Michigan Safety Conference

Michigan PFAS Action Response Team (MPART) April 16, 2024

Abigail Hendershott, Executive Director Michigan PFAS Action Response Team (616) 888-0528 HendershottA@Michigan.gov

Agenda

MPART Mission: Protection of Public Health and the Environment

- Overview of Work
- Focus Areas Source Reduction
- MPART Updates
 - Sampling Guidance Updates
- National Perspective
 - EPA Updates

Establishment of MI PFAS Action Response Team

MPART:

- **Executive Directive** 2017
- Executive Order 2019
- Unique Multi-Agency Approach
- Leads Coordination and Cooperation Among All Levels of Government
- Directs Implementation of State's strategy

MDOT

Collaborating with MPART to investigate human exposure to PFAS AFFF foam at airports where MDOT plays a role

LARA

- Fire Marshalls Office
- Partnering on Occupational Exposures to fire fighters
- Partnering on PFAS response anywhere fire response has or can occur
- Promoting effective firefighting solutions that reduce the harm from PFAS AFFF

EMDOT

LARA

DNR

- Studying impacts on fish and wildlife
- Partner on Eat Safe Fish and Wild Game



MDARD

- Protect the commercial food supply
- · Protect domesticated animals
- Promote Michigan Agriculture
- Partner on investigations



EGLE

- · Lead for regulatory oversight of PFAS releases, investigations and responses
- Identify and characterize the source and extent of local release for orphan sites
- Coordinate to obtain necessary data to understand risk to public health and environment
- · Leading the clean water and environmental justice advocacy





MPART

MDHHS

- Identify & characterize human contact with PFAS
- Assess human exposure, determine risk & harm



DMVA

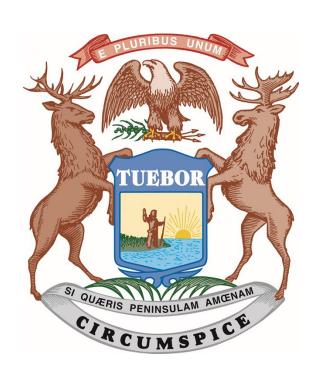
· Collaborating on PFAS exposure investigations on current and former military properties



- Trusted Resource for health in the community
- Knowledge appropriate staff to work with concerned community members
- · Operate according to the Michigan Public Health Code

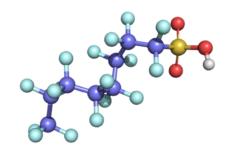


Michigan PFAS Action Response Team (MPART)



- Executive Order 2019-03
- Unique Multi-Agency Approach
- Leads Coordination and Cooperation Among All Levels of Government
- Directs Implementation of State's Action Strategy

Per- and Polyfluoroalkyl Substances (PFAS)



What are they?

- Strong Carbon-Fluorine Bonds
- Surfactants
- Highly Stable
- Repel Water, Oil, Fat, and Grease
- Began Developing in 1940s
- 5,000+ Compounds Today

Why the concern?

- Widespread through the ecosystem
- Don't Break Down Easily Hard to Get Rid of
- Bioaccumulate Build Up in Our Bodies
- Some PFAS May Affect Health
- Some emerging science/information
- Lack of Federal Standards

Potential PFAS Uses











































Michigan's Approach to PFAS

MPART was established as enduring body to address the threat of PFAS contamination in Michigan, protect public health, and ensure the safety of Michigan's land, air, and water.

- Proactive in identifying public health risks
- Evaluate the potential PFAS issues by prioritization of industries/sectors
- Sample groundwater to identify public health risks
- Identify the sources
- Implement source controls on industrial discharges and WWTP's

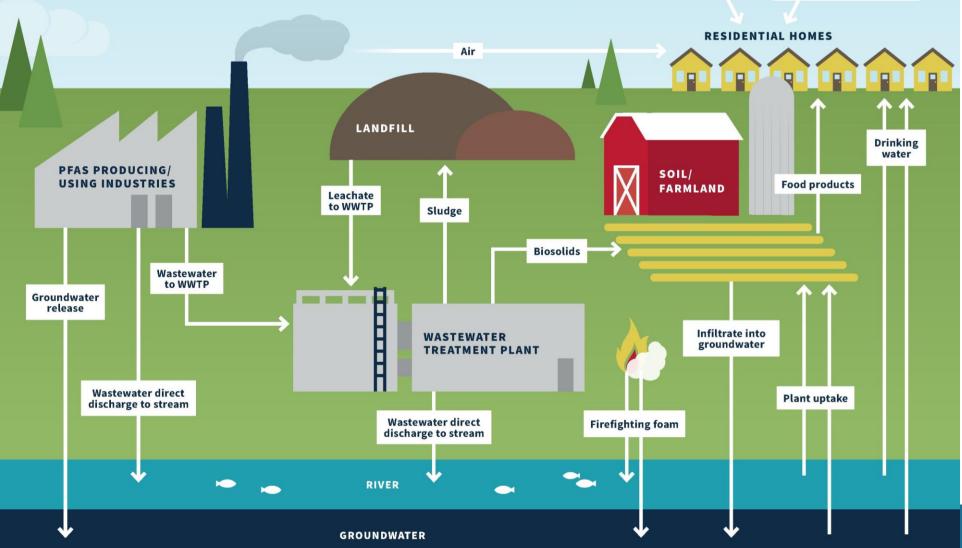
PFAS Cycle

PFAS TREATED MATERIAL

(such as aerosol, fabric protectors, stain resistant carpeting/raincoats/shoes)

PFAS TREATED FOOD PACKAGING

(such as grease-resistant paper products)







Michigan's Drinking Water and Groundwater Cleanup Standards

Compound	Standards		
PFNA	6 ppt		
PFOA	8 ppt		
PFOS	16 ppt		
PFHxS	51 ppt		
GenX (HFPO-DA)	370 ppt		
PFBS	420 ppt		
PFHxA	400,000 ppt		

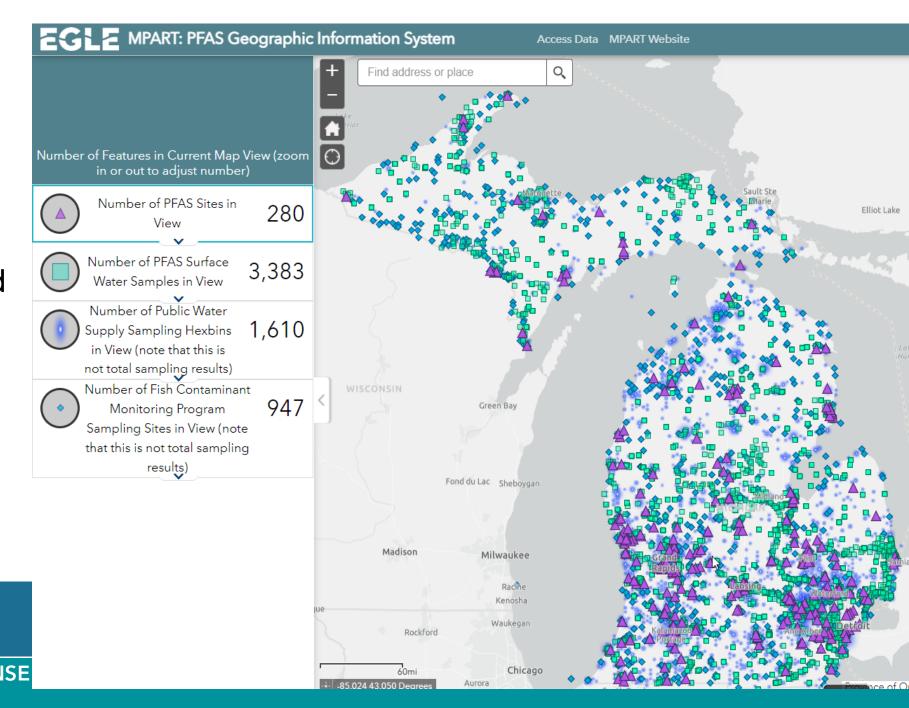
Michigan Surface Water Quality Values

Compound	Water Quality Value		
PFOA	170 ppt		
If Drinking Water Source	66 ppt		
PFOS	12 ppt		
If Drinking Water Source	11 ppt		
PFBS	670,000 ppt		
If Drinking Water Source	8,300 ppt		
PFHxS	210 ppt		
If Drinking Water Source	59 ppt		
PFNA	30 ppt		
If Drinking Water Source	19 ppt		

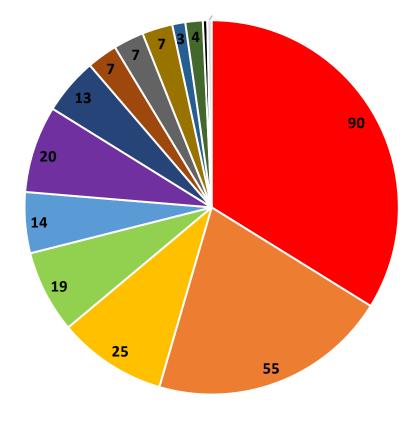
Michigan's Rule 57 Water Quality Values apply to NPDES discharges

PFAS work:

- PFAS sites identified
- Surface waters sampled
- Public water sampled
- Fish sampled

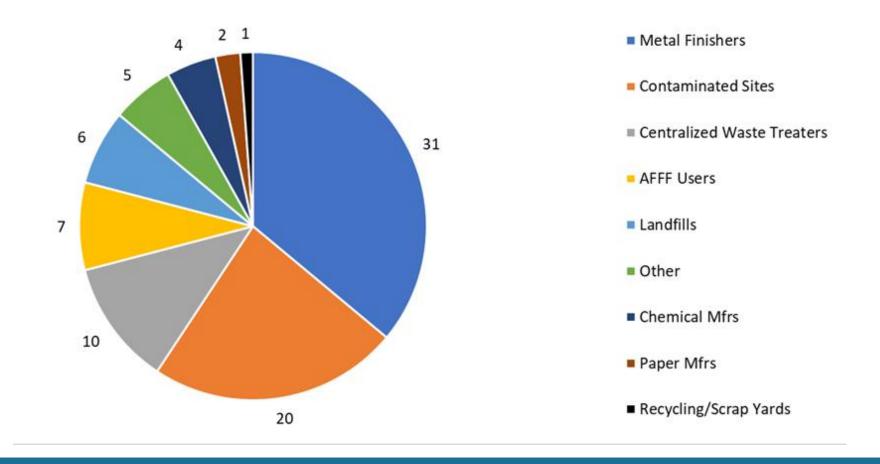


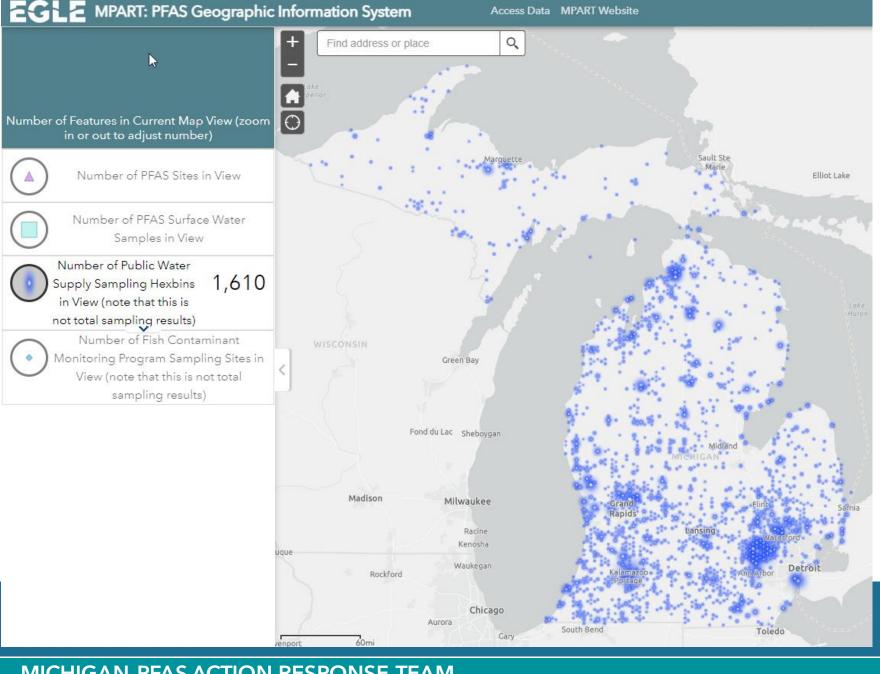
Types of PFAS Sites Identified



- Landfill
- Industrial (transportation-related, chemical and other manufacturing)
- Plating
- Airport
- Military
- Wastewater (wastewater treatment plants, a car wash, and a school)
- Fire Related
- Laundromat/Dry Cleaner
- Unknown
- Paper Manufacturing
- Refinery
- Tannery
- Hazardous Waste
- Power Station

Michigan PFAS Pretreatment / Reduction by Industry Sector Indirect Dischargers Only





Michigan Public Water Supply Sampling

MI PFAS MCL Compliance Monitoring

	Supplies Sampled	w/ Non- Detect for PFAS	w/ Detections ≤ MI PFAS MCL(s)	w/ Detections > MI PFAS MCL(s)	w/ Current MCL Exceedances
Community Water Supplies (Type I)	1,139	945	182	12	2
Noncommunity Water Supplies (Type II)	1,387	1,204	161	22	6
Total	2,526	2,149	343	34	8

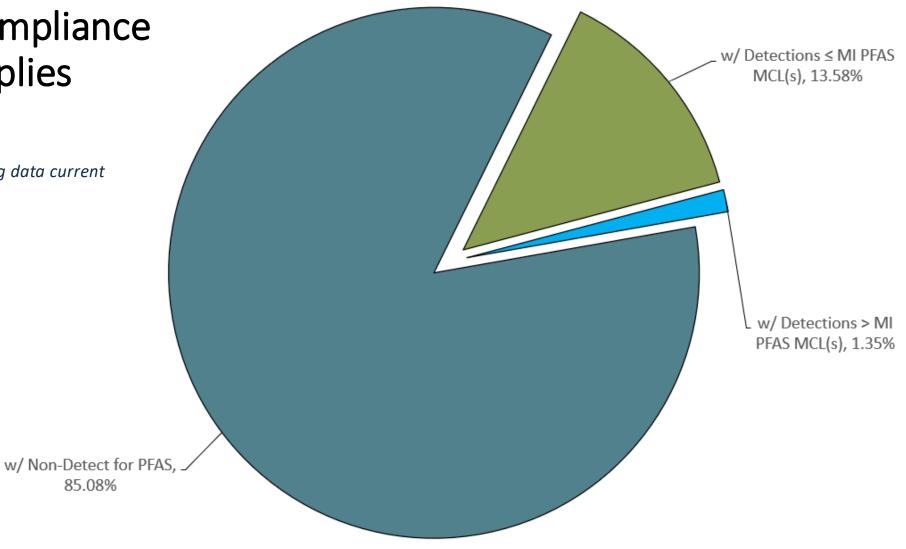
*MI PFAS MCL compliance monitoring data current as of 3/18/2024.

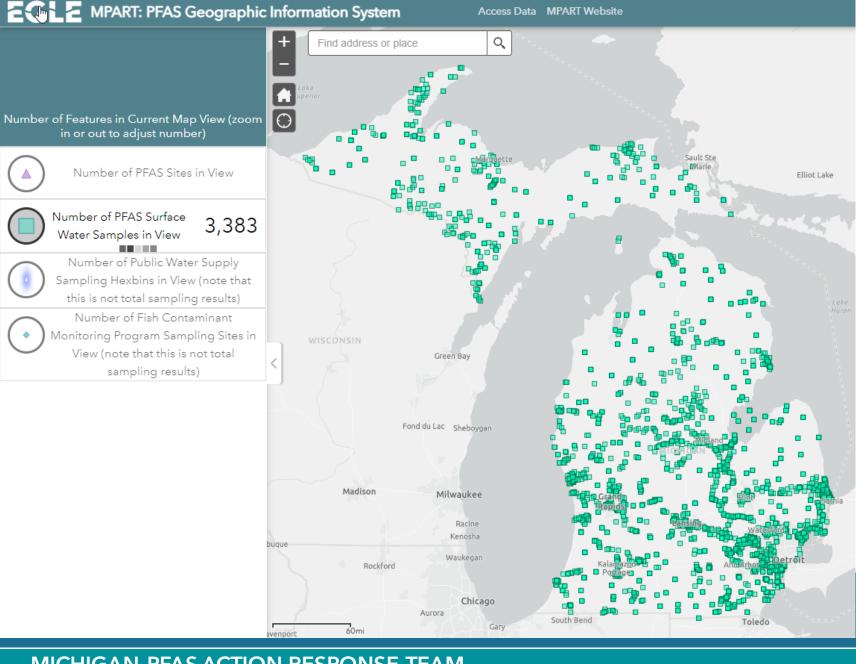


MI PFAS MCL Compliance **Monitoring: Supplies** Sampled

85.08%

*MI PFAS MCL compliance monitoring data current as of 3/14/2024.





Michigan Surface Water Sampling

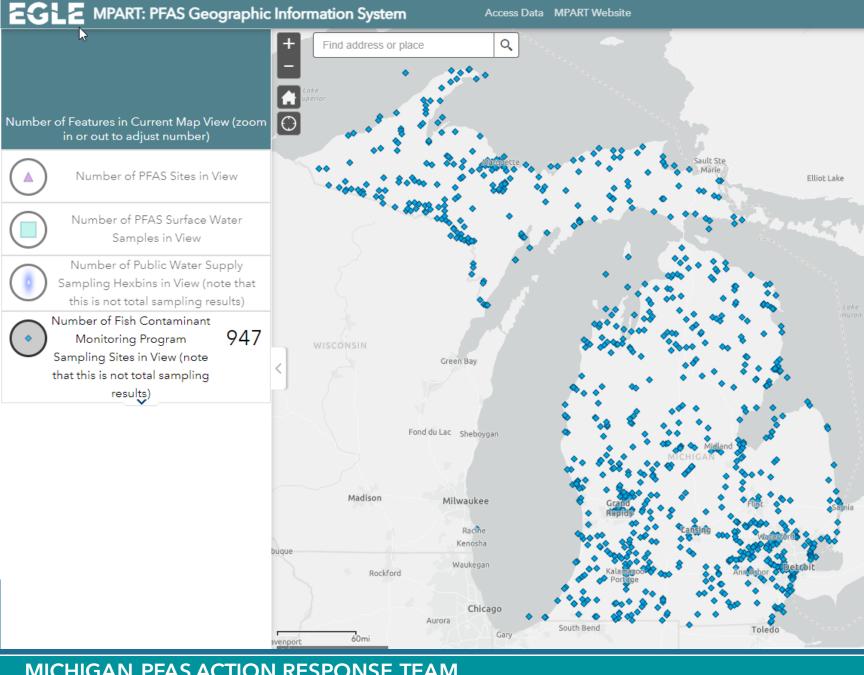
Sampling Lakes and Streams

 In 2023, collected 504 water samples from lakes and streams from 45 different watersheds



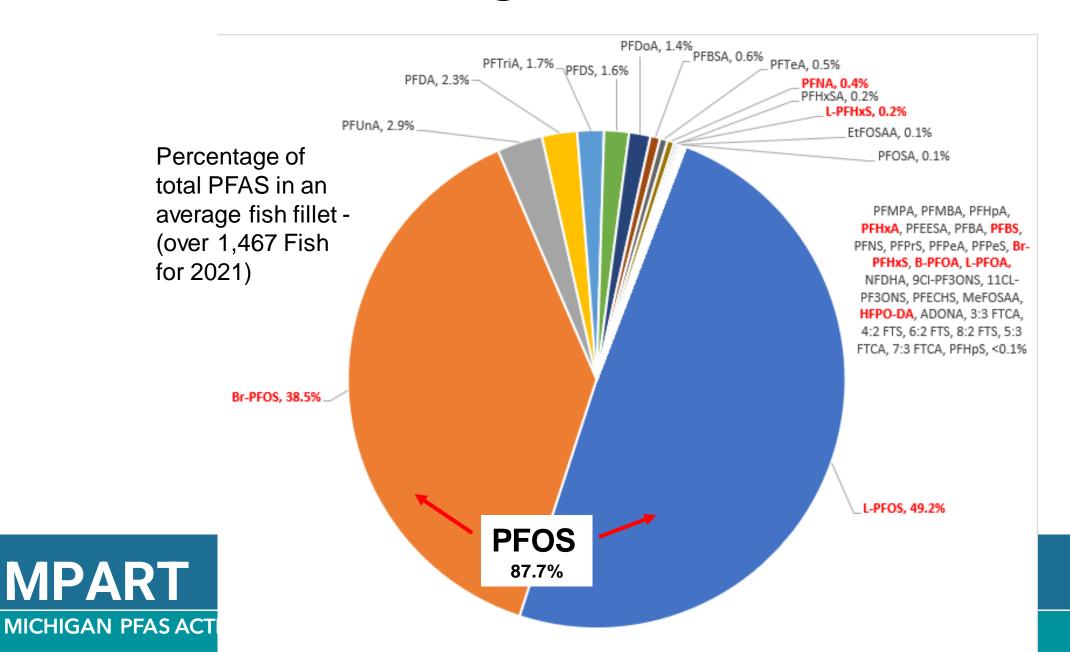


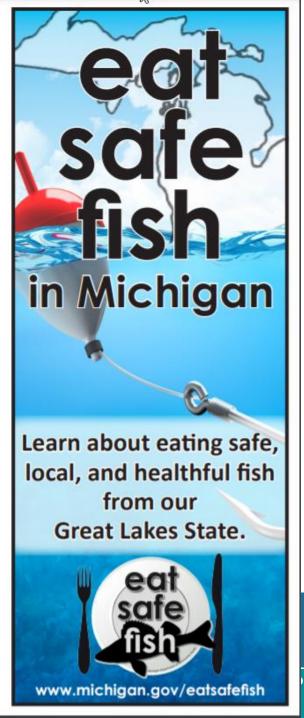




Michigan Fish Sampling

Michigan Fish Results

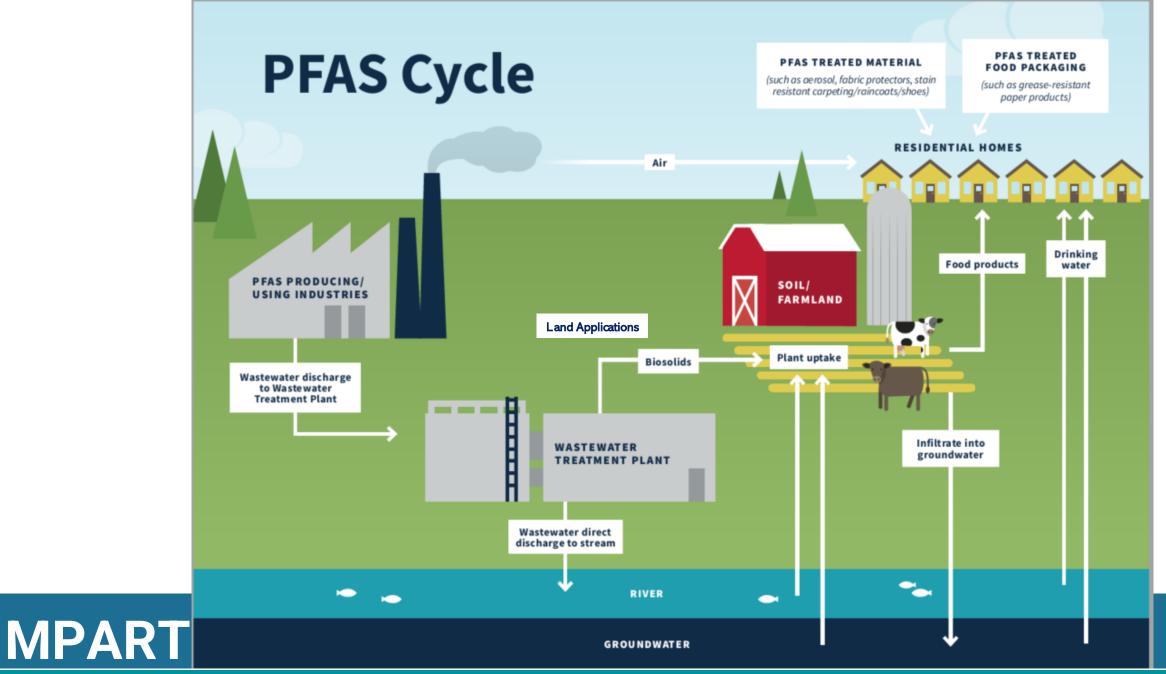




Fish Sampling

• In 2023, **1,551 fish** from 63 **different water bodies** to determine the need for **fish consumption advisories**







Source



GLE MICHIGAN DEPARTMENT C ENVIRONMENT, GREAT LAKES, AND ENLIN

LAND APPLICATION OF BIOSOLIDS CONTAINING PFAS

Interim Strategy

Updated April 2022

Have not allowed industrial impacted biosolids to be land applied since 2018

2024 Changes to Industrial Impacted Biosolids:

- Includes PFOA as well as PFOS
- Lowers industrial impacted threshold
- Mitigation and sampling and source identification above 20 ppb
- Same requirements to sample before application

Analytical Results/Source Investigation and Control

PFOS at or above 125 µg/kg.

- Biosolids exceeding 125 μg/kg PFOS are deemed to be industrially impacted and cannot be land applied.
- Immediately notify EGLE, WRD staff.
- Sample effluent and investigate potential sources to develop a source reduction program, if they have not already done so under the IPP PFAS Initiative.

native treatment or disposal of solids.

√ove 50 μg/kg but below 125 μg/kg.

mediately notify EGLE, WRD staff.

ample effluent and investigate potential sources to develop a source reduction program, gey have not already done so under the IPP PFAS Initiative.

duce overall loading to the site, reduce land application rates to no more than tons per acre (or submit an Alternative Risk Mitigation Strategy).

MICHIGAN STRATEGY FOR LAND APPLICATION OF BIOSOLIDS CONTAINING PFAS (UPDATED 2022)

PFOS above 20 µg/kg, but below 50 µg/kg.

- EGLE recommends investigating sources and sampling the WWTP effluent for PFAS. Guidance can be obtained from the WRD IPP PFAS staff.
- If a WWTP on the Permit Cycle (five year) sampling frequency has a PFOS result above 20 µg/kg, the WWTP will be required to sample each year the WWTP intends to land apply, prior to land application.

PFOS at or below 20 µg/kg.

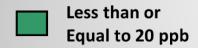
 This number is based on the averages derived from the Summary Report: Statewide Biosolids and WWTP Study and other available data. No additional requirements to comply with the Interim Strategy.

WWTPs are encouraged to collect more frequent PFAS samples for biosolids and may choose to sample annually, even if not required to do so. The WRD recommends including PFAS in routine sampling of biosolids prior to land application.

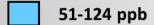
Communication to Landowners/Farmers

Prior to land application at a site, provide the PFOS analytical results to the landowner and farmer (if different) via hard copy or electronic mail. Also provide EGLE biosolids staff contact information and the additional PFAS-related resources provided in the PFAS Landowner/Farmer section of the PFAS Land Application Workgroup Web page.

2023 Biosolids Interim Strategy WWTP PFOS Levels

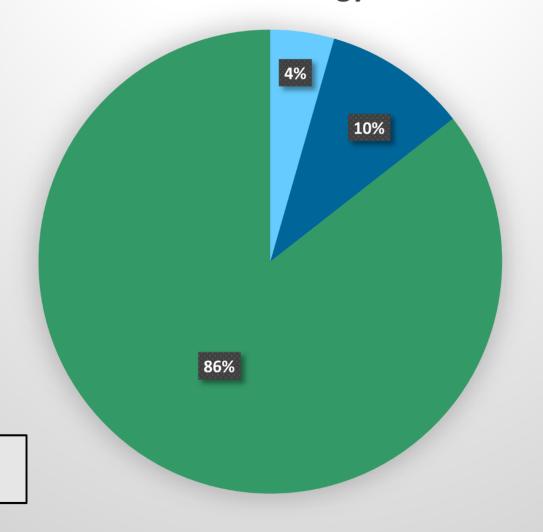






125 ppb or Above

Average PFOS Level: 11.49 ppb Median PFOS Level: 7.1 ppb



Number of WWTPs by Tier

Less than or Equal to 20 ppb: 77

21 - 50 ppb: 9

51 - 124 ppb: 4

125 ppb or Above: 0

Total WWTPs: 90

Health Studies - Updates

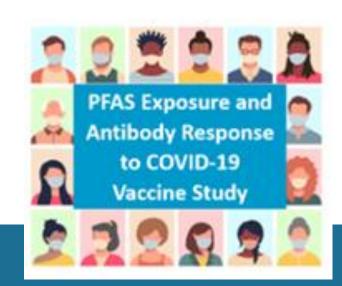






Biomonitoring and PFAS Health Studies



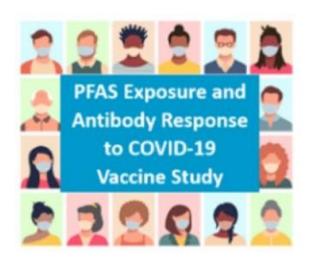




MPART

https://www.michigan.gov/mdhhs/safetyinjury-prev/environmentalhealth/topics/dehbio

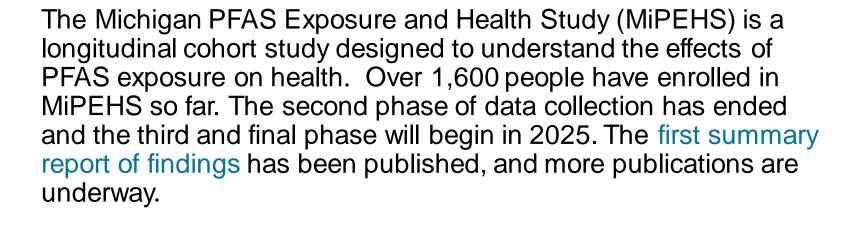




The PFAS in Firefighters of Michigan Surveillance (PFOMS) project is a statewide initiative with the primary goal of determining blood concentrations of PFAS in Michigan firefighters. Over 1,000 firefighters were enrolled before the end of data collection in September 2023. Data analysis has begun. To date, 96% of participants have learned their blood PFAS levels.

The PFAS exposure and antibody response to COVID-19 vaccine study uses a longitudinal design to understand an important area of PFAS health effects. Over 250 people participated in this cutting-edge research. Data collection and analysis has been completed. All participants learned their blood PFAS levels. Results were published in a leading environmental health scientific journal (nature.com).







The Multi-site Health Study (MSS) is a national cross-sectional study designed to research the effects of PFAS exposure on health. Over 600 Michiganders joined others from around the US to participate. Data collection for MSS has ended and data analysis will begin soon. Participants will learn their blood PFAS levels and the results of their health tests.

1/10/2024

Drinking Water PFAS
Concentrations and
Exposure Factors
Influencing Measured and
Predicted Serum PFAS
Concentrations

Report 2 of the North Kent County Exposure
Assessment





North Kent Exposure Assessment

Read the Second Report

The full North Kent County PFAS Exposure Assessment (NKCEA) report is available at: Michigan.gov/DEHBio.





The Oscoda Area Exposure Assessment is an investigation to understand exposure to environmental chemicals, including PFAS, among residents of the Oscoda area. Over 600 Oscoda area residents are enrolled in the project.



The Michigan Chemical Exposure Monitoring project is a statewide biomonitoring surveillance effort with the goal of characterizing the amount of 197 chemicals – including lead, mercury, and PFAS – in the blood and urine of adult Michiganders.

MPART Website Updates

Michigan.gov/pfasresponse

MDART

Michigan PFAS Action Response Team (MPART)

FAST FACTS: FY23

study on PFAS concentration in soils. Soils in publicly owned

npled for 28 different PFAS. The concentrations observed were icantly lower than other soils collected around the world. Some

by industrial or urban sources than others, such as those

eninsula. No significant correlations were found between

to address PFAS contamination in drinking water. Projects

ection of ~646 homes to existing municipal drinking

bor to treat PFAS

Alters to impacted residents.

artridges for PFAS-reducing filters.

ells that had not been previously sampled. ells that had been sampled in previous years.



MPART MICHIGAN PFAS ACTION RESPONSE TEAM

FAST FACTS: Fiscal Year 2023 Update

In fiscal year (FY) 2023, the Michigan legislature continued to support the state's response to PFAS by appropriating funding across the seven state agencies that make up the Michigan PFAS Action ерриоргазинд пыпштід астоза ине замен этаке agencies тим тпаже up тие мистідал ттъх испол Response Team (MPART). This funding allowed MPART to continue to be a national leader in

addressing PFAS. As of the end of FY 2023, MPART had identified 266 MPART PFAS Sites. A PFAS site is an area where PFAS contamination has been found in groundwater above Michigan's criteria, and the source of the

contamination has been identified. MPART is also actively conducting investigations at dozens of other areas around the state where the sources of the contamination are still unknown.

Total MPART Sites by Fiscal Year

EGLE

visory Workgroup (CAWG) members met 12 times with addition to meetings of four subcommittee groups: ne Public; Web Review; Preventative Measures; and

o update the MPART Geographic Information System provides PFAS sites, surface water data, and public data on an interactive online man

FAST FACTS: FY23

istrants from 44 states and 10 countries.

Update Gov Delivery emails to over 5,600





What makes MPART unique?

For every new site, drinking water exposure is evaluated.

MPART works with the local health departments to:

- Determine if there are residential/private drinking water
- Review well records to identify wells that are potentially atrisk of PFAS contamination.
- Access property and conduct water sampling of the wells identified to be potentially at-risk.
- Share results with well owners and among agencies, as well as provide filters to residents if necessary.
- Expand sampling areas if results indicate additional potential impact.

In addition to contacting local health departments and informing potentially impacted private well owners, MPART conducts public outreach to ensure awareness among: Local officials | Legislators | Tribal governments

ng with the Public

I the December 2022 Great Lakes PFAS Summit to







MPART FY2023 Fast Facts

In FY2023, the Michigan legislature supported the PFAS response by appropriating funding across the 7 state agencies that make up MPART. Learn more about the impact of that funding.

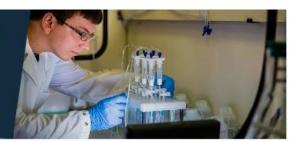
Fast Facts: Fiscal Year 2023 Update

MPART

MICHIGAN PFAS ACTION RESPONSE TEAM

New on the Web

Michigan PFAS Action Response Team (MPART)



What's new

- New site in Marquette County: West Marquette County Sanitation Authority Landfill
- New site in Gratiot County: 515 North Union Street (added 1/12)
- New site in Genesee County: Container Specialties, Inc. (added 1/5)
- · New section of the website: Resources for Residents



MPART FY2023 Fast Facts

In FY2023, the Michigan legislature supported the PFAS response by appropriating funding across the 7 state agencies that make up MPART. Learn more about the impact of that

Featured topics



NEW! Resources for residents



About MPART



Citizen's Advisory Workgroup



Drinking water



Public engagement



Investigations



Sampling guidance



Identified sites

MPART

MICHIGAN PFAS ACTION RESPONSE TEAM



Drinking Water & Wells v. Investigations & Sites v. Fish & Wildlife v. Public Engagement v. FAQs. About v.

(n) > Resources for Residents

Resources for Residents >>

We know there's a lot of information out there about PFAS. This page was created to make it easier for residents to find PFAS information.



PFAS basics

PFAS are human-made chemicals that can persist in the environment for many, many years.

Learn more about what PFAS are, including potential health risks, and how you can protect yourself and your

Learn more about PFAS >



PFAS can be in many things - on the clothes we wear, in the products we use, and even in the water we drink:

Learn more about what actions you can take, starting today, to limit your exposure.

Find out what you can do





Still have questions?

Check out our many Frequently Asked Questions - simply use the search bar on the page or choose from one of our categories, including air quality, pets and livestock health, crops and gardening, and more!

Find your question)









Research your well

How to use Wellogic >

Having a private residential well means you are responsible for your own water system. This includes taking care of and knowing the history of your well. Wellogic is a portal that provides an easy and efficient method to look up your well information.

Sample your private well

For private residential well owners, the first way to protect yourself from PFAS is to sample your well. Follow our detailed home sampling guidance to test your drinking water.

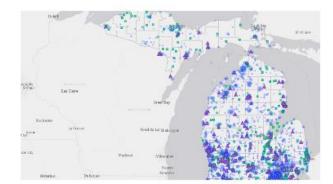
Home filters

If you have a private residential well, an inhome filtration system can help filter natural impurities (such as iron) and manmade contaminants (such as PFOS and PFOA).

Options for home sampling >



Choosing a filter >

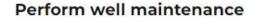






Find PFAS sites in your area

A PFAS site is a location where PFAS has been



Taking care of your water well is important;

Don't have a private well?

Approximately 75% of Michigan residents get



Updated Guidance

Michigan PFAS Action Response Team (MPART)



What's new

- New site in Marquette County: West Marquette County Sanitation Authority Landfill (added 1/23)
- . New site in Gratiot County: 515 North Union Street (added 1/12)
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NEW! Resources for residents



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Drinking water



Public engageme



Investigations



Sampling guidance



Identified sites



MICHIGAN DEPARTMENT OF NVIRONMENT, GREAT LAKES, AND ENERGY

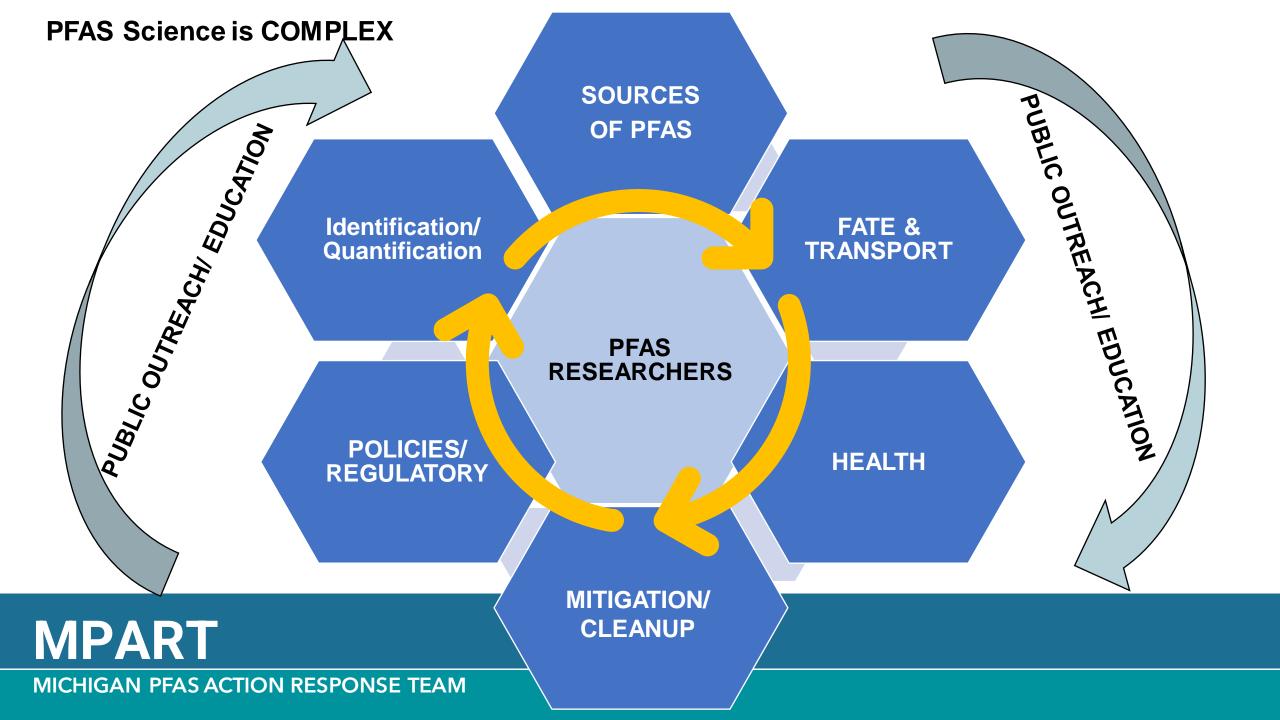
GENERAL PFAS SAMPLING GUIDANCE

This document contains an introduction to PFAS, biosecurity recommendations, and general recommendations to decrease the possibility of cross-contamination.

January 2024

Michigan.gov/EGLE 800-662-9278

MPAR1



From PFAS AFFF to Fluorine Free Foam updates



AFFF Pickup and Collection Program



- 65,000 Gallons of AFFF Collected from Fire Departments & Airports
- \$1.2M spent since 2019





2019: Airport eco test carts

2020: Legislation regulating AFFF

- Prohibits use in training
- Requires reporting for use
- Requires firefighter education
- AFFF collection and disposal

Treatment Technologies



- PFAS Destruction technologies
- PFAS Removal Filtration
- PFAS concentration
 - Mechanochemical Destruction of PFAS Captured from Surface Water
 - Foam Fractionation coupled with Hydrothermal Alkaline Treatment for PFAS Separation and Destruction
 - Reductive Defluorination of PFAS in AFFF Impacted Waters

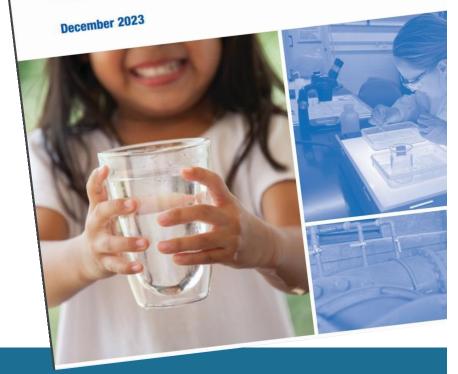


EPA Updates:





EPA's PFAS Strategic Roadmap: Second Annual Progress Repor



MPART

MICHIGAN PFAS ACTION RESPONSE TEAN



Environmental Topics V

Laws & Regulations ∨

Report a Violation 🗸

About EPA V



Per- and Polyfluoroalkyl Substances (PFAS)

Final PFAS National Primary Drinking Water Regulation

- Summary
- Supporting Materials
 - o General Information
 - o Communications Toolkit
 - o <u>Technical Information</u> for States, Tribes and Water Systems
 - o Español
- Regulatory Information and Supporting Documents
- Webinar Registration
- Background



Summary

On April 10, 2024, EPA announced the final National Primary Drinking Water Regulation (NPDWR) for six PFAS. To inform the final rule, EPA evaluated over 120,000 comments submitted by the public on the rule proposal, as well as considered input received during multiple following the proposed rule. EPA expects that over many years the final rule will prevent PFAS exposure in drinking water for approximately 10 serious PFAS-attributable illnesses.

EPA is also making upprecedented funding available to belo ensure that all people have clean and safe water. In addition to today's final rule

EPA Final Primary Drinking Water Regulations

On April 10, 2024, EPA announced the final National Primary Drinking Water Regulation (NPDWR) for six PFAS. To inform the final rule, EPA evaluated over 120,000 comments submitted by the public on the rule proposal, as well as considered input received during multiple consultations and stakehol following the proposed rule. EPA expects that over many years the final rule will prevent PFAS exposure in drinking water for approximately 100 million people, prevent the serious PFAS-attributable illnesses.

EPA is also making unprecedented funding available to help ensure that all people have clean and safe water. In addition to today's final rule, \$1 billion in newly available and territories implement PFAS testing and treatment at public water systems and to help owners of private wells address PFAS contamination.

EPA finalized a National Primary Drinking Water Regulation (NPDWR) establishing legally enforceable levels, called Maximum Contaminant Levels (MCLs), for six PFAS in draw contaminants with individual MCLs, and PFAS mixtures containing at least two or more of PFHxS, PFNA, HFPO-DA, and PFBS using a Hazard Index MCL to account for the cdrinking water. EPA also finalized health-based, non-enforceable Maximum Contaminant Level Goals (MCLGs) for these PFAS.

Compound	Final MCLG	Final MCL (enforceable levels)	
PFOA	Zero	4.0 parts per trillion (ppt) (also expressed as ng/L)	
PFOS	Zero	4.0 ppt	
PFHxS	10 ppt	10 ppt	
PFNA	10 ppt	10 ppt	
HFPO-DA (commonly known as GenX Chemicals)	10 ppt	10 ppt	
	1 (unitless)	1 (unitless)	
Mixtures containing two or more of PFHxS, PFNA, HFPO-DA, and PFBS	Hazard Index	Hazard Index	



The final rule requires:

• Public water systems must monitor for these PFAS and have three years to complete initial monitoring (by 2027), followed by ongoing compliance monitoring. Water systems

Interim Guidance on the Destruction and Disposal of Perfluoroalkyl and Polyfluoroalkyl Substances and Materials Containing Perfluoroalkyl and Polyfluoroalkyl Substances—Version 2 (2024)

INTERIM GUIDANCE FOR PUBLIC COMMENT
APRIL 8, 2024

EPA Guidance:

- Thermal Destruction
- Landfills
- Underground Injection

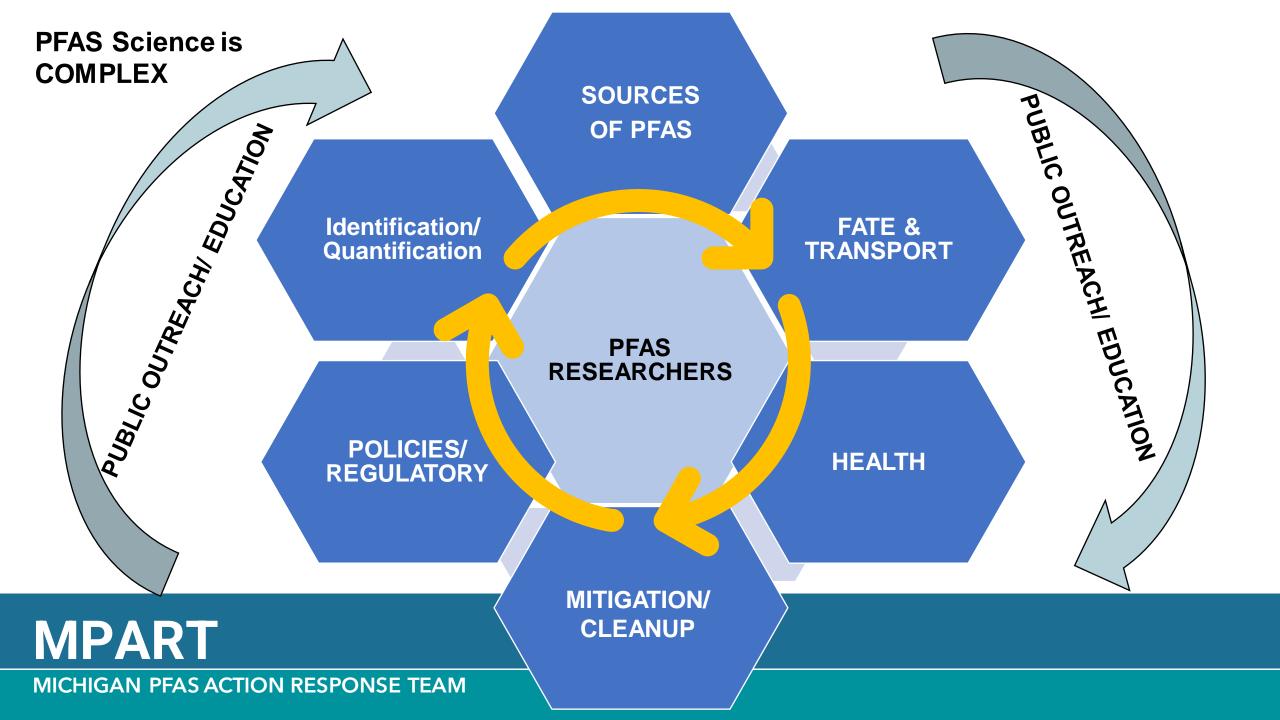


Comprehensive Environmental Response, Compensation, and Liability Act - CERCLA

• CERCLA Hazardous Substance Designation for PFOA and PFOS: On December 6, the CERCLA PFOA-PFOS hazardous substance final rule package was sent from EPA to the Office of Management and Budget for interagency review. EPA expects the rule to be published in early 2024.

Resource, Conservation, Recovery Act - RCRA

- EPA Announced New Steps to Protect Communities from PFAS and Other Chemicals of Concern.
- EPA intends to develop two rules that will strengthen states' ability to address PFAS under the Resource Conservation and Recovery Act (RCRA):
 - EPA is proposing to modify the definition of hazardous waste as it applies to cleanups at permitted hazardous waste facilities. This modification would assure that EPA's regulations clearly reflect EPA's and authorized states' authority to require cleanup of the full range of substances that RCRA intended, including emerging chemicals of concern, such as PFAS, that may present substantial hazards, at permitted facilities. Currently, the regulations do not clearly and accurately reflect the full authorities granted to EPA by Congress.
 - EPA is also proposing to amend its RCRA regulations to add multiple PFAS compounds as hazardous constituents. These PFAS--PFOA, PFOS, PFBS, HFPO-DA, PFNA, PFHxS, PFDA, PFHxA, and PFBA--would be added to the list of substances identified for consideration in facility assessments and, where necessary, further investigation and cleanup through the corrective action process at hazardous waste treatment, storage and disposal facilities.
 - A public comment period will follow publication of the proposals in the Federal Register. EPA will offer 30 days for commenting on the modified definition (first bullet above) and 60 days for commenting on listing PFAS as hazardous constituents (second bullet above). EPA said during a webinar yesterday that they hope to have these rules promulgated in a year.



Thank You

MICHIGAN PFAS ACTION RESPONSE TEAM (MPART)

www.Michigan.gov/PfasResponse













