

# PFAS: Coming to a Neighborhood near You

Wisconsin Environmental Health Network

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STOP POISONING OUR WATER  
CONCERNED FRIENDS AND NEIGHBORS GROUP OF SOH2O

# POISONING

**“ A substance that causes injury, illness, or death, especially by chemical means”**

The American Heritage Dictionary

**PFAS = POISON**



# WHAT ARE PFAS?

*(Pronounced “P- FAS”)*

- Per- and polyfluoroalkyl substances (PFAS) are a group of **man-made chemicals** that don't occur naturally in the environment. There are thousands of different PFAS compounds including PFOA, PFOS , and “GenX” formulations. PFAS have been manufactured and used in a variety of industries around the globe, including in the United States since the 1940s. The EPA has determined that some PFAS compounds are “Toxic.”

# “FOREVER CHEMICALS”

- PFAS compounds don't break down in the environment and are often called the “**forever chemicals.**” Once they enter our bloodstream their presence can be detected for decades.
- PFAS are also **Bioaccumulators.** Bioaccumulation occurs when an organism absorbs a substance at a rate faster than that at which the substance is lost. Even relatively small amounts can build up over time in the human body.

# PFAS CAN BE FOUND IN:

- Food packaged in PFAS-containing materials, processed with equipment that used PFAS (microwave popcorn bags for example)
- Commercial household products, including stain- and water-repellent fabrics, nonstick products (e.g., Teflon), polishes, waxes, paints, cleaning products,
- **Fire-Fighting Foams** (a major source of groundwater contamination at airports and military bases where firefighting training occurs).

# PFAS HEALTH RISKS

- 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
- increase the risk of cancer(for PFOA)
- thyroid hormone disruption (for PFOS)
- testicular cancer

# WATER INGESTION

- ***Drinking water*** is a source of exposure in communities where these chemicals have contaminated water supplies. Such contamination is typically localized and associated with a specific facility. (Tyco)

# FOOD INGESTION

**People can be exposed to low levels of PFAS through *food*, which can become contaminated through:**

- Eating Fish living in Contaminated Water (Tyco)
- Eating Food grown in Contaminated soil or watered with Contaminated water(Tyco)
- Food packaging containing PFAS
- Equipment that used PFAS during food processing.



# PFAS IS NOT REGULATED



Business

Licenses & Regulations

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Contact

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## ▲ Are PFAS regulated by the federal or state government?

Currently, there is limited regulatory authority of PFAS at the federal level. In 2016, the EPA issued a non-enforceable [Lifetime Health Advisory level for PFOA and PFOS](#) [exit DNR] of 70 parts per trillion (ppt) in drinking water. Presently, PFAS is not a hazardous substance subject to the federal Superfund cleanup law or a hazardous waste subject to federal Resource Conservation and Recovery Act (RCRA) hazardous waste treatment, disposal or storage requirements.

The state DNR currently has authority to require that persons who cause hazardous substance discharges of PFAS or environmental pollution to take action to protect human health and the environment under [Chapter 292, Wisconsin Statutes](#) [exit DNR].

DNR's Water Quality Program has authority to regulate discharges to surface water on a site-by-site basis in accordance with the federal Clean Water Act. Solid waste containing PFAS must be managed in accordance with state law.

With respect to groundwater, the [Wisconsin Department of Health Services \(DHS\) has recommended a groundwater standard of 20 ppt](#) [exit DNR], which is a combined standard for PFOS and PFOA. In order for that recommended standard to be implemented as law, the groundwater standard will need to go through the state's formal rulemaking process. Until that time, persons undertaking groundwater cleanups of PFAS contamination are required to work with DNR and DHS to establish a site-specific cleanup standard.

For more information, visit [NR 140 groundwater quality standards update](#).

# AGENCY FOR TOXIC SUBSTANCES AND DISEASE REGISTRY (ATSDR)

The ATSDR CDC issued a 2018 draft report that states the current EPA HAL 70 PPT may be too high by as much as a factor of ten and suggests an appropriate HAL could be as low as:

- **7 PPT for PFOS**
- **10 PPT for PFOA**

# AGENCY FOR TOXIC SUBSTANCES AND DISEASE REGISTRY (ATSDR)

## How long do PFAS remain in the body?

Some PFAS remain in the body for a long time. However, biological half-life varies by chemical species. The half-life of chemical is the amount of time it takes for 50% of the substance to be metabolized and/or eliminated from the body. A few examples are: <sup>2,3,4,5,6</sup>

**PFBA:** 72 to 81 hours      **PFOA:** 2.1 to 10.1 years

**PFOS:** 3.3 to 27 years      **PFHxS:** 4.7 to 35 years

**Note:** PFAS compounds like pentafluorobenzoic acid (PFBA) with shorter carbon chains may have a shorter half-life

**Note:** Because some PFAS are persistent in the human body, blood PFOS and PFOA levels can be a surrogate for total PFAS body burden and provide a better indication of the PFAS dose to a target organ than an externally measured dose like PFAS water concentration.

**Agency for Toxic Substances and Disease Registry (ATSDR 12-6-2019)**

# AGENCY FOR TOXIC SUBSTANCES AND DISEASE REGISTRY (ATSDR)

## What are PFAS levels in the U.S. population?

Most people in the United States and in other industrialized countries have measurable amounts of protein-bound and free PFAS in their blood.

The National Health and Nutrition Examination Survey (NHANES) is a survey of the health and nutritional status of U.S. adults and children that has been conducted by the National Center for Health Statistics.<sup>7</sup> Since 1999, NHANES has measured the concentrations of PFAS in the blood of a representative sample of the U.S. population (12 years of age and older). The average blood levels found in 2015-16 were as follows:<sup>8</sup>

(1,000 x 1 ppb = 1 ppt)

- **PFOA:** 1.56 parts per billion, with 95% of the general population at or below 4.17 parts per billion
- **PFOS:** 4.72 parts per billion, with 95% of the general population at or below 18.3 parts per billion
- **PFHxS:** 1.18 parts per billion, with 95% of the general population at or below 4.90 parts per billion

In 2006, EPA enlisted major manufacturers of PFOA- and PFOS-related products to join in a global stewardship program to phase out production and reduce facility emissions of these agents by 2015. This facilitated significant reductions in PFOA and PFOS by all participating companies as measured by EPA PFOA Stewardship Program goals between 1999 and 2016. According to 1999–2000 NHANES data, blood levels of PFOA and PFOS in the general population were 5.2 and 30.4 parts per billion, respectively. NHANES data in 2015-2016 for the general population found that PFOA was 1.56 parts per billion and PFOS 4.72 parts per billion, indicating decreases of PFOA and PFOS by 70% and 84% respectively.<sup>8</sup>

# WISCONSIN

- Wisconsin Department of Health has recommended a combined 20 PPT PFOA/PFOS for Groundwater
- For comparison, the allowable limits for Arsenic in drinking water is 500 times higher than PFAS. In other words, drinking small amounts of rat poison is safer than drinking extremely smaller amounts of PFAS.

# AFFF PFAS CONTAMINATION SOURCE #1 TYCO/JOHNSON CONTROLS FIRE TECHNOLOGY CENTER



# CONTAMINATION EXAMPLES

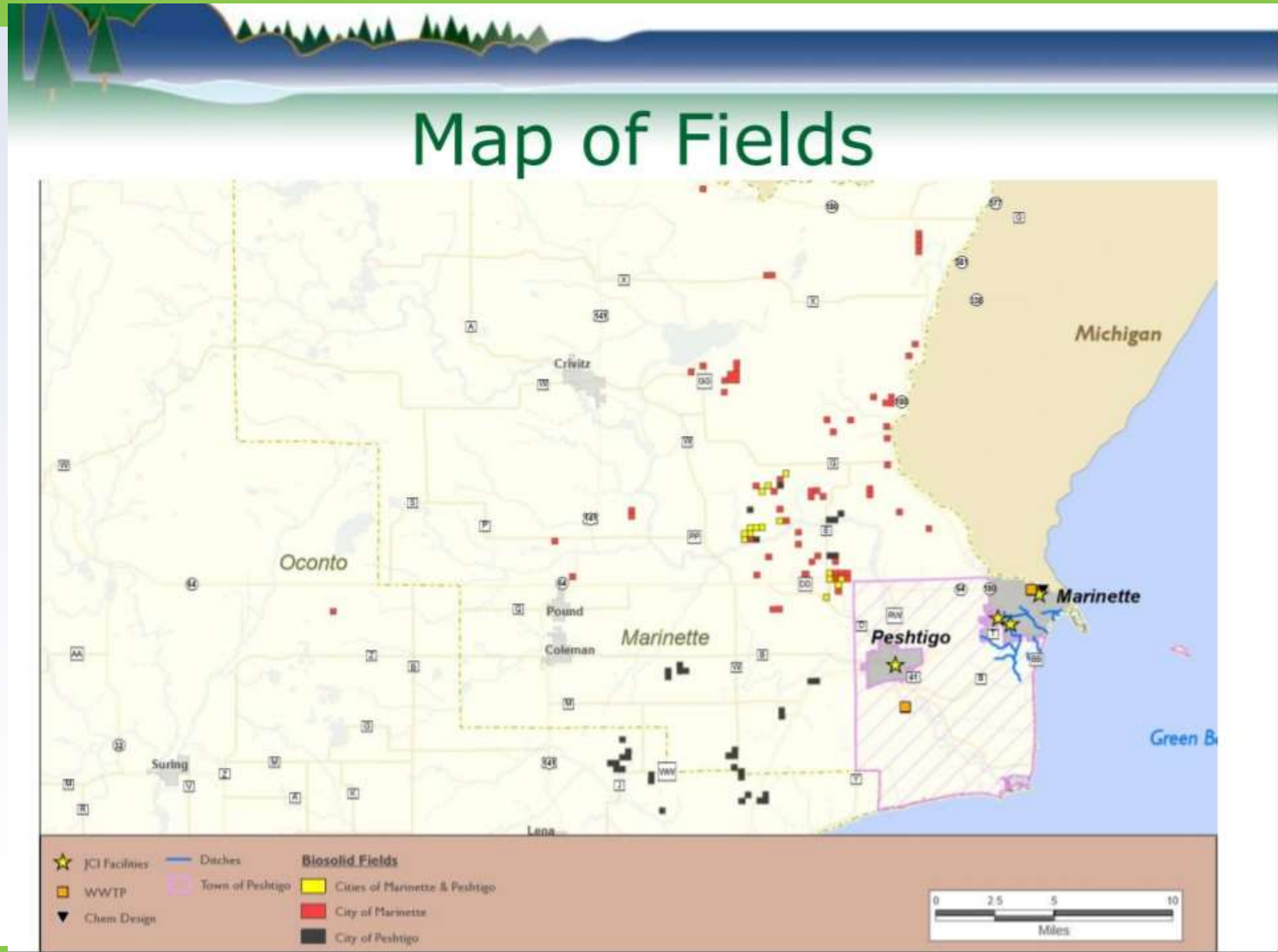


# BIOSOLIDS

- A bi-product of the Wastewater Treatment are biosolids or sludge. This sludge was tested and found to have significant PFAS concentrations of **210,000 PPT PFOS, and 10,000 PPT PFOA**. This sludge, which would have normally been spread on agricultural land, was held at the plant over a year because of its contamination. It was finally sent at a cost of \$3 million to a landfill in Oregon.



# BIOSOLIDS DISPOSAL LOCATIONS



# **Activism and Working to protect a community from PFAS**

- **Learn the Facts**
- **Key Individuals**
- **Have a Plan:**
  - **Publicity**
  - **Education**
  - **Action - Solutions**
  - **Pushback Response**

# Learn the Facts

- **PFAS in General**
- **PFAS in other States**
- **PFAS in Wisconsin**
- **Wisconsin DNR BRRTS (Bureau for Remediation and Redevelopment Tracking System )**
- **Networking**

# Key Individuals

- **Persons Directly Affected**
- **Persons with Professional Credentials**
- **Persons with Community Connections**
- **Persons with social media and graphic/print media skills**

# Publicity

- **Get to know your local reporters and feed them information and offer insights**
- **Encourage TV stations to cover events and solicit stories on breaking PFAS news**
- **Issue Press Releases**
- **Write Letters to the Editor in the local newspaper**
- **Do radio and TV interviews**



# Broadcast Media

## AG Josh Kaul joins in PFAS listening session in Marinette



by: [Erinn Taylor](#)

Posted: Dec 18, 2019 / 05:40 PM CST / Updated: Dec 18, 2019 / 05:40 PM CST

TV 5 WFRV Green Bay

# Education

- **Print literature on the facts about PFAS in general and the local impact of contamination**
- **Hold Public Informational meetings: Present Your side of the story**
- **Facebook Page and e-mail contact list**



# Local Printed Information



TV 5 WFRV Green Bay

# Facebook



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# Action - Solutions

## What Should be Done? (April 2019)

- Continuous testing of municipal drinking water for PFAS
- Stop permanently all discharge of AFFF foam products into the Sanitary Sewer System
- Test all 72 fields and private wells where utility biosolids have been spread
- Continuous testing of Influent and effluent at the Wastewater Treatment Plant
- Sump pump discharge testing for PFAS contamination
- Voluntary Tyco Employee testing for PFAS health risks
- Voluntary Baseline testing of all school children for PFAS related health risks
- Voluntary Fire Fighter, Shipyard workers, Wastewater Treatment Plant workers, and other workers exposed to fire suppression foam testing for PFAS health risks
- Develop dewatering protocols for all street and other construction projects where PFAS contaminated groundwater could be present
- Placement of warning signs along ditches where surface water PFAS contamination exists
- “Do not Eat” any wildlife killed within a five mile radius of the contamination plume advisory should be issued
- Deer and other wildlife testing for PFAS
- **A containment and clean-up plan should be developed by Tyco by the end of 2019 for all contaminated soil, groundwater, and private wells**

## **Speaker's Task Force on Water Quality Testimony 8-29-2019**

### **AB 323/SB 310:**

AN ACT to create 299.48 of the statutes; relating to: regulating fire fighting foam that contains certain contaminants and granting rule-making authority.

“Had this been the law twenty years ago, none of the PFAS well contamination from the Tyco Fire Technology Center would have happened. AFFF fighter fighting foam containing PFAS was used for training purposes and testing of the foam mixtures was done without proper containment measures to ensure it did not enter the environment and groundwater.

Additionally, we have requested and Rep. Nygren has agreed to introduce an amendment that would prohibit the disposal of fire fighting foam containing PFAS through sanitary sewers which would affect future biosolid contaminations in wastewater treatment facilities across Wisconsin.

We strongly support this bill with this amendment and thank our Rep. John Nygren, and Senator Cowles for their sponsorship of it.”

**Update: Passed into law and signed by the Governor February 2020 with amendments requested by local activists.**

## Speaker's Task Force on Water Quality Testimony 8-29-2019

### CLEAR ACT AB 321/SB 302:

AN ACT to amend 292.31 (1) (d) (intro.);..... of the statutes; relating to: setting standards for certain contaminants, providing information relating to off-site disposal of certain waste, extending the time limit for emergency rule procedures, providing an exemption from emergency rule procedures, granting rule-making authority, and making an appropriation.

“There are no Federal or State Regulations to protect our drinking water, groundwater, or surface water from PFAS contamination. The Town of Peshtigo residents were shocked and angered as they learned that there were no rules and no limits on the poison that had contaminated their wells and drinking water. PFAS is the water quality challenge of the 21<sup>st</sup> Century because it does not break down in the environment and it will take all of the rest of this Century to clean it up. We must start by setting the rules so industry and municipal utilities can begin the process to protect our residents.

We strongly support this bill and thank our Senator Dave Hansen and Senator Miller and Rep. Gruszynski for their sponsorship of it.”

**Update: CLEAR Act supplanted by bipartisan legislation SB 772/773 and AB 842/843. Voted out of both Senate and Assembly committees and killed by the Speaker by not scheduling it for vote in the Assembly before adjournment.**

# Pushback Response

- **Local Industry**
- **Local Utility/Municipality**
- **State Industry: WMC, Wisconsin Paper Council**
- **National: American Chemistry Council**
- **Federal Government**
- **State Government**

# PFAS MYTH example #1

- *“PFOA and PFOS are no longer manufactured in the United States therefore the contamination being found is just legacy pollution.”* **NOT TRUE.** There were thousands and thousands of gallons of biosolids being held at the Marinette Wastewater Treatment Plant that were highly contaminated with PFOA and PFOS collected between 2018 and 2019 That’s not legacy pollution. Shorter chain compounds have been found to be unstable and transition to other forms of PFAS such as PFOA and PFOS. Products containing PFOA and PFOS are still being imported into the country.

# PFAS MYTH example #2

- ***“Only PFOA and PFOS are a health concern.”***
  - The lack of studies on the GenX and other PFAS compounds are not “proof” of their safety but represent the opposite: “no proof” of their safety
  - Vermont for example, already includes some GenX compounds in their combined HAL of 20 PPT
  - North Carolina recently won a \$12 million settlement against the Chemours Fayetteville Works Plant for GenX contamination of the City’s water supply



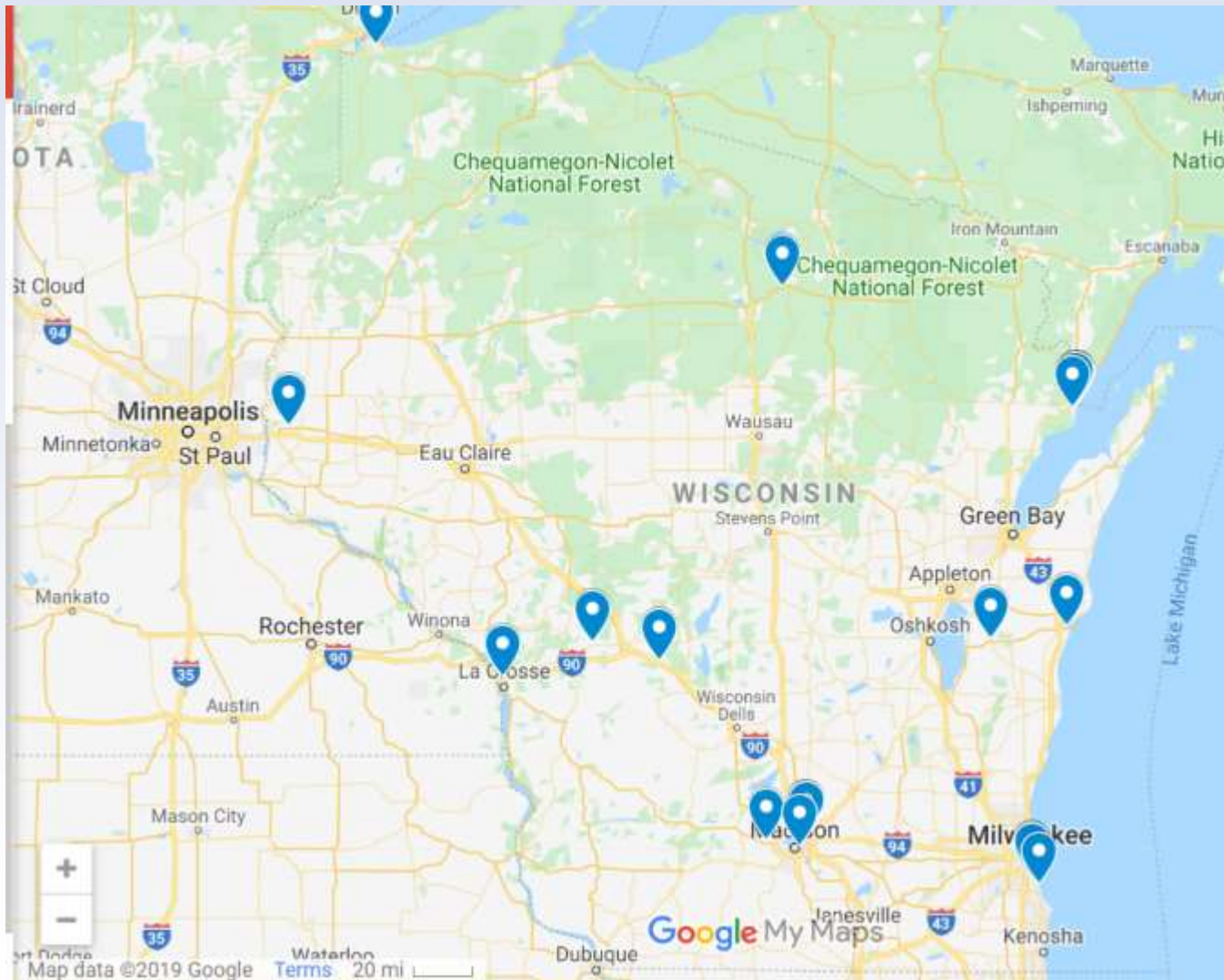
# Wisconsin Manufacturers and Commerce (WMC)

- **“We will provide the input we can to ensure that we ultimately end up with rules that balance environmental and public health interests with economic and cost concerns.” Feb. 7, 2020 - Scott Manley WMC**
- **Said the man representing industries that have caused the poison to be introduced into the environment and into our blood serum. How much “balancing” was done before industry decided PFAS was safe to use and carelessly discard?**

# **“COST vs BENEFIT ANALYSIS”**

- **What cost is too high to protect our families from cancer?**
- **What cost is too high to protect young children from life-long immune deficiencies, learning disabilities, and behavioral problems?**
- **How much poison should your family be forced to consume so industry can avoid the costs of regulation?**
- **How much property value loss is acceptable to avoid regulation of PFAS exposure?**

# Coming to a Neighborhood Near You



# WISCONSIN

**There are 5.8 Million Stakeholders in Wisconsin on the issue of water quality. PFAS is a poison. PFAS is in the blood serum of every living person. PFAS can make you sick. PFAS can kill you. We must do everything we can to protect our health and safety. We must pass legislation to protect our drinking water, our agricultural resources, our food, our environment, and our property values from the scourge of PFAS contamination.**