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

## January 5, 2022

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

#### **OVERVIEW**

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

## Public input

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

#### ECONOMIC IMPACTS ANALYSIS

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

The final Environmental Impact Analysis can be found here EIA.

## LEGISLATIVE COUNCIL RULES CLEARINGHOUSE

The Legislative Council Rules Clearinghouse submitted comments on statutory authority; form, style and placement; and clarity grammar, punctuation and use of plain language. Changes to the proposed rule were made to address all recommendations by the Legislative Council Rules Clearinghouse.

## PUBLIC COMMENTS ON DRAFT RULE

A public comment period for the draft rule occurred from December 1 to December 8, 2021, with a public hearing held on December 1, 2021. The following is a summary of comments and the department's response.

The comments below are a condensed summary of the full comments received with a brief department response. A recording of the full oral comments can be found at Public Hearing Recording and the full written comments can be found at Written Comments.

## **Public Hearing December 1, 2021**

Number attended: 118

Number in support: 34

Number in opposition: 2

Number attending for information only: 62

Oral Comments (none opposed)

# In support

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

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

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	MEA encourages DNR to stay the course to develop standards. We must follow the	
	science.	
	There are thousands of PFAS compounds. PFOA and PFOS are only part of the	
	problem.	
Susan Davidson - WI		The for
	Many adult diseases can be traced to fetal development. The fetus is exposed to	Thank you for your
Environmental Health	every environmental toxin the mother is exposed to. These include preeclampsia, low	comment.
Network	birth weight, impaired kidney and immune function, and adverse effects on neuro	
	development. PFAS exposure occurs via breast milk.	
	Economic impacts to children's health are also huge. It is both ethical and cost	
	effective to create standards.	
	effective to effecte standards.	
	The 20 ppt is in the midrange of states. Others are lower. Increased research will	
	likely lower the acceptable levels.	
Milwaukee Riverkeeper	In support of MCLs even stricter than 20 ppt.	Thank you for your
		comment.
	100% of Milwaukee Riverkeeper samples had PFAS.	
	The state of the s	
	Additional sampling will probably also find more PFAS.	
	Traditional sampling will productly also that more 11716.	
	Advance health offers are a company	
	Adverse health effects are a concern.	
	Waiting for EPA to create MCLs will take too long.	
Lee Donahue - Town of	97% of 555 wells tested positive for PFAS contamination on French Island and all	Thank you for your
Campbell Board	municipal buildings. Firefighting foam near airport is a possible source.	comment.
Supervisor		
	There are harmful health effects of PFAS.	
	There are narmar near effects of 1 17 kg.	
	Eywana haa maah layyan DEAC atandanda almaady	
	Europe has much lower PFAS standards already.	
	Other states, including Michigan and Minnesota already have standards.	
	We can't wait on EPA to create MCLs.	
Harry Richardson	PFAS regulations are long overdue.	Thank you for your
		comment.

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

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

# **Written Comments**

Number in support: 80

Number in opposition: 12

# In support

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

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

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

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

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

# **Opposed**

Name/Organization	Comment	DNR Response
		<b>1</b>

3M Company, Saint Paul, MN

- 1) The 3M Company stated that the Proposed Rule does not cite any sources when describing the purported health effects of exposure to PFOA and PFOS, the text of the draft EIA, the text of the Proposed Rule, and the EPA webpage lack the analysis and quantification of the health impacts required by the Wisconsin Administrative Procedures Act, and DNR provides neither context nor support for its assertion that exposure to PFOS and PFOA cause developmental effects on fetuses during pregnancy or to breastfed infants.
- 2) The 3M Company stated that nowhere in the Proposed Rule or supporting documents does DNR explain why it selected 20 ppt for the MCL and why an MCL of 20 ppt is necessary to protect human health and the environment. They also stated that the draft EIA's conclusory statements on the potential health effects of PFOA and PFOS are unsupported and not based on the best available science.
- 3) The 3M Company stated that DNR's statement that exposure to PFOS and PFOA leads an increased risk of cancer is baseless.
- 4) The 3M Company stated that DNR mistakenly concludes that PFOS and PFOA adversely affect the liver, immune system, and thyroid.

1) The draft EIA and board order have been revised to include the following citations:

ATSDR, <u>Toxicological Profile for Perfluoroalkyls</u>, 2021. U.S. EPA, <u>Drinking Water Health Advisory for</u> Perfluorooctanoic Acid (PFOA), 2016.

U.S. EPA, <u>Health Effects Support Document for Perfluorooctanoic Acid (PFOA)</u>, 2016.

U.S. EPA, <u>Drinking Water Health Advisory for</u> Perfluorooctane Sulfonate (PFOS), 2016.

U.S. EPA, <u>Health Effects Support Document for</u> Perfluorooctane Sulfonate (PFOS), 2016

- 2) The proposed MCLs for PFOA and PFOS are based on recommended groundwater public health enforcement standards developed by the Wisconsin Department of Health Services (DHS) in 2019. The board order has been revised to include reference to DHS' technical support documents for PFOA and PFOS.
- 3) The board order has been revised to state that "PFOA may cause an increased risk of certain cancers" and to cite the following documents:
- ATSDR, <u>Toxicological Profile for Perfluoroalkyls</u>, 2021.
- U.S. EPA, <u>Drinking Water Health Advisory for</u> Perfluorooctanoic Acid (PFOA), 2016.
- U.S. EPA, <u>Health Effects Support Document for</u> Perfluorooctanoic Acid (PFOA), 2016.
- IARC, Monograph on the Identification of Carcinogenic Hazards to Humans: Perfluorooctanoic Acid (PFOA), 2018.

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

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

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

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

# Drinking Water Regulations and Advisory Levels for PFOA and PFOS

(Source: ITRC. Water and Soil Value Table, October 2021)

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