



Oscoda Area and Former Wurtsmith Air Force Base PFAS Update Meeting

The Webinar will Begin Shortly

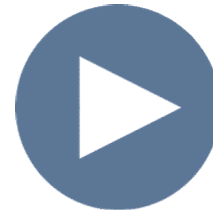
July 20, 2021

MPART

Webinar Housekeeping



All lines are muted during the webinar.



We are recording this webinar

How to ask a question in Zoom



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 #2 to raise your hand.

#2

Welcome

Abigail Hendershott, MPART Executive Director

Michigan PFAS Action Response Team

616-888-0528

HendershottA@Michigan.gov

Introductions, Logistics and Agenda

- Introductions – Abigail Hendershott, MPART Executive Director
- Agenda:
 - Michigan Department of Environment, Great Lakes, and Energy (EGLE) Update
 - Michigan Department of Health and Human Services (MDHHS) Update
 - Michigan Department of Natural Resources (DNR) Update
 - Comments, Questions, and Answers
 - Meeting Conclusion

*** This meeting is being recorded. ***



MICHIGAN DEPARTMENT OF
ENVIRONMENT, GREAT LAKES, AND ENERGY

Former Wurtsmith Air Force Base

Beth Place, Project Manager

Remediation and Redevelopment Division

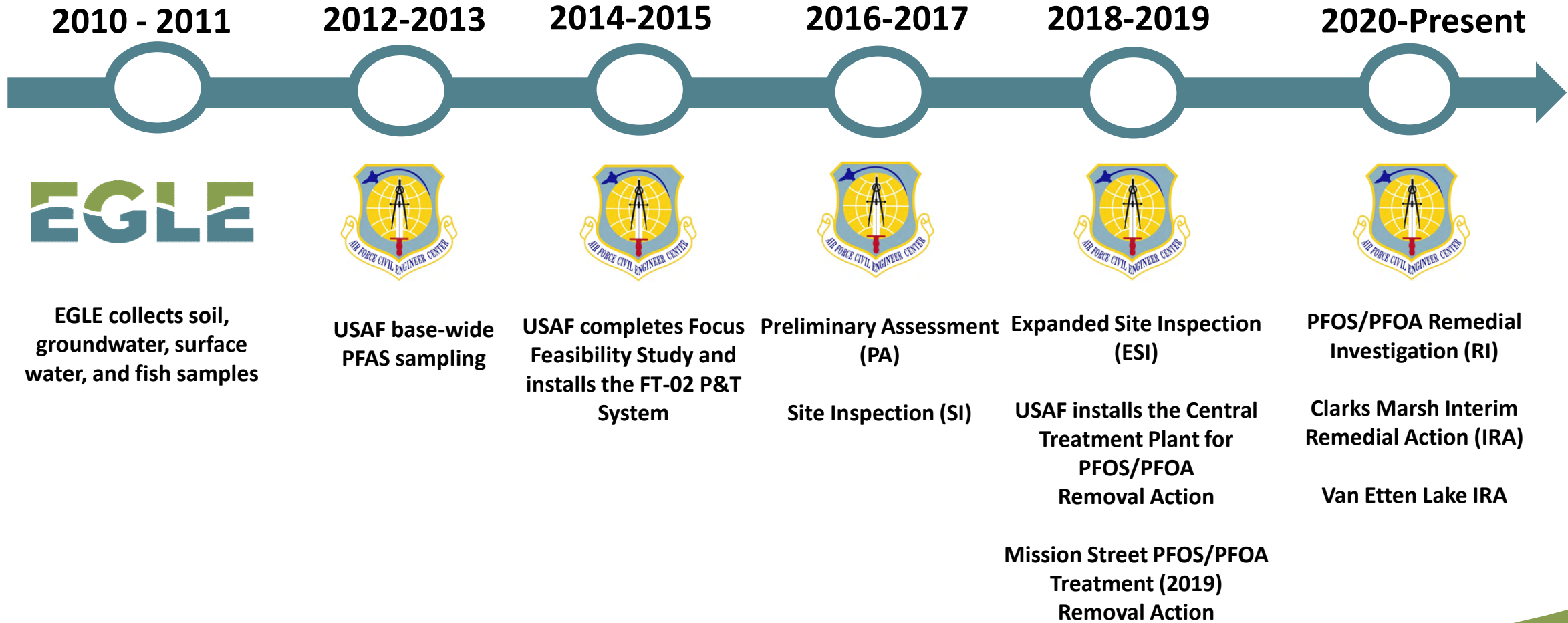
517-899-7924 | placeb1@michigan.gov

MPART

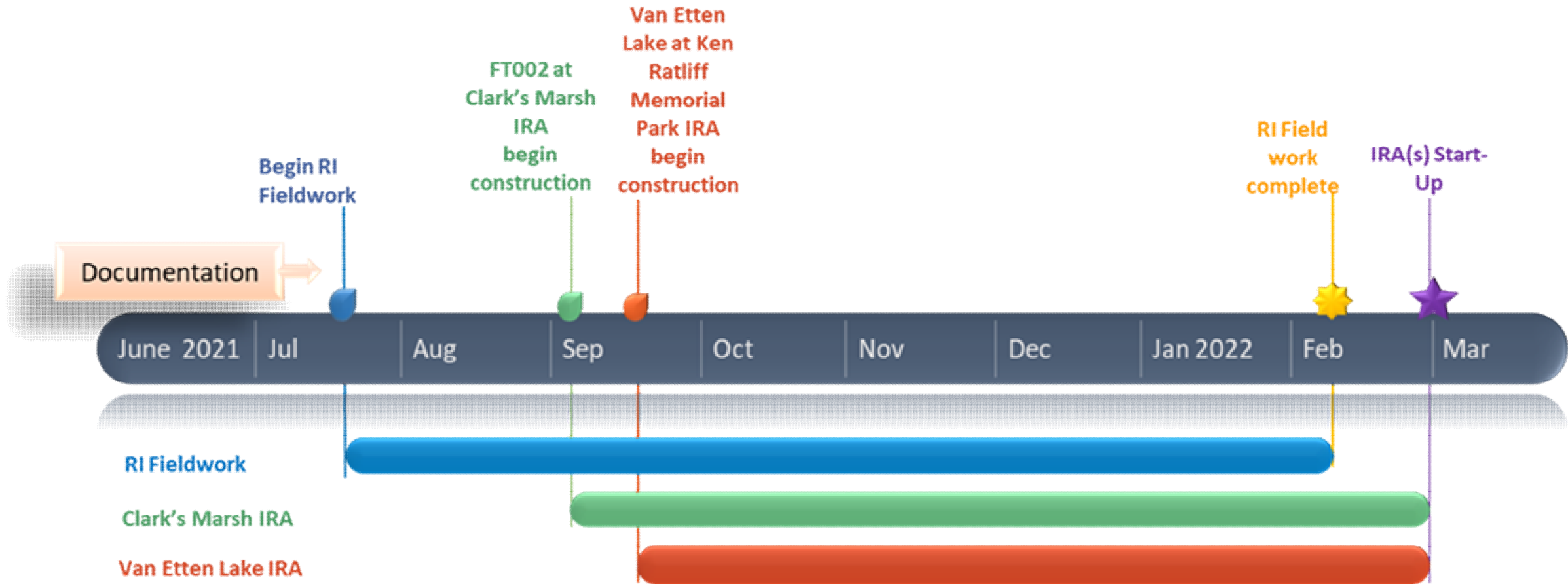
Former Wurtsmith Air Force Base

- 1923 Established
- 1993 Officially closed under the Base Realignment and Closure decision, 1991
- Most Acreage has been transferred for reuse.
- Air Force is the lead
- Comprehensive Environmental Response, and Liability Act (CERCLA)

PFAS



Air Force Schedule



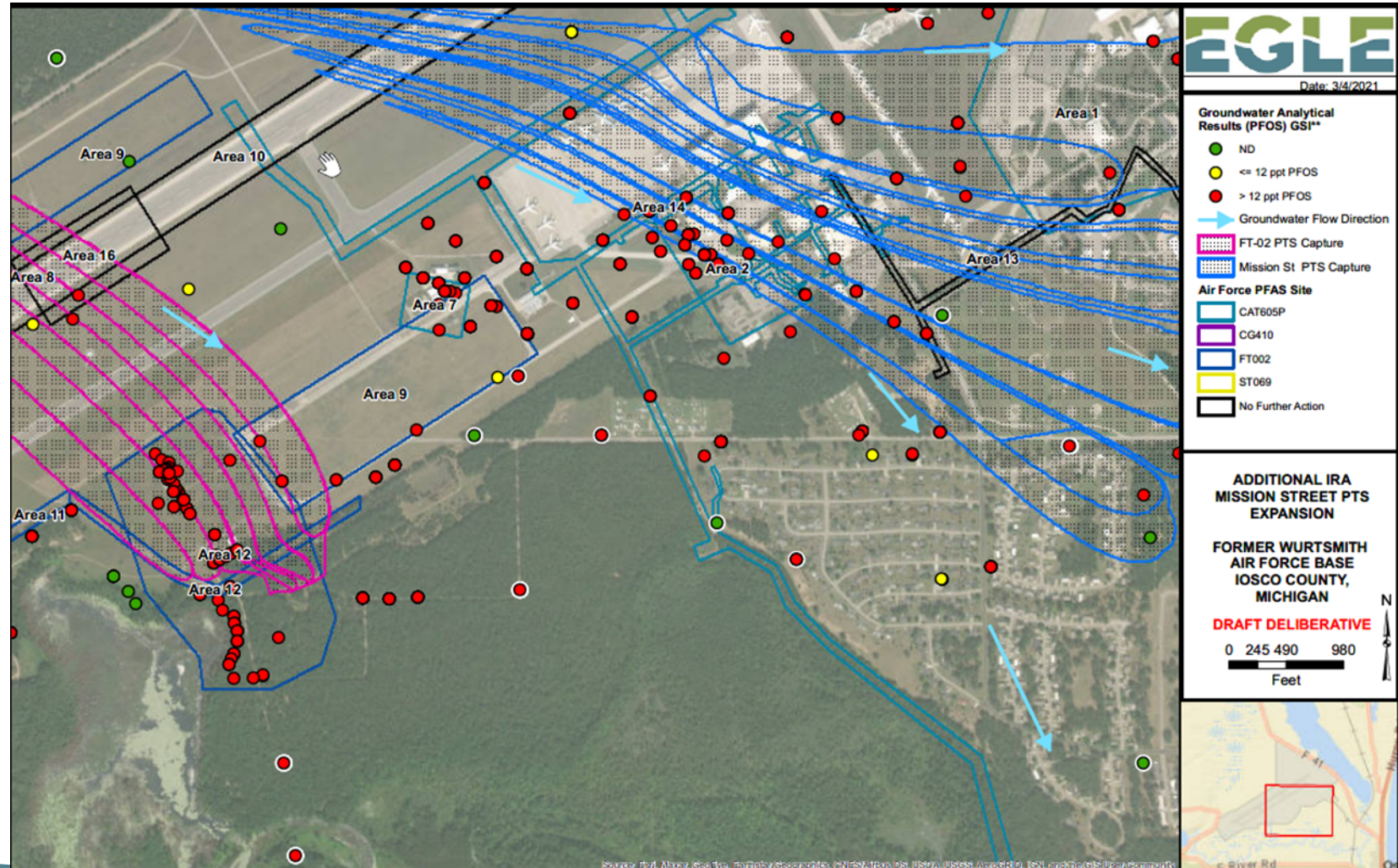
Other Updates

February 19, 2021

EGLE requested Air Force sample PFAS in the Engineered Wetland treatment System at LF30/31.

March 23, 2021

Additional Interim Remedial Action Request

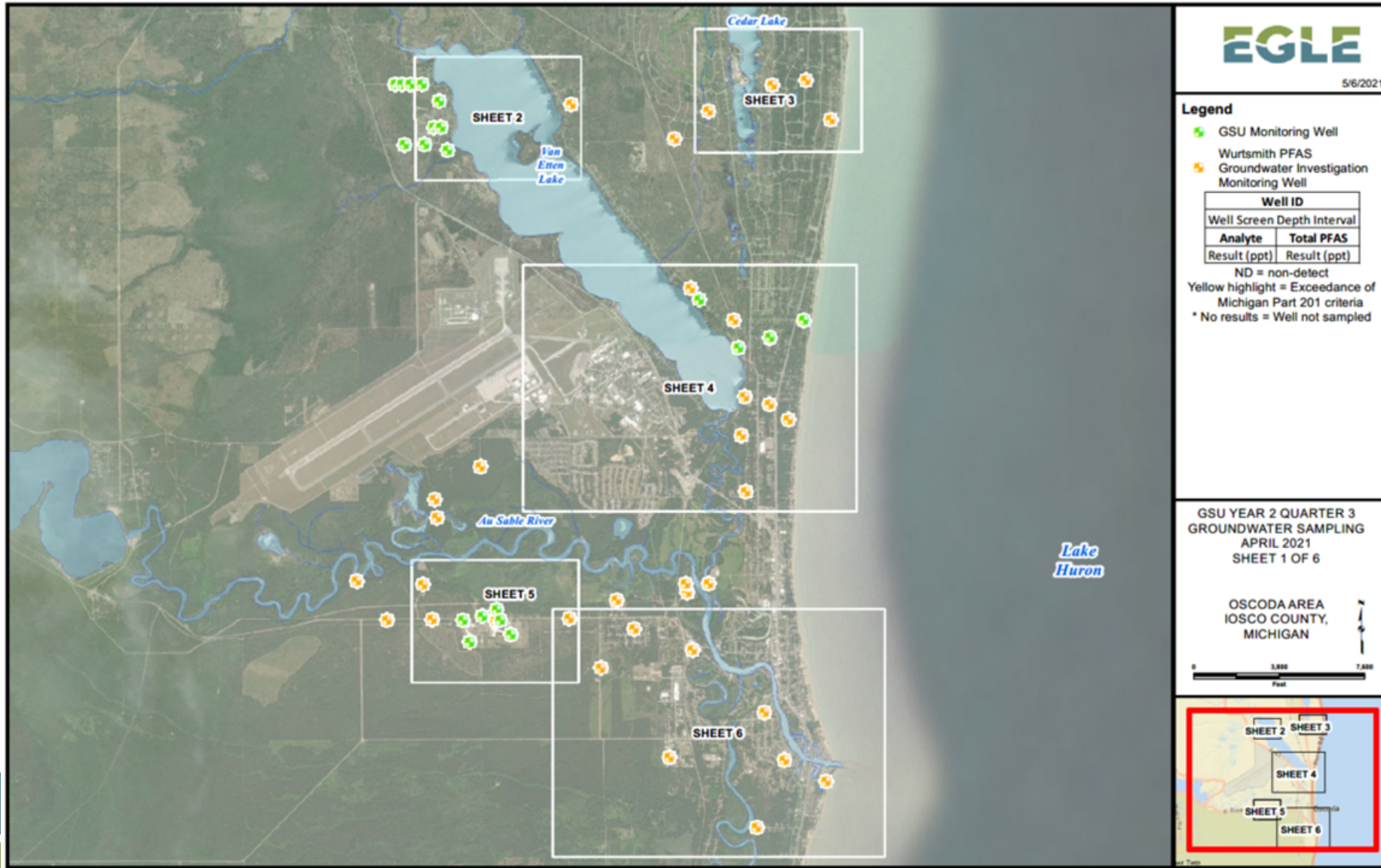




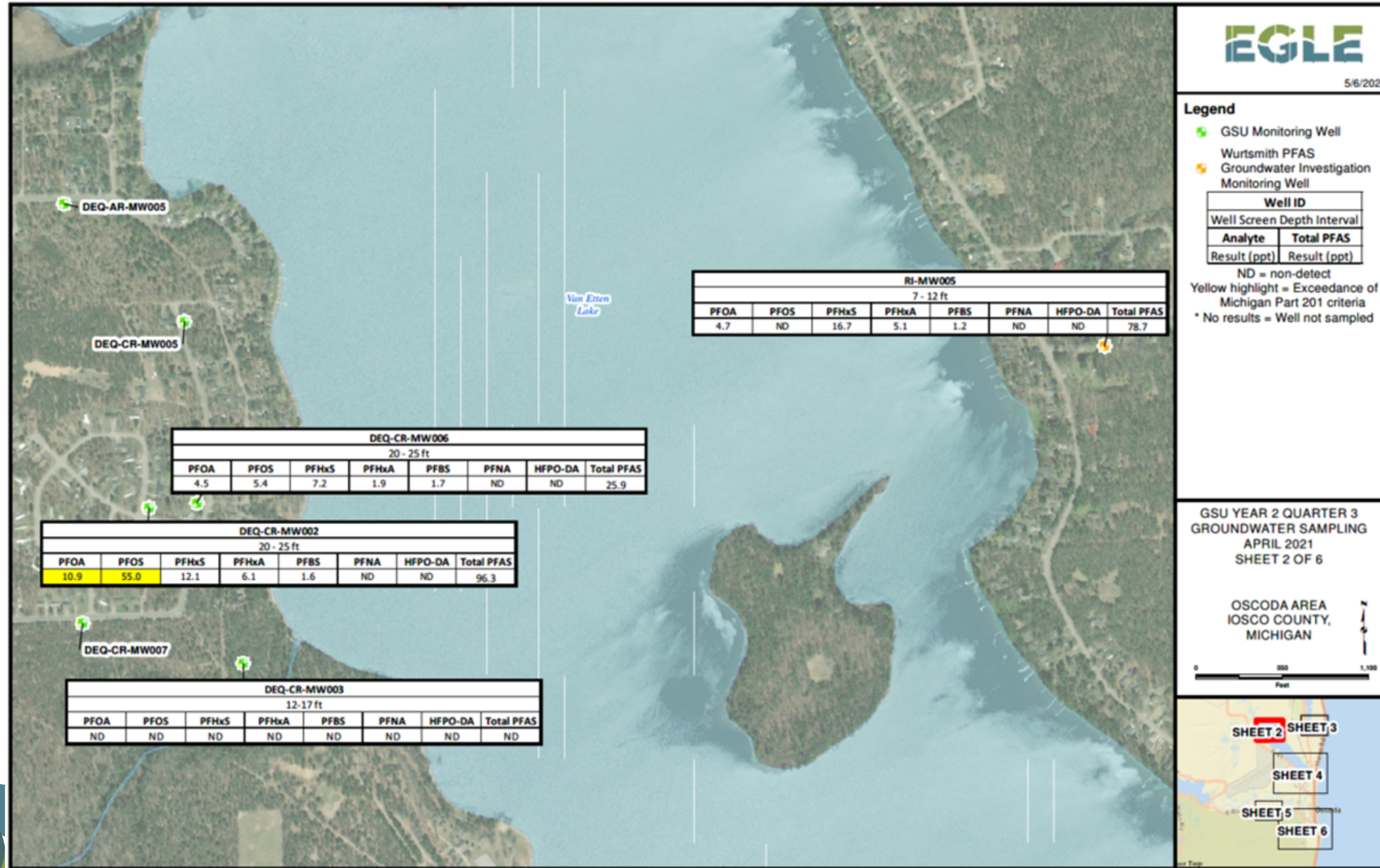
Oscoda Area Sites

Amanda Armbruster, Geologist
Remediation and Redevelopment Division
989-450-6377 | ArmbrusterA@Michigan.gov

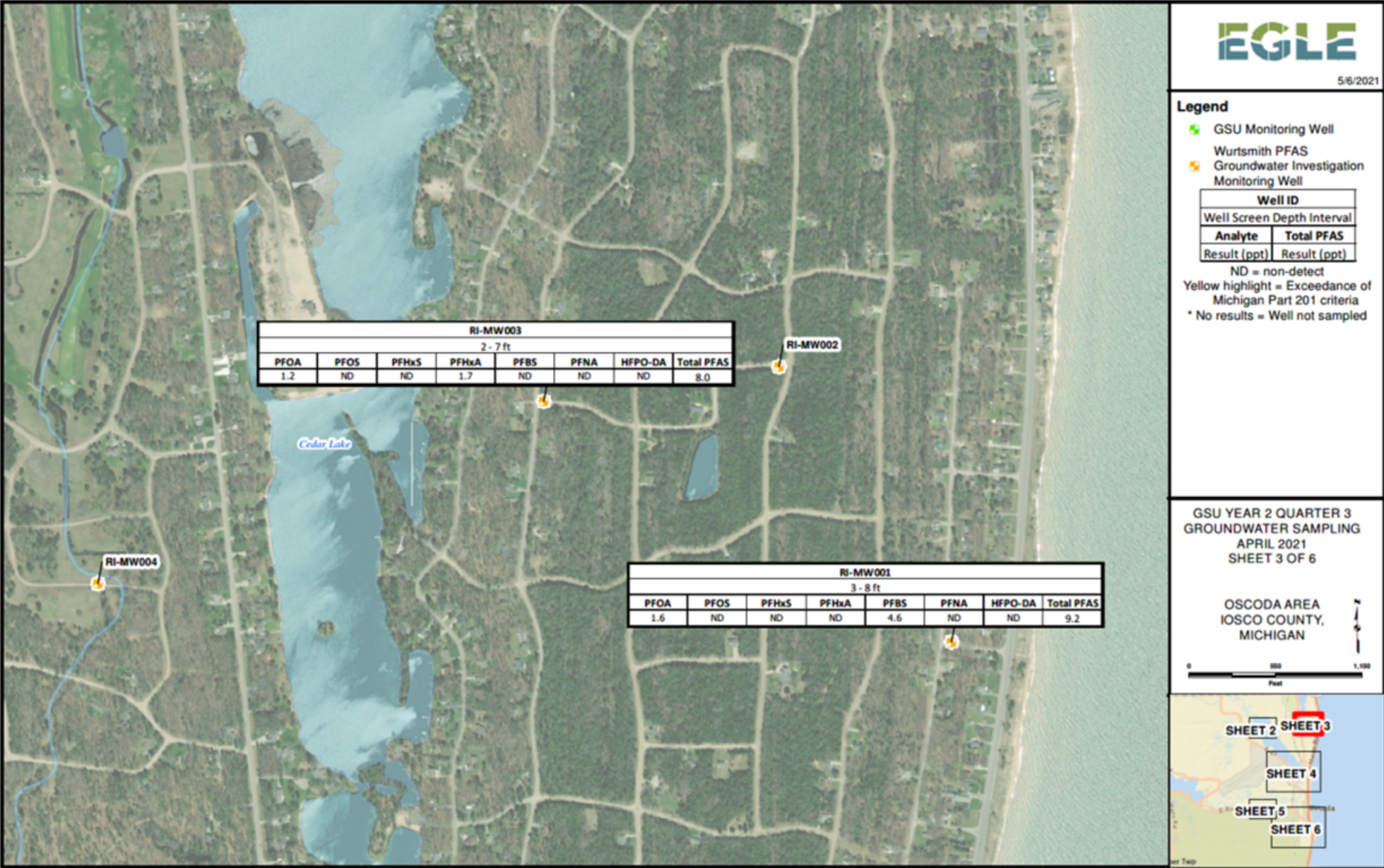
Oscoda Township & Au Sable Township EGLE Groundwater Monitoring Well Locations



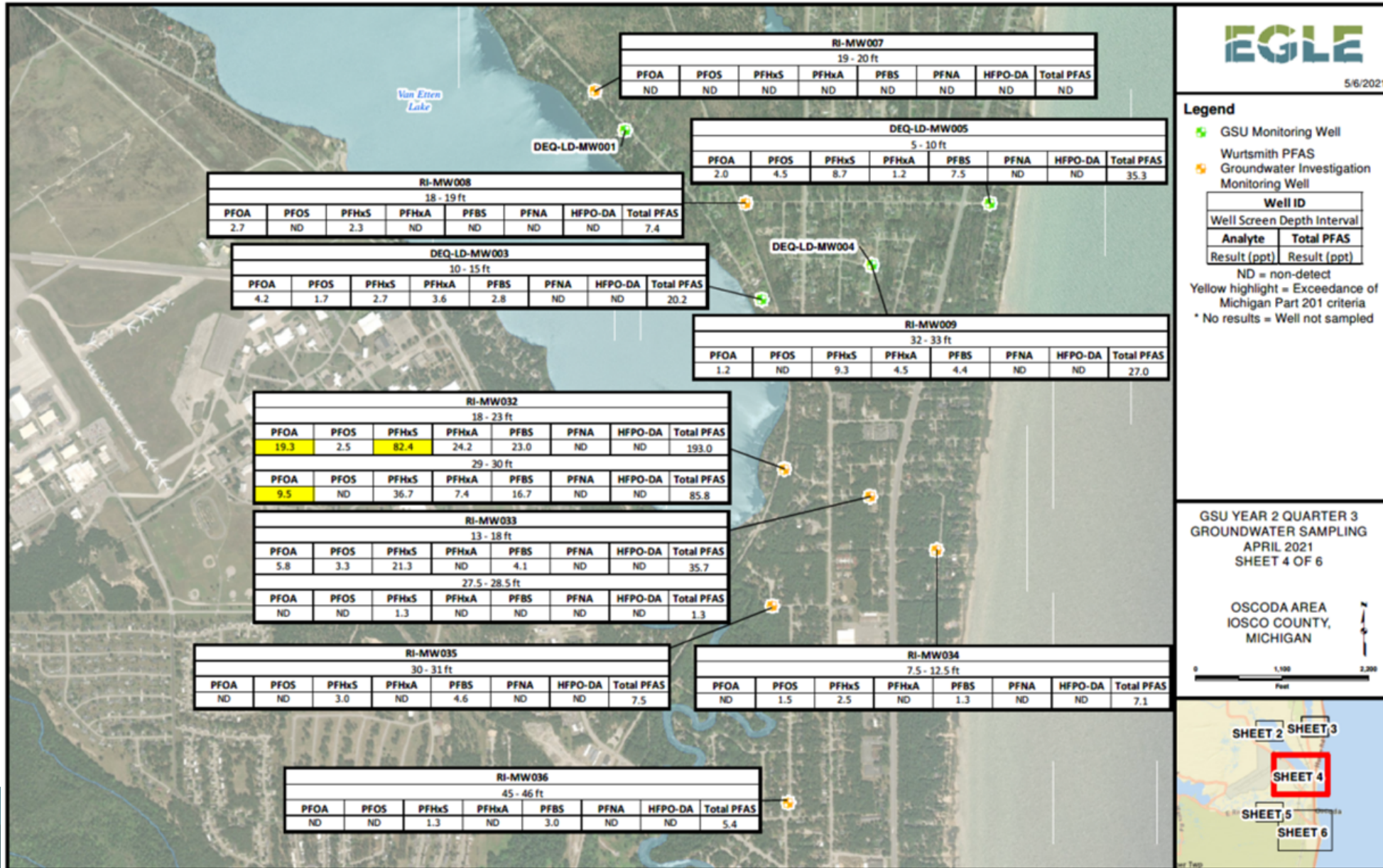
Colbath Road Area



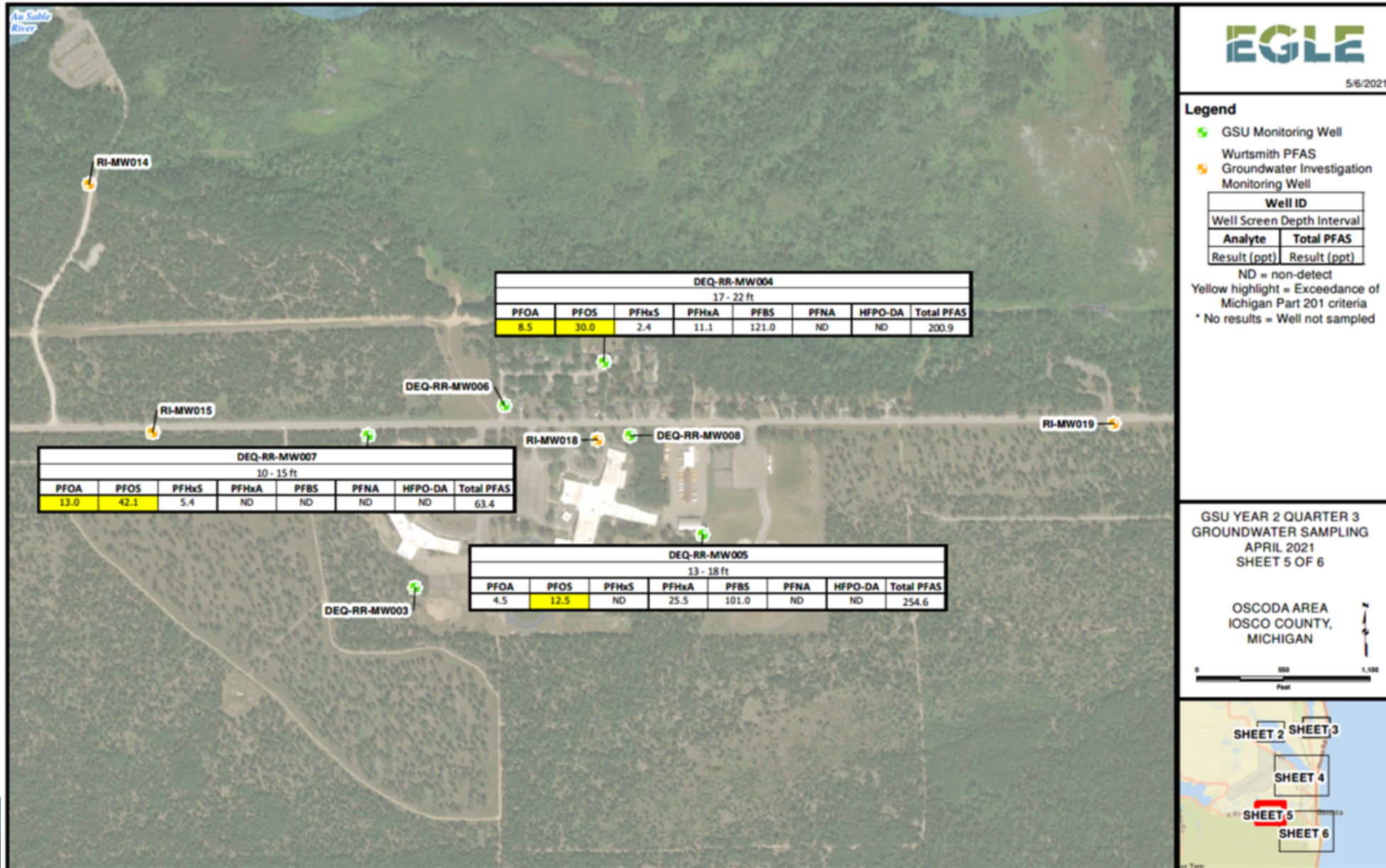
Cedar Lake Area



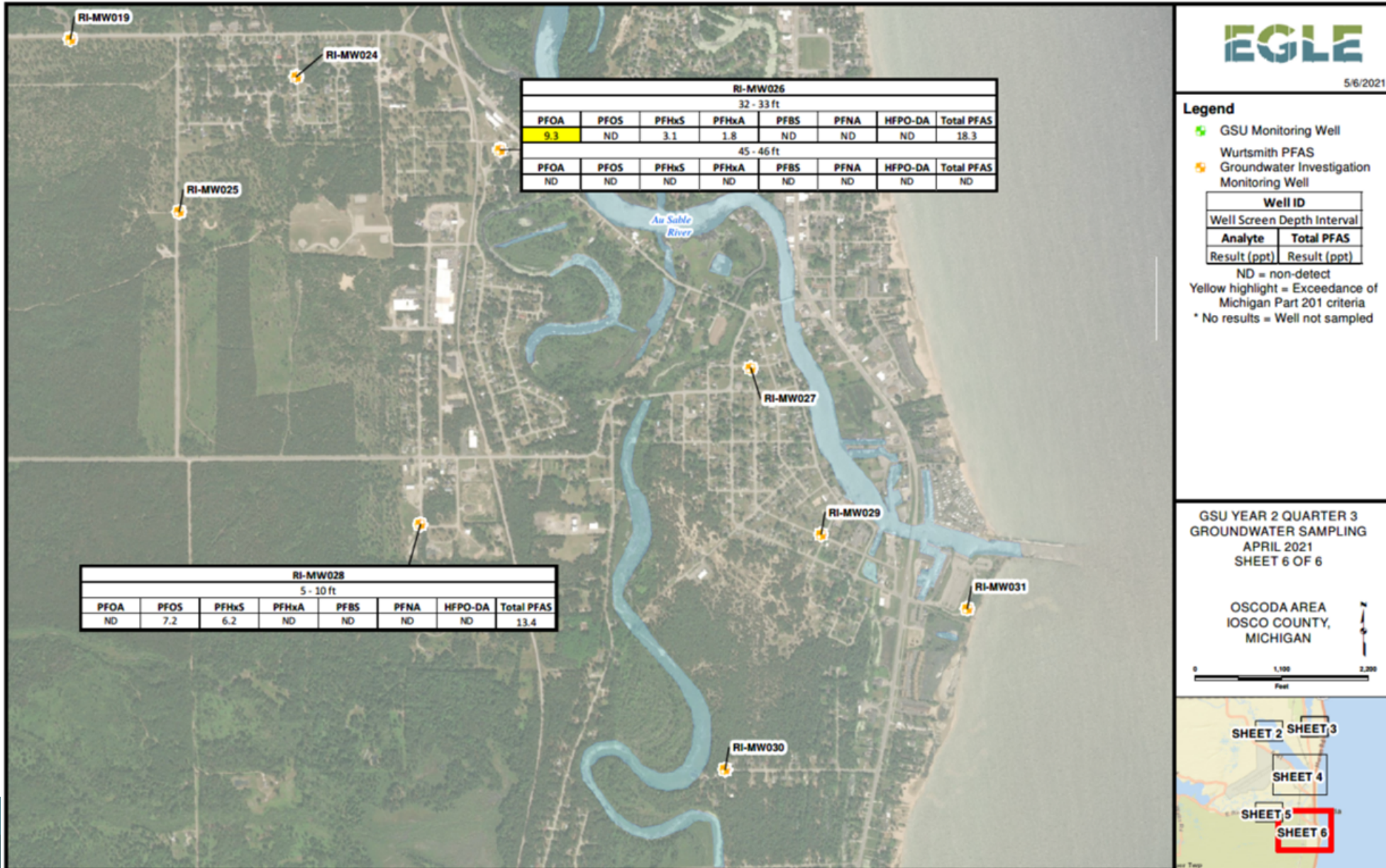
Loud Drive Area



River Road Oscoda Schools Area



Au Sable Township Area



5/6/2021

Legend

- GSU Monitoring Well
- Wurtsmith PFAS
- Groundwater Investigation Monitoring Well

Well ID	
Well Screen Depth Interval	
Analyte	Total PFAS
Result (ppt)	Result (ppt)

ND = non-detect
 Yellow highlight = Exceedance of Michigan Part 201 criteria
 * No results = Well not sampled

GSU YEAR 2 QUARTER 3
 GROUNDWATER SAMPLING
 APRIL 2021
 SHEET 6 OF 6

OSCODA AREA
 IOSCO COUNTY,
 MICHIGAN





Part 4 Rule 57 Water Quality Standards PFAS

Brandon Armstrong, Ph.D.,
Aquatic Biology Specialist

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Part 4, Surface Water Water Quality Standards

- Rule 323.1057 – provides procedures for calculating water quality values to protect humans, wildlife and aquatic life.

- Human Health Values

- Human Noncancer Values (HNVs)
- Human Cancer Values (HCVs)
- “Drink” vs “Non-Drink”

- Aquatic Life Values

- Wildlife Values

Rule 57 Surface Water Human Health Values

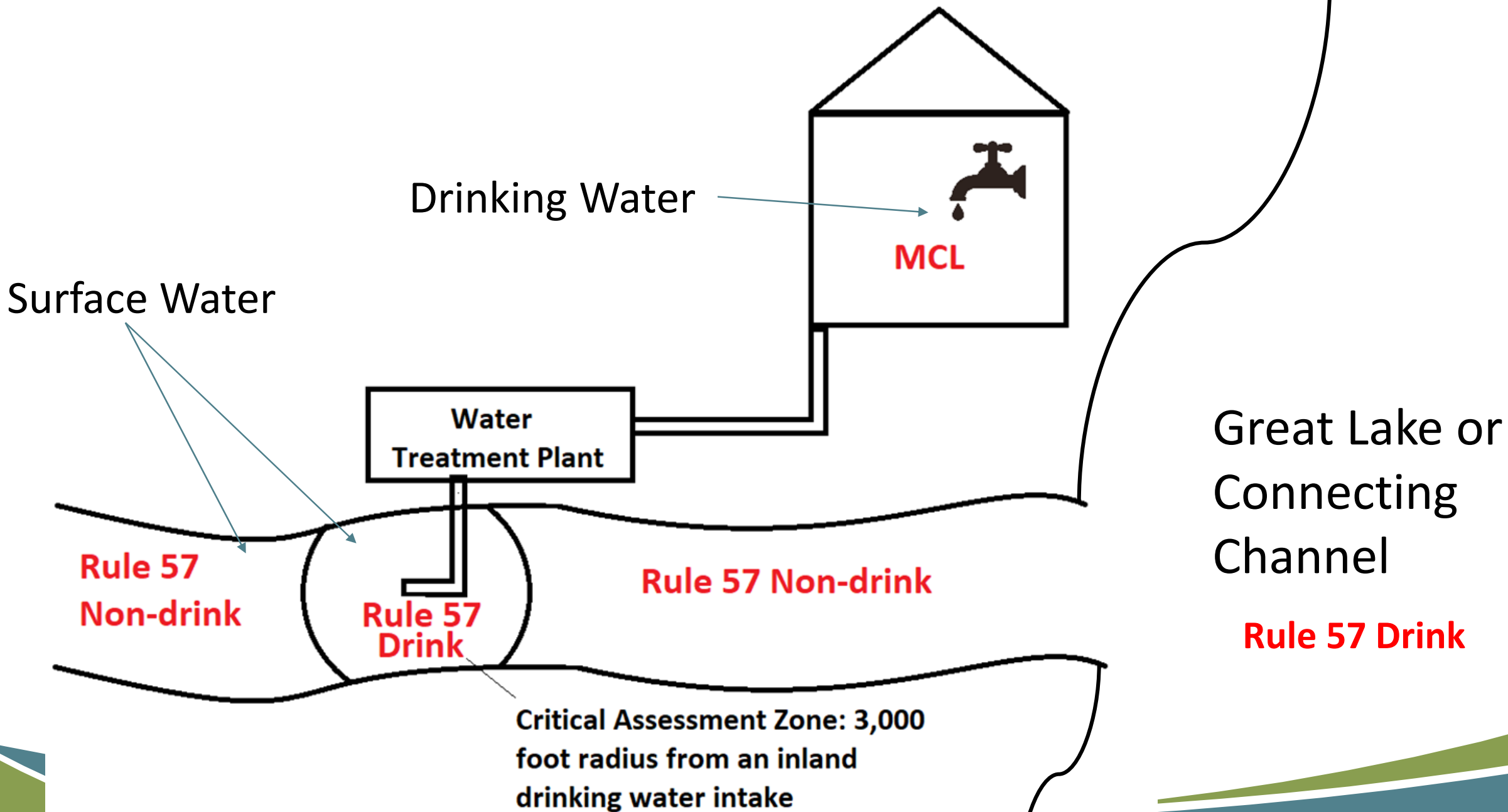
- Human Noncancer Value (HNV)
 - Maximum ambient water concentration of a substance at which adverse noncancer effects are not likely to occur from lifetime exposure from either: drinking the water, consuming fish from the water, and water-related recreation activities
- Human Cancer Value (HCV)
 - Maximum ambient water concentration of a substance at which a lifetime of exposure from either: drinking the water, consuming fish from the water, and water-related recreation activities will represent a plausible upper-bound risk of contracting cancer of one in 100,000

Rule 57 Surface Water Human Health Values

- Drink vs non-drink
 - All surface waters of the state are designated and protected as public water supply sources at the point of water intake and in such contiguous areas as the department may determine necessary for assured protection. In addition, all Michigan waters of the Great Lakes and connecting waters shall meet the human cancer and human noncancer values for drinking water established pursuant to R 323.1057(4).

Drinking Water Maximum Contaminant Level (MCL)

- The highest level of a contaminant that is allowed in drinking water



Rule 57 Surface Water Water Quality Standards

- Currently have surface water WQS for PFOS and PFOA
- 2021 EGLE plans:
 - Update PFOA human health values
 - Derive PFBS human health and aquatic life values
 - Conduct a fish tissue bioaccumulation study for PFHxS and PFNA



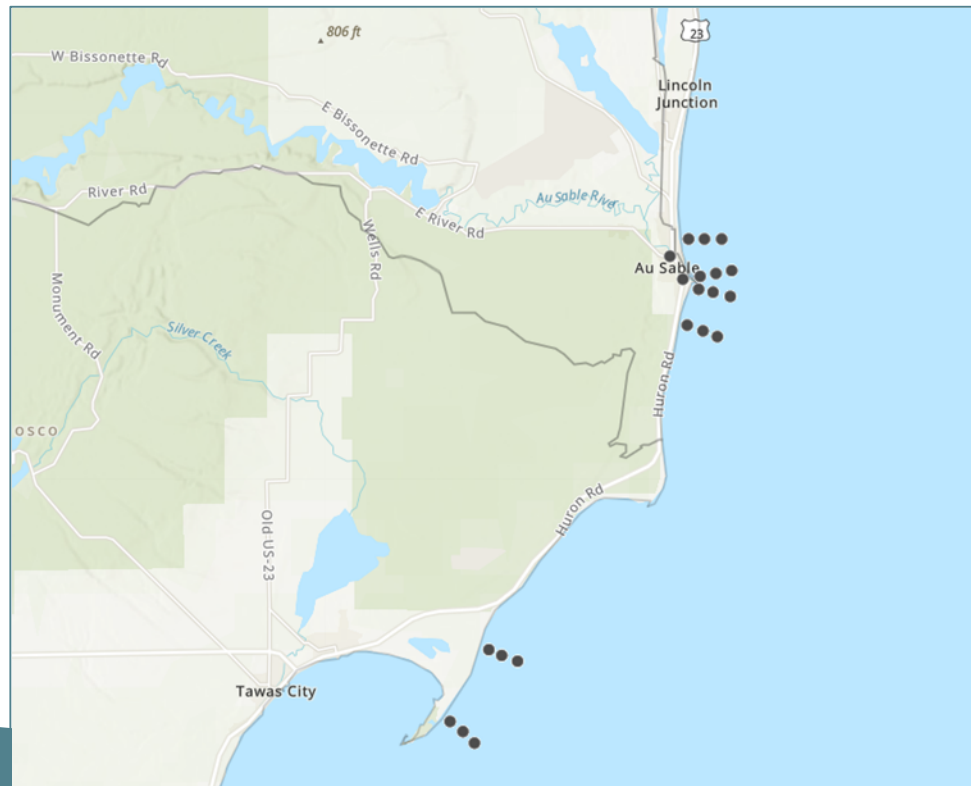
PFAS concentrations in Lake Huron near the Au Sable River: 2021 Update

Brandon Armstrong, Ph.D.,
Aquatic Biology Specialist

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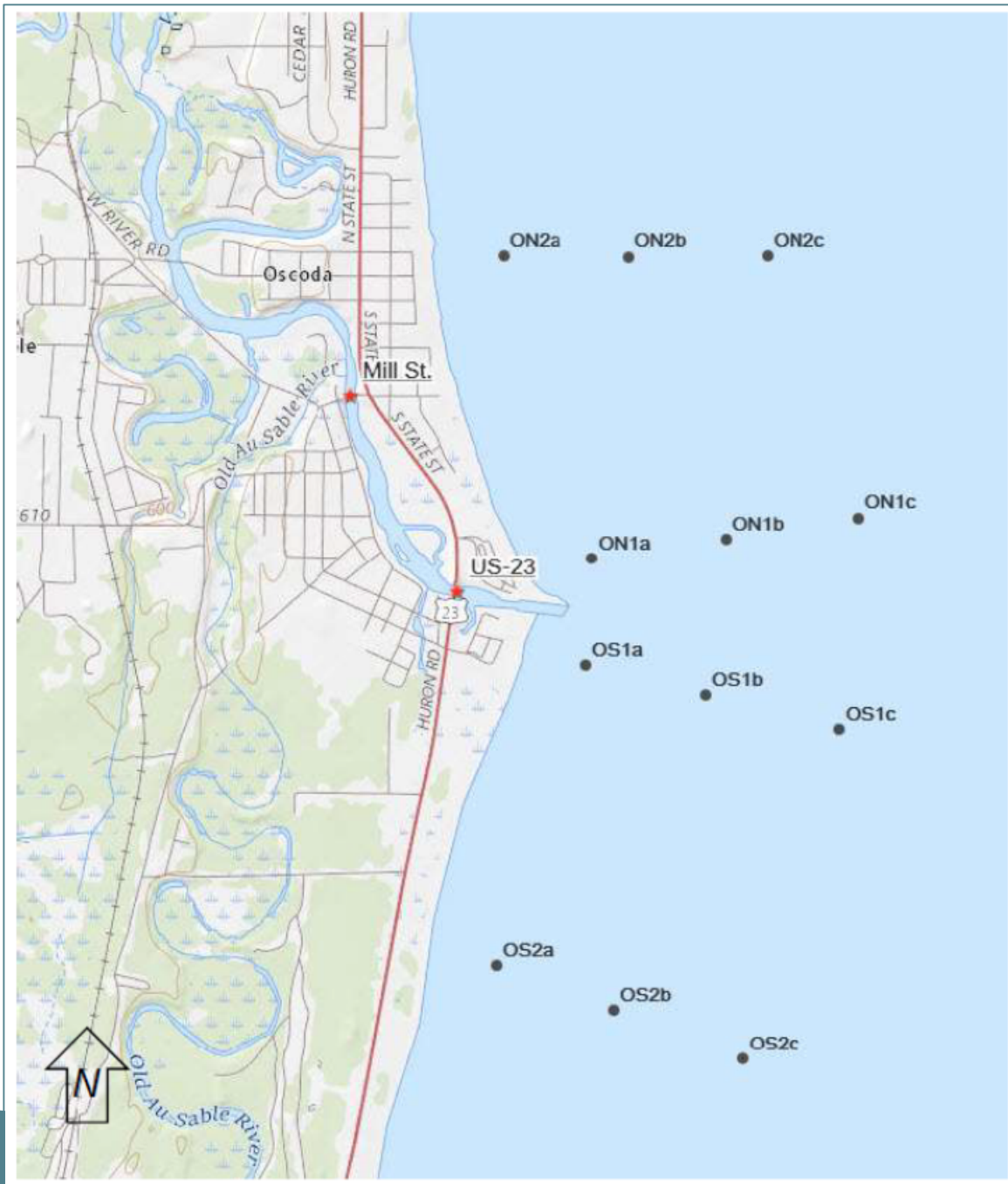
Study Objective

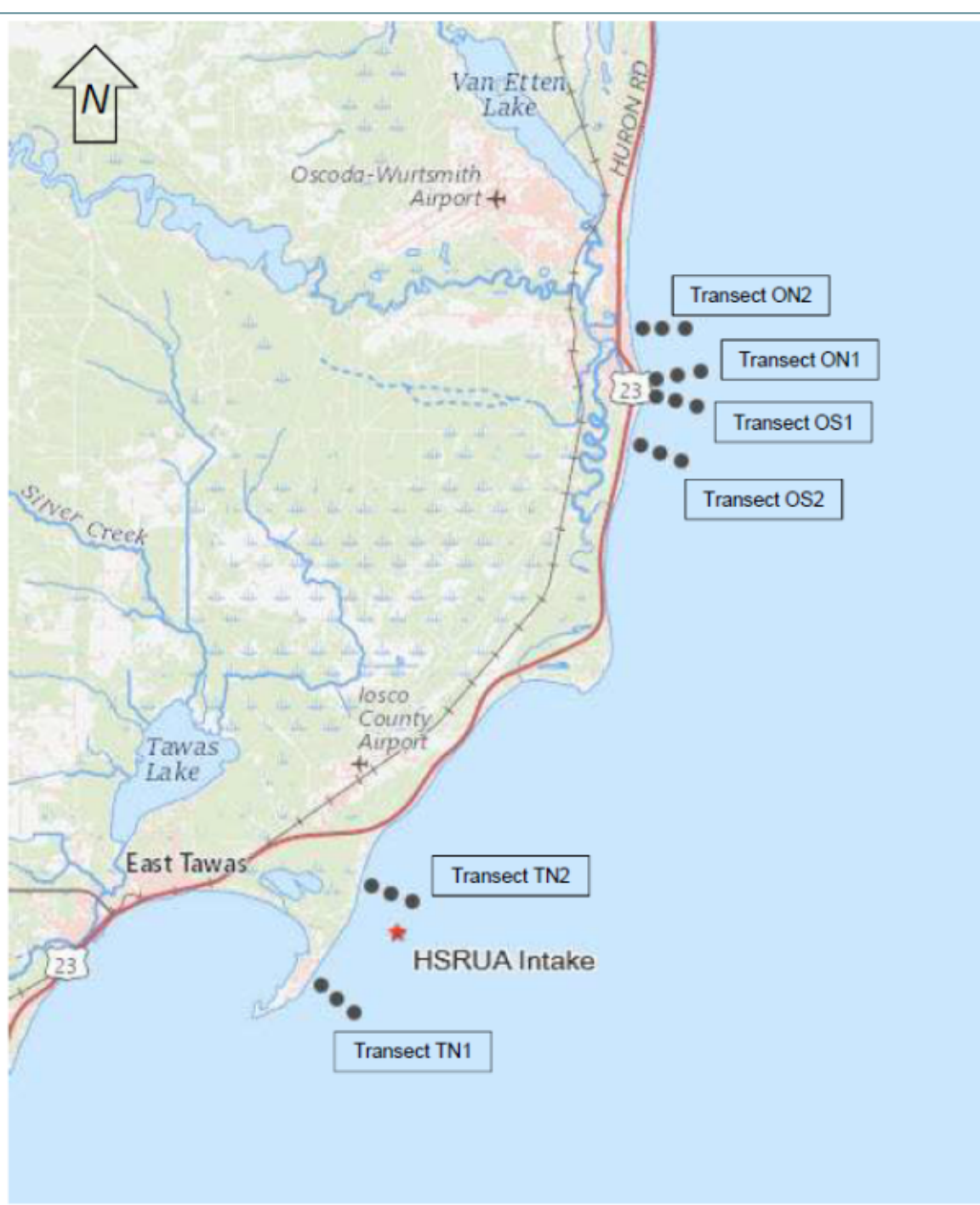
- Determine the extent of measurable PFAS contamination in nearshore Lake Huron south of the Au Sable River mouth.

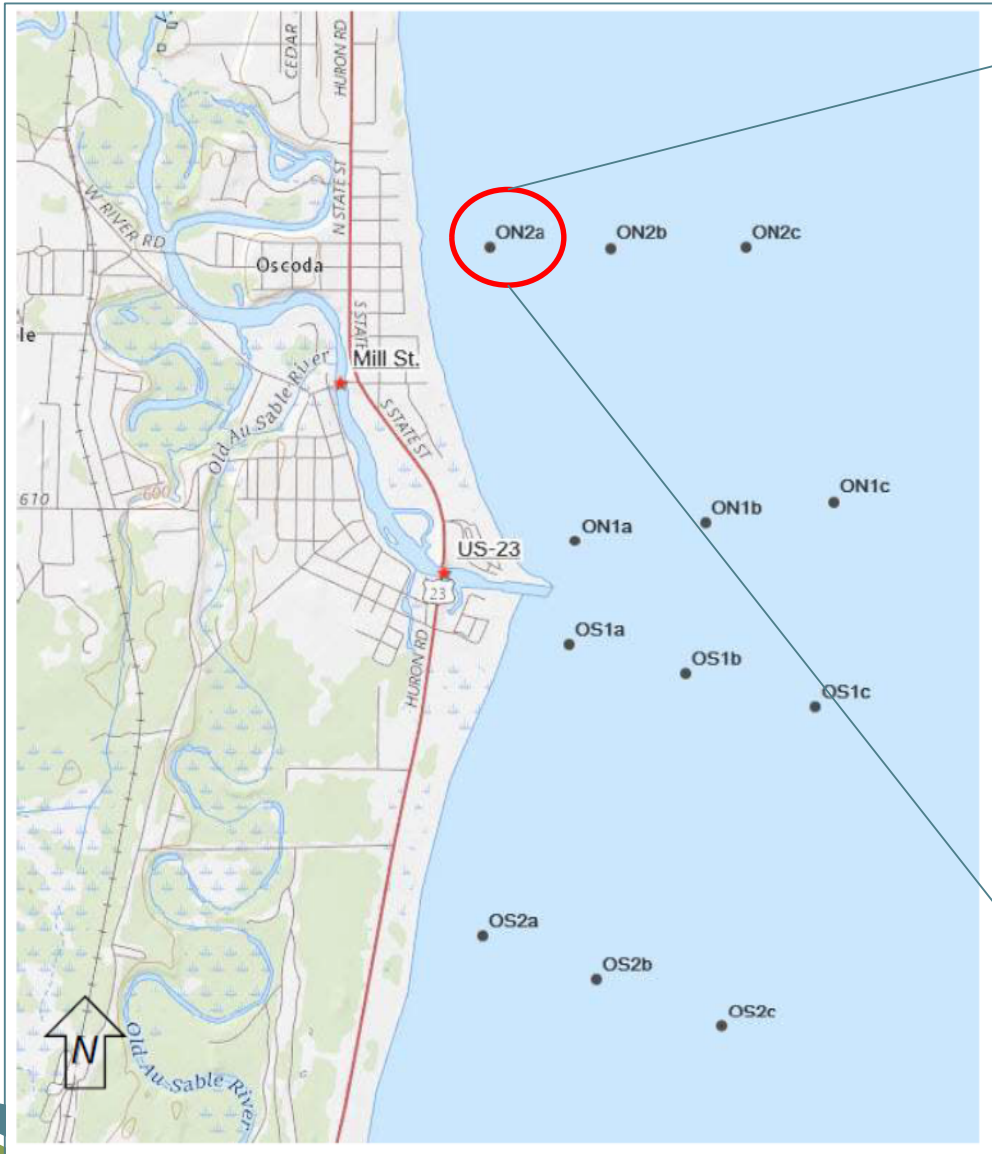


Sampling Locations

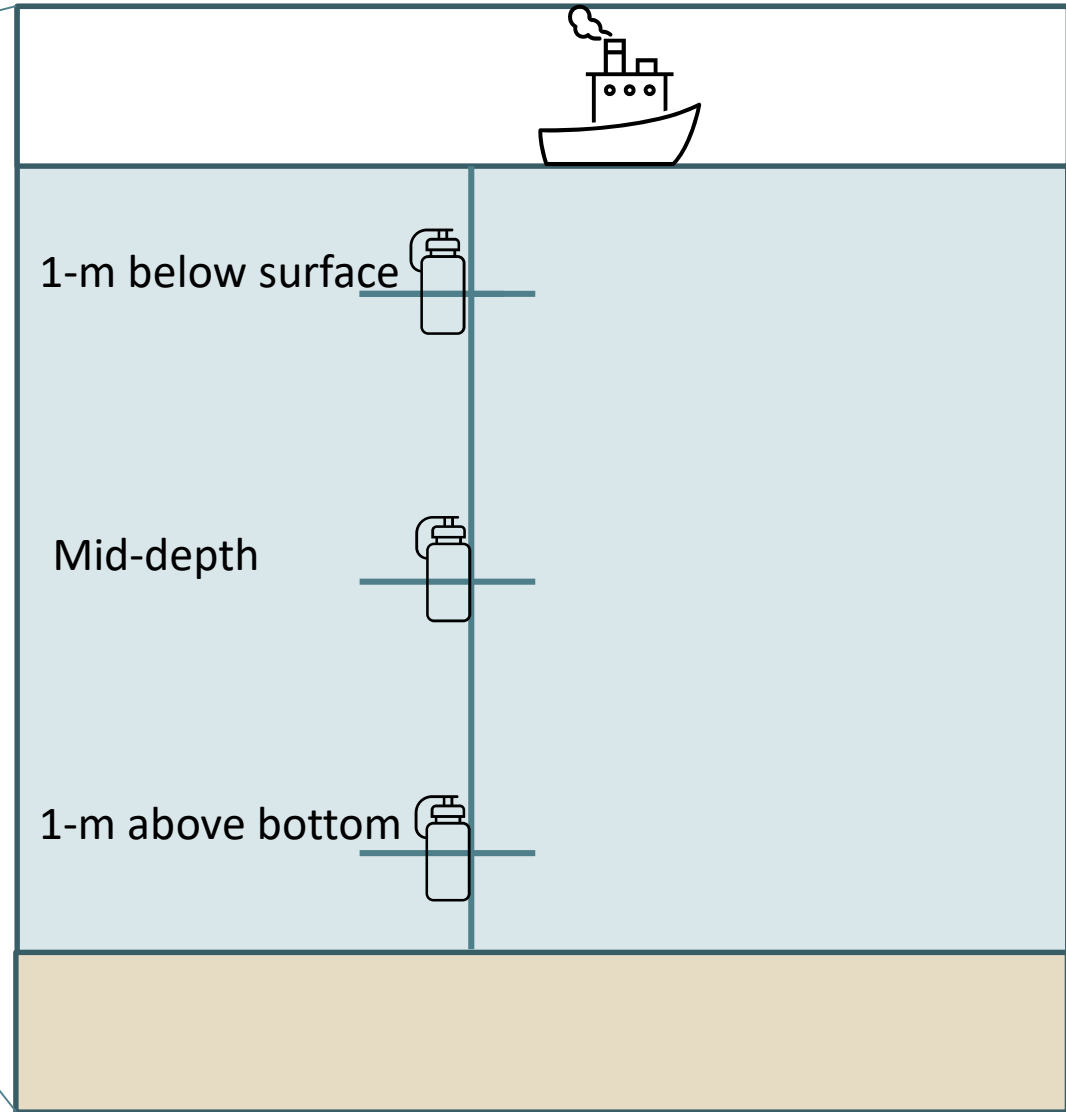
- Two sites on the Au Sable River
- Six Lake Huron transects
 - Four transects near Au Sable township/Oscoda
 - Two north and two south of the Au Sable River mouth
 - Two transects near Tawas City
 - One north and one south of the HSRUA drinking water intake.
- Each transect begins approximately 300 m from the shore and extends approximately 1.2 km perpendicular to shore.
- Three sampling locations along each transect
- At each location, samples collected at 1-meter below the surface, mid-depth, and 1-meter off lake bottom







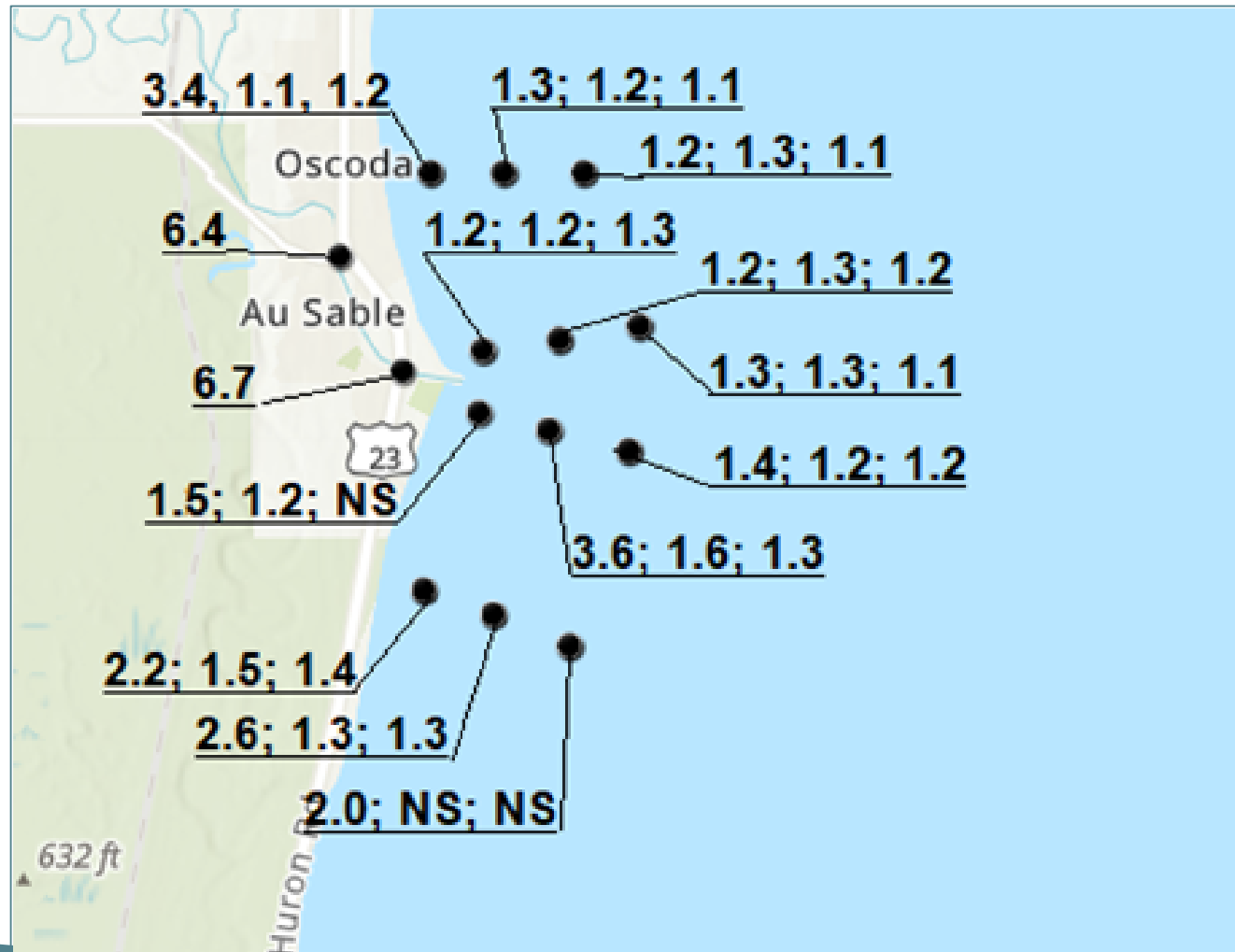
Water Column



Seasonal differences

- Account for variability in concentrations due to weather related conditions by conducting four sampling events: July 2019; September 2019; November 2019; April 2021*.
 - Spring runoff sampling initially scheduled for April 2020; postponed due to COVID-19

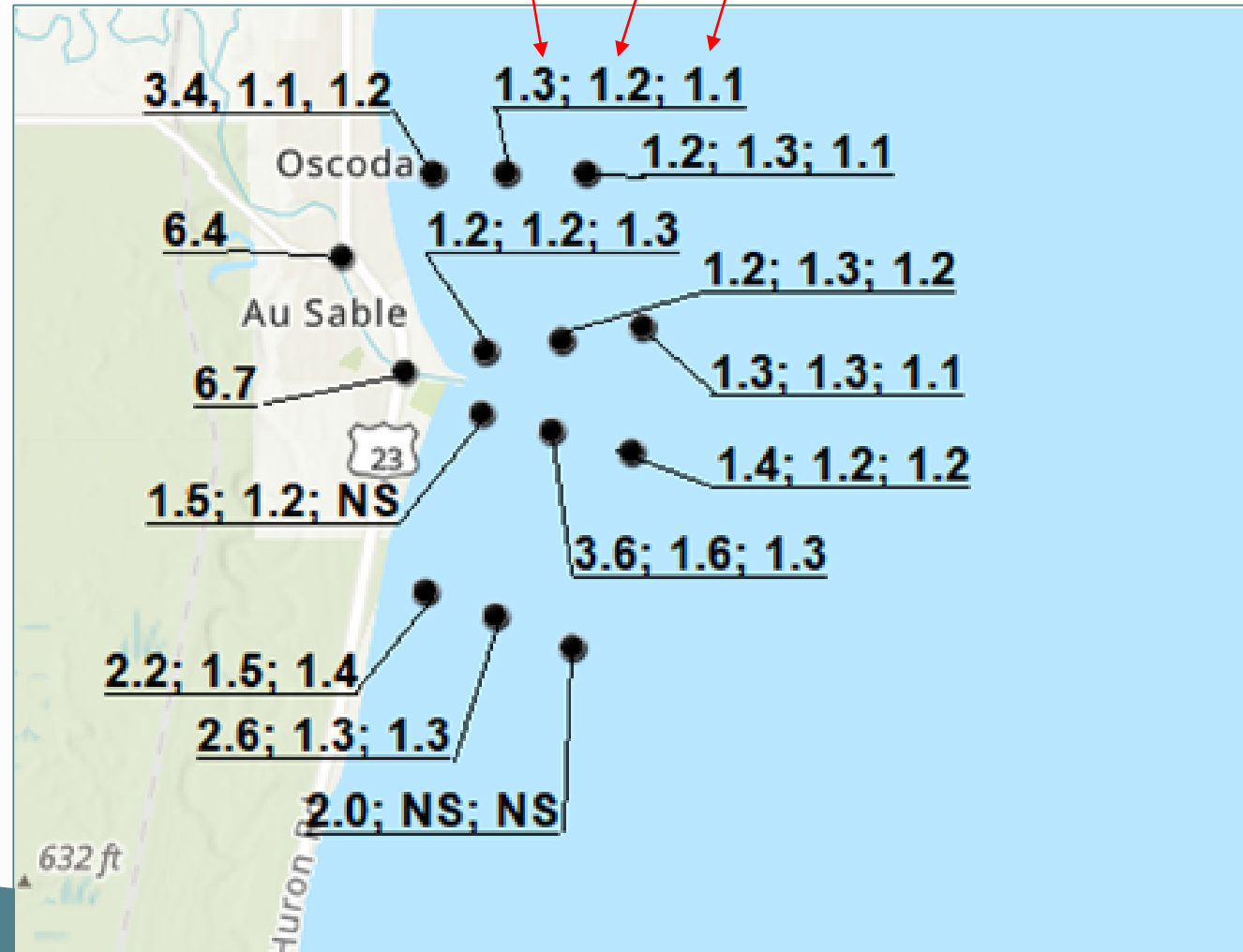
July 2019: Au Sable/Oscoda Area PFOS Concentrations (ppt)



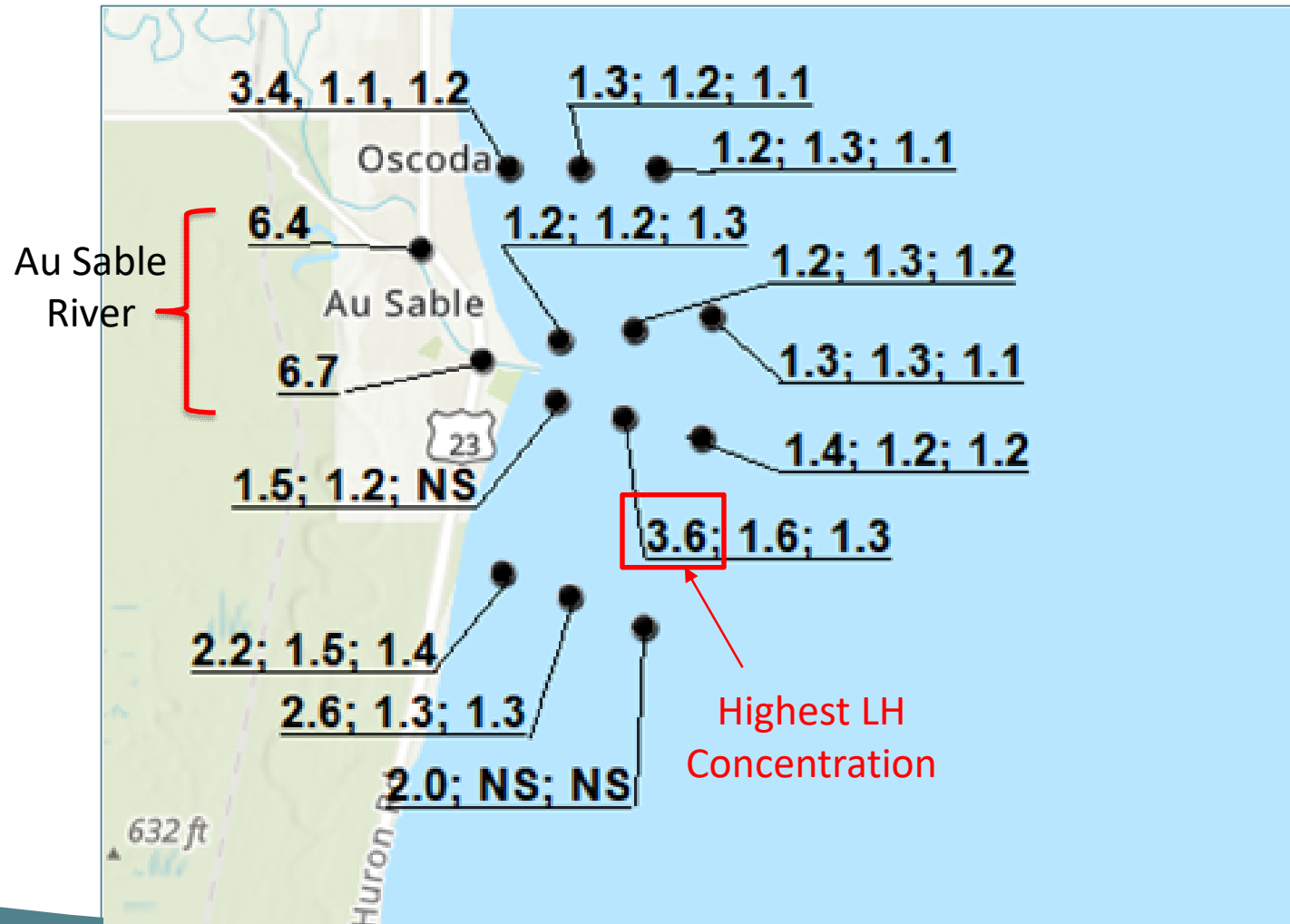
July 2019: Au Sable/Oscoda Area PFOS Concentrations (ppt)

At Each Location: 3 Sample Depths:

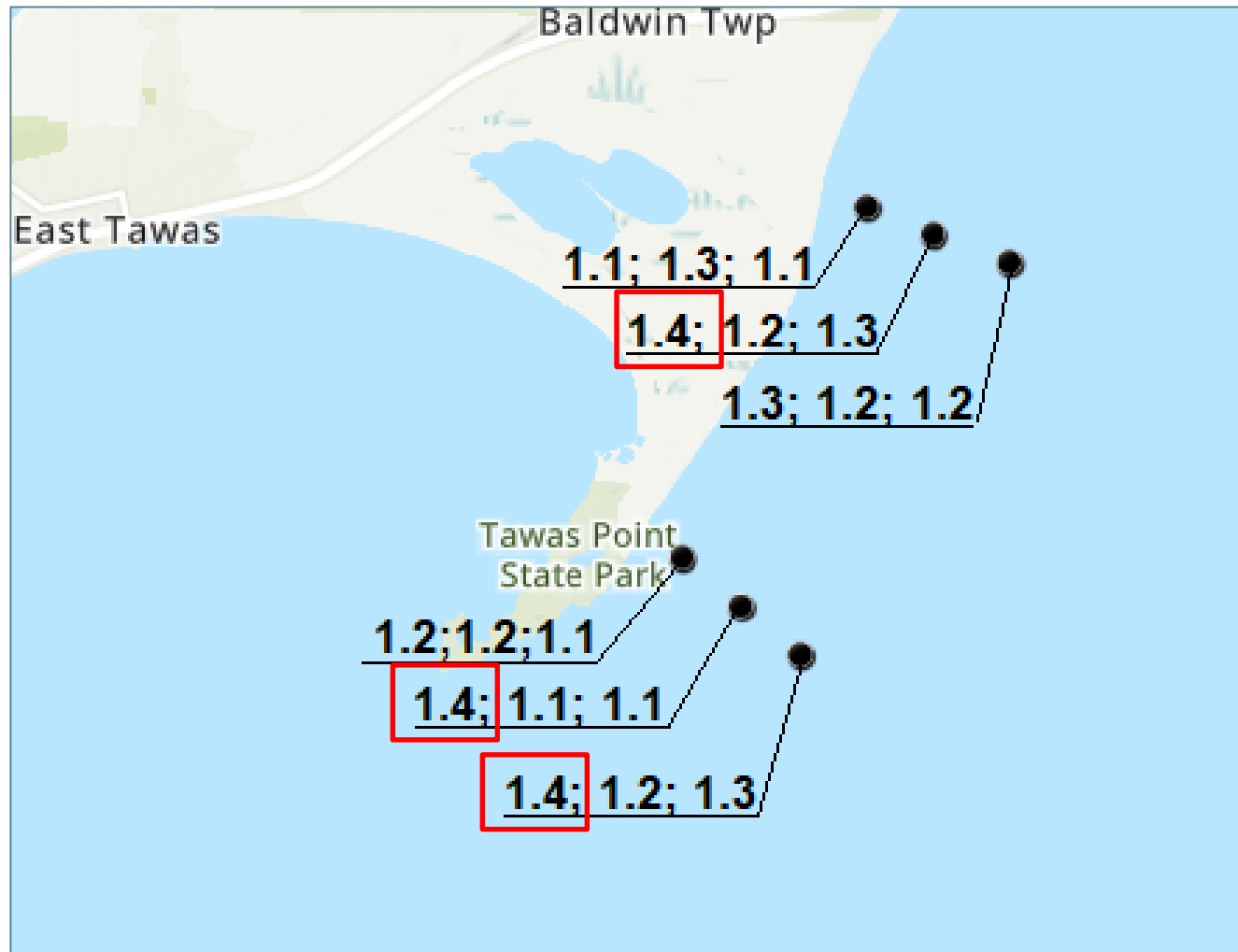
Below Surface Mid Above Bottom



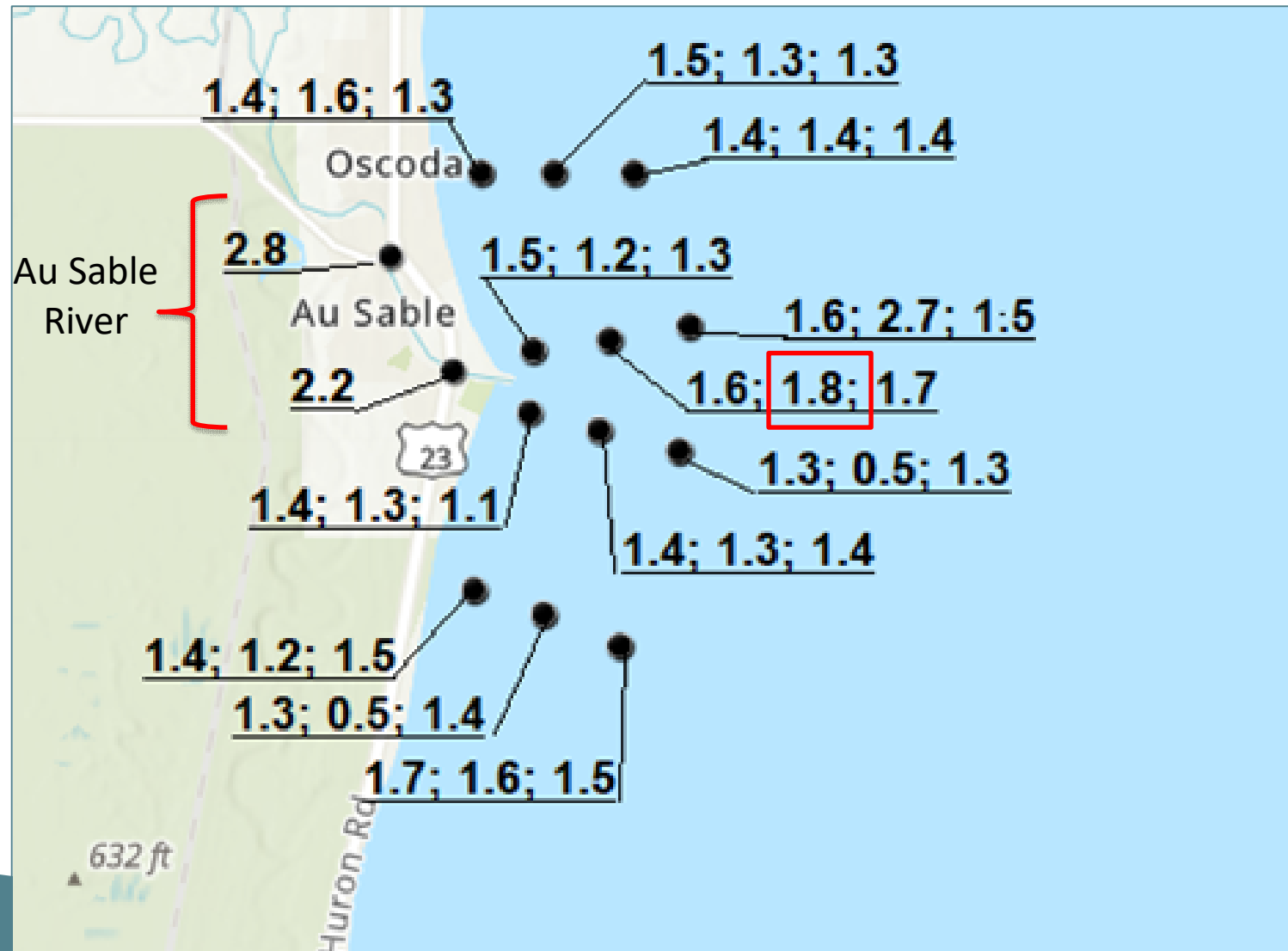
July 2019: Au Sable/Oscoda Area PFOS Concentrations (ppt)



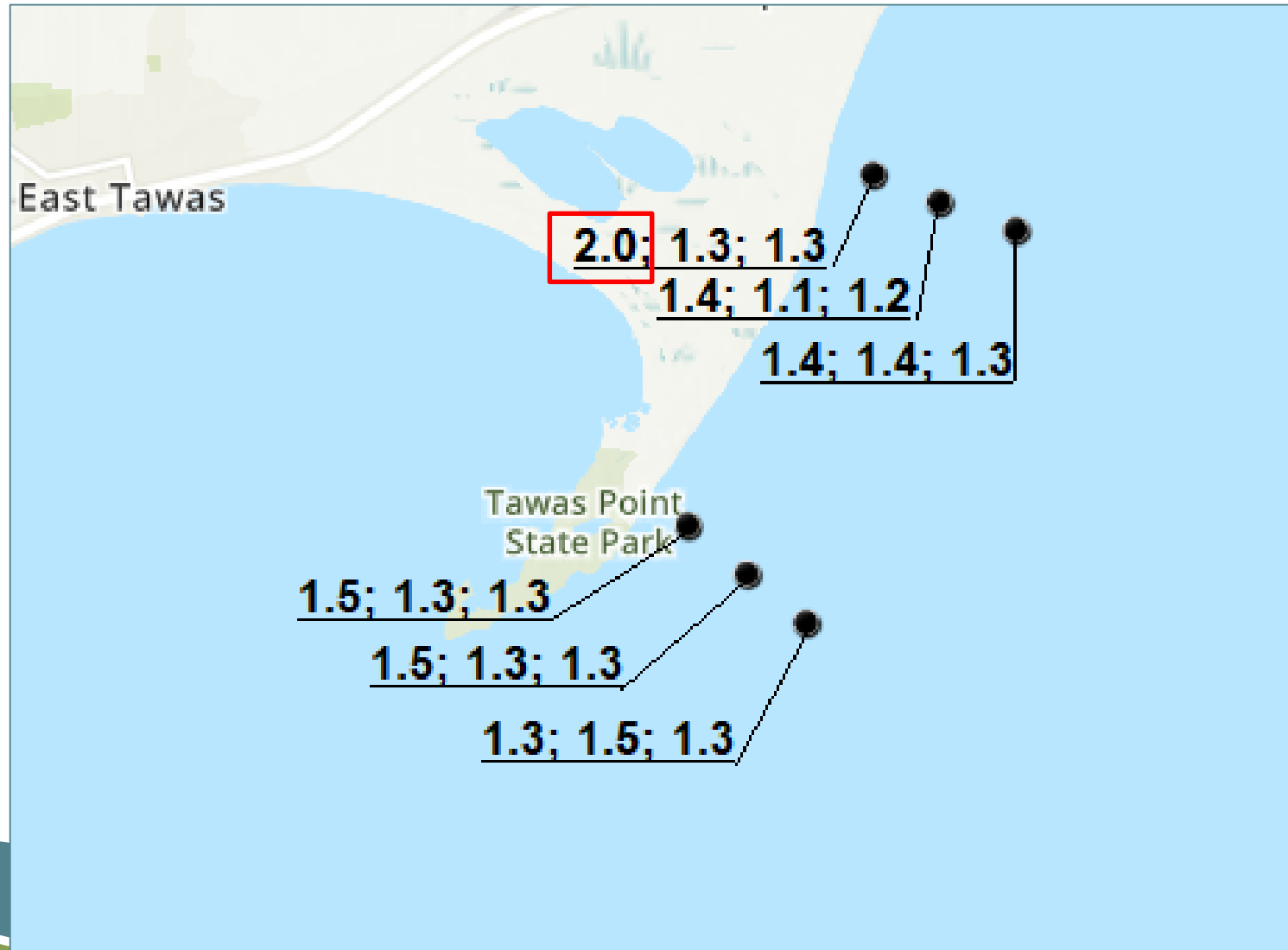
July 2019: Tawas Area PFOS Concentration (ppt)



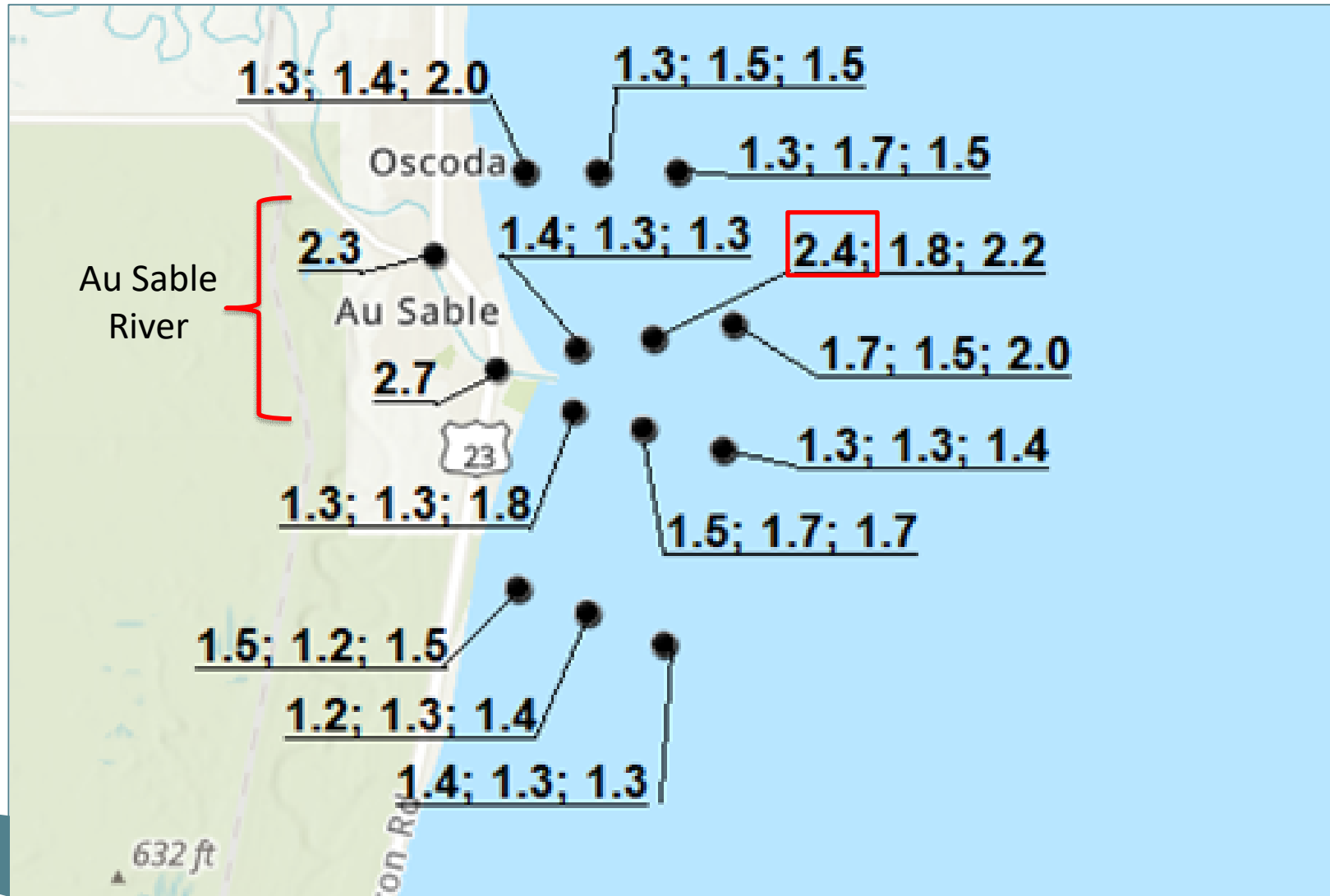
September 2019: Au Sable/Oscoda Area PFOS Concentrations (ppt)



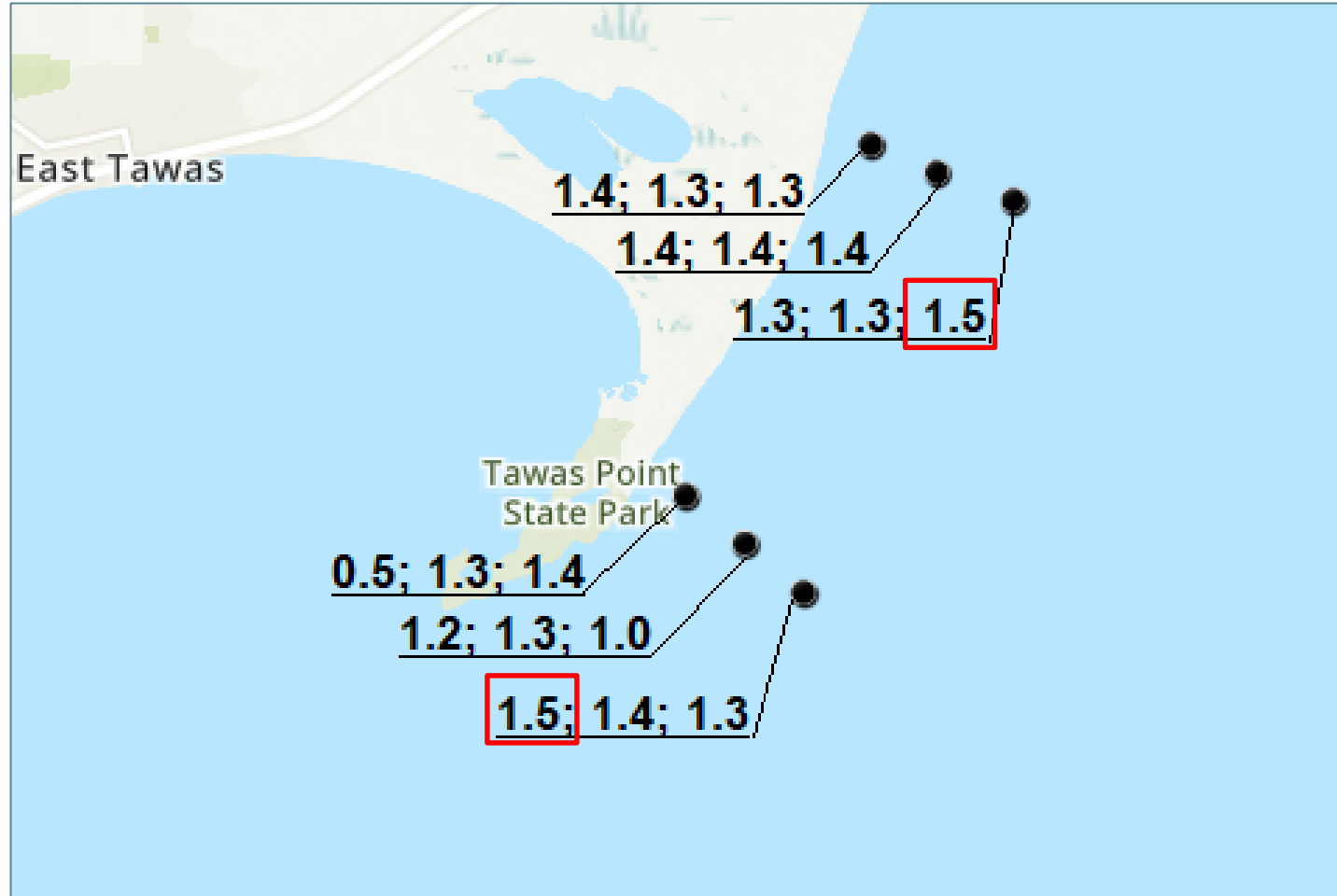
September 2019: Tawas Area PFOS Concentrations (ppt)



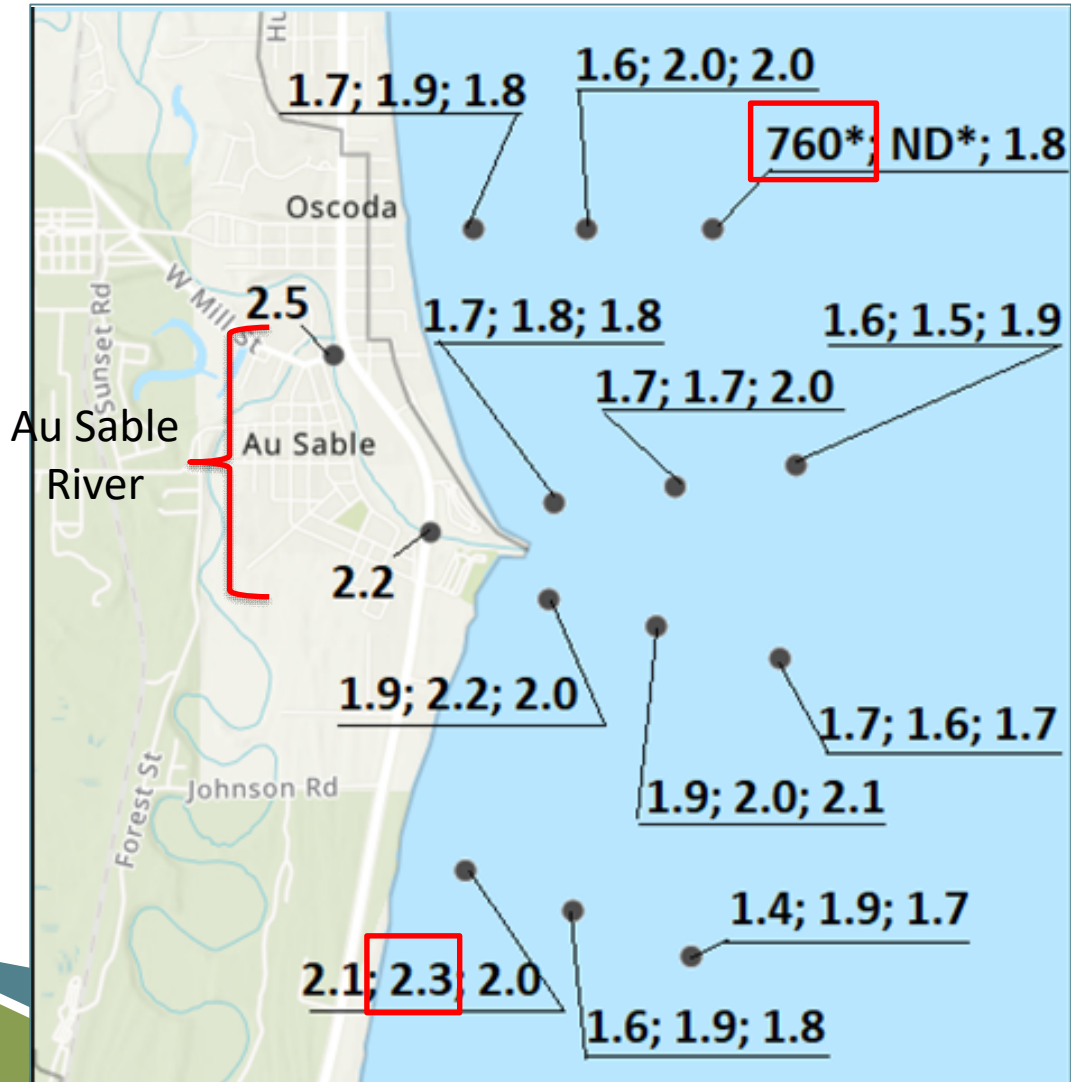
November 2019: Au Sable/Oscoda Area PFOS Concentrations (ppt)



November 2019: Tawas Area PFOS Concentrations (ppt)



April 2021: Au Sable/Oscoda Area PFOS Concentrations (ppt)



* Sample had a very high reporting limit (2,000 ppt). Lab indicated sample was discolored and required significant dilution (100x).

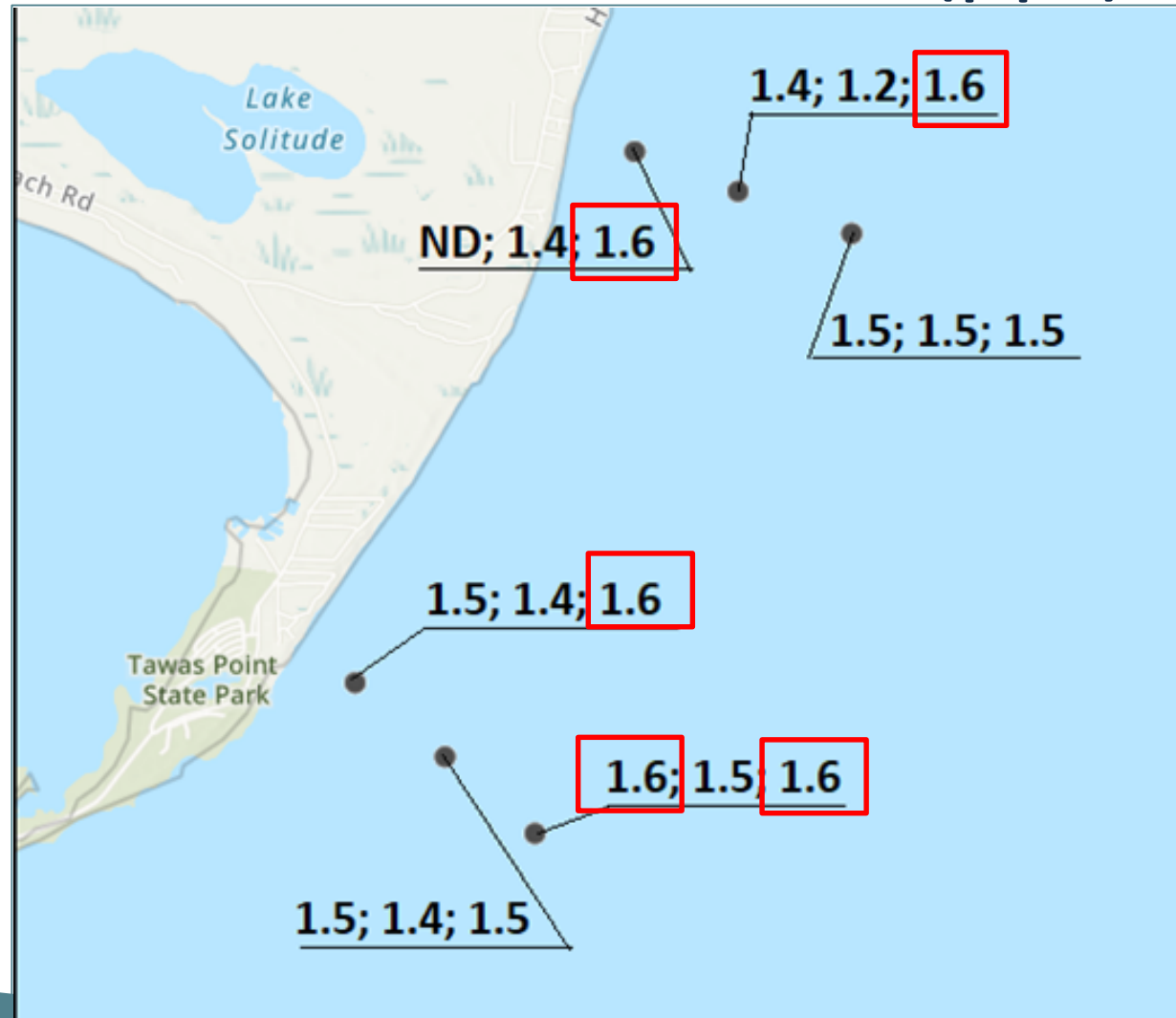
Sample Location: ON2C sub-surface

- For comparison purposes: 660 ppt PFOS in 2020 Clark's Marsh sampling
- 2,000 ppt PFOS reporting limit in the ON2c sample
 - Highest PFOS reporting limit to date out of 1,800 surface water samples statewide was 190 ppt in a lagoon collected at Parchment (PFOS concentration was 7,000 ppt).
- PFBS only other PFAS detected in this sample (420 ppt; 2,000 ppt reporting limit)

Sample Location: ON2C sub-surface

- Approximately 1.15 miles northeast of Au Sable River mouth.
- In situ data collected by GLEC at time of sampling indicated similar turbidity, conductivity, pH, and temperature as other Lake Huron samples
- Field crew confirmed all samples were clear at time of sampling and lake was well homogenized top to bottom
- Its clear to EGLE that this was either contaminated after collection or mixed up with another non-surface water sample

April 2021: Tawas Area PFOS Concentrations (ppt)



Revisiting study objective

- Determine the extent of measurable PFAS contamination in nearshore Lake Huron south of the Au Sable River mouth

Conclusions

- Highest river PFOS concentration: 6.7 ppt in September 2019
- Overall, Lake Huron surface water PFOS concentrations have been generally low, 1 to 3 ppt, and below WQS.
- Lake Huron PFOA generally < 2 ppt; one sample collected north of the river at mid-depth was 3.9 ppt in Sept 2019.
- Other PFAS generally below reporting limit and/or < 5 ppt.

Conclusions

- 161 of the 162 surface water samples collected from Lake Huron met WQS.
- One sample collected >1 mile northeast of river had 760 ppt PFOS; however, sample has data quality concerns.
- No significant PFAS plume coming out of Au Sable River that has resulted in elevated Lake Huron PFAS concentrations exceeding WQS.



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Huron Shores Regional Utility Authority: Drinking Water PFAS Testing

Ian Smith, Ph.D.

Emerging Contaminants Unit Manager

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Huron Shores Regional Utility Authority: Drinking Water PFAS Testing

- Initially tested during Phase I of EGLE statewide PFAS survey (2018)
 - Samples collected for raw (intake) water and finished (treated) water
 - Raw and finished water analyzed for 24 PFAS compounds: **No detections**
 - Finished water also analyzed using EPA method 537 (14 compounds): **No detections**
- Monthly testing performed by EGLE at HSRUA between April and September 2019
 - Samples again collected for raw and finished water
 - Raw and finished water analyzed as above: **No detections**
- HSRUA is participating in compliance monitoring for Michigan's 7 PFAS MCLs
 - Supply is currently on annual monitoring
- Bi-monthly intake water testing performed at HSRUA in 2021
 - Raw water analyzed for 28 PFAS compounds: **No detections**

Huron Shores Regional Utility Authority: Drinking Water PFAS Testing

Sample Date	Sample Type	Analytical Method	Total Tested PFAS (parts per trillion)
11/15/2018	Raw Water (Intake)	IDA (24 compounds)	Non-Detect (ND)
11/15/2018	Finished Water	EPA 537 (14 compounds)/IDA (24 compounds)	ND
4/26/2019	Raw Water (Intake)	IDA (24 compounds)	ND
4/26/2019	Finished Water	EPA 537 (14 compounds)	ND
5/29/2019	Raw Water (Intake)	IDA (24 compounds)	ND
5/29/2019	Finished Water	EPA 537 (14 compounds)	ND
6/25/2019	Raw Water (Intake)	IDA (24 compounds)	ND
6/25/2019	Finished Water	EPA 537 (14 compounds)	ND
8/6/2019	Raw Water (Intake)	IDA (24 compounds)	ND
8/6/2019	Finished Water	EPA 537 (14 compounds)	ND
9/5/2019	Raw Water (Intake)	IDA (24 compounds)	ND
9/5/2019	Finished Water	EPA 537 (14 compounds)	ND
9/24/2019	Raw Water (Intake)	IDA (24 compounds)	ND
9/24/2019	Finished Water	EPA 537 (14 compounds)	ND
12/2/2020	Finished Water	EPA 537.1 (18 compounds)	ND
1/28/2021	Raw Water (Intake)	IDA (28 compounds)	ND
3/4/2021	Raw Water (Intake)	IDA (28 compounds)	ND
5/26/2021	Raw Water (Intake)	IDA (28 compounds)	ND

IDA: Isotope Dilution Analysis

Full statewide PFAS survey results available on the MPART website: michigan.gov/pfasresponse



PFAS and Health

Puneet Vij, Ph.D.

Toxicologist

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The Role of MDHHS/ Local Health Department (LHD)

- 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

Associated Human Health Outcomes PFOA and/or PFOS

- Reduced fertility
- High blood pressure or pre-eclampsia in pregnant women
- Small decreases in infant birth weight
- Higher cholesterol
 - Especially total cholesterol and LDL cholesterol

Associated Human Health Outcomes

PFOA and/or PFOS, continued

- Thyroid disease
- Liver damage
- Decreased immune system response to vaccines
- Developing certain types of cancer
 - In particular, kidney and testicular cancers*

* PFOA only

MDHHS Comparison Values

- MDHHS Comparison Values are the lowest of:
 - MDHHS Public Health Drinking Water Screening Level
 - MPART Health-Based Value or Maximum Contaminant Level (MCL)
- Both the MDHHS screening levels and the MCL were set to protect everyone
 - including those most at risk of harm to their health: fetuses and breastfed babies

MDHHS Comparison Values

PFAS	Comparison Values
PFOS	8 ppt ^A
PFOA	8 ppt ^B
PFNA	6 ppt ^B
PFHxS	51 ppt ^B
PFBS	420 ppt ^B
PFHxA	400,000 ppt ^B
GenX	370 ppt ^B

A. MDHHS Public Health Drinking Water Screening Level

B. MPART Health-Based Value or Maximum Contaminant Level (MCL)

Summary: MDHHS Round 1 Resampling Effort

Round 1 Resampling Summary

- Total number of wells sampled: 277
 - Number of non-detects: 136
 - Number of detections: 141
 - Of the detections, 20 exceeded MDHHS Comparison Values

Detected PFOA + PFOS amounts ranged from 2.05 ppt to 263.62 ppt

Detected Total PFAS amounts ranged from 2.01 ppt to 2,514.02 ppt

Round 2: Resampling effort

- Recruitment letters
 - Three phone calls
- Door knocking (first-time samples)
- Appointments with sanitarians
- Again, door knocking for 140 homes
- Started receiving results (39 analytes)
- Total number of wells sampled: 241
 - Number of non-detects: 96
 - Number of detections: 94
 - Of the detections, 13 exceeded MDHHS CVs



Fish sampling/results updates

- **Van Etten Lake (Collected in 2020)**
 - Yellow perch
 - bluegill
 - black crappie
 - Results still pending
- **Cedar Lake (Collected in 2020)**
 - Yellow perch
 - Results still pending



Avoid Foam

- Foam may have high amounts of PFAS
- Rinse off foam after contact
- Bathe or shower after the day's outdoor activities
- Recreational use of **water** is *not a concern*
- Incidental swallowing of **foam** with high levels of PFAS is *a concern*
- Do not allow pets to drink foamy water
- Rinse pets with fresh water after contact with foam



Deer report updates

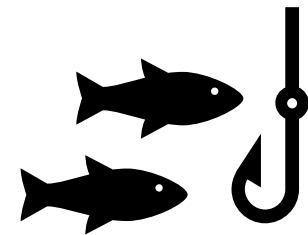
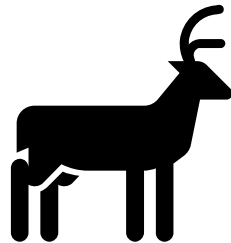
- Update to the existing Do Not Eat deer advisory
 - MDHHS is reducing the Do Not Eat deer advisory area around Clark's Marsh to an approximately 3-mile radius
 - March 2020: Muscle and liver samples were collected from 44 deer (14 male, 30 female)
 - Only two PFAS (PFOS and PFHxS) were detected in muscle samples collected
 - Seven PFAS (PFDA, PFOS, PFDS, PFHxS, PFNA, PFUnA, and PFOSA) were detected in liver samples

Conclusions and Recommendations

- Relationship between detections of PFOS in liver samples and the collection location distance from Clark's Marsh
- MDHHS recommends that the "Do Not Eat" advisory be changed from within 5 miles of Clark's Marsh to within 3 miles
- MDHHS continues to recommend not eating kidneys or liver from any deer

MDHHS Exposure Assessment

- Designing exposure assessment
 - What are the average PFAS blood levels of people who live and recreate in the Oscoda area?
- Participants would:
 - Give a small blood sample to be tested for PFAS
 - Take a short survey about ways they could potentially be exposed to PFAS
- Working with the community



Additional Resources

- Michigan PFAS Action Response Team (MPART)
www.michigan.gov/pfasresponse
- More info about ESF guidelines → www.michigan.gov/EatSafeFish
- Agency for Toxic Substances and Disease Registry (ATSDR)
<https://www.atsdr.cdc.gov/pfas/>



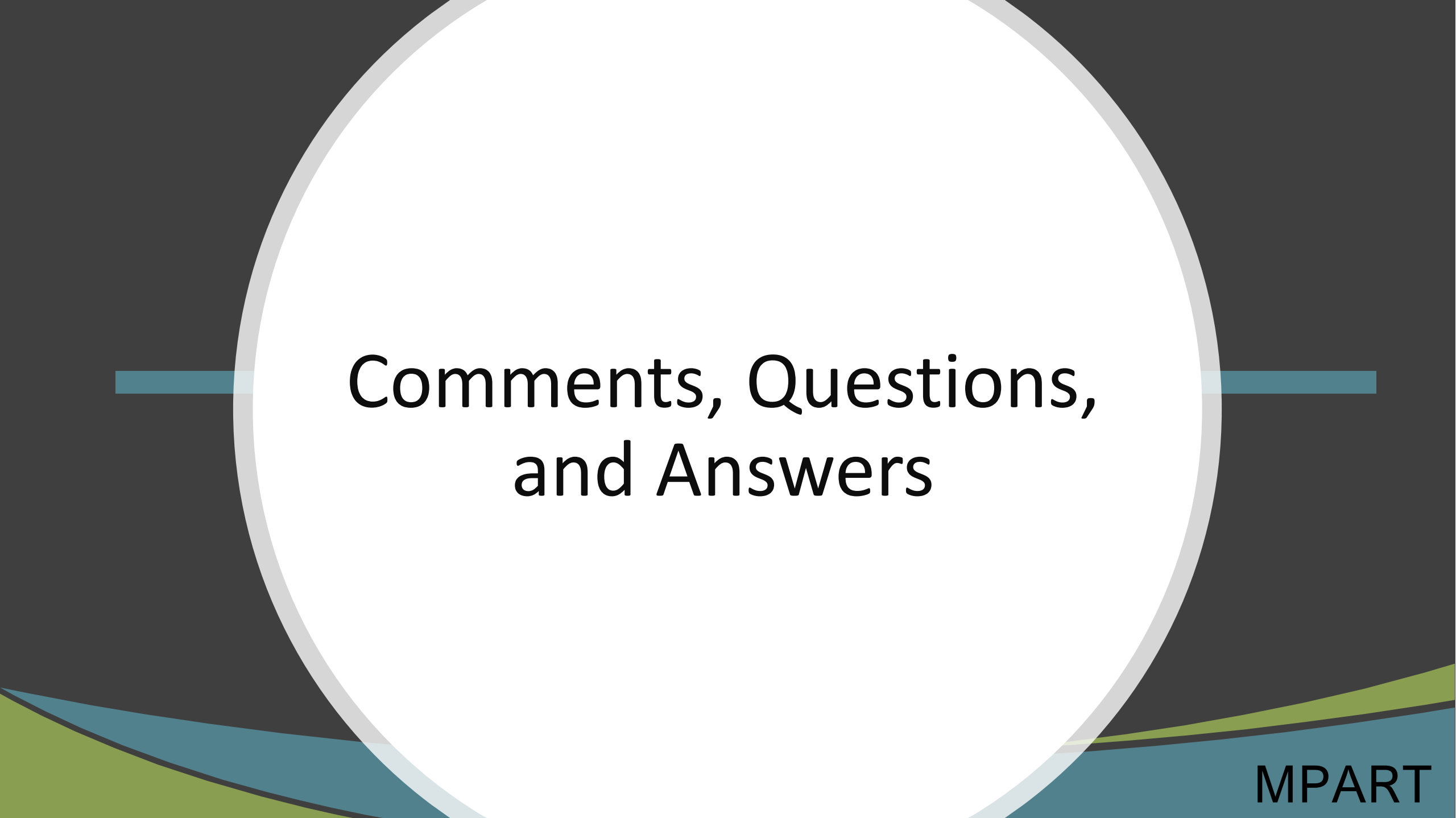
DNR Update

Tammy Newcomb, Ph.D.

Senior Water Policy Advisor

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Thank you



Comments, Questions, and Answers

Restoration Advisory Board (RAB) Meeting

- Wednesday, July 22, 5:00 – 8:00 pm

Additional Resources

- Wurtsmith investigation page → Michigan.gov/Wurtsmith (Wurtsmith updates)
- MPART, Investigations, PFAS Sites → Michigan.gov/PFASResponse (Oscoda Area site updates)

Michigan.gov/PFASResponse website

Department of Environment, Great Lakes, and Energy
Michigan PFAS Action Response Team

HEALTH | DRINKING WATER | INVESTIGATIONS | TESTING | FISH AND WILDLIFE | PFAS FOAM | MPART

MDHHS RECOMMENDS MICHIGANDERS AVOID FOAM ON LAKES AND RIVERS

SEARCH

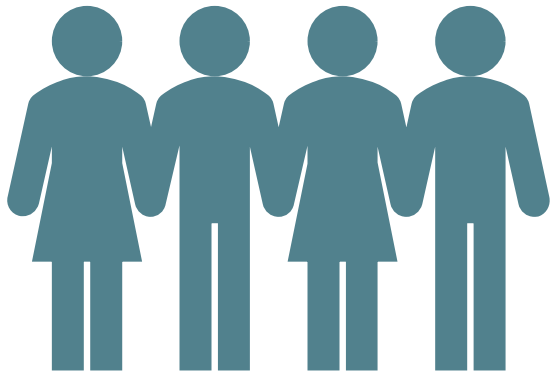
TRENDING TOPICS

- PFAS in Drinking Water for Private Residential Well Owners
- Laboratories Offering Home Testing
- PFAS 101: What Every Homeowner Should Know
- PFAS Foam on Lakes and Streams
- Drinking Water Compliance Monitoring
- PFAS in Fish

POPULAR PAGES

- Public Meetings
- Sampling Guidance
- PFAS Sites
- Topical Workgroups
- Watershed Investigations
- Citizen's Advisory Workgroup

Citizens Advisory Workgroup



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

Thank you!

We will post a recording and closed-captioned copy of tonight's conversation on our website in the next few days.

MICHIGAN PFAS ACTION RESPONSE TEAM (MPART)

Michigan.gov/PFASResponse



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