 Washington Ave	Racine	WI
Linea	Anthony	1512 Washington Ave	Racine	WI
William	Appel	215 Saint Matthews St	Green Bay	WI
Amy	Armstrong	8248 Raymond Rd	Madison	WI
Richard	Armstrong	W2841 Pine Ridge Ct	Belleville	WI
Julie	Arneth	2682 Woodfield Ct	Green Bay	WI
Evan	Arnold	1415 Williamson St Apt 1	Madison	WI
Sr. Margaret Ann	Arnold	1512 S 32nd St	Milwaukee	WI
Joan	Arnold	285 County Road Pp	Rudolph	WI
Barbara J.	Arnold	525 Dapin Rd	Madison	WI
Mary	Arthur	12035 W Brown Deer Rd	Milwaukee	WI
Nancy	Ashmore	655 Village Green Way Unit 413	West Bend	WI
Douglas	Aunet	6125 Hughitt Ave	Superior	WI
Cheryl	Austin	4715 Lincoln Rd	Lancaster	WI
Kyle	Baemmert	13031 County Road M	Kiel	WI
Jacob	Baisden	623 4th St	De Pere	WI
Jay	Balke	N5873 Swan Acre Dr	Cecil	WI
Joseph	Balke	S66W18722 Gem Dr	Muskego	WI
Tom	Banner	2788 N Shore Rd	La Pointe	WI
Aleta	Barmore	7509 Kenyon Dr	Middleton	WI
Duane	Barmore	7509 Kenyon Dr	Middleton	WI
Mary	Barrett	2007 N Prospect Ave	Milwaukee	WI
Barb	Barrish	9159 N 70th St	Milwaukee	WI
Anne	Bartels	1926 Hall Ave	Marinette	WI
Deborah	Bascom	2056 Ludington Ave	Wauwatosa	WI
Rhonda	Bast	815 8th St Apt 309	Racine	WI
Richard	Basterash	4531 S Delaware Ave	St Francis	WI
Gerry	Baudendistel	N5961 County Road I	Fredonia	WI
Brent	Bauer	W4292 State Highway 85	Durand	WI
Joseph	Baye	518 Menasha Ave E	Ladysmith	WI
Renee	Beaulieu	2665 County Road O S	Delavan	WI
John J	Beck	5267 Forest Rd	Sturgeon Bay	WI
James	Becker	2870 Char La Mar Dr	Green Bay	WI
Jon	Becker	PO Box 3292	Madison	WI
Karolyn	Beebe	220 Merry St	Madison	WI
Leigh	Begalske	1823 Fiesta Ln	Green Bay	WI
Ann	Behrmann	2209 Chamberlain Ave	Madison	WI
Cornelia	Beilke	1443 Alice St	Wauwatosa	WI
T. Greg	Bell	11 Court Of Brixham	Madison	WI
Jerry	Belter	332 5th St	Baraboo	WI
Carl	Bennett	3626 Stanford Dr	New Franken	WI

Jim	Bennett	6238 State Road 78	Mazomanie	WI
Pamela	Benson	1453 County Rd N	Roberts	WI
Karen	Benson	3230 W Folsom St	Eau Claire	WI
Lisa	Bents	7696 S County Rd S	Lake Nebagamon	WI
Ilana	Benusa	1528 Covey Dr	River Falls	WI
M	Bergs	PO Box 2013	Woodruff	WI
Kathryn	Berkey	S9345 Pleasant Valley Dr	Eau Claire	WI
Manuel	Bermudez	W232S7390 Woodland Ln	Big Bend	WI
Kate	Bernardo	24820 Cherryville Rd	Ashland	WI
Kathleen	Bernardo	24820 Cherryville Rd	Ashland	WI
Thomas	Bernthal	4622 Keating Ter	Madison	WI
Crystal	Betterley	118 North St	Madison	WI
Sally	Bialecki	4326 Beilfuss Dr	Madison	WI
Ryan	Billingham	4873 High Chaparral Rd	Marshall	WI
Cheryl	Bishop	5148 Bluff Ct	Sturgeon Bay	WI
Michael	Blair	206 Glen Hollow Rd	Madison	WI
Chuck	Block	7267 W Lanice Ln	Winter	WI
Ed	Blume	1019 Melvin Ct	Madison	WI
Jon	Blume	5100 Camellia St	Wausau	WI
Charles	Boardman	1422 Chandler St	Madison	WI
Kelcy	Boettcher	834 Criglas Rd	Wales	WI
Rita	Bogolub	5424 Razorback Rd	Conover	WI
Rebecca	Bohmsach	5021 Tower Rd	Wisconsin Rapids	WI
Joan	Bojarski	7304 16th Ave	Kenosha	WI
Delesa	Boley	1017 City View Dr Bldg	Eau Claire	WI
Marcy	Bosworth	513 E Elm St	River Falls	WI
John	Bowditch	1007 Lakeshore Dr	Cleveland	WI
Cindy	Boyle	N3028 Woodland Rd	Marinette	WI
Chuck	Boyle	N3028 Woodland Rd	Marinette	WI
David	Braby	5431 Village Dr	West Bend	WI
Fred	Braby	N74W29083 Winzer Rd	Hartland	WI
Marya	Bradley	2236 N Terrace Ave	Milwaukee	WI
Susan	Braeger	W215N10095 Hickory Dr	Colgate	WI
Catherine	Brandstetter	8942 41st Ave	Kenosha	WI
Mary	Brayton	N6291 State Highway 55	White Lake	WI
Deena	Brazy	5305 Loruth Ter	Madison	WI
Judith	Brey	2101 Winfield Dr	Reedsburg	WI
Michele	Brielmaier	3082 S Wentworth Ave	Milwaukee	WI
L	Brock	4915 County Road D	West Bend	WI
Mike	Brodd	2182 Seaquist Rd	Sister Bay	WI
Orville	Brooks	1020 Olympian Blvd	Beloit	WI
Dianne	Brooks	N7941 County Rd N	New Glarus	WI
Ryan	Brost	N3965 Lekie Dr	Medford	WI
Anna Marie	Brown	W7449 County Hwy E	Spooner	WI

Mark	Bruemmer	N3018 Woodland Rd	Marinette	WI
Mark	Bruhy	W62N822 Arbor Dr	Cedarburg	WI
Nancy	Bruins	9391 Union Valley Rd	Black Earth	WI
David	Brusky	1793 Cinnabar Way	Green Bay	WI
John	Buenker	227 William St	Racine	WI
Michelle	Buerger	8510 Greenway Blvd Unit 201	Middleton	WI
Delores	Bunge	N416 Owl Ln	Merrill	WI
Christine	Burch	1108 Lindbergh Ave	Stevens Point	WI
Mary	Burt	N1298 E County Road O	Mondovi	WI
Carole	Burzynski	20975 George Hunt Cir Apt 610	Waukesha	WI
Craig	Butler	567 High Knoll Dr	Cedarburg	WI
Terry	Butz	1220 Meadowview Dr	Menasha	WI
Leslie	Byrne	3401 S 113th St Apt 4	West Allis	WI
Jim	Cairns	1507 Sue Ln	Green Bay	WI
Joan	Campbell	N2995 Shore Dr	Marinette	WI
Linda	Candlin	1018 Hampshire Pl	Madison	WI
Karen	Cannestra	2208 N 72nd St	Milwaukee	WI
Deborah	Cardinal	1521 Adams St	Madison	WI
Teena	Carlson	436 Lafayette St	Berlin	WI
Christine	Carollo-Zeuner	254 Jefferson St	Oregon	WI
John	Carroll	2528 N Dousman St	Milwaukee	WI
John	Carroll	2528 N Dousman St	Milwaukee	WI
Bill	Cary	20742 Buckta Hill Rd	Richland Center	WI
Mar	Case	9834 S Dietz Rd	Foxboro	WI
David	Casey	N4545 Division Dr	Medford	WI
Michele	Caskey	3334 Pleasant Ln	Mount Pleasant	WI
Chris	Casper	1600 Sherman Ave	Stevens Point	WI
Julie	Casper	34785 Fire Tower Rd	Bayfield	WI
Dawn R.	Casper	5709 Cedar Pl	Madison	WI
John	Cecco	3606 Wilderness Trl	Suamico	WI
Laurel	Challoner	709 N Fair Oaks Ave	Madison	WI
Richard	Champion	757 Lincoln Ave	Beloit	WI
Mary	Charles	1312 Black Stallion Dr	Madison	WI
Philip	Chaudoir	161 N Oakland Ave	Green Bay	WI
Judy	Childers	610 Vernon Ave	Madison	WI
James	Christenson	15393 COUNTY ROAD B	Osseo	WI
Patricia	Chung	5301 S46 St	Greenfield	WI
Monique	Clark	3925 Naugart Dr	Merrill	WI
John	Cloutier	162 Cobham Ln	Sun Prairie	WI
Andrea	Coffey	587 Gilbert Rd	Hudson	WI
Virgil	Cole	W5285 County Rd W	Wild Rose	WI
Mary	Collet	5510 Tesla Ter	Madison	WI
Fred	Colman	11416 Scott Rd	Woodruff	WI
Douglas	Combs	15544 W Francis Rd	Evansville	WI

Robert	Conner	413 Maple St	Blanchardville	WI
Beverly Ann	Conroy	2980 Gibraltar Rd	Fish Creek	WI
Barbara	Converse	W8339 R and W Townline Rd	Whitewater	WI
Paula	Cooley	2860 N Interlaken Dr	Oconomowoc	WI
Ruth	Cooper	505 W Oak St	Sparta	WI
Arlene	Corona	N1963 Wedgewood Dr E	La Crosse	WI
Vivian	Corres	1707 N Prospect Ave Unit 8	Milwaukee	WI
Sue	Costoff	909 Hazel Ridge Rd	Elkhorn	WI
Carol	Cournoyer	721 Lake Shore Dr	Beaver Dam	WI
William	Cramer	125 N 3rd St Apt 2	Platteville	WI
Cathy	Crary	4 S High St	Deerfield	WI
Kevin	Crisman	2523 N Humboldt Blvd	Milwaukee	WI
Kathleen	Crittenden	E8022 Bakkom Rd	Viroqua	WI
Pam	Culviner	4325 Upland Dr	Madison	WI
S	Czarny	2910 95th St S	Wisconsin Rapids	WI
G Allen	Daily	2200 N Commerce St Apt 302	Milwaukee	WI
Annette	Dake	W148N8184 University Dr	Menomonee Falls	WI
Kathy	Dalsey	N7560 Kame Ct	Whitewater	WI
Fritz	Damler	1299 Lake View Rd	Washington Island	WI
Kristin	Daugherty	509 Hillington Way	Madison	WI
Rachel	Davauer	4413 N Oakland Ave	Milwaukee	WI
Fallow	David	102 Leon St	Madison	WI
Pamela	Davidson	781 McArthur St	Fond Du Lac	WI
Fran	Davidson	N3402 Fenander Rd	Sarona	WI
Dan	Davies	2690 North St	East Troy	WI
Steven C.	Davis	1700 W Bender Rd Apt 273	Glendale	WI
John	Davy	7301 County Hwy N	Chippewa Falls	WI
William	Dawson	279 Oconomowoc Pkwy	Oconomowoc	WI
Wes	Dawson	W8394 Cedar Ln	Lake Mills	WI
Bill	Dean	4125 Nicolet Dr	Green Bay	WI
Laura	DeGolier	114 S Main St Pmb 301	Fond Du Lac	WI
Marie Claire	DeLuna	N2927 Banker Rd	Fort Atkinson	WI
Nicole	Dembowski	10426 Dunkelow Rd	Franksville	WI
Carol	Demos	4445 Hillcrest Dr	Madison	WI
Jacob	Demoske	W8062 Randallwood Ln	Fond Du Lac	WI
Holly	Denning	302 Plumb St	Milton	WI
Bruce	Denny	411 W 4th St	Shawano	WI
Rebecca	Derenne	817 N Chestnut Ave	Green Bay	WI
Lynn	Deschler	207 E Racine St	Jefferson	WI
Jeanne	Deval	W276N1715 Spring Creek Dr	Pewaukee	WI
Cheryl	Diehl	1290 Friess Lake Rd	Hubertus	WI
Peter	Diehn	W2109 Swoboda Rd	East Troy	WI
Dick	Dierks	218 E Harris St	Appleton	WI
Dan	Dieterich	1490 Evergreen Dr	Stevens Point	WI

Rich	Dittle	W5507 N Gilbert Lake Rd	Wild Rose	WI
Jeffrey	Dix	4708 Stettin Dr	Wausau	WI
Scott	Dizack	700 Waters Edge Rd	Racine	WI
Joan	Dobkin	2243 N Summit Ave	Milwaukee	WI
Kathleen	Doleshal	S36W35127 County Road D	Dousman	WI
James	Dollhausen	7217 W Wabash Ave	Milwaukee	WI
Susan	Donahoe	4207 Claire St	Madison	WI
Dana	Doty	15300 W Howard Ave Unit 511492	New Berlin	WI
Ed	Douglass	5301 Pine Tree Rd	Sturgeon Bay	WI
Gayle	Doukas	8113 W Puetz Rd	Franklin	WI
Pat	Dreese	432 W Trillium Ct	Stevens Point	WI
Michael	Drexler	1250 Judy Lee Dr	Oshkosh	WI
Sue	Drum	11384 Cth B	Presque Isle	WI
Bonnie	Dryer	1033 3rd Ave S	Park Falls	WI
John	Duffin	1202 Southfield Dr	Menasha	WI
Robin	Duffy	411 W Thorne St	Ripon	WI
George	Dugan	PO Box 767	Baileys Harbor	WI
Jean	Duginski	W6827 Alder Way	Appleton	WI
Russ	Dunst	5328 Blue Bill Park Dr	Madison	WI
Jodie	Duntley	424 N Glover Rd	Hudson	WI
Harvey	Dym	4813 Tocora Ln	Madison	WI
Kate	Edwards	2422 Fox Ave	Madison	WI
Edie	Ehlert	15981 Moldrem Rd	Ferryville	WI
Holly	Eisberner	6309 W Girard Ave	Milwaukee	WI
Read	Eldred	1837 Spohn Ave	Madison	WI
Tom	Elliott	33 Oakbridge Ct Apt 37	Madison	WI
David	Elmergreen	302 S Main St	Alma	WI
Claudia	Ends	17310 W Footville Brodhead Rd	Brodhead	WI
Alan	Engebretson	1008 Frontenac Ave	Stevens Point	WI
Thomas	Erb	12280 Lawrence Ridge Rd	De Soto	WI
Don	Erickson	2806 28th St	Birchwood	WI
Kathy	Esch	116 Washington St	Oregon	WI
Jennifer	Evans	6512 W Chambers St	Milwaukee	WI
Russel	Evans	S19W29051 Cambria Rd	Waukesha	WI
Gregg	Ewert	850 Maple St	Neenah	WI
Diane	Fabian	915 S Main St Apt 118	Fort Atkinson	WI
Steve	Fabos	W8707 Sawmill Rd	Blanchardville	WI
Marylee	Fahlstrom	828 Water St	Chippewa Falls	WI
Jeanine	Fair	W14196 Selwood Dr	Prairie Du Sac	WI
David	Fallow	102 Leon St	Madison	WI
Kaitlyn	Federwitz	2811 80th St N	Wisconsin Rapids	WI
Hildy	Feen	4313 Maher Ave	Madison	WI
Dennis	Fenner	19490 53rd Ave	Chippewa Falls	WI
Don	Ferber	4700 Allis Ave	Madison	WI

Mary	Feuling	941 Pope St	Lake Mills	WI
Vivian	Finch	7534 Zawalick Rd	Sobieski	WI
Jack	Finger	12538 Cedar Dell Ln	Ellison Bay	WI
Kathleen	Finnerty	707 Georgia St	Sturgeon Bay	WI
Mike	Firkins	131 Chicago St	Pulaski	WI
Paula	Firkins	131 Chicago St	Pulaski	WI
Kathy	Fish	705 Village Green Way Unit 406E	West Bend	WI
Hannah	Fisher	1071 Regent Rd Unit 709	Oconomowoc	WI
Erik	Fitzpatrick	2512 N 116th St	Milwaukee	WI
John	Flanders	1067 S Lansing Ave	Sturgeon Bay	WI
Kellie	Flatt	1546 S 63rd St	West Allis	WI
Pete	Fleischman	W5082 Blackhawk Rd	Wild Rose	WI
Carla	Fletcher	3101 Whiting Ave Apt F7	Stevens Point	WI
Bill	Folta	1101 Pierce St	Merrill	WI
Susan	Foote-Martin	W7503 Kampen Rd	Arlington	WI
Corita	Forster	W4241 Forster Rd	Durand	WI
Sarah	Foster	3130 James St	Madison	WI
Jessica	Foster	3156 S Quincy Ave	Milwaukee	WI
Janet	Foust	W993 Gopher Hill Rd	Watertown	WI
Amy	Fowler	574 S Hillcrest Dr	Verona	WI
Adrienne	Fox	43188 Guthrie Rd	Gays Mills	WI
Melanie	Foxcroft	6767 Frank Lloyd Wright Ave	Middleton	WI
Timothy	Fraley	2 Pagham Ct	Madison	WI
Richard	Franken	3038 Irvington Way	Madison	WI
Gerri	Friedberg	7548 Bluff Pass	Egg Harbor	WI
Joyce	Frohn	425 Congress Ave	Oshkosh	WI
Nila	Frye	404 E Verleen Ave	Waunakee	WI
Everett	Fuchs	1724 Laurel Ave	Hudson	WI
Kayla	Furton	N2599 Shore Dr	Marinette	WI
John	Gajewski	1913 A E Nock St	Milwaukee	WI
Jg	Garey	724 Zlatnik Dr	Two Rivers	WI
Ned	Gatzke	10498 Jancing Ave	Sparta	WI
Charles	Gaulke	W287N8950 Center Oak Rd	Hartland	WI
Marcia	Geiger	5591 Riveredge Rd	Waunakee	WI
Tom	Geilfuss	8700 N Point Dr	Milwaukee	WI
Terry	Gerlach	802 Sunridge Ct Unit A	Waupaca	WI
Jacqueline	Gessner	2320 E Newton Ave	Shorewood	WI
Sue	Geurkink	22095 Glasgow Ave	Tomah	WI
Bradley	Geyer	3834 Whitman Ln Apt 204	Madison	WI
Peter	Gibeau	306 Deer Ridge Dr	West Bend	WI
Kevin	Giehl	5307 N 13th St	Milwaukee	WI
Mark M	Giese	1520 Bryn Mawr Ave	Mount Pleasant	WI
Jennifer	Giesler	21 Apple Hill Cir	Madison	WI
Josh	Gilbert	319 Chapple Ave Apt 501	Ashland	WI

Carolyn Jane	Gillis	2931 Chapel Valley Rd Apt 301	Fitchburg	WI
Darlene	Glass	30069 152nd St	New Auburn	WI
Brian	Glassel	1120 Birch Haven Cir	Monona	WI
Sandra	Glick	2007 Butler Ct	Middleton	WI
Rachael	Glogovsky	1695 Geneva National Ave N	Lake Geneva	WI
Patti	Gmeiner	1617 River St	Niagara	WI
Alice	Godfrey	7421 Bremmer Rd	Avoca	WI
Eric P	Godfrey	PO Box 75	Ripon	WI
Grace	Golata	2735 W Greenfield Ave Apt 2003	Milwaukee	WI
Constance	Goldman	217 W Canyon Dr	Hudson	WI
Patricia	Golner	W277N2242 Lakeview Dr	Pewaukee	WI
Margaret	Gompper	W2208 Woodland Dr	White Lake	WI
Erin	Gonzales	301 Norris Ct Apt 8	Madison	WI
Cheryl	Goodman	3214 Heatherdell Ln	Madison	WI
Carolyn	Goodman	430 Whitewater Ave	Fort Atkinson	WI
John	Gosling	1102 W Prospect Ave	Appleton	WI
Judith	Gosz	W12998 River Rd	Bowler	WI
Gordon	Gottbeheut	361 Plank Hill Ln	Nekoosa	WI
Sueli	Goulart	4700 Dale St Apt 303	Mc Farland	WI
Sister	Grabowski	1300 Maria Dr	Stevens Point	WI
Scott	Graham	1380 Park Pl Apt 1	Union Grove	WI
Linda	Graham	16297 W W Nursery Rd	Hayward	WI
Delores	Grandaw	2995 Holmgren Way Apt 3	Green Bay	WI
James	Grant	S3575 County Road M	Fountain City	WI
Lori	Grass	1832 1st Ave Unit A	Grafton	WI
Paul	Gravunder	W6809 Windward Dr	Greenville	WI
Vickie	Gray	W13629 State Road 121	Alma Center	WI
Alan	Green	1690 Meadow Ln	Plain	WI
Lance	Green	186 Dixon St	Madison	WI
Mary	Green	1912 N Charlotte St	Appleton	WI
Lois	Green	2430 Anderson Ave	Stoughton	WI
Claude	Greene	1512 Vernon St	Stoughton	WI
Alan	Greene	3917 Finch Trl	Deforest	WI
Samuel	Greene	6743 Sneed Creek Rd	Spring Green	WI
Susan	Gregersen	3513 Westshire Cir	Delavan	WI
Matthew	Gregersen	4800 N Morningview Ct	Appleton	WI
Betty	Gritt	11304 N Glenwood Dr	Mequon	WI
Norda	Gromoll	1717 Watersmeet Lake Rd	Eagle River	WI
Susan	Gruber	2843 Century Harbor Rd Apt 2	Middleton	WI
Ken	Grzesiak	4767 Emerald Ln	Stevens Point	WI
John	Gubner	513 San Juan Trl	Madison	WI
Cynthia	Guggemos	803 Blake St	Blanchardville	WI
Michelle	Guilette	115 Chestnut St	Madison	WI
Brent	Gunderson	882 Kellogg St	Green Bay	WI

Howard	Gundlach	5205 Academy Dr	Madison	WI
Mary	Guzman	3029 W Wells St Apt 308	Milwaukee	WI
John	Haag	N1470 County Road H	Stanley	WI
Sue	Haake	9750 30th St	Colfax	WI
Kristof	Haavik	N79W15704 Charles Ct	Menomonee Falls	WI
Susan	Haebig	613 Broadway Ave	Wausau	WI
Eva	Hagenhofer	470 W Willow Ct	Milwaukee	WI
Inga	Hagge	2607 Middleton Beach Rd	Middleton	WI
Theodore	Haglund	S10091 Bear Valley Rd	Lone Rock	WI
Mary	Hahn	S11570 Hazelnut Rd	Spring Green	WI
Teresa	Halcsik	1701 Brighton Beach Rd	Menasha	WI
Karen Etter	Hale	517 Tower St	Lake Mills	WI
John	Hall	6437 Upper Pkwy N	Wauwatosa	WI
Anna Marie	Hallada	369 White Waters Trl	Nekoosa	WI
Marcia	Halligan	S4001 River Rd	Viroqua	WI
Diane	Halom	1300 Kings Lynn Rd	Stoughton	WI
Heather	Halvorson	5301 Admiral Dr	Monona	WI
Debbie	Haman	725 S Fern St	Richland Center	WI
Dennis	Hamilton	10374 Jancing Ave	Sparta	WI
Jeremy	Hamilton	PO Box 126	Rochester	WI
Marcella	Hammond	3156 Muir Field Rd Apt 206	Madison	WI
Bonnie	Hanamann	1310 Crystal Cove Trl Unit 2	Green Bay	WI
Jack	Handley	2307 Mayflower Dr	Middleton	WI
Sharon	Hanrahan	5709 Lancashier Ct	Fitchburg	WI
Jerry	Hansen	54770 Pumpkin Dr	Ferryville	WI
Joyce	Hansen	54770 Pumpkin Dr	Ferryville	WI
Delene	Hanson	10203 W Ridge Rd	Hales Corners	WI
Wayne J	Hanson	215 S Lincoln St	Poynette	WI
Loren	Hanson	4227 E Apollo Ln	Janesville	WI
Diane	Hanson	W2652 Longmeadow Dr	Elkhorn	WI
Natalie	Harburn	5110 Manitowoc Pkwy	Madison	WI
Robert	Harrington	2010 Ardmore Dr	Madison	WI
Linda	Hartwich	688 Glover Rd	River Falls	WI
Fred	Hass	340 Albert Dr Apt 16	Manitowoc	WI
Mary	Hatleberg	709 McIntyre Rd	Cornell	WI
Alice	Hatzenbeller	4366 S 52nd St	Milwaukee	WI
Catherine	Haupert	W9511 Ridge Rd	Catawba	WI
Julie	Hawkins-Tyriver	136 Plummer Ct	Neenah	WI
Pat	Hawthorn	12876 N Balsam Rd	Hayward	WI
Mary	Hayes	7124 88th Ave	Kenosha	WI
Helgaleena	Healingline	112 Owen Rd Unit 6121	Monona	WI
Lynette	Heath	5560 Sheil Dr	Oregon	WI
Sara	Heck	107 4th Ave N Apt 5	Strum	WI
Patricia	Heiden	HY Z	Dousman	WI

Kay	Heimerl	3417 N Windward Ln	Appleton	WI
Ruth	Heimler	10705 W Wisconsin Ave	Wauwatosa	WI
Katie	Heinen	2547 N 67th St	Wauwatosa	WI
Richard	Heinlein	PO Box 152	Trevor	WI
Thomas	Heinrich	14651 W County Road B	Hayward	WI
John Charles	Heiser	2567 N 46th St	Milwaukee	WI
Carol	Heitman	12058 S Crab Lake Rd	Presque Isle	WI
Lois	Helland	400 Foxmoor Ln	Eau Claire	WI
Lisa	Heller	W15270 County Road D	Melrose	WI
Simon	Hellerstein	446 Agnes Dr	Madison	WI
Trish	Henderson	1300 19th St	Reedsburg	WI
David	Henning	9352 Eisenhower Dr	Marshfield	WI
Janet	Henning	W11799 Wall Street Rd	Portage	WI
Martha	Henry	835 Circle Dr	Elm Grove	WI
John	Herbst	2604 Fairfield Pl	Madison	WI
Patti	Herman	116 Merton Ave	Lodi	WI
John	Hermann	6261 Bay Shore Dr	Sturgeon Bay	WI
Marnie	Hersrud	1511 Frederic St	Eau Claire	WI
Sidney	Herszenson	230 W Nokomis Ct WI53217	Milwaukee	WI
E.	Hesseling	3353 S Quincy Ave	Milwaukee	WI
Joanne	Hesselink	W2838 Eagle Rd	Neshkoro	WI
Frederick	Heth	7692 Heritage Meadows Rd	Egg Harbor	WI
Kay	Hetlen	534 E Countryside Dr	Evansville	WI
Sally	Heuer	13114 W Forest Dr	New Berlin	WI
Casey	Hicks	1332 Angels Path Apt 28	De Pere	WI
Carrie	Hildeman	4609 N 70th St	Milwaukee	WI
Francis	Hilgart	2581 Smith Xing Unit 308	Sun Prairie	WI
Nancy	Hill	425 19th St S	La Crosse	WI
Vicky	Hinchey	126 Wittig Ct	Williams Bay	WI
Mark	Hinrichs	1417 Ellen Ave	Madison	WI
Cynthia	Hirsch	611 S Prospect Ave	Madison	WI
Randi	Hoffmann	95 Rubina Lane # Rubina Lane # 95	Fond Du Lac	WI
Wilma	Hollander	84 Kessel Ct Apt 32	Madison	WI
Judith	Hollis	599 Bragg St	Fond Du Lac	WI
Kimberly	Hollis	6296 W Hunter Lake Rd	Winter	WI
Sam	Holm	545 E Dover St	Milwaukee	WI
Amy	Holt	2952 Ivanhoe Gln	Fitchburg	WI
Theresa	Holzem	1206 Mendota St	Madison	WI
Kathleen	Hones	N8703 County Rd E	Ripon	WI
Tim	Hood	1409 Club Cir	Middleton	WI
Sara And Charles	Hoot	5038 N Diversey Blvd	Milwaukee	WI
Michael	Horejs	3331 Mirage Cir	Plover	WI
Carl	Hosterman	W7315 County Road X	Wausaukee	WI
William	Houterman	727 Lorillard Ct Apt 439	Madison	WI

Joshua	Howell	1734 Lunde Cir	Stoughton	WI
Penny	Howell	N5946 Cass Ct	Green Lake	WI
Margaret	Hrncirik	4010 Saint Clair St	Madison	WI
Edward	Hubbard	210 S Whitney Way	Madison	WI
David	Huebner	137 Law St	Neenah	WI
Marieta	Huff	7939 34th Ave	Kenosha	WI
Robert	Hughes	113 Edgar Ave	Rothschild	WI
Barbara	Hughes	25 Sugar Maple Trl	Madison	WI
Whilden	Hughes	3314 W US Highway 14	Janesville	WI
Ryan	Hummer	15 Wentworth Cir	Madison	WI
Patricia	Hung	938 Pebble Beach Dr	Madison	WI
Elizabeth	Hurst	4115 Jeffers Rd	Eau Claire	WI
Michael	Iltis	2784 Marshall Pkwy	Madison	WI
Phil	Immerfall	901 N Bennett St	Appleton	WI
Elizabeth	Ivankovic	5001 William Ct	Eau Claire	WI
Elizabeth	Jach	6101 Roseberg Rd	Madison	WI
Mari	Jackson	527 Maxon St	Eau Claire	WI
Kevin	Jacobson	E6487 1370th Ave	Ridgeland	WI
Jolie	Jacobus	2428 Independence Ln Unit 206	Madison	WI
Andrew	Jadczak	442 N 49th St	Milwaukee	WI
Marie	Jaeger	124 W Meadow St	Stratford	WI
Carol	Jaksic	N3327 4th Ln	Oxford	WI
Rhody	Jakusz	6430 Journeys End Rd	Rhinelander	WI
Ruth	Jallings	7443 North St	Sauk City	WI
Joan	Janisch	8640 Jackson Park Blvd	Milwaukee	WI
Jean	Janssen	1013 Buttermilk Creek Dr	Fond Du Lac	WI
James	Janus	3489 N Duluth Ave	Sturgeon Bay	WI
Peter	Jasen	306 Ross Ct	Stevens Point	WI
Kimberly	Jay	313 N Fremont St	Whitewater	WI
Kitty	Jerome	1802 Monroe St Unit 506	Madison	WI
Ellen	Jessen	4534 Turquoise Ln	Madison	WI
John	Joadwine	2010 Ohm Ave	Eau Claire	WI
Jeff	Johns	N5430 Switzke Rd	Jefferson	WI
Elaine Dorough	Johnson	1419 Jamesway	Fort Atkinson	WI
D.J.	Johnson	1755 30th Ave	Rice Lake	WI
Deb	Johnson	1755 30th Ave	Rice Lake	WI
Harold	Johnson	1755 30th Ave	Rice Lake	WI
Keith	Johnson	340 N Minnesota St Apt 108	Muscoda	WI
Anthony	Johnson	N3656 Heideman Rd	Waupun	WI
Dave	Johnson	W10276 County Road Cs	Poynette	WI
Judy	Jolin	509 County Road M	Pickett	WI
Kurtis	Jones	1022 Westport Dr Apt 117	Port Washington	WI
Harold	Jones	1232 Johnson St	Onalaska	WI
Sarah	Jones	125 N Hamilton St Unit 905	Madison	WI

Mary	Jones	12917 N Colony Dr	Mequon	WI
Patrick	Jones	6523 W Fremont Pl	Milwaukee	WI
Mary	Jones-Giampalo	N7282 Trophy Dr	New Lisbon	WI
Renee	Joos	2919 N 68th St	Milwaukee	WI
Adam	Jorgenson	6400 Conifer Ln	Greendale	WI
Jeff	Josephs	836 Lincoln Green Rd	Deforest	WI
Denise	Judy	606 Main St	Oconto	WI
Amanda	Jungkuntz	1200 N 62nd St Apt 211	Milwaukee	WI
Reginald	Jungwirth	439 Braatz Dr	Kewaskum	WI
Sarah	Juon	525 Spring Lake Rd	Rhinelander	WI
Robert And Louise	Juracka	10590 County Road D	Amherst	WI
Jerome	Kabelowsky	3316 Lake Dr	Hartford	WI
Ben	Kalb	3377 N Pierce St Apt 1	Milwaukee	WI
Chris	Kalfa	842 65th St	Kenosha	WI
Carol	Kalscheur	204 Morningside Ave	Madison	WI
Michael	Kaltenberg	621 Highway 65	Roberts	WI
Lance	Kammerud	20815 State Road 78	Blanchardville	WI
Agnes	Kanikula	3981 County Road Jj	Black Earth	WI
Aaron	Kapp	8209 Portland Ave	Wauwatosa	WI
Laura	Karan	7012 N Bethmaur Ln	Glendale	WI
Steve	Karges	33 Campus Ln	Janesville	WI
Sarah	Karnes	7394 Hilltop Ln	Lake Geneva	WI
Barbara	Kashian-Snow	8502 Old Sauk Rd Apt 206	Middleton	WI
Robert	Katrosits	660 N Mill St	Saukville	WI
Jane H.	Kavaloski	57 Lansing St	Madison	WI
Kevin	Kemps	615 Monroe St	Neenah	WI
Malcolm	Kennett	3303 E Heideman Dr	Appleton	WI
Randy	Kiel	1040 N Cass St	Milwaukee	WI
Paige	Kimble	2532 N 115th St	Milwaukee	WI
Kathleen	King	410 Ozark Trl	Madison	WI
Marilyn	Kinsman-Kharbush	E1424 Boot Jack Rd	Wonewoc	WI
Paul	Kirsch	4822 Main St	Stevens Point	WI
Hunter	Klapperich	612 Park Ave	Stanley	WI
James	Kleppin	606 E Custer Ave	Oshkosh	WI
Thomas	Klopf	8655 Westlake Dr	Greendale	WI
Robert	Klossner	4617 Crescent Rd Apt 7	Fitchburg	WI
Sandra	Klueger	W2274 County Road Y	Lomira	WI
Gary M	Kmiecik	T5584	Wausau	WI
Susan	Knapp	11005 W Harvard Ln	Wauwatosa	WI
James	Kneisler	E953 Rural Rd	Waupaca	WI
Robert	Knitter	327 W Washington St	Port Washington	WI
Justin	Knutesen	3337 Vineyard St	Eau Claire	WI
Ralph	Knuth	N7011 State Road 57	Plymouth	WI
Jeremy	Koehl	32795 Whiting Rd	Bayfield	WI

Cheri	Koehler	801 Oak St	Shawano	WI
David	Koeller	931 S Lafayette St	Shawano	WI
Mary	Kohl	PO Box 855	Sheboygan	WI
Susan	Kopish	N2782 Roosevelt Rd	Marinette	WI
Krysta	Koralesky	111 Meadow Oak Trl	Waunakee	WI
Greg	Koshak	8709 Cattail Ln	Larsen	WI
Aleks	Kosowicz	12876 N Balsam Rd	Hayward	WI
Alan	Kotlarek	138 Glenway St	Madison	WI
Vincent	Kotnik	4829 W Washington Blvd	Milwaukee	WI
Valerie	Kozlovsky	12969 E County Road Ff	Maple	WI
Glenn	Krakower PhD	7700 Portland Ave	Milwaukee	WI
Stafford	Kramer	S94W14528 Ryan Dr	Muskego	WI
Valarie	Kratochwill	610 Gray St Apt 305	Eau Claire	WI
Bruce	Krawisz	1600 N Hills Dr	Marshfield	WI
Jonathan	Kresin	365 Laverne Dr Apt 8	Green Bay	WI
James	Krueger	10833 N Port Washington Rd	Mequon	WI
Gloria	Krueger	1445 MacArthur Rd	Madison	WI
Linda	Krug	321 Westmorland Blvd	Madison	WI
Paul	Kruse	500 Saint Jude St	Green Bay	WI
Margaret	Krzyzewski	746 Fish Dr	Wisconsin Dells	WI
John	Kuehni	4726 Turner Ave	Madison	WI
Christopher	Kugel	1227 39th Ave	Kenosha	WI
Rob	Kukla Sr	W1955 S Lawson Dr	Green Lake	WI
Marvin	Kummer	4326 Koppen Rd	Pittsville	WI
Adriana	Kusnirova	W181N8945 Melanie Ln	Menomonee Falls	WI
Cathie	Kwasneski	N1691 Mount Hope Rd	Brodhead	WI
Dana	Lafontsee	5228 Buena Park Rd	Waterford	WI
Max	Lagally	5110 Juneau Rd	Madison	WI
William	Laine	608 Wakanda Cir	Menomonie	WI
Jeffrey	Lamont	N2981 Cooke Ln	Marinette	WI
Barbara	Landis	107 Cedar Ridge Dr Apt N124	West Bend	WI
Rebecca	Lane	5609 Beaver Ct	Greendale	WI
Donald	Langenfeld	822 Willow Ln	Hartford	WI
Gloria	Lansin	139 Oak St	Amery	WI
Judith	Larsen	N67W5349 Cedar Ct	Cedarburg	WI
Richard	Larson	1470 Rosewood Pass	Oconomowoc	WI
Brian	Larson	5913 Dietrich Hts	Cassville	WI
Audrey	Lasse	438 W Jefferson St	Oconomowoc	WI
Mark	Latiker	3530 E Tesch Ave Apt 4	Saint Francis	WI
John	Laughlin	N7915 902nd St	River Falls	WI
Karen	Law	384 Thomas Ct	Neenah	WI
John C	Lawson	2041 S 15th St	Milwaukee	WI
Mike	Leannah	522 Grant Ave	Sheboygan	WI
Patti	Lechmaier	2456 Hannemann Rd	Grafton	WI

Tim	Lechmaier	5601 Mendota Dr	Middleton	WI
Jeffrey	Leckwee	435 Seminary St	Lodi	WI
Nicole	Ledvina	1949 Manley St	Madison	WI
Hannah	Lee	3834 Whitman Ln Apt 312	Madison	WI
Ben	Lefort	2980 S Wentworth Ave	Milwaukee	WI
Bill	Leichtnam	13413 Hollywood Rd	Nekoosa	WI
Ira Pauline	Leidel	430 W Brentwood Ln	Glendale	WI
Dale	Leist	9802 W W Hillcrest Rd	Whitelaw	WI
Marc	LeMaire	430 E Court St	Viroqua	WI
Jessica	LeMieux	2420 Sycamore Dr	Green Bay	WI
Dan	Lemieux	608 Robert Ln	Green Bay	WI
Bonnie	Lemmens	9007 County Road J	Forestville	WI
William	Lemorande	7295 N River Rd	Milwaukee	WI
Robert	Lenius	W7304 County Road R	Niagara	WI
Brenda	Letellier	17000 W Sundown Dr	New Berlin	WI
Eva	Lewis	716 W Grand Ave Apt 323	Eau Claire	WI
Tanya	Lewis	PO Box 806	Brookfield	WI
Denise	Lexa-Grant	1236 Walton Ave	Racine	WI
Jean	Liedl	303 Governor St	Chippewa Falls	WI
Julianne	Lien	1211 E 3rd St	Superior	WI
Madeline	Light	333 W Mifflin St Unit 8010	Madison	WI
James	Limbach	1732 Ellis St	Stevens Point	WI
Matthew	Lind	314 S Badger Ave	Appleton	WI
Dana	Lind	622 Wisconsin St	Eau Claire	WI
David	Lindberg	1145 N 21st St	Milwaukee	WI
Susan	Lindell	3008 S Superior St	Milwaukee	WI
Karen	Lindholm	1991 1/2 Street	Comstock	WI
Steven	Lindstrom	4541 S Pine Ave	Milwaukee	WI
Linda	Linssen	3638 Richard St	Madison	WI
Bruce A.	Lisiecki	W8902 County Road F	Cascade	WI
Robin	Lisowski	618 Tall Pines Way	Verona	WI
Thomas	Littelmann	5506 W Brooklyn Pl	Milwaukee	WI
Charles	Litweiler	5 Lukken Ct	Madison	WI
Dale	Long	1440 131st Ave	New Richmond	WI
Charles	Lonsdorf	7845 Lake Cunard Campground Rd	Lake Tomahawk	WI
Eileen	Lonsdorf	7845 Lake Cunard Campground Rd	Lake Tomahawk	WI
Constance	Lorig	927 S 7th St	De Pere	WI
Shabnam	Lotfi	PO Box 64	Madison	WI
Tim	Lowe	S6274 Bluff Rd	Merrimac	WI
Marianne	Lubar	8160 N Green Bay Rd	River Hills	WI
Beth	Lueck	816 Peace Ln	Oregon	WI
Robert	Luhm	2160 E Hidden Creek Ct Apt 209	Oak Creek	WI
Jackie Lee Luyet	Luyet	705 Chapman St	Madison	WI
Robert	Maas	606 W Wisconsin Ave	Milwaukee	WI

Diane	Macaluso	3818 N 79th St	Milwaukee	WI
Deborah	MacHak	6015 Star Grass Ln	Racine	WI
Elizabeth	MacKelvie	1954 Palisades Dr	Appleton	WI
Jill	Madigan	2010 S 13th St	Milwaukee	WI
John	Mahan	62510 Delta Lake Rd	Iron River	WI
Vic	Mandarich	W1099 Spleas Skoney Rd	East Troy	WI
Thomas	Mandli	W5654 Boat Landing Ln	Peshtigo	WI
Paula	Mansholt	417 Cross Country Rd	Verona	WI
Julie	Marcks	4611 Juniper Ln	Wisconsin Rapids	WI
Mary Beth	Martin	2309 N 23rd St	Sheboygan	WI
Nichelle and Paul	Martin	S5572 Bluff Rd	Baraboo	WI
Ernest	Martinson	15865 Guard St Apt 102	Hayward	WI
Jessica	Matelsky	616 N Pierce Ave	New Richmond	WI
Pauline	Mauthe	3210 E Canary St Apt 9	Appleton	WI
Julie	Maybee	1118 Jenifer St	Madison	WI
T.J.	McCarrier	3808 Lorraine St	Stevens Point	WI
James	McCauley	28501 Wilmot Rd Ste 18	Trevor	WI
Janet	McConaughey	N8144 La Salle Cir	Oconomowoc	WI
Patricia	McConnell	4839 County Road F	Black Earth	WI
James	McConnell	715 Amy Ln	Eau Claire	WI
Joan	McCormick	2909 E Newport Ave	Milwaukee	WI
Frances	McDonal	200 W Packard St Apt 329	Appleton	WI
Mark	McDonough	1838 S Grant Ave	Janesville	WI
Seth	McElhinney	1850 Beld St Apt C2	Madison	WI
Kathy	McElwain	143400 County Road C	Mosinee	WI
Kathryn	McEwen	1605 Wilson St	Menomonie	WI
Latoya	McGhee	4231 N 44th St	Milwaukee	WI
Mary	McGuire	2657 Red Pine Ct	Suamico	WI
Patrick	McIntyre	N11613 450th St	Boyceville	WI
Jim	McKeever	811 Pine St	Antigo	WI
Allie	McKinstry	425 W Willow Ct Apt 153	Fox Point	WI
Patricia	McKnight	138 Wimbledon Ln	Holmen	WI
Christopher	McLaughlin	2630 Springville Dr	Plover	WI
Darlene	McLeod	N1469 Shore Dr	Marinette	WI
Kathy	Medtlie	3312 W Burgundy Ct	Mequon	WI
Larry	Meisgeier	1560 N Prospect Ave	Milwaukee	WI
Robert	Melcher	S78W20229 Monterey Dr	Muskego	WI
Jill	Melchoir	3401 Blackberry Ln	Suamico	WI
Dan	Melton	2138 La Follette Ave	Madison	WI
Rita	Meuer	1422 Wheeler Rd Unit E	Madison	WI
Larry	Meyer	11921 E Pioneer Rd	Whitewater	WI
Justin	Meyer	17884 45th Ave	Chippewa Falls	WI
Donna	Meyer	N5461 43rd Rd	Pound	WI
Susan	Michetti	605 Sheila St	Mount Horeb	WI

Neil	Micke	W5951 County Road A	Medford	WI
Trish	Miller	1124 N 44th St	Milwaukee	WI
Lester	Miller	3143 W Villa Dr	Franklin	WI
Amy	Miller	3275 A S 99th St	Milwaukee	WI
Yolan	Mistele	11355 Marchese Rd	Arbor Vitae	WI
Thomas	Mittelstaedt	420 E 3rd St Apt 103	Washburn	WI
David	Mittlesteadt	4034 Oak Park Rd	Deerfield	WI
Frank	Mlodik	E894 County Road C	Iola	WI
Ann	Moffat	2150 Dahlk Cir	Verona	WI
Judy	Moon	9850 PN COURTLAND Dr	Mequon	WI
Holly	Moore	2221 Sherman Ave Apt 409	Madison	WI
Nancy	Moore	6225 Mineral Point Rd Apt D87	Madison	WI
Jeff	Morgan	131 Washington St	Fountain City	WI
Samuel	Morningstar	2728 N Prospect Ave	Milwaukee	WI
Michael	Morrison	444 N 5th Pl	Sturgeon Bay	WI
Christine	Morrissey	1102 N Union St	Appleton	WI
Thomas	Morse	1628 Jacobsen Rd	Neenah	WI
Elise	Moser	1200 Water St	Sauk City	WI
Laurie	Mosher-Paulin	4232 Valley View Ct	Newton	WI
Jim	Moskal	2907 Taylor St	Marinette	WI
Cliff	Moyes	905 Division St Apt 18	Horicon	WI
Edward	Mrkvicka	341 Whitewater Ave Uppr APT	Fort Atkinson	WI
Megan	Mrozek	2022 Elka Ln Apt 7	Madison	WI
Christine	Muellenbach	W281N8674 Hideaway Dr	Hartland	WI
Ellen	Mueller	2914 County Rd E Berlin	Berlin	WI
Jeanette	Muench	3863 E Martin Ave	Cudahy	WI
Martha	Munger	S8821 County Line Rd	Mondovi	WI
Jason	Murcko	601 Wingra St	Madison	WI
Mary	Murl	9 Pepper Wood Ct	Madison	WI
Daniel	Murphy	3125 N Rankin St	Appleton	WI
Dan	Murray	409 24th St N Apt 2	Menomonie	WI
Mary	Mutch	W2658 State Road 33	La Crosse	WI
Tom	Nacey	HARRISON St	Superior	WI
Patricia	Nadreau	24191 Dial Ave	Tomah	WI
Barbara	Namenwirth	1834 S Sharpes Corner Rd	Mount Horeb	WI
Ronald	Natzke	1921 Cook Ave	Wisconsin Rapids	WI
Sharon	Nault	2424 Mirro Dr Apt 6	Manitowoc	WI
Kathy	Neidert	711 Camelot Ct	Viroqua	WI
Jared	Nellis	117 S Lansing Ave	Sturgeon Bay	WI
Peter	Nelson	1135 Willow Green Cir	Eau Claire	WI
Thomas	Nelson	1198 Sunny Slope Rd # 222	La Pointe	WI
Keith	Nelson	1519 Regency Rdg	Waunakee	WI
Patrick	Nelson	16610 S Main St	Galesville	WI
Carol	Nelson	26241 Midway Ave	Wilton	WI

Bonnie	Nelson	3642 Graham Paige Rd	Cottage Grove	WI
Cheryl	Nenn	2400 N 58th St	Milwaukee	WI
Teri	Nesja	1198 6th Ave	Prairie Farm	WI
Forrest	Netzel	14255 W Maylore Dr	New Berlin	WI
Dan	Nevers	2022 Jefferson St	Madison	WI
Judith	Newland	W2955 Badger Dr	Pine River	WI
Jane	Newton	PO Box 403	Brandon	WI
Maryjean	Nicholls	1103 River Heights Rd	Menomonie	WI
Brenna	Nicholson	3312 Walter Way # 2839	Green Bay	WI
Jane	Nicholson	6066 Townsend Rd	Manitowish Waters	WI
Gary	Nickel	W5881 Riverview Ct	Plymouth	WI
Meg	Nielsen	PO Box 274	Mc Farland	WI
Mary	Nix	1420 W Center St Apt 201	Milwaukee	WI
J	Noble	Personal	Fitchburg	WI
Peter	Nordgren	22140 Old Highway 13	Cornucopia	WI
Russell	Novkov	602 Sawyer Ter Apt 308	Madison	WI
Amy	Nyce	439 Bron Derw Ct	Wales	WI
Suzanne	Oberhauser	6225 Mineral Point Rd Apt C64	Madison	WI
Patrica	Obletz	2147 N 53rd St	Milwaukee	WI
Michael	O'Brien	14414 Braun Rd	Sturtevant	WI
Ellen	Ochs	E4426 County Road D	Menomonie	WI
John	O'Connell	S90W22950 Rose Ave	Big Bend	WI
Katharine	Odell	1415 Vilas Ave	Madison	WI
Dan	Oelke	1251 Sunset Dr	Wausau	WI
Lorrie	Ogren	4403 Spring St	Mount Pleasant	WI
Allan	Ohm	745 24th St N	La Crosse	WI
Marjorie	Okeefe	3746 County Road P	Oxford	WI
Randy	Ollila	6315 62nd Ave	Kenosha	WI
Deb	Olsen	1032 S 150th Ave	Fall Creek	WI
Pat	Olsen	373 Scout Rd # I	Mosinee	WI
Lorain	Olsen	437 Wild Indigo Ln	Madison	WI
Corey E.	Olsen	W334S724 Cushing Park Rd	Delafield	WI
Carrie	Olson	11366 Main St	Trempealeau	WI
Dennis	Olson	1515 Frederic St	Eau Claire	WI
Barb	Olson	221 Glacier Dr	Madison	WI
Judy	Olson	518 Clemons Ave	Madison	WI
Sondra	Olson	W11322 Schultz Dr	Beaver Dam	WI
Diane	Olson Schmidt	6087 N Denmark St	Milwaukee	WI
Sam	Orlich	2938 S 15th St	Milwaukee	WI
Patti	Orthwein	3670 Isaacson Rd	Scandinavia	WI
Winston	Ostrow	S4694 N Elk Run Rd	Viola	WI
Chris	Ottosen	W8421 Brook Dr	Shell Lake	WI
Bob	Ottosen	W8421 Brook Dr	Shell Lake	WI
Cindy	Owen	3029 N 7th St	Wausau	WI

John And June	Owens	S3091 Oak Knoll Rd	Fall Creek	WI
Muriel	Pacheco	4647 N Marlborough Dr	Milwaukee	WI
Patrick	Pacifico	3003 88th Pl	Kenosha	WI
Heidi	Papadhopulli	1412 Lake Dr	South Milwaukee	WI
Zach	Pappas	1911 Mitscher Ave	Eau Claire	WI
Lynne	Parker	1429 S Main St	Fort Atkinson	WI
Janet	Parnell	368 Old Cemetery Rd	River Falls	WI
Kim	Parsons	14055 W Kostner Ln	New Berlin	WI
Mark	Pass	404 Westminster Dr	Waukesha	WI
Kelly	Pasztor	313 Wynnwood Dr	Verona	WI
Evelyn	Pate Alcalde	1900 Greene Rd	Stoughton	WI
Donna	Patske	800 11th Ave	Green Bay	WI
Ellen	Paul	723 8th St	Prairie Du Sac	WI
Louise	Paulson	12176 102nd Ave	Chippewa Falls	WI
Vicki	Pauly	151 N University Dr Unit 115	West Bend	WI
Ernest	Pearson	S3164 Red Pine Rd	Baraboo	WI
Jim	Pech	122 Daffodil Ln	Madison	WI
Wendy	Peche	1633 Belmont Rd	Green Bay	WI
Kenneth	Peckham	350 7th St S	Wisconsin Rapids	WI
Patty	Peltekos	227 Jeanette Rd	Belleville	WI
Mary	Pentler	1020 Lone Tree Rd	Elm Grove	WI
Thomas	Peret	1270 Fox Point Dr	Waukesha	WI
Diane	Perschbacher	2531 Bruce Ct	Neenah	WI
Jan	Pesek-Herriges	1080 21st St SE Apt 2	Menomonie	WI
David	Petering	7229 N Santa Monica Blvd	Milwaukee	WI
Aaron	Peters	2433 Prais St	Stevens Point	WI
Wendi	Peters	5 Singleton Ct	Madison	WI
Janelle	Peterson	233 5th Ave	Viroqua	WI
Carla	Peterson	817 Hemlock Dr	Verona	WI
Erik	Pettersen	1110 Ruskin St Apt 7	Madison	WI
Laurie	Pevnick	2301 W Brantwood Ave	Glendale	WI
Rose	Phillips	1628 Spruce Ct	Sheboygan	WI
Richard	Phillips	2490 Jackson St Apt 211	Oshkosh	WI
Linda	Phillips	3532 E Barnard Ave	Cudahy	WI
Brian	Pickett	S3212 Casey Ave	Spencer	WI
Deann	Piehl	3620 N Woodhaven Ct	Appleton	WI
Brian	Pierce	2753 Woodruff Ct	Green Bay	WI
Ina	Pillar	236 Prairie View St	Oregon	WI
Rollin	Pizzala	5303 43rd Ave	Kenosha	WI
Kathleen	Plaisance	1349 Mockingbird Dr	Oconomowoc	WI
Mary	Platten	344 Columbia Ave	Green Bay	WI
Jules	Plumitis	7126 Military Rd	Three Lakes	WI
Mary	Plummer	4755 N Idlewild Ave	Milwaukee	WI
Debra	Polsin	W8200 State Road 16	Lowell	WI

Glen	Popple	8010 Thistle Ct	Waterford	WI
Phillip	Porter	1135 Blackoak Rd	Eau Claire	WI
Lorrie	Potash	7408 Elms Rd	Sturgeon Bay	WI
Nicole	Powers	512 Hancock St	Watertown	WI
Irene	Prieve	N5893 Walnut Rd	Monticello	WI
Ian	Proctor	3072 Water St	Stevens Point	WI
Dan	Pubanz	N6745 Balsam Row Rd	Shawano	WI
Francis	Puig	N14051 705 St Box 33	New Auburn	WI
Julie	Putney	W203S10510 N Shore Dr	Muskego	WI
John	Quinn	2105 Mica Rd	Madison	WI
Lillis	Raboin	1958 Dove Trl	Eagle River	WI
John	Radloff	W666 Heath Ln	Marinette	WI
William	Radue	3265 Soo Marie Ave	Stevens Point	WI
Mary	Radue	879 W Saint Francis Rd	De Pere	WI
Steven	Raith	N4247 Square Rd	Humbird	WI
Jane	Ralph	28365 Lucia Rd	Washburn	WI
Bob	Ramlow	9784 County Road K	Amherst	WI
Cynde	Randall	W3623 2nd St	Maiden Rock	WI
Chris	Ranson	8905 W Center St	Milwaukee	WI
Bonnie	Ranta	11519 E Waterfront Dr	Lake Nebagamon	WI
Carla	Raushenbush	3809 Busse St	Madison	WI
Donna	Recker	421 N Main St Apt 4	Seymour	WI
Janice	Redford	2062 Hillside Rd	Cambridge	WI
Peggy	Reeder	W174N12203 Fond Du Lac Ave	Germantown	WI
Jeff	Reese	43 W 12th St Uppr	Fond Du Lac	WI
Matthew	Reetz	2916 Gregory St	Madison	WI
Dr. Jacqui	Regenbogen	1906 Sachtjen St	Madison	WI
Pam	Reichmann	4556 N 74th St	Milwaukee	WI
Joyce	Rejret	125 County Road Z	Nekoosa	WI
Beth	Rendall	N1558 Wooddale Dr	Lake Geneva	WI
Brek	Renzelman	8345 N Poplar Dr	Fox Point	WI
Georgia	Ressmeyer	717 Grand Ave	Sheboygan	WI
Lou	Reynolds	2058 Helena St	Madison	WI
Arlene	Ricci	W7345 Ricci Rd	Ladysmith	WI
Robert	Rice	74355 Kaukamo Rd	Iron River	WI
David	Rieckmann	W3268 Buffalo Hills Rd	Pardeeville	WI
Sheila	Ries	1707 N 10th St	Sheboygan	WI
Chuck	Riley	1639 Rustic Oaks Ct	Green Bay	WI
Melissa	Rink	1107 Cardinal St	De Pere	WI
Jean	Roberts	56 State Road 69	New Glarus	WI
Sam	Robinson	305 Patrick Ave	Waunakee	WI
Gustavo	Robledo	1600 Auburn Ct	Waukesha	WI
Eric	Robson	318 Island Dr Apt 20	Madison	WI
Kathy	Roby	329 New Market Ct	Nekoosa	WI

Rolf	Rodefeld	602 S Thornton Ave	Madison	WI
Kevin	Rodgers	1821 E Thomas Ave	Milwaukee	WI
Victor	Rodriguez	4432 N Woodruff Ave	Shorewood	WI
Sandra	Rohde	W3059 Pinecrest Ct	Appleton	WI
Peter	Roop	2601 N Union St	Appleton	WI
Jackie	Rose	1114 Shasta Dr	Madison	WI
Carl	Rosenstock	S5069 Durwards Glen Rd	Baraboo	WI
Mike	Rosing	5810 S Hill Dr	Madison	WI
Miriam	Ross	10202 W Schlinger Ave	Milwaukee	WI
Wayne	Ross	6791 Deuster Rd	Greenleaf	WI
Michele	Roy	8006 W Keefe Ave	Milwaukee	WI
Chris	Rudahl	2021 River Bend Rd	Plover	WI
William	Rudersdorf	N384 Mariposa Ln	Wisconsin Dells	WI
Roberta	Rudiger	3411 Meadow Green Rd	Danbury	WI
Kristine	Ruffatto	1707 Butler Dr	Waukesha	WI
Susan	Ruggles	5779 N Bel Aire Dr	Milwaukee	WI
Christine	Rundblad	2962 S Wentworth Ave	Milwaukee	WI
Steve	Rupert	925 Wells St	Marinette	WI
Robert	Rusch	N 8645 Cth C	Rib Lake	WI
Richard	Russo	6 Castlebar Ct	Madison	WI
Michael	Rutschow	433 Lakewood Dr	Mondovi	WI
Paul	Rybski	N8664 Duffin Rd	Whitewater	WI
Rich	Saglin	707 Odanah St	Lac Du Flambeau	WI
James	Sajdak	804 Bowman Ave	Madison	WI
Steve	Salemson	2105 Canterbury Rd	Madison	WI
Jerome	Sanderfoot	112 Edgewood Ln	Combined Locks	WI
David	Sanders	W9070 Lakeview Dr	Cambridge	WI
Richard	Sanford	1508 Hillside Ln	Watertown	WI
Judy	Savard	5138 Spruce St	Laona	WI
Judith	Savard Max	5138 Spruce St	Laona	WI
Peggy	Savides	W6741 Ash Rd	Mondovi	WI
Madelyn	Scheer	522 Ludington Ave	Madison	WI
John	Scherf	243 Plainview Dr	River Falls	WI
Gary	Schill	502 Uplands Dr	Dodgeville	WI
Dorene	Schink	6409 Wydown Cir	Middleton	WI
Roger	Schmidt	1505 E Wells St	Prairie Du Chien	WI
Irene	Schmidt	1820 E Blue Mounds Rd	Mount Horeb	WI
Willa	Schmidt	2020 University Ave Apt 317	Madison	WI
Elvira	Schmidt	3348 30th St	Frederic	WI
Stephen	Schmidt	4411 Huntington Ct	Wausau	WI
Joseph	Schmitt	1304 Jenifer St	Madison	WI
Wendy	Schneider	201 Merryturn Rd	Madison	WI
Jean	Schnick	708 Jefferson Ct	Deforest	WI
Richard	Schoemer	N4007 County Road A	Cambridge	WI

Patricia	Scholz	1526 Calumet Dr	New Holstein	WI
William	Schrader	421 S Midvale Blvd	Madison	WI
Tom	Schrader	421 S Midvale Blvd	Madison	WI
Sheila	Schrieber	20975 Macaulay Dr	Brookfield	WI
Carole	Schroeder	3530 N Story St	Appleton	WI
Andrea	Schultz-Cockerham	6909 W Lloyd St	Milwaukee	WI
Kerry	Schumann	4122 Hillcrest Dr	Madison	WI
Judith	Schure	1201 Euclid Ave	Sparta	WI
Caleb	Schuster	2876 Sky Hawk Dr	Eau Claire	WI
Victor	Schwartz	605 Russell St	Madison	WI
Rachel	Scott	421 E Cravath St	Whitewater	WI
Lee	Scoville	24273 Judson Ln	Hillsboro	WI
Dave	Searles	804 17th St	Brodhead	WI
Tamara	Sedakow	643 11th St	Baraboo	WI
Scot	Seffinga	16127 W Anderson Rd	Hayward	WI
Vincent	Segovia	204 Wisconsin St	Elroy	WI
Jane	Seidl	713 Eau Claire Place	De Pere	WI
Teresa	Sem	14230 W Glen Meadow Dr	New Berlin	WI
Janis	Senungetuk	4505 Leo Dr Apt 4	Madison	WI
Rose	Servantez	1616 Marion Ave	South Milwaukee	WI
Julie	Serwer	102 N River St	Janesville	WI
Megan	Severson	4254 Warwick Way	Madison	WI
Samuel	Seward	8920 N Pelham Pkwy	Bayside	WI
Mary	Sharpee	N1005 HIGHWAY Dm	Rio	WI
Paul	Shedivy	1123 Mallard Ct	Mukwonago	WI
Terry	Sheffer	489 Galena St	Benton	WI
John	Shelley	25 Hein Ave	Plymouth	WI
Larry	Shepler	6722 10th Ave	Eau Claire	WI
Jean	Sherman	11800 Sherman Rd	Port Wing	WI
Kent	Shifferd	N12036 Pash Dr	Trego	WI
Lynn	Shoemaker	172 N Esterly Ave	Whitewater	WI
Perry	Sieber	501 S Washington St	Green Bay	WI
Carol	Siewert	5005 Ironwood Dr	Madison	WI
Margaret	Sikowski	N57W34963 Pondview Ln	Oconomowoc	WI
Carl	Silverman	5521 Barton Rd	Madison	WI
George	Silverwood	4414 Woods End	Madison	WI
Capt. George	Silverwood Ret.	2970 Chapel Valley Rd	Fitchburg	WI
Gladys	Simerl	3225 Anders Ln WI	Brookfield	WI
Joyce	Simmons	3955 High View Dr	Eau Claire	WI
Allie	Simon	N7018 County Rd E	Oconomowoc	WI
Carol	Sinclair	3830 Cosgrove Dr	Madison	WI
Beryle	Skaar	139 S 1st St	Black River Falls	WI
Russell	Skinner	310 Paul Dr	Kimberly	WI
Robert	Skloot	2630 Park Pl	Madison	WI

Nancy	Sloan	305 S Few St	Madison	WI
Susanne	Smebak	7956 Albe Rd	Cross Plains	WI
Sandra	Smith	2445 Spring Hill Dr	Cedarburg	WI
Robert	Smith	2616 E Jarvis St	Shorewood	WI
Genie	Smith	4500 N Lake Dr	Milwaukee	WI
Shannon	Smith	555 Elm Spring Ave	Milwaukee	WI
Mark	Smith	8265 Schroeder Rd	Oconto Falls	WI
Stanley	Smoniewski	N6532 Shorewood Hills Rd	Lake Mills	WI
David	Snell	9000 N White Oak Ln Apt 303	Bayside	WI
Joe	Sokolinsky	1602 Adams St	Madison	WI
Ken	Somerville	992 Bonnie Brae Ln	Lake Geneva	WI
Barbara	Sorensen	32250 Oak Rd	Washburn	WI
Catherine	Sorensen	4607 N Bartlett Ave	Shorewood	WI
Terri	Spaanem	W6166 Pine Ln	Crivitz	WI
Gail	Spang	7849 4 Mile Rd	Franksville	WI
Jennifer	Spann	S3921 Bakkom Rd	Viroqua	WI
Katarina	Spelter	3609 Sargent St	Madison	WI
Daniel	Spillman	88980 Bark Point Rd	Herbster	WI
Ron	Spitz	110 Corrina Blvd	Waukesha	WI
Mike	Splinter	1475 Torun Rd	Stevens Point	WI
Sara	Stanard	4511 45th Ave	Kenosha	WI
Veronica	Standeven	11852 15th Ave N	Chippewa Falls	WI
Sharon	Stanke	1026 Perry St	Watertown	WI
Diane	Stannard	1312 Wisconsin St	Hudson	WI
Sandra	Stark	2720 Gregory St	Madison	WI
Sharon	Stark	E6095 County Road Wc	Spring Green	WI
Harriet	Statz	421 Prospect Rd	Waunakee	WI
Patricia	Stefancic	1655 Jennie St	Menasha	WI
W	Stein	77015 W Maple Hill Rd	Washburn	WI
Carol	Steinhart	6205 Mineral Point Rd	Madison	WI
Don	Steinke	17130 50th Rd	Franksville	WI
Marsha	Stelzer	911 Craite Ave	Rice Lake	WI
Christina	Stemwell	3472 E Koenig Ave	Saint Francis	WI
John	Steuerwald	10833 W Pallottine Dr	Milwaukee	WI
Leslie	Stewart	603 Dunn St	Pepin	WI
Dan	Stoltz	3017 McCulloch St	Stevens Point	WI
Rebecca	Stone-Ready	10178 Oak Ridge Rd	Lancaster	WI
Ron	Story	6404 5th Ave	Kenosha	WI
Mary	Strachota	130 S Water St Apt 307	Milwaukee	WI
Scott	Strand	301 Martin Ave E	Turtle Lake	WI
Nancy	Stratman	7825 Big Timber Trl	Middleton	WI
Lori	Strausser	2319 Maryland Ave Apt 4	Racine	WI
Michelle	Street	5239 N 88th Ct	Milwaukee	WI
Art And Carol	Stroede	3803 N 52nd St	Milwaukee	WI

Wayne	Stroessner	39 E Shore Dr	Random Lake	WI
Teresa	Strom	12804 Bell Rd	Caledonia	WI
Deborah	Studley	27694 Pratt Rd	Webster	WI
Roberta	Stuemke	225 N Westhaven Dr Apt X103	Oshkosh	WI
John	Sullivan	2208 Eagle Smt	Stevens Point	WI
Adam	Sullivan	4046 N 90th St	Milwaukee	WI
Joan	Sullivan	5111 Black Oak Dr	Madison	WI
Dorothy	Summers	2428 Bay Settlement Rd	Green Bay	WI
Veronica	Sustic	115 S Mills St Apt 306	Madison	WI
Dave	Swanson	5940 Stanton Rd	Platteville	WI
Kathie	Swanson	971 Lawinger Rd	Mineral Point	WI
Jennifer	Sweetland	3139 A S 50th St	Milwaukee	WI
Patricia	Swinford	1701 Brighton Beach Rd	Menasha	WI
Scott	Symes	913 Noridge Trl	Port Washington	WI
Robert	Szymanski	2839 N Bremen St	Milwaukee	WI
Michelle	Talhami	4476 N Woodburn St	Shorewood	WI
Arline	Taylor	106 S 4th St	River Falls	WI
Bill	Taylor	4754 Toepfer Rd	Middleton	WI
Sybil	Teehan	2117 20th Ave	Monroe	WI
Byron	Terry	838 Baldwin St	Neenah	WI
Jackie	Thiry	1600 Rustic Oaks Ct Unit 8	Green Bay	WI
Nancy	Thomadsen	7026 N Longview Ave	Glendale	WI
Jo Marie	Thompson	17483 Kendall Ave	Norwalk	WI
Ashley	Thompson	3337 N Cramer St	Milwaukee	WI
Kristin	Thompson	5506 Trempealeau Trl	Madison	WI
Eric	Thompson	5860 Osborn Dr	Mc Farland	WI
Anna	Threlfall	N3438 Wood Lawn Rd	Kennan	WI
Thomas	Thrun	999 Lake Country Ct	Oconomowoc	WI
Sonette	Tippens	N1524 Wildwood Rd	Lake Geneva	WI
Russell	Tonelli	603 Broken Arrow Rd	Wausau	WI
Arlene	Torbica	1707 N Prospect Ave Unit 9E	Milwaukee	WI
Paula	Touhey	3011 89th St	Kenosha	WI
James	Trebatoski	E2674 County Road Gg	Iola	WI
David	Trewin	19010 83rd St	Bristol	WI
I	Trigonis	7248 CENTURY	Middleton	WI
Susan	Turner	PO Box 628	La Pointe	WI
Diane	Twardy	524 Terrace Ave	Burlington	WI
John	Twiggs	1711 Woodsview Dr	Marshfield	WI
Andrew	Ukasick	5067 Tower Line Rd	Marshall	WI
Peg	Unger	5229 Irish Ln	Fitchburg	WI
Jacquelyn	Valde-Milsted	816 Mill St	Delafield	WI
Scott	Valitchka	9251 Bomar Ave	Neenah	WI
Astra	Valters	10315 W Sunset Ave	Wauwatosa	WI
Juris	Valters	2666 Jackson Dr	Jackson	WI

Katie	Valters	2666 Jackson Dr	Jackson	WI
Juliana	Van Clausen	9900 County Road Y	Mazomanie	WI
Andy	Van Duym	1415 W Skyline Dr	Madison	WI
Patti	Van Linn	915 W 4th St	Appleton	WI
Janet	Van Vleck	1144 Florence Ct	Madison	WI
Carole	Vande Walle	4066 WI Hwy 42	Fish Creek	WI
Julia	Vandegrift	3904 S Prairie Hill Ln	Greenfield	WI
Lisa	Vanlaanen	7802 Horseshoe Bay Rd	Egg Harbor	WI
Milo	Velimirovic	122 16th St S	La Crosse	WI
Cindy	Verschay	W3490 Hardwood Rd	Porterfield	WI
John	Voegeli	1004 Yale Rd	Madison	WI
Betty	Voelker	124 612-111th SW	Wisconsin Rapids	WI
James	Voss	703 Clardell Dr	Sun Prairie	WI
Jay	Vosters	713 S Schaefer St	Appleton	WI
Theodore	Voth	17 N 7th St Apt 2	Madison	WI
Mat	Wagner	915 Johnson St	Viroqua	WI
Linda	Wagner	N7718 Kettle Moraine Dr	Whitewater	WI
Mauri	Waisman	2048 Geneva St	Racine	WI
Daniel	Waite	209 Cedar Valley Dr	Cedarburg	WI
Kathleen	Wald	4106 Major Ave	Madison	WI
William	Waldron	5780 S 92nd St	Hales Corners	WI
James	Wall	2227 Woodview Ct Apt 22	Madison	WI
Cindy	Wallintin	135 Charlton St	Beaver Dam	WI
Debra	Walser	7133 Park Shores Ct	Middleton	WI
Linda And Tom	Walsh	N4693 440th St	Menomonie	WI
Thomas	Walsh	N4693 440th St	Menomonie	WI
Barbara	Walters	8578 Mack Rd	Sauk City	WI
Spencer	Walts	1444 Morrison St	Madison	WI
Kenneth	Walz	4613 N River Park Blvd	Milwaukee	WI
Margaret	Washa	2870 Old Creek Rd	Middleton	WI
Ann	Watzka	N18125 Brookwood Ln	Pembine	WI
Jane	Weber	13990 Premo Rd	Mason	WI
Jerome	Weber	5001 N Bay Ridge Ave	Whitefish Bay	WI
Judy	Weber	6925 Buckhorn Dr	Madison	WI
Ty	Webster	W25128 Sullivan Rd	Trempealeau	WI
Jolean	Wegner	3304 Tara Hill Ct	Waukesha	WI
Joan M.	Weisensel	1707 Mount Pleasant St	Racine	WI
Susie	Weitzenkamp	397 1/2 Nassau St	Menasha	WI
Charles	Wellington	W7090 County Road Y	Monroe	WI
Susan	Wenckus	N3104 County Road Qq	Waupaca	WI
Isaac	Wendlick	2611 Clive St	Green Bay	WI
Karen	Wendt	706 S Matthias St	Appleton	WI
Richard	Wentzel	215404 Cardinal Ln	Edgar	WI
Claire	Westlund	2683 E Shore Dr	Green Bay	WI

Gwen	Westlund	PO Box 125	Weyerhaeuser	WI
Florence	Whalen	406 W 3rd St	Oconomowoc	WI
Michael	Whalen	8705 W Midland Dr	Greendale	WI
Barbara	White	38 Wirth Ct	Madison	WI
Herman	Whiterabbit	481 Marigold Dr	Madison	WI
Robert	Whitney	3350 E Ramsey Ave Apt 301	Cudahy	WI
Amy	Whitney	6311 W Boehlke Ave	Milwaukee	WI
Don	Wichert	1810 Keyes Ave	Madison	WI
Betsy	Wilcox	3314 Derby Down	Madison	WI
Dave	Wilcox	836 W3rd St	Washburn	WI
Arnie And Marty	Wilke	N877 Spring Lake Estates Dr	Neshkoro	WI
David	Williams	2 Maple Wood Ln Unit 20	Madison	WI
Margaret	Wilson	1017 Green Ridge Dr	Green Bay	WI
Eda	Wilson	215 E Clay St Unit 40	Whitewater	WI
Walter	Wilson	4276 S 3rd St	Milwaukee	WI
Joan	Wilson	82440 Arney Rd	Port Wing	WI
Anne	Winkle	4414 68th St	Kenosha	WI
Kenneth	Winkle	4414 68th St	Kenosha	WI
Nina	Winston	15 Hemlock Trl	Madison	WI
Inge	Wintersberger	1612 Summit Dr	Cedarburg	WI
Lori	Wirts	907 Elmer Rd	New Glarus	WI
Sally	Wise	232 S 8th Ave	West Bend	WI
Deb Wolf	Wolf	2117 Falcons Cv	Stevens Point	WI
Christine	Wolf	222 N 4th St	River Falls	WI
Thomad	Wolfe	8710 County Road F	Fish Creek	WI
Laurie	Woltman	N8294 County Road Qq	Malone	WI
Daryl	Wood	1804 Cameron Ave	La Crosse	WI
Margaret	Wood	1804 Cameron Ave	La Crosse	WI
Mary	Wood	3767 Caribou Rd	Verona	WI
Levi	Wood	4222 Mohawk Dr	Madison	WI
Marilyn	Woudenberg	1407 Greenfield Cir	Sun Prairie	WI
Nancy	Wrensch	W5154 E Wenzel Ln	Jefferson	WI
Norman	Wrensch	W6619 Timberline Ct	Watertown	WI
Blossom	Wright	21856 Bethke Ln	Richland Center	WI
Theodore	Wuerslin	130 Hartman Pl	Waukesha	WI
Judy	Wyeth	121 Locust St	Lodi	WI
Brian	Yanke	3173 Muir Field Rd	Madison	WI
Amanda	Yeglic	3225 Tallyho Ln	Madison	WI
Susan	Zach	415 Oak Rd	Custer	WI
Lila-Dave	Zastrow-Hendrickson	N5399 French Rd	Seymour	WI
Judith	Zetting	6229 W Villa Ln	Milwaukee	WI
Cathy	Zimmerman	24535 State Highway 13	Bayfield	WI
Alysce	Zuleger	115 E Walnut St Apt 505	Green Bay	WI

Beth	Zupec-Kania	1325 Victoria Cir S	Elm Grove	WI

WISCONSIN LAKES

We Speak for Lakes!

716 Lois Dr
Sun Prairie WI 53590
608.661.4313 / info@wisconsinlakes.org

November 19, 2019

WI Dept. of Natural Resources
ATTN: Adam DeWeese
Bruce Rheineck
Meghan Williams
PO Box 7921
101 S Webster St
Madison WI 53707-7921

SUBMITTED VIA EMAIL

Re: Proposed PFAS Rulemaking Scope Statements

- Statement of Scope 089-19, Rule No. DG-24-19 relating to maximum contaminant levels (MCLs) for drinking water
- Statement of Scope 090-19, Rule No. DG-15-19 relating to groundwater standards for PFAS
- Statement of Scope 091-19, Rule No. WY-23-19 relating to surface water quality standards for PFAS

Dear Mr. DeWeese, Mr. Rheineck, and Ms. Williams,

Thank you for the opportunity to submit comments regarding the scope statements for the rulemakings regarding the establishment of rules and standards for PFAS in surface, ground, and drinking water. Wisconsin Lakes strongly supports each scope statement and urges the agency to undertake this important rulemaking that is crucial to the safety of all Wisconsin's waters.

Wisconsin Lakes is a statewide non-profit conservation organization of waterfront property owners, lake users, lake associations, and lake districts who in turn represent over 80,000 citizens and property owners, serving as the statewide association of lake associations and districts.

General support for all three rulemakings

The members of Wisconsin Lakes are deeply concerned about the emerging evidence regarding poly-and perfluoroalkyl substances (PFAS) both in regards to the danger they pose to humans as well as the rising number of incidences where they are being found in our waters. Because Wisconsin does not have standards or rules related to these chemicals we believe it to be reasonable, proper, and urgent that WDNR undertake these three rulemakings. We submit our comments on each rulemaking as one document to acknowledge that each rule is interrelated

to the others. Failure to advance all three rules would severely hamper the state's efforts to protect the public from PFAS contamination.

Rule WY-23-19, Statement of Scope 091-19 (Surface Water Quality Standard for PFAS)

The members of Wisconsin Lakes through the 600 plus lake organizations in the state have worked tirelessly to protect and restore their lakes from water quality problems caused by phosphorus and other pollutants. They now recognize an emerging, largely unseen, and particularly dangerous threat in PFAS. Because of its tendency to bio-accumulate, it threatens the safety of Wisconsin's fisheries, and these chemicals impact recreational interests as well. Establishing a surface water standard for PFAS is crucial to protect wildlife, fisheries, and ourselves.

Rule DG-24-10, Statement of Scope 089-19 (Max Contaminant Levels for Drinking Water)

The members of Wisconsin Lakes believe all Wisconsinites and visitors to Wisconsin deserve access to clean, safe drinking water, be it from a municipal source or private well. PFAS testing needs to be conducted and clean ups need to occur where warranted. Setting MCLs for PFAS is a step in that direction and needs to happen as quickly as possible.

Rule DG-15-19, Statement of Scope 090-19 (Groundwater Standards for PFAS)

The members of Wisconsin Lakes understand that groundwater is often directly connected to surface waters and the frequent source of our drinking water. The Department of Health Services already recommends a groundwater standard of 20 ppt for PFAS and WI Lakes urges DNR to implement and enforce this standard. A groundwater standard is inextricably linked to the protection of surface and drinking water and ensuring both are clean and safe for consumption and use.

For the reasons stated above, Wisconsin Lakes urges the acceptance of all three Statements of Scope and for the agency to pursue all due haste in passing and implementing these rules for the health, safety, and welfare of us all.

WISCONSIN PAPER COUNCIL

COMMENTS OF THE WISCONSIN PAPER COUNCIL: DNR SCOPE STATEMENTS FOR GROUNDWATER STANDARDS (DG-15-19), SURFACE WATER STANDARDS (WY-23-19), AND DRINKING WATER STANDARDS (DG-24-19)

I. Introduction

The Wisconsin Paper Council (WPC) appreciates the opportunity to comment on the three scope statements proposed by the Department of Natural Resources (DNR): groundwater standards (SS 090-19; DG-15-19), surface water standards (SS 091-19; WY-23-19), and drinking water standards (SS 08919; DG-24-19). DNR's proposal is largely aimed at regulating per- and poly- fluoroalkyl compounds, commonly referred to as PFAS. However, it remains unclear which substances the agency actually intends to regulate.

The papermaking industry is a key economic driver for Wisconsin - employing over 35,000 highly skilled men and women whose efforts continue to make us the number one papermaking state in the United States. WPC is the premier trade association which advocates for our entire industry – an industry which is focused on sustainability and strong environmental stewardship. Our industry prides itself on its continual scientific advancements to produce products that are renewable, recyclable, and sustainable.

Our members will be impacted by permit conditions stemming from these three rules, as will many other permit holders across the state including municipal waste water treatment facilities and industrial facilities. The compliance costs could be very significant and must be balanced with the benefits of the rules as they relate to each specific compound. The breadth of these rules' impact is why it is vital that the rules are scoped clearly and narrowly.

II. The PFAS Family of Compounds

PFAS are a family of fluorochemicals, a combination of carbon and fluorine, often called per- and poly-fluoroalkyl substances. The strength of the carbon-fluorine bonds in these compounds means they do not break down as quickly or easily as many other synthetic compounds. It is also that strong bond that gives these compounds the useful characteristics of water and grease repellency.

There are thousands of different PFAS compounds, which have been used since the 1940s in many household items such as cookware, waterproof and stain resistant clothing and goods, cosmetics, cleaning products, electronics, packaging, and fire suppression foam. The most studied PFAS compounds are those containing a chain of eight or more carbon molecules. Specifically, perfluorooctanoic acid (PFOA) and perfluorooctaine sulfonic acid (PFOS) are the focus of many recent studies. These two compounds have been voluntarily phased out of production in the United States but remain present in the environment from past uses. In the U.S., testing shows higher levels of PFOA and PFOS around military installations, airports, and training facilities using fire suppression foam.

WPC does not object to regulation of PFOA and PFOS. However, we urge regulators to keep two things in mind while determining regulations. First, not all PFAS are the same, so it follows they will not impact human health in the same manner and, therefore, should not be regulated as one large group. Second, regulations must be determined by sound science.

III. PFOA and PFOS

There are two that are legacy compounds: PFOA and PFOS. Some science shows that exposure to these two compounds at very high levels can be associated with adverse health impacts. While we are not addressing the proper regulatory level in these comments, which will be an issue of discussion in the actual rulemaking, we do want to address the proposed scope statements. We support limiting the scope statements for the drinking water and surface water standard to PFOA and PFOS only, and limiting the groundwater standard to Cycle 10 compounds only, rather than leaving the door open for DNR to include any of the more than 4000 PFAS compounds in the rules.

Chapter 227 and the rulemaking process envision use of a narrow scope statement, which sets clear and specific expectations for the legislature and the public on what regulations will be developed, and clear authority of the regulators to determine those standards. In this instance, by including the ability to regulate more than 4,000 different PFAS compounds, it is unclear which substances the final rule will regulate. This lack of clarity and specificity is contrary to both the letter and spirit of Wisconsin's administrative rulemaking requirements.

A. Groundwater Standards (DG-15-19)

With respect to the groundwater standard, DNR must first have a recommendation from DHS prior to promulgating rules to set a standard. Wisconsin Statutes Chapter 160 lays out an extensive process for the health experts to determine a recommendation. Currently, DHS has recommended standards for only two of PFAS, PFOA and PFOS, which were requested along with several other non-PFAS substances in the Cycle 10 request from DNR to DHS. More recently, DNR has requested several more recommendations from DHS, including 36 additional PFAS compounds, as part of Cycle 11. We believe that this rulemaking should be explicitly limited to cycle 10 compounds, for which DNR already has recommendations from DHS. Cycle 11 recommendations should be handled in a new and separate rulemaking.

Additionally, we believe that DNR must set a standard for each compound individually. There appears to be no authority in rule or statute allowing DNR to combine certain compounds into one standard, as recommended by DHS.

B. Surface Water Standards (WY-23-19)

In addition, the surface water standard scope statement allows the agency to make rules to set enforcement limits for PFOA, PFOS, and "any other PFAS which the Department determines may be harmful to human health." This is problematic for many reasons. DNR is not the state agency with health expertise, so authorizing a rulemaking whereby DNR evaluates and makes policy decisions based on their own evaluation of health impacts, without any necessary input from DHS, is concerning. Perhaps DNR will claim to work with DHS, but in recent presentations, DNR has asserted its authority to ignore DHS's suggestion for groundwater standards, and that may be the plan with respect to surface water as well. It is best to keep the scope of the rule limited to the two compounds which have been evaluated by DHS: PFOA and PFOS.

C. Drinking Water Standard (DB-24-19)

The Drinking water scope statement is equally as troubling, allowing DNR to promulgate rules for all PFAS compounds. These standards go beyond impacting industry and municipal treatment facilities. They will apply to apartment buildings and mobile home parks, impacting low and lower middle-class citizens, as well as small businesses. The treatment and testing for these compounds is emerging technology, and the cost of testing for and controlling any number of PFAS compounds has great potential to cripple small businesses, increase housing costs for our state's most vulnerable populations, and have a negative economic impact on municipalities throughout Wisconsin.

As noted, WPC does not object to reasonable, science-based regulation of PFOA and PFOS. However, we believe the only PFAS compounds that should be regulated right now are those two compounds. Any additional rules should be proposed through new and separate rule makings and should be based on analysis by DHS of the individual compounds.

IV. Adherence to the Spirit and Letter of Chapter 227

In addition, we believe that rules promulgated according to these scope statements are vulnerable to legal challenge based on the administrative laws found in Wisconsin Statutes Chapter 227. Chapter 227 supports the concept of specific and detailed scope statements and requires agencies to abandon a rulemaking and start over with a new scope statement if the regulatory approach changes in a material way. This policy decision by the Legislature is a clear rejection of the approach taken by the Department in these three scope statements, which utilize very broad and vague descriptions of what the agency proposes to do.

The statutes also envision one rule per scope statement. Presuming that these scope statements authorize only one rule each, the breadth of proposed regulation will lead to an unworkable rulemaking process. By leaving the door open to regulating literally thousands of PFAS substances for new surface water and drinking water standards, the scope statements could lead to rules that make it impossible for the general public and legislature to participate in a meaningful way.

For example, businesses, local governments, and the general public would not be able to provide meaningful estimates of the cost of a rule that establishes hundreds or even thousands of new regulatory standards for surface water or drinking water. Although PFOA and PFOS have been studied at great length from a human health standpoint, other PFAS substances have not. Those impacted by resulting rules would have little ability to understand their impact, or comment on the cost or appropriateness of new standards for potentially thousands of new substances. Nor would it be practical for the Legislature to perform its important oversight of proposed agency rules if the Department sent a new rule that proposes hundreds or even thousands of new regulatory standards. For these reasons, the three scope statements should be narrowed to focus on the known concerns related to public health and the environment – PFOA and PFOS.

V. Conclusion

For the reasons previously stated, we respectfully request that NRB reject these scope statements, amend them to cover only PFOA and PFOS, or remand them to DNR with direction to do so.

Wisconsin Rural Water Association
350 Water Way • Plover, Wisconsin 54467
715-344-7778 • Fax: 715-344-5555 • E-mail: wrwa@wrwa.org

November 19, 2019

Department of Natural Resources
Attn: Bruce Rheineck – DG/5
P.O. Box 7921
101 S. Webster Street,
Madison, WI 53707-7921
Re: Preliminary Public Hearing Comments on Statement of Scopes (SS 090-19, SS 089-19, SS 091-19)

On behalf of the Wisconsin Rural Water Association (WRWA), I appreciate the opportunity to submit comments on the proposed Statement of Scopes (SS 090-19, SS 089-19, SS 091-19) to regulate PFAS in Wisconsin's drinking water, groundwater and surface water.

The Wisconsin Rural Water Association (WRWA) is a nonprofit association that represents 586 municipal water and wastewater system members and provide services to over four million Wisconsin residents and is generally focused on assisting small and rural communities that serve less than 10,000 people.

We understand and acknowledge the concerns of PFAS in our environment. The public wants to know what levels of PFAS in drinking water are safe or unsafe. As the public stewards of safe drinking water, our members want to address this issue – however we strongly impress that PFAS standards be based on credible science, ratepayer effects, and due deliberation.

Below are additional comments on the three pending Scope Statements:

1) *Specify and Limit the PFAS Compounds*
   SS 089-19 and SS 091-19 include broad rulemaking authority for certain PFAS *including* the contaminant compounds PFOA and PFOS. With over 4,000 PFAS compounds, WRWA asks the department to narrow the scope statements to include only PFOA and PFOS – the two most well studied PFAS compounds. The current parameters of the scope statements allow the department sizable discretion in applying standards to thousands of PFAS compounds, far beyond what is included in the health advisory guidelines from Environmental Protection Agency (EPA) and most other jurisdictions.
2) *Follow the SDWA Process*
   WRWA requests that DNR follow the standard setting process under the Safe Drinking Water Act (SDWA) to develop the Maximum Contaminant Level (MCL) for PFAS. To date, *all* of Wisconsin's drinking water standards have been set using this SDWA methodology. This includes basing the standard on credible science, available treatments, and costs.

With no federal standard in place, Wisconsin should follow the SDWA process and consider the incremental costs and benefits associated with the proposed and alternative MCLs. Under the SDWA process, the MCL is set weighing the marginal benefit of a stricter standard versus the incremental cost to meet such a standard. As such, a stricter standard will generate more costs, which could outweigh any health benefits.

This is especially critical for small systems. Currently, when the EPA sets new primary standards, they consider the compliance costs and affordability for small systems (under 10,000). Research has found that even the known treatments for PFOA and PFOS vary depending the type of method (e.g. granular activated carbon, ion exchange, reverse osmosis) and the corresponding MCL limit.

For these reasons, WRWA requests the state amend the Scope Statements to ensure that the PFAS standards are set under the SDWA process.

3) *Wait for EPA*

It is expected EPA will announce by the end of 2019 the development of drinking water standards for PFOS and PFOA MCLs. WRWA urges DNR to hold off on further movement of Wisconsin-specific regulations until it is more apparent how the federal government will proceed. When appropriate, WRWA supports national-based standards to avoid confusion and uniformity of testing and treatment protocols.

4) *Biosolid Considerations*

As part of standard wastewater treatment processes, residuals, commonly known as "biosolids," are rich in nutrients and utilized as fertilizers for agricultural purposes. Through the treatment process, PFAS can accumulate in the biosolids and may affect the surface and ground water after land application.

WRWA requests the department consider the abilities of wastewater treatment facilities to manage PFAS accumulation in biosolids, the need to focus on reducing PFAS inputs into the wastewater treatment system, and the developing and limited amount of research relating to PFAS in this area.

Thank you for your consideration of these comments.

Sincerely,

Chris Groh
Executive Director
Wisconsin Rural Water Association