



# **The Fifth Unregulated Contaminant Monitoring Rule (UCMR 5): Large Public Water Systems Implementation**

Held October 26 and 27, 2022  
USEPA, Office of Ground Water and Drinking Water

# The Fifth Unregulated Contaminant Monitoring Rule (UCMR 5): Large Public Water Systems Implementation

Public Meeting by Webinar

October 26, 2022

October 27, 2022 – repeated

Office of Ground Water and Drinking Water, Standards and Risk Management Division,  
Unregulated Contaminant Monitoring Branch



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## Welcome

Melissa Simic, U.S. EPA

Office of Ground Water and Drinking Water

Standards and Risk Management Division

Unregulated Contaminant Monitoring Branch



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Slide 2 of 145

Agenda (Eastern Time)		
October 26	October 27	Topics
12:45-1:00pm	8:45 9:00am	Log in to the Meeting
1:00-1:05pm	9:00 9:05am	Welcome, Logistics, Agenda
1:05-1:25pm	9:05 9:25am	Overview of the UCMR Program
1:25-2:05pm	9:25 10:05am	Overview of UCMR 5
2:05-2:30pm	10:05 10:30am	UCMR 5 Contaminants, Analytical Methods, and Public Access to UCMR Data
<b>2:30-2:45pm</b>	<b>10:30 10:45am</b>	<b>Break</b>
2:45-2:50pm	10:45 10:50am	Q&A Received Via Chat Box
2:50-3:05pm	10:50 11:05am	Representative Samples
3:05-3:35pm	11:05 11:35am	SDWARS and UCMR 5 Reporting Requirements
3:35 3:50pm	11:35 11:50am	EPA Approval of Laboratories to Support UCMR 5
3:50-4:00pm	11:50-12:00pm	Q&A Received Via Chat Box




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Slide 3 of 145

## Webinar Tips

- **Webinar Slides**
  - Located under “Handouts” in the right navigation bar on your screen
    - Slides were also emailed to all registered participants
  - Slides contain all content that will be discussed
- **Webinar Audio**
  - Webinar lines are muted to minimize background noise (listen-only mode)
- **Webinar Support**
  - Send email to [UCMRWebinar@cadmusgroup.com](mailto:UCMRWebinar@cadmusgroup.com)
    - e.g., “I can hear you speaking, but I cannot see the slides.”



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Slide 4 of 145

## Questions on the Presentation

- Click on “?” in the upper part of the control panel (Figure 1) to submit questions/comments
  - Type a question in the box; click send (Figure 2)
- Submit general clarifying questions throughout the webinar
  - Questions will be answered in the question box throughout the presentation
  - Common questions will be answered after the break and at the end

Figure 1

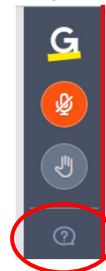
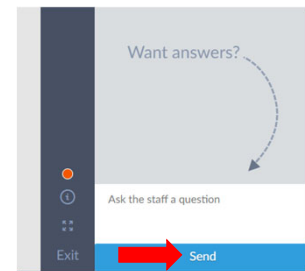


Figure 2



## PWS-Specific Questions about UCMR 5

- If you have detailed questions that apply to your PWS specifically, please email the appropriate inbox below
  - [UCMR5@glec.com](mailto:UCMR5@glec.com)
    - Schedule, sampling locations, applicability (e.g., PWS merged with another PWS(s), size category has changed, source water has changed), seasonal sample points
  - [UCMR\\_Sampling\\_Coordinator@epa.gov](mailto:UCMR_Sampling_Coordinator@epa.gov)
    - Schedule and sampling location changes (post-2022), representative monitoring

## General Meeting Information

- Purpose
  - Provide large public water systems (PWSs) (i.e., those serving more than 10,000 people) with the UCMR 5 requirements and the actions they must take to properly prepare for monitoring
    - Sampling schedules and locations
    - Contaminants, methods, and public access to UCMR data
    - Safe Drinking Water Accession and Review System (SDWARS)
    - Laboratory approval program
    - UCMR 5 small PWS sampling kit instructions and tips (Appendix 1)
- Q&A at the end of the webinar via the chat

## Overview of the Unregulated Contaminant Monitoring Rule Program

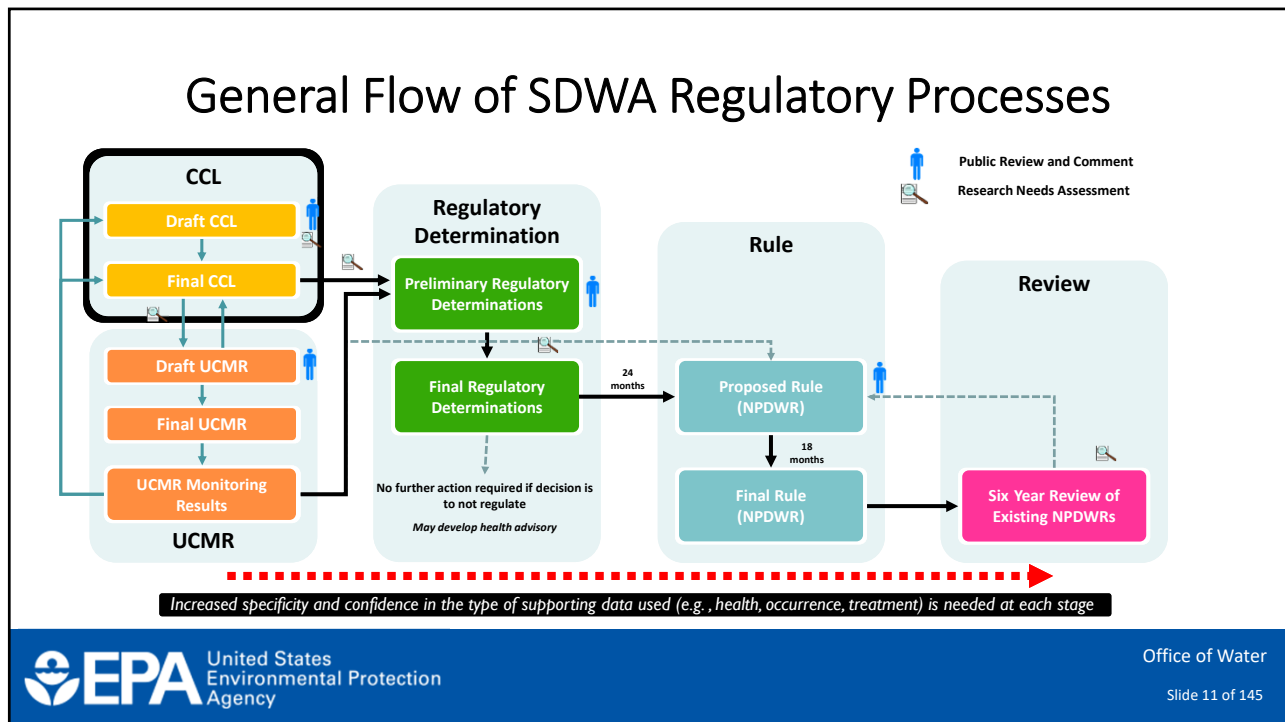
Kelsey Dailey, U.S. EPA  
Office of Ground Water and Drinking Water  
Standards and Risk Management Division  
Unregulated Contaminant Monitoring Branch

## Overview

- Regulatory background for UCMR, relationship to other Safe Drinking Water Act (SDWA) programs
  - Contaminant Candidate List (CCL)
  - The Unregulated Contaminant Monitoring Rule (UCMR)
    - UCMR objective
    - History of UCMR
  - Regulatory Determinations
  - National Primary Drinking Water Regulations (NPDWRs)
  - Six-Year Review

## The Safe Drinking Water Act (SDWA)

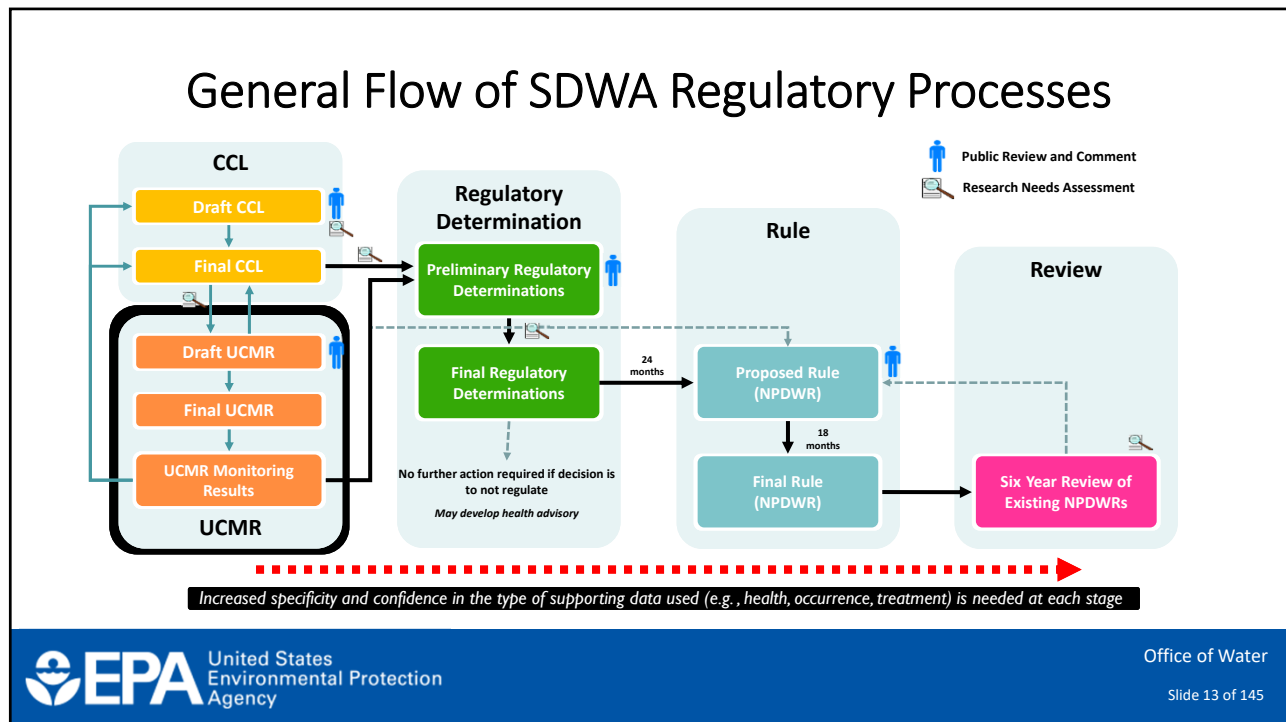
- Enacted in 1974, SDWA authorized the Environmental Protection Agency (EPA) to set enforceable health standards for contaminants in drinking water
  - National Primary Drinking Water Regulations (NPDWRs)
- The 1986 SDWA amendments were the basis for the original “UCM” program
  - State drinking water programs managed the original UCM program
  - Public water systems (PWSs) serving >500 people were required to monitor
- The 1996 SDWA amendments changed the process of developing and reviewing NPDWRs
  - CCL
  - UCMR (EPA-managed implementation)
  - Regulatory Determination
  - Six-Year Review



## The Contaminant Candidate List (CCL)

- SDWA 1412(b)(1)(B) required EPA to establish a listing of contaminants that are:
  - Not subject to any proposed or promulgated NPDWR
  - Known or anticipated to occur in PWSs
  - May require regulation under SDWA
- List must be published every 5 years

The Final CCL 4 includes 97 chemicals or chemical groups and 12 microbes



## The Unregulated Contaminant Monitoring Rule (UCMR)

- SDWA Section 1445(a)(2), as amended in 1996, established requirements for the UCMR Program:
  - Issue a list of no more than 30 priority unregulated contaminants in drinking water, once every 5 years
  - Require PWSs serving a population >10,000 people as well as a nationally representative sample of small PWSs serving ≤10,000 people to monitor
  - Make analytical results publicly available in the National Contaminant Occurrence Database (NCOD) for drinking water
  - EPA funds shipping and analytical costs for small PWSs
- EPA manages the program in partnership with States, Tribes, and Territories (hereafter referred to as "States") that volunteer to assist



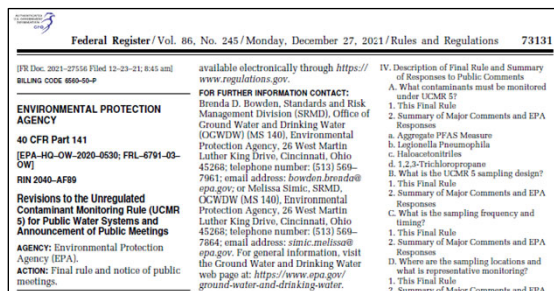
## Objective of the UCMR Program

- Collect nationally representative occurrence data for unregulated contaminants that may warrant regulation under SDWA
  - Consider data collected as part of future EPA decisions on actions to protect public health
  - Provide data to States, local governments, and to the public for their use in decisions regarding public health protection

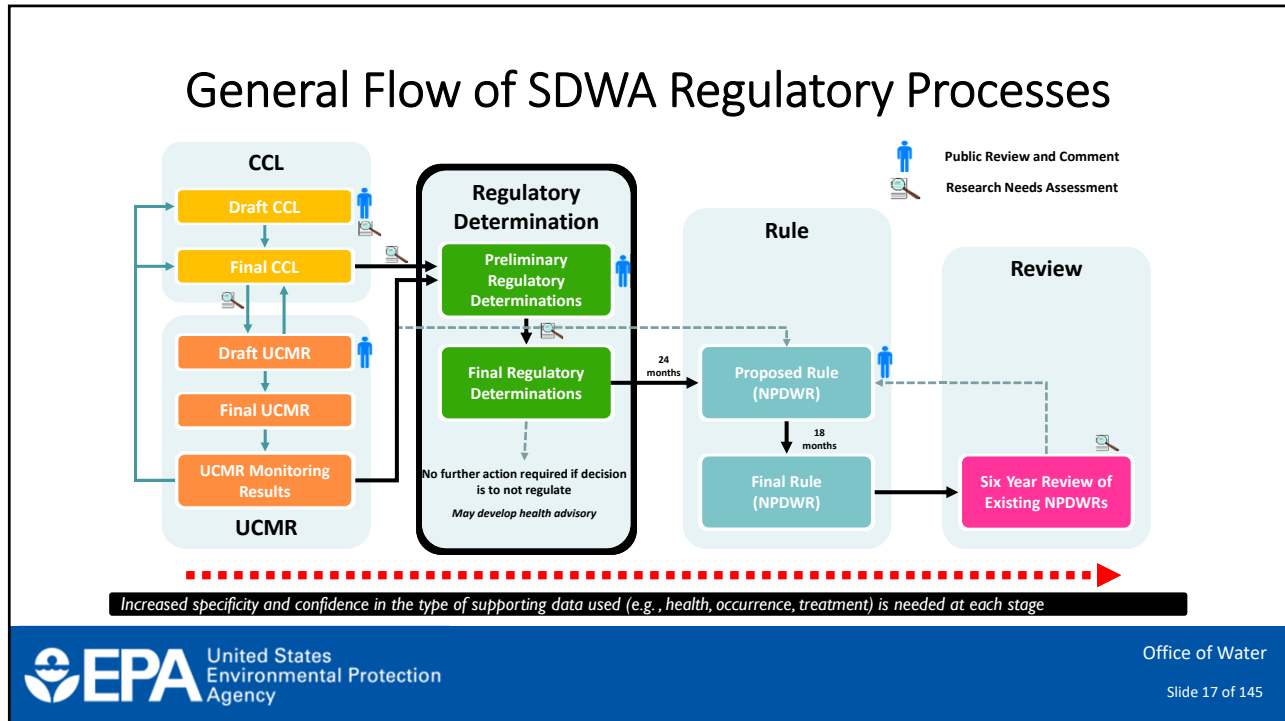
**National occurrence data publicly available:**  
<https://www.epa.gov/dwucmr/occurrence-data-unregulated-contaminant-monitoring-rule>

## History of UCMR

- UCMR 1 (2001-2005)
  - Published in Federal Register (FR) on September 17, 1999
- UCMR 2 (2007-2011)
  - Published in FR on January 4, 2007
- UCMR 3 (2012-2016)
  - Published in FR on April 16, 2012
- UCMR 4 (2017-2021)
  - Published in FR on December 20, 2016
  - PWSs collected samples 2018-2020
- UCMR 5 (2022-2026)
  - Published on December 27, 2021 (86 FR 73131)
  - PWSs will collect samples 2023-2025



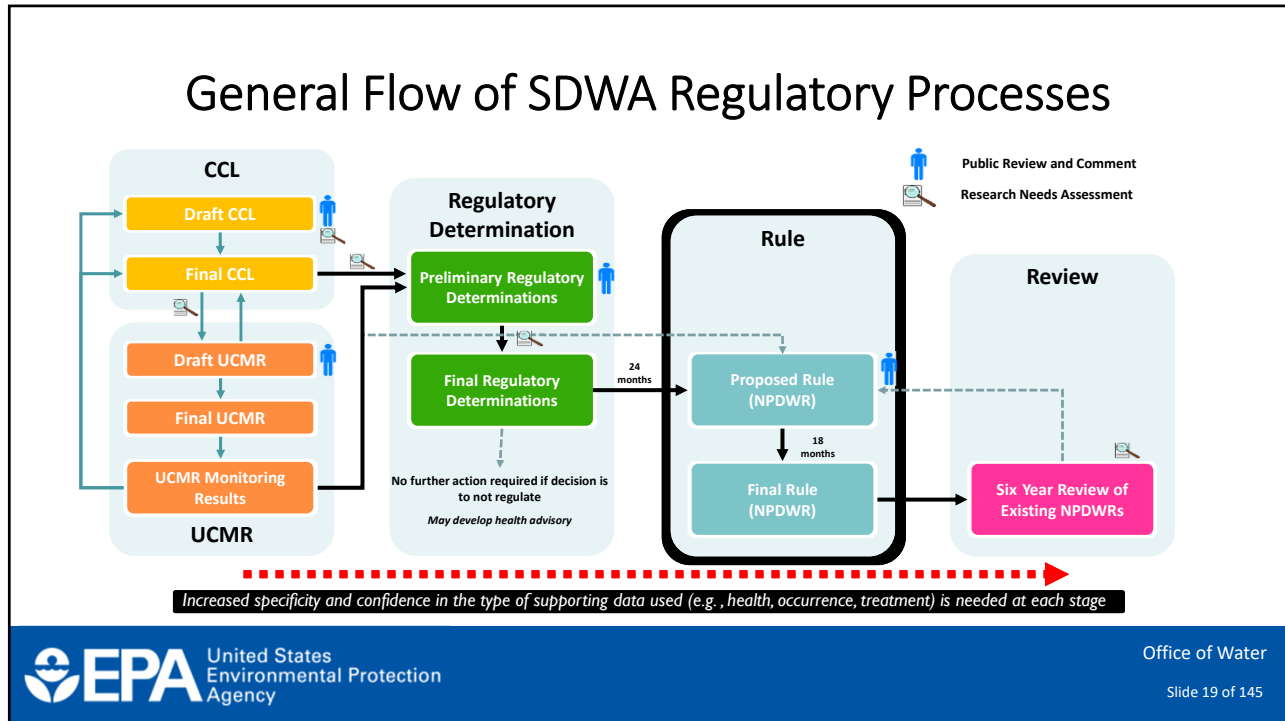
**Each new UCMR cycle is established via a revision to the rule for the ongoing/preceding cycle**



## Regulatory Determinations

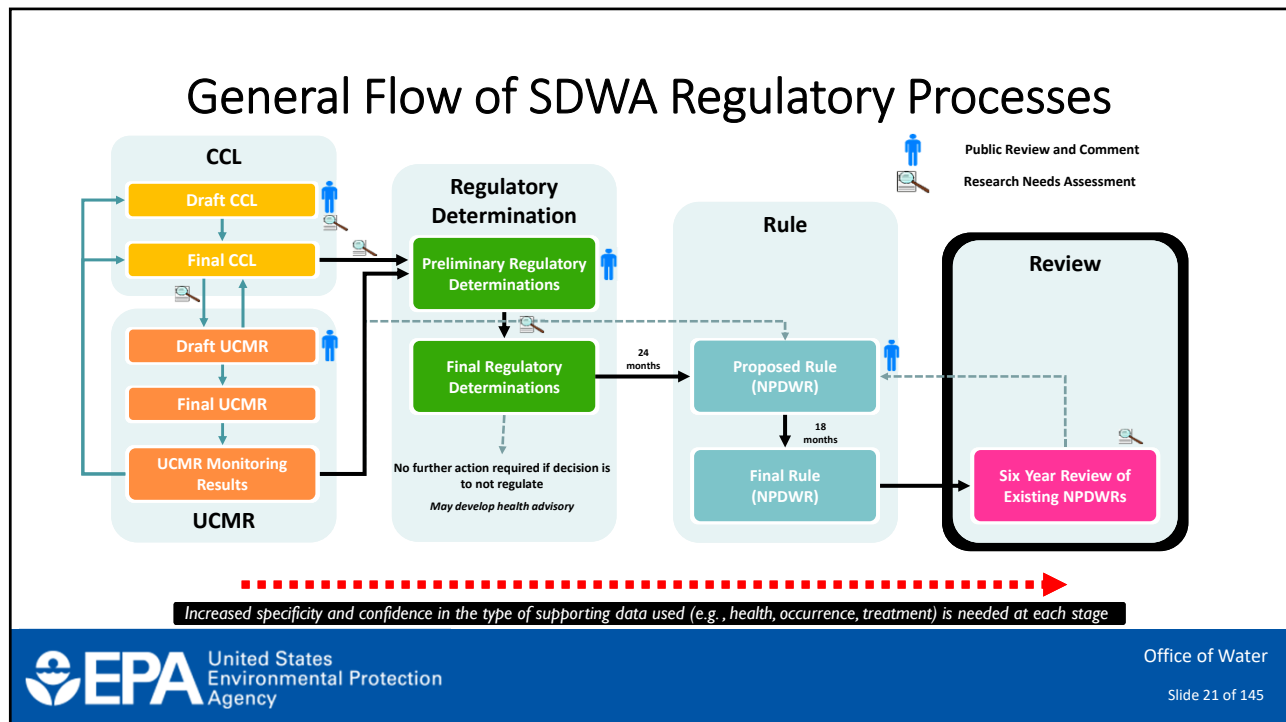
- Every five years, the Administrator shall, after notice of the preliminary determination and opportunity for public comment, for not fewer than five contaminants included on the CCL, make determinations on whether to regulate such contaminants
- SDWA requires EPA to publish a maximum contaminant level goal (MCLG) and promulgate an NPDWR for a contaminant if the Administrator determines that:
  1. The contaminant may have an **adverse effect** on the health of persons;
  2. The contaminant is **known to occur or there is a substantial likelihood** that the contaminant will occur in PWSs with a frequency and at levels of public health concern; **and**
  3. In the sole judgment of the Administrator, regulation of such contaminant presents a meaningful opportunity for health risk reduction for persons served by PWSs

– SDWA Section 1412(b)(1)



## National Primary Drinking Water Regulations (NPDWRs)

- For each contaminant that the Administrator determines to regulate, the Administrator shall publish MCLGs and promulgate, by rule, NPDWRs. The Administrator shall:
  - Propose the MCLG and NPDWR for a contaminant no later than 24 months after the determination to regulate
  - Publish an MCLG and promulgate an NPDWR within 18 months after the proposal thereof
- An NPDWR shall take effect three years after the date on which the regulation is promulgated. The Administrator, or a State, may allow this period to be extended up to two additional years if it determines that additional time is necessary for capital improvements



## Six-Year Review

- SDWA Section 1412(b)(9) requires review and revision, as appropriate, of each NPDWR no less often than every six years. The review includes:
  - Re-evaluation of health effects, occurrence, exposure, analytical methods, treatment feasibility, risk-balancing, and implementation issues
- Any revision of an NPDWR shall maintain, or provide for greater, protection of the health of people

## Overview of UCMR 5

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Office of Ground Water and Drinking Water  
Standards and Risk Management Division  
Unregulated Contaminant Monitoring Branch



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Slide 23 of 145

## Overview

- America's Water Infrastructure Act (AWIA)
- National Defense Authorization Act (NDAA)
- Sampling and statistical design
- PWS types
- UCMR monitoring tiers
- Notifications
- Sampling schedules
- Sampling frequency and locations
- Timeline of activities
- Implementation roles



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Slide 24 of 145

## America's Water Infrastructure Act (AWIA) of 2018

- SDWA was amended in 2018 by Public Law 115-270
  - AWIA Section 2021, enacted October 23, 2018
- Key changes to UCMR (SDWA Section 1445(j)):
  - Require PWSs serving 3,300 to 10,000 people to monitor
  - Ensure that only a representative sample of PWSs serving <3,300 people monitor
- Limitations:
  - Subject to the availability of appropriations and sufficient laboratory capacity
- Under the AWIA provisions, EPA continues to be responsible for all sample shipping and analytical costs associated with monitoring at PWSs serving ≤10,000 people

## National Defense Authorization Act (NDAA) for Fiscal Year 2020

- Section 7311 of the NDAA (Public Law 116-92) requires EPA to include all per- and polyfluoroalkyl substances (PFAS) in UCMR 5 for which a drinking water method has been validated by the Administrator and that are not subject to an NPDWR

## Sampling and Statistical Design

- Sampling design has been vetted with stakeholders and peer-reviewed
- Data Quality Objectives for the representative sample of PWSs
  - Provides occurrence data for unbiased national exposure estimates
  - The statistical design:
    - Stratifies by PWS size and source water type
    - Allocates PWSs across the strata proportional to population served with at least two PWSs allocated to each State

## Selection of Nationally Representative PWSs

The document "Selection of Nationally Representative Public Water Systems for the Unregulated Contaminant Monitoring Rule: 2021 Update" is available in the docket at:  
<https://www.regulations.gov/document/EPA-HQ-OW-2020-0530-0127>

- Updates the 2001 statistical design document
- Describes:
  - Refinement to the UCMR program monitoring tiers
  - Selection of representative PWSs for Assessment Monitoring and Screening Survey Monitoring
  - Changes in statistical design to address the AWIA requirements
  - Development of State Monitoring Plans that identify specific PWSs participating in UCMR and establish sampling schedules

## PWS Types

- **Public Water System (PWS):** provides water for human consumption through pipes or other constructed conveyances to at least 15 service connections or serves an average of at least 25 people for at least 60 days a year
  - **Community Water System (CWS):** PWS that supplies water to the same population year-round
  - **Non-Transient Non-Community Water System (NTNCWS):** PWS that supplies water to at least 25 of the same people at least six months per year but not year-round (e.g., schools)
  - **Transient Non-Community Water System (TNCWS)** (not generally included in UCMR sampling and not included in UCMR 5): PWS that provides water where people do not remain for long periods of time (e.g., gas stations, campgrounds)

## UCMR Monitoring Tiers

- UCMR approach relies on using one or more of 3 monitoring tiers:
  - Assessment Monitoring (primary approach to-date)
  - Screening Survey
  - Pre-Screen Testing
- Based on:
  - Availability and complexity of analytical methods
  - Laboratory capacity
  - Sampling frequency
  - Characteristics of PWSs performing the monitoring
  - Other considerations (e.g., cost/burden)
- Assessment Monitoring is the only tier under UCMR 5



## Assessment Monitoring

- Primary objective is to determine national contaminant occurrence in PWS-supplied drinking water for the purpose of estimating national population exposure
- Primary tier and largest in scope
- Generally relies on analytical methods that use more common techniques and are expected to be widely available
- Consistent with the AWIA provisions, monitoring for UCMR 5 includes:
  - Small
    - Nationally representative sample of 800 systems serving <3,300 people
    - Census of systems serving 3,300 to 10,000 people, if they are notified and confirmed by EPA
  - Large
    - Census of systems serving >10,000 people
- Sampling design is population weighted
- **Total number of systems: ~10,300**

## PWSs Expected to Participate in UCMR 5 Monitoring

System Size Category (Number of people served)	Monitoring Design (CWSs and NTNCWSs) <sup>2</sup>	Total Number of Systems per Size Category
<b>Small Systems<sup>1</sup></b> (fewer than 3,300)	Nationally representative sample	800
<b>Small Systems<sup>1</sup></b> (3,300 – 10,000)	All systems, if confirmed by EPA	5,147 <sup>3</sup>
<b>Large Systems</b> (10,001 and over)	All systems	4,364 <sup>3</sup>
<b>TOTAL</b>		<b>10,311</b>

<sup>1</sup> This requirement is based on the availability of appropriations and sufficient laboratory capacity. As EPA obtains appropriations, PWSs will be notified.

<sup>2</sup> Community Water Systems (CWSs), Non-Transient Non-Community Water Systems (NTNCWSs)

<sup>3</sup> Counts are approximate

## Frequently Asked Question



### **How does EPA determine if a PWS monitors under UCMR 5?**

The determination of whether a PWS is required to monitor under this rule is based on the type of system (e.g., community water system, non-transient non-community water system, etc.), and its retail population, as indicated by SDWIS/Fed on February 1, 2021, or subsequent corrections from the State.

## Frequently Asked Question



### **I purchase 100% of my water, am I subject to UCMR 5?**

Yes. Purchasing 100% of your water that is supplied to customers does not exclude a PWS from UCMR 5. 40 CFR 141.40(a)(2) specifies UCMR 5 applicability. PWSs that purchase any of their water supply (i.e., 0-100%) and serve more than 10,000 people are required to monitor. Systems that serve 3,300 to 10,000 people are required to monitor if appropriations are provided to EPA. Systems that have a retail population of <3,300 are only required to monitor if they are selected as part of the nationally representative sample and notified by EPA.

## PWS Notifications

- Notifications were sent to ALL PWSs subject to UCMR 5 (~10,300)
- Notifications informed PWSs of their UCMR requirements and included:
  - Instructions on how to access EPA's web-based data reporting system, the Safe Drinking Water Accession and Review System 5 (SDWARS 5)
  - Actions that ALL PWSs must take in SDWARS 5 to prepare for their monitoring
- Most PWSs received their notification through email from [UCMR@epacdx.net](mailto:UCMR@epacdx.net) during the week of January 18, 2022. Please check your junk/spam folders. Emails were sent to multiple contacts at each PWS, if available.
- PWSs without a valid email address were physically mailed a notification the week of February 22, 2022. The letter was addressed to the PWS, not a specific person.
- PWSs not yet registered for a SDWARS account were sent a reminder email(s) or physical notification the week of August 22, 2022
- If you have not received your notification, please contact EPA's contractor Great Lakes Environmental Center, Inc. (GLEC) at the UCMR Message Center at [UCMR5@glec.com](mailto:UCMR5@glec.com) or 1-800-949-1581

## Frequently Asked Question



### What does the notification email look like?

**From:** [ucmr@epacdx.net](mailto:ucmr@epacdx.net) <[ucmr@epacdx.net](mailto:ucmr@epacdx.net)>  
**Sent:** Sunday, January 23, 2022 10:57 AM  
**To:** [REDACTED]  
**Subject:** RE: Medium PWS Registration for U.S. EPA's Fifth Unregulated Contaminant Monitoring Rule

RE: Medium PWS Registration for U.S. EPA's Fifth Unregulated Contaminant Monitoring Rule  
[REDACTED]

Your CRK is: [REDACTED]

Dear Public Water System:

Our records indicate that your public water system (PWS) is subject to the requirements of the next [Unregulated Contaminants Monitoring Rule \(UCMR 5\)](#), published on December 27, 2021 (86 FR 73131). UCMR 5 requires certain PWSs to collect drinking water samples for 29 per- and polyfluoroalkyl substances (PFAS) and lithium analysis during a 12-month period between 2023 and 2025. This notification provides you with information to access the UCMR 5 internet-based reporting system, the Safe Drinking Water Accession and Review System (SDWARS 5), so that your account will be ready to support your pre-sampling and monitoring responsibilities.

The Safe Drinking Water Act (SDWA) requires the U.S. Environmental Protection Agency (EPA) to establish criteria for a program to monitor unregulated contaminants in drinking water and to identify contaminants to be monitored every five years. The UCMR dataset is one

## Sampling Schedules

- EPA developed schedules for all PWSs
- Partnering States had opportunity to review and modify schedules for PWSs during review of State Monitoring Plan
- Large PWSs have opportunity to review and modify their schedule in SDWARS 5 through December 31, 2022
  - Starting in 2023, large PWSs must contact EPA at [UCMR\\_Sampling\\_Coordinator@epa.gov](mailto:UCMR_Sampling_Coordinator@epa.gov) to request schedule changes
  - Provide a reason for the request and your PWSID

## Sampling Frequency and Locations

- PWSs will be required to collect samples based on the traditional UCMR sampling frequency and timeframe
- UCMR 5 samples will be collected at non-emergency entry points to the distribution system (EP or EPTDS) for all contaminants (finished water)

Water Source	Timeframe	Frequency
Surface water, ground water under the direct influence of surface water, or mixed sources systems	Year-Round	Systems must monitor 4 times during a consecutive 12-month monitoring period. Sample events must occur 3 months apart.
Ground water systems	Year Round	Systems must monitor 2 times during a consecutive 12 month monitoring period. Sample events must occur 5 7 months apart.

## Frequently Asked Question



### I receive water from another water system via a consecutive connection. Where should I take my entry point to the distribution system (EPTDS) sample?

EPA advises samplers to collect from the closest location to the EPTDS that can be readily, safely, and consistently accessed. The PWSs should contact the UCMR Message Center ([UCMR5@glec.com](mailto:UCMR5@glec.com)) with additional questions/concerns.

## Timeline of Activities

The UCMR 5 Proposed Rule was published March 11, 2021 (86 FR 13846) and the Final Rule was published **December 27, 2021** (86 FR 73131)

2022	2023	2024	2025	2026
<p>Pre-sampling Activities by EPA, States</p> <p>Pre-sampling Activities by PWSs</p> <ul style="list-style-type: none"> <li>PWSs register for a SDWARS account to provide contact information, sampling location inventory, and Zip Code(s)</li> </ul>	<p>← Sampling Period →</p> <p>EPA, State Implementation Activities</p> <p>PWS Sample Collection, Laboratory Analysis, Reporting (Approximately 1/3 of PWSs in each year)</p>			<p>Post-sampling Activities by PWSs, Laboratories</p> <ul style="list-style-type: none"> <li>PWSs complete resampling, as needed</li> <li>Laboratories conclude data reporting</li> </ul> <p>Post-sampling Activities by EPA</p> <ul style="list-style-type: none"> <li>Complete upload of UCMR 5 data to NCOD</li> </ul>

## EPA Implementation Roles

- **Large and Small PWS support:**
  - Extract data from SDWARS to review for completeness and reporting to NCOD
  - Support the SDWARS reporting system and users
  - Update PWS inventory and schedules as needed
  - Provide technical assistance
  - Use SDWARS for real-time communication and outreach
- **State, PWS, and Laboratory support:**
  - Review and track rule applicability and PWS sampling progress
  - Coordinate Laboratory Approval Program
  - Provide technical support
  - Coordinate outreach
  - Lead compliance assistance

## Extended UCMR Implementation Team

- **EPA Office of Ground Water and Drinking Water (OGWDW)**
  - Lead organization for direct-implementation of rule
- **EPA Regional Offices**
  - Coordinate State Partnership Agreements
  - Assist States and PWSs with UCMR requirements, compliance assistance, and enforcement
- **Partnering States**
  - Support various aspects of implementation based on State-specific interest

## States' Role in the UCMR Program

- Participation by States is voluntary and documented via Partnership Agreements
- States help EPA implement the UCMR program and ensure high data quality
- Partnership Agreement activities can include any or all of the following:
  - Review and revise State Monitoring Plans
  - Provide inventory and contact information for small and large PWSs
  - Review proposed Ground Water Representative Monitoring Plans (GWRMPs)
  - Provide compliance assistance (e.g., notify and instruct systems)
  - Collect samples
  - Other

UCMR 5 is the highest "partnered" cycle. Thank you for the large amount of State-provided data.

## Large PWS Responsibilities

- PWSs serving >10,000 people are responsible for the costs associated with analyses
- PWS coordinates sample shipping and analyses with an EPA-approved UCMR 5 laboratory
  - A list of approved laboratories is available at: <https://www.epa.gov/dwucmr/list-laboratories-approved-epa-fifth-unregulated-contaminant-monitoring-rule-ucmr-5>
- PWS reviews and approves the data within 30 days of the laboratory posting data
  - Laboratories must post data to SDWARS within 90 days of sample collection
  - If the PWS has not acted upon the data after 30 days, the data are considered approved and ready for State and EPA review

# UCMR 5 Contaminants, Analytical Methods, and Public Access to UCMR Data

Elizabeth Hedrick, U.S. EPA

Office of Ground Water and Drinking Water

Standards and Risk Management Division

Unregulated Contaminant Monitoring Branch



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Slide 45 of 145

## Overview

- Contaminant Selection
  - “Information Compendium for Contaminants for the Final Unregulated Contaminant Monitoring Rule (UCMR 5)”
- UCMR 5 Contaminants
  - Analytical methods
  - Minimum reporting levels (MRLs)
  - Health information
- National Contaminant Occurrence Database (NCOD) and Data Summary
- Consumer Confidence Reports (CCRs)
- Public Notification Requirements



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Slide 46 of 145



## Information Compendium for Contaminants

- Published December 2021 (EPA 815-B-21-009)
- Provided supporting information for the 30 UCMR 5 contaminants
- Used data sources from the Contaminant Candidate List (CCL) program to inform
  - Background and Use
  - Health Effects
  - Occurrence in Water
  - Production, Release, and Usage
  - Persistence and Mobility
- Outlined the contaminant prioritization process
- Summarized the data sources reviewed
- Included a comprehensive list of the other contaminants that were considered

The document "Information Compendium for Contaminants for the Final Unregulated Contaminant Monitoring Rule (UCMR 5)" is available in the docket at:  
<https://www.regulations.gov/document/EPA-HQ-OW-2020-0530-0126>



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Slide 47 of 145

## UCMR 5 Contaminants: 29 PFAS + Lithium

### EPA Method 533 (PFAS monitored under UCMR 3 are in bold)

1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9Cl-PF3ONS)	4,8-dioxa-3H-perfluorononanoic acid (ADONA)	Perfluorohexanoic acid (PFHxA)
1H, 1H, 2H, 2H-perfluorohexane sulfonic acid (4:2 FTS)	Perfluorobutanoic acid (PFBA)	Hexafluoropropylene oxide dimer acid (HFPO-DA) ("GenX chemical")	<b>Perfluorohexanesulfonic acid (PFHxS)</b>
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	Perfluoroheptanesulfonic acid (PFHpS)	<b>Perfluorobutanesulfonic acid (PFBS)</b>	<b>Perfluorononanoic acid (PFNA)</b>
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	Perfluoropentanesulfonic acid (PFPeS)	Perfluorodecanoic acid (PFDA)	<b>Perfluorooctanesulfonic acid (PFOS)</b>
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	Perfluoropentanoic acid (PFPeA)	Perfluorododecanoic acid (PFDoA)	<b>Perfluorooctanoic acid (PFOA)</b>
Perfluoro-3-methoxypropanoic acid (PFMPA)	11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<b>Perfluoroheptanoic acid (PFHpA)</b>	Perfluoroundecanoic acid (PFUnA)
Perfluoro-4-methoxybutanoic acid (PFMBA)			

### PFAS Analytes Unique to EPA Method 537.1

N-ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	N-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	Perfluorotetradecanoic acid (PFTA)	Perfluorotridecanoic acid (PFTrDA)
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### EPA Method 200.7 or Alternate SM 3120 B or ASTM D1976 20

Lithium



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Slide 48 of 145

## Per- and Polyfluoroalkyl Substances (PFAS)

### EPA Method 533<sup>1</sup> (SPE LC/MS/MS)

Location: EPTDS<sup>2</sup>

Analyte	CASRN <sup>3</sup>	MRL <sup>4</sup>	Health Information
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	763051-92-9	0.005 µg/L	No EPA health assessment
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	0.005 µg/L	No EPA health assessment
1H, 1H, 2H, 2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	0.003 µg/L	No EPA health assessment
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	0.005 µg/L	No EPA health assessment
4,8-dioxa-3H-perfluorononanoic acid (ADONA) <sup>5</sup>	919005-14-4	0.003 µg/L	No EPA health assessment

<sup>1</sup> Determination of PFAS in Drinking Water by Isotope Dilution Anion Exchange Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry, November 2019

<sup>2</sup> Entry Point to the Distribution System

<sup>3</sup> Chemical Abstracts Service Registry Number

<sup>4</sup> Minimum Reporting Level

<sup>5</sup> 4,8-dioxa-3H-perfluorononanoic acid is the parent acid form of the ammonium salt



Office of Water

Slide 49 of 145

## Per- and Polyfluoroalkyl Substances (PFAS)

### EPA Method 533 (SPE LC/MS/MS)

Location: EPTDS

Analyte	CASRN	MRL	Health Information
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9Cl-PF3ONS)	756426-58-1	0.002 µg/L	No EPA health assessment
hexafluoropropylene oxide dimer acid (HFPO-DA) (GenX chemicals)	13252-13-6	0.005 µg/L	EPA Lifetime Health Advisory (final) <sup>1</sup> : 0.01 µg/L EPA Toxicity Value <sup>2</sup> : Chronic Reference Dose (RfD) = 0.000003 mg/kg-day
nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	151772-58-6	0.02 µg/L	No EPA health assessment
perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	113507-82-7	0.003 µg/L	No EPA health assessment

<sup>1</sup> [Drinking Water Health Advisory: Hexafluoropropylene Oxide \(HFPO\) Dimer Acid and HFPO Dimer Acid Ammonium Salt, Also Known as "GenX Chemicals"](#), June 2022

<sup>2</sup> [Final Human Health Toxicity Values for Hexafluoropropylene Oxide \(HFPO\) Dimer Acid and Its Ammonium Salt, Also Known As "GenX Chemicals"](#), 2021



Office of Water

Slide 50 of 145

## Per- and Polyfluoroalkyl Substances (PFAS)

### EPA Method 533 (SPE LC/MS/MS)

Location: EPTDS

Analyte	CASRN	MRL	Health Information
perfluoro-3-methoxypropanoic acid (PFMPA)	377-73-1	0.004 µg/L	No EPA health assessment
perfluoro-4-methoxybutanoic acid (PFMBA)	863090-89-5	0.003 µg/L	No EPA health assessment
perfluorobutanesulfonic acid (PFBS)	375-73-5	0.003 µg/L	EPA Lifetime Health Advisory (final) <sup>1</sup> : 2 µg/L EPA Toxicity Value <sup>2</sup> : Chronic RfD = 0.0003 mg/kg-day (thyroid)
perfluorobutanoic acid (PFBA)	375-22-4	0.005 µg/L	EPA Integrated Risk Information System (IRIS) assessment in process <sup>3</sup>

<sup>1</sup> [Drinking Water Health Advisory: Perfluorobutane Sulfonic Acid and Related Compound Potassium Perfluorobutane Sulfonate](#), June 2022

<sup>2</sup> [Human Health Toxicity Values for Perfluorobutane Sulfonic Acid and Related Compound Potassium Perfluorobutane Sulfonate](#), October 2021

<sup>3</sup> [PFBA IRIS assessment in process](#)



Office of Water

Slide 51 of 145

## Per- and Polyfluoroalkyl Substances (PFAS)

### EPA Method 533 (SPE LC/MS/MS)

Location: EPTDS

Analyte	CASRN	MRL	Health Information
perfluorodecanoic acid (PFDA)	335-76-2	0.003 µg/L	EPA IRIS assessment in process <sup>1</sup>
perfluorododecanoic acid (PFDoA)	307-55-1	0.003 µg/L	No EPA health assessment
perfluoroheptanesulfonic acid (PFHpS)	375-92-8	0.003 µg/L	No EPA health assessment
perfluoroheptanoic acid (PFHpA)	375-85-9	0.003 µg/L	No EPA health assessment
perfluorohexanesulfonic acid (PFHxS)	355-46-4	0.003 µg/L	ATSDR <sup>2</sup> : Minimal Risk Level = 0.00002 mg/kg-day (intermediate duration); drinking water concentrations = 0.517 µg/L (adult) and 0.140 µg/L (child) EPA IRIS assessment in process <sup>3</sup>

<sup>1</sup> [PFDA IRIS assessment in process](#)

<sup>2</sup> Agency for Toxic Substances and Disease Registry (ATSDR), 2021: "Toxicological Profile for Perfluoroalkyls"

<sup>3</sup> [PFHxS IRIS assessment in process](#)



Office of Water

Slide 52 of 145

## Per- and Polyfluoroalkyl Substances (PFAS)

### EPA Method 533 (SPE LC/MS/MS)

Location: EPTDS

Analyte	CASRN	MRL	Health Information
perfluorohexanoic acid (PFHxA)	307-24-4	0.003 µg/L	EPA IRIS assessment in process <sup>1</sup>
perfluorononanoic acid (PFNA)	375-95-1	0.004 µg/L	ATSDR <sup>2</sup> : Minimal Risk Level = 0.000003 mg/kg-day (intermediate duration); drinking water concentrations = 0.078 µg/L (adult) and 0.021 µg/L (child) EPA IRIS assessment in process <sup>3</sup>
perfluoropentanesulfonic acid (PFPeS)	2706-91-4	0.004 µg/L	No EPA health assessment
perfluoropentanoic acid (PFPeA)	2706-90-3	0.003 µg/L	No EPA health assessment
perfluoroundecanoic acid (PFUNA)	2058-94-8	0.002 µg/L	No EPA health assessment

<sup>1</sup> PFHxA IRIS assessment in process

<sup>2</sup> Agency for Toxic Substances and Disease Registry (ATSDR), 2021: "Toxicological Profile for Perfluoroalkyls"

<sup>3</sup> PFNA IRIS assessment in process



Office of Water

Slide 53 of 145

## Per- and Polyfluoroalkyl Substances (PFAS)

### EPA Method 533 (SPE LC/MS/MS)

Location: EPTDS

Analyte	CASRN	MRL	Health Information
perfluorooctanesulfonic acid (PFOS)	1763-23-1	0.004 µg/L	EPA Lifetime Health Advisory (interim) <sup>1</sup> : 0.00002 µg/L Draft Chronic RfD = 7.9 x 10 <sup>-9</sup> mg/kg-day Health Canada <sup>2</sup> : MAC = 0.6 µg/L ATSDR <sup>3</sup> : Minimal Risk Level = 0.000002 mg/kg-day (intermediate duration); drinking water concentrations = 0.052 µg/L (adult) and 0.014 µg/L (child)
perfluorooctanoic acid (PFOA)	335-67-1	0.004 µg/L	EPA Lifetime Health Advisory (interim) <sup>4</sup> : 0.000004 µg/L Draft Chronic RfD = 1.5 x 10 <sup>-9</sup> mg/kg-day Health Canada <sup>2</sup> : MAC = 0.2 µg/L ATSDR <sup>3</sup> : Minimal Risk Level = 0.000003 mg/kg-day (intermediate duration); drinking water concentrations = 0.078 µg/L (adult) and 0.021 µg/L (child)

<sup>1</sup> INTERIM Drinking Water Health Advisory: Perfluorooctane Sulfonic Acid (PFOS), June 2022; not federally enforceable; RfD subject to change based on current [EPA reevaluation](#) of toxicity information for PFOS

<sup>2</sup> Health Canada Guidelines for Canadian Drinking Water Quality, 2018, Maximum Acceptable Concentration (MAC); not federally enforceable

<sup>3</sup> Agency for Toxic Substances and Disease Registry (ATSDR), 2021: "Toxicological Profile for Perfluoroalkyls"

<sup>4</sup> INTERIM Drinking Water Health Advisory: Perfluorooctanoic Acid (PFOA), June 2022; not federally enforceable; RfD subject to change based on current [EPA reevaluation](#) of toxicity information for PFOA



Office of Water

Slide 54 of 145

## Per- and Polyfluoroalkyl Substances (PFAS)

Using EPA Method 537.1<sup>1</sup> (LC/MS/MS)

Location: EPTDS

Analyte	CASRN	MRL	Health Information
n-ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2991-50-6	0.005 µg/L	No EPA health assessment
n-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2355-31-9	0.006 µg/L	No EPA health assessment
perfluorotetradecanoic acid (PFTA)	376-06-7	0.008 µg/L	No EPA health assessment
perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.007 µg/L	No EPA health assessment

<sup>1</sup> Determination of Selected Per- and Polyfluorinated Alkyl Substances in Drinking Water by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS), Version 2.0, March 2020



Office of Water

Slide 55 of 145

## Lithium (Metal/Pharmaceutical)

EPA Method 200.7<sup>1</sup> (ICP-AES), SM 3120 B<sup>2</sup>, ASTM D1976-20<sup>3</sup>

Location: EPTDS

Analyte	CASRN	MRL	Health Information
lithium	7439-93-2	9 µg/L	EPA Draft CCL 5 Health Reference Level <sup>4</sup> = 10 µg/L EPA PPRTV <sup>5</sup> : p-RfD = 0.002 mg/kg-day (Chronic and Subchronic); lower bound of the therapeutic serum concentration range selected as basis

<sup>1</sup> Determination of Metals and Trace Elements in Water and Wastes by Inductively Coupled Plasma-Atomic Emission Spectrometry, Revision 4.4., 1994

<sup>2</sup> Standard Methods (SM) 3120 B (2017) or SM Online 3120 B-99 (1999 [Revised December 14, 2020])

<sup>3</sup> ASTM International (ASTM) D1976-20, 2020

<sup>4</sup> Draft CCL 5 Contaminant Information Sheets, 2021; non-cancer health value; not federally enforceable

<sup>5</sup> EPA Provisional Peer-Reviewed Toxicity Value (PPRTV), 2008



Office of Water

Slide 56 of 145

## EPA Lifetime Health Advisories

- Identify levels to protect all people, including sensitive populations and life stages, from adverse health effects resulting from exposure throughout their lives to contaminants in drinking water
  - Calculated to offer a margin of protection against adverse health effects
  - Take into account other potential sources of exposure (e.g., food, air, consumer products)
- Non-enforceable and non-regulatory
  - Provide technical information for PWSs, States, and public officials on health effects, analytical methods, and treatment technologies
- For more information on EPA health advisories, visit:  
<https://www.epa.gov/sdwa/drinking-water-health-advisories-has>

## EPA Lifetime Health Advisories for PFAS

- For more information on PFAS: <https://www.epa.gov/pfas/pfas-explained>
- For questions and answers on the interim (PFOA, PFOS) and final (GenX chemicals, PFBS) EPA lifetime health advisories published in June 2022:  
<https://www.epa.gov/sdwa/questions-and-answers-drinking-water-health-advisories-pfoa-pfos-genx-chemicals-and-pfbs>
  - Fact Sheet for PWSs: <https://www.epa.gov/system/files/documents/2022-06/drinking-water-ha-pfas-factsheet-water-system.pdf>
  - Fact Sheet for Communities: <https://www.epa.gov/system/files/documents/2022-06/drinking-water-ha-pfas-factsheet-communities.pdf>

## NCOD and Data Summary Document

- After UCMR 5 monitoring starts, EPA will update the NCOD and publish a “Data Summary” **approximately quarterly** at the link below
- The Data Summary will summarize the NCOD results at a national level (e.g., the number of PWSs with results above the MRL), provide data field definitions, and tabulate health-based information from EPA risk assessments for the UCMR 5 contaminants alongside MRLs to help inform interpretation of results
  - Health-based reference values (e.g., EPA lifetime health advisory values) are reported as concentrations in water, if available, or reference doses
  - MRLs are the lowest concentrations that laboratories can report for a UCMR 5 contaminant
- EPA will continue to look for ways to improve the document to make sure we are providing stakeholders with the most appropriate information

**National occurrence data publicly available:**

<https://www.epa.gov/dwucmr/occurrence-data-unregulated-contaminant-monitoring-rule>

## Public Access to UCMR Results

- Annual Consumer Confidence Reports (CCRs)
  - Required by 40 CFR §141.153(d)(7) **for community water systems (CWSs)**
    - **Detected unregulated contaminants**, for which monitoring is required: the table(s) must contain the average and range at which the contaminant was detected (i.e., measured  $\geq$  the UCMR MRL). The report may include a brief explanation of the reasons for monitoring for unregulated contaminants
    - **Example language:** Unregulated contaminants are those for which EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist EPA in determining the occurrence of unregulated contaminants in drinking water and whether future regulation is warranted
  - For additional information: <https://www.epa.gov/ccr>

## Public Access to UCMR Results

- Public Notification
  - Required by §141.207 **for all PWSs** (CWSs and NTNCWSs subject to UCMR)
    - PWSs must notify persons served of the availability of the results no later than 12 months after monitoring results are known
    - Follows Tier 3 public notice §141.204(c), (d)(1), and (d)(3)
    - Special requirement notice must identify a person and the telephone number to contact for information on monitoring results
  - CWSs may include their public notice within their CCRs
  - For additional information: <https://www.epa.gov/dwreginfo/public-notification-rule>
- PWSs should be aware that some States may have requirements for communicating **PFAS** monitoring results to consumers and/or reporting them to the State

## Frequently Asked Question



### Can a PWS use State-required PFAS monitoring results for UCMR 5?

PWSs may be able to conduct PFAS sampling that meets the needs of both State-required and UCMR 5 monitoring, with the understanding that UCMR 5 requirements must be met including:

- PFAS samples must be analyzed by an EPA-approved UCMR 5 laboratory using EPA Method 533 and Method 537.1 to conduct the analysis for the respective PFAS, as required under UCMR 5.
- Sampling must take place during the 2023-2025 UCMR 5 monitoring period and follow UCMR 5 sampling frequency requirements
- State-required MRLs must be equal to or lower than the UCMR 5 MRLs

EPA offers flexibility for PWSs to reschedule their UCMR 5 monitoring, and PWSs may do so to coordinate it with their State-required monitoring. PWSs wishing to conduct “dual purpose” monitoring (i.e., concurrently meeting the State and UCMR 5 needs) may contact their State or EPA, as appropriate, if there are questions about whether both requirements are being met.



## Frequently Asked Question



### Will EPA provide materials specific to sampling procedures for PFAS?

The Agency prepared outreach material for PWSs on PFAS sampling for UCMR 5 (Appendix 1):

- Sampling instructions specific to the small PWS sampling kit
- Video demonstrating the sampling procedures
- Tips to reduce cross-contamination

**Please Note:** The instructions are specific to the UCMR 5 sampling kit for small PWS monitoring and are **not Agency-wide PFAS sampling guidance.**

Break  
(15 minutes)



## PWS-Specific Questions about UCMR 5

- If you have detailed questions that apply to your PWS specifically, please email the appropriate inbox below
  - [UCMR5@glec.com](mailto:UCMR5@glec.com)
    - Schedule, sampling locations, applicability (e.g., PWS merged with another PWS(s), size category has changed, source water has changed), seasonal sample points
  - [UCMR\\_Sampling\\_Coordinator@epa.gov](mailto:UCMR_Sampling_Coordinator@epa.gov)
    - Schedule and sampling location changes (post-2022), representative monitoring

## Questions on the Presentation

- Click on “?” in the upper part of the control panel (Figure 1) to submit questions/comments
  - Type a question in the box; click send (Figure 2)
- Submit general clarifying questions throughout the webinar
  - Questions will be answered in the question box throughout the presentation
  - Common questions will be answered after the break and at the end

Figure 1

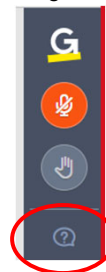
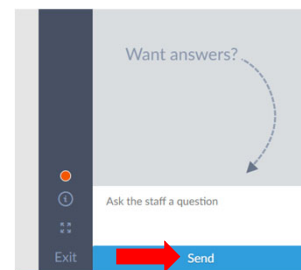


Figure 2



## Questions and Answers Received in Question Box



## Representative Samples (PWS Options)

Derek Losh, U.S. EPA  
Office of Ground Water and Drinking Water  
Standards and Risk Management Division  
Unregulated Contaminant Monitoring Branch

## Overview

- Ground Water Representative Monitoring Plan (GWRMP) Program
  - Option for systems with ground water sources to reduce monitoring
- Representative Sampling from Wholesaler Connections
  - Option for systems that purchase water with multiple connections from the same wholesaler to reduce monitoring

## Ground Water Representative Monitoring Plan (GWRMP) Program

- Applications from PWSs are now being accepted
- PWSs with multiple ground water EPTDSs can sample at representative locations rather than at each EPTDS, with EPA approval
- A representative EPTDS is associated with a ground water well that:
  - Is in close proximity to and draws from the same source as the wells it represents (i.e., same aquifer)
  - Is representative of the highest annual volume and most consistently active wells
  - Will be in use at the scheduled sampling time

The document "Instructions for Preparing a Ground Water Representative Monitoring Plan for the Unregulated Contaminant Monitoring Rule" is available in the docket at:

<https://www.regulations.gov/document/EPA-HQ-OW-2020-0530-0128>

## GWRMP Program

- Key GWRMP proposal requirements:
  - **Site map** showing the locations of all wells and the proposed representative wells. Generally, represented wells should be located within a mile of the representative well
  - Uniform **contamination susceptibility** among the represented wells and their representative well
  - Historical **ground water quality data** demonstrating similarity among the represented wells and the representative well
  - All of the wells have either the same treatment or no treatment

## GWRMP Program

- GWRMPs approved under prior UCMRs
  - May be used for UCMR 5 if there are no significant changes in the configuration of the ground water EPTDSs since prior approval
  - PWS must send a message to [UCMR\\_Sampling\\_Coordinator@epa.gov](mailto:UCMR_Sampling_Coordinator@epa.gov) to confirm intention to use the previous GWRMP
  - EPA sent reminder emails to PWSs with previous GWRMPs in September 2022 to confirm reuse
- Amending GWRMPs
  - Requests for change must also be submitted to [UCMR\\_Sampling\\_Coordinator@epa.gov](mailto:UCMR_Sampling_Coordinator@epa.gov)
  - If new wells are being added to the plan, an amendment request must be accompanied by the supporting information discussed on the preceding slides

## GWRMP Program

- PWSs must prepare proposals for any new GWRMPs and submit them to [UCMR\\_Sampling\\_Coordinator@epa.gov](mailto:UCMR_Sampling_Coordinator@epa.gov) **six months prior to their scheduled sample collection**
- PWSs scheduled for sample collection in 2023 are encouraged to submit plans by **December 31, 2022**, to allow time for review by EPA and, as appropriate, the State
- For more information, contact [UCMR\\_Sampling\\_Coordinator@epa.gov](mailto:UCMR_Sampling_Coordinator@epa.gov)
- To participate in the GWRMP program for UCMR 5, a PWS must:
  - Confirm use of previously-approved GWRMP,
  - Propose an amendment to a previously-approved GWRMP, *or*
  - Submit a proposal for new GWRMP

## Frequently Asked Question



### How does a PWS establish a GWRMP for UCMR 5?

There are three ways for a PWS to establish a GWRMP for UCMR 5. All three require the PWS to initiate the process six months prior to the PWS's scheduled sample collection date by sending an email to [UCMR\\_Sampling\\_Coordinator@epa.gov](mailto:UCMR_Sampling_Coordinator@epa.gov).

- 1) The PWS may **use a GWRMP from a previous UCMR cycle** by emailing EPA to confirm this intention and that no significant changes have occurred to the ground water EPTDSs since the GWRMP was approved.
- 2) The PWS may **request to modify a previous GWRMP** if significant changes have occurred to the ground water EPTDSs. The PWS must email EPA all appropriate information supporting the changes, which may include a revised site map or historical water quality data, consistent with the criteria outlined in the instructions for preparing a GWRMP (available in the docket).
- 3) The PWS may **submit a proposal for a new GWRMP** by sending an email to EPA listing the proposed representative ground water sampling EPTDSs and containing all appropriate supporting information, consistent with the criteria outlined in the GWRMP instructions.

## Representative Sampling from Wholesaler Connections

- PWSs that purchase water with multiple connections from the same wholesaler may select one representative connection from that wholesaler
  - Does not need EPA approval
  - Upload your representative connection to SDWARS
  - If selected representative connection is not in service at the time of sample collection, a different representative connection from the same wholesaler must be sampled

## Frequently Asked Question



### **I have a consecutive connection with multiple connections from the same wholesaler. What do I do?**

PWSs that purchase water with multiple connections from the same wholesaler may select one representative connection from that wholesaler, as specified in 40 CFR 141.40(a)(3) Table 1, footnote c. The entry point to the distribution system (EPTDS) representative sampling location must be representative of those that receive the highest annual volume. If the connection selected as the representative EPTDS is not available for sampling, the PWS must sample an alternate highest volume representative connection.

# SDWARS and UCMR 5 Reporting Requirements

Jillian Toothman, U.S. EPA  
Office of Ground Water and Drinking Water  
Standards and Risk Management Division  
Unregulated Contaminant Monitoring Branch



Office of Water

Slide 77 of 145

## Overview

- SDWARS 5
- Central Data Exchange (CDX) account
- Large PWS workflow
  - Notification letter
  - Updating contact/inventory/schedule/Zip Codes
- Reporting requirements and data elements
- Timing of reporting
- Data review



Office of Water

Slide 78 of 145



## SDWARS 5

- Safe Drinking Water Accession and Review System (SDWARS) used by PWSs and EPA-approved UCMR 5 laboratories to report results
- Internet-based electronic reporting system that utilizes a secure access portal, the Central Data Exchange (CDX), to access
  - <https://cdx.epa.gov/>
  - <https://www.epa.gov/dwucmr/reporting-requirements-unregulated-contaminant-monitoring-rule-ucmr-5>

**All PWSs must log in to SDWARS 5.**

This is EPA's main way of communicating with PWSs regarding deadlines, inventory changes/corrections, sampling reminders, availability of analytical results, etc.

## SDWARS 5/CDX Registration

- To register to use the CDX:
  - Go to <https://cdx.epa.gov/preregistration/>
  - Enter the customer retrieval key (CRK) you received by email (sender [UCMR@epacdx.net](mailto:UCMR@epacdx.net)) or by physical mailing if no email address was available (refer to slide 35)
  - Follow the directions to complete registration
- **All PWSs** should have received a CRK
  - If you lost/did not receive a CRK, please contact EPA's implementation contractor GLEC at the UCMR Message Center at [UCMR5@glec.com](mailto:UCMR5@glec.com) or 1-800-949-1581
- **Please do this as soon as possible**
  - If you have CDX/SDWARS 5 registration issues after using your CRK, please contact the CDX Help Desk at [helpdesk@epacdx.net](mailto:helpdesk@epacdx.net) or call 1-888-890-1995

## SDWARS Workflow for Large PWSs – Overview

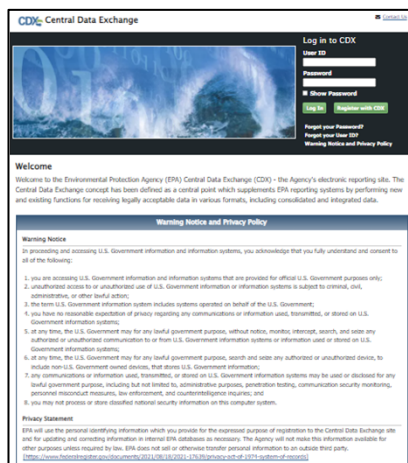
- Complete pre-sampling activities before **December 31, 2022**
  - **Step 1:** Log in to CDX
  - **Step 2:** Select SDWARS 5 and accept your PWS's UCMR 5 notification letter
  - **Step 3:** Add/review/edit sample locations
  - **Step 4:** Add/edit Zip Code(s) served
  - **Step 5:** Review sampling schedule
  - **Step 6 (optional):** Nominate additional user(s) for your PWS
- Respond to specific UCMR 5 data elements (functionality available once monitoring starts)

### SDWARS 5 Walkthrough Video for Large PWSs

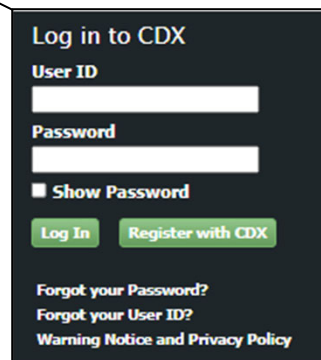
Includes additional information for completing your pre-sampling activities in SDWARS

<https://www.youtube.com/watch?v=2l4oUSGR4Fc>

## 1. Log in to CDX



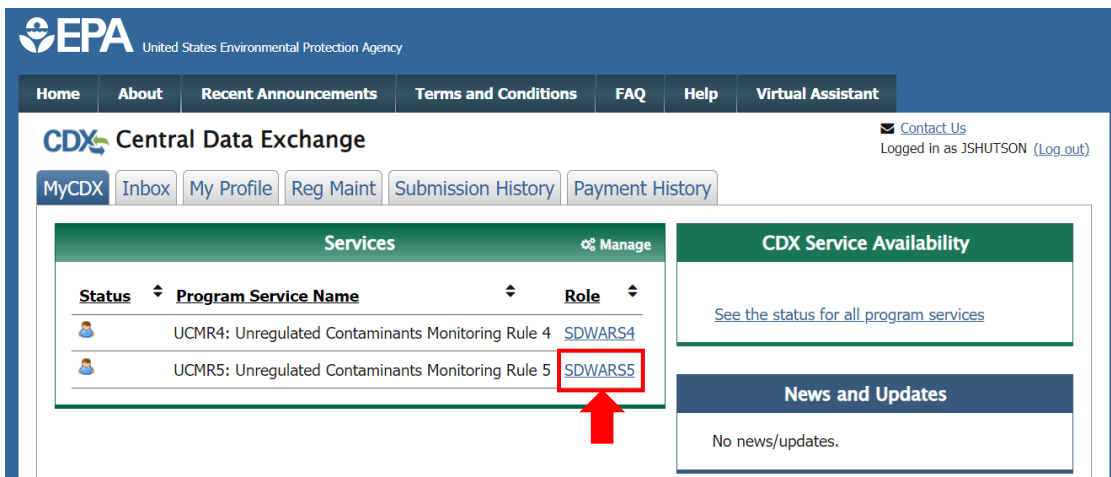
<https://cdx.epa.gov/>



## 2. Select SDWARS 5 and Accept Notification Letter

- To read and accept your notification letter, you must select SDWARS 5
  - Your PWS's notification letter should automatically open
- Status of acceptance of notification is tracked in SDWARS 5

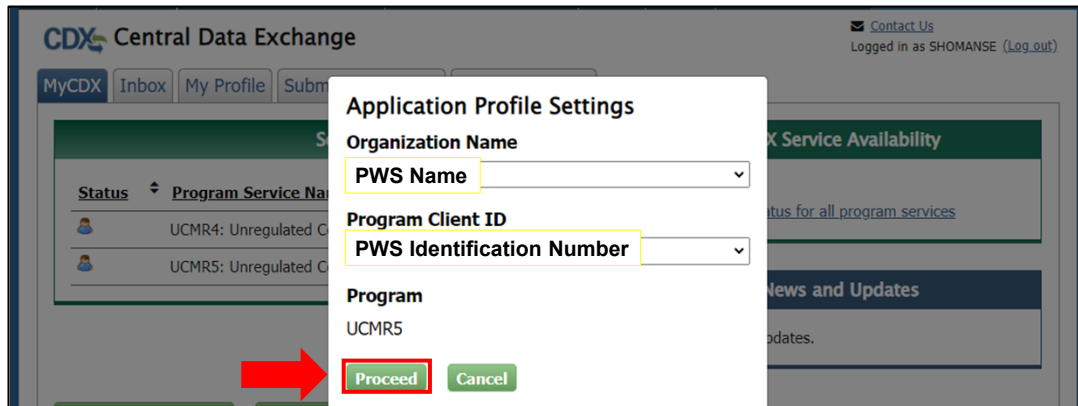
### 2a. Select SDWARS 5



The screenshot shows the EPA CDX Central Data Exchange interface. At the top, there is a navigation bar with links for Home, About, Recent Announcements, Terms and Conditions, FAQ, Help, and Virtual Assistant. Below this is the CDX logo and the text 'Central Data Exchange'. On the right, there is a 'Contact Us' link and a login status 'Logged in as JSHUTSON (Log out)'. Below the navigation bar, there are several tabs: MyCDX, Inbox, My Profile, Reg Maint, Submission History, and Payment History. The main content area is divided into three sections. The first section is titled 'Services' and contains a table with columns for Status, Program Service Name, and Role. The table has two rows: one for 'UCMR4: Unregulated Contaminants Monitoring Rule 4' with role 'SDWARS4', and one for 'UCMR5: Unregulated Contaminants Monitoring Rule 5' with role 'SDWARS5'. The 'SDWARS5' role is highlighted with a red box, and a red arrow points to it. The second section is titled 'CDX Service Availability' and contains a link 'See the status for all program services'. The third section is titled 'News and Updates' and contains the text 'No news/updates.'

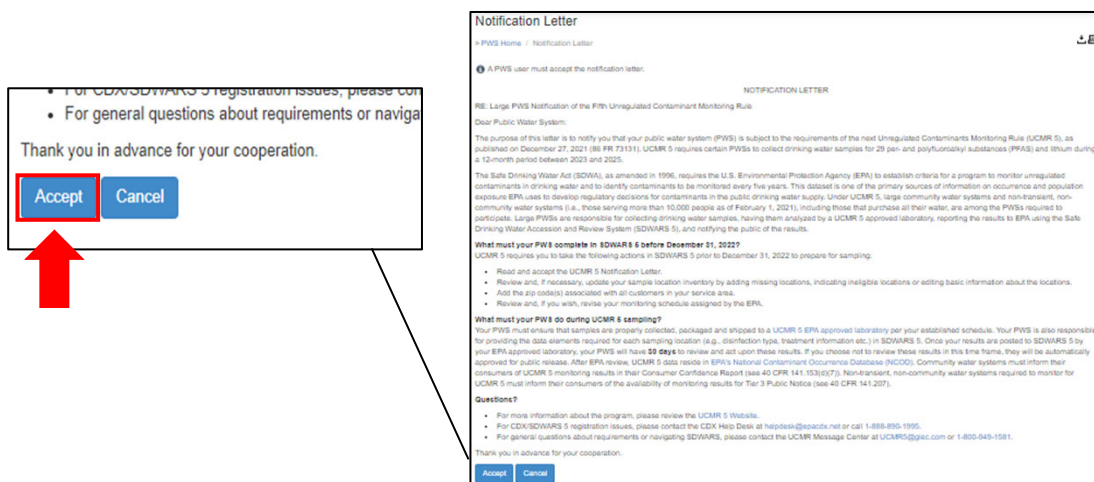
Status	Program Service Name	Role
	UCMR4: Unregulated Contaminants Monitoring Rule 4	SDWARS4
	UCMR5: Unregulated Contaminants Monitoring Rule 5	SDWARS5

## 2b. Proceed to Notification Letter



Once logged-in, your personal PWS Name and ID will appear in those sections, which are marked in yellow above. Click "Proceed" to view Notification Letter.

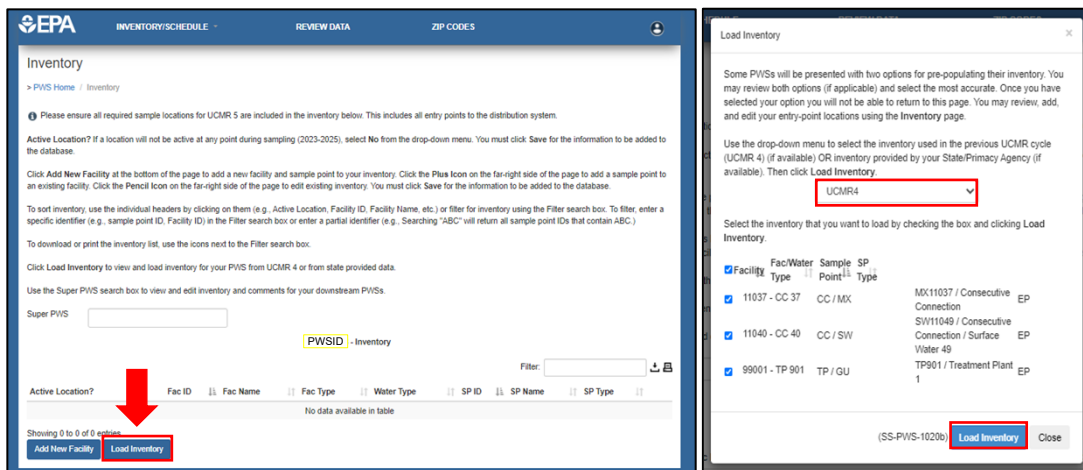
## 2c. Read and Accept Notification Letter



### 3. Add/Review/Edit Inventory

- Identify/confirm all entry points to your distribution system (EP)
  - **Option 1:** Select the EP locations used for UCMR 4, as applicable, and review/edit as appropriate
  - **Option 2:** Select the EP locations provided by your State/primacy entity in late 2021 for your PWS, if available, and review/edit as appropriate. This information may be more up to date than UCMR 4 locations (Data Call)
  - **Option 3:** If your PWS did not participate in UCMR 4 and your State/primacy entity did not provide any EP locations on your behalf, you must add your EP locations

### 3. Load Inventory from UCMR 4 or State/Primacy Entity



The screenshot shows the EPA Inventory Management System interface. The main window displays the 'Inventory' page with a 'Load Inventory' button highlighted in red. A secondary window titled 'Load Inventory' is open, showing a dropdown menu set to 'UCMR4' and a 'Load Inventory' button highlighted in red. The secondary window also displays a table of inventory items with columns for Facility Type, Water Type, Sample Point Type, and EP.

Facility Type	Water Type	Sample Point Type	EP
11037 - CC 37	CC / MX	MX11037 / Consecutive Connection	EP
11040 - CC 40	CC / SW	SW11049 / Consecutive Connection / Surface Water 49	EP
99001 - TP 901	TP / GU	TP901 / Treatment Plant 1	EP

### 3. Add/Review/Edit Inventory – Manual Entry

PWSID - Inventory

Filter:   

Active Location?	Fac ID	Fac Name	Fac Type	Water Type	SP ID	SP Name	SP Type
<input type="checkbox"/>	11037	CC 37	CC	MX	MX11037	Consecutive Connection	EP 
<input type="checkbox"/>	11040	CC 40	CC	SW	SW11040	Consecutive Connection / Surface Water 49	EP 
<input type="checkbox"/>	99001	TP 901	TP	GU	TP901	Treatment Plant 1	EP 

Showing 1 to 3 of 3 entries

[Add New Facility](#)

### 3. Add/Review/Edit Inventory – Manual Entry

**Add Facility**

You must complete every field marked with an (\*). You must click Save for the information to be added to the database.

Facility ID\*

Facility Name\*

Facility Type\*

Water Type\*

Sample Point ID\*

Sample Point Name\*

Sample Point Type (determined by Facility Type)

(SS-PWS-1020a)

**Add Sample Point**

You must complete every field marked with an (\*). You must click Save for the information to be added to the database.

Facility: 11037 - CC 37

Sample Point ID\*

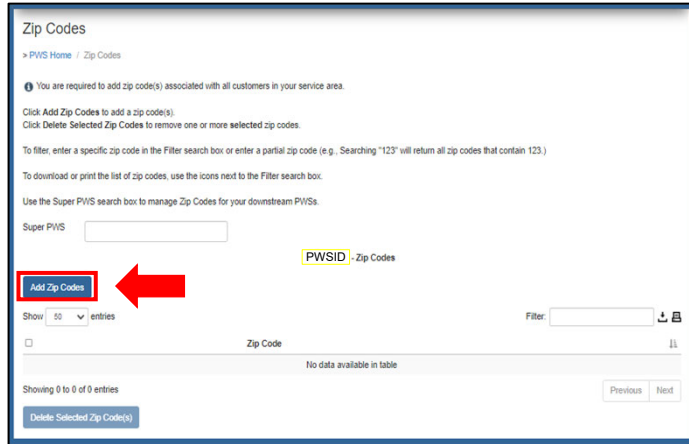
Sample Point Name\*

Sample Point Type EP - Entry Point to the Distribution System

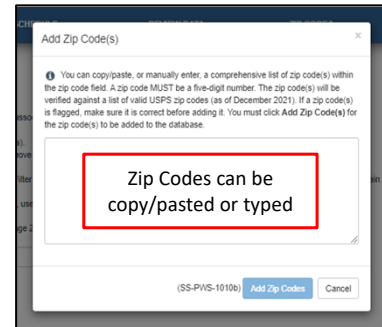
(SS-PWS-1020b)

- Create a new Facility and Sample Point
- Add a Sample Point to an existing Facility

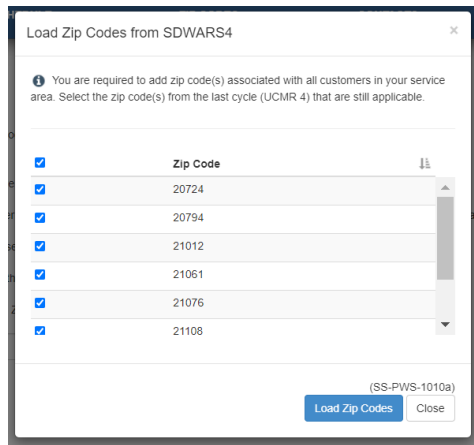
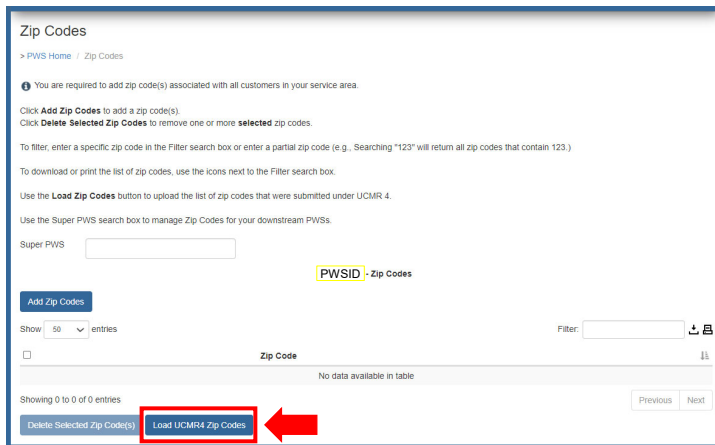
## 4. Add/Edit Zip Codes Served



- Add Zip Codes associated with all customers served by your PWS
- Click "Add Zip Codes" for pop-up window



## 4. Add UCMR 4 Zip Codes Served



## Frequently Asked Question



### **Why do I need to report Zip Codes for all areas being served water by my PWS?**

EPA will continue to collect U.S. Postal Service Zip Code(s) for UCMR 5, as collected under UCMR 3 and UCMR 4, to support potential assessments of whether or not certain communities are disproportionately impacted by particular drinking water contaminants. The specification for this one-time reporting requirement is established in 40 CFR 141.35(c)(1) and (d)(1) for large and small systems, respectively.

## 5. Review/Revise Sampling Schedule

- EPA initially drafts large PWS schedule
- Partnered State had opportunity to review and modify
- Large PWS has opportunity to review and modify schedule until December 31, 2022
  - Systems must NOT modify their schedules to avoid a suspected vulnerable period
- Schedule changes after December 31, 2022, must be submitted to [UCMR\\_Sampling\\_Coordinator@epa.gov](mailto:UCMR_Sampling_Coordinator@epa.gov) and approved by EPA
  - Provide a reason for the change



## 5. Review/Revise Sampling Schedule

Schedule

> PWS Home / Schedule

For surface water (SW), ground water under the direct influence of surface water (GU), and mixed locations (MX), sampling should take place for four consecutive quarters over the course of 12 months (for a total of 4 sampling events). These sampling events should occur three months apart. For ground water (GW) locations, sampling should take place twice over the course of 12 months (for a total of 2 sampling events). These sampling events should occur five to seven months apart.

Click the month/year in blue text for Sample Event 1 (SE1) to edit the schedule for that location.



To sort schedule, use the individual headers by clicking on them (e.g., Facility ID, Facility Name, Sample Point ID etc.) or filter for schedule using the Filter search box. To filter, enter a specific identifier (e.g., sample point ID, Facility ID) in the Filter search box or enter a partial identifier (e.g., Searching "ABC" will return all sample point IDs that contain ABC).

To download or print the schedule, use the icons next to the Filter search box.

Use the Super PWS search box to view and edit schedule and comments for your downstream PWSs.

Super PWS

PWSID | Schedule

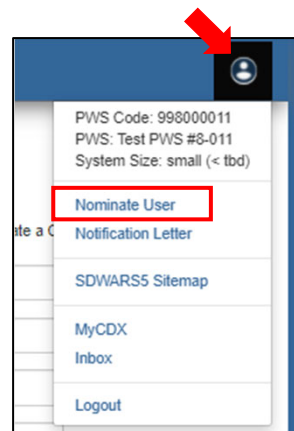
Filter:   

Fac ID	Fac Name	Fac Type	Water Type	SP ID	SP Name	SP Type	SE1	SE2	SE3	SE4
11037	CC 37	CC	MX	MX11037	Consecutive Connection	EP	Aug 2020	Nov 2020	Feb 2021	May 2021
11040	CC 40	CC	SW	SW11049	Consecutive Connection / Surface Water 49	EP	Aug 2020	Nov 2020	Feb 2021	May 2021
99001	TP 901	TP	GU	TP901	Treatment Plant 1	EP	Aug 2020	Nov 2020	Feb 2021	May 2021

Showing 1 to 3 of 3 entries

## 6. Nominate User for Your PWS (optional)

- You may nominate other individuals to serve as representatives for your PWS using the **Nominate User** function by selecting your account/person icon in the upper right-hand corner
- A new letter will be generated, which you must provide to the nominee for use in establishing their own account



PWS Code: 998000011  
PWS: Test PWS #8-011  
System Size: small (< tbd)

**Nominate User**

Notification Letter

SDWARS5 Sitemap

MyCDX

Inbox

Logout

## 6. Nominate User for Your PWS (optional)

**Nominate a PWS User**

UCMR 5 Home > Nominate a PWS User

Use the form below to nominate a CDX (CDXREG) User. You must complete every field marked with an \*. You must click **Nominate** to generate a CDX.

PWS Code\*

First Name\*

Last Name\*

Organization Name\*

Registrant's Work Mailing Address 1\*

Registrant's Work Mailing Address 2

City\*

State\*

Zip Code\*

Phone\*

Email\*

**Terms And Conditions**

By completing this interface, the nominator attests to the following:

- The nomination is for the purpose of reporting UCMR 5 data on behalf of the PWS.
- The nominator is authorized to report UCMR 5 data on behalf of the PWS.
- The nominator is authorized to report UCMR 5 data on behalf of the PWS.
- The nominator is authorized to report UCMR 5 data on behalf of the PWS.
- The nominator is authorized to report UCMR 5 data on behalf of the PWS.
- The nominator is authorized to report UCMR 5 data on behalf of the PWS.
- The nominator is authorized to report UCMR 5 data on behalf of the PWS.
- The nominator is authorized to report UCMR 5 data on behalf of the PWS.

**Privacy Statement**

We use your personal identifying information which you provide to the automated process of registration in the Central Data Exchange (CDX) and for reporting and monitoring UCMR 5 data. Your information will be used to generate reports for the PWS and for the CDX. Your information will be used to generate reports for the PWS and for the CDX. Your information will be used to generate reports for the PWS and for the CDX.

PWS Code\*

First Name\*

Last Name\*

Organization Name\*

Registrant's Work Mailing Address 1\*

Registrant's Work Mailing Address 2

City\*

State\*

Zip Code\*

Phone\*

Email\*



## 6. Nominate User for Your PWS (optional)

**Nominate a PWS User**

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
(TO BE PROVIDED TO NOMINATED CDX USER ONLY)  
SENSITIVE

NOMINEE:  
January 26, 2022

Contact's Name

Department - PWSID

Address

City, State, Zip

Contact's Name

[Nominator's Name] and U.S. Environmental Protection Agency (EPA) are providing you with the opportunity to report Unregulated Contaminant Monitoring Rule (UCMR) information for EPA and further nominate other individuals.

To obtain access to register on Central Data Exchange (CDX), you will need to enter the following unique customer retrieval key at the CDX registration site:

**830d77d4-4187-49dc-80e4-d8d6d4b471ac**



## PWS Home Page and Checklist

**PWS Home**

Use the tabs at the top of the page to access Inventory, Schedule and Zip Codes.

Use the person icon in the upper right corner to Nominate User, view the Notification Letter, view the SDWARS 5 Sitemap, go to MyCDX, go to Inbox or Logout.

Use the Completion Checklist to view your status on completing your reporting requirements. The buttons under Action will allow you to view your Signed Notification Letter, edit Inventory and add Zip Codes.

**Notice!**  
Announcement for the role PWS. SPM GLEC

ICRF#: 202111-2040-003  
OMB#: 2040-0304

PWS ID: 998000018  
PWS Name: Test PWS #8-08  
System Size: large (- tbd)  
Monitoring Requirements: AM

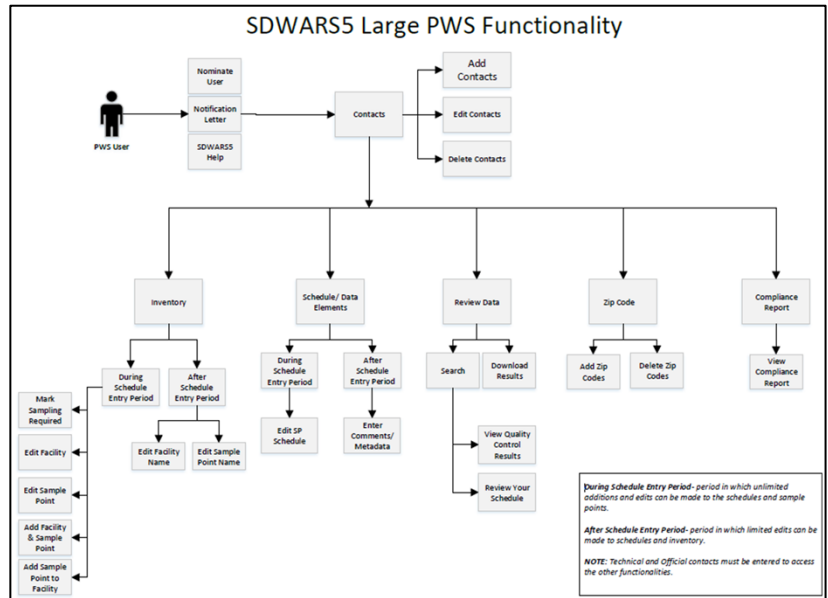
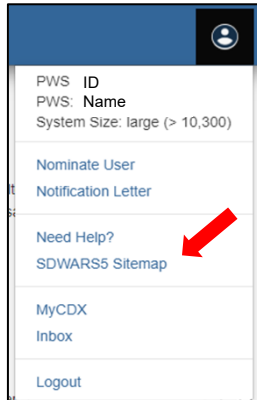
**Completion Checklist**

Dataset	Status	Action
Signed Notification Letter	Is Signed	<a href="#">View</a>
Inventory	Has Data	
Zip Codes	MISSING	<a href="#">Enter</a>

## SDWARS Email Reminders

- CDX/SDWARS users will receive automated emails for their PWS for:
  - **Zip Code completion** (sent on a quarterly basis if incomplete)
  - **Sampling reminders** (sent the month before scheduled sample event date)
  - **Data element completion** (sent the month after sample event if incomplete)
  - **Missing analytical result reminders** (PWS needs to input a valid comment for any missing data)

## SDWARS Sitemap



## Large System Reporting §141.35(c)

- Contact and Zip Code information
  - SDWARS by December 31, 2022
- Sampling location information
  - SDWARS by December 31, 2022
  - Changes after December 31, 2022, must be submitted to [UCMR\\_Sampling\\_Coordinator@epa.gov](mailto:UCMR_Sampling_Coordinator@epa.gov) and approved by EPA
- Data elements
  - PWSs must report all data elements specified in §141.35(e) Table in SDWARS
  - PWSs will be able to add data element responses once monitoring starts
- Analytical results
  - Uploaded to SDWARS by the large PWS's contracted laboratory within 90 days from the sample collection date
  - Reviewed and submitted by the large PWS in SDWARS within 30 days from when the laboratory posts the data

## Reporting Data Elements §141.35(e)

Data Elements Reviewed by Large PWS Before Sampling Begins	Data Elements Reported by Large PWS at Sample Collection
1. Public Water System Identification (PWSID) Code	10. Disinfectant Type
2. Public Water System Name	11. Treatment Information
3. Public Water System Facility Identification Code	26. Historical Information for Contaminant Detections and Treatment
4. Public Water System Facility Name	27. Potential PFAS Sources*
5. Public Water System Facility Type	*EPA is not asking for a formal, in-depth, source water evaluation for Data Element 27. EPA recognizes that the response requires judgement and that some PWSs will have more complete information than others.
6. Water Source Type	
7. Sampling Point Identification Code	
8. Sampling Point Name	
9. Sampling Point Type Code	

- Data elements 12-25 are reported by the laboratory and are not shown in the table above
- If you have questions or need assistance providing the data elements listed above, please contact the UCMR Message Center at [UCMR5@glec.com](mailto:UCMR5@glec.com) or 1-800-949-1581

## Disinfectant Type - Data Element 10

All of the disinfectants/oxidants that have been added prior to and at the entry point to the distribution system.  
Please select all that apply.

**PEMB** = Permanganate

**HPXB** = Hydrogen peroxide

**CLGA** = Gaseous chlorine

**CLOF** = Offsite generated hypochlorite (stored as liquid form)

**CLON** = Onsite generated hypochlorite

**CAGC** = Chloramine (formed with gaseous chlorine)

**CAOF** = Chloramine (formed with offsite hypochlorite)

**CAON** = Chloramine (formed with onsite hypochlorite)

**CLDB** = Chlorine dioxide

**OZON** = Ozone

**ULVL** = Ultraviolet light

**OTHD** = All other types of disinfectant/oxidant

**NODU** = No disinfectant/oxidant used

## Treatment Information - Data Element 11

Treatment information associated with the sample point. **Please select all that apply.**

**CON** = Conventional (non-softening, consisting of at least coagulation/sedimentation basins and filtration)

**SFN** = Softening

**RBF** = River bank filtration

**PSD** = Pre-sedimentation

**INF** = In-line filtration

**DFL** = Direct filtration

**SSF** = Slow sand filtration

**BIO** = Biological filtration (operated with an intention of maintaining biological activity within filter)

**UTR** = Unfiltered treatment for surface water source

**GWD** = Groundwater system with disinfection only

**PAC** = Application of powder activated carbon

**GAC** = Granular activated carbon adsorption (not part of filters in CON, SFN, INF, DFL, or SSF)

**AIR** = Air stripping (packed towers, diffused gas contactors)

**POB** = Pre-oxidation with chlorine (applied before coagulation for CON or SFN plants or before filtration for other filtration plants)

**MFL** = Membrane filtration

**IEX** = Ionic exchange

**DAF** = Dissolved air floatation

**CWL** = Clear well/finished water storage without aeration

**CWA** = Clear well/finished water storage with aeration

**ADS** = Aeration in distribution system (localized treatment)

**OTH** = All other types of treatment

**NTU** = No treatment used

**DKN** = Do not know



Office of Water

Slide 105 of 145

## Historical Information for Contaminant Detections and Treatment - Data Element 26

A yes or no answer provided by the PWS for each entry point to the distribution system

**Question:** Have you tested for the contaminant in your drinking water in the past? (finished water)

**YES** = If yes, did you modify your treatment and if so, what types of treatment did you implement? **Select all that apply.**

**PAC** = Application of powder activated carbon

**GAC** = Granular activated carbon adsorption (not part of filters in CON, SFN, INF, DFL, or SSF)

**IEX** = Ionic exchange

**NRO** = Nanofiltration and reverse osmosis

**OZN** = Ozone

**BAC** = Biologically active carbon

**MFL** = Membrane filtration

**UVL** = Ultraviolet light

**OTH** = Other

**NMT** = Not modified after testing

**NO** = Have never tested for the contaminant

**DK** = Do not know



Office of Water

Slide 106 of 145

## Potential PFAS Sources - Data Element 27

A yes or no answer provided by the PWS for each entry point to the distribution system

**Question:** Are you aware of any potential current and/or historical sources of PFAS that may have impacted the drinking water sources at your water system?

**YES = If yes, select all that apply:**

**MB** = Military base  
**FT** = Firefighting training school  
**AO** = Airport operations  
**CW** = Car wash or industrial laundrers  
**PS** = Public safety activities (e.g., fire and rescue services)  
**WM** = Waste management  
**HW** = Hazardous waste collection, treatment, and disposal  
**UW** = Underground injection well  
**SC** = Solid waste collection, combustors, incinerators  
**MF** = Manufacturing  
**FP** = Food packaging  
**TA** = Textile and apparel (e.g., stain- and water-resistant, fiber/thread, carpet, house furnishings, leather)

**PP** = Paper  
**CC** = Chemical  
**PR** = Plastics and rubber products  
**MM** = Machinery  
**CE** = Computer and electronic products  
**FM** = Fabricated metal products (e.g., nonstick cookware)  
**PC** = Petroleum and coal products  
**FF** = Furniture  
**OG** = Oil and gas production  
**UT** = Utilities (e.g., sewage treatment facilities)  
**CT** = Construction (e.g., wood floor finishing, electrostatic painting)  
**OT** = Other

**NO** = Not aware of any potential current and/or historical sources

**DK** = Do not know



Office of Water

Slide 107 of 145

## Select Responses for UCMR 5 Data Elements (available January 2023)

Fac ID	Fac Name	Fac Type	Water Type	SP ID	SP Name	SP Type	SE1	SE2	SE3	SE4
00002	EP/SW 002	SS	SW	SP00002	Sample Point for EP/SW 002	EP	Nov 2020	Feb 2021	May 2021	Aug 2021

Showing 1 to 1 of 1 entries

SDWARS Version 5, release: 1.0.2 (SS-SPWS-1030)

- Disinfectant Types
- Treatment Information
- Historical Information for PFAS
- Lithium Detections & Treatment
- Potential PFAS Sources

- Select appropriate responses for Disinfectant Type, Treatment Information, Historical Information for PFAS/Lithium Detections and Treatment, and Potential PFAS Sources



Office of Water

Slide 108 of 145

## Select Responses for UCMR 5 Data Elements (available January 2023)

The screenshot displays three panels from the EPA UCMR 5 data entry system:

- Panel 10: Edit Disinfectant Types** - A list of disinfectant/oxidant types with checkboxes. The list includes: CAGC (Chloramine formed with gaseous chlorine), CAOF (Chloramine formed with offsite hypochlorite), CAON (Chloramine formed with onsite hypochlorite), CLDB (Chlorine dioxide), CLGA (Gaseous chlorine), CLOF (Offsite generated hypochlorite stored as a liquid form), CLON (Onsite generated hypochlorite), HPXB (Hydrogen peroxide), OZON (Ozone), PEMB (Permanganate), ULVL (Ultraviolet light), OTHD (All other types of disinfectant/oxidant), and NODU (No disinfectant/oxidant used).
- Panel 11: Edit Treatment Types** - A list of treatment types with checkboxes. The list includes: ADS (Aeration in distribution system), AIR (Air stripping), BIO (Biological filtration), CCN (Conventional non-soffening), CWA (Clear well/finished water storage with aeration), DAF (Dissolved air floatation), DFL (Direct filtration), GAC (Granular activated carbon adsorption), GND (Groundwater system with disinfection only), IEX (Ionic exchange), INF (In-line filtration), MPL (Membrane filtration), PAC (Application of powder activated carbon), POB (Pre-oxidation with chlorine), PSD (Pre-sedimentation), RBF (River bank filtration), SPh (Softening), SSp (Slow sand filtration), UPR (Unfiltered treatment for surface water source), OTH (All other types of treatment), NTU (No treatment used), and DKN (Do not know).
- Panel 26: Edit Historical Information for Lithium and PFAS** - Two sub-panels for historical information. The top one asks "Have you tested for lithium in your drinking water in the past, prior to monitoring for UCMR 5?" and the bottom one asks "Have you tested for PFAS in your drinking water in the past, prior to monitoring for UCMR 5?". Both have dropdown menus and "Save" and "Close" buttons.
- Panel 27: Edit Potential PFAS Sources** - A sub-panel asking "Prior to monitoring for UCMR 5, were you aware of any potential current and/or historical sources of PFAS that may have impacted the drinking water sources at your water system?" with a dropdown menu and "Save" and "Close" buttons.

## Timing of Reporting for Large PWSs

- Following sample collection:
  - Laboratories post data to SDWARS within 90 days of sample collection
    - The large PWS is responsible for ensuring that the laboratory conducting the analysis of their UCMR 5 samples posts the analytical results to SDWARS in this time
  - Large PWSs review and approve the data within 30 days of the laboratory posting data. If the PWS has not acted upon the data after 30 days, the data are considered approved and ready for State and EPA review
    - Review and accept field sample results
    - View QC associated with field sample results



## Review Large PWS Data in SDWARS

**EPA** INVENTORY/SCHEDULE **REVIEW DATA** ZIP CODES CONTACTS

PWS Analytic Search Results

> PWS Home / Review Data / PWS Analytic Search Results

To sort data, use the individual headers by clicking on them (e.g., Facility, Lab, Sample ID, etc) or filter for data using the Filter search box. To filter, enter a specific identifier (e.g., sample point ID, Facility ID) in the Filter search box or enter a partial identifier followed by the wildcard (%). (e.g., Searching "ABC%" will return all sample IDs that contain ABC.)

Use the drop-down menu in the Status column to hold, approve, or return data to the lab.

To download or print the data, use the icons next to the Filter search box.

Click on the **analyte name in blue text** to view Quality Control (QC) data.  
Click on the **sample ID in blue text** to view comments from your laboratory.

Show 50 entries Filter:

Facility	Sample Point	Sampling Event	Lab	Sample ID	Collection Date	Method	Analyte	Result (µg/L)	Status
00001	SP00001	SE2	Test Lab #80011	SAMPLESH2007FS10	9/1/20	200.7	lithium		Return to Lab
00001	SP00001	SE2	Test Lab #80011	SAMPLESH2007FS11	9/1/20	200.7	lithium		Return to Lab

## View Quality Control Data

Quality Control Results

Abbreviations in front of Analyte Names correspond to: IS - Internal Standard, Surr - Surrogate, IDA - Isotope Dilution Analogues.

Show 50 entries Filter:

QC Type	Analysis Date	Analyte Name	Recovery	Units	Acceptance Range (%)
CCCH	5/3/2022	11Cl-PF3OUdS	110	%	69.5-130.5
CCCL	5/3/2022	11Cl-PF3OUdS	105	%	49.5-150.5
CCCM	5/3/2022	11Cl-PF3OUdS	97	%	69.5-130.5
FRB	5/3/2022	11Cl-PF3OUdS	0.0006	µg/L	NA
LFB	5/3/2022	11Cl-PF3OUdS	105	%	49.5-150.5
LRB	5/3/2022	11Cl-PF3OUdS	<0.0017	µg/L	NA

Showing 1 to 6 of 6 entries Previous 1 Next

## EPA Approval of Laboratories to Support UCMR 5

Paul Grimmett, U.S. EPA  
Office of Ground Water and Drinking Water  
Standards and Risk Management Division  
Unregulated Contaminant Monitoring Branch



Office of Water

Slide 113 of 145

## Overview

- Laboratory Approval Program
  - General expectations
  - Maintaining approval
- Laboratory Approval Manual
- List of Approved Laboratories for UCMR 5
  - Establishing laboratory contracts for your large PWS

For additional information, the document "UCMR 5 Laboratory Approval Manual Version 2.0" is available in the docket at:

<https://www.regulations.gov/document/EPA-HQ-OW-2020-0530-0129>



Office of Water

Slide 114 of 145

## General Expectations

- UCMR 5 Laboratory Approval Program registration closed on August 1, 2022
- Laboratories must be approved by EPA to analyze UCMR 5 samples even if already certified or accredited by a State/primacy entity for a particular method being used in UCMR 5
  - Approval is by method and by individual laboratory locations
  - A laboratory could apply for approval for any method(s)
- Laboratories need to meet:
  - UCMR 5 Laboratory Approval Program criteria
  - Required equipment criteria
  - Laboratory performance criteria
  - Data reporting criteria

## Maintaining Approval

- During UCMR monitoring (2023-2025), EPA may revoke a laboratory's UCMR 5 approval status if they do not:
  - Adhere to quality assurance/quality control (QA/QC) procedures in the methods, rule language, and the Laboratory Approval Manual
  - Post occurrence data and required QC data via SDWARS within the prescribed timeframe
  - Respond to inquiries or requests from the Laboratory Approval Coordinator
  - Participate in and pass on-site and/or paper audits
- UCMR 5 approval is only valid through the UCMR 5 monitoring cycle

# Laboratory Approval Manual

- Includes procedures for obtaining UCMR approval and for revocation of approval
- QA/QC requirements
  - MRL verification
  - Initial demonstration of capability (IDC)
  - Initial calibration
  - QC sample types
  - Surrogate and internal standard criteria
  - Field blank criteria (if required by the method)
- Sample handling requirements
- Available at: <https://www.regulations.gov/document/EPA-HQ-OW-2020-0530-0129>

# List of Approved Laboratories for UCMR 5

- As of October 2022, 50 laboratories have attained EPA approval in one or more of the three UCMR 5 methods
  - 30 approved for all three methods
  - 38 approved for EPA 533
  - 42 approved for EPA 537.1
  - 40 approved for EPA 200.7
- The list of approved laboratories and associated methods is posted and will be updated as necessary
  - If EPA revokes approval, or the laboratory requests to discontinue program participation, it will be removed from the list
  - Available at: <https://www.epa.gov/dwucmr/list-laboratories-approved-epa-fifth-unregulated-contaminant-monitoring-rule-ucmr-5>

**Laboratories Approved by EPA to Support UCMR 5**

EPA approved the following laboratories after they met the application requirements and Proficiency Testing (PT) criteria for the Laboratory Approval Program (LAP) supporting the fifth cycle of the Unregulated Contaminant Monitoring Rule (UCMR 5). These laboratories can analyze UCMR 5 samples using those methods marked with an "X" next to their names. This list is subject to change with updates that include additional approved laboratories that complete the LAP requirements prior to the August 1, 2022 deadline as well as the permanent removal of any laboratory that withdraws or subsequently fails to meet the method and program quality assurance/quality control (QA/QC) requirements.

Laboratory Information	Pre- and Polyfunctional Subcategory (PFA)		Lotion	Commercial Services
	EPA 533	EPA 537.1		
<b>Accurate Environmental, LLC</b> 500 South Lowry Dulles, VA 20146 (425) 372-5300	X	X	X	X
<b>Advanced Environmental Laboratories, Inc.</b> 9010 Princess Palm Avenue Tampa, FL 33619 (813) 630-9815			X	X
<b>Advanced Environmental Laboratories, Inc.</b> 6010 Southpark Parkway Jensen Beach, FL 33429 (561) 353-5000	X	X	X	X
<b>Alpha Analytical</b> 1227 Spring Brookway Manchester, NH 03104 (603) 886-8222	X	X	X	X
<b>ALS Environmental - Holland</b> 1402 12th Avenue Holland, MI 49424 (616) 396-0275	X	X	X	X
<b>ALS Environmental - Kansas</b> 1217 South 13th Avenue Kansas, KS 66103 (785) 875-7222	X	X	X	X
<b>American Water Center Laboratory</b> 1110 South Main Street Berwyn, IL 60312 (630) 252-3000	X	X	X	X
<b>ANA-LAB Corporation</b> 2805 Dudley Road Higley, AZ 85115 (520) 344-0251		X		X
<b>Anvek Labs, Inc.</b> 1222 Atlantic Street Monroe, LA 70143 (504) 383-2000	X	X	X	X
<b>Arsenic Department of Health Public Health Lab</b> 201 South Main Street Little Rock, AR 72202 (501) 694-6220			X	X

PHOTOGRAPHY (PH-140)  
810-B-02-008 Page 1 of 5 October 11, 2022

## Establishing Laboratory Contracts

- Large PWSs are responsible for monitoring arrangements, including sample collection, analysis, and payment, unless otherwise directed by their State
  - Ensuring the laboratory conducting your UCMR 5 sample analysis posts the analytical results to SDWARS 5
  - Reviewing, approving, and submitting those results to EPA
- Large PWSs can choose the approved laboratory(ies) that fits their needs
  - This includes using a single laboratory approved to analyze all 30 contaminants or multiple laboratories
  - Approved laboratories are permitted to analyze UCMR 5 samples from any State, Territory, or Tribe
- Laboratories are responsible for communicating with the large PWS to ensure their client has a clear understanding of the UCMR 5-specific requirements for sample collection, preservation, and shipping
  - If a sample does not meet a sampling requirement, laboratories would contact the PWS to set up a resample
  - If resamples continue to fail requirements, the laboratory would contact UCMR Laboratory Approval at [UCMR\\_Lab\\_Approval@epa.gov](mailto:UCMR_Lab_Approval@epa.gov) to discuss potential remedial actions

## Frequently Asked Question



### What is the approximate cost for a laboratory to analyze one UCMR 5 sample set?

Method Type	Average Analysis Cost per UCMR 5 Sample <sup>1</sup>
25 PFAS using EPA Method 533 (Solid Phase Extraction (SPE) Liquid Chromatography-Tandem Mass Spectrometry (LC-MS/MS))	\$376
4 PFAS using EPA Method 537.1 Solid Phase Extraction (SPE) Liquid Chromatography-Tandem Mass Spectrometry (LC-MS/MS))	\$302
1 Metal using EPA Method 200.7 (Inductively Coupled Plasma-Atomic Emission Spectrometry (ICP-AES)) or alternate SM <sup>2</sup> or ASTM <sup>3</sup>	\$62
<b>Total<sup>4</sup></b>	<b>\$740</b>

<sup>1</sup>The average analytical cost was determined by averaging estimates provided by four drinking water laboratories. Data can be found in the "Information Collection Request" at <https://www.regulations.gov/document/EPA-HQ-OW-2020-0530-0141>

<sup>2</sup>Standard Method (SM) 3120 B or SM 3120 B-99

<sup>3</sup>ASTM International (ASTM) D1976-19

<sup>4</sup>If a PFAS sample is positive, the Field Reagent Blank (FRB) must be analyzed, resulting in higher aggregate analytical costs per sample set. PWSs may incur a cost of up to \$1,333, if the FRB for both EPA Method 533 and 537.1 must be analyzed

## Closing Remarks

**Thank you** for attending this UCMR 5 webinar

## If You Have Questions Following This Presentation – References

- **Presentation slides** were sent to all registered participants
  - If you did not receive a copy, please email [UCMRwebinar@cadmusgroup.com](mailto:UCMRwebinar@cadmusgroup.com) and we will send you a copy
- **March 2022 Stakeholder Meeting Slides with Question and Answers**
  - <https://www.epa.gov/dwucmr/unregulated-contaminant-monitoring-rule-ucmr-meetings-and-materials>

### Question and Answers for This Presentation

Questions received during the presentation were similar to the questions received during the March 2022 webinar. Please refer to the March 2022 Stakeholder Meeting Slides (linked above) and note the last bookmarked section – Appendix 2: Supplemental Q&A

## If You Have Questions Following This Presentation – References

- **UCMR Homepage and Fact Sheet**

- <https://www.epa.gov/dwucmr>
- <https://www.epa.gov/system/files/documents/2022-02/ucmr5-factsheet.pdf>
- <https://www.epa.gov/system/files/documents/2022-08/Spanish-UCMR5-FactSheet-ProgramOverview.pdf> (Spanish Version)

- **SDWARS 5 Walkthrough Video for Large PWSs**

- <https://youtu.be/2l4oUSGR4Fc>

- **Safe Drinking Water Information**

- <https://www.epa.gov/ground-water-and-drinking-water/safe-drinking-water-information>



Office of Water

Slide 123 of 145

## If You Have Questions Following This Presentation – Contacts

- **UCMR Message Center**

- For general questions about requirements (e.g., inventory, data elements, schedule) or navigating SDWARS, [UCMR5@glec.com](mailto:UCMR5@glec.com) or 1-800-949-1581

- **CDX Help Desk**

- For CDX/SDWARS 5 registration issues, [helpdesk@epacdx.net](mailto:helpdesk@epacdx.net) or 1-888-890-1995

- **UCMR Sampling Coordinator**

- [UCMR\\_Sampling\\_Coordinator@epa.gov](mailto:UCMR_Sampling_Coordinator@epa.gov)

- **Contacts**

- Brenda Bowden: [bowden.brenda@epa.gov](mailto:bowden.brenda@epa.gov)
- Melissa Simic: [simic.melissa@epa.gov](mailto:simic.melissa@epa.gov)

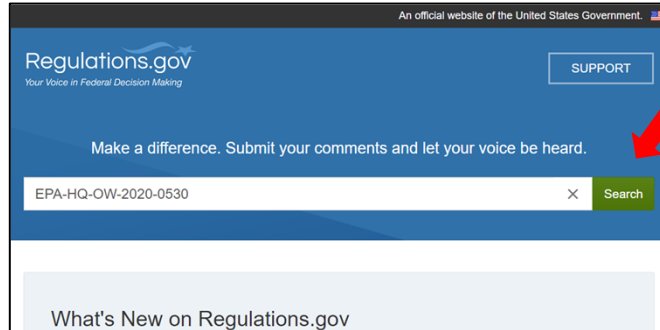


Office of Water

Slide 124 of 145

## Accessing the UCMR 5 Docket

Go to <https://www.regulations.gov> and enter **Docket ID EPA-HQ-OW-2020-0530**

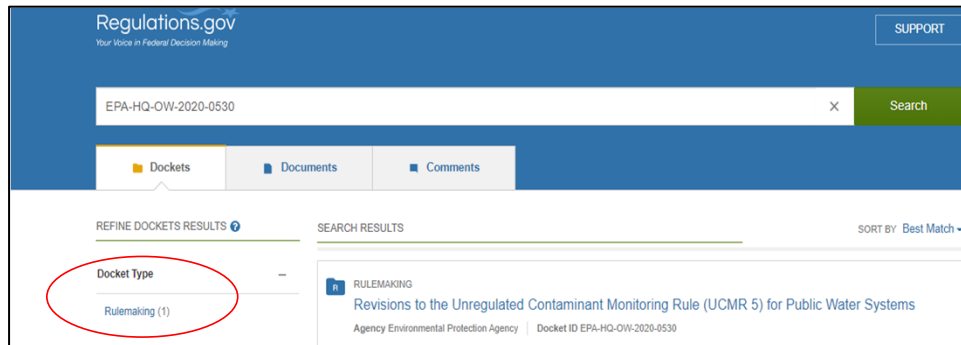


Click **Search**

Direct link to docket: <https://www.regulations.gov/docket/EPA-HQ-OW-2020-0530>

## Accessing the UCMR 5 Docket

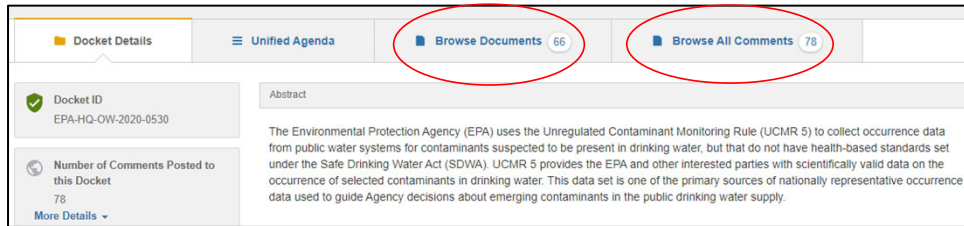
The UCMR 5 docket should pop up on the next screen





## Accessing the UCMR 5 Docket

Browse documents and comments using the tabs



## Questions on the Presentation

- Click on “?” in the upper part of the control panel (Figure 1) to submit questions/comments
  - Type a question in the box; click send (Figure 2)
- Submit general clarifying questions throughout the webinar
  - Questions will be answered in the question box throughout the presentation
  - Common questions will be answered after the break and at the end

Figure 1

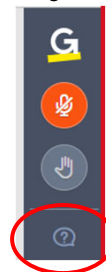
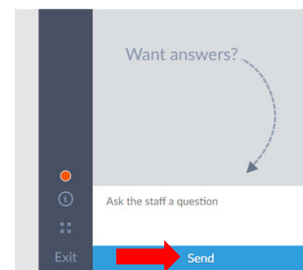


Figure 2



## Questions and Answers Received in Question Box



## Appendix 1: UCMR 5 Small PWS Sampling Kit Instructions and Tips to Reduce Cross-Contamination

## Sampling Instructions and Video

- **Please Note:** These instructions are specific to the UCMR 5 sampling kit for small PWSs and are **not Agency-wide PFAS sampling guidance**
- EPA is recording a YouTube training video that walks through sample collection



**DRAFT**



Freeze ice packs for at least 72 hours prior to sampling. Do not sample until ice packs are frozen solid.  
**Samples arriving at the lab too warm is the #1 reason for having to re-sample!**



Only sample on Monday, Tuesday or Wednesday.



Check the entry point to the distribution system sample location. Ensure that any supplies or tools needed to open and flush the tap are available.



Samples must be shipped the same day they are collected **unless they are refrigerated overnight.**  
 Arrange with FedEx to pick up your samples or plan to drop them off at a staffed FedEx Express location.

BEFORE SAMPLING



**Don't rinse out or overfill the bottles**

There are preservatives in the bottles that need to be dissolved into the sample (that's why they need to be shaken). Overfilling can dilute the preservative concentration in the bottle.



**Don't contaminate the bottles, lids, or samples**

Refer to the kit lid for additional precautions to minimize the possibility of contaminating your samples.

Do not touch the inside of the cap or bottle.

Do not touch the bottle to the faucet.

Do not place the lids in a pocket.


Set bottle lids face up on a clean surface while sampling.







**Date all sample bottles using the supplied pen**

The lab needs to know when the samples were collected so they are analyzed before they expire.

SAMPLING RULES



Put on supplied gloves (they are non-latex)

1. At the sampling location, remove bottles from bag **A**
2. Pour Reagent Water into Field Reagent Blank bottle, cap, and shake for 15 seconds.
3. Write date on bottles and place back in bag **A**


Repeat steps 1-3 with bottles in bag **B**

Dispose of gloves

Why am I doing this? The full bottle contains ultra-pure water and after transfer is referred to as a Field Reagent Blank. It will be used as a control during analysis to protect against false positives.

BAG A


BAG B






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Slide 133 of 145



1. If present, remove aerator, hose, tubing and/or Teflon tape from faucet.
2. Open and flush the valve for 2-5 minutes to obtain a sample representative of the water entering the distribution system. If previously calculated, a shorter period of flushing may be sufficient.
3. Reduce stream to pencil thickness.

PREPARE TO COLLECT SAMPLES








Put on a new pair of gloves

1. One at a time: uncap, fill to the shoulder, and recap bottles from bag **C**
2. Shake each bottle for 15 seconds
3. Write date on bottles and place back in bag **C**

Repeat steps 1-3 with bottles in bag **D**

Refrigerate all bottles if unable to pack and ship immediately




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Slide 134 of 145

Retrieve the four ice packs from your freezer and put them back in the kit. The two big ones go on the sides, and the two smaller ones go on top of the samples.



PACK & SHIP






Sign and date the blue form and seal it in the ziplock bag.

Place the ziplock bag on top of the foam box lid.


Seal the box shut with supplied tape strips.



Find the FedEx label and stick it over the old label.

Wait for FedEx Express to arrive if you scheduled a pickup, or drop off at a staffed FedEx location.

This is a prepaid FedEx Priority Overnight label; you will incur no shipping expenses.



United States Environmental Protection Agency

Office of Water

Slide 135 of 145

**Why must I collect these samples?**

This sampling is required by EPA for public water systems. It is not voluntary. If you are interested in learning more about the program, search for "UCMR5" online and visit EPA's UCMR homepage.

**What is being monitored for in the water samples?**

Your drinking water is being tested for PFAS compounds and lithium.

**I forgot/can't sample during my scheduled week. What should I do?**

Call Great Lakes Environmental Center at (231) 525-0521 or email UCMR@GLEC.com

**It's hot out. What should I do?**

Chill the samples in a refrigerator for a couple hours before putting them in the shipping container. Make sure the sample location on the bottles matches the sample location on the box and paperwork when you're packing the kits for shipment.

**How do I view my results?**


To view your analytical results, inventory and schedule, log into the Safe Drinking Water Accession and Review System (SDWARS) using the Central Data Exchange (cdx.epa.gov). If you do not have an account or are having trouble logging in, contact the CDX Help Desk at helpdesk@epacdx.net or call (888) 890-1995 from 8 AM to 6 PM (EST), Monday through Friday.

**If you have questions...**

Call Great Lakes Environmental Center at (231) 525-0521 or email UCMR@GLEC.com

FREQUENTLY ASKED QUESTIONS





United States Environmental Protection Agency

Office of Water

Slide 136 of 145

Page 68 of 75

## Tips for Reducing Cross-Contamination

**DRAFT**

### Do not risk contaminating your samples with PFAS!

PFAS are found in thousands of products we use every day and contamination could be accidentally introduced into your samples during sampling. Follow the precautions listed below to minimize the possibility of contaminating your samples.

#### Do Not

- Apply personal care products, sunscreen, or insect repellent prior to sample collection.
- Use anti-fog sprays or wipes prior to sample collection.
- Handle or use water, oil or stain resistant materials prior to sample collection (i.e., water-repellant face masks, food packaging and wrappers, Gore-Tex or Tyvek clothing, plastic clip boards).
- Use permanent markers (i.e., Sharpies) to label sample bottles.
- Touch the inside of the cap or bottle.
- Touch the bottle to the faucet.
- Place the lids in a pocket (set bottle lids face up on a clean surface while sampling).

- Please review prior to sample collection

#### Do

- Adhere to the steps contained in the Sampling Instructions.
- Watch the UCMR 5 training video.
- If possible, wash your hands before handling sample bottles.
- Use only the materials provided in the UCMR 5 sampling kit.

Have questions about anything UCMR related? Contact Great Lakes Environmental Center. We're here to help! Email [UCMR@GLEC.com](mailto:UCMR@GLEC.com) anytime, or phone (231) 525-0521 M-F, 9-5

## Appendix 2: Abbreviations and Acronyms

## Abbreviations and Acronyms

- **µg** – Microgram
- **11Cl-PF3OUdS** – 11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid
- **4:2 FTS** – 1H, 1H, 2H, 2H-Perfluorohexane Sulfonic Acid
- **6:2 FTS** – 1H, 1H, 2H, 2H-Perfluorooctane Sulfonic Acid
- **8:2 FTS** – 1H, 1H, 2H, 2H-Perfluorodecane Sulfonic Acid
- **9Cl-PF3ONS** – 9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid
- **ADONA** – 4,8-Dioxa-3H-Perfluorononanoic Acid
- **ATSDR** – Agency for Toxic Substances and Disease Registry
- **AWIA** – America’s Water Infrastructure Act of 2018
- **CASRN** – Chemical Abstracts Service Registry Number
- **CCL** – Contaminant Candidate List

## Abbreviations and Acronyms

- **CDX** – Central Data Exchange
- **CFR** – Code of Federal Regulations
- **CWS** – Community Water System
- **EPA** – Environmental Protection Agency
- **EP/EPTDS** – Entry Point to the Distribution System
- **FR** – Federal Register
- **FRB** – Field Reagent Blank
- **GenX** – Trade Name for a Technology Used to Make High-Performance Fluoropolymers Without the Use of PFOA
- **GWRMP** – Ground Water Representative Monitoring Plan
- **Health Canada** – Health Canada Guidelines for Canadian Drinking Water Quality

## Abbreviations and Acronyms

- **HFPO-DA** – Hexafluoropropylene Oxide Dimer Acid
- **ICP-AES** – Inductively Coupled Plasma-Atomic Emission Spectrometry
- **IDC** – Initial Demonstration of Capability
- **IRIS** – Integrated Risk Information System
- **kg** – Kilogram
- **L** – Liter
- **LC/MS/MS** – Liquid Chromatography/Tandem Mass Spectrometry
- **MAC** – Maximum Acceptable Concentration
- **MCLG** – Maximum Contaminant Level Goal
- **mg** – Milligram
- **MRL** – Minimum Reporting Level

## Abbreviations and Acronyms

- **NCOD** – National Contaminant Occurrence Database
- **NDAA** – National Defense Authorization Act
- **NEtFOSAA** – N-Ethyl Perfluorooctanesulfonamidoacetic Acid
- **NFDHA** – Nonafluoro-3,6-Dioxaheptanoic Acid
- **NMeFOSAA** – N-Methyl Perfluorooctanesulfonamidoacetic Acid
- **NPDWR** – National Primary Drinking Water Regulation
- **NTNCWS** – Non-Transient Non-Community Water System
- **OGWDW** – Office of Ground Water and Drinking Water
- **OW** – Office of Water
- **PFAS** – Per- and Polyfluoroalkyl Substance
- **PFBA** – Perfluorobutanoic Acid



## Abbreviations and Acronyms

- **PFBS** – Perfluorobutanesulfonic Acid
- **PFDA** – Perfluorodecanoic Acid
- **PFDoA** – Perfluorododecanoic Acid
- **PFEESA** – Perfluoro (2-Ethoxyethane) Sulfonic Acid
- **PFHpA** – Perfluoroheptanoic Acid
- **PFHpS** – Perfluoroheptanesulfonic Acid
- **PFHxA** – Perfluorohexanoic Acid
- **PFHxS** – Perfluorohexanesulfonic Acid
- **PFMBA** – Perfluoro-4-Methoxybutanoic Acid
- **PFMPA** – Perfluoro-3-Methoxypropanoic Acid
- **PFNA** – Perfluorononanoic Acid

## Abbreviations and Acronyms

- **PFOA** – Perfluorooctanoic Acid
- **PFOS** – Perfluorooctanesulfonic Acid
- **PFPeA** – Perfluoropentanoic Acid
- **PFPeS** – Perfluoropentanesulfonic Acid
- **PFTA** – Perfluorotetradecanoic Acid
- **PFTrDA** – Perfluorotridecanoic Acid
- **PFUnA** – Perfluoroundecanoic Acid
- **PPRTV** – Provisional Peer-Reviewed Toxicity Value
- **PWS** – Public Water System
- **PWSID** – Public Water System Identification Code
- **QA** – Quality Assurance

## Abbreviations and Acronyms

- **QC** – Quality Control
- **RfD** – Reference Dose
- **SDWA** – Safe Drinking Water Act
- **SDWARS** – Safe Drinking Water Accession and Review System
- **SDWIS/Fed** – Federal Safe Drinking Water Information System
- **SE** – Sample Event
- **SP** – Sample Point
- **SPE** – Solid Phase Extraction
- **TNCWS** – Transient Non-Community Water System
- **UCM** – Unregulated Contaminant Monitoring
- **UCMR** – Unregulated Contaminant Monitoring Rule



## The Fifth Unregulated Contaminant Monitoring Rule (UCMR 5): Small and Large Public Water Systems Implementation Public Meetings by Webinar on October 26 & 27, 2022

### Biographies

**Brenda Bowden** has worked as an environmental scientist with the U.S. EPA's Office of Water, Office of Groundwater and Drinking Water, Standards and Risk Management Division, Unregulated Contaminant Monitoring Branch in Cincinnati, Ohio, for more than 15 years. She began her research on the first Unregulated Contaminant Monitoring Rule (UCMR 1) as an Oak Ridge Institute for Science and Education (ORISE) research fellow and has held various roles throughout every round of UCMR monitoring. She is currently the UCMR rule manager. Brenda holds a B.S. in Environmental Science and Toxicology from Ashland University and a M.En. in Environmental Science concentrated on Hazardous Waste and Toxicology from Miami University.

**Kelsey Dailey** is a physical scientist with the U.S. EPA's Office of Water, Office of Groundwater and Drinking Water, Standards and Risk Management Division, Unregulated Contaminant Monitoring Branch in Cincinnati, Ohio, working on UCMR 5 with a focus on small system implementation and assisting with rule development and outreach. She has participated in UCMR program activities since January 2021 when she first arrived at EPA as an Oak Ridge Institute for Science and Education (ORISE) research fellow. Kelsey holds a B.S. in Geological Sciences from The Ohio State University and an M.S. in Environmental Studies specializing in Hydrologic Sciences from the University of Colorado Boulder.

**Paul Grimmert** is a chemist with the U.S. EPA's Office of Water, Office of Ground Water and Drinking Water's Standards and Risk Management Division (SRMD), working in programs such as the Drinking Water Laboratory Certification Program and the Unregulated Contaminant Monitoring Rule (UCMR). Prior to joining SRMD in 2015, Paul served as a research chemist at EPA's Office of Research and Development for the previous nine years. His expertise is the research, development, and application of analytical chemistry methods for use in the environmental field. Prior to his time at EPA, Paul was a contract chemistry supervisor for an on-site EPA contractor. He received his Bachelors and Masters of Science degrees from Marshall University.

**Elizabeth Hedrick** is a chemist with the U.S. EPA's Office of Water, Office of Groundwater and Drinking Water, Standards and Risk Management Division, Unregulated Contaminant Monitoring Branch (UCMB) in Cincinnati, Ohio. The UCMB develops and implements the Unregulated Contaminant Monitoring Rule. Before joining the UCMB, she was a research chemist for 15 years in EPA's Office of Research and Development where she authored journal articles, analytical methods, and methods manuals for the analysis of contaminants in a variety of matrices. She later joined EPA's Office of Water, working in water security where she developed laboratory and field guidance for drinking water utilities to respond to contamination incidents. She has been in the UCMB for four years. Elizabeth has a BS in chemistry and an MS in environmental science.

**Derek Losh** has been an environmental engineer with the U.S. EPA's Office of Ground Water and Drinking Water since 2004. For several years he worked in Washington, DC, providing analysis to support regulatory decisions on drinking water contaminants. In 2007 he moved to U.S. EPA's Cincinnati office to provide nation-wide assistance to small drinking water utilities to optimize existing treatment processes. Now Derek works on the Unregulated Contaminants Monitoring Team, which is a program to monitor unregulated contaminants in public drinking water systems across the country. He holds an M.S. in environmental engineering from the University of Texas at Austin (2001) and became a licensed professional engineer in 2003.

**Melissa Simic** has been a physical scientist for the U.S. EPA for 12 years. She is the Branch Supervisor for the Unregulated Contaminant Monitoring Branch in the Office of Ground Water and Drinking Water. She manages the development and implementation of UCMR, a national drinking water occurrence study for contaminants of emerging concern. Melissa has a B.S. in Cell and Molecular Biology from Oklahoma State University and a M.S. in Environmental Epidemiology, Exposure & Risk from Harvard University.

**Jillian Toothman** is a chemist with the U.S. EPA's Office of Water, Office of Ground Water and Drinking Water, Standards and Risk Management Division, Unregulated Contaminant Monitoring Branch in Cincinnati, Ohio, and is the current database manager for UCMR. Since 2008, she has served in various technical capacities for the UCMR program including contract laboratory oversight, laboratory data submission support and laboratory audits. In her role as the UCMR database manager, she manages the overall design, development, implementation, maintenance and user support for the Safe Drinking Water Accession and Review System (SDWARS) which is the data portal for all UCMR results.