Safe Drinking Water Act (SDWA): Updates and Current Activities

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Overview

- SDWA Overview
- Alternative Test Procedure (ATP) Program and Method Approval
- EPA Drinking Water Methods for PFAS
  - EPA Methods 537.1 and EPA Method 533 (Dec 2019)
  - Technical Considerations
- UCMR 4 Update
- UCMR 5 Preparation

Safe Drinking Water Act (SDWA)

- SDWA defines three criteria for regulation of a contaminant in drinking water:
  - Adverse health effect
  - Occurrence
  - Regulation provides a meaningful opportunity for health risk reduction
- Primary Drinking Water Regulation for each contaminant specifies either a maximum contaminant level (MCL) or treatment technique

Safe Drinking Water Act (SDWA)

- Compliance with MCLs requires EPA to specify "accepted methods for quality control and testing procedures" with each Primary Drinking Water Regulation
  - With each MCL that is established, at least one analytical test method must be available and promulgated with the regulation
- SDWA also allows addition of "equally effective quality control and testing procedures" after promulgation of a regulation by publication of a *Federal Register* notice.

Drinking Water Alternate Test Procedure (ATP) Program

- ATP program does not have authority to approve alternate testing procedures
- ATP program evaluates modified or new testing methods (alternative testing procedures)
- Drinking Water methods must undergo sufficient validation to support their use at the national level (multi-lab/multi-DW matrices)
  - Single laboratory approvals are not allowed
  - Regional approvals are not allowed

Drinking Water Alternate Test Procedure (ATP) Program

- Validation study compares performance of modified or new method with performance of approved method
  - Must be able to demonstrate the modified or new method is "equally effective" relative to the approved method
- Method approval can take two paths:
  - Expedited method approval
  - Promulgation through notice-and-comment rulemaking

Expedited Method Approval Process

- Used to approve alternative test methods as “equally effective” relative to method(s) cited in the regulations
- Approval decision published as an FRN and included in CFR (Appendix A to Subpart C of Part 141)
- Methods treated the same as those approved through formal rulemaking process:
  - Data are acceptable for compliance monitoring & reporting
  - State adoption of Expedited approved test methods is optional; however, if these methods are used, laboratory certification requirements extend to the use of methods approved through the expedited process

Expedited Method Approval Process (cont.)

- Method approvals include:
  - Methods evaluated through the drinking water ATP program
  - Voluntary Consensus Standard Body methods (Standard Methods and ASTM)
  - New or revised EPA methods
- Frequency of approvals
  - Anticipate publishing FR notices approximately on an annual basis

ATP and Expedited Method Approval Resources

- Drinking water ATP web page:
  https://www.epa.gov/dwanalyticalmethods/drinking-water-alternate-test-procedure-program
- Expedited methods approval web page:
  https://www.epa.gov/dwanalyticalmethods/expedited-drinking-water-analytical-method-approval-requirements.

  To find specific methods:
  - Public docket associated with each FR notice (except copyright protected VCSB methods)
  - Drinking water methods web page:
    https://www.epa.gov/dwanalyticalmethods/approved-drinking-water-analytical-methods.

EPA Drinking Water Methods Recently Published for PFAS

- EPA 537.1 (November 2018)
  - Same methodology as Method 537 (September 2009) but scope expanded from 14 PFAS to address 4 new PFAS (including HFPO-DA and ADONA)
  - Solid-Phase Extraction (SPE) and Liquid Chromatography/Tandem Mass spectrometry (LC/MS/MS)
  - Capable of supporting single-digit ppt (ng/L) reporting levels
- EPA 533 (December 2019)
  - Complements EPA Method 537.1, by including 25 PFAS (11 unique to Method 533 with 14 also included in 537.1
  - SPE using weak anion exchange followed by LC/MS/MS
  - Focus on “short chain” PFAS [perfluorinated acids, sulfonates and mono/poly perfluorinated ethers] in drinking water
    - “short chain” representing PFAS with carbon chain lengths of 4-12
  - Capable of supporting single-digit ppt (ng/L) reporting levels
  - Incorporates isotope dilution allowing accurate measurement of PFAS in relatively complex DW sample matrices, such as those with high TOC and/or elevated TDS

Analyte	Abbreviation	CASRN	Method 533	Method 537.1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	11Cl-PF3OUdS	763051-92-9	x	x
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acd	9Cl-PF3ONS	756426-58-1	x	x
4,8-Dioxa-3H-perfluorononanoic acid	ADONA	919005-14-4	x	x
Hexafluoropropylene oxide dimer acid	HFPO-DA	13252-13-6	x	x
Perfluorobutanesulfonic acid	PFBS	375-73-5	x	x
Perfluorodecanoic acid	PFDA	335-76-2	x	x
Perfluorododecanoic acid	PFDoA	307-55-1	x	x
Perfluoroheptanoic acid	PFHpA	375-85-9	x	x
Perfluorohexanoic acid	PFHxA	307-24-4	x	x
Perfluorohexanesulfonic acid	PFHxS	355-46-4	x	x
Perfluorononanoic acid	PFNA	375-95-1	x	x
Perfluorooctanoic acid	PFOA	335-67-1	x	x
Perfluorooctanesulfonic acid	PFOS	1763-23-1	x	x
Perfluoroundecanoic acid	PFUnA	2058-94-8	x	x
1H,1H, 2H, 2H-Perfluorohexane sulfonic acid	4:2FTS	757124-72-4	x	
1H,1H, 2H, 2H-Perfluorooctane sulfonic acid	6:2FTS	27619-97-2	x	
1H,1H, 2H, 2H-Perfluorodecane sulfonic acid	8:2FTS	39108-34-4	x	
Nonafluoro-3,6-dioxaheptanoic acid	NFDHA	151772-58-6	x	
Perfluorobutanoic acid	PFBA	375-22-4	x	
Perfluoro(2-ethoxyethane) sulfonic acid	PFEESA	113507-82-7	x	
Perfluoroheptanesulfonic acid	PFHpS	375-92-8	x	
Perfluoro-4-methoxybutanoic acid	PFMBA	863090-89-5	x	
Perfluoro-3-methoxypropanoic acid	PFMPA	377-73-1	x	
Perfluoropentanoic acid	PFPeA	2706-90-3	x	
Perfluoropentanesulfonic acid	PFPeS	2706-91-4	x	
N-ethyl perfluorooctanesulfonamidoacetic acid	NEtFOSAA	2991-50-6		x
N-methyl perfluorooctanesulfonamidoacetic acid	NMeFOSAA	2355-31-9		x
Perfluorotetradecanoic acid	PFTA	376-06-7		x
Perfluorotridecanoic acid	PFTrDA	72629-94-8		x

UCMR 4 Update

- Proposed Dec 2015, Final Dec 2016
- Monitoring period: 2018 - 2020
- 2021: finalize implementation program, complete reporting process
- Currently working through final monitoring year
- Implementation going well
- SDWARS allows complete e-reporting of sample results and lab QC

UCMR 5 Preparation

- Anticipate publishing proposed UCMR 5 late in 2020
  - Envision final UCMR 5 late in 2021
  - Projected monitoring period: 2023-2025
- Stakeholder Engagement: July 16, 2019 Meeting/ Webinar on UCMR 5 Pre-Proposal
  - Presented potential approaches and considerations:
    - Impact of the America's Water Infrastructure Act of 2018 (AWIA);
    - Analytical methods and contaminants the Agency is considering (including PFAS);
    - potential sampling design and other modest changes

Questions?