

# Welcome

## MPART PFAS Regional Informational Webinar Grand Rapids Region

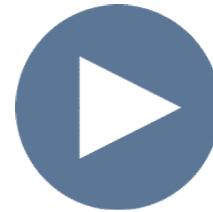
September 28, 2020

The Webinar will begin at 6:00 p.m.

# Webinar Housekeeping



All lines are muted during the webinar.



We are recording this webinar

# How to ask a question?



Submit your questions using the “Q/A” box in at the bottom of your screen.



Click the “hand” icon at the bottom of your screen.



Type \*9 to raise your hand.

**\*9**

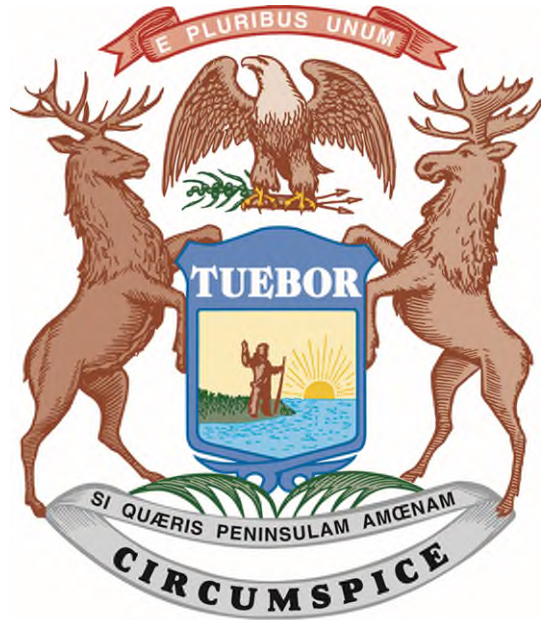
# MPART PFAS Regional Informational Webinar

## Grand Rapids Region

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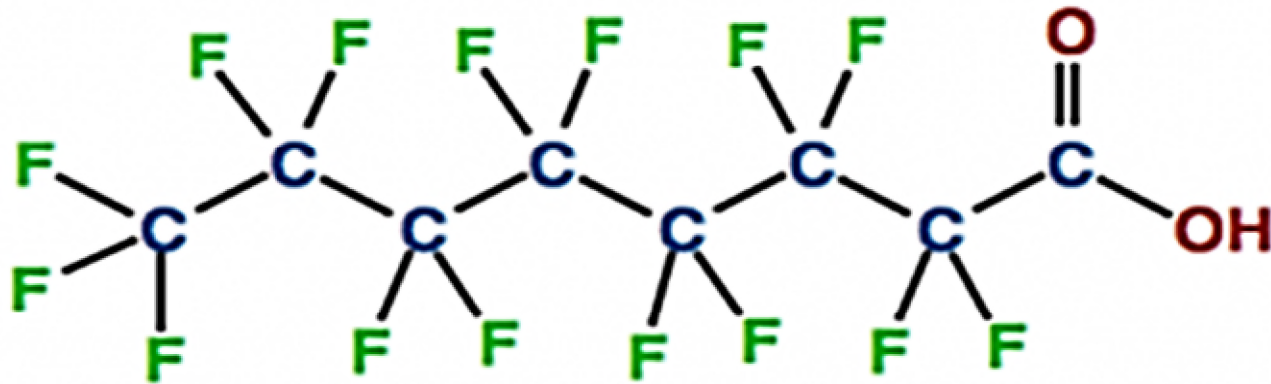
Steve Sliver, Executive Director  
Michigan PFAS Action Response Team  
(517) 290-2943  
[SliverS@Michigan.gov](mailto:SliverS@Michigan.gov)

# 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)



**PFOA** - perfluorooctanoic acid

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

# PFAS Uses



**Aerospace**



**Apparel and  
Fabrics**



**Building and  
Construction**



**Chemicals and  
Pharmaceuticals**



**Electronics**



**Oil, Gas, and Energy**



**Industrial**



**Healthcare and  
Hospitals**



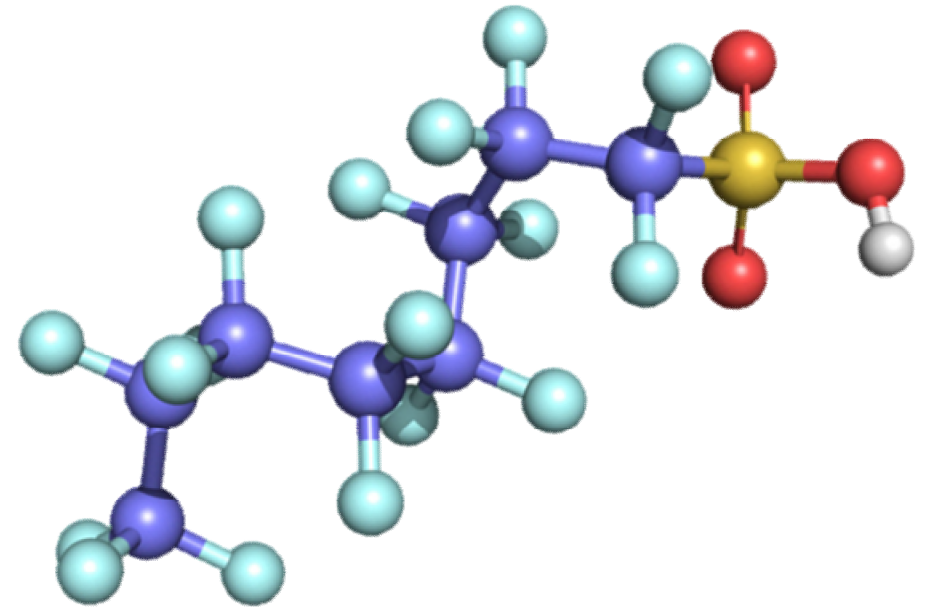
**Aqueous Film  
Forming Foam**



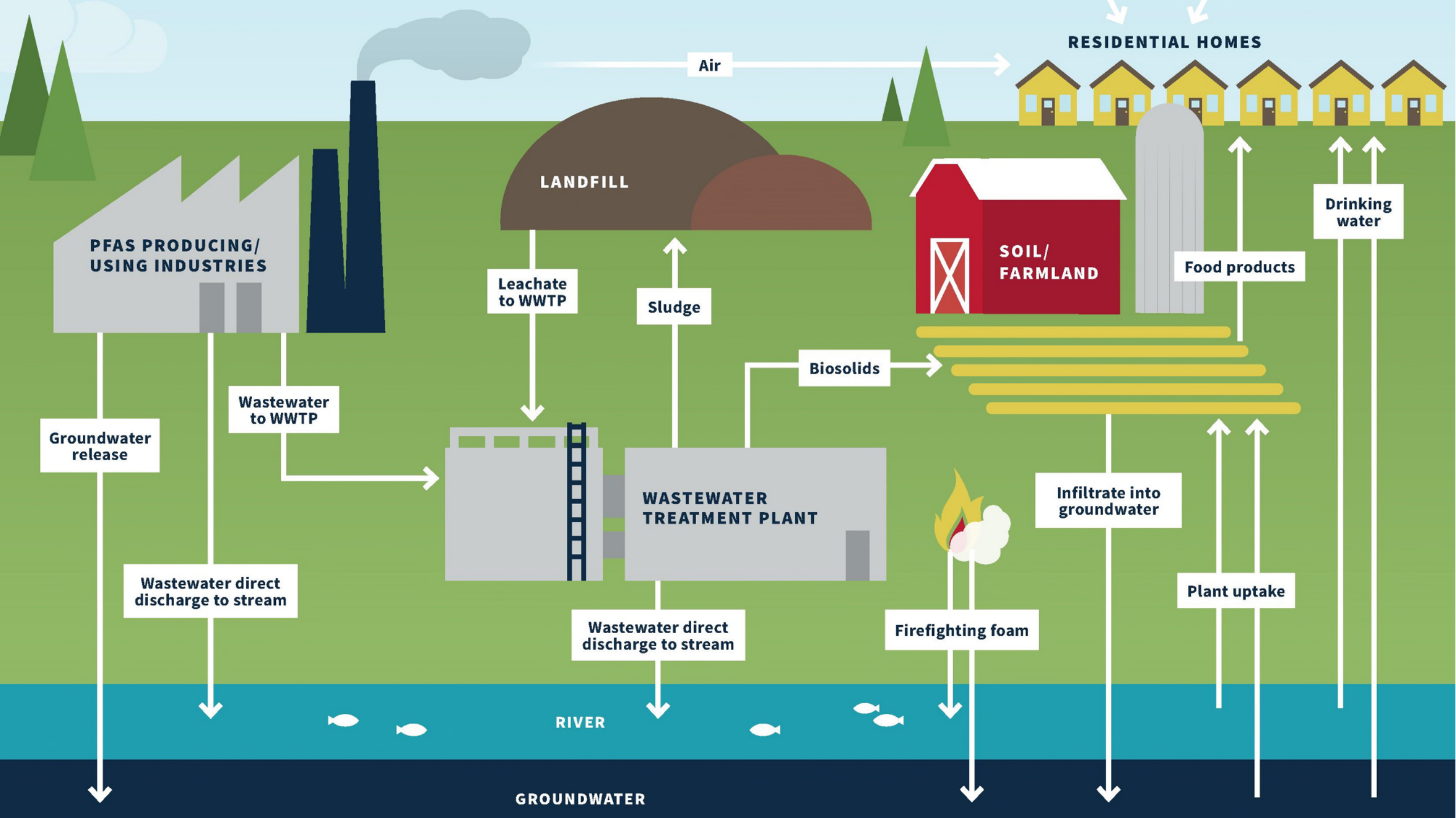
**Food Packaging**

# 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 National Regulations









# Surface Water Investigations

- Survey of Surface Water and Fish
- Foam
- Wastewater





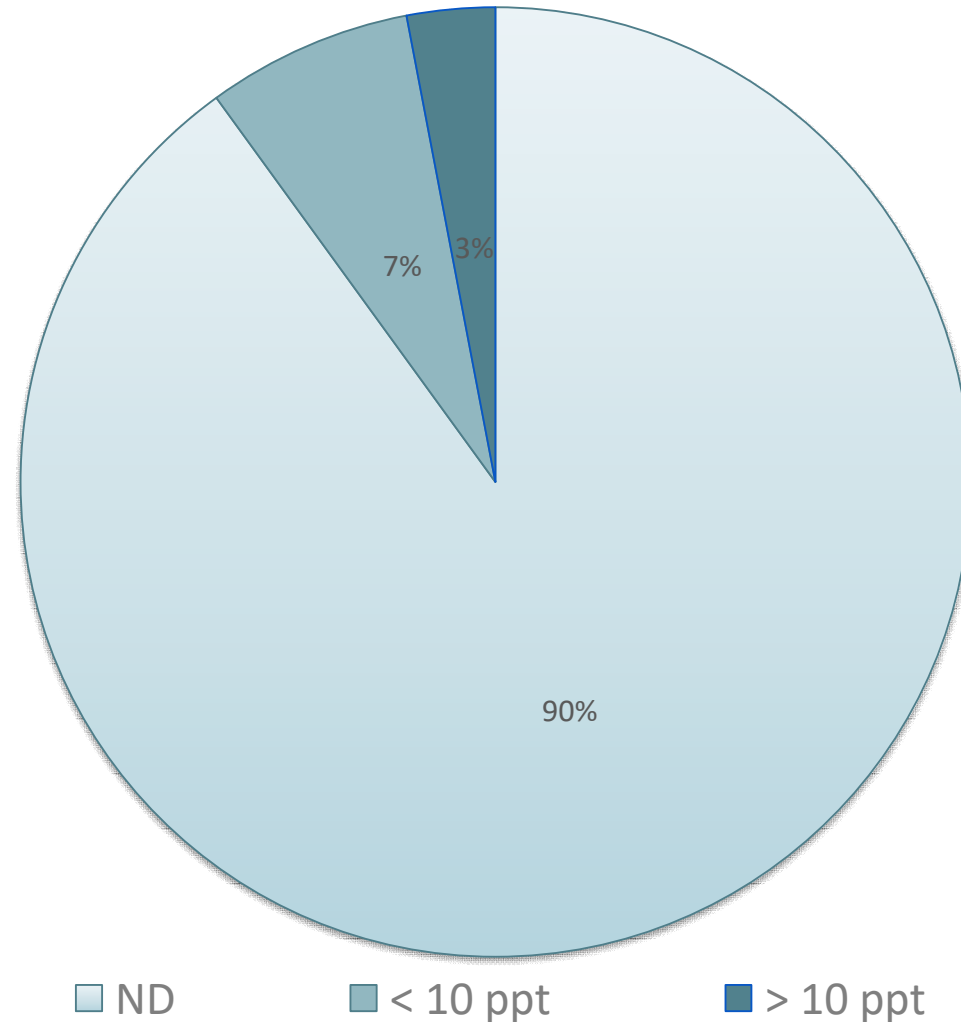
# Public Water Supply Testing

- All Community Water Supplies (1,114)
- All Tribal Systems (17)
- Schools and Larger Day Cares (619)
- Additional Select Water Supplies
- Monitoring
  - All 65 Surface Water Systems
  - 61 Systems > 10 ppt Total PFAS

# Total PFAS in MI Public Water Supplies

EPA Method 537 Rev 1.1

NEtFOSA	NMeFOSAA	PFBS
PFDA	PFDoA	PFHpA
PFHxS	PFHxA	PFNA
PFOS	PFOA	PFTA
PFTTrDA	PFUnA	





# Drinking Water Standards

- No Federal Standards to Adopt
- Science Advisory Panel Report, December 2018
  - **70 ppt standard for PFOA/PFAS too high**
  - **Other PFAS should be considered**
- Michigan's Two-Step Approach
  - **Science Advisory Workgroup provided health-based values**
  - **EGLE promulgated standards in rule**

## Michigan Drinking Water Standards

- Maximum Contaminant Levels (MCLs)
- August 3, 2020
- 2,700 water systems

Compound	MCL	EPA Recommendation
PFNA	6 ppt	NA
PFOA	8 ppt	70 ppt combined
PFOS	16 ppt	
PFHxS	51 ppt	NA
GenX (HFPO-DA)	370 ppt	NA
PFBS	420 ppt	NA
PFHxA	400,000 ppt	NA

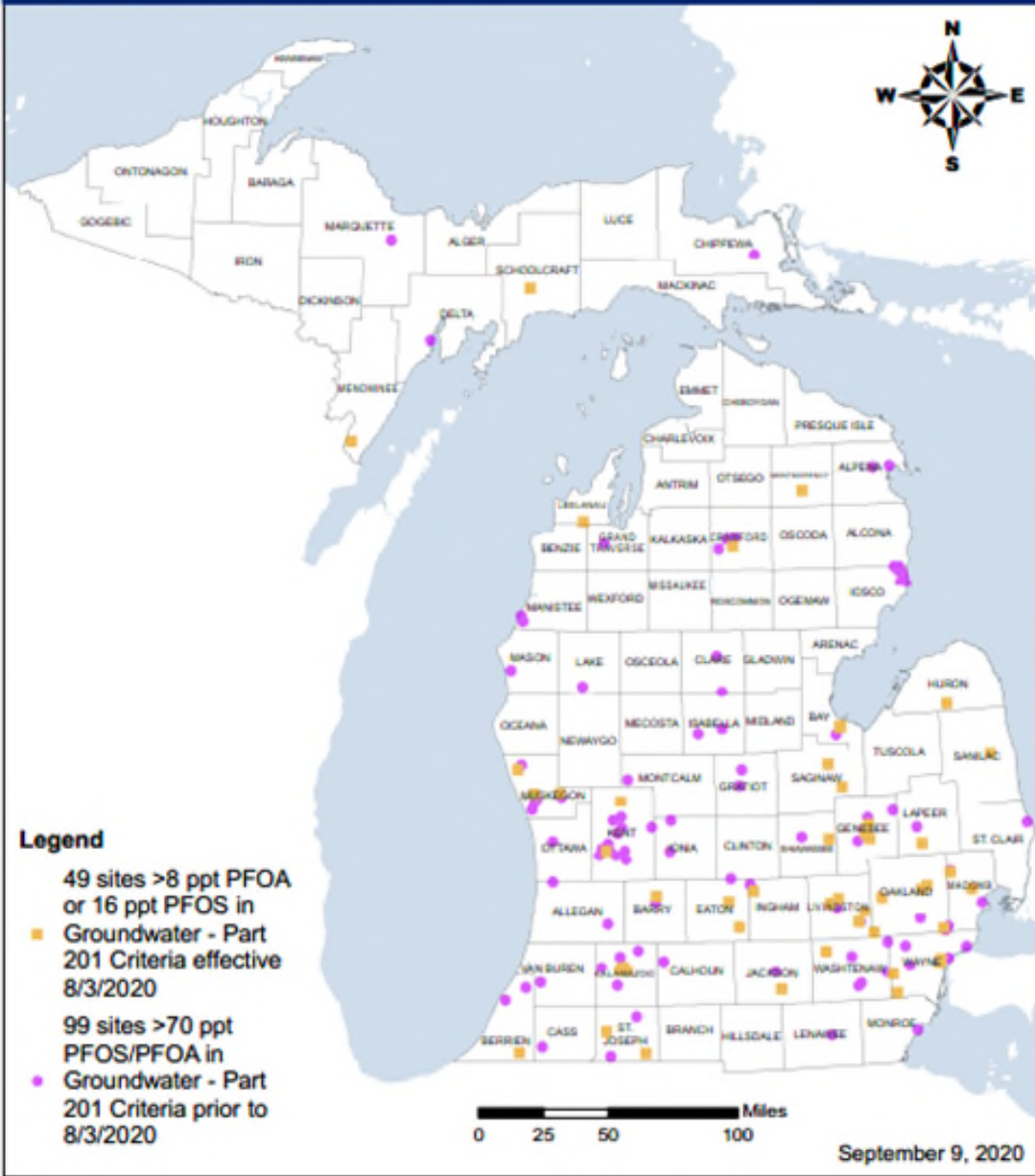
# 7 MCLs ≠ 7 Cleanup Criteria

- Groundwater cleanup criteria already in rule

Compound	Prior to 8/3/20	After 8/3/20
PFOA	70 ppt combined	8 ppt
PFOS		16 ppt

- Rulemaking necessary for other 5 MCLs to become groundwater cleanup criteria
- Important for how we define a PFAS site



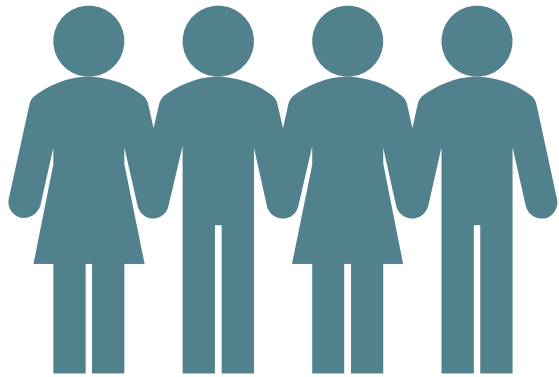


# PFAS Sites

- Exceed groundwater cleanup criteria
  - Expanded from 99 to 138 sites on August 3, 2020
- Prioritized Investigations Based on Known or Suspected Sources, Potential for Exposure
- Protect Drinking Water Pathway



# Citizens Advisory Workgroup



- Residents From Impacted Communities
- Key Charges:
  - Recommend How to Engage and Empower Communities
  - Recommend How to Educate the General Public

# PFAS and Health

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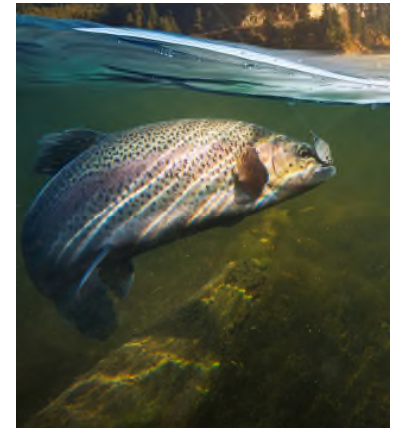
William Farrell, Toxicologist  
Michigan Department of Health and Human Services  
517-243-5350  
[FarrellW@Michigan.gov](mailto:FarrellW@Michigan.gov)

# The Role of MDHHS/Local Public Health

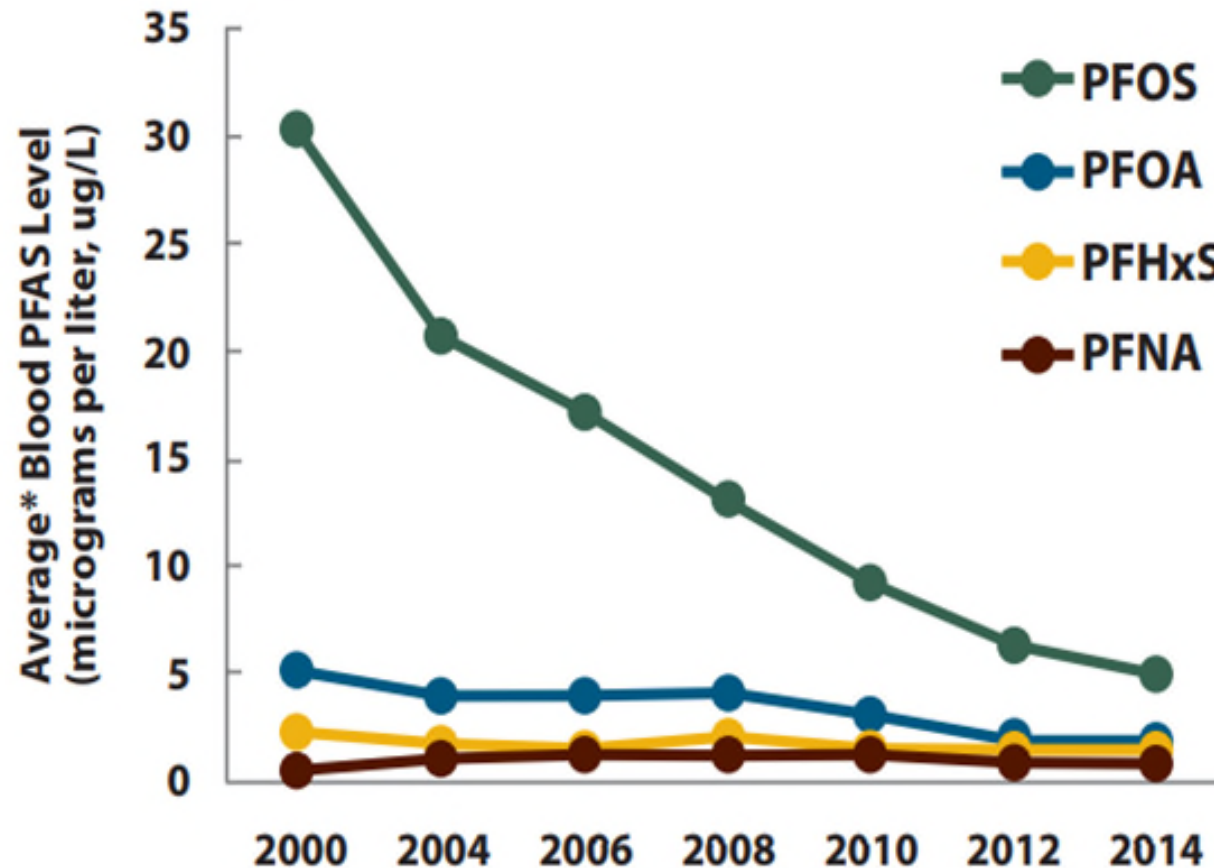
- Understand the health concerns facing your community
- Develop a plan to investigate and address health risks
  - EGLE leads the site investigation
  - MDHHS and the Local Health Department lead the public health planning and response
- Evaluate PFAS exposures to residents in the community
  - Recommend public health actions as needed

# Exposure to PFAS Chemicals

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



# Blood levels of the most common PFAS in people in the United States 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).

# Potential Associated Human Health Outcomes PFOA and/or PFOS

- 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

\* PFOA only

# Regional Site Investigations

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Heidi Hollenbach, District Supervisor

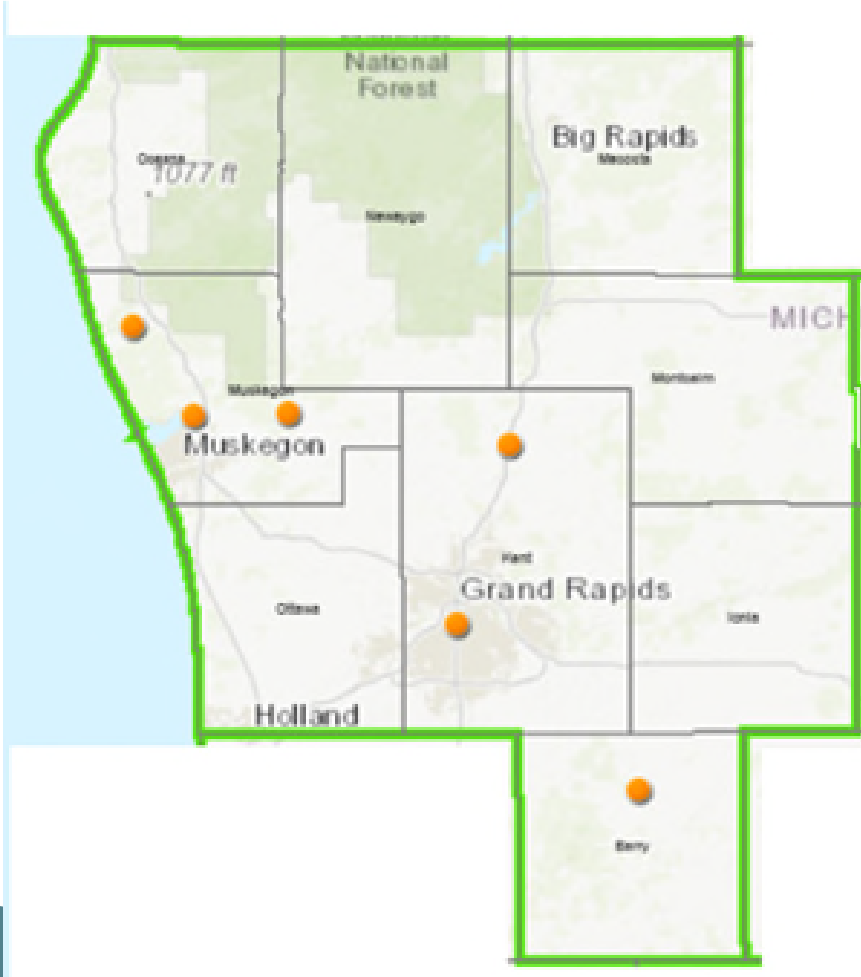
Grand Rapids District Office

Air Quality Division

[HollenbachH@Michigan.gov](mailto:HollenbachH@Michigan.gov)

616-540-1136

# Regional PFAS Contact



Heidi Hollenbach  
Grand Rapids District Office  
[HollenbachH@Michigan.gov](mailto:HollenbachH@Michigan.gov)  
616-540-1136



# Sites

- **Barry County**
  - CES Landfill of Hastings
- **Kent County**
  - Cedar Springs Historic Wastewater Treatment Lagoons and Current Discharge Fields
  - Steele Avenue Area
- **Muskegon County**
  - Former Teledyne Vehicle Systems (TDY)
  - Muskegon County Wastewater Management System Metro Wastewater Treatment Plant
  - Muskegon Chemical Company



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ENVIRONMENT, GREAT LAKES, AND ENERGY

# CES Landfill of Hastings

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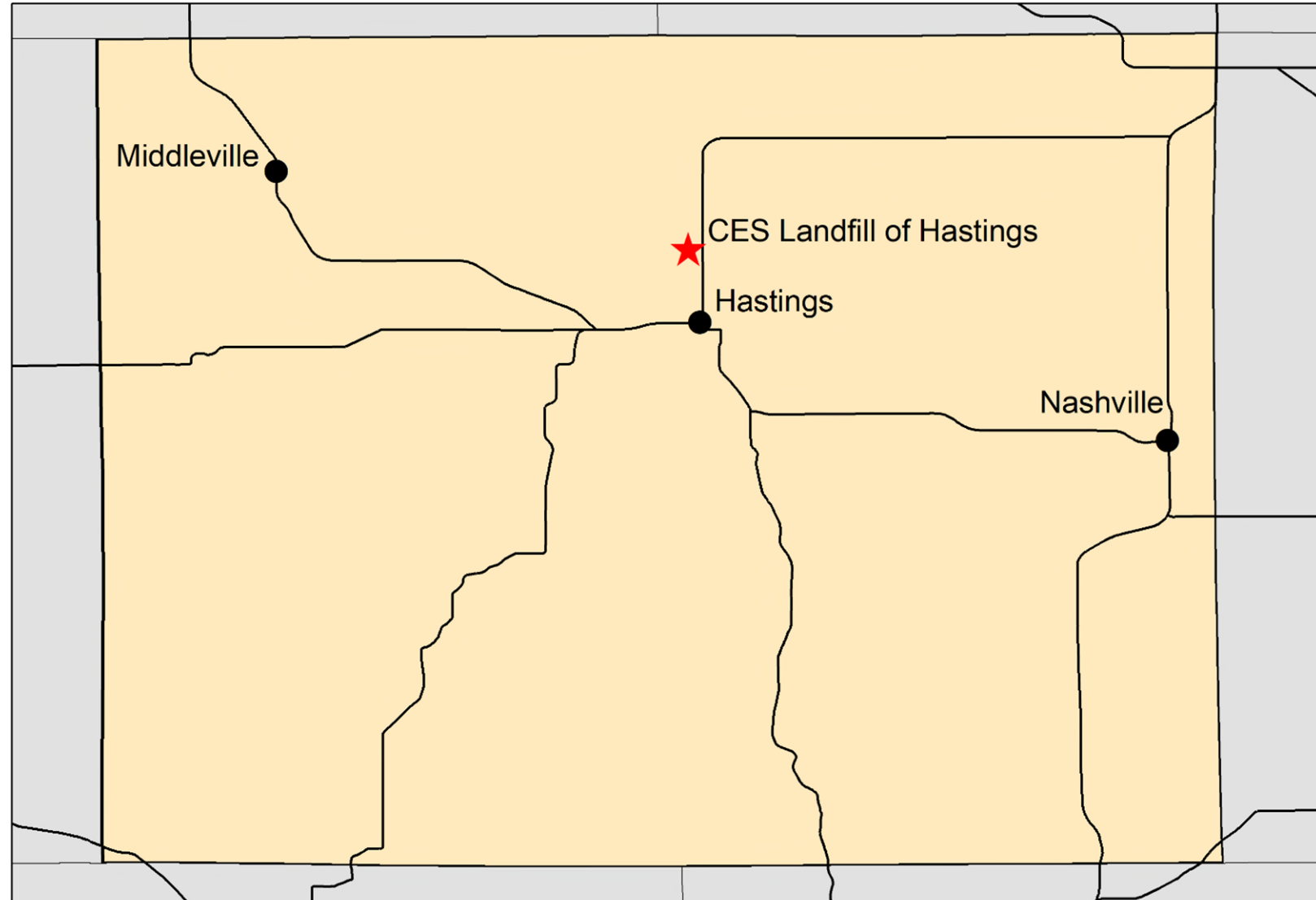
Kent Walters

Materials Management Division

616-278-4350 | [WaltersK7@Michigan.gov](mailto:WaltersK7@Michigan.gov)

# CES Landfill of Hastings

Site Location:  
1899 N M-43 Hwy,  
Hastings, Barry County



# CES Landfill of Hastings





# CES Landfill of Hastings

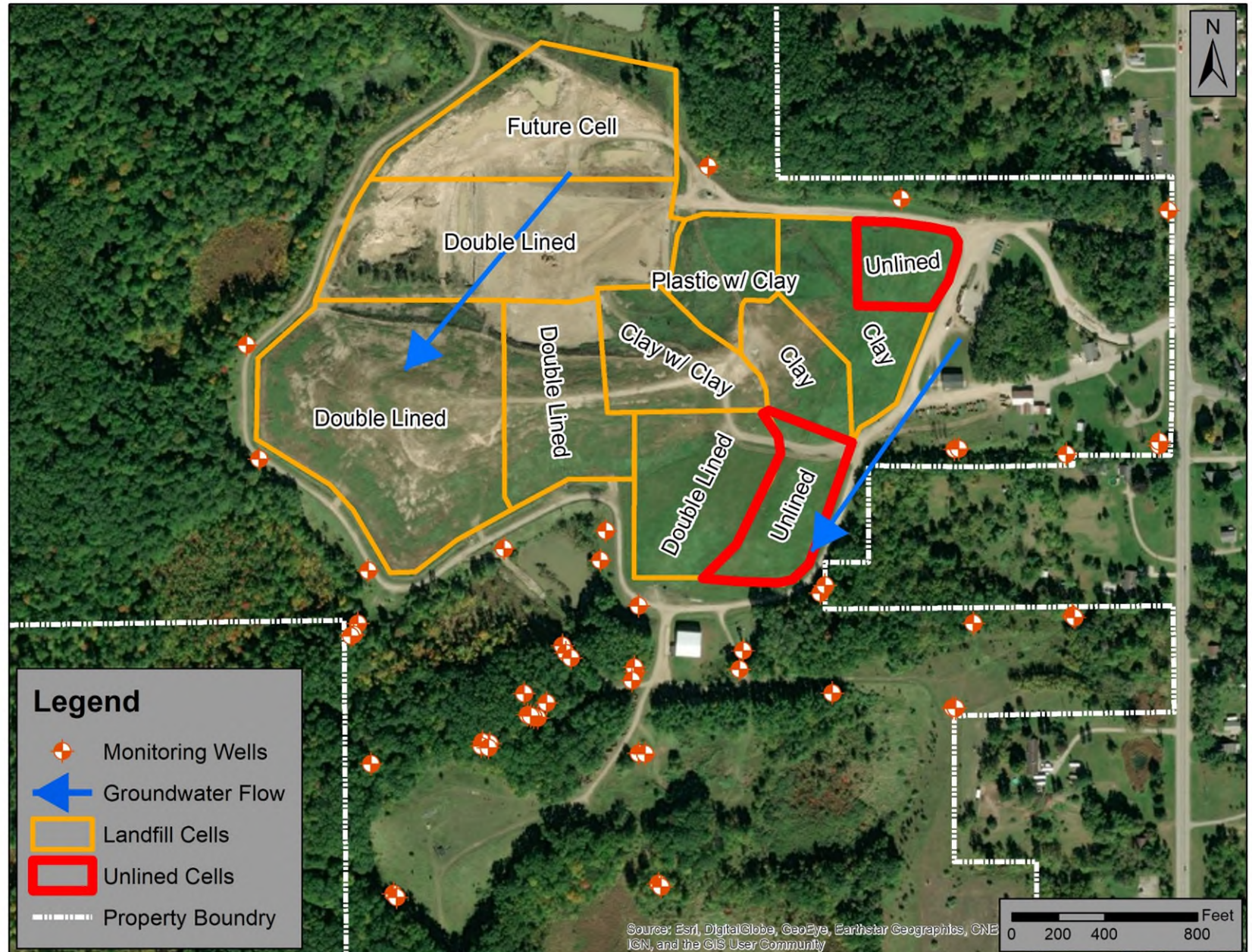
Why did EGLE test for PFAS?





# CES Landfill of Hastings

Why did EGLE test for PFAS?



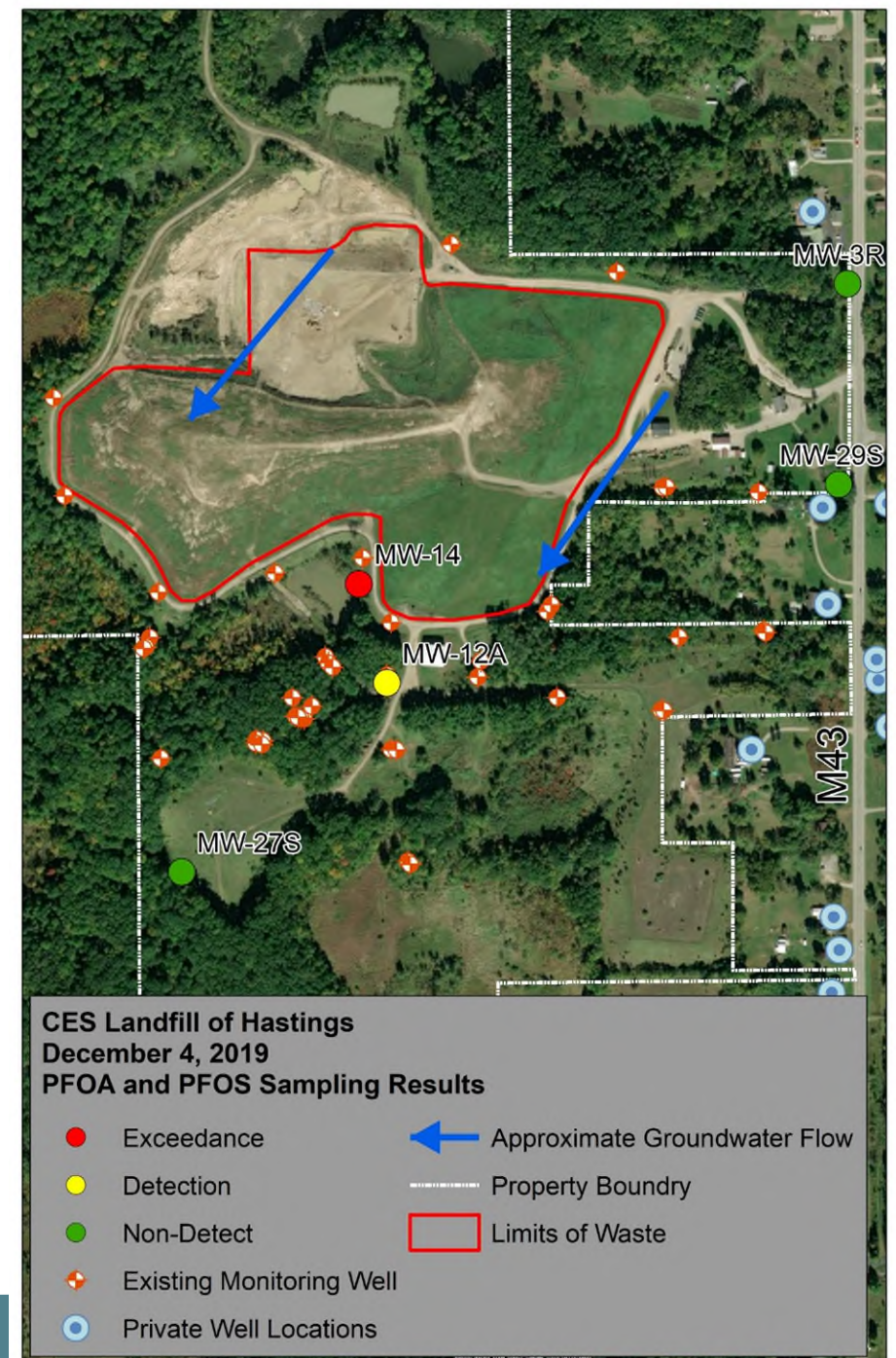


## PFAS Results

- 1 well in exceedance of groundwater criteria for PFOA (Red Dot)
- 1 well had a detection of PFOA but was below groundwater criteria (Yellow Dot)
- 3 wells did not detect PFAS (Green Dots)

## PFAS Results Discussion

- Groundwater tests near private water wells do not detect PFAS
- Groundwater flows away from drinking water wells
- PFOA exceeds groundwater criteria next to the landfill, but PFAS is not detected further downgradient

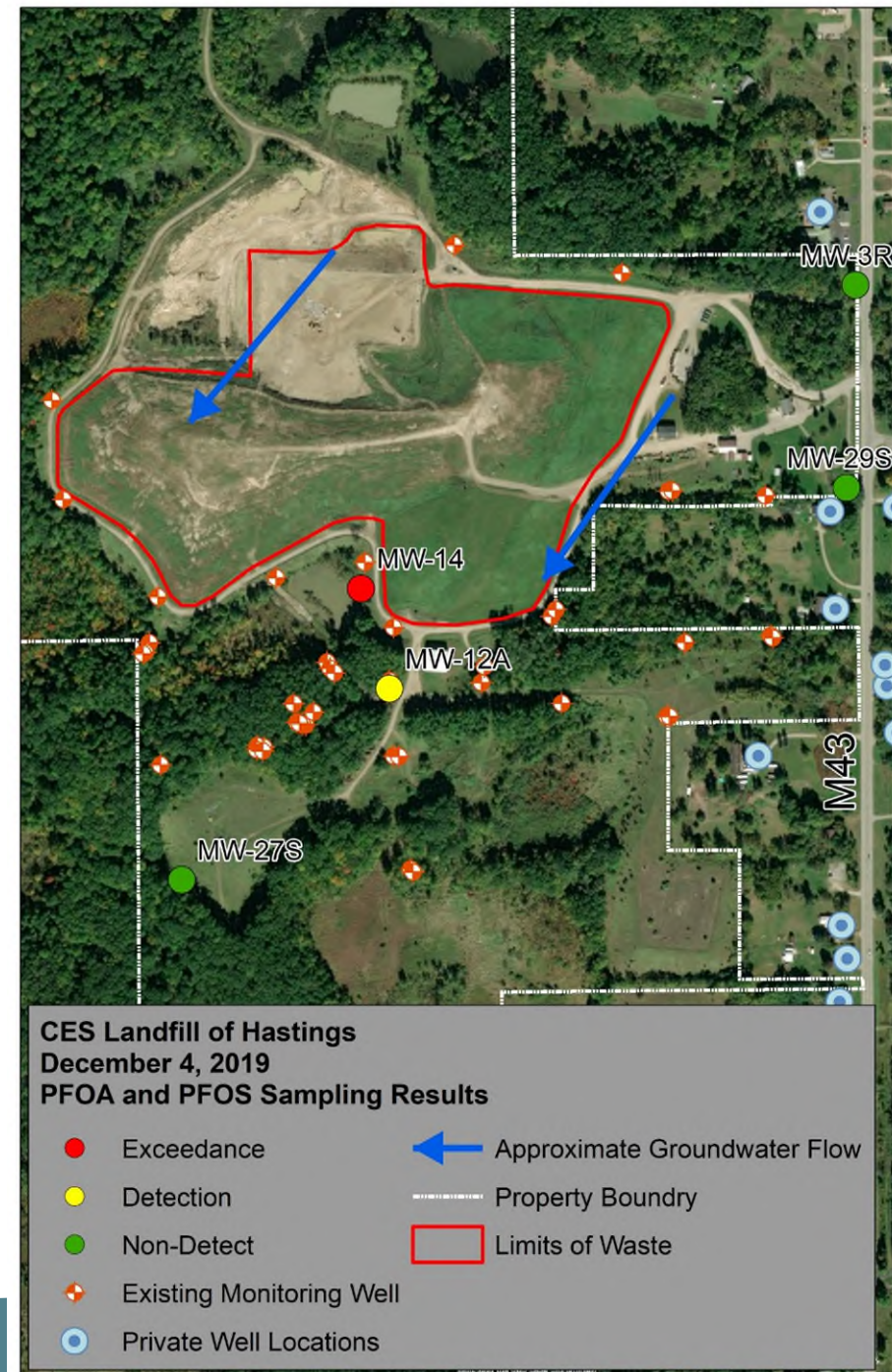




# CES Landfill of Hastings

## Next Steps

- Additional onsite groundwater testing.
- No private well testing planned at this time with current known Information.







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# Cedar Springs Historic Wastewater Treatment Lagoons and Current Discharge Fields

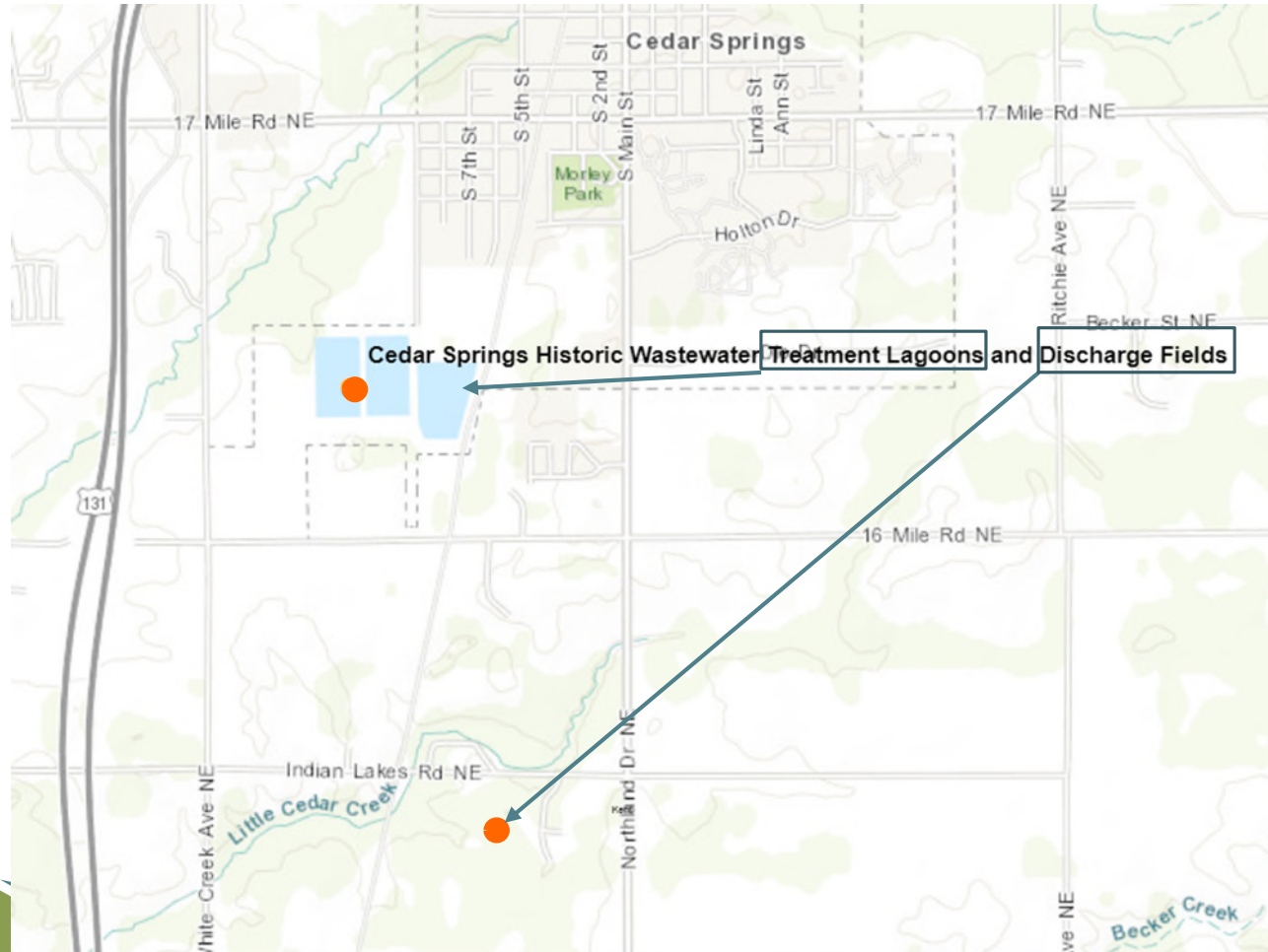
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Karen Vorce

Remediation and Redevelopment Division

616-439-8008 | [VorceK@Michigan.gov](mailto:VorceK@Michigan.gov)

# Cedar Springs Historic Wastewater Treatment Lagoons and Current Discharge Fields



- Historic Lagoons: 725, 730, 750, & 755 West Street NE
- Current Discharge Fields: 4482 & 4550 Indian Lakes Road NE
- Shallow groundwater flows to the west-southwest
- Deeper groundwater is believed to flow south

# Cedar Springs Historic Wastewater Treatment Lagoons and Current Discharge Fields

## Historical Area Residential Well Sampling:

- Between 2017 through 2018, 16 residents in the Russell Ridge neighborhood independently sampled their drinking water wells for PFAS
  - The highest result was 18.2 ppt for PFOA
- In 2019, EGLE resampled 7 of the previously tested wells to verify PFAS contamination
  - The highest result was 15 ppt PFOA



Photo Source: AECOM

# Cedar Springs Historic Wastewater Treatment Lagoons and Current Discharge Fields

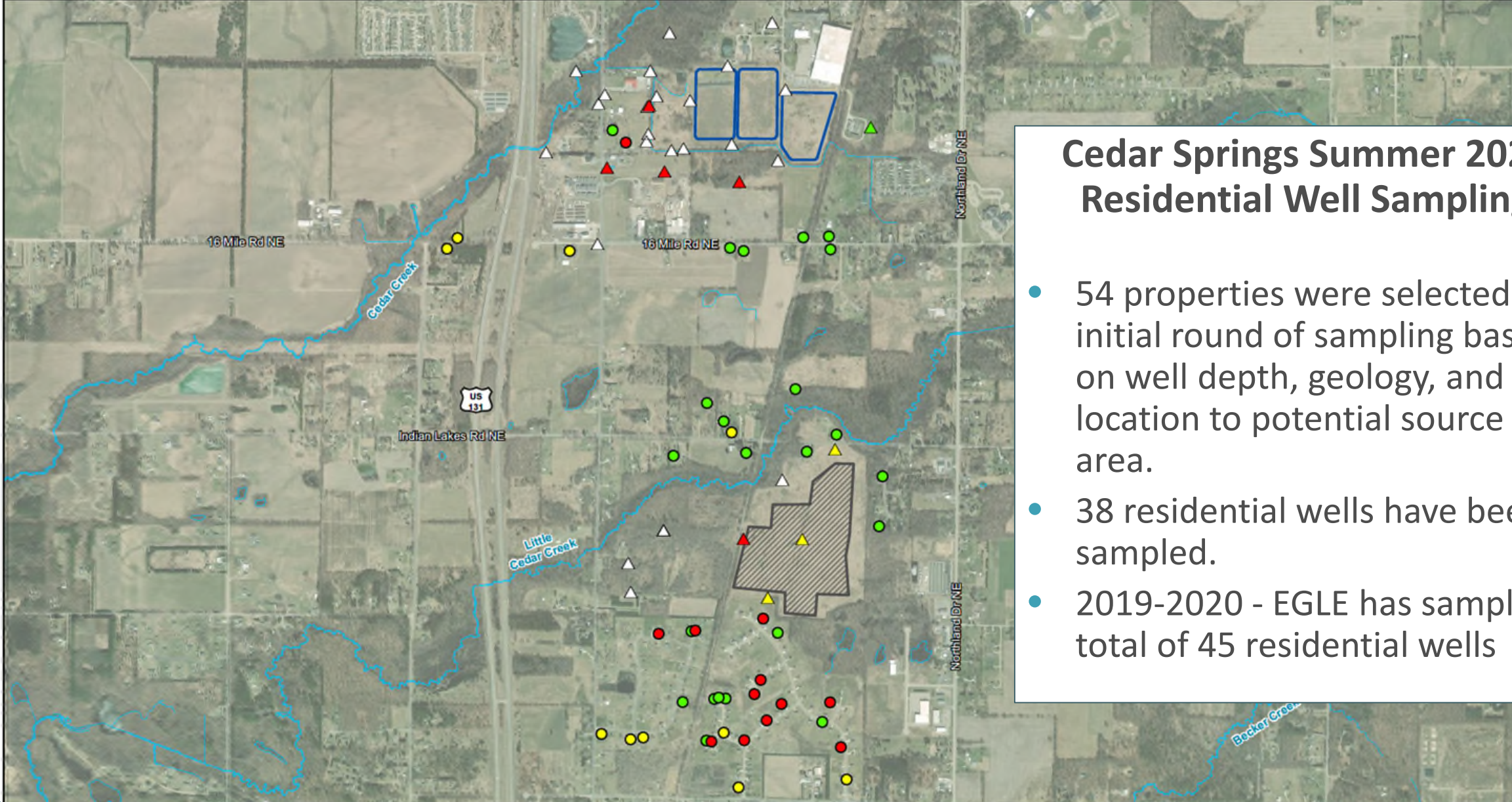
## Groundwater Sampling:

- In January 2020, the city of Cedar Springs collected groundwater samples:
  - 5 monitoring wells located at the historic lagoon property
    - PFOA in 4 of the 5 monitoring wells sampled at the historic lagoon property exceeded 8 ppt for PFOA; the highest PFOA detection was 43 ppt.
  - 4 monitoring wells at the discharge fields
    - 1 monitoring well at the current discharge fields exceeded 8 ppt PFOA, with a concentration of 10 ppt.



## Cedar Springs Summer 2020 Residential Well Sampling

- 54 properties were selected for initial round of sampling based on well depth, geology, and location to potential source area.
- 38 residential wells have been sampled.
- 2019-2020 - EGLE has sampled a total of 45 residential wells



# Cedar Springs Historic Wastewater Treatment Lagoons and Current Discharge Fields

## Next Steps:

- EGLE will continue to review sampling data and area geology to determine what additional homes should be sampled.
- Local and State Health Departments will work with residents to provide point-of-use filters based on well sampling results.
- EGLE will work with the city of Cedar Springs regarding the on-site investigations of the historic lagoons and the current discharge fields.



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# Steele Avenue Area

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Jay Poll

Remediation and Redevelopment Division

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# Steele Avenue Area



- 1500 Block of Steele Avenue SW, City of Grand Rapids, Kent County
- Formerly vacant - discovered during groundwater sampling for property transaction
- Groundwater flows to the west, toward Plaster Creek
- Area is industrial and there are no known drinking water wells in the area

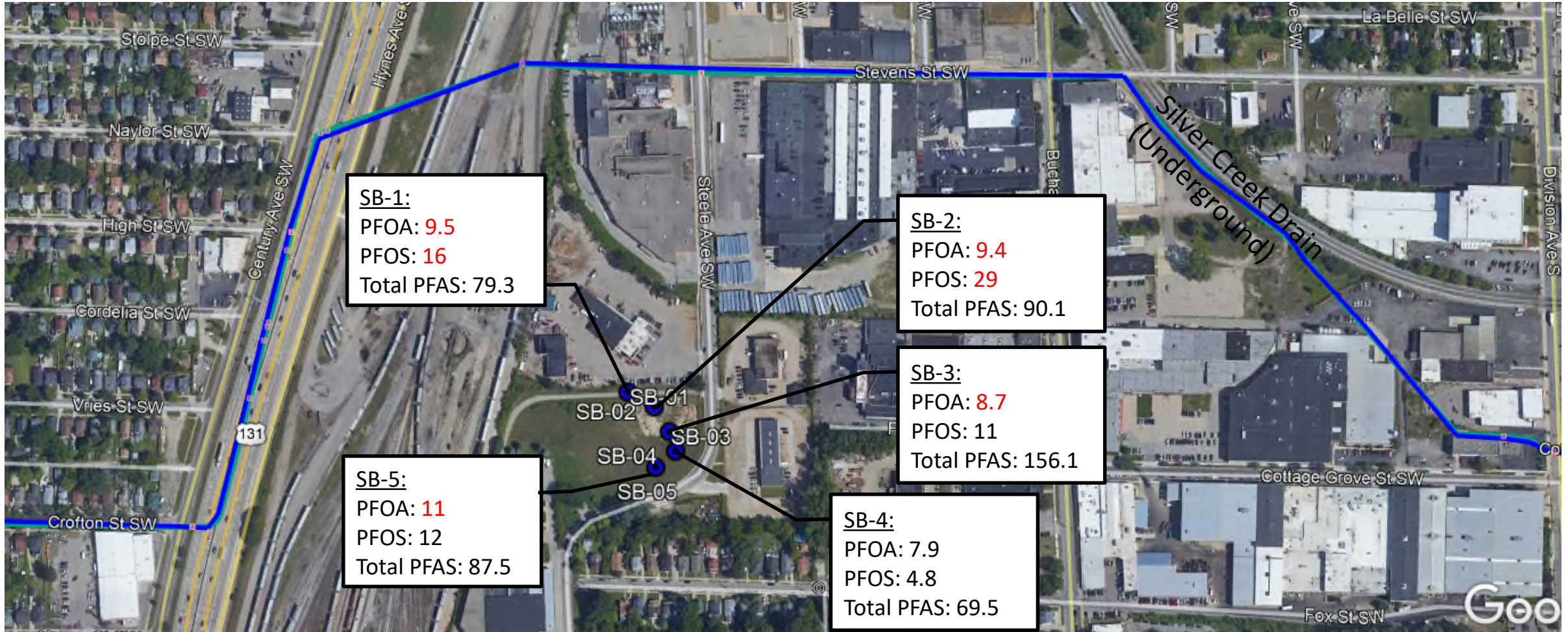


# Steele Avenue Area



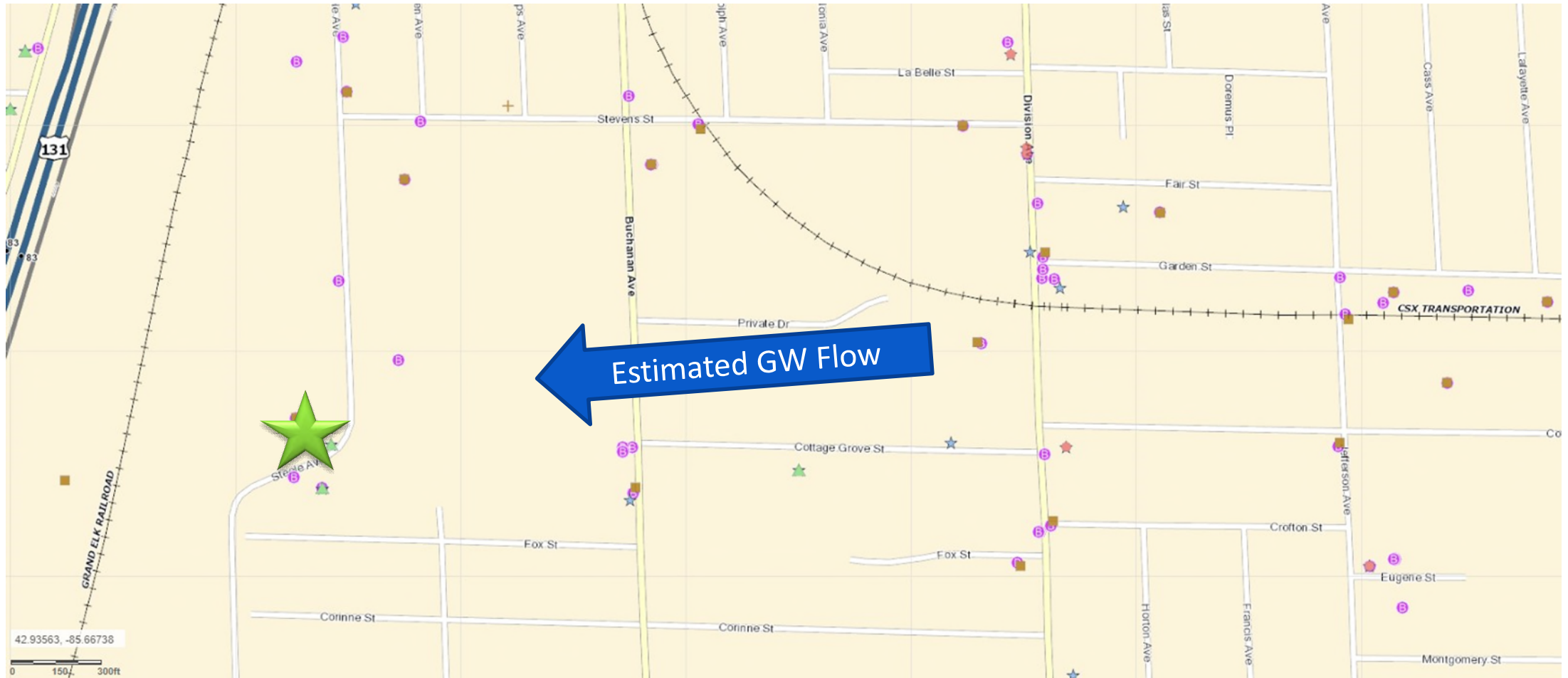


# Steele Avenue Area



Sample results in parts per trillion. Red indicates exceedance.

# Steele Avenue Area



A “target rich environment” – each symbol represents a known site of contamination and potential source.



# Steele Avenue Area



## EGLE's Next Steps:

- Additional file investigation for potential/likely sources
- Directed groundwater investigation
- Based on above, complete revised receptor survey: are there any drinking water wells in the expanded area of concern?
- If a source is located, pursue compliance & enforcement activities in accordance with Part 201



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# Former Teledyne Vehicle Systems

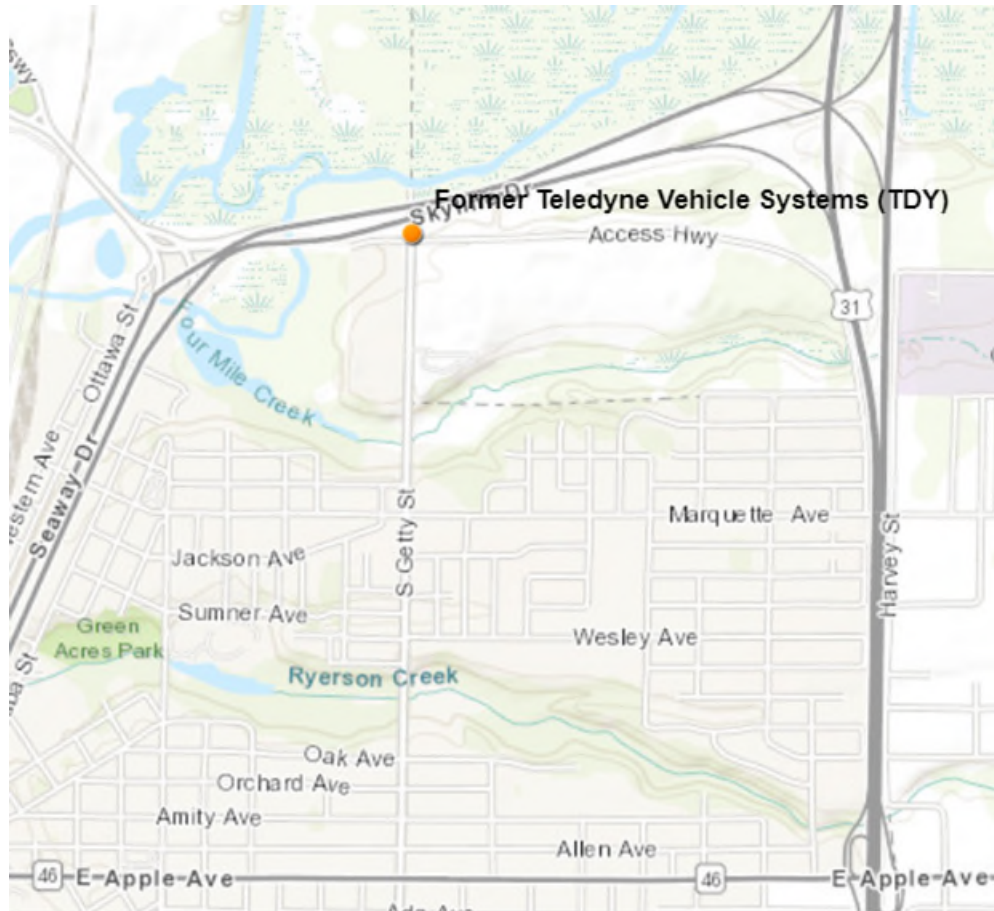
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John McCabe

Materials Management Division

517-284-6564 | [McCabeJ@Michigan.gov](mailto:McCabeJ@Michigan.gov)

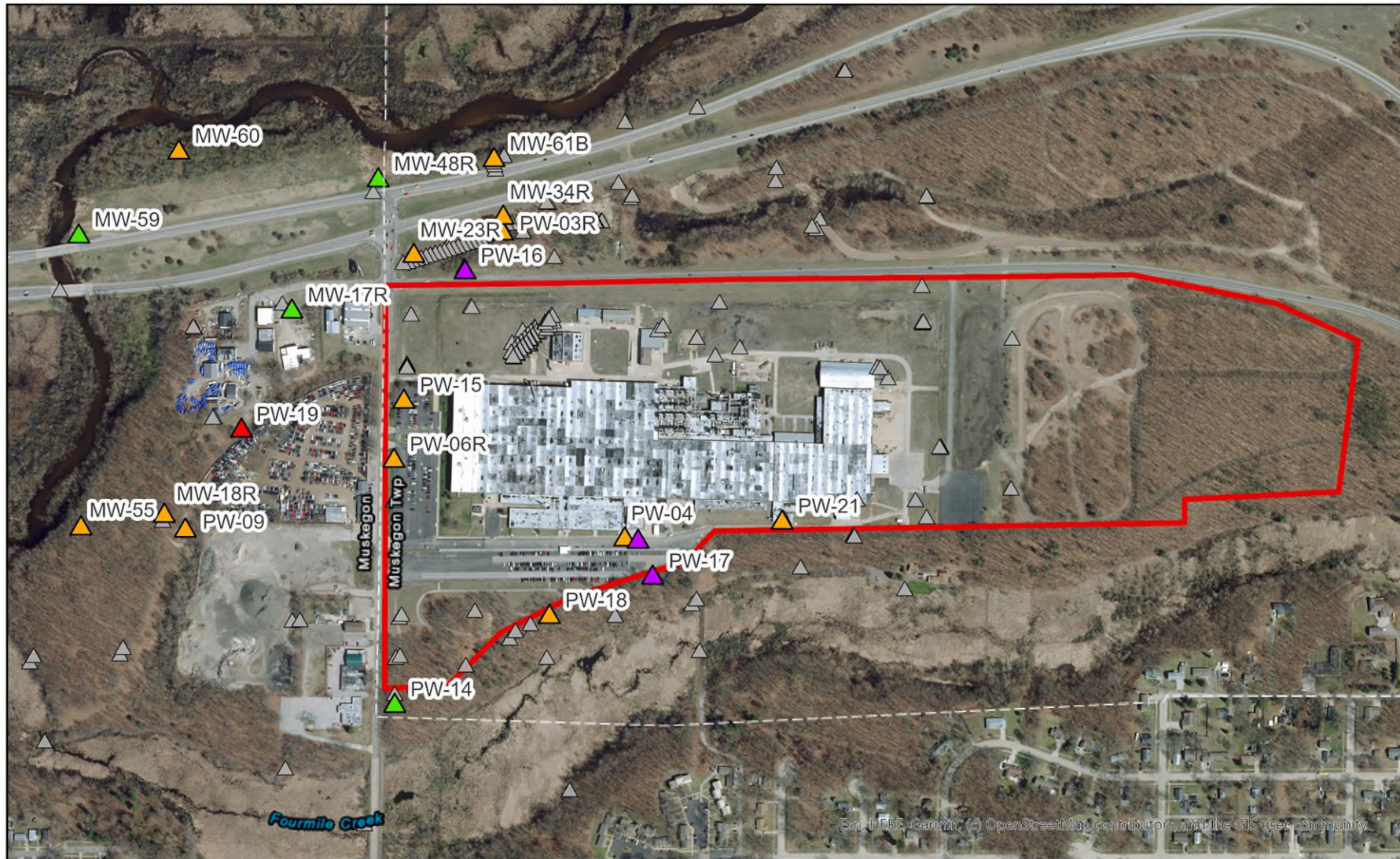
# Former Teledyne Vehicle Systems (TDY)



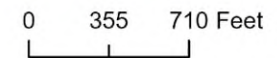
- 76 Getty Street, Muskegon, Muskegon County
- PFAS contamination discovered in pumped groundwater discharged to Muskegon County Wastewater System.
- Groundwater is pumped to prevent offsite flow of previously identified solvent contamination.
- Residential wells have not been sampled as contaminated groundwater is not leaving the site.



# Former TDY PFAS Investigation Results



- ▲ PFOA ≥ 8 ppt
- ▲ PFAS Not Detected
- ▲ PFOS ≥ 16 ppt
- ▲ Other Wells
- ▲ PFAS Detected Less Than Standard
- ▭ Facility Boundary



# Former Teledyne Vehicle Systems (TDY)

## Next Steps:

- Add PFAS monitoring to site perimeter monitoring system to ensure PFAS are not getting off site in groundwater.
- Continue to monitor pumping well discharge to ensure PFAS exceedances are not discharged to the Muskegon County Wastewater Management System.
- Better determine PFAS distribution onsite.



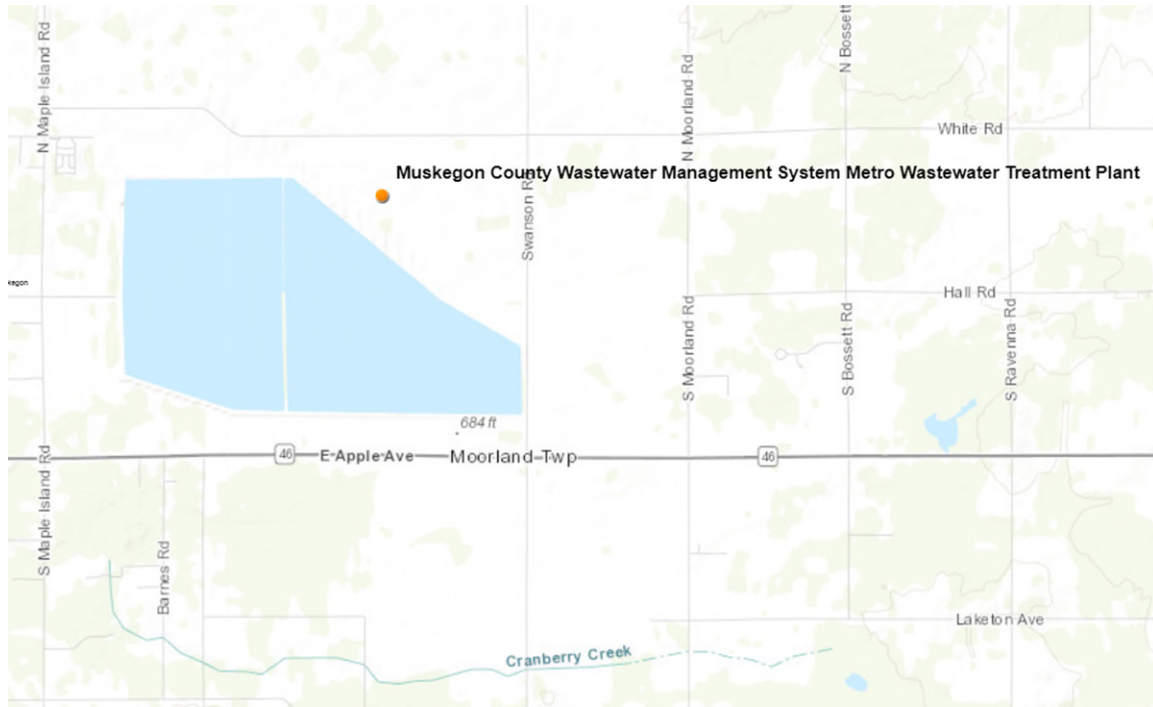
# Muskegon County Wastewater Management System Metro Wastewater Treatment Plant

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Thomas Berdinski  
Water Resources Division

(616) 204-7334 | [BerdinskiT@Michigan.gov](mailto:BerdinskiT@Michigan.gov)

# Muskegon County Wastewater Management System Metro Wastewater Treatment Plant



- Location:  
698 North Maple Island Road,  
Muskegon, Muskegon County

# Muskegon County Wastewater Management System Metro Wastewater Treatment Plant



Muskegon County WWMS Metro WWTP storage lagoons, irrigation fields, rapid infiltration beds

# Muskegon County Wastewater Management System

## Metro Wastewater Treatment Plant



Muskegon County Solid Waste Landfill adjacent to storage lagoon

# Muskegon County Wastewater Management System

## Metro Wastewater Treatment Plant

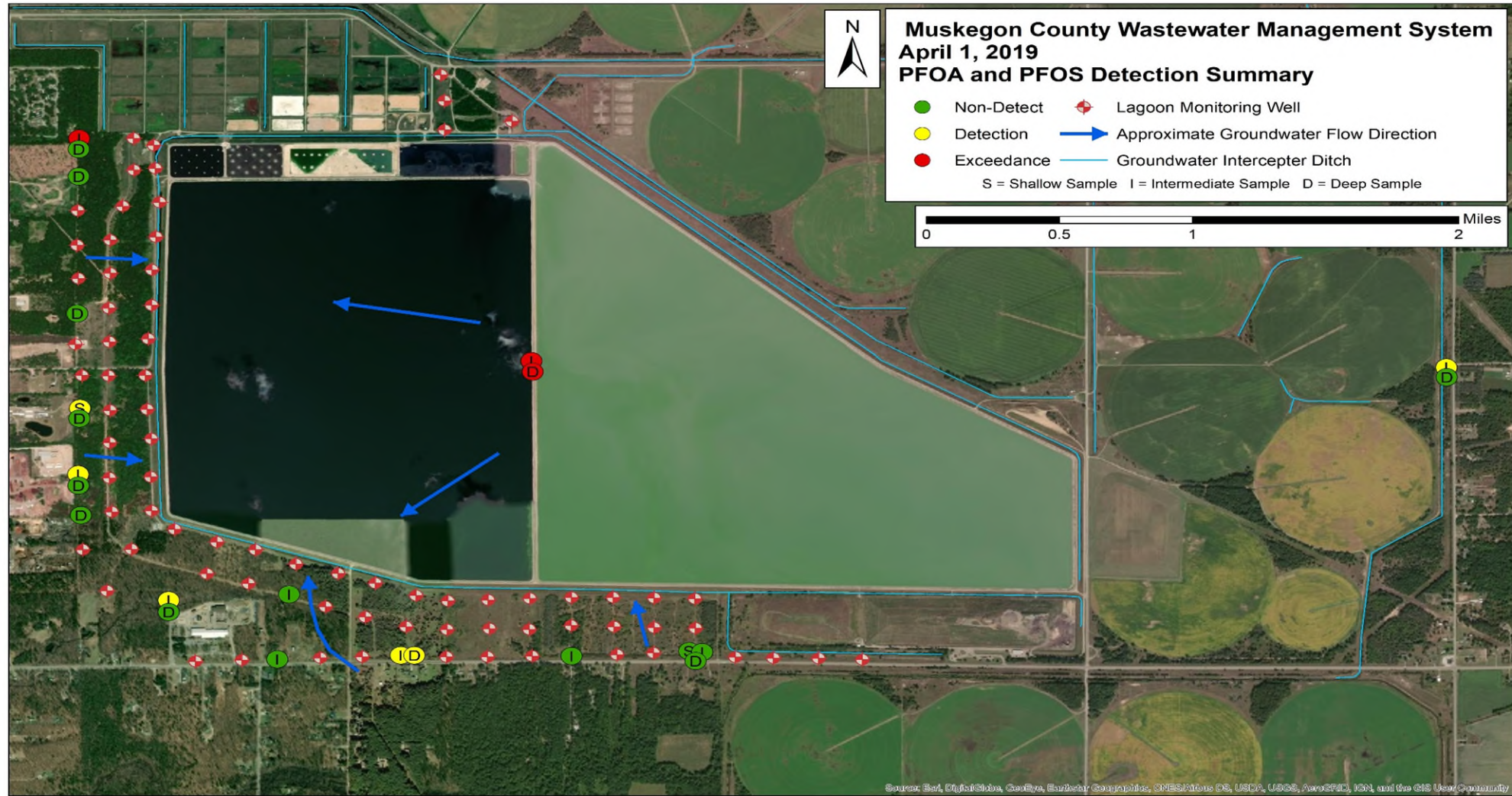
Sample Location	Sample Date	PFOS Result ppt*	PFOA Result ppt**
LS34C3	11/30/2018	20	42
LS34C2	11/30/2018	48	17
LS-01C-2	4/1/19	9.3	21

\* PFOS  
Standard is  
16 ppt

\*\* PFOA  
Standard is  
8 ppt



# Muskegon County Wastewater Management System Metro Wastewater Treatment Plant





# Muskegon County Wastewater Management System Metro Wastewater Treatment Plant

## Next Steps:

- To ensure protection of public health, EGLE will work with the Muskegon County Wastewater and the Muskegon County Health Department to conduct an evaluation of potential receptors.
- EGLE will also work with Muskegon County Department of Public Works to determine the nature and extent of the plume.
- Evaluation of receptors and plume study plan are expected to be developed this fall.



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# Muskegon Chemical Company

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Nic Dawson

Remediation and Redevelopment Division

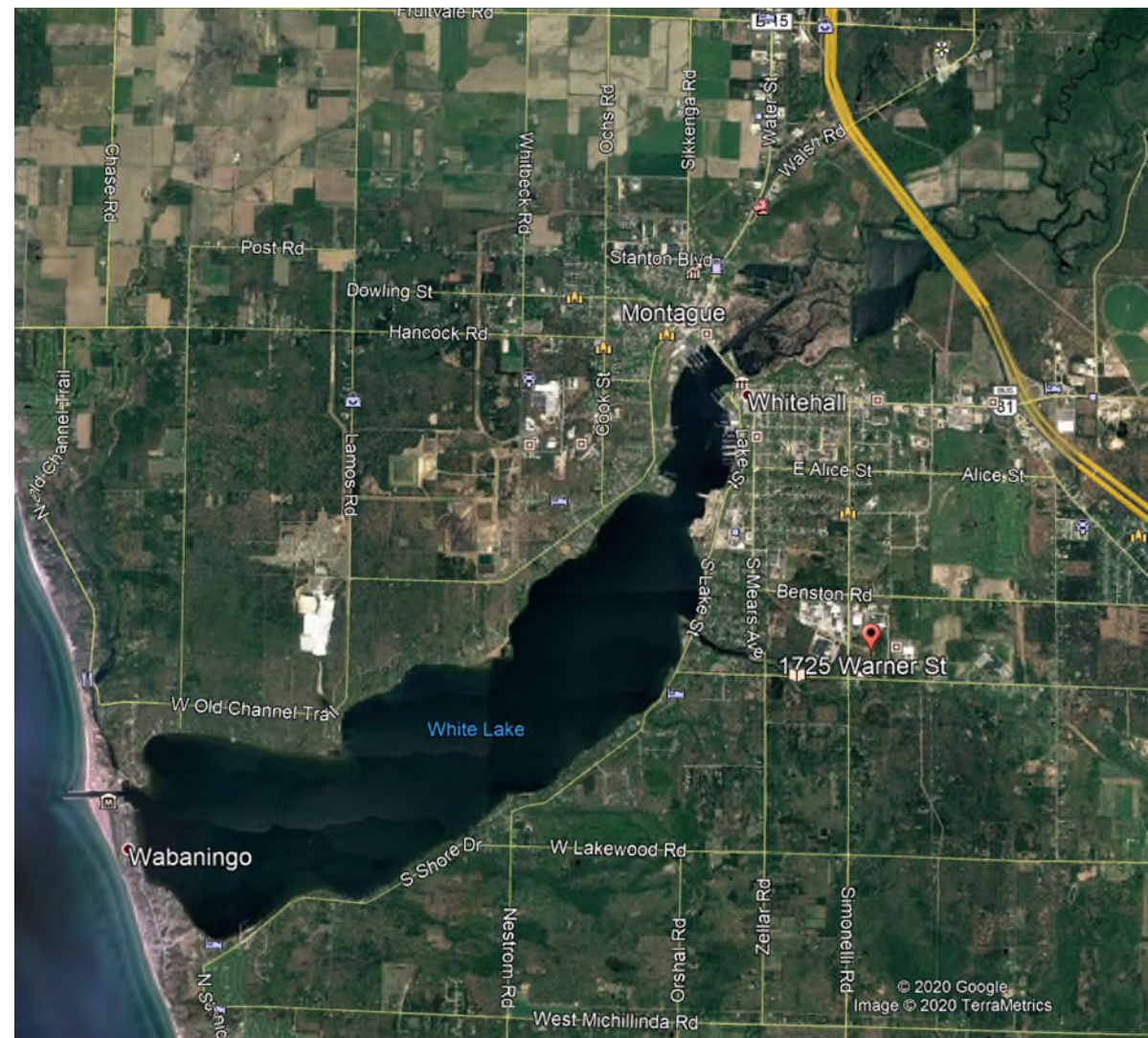
517-897-0912 | [DawsonN1@Michigan.gov](mailto:DawsonN1@Michigan.gov)

MPART

# Muskegon Chemical Company

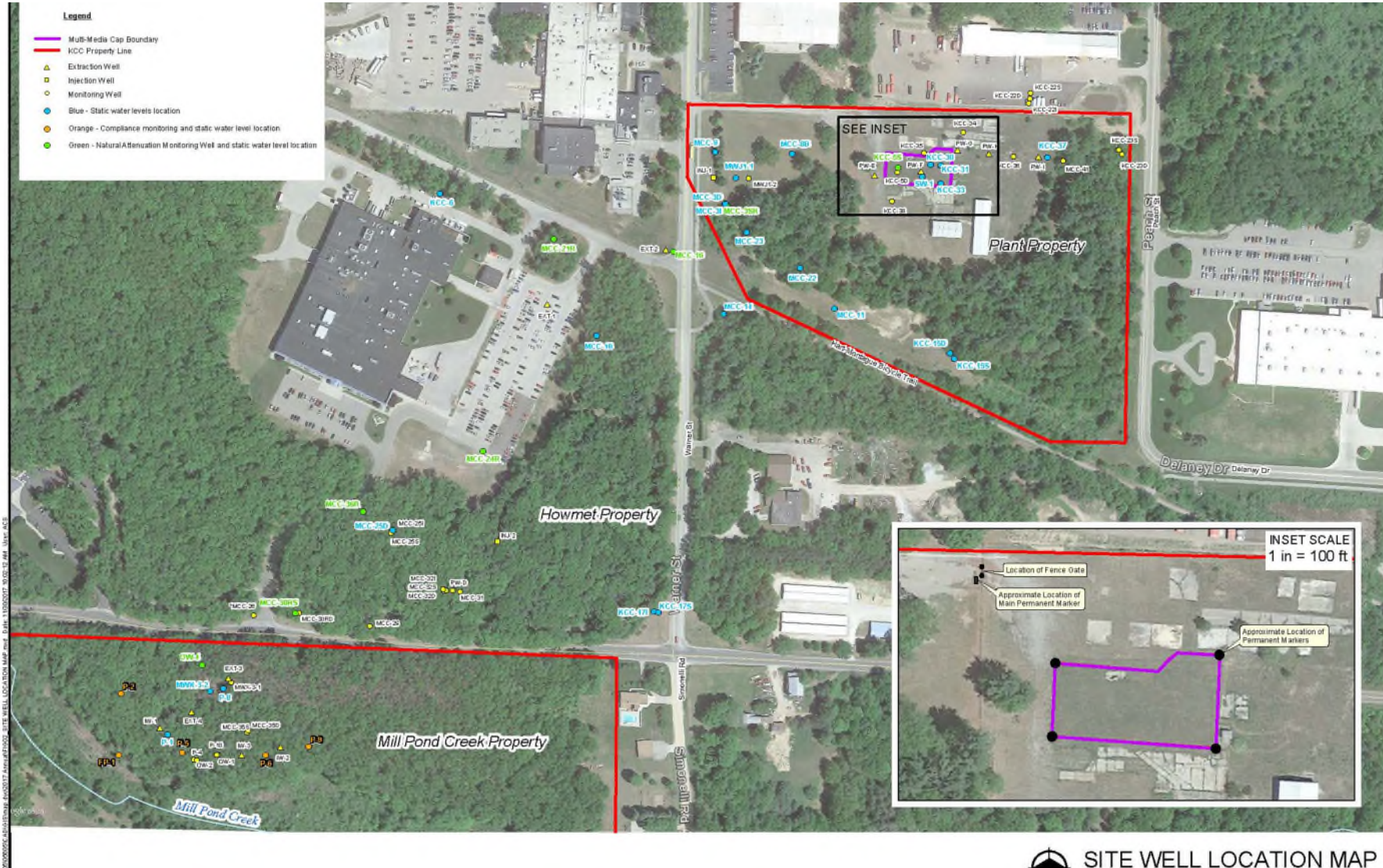
## Location

- 1725 Warner Street,  
City of Whitehall, Muskegon County
- Superfund Site - Listed on the NPL in  
1990.





# Muskegon Chemical Company



**frch**  
engineers  
scientist  
architects  
constructors

Stebek, Thompson,  
Carr & Hubel, Inc.

Hard copy is  
extended to be  
11"x17" when  
printed. Scale(s)  
indicated and  
graphic scales may  
not be similar to  
any other scale.

**Muskegon Chemical Company  
NPL Site (MID072569510)**  
Whitehall, Michigan

2017 Annual Progress Report

PROJECT NO.  
05605R8

SITE WELL LOCATION MAP

# Muskegon Chemical Company

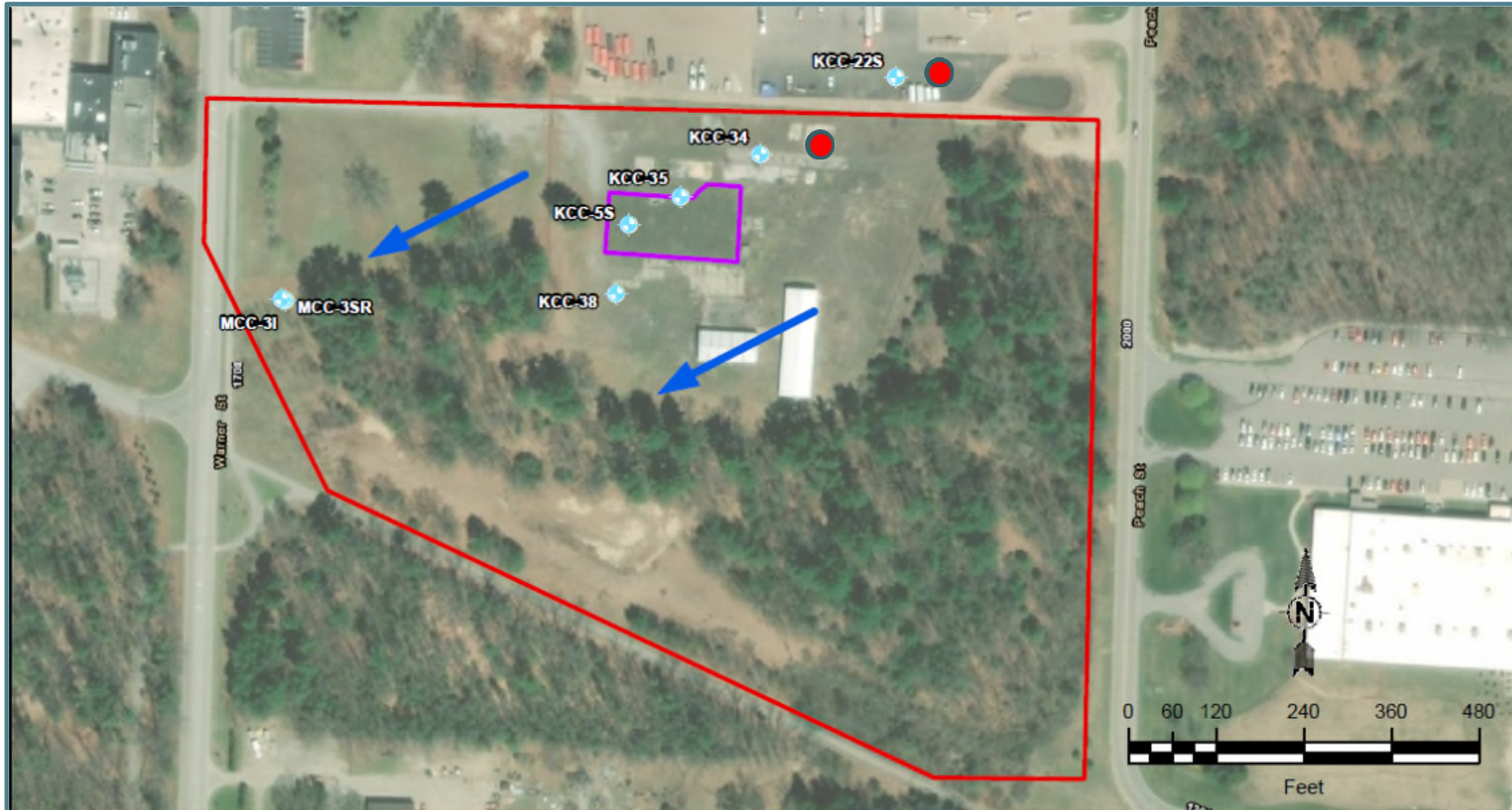
- Subset of monitoring wells sampled for PFAS in October 2018.
- PFAS analytes were detected but were below criteria.
- New Groundwater Criteria adopted in August 2020.



# Muskegon Chemical Company

## Exceedances of New MCLS

PFOA – 8ppt - ●



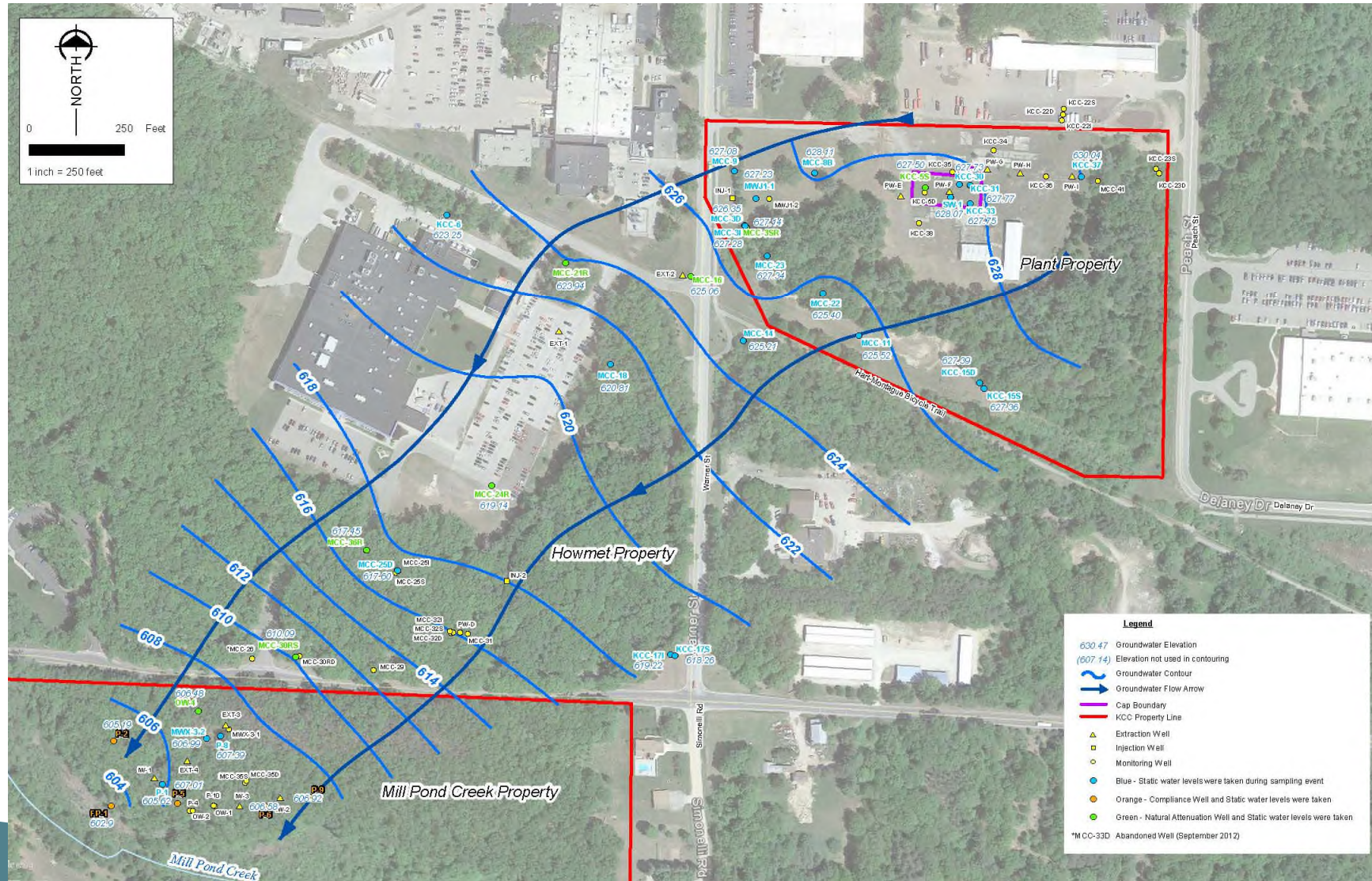
- ◆ Sampling Location
- Multi-Media Cap Boundary
- Muskegon Chemical Company Property Line

Groundwater Flow Direction  
→

Groundwater flow direction is based on Figure 3 of the Muskegon Chemical Company 2017 Annual Progress Report, FTC&H January 11, 2018



# Muskegon Chemical Company



# Muskegon Chemical Company

- Discussions with EPA and PRP are ongoing
- Additional Monitoring Well Sampling
- Residential Well Sampling

# Site Lead Contact Information

## **Cedar Springs Historic Wastewater Treatment Lagoons and Current Discharge Fields**

Karen Vorce

616-439-8008

[VorceK@Michigan.gov](mailto:VorceK@Michigan.gov)

## **CES Landfill of Hastings**

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616-278-4350

[WaltersK7@Michigan.gov](mailto:WaltersK7@Michigan.gov)

## **Steele Avenue Area**

Jay Poll

616-446-1263

[PollJ@Michigan.gov](mailto:PollJ@Michigan.gov)

## **Former Teledyne Vehicle Systems**

Nathan Erber

517-256-6063

[ErberN@Michigan.gov](mailto:ErberN@Michigan.gov)

## **Muskegon County Wastewater Management System Metro Wastewater Treatment Plant**

Thomas Berdinski

616-204-7334

[BerdinskiT@Michigan.gov](mailto:BerdinskiT@Michigan.gov)

## **Muskegon Chemical Company**

Nic Dawson

517-897-0912

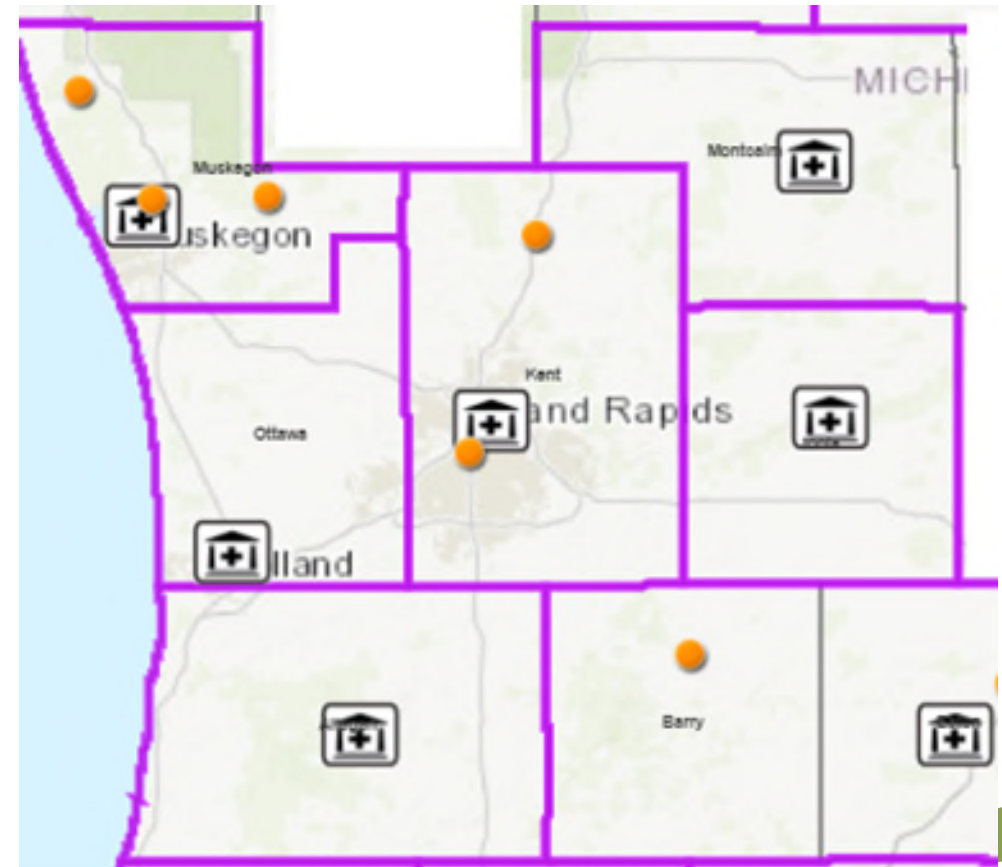
[DawsonN1@Michigan.gov](mailto:DawsonN1@Michigan.gov)





# Local Health Departments

- **BARRY-EATON DISTRICT HEALTH DEPARTMENT**  
517-543-2430
- **IONIA COUNTY HEALTH DEPARTMENT**  
616-527-5341
- **KENT COUNTY HEALTH DEPARTMENT**  
676-632-7100
- **MID MICHIGAN DISTRICT HEALTH DEPARTMENT**  
989-831-5237
- **OTTAWA COUNTY HEALTH DEPARTMENT**  
616-396-5266
- **PUBLIC HEALTH MUSKEGON COUNTY**  
231-724-6246



# MICHIGAN PFAS ACTION RESPONSE TEAM (MPART)

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



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