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**Water Works Operators' Association of Pennsylvania
Comments to the Environmental Quality Board**

Proposed Rulemaking

[25 Pa. CODE, Ch. 109]

Safe Drinking Water, Revised Total Coliform Rule

[45 Pa. B. 5943]

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Summary Comments

1. The Water Works Operators' Association of Pennsylvania (WWOAP) supports the Pennsylvania Department of Environmental Protection's (DEP) efforts to increase public health protection by adopting revisions to the Total Coliform Rule (TCR). WWOAP participated as a member of the DEP's Advisory Committee: the Technical Assistance Center for Small Drinking Water Systems (TAC) at all meetings during the development of the RTCR regulatory package.
2. WWOAP remains concerned that DEP after substantial input from water industry professionals representing, large, medium, and small water systems and a diversity of system ownership including authorities, investor-owned, municipal and private systems did not adopt the TAC recommendations in the proposed RTCR rulemaking.
3. WWOAP finds the language in 109.202 (c) (4) (iii) allowing DEP to require a Level 1 or Level 2 assessment "...if circumstances exist which may adversely affect drinking water quality..." to be beyond the intent of the RTCR. The Federal RTCR meant for assessments to be used as a tool to specifically address Total Coliform and E.coli. The proposed regulatory language unnecessarily broadens the scope and intent of assessments. While DEP may have other water quality concerns that warrant investigation, these should not be designated as assessments as defined under the RTCR but remain separate to preclude confusion between water suppliers, regulators, and the public.
4. WWOAP finds the language in 109.409 requiring a Tier 2 Public Notice for failure to report a positive E.coli *routine* sample within one hour is contrary to the intent of the Federal RTCR. One major objective of the Revisions to the Total Coliform Rule was to eliminate alarming the public unnecessarily. The Federal RTCR recognized this objective by requiring a Tier 3 Public Notification. WWOAP urges the EQB to support the change to a Tier 3 Public Notification instead of a Tier 2 Public Notification to be consistent with the intent of the Federal RTCR.
5. WWOAP finds the language in 109.701 (a) (5) (D) and (G) requiring the identification of specific monitoring sites and a description of the accessibility of the sample sites is unworkable and unduly burdensome to water systems as well as not protective of public health. DEP stated in the Proposed Rulemaking that, "Section 109.701(a)(5)(i)(D) is proposed to be added to clarify that repeat coliform monitoring locations must be included in sample siting plans. This amendment reflects 40 CFR 141.853(a)(1). TAC noted that identifying specific addresses for check samples is unworkable for some water systems. However, this proposed amendment reflects 40 CFR 141.853(a)(1)." WWOAP maintains that, in fact, this requirement will be unworkable for the majority of water systems. WWOAP further believes that DEP failed to provide the regulatory language in 40 CFR 141.853(a)(1) in its entirety for transparency and comparison and that DEP also failed to acknowledge that the Federal rule allows flexibility for water systems to select repeat monitoring locations. Per **40 CFR § 141.853 (a)(5)(i)** General Monitoring requirements for all public water systems Sample Siting Plans states, "*Systems may propose repeat monitoring locations to the State that the system believes to be representative of a pathway for contamination of the distribution system. A system may elect to specify either alternative fixed locations or criteria for selecting repeat sampling sites on a situational basis in a standard operating procedure (SOP) in its sample siting plan.*" WWOAP, therefore, would recommend the EQB's re-consideration of the proposed amendment by DEP based on the full citation and intent from 40 CFR.
6. WWOAP finds that the term "check" is used extensively throughout the proposed regulation to refer to "repeat" monitoring. The term "check" should be replaced consistently with the term "repeat" to conform to the Federal RTCR terminology. Use of the terms "check" and "repeat" interchangeably is confusing for both water systems and regulators.
7. WWOAP is concerned that DEP may not have reviewed and drafted revisions to the Public Notification (PN) and Consumer Confidence Report (CCR) requirements due to the changes created by the RTCR revisions. This review is needed to preclude compliance uncertainty for both the regulated community and the regulators.

Specific Comments

1. **§ 109.202. State MCLs, MRDLs and treatment technique requirements (Section (c)(4)(i),(ii),(iii))**
“(4) Public water systems shall conduct assessments in accordance with § 109.705(b) (relating to system evaluations and assessments) after meeting any of the triggers under subparagraph (i) or (ii). Failure to conduct an assessment or complete a corrective action in accordance with § 109.705(b) is a treatment technique violation requiring 1-hour reporting in accordance with § 109.701(a)(3) and public notification in accordance with § 109.409.
 - (i) A Level 1 assessment is triggered if any of the following conditions occur:*
 - (A) For systems taking 40 or more samples per month under § 109.301(3), the system exceeds 5.0% total coliform-positive samples for the month.*
 - (B) For systems taking fewer than 40 samples per month under § 109.301(3), the system has two or more total coliform-positive samples in the same month.*
 - (C) The system fails to take every required check sample under § 109.301(3) after any single total coliform-positive sample.*
 - (ii) A Level 2 assessment is triggered if any of the following conditions occur:*
 - (A) A system fails to meet the E. coli MCL as specified under subsection (a)(2).*
 - (B) A system triggers a second Level 1 assessment, as defined in subparagraph (i), within a rolling 12-month period, unless the Department has determined a likely reason that the samples that caused the first Level 1 assessment were total coliform-positive and has established that the system has corrected the problem.*
 - (iii) The Department may direct a system to conduct a Level 1 or Level 2 assessment if circumstances exist which may adversely affect drinking water quality including, but not limited to, the situations specified in § 109.701(a)(3)(iii).”*

WWOAP Comment: Under (iii), WWOAP disagrees with DEP directing a system to conduct an assessment if other situations outside § 109.701(a)(3)(iii) arise for any particular water quality situation. The Federal RTCR proposed Assessments to be used as a tool specifically to respond to Total Coliform and E. coli. The proposed language provides significant detail describing how and when a Level 1 or Level 2 Assessment will be required, but is then negated by “for any other” reason language. Use of Assessments for other purposes will be confusing to water suppliers and regulators. WWOAP agrees that DEP may have other water quality concerns that may warrant “investigations” and that DEP can rely on existing regulations to compel a water supplier to conduct the necessary investigation.

2. **§ 109.301. General monitoring requirements – *Monitoring requirements for coliforms* (Section 3)**
“(3) Monitoring requirements for coliforms. Public water systems shall determine the presence or absence of total coliforms for each routine or check sample; and, the presence or absence of E. coli for a total coliform positive sample in accordance with analytical techniques approved by the Department under § 109.304 (relating to analytical requirements). A system may forego E. coli testing on a total coliform-positive sample if the system assumes that any total coliform-positive sample is also E. coli-positive. A system which chooses to forego E. coli testing shall, under § 109.701(a)(3), notify the Department within 1 hour after the water system learns of the violation or the situation, and shall

provide public notice in accordance with § 109.408 (relating to Tier 1 public notice—categories, timing and delivery of notice).”

WWOAP Comment: The Public Notification requirement as stated is unclear and may not be required for every single *E. coli* positive sample. If a system foregoes *E. coli* testing on a positive total coliform sample, this does not always result in a violation of the MCL. If, for example, this is the original-routine sample, then the system must collect a set of repeat (check) samples prior to making an MCL determination (see §109.301(3)(iv)(A)) relating to compliance determinations. WWOAP recommends that the language be clarified to state that the sample must be counted as an *E. coli* positive and must be used to determine MCL compliance and that DEP must be notified of the positive sample result within 1 hour.

3. **§ 109.301. General monitoring requirements – *Monitoring requirements for coliforms, Frequency* (Section 3(i)(D))**

“(D) A system may take more than the minimum number of required routine samples only if the samples are collected in accordance with § 109.303(a)(2) and are included in the sample siting plan in accordance with § 109.701(a)(5). These samples shall be included in determining whether an assessment has been triggered under § 109.202(c)(4).

WWOAP Comment: WWOAP agrees with DEP in allowing water systems to collect more than the required number of samples for compliance with the TCR as explained in the sample siting plan. However, WWOAP recommends that water systems be allowed to collect more samples than required in unusual circumstances, such as following positive total coliform samples, when a water system believes there is reason to collect more samples to ensure public health protection. This flexibility in the sampling site plan should be noted in the water system’s sample siting plan.

4. **§ 109.301. General monitoring requirements – *Monitoring requirements for coliforms, Repeat monitoring* Section (Section 3(ii)B)**

“(B) The system shall collect at least one check sample from the sampling tap where the original total coliform-positive sample was taken, at least one check sample at a tap within five service connections upstream of the original coliform-positive sample and at least one check sample within five service connections downstream of the original sampling site. If a total coliform-positive sample occurs at the end of the distribution system or one service connection away from the end of the distribution system, the water supplier shall collect an additional check sample upstream of the original sample site in lieu of a downstream check sample.”

WWOAP Comment: WWOAP concurs with DEP for following the EPA revisions in repeat sampling requirements. The current TCR is complicated for smaller systems to determine the appropriate number of repeat samples required. This RTCR change clarifies that every positive total coliform sample requires three repeat samples for all water systems regardless of water system size.

WWOAP, however, strongly recommends that DEP follow the EPA's revision (refer to **40 CFR § 141.853 (a)(5)(i)** General Monitoring requirements for all public water systems Sample Siting Plans) by allowing water systems to develop alternative repeat sampling plans in addition to utilizing the default +/- 5 upstream/downstream requirements. Water systems should be given flexibility to assess the current, real-time situation and then to utilize alternative plans or default to +/- 5 upstream and downstream, whichever is appropriate. Water systems can select, under current conditions (frequently using hydraulic models), the most valid upstream and downstream sample locations to meet the intent of the rule by reviewing system dynamics and variables that impact flow volume and direction of flow in the system such as storage tank levels, storage tanks in/out of service, valve positions, system maintenance activities, pump activity, water supply demand, etc. Distribution systems are complex and dynamic and the water systems are best able to evaluate system operation on a real-time basis to select the appropriate repeat sampling locations. Allowing a water system to better determine the repeat sample locations improves the chances of identifying any contamination and/or any sanitary defects, and, therefore, better protect public health.

5. § 109.301. General monitoring requirements – *Monitoring requirements for coliforms, Invalidation of total coliform samples Section (Section 3(iii)(A)(III))*

“(iii) Invalidation of total coliform samples. A total coliform sample invalidated under this paragraph does not count towards meeting the minimum monitoring requirements of this section.

(A) The Department may invalidate a total coliform-positive sample if one of the following applies:

*(III) A total coliform-positive sample result is due to a circumstance or condition which does not reflect water quality in the distribution system. The Department's decision to invalidate a sample shall be based on evidence that the sample result does not reflect water quality in the distribution system. In this case, the system shall still collect all check samples required under subparagraph (ii) to determine compliance with the MCL for *E. coli* as established under § 109.202(a)(2) or whether an assessment has been triggered under § 109.202(c)(4). The decision to invalidate a total coliform-positive sample result and supporting evidence will be documented by the Department, in writing, and approved and signed by the supervisor of the Department official who recommended the decision.”*

WWOAP Comment: Invalidation should be used for both total coliform and *E. coli* sample results when contamination is deemed to come from the sample tap, the internal plumbing system, etc. This determination should be made following discussion between the water system and DEP.

6. § 109.301. General monitoring requirements – *Monitoring requirements for coliforms, Compliance determinations Section (Section 3(iv))*

(iv) Compliance determinations.

*(A) A system is in compliance with the MCL for *E. coli* as specified under §109.202(a)(2) for samples taken under this paragraph unless any of the following conditions occur:*

*(I) The system has an *E. coli*-positive check sample following a total coliform-positive routine sample.*

(II) The system has a total coliform-positive check sample following an E. coli-positive routine sample.

(III) The system fails to take all required check samples following an E. coli-positive routine sample.

(IV) The system fails to test for E. coli when any check sample tests positive for total coliform.

(B) A public water system shall determine compliance with the MCL for E. coli in clause (A) for each month in which it is required to monitor for total coliforms.

WWOAP Comment: WWOAP supports the MCL determination being based on E. coli and also on the MCL determination in clause (A) above. Moreover, WWOAP notes that sub-clauses I-IV support WWOAP's Comment #2 above to § 109.301. General monitoring requirements – *Monitoring requirements for coliforms* (Section 3), when not every E. coli positive result generates an MCL violation requiring PN.

7. § 109.303. Sampling requirements (Section a(2))

“(2) Samples for determining compliance with the E. coli MCL under § 109.202(a)(2) (relating to state MCLs, MRDLs and treatment technique requirements) and for determining whether an assessment is triggered under § 109.202(c)(4) shall be taken at regular intervals throughout the monitoring period at sites which are representative of water throughout the distribution system according to a written sample siting plan as specified under § 109.701(a)(5) (relating to reporting and recordkeeping). Representative locations include, but are not limited to, the following:

(i) Dead ends.

(ii) First service connection.

(iii) Finished water storage facilities.

(iv) Interconnections with other public water systems.

(v) Areas of high water age

(vi) Areas with previous coliform detections.”

WWOAP Comment: WWOAP agrees with TCR sampling locations that are “representative” of water throughout the distribution system. These samples should be collected at regular intervals throughout the monitoring period, however, WWOAP advocates that sampling plans need to be flexible to accommodate operational/business efficiencies, particularly for small systems that are dependent on commercial laboratories for sample collection. Small systems will see significant cost increases for sample collection if commercial laboratories cannot continue to collect samples for several small systems on the same date in order to economize on personnel and travel expenses. Sampling plans require flexibility for all water systems due to unusual events such as adverse weather, flooding, road closures, etc. Sampling plans also need to be flexible so that water systems can accommodate sampling personnel schedules including vacations, sick leave, Holidays, etc., since many water systems may have only one designated employee for sample collection, or in the case of small water systems may rely on a commercial laboratory that has multiple water systems' demands competing for sample collection time.

8. § 109.409. Tier 2 public notice – categories, timing and delivery of notice (a) General violation categories and other situations requiring a Tier 2 public notice (Section a(3))

“(3) Failure to report an E.coli MCL violation or an E.coli-positive routine or check sample as required under § 109. 701(a)(3)(iv)” and

§ 109.701. Reporting and recordkeeping – Reporting requirements for public water systems (Section a(3)(iv))

“(3) One-hour reporting requirements. A public water supplier shall report the circumstances to the Department within 1 hour of discovery for the following violations or situations:

(iv) Any sample result is E. coli-positive.”

WWOAP Comment: WWOAP disagrees with Tier 2 Public Notifications for failure to report an *E.coli*-positive routine sample that does not result in an MCL violation. Since the routine *E. coli* positive sample requires repeat (check) sampling, a failure to report the routine positive sample does not pose risk to public health itself. This should be a Tier 3 Reporting violation, not a Tier 2 Reporting violation to be consistent with the Federal RTCR reporting requirements.

9. §109.701. Reporting and recordkeeping - Siting plan (Section a(5))

“(5) Siting plan. The water supplier shall submit to the Department a written sample siting plan for routine and repeat coliform sampling as required under § 109.301(3) by (insert effective date of the regulation). A public water system that begins operation after (insert effective date of the regulation) shall submit the sample siting plan prior to serving water to the public.

(i) A sample siting plan shall include at a minimum the following:

(A) A list of sample site locations as specified in § 109.303(a)(2) (relating to sampling requirements) in the distribution system to be used for routine monitoring purposes.

(B) The name of the company or individual collecting the samples.

(C) A sample collection schedule.

(D) Available repeat monitoring locations for each routine monitoring location.

(E) Triggered source water monitoring locations as specified under 109.1303(relating to triggered monitoring requirements for groundwater sources).

(F) The population served by the system.

(G) A description of the accessibility of sample sites.

(H) The beginning and ending dates of each operating season for seasonal systems.

(ii) A water supplier shall revise and resubmit its sample siting plan within 30 days of notification by the Department of a sample siting plan which fails to meet the criteria in subparagraph (i).”

WWOAP Comment: WWOAP agrees that water systems should have written or electronic sample siting plans that provide flexibility for planned and unplanned circumstances, see WWOAP Comment #7. However, WWOAP strongly disagrees with the incorporation of clauses (D) and (G) above and finds they are more stringent than requirements of the Federal RTCR. Clauses (D) and (G) provide no

benefit to public health protection are unworkable, overly time-consuming and burdensome to water systems and do not allow for the flexibility needed to assess positive total coliform or E. coli results on a real-time and current situational basis. Clauses (D) and (G) in fact, may jeopardize public health.

The Federal Rule at **40 CFR § 141.853 (a)(5)(i)** General Monitoring requirements for all public water systems Sample Siting Plans states, *“Systems may propose repeat monitoring locations to the State that the system believes to be representative of a pathway for contamination of the distribution system. A system may elect to specify either alternative fixed locations or criteria for selecting repeat sampling sites on a situational basis in a standard operating procedure (SOP) in its sample siting plan.”*

WWOAP notes that simply selecting two (2) “fixed” addresses or range of addresses for repeat (check) sample locations is not sufficient. Water systems must spend additional time investigating and testing potential sample taps within each sample site location to find suitable sampling taps to include in the siting plan. However, these “fixed” locations may not reflect operational considerations or the distribution system flow direction at the given time when repeat sampling is required. Water systems can more appropriately select the repeat sampling locations on an as needed basis at the specific point in real-time with due consideration to the operational and/or distribution system dynamics to better identify a contamination issue or sanitary defect and to better protect public health. The water system methodology for the sample site selection process can be documented in an SOP.

It is not cost effective to force all water systems to expend limited funds and resources to “pre-select” repeat monitoring locations that, in actual practice, may never be used or needed. WWOAP therefore, recommends that clause (D) not be adopted.

Similarly, clause (G) above is more stringent than the Federal RTCR. The Federal RTCR does not require water systems to identify and document accessibility for routine or repeat monitoring locations in the sample siting plan. Requiring water systems to pre-determine accessibility of repeat monitoring locations and documenting that information in sample siting plans is an exercise with no value. Water systems need to review current operations, in real-time to properly select routine or repeat monitoring locations, including the availability of appropriate sample taps within a premise location. In the same manner that distribution systems are dynamic, sample site locations are also dynamic with changing occupancy and use. The water system has no control over whether a sample location is closed, not open during the time when a repeat sample is required, whether a resident is home or not home, etc. Water systems are accustomed to reviewing system operations, distribution system dynamics and determining the appropriate, as well as, accessible repeat monitoring locations on a real-time, as needed basis. WWOAP recommends that clause (G) not be adopted and that water systems be allowed to continue to appropriately select sampling locations that assure public health protection.

10. § 109.705. System Evaluations and Assessments (Section b(3),(4))

“(3) A Level 1 assessment must be conducted by competent personnel qualified to operate and maintain the water system’s facilities.

(4) A Level 2 assessment must be conducted by one or more individuals meeting the following criteria:

(i) Holds a valid certificate issued under Chapter 302 (relating to administration of the water and wastewater operator's certification program) to operate a water system.

(ii) Maintains certification in the appropriate class and subclassifications as defined in Chapter 302 for the size and treatment technologies for the water system being assessed."

WWOAP Comment: WWOAP recommends that the language be clarified to state that the Level 1 assessment should be conducted and approved by persons appropriate to the water system. Such persons, for example, could be an engineer, distribution system specialist or water quality specialist that may not "operate or maintain" the system but may have areas of expertise to complete the assessment. Further, that the Level 2 assessment does not have to be fully "conducted" by someone meeting the stated qualifications, but that personnel with expertise may assist in the assessment, providing the assessment is reviewed and approved by the qualified person.

WWOAP Responses to the Board's request for Comments on the following Questions:

- Question - "Why alternate repeat monitoring locations should be allowed"

WWOAP Response: WWOAP strongly recommends that DEP follow the EPA's revision (refer to **40 CFR § 141.853 (a)(5)(i)** General Monitoring requirements for all public water systems Sample Siting Plans) by allowing water systems to develop alternative repeat sampling plans in addition to utilizing the default +/- 5 upstream/downstream requirements. Water systems should be given flexibility to assess the current, real-time situation and then to utilize alternative plans or default to +/- 5 upstream and downstream, whichever is appropriate. Water systems can select, under current conditions (frequently using hydraulic models), the most valid upstream and downstream sample locations to meet the intent of the rule by reviewing system dynamics and variables that impact flow and direction of flow in the system such as storage tank levels, storage tanks in/out of service, valve positions, system maintenance activities, water supply demand, etc.. Distribution systems are complex and dynamic and the water systems are best able to evaluate system operation on a real-time basis to select the appropriate repeat sampling locations. Allowing a water system to better determine the repeat sample locations improves the chances of identifying any contamination and/or any sanitary defects, and, therefore, better protect public health. The process of repeat sample selection needs to be controlled by water systems on a case by case, real-time basis. WWOAP does support EPA's requirement that a water system have an SOP for how a water system determines or selects repeat sample locations, and that the SOP be included in the water system's sampling plan,

- Question - "How a PWS would demonstrate that an alternative repeat monitoring location represents the pathway for contamination that led to the original coliform-positive sample in the distribution system"

WWOAP Response: WWOAP strongly recommends that water systems be given flexibility to assess the situation and then utilize an alternative plan and/or default to +/- 5 upstream and downstream service connections, whichever is appropriate to the current situation and whichever is best able to identify any

contamination or pathway to contamination. Both of these options for repeat sample site selection should be documented in an SOP. Water systems can select, under current conditions, the most valid upstream and downstream sample locations to meet the intent of the rule by reviewing variables that impact distribution system dynamics as discussed in WWOAP Comment #4. Allowing a water system to appropriately determine the repeat sample locations significantly improves the chances of identifying any contamination or sanitary defect and, therefore, better protects public health.

- Question - “Whether only fixed alternative repeat monitoring locations should be allowed or if a standard operating procedure for choosing locations may also be allowed and why”

WWOAP Response: WWOAP references Comment #4 and the responses to the previous questions. The Federal rule, **40 CFR § 141.853 (a)(5)(i)**, allows for selection of alternate repeat sampling locations via SOP. .

- Question - “Whether alternative repeat monitoring locations must be submitted under the signature of a certified operator”

WWOAP Response: WWOAP strongly disagrees with requiring a certified operator to submit the alternative repeat monitoring locations. In many water systems, the certified operator may only operate the treatment facility and may have limited to no interaction with distribution system operation and/or water quality control. WWOAP recommends that the determination of alternative repeat monitoring locations be submitted by the personnel deemed qualified by the water system. In many circumstances, a variety of personnel at a water system with different qualifications and expertise may be involved in determining the criteria for repeat monitoring locations and selecting repeat monitoring locations, all of whom may have no “operating” responsibilities, or be certified operators. Water systems need to have the authority and flexibility to determine what personnel are best utilized in making the best selection of repeat monitoring locations that best protect public health.

- Question - “Whether alternative repeat monitoring locations must be submitted under the seal of a professional engineer”

WWOAP Response: WWOAP strongly disagrees with requiring a professional engineer to submit the alternative repeat monitoring locations. WWOAP believes that the best interests of public health protection are served when the water systems have the authority and flexibility to utilize the most appropriate personnel to identify repeat alternative sample monitoring locations. Every water system does not have an engineer on staff nor does every engineer have the expertise and distribution system familiarity needed to assess the most valid alternative repeat monitoring site locations. WWOAP recommends that alternate repeat sampling locations be submitted and approved by personnel deemed qualified by the water system. Requiring a professional engineer to submit alternative repeat sampling locations puts unjustified time and financial burdens on water systems with no qualitative benefit to public health.

- Question - “Whether alternate locations should only be allowed for systems serving greater than 9,999 people”

WWOAP Response: WWOAP as stated in Comment #4 and as noted above, strongly recommend that water systems, regardless of size, have the authority and flexibility to assess the real-time situation and then utilize alternative repeat sampling plans and/or default to +/- 5 upstream and downstream service connections, whichever is appropriate and will best identify any contamination and/or any sanitary defect. Water systems should be able to utilize available resources, including personnel with varying expertise, to best determine the selection of repeat monitoring locations to protect public health.

WWOAP thanks the Environmental Quality Board for the opportunity to provide comments on the Proposed RTCR and to address the specific questions posed.

Very truly yours,

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