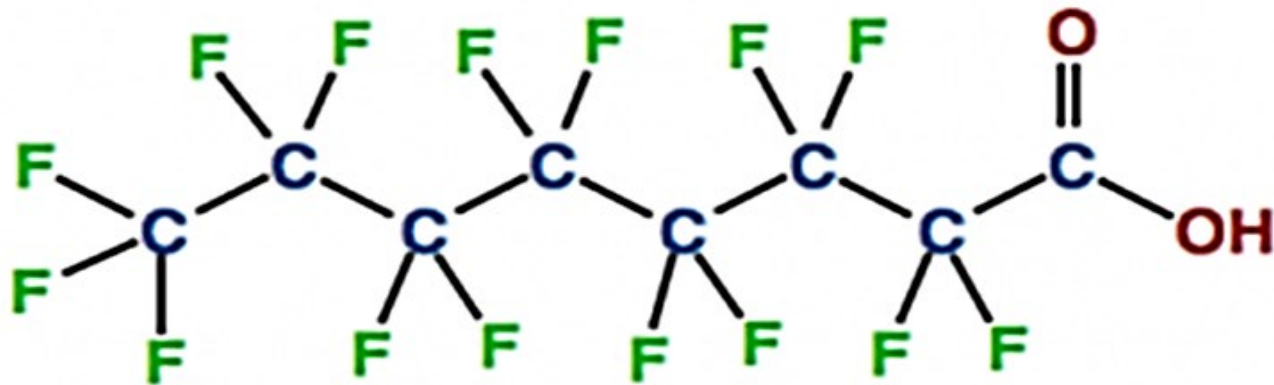


Michigan Taking Action on PFAS

Pellston PFAS Town Hall
February 12, 2020

Steve Sliver, Executive Director
Michigan PFAS Action Response Team
517-290-2943 | SliverS@Michigan.gov



PFOA - perfluorooctanoic acid

Per- and Polyfluoroalkyl Substances (PFAS)

- **Strong carbon-fluorine bonds**
- Surfactants
- Repel water, oil, fat, and grease
- Began developing in 1940s
- 5,000+ compounds today

PFAS Uses



Aerospace



Apparel



**Building and
Construction**



**Chemicals and
Pharmaceuticals**



Electronics



Oil & Gas



Energy



**Healthcare and
Hospitals**



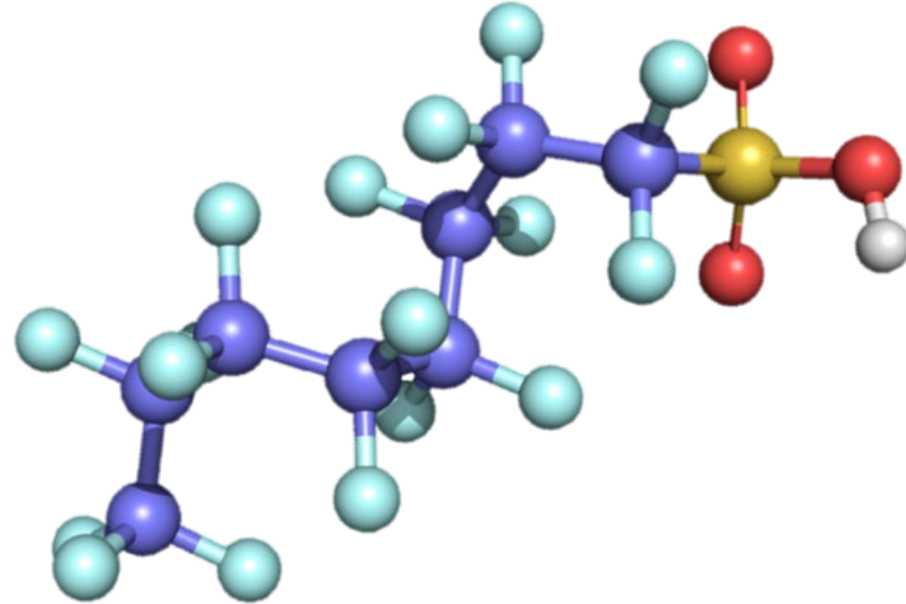
**Aqueous Film
Forming Foam**

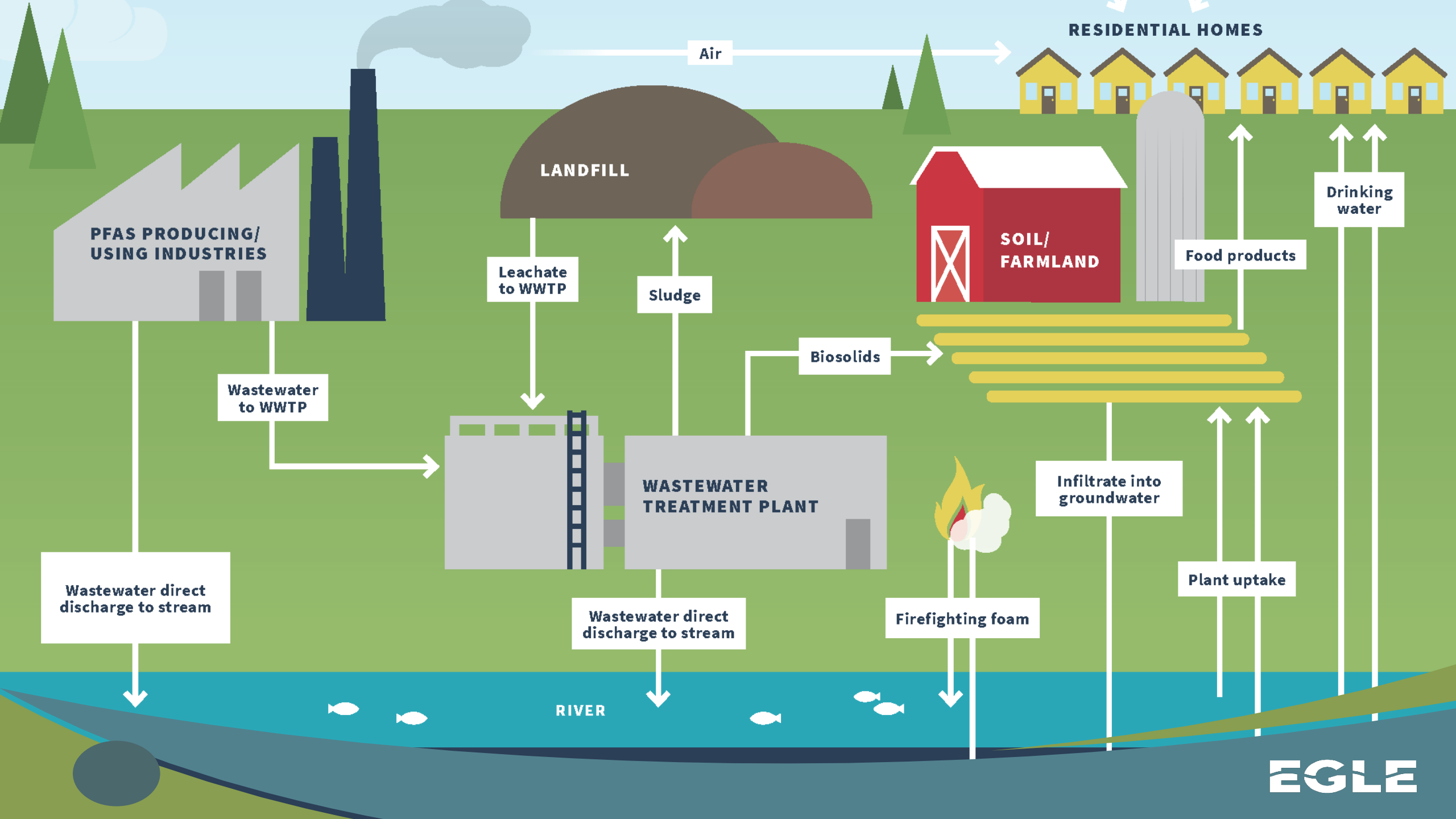


Semiconductors

Why the Concern?

- Widespread
- Don't break down easily - hard to get rid of
- Bioaccumulative – build up in our bodies
- Some PFAS may affect health
- Lack of information
- Lack of standards



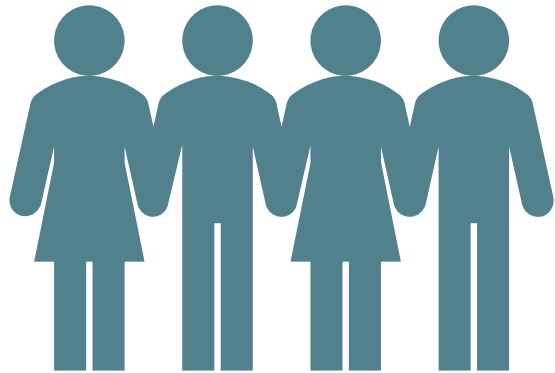


Michigan PFAS Action Response Team (MPART)

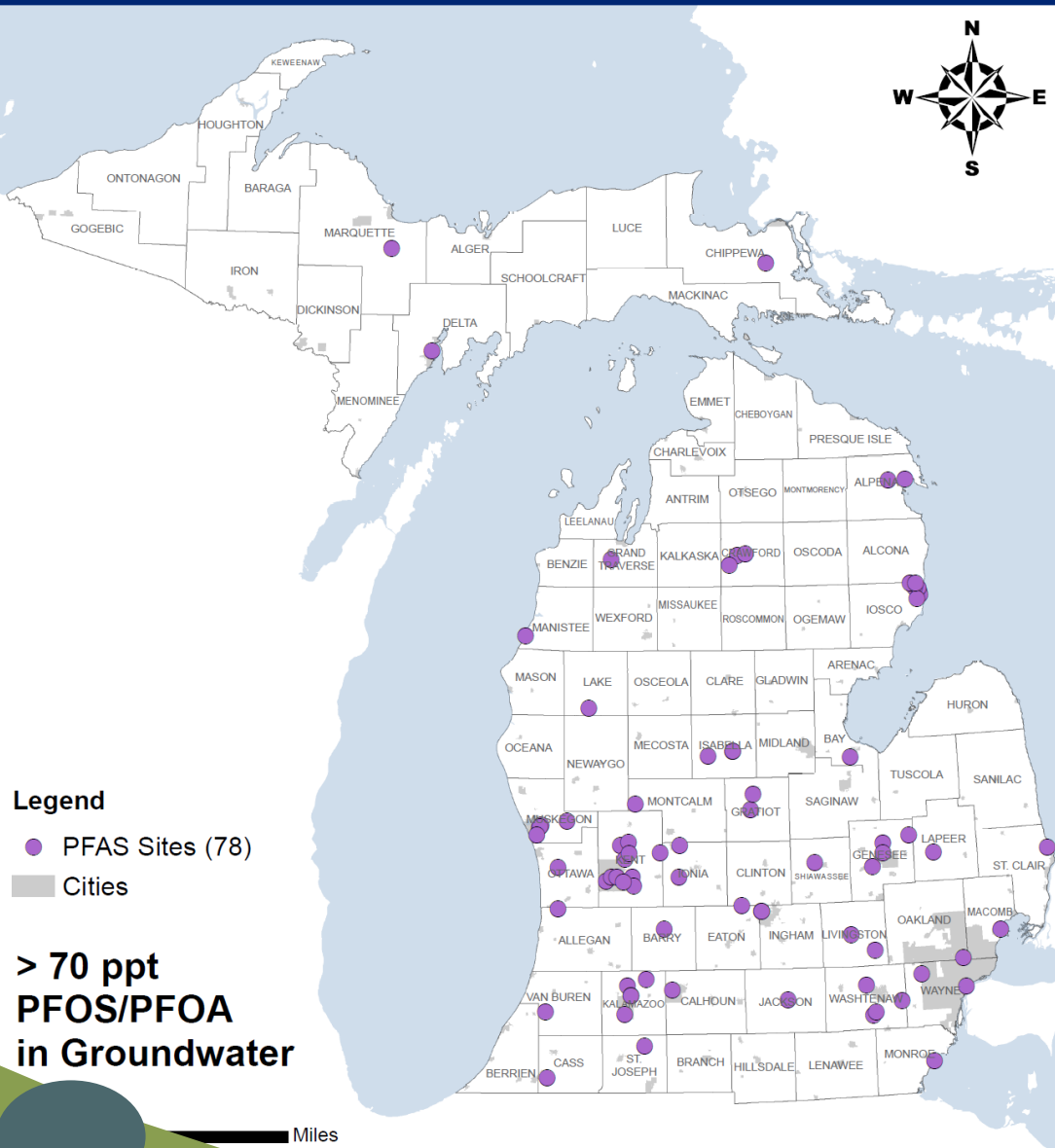
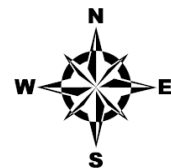


- Executive Order 2019-03
- Unique multi-agency approach
- Leads coordination and cooperation among all levels of government
- Directs implementation of state's action strategy

Citizens Advisory Workgroup



- Residents from impacted communities
- Key Charges:
 - Recommend how to engage and empower communities
 - Recommend how to educate the general public



Sites Being Investigated

Prioritized investigations based on known or suspected sources, potential for exposure

Protect drinking water pathway

Multiple other investigations underway

Surface Water Investigations

- Survey of surface water and fish
- Foam
- Wastewater



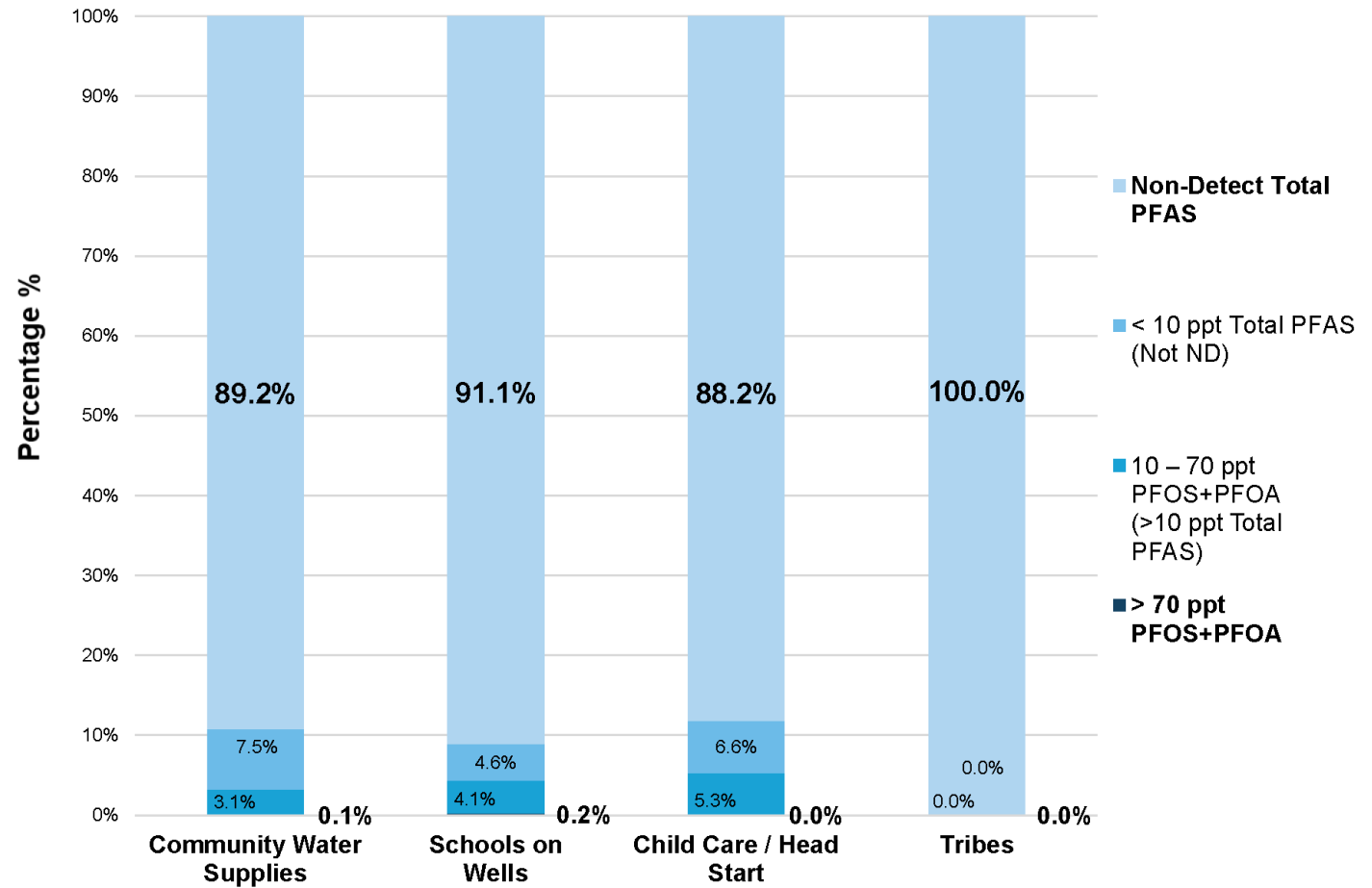


MI Public Water Supply Testing

- Phase I - 2018
 - All community water supplies (1,114)
 - All NTNCWS schools and day cares (619)
 - All Tribal systems (17)
- Phase II - 2019
 - Non-community water supplies (750 total)
 - 237 children's camps
 - 162 medical care facilities
- Monitoring
 - All 65 surface water systems
 - 61 systems > 10 ppt Total Phase I
- Phase III – 2020 under development

Phase I Results

Statewide Public Water Supply Testing Initiative Results*



*As of February 5, 2019



Establishing Drinking Water Standards

- No federal standards on the horizon
- Science Advisory Panel Report, December 2018
 - **70 ppt standard for PFOA/PFAS could be too high**
 - **Other PFAS should be considered as well**
- Michigan's two-step approach
 - **Science Advisory Workgroup recommendations on June 27, 2019**
 - **Rulemaking underway**

Health-Based Values

Specific PFAS		Parts Per Trillion (ppt)
PFOA		8
PFOS		16
PFHxS		51
PFNA		6
PFBS		420
GenX		370
PFHxA		400,000

Fire Fighting Foam

- State Fire Marshal survey of fire departments
- MDOT survey of airports
- Special equipment for required training
- PEAS Hotline after use
- Collection and disposal program underway
- Evaluating alternatives



MICHIGAN PFAS ACTION RESPONSE TEAM (MPART)

www.Michigan.gov/PfasResponse



MICHIGAN DEPARTMENT OF
ENVIRONMENT, GREAT LAKES, AND ENERGY



Per and Polyfluorinated Alkyl Substances (PFAS)

General Information

Lisa Fischer

Michigan Department of Health and Human Services

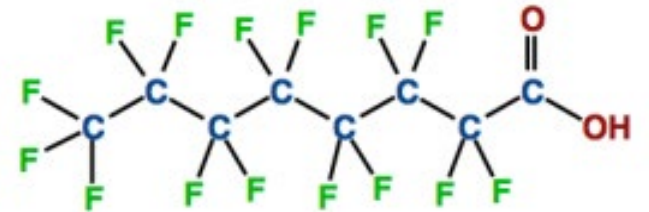
February 12, 2020

The Role of MDHHS/Health Dept. of Northwest MI

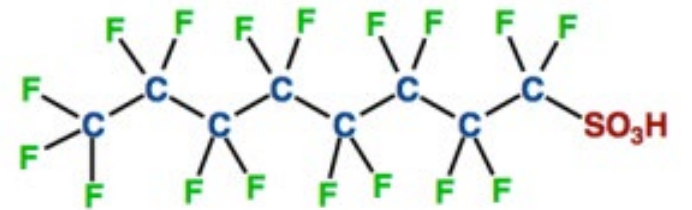
- Provide Public Health information and advice
 - Support Health Dept. of Northwest MI (NWHD) and other agencies
 - Respond to public's questions and concerns
- Be proactive/respond immediately to protect health of people
- Understand the chemicals
 - How they move, how they could impact health, what can be done to prevent harm
- Evaluate residential well results and provide recommendations/public health response actions
- Maintain scientific knowledge
 - Science is constantly changing
 - Provide expert knowledge
- Outreach to residents, healthcare providers, others

PFAS

- About 5,000 or more chemicals
- Human-made chemicals
 - heat-resistant
 - repel oil, stains, grease, and water
- Most studied
 - PFOA – **P**er**F**luoro**O**ctanoic **A**cid (1947 – 2002)
 - PFOS – **P**er**F**luoro**O**ctane **S**ulfonate (1949 – 2002)



PFOA - perfluorooctanoic acid



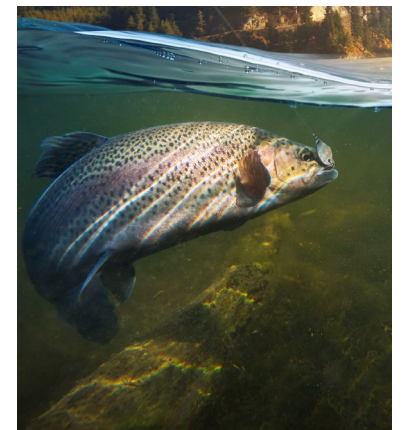
PFOS - perfluorooctanesulfonic acid

PFAS Sources

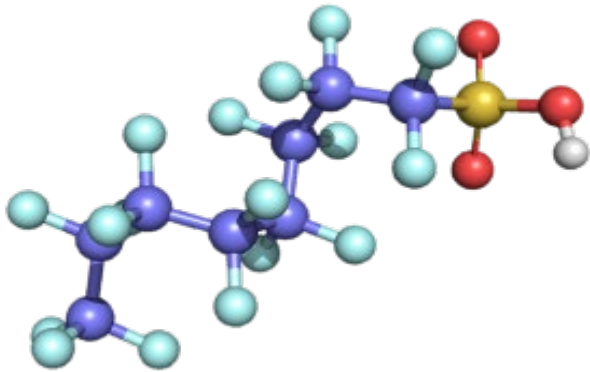


Exposure to PFAS Chemicals

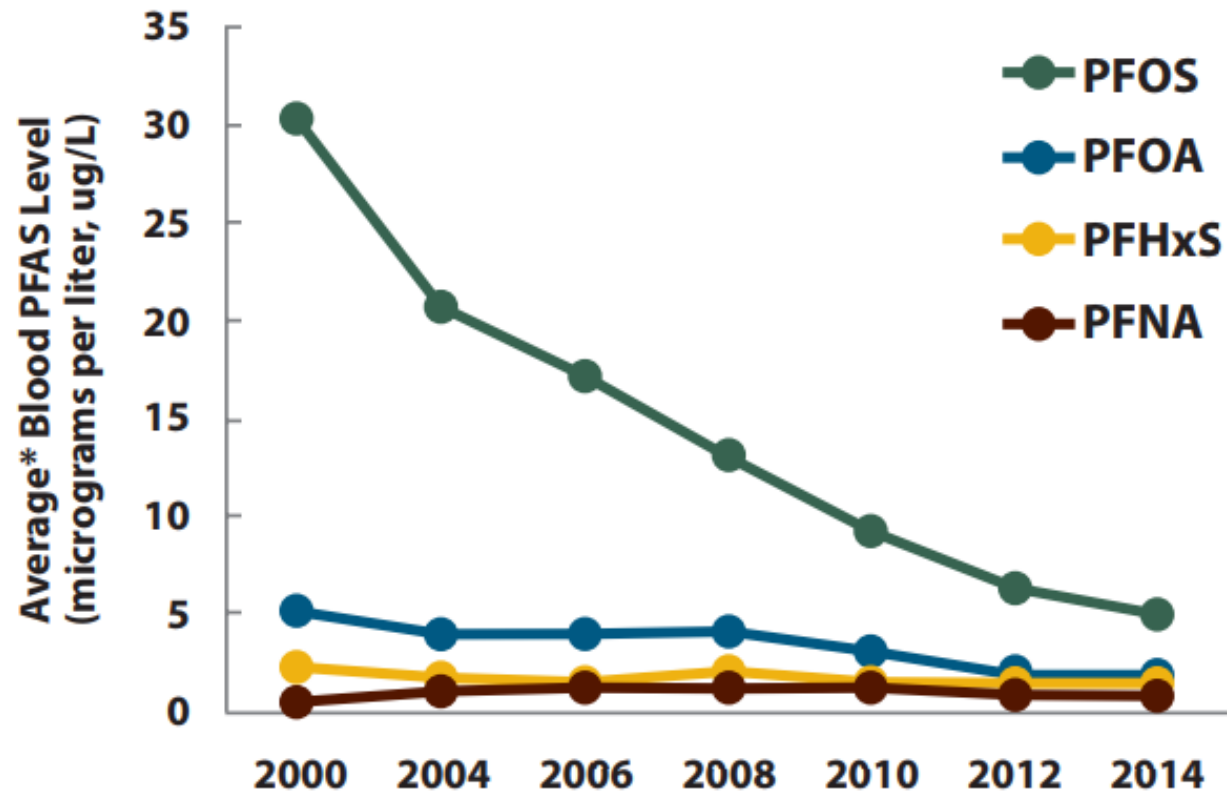
- Drinking contaminated water
 - “Do Not Eat Fish” Advisories
- Eating fish caught from water contaminated by PFAS
- Incidental swallowing of contaminated soil or dust
- Eating food packaged in materials containing PFAS
- Using some consumer products
- PFAS absorption through skin is not a concern



Why the concern?



- Pervasive
- Persistent
- Bioaccumulative
- Associated with adverse health effects (human epidemiology)
- Scarcity of information in scientific literature
- Incomplete regulatory structure



* Average = geometric mean

Data Source: Centers for Disease Control and Prevention. Fourth Report on Human Exposure to Environmental Chemicals, Updated Tables, (January 2017). Atlanta, GA: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention.

Blood Levels of
the Most
Common PFAS
in People in the
United States
from 2000-2014

Potential Associated Health Outcomes – PFOA and/or PFOS

Humans

- Lowering a woman's chance of getting pregnant
- Increasing the chance of high blood pressure in pregnant women
- Increasing the chance of thyroid disease*
- Increasing cholesterol levels
- Changing immune response
- Increasing chance of cancer, especially kidney and testicular cancers

Potential Associated Health Outcomes – PFOA and/or PFOS

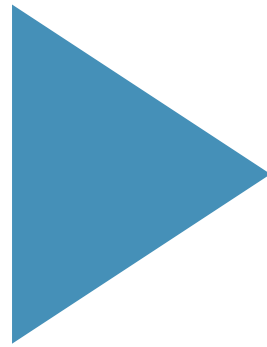
Animals

- Developmental effects
- Reproductive effects
- Liver effects
- Endocrine effects (thyroid)
- Immune effects
- Tumors (liver, testicular*, pancreatic)

* PFOA only

Exposure to PFAS Chemicals

Health problems
are not immediate



If you drink high
levels of PFAS
chemicals over time
you could be more
likely than the
average person to
develop some health
problems in the
future

Multiple Lines of Consideration for Determining Public Health Response Actions

- Part 201 Cleanup Criteria
- MDHHS Public Health Screening Levels
- Residential well results (individually and collectively)
- Site –specific information (e.g., known source, geology, etc.)

What are PFAS public health drinking water screening levels?

- PFAS public health drinking water screening levels
 - Health-based
 - Protective of fetus and breastfed infant
 - Also protective of formula fed infant and other ages
 - Used to determine if further evaluation of PFAS is needed
 - Used to determine if public health actions are needed
 - Non-regulatory

MDHHS Public Health Screening Levels

PFAS	MDHHS Public Health Drinking Water Screening Level
PFOA	9 ng/L (parts per trillion [ppt])
PFOS	8 ng/L (ppt)
PFNA	9 ng/L (ppt)
PFHxS	84 ng/L (ppt)
PFBS	1000 ng/L (ppt)

MDHHS/NWHD

Public Health Response Actions

- No public health actions necessary
- Recommend filter or use of alternate water
 - Need time to conduct investigation
 - Provides residents with protection from potential fluctuations in PFAS levels, if any, while investigation is ongoing
- Education
 - Provide information on PFAS in drinking water

MDHHS/NWHD Contacts

MDHHS:

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- Bill Farrell, Toxicologist
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NWHD:

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ENVIRONMENT, GREAT LAKES, AND ENERGY

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Christiaan Bon, Gaylord District Geologist

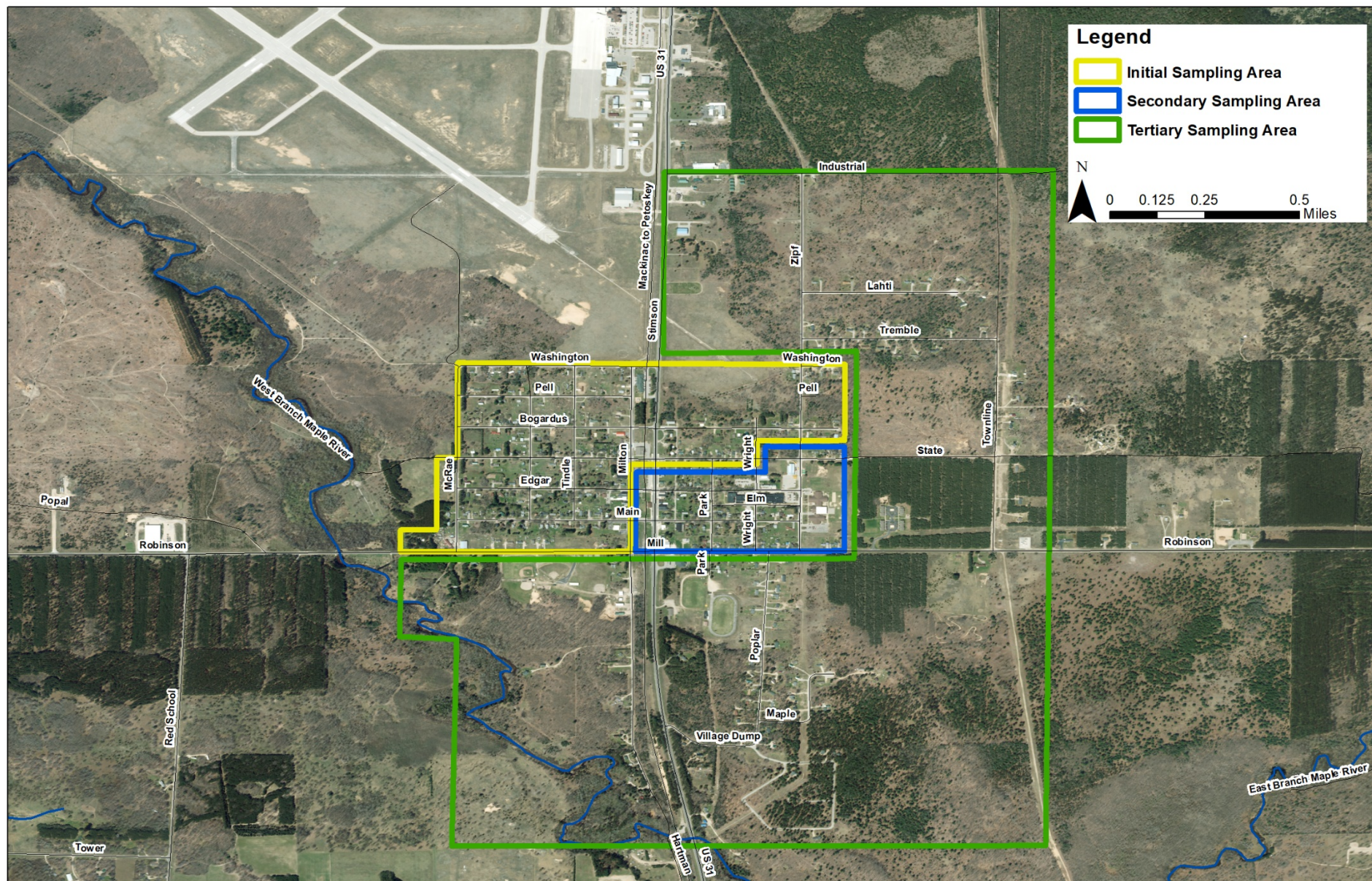
bonc@michigan.gov

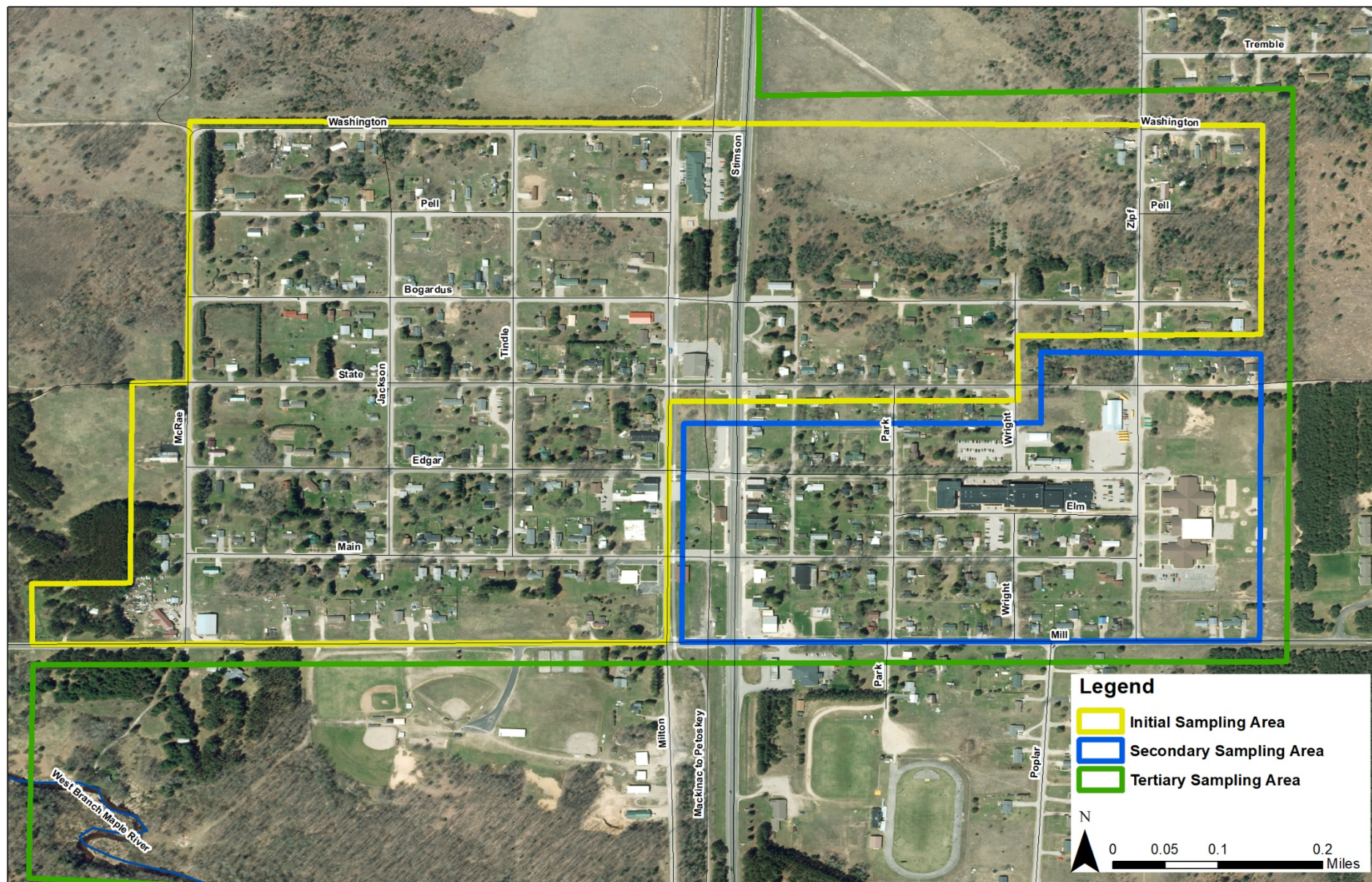
989-370-9624

Randy Rothe, Gaylord District Supervisor

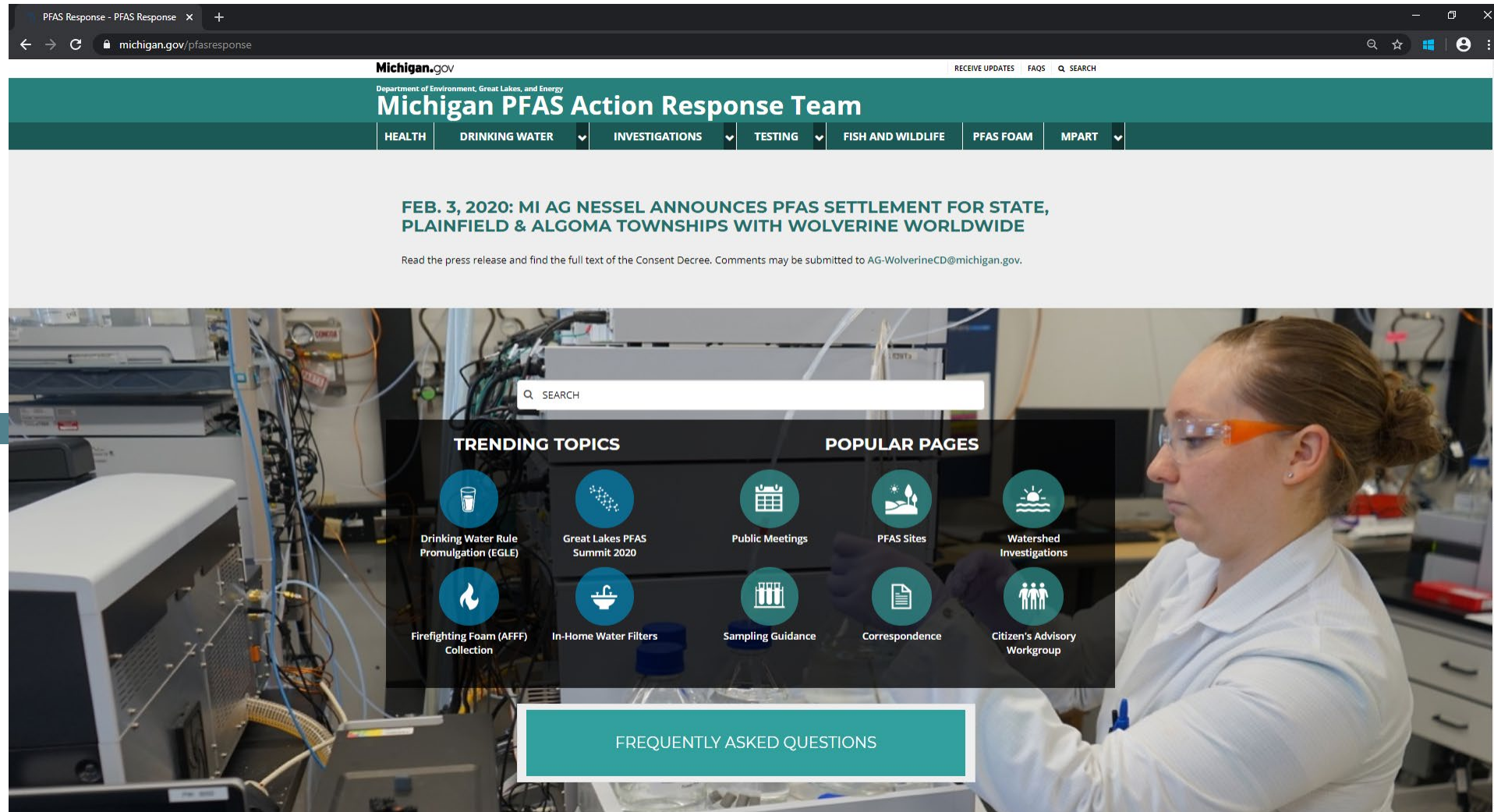
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989-217-0083





MPART Website



Michigan.gov/pfasresponse