



PFAS: Complying with the EPA's Final Drinking Water Rule

April 2024



Black & Veatch designed the nation's largest PFAS-specific GAC facility at the Sweeney WTP in Wilmington, NC for the Cape Fear Public Utility Authority.

PFAS MCLs

On April 10, 2024, the U.S. Environmental Protection Agency (EPA) announced the final National Primary Drinking Water Regulation (NPDWR) that includes the following maximum contaminant levels (MCLs) and MCL goals (MCLGs) for six PFAS compounds:

PFAS	MCL	MCLG
PFOA	4 ppt (ng/L)	0 ppt
PFOS	4 ppt	0 ppt
PFHxS	10 ppt	10 ppt
GenX	10 ppt	10 ppt
PFNA	10 ppt	10 ppt
PFHxS	Hazard Index (HI) = 1 $HI = \frac{[PFHxS]}{10 \text{ ppt}} + \frac{[GenX]}{10 \text{ ppt}} + \frac{[PFNA]}{10 \text{ ppt}} + \frac{[PFBS]}{2,000 \text{ ppt}}$	
GenX		
PFNA		
PFBS		

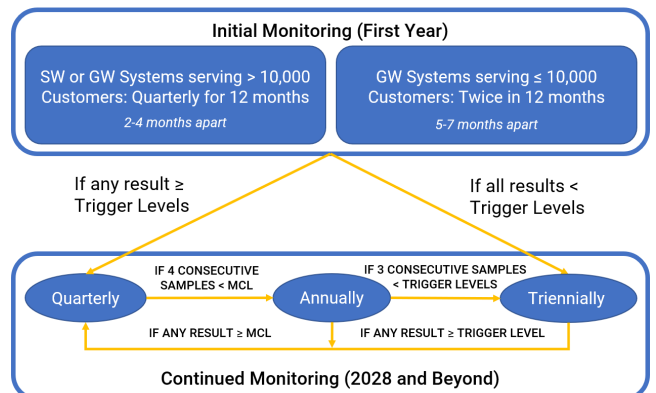
The MCLs reduce exposure to PFOA and PFOS to the lowest levels that are feasible for implementation.

The HI is calculated as a summation of the individual concentrations divided by the health based water concentrations, or the levels below which adverse health effects are unlikely to occur. The EPA utilized the HI approach due to additive health risk from co-occurrence of these compounds. The HI is only applicable when two or more of these compounds are simultaneously detected.

Compliance Monitoring

EPA method 533 or 537.1 are required for monitoring the six regulated PFAS compounds. Laboratories must be certified to perform these analyses.

PWSs are required to sample distribution system entry points for the regulated PFAS. The following sampling frequency requirements are outlined in the final rule, where the trigger levels are defined as 1/2 the MCLs:



PFAS results will be determined by running annual averages (RAAs) at the sampling point. Monitoring must begin in the first quarter of 2027. Previously collected data can satisfy initial monitoring requirements upon approval from the local primacy agency.





Why Black & Veatch?

Research

State-of-the-art capabilities to identify best media and membrane options for clients

Experience

Includes all available treatment technologies.

Innovation

Turnkey solutions including modular units that enable rapid treatment of PFAS and accelerate a long-term solution

Cost Control

BV's one-of-a-kind cost model tool, built for AWWA, helps clients calculate the cost of compliance with confidence

Questions?

BV's dedicated process experts are ready to help - see contact information below

Reporting, Public Notifications, and Schedule

RAAs must be summarized in consumer confidence reports (CCRs). Violations of monitoring and testing procedures will require tier 3 public notifications and will begin in 2027. MCL violations will begin in 2029 and require a tier 2 public notification.

The final rule extended the MCL compliance timeline to 5 years. Monitoring and testing will be required within 3 years of the final rule.

Treatment

Best Available Technologies include granular activated carbon (GAC), anion exchange resin (AIX), and high-pressure membranes (reverse osmosis (RO)/nanofiltration (NF)). Novel adsorbents, such as FluoroSorb, and powdered activated carbon (PAC) also achieve PFAS treatment. The most effective treatment solution varies based on water quality, layout considerations, treatment goals, solids disposal constraints, and life cycle costs and must be evaluated on a case by case basis. Site-specific bench- and pilot-scale tests can be conducted to quantify life cycle costs to select the optimal solution for your facility. The costs and time frame associated with bench-scale testing is advantageous, though novel modeling techniques are available that can reduce piloting durations with a high degree of accuracy.

Black & Veatch - Your PFAS Solution Partner

Black & Veatch helps organizations across the country and around the world address their PFAS challenges, providing end-to-end consulting, engineering, and construction services to meet each community's unique needs.

From applied research to executed projects, Black & Veatch is at the forefront of innovative and effective PFAS treatment solutions, trusted by key trade and research organizations such as the American Water Works Association, the Water Environment Federation, and the Society of American Military Engineers to mitigate PFAS impacts in the environment, critical infrastructure, and communities.



Black & Veatch has capabilities to perform rapid small scale column tests (RSSCTs), or bench-scale tests for adsorptive media used for PFAS treatment, in-house in our research facility in Kansas City, MO. We are also currently supporting pilot projects nationwide and can reduce pilot expenditures and timeline with novel modeling techniques.

Learn more bv.com

John Powell

PFAS and Emerging Contaminants Practice Lead
+1 913 458 3895 PowellJD@bv.com

Adam Feffer

Sr. Water Process Engineer, Drinking Water PFAS Lead
+1 919 463 3044 FefferAS@bv.com

Amanda Canida

Sr. Drinking Water Process Engineer
+1 317 288 3843 CanidaA@bv.com

Ajay Kasarabada

Director, Environmental Solutions
+1 913 458 9837 KasarabadaAN@bv.com

Sean Lammerts

Solutions Director
+1 315 427-3476 LammertsSJ@bv.com

