

The Fifth Unregulated Contaminant Monitoring Rule (UCMR 5)

Program Overview Fact Sheet

What is the Unregulated Contaminant Monitoring Rule (UCMR)?

As part of its responsibilities under the Safe Drinking Water Act (SDWA), the U.S. Environmental Protection Agency (EPA) implements Section 1445(a)(2), Monitoring Program for Unregulated Contaminants. SDWA requires that once every five years, EPA issue a list of priority unregulated contaminants to be monitored by certain public water systems across States, Tribes, and Territories. These contaminants may be present in drinking water but are not yet subject to EPA drinking water standards. Under the Unregulated Contaminant Monitoring Rule (UCMR), EPA collects nationally representative drinking water occurrence data to support EPA's future regulatory determinations and, as appropriate, assist in the development of national primary drinking water regulations (NPDWRs). For each UCMR cycle, EPA establishes a new list of contaminants for monitoring, specifies which systems are required to monitor, identifies the sampling locations, and defines the analytical methods to be used. On December 17, 2021, EPA Administrator Michael Regan signed the final "Revisions to the Unregulated Contaminant Monitoring Rule (UCMR 5) for Public Water Systems" and the rule was subsequently published in the *Federal Register* on December 27, 2021 (86 FR 73131). The 5-year UCMR 5 cycle spans 2022 – 2026, with preparations in 2022, sample collection from 2023 – 2025, and completion of data reporting in 2026.

Which water systems will participate in UCMR 5?

Section 2021 of America's Water Infrastructure Act of 2018 (AWIA) (Public Law 115-270) amended SDWA and specifies that, subject to the availability of EPA appropriations for such purpose and sufficient laboratory capacity, EPA must require all public water systems serving between 3,300 and 10,000 people to monitor and ensure that a nationally representative sample of systems serving fewer than 3,300 people monitor for the contaminants in UCMR 5 and future UCMR cycles. Systems serving a population of more than 10,000 people (large systems) continue to be responsible for participating in the UCMR program.

EPA anticipates approximately one-third of all systems will collect samples each year between 2023 and 2025. If EPA does not receive the appropriations needed in a given year, EPA will reduce the number of small systems that will be asked to perform monitoring.

Size Category (Number of People Served)	Monitoring Design (CWSs and NTNCWSs) ²	Total # of Systems per Size Category
Small Systems¹ (fewer than 3,300)	Nationally representative sample	800
Small Systems¹ (3,300-10,000)	All systems, if confirmed by EPA	5,147 ³
Large Systems (10,001 and over)	All systems	4,364 ³
Total		10,311

1. This requirement is based on the availability of appropriations and sufficient laboratory capacity

2. Community Water Systems (CWSs), Non-Transient Non-Community Water Systems (NTNCWSs)

3. Counts are approximate

What contaminants are in UCMR 5?

UCMR 5 specifies monitoring for 29 per- and polyfluoroalkyl substances (PFAS) and lithium listed in the table below.

Contaminant	CASRN ¹	MRL ² (µg/L)	Additional Information
25 PFAS: EPA Method 533			
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	763051-92-9	0.005	PFAS are a group of synthetic chemicals used in a wide range of consumer products and industrial applications including: non-stick cookware, water-repellent clothing, stain-resistant fabrics and carpets, cosmetics, firefighting foams, electroplating, and products that resist grease, water, and oil. PFAS are found in the blood of people and animals and in water, air, fish, and soil at locations across the United States and the world.
1 <i>H</i> ,1 <i>H</i> , 2 <i>H</i> , 2 <i>H</i> -perfluorodecane sulfonic acid (8:2FTS)	39108-34-4	0.005	
1 <i>H</i> ,1 <i>H</i> , 2 <i>H</i> , 2 <i>H</i> -perfluorohexane sulfonic acid (4:2FTS)	757124-72-4	0.003	
1 <i>H</i> ,1 <i>H</i> , 2 <i>H</i> , 2 <i>H</i> -perfluorooctane sulfonic acid (6:2FTS)	27619-97-2	0.005	
4,8-dioxa-3 <i>H</i> -perfluorononanoic acid (ADONA)	919005-14-4	0.003	
9-chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	756426-58-1	0.002	
hexafluoropropylene oxide dimer acid (HFPO-DA)(GenX)	13252-13-6	0.005	
nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	151772-58-6	0.02	
perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	113507-82-7	0.003	
perfluoro-3-methoxypropanoic acid (PFMPA)	377-73-1	0.004	
perfluoro-4-methoxybutanoic acid (PFMBA)	863090-89-5	0.003	
perfluorobutanesulfonic acid (PFBS)	375-73-5	0.003	
perfluorobutanoic acid (PFBA)	375-22-4	0.005	
perfluorodecanoic acid (PFDA)	335-76-2	0.003	
perfluorododecanoic acid (PFDoA)	307-55-1	0.003	
perfluoroheptanesulfonic acid (PFHpS)	375-92-8	0.003	
perfluoroheptanoic acid (PFHpA)	375-85-9	0.003	
perfluorohexanesulfonic acid (PFHxS)	355-46-4	0.003	
perfluorohexanoic acid (PFHxA)	307-24-4	0.003	
perfluorononanoic acid (PFNA)	375-95-1	0.004	
perfluorooctanesulfonic acid (PFOS)	1763-23-1	0.004	
perfluorooctanoic acid (PFOA)	335-67-1	0.004	
perfluoropentanesulfonic acid (PFPeS)	2706-91-4	0.004	
perfluoropentanoic acid (PFPeA)	2706-90-3	0.003	
perfluoroundecanoic acid (PFUnA)	2058-94-8	0.002	
4 PFAS: EPA Method 537.1			
<i>N</i> -ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2991-50-6	0.005	See above for PFAS information.
<i>N</i> -methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2355-31-9	0.006	
perfluorotetradecanoic acid (PFTA)	376-06-7	0.008	
perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.007	
Metal/Pharmaceutical: EPA Method 200.7; SM³ 3120 B (2017); SM³ 3120 B-99 (1999); ASTM⁴ D1976-20			
lithium	7439-93-2	9	Naturally occurring metal that may concentrate in brine waters; lithium salts are used as pharmaceuticals, used in electrochemical cells, batteries, and in organic syntheses.

1. CASRN – Chemical Abstracts Service Registry Number

2. MRL – Minimum Reporting Level

3. SM – Standard Methods

4. ASTM – ASTM International

Where will samples be collected?

UCMR 5 samples will be collected at entry points to the distribution system (EPTDS) for all contaminants.

- With prior approval, large ground water systems that have multiple EPTDSs can sample at representative sampling locations rather than at each EPTDS through a Ground Water Representative Monitoring Plan (GWRMP).
- Systems that purchase water with multiple connections from the same wholesaler may select one representative connection from that wholesaler. The representative EPTDS must be a location within the purchaser's water system. This EPTDS sampling location must be representative of the highest annual volume.

What is the sampling frequency and timing?

Water systems will be required to collect samples based on the typical UCMR sampling frequency and timeframe.

Water Source	Timeframe	Sampling 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.

What does UCMR 5 participation involve? Who pays?

All systems required to participate in UCMR 5 will *collect* samples. As with previous UCMRs, *large* systems make arrangements with approved laboratories and pay for their own sample shipping and analytical costs; EPA arranges for the analysis of *small*-system samples and pays for shipping and analytical costs. All laboratories conducting analyses for UCMR 5 must receive EPA approval to perform those analyses ([UCMR Laboratory Approval Program](#)).

How did EPA select the UCMR 5 contaminants?

The National Defense Authorization Act for Fiscal Year 2020 (NDAA) specifies that EPA shall include all PFAS in UCMR 5, for which a drinking water method has been validated by the Administrator and that are not subject to an NPDWR. Accordingly, UCMR 5 includes all 29 PFAS that are within the scope of EPA Methods 533 and 537.1, as well as lithium. In evaluating contaminants for UCMR 5, EPA considered the fourth Contaminant Candidate List (CCL 4) as well as contaminants nominated by the public for potential inclusion on the fifth CCL (CCL 5) and other priority contaminants.

EPA selected UCMR contaminants using a multi-step prioritization process. The first step identified contaminants that were not monitored under previous UCMR cycles; may have significant occurrence nationally; and have a completed, validated drinking water method. The next step focused on contaminants associated with one or more of the following considerations: an available health assessment to facilitate regulatory determinations; high public concern; critical health endpoints (for example, a likely or suggestive carcinogen); active use (for example, pesticides); and/or an occurrence data gap. Then EPA considered stakeholder input; looked at cost-effectiveness of analytical methods (single methods that address multiple contaminants of interest); considered implementation factors (such as laboratory capacity); and further considered available health data (e.g., children), occurrence data, and persistence/mobility data.

What are the public health benefits of the UCMR program?

The UCMR program provides EPA and other interested parties with nationally representative occurrence data on emerging contaminants in drinking water. The data can be used to support EPA's regulatory determinations and may support additional actions to protect public health.

The public benefits from the information about whether or not unregulated contaminants are present in their drinking water. If contaminants are not found, consumer confidence in their drinking water should improve. If contaminants are found, related health effects may be avoided when subsequent actions, such as regulations, are implemented, reducing or eliminating those contaminants.

Where can consumers find UCMR results?

All systems are required to report their data to EPA. The analytical results from UCMR are stored in the [National Contaminant Occurrence Database \(NCOD\)](#) for drinking water. For a summary of the UCMR results, tips for querying NCOD, and health effects information (including reference concentrations), please refer to the [UCMR Occurrence Data webpage](#).

The [Public Notification Rule](#) requires that all systems notify their customers of the availability of UCMR results no later than 12-months after results are known. Community Water Systems (CWSs) are also required to report UCMR results in their annual [Consumer Confidence Report](#) (CCR) when unregulated contaminants are detected (the CCR Rule does not apply to non-community water systems). CWSs may include their public notice within CCRs, also known as annual drinking water quality reports, which are to be delivered to all billing customers by July 1 of each year. CWSs must report the average of the year's monitoring results and the range of detections. To obtain a copy of their CCR, consumers may check their water bill for information or contact their water supplier. Additional information about the CCR including details on reporting requirements can be found on the [CCR Homepage](#).

What are the key deadlines and requirements?

Due Date	Requirement	Report via SDWARS ¹
Following Rule Publication on December 27, 2021		
August 1, 2022	Laboratories seeking approval must complete and submit the necessary registration form and application materials in order to participate in the laboratory approval process. Contact UCMR_Lab_Approval@epa.gov for more information.	
December 31, 2022	Large systems must register for EPA’s web-based reporting system “SDWARS”, accept their notification letter, and update sampling location(s) and zip code(s). If applicable, the system may update their monitoring schedule. After December 31, 2022, large systems must contact UCMR_Sampling_Coordinator@epa.gov to request any changes.	X
December 31, 2022	Small systems must register for SDWARS, accept their notification letter and update sampling location(s), shipping address, and zip code(s). Systems must provide an explanation and obtain approval for any requested monitoring schedule change. Contact the UCMR Message Center at UCMR5@glec.com for more information.	X
6 months prior to the water system’s scheduled sample collection	Large ground water systems (or large surface water systems with ground water sources) that wish to monitor from representative EPTDSs may submit a ground water representative monitoring plan (GWRMP) approved under a prior UCMR cycle or a proposal for a new representative sampling plan. Systems 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. Contact UCMR_Sampling_Coordinator@epa.gov for more information.	
Following Sample Collection		
Within 90 days of sample collection	Laboratories post data to SDWARS.	X
Within 30 days of laboratory posting data	Large water systems review and approve the data. If the system has not acted upon the data after 30 days, the data are considered approved and ready for state and EPA review.	X

1. [Safe Drinking Water Accession and Review System \(SDWARS\)](#).

What are the data elements EPA will collect?

EPA will collect the following information in EPA's web-based data reporting system, SDWARS.

Public Water System Identification (PWSID) Code	Disinfectant Type	Analysis Date
Public Water System Name	Treatment Information	Sample Analysis Type
Public Water System Facility Identification Code	Sample Collection Date	Analytical Result–Sign
Public Water System Facility Name	Sample Identification Code	Analytical Result–Measured Value
Public Water System Facility Type	Contaminant	Additional Value
Water Source Type	Analytical Method Code	Laboratory Identification Code
Sampling Point Identification Code	Extraction Batch Identification Code	Sample Event Code
Sampling Point Name	Extraction Date	Historical Information for Contaminant Detections and Treatment
Sampling Point Type Code	Analysis Batch Identification Code	Potential PFAS Sources

Where can I find more information?

- [Safe Drinking Water Information Website](#) for information on how to submit drinking water comments or questions to EPA Office of Ground Water and Drinking Water
- [UCMR Website](#) for information on current and past UCMRs, occurrence data, and public meetings
- [EPA Ground Water and Drinking Water Website](#) for information on source water protection, drinking water regulations, monitoring requirements for States and systems, SDWA on Tribal lands, and laboratory certification
- [EPA PFAS Website](#) for information on the Agency's actions to address PFAS

Questions?

- Contact the UCMR Message Center at UCMR5@glec.com for general information about monitoring requirements or navigating SDWARS
- Contact UCMR_Sampling_Coordinator@epa.gov for changes to large water system inventory and/or schedule after December 31, 2022
- Contact UCMR_Lab_Approval@epa.gov for information on the laboratory approval program and general laboratory support