



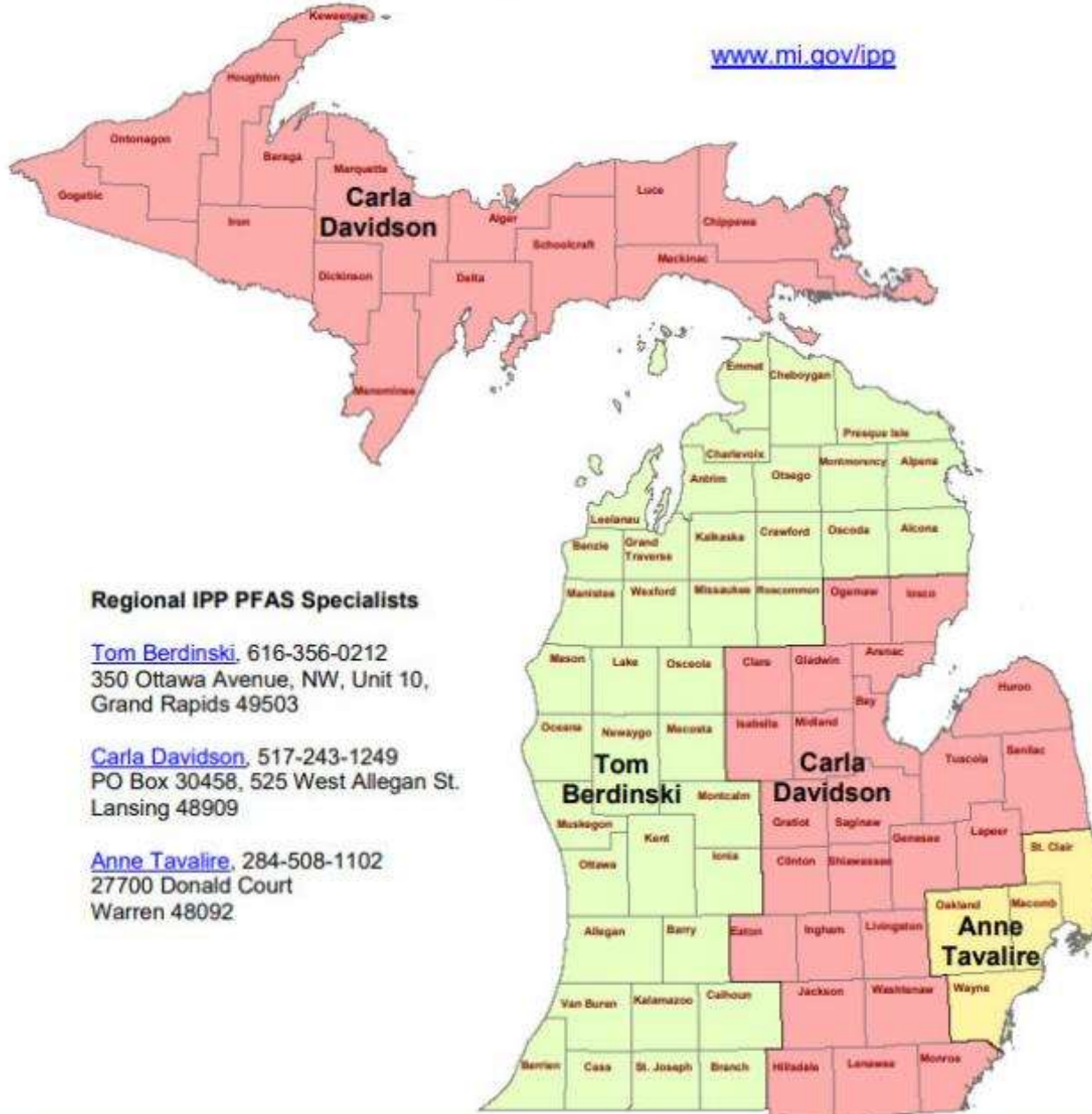
IPP Update

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Industrial Pretreatment Program (IPP) Perfluoroalkyl and Polyfluoroalkyl Substances (PFAS) Staff

www.mi.gov/ipp



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Update

- IPP PFAS Initiative
 - Scope, Findings, Impacts
 - Requirements and Recommendations
 - Examples: Wixom WWTP, Howell WWTP, Jackson WWTP & Lapeer WWTP
- Next Steps
- Up Next, Non-PFAS IPP

IPP PFAS Initiative

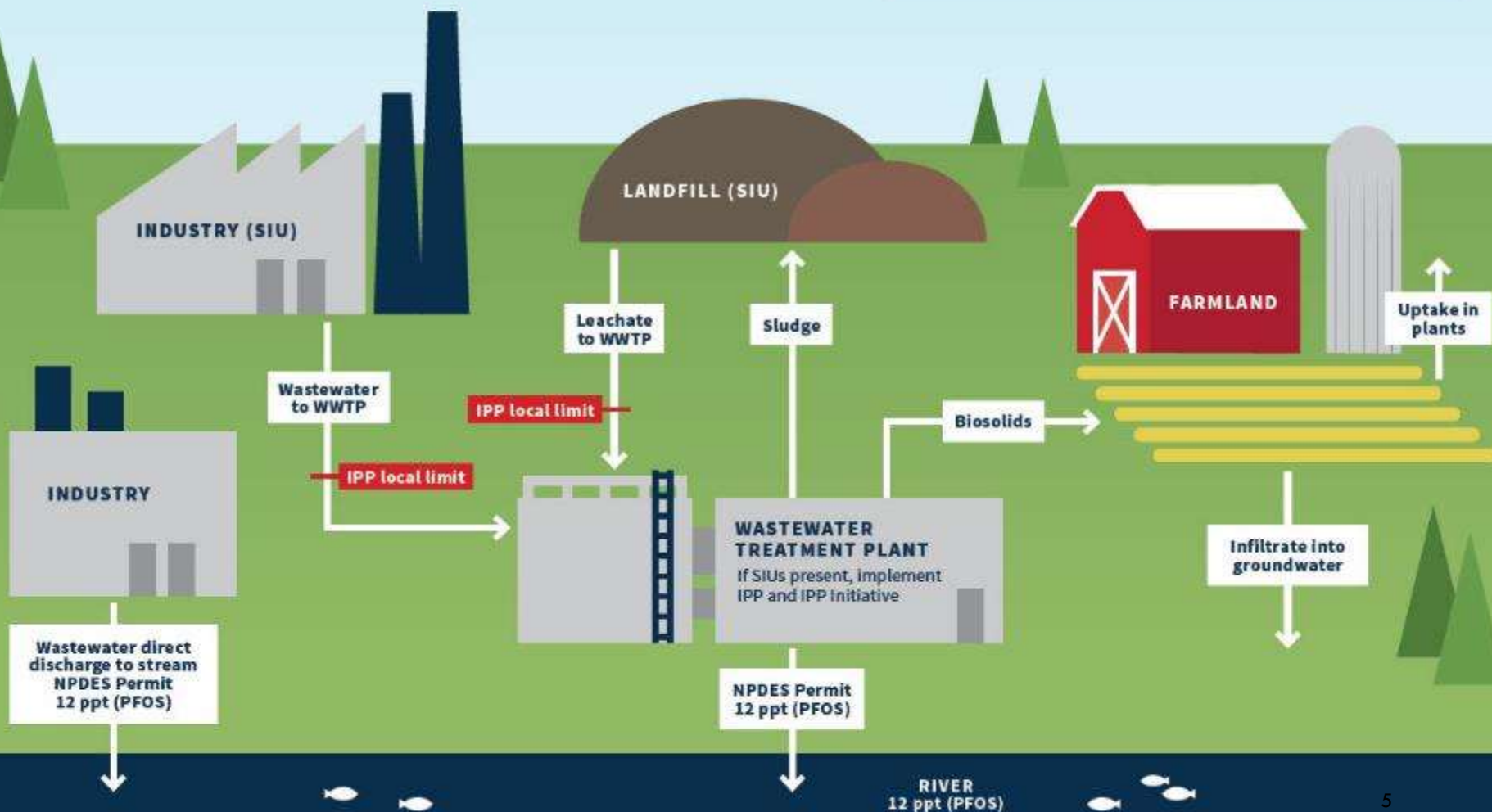
- Potential Source Screening
- Monitor Probable Sources
- If sources found:
 - Reduce/Eliminate PFOS & PFOA Sources
 - Monitor WWTP effluent; report if $>WQS$
- Submit Interim Report – due 6/29
- Continue Source Reduction & Monitoring
- Submit Summary Report – due 10/26

Alternative Plan:

- More time
- Fewer samples
- For larger POTWs

PFAS Water Cycle

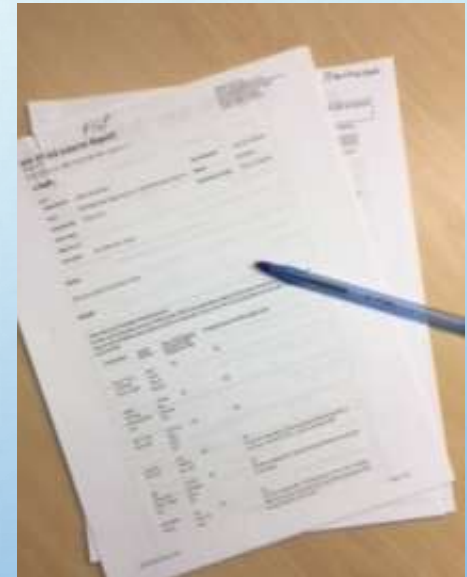
IPP = Industrial Pretreatment Program
SIU = Significant Industrial User
NPDES = National Pollutant Discharge Elimination System
PPT = Parts Per Trillion
WWTP = Wastewater Treatment Plant



IPP PFAS Interim Reports

Of 93 WWTPs with Required IPPs:

- 32 Report Extensions approved
- 85 Reports Submitted to date
- Not all 85 Reports Reviewed
- 1 Report Late



IPP PFAS Initiative Status

Update 9-26-2018

93 POTWs with IPPs
IPP PFAS Interim Reports:

- 19 Report Extensions
- 85 Reports Submitted
- 60 Reports Reviewed
- 1 Report Outstanding

Bin TBD: 41
Interim Report submitted but a bin determination cannot be made as staff have not yet reviewed the report, the report was determined to be incomplete, or sample results (from IUs and/or POTW effluent) are still pending

Bin 1: 19
No sources
PFOS/PFOA found

IPP PFAS Requirements Complete

Bin 2: 10
Sources found but
POTW Effluent
 \leq WQS¹

- Source reduction recommended
- Semi-annual PFAS monitoring required
- Local limits and PMP recommended

Bin 3: 18
Sources found and
POTW Effluent
 $>$ WQS¹

- 3a: 12**
Effluent concentrations of **moderate priority**²
- Source reduction required
 - **Quarterly** POTW effluent monitoring required
 - Local limits recommended
 - Pollutant Min Plan SUO provisions recommended

- 3b: 6**
Effluent concentrations at **highest priority**³
- Source reduction required
 - **Monthly** POTW effluent monitoring required
 - **Biosolids** monitoring required
 - Local limits recommended
 - Pollutant Min Plan SUO provisions recommended

WWTPs with Effluent \geq 50 ppt PFOS (Highest Concentrations to date)

WWTP	Effluent Flow, MGD	PFOS, ppt
Bronson WWTP	1.5	150
Howell WWTP	1.4	130
Ionia WWTP	2.1	430
KI Sawyer WWTP	0.19	200
Lapeer WWTP*	1.8	2,000
Wixom WWTP	2.2	290

*After Plater installed treatment, effluent has been as low as 18 ppt

Impacts, Effluent \geq 50 ppt PFOS

- Additional Fish Consumption Advisories (so far):
 - Flint River (6 meals/yr, some species)
 - Huron River (Do Not Eat)
- DEQ PFAS Requirements of WWTPs:
 - Monthly WWTP Effluent Sampling
 - Biosolids Monitoring
 - Potential WWTP Biosolids restrictions
 - Work with Sources to Reduce/Eliminate
- DEQ Recommends PFOS Local Limits, Reduction Plans



Additional WWTPs with PFOS > WQS

PFOS, ppt, highest concentration to date

WWTP	Effluent Flow, MGD	PFOS, ppt
Belding WWTP	1.1	14
Detroit WWTP	635	15
Flint WWTP	20	28
Kalamazoo WWTP	29	38
Marysville WWTP	2.5	14
Menominee WWTP	1.95	13
Muskegon WWTP	21	19
North Kent SA	3.8	27
Port Huron WWTP	11	50
Saline WWTP	1.4	33
Sandusky WWTP	0.3	27
Warren WWTP	20	14

Impacts, Effluent >WQS but <50 ppt PFOS

- DEQ PFAS Requirements of WWTPs:
 - Quarterly WWTP Effluent Sampling
 - Work with Sources to Reduce/Eliminate
- Recommend PFOS Local Limits
- Recommend PFOS Reduction plans

Sources PFAS to WWTPs found (so far)

- **Metal Finishers:** significant sources (ranging from 180 to 240,000 ppt PFOS)
 - Decorative Chrome on Plastic (Tri and Hex)
 - Hard Chrome (using Tri and Hex)
 - Aluminum Anodizing (using Tri and Hex)
 - Chrome conversion coatings
 - Also groundwater from former plating sites (infiltrating to sanitary sewers or groundwater cleanup (pump & treat))

Sources PFAS to WWTPs found (cont'd)

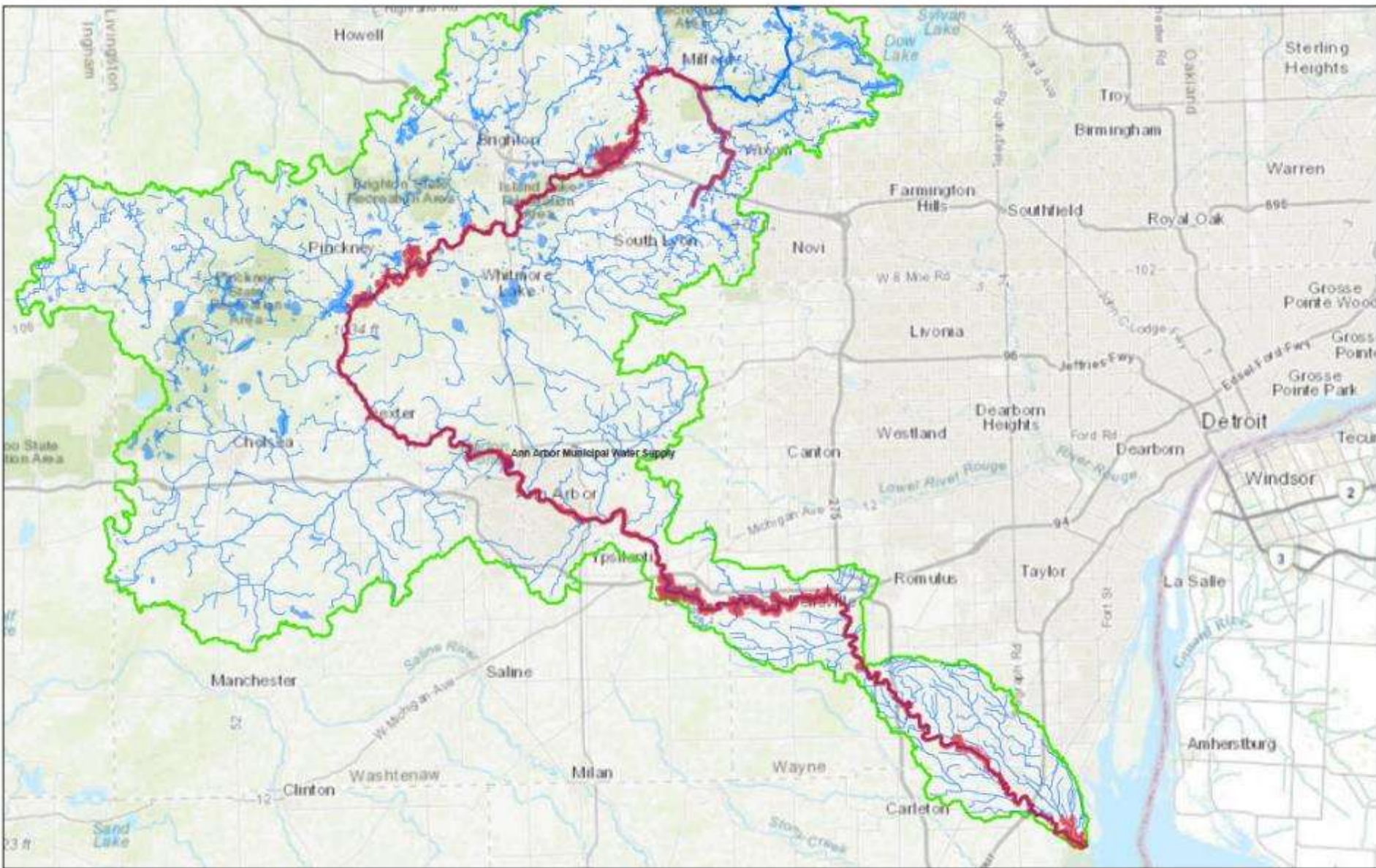
- Sites where **AFFF** used (Air Force Bases, refineries, etc.): PFOS 240 to 45,000 ppt
- **Paint manufacturers**/former sites: PFOS 6,047 ppt
- **Landfills**: PFOS non-detect to 4000 ppt
- Former **Dry Cleaner** site: PFOS 1000 ppt
- **Medical Products** (implants, patches, tubing): 25 ppt
- **Paper Mfg**/former sites: PFOS 20 to 150+ ppt

Example: Wixom WWTP

- Medium-sized WWTP
 - 2.2 MGD discharge
 - 290 ppt effluent PFOS
- **Chrome plater on plastic**
 - 0.083 MGD discharge
 - 28,000 ppt PFOS in effluent
- DEQ, Wixom WWTP, and Plater working to reduce, eliminate PFOS

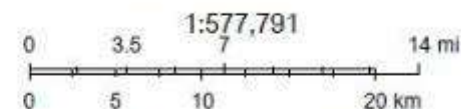


Huron River Fish Advisory Area 9/5/18



9/5/2018 3:44:35 PM

- █ Huron River Fish Advisories
- █ Huron River Main Channel
- Confirmed PFAS Sites
- Huron River Flowline
- █ Huron River Waterbodies
- Ann Arbor



Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri

Example: Howell WWTP

- Medium-sized WWTP
 - 1.4 MGD
 - 130 ppt PFOS
- 1 source found: **hard chrome plater**
 - Effluent 2,000 ppt PFOS
 - 9,000 GPD once/week
 - Additional pretreatment (GAC) pilot installed



NOTE: Plater
Storm water
runoff 12,000
ppt PFOS
before
treatment

Example: Jackson WWTP

- Large WWTP (11 MGD)
 - Effluent <10 ppt PFOS
- 2 Sources found:
 - **Metal Finisher** at 9,950 ppt (Al anodizer w/Chrome coating) at 0.01 MGD
 - **Industrial laundry** at 50 ppt
- No PFOS found at 7 metal finishers

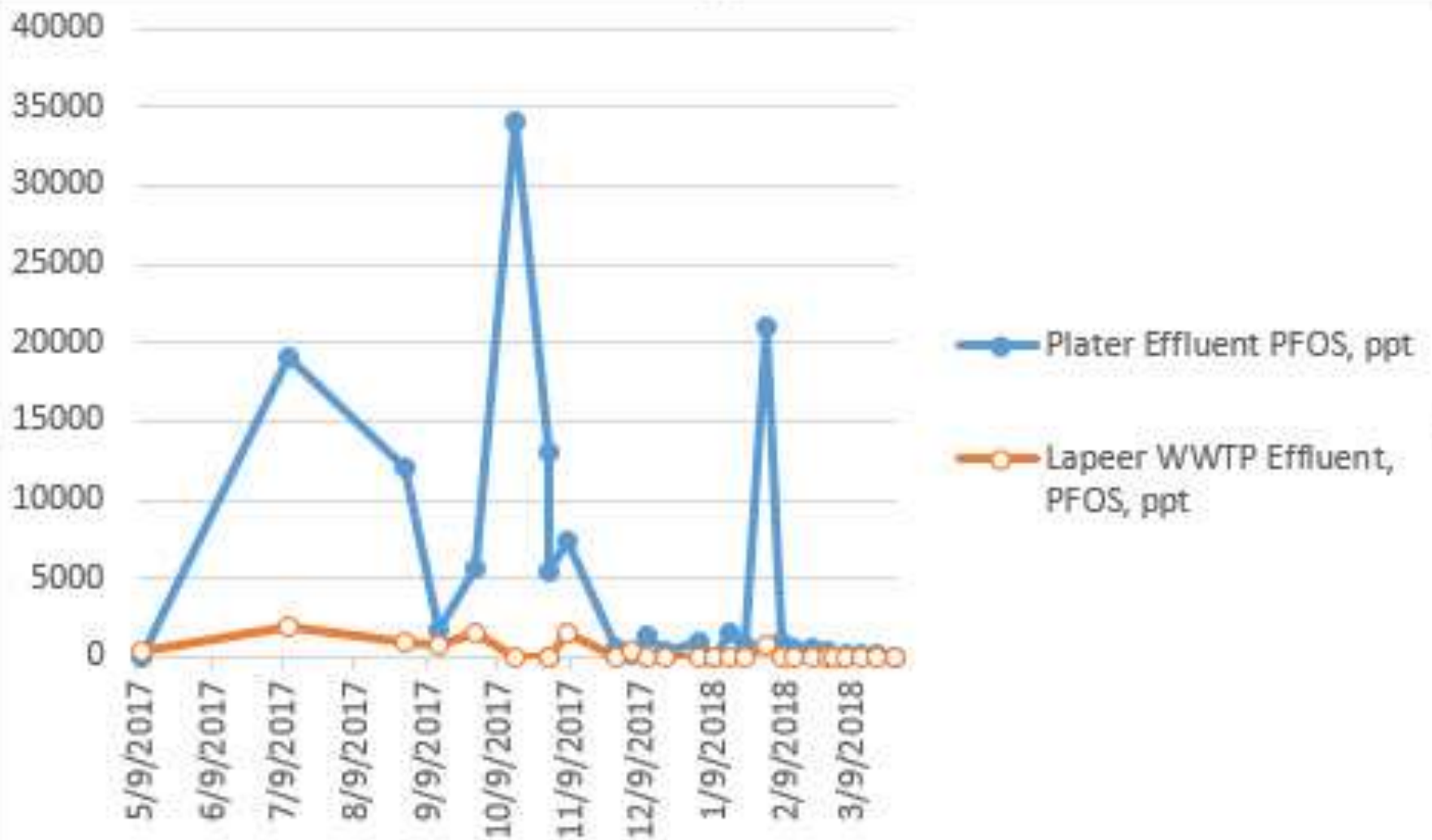


Example: Lapeer WWTP

- Medium-sized WWTP (1.8 MGD)
- Up to 2,000 ppt PFOS
- Recently 18 ppt PFOS
- 1 source: Metal finisher
 - Initially 19,000 ppt PFOS in effluent, 0.08 MGD
 - Decorative chrome plater on plastic
 - **Pretreatment installed: GAC**
 - Cleaned/replaced tanks, lines
- City working with source to eliminate PFOS



PFOS Reduction Effort, Lapeer



Next Steps for DEQ- PFAS

- Work with WWTPs/IUs to **find & reduce/eliminate PFOS**
- Receive & Approve **Complete** Interim Rpts
- Write **letters** re bin status, Interim Rpts
- Identify **direct dischargers** (non-IPP WWTPs, industries) for **DEQ monitoring**

Statewide, Multi-media Action

PFAS RESPONSE

TAKING ACTION, PROTECTING MICHIGAN

HEALTH

TESTING AND TREATMENT

MICHIGAN PFAS SITES

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 we learn more about this nationally emerging contaminant.



Upcoming for IPP (non-PFAS)

- Revised annual report form (Comments to Deb Snell)
- EPA's E-Reporting Rule
- **Rotating DEQ IPP Statewide Coordinators** (likely):
 - Jill Edelbrock, first volunteer
 - Deb Snell, second volunteer
- **New IPP Staff:**
 - Claire Lowe, Cadillac District Office
 - Pam Willard, Lansing District Office
- **Congratulations** on 30-years of IPP!
 - Genesee Co-Anthony Ragnone Treatment Plant





Questions?