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2016 APR 19 AM 11:50

**Summary of Comments to the Environmental Quality Board
Regarding Proposed Rulemaking
[25 PA Code Ch. 109] Disinfection Requirements Rule (46 Pa. B. 857)
April 18, 2016**

Suez Water appreciates the opportunity to offer comments and express our concerns regarding the proposed rulemaking for the Disinfection Requirements Rule. Suez Water serves a population of over 165,000 in 40 communities across Pennsylvania including small, medium and large public water system. Our company has been engaged in the rule making process for the proposed regulation since 2014 through our participation at TAC meetings, attendance at EQB, and serving on the Stakeholders Group. In summary we have the following concerns with the proposed rule:

- The PA DEP has not substantiated that there is a public health benefit from the proposed regulation. Scientific evidence presented through the stakeholder process has demonstrated that this proposed regulation will not eliminate risks for the waterborne pathogens stated in the preamble (Salmonellosis and Legionella).
- Suez Water estimates that the proposed rule will increase operating costs by \$400,000 per year and will require \$2.79 million in capital investments to bring all systems into compliance which would require an extended compliance schedule of approximately 5 years.
- Increasing chlorine residuals in the distribution system will lead to increased DBPs which have known health risks.
- Scientific studies presented during the stakeholder process have demonstrated that 0.1 mg/L chlorine residual does in fact represent a true detectable residual. As such if PA DEP's primary concern is that the current regulation is not valid this issue may be resolved by replacing 0.02 mg/L in the current regulation with 0.1 mg/L for detectable residual (Note this is 5 times the current requirement).
- HPCs are in the current federal regulation and continue to be a tool that water utilities use as an indicator of water quality and therefore should not be deleted from the current regulation.
- The proposed rule will increase unnecessary alarming public notifications degrading consumer confidence.

If the EQB is not amenable to the simplified approach to the rule by redefining detectable residual from 0.02 mg/L to 0.1 mg/L we recommend that following recommendations proposed by the TAC Board in July 2015 be incorporated into the final rule:

- Minimum disinfectant residual should be revised to 0.1 mg/L free or total chlorine (5 times the current requirement).
- Compliance based on 95% compliance criteria. For systems collecting less than 40 samples per month, no more than one sample per month is below the limit.
- HPC should be kept in the regulation as alternative compliance criteria.
- Monitoring and reporting of CT calculations for Giardia and viruses should be deleted
- Entry Point residual change from 0.2 to 0.20-mg/L should be eliminated.

In addition we recommend a deferred effective date of one year following promulgation of the rule to allow water systems to make necessary operational changes. We also recommend a provision to allow water systems to request extended compliance schedules when further evaluation of simultaneous compliance issues and/or construction of capital improvements are necessary to comply.

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General Comments:

Cost Benefit Analysis & SDWA Criteria to Regulate

Suez Water conducted a cost/benefit analysis of this regulation and determined that the proposed regulation creates adverse impact on community water systems specifically creating an undue burden on large community water systems with undefined benefits. This significant financial burden will be shared by ratepayers in all of our systems throughout PA. The federal Safe Drinking Water Act (1412(b)(1)(A)) uses the following criteria to create new regulation:

- (i) The contaminant may have an adverse effect on the health of persons;
- (ii) The contaminant is known to occur or there is substantial likelihood that the contaminant will occur in public water systems with a frequency and at levels of public health concern; and
- (iii) Regulation of the contaminant presents a meaningful opportunity for health risk reduction for persons served by public water systems.

There is no indication that there is a current public health concern with our water systems. All of Suez Water systems are in compliance with the TCR and have no history of E. Coli positive sampling results in the past 5 years. An analysis of the TCR data for the Suez Water Harrisburg system from 2010 through 2014 demonstrated that out of 6,000 required total coliform samples only 19 or 0.32% of the samples were positive for total coliform and none of these samples were E.coli positive. The preamble for this rule cites the prevention of waterborne disease outbreaks such as Legionella as a basis for the rule. At the November 2015 EQB meeting DEP staff stated that other than the legionella outbreaks, which were attributed to premise plumbing issues there have been no other waterborne disease outbreaks in PA. Public Health data provided by the CDC indicated that waterborne disease outbreaks occur in premise plumbing (<http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6235a3.htm>). Increasing the disinfectant residual in the distribution system will not lead to improved public health because legionella is a premise plumbing issues that must be managed through proper operation and maintenance of building plumbing systems.

Further substantiation is needed of the public health improvement or benefit. Based on information provided through stakeholder group presentations the proposed regulation would not prevent these type of outbreaks and creates a false sense of security in addressing risks for waterborne disease outbreaks

Simultaneous Compliance Issues

The proposed regulation will require public water systems to reevaluate simultaneous compliance issues such as disinfectant byproducts (DBPs) and corrosion control for lead and copper. Increasing chlorine residuals in the distribution system will increase disinfection byproducts that have known public health risks. *(Reference: DBPs, HPCs and a shared goal of Optimized Distribution Systems - Tim Bartrand/Jeff Rosen, Corona Environmental Consulting)*



Existing designs for system storage capacity for pressure, fire protection, and 24 hour emergency supply will have to be reevaluated. In addition water suppliers anticipate an increase in taste and odor complaints from customers.

Cost of Compliance

The cost of compliance for this rule both in regard to consumer confidence and financial impact were grossly underestimated in the preamble of the rulemaking. PA DEP used monthly average residual data for public water systems to determine potential compliance, not individual location residual data as proposed by the regulation. Suez water has conducted an analysis of the proposed rule and found 32 vulnerable sites that would not be able to meet compliance with the proposed rule. This creates the potential for up to 384 Tier II public notification annually degrading consumer confidence and alarming customers in systems that have no history total coliform rule compliance issues or waterborne pathogen outbreaks.

Due to the complexity of our water systems and the need to complete further study of simultaneous compliance issues, it is difficult to provide a fully accurate accounting of the financial cost to comply with the proposed regulation. Based on the compliance analysis that was conducted on all of our systems it was determined that the ratepayers would bare a significant burden in both increased operational costs of approximately \$400,000 per year and capital improvements estimated at \$2.79 million. The total 10 year cost to implement the proposed rule would be \$6.79 million.

Necessary Capital Expenditures include:

- Large System Simultaneous Compliance Study \$150,000
- Automatic Flushers located at 32 Sites \$320,000
- Resizing of Storage Tanks 2 tanks estimated cost \$2 million
- Addition of 2 booster stations \$300,000
- Programming for daily calculation of log inactivation \$20,000

Additional Operating Expenses include:

- Increased labor sampling \$8,000
- Increased labor reporting \$3,000
- Increased labor flushing program \$78,000
- Non-revenue water \$308,000

Finally there will be an environmental cost of the approximately 49 million gallons of water that will be dechlorinated and then discharged back in PA waterways. These is at a time when Community Water systems nationwide are increasing being required to justify their allocation permits and implement water conservation programs to reduce demand on stream flows and groundwater aquifers.

The purpose of this cost analysis was to meet compliance of a 0.2 mg/L chlorine residual throughout the distribution system. Suez designed their cost around a 0.3mg/L so as to meet the standard. If the proposed 0.1mg/L detectable residual is adopted by the state with and HPC as an alternative method of compliance the costs will slightly reduce due to a decreased need for flushing and chemical usage. However, capital improvements to storage tanks and booster stations will remain to meet the 0.1 mg/L residual.

True Detectable Disinfectant Residual & Heterotrophic Plate Count

Through the review of the following studies available on the science of detectable chlorine residuals, Suez supports the consensus that 0.1 mg/L represents a true detectable residual.

- Draft—Minimum Distribution System Disinfectant Residuals: Chlorine Residual Values Reported from Co Drinking Water Distribution Systems – Colorado Dept. Public Health & the Environment
- Aqua PA Disinfection Residual Measurements Presentation - Dr. Charles Hertz, Aqua PA;
- The Meaning and Quantification of a Detectable Residual - Tim Bartrand, Corona Environmental Consulting
- An Alternative Approach for Setting an Interim Chlorine Residual Requirement - Jeff Rosen, Corona Environmental Consulting

In addition, the option for Heterotrophic Plate Count (HPC) should be retained as an alternative compliance criteria for surface water systems when the distribution disinfectant residual is below the minimum required level. HPCs are included in the federal regulation, are currently used by water suppliers as an indicator of water quality examples are in nitrification control plans and in assessing biological quality in main replacements, and are included in proposed regulation for bottled water industry. (*Reference: DBPs, HPCs and a shared goal of Optimized Distribution Systems - Tim Bartrand/Jeff Rosen, Corona Environmental Consulting*)

Public Notification

It is a primary concern to Suez Water that consumers have confidence in their public water supply and their water supplier. As previously stated, the rule as proposed will require us to issue up to 384 Tier II public notification. Changing the minimum residual to a 0.1 mg/L in the distribution system with HPCs as an alternative compliance criteria will greatly reduce the number public notifications required. In addition, Suez recommends that a new tier II PN template be developed that is specific to the loss of secondary disinfection. As stated in the AWWA Disinfection Residual Strategy Panel memo (p.12) the language in the EPA's 2010 PN Guidance provides a template for PN after loss of a disinfectant residual is not tailored to secondary disinfection and is not written for distributions systems. The current PA Public Notification handbook tier II template for loss of a disinfectant residual is specifically written for primary disinfection and is not tailored to loss of secondary disinfectant. The use of this language may be unnecessarily alarming to customers.

Specific Comments:

Disinfectant Residual in the Distribution System

§ 109.710(a). The minimum disinfectant residual shall be 0.2 mg/L measured as free chlorine for systems using chlorine, 0.2 mg/L measured as total chlorine for systems using chloramines, or another level approved by the Department for systems using an alternate oxidizing disinfection treatment.

This section should be revised to change the minimum disinfectant residual from 0.2 mg/L to 0.1 mg/L for both free and total chlorine.

Removal of HPC as an option to invalidate a low distribution system chlorine residual result.

§ 109.710(a)(2) Sampling points with nondetectable disinfectant residuals which have heterotrophic plate count (HPC) measurements of less than 500/ml are deemed to be in compliance with paragraph (1).

This section should not be deleted from the existing regulations. HPC should be kept as another tool to demonstrate compliance with distribution system disinfectant residual treatment technique. HPCs are in the current federal regulation and continue to be a tool that water utilities use as an indicator of water quality through nitrification control plans and in assessing biological quality in main replacements and installations. In addition the use of HPC of an indicator of the biological integrity of water is included in this proposed regulation for bottled and vended water systems, retail water systems, and bulk water hauling systems.

Weekly Compliance Monitoring

§ 109.301. General Monitoring Requirements Subclause II A public water supplier shall monitor the disinfectant residual at representative locations in the distribution system at least once per week.

Subclause II should be deleted to allow for monitoring at the same frequency and schedule as the RTCR. The requirement to monitor chlorine residuals throughout the distribution system on a weekly basis would have an impact on operational costs in our small systems. Many of our small systems are currently monitored once a month or twice a month. These small water systems are not contiguous and are distributed geographically throughout PA. It is typical for our samplers to drive up to an hour to reach sampling locations we have estimated that sampling each of our systems weekly will add 20 additional work hours per month at an operational cost of approximately \$8,000 per year.

Daily Log Inactivation Values Reporting

§ 109.301(1)(v) A public water supplier shall calculate the log inactivation of Giardia, using measurement methods established by the EPA, at least once per day during peak hourly flow. The log inactivation for Giardia must also be calculated whenever the residual disinfectant concentration at the entry point falls below the minimum value specified in § 109.202(c) and continue to be calculated every 4 hours until the residual disinfectant concentration at the entry point is at or above the minimum value specified in § 109.202(c). Records of log inactivation calculations must be reported to the Department in accordance with § 109.701(a)(2).

Suez Water is in agreement with the TACs comment that the monitoring and reporting requirements for CT calculation will create an additional burden for surface water systems and therefore should be deleted from the proposed regulation. There are many complexities to calculating CT for each of our treatment plants. The calculation is different due to the location of the chlorine injection points as well as the sizing and location of finished water storage. At this time systems are insuring compliance by predefining the required chlorine residual under curtailed conditions (pH, temp, flow) to produce the required CT, when the chlorine analyzer detects a residual below this residual it automatically shuts down the WTP to prevent non-compliance. In order to provide daily CT calculations to the state Suez Water would have to program this calculation into the SCADA system for the 4 surface water treatment plants and the 1 GUDI well at an estimated cost of \$20,000 in capital expenses.

Entry Point Disinfectant Residual Level

§ 109.202(c)(1)(ii)(B) Provide a minimum residual disinfectant concentration of 0.20 mg/L at the entry point as demonstrated by measurements taken under § 109.301(1). Failure to maintain the minimum entry point disinfectant residual for more than 4 hours of operation constitutes a breakdown in treatment.

Suez Water is in agreement with the TACs comment that this revision should be deleted as it may impact small water systems.

46 Pa. B. 857 – Proposed Rulemaking 25 PA. Code Ch. 109 A. Effective Date

In response to the EQB's request for comment on the effective date of this proposed rule, we recommend a deferment of one year to allow water systems to make operational changes that will allow for the increase of residuals while maintaining simultaneous compliance. We also recommend a provision to allow water systems to request extended compliance schedules when further evaluation of simultaneous compliance issues and/or construction of capital improvements are necessary to comply. These water systems will need additional time (up to 5 years) to properly study simultaneous compliance issues, design improvements, and build improvements. In situations where ratepayers will be adversely impacted by capital improvements needed in multiple water systems across the state extended compliance schedules should be granted to lessen the burden to the ratepayer.