NRDC

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FACT SHEET

FEDERAL DRINKING WATER MONITORING OVERLOOKS MANY PFAS:

COMMUNITY-LED WATER TESTING FINDS DANGEROUS LEVELS OF PFAS THAT THE EPA DOES NOT TEST FOR

Under the Safe Drinking Water Act, certain public water systems around the United States are required to test their drinking water every five years for a new list of unregulated contaminants. The results go on to inform future regulations and cleanup efforts and provide communities with crucial information about the safety of their water.[1] For the upcoming round of testing (to be done between 2023 and 2025), the U.S. Environmental Protection Agency (EPA) selected 29 PFAS chemicals—a small fraction of the thousands of chemicals in the PFAS class—to understand how pervasive PFAS contamination is across the country.[2] Driven by concerns about limitations in EPA test methods, NRDC partnered with impacted communities to conduct more expansive testing of 70 PFAS chemicals in drinking water. We found a significant amount of PFAS present in drinking water that is being missed by EPA's test methods.[3]

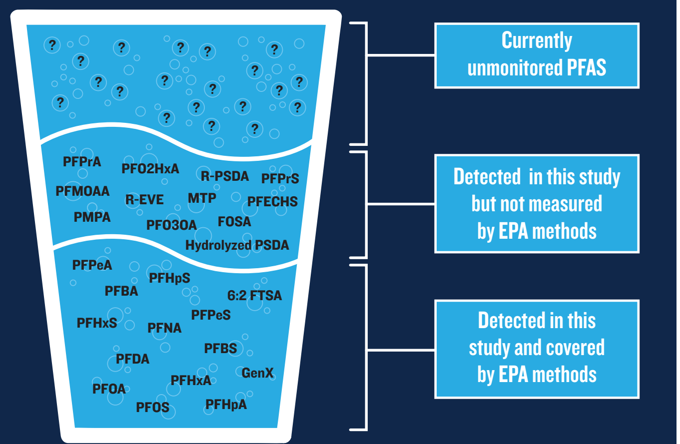
Communities deserve to know if and to what extent their drinking water is contaminated with harmful PFAS. Our analysis shows that national testing is predicted to significantly underreport the presence of PFAS, potentially misleading communities about the safety of their drinking water.

EPA MONITORS FOR ONLY A FRACTION OF PFAS

PFAS (per- and polyfluoroalkyl substances) are a large group, or class, of fluorinated chemicals that are widely used in consumer products and industrial processes. Often referred to as "forever chemicals," PFAS are extremely resistant to breakdown and can accumulate in humans and animals. They can also spread quickly in the environment and can be harmful to people and many other species at extremely low doses. Health effects associated with PFAS exposure include cancer, liver disease, decreased fertility, hormone disruption, developmental harm, and effects on the immune system—including decreased response to vaccines. PFAS are now considered a global public health and environmental threat.[4]

Although there are thousands of chemicals in the PFAS class, the EPA-approved methods can test for only 29 individual PFAS.[5] Sensitive testing methods to quantify a greater number of individual PFAS and to estimate total PFAS are critical for understanding the full extent of PFAS contamination. However, the EPA is not requiring

PFAS in Drinking Water



In this study we found 26 unique PFAS, 12 of which are not covered by EPA methods.
The PFAS class contains thousands of chemicals, most of which are not monitored for.

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or providing this testing, leaving communities and the government largely unaware of the full extent and distribution of PFAS in drinking water.

EXPANDED MONITORING DETECTS MULTIPLE PFAS MISSED BY EPA METHODS

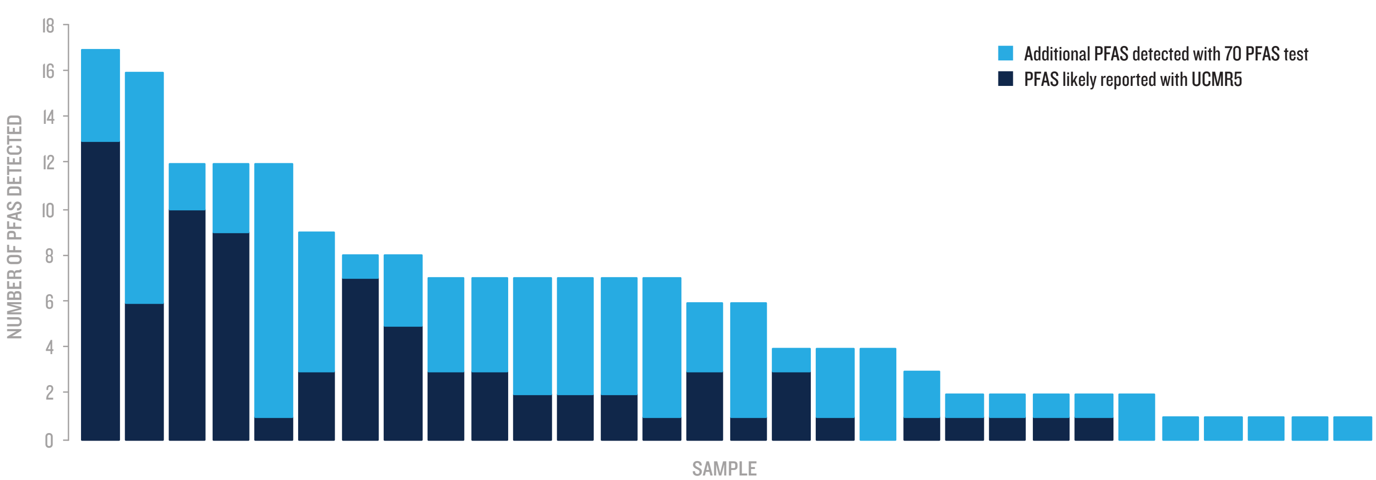
In March 2021, Eurofins Environment Testing announced the commercial availability of a test to measure 70 PFAS, including the 29 covered by EPA's current methods.[6] NRDC and community partners worked with Eurofins to test 44 drinking water samples from public water systems and private wells across 16 states: Alaska, Alabama, Arizona, California, Colorado, Florida, Louisiana, Massachusetts, Maine, Michigan, Minnesota, North Carolina, New Hampshire, Oregon, South Carolina, and Texas. We then modeled how the data from the samples we collected would be reported under the more limited and less sensitive UCMR5 testing and reporting requirements and compared our findings with the predicted EPA results.

PFAS were detected in **30 out of 44** drinking water samples (nearly 70 percent). We found 26 unique PFAS across the samples, including **12** that EPA does not test for (figure 1). The 5 most frequently detected PFAS were PFPrA, PFOS, PFOA, PFHxA, and PFPeA. PFPrA, an ultrashort chain PFAS (a very small version of PFOA) not covered by EPA methods, was the most common PFAS present and was often found at the highest concentration; little is known about its health impacts. The widespread detection of PFPrA in this study was particularly surprising and concerning to participating community members, many of whom had never heard of PFPrA despite their years of PFAS advocacy.

The science suggests that there are no safe levels of PFAS in drinking water; however, the sum of PFAS concentrations in the samples with detected PFAS ranged from 2.3 parts per trillion (ppt) to as high as 7,135 ppt (figure 2). **Fifteen** samples would exceed the EPA's newly proposed drinking water regulations for six PFAS.[7] Overall, **16** samples in our study had concentrations of at least one PFAS below the UCMR5 required reporting limits, meaning that the presence of these PFAS would go unreported.[8] Ultimately, **all 30** of the samples with PFAS in this study had one or more PFAS present that would not be captured under UCMR5's reporting requirements, due to lack of coverage and/or reporting limits higher than the levels detected.

Figure 1 : EPA'S NATIONAL TESTING LIKELY TO UNDERREPORT THE NUMBER OF PFAS

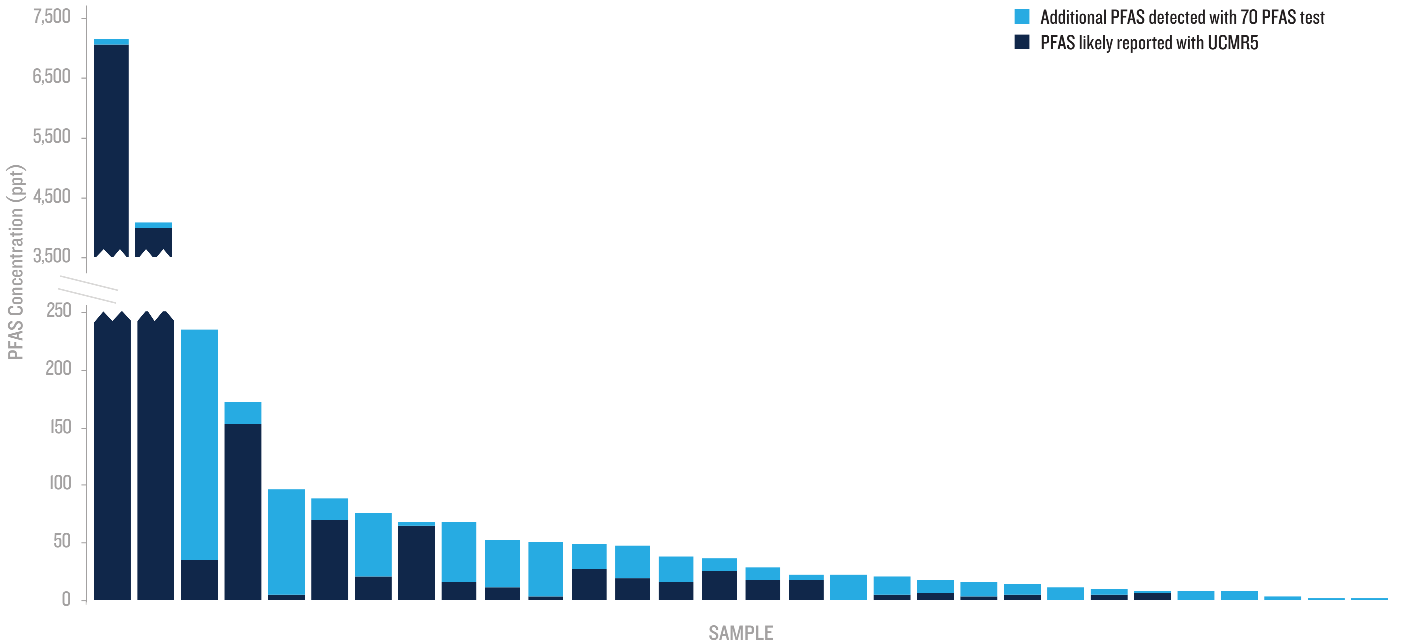
The upcoming UCMR5 includes the measurement of 29 PFAS. The Eurofins 70 PFAS test includes more individual chemicals and can detect levels lower than the reporting limits required for UCMR5.



Adapted from Katherine E. Pelch, Taryn McKnight, and Anna Reade, "70 Analyte PFAS Test Method Highlights Need for Expanded Testing of PFAS in Drinking Water," Science of the Total Environment, April 12, 2023, https://doi.org/10.1016/j.scitotenv.2023.162978.

Figure 2: EPA'S NATIONAL TESTING LIKELY TO UNDERREPORT THE CONCENTRATION OF PFAS

The upcoming UCMR5 includes the measurement of 29 PFAS. The Eurofins 70 PFAS test includes more individual chemicals and can detect levels lower than the reporting limits required for UCMR5.



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Threats to communities with high levels of currently unmonitored PFAS or with PFAS levels below UCMR5 reporting limits could be missed by current testing. For example, communities in North Carolina face high levels of newer PFAS, many of which are not included in EPA's PFAS testing methods. EPA's continued focus on a small number of PFAS will result in entire regions and communities lacking the resources and tools needed to understand and address the PFAS contamination they are facing.

URGENT COMPREHENSIVE ACTIONS ARE NEEDED TO ADDRESS THE PFAS CRISIS

Although UCMR5 will provide a valuable overview of the state of PFAS contamination nationally, it is important to keep in mind the EPA's testing limitations—and the limitations of regulators' current approach to tackling the PFAS crises more broadly. The results of NRDC's drinking water study underscore the need for a comprehensive approach to managing PFAS, including developing methods to expand testing for individual PFAS and to measure the total amount of PFAS in drinking water.

Importantly, actions can be taken immediately to reduce PFAS exposures. There are scalable and effective treatment techniques available to reduce PFAS in drinking water.[9] Additional research is needed to ensure that these technologies adequately address short- and ultrashort-chain PFAS, which are increasingly detected in drinking water.[10] Special attention is needed to protect vulnerable populations, including communities that have known or historical contamination, pregnant and nursing mothers, infants, and children.

Furthermore, scientists and regulators cannot keep pace with the production of new chemicals, that have been largely assumed to be safe until proved otherwise.[11] The magnitude of this problem demands a more efficient and effective approach, which is why prominent scientists from around the world are urging a class-based approach for managing PFAS, including a phaseout of all nonessential uses of the entire class.[12]

While some states and communities are taking individual action, it's clear that the federal government must:

- Pass federal legislation and adopt strong regulations to better prevent, monitor, track, and address PFAS contamination as a class.
- Use a science-based, broad definition for PFAS that aligns with international, health, and scientific communities.
- Ban all nonessential uses of PFAS chemicals as quickly as possible.
- Hold polluters accountable for contamination and responsible for treating contaminated drinking water.

ENDNOTES

1 Environmental Protection Agency (hereinafter EPA), "Learn About the Unregulated Contaminant Monitoring Rule," Overviews and Factsheets, September 1, 2015, https://www.epa.gov/dwucmr/learn-about-unregulated-contaminant-monitoring-rule.

2 US EPA. "Fifth Unregulated Contaminant Monitoring Rule," January 11, 2021, https://www.epa.gov/dwucmr/fifth-unregulated-contaminant-monitoring-rule.

3 Katherine E. Pelch, Taryn McKnight, and Anna Reade, "70 Analyte PFAS Test Method Highlights Need for Expanded Testing of PFAS in Drinking Water," *Science of the Total Environment*, April 12, 2023, https://doi.org/10.1016/j.scitotenv.2023.162978.

4 Carol F. Kwiatkowski et al., "Scientific Basis for Managing PFAS as a Chemical Class," *Environmental Science & Technology Letters* 7, no. 8 (August 11, 2020): 532–43, https://doi.org/10.1021/acs.estlett.0c00255; EPA, "Our Current Understanding of the Human Health and Environmental Risks of PFAS," October 14, 2021, https://www.epa.gov/pfas/our-current-understanding-human-health-and-environmental-risks-pfas.

5 Jody A. Shoemaker and Daniel R. Tettenhorst, *Method 537.1: Determination of Selected Per- and Polyfluorinated Alkyl Substances in Drinking Water by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS)*, EPA Office of Research and Development, November 2018, https://cfpub.epa.gov/si/si_public_record_Report.cfm?dirEntryId=343042&Lab=NERL; Laura Rosenbloom and Steven C. Wendelken, *Method 533: Determination of Per- and Polyfluoroalkyl Substances in Drinking Water by Isotope Dilution Anion Exchange Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry*, EPA, December 18, 2019, https://www.epa.gov/dwanalyticalmethods/method-533-determination-and-polyfluoroalkyl-substances-drinking-water-isotope.

6 Eurofins Environment Testing is a global leader in food, environment, pharmaceutical, and cosmetic product testing and in discovery pharmacology, forensics, advanced material sciences, and agroscience contract research services. For more on Eurofins' PFAS testing, see Eurofins, "Eurofins Environment Testing/TestAmerica, last updated June 29, 2022, https://www.eurofinsus.com/environment-testing/locations/eurofins-environment-testing-testamerica/.

7 EPA, *Pre-Publication Federal Register Notice for PFAS NPDWR*, March 14, 2023, https://www.epa.gov/system/files/documents/2023-03/Pre-Publication%20Federal%20Register%20Notice_PFAS%20NPDWR_NPRM_Final_3.13.23.pdf.

8 Pelch et. al., "70 Analyte PFAS Test Method Highlights Need for Expanded Testing of PFAS in Drinking Water."

9 Anna Reade, Tracy Quinn, and Judith Schreiber, "*Michigan PFAS 2019: Scientific and Policy Assessment for Addressing Per- and Polyfluoroalkyl Substances (PFAS) in Drinking Water*," NRDC, March 15, 2019, https://www.nrdc.org/sites/default/files/assessment-for-addressing-pfas-chemicals-in-michigan-drinking-water.pdf.

10 Steven J. Chow et al., "Detection of Ultrashort-Chain and Other per- and Polyfluoroalkyl Substances (PFAS) in U.S. Bottled Water," *Water Research* 201 (August 1, 2021): 117292, https://doi.org/10.1016/j.watres.2021.117292.

11 Linn Persson et al., "Outside the Safe Operating Space of the Planetary Boundary for Novel Entities," *Environmental Science & Technology* 56, no. 3 (February 1, 2022): 1510–21, https://doi.org/10.1021/acs.est.1c04158.

12 Kwiatkowski et al., "Scientific Basis for Managing PFAS as a Chemical Class"; Simona A. Bălan et al., "Optimizing Chemicals Management in the United States and Canada Through the Essential-Use Approach," *Environmental Science & Technology* 57, no. 4 (January 19, 2023): 1568–75, https://doi.org/10.1021/acs.est.2c05932.