

Purpose of DNR's PFAS Monitoring Request Letter

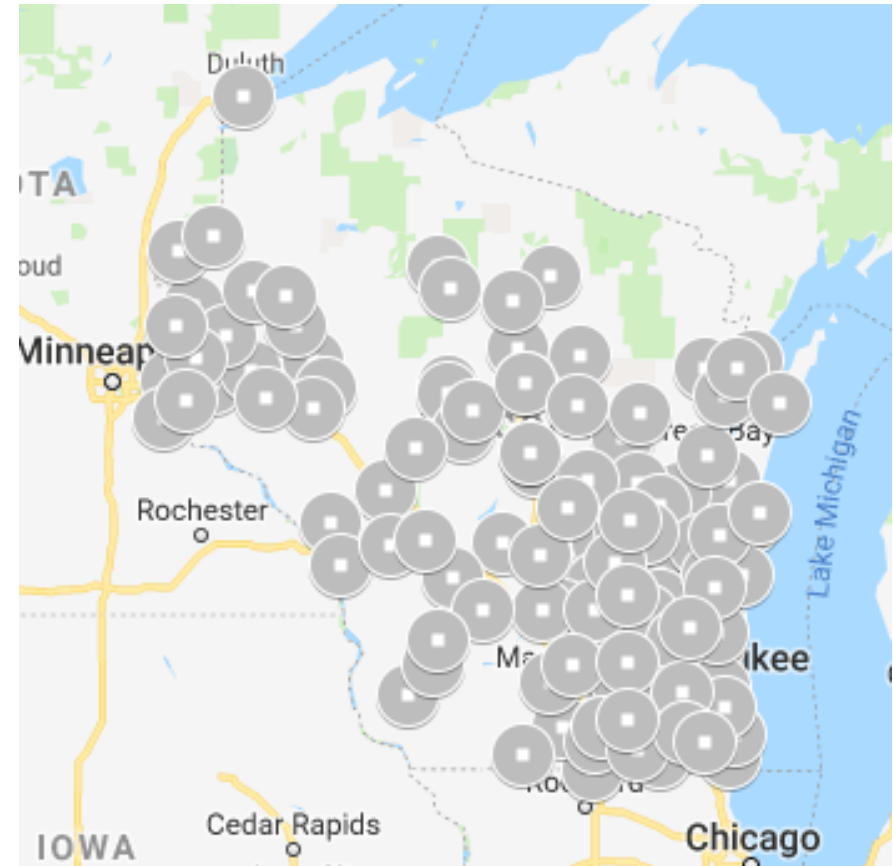
Jason Knutson, PE
Wastewater Section Chief
Wisconsin DNR



Recipients



- 125 POTWs
 - 27 Authorized Pretreatment Programs
 - 87 Other POTWs with SIUs
 - 10 found by query of permit fact sheets
 - 1 community with PFAS in water supply





Content

- PFAS Background
- Known Industrial Sources
- Statement that POTWs are not original sources of PFAS, but PFAS pass through them
- Requested Actions
- Invitation to participate in the State Lab of Hygiene Study
- Statement of Department's Intent in sending letter
- Additional Resources





Requested Actions

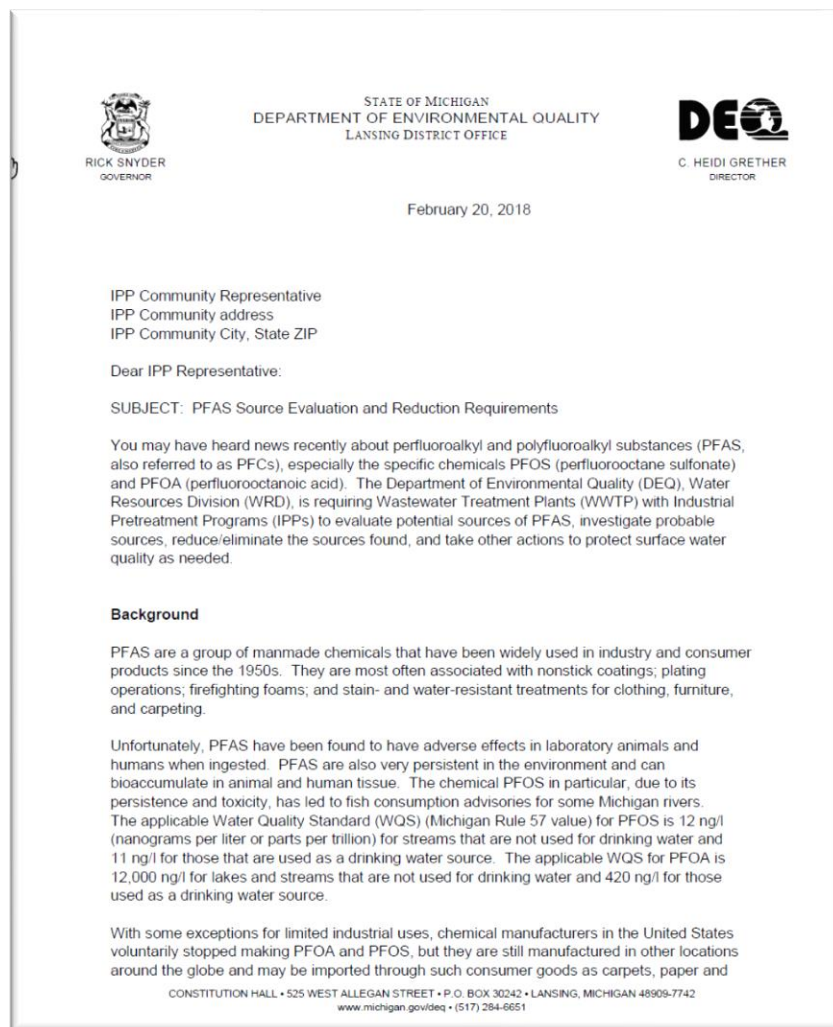
- Voluntary sampling of influent and effluent
 - 36 PFAS compounds
 - Please use isotope dilution method
 - Within 90 days of receipt of letter
- Source Identification and Reduction
 - If PFOA+PFOS > 20 ng/L
 - Invitation to work with DNR to develop plan to sample potential sources
 - Invitation to work with DNR and sources to eliminate PFAS
 - Product substitution
 - Operational Controls
 - Cleanup of historical contamination
 - Pretreatment





Intended Outcomes

- Primary Goal: Avoid effluent limitations at POTWs
 - Address sources before standards take affect
 - Avoid back-end treatment at POTWs
- Parallel Michigan's demonstrated approach
- Scope extent of PFAS contamination in Wisconsin
- Inform Economic Impact Analysis for standards rulemaking
 - Make informed decisions based upon data



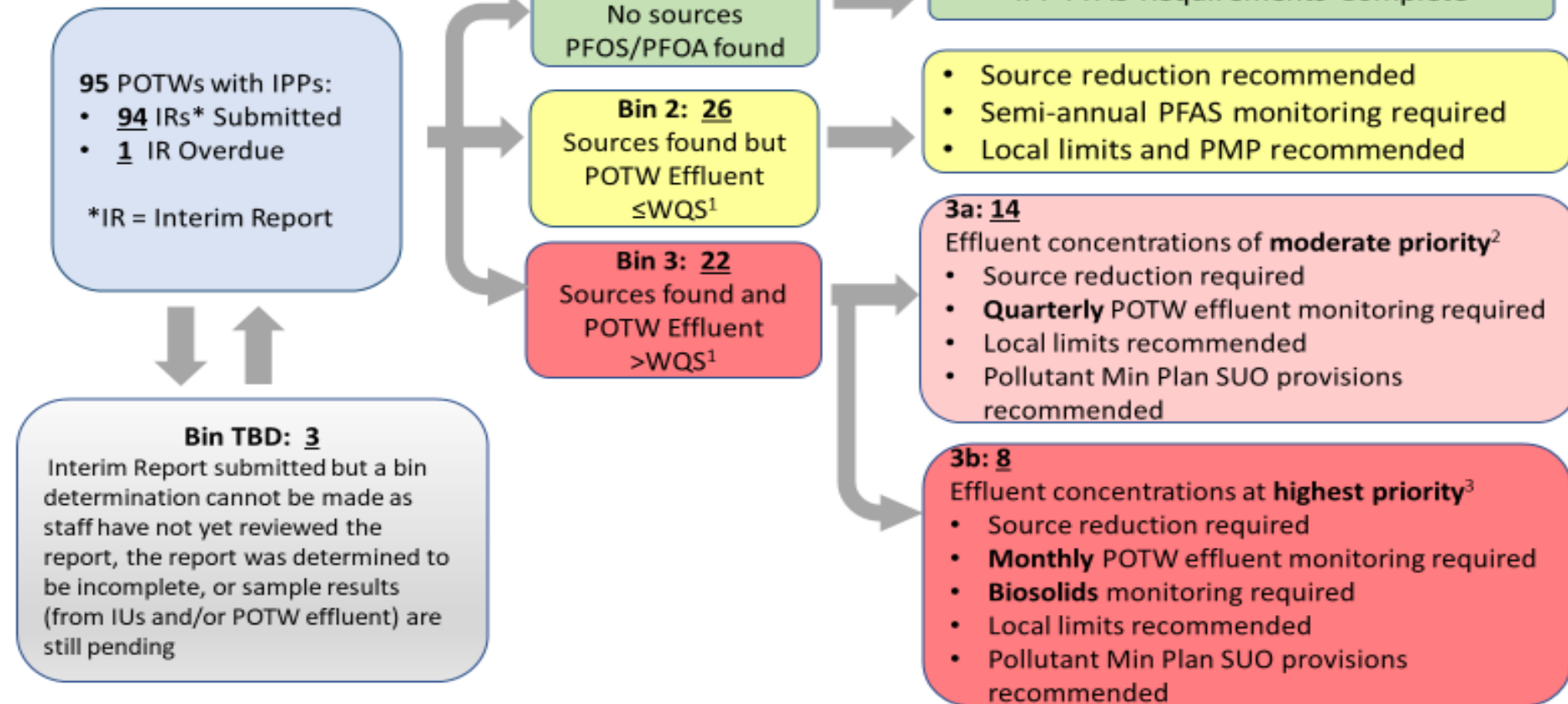
MI EGLE's 2018 Industrial Pretreatment Program PFAS Initiative

- 95 Wastewater Treatment Plants with IPPs
 - Screen industrial users for PFAS
 - Sample users and effluent
 - Control/reduce discharges
 - Monitoring



IPP PFAS Initiative Status

Update 4-11-2019





Sources PFAS to WWTPs found (so far)

Metal Finishers: Significant sources **16 - 240,000** ppt PFOS

Of ~248 Metal Finishers in Michigan,

- **53** with PFOS > WQS
- Of these, **39** with PFOS \geq 50 ppt



- Primarily Decorative & Hard Chrome Platers using fume suppressants (Cr +6)
- Some Anodizing (Chrome conversion coatings, fume suppression (sulfuric acid), Teflon coating?)
- Also, groundwater from former plating sites (infiltrating to sanitary sewers or groundwater cleanup sites)



Sources PFAS to WWTPs found (cont'd)

- Sites where **AFFF** used (Air Force Bases, refineries, fire stations, etc.): **PFOS 240 - 45,000 ppt**
- **Paint manufacturers/former sites**: **PFOS 6,047 ppt**
- **Landfill leachate**: **PFOS non-detect - 4000 ppt**
- **Paper Mfg/former sites**: **PFOS 20 - 150+ ppt**
- **Centralized Waste Treaters (CWTs)**: **PFOS 13 - 650 ppt**
- **Industrial Laundry facilities**: **PFOS 29 - 50 ppt**
- **Medical Products** (implants, patches, tubing): **25 ppt**

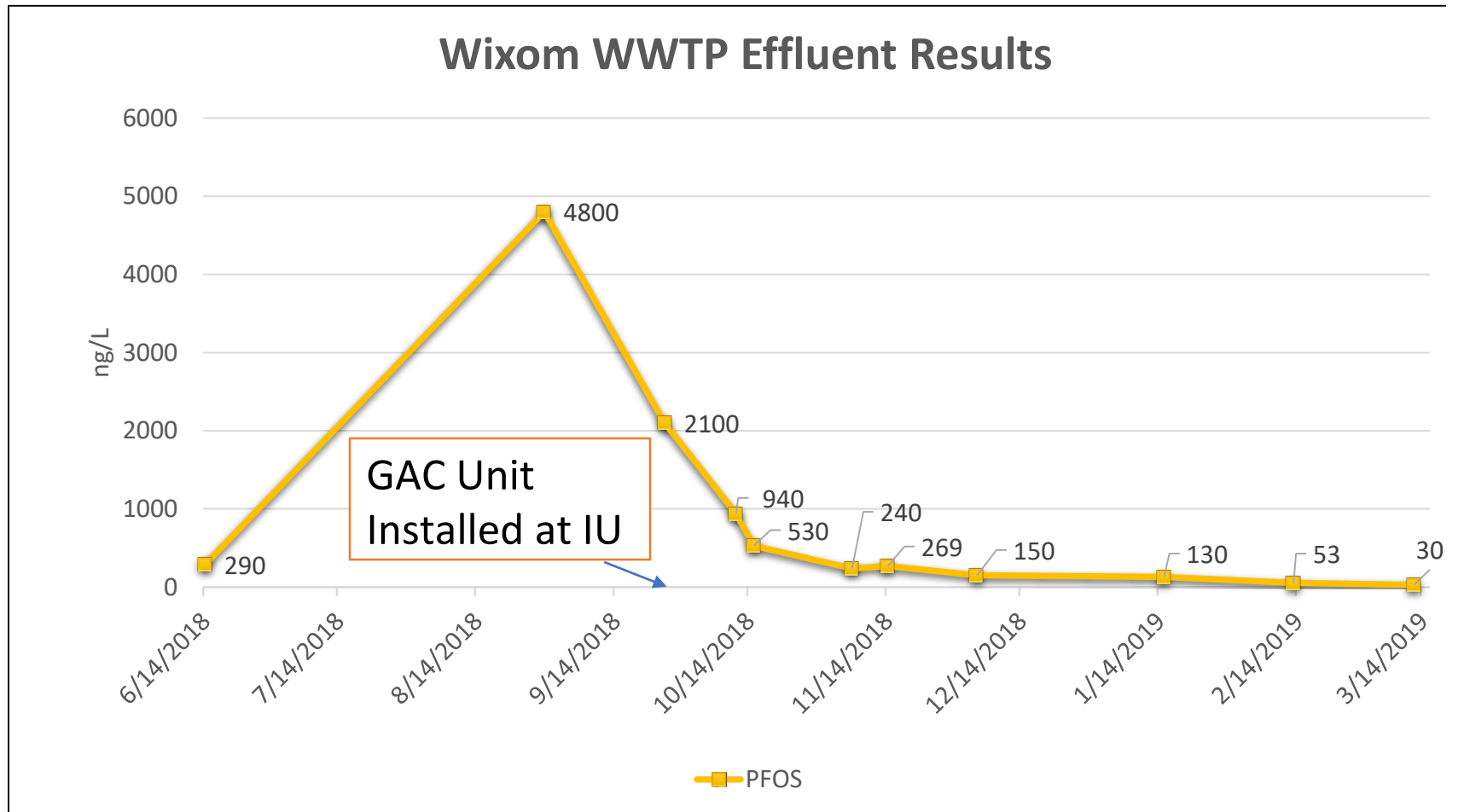


Source Control

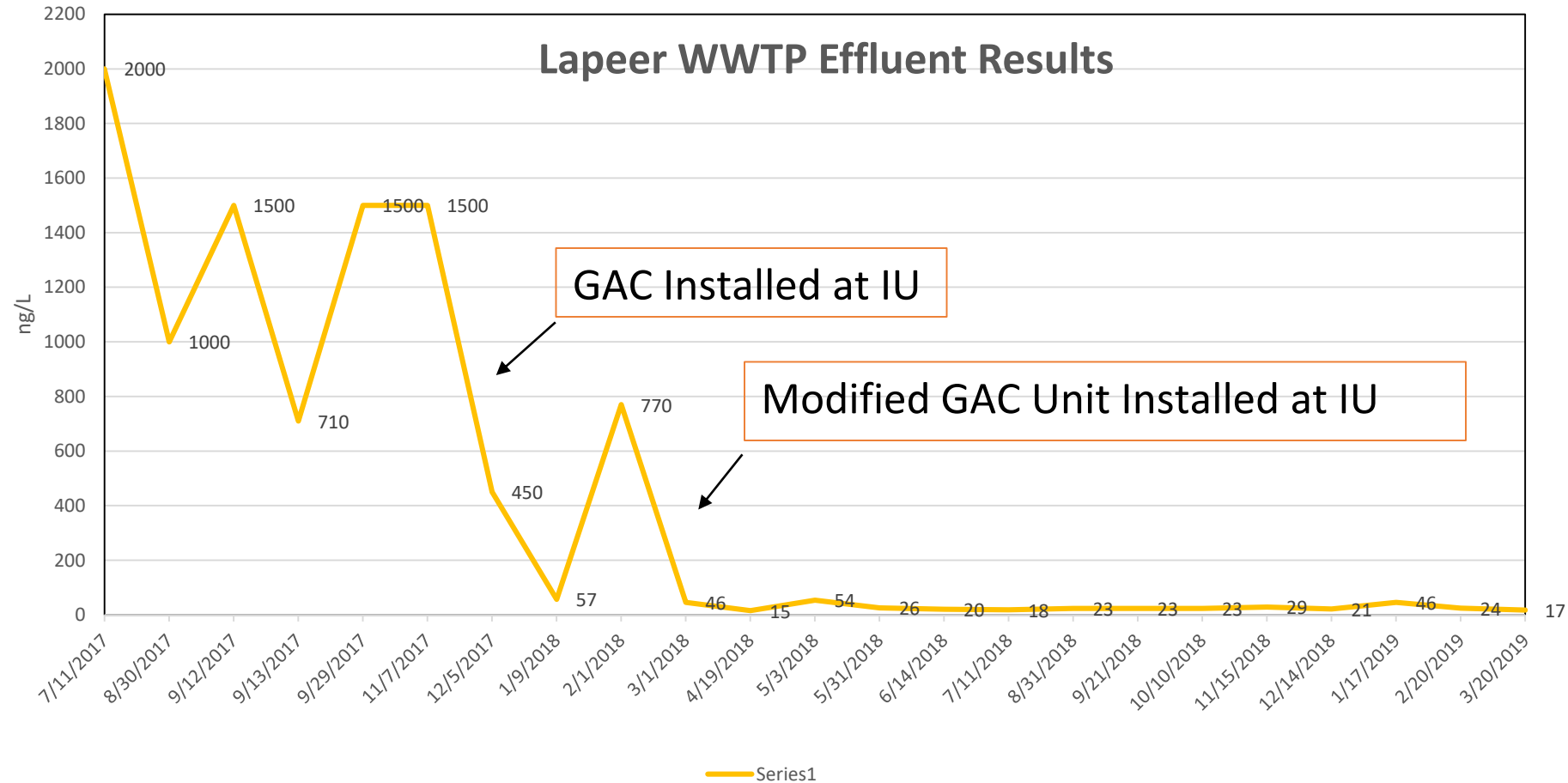


- Product Substitution
- Cleaning & Replacing tanks/equipment/scrubbers
 - Some reductions
- Treatment – Granular Activated Carbon
 - Significant Reductions
 - Maintenance Concerns/issues
 - High costs
 - Sample results lag – miss breakthrough?
 - Metals such as iron interfere with GAC
 - Use of PFOS replacement products (PFAS) – burn through carbon quicker?
- Pollutant Minimization Plans and local limit development

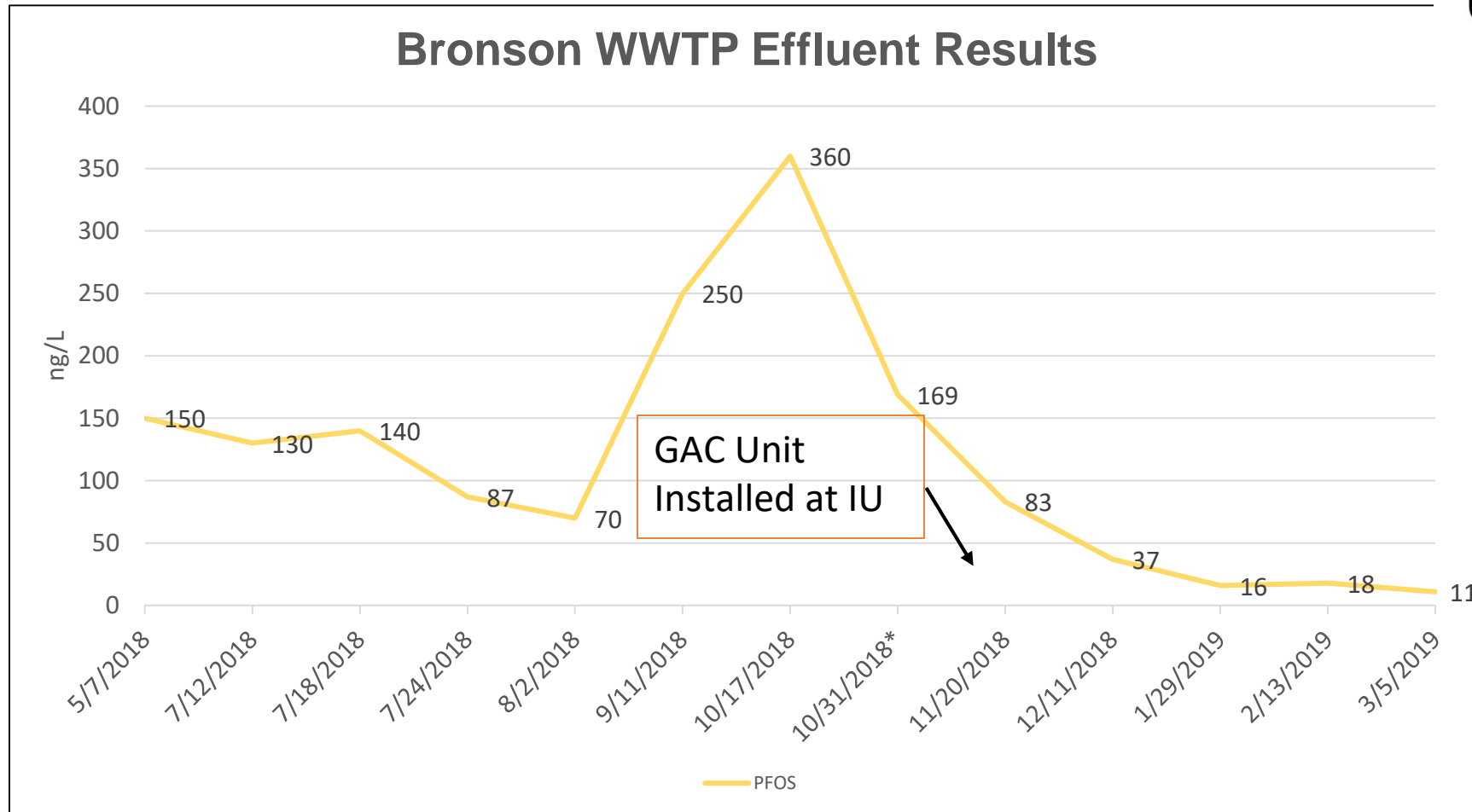
PFOS Reduction After IU Pretreatment



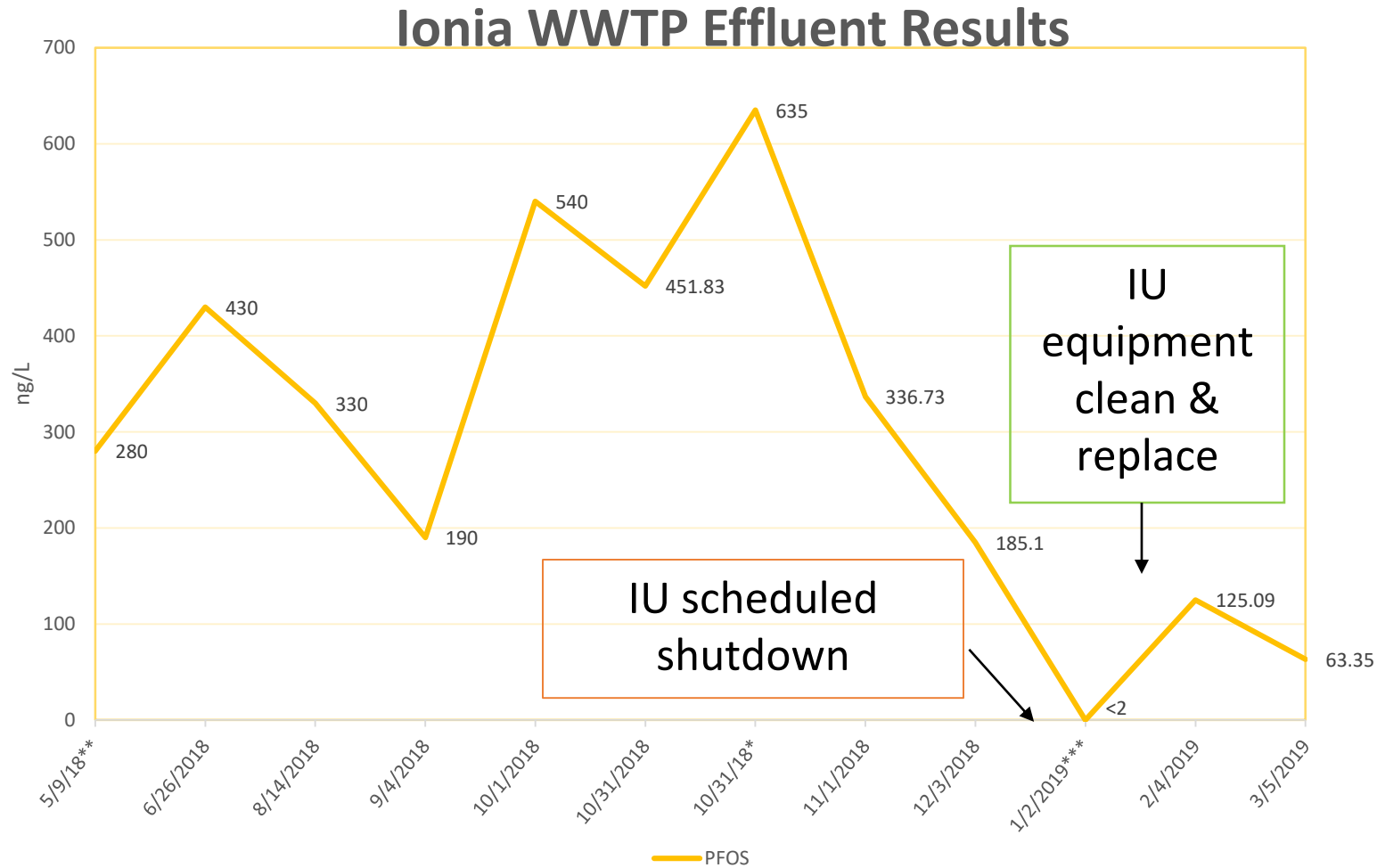
PFOS Reduction After IU Pretreatment



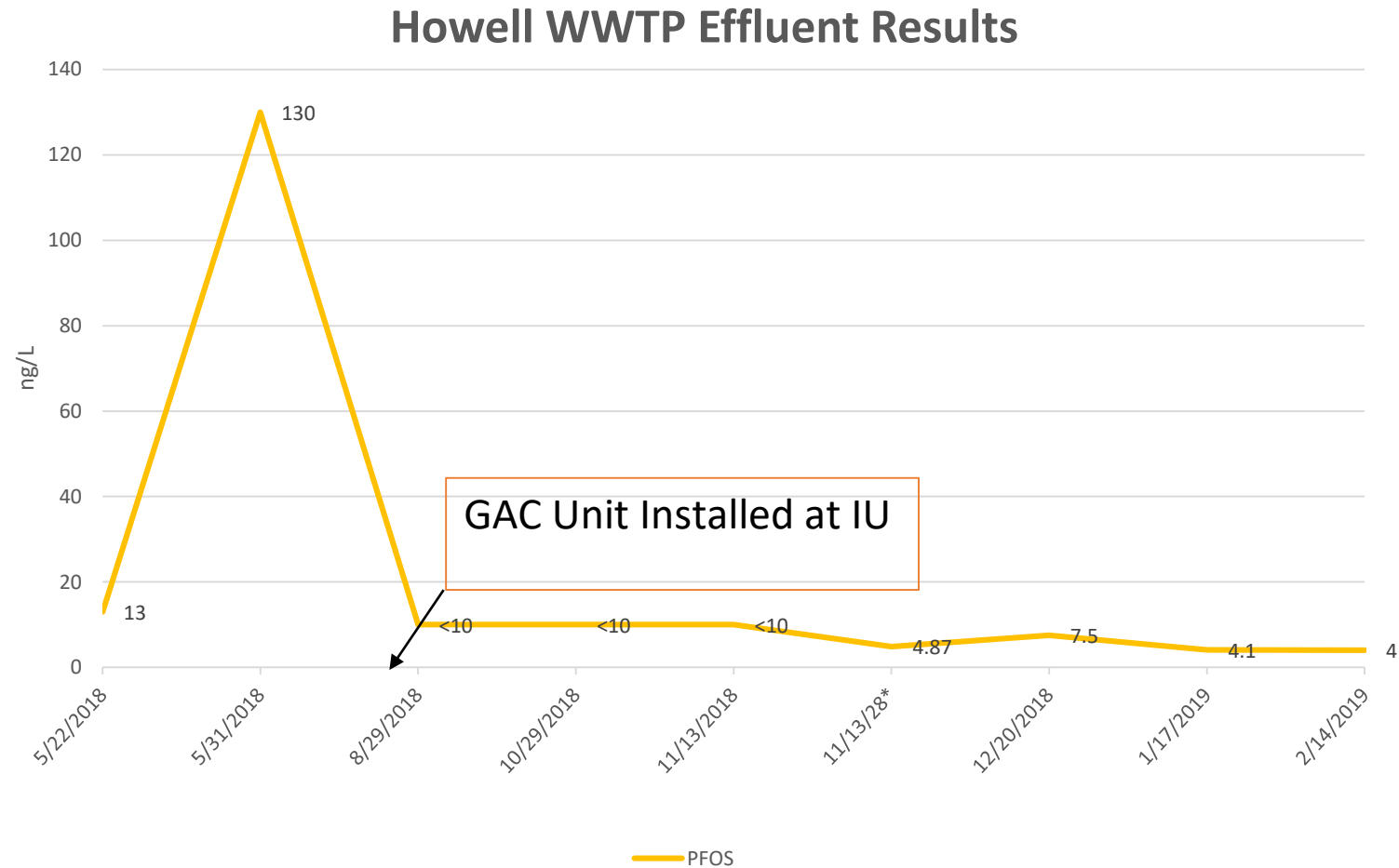
PFOS Reduction After IU Pretreatment



PFOS Reduction After IU Clean/Replace



PFOS Reduction After IU Pretreatment



Source: Michigan EGLE, "Michigan's IPP PFAS Initiative" (May 2019)

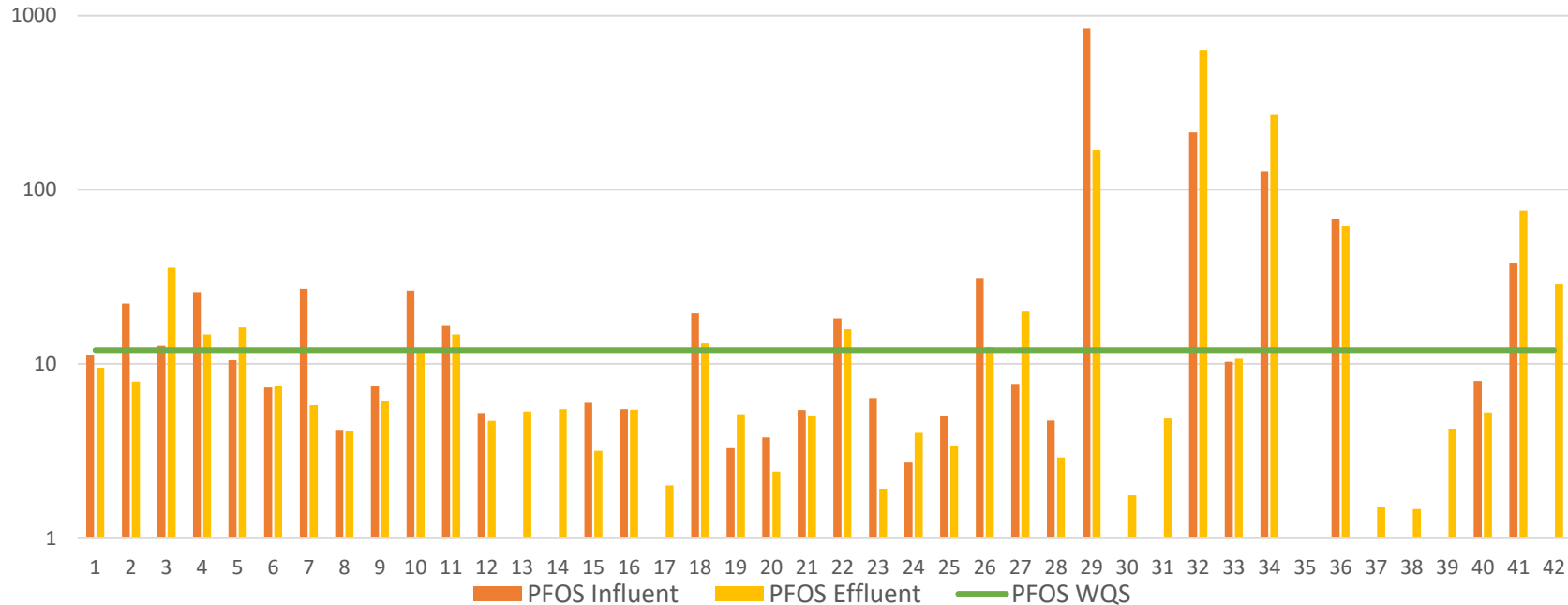
Statewide Biosolids Study



- Sample Effluent, Influent, & Biosolids from 41 WWTPs
 - Oct – Nov 2018
 - 20 Largest
 - 3.0 – 9.0 MGD (8 WWTPs)
 - 0.5 – 3.0 MGD (8 WWTPs)
 - 0.2 – 0.4 MGD (5 WWTPs)
 - Various treatment processes
 - Some w/ no industrial users
- Screen select fields from WWTPs with high conc. of PFOS in biosolids
 - Spring 2019
 - Wixom, Ionia and Bronson
 - Revisit City owned field in Lapeer (complete)
 - Follow-up based on results
- Sample fields from WWTPs with “typical/low” PFOS concentrations in biosolids
- Identify data gaps
- In lieu of criteria, develop guidance to assist with biosolids management decisions

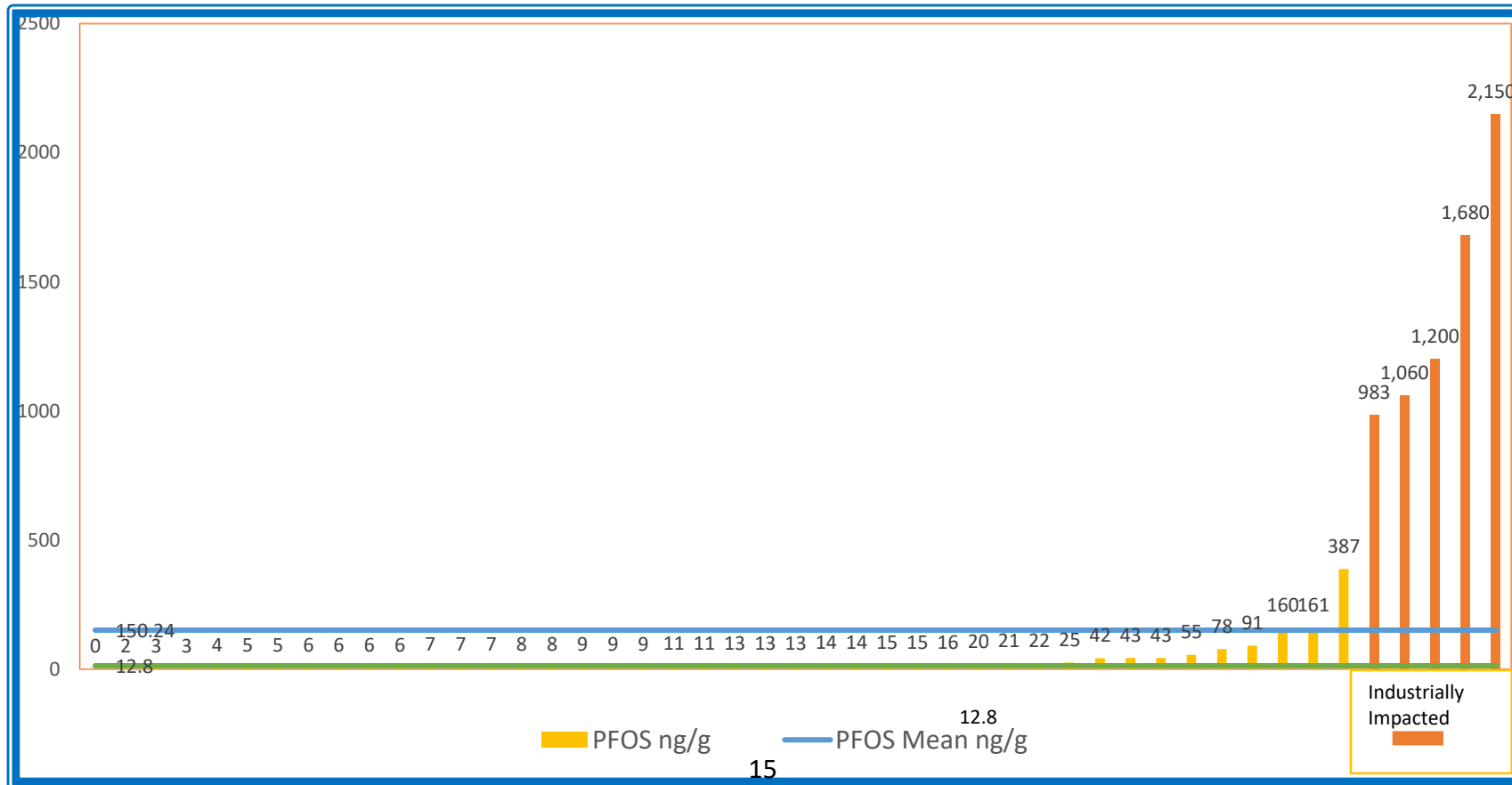


2018 Statewide Study WWTP Influent and Effluent Data

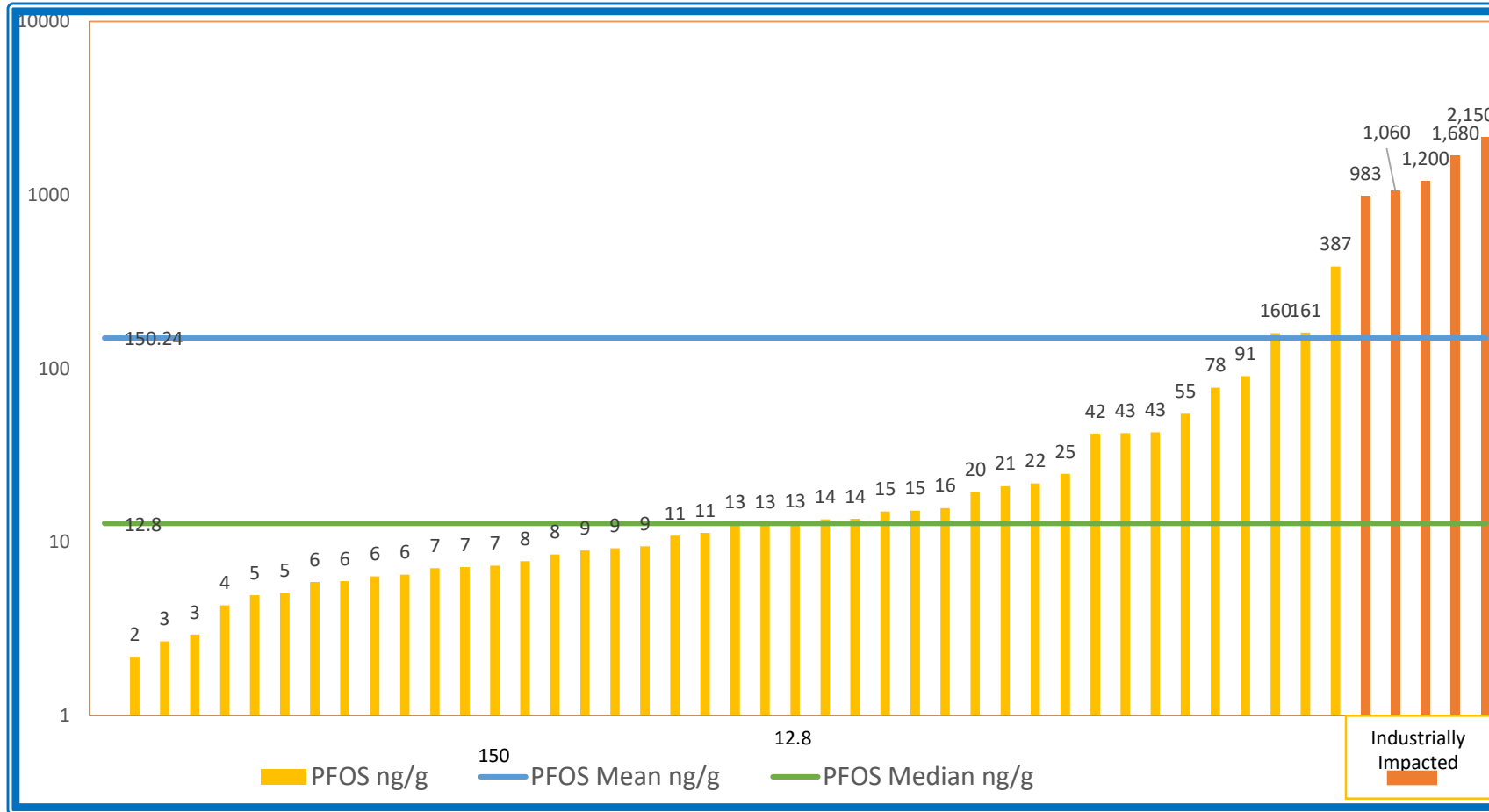


Source: Michigan EGLE, "Michigan's IPP PFAS Initiative" (May 2019)

Statewide Study - WWTP Stabilized Sludge/Biosolids PFOS Results



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Review



- Michigan's Differences:
 - All POTWs participating have Industrial Pretreatment Programs
 - Required Participation
- Success in reducing PFAS in effluent via source reduction
 - Elimination of PFAS use
 - Tank/equipment cleaning
 - Pretreatment
- Biosolids study/guidance to be complete Spring 2020



Intended Outcomes in Wisconsin

- Primary Goal: Avoid effluent limitations at POTWs
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