

Phelps, William L - DNR

From: info@cswab.org
Sent: Friday, October 20, 2023 10:54 AM
To: DNR 140 Groundwater Quality Standards
Cc: Sen.Hesselbein - LEGIS; Stromme, Denise - LEGIS; Maria Konecke/Rep Considine; Dye, Jenni N - GOV; Noah Roberts/Governor Tony Evers
Subject: PFAS Groundwater Standards - Implications for Federal Facilities (includes SB 312)
Attachments: Wisconsin Groundwater Standards Critical for Military Base Cleanup CSWAB June 2023.pdf; Federal Priorities for PFAS Response in WI includes Volk Field and Fort McCoy.pdf

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Good morning,

Please accept this and the attached documents as public comment concerning the distinct challenges faced by federal facility host communities impacted and at risk from exposure to PFAS.

Please note that the second attachment is dated 2021 and since then, unsafe levels of PFAS have been detected in groundwater at the southern boundary of the former Badger Army Ammunition Plant in Sauk County. The impacted groundwater monitoring wells are upgradient of nearby rural homes that rely on groundwater for their drinking water. Lacking promulgated state standards that qualify at ARARs, the Army currently maintains that it is not obligated to test nearby drinking water wells for PFAS.

Laura

-

Laura Olah | Executive Director

Citizens for Safe Water Around Badger | www.CSWAB.org

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Wisconsin Groundwater Standards Critical for Military Base Cleanup



In order to assure that Wisconsin residents, military base workers and service members are fully and promptly informed of potential risks to public health, groundwater standards recommended by state health officials should be immediately adopted by the state legislature. These interim standards should have the force of law until such time as permanent standards are promulgated.

Here's why...

We are neighbors of the former Badger Army Ammunition Plant in rural Sauk County – the source of four separate groundwater contaminant plumes of solvents and explosives. Three plumes have migrated offsite, contaminating nearby drinking water wells and discharging to the Lower Wisconsin Riverway.

In 2018, the military at Badger hosted a public informational meeting to report on their preliminary PFAS investigation. Army officials explained that PFOA and PFOS had been detected in groundwater at concentrations that did not pose a risk to public health. No one said anything about other forms of PFAS. Just the two – that was it.

Months later, in response to our Open Records request, we found the complete data set which showed that the summed total concentration of all PFAS chemicals tested was actually much higher – in fact, 4 times higher.

So what happened? The Army only shared test results for PFOA and PFOS, and intentionally omitted all other PFAS detections because, they argued, that full disclosure was NOT required as the additional PFAS analytes are “not regulated by the State”.

We have experienced first-hand that without clear and comprehensive state regulation of ALL forms of PFAS, communities like our own are not fully informed and are therefore at increased risk for exposure and harm.

And our community is not alone. In other host communities in Wisconsin, concentrations of PFOA & PFOS combined have been detected in groundwater at **Fort McCoy** (near Sparta) at concentrations as high as 121,000 ng/L, at **General Mitchell's 440th** in Milwaukee 10,800 ng/L, at **Volk Field Air National Guard** in Camp Douglas 23,000 ng/L and at the Wisconsin Air National Guard **Truax Field** in Madison 39,841 ng/L.

By comparison, state health officials have recommended a groundwater standard of only **20 ng/L** for the summed total concentration of PFOA, PFOS, and four additional PFAS compounds (FOSA, NETFOSA, NETFOSAA, and NETFOSE).

Access to federal funding for investigating and cleaning up Wisconsin's military sites is tied to the federal CERCLA (Superfund) process which identifies how state standards are evaluated. In particular, the military emphasizes that it is promulgated state environmental standards that may qualify as an “Applicable or Relevant and Appropriate Requirement” (ARAR) for remedial action.

(continued on other side)



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 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 breast milk into her breastfed baby. Therefore, this population in particular should be a priority consideration in the State’s efforts.

There are currently no enforceable state groundwater standards for PFAS applicable to the complex mixture of PFAS found in Wisconsin’s groundwater.

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 a very few 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. But without this data and without state regulations, drinking water supplies may be dosed with PFAS – undetected for years and even decades.

Solving the PFAS crisis will not be easy and it will be expensive, but this does not cancel our shared responsibility to inform and protect the public.

So far, 28 PFAS chemicals have been detected in or pose a threat to the Wisconsin’s groundwater, and as analytical methods for PFAS continue to evolve and improve, this number will quickly escalate.

Hiding the complete PFAS problem doesn’t make it go away – it only means that exposures remain undetected.

WDNR Target Analyte List			
13 Carboxylic Acids	12 Sulfonic Acids	4 Replacement Chemicals	2 Sulfonidoacetic acids
PFBA	PFBS	HFPO-DA	NMeFOSAA
PFPeA	PFPeS	DONA	NEtFOSAA
PFHxA	PFHxS	9Cl-PF3ONS	
PFHpA	PFHpS	11Cl-PF3OUdS	2 Sulfonamidoethanols
PFOA	PFOS		NMeFOSE
PFNA	PFNS	3 Sulfonamides	NEtFOSE
PFDA	PFDS	FOSA	
PFUnA	4:2 FTS	NMeFOSA	
PFDoA	6:2 FTS	NEtFOSA	
PFTriA	8:2 FTS		
PFTeA	10:2 FTS		
PFHxDA	PFDoS		
PFODA			

Federal Priorities for PFAS Response in Wisconsin – January 2021

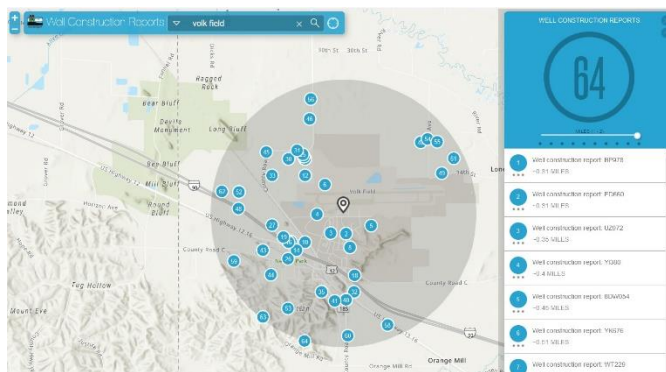
High levels of PFAS contamination have been detected in groundwater and other media at thousands of military and civilian sites in the U.S. and its territories including Wisconsin. For virtually all of these sites, the extent and degree of PFAS groundwater contamination within and beyond these properties are unknown.

In Wisconsin, the military (including National Guard) has not tested nearby drinking water wells nor installed off-site monitoring wells in response to the discovery of significant PFAS contamination. In many communities, the Department of Defense has tested its own on-site drinking water wells and called it a day.

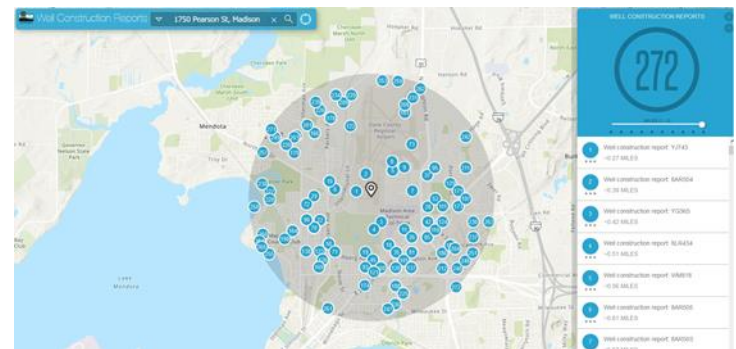
PFAS are highly toxic, bioaccumulative, persistent and mobile – readily and quickly migrating with groundwater many miles from source areas. At the Woodbury site in Minnesota, the groundwater contaminant plume has spread to more than 150 square miles.

PFOA & PFOS Groundwater Detections in Wisconsin (Partial List - 2018)		
Wisconsin Health Advisory Level for Groundwater = 20 ng/L		
Site Name	Location	PFOS + PFOA Max Conc.
Ansul Fire Technology Center	Marinette, WI	202,000 ng/L
Badger Army Ammunition Plant	Baraboo, WI	not tested
Fort McCoy Fire Training Burn Pit #1	Sparta, WI	31,900 ng/L
Fort McCoy Fire Training Burn Pit #2	Sparta, WI	72,400 ng/L
Fort McCoy Fire Training Burn Pit #3	Sparta, WI	121,000 ng/L
General Mitchell – 440 th	Milwaukee, WI	10,800 ng/L
Volk Field Air National Guard	Camp Douglas, WI	23,000 ng/L
WI Air National Guard Truax Field	Madison, WI	39,841 ng/L

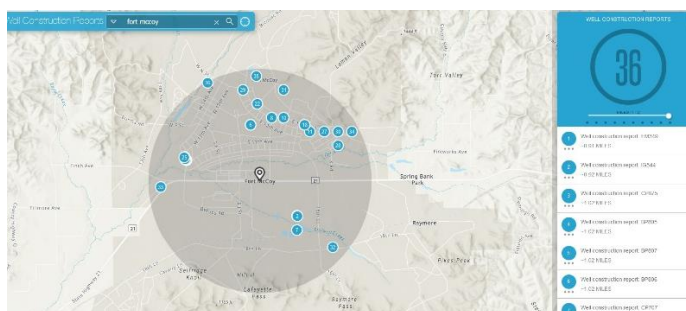
Private wells within a 2-mile radius of **Volk Field: 64**



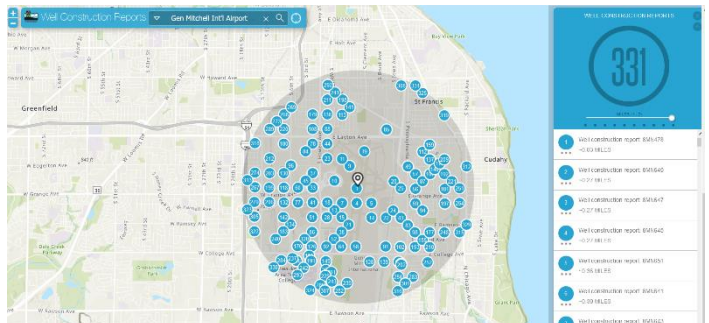
Private wells within a 2-mile radius of **Truax ANG: 272**
(City of Madison has voluntarily tested municipal wells.)



Private wells within a 2-mile radius of **Fort McCoy: 36**



Private wells within a 2-mile radius of **General Mitchell: 331**



- Prompt public access to complete DOD PFAS Site Investigations, Preliminary Assessments and other environmental records should be made available through a national public online database. This information will not just serve impacted communities and local decision makers, it will help inform military firefighters who have handled, used or been exposed to PFAS and require access to health services especially through the VA. Access to PFAS records should include overseas deployment locations.
- PFAS should be federally designated as a hazardous constituent.
- DOD and other federal responsible parties should be mandated to comply with State environmental standards and advisories.
- Federal funding should be made available to states and tribes specifically for (voluntary) testing of private wells within a 2-mile radius of a PFAS contaminated site where the degree and extent of contamination is unknown.
- Federal funding should be made available to states and tribes for testing public water supply systems that are not and will not be tested by EPA through the most recent or upcoming round of UCMR testing, including support staff.

Phelps, William L - DNR

From: Martin Griffin <marting@madsewer.org>
Sent: Friday, October 20, 2023 12:23 PM
To: DNR 140 Groundwater Quality Standards; Phelps, William L - DNR; Zellmer, James A - DNR; Elmore, Steve B - DNR
Cc: Michael Mucha; Kent, P; VWishart; Lisa Coleman; Julie Maas; Zac Thompson; Eric Dundee
Subject: Madison Metropolitan Sewerage Districts Public Comments on DG-17-22
Attachments: DNRPFAS_EIA_NR140_final_comment_letter #2 2023.pdf

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Hello Bill,

Thank you for allowing Madison Metropolitan Sewerage District the opportunity to provide public comments regarding the economic impact assessment for Board order DG-17-22.

As you will see by our attached comments we feel that there are additional economic impacts that need to be considered for wastewater utilities as a result of the proposed rule than was indicated in the draft economic impact assessment.

Please feel free to reach out to me directly if you have any questions or need any additional clarification on any of the comments that we have submitted.

Thanks
~M

Martye Griffin

Director of Ecosystem Services

Madison Metropolitan Sewerage District

1610 Moorland Road • Madison, WI 53713-3398

P: 608-709-1813 • General: 608-222-1201

Email: MartinG@madsewer.org • madsewer.org

Madison Metropolitan
Sewerage District



Madison Metropolitan Sewerage District

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October 20, 2023

Bill Phelps
Groundwater Section DG/5
Department of Natural Resources
P.O. Box 7921
101 S. Webster Street
Madison, WI 53707-7921

Re: Comments on the economic impact of proposed rule DG-17-22

Thank you for the opportunity to comment on the economic impact of proposed rule DG-17-22 related to the setting of numerical standards to minimize the concentration of pollution in groundwater.

The District is 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.

As part of 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 utilities that hold WPDES permits, such as the District, that have biosolids land application programs, industrial pretreatment and waste acceptance programs, and that undertake major construction projects that frequently require dewatering.

With new groundwater enforcement standards in place for PFOS and PFOA combined at 20 ng/l and the PAL for those combined compounds even lower at 2 ng/l, this will undoubtedly have an economic impact on wastewater utilities that beneficially reuse biosolids. For example, if a private rural well or a monitoring well in any proximity to a land application site provides a test result above the standards presented in the rule, there is the potential for the Department to act to limit any additional impacts to groundwater. Although the fate and transport of PFAS compounds from land application of biosolids to groundwater wells is still emerging, there is a significant concern that setting the PAL at 2 ng/l – essentially the detection level – will effectively require a more conservative approach to land application that could manifest itself in the form of significant costs for additional treatment and disposal of biosolids.

Biosolids Management Costs

Reports put out by [NACWA, WEF and NEBRA](#), and more recent [reports by Minnesota Pollution Control Agency](#) and a [national cost survey by NACWA](#) assesses the cost of alternative biosolids management and disposal to address PFAS contamination. These reports indicate that, on average, biosolids management costs increased 60% in response to PFAS concerns. The District generates approximately 7,000 tons of biosolids per year and the land application program costs approximately \$2 million per year to operate (data taken from [p. 20 of District annual report](#)). Increasing our land application costs by 60% would result in a biosolids management program cost of an additional \$1.2 million, increasing annual costs to over \$3 million for one utility. These are conservative costs. A preliminary analysis by District staff pertaining to biosolids disposal options in lieu of a land application option has landfilling costs at between \$3 million and \$5 million annually, depending on the distance to transport to the landfill and the landfill cost per ton. Incineration is not any cheaper. To incinerate, the costs start at \$5 million annually and increase from there depending on incineration costs per ton and the distance to transport the material. These are costs that will necessitate raising rates for the customers we serve, and we feel that these costs should be accounted for in the economic impact analysis.

Groundwater Waste Acceptance and Dewatering Costs

With the proposed groundwater standards there is now a threshold for what levels of PFOA and PFOS are acceptable in groundwater. This threshold for treatment will have significant costs for our Industrial Pretreatment program customers and costs for the District in administering the program. As part of our pretreatment and waste acceptance programs, the District accepts contaminated groundwater from construction sites that cannot be discharged directly to surface waters. Creating a new standard for PFOA and PFOS will require the District to require additional analytical information and review for each discharge request, increasing costs for the requestor and the District. If the groundwater standards are not being met, the District will be in a situation to potentially require pretreatment from customers before accepting the material, resulting in significant costs to those customers and small businesses.

Coupled with this is the District's own construction activities related to conveying wastewater in an efficient manner with many District projects requiring dewatering (sometimes known as pit-trench dewatering). With the proposed rule establishing a new PFOA and PFOS threshold for treatment, District construction projects that require dewatering will now also be required to treat groundwater before discharge. Dewatering volumes on construction projects vary, but on average, a District project could discharge around 0.25 MGD over the course of the project (from personal communication with a District project engineer). Depending on the treatment technology chosen (Granular Activated Carbon or Ion Exchange), costs to put in an on-site treatment of groundwater as part of dewatering could be upward of an additional \$500,000 per project (data taken from [EPA presentation "PFAS Treatment in Drinking Water and Wastewater State of the Science"](#)). With multiple projects in a year, these costs will increase exponentially into the millions of dollars per year. These are costs that will necessitate raising rates for the customers we serve, and we feel that these costs should be accounted for in the economic impact analysis so the rule can fully account for the economic impacts of meeting the proposed PFOA and PFOS enforcement standard and PAL.

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
District Director of Ecosystem Services

Phelps, William L - DNR

From: cindy <cindy@boyledesigngroup.net>
Sent: Friday, October 20, 2023 1:09 PM
To: DNR 140 Groundwater Quality Standards
Subject: Public comment
Attachments: Economic Impact public comment Boyle.docx

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Please accept this written public comment.

Best Regards,
Cindy Boyle

10/20/23

RE: Economic Impact of proposed PFAS ground water standards

Thank you for accepting public comment this afternoon, especially from those of us on private drinking wells living in communities impacted by PFAS contamination. My name is Cindy Boyle, my family resides in the Town of Peshtigo and has been living with knowledge of PFAS contamination in our community for 6 years, still with zero regulation. As I present my public comment, I want you to know that I recognize you have criteria you are required to consider...but ask yourself who's interests that set of criteria is designed to prioritize and how severely it limits your scope? If it's about ensuring that the solution to a problem created by industry doesn't 'cost' too much then I would argue the criteria is fundamentally flawed.

There has been, is and will be economic impact resulting from PFAS, perhaps more than we can anticipate and we should all stop fooling ourselves into believing otherwise. But inaction will come at a much higher cost and it's time we all begin exercising greater vision and wisdom around this harsh reality. To remain short sighted now will result in catastrophic outcomes. Consider this...Maine's Dairy industry is a mere [6% of Wisconsin's](#) yet a [\\$100 Million](#) in taxpayer funded legislation was proposed to deal with the PFAS contamination on Maine farms. I would argue that the costs of regulation would actually be an affordable insurance policy guarding against ongoing contamination and subsequent cost.

If you fail to move forward, the result is going to be yet another three years lost toward protective standards. If the process stagnates on the economic impact debate, which by the way only serves to benefit polluters, public safety remains at risk as there are deadlines and timeframes that must be met to achieve these desperately needed standards.

Your greatest concern should be the environmental, medical and financial impact of INACTION. You aren't tasked with making thoughtless recommendations and the legislature isn't elected to tackle only easy problems. PFAS is proving to be one of Wisconsin most historic challenges. Historic challenges are not met or solved without seeing the full picture, the picture that 50 years too late is only now coming into focus. Establishing ground water standards for PFAS may draw debate in the present but they are required to ensure public safety along with environmental and economic stability for the future.

Phelps, William L - DNR

From: Peter Burress <peter@conservationvoters.org>
Sent: Friday, October 20, 2023 1:50 PM
To: DNR 140 Groundwater Quality Standards
Subject: Comments on the EIA for DG-17-22
Attachments: DG-17-22_EIA_WisconsinConservationVoters.pdf

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Hello,

Our comments on the EIA for DG-17-22 are attached. Please let me know if you have any questions or need anything else from me.

Thanks and have a great weekend,
Peter

--

Peter Burress (he/him)

Government Affairs Manager, Wisconsin Conservation Voters

133 S. Butler St. Ste. 320, Madison, WI 53703 | Cell: 920-421-3601

Peter@conservationvoters.org | www.conservationvoters.org



Engaging voters to protect Wisconsin's environment.



**Written Comments on the Draft Economic Impact Analysis for DG-17-22
Submitted by Peter Burress, Government Affairs Manager
October 20, 2023**

No matter who we are or where we live, water is one of the strongest connections that we share. Unfortunately, our water is being poisoned by per- and polyfluoroalkyl substances (PFAS), a class of highly toxic human-made chemicals. Through our network of over 40,000 members and supporters, we at Wisconsin Conservation Voters continue to learn more about the fears, frustrations, and health related costs associated with inattention to PFAS pollution.

We appreciate the DNR is soliciting input on the economic impacts of setting groundwater standards for PFAS, specifically PFOA, PFOS, PFBS, and GenX. The economic impacts of not moving forward with this proposed rule are dire. As currently structured, this economic impact analysis does not account for the cost of inaction. Given the negative health effects associated with PFAS contamination, the cost of inaction is steep. We cannot afford it.

There is mounting evidence linking PFAS to a long list of negative health effects including cancer, diabetes, thyroid disease, decreased fertility, altered metabolism, increased cholesterol levels, interference with the body's natural hormones, reduced immune system function and vaccine response, increased blood pressure and pre-eclampsia in pregnant women, and growing, learning, and behavioral challenges in children and infants.

There are real costs associated with these healthcare-related nightmares. There are real costs to Wisconsinites facing cancer treatments, miscarriages, and heart surgeries. There are real costs to parents needing to raise children that face developmental challenges. All of these PFAS-related impacts have costs that this economic impact analysis currently does not consider. In a state with nearly six million people, these costs need to be our priority.

These costs disproportionately impact rural Wisconsinites because of three primary reasons: approximately one-third of Wisconsinites rely on private wells for their drinking water; Wisconsin doesn't have any PFAS groundwater standards; and the federal government does not set groundwater standards. From impacted communities like Campbell, Stella, Peshtigo, and many in between, we must ensure that every Wisconsinite is protected from the costs associated with PFAS contamination.

Wisconsinites continue to live with these costs, despite not being responsible for the problem. If we fail to adopt rules that set public health-based groundwater standards for PFAS, people will continue to get sick and incur growing health-related costs. The DNR must consider these costs, move forward with these rules as expeditiously as possible, and work toward a day where every Wisconsinite can turn on their tap and know their water is safe to drink.

Thank you for your time and service.

Lisa Aarli, Madison
Kishore Acharya, Brookfield
Karen Ackroff, Eagle
Cecile Adams, Muskego
Steven Adams, Viroqua
Joanne Allen, Black River Falls
Kathy Allen, La Crosse
Rebecca Alwin, Middleton
Eric Andersen, Kaukauna
Nancy Anderson, Middleton
Lisa Anderson, Nelsonville
Evan Arnold, Madison
Dennis Bahlmann, Wisconsin Rapids
Rachel Barko, Mc Farland
Duane Barmore, Middleton
Barbara Barrish, Milwaukee
Deborah Bascom, Wauwatosa
Rhonda Bast, Racine
Ruth Battaglia, Fond Du Lac
Brent Bauer, Durand
Ben Becker, Madison
Leigh Begalske, Green Bay
Mara Beldavs, Shorewood
Barbara Bend, Roberts
Sheryl Benning, Madison
Jane Benson, Suamico
Heather Berg, West Allis
Katherine Berkvam, Beaver Dam
Jess Bernstein, Mount Horeb
Kay Bevington, La Crosse
Michael Blair, Madison
Dennis Blawat, Muskego
Robert Block, Madison
Erin Bloodgood, Milwaukee
Charles Boardman, Madison
Colleen Boatman-Katchenago, Green Bay
Brian Boettcher, Madison
James Bohr, Marinette
Bernadette Borchert, Mount Pleasant
Jana Boswell, Jackson
James Bove, Auburndale
Nathan Brummel, De Pere
Peter Burress, Madison
Jane Burress, Sister Bay
Karen Cannestra, Milwaukee
Hilary Carroll, Fitchburg

John Carroll, Milwaukee
Chris Casper, Stevens Point
Dawn Casper, Madison
Mary Charles, Madison
Julie Christensen, Mukwonago
Teresa Coffman, Madison
Molly Collins, Milwaukee
Katy Connors, Spring Green
Kate Cooper, Barneveld
Madeline Crane, Milwaukee
Amneris Curet, Madison
Carol Czarnecki, Oshkosh
Lindsay Wood Davis, Monona
Paul Dearlove, Madison
Laura DeGolier, Fond Du Lac
Calvin Dexter, Wausau
Cheryl Diehl, Hubertus
Dick Dierks, Appleton
Dan Dieterich, Stevens Point
Jeffrey Dix, Wausau
Joanne Doehler, Milwaukee
Lee Donahue, La Crosse
Exeard Douglass, Sturgeon Bay
Gayle Doukas, Franklin
Ruby Dow, Mauston
George Dugan, Baileys Harbor
Jedediah Durni, Viroqua
Kaye Eckert, Watertown
Anne Egan-Waukau, Glendale
Thomas Eggert, Madison
Gordon Engel, Green Bay
Harry Engle, Tomahawk
Catherine Erhard Olson, Madison
Dianne Erickson, Baldwin
Francesca Erickson, Neosho
Russel Evans, Waukesha
Sue Fecarotta, Viola
Evelyn Fee, Fitchburg
Jim Feldman, Madison
Don Ferber, Madison
Joanne Fetting, Milwaukee
Stacia Fields, Waupaca
Thomas Filipczak, Cornucopia
Helen Findley, Madison
Kathleen Fitzgibbon, Madison
Heather Florian, Chippewa Falls

Pearl Foster, Milwaukee
Amy Fowler, Verona
Leanne Foxman, Greendale
Lorrie Franson, Eau Claire
Pat French, Green Bay
Christopher Fries, Stone Lake
Susan Frinak, Green Bay
Rosemarie Garczynski, Beaver Dam
Mary Garnett-Hayes, Kenosha
Lisa Geason-Bauer, Nashotah
Becky Geiser, Medford
Terrence Gerlach, Waupaca
Valerie Gerlach, Franklin
Kathy Germann, Madison
Mark Giese, Mount Pleasant
Robert Giese, Appleton
Michael Gleason, Merrimac
Patti Gmeiner, Niagara
Cheryl Goodman, Madison
Judith Gosz, Bowler
Leigh Gray, Madison
Janet Greendeer, Baraboo
Don Greenwood, Spring Green
Richard Guevara, Plover
Karen Etter Hale, Lake Mills
Heidi Hallett, Oconomowoc
Debbie Haman, Richland Center
Eric Hamburg, Baraboo
Delene Hanson, Hales Corners
Loren Hanson, Janesville
Stacy Harbaugh, Madison
Paula Harris, Mukwonago
Vicky Harris, Sturgeon Bay
Barry Hartup, Baraboo
Linda Hendrix, New Richmond
David Henning, Marshfield
Lynne Herrli, Spring Green
Sidney Herszenson, Milwaukee
Eileen Hesseling, Milwaukee
Holly Hinnrichs-Dahms, Menomonee Falls
Mark Hinrichs, Madison
Cynthia Hirsch, Madison
Ron Hobart, Hayward
Lisa Hoch, Superior
Libbie Hodas, Port Washington
Dean Hoegger, Sturgeon Bay
Frances Hoffman, Deforest
Randi Hoffmann, Fond Du Lac

Kimberly Hollis, Winter
Penny Howell, Green Lake
Edward Hubbard, Madison
David Huebner, Neenah
Cal and Beth Huizenga, Waukesha
William Huth, Madison
Elizabeth Icks, Cable
Michael Iltis, Madison
Jo Jacobi, East Troy
Darlene Jakusz, Amherst Jct
Dorothy Jayne, Cleveland
Kristy Jensch, Washburn
Marcia Jespersen, Madison
Ellen Jessen, Madison
John Joadwine, Eau Claire
Sandy Johnson, Fitchburg
Ann Johnson, Appleton
Grace Johnson, Baileys Harbor
Diana Jonen, Fond Du Lac
Renee Joos, Milwaukee
Lance Kammerud, Blanchardville
Elizabeth Kelsey, Fitchburg
Daniel Kiernan, Green Bay
Paige Kimble, Milwaukee
John Kivlin, Lake Geneva
Debra Klapperich, Waukesha
Hunter Klapperich, Jim Falls
Duwayne Klessig, Chilton
Jeanette Knill, Green Bay
Melinda Knutson, Onalaska
Philip Kober, Fitchburg
Aleks Kosowicz, Abrams
Susan Kozinski, St Francis
David Koziol, Eastman
Stafford Kramer, Muskego
Bruce Krawisz, Marshfield
Margaret Krome, Madison
Richard Kuss, River Falls
Howard Landsman, Madison
Robin Langenbach, Milwaukee
Audrey Lasse, Oconomowoc
Hannah Lee, Madison
Marc LeMaire, Viroqua
Diane Lembck, Franklin
Lennie Lichter, Cashton
Karen Lindholm, Eau Claire
Eric Linn-Miller, Lake Mills
Bruce Lisiecki, Cascade

Marge Loberger, Appleton
Constance Lorig, De Pere
William Lynch, Milwaukee
Deborah Machak, Racine
Jill Madigan, Milwaukee
Mary Maher, Madison
Anne Malcore, Green Bay
Vic Mandarich, East Troy
Steven Markgraf, Mc Farland
Mary Beth Martin, Sheboygan
Caryl McAllister, Delafield
Janet McConaughy, Oconomowoc
Joan McCormick, Milwaukee
Carl Meincke, Hudson
Dan Melton, Madison
Denise Mendoza, Belleville
Carol Metzger, Wisconsin Rapids
Richard Meyer, Madison
Anne Michalski, Thiensville
Diane Miesbauer, Hartland
Lester Miller, Franklin
Bernard Miszczak, Milwaukee
Kat Molitor, Cazenovia
Wendy Moore Skinner, Madison
Samuel Morningstar, Shorewood
Christine Morrissey, Appleton
Elise Moser, Sauk City
Tim Moser, Hudson
Martha Munger, Mondovi
Eric Murrock, Sturgeon Bay
Tom Nacey, Superior
Paul Nasvik, Hudson
Peter Nelson, Eau Claire
Catherine Nelson, De Pere
Cheryl Nenn, Milwaukee
Forrest Netzel, New Berlin
Nicklaus Neureuther, Cedarburg
Anne Nischke, Stevens Point
Barb Noeldner, Madison
Rebecca North, Milwaukee
Russell Novkov, Madison
Ellen Ochs, Menomonie
Ruth O'Donnell, Waukesha
Diane Olson Schmidt, Milwaukee
Sam Orlich, Milwaukee
David Ortiz, Franklin
Heidi Papadhopulli, South Milwaukee
Terry Pavletic, Greenfield

John Peck, Brooklyn
MaryBeth Petesch, Oshkosh
Catie Petralia, Milwaukee
Karen Peugh, Milwaukee
Suzanne Peyer, Madison
Judie Pfeifer, Sun Prairie
Pat Pire, Milwaukee
Roger Pope, Eau Claire
Cynthia Porter, Mineral Point
Susan Priebe, Mcfarland
Nancy Proctor, Milwaukee
Paul Prodoehl, Menomonee Falls
Joyce Radtke, Milwaukee
Zoe Rammelkamp, Madison
Michael Rausch, Madison
Sydney Ray, Waunakee
Jeff Reese, Fond Du Lac
John Reid, Franksville
Gretchen Reis, Tomah
Beth Rendall, Lake Geneva
Sandy Riebe, Hudson
Ann Rivlin, Madison
Kenneth Rizzo, Oconomowoc
Kelly Robe, Green Bay
Madolyn Rogers, Cross Plains
Steven Rogers, Cornell
Ronald Rohde, Beaver Dam
Joy Rosenberry Chase, Madison
Deb Rugg, Green Bay
Cara Russo, Racine
Stephanie Salgado, Madison
Reuben Sanon, Madison
Lucy Saunders, Shorewood
Peggy Savides, Mondovi
Randy Scannell, Green Bay
Elizabeth Schaefer, Madison
Jeffrey Schimpff, Madison
Roger Schmidt, Middleton
Ian Schmitt-Ernst, Wauwatosa
Tom Schuppe, Fond Du Lac
Judith Schure, Sparta
Dave Searles, Brodhead
Caryl Sewell, Brookfield
Jane Maya Shippy, Stevens Point
Beth Shockey-Woll, River Falls
Robert Sijgers, Sturgeon Bay
Mark Silverman, Milwaukee
Joyce Simmons, Eau Claire

Gordon Simon, Chippewa Falls
Brian Simurdiak, Green Bay
Kelly Sonnleitner, West Bend
Carol Soper, Sister Bay
Nancy Sorensen, Madison
Katarina Spelter, Madison
Erin Spoehr, Appleton
Katherine Stahl, Elk Mound
David Statz, Baraboo
Patricia Stefancic, Menasha
Marsha Stelzer, Rice Lake
Christina Stemwell, Saint Francis
Elizabeth Stevens, Appleton
Vivian Storm, La Crosse
Wayne Stroessner, Random Lake
Roger Strom, Caledonia
Mary Sundberg Stirling, Gays Mills
James Tenorio, Menomonie
Glenn Teschendorf, Madison
Catherine Thompson, Appleton
Tim Thompson, Deforest
Patti Thomsen, Oconomowoc
Doris Marie Thrasher, Milwaukee
Tom Thrun, Oconomowoc
Posy Thurow, Neenah
James Trebatoski, Iola
Diane Twardy, Burlington
Janet Van Vleck, Madison

David Verhagen, De Pere
Lisa Vieth, Kendall
Aimee Villwock, De Pere
John Voegeli, Madison
Victoria Vollrath, Plymouth
Karen Voss, Eau Claire
Scott Voss, Lodi
Jessica Voss, Viroqua
Theodore Voth, Madison
Bruce Wachholz, Madison
Lisa Wachholz, Dodgeville
Daniel Waite, Cedarburg
Jane Weber, Mason
Elizabeth Wheat, Green Bay
James Wheeler, Appleton
Herman Whiterabbit, Madison
Jennifer Williamson, Dodgeville
Annetta Winkle, Kenosha
Bradley Wishard, Somerset
Janet Wolfe, Marshfield
Thomas Wolfe, Fish Creek
Rosalind Woodward, Madison
Brian Yanke, Verona
Jayne Zabrowski, Sheboygan
Randy Zelent, Merrill
Mark Zera, Milwaukee
Karen Zimmerman, Wauwatosa
Patricia Zody, Beloit

Phelps, William L - DNR

From: verschay@gmail.com
Sent: Tuesday, October 24, 2023 8:02 AM
To: DNR 140 Groundwater Quality Standards
Subject: PFAS groundwater standards

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DNR Regulatory Board -

I am submitting comments regarding PFAS standards as an over 30 year homeowner in WI. We owned a home in the PFAS plume in Marinette county which now belongs to our daughter. We are greatly concerned about the health of WI residents and the economic impact of high levels of PFAS in our groundwater.

The groundwater PFAS problem in our state needs to be addressed now with meaningful action to protect the health and wealth of our state. If we miss this window of opportunity, it could leave residential well owners unprotected for several more years - resulting in continued tragic health impacts

The proposed rules that would set a groundwater standard of 20 parts per trillion for both PFOA and PFOS, with a preventative action limit of 2 parts per trillion is a good beginning.

There has been, is and will be economic and health impact from PFAS. Decisions need to be made with weight considering the cost to human health, our future in Wisconsin and the true cost of inaction. Please take every step needed to follow the proper regulatory procedures, but do not lose sight of the citizens and the environment. That is really what will benefit the true economic future of Wisconsin.

We look to your board to protect our state residents with rules regulations and monitoring.

Thank you,
Bill and Cindy Verschay
W3490 Hardwood Road
Porterfield, WI 54159

Phelps, William L - DNR

From: Miller, Anthony W. <awmiller@GFNET.com>
Sent: Friday, October 27, 2023 11:26 AM
To: DNR 140 Groundwater Quality Standards
Subject: Comments on WDNR's Economic Impacts of Proposed PFAS Regulations

**CAUTION: This email originated from outside the organization.
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This email responds to the WDNR's request for comments on the NR 140 Economic Impact Analysis it is conducting with regards to proposed addition of PFOA and PFOS, along with other PFAS, to the list of regulated compounds in groundwater. As an environmental scientist with 32 years' experience working for a civil and environmental engineering firm investigating and cleaning up sites impacted by hazardous waste of all kinds, let me say that PFAS currently poses unique challenges with regards to remediation, as I'm sure the WDNR is aware. The remediation technology is evolving but still many years (perhaps decades?) from maturing the way that remedial technologies have for treating soil and groundwater impacted by petroleum compounds or chlorinated solvents. Further, the technologies that do exist for treating soil and groundwater impacted by PFAS are approximately one to two orders of magnitude more expensive to implement and operate than the remedial technologies used to treat other types of hazardous waste. Combining that with extremely low cleanup standards, the environmental investigation and cleanup costs can easily cost well into the millions on sites where AFFF was used to suppress fires.

An example of this is an industrial site we are working on in northern Wisconsin. That site had two fires that were suppressed using AFFF, which created PFAS impacts to the soil and groundwater beneath the site. While the full extent of PFAS in the soil and groundwater are still being investigated, the projected investigation and remediation work will likely cost millions of dollars and could take decades to complete. Having extremely low cleanup values drives up the cost of remediation and prolongs the time necessary to achieve closure.

The owner of property where AFFF was used may not have the resources to clean up the PFAS impacts that were not caused by them or their facility's operations. If they had to pay for the cleanup on their own, it would likely bankrupt them. If that happened, it would put 88 people, with an annual payroll of \$6 million dollars, out of work. It would also affect the local and state economies as the facility spends over \$2M/year in Wisconsin for services and supplies and that total does not include state and local taxes.

That is just one site. There are numerous other sites throughout Wisconsin where AFFF was used to put out fires, including gas stations, fuel terminals, and airports where it was also used for firefighting training. Most sites where AFFF was used likely have PFAS impacts. While I am not a toxicologist, I believe that we, as a society, cannot afford and likely do not need to spend billions of dollars bringing all water sources to the extremely low cleanup levels proposed by the WDNR and USEPA. I believe that risk-based site-specific cleanup standards should be used when evaluating the PFAS impacts at each site, using the proposed WDNR/USEPA standards for sites where PFAS is impacting drinking water sources but having less restrictive standards where the risks to human health and the environment are minimal. In my experience, every order of magnitude that cleanup standards get lowered drives up the remedial costs by at least one order of magnitude. We need to make sure that we spend our time and resources wisely to protect human health and the environment but not unduly impact the finances and operations of property owners that are impacted by PFAS through no fault of their own.

Sincerely,

Anthony W. Miller, P.S.S. | Project Manager | Senior Environmental Scientist
Gannett Fleming, Inc. | 8040 Excelsior Dr., Suite 303, Madison, WI 53717
Phone: O 608.327.5041 **C** 608.354.7730 | awmiller@gfnet.com

Phelps, William L - DNR

From: John Robinson <robinson.john@hotmail.com>
Sent: Friday, October 27, 2023 1:50 PM
To: DNR 140 Groundwater Quality Standards
Cc: PAUL HEINEN; mthimke@foleyretiredpartners.com
Subject: Comments on Fiscal Estimate & Economic Impact Analysis
Attachments: NR 140 comments on Economic Impact statement final.docx

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Attached are Wisconsin's Green Fire comments on the Groundwater Quality Standards.

John Robinson
715 212-2227

Sent from [Mail](#) for Windows

Phelps, William L - DNR

From: John Robinson <robinson.john@hotmail.com>
Sent: Friday, October 27, 2023 1:56 PM
To: DNR 140 Groundwater Quality Standards
Cc: PAUL HEINEN; mthimke@foleyretiredpartners.com
Subject: RE: Comments on Fiscal Estimate & Economic Impact Analysis
Attachments: NR 140 comments on Economic Impact statement final.docx

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Please accept this version with a correction for a typo.

John Robinson

Sent from [Mail](#) for Windows

From: [John Robinson](#)
Sent: Friday, October 27, 2023 1:49 PM
To: DNR140GroundwaterQualityStandards@wisconsin.gov
Cc: [PAUL HEINEN](#); mthimke@foleyretiredpartners.com
Subject: Comments on Fiscal Estimate & Economic Impact Analysis

Attached are Wisconsin's Green Fire comments on the Groundwater Quality Standards.

John Robinson
715 212-2227

Sent from [Mail](#) for Windows



October 27, 2023

To: Bill Phelps, Wisconsin Department of Natural Resources

From: Wisconsin's Green Fire

Re: DG-17-22 Fiscal Estimate & Economic Impact Analysis on Ch. NR 140 – Groundwater Quality Standards

Wisconsin's Green Fire supports the development of groundwater standards regulating PFAS to protect the public's health and the environment. We believe that these rules are critical to protecting one third of the state's population who receive their water through a private well not covered under drinking water standards. In addition, there are significant benefits to developing groundwater standards and these the benefits outweigh the costs of compliance.

Moving forward with these rules is an action we support, however, we have questions relating to the analysis in the draft Economic Impact Statement relating to:

1. The assessment of costs relating to remediation sites;
2. The costs associated with the implementation of these standards as part of the wastewater program.

As part of our support for the development of groundwater standards, Wisconsin's Green Fire offers our assistance to the Department in addressing the costs associated with implementing the proposed rule. Members of our organization are tracking costs associated with addressing PFAS contamination and are willing to assist the Department in your efforts to quantify the costs and benefits associated with the proposed standards.

Please feel free to contact John Robinson at robinson.john@hotmail.com or at 715 212-2227 if you have any questions.

Phelps, William L - DNR

From: Vanessa Wishart <VWishart@staffordlaw.com>
Sent: Friday, October 27, 2023 2:53 PM
To: DNR 140 Groundwater Quality Standards
Subject: Municipal Environmental Group - Wastewater Division Comments on DG-17-22
Attachments: MEG Comments on EIA for DG-17-22 (PFAS Groundwater Rule).pdf

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Good afternoon,

Please see attached comments of MEG Wastewater on DG-17-22.

Best Regards,
Vanessa

STAFFORD ROSENBAUM LLP	Vanessa Wishart VWishart@staffordlaw.com 608.210.6307 222 West Washington Avenue, Suite 900 P.O. Box 1784 Madison, Wisconsin 53701-1784 www.staffordlaw.com
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Stafford Rosenbaum LLP | If you receive this email in error, use or disclosure is prohibited. Please notify me of the error by email and delete this email.

October 27, 2023

Bill Phelps
Groundwater Section DG/5
Department of Natural Resources
PO Box 7921
101 S. Webster Street
Madison, WI 53707

VIA EMAIL: DNR140GroundwaterQualityStandards@wisconsin.gov

RE: Comments of the Municipal Environmental Group – Wastewater Division
Board Order DG-17-22 (Amendments to ch. NR 140 to set numerical standards to minimize the concentration of polluting substances for certain Per- and Polyfluoroalkyl Substances (PFAS) in groundwater)

Mr. Phelps:

We are submitting these comments on behalf of the Municipal Environmental Group–Wastewater Division (MEG Wastewater). MEG Wastewater is an organization of over 100 municipalities statewide who own and operate wastewater treatment plants. We represent facilities ranging in size from small sanitary districts to larger utilities. MEG Wastewater appreciates the opportunity to comment on DG-17-22, the department’s proposed amendments to NR 140 to set numerical limits for PFOS, PFOA, PFBS, and GenX compounds.

MEG Wastewater supports the regulation of PFAS compounds based on due deliberation and credible science and generally supports the approach to regulation of these PFAS compounds in DG-17-22. It is important to note, however, that the proposed rule establishes restrictive standards for these compounds that could have significant impacts on the operation of municipal wastewater treatment plants (WWTPs), particularly with respect to the management of biosolids. While the department notes potential impacts to WWTPs in the economic impact analysis (EIA) for DG-17-22, MEG Wastewater believes that some of the potential impacts have been underestimated or not addressed. It is important that these impacts are fully considered as the department moves forward with this proposed rule.

A. Costs Associated with Land Application Programs

MEG Wastewater does not believe that the department has adequately captured the potential cost impacts of DG-17-22 to WWTPs that have land application programs. DG-17-22 would establish very

1027231410

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restrictive standards for PFOS and PFOA in particular, with the preventative action limit (PAL) for these concentrations essentially at the current detection level of 2 ng/L. This restrictive PAL would necessitate that WWTPs take a conservative approach to land application of biosolids that would likely result in reliance upon much more costly disposal methods than land application, namely, landfilling or incineration. The department notes in the EIA that these alternate disposal methods come at a high cost. However, MEG Wastewater believes that the department's cost estimate of \$25,000 to \$1,250,000 for these alternative disposal methods is low. One MEG member has estimated the cost of landfilling its biosolids at approximately \$2.5 million annually and the cost of incineration at approximately \$4 million annually.

Further, neither incineration nor landfilling are widely available alternative disposal options for biosolids. There are extremely limited options for incineration of biosolids containing PFAS. Landfill disposal of biosolids is complicated by the fact that extensive and costly dewatering is necessary before biosolids are suitable for landfilling. In addition, because landfill leachate has the potential to contribute PFAS to WWTPs, landfilling PFAS-impacted biosolids can create a problematic PFAS cycle and additional operation and management challenges for both WWTPs and landfills. Given these limitations on incineration and landfilling as disposal options, MEG Wastewater believes it is appropriate for the EIA for DG-17-22 to also include costs for treatment of PFAS in biosolids. A report released by the Minnesota Pollution Control Agency and referenced in the EIA for DG-17-22 estimates the capital costs of removing PFAS from biosolids at \$40-110 million per facility, with annual operation and maintenance costs in the range of \$470,000 to \$1.2 million per facility.

B. Pit Trench Dewatering

MEG Wastewater also believes the department continues to underestimate the cost impact of DG-17-22 regarding pit trench dewatering. The department asserts that because very few dewatering projects discharge to groundwater, very few construction projects would be impacted by the proposed groundwater standards. However, as noted in the comments MEG Wastewater previously submitted on prior groundwater standard rulemaking efforts in 2022, MEG Wastewater's concern with pit trench dewatering in the context of groundwater standards for PFAS compounds is that the common practice of accepting pit trench dewatering discharges at WWTPs could result in increased PFAS compounds in WWTP wastewater and biosolids. As discussed above, the costs to a WWTP for disposing of biosolids containing certain levels of PFAS compounds could be significant. If a WWTP requires treatment for pit trench dewatering discharges to ensure there is no impact on biosolids at the WWTP, such treatment would add significant additional costs to the construction project. MEG Wastewater requests that the department consider these potential costs in its evaluation of DG-17-22.

C. Costs Associated with Current Rules

At a number of points in the EIA, the department explains that certain costs are not included in the EIA for DG-17-22 because such costs are already imposed under other, current department rules. However, to the extent such costs would be increased or applied to additional parties if DG-17-22 is promulgated, those costs should be included in the EIA for DG-17-22.

October 27, 2023

Page 3

Thank you for your consideration of these comments. MEG greatly appreciates the opportunity to participate in this process and welcomes further communication with the department.

Sincerely,

STAFFORD ROSENBAUM LLP

A handwritten signature in black ink, appearing to read "Vanessa D. Wishart". The signature is written in a cursive, flowing style.

Vanessa D. Wishart

Paul G. Kent

VDW:mai

Phelps, William L - DNR

From: Michelle Winter <mwint93@gmail.com>
Sent: Friday, October 27, 2023 6:07 PM
To: DNR 140 Groundwater Quality Standards
Subject: DNR groundwater standards need

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Mr Phelps and DNR officials,

Yes—We NEED to set numerical standards to minimize the concentration of polluting substances for Per- and Polyfluoroalkyl Substances (PFAS) in our Wisconsin groundwater. We need to test at concerning facilities and independent wells.

Our future of WI and our country depend upon having healthy ground water - we need to maintain and assure ongoing testing for it to be safe.

In regard to the economic impact analysis, the cleanup of PFAS is far more costly than regular scheduled testing. We need to and preserve the integrity of our water supply.

Our family home has an independent well. Our extended family also with independent wells, have a intensive grazing grass-fed beef farm nearby that uses safe soil and safe water preserving methods. Unfortunately our family and friends, farm animals and produce could be at risk for contamination in the future. A local CAFO dairy farm is requesting an industrial digester for mixed manure and food waste proposed to our area. We do not want to experience the issues going on in Peshtigo, WI, or Maine, or Mexico with this forever plastic, PFAS, contaminants now forever in their groundwater, animals, milk, and soil and ultimately themselves. The cost of clean up and medical bills is astronomical. Let's keep our groundwater safe.

Respectfully

Michelle Winter RN, BSN

Phelps, William L - DNR

From: Michelle Winter <mwint93@gmail.com>
Sent: Saturday, October 28, 2023 9:06 AM
To: DNR 140 Groundwater Quality Standards
Cc: Arthur Richardson
Subject: DNR public comment re PFAS Standards for Groundwater

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Mr. Phelps

These 14000 different forever chemicals, generally known as PFAS, PFOS, or GenX, are very harmful to human and animal health and need to be contained to our present situation and not added to. These chemicals do not go away and when more is applied, the amount of PFAS simply additively increases. Our lives and more important our children's lives, who are much more responsive to these forever chemical effects, really hang in the balance. I believe the tolerance for these forever chemical should be zero for anything being applied to the land or added to our surface waters, such as lakes, rivers, marshes, or streams.

As the folk in Wausau, Wisconsin are finding out, it is very much more expensive to correct this PFAS problem than to have curbed it in the beginning.

Thank you, Arthur Richardson, Wisconsin Farmer

Phelps, William L - DNR

From: Craig Summerfield <csummerfield@wmc.org>
Sent: Friday, October 27, 2023 7:12 PM
To: DNR 140 Groundwater Quality Standards
Cc: Phelps, William L - DNR; Patrick Stevens; Manley, Scott
Subject: WMC-WPC Comments on Draft EIA for NR 140 PFAS Groundwater Rule (DG-17-22)
Attachments: WPC-WMC Comments for GW Standards for PFOA-PFOS-PFBS-HFPO-DA - 2023.10.27.pdf; NCASI_MemoToWPC_Groundwater_EIA.pdf; WMC Comments on DNR Guidance on Public Notice Requirements for Non-Primary MCLs - 2023.10.10.pdf

**CAUTION: This email originated from outside the organization.
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Attached are comments from Wisconsin Manufacturers & Commerce and the Wisconsin Paper Council in reference to DNR's draft economic impact analysis for DG-17-22, relating to groundwater standard for 4 PFAS. The comments reference the two other attachments.

Please confirm receipt and let me know of any questions.

Sincerely,

Craig Summerfield

Director of Environmental & Energy Policy

WMC

csummerfield@wmc.org
Work: 608.258.3400
Direct: 608.661.6910

501 E. Washington Ave.
Madison, WI 53703
www.wmc.org





October 27, 2023

Attn: Bill Phelps
Wisconsin Department of Natural Resources
DG/5, PO Box 7921
Madison, WI 53707

Sent via email to DNR140GroundwaterQualityStandards@wisconsin.gov

RE: Comments on Economic Impact Analysis (EIA) for proposed rules relating to amendments to ch. NR 140 to set numerical standards to minimize the concentration of polluting substances for certain Per-and Polyfluoroalkyl (PFAS) in groundwater, Board Order DG-17-22

I. Introduction

These comments are submitted on behalf of the Wisconsin Paper Council (WPC) and Wisconsin Manufacturers & Commerce (WMC).

WPC is the premier trade association that advocates for the papermaking industry before regulatory bodies, and state and federal legislatures to achieve positive policy outcomes. WPC also works to educate the public about the social, environmental, and economic importance of paper, pulp, and forestry production in Wisconsin and throughout the Midwest.

The pulp and paper sector employs over 30,000 people in Wisconsin and has an annual payroll of \$2.5 billion. Wisconsin is the number one paper-producing state in the United States, with the output of paper manufactured products estimated to be over \$18 billion. Our members are dedicated to maintaining clean water in Wisconsin.

WMC is the largest general business association in Wisconsin, representing over 3,800 member companies of all sizes, and from every sector of the economy. Since 1911, its mission has been to make Wisconsin the most competitive state in the nation to do business. This mission includes advocating for a regulatory environment that does not unduly burden Wisconsin businesses.

II. Background

DNR intends to establish groundwater standards for four PFAS compounds. These substances include perfluorooctanoic acid (PFOA), perfluorooctane sulfonic acid (PFOS), perfluorobutane sulfonic acid and its potassium salt (PFBS) and hexafluoropropylene oxide dimer acid and its ammonium salt (HFPO-DA).

On February 23, 2022, the Natural Resources Board considered a rule for establishing groundwater standards for PFOS and PFOA, as well as for chemicals. That rule failed to pass the NRB.

On July 1, 2022, DNR received a petition from Midwest Environmental Advocates to establish groundwater standards for PFOA, PFOS, PFBS, and HFPO-DA, the same chemicals for which EPA issued drinking water advisories. On September 1, 2022, former DNR Secretary Cole authorized a scope statement to establish groundwater standards for these same compounds. On October 26, 2022, the Natural Resources Board approved a preliminary hearing and comment period on the scope statement.

On September 28, 2023, DNR issued a notice soliciting information for an EIA associated with this rulemaking. The proposed EIA indicates DNR is proposing the following enforcement standards (ES) and prevent action limits (PAL) for these compounds:

Substance	Enforcement Standard	Preventive Action Limit
PFOA	20 ng/l (ppt)	2 ng/l
PFOS	20 ng/l	2 ng/l
PFBS	450 ug/l (ppb)	90 ug/l
HFPO-DA	300 ng/l	30 ng/l

These standards are based on recommendations from the Wisconsin Department of Health Services (DHS). Note that the standard for PFOS and PFOA applies individually to PFOS and PFOA, as well as to the sum of the PFOS and PFOA concentrations.

III. All Costs Associated with the Groundwater Standards must be included in the EIA

In the EIA, DNR indicates that groundwater standards are not self-implementing, and that they are implemented through other statutes and rules that use groundwater standards. DNR notes that it included costs in its EIA “the implementation and compliance costs...expected to be incurred...by businesses...based on the current administrative and statutory authority in the department’s regulatory programs and rules that refer to ch. NR 140 chapters.” We strongly agree that **all such costs** must be included.

DNR further indicates that promulgation of groundwater standards also requires other agencies, such as Wisconsin Department of Transportation, to review new groundwater standards and, if necessary, commence rulemaking for their regulatory programs that use NR 140 groundwater standards. The estimated costs related to required

promulgation by other agencies must also be included in the cost estimate of this rulemaking. However, that is not what DNR achieved in the draft EIA; many required compliance costs are missing.

Wis. Stat. § 227.137(3) provides in part that an “economic impact analysis of a proposed rule shall contain information on the economic effect of the proposed rule on specific businesses, business sectors, public utility taxpayers, local governmental units, and the state’s economy as a whole.” Moreover, Wis. Stat. §227.137(3)(b) specifies that the EIA must include an “analysis and detailed quantification of the economic impact of the proposed rule, including implementation and compliance costs” that will be passed on to certain entities. In addition, the analysis must specifically include an “estimate of the **total implementation** and compliance costs that are reasonably expected to be incurred or passed along to businesses” and certain other entities.

Nothing in the applicable statutes limits the EIA to costs incurred solely from the regulatory programs associated with one agency. Rather, the **costs are those associated with a proposed rule**. Thus, insofar as other agencies are required to impose costs on these entities because of DNR’s promulgation of groundwater standards, those estimated costs must be included in this EIA. But for the DNR’s adoption of these standards, there would be no costs incurred by other agencies.

Moreover, Wis. Stat. §227.139 provides in part that if an EIA indicates compliance and implementation costs of \$10,000,000 or more are reasonably expected to be incurred by businesses and certain other entities over any 2-year period, the agency must stop work on the rule until a bill is enacted authorizing the agency to move forward with the rule. Ignoring costs incurred through other agencies because of DNR’s promulgation of a groundwater standard could result in a groundwater rule that exceeds the \$10,000,000 threshold to avoid this legislative requirement.

In addition, DNR notes that some costs that are incurred from remedial actions that are currently required under existing law. DNR notes in the EIA that there are 96 open remediation sites with identified PFAS. Thus, DNR has a plethora of actual cost data.

Moreover, DNR’s current approach of applying a narrative definition of “hazardous substance,” rather than identifying in administrative rule specific chemicals and corresponding levels at which they are hazardous, is subject to ongoing litigation. Regardless of DNR’s authority to regulate hazardous substances, DNR must consider the additional costs that may be incurred to meet the proposed specific PFAS numeric groundwater standards DNR is proposing.

Furthermore, DNR notes in the EIA that an estimated 5,700 private wells may exceed “DHS recommendations,” which for PFOS and PFOA is a combined standard of 20 ppt. These groundwater standards serve as drinking water standards for private well owners. DNR, however, concludes there are no regulatory or compliance costs to private well owners.

There are in fact compliance costs that will be incurred by private well owners. If there is a known exceedance of a PFAS groundwater standard, particularly if used for drinking water, that exceedance will likely have to be addressed when the property with the contaminated well is sold. There will need to be an alternative water source or system provided to address the contamination, or a reduction in the property's sale price to account for the contaminated well. These are real costs that will be incurred to comply with an applicable standard. Consequently, these costs must be included in the EIA.

IV. Land Application of Industrial Wastewater Biosolids from Paper Facilities

a. EIA Cost Estimate

DNR's EIA contains information relating to land application of biosolids. As an initial matter, we note that land application of wastewater residuals from paper facilities has been an important and valuable alternative to landfilling, from both an environmental perspective and economic perspective. Limiting application rates may increase demand for landfills, increase greenhouse gases as residuals are trucked greater distances to landfills and as residuals anaerobically decompose, as well as increase the need for conventional fertilizer use. DNR should consider these impacts as it develops any policies that may further restrict the beneficial use of this material.

Moreover, these materials serve as a beneficial soil amendment due to their high carbon content. The carbon in the residuals increases the water holding capacity of the soils, and reduces leaching of potential pollutants, such as nitrates, to groundwater.

The cost information contained in the draft EIA largely mirrors the costs contained in its previous EIA for DG-15-19, relating to groundwater standards for PFOA, PFOS and other chemicals. The DNR estimates the following costs would be incurred because of having to find additional lands for land application:

- Cost to mobilize and transport a portion of their residuals meant for existing land to another location: \$30,000 per facility/year.
- Cost to solicit landowners who would accept the material, and to obtain DNR approval for new sites: \$25,000 per facility/year.
- Costs for consultants and modeling to determine acceptable application rates: \$17,500 per facility/year.

DNR estimates the cost to comply with DNR-proposed PPAS groundwater standards would be \$72,500 per facility/year, plus \$2,400 per facility/year for sampling, for a total of \$74,900 per facility/year.

There is no description of how the costs result in compliance with the proposed groundwater standards. Furthermore, DNR provided no information regarding how it estimated the dollar amounts above. For example, there is no discussion of the distance

or tonnage of material that would have to be transported to another location. Similarly, it is unclear how DNR determined solicitation costs.

In addition, it is unclear how DNR determined the amount of reduction in application rates would be necessary to comply with DNR's proposed standards. Thus, it is difficult to comment on DNR's cost estimate because it is unclear how it was derived. We request DNR provide an explanation of how it derived the amount of reduction that would be needed, as well as the associated costs to reach that reduction.

DNR grossly underestimates the costs that would result if there are additional restrictions on the land application of residuals. **In addition to the negative environmental impacts referenced above and the waste of a valuable soil supplement, if this material would need to be landfilled, the additional costs associated with these restrictions would be enormous.** Costs would include consulting, engineering, and construction expenses associated with expanding existing landfills, or permitting and establishing new landfills.

b. NCASI Cost Estimate

WPC requested the National Council for Air and Stream Improvement, Inc. (NCASI) evaluate the EIA regarding cost estimates related to the pulp and paper industry. NCASI is an independent, non-profit scientific research organization that has focused on environmental and sustainability topics of interest to the forest products sector for over 80 years. NCASI serves forest landowners, managers, forest products manufacturing, and the forest products sector as a center of excellence, providing technical information and rigorous scientific research needed to achieve the sector's environmental goals and principles. Members of NCASI represent more than 80% of the pulp and paper production in the United States. In its capacity as a research organization, NCASI has a long history of collaboration with EPA and state agencies on developing and implementing the sound science needed to address numerous environmental topics related to the forest products sector, including effluent regulation and development of water quality standards (WQS).

Attached is the analysis NCASI provided in response to WPC's request for an evaluation of the EIA. The analysis provides information regarding certain costs. These cost estimates include:

- Compliance costs (sludge transportation, landfill alternatives): \$500,000 to \$3.85 million per facility per year. *Note: Transportation costs are based on the assumptions outlined below.*
- Treatment: \$150 to \$475 million per facility (typical pulp/paper mill has flows of 25 million gallons a day).
- Annual Sampling: \$16,000 to \$35,000, and an additional one-time cost of \$14,000 to \$21,000 for consulting services.

As noted above, DNR in the EIA indicates that the cost for mobilizing and transporting a portion of sludge meant for land application to the existing land base, to other lands to limit loading on existing lands, is estimated at \$30,000 per facility. DNR, however provides no other information regarding how this cost was determined. It appears likely, however, to be a significant underestimate of transportation costs.

As explained in detail in the NCASI attachment, transportation costs include mobilizing and transporting a portion of the material from lands that are currently receiving biosolids, to other lands to reduce the loading on the existing land base. To calculate the additional lands needed, it is necessary to know the current acceptable PFOA and PFOS load, in comparison to the load that would be allowed under the proposed groundwater standards. DNR did not provide information regarding current loading, compared to what would be allowed under the proposed standards.

The attachment contains **an example** of transportation cost based on a load of 70 ppt (EPA's initial remediation goal to address groundwater contamination) compared to 20 ppt. Keeping all other model inputs constant, a decrease in allowable application rates of wastewater solids will result in an equivalent decrease in application rates per acre. Reducing the standard from 70 ppt to 20 ppt would result in facilities potentially having to reduce application rates by 70%. Under this scenario, a facility would have to increase its land application area by 350% and would increase one-way travel distance by 1.87 times the current distances. If, for example, the average distance went from 30 miles to 56 miles, transportation costs would increase 58%. Based on these assumptions, for a facility generating 16,000 tons of wastewater solids per year and managing the material through land application, the increase in transportation costs would be approximately \$500,000 more per year.

DNR should calculate estimated transportation costs using this type of approach to obtain a more accurate estimate of transportation costs. Moreover, DNR should provide the assumptions that were used to determine transportation costs.

V. Municipal Biosolids

In a June 11, 2021 comment letter to DNR, the Madison Metropolitan Sewerage District outlined costs associated with its compliance with a PFOA/PFOS groundwater enforcement standard of 20 ppt. That letter provides in part:

A recent report put out by NACWA, WEF and NEBRA assesses the cost of alternative biosolids management and disposal to address PFAS contamination. This report indicates that, on average, biosolids management costs increased 37% in response to PFAS concerns. The District generates approximately 7,500 tons of biosolids per year and the land application program costs approximately \$2 million per year to operate (data taken from p. 20 of 2019 District annual report). Increasing our land application costs by 37% would result in a biosolids management program cost of an additional \$1 million, increasing annual costs to almost \$3 million

for one utility. These are conservative costs. A preliminary analysis by District staff pertaining to biosolids disposal options in lieu of a land application option has landfilling costs at between \$2 million and \$4 million annually, depending on the distance to transport to the landfill and the landfill cost per ton. Incineration isn't any cheaper. To incinerate, the costs start at \$4 million annually and increase from there depending on incineration costs per ton and the distance to transport the material. These are costs that will necessitate raising rates for the customers we serve, and we feel that these costs should be accounted for in the economic impact analysis.

[NR 140 Cycle 10 EIA Comments \(wisconsin.gov\)](http://wisconsin.gov)

This, of course, is only one example of the costs that may be incurred by municipalities that land apply biosolids. Wisconsin has approximately 580 municipal wastewater treatment plants, many of which land apply biosolids.

VI. Total Costs Estimated by DNR

As noted previously, there are a number of significant shortcomings with DNR's EIA. One critical shortcoming is DNR's failure to provide a preliminary, overall estimate of the rule's compliance costs. Specifically, this includes determining if the implementation and compliance costs of the rulemaking will exceed \$10 million or more over any two-year period. This determination is required, per s. 227.137(3)(b)2.

In addition, DNR is required to provide an estimate of the "total implementation and compliance costs...expressed as a single dollar figure," per s. 227.137(3)(b)1. Likewise, there is no such estimate in DNR's draft analysis.

Nonetheless, DNR analyzed and provided estimates of various potential costs, but declined to total them. WPC and WMC reviewed and summarized the DNR estimates in the table below:

Table 1: Summary of DNR Analysis of Costs of PFAS Groundwater Rule

Cost Driver	Min Cost over 2 Years	Max Cost over 2 Years
Remediation & Redevelopment Sites	\$0	\$0
Landfills (excluding spreading of biosolids)	\$0	\$0
Private Wells	\$0	\$0
Public Water Systems	\$0	\$0
Pit Trench Dewatering	\$0	\$0
Industrial Facilities That Discharge Liquid Wastewater or Biosolids Through Land Treatment System	\$1,073,504	\$1,532,704
Municipal Wastewater Treatment Facilities that Discharge Treated Wastewater	\$798,250	\$798,250

Through a Land Treatment/Application System		
Municipal Wastewater Treatment Facilities that Land Apply Biosolids and Waste Haulers that Accept Municipal Biosolids	\$691,867	\$5,998,733
Total	\$2,563,621	\$8,329,687

For the purposes of complying with ch. 227 rulemaking requirements, it appears DNR estimated a maximum compliance cost of \$8,329,687 over two years.

DNR’s preliminary analysis is sorely deficient and missing many key costs. In the draft EIA, DNR notes that it is seeking input on this draft EIA and states that “PFAS is an expensive problem facing Wisconsin.”

VII. Analyses and Reports Considered for WMC-WPC Cost Estimate

WMC and WPC appreciate DNR’s invitation to submit written comments to augment DNR’s analysis. We compiled our own cost analysis to make our best, reasonable estimate of compliance costs to businesses and taxpayers associated with implementing the rule. To compile this estimate, our coalition considered resources including, but not limited to, the following:

- Written comments submitted on the draft EIA for the prior PFAS groundwater rule (DG-15-19)
- Written comments submitted on the draft rule for DG-15-19
- American Water Works Association Report, titled “WITAF Technical Memorandum: PFAS National Cost Model Report”
- National Association of Clean Water Agencies Report, titled “Cost Analysis on Impacts of Per- and Polyfluoroalkyl Substances (PFAS) on the Clean Water Community”
- Minnesota Pollution Control Agency Report, titled “Evaluation of Current Alternatives and Estimated Cost Curves for PFAS Removal and Destruction from Municipal Wastewater, Biosolids, Landfill Leachate, and Compost Contact Water”
- Analysis of the industrial biosolid portion of DNR draft EIA by the National Council for Air and Stream Improvement (NCASI)
- Input from members of our respective associations

VII.A. American Water Works Association Report

The American Water Works Association (AWWA) commissioned a report to estimate the cost of compliance with a new federal drinking water regulation for PFAS. The study examined costs to public water systems and households as a result of a federal standard for select PFAS. This included PFOA and PFOS, as well as a broader regulatory standard for “long-chain” PFAS including PFOA, PFOS, PFHxS, PFHpA, and PFNA.

Key findings are summarized below. Figure 1 shows the national burden and costs associated with establishing a National Primary Drinking Water Regulation (NPDWR). Figure 2 shows annualized costs:¹

Figure 1: PFAS Compliance Costs – Life-Cycle

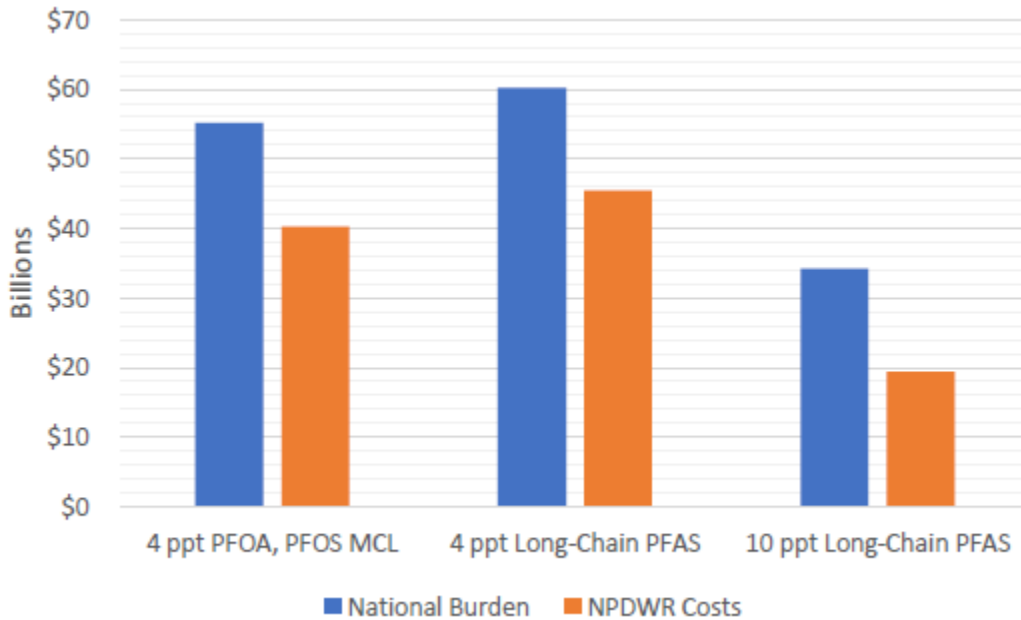
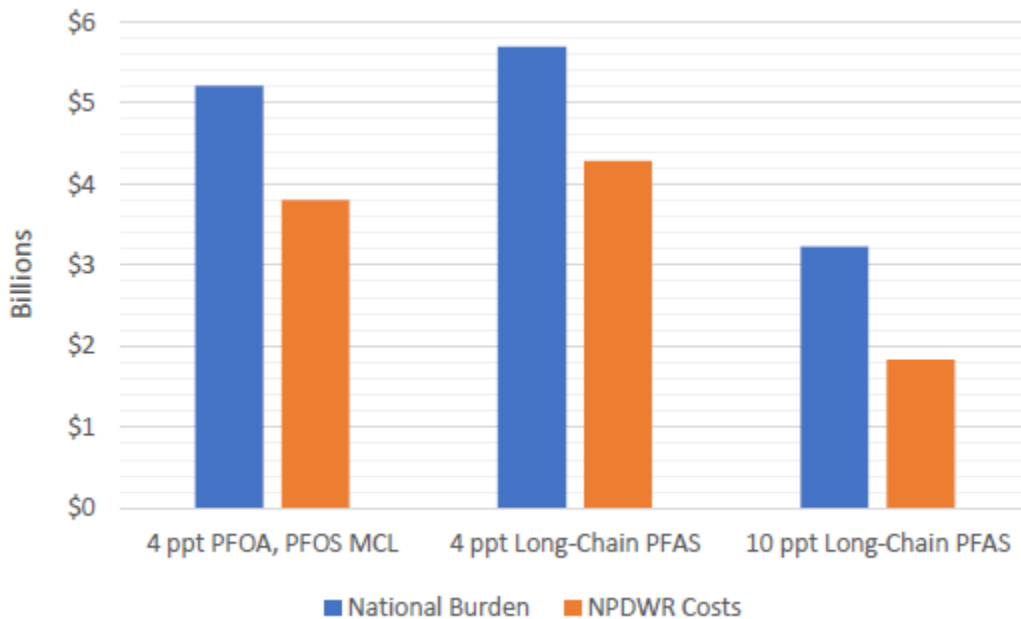


Figure 2: PFAS Compliance Costs – Annualized



¹ See Figures 7-1 and 7-2 (pages 31-32) in American Water Works Association report.

Obviously, there are limitations to this data. This analysis reviewed a national standard for 6 PFAS, as opposed to a state-level standard for 4 PFAS. The analysis also reviewed more stringent standards than what is proposed in Wisconsin. In addition, it examines costs to public water systems, and not compliance costs directly applicable to groundwater.

However, the study does help illustrate the incredible costs associated with stringent PFAS standards. It also suggests that DNR has been substantially underestimating compliance costs associated with PFAS criteria.

Specifically, for the PFAS drinking water rule (DG-31-20), DNR initially proposed a combined standard of 20 ppt for PFOA and PFOS.² At the time, DNR estimated a maximum compliance cost of \$9,350,949.15 over two years. (In prior comments, WMC and WPC noted this estimate was far too low.)

In the AWWA study, the authors examined compliance costs associated with a 10 ppt standard for PFOA, PFOS, PFHxS, PFHpA, and PFNA. Their analysis suggests an expected national burden of roughly \$6.4 billion over two years.

This would suggest an expected state level burden for Wisconsin exceeding \$100 million. The Wisconsin DNR's estimate for maximum compliance costs under the EIA for DG-31-20 was an order of magnitude lower than this total. This difference raises legitimate questions as to whether the state's maximum compliance cost estimate was accurate.

VII.B. National Association of Clean Water Agencies Report

The National Association of Clean Water Agencies (NACWA) commissioned a report to study the compliance costs associated with PFAS on biosolids management. Per the report, the study "demonstrated that PFAS regulations are a major concern to POTWs throughout the US, particularly in terms of their potential cost burden related to biosolids management." The study surveyed utility members of NACWA, and further conducted case study evaluations of four utilities.

In one case study, a regional utility in Arizona (Pima County Regional Water Reclamation Department) was forced to stop land-spreading biosolids following a government-imposed moratorium. Costs for the biosolids program increased from \$1.58 M annually in 2018 (land application) to \$3.17 M annually in 2020 (landfills), then returning back to \$2.003 M annually in 2022 (land application). It should be noted that the increased cost to landfill biosolids (~ \$1.59 M) was more than double the average compliance cost estimate by DNR in the draft EIA (\$637,500).³

² As noted previously, DNR ultimately adopted a standard of 70 ppt combined for PFOA/PFOS at the direction of the Natural Resources Board.

³ See draft EIA, page 9: "Costs relating to additional treatment and/or alternative disposal of biosolids, such as in a Type 3 landfill or through incineration, are estimated at between \$25,000 to \$1,250,000,..."

More critically, the long-term solution was an extremely expensive capital investment. The utility conducted a Biosolids Master Planning Project, and designed and constructed “Solar Heated Floor Greenhouse Dryers” at a cost of \$44 M.

Conversely, the DNR draft EIA does not contemplate any capital investments by POTWs in order to assist in the disposal of biosolids. It assumes the requirements can simply be met via source reduction, landfilling, or “alternative disposal.” Moreover, DNR states that “given the high costs of these alternative disposal methods, WWTFs will more likely find other options for management and treatment of contaminated biosolids.” However, compliance costs cannot simply be ignored because they are too high or inconvenient for DNR to consider.

VII.C. Minnesota Pollution Control Agency Report

The Minnesota Pollution Control Agency (MPCA) commissioned a report to study alternatives to remove and destroy PFAS from liquid waste streams. The detailed, 281-page report examined alternatives to remove PFAS in water resource recovery facility effluent, mixed municipal solid waste landfill leachate, and compost contact water. Compliance costs from the study are summarized in Table 2 below:

Table 2: Compliance Costs – MPCA Study to Remove PFAS

Waste Stream	Facility Size	Highest-Ranking Alternatives	Capital Cost Range (by facility)	Annual O&M Cost Range (by facility)	Relative Confidence in Ability to Reliably Meet PFAS Targets ⁽²⁾
Municipal WRRF effluent	10 million gallons per day (MGD) (6,940 gpm) (similar to Mankato or Moorhead with a population of 45,000)	GAC with reactivation (Alt 1a) ⁽¹⁾	\$41M–\$88M	\$4.5M–\$9.6M	Medium-high (breakthrough of short-chain PFAS may limit reliability)
		GAC, single-use AIX with GAC reactivation and AIX high-temperature incineration (Alt 6a) ⁽¹⁾	\$80M–\$170M	\$6.1M–\$13M	High (two processes provide more controlled breakthrough)
Municipal WRRF biosolids	10 dry tons per day (estimated for 10 MGD WRRF)	SCWO ⁽³⁾	\$40M–\$85M	\$0.47M–\$0.99M	Medium-high (limited testing at full-scale)
		Pyrolysis or gasification with thermal oxidation of pyrogas ^(1,3)	\$53M–\$110M	\$0.55M–\$1.2M	Medium-high high (limited testing at full scale)
Mixed MSW landfill leachate	0.014 MGD (10 gpm)	GAC with high-temperature incineration (Alt 1a) ⁽¹⁾	\$0.30M–\$0.60M	\$0.23M–\$0.48M	Medium (breakthrough of short-chain PFAS may limit reliability)
		Foam fractionation with high-temperature incineration of foamate (Alt 8a)	\$5.0M–\$11M	\$0.20M–\$0.42M	Low (limited removal of short-chain PFAS)
Compost contact water	0.014 MGD (10 gpm)	GAC with high-temperature incineration (Alt 1a) ⁽¹⁾	\$0.30M–\$0.60M	\$0.21M–\$0.44M	Medium (breakthrough of short-chain PFAS may limit reliability)
		Foam fractionation with high-temperature incineration of foamate (Alt 8a)	\$5.0M–\$11M	\$0.20M–\$0.42M	Low (limited removal of short-chain PFAS)

The report estimates costs for Minnesota, including capital costs and ongoing operations and maintenance, could be “at least \$14 billion.”⁴

This estimate cannot simply be applied to Wisconsin’s proposed groundwater rule, as not all of the estimated costs would result from new PFAS groundwater standards. In addition, the study assumed a treatment target of 5 ppt for 8 PFAS, which is more stringent than what DNR has proposed. However, it should also be noted that the study did not set a treatment goal for HFPO-DA, which is one of the compounds DNR proposes to regulate in this groundwater rulemaking.

Despite this limitation, the MPCA report is an important resource to inform compliance costs for Wisconsin. Indeed, the study was cited by DNR in the draft EIA as an analysis highlighting “the complexity of the problem, the many regulatory programs it impacts, and the high cost of certain treatment options.”⁵

That said, DNR does not explicitly cite the MPCA report anywhere else in the draft EIA. Presumably, it is seeking input from the public as to instances when it would be appropriate to incorporate compliance cost estimates from the MPCA study into the EIA.

VIII. WMC-WPC Cost Estimate

In the absence of a more detailed analysis by DNR, our coalition made its best attempt to compile a reasonable and accurate compliance cost estimate consistent with ch. 227 rulemaking requirements. Our estimate utilizes the DNR outline as a basis, while also noting key missing costs.

VIII.A. Remediation and Redevelopment Sites with PFAS Contamination

As noted previously in these comments, DNR is well aware of the substantial costs associated with remediation and redevelopment sites with PFAS contamination.

In prior comments on DG-15-19, members of our coalition assumed 100 sites statewide that may require remediation. Based on a feasibility report by the Madison Water Utility, we assumed a treatment system would cost \$670K-\$812K, plus an annual cost of \$136K - \$733K. Over two years and 100 sites, this would yield the following estimate:

Table 3: Remediation and Redevelopment Costs

	Min Costs over two years	Max Costs over two Years
Capital	\$67 M	\$81 M
O&M	\$13.6 M	\$73 M
Total	\$80.6 M	\$154 M

⁴ See Table ES-1 and pages 2-3 of MPCA study.

⁵ See draft EIA, page 3.

Back in 2021, this was already a conservative estimate, and is now an even more conservative estimate given significant inflation. It also considers no new costs associated with PFBS and HFPO-DA.

To our knowledge, DNR has never disputed the coalition’s compliance cost estimate for this remediation. Instead, it has simply refused to incorporate it because DNR believes it has the authority to force PFAS remediation absent applicable state standards.

As noted previously, this DNR interpretation is currently the subject of litigation. Our coalition continues to urge DNR to incorporate and consider these costs, as required by ch. 227 rulemaking.

VIII.B. Landfills

On pages 4-5 of the draft EIA, DNR reviews but dismisses any potential costs to landfills as a result of this rulemaking. DNR asserts that it already has the existing authority to require both sampling and remediation of landfills, and does not include potential costs for either activity.

DNR does note that active landfills may dispose of leachate by sending it for treatment to a wastewater treatment facility or by using on-site treatment, that such treatment may result in the spreading of biosolids, and that such costs are reviewed in a subsequent section of the EIA. However, no direct or indirect costs incurred by landfills appear to be analyzed in this section. It is also important to recognize that the ability to dispose of landfill leachate at a wastewater treatment facility may be extremely limited due to concerns regarding PFAS.

To be clear, landfills may incur significant costs as a result of this rulemaking. Moreover, it may be among the most cost-effective solutions to addressing PFAS impacts. As noted in the MPCA study, “treating wastewater biosolids or landfill leachate had the lowest cost per mass of target removed from over 20 years.”⁶

That said, costs for landfills are not insignificant. The MPCA study assumed 24 impacted landfills in Minnesota. Such costs assume the use of granular activated carbon (GAC) or foam fractionation with high-temperature incineration. Costs are summarized in Table 4 below:

Table 4: Estimated 20 Year Costs for Municipal Solid Waste (MSW) Landfills in Minnesota⁷

Type of Cost	Total
Capital Costs	\$20 M - \$40 M
Annual O&M Costs	\$5.4 M - \$12 M
Total 20-year Costs	\$77 M - \$170 M

⁶ See page 3 of MPCA study.

⁷ See Table 11-2 of MPCA study.

It is difficult to estimate how many landfills may be impacted in Wisconsin. As noted by DNR in the EIA, there are hundreds of landfills in the state. Given Wisconsin's slightly larger population, twenty-four impacted landfills may be a reasonable, conservative estimate. Thus, if we adjust the MPCA estimate to account for two years instead of 20, we can derive the following table:

Table 5: Estimated 2 Year Costs for MSW Landfills in Wisconsin

Type of Cost	Minimum Over 2 Years	Maximum Over 2 Years
Capital Costs	\$20 M	\$40 M
O&M Costs	\$10.8 M	\$24 M
Total Costs	\$30.8 M	\$64 M

It should be noted that this estimate is likely overly conservative because it only considers capital investments and ongoing treatment costs for 24 landfills. It does not consider any new sampling or other compliance costs for hundreds of other Wisconsin landfills.

VIII.C. Industrial Facilities that Discharge Liquid Wastewater or Biosolids through Land Treatment System

Shortcomings with the DNR's analysis were already well analyzed in Section IV of these comments. For the purposes of this estimate, our coalition will accept DNR's optimistic assumption that only six industrial facilities will be impacted. Of these, only one is required to pursue treatment. For the purposes of this analysis, our coalition assumed that this was a pulp and paper mill.

Utilizing the data provided via the NCASI cost analysis, we can derive the following table:

Table 7: Compliance Costs for Affected Industrial Facilities

	Minimum over 2 years	Maximum over 2 years
Costs for 5 facilities		
Compliance costs (sludge transportation, landfill alternatives)	<i>See NCASI Cost Estimate – pg. 6 of coalition comments</i>	
Sampling	\$160 K	\$350 K
Consulting (one-time)	\$70 K	\$105 K
Total (5 facilities)	\$230 K	\$455 K
Costs for 1 facility (with PFAS treatment)		
Treatment	\$150 M	\$475 M
Sampling	\$32 K	\$70 K
Consulting	\$14 K	\$21 K
Total (1 facility)	\$150,046,000	\$475,091,000
Overall Total (6 facilities)	\$150,276,000	\$475,546,000

VIII.E. Municipal Wastewater Treatment Facilities that Discharge Treated Wastewater through a Land Treatment/Application System

In the draft EIA, DNR indicates that 6 publicly owned treatment works (POTWs) discharge effluent to groundwater. DNR further estimates that one such facility will exceed the proposed PFAS groundwater standards under the rulemaking.

The MPCA study notes the “high cost of removing PFAS at WRRFs.” (WRRF, or water resource recovery facility, can be used in lieu of the term wastewater treatment facility). Table 8 summarizes such costs below:

Table 8: Compliance Costs to Remove PFAS in Municipal WRRF Effluent in Minnesota⁸

Facility Size	0.1 MGD	1 MGD	10 MGD
Capital Costs	\$7.3 M	\$32 M	\$120.3 M
Annual O&M	\$ 500 K	\$1.4 M	\$6.4 M
Total 20-year cost	\$12.6 M	\$46.9 M	\$188.2 M

In the draft EIA, DNR assumes sampling costs of \$2,400-\$3,600 per facility per year. This can be applied to the 5 facilities. For the facility with the exceedance, DNR assumes an annual cost of \$3,600. For treatment, we utilize the range for capital costs and annual O&M outlined in the MPCA study.

Table 9: Compliance Costs for Affected POTWs in Wisconsin

	Minimum over 2 years	Maximum over 2 years
Costs for 5 facilities		
Sampling	\$24 K	\$36 K
Total (5 facilities)	\$24 K	\$36 K
Costs for 1 facility (with PFAS treatment)		
Sampling	\$4,800	\$7,200
Additional Sampling (3 monitoring wells)	\$7,200	\$7,200
Capital Costs	\$7.3 M	\$120.3 M
O&M	\$1 M	\$12.8 M
Total (1 facility)	\$8,312,000	\$133,114,400
Overall Total (6 facilities)	\$8,336,000	\$133,150,400

The compliance cost varies greatly depending on the size of the POTW. The outlined capital costs above include GAC-related upgrades.

⁸ See Table 11-1, page 158, in MPCA study. MGD refers to “million gallons per day.”

VIII.F. Municipal Wastewater Treatment Facilities that Land Apply Biosolids and Waste Haulers that Accept Municipal Biosolids

The largest cost driver in the draft EIA relates to wastewater treatment facilities and biosolids containing PFAS. In the draft EIA, DNR suggests a maximum of nearly \$6 million in compliance costs, and indicates 74 facilities may be impacted. Of these, DNR identifies 14 of them in the category of “significant” or “moderate,” and thus requiring temporary storage and treatment or “alternative disposal.”

As noted in Section VII of our comments, DNR assumes these 14 impacted facilities will pursue “other options” due to high costs, but does not otherwise elaborate on such options these facilities should pursue. DNR does not propose to exempt municipal biosolids within the rulemaking, and treatment costs will be substantial.

The MPCA study analyzed compliance costs associated with removing PFAS via biosolids management at municipal WRRF facilities. Potential costs are analyzed in the table below:

Table 10: Compliance Costs to Remove PFAS in WRRFs that Land Apply Biosolids in Minnesota⁹

Municipal Biosolids Production	1 dtpd	10 dtpd
Capital Costs	\$24.6 M	\$85.2 M
Annual O&M	\$200 K	\$800 K
Total 20-Year Cost	\$26.8 M	\$93.7 M

Per the DNR draft EIA, 74 wastewater treatment facilities will be impacted. DNR expects 4 facilities to meet the “significant” threshold, 10 facilities to meet a “moderate” threshold, 20 facilities are considered “low, but impacted,” and 40 facilities would be at a “low” threshold. The costs are compiled in the table below, applying DNR’s draft EIA as an outline, but utilizing treatment costs compiled by the MPCA study.

Table 11: Compliance Costs for Wisconsin POTWs with PFAS-containing Biosolids

	Minimum over 2 years	Maximum over 2 years
“Significant” Facilities (4)		
Monitor Wastewater	\$4,000	\$20,000
Capital Costs for Treatment	\$98,400,000	\$374,800,000
O&M for Treatment	\$1,600,000	\$6,400,000
Total	\$100,004,000	\$381,220,000
“Moderate” Facilities (10)		
Monitor Wastewater	\$10,000	\$50,000
Capital Costs for Treatment	\$246,000,000	\$937,000,000

⁹See Table 11-1, page 158, in MPCA study. DTPD refers to “dry tons per day.”

O&M for Treatment	\$4,000,000	\$16,000,000
Total	\$250,010,000	\$953,050,000
<u>“Low, But Impacted” Facilities (20)</u>		
Monitor Wastewater	\$20,000	\$100,000
Source Identification	\$200,000	\$1,000,000
Source Reduction/Elimination	\$100,000	\$5,000,000
Acquire More Sites	\$100,000	\$500,000
Total	\$270,000	\$6,100,000
<u>“Low” Facilities (40)</u>		
Monitor Wastewater	\$20,000	\$100,000
Total	\$20,000	\$100,000
Overall Total Cost (71 Facilities)	\$350,304,000	\$1,340,470,000

While these costs may seem high, they are a reflection of the very cost-intensive processes needed to remove PFAS from biosolids. In many ways, this estimate may be overly conservative. The estimate assumes that only a fraction (14) of the 74 impacted POTWs will need to pursue treatment.

Our coalition analysis also utilizes the DNR assumption that implementing PFAS source reduction strategies at 20 “low, but impacted” sites will only cost \$5K - \$500K per facility, and additional land application acreage will only cost \$5 K - \$25 K per year. These seem to be incredibly optimistic assumptions. To the extent that any of these 20 sites would need to pursue alternative disposal or treatment, this would further increase costs.

VIII.G. Missing Costs

Our coalition analysis includes costs we can reasonably ascertain. However, additional, unknown costs may still be substantial.

As noted in Section III of these comments, there could be substantial costs associated with private wells. If a private well is tested and the sample exceeds the proposed groundwater standard, the property owner may need to address the exceedance. Failure to take action would likely impact the value of the property. Such costs must be considered.

In addition, while this analysis considers costs associated with remediation of known sites with PFAS contamination, it is unknown how many additional site investigations will be triggered by the additional testing required by this rulemaking. DNR has taken the position that “when remediating for hazardous substances in groundwater that do not have a ch. NR 140, Wis. Adm. Code standard, department rules authorize the development of a site-specific standard, which is usually based on the DHS recommended levels.”¹⁰ DHS has put forward recommendations for 18 PFAS

¹⁰ See page 4 of the draft EIA.

compounds; currently none of them have promulgated groundwater standards, but DNR has essentially utilized them as standards for the purposes of remediation.

Furthermore, with respect to implementing the PFAS drinking water rule (DG-31-20), DNR has taken the position that NR 809 requires the use of EPA certified methods 537.1 or 533 for analyzing PFAS samples. This requires sampling for 18 or 29 PFAS compounds respectively, and not simply PFOA and PFOS, as required by the PFAS drinking water rule.¹¹ The current NR 140 also includes provisions allowing DNR to set sampling procedures for groundwater testing. Thus, it is not unreasonable to assume that, as a result of this rulemaking, DNR will require groundwater testing of PFAS compounds beyond the four compounds – PFOA, PFOS, PFBS, HFPO-DA – listed in this rulemaking.

Based on the DNR's interpretation of its own authority, it is very reasonable to assume that additional testing will lead to additional site investigations and additional required remediation based upon unpromulgated PFAS standards. These costs must be considered.

Finally, DNR has dismissed any costs relating to pit trench dewatering with the groundwater rule. In the draft EIA, DNR asserted that “very few dewatering projects discharge to groundwater and thus very few construction projects would be impacted by the proposed groundwater standards.” However, during the rulemaking for the PFAS prior groundwater rule (DG-15-19), multiple entities – League of Wisconsin Municipalities, MEG-Wastewater, and the Madison Metropolitan Sewerage District – submitted comments noting that DNR did not properly consider pit trench dewatering costs.

In particular, the concern was raised that the acceptance of pit trench dewatered discharges at a treatment plant could result in increased PFAS in wastewater and biosolids. If municipal wastewater treatment facilities were to require treatment for such discharges prior to acceptance, it would add significant additional costs to construction projects.

Ch. 227 rulemaking requires DNR to consider all “reasonable” costs in its EIA. These costs must be considered as part of the final EIA.

IX. WMC-WPC Estimate of Compliance Costs

The totals derived in parts VIII-A. through VIII.G of these comments are summarized in the following table:

¹¹ For more information on this DNR interpretation, included with this submission are prior comments submitted by WMC in reference to DNR guidance document: [“Guidance Concerning Public Notices and Response Actions for Contaminants Other Than Primary MCLs.”](#)

Table 12: Summary of WMC-WPC Analysis of Costs of PFAS Groundwater Rule

Cost Driver	Min Cost over 2 Years	Max Cost over 2 Years
Remediation & Redevelopment Sites	\$80,600,000	\$154,000,000
Landfills	\$30,800,000	\$64,000,000
Industrial Facilities That Discharge Liquid Wastewater or Biosolids Through Land Treatment System	\$150,276,000	\$475,546,000
Municipal Wastewater Treatment Facilities that Discharge Treated Wastewater Through a Land Treatment/Application System	\$8,336,000	\$133,150,400
Municipal Wastewater Treatment Facilities that Land Apply Biosolids and Waste Haulers that Accept Municipal Biosolids	\$350,304,000	\$1,340,470,000
New Site Investigation & Remediation of Unpromulgated Standards	<i>Unknown</i>	<i>Unknown</i>
Pit Trench Dewatering	<i>Unknown</i>	<i>Unknown</i>
Private Wells	<i>Unknown</i>	<i>Unknown</i>
Total	\$620,316,000	\$2,167,166,400

While this may seem like a surprising estimate, it is less surprising when considering other substantial compliance cost estimates now readily available. The Minnesota Pollution Control Agency study – cited by the DNR in its draft EIA – estimated compliance costs in Minnesota exceeding \$14 billion to mitigate PFAS impacts in “select waste streams.” The American Water Works Association estimated a national burden exceeding \$30 billion to establish a drinking water standard of 10 ppt for long-chain PFAS. The National Council for Air and Stream Improvement (NCASI) – in response to this rulemaking – estimated capital costs for necessary PFAS treatment at *one* pulp and paper mill at \$150 million to \$475 million.

In addition, there are still additional, unknown costs associated with this rulemaking. It is unclear how this new testing will impact property values for private well owners. Nor do we know the costs associated with *new* site investigations and remediations.

Averaging the two “total” figures in Table 12 (above) would suggest an estimated cost of \$1,393,741,200 with a maximum compliance cost estimate of \$2,167,166,400 over two years. Either estimate exceeds – by two orders of magnitude – the maximum compliance costs allowed under s. 227.137(3)(b)2. **Per ch. 227 rulemaking, DNR must stop work on this rulemaking, unless or until DNR seeks authorization via legislation.**

Enclosures (2):

Letter from NCASI to WPC on DNR EIA

WMC Comments on DNR “Guidance Concerning Public Notices and Response Actions for Contaminants Other Than Primary MCLs”

October 25th, 2023

Dear Patrick Stevens,

Upon your request, we have evaluated the Fiscal Estimate & Economic Impact Analysis (hereafter, EIA) conducted by Wisconsin Department of Natural Resources (WDNR) and related to amendments to ch. NR 140 to set numerical standards to minimize the concentration of polluting substances for certain Per- and Polyfluoroalkyl Substances (PFAS) in groundwater (DG-17-22). Below is a list of technical considerations to be accounted for when evaluating the validity of the EIA. Please reach out to us with any further questions.

NCASI Overview

The National Council for Air and Stream Improvement, Inc. (NCASI) is an independent, non-profit scientific research organization that has focused on environmental and sustainability topics of interest to the forest products sector for over 80 years. NCASI serves forest landowners, managers, forest products manufacturing, and the forest products sector as a center of excellence, providing technical information and rigorous scientific research needed to achieve the sector's environmental goals and principles. Members of NCASI represent more than 80% of the pulp and paper production in the United States. In its capacity as a research organization, NCASI has a long history of collaboration with EPA and state agencies on developing and implementing the sound science needed to address numerous environmental topics related to the forest products sector, including effluent regulation and development of water quality standards (WQS).

Unclear linkage with the proposed groundwater standard

It is unclear how WDNR plans to technically and robustly determine how effluent and land application inputs of various PFAS impact groundwater levels. No specific modeling parameters are discussed, and no statistical certainty levels are given, and it instead appears that modeling is recommended only after the state has determined that current land application loading rates are inappropriate. Because WDNR does not indicate how it intends to determine compliance with the proposed standards, determining specific impacts of the rule, such as the reduction of application rates that may result from this standard, is challenging.

Due to the heterogeneity of land use among watersheds throughout the State of Wisconsin, it is unlikely to be a straightforward analysis to determine the relationship between effluent discharges and land application inputs on groundwaters throughout the state.

Sunsetting provision not provided for industrial facilities

Section 2 of WPDES Permitted Discharges (i.e., municipal wastewater treatment facilities that discharge treated wastewater through a land treatment/application system) appears to indicate that sampling for affected facilities is only required for the first two years after permit reissuance. Presumably if the wastewater is below an acceptable level, testing will cease after two years. There is no such sunsetting provision provided for industrial facilities.

Compliance costs appear to be underestimated

For facilities that land apply biosolids and exceed the groundwater PFOA, PFOS, PFBS, or HFPO-DA standard in any given year, these actions are estimated to total \$72,500 per entity per year, including sludge transportation, soliciting additional or alternative landowners, and conducting modeling to determine application rates. WDNR did not sufficiently describe how they estimated impacts on land application practices or associated costs. Therefore, in order to perform a cost analysis, several assumptions were required for each cost calculation. These assumptions have been identified to the extent possible in the review below.

1. Sludge Transportation

Mobilizing and transporting a portion of sludge meant for existing land spread area to other land areas to limit PFOA, PFOS, PFBS, or HFPO-DA loading on existing land. This was estimated to be \$30,000 per year per entity with PFAS exceedance. To determine cost impacts from the proposed rule, one assumption was that all industrial land application in the state would be protective at EPA's 2016 Drinking Water Health Advisory for PFOA and PFOS of 70 parts per trillion (ppt). The 70 ppt value was selected as an example reference point because of its use as the preliminary remediation goal in EPA's initial recommendations to address groundwater contamination for PFOS and PFOA. As a result of this guidance, several states adopted this value when setting their own groundwater limits. As an example, by using 70 ppt as the reference point, the costs of setting a lower limit of 20 ppt for PFOA and PFOS can be evaluated. Using a proprietary screening tool based on the Pesticide Root Zone Model (PRZM) that was developed by the engineering consulting firm Exponent, the impacts of setting an Enforcement Standard at 20 ppt as opposed to the health advisory of 70 ppt was evaluated. Keeping all other model inputs constant, a decrease in the allowable groundwater concentrations will result in an equivalent decrease in the allowable application rates of wastewater solids per acre. For example, setting an Enforcement Standard for PFOA at 20 ppt when current land application practices are protective at 70 ppt could result in facilities potentially needing to reduce application rates by over 70%. If this were the case, a facility would need to increase their land application area by 350%. Transportation of material represents a significant portion of the total land application costs. Increasing the application area by 350% of the current acreage would result in a need to increase one-way travel distance from the facility by 1.87 times current distances, thereby creating a significant increase in transportation costs. The NCASI Beneficial Use Cost Comparison Model (Version 1.1) was used to estimate transportation cost. If, for example, the average distance from the facility to a land application field is currently 30 miles,

increasing the average distance to 56 miles would cause transportation costs to increase by 58%. For a facility generating 16,000 dry tons of wastewater solids per year (a typical amount produced by a pulp and paper facility operating in North America) and managing all of that material through land application, this increase in transportation cost would be significant. For the example scenario presented of a facility with land application practices that would be protective at 70 ppt for PFOA in groundwater and needing additional acreage to meet the proposed 20 ppt level for PFOA, the increase in transportation cost for that facility would be approximately \$500,000 more per year.

2. Soliciting Landowners vs. Landfill Alternatives

Soliciting landowners who would be willing to take the sludge in addition to potential costs of obtaining department approval for such new sites was estimated to be \$25,000 per year per entity with PFAS exceedance. It is difficult and highly uncertain to estimate the cost for finding additional acreage. However, if additional landowners cannot be found, the remaining wastewater solids would need to be managed in another way. Landfilling is the most likely alternative management option. Assuming the same scenario as above where facilities would need reduce land application in current fields by over 70%, the excess material can either be sent to an on-site facility landfill (if one exists) or an off-site landfill owned and operated by a private or public entity. Using the NCASI Beneficial Use Cost Comparison Model, for a facility generating 16,000 dry tons of wastewater solids per year, landfill costs are estimated to increase from \$1.50 to \$2.75 million per year depending on if an on-site or off-site (e.g., 30 miles away) landfill is used.

Impacts on public perception toward land application of wastewater solids as a result of this rule are highly uncertain. A worst-case outcome would be all land application of biosolids ceases in the state due to landowners no longer willing to accept the material, forcing all biosolids to be sent to landfill or disposed of in some other manner. For the example facility needing to landfill all 16,000 dry tons of biosolids, this would increase the landfill disposal costs for that facility from approximately \$2.00 to \$3.85 million per year.

There are a multitude of factors that can impact compliance costs associated with this proposed rulemaking. Using the assumptions described above, the estimated cost of compliance can range from \$500,000 to \$3,850,000 per facility per year. This is in contrast to the estimate cost of \$72,500 provided in the EIA.

Treatment costs are underestimated

WDNR estimates that there may be only one current facility in Wisconsin that would have to install treatment should PFOA, PFOS, PFBS, or HFPO-DA groundwater standards be exceeded. A granulated activated carbon (GAC) system for that facility is estimated to be \$449,852 in the first year of operation and \$379,852 each year thereafter. While we do not know which facility is being noted here, GAC systems are often not a suitable treatment option for industrial wastewater effluents including those from pulp and paper facilities. These effluent streams have higher levels suspended solids and dissolved organics compared to drinking water or groundwater sources. These effluent components can plug and foul absorption sides, significantly reducing the effective lifespan of the system and increasing costs. The

effluent volume at most pulp and paper mills is also beyond what a typical GAC system can process. Most PFAS removal systems are designed for flows in the range of 0.5 to 5.0 million gallons per day (mgd), while a typical pulp and paper mill could have flows in the range of 3.0 to 31.0 mgd.

In addition, the cost estimates listed for installation and construction of a GAC system are low even for tertiary treatment of drinking water. NCASI has conducted a review of the technical factors and potential costs associated with treating pulp and paper mill effluent to remove PFAS. Reported construction costs of GAC drinking water systems designed for flows of less than 5 mgd range from \$2.5 to \$5.5 million. These costs alone are significantly higher than what was estimated by WDNR. An engineering estimate of installation costs for a tertiary PFAS removal system at a facility with a 25 mgd discharge rate using microfiltration (needed to protect the performance and lifetime of GAC system) followed by GAC would range from \$150 to \$475 million. These costs are up to 3 orders of magnitude greater than the estimate provided in the EIA.

Sampling costs underestimated

Per the EIA, the facility cost is estimated to be \$600 per sample, for a total cost of \$2,400 per year for each facility. One facility may also be required to conduct quarterly sampling if its 8 groundwater monitoring wells at its land treatment site, at \$300 per sample, with a total annual cost of \$9,600. Approximately 20% of permitted facilities (1 to 2 entities out of 6) will have their WPDES permits reissued and will begin sampling for PFOA, PFOS, PFBS, or HFPO-DA. Based on this cycle, in any year, sampling costs are expected to range between \$14,400 and \$24,000.

Currently, there are several analytical methods used for analysis of PFAS in aqueous, solid, biosolids, and tissue samples. In the future, EPA Method 1633 will consolidate the various methods into a single PFAS analytical method. Method 1633 is currently in draft form but is expected to be finalized in the near future. Our review of costs for sample analysis using draft EPA Method 1633 are approximately \$400-575 per sample. Labs will often add additional costs associated with this analysis (e.g., waste disposal cost), making the quoted \$600 per sample a reasonable estimate. We assumed the lower cost groundwater samples estimated at \$300 are to be analyzed using one of the existing PFAS methods for drinking water samples. Draft EPA Method 1633, with its higher analytical costs, is expected to replace these methods once finalized. This would double the cost estimate for all groundwater samples.

In addition to standard analytical samples, it is strongly advised to also collect field quality control (QC) samples that can be used to evaluate field equipment and supplies as well as to assess the possibility of cross-contamination during sampling, transport, and storage of samples. NCASI recommends that, at the very least, an equipment blank and field blank be collected at each sampling site. Note also that the Interstate Technology Regulatory Council recommends even more field QC sample be collected to include field reagent blank, source water blank, equipment rinse blank, field duplicate, and performance evaluation sample (ITRC PFAS Technical and Regulatory Guidance Document¹). Each of these recommended QC samples would incur additional analytical costs (\$600 each).

Note that these estimates seem to only cover the analytical costs and do not include the cost of sample collection in the field. While sample collection can be conducted by facility staff, consulting firms are

¹ <https://pfas-1.itrcweb.org/11-sampling-and-analytical-methods/>

often asked to develop site-specific sampling plans and provide onsite training. These costs can range from \$14,000 to \$21,000. The cost estimate also does not seem to include the cost for shipping samples to the analytical lab. PFAS samples need priority, overnight shipping to the labs to ensure hold times are met. Depending on the weight, costs can range from \$150 to \$400 per cooler.

In contrast to the annual sampling cost per facility of \$2,400 to \$9,600, NCASI estimates costs could range from \$16,000 to \$ 35,200 with an additional one-time cost of \$14,000 to \$21,000 for consulting services.

Conclusions

The cost estimates provided by NCASI could be refined if WDNR were to provide additional information regarding how they conducted their own analysis. However, even if that were to occur, it is believed that many of the cost estimates provided in the EIA are greatly underestimated and should be reevaluated.

Sincerely,



Derek Sain
Sr. Program Manager, Wood Products
NCASI
402 SW 140th Terrace
Newberry, FL 32669Address
(352) 244-0915
dsain@ncasi.org



October 10, 2023

Ms. Beth Finzer
Water Supply Specialist-Adv
Wisconsin Department of Natural Resources
PO Box 7921
Madison, WI 53707-7921

Submitted via email to DNRDGGuidanceComment@wisconsin.gov

RE: WMC Comments on Public Water Supply Operations Ch. 15: "Guidance Concerning Public Notices and Response Actions for Contaminants Other Than Primary MCLs"

Dear Ms. Finzer,

Wisconsin Manufacturers and Commerce (WMC) appreciates the opportunity to provide written comment on DNR's draft guidance related to DNR requirements for "contaminants other than primary MCLs."

WMC is Wisconsin's combined state chamber of commerce and manufacturers' association. We represent approximately 3,800 member companies of all sizes, and from every sector of the economy. Our mission is to make Wisconsin the best state in the country to do business. This mission includes advocating for fair, predictable, and lawful standards for Wisconsin's regulated community.

WMC urges DNR to withdraw this guidance, as it clearly rises to the level of an unpromulgated rule. The guidance document imposes new, ongoing requirements on public water systems for exceedances of health advisory levels of so-called "non-primary contaminants" that have not been lawfully promulgated. Instead, DNR must withdraw the guidance and instead promulgate a rule.

I. DNR Must Utilize Rulemaking

In Section 15.1 of the guidance document, DNR points to its authority within NR 809.950(3)(c)5. in justifying the new requirements:

"NR 809.950(3)(c) Special public notices, including all of the following, require a public notice:

5. Other violations and situations determined by the department to require a public notice under this subchapter, not listed in Appendix A."

However, this section of administrative code does not exempt the agency from complying with statutory rulemaking requirements. Section 227.10(1) provides that "Each agency shall promulgate as a rule each statement of general policy and each interpretation of statute which it specifically adopts to govern its enforcement or administration of that statute." The proposed requirements

within this guidance amount to an “interpretation” of statutory authority that necessitates rulemaking.

II. Guidance Imposes Requirements on Regulated Community without Citing Explicit Statutory Authority

Section 15.1 of the draft guidance requires that “public water system consumers are to be notified when contaminants beyond primary MCLs, herein referred to as non-primary contaminants, exceed a health-based risk in drinking water.” DNR then provides examples of “non-primary contaminants,” such as “HALs and Enforcement Standards (ES) exceedances.” Notably, the term “non-primary contaminants” is not defined in NR 809.

Section 15.4 of the guidance provides that “DNR may require public notice” if detections of non-primary contaminants exceed an enforcement standard under NR 140, a HAL established by DHS or USEPA, or a proposed federal or state HAL or ES.

Section 15.5 provides requirements for the public notice letter. This includes the risks associated with the contaminant, “specific advice on whether or not to drink the water or other actions DHS recommends,” and “a recommendation that the facility pursue a permanent solution to the problem.” Suggested solutions include well reconstruction, drilling a new well, connecting to a new water system, or treatment.

Section 15.7 provides that “public notices issued for non-primary contaminants may need to be updated and continually posted as long as the impacted source is in use.” Under this section, DNR only contemplates discontinuing a public notice if the public water system changes the water supply or if monitoring results “show contaminants are consistently below ES or HAL or a proposed standard.”

Section 15.9 outlines requirements and recommendations for community systems and even non-community systems. If a community system “chooses” to “voluntarily install new treatment,” DNR approval may be required.

In summary, the guidance appears to require all of the following:

- Public notification of exceedances of drinking water HALs that have never been promulgated under ch. 227 rulemaking.
- A recommendation for expensive corrective actions within the public notice, such as drilling a new well or treatment.
- Ongoing public notice as long as the water supply remains in use, unless or until new monitoring shows contaminants fall below the unpromulgated health advisory levels.

Throughout this guidance document, DNR largely fails to cite its explicit statutory authority for these new requirements. Instead, the primary authority cited is NR 809.950(3)(c). As noted previously, this section of administrative code does not exempt DNR from needing to follow ch. 227 rulemaking requirements.

III. Proposed Guidance Requirements for PFAS Notices for Substances Without a Promulgated Standard are Not Lawful

The guidance document also contains multiple “public notice checklists.” This includes a checklist titled “Consistency for Irregular Public Notices (PN) – PFAS.”

Under Point #1, the checklist provides that “PFAS concentrations that exceed DHS’ recommended health hazard index at the entry point of public water systems” require public notice.

Point #6 provides that the water system must “Repeat PN every 3 months. The repeat PN should provide information on the initial events which triggered the notice. They should also include any relevant monitoring results and actions taken by the system or the DNR.”

Point #8 requires that “The PN may be rescinded when the situation is resolved by either taking a source offline or through 2 consecutive quarterly compliance samples reliably below the DHS recommended health advisory levels and health hazard index.”

In summary, the checklist requires a public water system to issue a public notice if PFAS sampling demonstrates an exceedance of the DHS hazard index. In addition, the water system must continue to issue notices every three months until 2 consecutive quarterly tests show that the water system is “reliably below” the DHS hazard index.

Importantly, the DHS hazard index is not a promulgated standard or rule. It is a metric internally derived by DHS. The DHS hazard index includes 18 PFAS compounds. However, only two substances – PFOA and PFOS – have lawfully promulgated standards.

IV. Other Considerations

As applicable, Wisconsin’s drinking water systems are continuing to comply with the new PFOA/PFOS NR 809 drinking water standards. However, it should be noted that DNR does not permit sources to simply test for PFOA and PFOS in order to comply with the new drinking water rule.

Instead, DNR requires water systems to use EPA certified methods 537.1 or 533 for analyzing PFAS samples. These methods analyze 18 or 29 PFAS compounds, respectively. Water systems are also required to report any detects of these other PFAS compounds to DNR.

With this existing policy on PFAS sampling, coupled with this new guidance on PFAS reporting, DNR has effectively imposed a system on water systems to require testing, reporting, and compliance recommendations for PFAS compounds that have never undergone the transparent rulemaking required by ch. 227. As a result, in many ways DNR is essentially treating the DHS Hazard Index and DNR health advisory levels as “standards.”

V. Conclusion

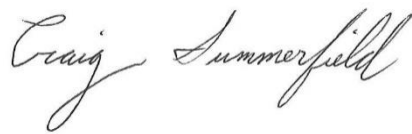
This regulatory scheme by DNR obviously has significant implications for Wisconsin’s regulated community. Required testing and public notice regarding unregulated PFAS compounds at public drinking water systems could lead to a local “blame game” between water systems, local

governments, homeowners, and private businesses. Public water systems may feel compelled to install expensive and unnecessary treatment systems, driving up water utility costs for homeowners and businesses.

DNR must withdraw the guidance and instead promulgate a rule. DNR needs to allow the public, the regulated community, and the Legislature to weigh-in before implementing this impactful policy. Moreover, the public should be provided an opportunity to understand the costs and benefits of implementing these standards, as provided under ch. 227 rulemaking requirements.

Thank you for your consideration of WMC's comments. Please do not hesitate to contact me with any questions.

Sincerely,

A handwritten signature in cursive script that reads "Craig Summerfield". The signature is written in black ink and is positioned below the word "Sincerely,".

Craig Summerfield
Director of Environmental & Energy Policy
Wisconsin Manufacturers & Commerce

Phelps, William L - DNR

From: Toni Herkert <therkert@lwm-info.org>
Sent: Saturday, October 28, 2023 11:06 AM
To: DNR 140 Groundwater Quality Standards
Subject: DG-17-22 EIA Comments
Attachments: League Comments EIA NR 140 to set numerical limits for PFOS, PFOA, PFBS, and GenX.pdf

**CAUTION: This email originated from outside the organization.
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Mr. Phelps,

Please accept these comments from the League of Wisconsin Municipalities regarding the EIA for Board Order DG-17-22 - Amendments to ch. NR 140 to set numerical standards to minimize the concentration of polluting substances for certain Per- and Polyfluoroalkyl Substances (PFAS) in groundwater.

If you have any questions, please feel free to contact me at your convenience.

Kind Regards,
Toni



Toni Herkert
Director of Government Affairs
League of Wisconsin
Municipalities

Phone: 608-267-2380


Email: therkert@lwm-info.org



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October 28, 2023

Bill Phelps
Groundwater Section DG/5
Department of Natural Resources
PO Box 7921
101 S. Webster Street
Madison, WI 53707

VIA EMAIL: DNR140GroundwaterQualityStandards@wisconsin.gov

RE: League of Wisconsin Municipalities comments regarding Board Order DG-17-22 - Amendments to ch. NR 140 to set numerical standards to minimize the concentration of polluting substances for certain Per- and Polyfluoroalkyl Substances (PFAS) in groundwater

Mr. Phelps:

The League of Wisconsin Municipalities, a nonprofit and nonpartisan association with 607 member cities and villages, welcomes the opportunity to submit these comments pertaining to the department's proposed amendments to NR 140 to set numerical limits for PFOS, PFOA, PFBS, and GenX compounds. League members own and operate the state's municipal wastewater treatment plants. We represent facilities ranging in size from small sanitary districts to large wastewater utilities.

The League and our members support the regulation of PFAS compounds based on sound science and a deliberative process to outline all the costs associated with resulting regulations to inform the public about the impacts in rates they may be experiencing due to new regulatory requirements. In this proposed rule very restrictive standards are established for PFOS, PFOA, PFBS, and GenX compounds. These requirements will have significant impacts on the costs and operation of municipal wastewater treatment plants. While the department attempts to categorize costs in the economic impact analysis (EIA) for DG-17-22, the League believes that some of the resulting costs and impacts have not been addressed or have been underestimated. To be transparent and forthcoming to ratepayers, local governments, state officials, and the general public, it is critical that all costs and impacts be considered before this rule is moved forward in the administrative rulemaking process.

The League's comments can be classified in the following three areas and are summarized in greater detail by [MEG Wastewater Division in their October 27th public comments](#).

- **Costs associated with land application programs and biosolids management -**
A report released by the Minnesota Pollution Control Agency and referenced in the EIA for DG-17-22 estimates the capital costs of removing PFAS from biosolids at \$40-110 million per facility, with annual operation and maintenance costs in the range of \$470,000 to \$1.2 million per facility.
- **Pit trench dewatering** – The department notes that not any dewatering projects are discharged to groundwater, but what the department fails to take into consideration is that many dewatering construction projects send that water to our wastewater treatment facilities and increases in PFAS in this wastewater will increase PFAS in biosolids thus increasing the cost of treatment and disposal. These costs must be analyzed and accurately accounted for in the EIS. These costs will be borne by the wastewater treatment facility and ratepayers.
- **Costs associated with current rules** – Several points in the EIA attempt to explain away certain costs because they are incorporated under other, current department rules. However, to the extent such costs would be increased or applied to additional parties if DG-17-22 is promulgated, those costs must be included in the EIA for DG-17-22.

Thank you for the opportunity to provide comments. Please feel free to contact me at your convenience if you should have any questions.

Kind Regards,
Toni Herkert, Government Affairs Director
Wisconsin League of Municipalities

Phelps, William L - DNR

From: Rob Lee <rlee@midwestadvocates.org>
Sent: Saturday, October 28, 2023 4:45 PM
To: DNR 140 Groundwater Quality Standards
Subject: PFAS GW Standards EIA Comments
Attachments: 2023-10-28 - Comments on DG-17-22 EIA.pdf

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Please find the comments of Midwest Environmental Advocates, submitted on behalf of Save our Water and the League of Women Voters of Wisconsin, attached.

Thank you,

Rob Lee, *Staff Attorney*
Midwest Environmental Advocates
NEW ADDRESS: 634 W. Main St. Suite 201
Madison, WI 53703
Phone: (608) 251-5047 ext. 8
midwestadvocates.org

Delivered via e-mail

October 28, 2023

Bill Phelps
Wisconsin Dept. of Natural Resources – DG/5
P.O. Box 7921
Madison, WI 53707
DNR140GroundwaterQualityStandards@wisconsin.gov

RE: Comments on Draft EIA for Board Order DG-17-22, Setting Numerical Standards to Minimize the Concentration of Polluting Substantives for Certain Per- and Polyfluoroalkyl Substances in Groundwater

Mr. Phelps:

On behalf of Save Our Water (“S.O.H2O”) and the League of Women Voters of Wisconsin, Midwest Environmental Advocates¹ submits these comments on the draft economic impact analysis (“EIA”) for Board Order DG-17-22, a rulemaking that would establish numerical groundwater enforcement standards for certain per- and polyfluoroalkyl substances (“PFAS”).

Establishing groundwater standards for any PFAS is long overdue in Wisconsin, and we appreciate the continued efforts of the Wisconsin Department of Natural Resources (“DNR”) staff to make that a reality. As the draft EIA recognizes, the rule is a single but nevertheless critical step toward protecting public health in this state from PFAS contamination.

The draft EIA estimates that thousands of private wells in Wisconsin are contaminated with PFAS at levels above Wisconsin Department of Health Services (“DHS”) recommendations. Without this rule, those who drink water from those wells are at a significant disadvantage when it comes to reducing their exposure and preventing or at least mitigating correlated health risks. The health of Wisconsinites must be paramount throughout this rulemaking process, and we look forward to a final EIA that reflects DNR’s commitment to addressing that and other PFAS-related issues this rule implicates.

I. DNR Should Better Analyze and Quantify Benefits.

All economic impact analyses must include “[a]n analysis of the actual and quantifiable benefits of the rule, including an assessment of how effective the rule will be in addressing the policy problem that the rule is intended to address.”² The draft EIA identifies a host of potential benefits from the rule, including human health protection, regulatory and technical clarity, standards for

¹ Midwest Environmental Advocates would like to thank volunteers Maggie Munson and Mark Hurst for their background research and assistance with these comments.

² Wis. Stat. § 227.137(3)(c).

bottled water providers, and well compensation access for impacted homeowners, but should better analyze and quantify those benefits. In addition, the EIA should also analyze and quantify benefits to hunting and fishing, as well as to agriculture.

The draft EIA indicates that “there is an indeterminate benefit derived from preventing and remediating PFAS contamination,” and subsequently fails to quantify any of the identified benefits of the rule.³ While quantifying such benefits may be difficult, it is not impossible. To be sure, there will always be some uncertainty, but some level of uncertainty is inherent in any EIA, whether considering costs or benefits, and that should not be a barrier to making a good faith effort to analyze and quantify both the costs and benefits of the rule. Researchers in a PFAS study released just last year rightly pointed out that “it is important to document the costs of inaction even in the presence of uncertainty.”⁴

To assist DNR in its analysis and quantification, we provide the discussion below as well as a list of sources appended to the end of these comments. We encourage DNR to not only review these sources and the methodology described therein, but also to review the underlying sources they rely upon. We also encourage DNR to reach out to the scientists and economists authoring the studies included in the list of sources, as well as to staff at agencies in states such as Maine, whose insight and information may prove invaluable. And of course, DNR staff should conduct its own literature review to identify any studies, data sets, and other information that may be helpful. Such a literature review need not be confined to studies and data sets focusing solely on the United States or even PFAS to be of some potential use.

Ultimately, it is up to DNR to analyze and quantify the benefits of the rule, and these comments do not attempt to do so in DNR’s stead. To the extent benefits of the rule are so indeterminate that projections based on existing information cannot be reasonably made, DNR should still survey the available information and identify data gaps for specific variables that prevent it from making those projections.

a. Avoided Health Care Costs

The draft EIA surveys adverse health impacts associated with exposure to each of the four PFAS addressed in the rule. As the draft EIA indicates, exposure with those PFAS is associated with, or correlated to, the identified adverse health impacts, although direct causality has yet to be confirmed. In other words, exposure to PFAS compounds increases the risk of developing associated adverse health impacts, those risks are likely to increase when exposure occurs for extended periods of time, and as a result those adverse health impacts are likely to manifest in at least some subset of the exposed populace.

³ Draft EIA, p. 11.

⁴ Obsekov, Vladislav, Kahn, Linda G., and Trasande Leonardo, *Leveraging Systematic Reviews to Explore Disease Burden and Costs of Per- and Polyfluoroalkyl Substance Exposure in the United States*, EXPOSURE AND HEALTH 15:373-94, 375 (July 26, 2022).

Conversely, interrupting exposure pathways can reduce the risk of developing the associated adverse health impacts and as a result those adverse health impacts are less likely to manifest in that subset of the exposed populace. This reduction in risk is likely to provide all sorts of actual benefits, including avoided health care costs for the associated adverse health impacts, that should be quantified in the draft EIA to the extent possible.

In a 2022 study that explored disease burden associated with PFAS exposure and attendant costs, including avoided health care costs and lost productivity, the exposure to perfluorooctanoic acid (“PFOA”) and perfluorooctane sulfonic acid (“PFOS”) was estimated cost the United States between \$5.52 billion and \$62.6 billion in 2018 alone.⁵ Proportional to Wisconsin’s population, that range is \$98.15 million to \$1.11 billion, again, just for the year 2018. Put in 2023 dollars, the range is \$121.87 million to \$1.38 billion.⁶ A 2019 European study, when assuming similar exposure rates and adjusting for population and exchange rates, estimates that annual health care expenditures in the U.S. for PFAS with four to 14 carbon chains (which include the four PFAS in the rule) range from \$37 to \$59 billion annually.⁷

The question then becomes how much of those costs could be avoided as a result of the groundwater standards set forth in the rule. Of course, avoided costs must be relative to the regulatory impact of the rule.⁸ The principal regulatory impact of the rule, as stated in the draft EIA, seems to be in the regulation industrial and municipal landspreading of waste through the Wisconsin Pollutant Discharge Elimination System (“WPDES”) permitting program. The WPDES program regulates discharges to “waters of the state”, which statute defines to include, among other things, surface water and groundwater.⁹ Although DNR can currently regulate landspreading, it can only do so to the extent necessary to prevent exceedances of previously established surface water standards. The rule will therefore have an impact on those regulated entities whose landspreading activities currently comply with state surface water standards but would not comply with the groundwater standards in the rule.

The historical landspreading of industrial and municipal waste has apparently contributed significantly to the PFAS issue in Wisconsin, particularly in communities such as the Marinette and Peshtigo area and the Town of Stella. Those communities continue to deal with substantial PFAS contamination of their groundwater, which is the source of drinking water for many residences that rely on private wells. And while the draft EIA indicates that establishing groundwater standards will not have a regulatory impact on remediation of historical contamination, the groundwater standards will certainly help limit new or increased contamination of private wells and the health risks associated therewith.

⁵ *Id.* at 389.

⁶ *CPI Inflation Calculator*, U.S. BUREAU OF LABOR STATISTICS, https://www.bls.gov/data/inflation_calculator.htm.

⁷ Cordner, Alissa et al, *The True Cost of PFAS and the Benefits of Acting Now*, Environmental Science and Technology, 2021, 55, 9630-9633 (citing Goldenman, G. et al, *Cost of Inaction: A Socio-economic Analysis of Environmental and Health Impacts Linked to Exposure to PFAS*, Nordic Council of Ministers, Copenhagen, 2019.).

⁸ If the regulatory impact of the rule as stated in the draft EIA is modified, the benefits stemming from the rule should be correspondingly modified.

⁹ Wis. Stat. § 283.01(20).

Since the groundwater standards will have more of a regulatory impact on landspreading than current surface water standards, the groundwater standards will also likely reduce PFAS contamination of surface water from runoff and groundwater discharges to surface water, and therefore may have a positive impact on surface water quality. That in turn, may have multiple positive benefits, including to human health.

For example, since PFAS is bioaccumulative and biomagnifying, there could be a reduction in the amount of PFAS found in fish used for consumption, which may have positive health impacts on subsistence anglers and others who consume fish on a regular basis. This may be the case especially considering the ever-evolving body of science on the adverse health impacts associated with PFAS contamination in surface water that may not be fully captured in the surface water standards DNR developed several years ago. And importantly, exposure to PFAS from consuming fish cannot be avoided through preparation, which is possible for at least one other contaminant DNR monitors for fish advisories, polychlorinated biphenyls (“PCBs”). DNR should also explore other marginal benefits, such as reducing exposure through incidental ingestion or even deer consumption, if non-negligible.

Beyond the general starting point of knowing the current health care and lost productivity burden of PFOA and PFOS contamination, discussed above, DNR could employ census, permit, sampling, and other data, as well as leverage general and PFAS-specific scientific and economic studies (and the methodology used therein) to reasonably project benefits the rule will provide in terms of avoided health care costs. For example, if DNR can estimate how many private wells are currently contaminated with concentrations of PFAS that exceed the groundwater standards in the rule (5700), it can also likely project the upper threshold of private wells that could be positively impacted by the rule by preventing or limiting future contamination.

DNR can also use the data it has about private well owners whose exposure pathway has already been interrupted by receiving bottled water from DNR or responsible parties to offset that upper threshold. But even then, there is likely to be a benefit to those currently receiving bottled water given that standards for bottled water providers will also result from the rule, and there is likely a benefit to mental health of not having to rely on bottled water and being able to resume normal household activities.

b. Benefits to Fishing and Hunting

Based on the discussion immediately above regarding the potential further reduction of PFAS in surface water, DNR should also quantify benefits to recreational activities and other activities like hunting and fishing. To date, DNR has posted multiple fish and deer consumption advisories due to PFAS contamination throughout the state. These advisories have a demonstrable impact on associated economic sectors because they influence choices hunters and anglers make about whether, when, and where to go. Multiple studies in the past have examined that impact in the context of other contaminants like PCBs and mercury and have even examined it in a Wisconsin-specific context. These studies should be leveraged to assess what portion of those economic costs the groundwater rule may avoid.

c. Benefits to Agriculture

An emerging body of evidence demonstrates a correlation between PFAS contamination in soil and uptake into agricultural crops, which may render them unfit for consumption by humans and livestock. In addition, contamination of groundwater used for irrigation and watering livestock could impact the viability of crops, meat, and milk produced therewith.

The issue of biosolid spreading and its impacts on agricultural operations has been most closely examined in the state of Maine, where milking operations in particular have been impacted and at least two farms have had to completely shut down.¹⁰ The state of Maine has responded by engaging in widespread testing of groundwater and agricultural fields, as well as testing all fluid retail milk in the state, and DNR should consider whether it can leverage this data (available on Maine state agency websites) with Wisconsin-specific agricultural and landspreading data to quantify benefits to the agricultural sector from the groundwater standards in the rule. Maine even sorts its results into tiers like DNR has in the draft EIA.

In New Mexico, an entire herd was slaughtered due to PFAS contamination, resulting in multi-million-dollar losses, although the source of the contamination there seems to have been from a nearby U.S. Air Force base (presumably from the historical use of aqueous film forming foam) and not from landspreading of industrial and municipal wastes. Nevertheless, DNR could still use those economic losses as a metric for any similar future result the groundwater standards in the rule could avoid.

II. DNR Should Better Explain its Assumptions and Estimates.

At several junctures in the draft EIA, DNR makes assumptions or estimates without providing any context, underlying information, or analysis as to how those assumptions or estimates were made. For example, on page six of the draft EIA, DNR states that “based on available data . . . there are 6 industrial facilities . . . that may be impacted by the proposed standards,” without identifying the “available data” on which it was based. Likewise, on page nine of the draft EIA, DNR estimates that 74 wastewater treatment facilities will have biosolids with either significant, moderate, or low PFAS contamination, but again does not explain how those estimates were made. Is DNR still extrapolating data from Michigan like with the previous effort to establish groundwater standards for PFAS? Has DNR collected enough Wisconsin sampling data on which to make estimates? We ask that DNR address these and other informational gaps so that the public can better understand the assumptions DNR made and by extension the conclusions it reached in the EIA.

¹⁰ Sharon Anglin Treat, *With a second farm shuttered due to massive PFAS contamination, Maine legislators weigh easing access to the courts*, INSTITUTE FOR AGRICULTURE & TRADE POLICY, July 2022, <https://www.iatp.org/blog/202007/second-farm-shuttered-due-massive-pfas-contamination-maine-legislators-weigh-easing>.

III. DNR's Timeline of Entities Impacted through Implementation of the WPDES Program is Conservative.

As established in the draft EIA, much of the estimated economic impact of the rule stems from the implementation of groundwater standards through the WPDES program and the regulation of industrial and municipal landspreading of waste thereunder. While DNR's estimates are already conservative for the reasons stated in the draft EIA, there are additional reasons why these estimates are conservative.

Certainly, WPDES permits are only valid for five years, but the assumption that approximately 20% of every WPDES permit will be reissued annually does not account for the fact that permits are often administratively extended past the five-year timeline as long as permittees submit an application for reissuance before the applicable deadline, and that administrative extensions can last months or even years. DNR is correct that if sampling after the first permit reissuance demonstrates the need for follow up action the preferred option will be source reduction, but that may not adequately address the issue, and, particularly for municipally owned treatment works, alternative treatment or disposal may be the only viable option at significant cost. However, the draft EIA also does not account for the potential availability of variances to water quality standards if compliance would "cause substantial and widespread adverse social and economic impacts in the area where the permittee is located."¹¹ In other words, municipally owned treatment works may be able to delay or avoid cost-prohibitive alternative treatment or disposal, and that possibility should be reflected in the draft EIA.

Even if DNR does not revise its estimates based on the foregoing, at the very least DNR should acknowledge the possibility these outcomes render its estimates even more conservative than presently stated in the draft EIA.

IV. The Economic Impact of the Rule Would NOT Be Impacted by Separate Changes in the Regulatory Authority or Requirements of Programs that Implement Groundwater Standards.

The draft EIA describes on page three the potential for other regulatory agencies to promulgate or amend their rules for regulatory programs that implement groundwater standards, and states that "[t]he implementation and compliance costs of this rule could be affected – either increased or decreased – by changes in the regulatory authority or requirements of the programs that use the standards." We strongly disagree that the implementation and compliance costs of this rule can be impacted in any way by a subsequent rulemaking. Any subsequent rulemaking will require the promulgating agency to navigate the entire rulemaking process on its own, including the preparation of an analysis of the economic impacts of that rule. The focus of an EIA is after all on the impacts of "the proposed rule", not on subsequent but separate rulemakings this rulemaking may or may not trigger.¹² Accordingly, the implementation and compliance costs associated with

¹¹ Wis. Stat. § 281.15(4)(a)1f.

¹² See Wis. Stat. § 227.137(3).

such a subsequently rulemaking are entirely separate from the implementation and compliance costs of the current rule.¹³

Thank you for the opportunity to submit comments on the draft EIA and please do not hesitate to reach out to discuss any questions or concerns you may have.

Sincerely,

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¹³ See, e.g., Wis. Stat. § 227.137(3) (An EIA “shall contain economic information on the impact of *the proposed rule.*”) (emphasis added).

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Phelps, William L - DNR

From: Sara Walling <swalling@cleanwisconsin.org>
Sent: Monday, October 30, 2023 10:26 AM
To: DNR 140 Groundwater Quality Standards
Subject: NR 140 EIA Comments
Attachments: NR 140 PFAS GH2O EIA Comments Clean WI Final_102823.pdf

**CAUTION: This email originated from outside the organization.
Do not click links or open attachments unless you recognize the sender and know the content is safe.**

Hello,

Please find attached our comments on the NR 140 draft EIA. We appreciate the opportunity to provide additional information to help your team develop the final EIA on this important rule.

Best,

Sara Walling

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October 28, 2023

Re: Comments on the draft Economic Impact Statement for amendments to ch. NR 140 to set numerical standards to minimize the concentration of polluting substances for certain per- and polyfluoroalkyl substances (PFAS) in groundwater; Board Order DG-17-22

For over 50 years Clean Wisconsin has been the leading statewide advocate for clean water, clean air, and clean energy. As a nonprofit, nonpartisan environmental organization with over 30,000 members and supporters around the state, we employ scientists, policy experts and attorneys to protect and improve Wisconsin's environment. We appreciate the opportunity to submit the following comments on the draft economic impact analysis (EIA) for the proposed groundwater standards for PFOS, PFOA, PFBS, and HFPO-DA.

1. A recent study has quantified health care costs associated with PFOS and PFOA exposure.

Groundwater is the source of drinking water for approximately 30% of Wisconsin residents using private drinking wells. Those wells are not protected by Wisconsin's drinking water standards. As the draft EIA notes, this proposed rule will provide health benefits to these populations by avoiding adverse health effects associated with PFAS exposure.

A recent study quantified the public health burden attributable to PFOS and PFOA in the United States.¹ This analysis reported a conservative main estimate of \$5.52 billion in health care costs for five end points with the strongest evidence for probable causation with PFAS exposure: low birth weight, childhood obesity, kidney cancer, testicular cancer, and hypothyroidism in females. Assuming exposure and case rates in Wisconsin are like the United States as a whole, this would extrapolate to approximately \$100 million in annual health care costs in Wisconsin.²

Recognizing that this is a conservative figure, the study also reports an analysis that expands the number of PFOA and PFOS-related health endpoints and potentially attributable cases. That analysis resulted in an upper estimate of \$62.2 billion in annual health care costs potentially attributable to PFAS exposure. Again, extrapolating based on Wisconsin's share of the United States' overall population, this would mean up to \$1.1 billion in annual health care costs in Wisconsin is attributable to PFOA and PFOS exposure.

¹ Obsekov et al. 2023. Leveraging systematic reviews to explore disease burden and costs of per- and polyfluoroalkyl substance exposures in the United States. *Exposure and Health* 15: 373-394.

² Wisconsin's population is approximately 1.8% that of the United States' population; \$5.52 billion x 0.018 = \$99.4 million.

Including these figures in the department's economic impact analysis would provide important context regarding the extent of the potential benefits to be gained in contrast to the estimated regulatory and compliance costs of this rule.

2. PFAS contaminated groundwater can impact Wisconsin's agricultural industry.

Groundwater is often the source of irrigation water for crops and livestock drinking water, both providing a pathway for PFAS to get into the food system.³ Dietary intake is the primary source of PFAS for most people⁴, and thus limiting agricultural contamination will have downstream public health benefits.

More immediately, PFAS contamination of agricultural products can have direct economic impacts on farms and producers themselves. The extent of PFAS contamination of agricultural products in Wisconsin has, to our knowledge, yet to be examined, but farms in Colorado⁵, Maine⁶, Michigan⁷, and New Mexico⁸ have incurred significant economic impacts to their operations including disposing of their agricultural products like milk, pulling products from shelves, culling herds, or even closing down entirely due to PFAS contamination.

The proposed groundwater standards in NR 140 will thus help to protect Wisconsin's agricultural industry, which contributes \$105 billion annually to the state's economy.⁹ Strong groundwater standards will help minimize the number of farms whose products are contaminated by PFAS and help to ensure public confidence in the quality and safety of Wisconsin's agricultural products.

We acknowledge that while this benefit is unquantifiable right now, it is an important benefit to a strong groundwater rule in Wisconsin and should be noted in the economic impact analysis.

3. PFAS contamination affects home values

³ Brown et al. 2020. Assessing human health risks from per- and polyfluoroalkyl substance (PFAS)-Impacted vegetable consumption: a tiered modeling approach. *Environmental Science & Technology* 54: 15202-15214 ; Costello & Lee. 2020. Sources, fate, and plant uptake in agricultural systems of per- and polyfluoroalkyl substances. *Current Pollution Reports*. <https://doi.org/10.1007/s40726-020-00168-y>

⁴ See literature review summarized in Table 1 of Sunderland et al. 2019. A review of the pathways of human exposure and poly- and perfluoroalkyl substances (PFASs) and present understanding of health effects. *J Expo Sci Environ Epidemiol* 29: 131-147; De Silva et al. 2021. PFAS exposure pathways for humans and wildlife: a synthesis of current knowledge and key gaps in understanding. *Environmental Toxicology and Chemistry* 40: 631-657.

⁵ <https://www.cpr.org/2019/07/31/despise-a-50m-cleanup-residents-still-bear-the-costs-of-peterson-afbs-water-contamination/>

⁶ <https://www.wsj.com/articles/maine-farmers-dump-milk-lose-crops-as-forever-chemicals-taint-soil-11656932400>; <https://www.newscentermaine.com/article/tech/science/environment/pfas/dairy-farm-coming-out-of-a-toxic-nightmare-from-forever-chemicals-pfas-environment-maine-business-agriculture/97-96c362b4-f9fd-42e8-9591-eeb69726c4f4>; <https://www.mainepublic.org/environment-and-outdoors/2022-02-07/complete-crisis-as-pfas-discovery-upends-life-and-livelihood-of-young-maine-farming-family>

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Missing in the list of benefits in the draft EIA is the benefit of avoiding home value losses due to PFAS contamination. Pollution—and even the perception of contamination—is known to reduce property values, particularly by pollutants with higher levels of public notoriety like PFAS.¹⁰

PFAS contamination has been documented to reduce home values. A report prepared for the State of Minnesota in their legal action against 3M analyzed the impact of PFAS contamination in the east metro area of the Twin Cities.¹¹ Using a hedonic analysis of home sale prices in Oakdale and other affected communities compared to surrounding unaffected areas of the East Metro area, the report found that home values were reduced by 7.3% in Oakdale and 4.4% in other affected areas due to PFAS contamination.

More directly relevant to this proposed rule, a recent lawsuit in French Island is claiming \$42 million in reduced property value and other harms due to PFAS groundwater contamination of private wells in the area.¹² Although this lawsuit is still in progress, it highlights the potential economic impact groundwater contamination can have on property values and should be noted in the draft economic analysis.

4. PFAS contamination disproportionately affects disadvantaged communities

The Union of Concerned Scientists published a report¹³ finding that non-military PFAS contamination sites are more likely to be found closer to minority and low-income populations. Furthermore, a recent analysis found a positive relationship between PFAS levels in rural community water systems and the proportion of residents below the federal poverty line in 18 states, including Wisconsin.¹⁴ This indicates that PFAS contamination of drinking water sources may disproportionately impact the rural poor, which is particularly relevant for this proposed rule since groundwater is the source of drinking water for Wisconsin's rural communities.

These potential disproportionate economic impacts on populations that are least able to deal with the contamination should be noted in the department's assessment.

¹⁰ Cordner et al. 2021. The true cost of PFAS and the benefits of acting now. *Environmental Science & Technology* 55: 9630-9633.

¹¹ Sunding DL. 2017. Damage to Minnesota's Natural Resources Resulting from 3M's Disposal of PFASs in Washington County, MN. Prepared for the State of Minnesota in the matter of the State of Minnesota v. 3M Company. September 22, 2017.

¹² Fitzpatrick, Skemp & Butler, LLC. 2023. French Island PFAS Claims of \$42.4 million asserted against city of La Crosse. New Release June 9, 2023. Available at: <https://www.news8000.com/news/local-news/la-crosse/city-of-la-crosse-served-with-42-4-million-in-claims-related-to-pfas-contamination/article_52196ee2-06fc-11ee-8c9b-2f593d8793e6.html>

¹³ Desikan, Anita, Jacob Carter, Shea Kinser, and Gretchen Goldman. 2019. *Abandoned Science, Broken Promises: How the Trump Administration's Neglect of Science Is Leaving Marginalized Communities Further Behind*. Cambridge, MA: Union of Concerned Scientists. <https://www.ucsusa.org/resources/abandoned-science-broken-promises>

¹⁴ Liddie et al. 2023. Sociodemographic factors are associated with the abundance of PFAS sources and detection in U.S. community water systems. *Environmental Science & Technology* 57: 7902-7912.

Thank you again for the opportunity to provide additional information to support the department's economic impact assessment process. While the costs of PFAS contamination clean-up are extensive, it is equally as important to recognize the public health and other economic costs that can be avoided through strengthened PFAS regulation of our groundwater resources.

Respectfully submitted this 28th day of October, 2023.

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