Maintaining a Numeric Minimum Disinfectant Residual in the Distribution System: American Water Works Association Publishes Framework for Strategy Selection and Evaluation



Walter Wright, Jr.
wwright@mwlaw.com
(501) 688.8839

11/21/2025

The American Water Works Association ("AWWA") published a document titled:

Maintaining a Numeric Minimum Disinfectant Residual in the Distribution System - A Framework for Strategy Selection and Evaluation ("Framework").

The Framework is stated to have been prepared by ARCADIS with support from Corona Environmental Consulting, LLC.

AWWA describes the organization as an international, scientific, and educational 501(c)(3) nonprofit organization dedicated to a better world through better water.

The Framework is stated to provide a:

… structured approach for water systems to determine both immediate and long-term strategies for achieving and maintaining a numeric minimum secondary disinfection residual throughout the distribution system.

Referenced is consideration of a range of possible numeric thresholds recommended by various organizations and state-established or proposed levels but is nevertheless designed to be applicable regardless of the specific numeric target selected.

The Framework is stated to:

- Recognize that each distribution system is unique and multiple factors may contribute to low or absent secondary disinfectant residuals.
- Does not prescribe a single solution.
- Guides users through the steps, considerations and decision points for evaluating and selecting the most appropriate combination of strategies for their particular circumstances.
- Highlights key questions to consider when identifying and assessing potential approaches.
- May be used internally by water systems or help water systems define a clear scope of work when engaging external support.

- Facilitate effective communication and collaboration with external partners if systems lack the technical expertise or capacity to fully apply the Framework.
- Is not intended to be comprehensive; rather, it is designed to complement and build upon existing guidance documents (including the AWWA Partnership for Safe Water (PSW) Distribution System Optimization Program).

Components of the Framework include:

- Purpose of the Framework
- Assumptions/Limitations of the Framework
- How to Use the Framework
- Strategies for Achieving and Maintaining a Numeric minimum Residual
- Costs and Staffing Needs
- Unintended Consequences
- Special System Considerations
- Strategy Evaluation
- Desktop Evaluation
- Modeling
- Bench Testing
- Pilot Testing
- Demonstration (or Field) Testing
- Case Studies

A copy of the Framework can be found here.