

Monitoring PFAS in Community Water Systems

DRINKING WATER PROTECTION SECTION

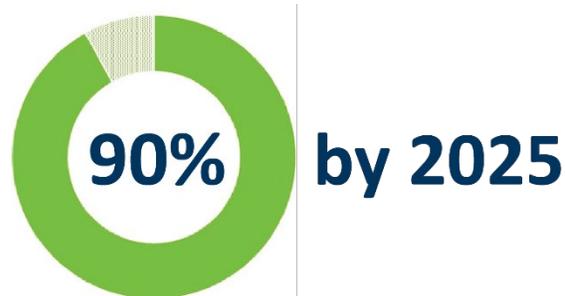
Background

The Minnesota Department of Health (MDH) is responsible for ensuring safe drinking water for all Minnesotans. As the primacy agency for the federal Safe Drinking Water Act (SDWA), MDH protects drinking water through regular testing of community water systems (CWSs or “systems”) for contaminants. CWSs serve at least 25 people or 15 service connections (i.e. 15 buildings served) year-round. CWSs include municipalities (cities) as well as some manufactured home parks, college campuses, prisons, and long-term care facilities.

MDH has been assessing the potential health impacts of perfluoroalkyl substances (PFAS) in groundwater in Minnesota since 2002. MDH and the Minnesota Pollution Control Agency (MPCA) have a long history of working with people in the East Metro to protect them from the health effects of PFAS in their groundwater. MDH began sampling community public water systems for PFAS in 2006. Much of this sampling has taken place in the East Metro and in areas where aqueous film-forming foam (AFFF) was used, such as airports and military bases.

Our PFAS monitoring goal

MDH has a long-term goal of sampling all CWSs in Minnesota for PFAS. Under this goal, MDH aims to cover 90% of CWS customers under its PFAS monitoring program by 2025. Through the PFAS monitoring program, MDH will evaluate whether Minnesotans are exposed to PFAS at levels above health-based guidance values in drinking water.



Due to high public interest in PFAS, MDH will be transparent with the public about PFAS monitoring. MDH will develop a web-based dashboard for the public to access information about PFAS monitoring in CWSs. The dashboard will include information about: which CWSs have been sampled for PFAS; sample collection dates; and whether results are at, above, or below available health-based guidance values.

Our approach to PFAS monitoring



MDH has taken a strategic approach to PFAS monitoring in drinking water. This approach focuses on: addressing potential public health risks near sites known to have nearby sources or disposal of PFAS; understanding how PFAS moves through the environment; and characterizing drinking water vulnerability to PFAS. MDH uses past monitoring results and current scientific evidence to inform this monitoring approach. This approach allows MDH to use its resources efficiently and target areas with public health risk.

MDH has conducted PFAS monitoring through several activities, as described below.

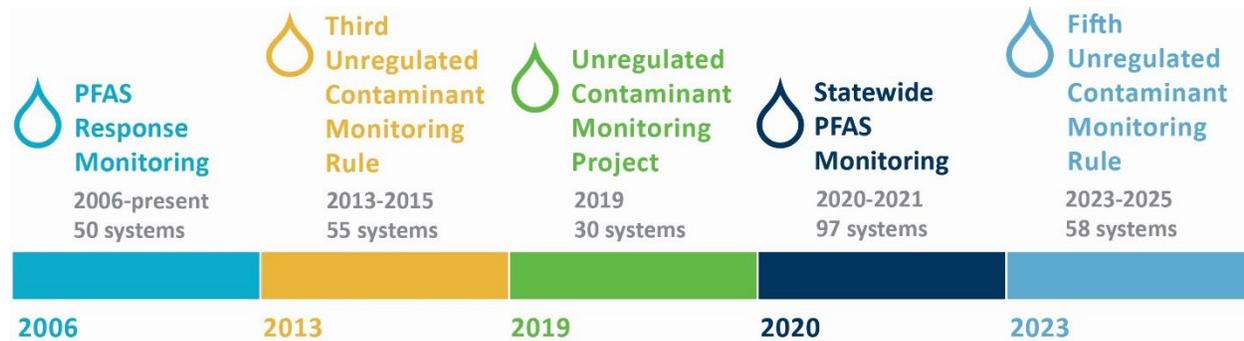


Figure 1. Timeline of PFAS monitoring activities

Figure shows number of CWSs newly sampled for PFAS compounds in each activity. In addition, some systems were resampled in subsequent monitoring activities.

Monitoring activities for PFAS in drinking water

PFAS Response Monitoring (2006-present)

MDH has been monitoring systems with PFAS detections since 2006. MDH has conducted ongoing sampling at 13 CWSs in the East Metro and near AFFF sites. Sampling at these CWSs takes place on a quarterly to biennial basis, depending on detections and levels of PFAS. MDH normally collects samples at the entry point (the point where water enters the distribution system; usually the treatment plant but sometimes a well). MDH sometimes also collects

samples after each treatment filter to monitor filter performance. Overall, approximately 250 samples are collected each year at these 13 CWSs through ongoing sampling.

Additionally, MDH has sampled 37 other CWSs for PFAS which are not in the East Metro or near AFFF sites. These CWSs are sampled for PFAS in conjunction with their routine monitoring schedules.

Third Unregulated Contaminant Monitoring Rule (UCMR 3) (2013-2015)

Every five years, the U.S. Environmental Protection Agency (EPA) implements the Unregulated Contaminant Monitoring Rule (UCMR). The purpose of UCMR is to collect data from across the country on contaminants that may be present in drinking water. EPA uses this data to decide if the contaminants occur at frequencies and concentrations high enough to be regulated in the future.

The third round of UCMR, UCMR 3, required monitoring for 21 contaminants, including six PFAS compounds, between 2013 and 2015.

UCMR 3 included all CWSs serving more than 10,000 people and some systems serving 10,000 or fewer people. In Minnesota, 84 CWSs were sampled; 55 of these were sampled for PFAS for the first time. MDH detected PFAS compounds at five CWSs: Oakdale, Bemidji, Hastings, Woodbury, and Cottage Grove. Following the detections, MDH worked with these CWSs to conduct additional monitoring and discuss options for treatment.

Perfluorobutanoate (PFBA) was not included in UCMR 3 sampling. PFBA is the most commonly detected PFAS compound. The number of systems with PFAS detections in UCMR 3 may have been higher if PFBA had been one of the included contaminants.

Unregulated Contaminant Monitoring Project (UCMP) (2019)

In this project, MDH tested for unregulated contaminants in drinking water sources across the state. The contaminants in this project were selected based on detection in previous monitoring studies and public health interest. The project was funded by the Environment and Natural Resources Trust Fund (ENRTF) and received additional funding from the Clean Water Fund.

MDH collected PFAS samples from 46 CWSs that were either using surface water as a drinking water source or were potentially impacted by wastewater. Samples were analyzed for 30 PFAS compounds. Through this project, we collected samples from 30 systems that had not been previously monitored for PFAS.

Statewide PFAS Monitoring (2020-2021)

Funding from the U.S. Environmental Protection Agency (EPA) and Clean Water Fund will allow MDH to conduct PFAS sampling in 2020-2021.

MDH will collect samples from CWSs with nearby sources of PFAS, nearby PFAS detections in groundwater, and high geologic vulnerability. MDH will resample approximately 30 CWSs near

AFFF sites. MDH has previously collected PFAS samples at many of these CWSs, but improved analytical methods will allow MDH to detect lower levels of PFAS than was previously possible. CWS Approximately 125 CWSs will be sampled, 97 of which have not been previously sampled for PFAS.

MDH’s sampling approach for this project will be to collect samples that represent what customers drink from the tap as closely as possible. MDH will collect samples from the system entry point(s) instead of individual wells. MDH will conduct follow-up monitoring based elevated detections of PFAS in the previous year and in MPCA source inventory investigations.

Fifth Unregulated Contaminant Monitoring Rule (UCMR 5) (2023-2025)

The fifth round of UCMR, UCMR 5, is expected to include PFAS compounds. EPA analytical method 533 will be used, which includes 29 PFAS compounds, including PFBA. Additionally, current analysis methods have lower reporting limits than were possible in earlier monitoring activities.

UCMR 5 will include all CWSs serving more than 10,000 people. Systems serving populations between 3,300-10,000 will also participate if there is sufficient funding and lab capacity. Depending on funding and capacity, approximately 180 CWSs will be included in UCMR 5. Of these 180 CWSs, 58 will be sampled for PFAS for the first time.

Table 1. About monitoring activities for PFAS in drinking water.

Activity	Years	Number of CWSs newly sampled for PFAS ^a	Number of PFAS compounds included	CWSs sampled
PFAS Response Monitoring	2006-Present	50	7	CWSs with known nearby sources or disposal of PFAS
UCMR 3	2013-2015	55	6	All CWSs serving more than 10,000 people Some CWSs serving 10,000 or fewer
UCMP	2019	30	30	CWSs using surface water CWSs potentially impacted by wastewater discharge
Statewide PFAS Monitoring	2020-2021	97 ^b	29	Targeted selection of CWSs statewide
UCMR 5	2023-2025	58 ^b	29	All CWSs serving more than 10,000 people All CWSs serving 3,300-10,000 if there is sufficient capacity and appropriations
Total CWSs sampled for PFAS	2006-2025	290	Varied	

^aNumber of systems that were not sampled for PFAS under previous sampling activities; ^bSubject to change

Summary of PFAS monitoring scope

By 2025, MDH will have sampled at least 290 of the 964 total CWSs in Minnesota. This includes the CWSs with the largest populations served, including Minneapolis, St. Paul, Rochester, Duluth, and Bloomington. Approximately 4 million people, or over 90% of the population served by CWSs, will be covered under MDH’s PFAS monitoring program by 2025.

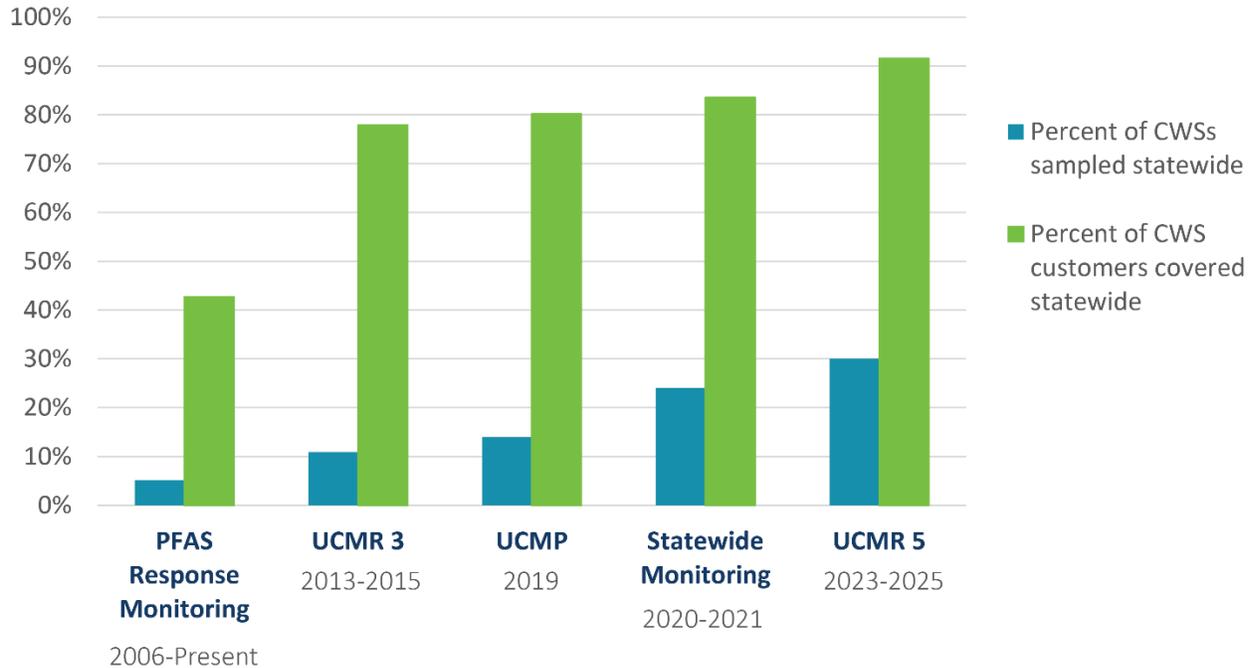


Figure 2. CWSs and customers covered under PFAS monitoring projects

Percentages reflect cumulative systems and customers over time

After 2025, approximately 674 CWSs will remain for PFAS sampling. These CWSs provide drinking water to less than 10% of the population served by CWSs. When we evaluate these CWSs under MDH’s strategic approach to PFAS monitoring, we expect that they have a lower risk of PFAS contamination. These CWSs are less vulnerable to PFAS contamination based on their geology, nearby land use, and nearby industrial activities.

MDH is pursuing additional resources to accelerate progress on PFAS monitoring and to reach all CWSs and 100% of their population served before 2025.

Minnesota Department of Health
 PO Box 64975
 St. Paul, MN 55164-0975
 651-201-4700

PFAS MONITORING IN CWSs

health.drinkingwater@state.mn.us

www.health.state.mn.us

11/24/2020

To obtain this information in a different format, call: 651-201-4700.