



# **Clean Water Act Methods**

## **Overview of EPA's CWA Method Activities**

August 2020, Adrian Hanley, U.S. EPA

# CWA Analytical Methods Program



- Many industries and municipalities are permitted to discharge pollutants under the CWA NPDES
- They use analytical methods to analyze the chemical, physical, and biological components of wastewater and other environmental samples for monitoring compliance
- CWA requires EPA, through rulemaking, to establish test procedures to measure pollutants for CWA programs
- EPA promulgates test procedures in 40 CFR Part 136



# Method Update Rules (MURs)



- Plan to propose and finalize MURs more frequently
  - Smaller rules
  - Less wait time for revisions, Alternate Test Procedures (ATPs), corrections
- A “Routine MUR” every 1-2 years
  - Routine MURs will contain non-controversial items
  - ATPs, minor editorial updates and revisions to methods (EPA, VCSBs, etc.)
- Non-routine MURs will contain more controversial items (i.e., new methods) and be proposed separately and less frequently

# 2020 Routine MUR



- Proposed October 2019, included:
  - Voluntary Consensus Standard Body (VCSB) method revisions and submittals
  - Alternate Test Procedures (ATPs)
  - Corrections and clarifications
- <https://www.epa.gov/cwa-methods/methods-update-rule-2019>
- EPA received 25 sets of comments
- Expected to go final in 2020



# CWA Microbiology Method Activities



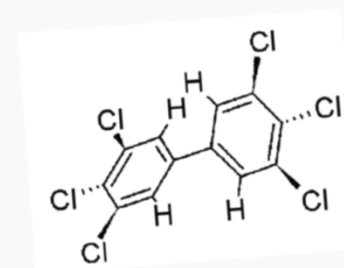
- Rapid methods for *E. coli* and enterococci by droplet digital qPCR in ambient water
- Single-laboratory validation in progress
- Two laboratories participating
- Shortens response time for swimming advisories



# PCB Congener Multi-Lab Validation



- Laboratory work completed
  - 12 laboratories recruited, 7 finished
  - 6 Commercial and 1 state laboratories
- Drafting multi-laboratory validation study report and EPA method
- Identifies and quantifies individual PCB congeners using low resolution GC/MS
- Wastewater, biosolids, sediment, and fish tissue
- 48 congeners calibrated, all 209 monitored
- 29 isotope dilution standards
- See Aug. 13, 10 AM Presentation



# Gross Alpha Beta Method 900.0 Revision



- EPA's OGWDW approved a revision to EPA Method 900.0 (Revision 1) in 2018 for drinking water at 40 CFR 141.66(c)
- Clean Water Act approved EPA method for Gross Alpha Beta is the original Method 900.0 published in 1980
- OW/OST plans to leverage the work of OGWDW and write a 'harmonized' wastewater addendum
- Study Plan is under review
- Testing to start later this year
- See Aug. 12, 3 PM Presentation

# Total Absorbable Organic Fluorine



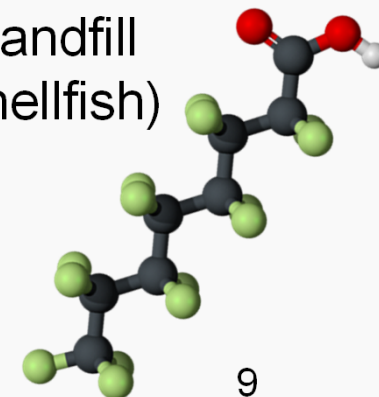
- Thousands of known man-made PFAS compounds exist, hundreds of known naturally occurring inorganic fluorine minerals exist
- Naturally occurring organofluorine compounds are only known to potentially exist as a byproduct of volcanic processes
  - (Gribble, Gordon W. "Naturally occurring organofluorines." The Handbook of Environmental Chemistry, 2002)
- Existing resources: Draft ASTM Standard in development and some environmental labs already own Combustion Ion Chromatographs (CICs) and have in-house SOPs



# DoD PFAS Method Validation



- Solid-phase extraction isotope dilution method
  - Based on an SOP originally developed by SGS AXYS
  - DoD is funding and managing both single and multi-laboratory validation studies of the method, EPA OW and OLEM are providing review
  - The goal is to provide EPA OW with the documentation needed to consider publication of this method as a CWA method. OLEM plans to also leverage the validation data to support an SW-846 method.
  - Test matrices are: wastewater, surface water, groundwater, landfill leachate, soil, sediment, biosolid, and fish tissue (includes shellfish)
- Progress
  - Study plan reviewed by EPA's OW and OLEM, and finalized
  - Single-laboratory validation is underway



# 608.3, 624.1, 625.1 QC Criteria Update



- TNI, ACIL, APHL, and WEF have volunteered to provide data to update QC criteria
  - Initial calibration, MDLs, calibration verification, ongoing precision and recovery, surrogate recovery, MS/MSDs
- Secondary Data Collection
  - Use existing data anonymously
  - Volunteer laboratories
    - Perform NPDES compliance monitoring
    - Have an SOP and formal quality system
  - Coordinate with laboratory associations
- Over 20 laboratories recruited
- Data collection this fall



# Total Nitrogen Collaboration



- Currently measured for NPDES regulatory use with TKN and nitrate/nitrite
- Multiple standards and methods exist at ASTM and SM for measurement of total nitrogen using a single method
- Currently assembling available methods and evaluating data to determine potential regulatory proposals
- See presentation on Wednesday, August 12 at 4 PM

# Continuous Monitoring Collaboration



- Total residual chlorine pilot study
- Based on EPA Drinking Water Method 334.0
- Hampton Roads Sanitation District (Virginia) is leading a pilot study with on-line chlorine monitors and comparative grab sample testing



# ATP Reviews



- Alternate test procedures (ATPs) for nationwide use are submitted to EPA HQ for review
  - Codified at 40 CFR 136.4 and 136.5
- Protocols for EPA review of ATPs and new methods are available at:

<https://www.epa.gov/cwa-methods/alternate-test-procedures>

## Contact Information



**For more information or additional feedback, please contact:**



Adrian Hanley, US EPA  
CWA Methods Team Leader  
Office of Science and Technology  
Office of Water  
Phone: 202-564-1564  
E-Mail: [hanley.adrian@epa.gov](mailto:hanley.adrian@epa.gov)