

Executive Summary
Disinfection Requirements Rule
25 Pa. Code, Chapter 109

Purpose of Proposed Rulemaking:

The purpose of the proposed rulemaking is to amend the Department of Environmental Protection's (DEP or Department) Safe Drinking Water regulations to: (1) incorporate necessary federal requirements needed to obtain or maintain primary enforcement authority (primacy) for the Long Term 2 Enhanced Surface Water Treatment Rule (LT2), the Stage 2 Disinfectants/Disinfection Byproducts Rule (Stage 2 DDBP), and the Lead and Copper Rule Short-Term Revisions (LCRSTR), (2) provide for the increased protection of public health at public water systems (PWS), and (3) promote healthy and sustainable communities.

Summary of Amendments:

Obtain primacy: The Pennsylvania Safe Drinking Water Act (SDWA) obligates the Department to maintain primacy for the Safe Drinking Water program. The U. S. Environmental Protection Agency (EPA) promulgated the Federal Stage 2 DBPR on January 4, 2006, the Federal LT2 on January 5, 2006, and the Federal LCRSTR on October 10, 2007. Pennsylvania adopted state regulations implementing the Federal rules on December 26, 2009 (Stage 2 and LT2) and December 18, 2010 (LCRSTR). Minor clarifications are needed in order to obtain or maintain primacy for these rules.

Protect public health: The amendments will protect public health through a multi-barrier approach designed to guard against microbial contamination by ensuring the adequacy of treatment designed to inactivate microbial pathogens and ensuring the integrity of drinking water distribution systems.

There are several provisions in this proposal that are more stringent than federal requirements. The Department developed these provisions to better protect public health and to be consistent with existing Pennsylvania drinking water regulations.

- Section 109.202(c)(1)(ii)(B) clarifies the minimum residual disinfectant level at the entry *point* by adding a zero to the minimum level (0.20 mg/L). This ensures that water suppliers maintain a residual that is equal to or greater than 0.20 mg/L. Currently, levels of 0.15 or higher round up to 0.2 and are in compliance. A level of 0.20 mg/L is necessary due to the importance of meeting CTs and maintaining an adequate disinfectant residual in the water entering the distribution system. Also, this level of sensitivity is consistent with existing requirements for the Groundwater Rule (0.40 mg/L) as specified in § 109.1302(a)(2). Under 40 CFR 141.72(b)(2), the federal rule requires a minimum level of 0.2 mg/L.
- Sections 109.202(c)(4) & (5); 109.301(1)(i)(D), (2)(i)(E) & (13); and 109.710(a) & (b) require compliance with the minimum disinfectant residual level of 0.2 mg/L in the distribution system and strengthens monitoring and reporting requirements to protect public health and ensure equitable water quality for all consumers. Additional justification for these

provisions may be found in Question 10. Under 40 CFR 141.72(b)(3), the federal rule requires a “detectable” residual. EPA did not define “detectable,” leaving the decision to the states.

- Existing regulations at § 109.202(c)(1)(ii)(A) require filter plants to maintain 90% (1-log) inactivation of Giardia cysts and 99.9% (3-log) inactivation of viruses using disinfection. When these levels are not achieved, consumers may be exposed to pathogenic Giardia cysts and viruses. The only way to determine compliance with this requirement is to perform log inactivation calculations, which is not required by current regulation. Sections 109.301(1)(v) & (vi) and 109.701(a)(2)(i)(C) & (D) were added to require monitoring and reporting of CT calculations to the Department.¹
- Section 109.710(c) requires one-hour notification to the Department for certain violations related to the disinfectant residual requirements. One-hour reporting is an existing requirement under § 109.701(a)(3), and ensures that the Department and the public are alerted to potential problems as soon as possible so that appropriate investigative and corrective actions can be taken. The federal rule generally requires self-reporting of violations to the state within 24 – 48 hours.
- Section 109.715 was added to require a water system that uses chloramines as a disinfection process to develop and implement a nitrification control plan. This plan is in lieu of requiring a higher residual for systems that chloramine in order to provide simultaneous control of microbes and nitrification.

Promote healthy and sustainable communities: Safe drinking water is vital to maintaining healthy and sustainable communities. Proactively avoiding incidents such as waterborne disease outbreaks can prevent loss of life, reduce the incidents of illness, and reduce health care costs. Proper investment in public water system infrastructure and operations helps ensure a continuous supply of safe drinking water; which enables communities to effectively serve existing residential, business and commercial customers; attract new customers; and ensure their long-term sustainability for years to come.

Advisory Committee Review:

The pre-draft proposed rulemaking was originally included in the Pre-Draft Proposed Revised Total Coliform Rule (RTCR), which was presented to the Small Water Systems Technical Assistance Center (TAC) Board on June 18 and September 23, 2014 for review and comment. However, on April 21, 2015, the Environmental Quality Board (EQB) approved the proposed RTCR with modifications. The modifications included splitting out the “Non-RTCR” provisions for additional stakeholder input. The motion was made with the expectation that the “Non-RTCR” provisions would be revisited promptly. On April 30, 2015, the TAC Board voted to recommend that the Department further split the “Non-RTCR” provisions to focus solely on the disinfection requirements and the minor corrections needed to obtain/maintain primacy.

¹ The proposed amendments include new monitoring and reporting requirements to ensure compliance with existing treatment techniques regarding log inactivation and CT requirements. Log inactivation is a measure of the amount of viable microorganisms that are rendered nonviable during disinfection processes. CT is the product of residual disinfectant concentration (C) and disinfectant contact time (T). The CT value is used to determine the levels of inactivation under various operating conditions.

In order to provide additional opportunity for stakeholder input on the disinfection requirements, TAC meetings were convened on May 18, May 26, June 16 and June 30, 2015. During these meetings, 14 water systems and organizations delivered presentations to help inform the discussion. Two additional meetings were held with large water systems on June 29 and July 16, 2015 to gather additional comments.

As a result of these six additional stakeholder meetings, several revisions were made during the pre-draft rulemaking process, including revisions to the minimum required disinfectant residual levels, monitoring and reporting requirements, and compliance determinations. These revisions were made to address concerns about compliance costs and the frequency of public notification. TAC provided a final set of recommendations on July 15, 2015. Many of TAC's recommendations are incorporated into the proposed rulemaking. Other recommendations are incorporated into the preamble as a means to solicit further public comment. The TAC letter is attached with this document.

Recommendations for Public Comment Period and Public Meetings/Hearings:

The Department recommends that the Board incorporate the proposed amendments into the Pa. Safe Drinking Water Regulations (25 Pa. Code Chapter 109) in order to obtain primacy and provide for the increased protection of public health at PWSs.

The Department recommends a 60-day public comment period and two public hearings.