



# Huron River Watershed PFAS Update

Michigan Department of Environmental Quality (DEQ)  
Michigan Department of Health and Human Services (DHHS)  
City of Wixom

# Introductions

**Gerald Tiernan**– DEQ, Jackson District Office, PFAS Regional Team Lead

**Stephanie Kammer** – DEQ, Water Resources Division, Huron River Watershed PFAS Project Manager

**Gary Klase** – DHHS, Division of Environmental Health

**Tim Sikema** – Director, Dept. of Public Works, City of Wixom

# PFAS - An Emerging Contaminant

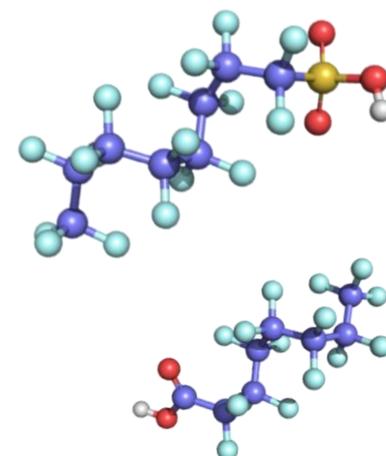
Chemicals and materials that have pathways to enter the environment and present real or potential unacceptable human health or environmental risks...

and either

Do not have peer-reviewed human health standards

or

Standards/regulations are evolving due to new science, detection capabilities or pathways.



Emerging Contaminant does not mean it is a new issue but rather that health effects and fate and transport are not well understood

# PFAS Uses



**Aerospace**



**Apparel**



**Building and  
Construction**



**Chemicals and  
Pharmaceuticals**



**Electronics**



**Oil & Gas**



**Energy**



**Healthcare and  
Hospitals**



**Aqueous Film  
Forming Foam**



**Semiconductors**



# Michigan PFAS Action Response Team (MPART)

- Governor Snyder signed Executive Directive 2017-4 on November 13, 2017
- Design: ensure comprehensive, cohesive, timely response to continued mitigation PFAS across Michigan
- Goal: provide cooperation and coordination among all levels of government

# MPART Goals

## Focus on

- Protecting public health
- Proactive efforts
- Working with communities
- Assisting responsible parties in remediation efforts
- Increasing scientific understanding



# Criteria and Guidelines

## Drinking Water

- 70 ppt PFOA and PFOS combined or individually
- EPA Lifetime Health Advisory Level
- Not enforceable MCL

## Groundwater

- 70 ppt PFOA and PFOS combined or individually
- Enforceable standard under Part 201
- Took effect January 10, 2018

# Criteria and Guidelines

## Surface Water - Rule 57 Water Quality Standards

### – PFOS:

- 11ppt (drinking water source)
- 12 ppt (non-drinking water source)

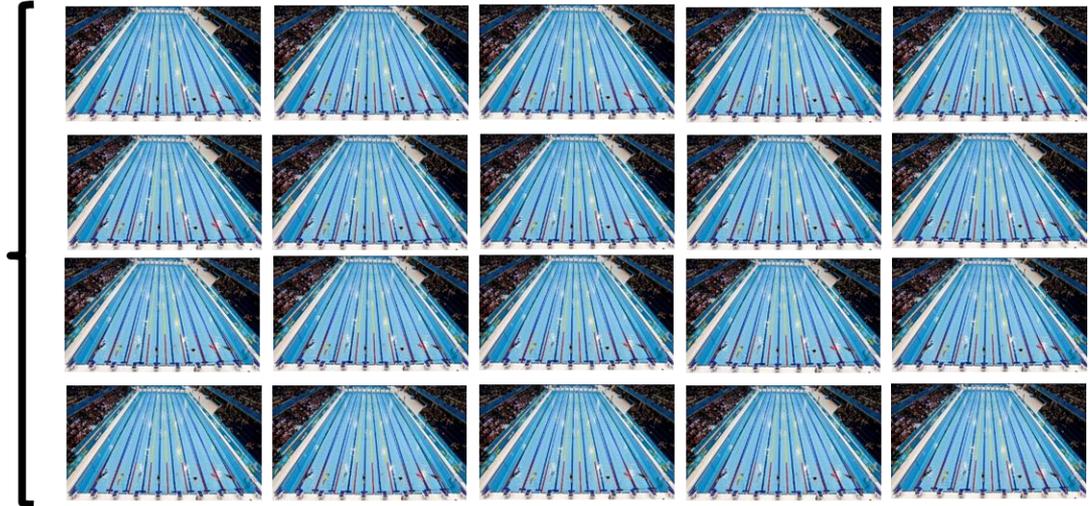
### – PFOA:

- 420ppt (drinking water source)
- 12,000ppt (non-drinking water source)

	<b>HNV (nondrinking)</b>	<b>HNV (drinking)</b>	<b>FCV</b>	<b>FAV</b>	<b>AMV</b>
<b>PFOS (ng/L)</b>	12	11	140,000	1,600,000	780,000
<b>PFOA (ng/L)</b>	12,000	420	880,000	15,000,000	7,700,000

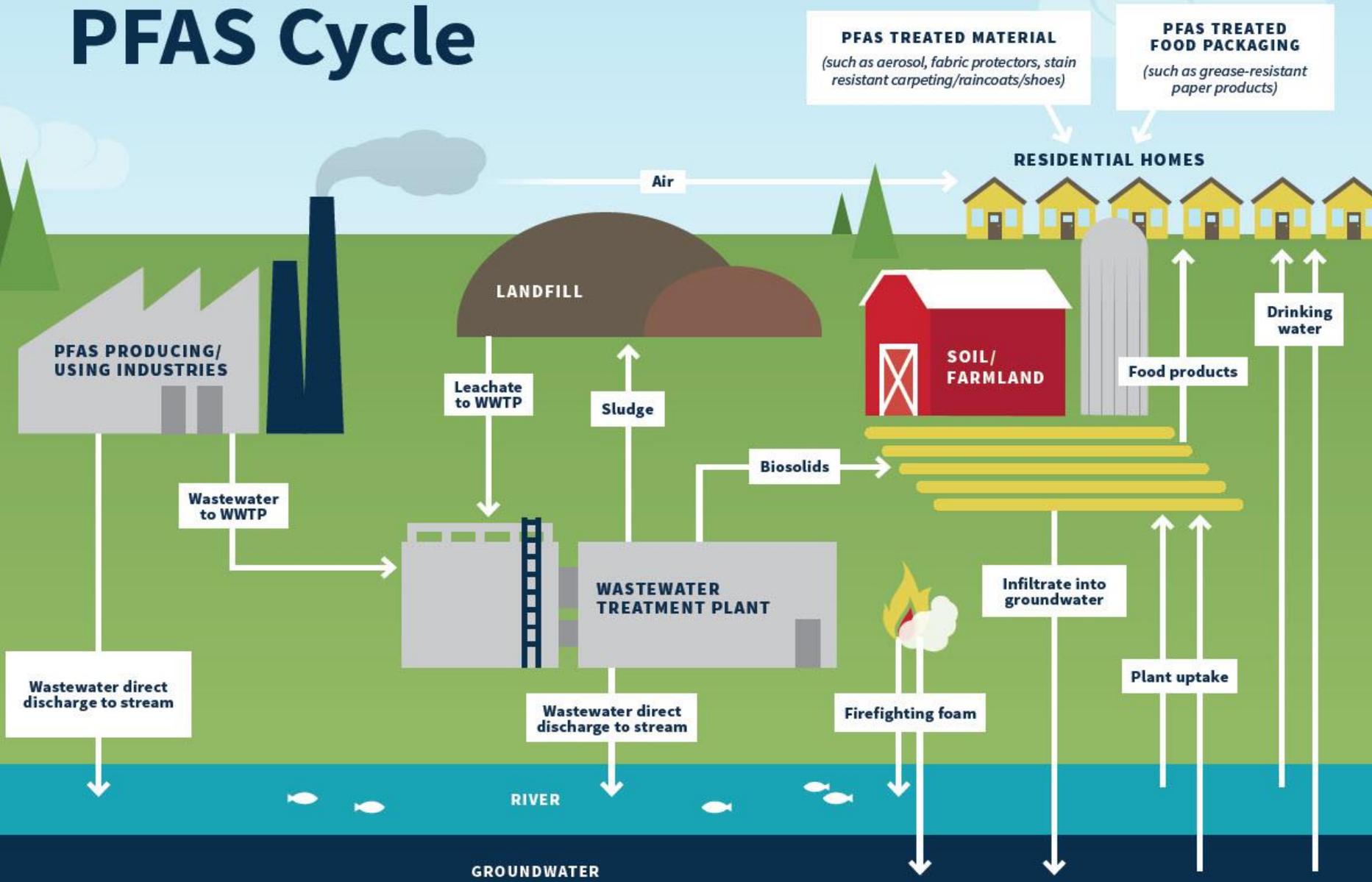
# Parts Per Trillion

1 ppt = 1 drop  
(0.05mL) in  
20 Olympic  
Swimming Pools



Note: 1 Olympic Pool = 660,000 gallons

# PFAS Cycle



## Statewide Municipal Drinking Water Testing Initiative

The DEQ has completed statewide sampling of drinking water from all [schools](#) that use well water and [community water supplies](#) for PFAS.

In November 2018 this effort was expanded to include all Child Care Providers and Michigan Head Start Programs listed as Type II Non-Transient Non-Community Water Supplies in Michigan.

Information summarizing these additional results beginning in late December 2018.

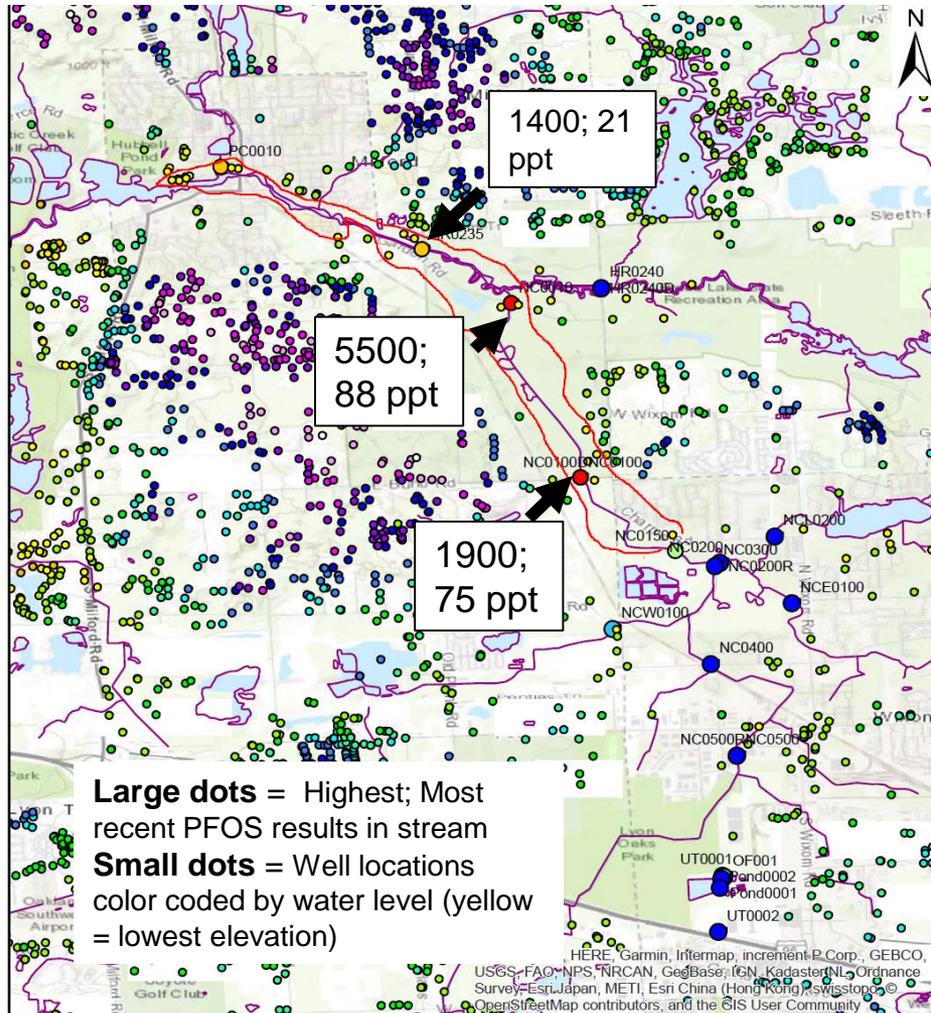
Up to date results for all sampled supplies can be found here:

<https://www.michigan.gov/pfasresponse>

Click on Treatment and Testing

# Residential Well Sampling

## Sample Area – Red Outline



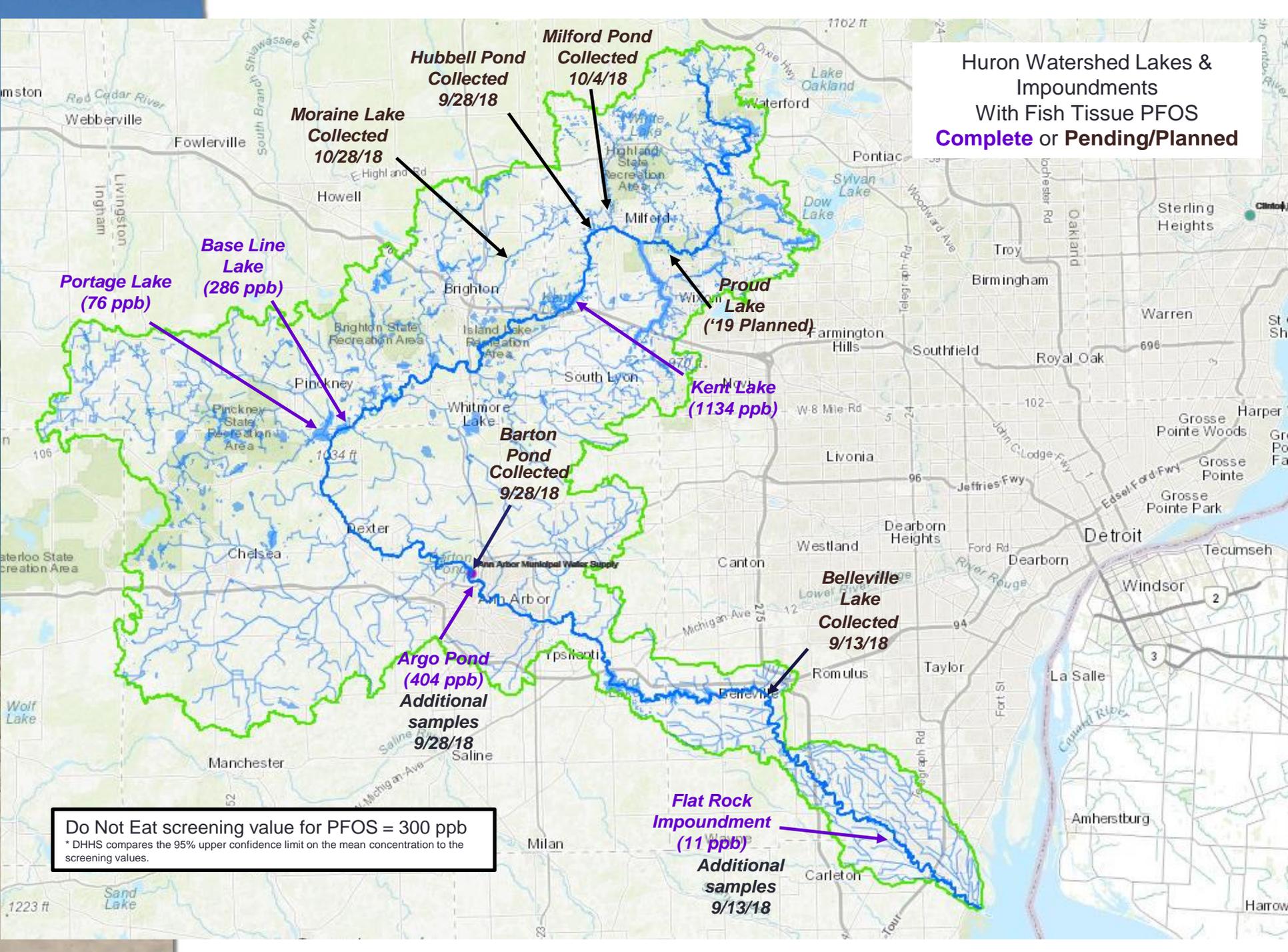
## Rationale

- Dr. Hyndman, MSU, conducted GIS analysis to determine highest risk wells
- Wells (small dots) closest to highest concentrations in Norton Creek (large dots)
- Low water level in well where it may be possible to communicate with river water (yellow dots)
  - Pumping
  - Seasonal fluctuations
- Likely that Norton Creek is a gaining stream – sampling is being conducted out of an abundance of caution
- AECOM will conduct sampling
- Timeline – early 2019
- Protocol
  - DEQ/AECOM contact residents
  - Sample homes where we get permission
  - DHHS sends letter to resident explaining results
  - More sampling scheduled if necessary

# Huron River Watershed PFAS Timeline

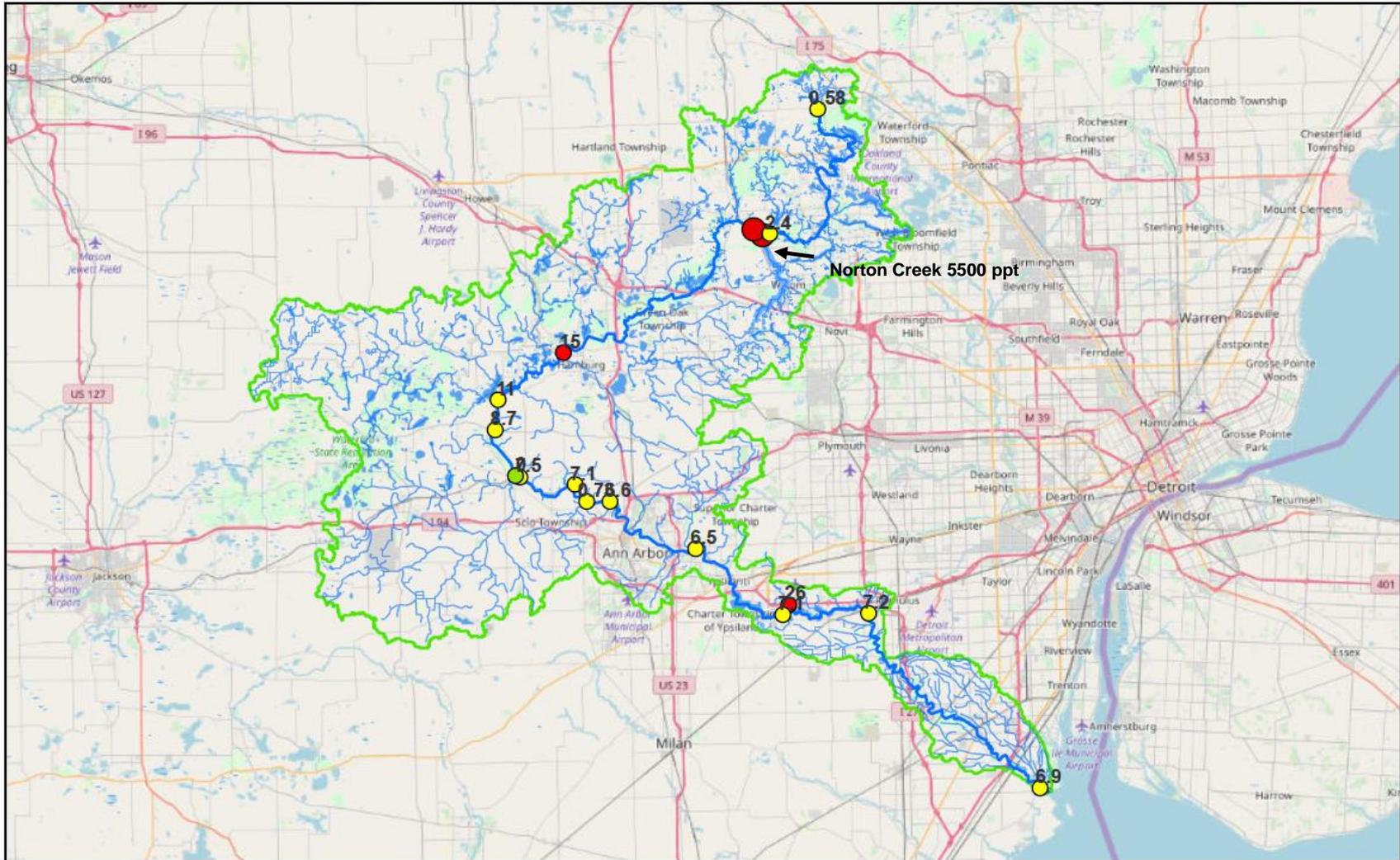
- A detailed timeline and updated next steps of the State's response to the PFAS issue within the Huron River Watershed can be found on our PFAS Response Website:
  - [www.Michigan.gov/pfasresponse](http://www.Michigan.gov/pfasresponse)
    - Click on Michigan PFAS Sites
    - Click on Lakes and Streams
    - Select Huron River

Huron Watershed Lakes & Impoundments  
With Fish Tissue PFOS  
**Complete or Pending/Planned**



**Do Not Eat** screening value for PFOS = 300 ppb  
\* DHHS compares the 95% upper confidence limit on the mean concentration to the screening values.

# Huron River Surface Water July 24, 2018 PFOS Results

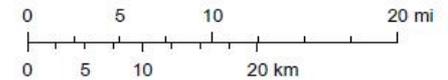


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Huron River PFAS Sampling Results 20180724

- Non-Detect
- >0-12
- >12-100
- >1000-5500
- Huron River - Norton Creek
- Huron River Main Channel
- Huron River Flowline
- Huron River Waterbodies

1:781,945



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Web AppBuilder for ArcGIS  
Source: USGS, EPA | Map data © OpenStreetMap contributors, CC-BY-SA |



# Norton Creek and other tributaries near Kent Lake – Milford - Wixom areas

## Confirmed source

- Wixom WWTP (source Tribar – metal finisher)

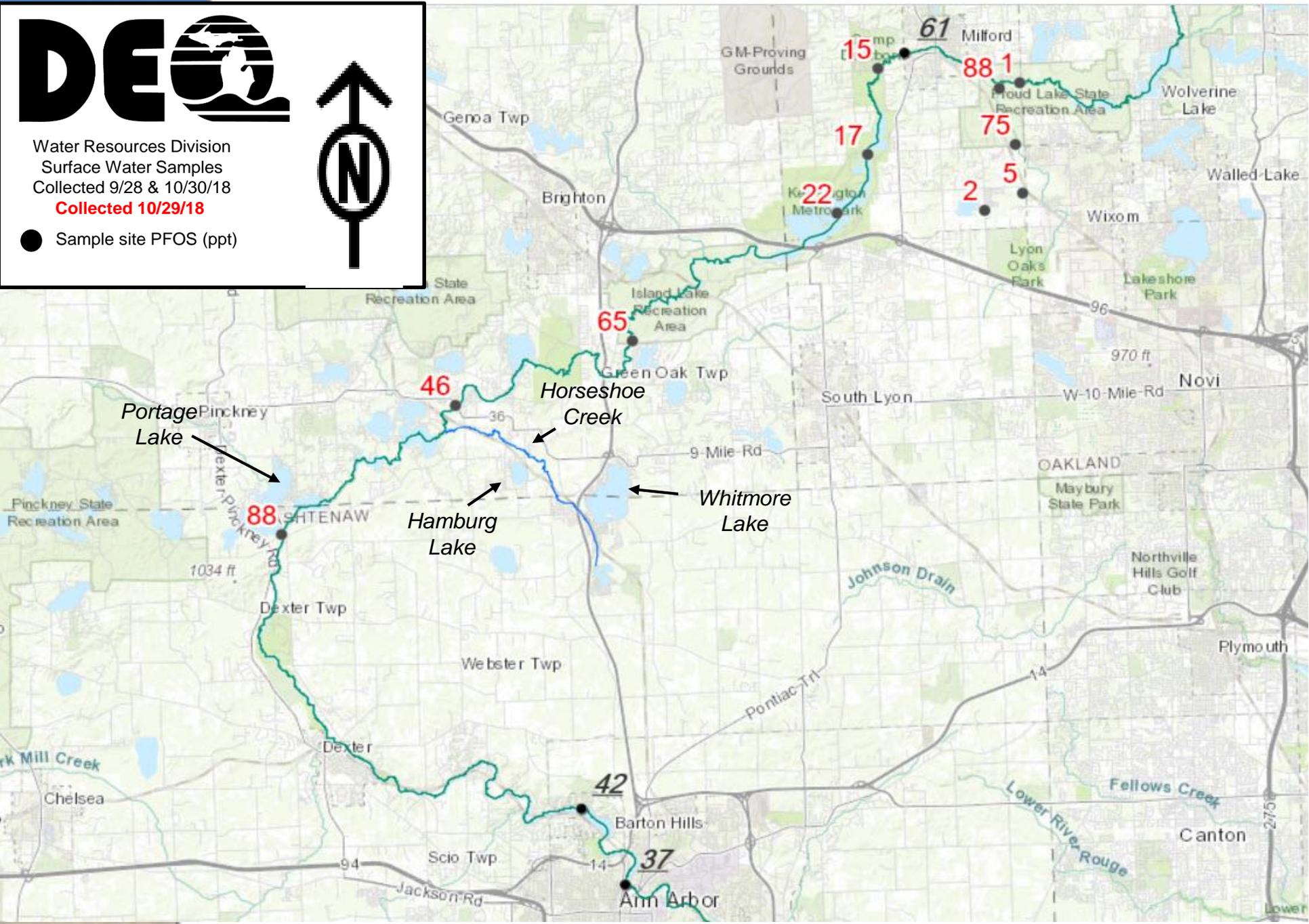
## Potential sources investigated

- 4 direct discharges
  - GM Proving Grounds
  - Seamless Tube
  - Coes Cleaner groundwater cleanup (conflicting results)
  - Kelsey-Hayes groundwater cleanup
- 2 Wastewater Treatment Plants (Milford & S. Lyon)
- S. Lyon closed landfill
- Former Ford Wixom Assembly site - low levels in storm water



Water Resources Division  
 Surface Water Samples  
 Collected 9/28 & 10/30/18  
**Collected 10/29/18**

● Sample site PFOS (ppt)



Portage Lake

Horseshoe Creek

Hamburg Lake

Whitmore Lake

88

46

65

15

17

22

42

37

61

88

75

5

2

81

1034 ft.

970 ft.

275

Pinckney

Pinckney State Recreation Area

SHTENAW

Dexter Twp

Webster Twp

Dexter

Scio Twp

Jackson Rd

Brighton

Island Lake Recreation Area

Green Oak Twp

Barton Hills

Ann Arbor

GM Proving Grounds

Keighton Metro Park

9 Mile Rd

Pontiac Trl

Johnson Drain

Lower River Rouge

Fellows Creek

South Lyon

W-10 Mile Rd

OAKLAND  
Maybury State Park

Northville Hills Golf Club

Plymouth

Canton

Genoa Twp

Milford

Milford

Moud Lake State Recreation Area

Wolverine Lake

Walled Lake

Wixom

Lyon Oaks Park

Lakeshore Park

Novi

Plymouth

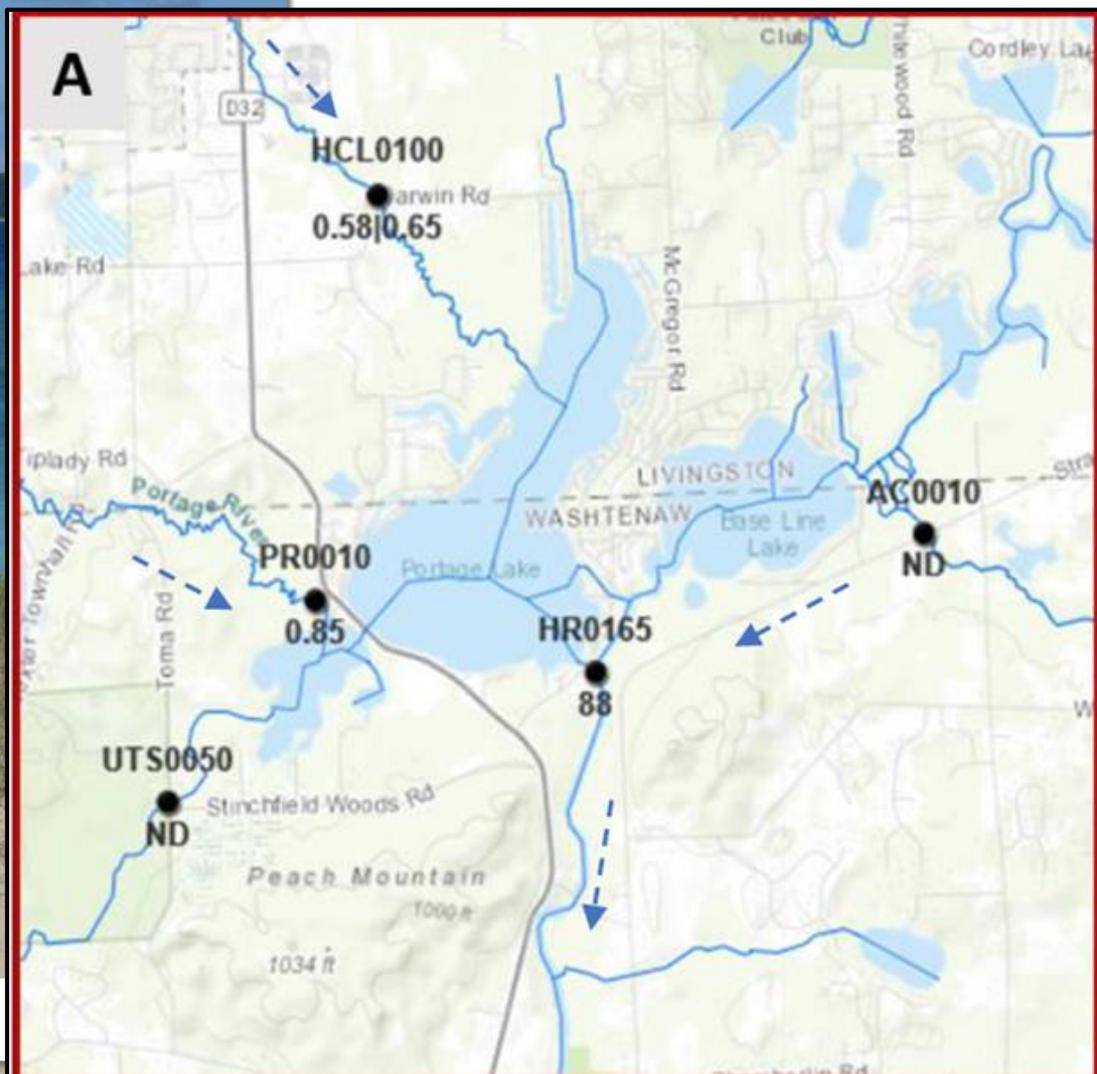
Canton

# Source investigations – Washtenaw and Livingston Counties

- Former Daimler Chrysler Scio facility
- PFOS detected in wells near river above criteria (11/12 ppt)
- Additional monitoring planned (groundwater/storm water)
- 3 Wastewater Treatment Plants (Dexter, S. Lyon, Brighton)
- 4 direct discharges -
  - Sweepster-Harley = <1.3 ppt PFOS
  - Pall Life Sciences = ND
  - groundwater clean-up sites – Brighton & Gregory - results pending
- Horseshoe Creek - stream sampling planned



# Portage Lake and tribs (Portage River, Honey Creek)



- Reports of foam September/October 2018
- October results from sampled streams - very low (<1 ppt) PFOS
- 1 DEQ upstream groundwater cleanup site (Gregory) sampled - results pending



Portage Lake Date: 9/28/18  
Submitted to DEQ on 10/1/18

# What's Next?

- Monitor progress with corrective actions at Wixom WWTP and Tribar Mfg.
- Work with responsible part on PFAS investigations at former Diamler Chrysler Scio facility
- Continue investigation of potential sources
- Fish analysis
- Stream samples as needed
- Residential Well Sampling
- Review of incoming data with respect to Do Not Eat Fish Advisory within watershed and update as needed
- Continued public engagement of issues surrounding PFAS

DEQ and DHHS are always available for discussions on this issue or any issues related to public health and the environment

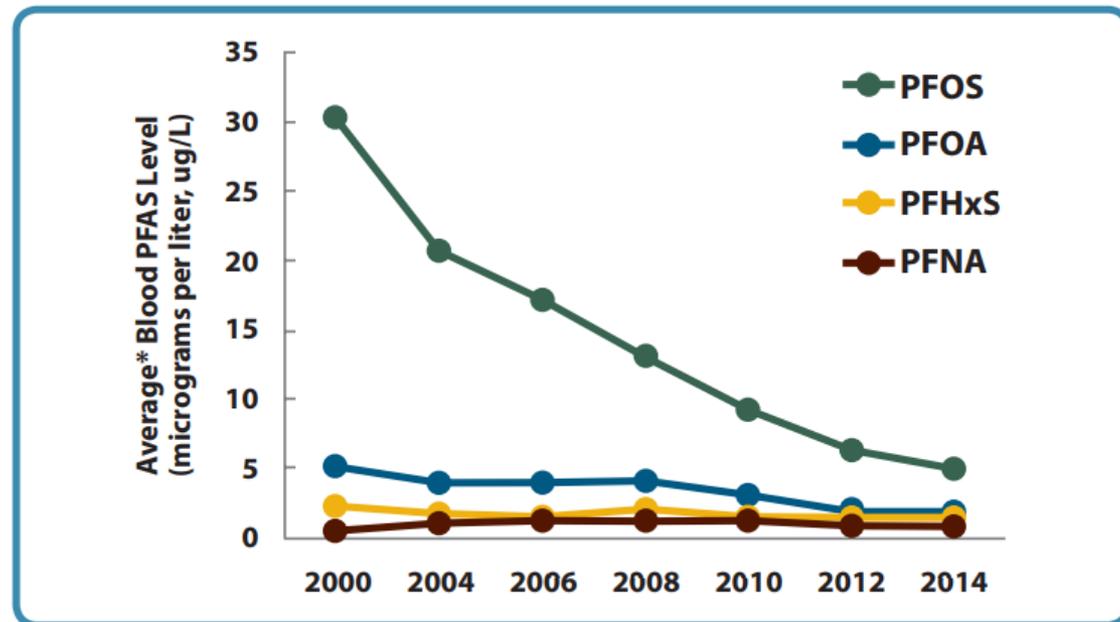
# The Role of MDHHS

- Evaluate potential exposure to chemicals in the environment
- Determine if harm may occur
- Provide recommendations
- Provide technical support to the local health department
- Outreach to public, healthcare, others

# EPA's Health Advisory Levels

- Based on reference doses (RfD) derived from developmental toxicity study in rodents
- Lifetime Health Advisory
  - PFOA + PFOS = 70 ppt (ng/L)
  - Short-term and long-term exposure
- Protects fetus and others against noncancer health issues

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



\* 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.

# Health Outcomes (PFOS and PFOA)

## In people:

- Alter cholesterol
- Thyroid disease (PFOA)
- Ulcerative colitis (PFOA)
- Testicular and kidney cancer (PFOA)
- Alter immune system function

## In laboratory animals:

- Developmental effects
  - Reduce ossification of the proximal phalanges
  - Decrease pup birth weight
  - Accelerated puberty in male pups
- Immune system dysfunction
- Alter liver and kidney weight



# Huron River

## Do Not Eat fish advisory

- Huron River at N Wixom Road to Lake Erie, including Norton Creek
- This includes:
  - Hubbell Pond (aka Mill Pond), Kent Lake (Oakland County)
  - Ore, Strawberry & Zukey, Gallagher, Loon, and Whitewood Lakes (Livingston County)
  - Base Line & Portage Lakes (Livingston/Washtenaw County line)
  - Barton Pond, Argo Pond, Geddes Pond, and Ford Lake (Washtenaw County)
  - Belleville Lake (Wayne County)

[www.Michigan.gov/pfasresponse](http://www.Michigan.gov/pfasresponse), under Fish and Wildlife

# Why is there a do not eat advisory?

- Kent Lake fish filet PFOS levels (press release Aug 4)
  - Advisory placed for Huron River, Milford to Livingston/Washtenaw County line
- PFOS surface water levels (press release Aug 24)
  - Added Norton Creek
- Base Line Lake and Argo Pond fish filet PFOS levels (press release Aug 31)
  - Extended to Lake Erie

# PFAS-containing Foam

- PFAS do not go through skin readily
- Adults and children should avoid swallowing foam
- An accidental swallow of a small amount of water during recreational activities is not a health concern
- Try to keep pets out of the foam and rinse them off to prevent them from swallowing the foam



Foam at the Hubbell Pond Dam in Milford (9/8/2018)

# For More Information:

[www.Michigan.gov/pfasresponse](http://www.Michigan.gov/pfasresponse)



**PFAS RESPONSE**

## TAKING ACTION, PROTECTING MICHIGAN

HEALTH TESTING AND TREATMENT MICHIGAN PFAS SITES FISH AND WILDLIFE FIREFIGHTING FOAM ABOUT MPART

### TAKING ACTION TO PROTECT THE PUBLIC'S WATER

Perfluoroalkyl and polyfluoroalkyl substances (PFAS), such as perfluorooctanoic acid (PFOA) and perfluorooctanesulfonic acid (PFOS), are part of a group of chemicals used globally during the past century in manufacturing, firefighting and thousands of common household and other consumer products.

In recent years, experts have become increasingly concerned by the potential effects of high concentrations of PFAS on human health.

Although there is more to learn about PFAS and human health, the State of Michigan takes this issue seriously and is one of the first states in the nation to establish a clean-up standard for PFAS in groundwater used for drinking water.

Launched in 2017, the Michigan PFAS Action Response Team (MPART) is the first multi-agency action team of its kind in the nation. Agencies representing health, environment and other branches of state government have joined together to investigate sources and locations of PFAS contamination in the state, take action to protect people's drinking water, and keep the public informed as we learn more about this nationally emerging contaminant.



# Contact Information and Questions

**DEQ Environmental Assistance Center:**  
**1-800-662-9278**

**DHHS Health Hotline:**  
**1-800- MI-TOXICS (1-800-648-6942)**

**Stephanie Kammer** - 517-897-1597 – [kammers@michigan.gov](mailto:kammers@michigan.gov)  
PFAS in the Huron River, Norton Creek, and in Livingston County

**Tracy Kecskemeti** – 248-200-6469 – [kecskemetit@michigan.gov](mailto:kecskemetit@michigan.gov)  
PFAS activities in Oakland & Wayne County

**Gerald Tiernan** – 517-582-0520 - [tiernang@michigan.gov](mailto:tiernang@michigan.gov)  
PFAS activities in the Washtenaw & Monroe County

**Joe Bohr** – 517-284-5525 - [bohrj@michigan.gov](mailto:bohrj@michigan.gov)  
Fish sampling

**Jennifer Gray**– Eat Safe Fish [grayj@michigan.gov](mailto:grayj@michigan.gov)

**Lisa Fischer** – health – [fischerl@Michigan.gov](mailto:fischerl@Michigan.gov)

**Gary Klase** – health - [klaseg@Michigan.gov](mailto:klaseg@Michigan.gov)

**Steve Brown** – Wixom City Manager 248-624-0894  
[sbrown@wixomgov.org](mailto:sbrown@wixomgov.org)