



UPDATE ON HURON RIVER WATERSHED PERFLUOROALKYL AND POLYFLUOROALKYL SUBSTANCES (PFAS) – STATE RESPONSE

Michigan Department of Environmental Quality (MDEQ)

Michigan Department of Health and Human Services (MDHHS)

September 20, 2018



Introductions

Gerald Tiernan – DEQ, Remediation and Redevelopment Division, Jackson District, PFAS Regional Team Lead

Joe Bohr – DEQ, Water Resources Division, Surface Water Assessment Section

Jennifer Gray– Michigan Department of Health and Human Services, Division of Environmental Health

Stephanie Kammer – DEQ, Water Resources Division, Water Quality Unit

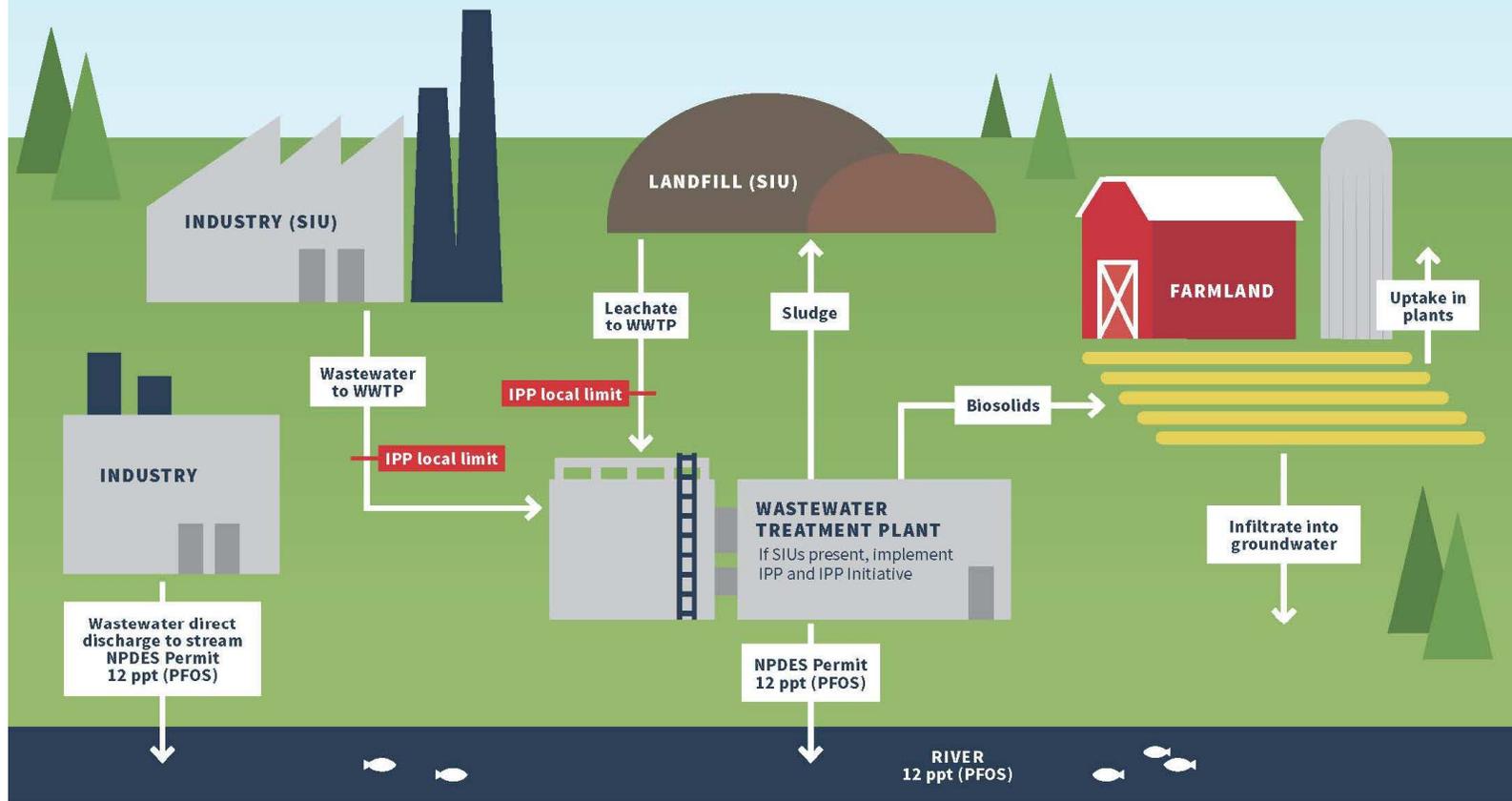


Goals for this Webinar

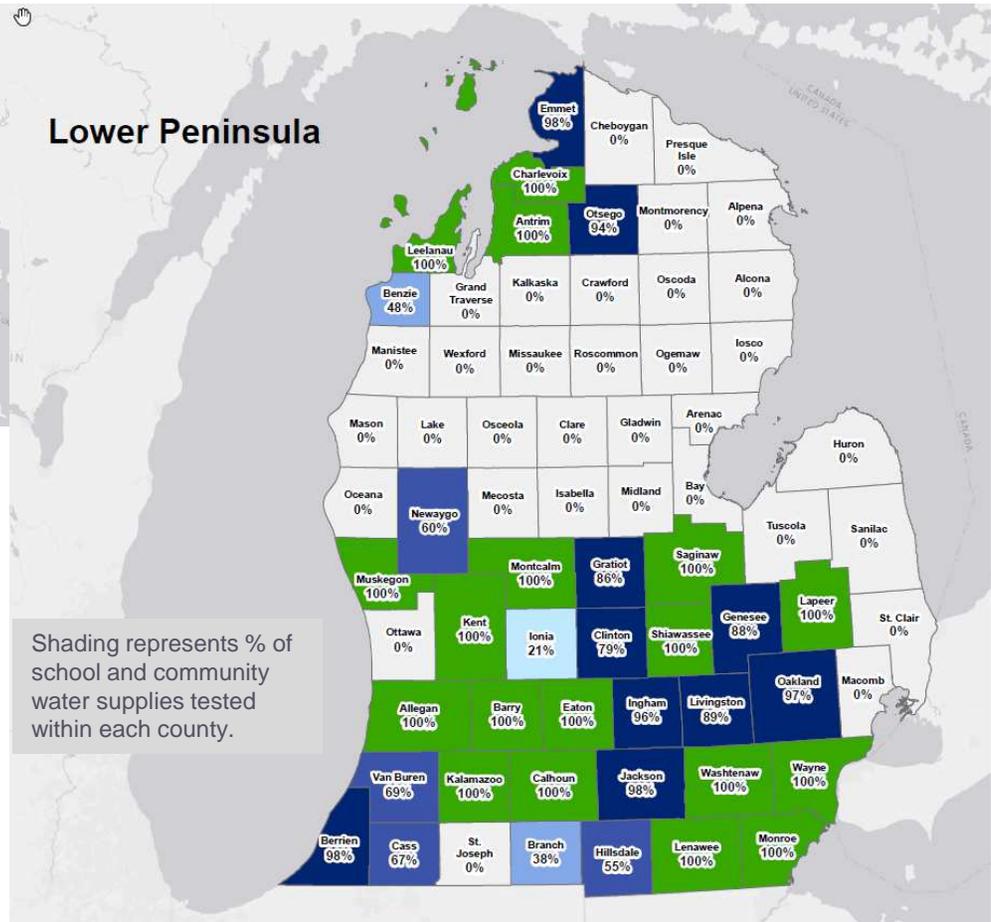
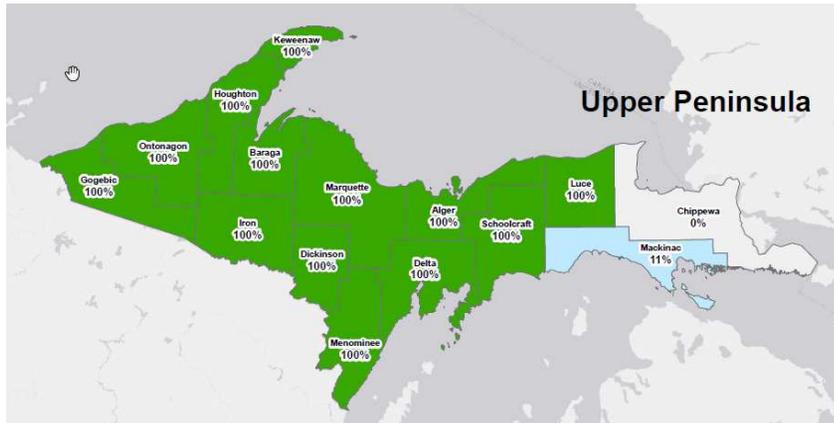
- Provide overview PFAS Water Cycle
- Provide update on PFAS Sampling of Community Water Supplies and Schools, including City of Ann Arbor
- Provide update on fish and surface water sampling
- Provide update and discuss initial Do Not Eat Fish Advisory
- Provide additional details on sampling results collected within Norton Creek Drainage Area and continued source identification
- Discuss planned next steps

PFAS Water Cycle

IPP = Industrial Pretreatment Program
 SIU = Significant Industrial User
 NPDES = National Pollutant Discharge Elimination System
 PPT = Parts Per Trillion
 WWTP = Wastewater Treatment Plant



Statewide Municipal Drinking Water Testing Initiative



The DEQ continues its statewide initiative to test drinking water from all **schools** that use well water and **community water supplies** for PFAS.

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

https://www.michigan.gov/pfasresponse/0,9038,7-365-86510_87918-464299--,00.html

Statewide PFAS Drinking Water Testing Initiative

	Supplies Sampled	Overall Number of Supplies	% Complete	Supply Samples Received	< 10 ppt Total PFAS	10 – 70 ppt PFOS/PFOA (> 10 ppt Total PFAS)	> 70 ppt PFOS/PFOA
Community Water Supplies	938	1,380	68%	464	449	14	1
Schools on Wells	300	461	65%	177	166	11	0
Total	1,238	1,841	67%	641	615	25	1
<i>As of September 7, 2018</i>					95.9%	3.9%	0.16%

Michigan.gov

PFAS RESPONSE / TESTING AND TREATMENT

TAKING ACTION, PROTECTING MICHIGAN

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

Statewide Testing Initiative

The Michigan Department of Environmental Quality (MDEQ) has begun a statewide initiative to test drinking water from all schools that use well water and community water supplies for PFAS. MDEQ is taking this precautionary step of testing these drinking water sources to determine if public health actions are needed. Information on this page summarizes current sampling results from these locations.

It is not uncommon to find low levels of PFAS in drinking water supplies, as PFAS can be found in fire-fighting foams, stain repellants, nonstick cookware, waterproof clothing, food wrappers, and many other household products. They do not break down in the environment, and move easily into water.

The EPA set a lifetime health advisory (LHA) level for two PFAS in drinking water, perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS). The LHA level is 70 parts per trillion (ppt, equal to 70 ng/L) for PFOA and PFOS combined, or individually if only one is present. The EPA has not set health advisory levels for other PFAS chemicals. The State of Michigan is using 70 ppt for decision making purposes.

MDEQ PFAS Public Water Supply & School Sampling Percentage of Completion by County (as of August 31, 2018) Click on the map to see the status of the statewide public water supply and schools that operate their own wells. Also available is the projected public water supply sampling schedule.

Statewide Sampling Initiative Testing Results for Public Water Supplies

Show 50 entries

County	Public Water Supply	Population Served	Sampling Date	Sample Number	Raw Water or Treated Drinking	PFOS	PFOA	Total Tested PFAS	Method
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Results Posted:
<https://www.michigan.gov/pfasresponse>

Ann Arbor Municipal Water Supply

- The City has been proactive in conducting regular water sampling of PFAS since early 2016.
 - Water samples are collected monthly from the Main Water Reservoir (treated water) and from the Raw River Intake (untreated water)
 - 28 samples have been collected from the Main Reservoir (treated water)
 - 24 samples have been collected from the Raw River (untreated intake)
 - Additional water samples have been collected within other locations including:
 - Two raw water production wells (untreated groundwater) – 2 samples
 - Within the Huron River, Barton Pond, and Honey Creek (upstream of intake, untreated surface water) – 5 total samples
- System operators are currently conducting a filter study to determine the efficacy of granular activated carbon in removing PFAS

Ann Arbor Municipal Water Supply Treated and Untreated Sampling Results

Location	Range of Results PFOS	Range of Results PFOA	Range of Total Sum of all PFAS	Number of Non-detect	Number Detected Below Criteria *	Number Detected Above Criteria *
Main Reservoir (treated)	<0.45 to 43	<0.41 to 3.6	0 to 43	6	22	0
Raw River Intake (untreated)	2.6 to <39 **	<0.41 to 5.1	2.1 to 32.5	0	24	0
Surface Water Various (untreated)	<4.0 to 38	<2.0 to 5.2	0 to 49.4	1	0	4
Raw Groundwater (untreated)	<4.0	<2.0	0	2	0	0

* Untreated water results are compared to Rule 57 surface water quality values of 11 ppt for PFOS and 420 ppt for PFOA. Treated water results are compared to the State of Michigan Groundwater for drinking water clean up standard and EPA Lifetime Health Advisory level of 70 ppt

** Some samples were analyzed using PFOS detection limits between 37-39 ppt which is much higher than the detection limits set by most laboratories. In these cases PFOS may be present at levels up to the detection limit of 37-41 ppt but still reported as a non-detect. The city of Ann Arbor has since switched to a laboratory that uses a more standard detection limit for PFOS.

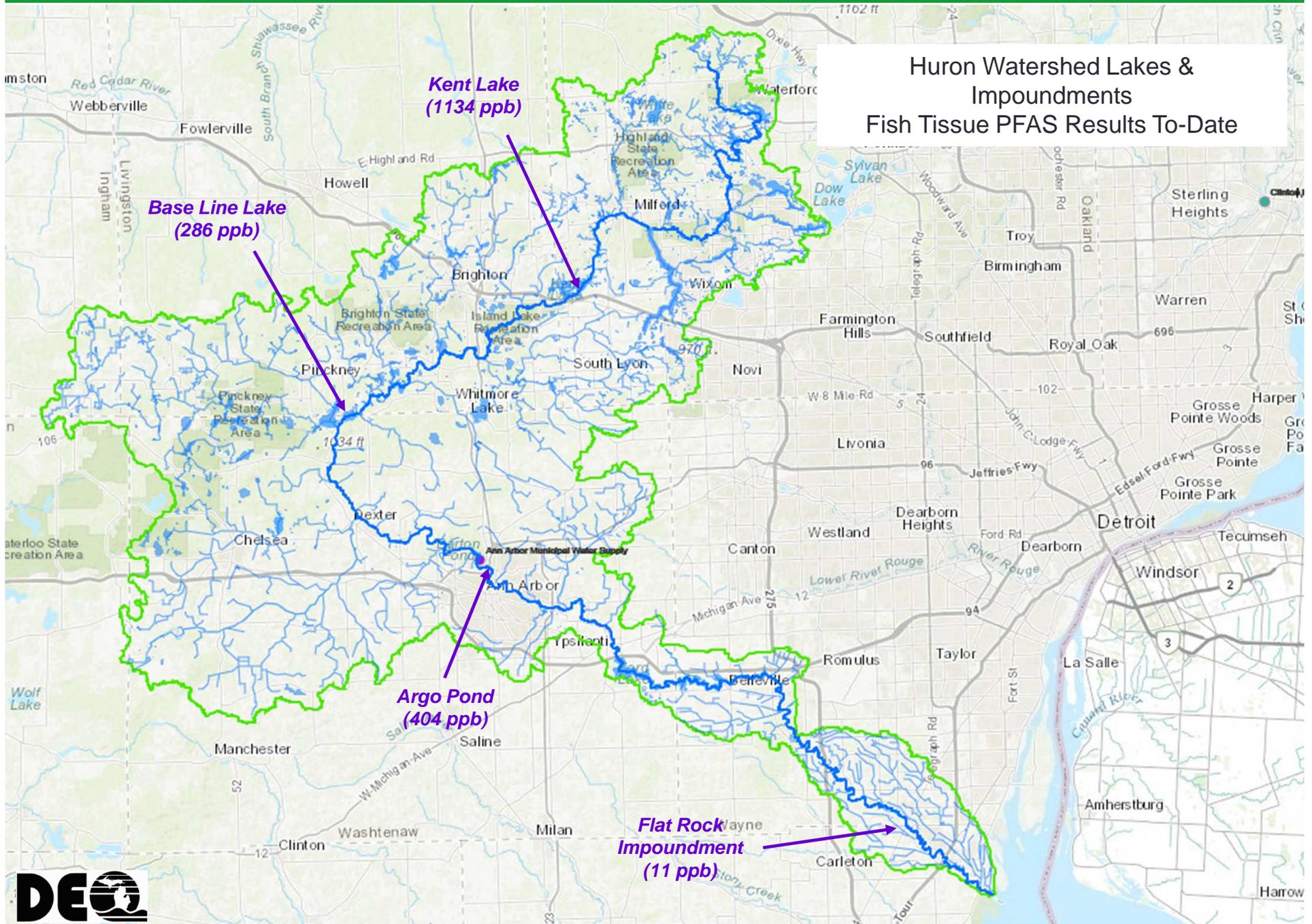
All levels reported as parts per trillion (PPT)



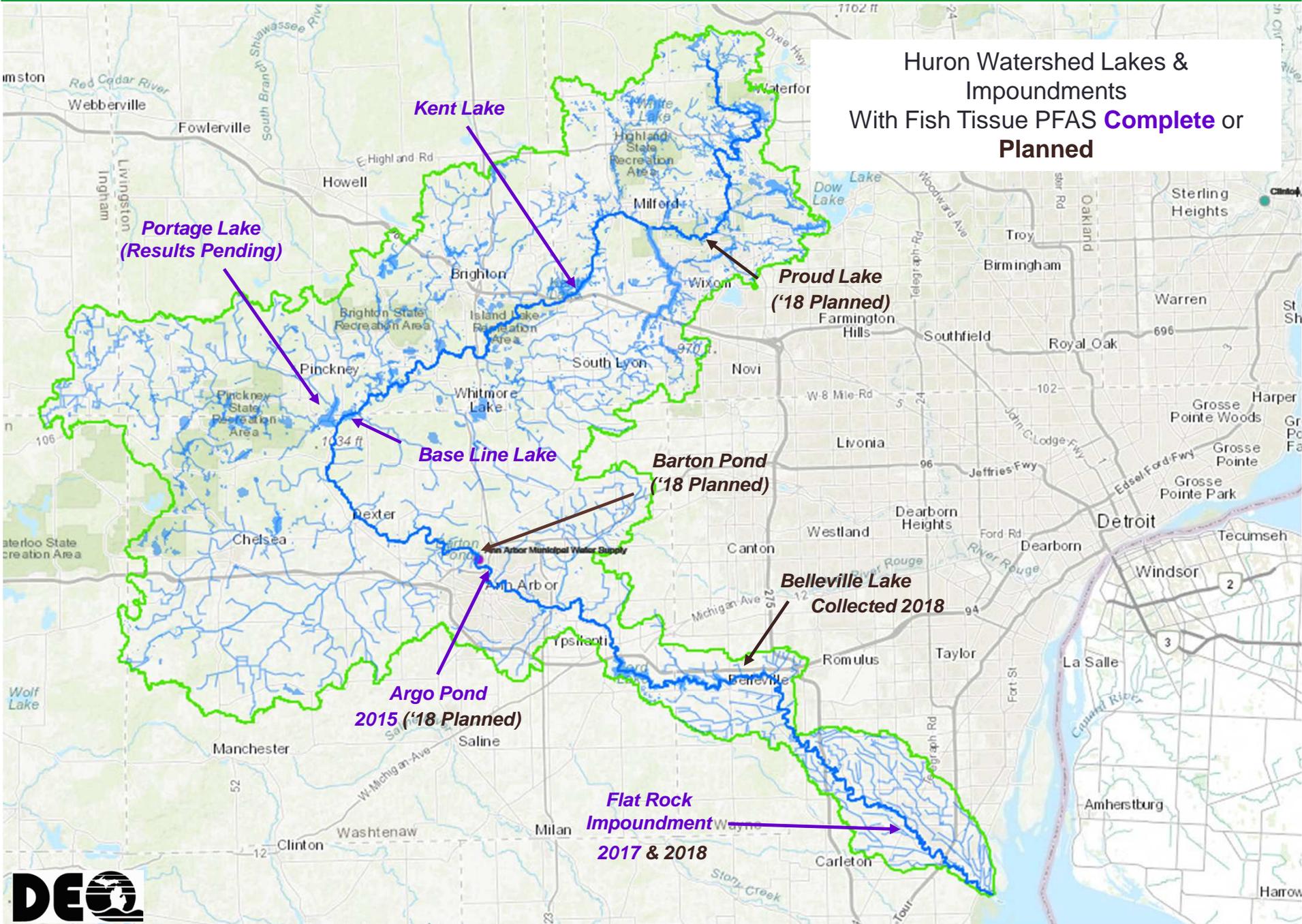
MDEQ Fish Contaminant Monitoring

- Provides data for the DHHS “Eat Safe Fish” guidelines
- Sample fish from about 40 waterbodies per year
- Most samples collected by DNR Fisheries Division during regular surveys
- “Normally” fish collected in one year are analyzed the following year (budgeting reasons)
- Often more fish samples are available than can be analyzed in a given year
- DHHS compares the 95% upper confidence limit on the mean concentration to the screening values. The DO NOT EAT screening value for PFOS is 300 ppb.

Huron Watershed Lakes & Impoundments Fish Tissue PFAS Results To-Date



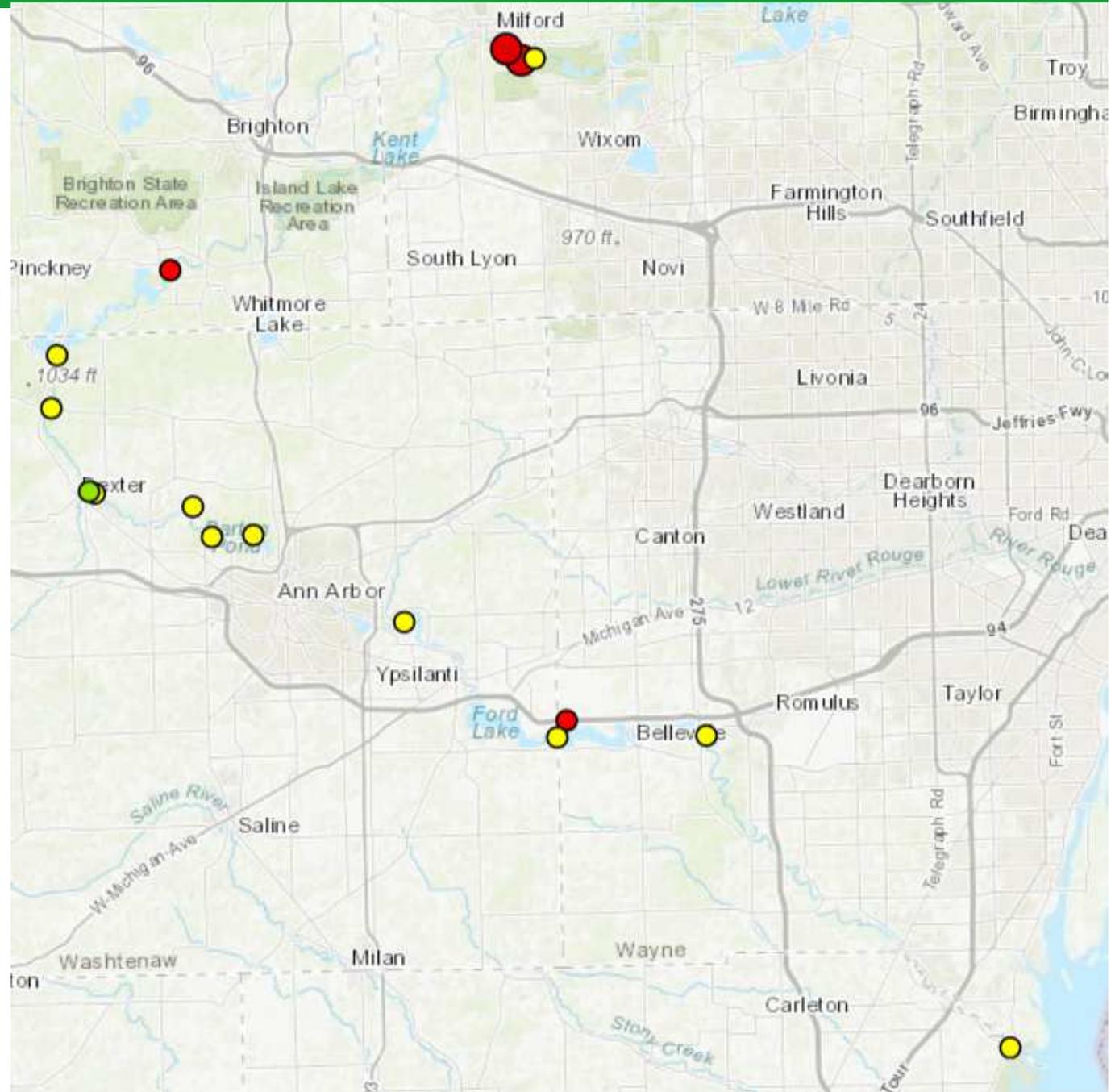
Huron Watershed Lakes & Impoundments
With Fish Tissue PFAS **Complete** or **Planned**



Surface Water Sampling Results July 24, 2018

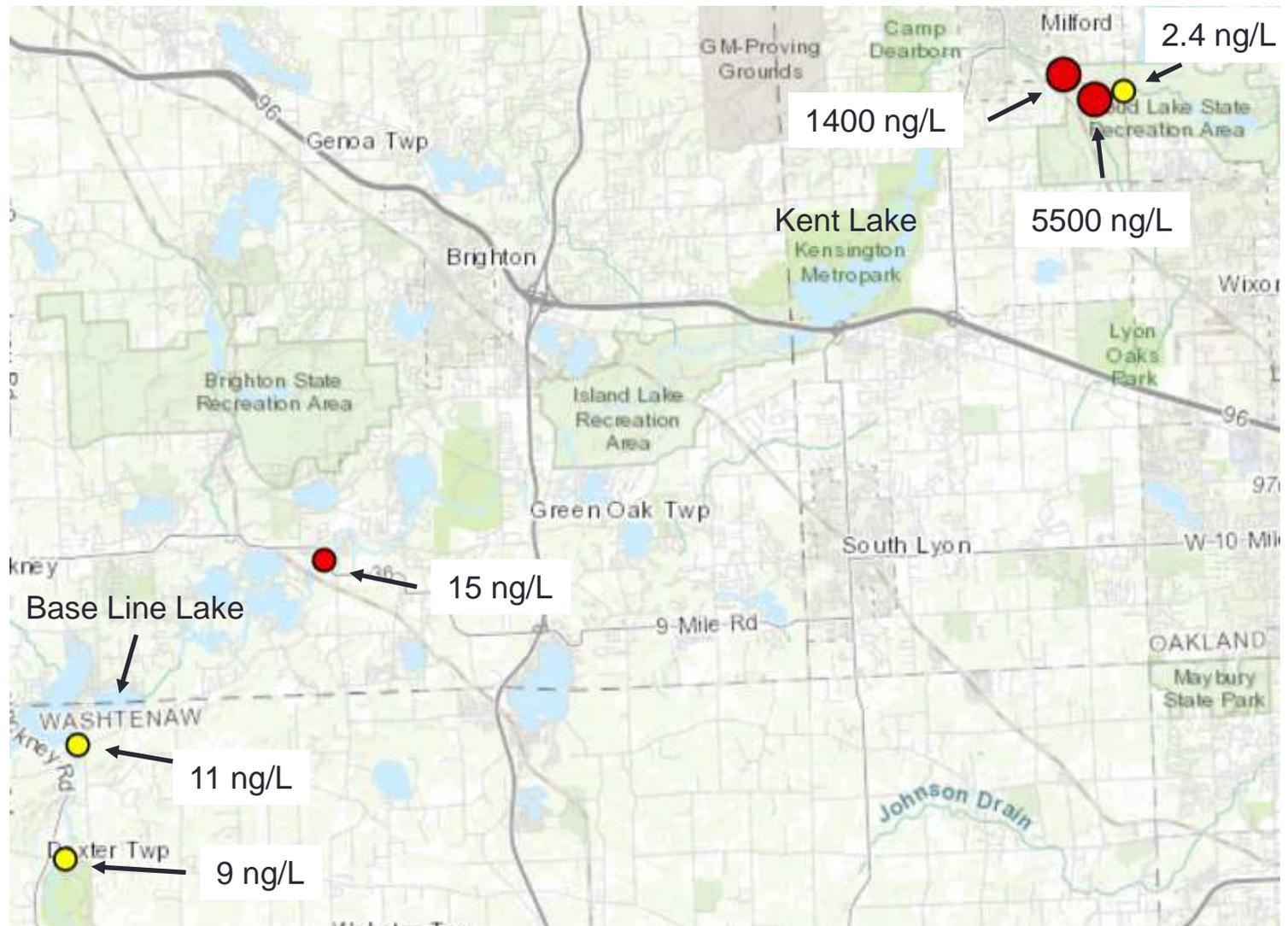
PFOS Concentration
Range (ng/L)

- >1000-5500
- >100-1000
- >12-100
- >0-12
- Non-Detect



Surface Water
Sampling
Results
July 24, 2018

Upper Huron
Watershed



Do not eat fish advisory for the Huron River

- Huron River at N Wixom Road, including Norton Creek in Oakland County downstream to the Huron River at Lake Erie at Wayne and Monroe Counties
- This includes:
 - Norton Creek, 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)

Why is there a do not eat advisory?

- Kent Lake fish filet PFOS levels (press release Aug 4)
 - PFOS fish filet levels elevated
- PFOS surface water levels (press release Aug 24)
 - Elevated PFOS surface water levels cause elevated fish filet PFOS levels
- Base Line Lake and Argo Pond fish filet PFOS levels (press release Aug 31)
 - PFOS fish filet levels elevated

Partnership on signage

- Working with county health departments, local municipalities, and Huron-Clinton Metroparks on temporary and more durable signs
- Temporary signs (in English) were placed at various access points throughout the stretch of the Huron River approximately two weeks ago
- More durable (weather resistant) signs are under development in Arabic, English, and Spanish



PFAS-containing Foam

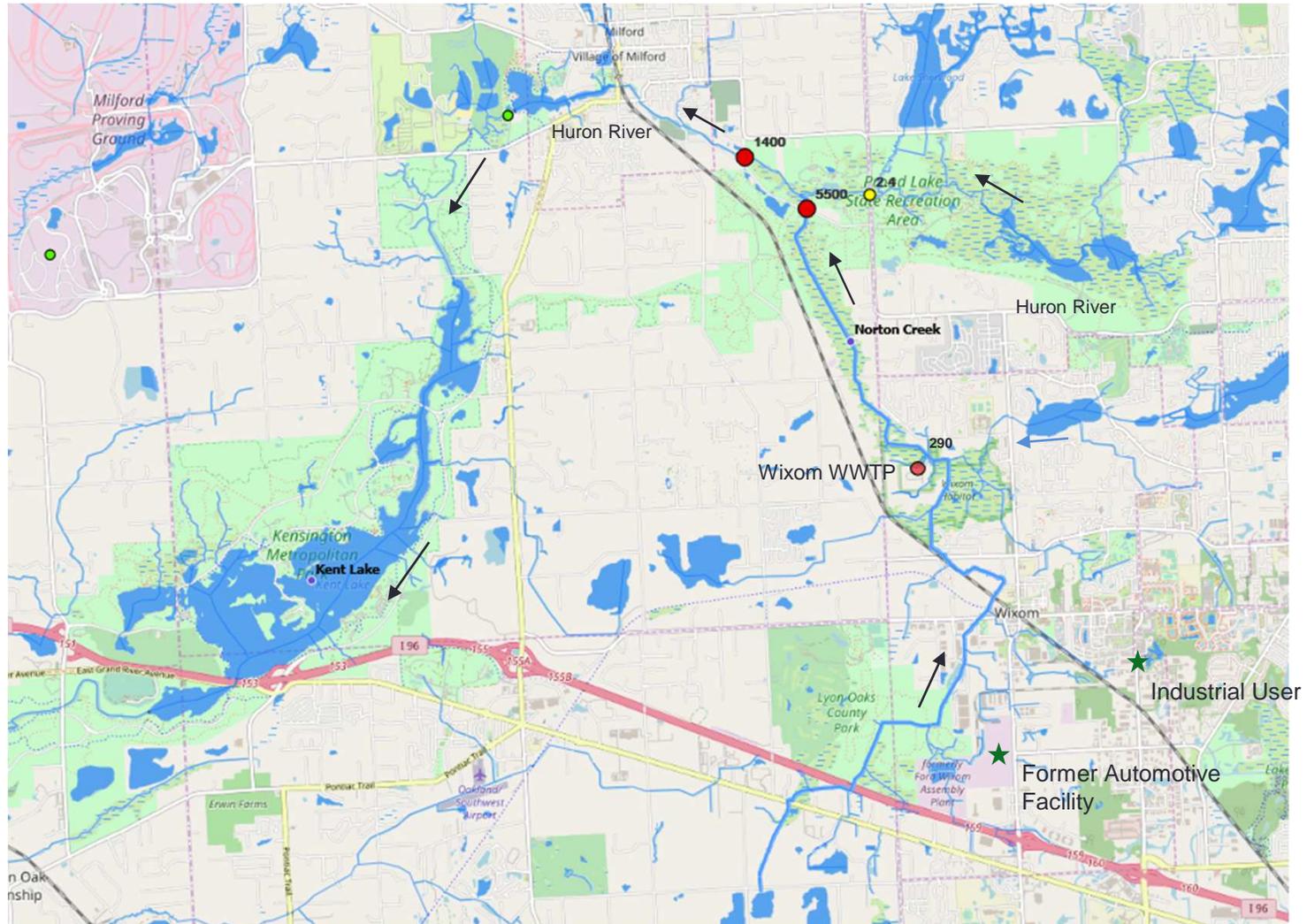
- PFAS do not go through skin readily
- Adults and children should avoid swallowing foam
- Try to keep pets out of areas with foam and rinse them off to prevent them from swallowing the foam



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

Potential Sources?

Source tracking priority - Norton Creek Drainage Area



Wixom Wastewater Treatment Plant (WWTP) Industrial Pretreatment Program (IPP) PFAS Initiative

February 2018 - DEQ required PFAS screening at Publicly Owned Treatment Plants with IPPs

- City of Wixom WWTP discharges treated wastewater to Norton Creek
 - Spring 2018 - Surveyed Industrial Users with potential sources of PFAS - 3 probable sources identified
 - May 2018 - Sampled probable sources. One Industrial User (decorative chrome plater on plastics) identified with high PFAS levels (28,000 ng/L PFOS) in their wastewater discharge to the WWTP
 - June 2018 – Sampled final effluent (treated wastewater) at WWTP – 290 ng/L PFOS
- City working with Industrial User to reduce/control PFOS discharges
- Monthly WWTP effluent monitoring
- Biosolids – Sampling required. Currently being landfilled.

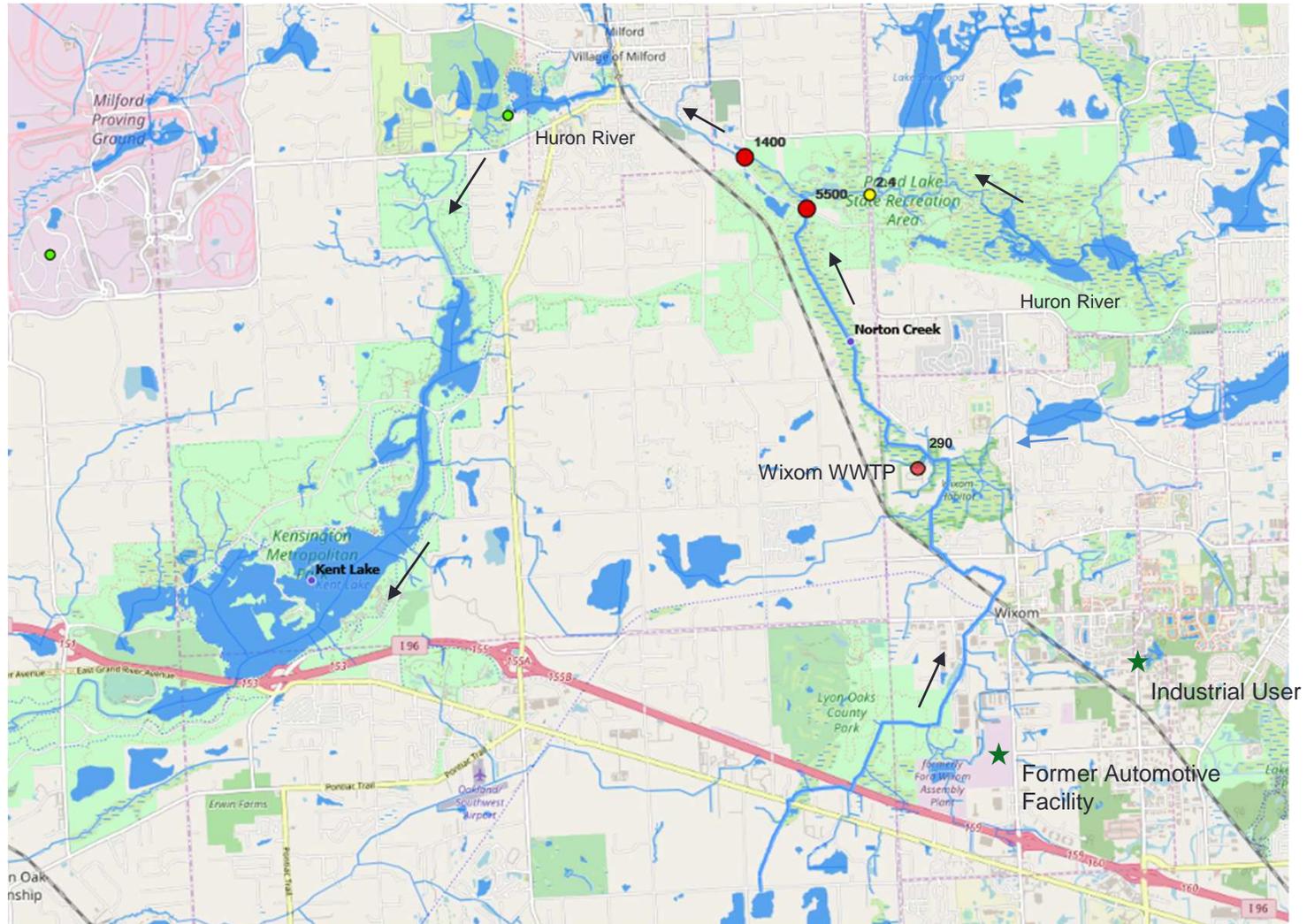


Addition information on IPP PFAS Initiative:

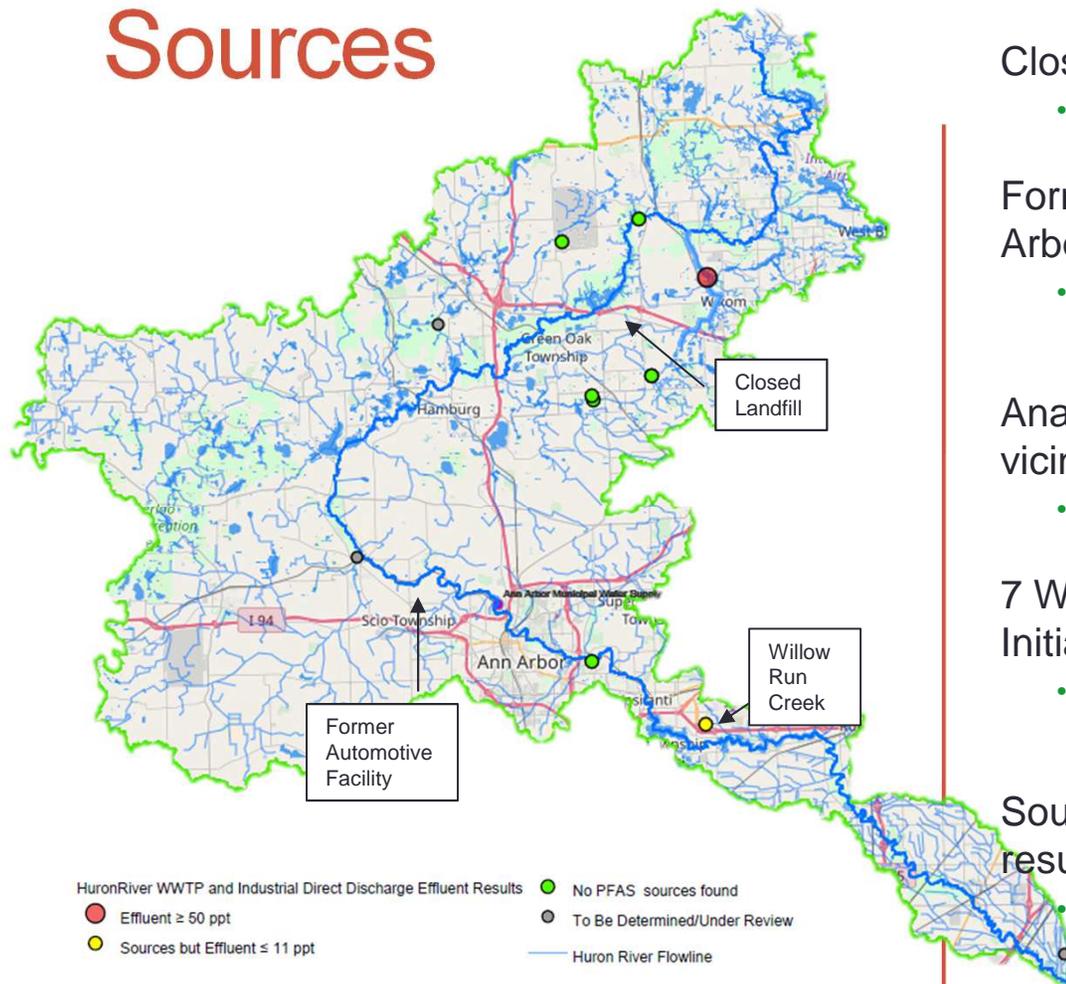
<https://www.michigan.gov/pfasresponse/0,9038,7-365-86510---,00.html>

Other Potential Sources?

Norton Creek Drainage Area – Source Tracking Sampling



Activities to Identify Other Potential Sources



Closed Landfill in Lyon Township

- Working with responsible party to sample groundwater monitoring wells

Former Automotive Facility upstream of Ann Arbor

- PFAS detected in groundwater. Results: None above criteria. Additional sample results expected end of September

Analysis of 4 permitted discharges in the vicinity of Kent Lake

- Results: All below WQS (Milford WWTP, S. Lyon WWTP, Seamless Tube, GM Proving Grounds)

7 WWTPs participating in IPP PFAS Initiative

- Results: 1 above WQS (Wixom); 3 no sources or effluent below WQS (Ann Arbor, Lyon Twp., YCUA); 3 yet TBD (Brighton, Dexter, S. Huron Valley UA)

Source tracking elevated surface water result in Willow Run Creek (26 ppt)

- Potential sources – (former automotive manufacturing facility, airport, landfill).

What's Next?

- Continued source identification, with priority on the Norton Creek drainage area
- Surface water - fish tissue samples
- 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

Contact Information and Questions

Stephanie Kammer - 517-897-1597 – kammers@michigan.gov – questions related to overall efforts to address PFAS in the Huron River, Norton Creek, and PFAS related activities within the Lansing District (Livingston County)

Gerald Tiernan – 517-582-0520 - tiernang@michigan.gov – questions related to PFAS activities within the Jackson District (Washtenaw County, Monroe County)

Tracy Kecskemeti – 248-200-6469 – kecskemetit@michigan.gov– questions related to PFAS activities within the Southeast Michigan District (Oakland County, Wayne County)

Joe Bohr – 517-284-5525 - bohrj@michigan.gov questions related to fish sampling.

Jennifer Gray– 517-281-3483 - grayj@michigan.gov – any questions related to fish advisories, PFAS, and its public health consequences

