WATERWORKS ADVISORY COMMITTEE MEETING

Perimeter Center, Conference Center; TR 1, 9960 Mayland Drive, Suite 300, Henrico, VA 23233

Wednesday, February 19, 2020
8:30 AM – 2:00 PM

AGENDA

Subject	Time
Meet and Greet with Stakeholders	8:30 – 9:00 AM
Call to Order Meeting Overview Adoption of Minutes from the 12/18/19 Meeting	9:00 – 9:10 AM
Public Comment Period	9:10 – 9:15 AM
ODW Updates	9:15 – 10:30AM
EPA Updates	10:30-10:45 AM
Break	
WW Regulations	11:00 – 1:30 PM
Working Lunch	Noon
Other Business	1:30 – 2:00 PM

Waterworks Advisory Committee (WAC) Meeting Summary

Perimeter Center, Conference Center, TR 1, 9960 Mayland Drive, Henrico, VA 23233
Wednesday, February 19, 2020

Final

Members Present: Dwayne Roadcap (ODW), Chair; Jesse L. Royall, PE, Sydnor; Bailey Davis, DCLS; Skip Harper, DHCD; David F. Van Gelder, Water Operator; Andy Crocker; SERCAP; Ignatius Mutoti, VSPE; Mark Estes, VRWA; Roger Cronin, ACEC

Guest in Attendance: ODW staff – Robert Edelman, Christine Latino, Nelson Daniel, Dan Horne, Jeremy Hull, Tony Singh, James Reynolds, Aaron Moses, Mark Perry, Bennett K. Ragnauth

Russ Navratil, AWWA; Tom Fauber, VA ABPA; Steven Edgemon, Fairfax Water; Laura Bauer, VA American Water Company; Kelly Ryan, VA American Water Company; Ryan Green, DEQ; Katie Krueger, HRPCD; Bryant Mountjoy, Cardno; J.P. Verheul, AWS Labs

Meeting Overview and Agenda

Nelson Daniel, ODW's Policy and Program Director, led the meeting. Dwayne Roadcap joined the group during the discussion about the proposed amendments to the Waterworks Regulations. Nelson called the meeting to order and provided an overview of the meeting agenda.

Adoption of Minutes from December 11, 2019 Meeting

WAC members voted unanimously to approve and adopt the draft minutes from the December 11, 2019 meeting. ODW will post the minutes as final on Town Hall.

Public Comments Period

No Public comments

ODW Updates

General Assembly: Nelson provided a brief description of the bills that are still active at the General Assembly and an overview of their status. ODW is lead on seven bills:

SB392 and **HB797** propose to amend Va. Code § 22.1-135.1 (lead testing in schools) to require local school boards to provide plans to test drinking water for lead and test results to the Department of Health (VDH). In addition, the bills state that plans shall be consistent with guidance published by the U.S. Environmental Protection Agency (EPA) (i.e., the 3Ts for Lead in Drinking Water in Schools and Child Care Facilities) and that each local school board shall notify parents if testing results indicate lead contamination exceeds 10 parts per billion (PPB). There is a fiscal impact for VDH to implement the requirements in the bills which has been addressed with budget amendments including $195,000 to establish a database and funding for 1.5 full time equivalent (FTE) positions. Both bills have passed through their respective chambers and are under consideration in the other chamber.

SB393 and **HB799** propose to add Va. Code § 63.2-1705.1 and require child day programs to test drinking water sources for lead. If the level of lead exceeds 15 ppb, the program is required to remediate the source, or switch to bottled water. Like SB392/HB797, child day programs are required to

provide test plans and results to VDH. There is a fiscal impact for VDH to implement requirements in the bills which has been addressed with budget amendments – using the same database as the school lead testing bills and funding for 1.5 FTEs. Both bills have passed through their respective chambers and are under consideration in the other chamber.

Budget amendment **304 #3s** (allowing the Board of Health to increase the waterworks operation fee cap to create a grant fund for the lead testing program) did not get included in the Senate's recommended budget amendments, effectively stopping the proposal.

HB586 and **HB1257** (related to PFOS, PFOA, and other specified PFAS compounds) passed the House and are under consideration in the Senate. HB586 would have VDH study PFAS compounds in Virginia, with the goal of quantifying sources, occurrence, and risk and establishing maximum contaminant levels (MCLs). HB1257 would have the Board of Health establish MCLs. As amended, VDH would complete the study required by HB586, then promulgate MCLs (the effective date of HB1257 is July 1, 2022. HB586 has a fiscal impact if VDH does any testing: without any funding, VDH can convene a workgroup and complete a literature review; with modest funding ($20,000), VDH could sample from a limited number of waterworks; with full funding ($900,000), VDH would collect samples across the state to quantify occurrence. The House did not include funding for HB586 in its budget proposal.

HJ92 requires ODW to complete a study of the sustainability of the public drinking water program, program needs, asset management, and infrastructure and report its findings to the General Assembly before the 2021 session. The bill passed the House and is under consideration in the Senate. It is similar to legislation Delegate Lopez introduced in 2017 and 2018. ODW has done preliminary work based on the 2018 bill and would build on that to complete HJ92 if it passes the Senate.

ODW is watching the following bills:
SB410 would require school divisions to develop water management plans to prevent Legionnaire's disease. The bill does not include language requiring VDH or ODW to do anything. Instead, the responsibility is on the school divisions. However, VDH expects a fiscal impact when school divisions ask for help in developing water management plans, reviewing sample results, communicating results, etc.

SB845 requires schools to test for mold and remediate as needed. VDH's Office of Environmental Health Services (OEHS) is watching the bill and expects schools will reach out to VDH for assistance.

HJ40 study harmful algae blooms in Lake Anna – Left in Appropriations
SB299 requiring bottle filing stations in public schools – stricken at the request of the patron

Office of Environmental Health Services: ODW staff frequently work with OEHS staff on enforcement cases, drinking water issues related to private wells, and other environmental issues. The OEHS director, Allen Knapp, retired in December and Dwayne has been serving as the acting office director. Julie Henderson, who is the director of OEHS's Division of Food and Environmental Services, has been named as the new office director, effective February 25.

Waterworks Operation Fee Regulations
ODW is forming a stakeholder group to assess the current fee structure and determine if it is appropriate to serve its intended purpose going forward. ODW intends to provide transparency, capture input, recommend policies, and ultimately suggest implementation procedures to maximize the

effectiveness of the Operation Fee Regulations. More information is in the attached PowerPoint presentation.

Stakeholder Meeting Dates:

Monday, April 6, 1-4 p.m., VDH Main Floor Conference Room
Tuesday, April 28, 1-4 p.m., VDH Main Floor Conference Room
Tuesday, May 26, 1-4 p.m., VDH Main Floor Conference Room

WIIN Grant for testing for lead in water at schools and day care centers

Dr. Tony Singh provided an update: VDH has received $737,000 from EPA to implement the program in Virginia. VDH may use 4% for overhead, the remainder must be used to develop test plans and pay for testing. The grant does not cover remediation. Staff are developing the scope of work and expect to involve several state agencies and universities in the program. A kickoff meeting is planned for the first week of March and testing is planned in three phases: Phase 1, Fall 2020; Phase 2, Spring 2021; Phase 3, Fall 2021. Schools will use the 3Ts guidance to develop sampling plans. The grant funding is limited to child day programs serving children under 7 years of age and public schools.

Field Office Rebalancing

The Richmond Field Office (RFO) is a fully functional field office. On February 20, RFO staff will move from the Madison Building, across 14th Street, to the Monroe Building so that the Department of General Services can renovate the HVAC systems in the basement of the Madison Building. The office recently hired three inspectors and they are undergoing training. The effort to redistribute workload between field offices is proceeding. ODW is in the process of communicating the changes to the affected waterworks. ODW is sending out notices this week with April 1, 2020 as the transition date. ODW is not making changes to public water system identification numbers (PWSIDs).

Lab Reporting

On December 27, 2019, ODW emailed all labs of the new requirement to submit test results electronically through the Compliance Monitoring Data Portal (CMDP). ODW and our contractor have followed up with phone calls to all 160 laboratories offering assistance on using the CMDP. ODW has set a deadline of September 1, 2020 for laboratories to report via CMDP.

A WAC member expressed concern about ODW's ability to enforce the electronic submission requirement with non-compliant labs. Another member requested ODW share the list of labs that are using CMDP with the WAC.

EPA Updates

Lead and Copper Rule Revisions (LCRR)

Bob Edelman, Director, Division of Technical Services provided a briefing on the comments ODW submitted to EPA on the proposed LCRR. Refer to the PowerPoint.

Timeline: The public comment period ended February 12, 2020. EPA must review and respond to comments. EPA's goal is to issue the final rule in 2020; however, this may be challenging due to the large number of comments. Three years after the final rule is published in the Federal Register, community waterworks (CWS) and nontransient noncommunity waterworks (NTNC) must comply.

ODW Activity: ODW's Lead & Copper Rule committee prepared and submitted a 17-page comment letter to EPA to address specific questions from EPA and document specific Virginia comments and concerns. ODW is worked with the Association of State Drinking Water Administrators (ASDWA) on their comment letter to EPA. ASDWA's comments extended to 42 pages and represent the combined views of the state drinking water programs and may be different from individual states.

Proposed Amendments to the Waterworks Regulations – Review of Public Comments

Bob Edelman, Director, Division of Technical Services, provided a briefing on specific comments ODW received during the public comment period for the proposed amendments to the Waterworks Regulations. The PowerPoint presentation that follows the meeting minutes provides a summary of each comment and ODW's response. Changes are indicated in red text and, except as noted below, are explained in the text of the slide.

Public comments that ODW received via Town Hall are available at:
https://townhall.virginia.gov/L/viewstage.cfm?stageid=8497

ODW also received comments from Fairfax Water, Loudoun Water, and EPA Region 3. They are included in the attachments that follow the meeting minutes.

The majority of the comments from EPA Region 3 were technical in nature and correct typos, incorrect cross references, or other omissions resulting from re-codifying several sections in Part 2 of the Regulations. ODW will make changes recommended by EPA as noted in the PowerPoint.

Comments about specific slides/sections with proposed amendments follow:

12VAC5-590-340. Compliance standards: Sodium is not included in Table 340.1, Inorganic Chemicals. Although there is no PMCL established for sodium, community water systems are required to monitor in accordance with 40 CFR §141.41 Special monitoring for sodium. Sodium is being included under the current *Waterworks Regulations* 12VAC5-590-440 Table 2.2 – Inorganic Chemicals. EPA recommends ODW add sodium to Table 340.1 and provide language regarding the special monitoring requirements. ODW will follow EPA's recommendation.

12VAC5-590-370. Monitoring requirements: ODW will add missing information regarding monitoring and reporting violations to be consistent with the requirements in the National Primary Drinking Water Regulations. See 40 CFR 141.860 (c); 40 CFR 141.860 (d) and the PowerPoint.

12VAC5-590-373 C 1 a. Organic chemicals monitoring: See 40 CFR 141.24 (f)(5) - ODW no longer considers grandfathered data for reduced monitoring of VOC and SOC beyond January 1993.

12VAC5-590-373 C 3: ODW recognizes that some clarification is needed as posited by EPA. To achieve this, ODW believes that a simpler approach would be to revise the subdivision title to reflect increased monitoring for results that are >PMCL only. Thus, for 12VAC5-590-373 C 3, "Return to compliance" becomes "Returning to annual monitoring after PMCL exceedance".

12VAC5-590-373 E 3 b (4): ODW will add the missing information on watershed protection for surface water systems (40 CFR 141,24(f)(8)(ii)(E)). Watershed protection is included in the current *Waterworks Regulations* under 590-370 B 2 f (4).

12VAC5-590-373 E 4 a (1): The proposed language does not include an update on vulnerability assessment as a VOC waiver condition (40 CFR§141.24(f)(9)). ODW will restore the relevant language from 12VAC5-590-370 B 2 g (1) in the current *Waterworks Regulations*.

12VAC5-590-373 F 4 b: The proposed language does not include the criteria for remaining on reduced monitoring for waterworks with annual or less frequent monitoring. ODW will restore the relevant language from 12VAC5-590-370 B 3 e (1) (c) in the current *Waterworks Regulations*.

12VAC5-590-1140. Installation and testing of water mains: In response to the comment about using the most current standard, in promulgating regulations, the Registrar requires agencies to specify the year for standards – cannot say "future versions" or "most recent version". Note that agencies can use another regulatory process to update regulations over a shorter period of time, assuming the regulated community supports the revision (see Va. Code § 2.2-4012.1. Fast-track rulemaking process). ODW will update references to the most current standard.

12VAC5-590-1170. Hydrants: Staff explained that the proposed language would codify ODW's practice and policy for the last 20 years. Several people objected to the mention of plugging fire hydrant drains. The group discussed current industry practice is to not plug the drain because some muddy water or contamination in the base of a fire hydrant is not a concern, in comparison to the problem of a frozen fire hydrant causing problems with firefighting.

The group discussed a possibility of using performance requirements – goal is to prevent backflow, cross contamination. Have the engineer/designer say design meets the performance requirement. This could lead to issues during ODW review of the plans.

There is a conflict between the fire protection – to meet firefighting needs (concern about water in hydrant freezing) – and health risk from backflow or cross contamination. Waterworks owners, others have not heard about any risk, contamination from backflow through a fire hydrant.

Several members of the group questioned ODW's proposed revision: "Under conditions where there is no high groundwater, surface flooding or ponding or contaminant or pollutant spills, fire hydrant drains shall drain to the ground surface or to dry wells provided exclusively for this purpose. In all other situations, fire hydrant drains shall either be drained in a manner that will avoid contamination of the hydrant or be plugged."

WAC members and others in attendance stated their willingness to form a work group to come up with design standards – David Van Gelder, Steve Edgemon, Jeremy Hull, and Bob Edelman agreed to consider the issue and develop a recommendation for the next WAC meeting in April. Steve Edgemon will provide some information on weep holes in fire hydrants before the next meeting.

12VAC5-590-600. Cross connection control program responsibilities: Generally, ODW and stakeholders need to work through issues related to:

- cost for annual recordkeeping and testing (education is less costly, less protective);
- irrigation systems should be classified as high hazard;
- scope of public education program, if allowed;
- cross connection control program approval by VDH; and
- waterworks responsibilities/authority beyond the service connection or point of demarcation.

Historically, line of separation between waterworks authority (point of demarcation) and the local building department (code official) is the water meter. Beyond the meter, the Uniform Statewide Building Code (USBC), which includes the Plumbing Code, is the source of regulatory authority. The USBC requires the property owner to annually test backflow prevention assemblies, but does have specific requirements for the property to report the results of the test and doesn't give authority to waterworks or ODW to enforce requirements on private property, beyond the service connection. 12VAC5-590-55

The group discussed the possibility that the USBC and Waterworks Regulations say the same thing or at least be consistent. The USBC requires testing of assemblies, which means that an education program could not replace testing. If the USBC doesn't require reporting, perhaps education can replace reporting.

One member stated that his waterworks is requiring homeowners to complete annual testing on testable devices and submit the test reports to the waterworks and there are no issues.

A member pointed out that a building must meet the building code when it is constructed or modified. If the building code changes, there is no requirement to update the building to meet the new requirements.

The group discussed containment devices and associated standards. One member advocated for relying on the USC to approve devices. Another member pointed out that this was in the Waterworks Regulations and was removed.

The WAC discussed and agreed to form a subgroup that will work together to recommend a way forward for addressing concerns about cross connection control. The following persons expressed interest in participating: Tom Fauber, Roger Cronin, Steve Herzog, Skip Harper, and Jeremy Hull. Bob Edelman of ODW will coordinate this subgroup.

Other Business

- The September meeting has been moved to September 23, 2020 due to Water Jam.
- Bailey Davis will be sending an email to WAC members and ODW regarding PFAS meeting in May.

WAC Meeting
February 19, 2020
Attachments
and
PowerPoint Presentations

Waterworks Advisory Committee (WAC) Meeting Summary

Sydnor Hydro, Inc., 2111 Magnolia St, Richmond, Virginia 23223
Wednesday, December 11, 2019

Final

Members Present: Dwayne Roadcap, (ODW) Chair; Jesse L. Royall, Jr. PE, Sydnor; Bailey Davis, DCLS; Skip Harper, DHCD; David F. Van Gelder, Water Operator; Steven Herzog, PE, VWEA; Eric Lasalle, NTNC

Guests in Attendance: ODW staff – Robert Edelman, Christine Latino, Nelson Daniel, Dan Horne, Jeff Wells, Jeremy Hull, Tony Singh, James Reynolds, Aaron Moses, Kelly Ward, Jarrett Talley

Russ Navratil, AWWA; Tom Fauber, VA ABPA; Paul Nyffeler, Aqua Law PLC; Steven Edgeman, Fairfax Water; Laura Bauer, VA American Water Company; Kelly Ryan, VA American Water Company; Paul Saunders, DPOR; Vincent Day, Cardno; Mike Nannery, Chesterfield Utilities; Keith Chambers, Chesterfield Fire & EMS

Meeting Overview and Agenda

Dwayne Roadcap, Office of Drinking Water Director, chaired the meeting. He introduced Kelly Ward, FCAP director, and Jarrett Talley, Non-Community Sustainability Coordinator in the Division of Training, Capacity Development and Outreach. He also provided an overview of the meeting agenda. David VanGelder requested to add an update on operator training/coordination with DPOR (discussed at the October 16, 2019 meeting).

Adoption of Minutes from October 16, 2019 Meeting

WAC members voted unanimously to approve and adopt the draft minutes from the October 16, 2019 meeting. ODW will post the minutes as final on Town Hall.

Public Comment Period

No public comments

ODW Updates

Guidance on Water Main Breaks and Responses

ODW staff responded to three comments they received during the 30-day public comment period beginning September 30, 2019. The effective date of the guidance is October 30, 2019. A copy of ODW's response to commenters is included with the meeting materials. ODW posted the guidance on Town Hall and the ODW website.

Source Water Manual

ODW staff received and responded to comments from Mission H20. The effective date of the guidance is October 30, 2019. A copy of ODW's response to Mission H2O is included with the meeting materials. ODW posted the Manual on Town Hall and the ODW website.

Waterworks Regulations
The Proposed Amendments to the Waterworks Regulations were published in the November 11, 2019 edition of the *Virginia Register* and are open for public comment until January 10, 2020. The public may submit comments via Town Hall, in writing to ODW, and/or at a public hearing at the Monroe Building on Jan 7, 2020. After the public comment period ends, ODW will use the comments to inform decisions regarding the final amendments, and present them to the Board of Health for approval. The Board meets in March, June, September, and December 2020. Depending on the number and nature of comments ODW receives, staff are working to have a final draft of the amended regulations ready for the June or, more likely, September Board meeting. If the Board approves the final amendments, ODW estimates the effective date would be sometime early to mid-2021 (following executive branch review and a 30-day public comment period).

Fee Regulations
ODW is still in the process of forming a stakeholder workgroup. ODW intends to get this started soon. Activities related to the General Assembly may affect staff ability to address this issue.

WIIN Grant for testing for lead in water at schools and day care centers
ODW submitted its application in August. EPA approved the work plan, and is in the process of approving funding. ODW will hold a kickoff meeting with stakeholders after EPA approves the funding. ODW plans to work with the Department of Social Services, Department of Education, and universities (Old Dominion University, University of Virginia, and Virginia Tech). The WIIN grant is focused on facilities serving younger children (ages 6 and under), underserved and low-income communities, and facilities that are older and more likely to contain lead plumbing (i.e., buildings constructed in whole or in part prior to 1986). ODW requested WAC members provide information on recent experience from lead sampling at some large school systems in their service areas.

Lead Sampling at Virginia Beach Schools
Dan Horne, Southeast Virginia Field Office (SEVFO) Director, briefed the WAC on recent sampling in Virginia Beach public schools. Lead sampling at schools is required by Va. Code 22.2-135.1.

Virginia Beach hired a contractor to perform lead sampling in its schools, starting this past summer. The results indicated lead levels above 15 parts per billion (ppb) at 60 outlets used for drinking water in 33 schools. The results lead to questions about interpretation, health effects, corrective actions, remediation and how to prioritize, and communicating with students, teachers, parents, and the public. ODW SEVFO and others (Epidemiology, Local Health Department, university officials, etc.) are working with the Virginia Beach public school officials and utilities department on these issues.

Sixth field office
James Reynolds, Richmond Field Office (RFO) Director, briefed the WAC. Three inspector positions came open due to internal promotions and RFO is working to fill the positions. RFO plans to make offers soon with start dates in January 2020. RFO is also working to fill the Deputy Field Director position and a data entry position (wage).

Workload balancing
Dr. Tony Singh briefed the WAC. With six field offices, ODW plans to redistribute work areas among the field offices and assign some counties to a different field office. VDH leadership has approved the proposed changes and the field directors are in the process of meeting with local health directors to explain changes and get their feedback. In January 2020, ODW expects to start reaching out to affected waterworks. In February 2020, ODW expects to begin data migration as needed. The transition is scheduled to begin in March 2020, with goal of completion by April 1, 2020.

One WAC member expressed concern about location of the RFO and would like a more convenient location than downtown Richmond. ODW acknowledged the concern, but responded that there are budget implications and benefits to having the RFO located in the same space as the central office. Three things that will influence the decision about the location of the RFO are:

(1) VDH leadership is reviewing the agency's Richmond area building assets/workspace allocation;
(2) The Department of General Services, which manages the Madison Building (where ODW and RFO are currently located) is planning HVAC upgrades in the upper and lower basement of the building, which will require RFO to move out of its current office space at some point; and
(3) ODW's objective is to use its current space as efficiently as possible. To this end, ODW is allowing some employees to telework.

WAC members noted the lack of parking near the Madison Building, poor conditions in current RFO workspace, and some difficulties reaching ODW employees that telework. RFO leadership is working on these issues and asked that stakeholders contact the field director if they are not able to reach employees that telework.

Dwayne Roadcap also discussed moving to electronic records and access to information in a cloud environment. This will facilitate getting rid of unneeded paper files and free up space office space.

EPA Updates

Lead and Copper Rule Revisions (LCRR)
Bob Edelman, Director, Division of Technical Services, provided a briefing and facilitated a discussion with the WAC on specific topics in the LCRR. Refer to the PowerPoint for background.

Timeline: ODW is now in the public comment period; it is scheduled to end January 13, 2020. EPA may possibly grant a 30-day extension. Three years after final rule is published in Federal Register, community water systems (CWS) and nontransient non-community (NTNC) systems must comply.

ODW Activity – ODW's Lead & Copper Rule committee is drafting a letter to EPA to address specific questions from EPA related to the LCRR and document specific Virginia comments and concerns. WAC members asked to see a draft of the letter before ODW submits it to EPA. ODW agreed to email a draft of the letter to the WAC members. ODW is also working with the Association of State Drinking Water Administrators (ASDWA) on its comment letter to EPA. ASDWA's comments represent the combined views of the state drinking water programs and may be different from individual states.

Regarding specific requirements in the proposed rule:

A new 90th percentile (P90) trigger level of > 10 µg/L < 15 µg/L will require waterworks to undertake additional planning, monitoring and treatment requirements.

Q: Is the trigger level of P90 > 10 µg/L too low or high? [WAC responses and comments are in italics.]

- *It is as good as any other arbitrary number.*

Q: Are the required actions under the trigger level appropriate?

- *Concern about requirement to re-optimize corrosion control treatment (CCT) could be required repeatedly, and coming up with the same result.*
- *Trigger Lead Service Line replacement at greater than 15 µg/L, not 10 µg/L.*

Q: Small Water System Compliance Flexibility – Should EPA provide different options?

- *The options lack off-ramps if the facts or situation changes. For example, if a small groundwater CWS installs corrosion control treatment (CCT), but later connects to wholesaler using treated surface water with CCT, the small groundwater system should be released from the requirement for installing and operating CCT.*
- *Likewise, if a small system starts lead service line (LSL) replacement, goes a couple of years, then changes the water source there is no provision to stop LSL program.*

Q: Replacement of lead bearing plumbing (NTNC) period is 1 year. Is this sufficient?

- *One year is not sufficient for NTNCs to complete replacement of lead bearing plumbing in larger facilities.*

Definition of Lead Service Line: (ODW highlighted sections for discussion)

Lead service line means a service line made of lead, which connects the water main to the building inlet. A lead service line may be owned by the water system, owned by the property owner, or both. For the purposes of this subpart, a galvanized service line is considered a lead service line if it ever was or is currently downstream of any lead service line or service line of unknown material. If the only lead piping serving the home or building is a lead gooseneck, pigtail, or connector, and it is not a galvanized service line that is considered an LSL the service line is not a lead service line.

- *Concern about considering a galvanized service line (SL) as a LSL if it ever was or is currently downstream of any lead service line or service line of unknown material. Consider a galvanized line to a house, installed pre-1986. The utility replaces the galvanized service line on their side, but does not replace the customer side. The Utility does not have records of service replacements from the 70's, 80's, etc. and has no records of the original SL material. The utility does their LSL inventory and finds a copper SL on the utility side and a galvanized line on the customer side. By the definition, this is a LSL and this is a problem.*
- *Concern that galvanized service lines will become de facto LSLs that must be replaced.*
- *Concern about excluding goosenecks, pigtails, etc. – counter intuitive to say that they are not a lead source.*
- *WW shouldn't focus on private side, focus should be on public side*
- *WW should focus on CCT*
- *Object to EPA mandating action on private property, unless the WW has owner consent*

LSL inventory requirement:

- *This will be tough.*
- *Concern that if you trigger or submit the inventory to the State, the LSL inventory is locked-in. If the Utility gets new or better information, it should be able to update the original LSL inventory.*
- *Concern about what is satisfactory inventory report. Guidance and clarification is needed. WW may be able to keep some SLs off the list of unknowns based on date of installation (post-1986). If unknown, assume Pb – there is then incentive to move to known. Is it arbitrary to assume that an unknown is Pb? Is it acceptable to do a survey sampling some homes in a neighborhood instead of checking every individual home/connection?*

- *To convert unknowns to knowns, the utility must take action to verify SL materials, must have information specific to the SL.*

Q: Is 3 years from the LCRR publication date reasonable to complete the LSL Inventory?

- *Will be harder for some utilities than others.*
- *Probably doable for the utility side of SLs.*
- *Customer sides of SLs will have many unknowns.*

Q: How good are your SL Records?

- *Utility records for specific SLs are incomplete or do not exist.*
- *Utility does not know if the customer replaced SL on their side because this is not in utility records.*
- *Inventory of private side is problematic because utility has no records and no way to learn the private side material without digging up SL or entering the home, both of which require staff to enter private property and gain homeowner permission. This does not seem doable for some utilities.*

Q: Should EPA require systems to distribute public education materials to customers with unknown SLs?

- *Notification requirements for LSLs go beyond the CCR – meaning another notice to consumers. Concern that it will cause undue alarm… Hanover will look at construction dates, everyone before '86 will be "unknown" and receive information.*

<u>LSL Replacement Plan</u>:

- *Concern with the pitcher filters that would be required when systems shut off customers with LSLs for nonpayment – the cost of the filters will be passed on to customers in the required payment to restore service. Concern that the cost of the pitcher filter program would drive up the cost to restore service after shutoff after nonpayment.*

  [Post-meeting note: Pitcher filters/cartridges would not be required for a shut off. Here is the proposed language: <u>Water systems that cause disturbance to a lead service line that results in the water being shut off, and without conducting a partial or full lead service line replacement, must provide the consumer with information about the potential for elevated lead in drinking water a result of the disturbance as well as a flushing procedure to remove particulate lead.</u>]

Q: Is 45 days sufficient for the water system to replace the system-owned LSL when customer notifies the water system of intent to replace the customer portion of the LSL?

- *45 days is not long enough for the WW to replace LSL on utility side if consumer notifies that they are going to replace on the private side. WAC says "within a reasonable timeframe, consistent with the LSL replacement plan" or say, within a year or within a budget cycle. All of this is going to drive up rates, passing the burden on to consumers… need to comment on affordability*

<u>Recordkeeping requirements</u> – significant increase in recordkeeping requirements if a WW exceeds trigger level… for WW under the trigger level, some new requirements – LSL inventory, etc.

- *Additional cost to provide more information to consumers,*

- *Implications of shutting off water to a house – provide a pitcher filter, information, etc. (cost, admin requirements)*

Reporting for trigger level exceedance

- *adds reporting requirements (same comments as recordkeeping)*

Reporting for action level exceedance

- *lots of moving parts (same comments recordkeeping – it all goes hand-in-hand)*

Schools and child care centers – requirement to sample 20% of facilities in service area each year:

- *Concern about inconsistencies with 3Ts (5 locations vs. all drinking water sources).*
- *Concern about WWs becoming 3Ts experts, which are not the same as LCR/LCRR (this has happened in VA in some cases already).*
- *Who manages this program – ODW, WW, schools?*
- *WW does not have legal authority over sampling in schools/daycares.*
- *Will be very challenging for WW to be able to ultimately sample at every school/daycare.*

ODW is looking at what it will cost to implement rule. Dwayne Roadcap suggested WW look at what it will cost to implement the rule – provide that as part of cost-benefit analysis.

Q from WAC – Is drinking water a significant source of lead poisoning in VA? ODW responded, generally, no, limited to about 20% of all lead exposure. However, for some populations, lead in drinking water can be a greater source (such as lead-contaminated water used in mixing formula)

Weep Holes in Fire Hydrants (12VAC5-590-1170)

Mike Nannery, Chesterfield Utilities, provided thoughts on the proposed amendments to the Waterworks Regulations: *We believe that plugging weep holes is a bad idea. Pumping out fire hydrants is a best practice, but does not always happen due to human error. We have concerns about frozen hydrants. This is more of a concern away from the coast. We have a hydrant meter program, which means that we have issued hydrant meters to companies that obtain water from fire hydrants, usually to fill a tank truck or for water use at a construction site. The problem is that we don't know which hydrants are actually used by the companies. We want to keep the current policy and regulations.*

Asst. Chief Keith Chambers, Chesterfield Fire & EMS provided perspective from Emergency Services: *The number one user of fire hydrants is the fire service. We have three major concerns with the proposal to require plugging of weep holes in certain locations.*

1. *We have problems with frozen hydrants in the winter even now. We are concerned about the potential increase in number of frozen hydrants and increase of property damage.*
2. *We were not engaged in this regulatory change. We will need to engage colleagues.*
3. *Was there a risk versus benefit analysis? Is there a documented health protection benefit for avoiding contamination? Frozen hydrants have a documented significant increase of property damage.*

Virginia Fire Chiefs Association is main point of contact for the stakeholders (fire departments).

Skip Harper stated that his agency already addressed the weep hole problem with yard hydrants, in the plumbing code. *He will reach out to the manufacturers to get more info and share with the group.*

Jeff Wells (Danville Field Office Director) pointed out the section in question is in Part 3 of the *Waterworks Regulations* and would apply to new construction only. This is not in the cross connection section of the *Regulations*.

Tom Fauber explained that he brought this up at the convention of the Virginia Chapter of the American Backflow Prevention Association. The gain in health protection from plugging the weep holes does not outweigh the risk of frozen hydrants and increased property damage if a fire were to occur. Weep holes are a necessary evil. Tom agrees that sanitary yard hydrants should not have weep holes.

Dwayne Roadcap stated that ODW will work with stakeholder community to get the word out, examine current regulations and policy, and consider comments to the WAC and any public comments received.

Skip Harper stated that the yard hydrant policy is already in the building code.

Data Management Update

Aaron Moses, ODW Field Services Engineer, briefed the WAC on data management projects. The project to replace ODW's MS Access interface applications is proceeding with proprietary software from Global Environmental Consulting (GEC). The Virginia Information Technologies Agency (VITA) review is underway – ODW expects VITA to finish in February 2020. Following VITA review, ODW expects to establish a contract with GEC (approximately March 2020). ODW is migrating data from the MS Access interface application to SDWIS to the extent possible, with a goal of October 2020 completion. ODW is currently working on migrating remaining Lead and Copper Rule data. This will facilitate use of more SDWIS automation features.

ODW has implemented electronic submission of lab sample results through the Compliance Monitoring Data Portal as a pilot project with a few certified laboratories. One lab completed the test phase and is ready to begin reporting to the SDWIS production environment.

ODW plans to require all laboratories to submit compliance monitoring results through CMDP and stop accepting paper and other forms of results, beginning September 1, 2020. This is required for future versions of SDWIS and for compliance with EPA's Cross Media Electronic Reporting Rule. Electronic reporting will reduce data errors and improve customer service to waterworks. As a result, this will reduce ODW staff time spent on data entry and error resolution.

ODW plans to use grant funds from EPA to help laboratories transition to CMDP by providing training and support. The grant funds expire August 2020. ODW will notify labs in writing and follow up by telephone.

GEC is working on vulnerabilities in their version of Drinking Water Watch (DWW) and plans to develop a customized version for ODW. To address stakeholders' concerns about being able to ensure water quality results are correct, ODW is planning to build in a 30-day delay on public access. The 30-day period will give ODW time to provide waterworks owners notice of alleged violations and waterworks owners time to contact ODW to address potential errors or violations.

ODW provided mockups of the next sample due report and compliance determination tables. WAC commented: *With mockups – would be good to define acronyms*.

See the PowerPoint presentation and example reports (mock-ups for future Drinking Water Watch).

Other Business

ODW will follow up with Barry Mathews regarding coordination between DPOR and Virginia Tech for operator training. David VanGelder volunteered to help if ODW involves outside stakeholders.

WAC members reviewed a draft letter to send to the Commissioner supporting the formation of a stakeholder workgroup that will review the waterworks operation fees (12VAC5-600). WAC Vice Chair David VanGelder will revise the letter as suggested by members and send it to the Commissioner on behalf of the WAC.

General Assembly 2020 session – SB106 would ban fracking in the Eastern Virginia Groundwater Management Area. ODW also saw some discussion of PFOA/PFOS in a potential bill. ODW expects a bill on lead testing in schools and day care facilities. ODW will communicate with stakeholders as needed – starting with an email and/or call to WAC members. ODW will take stakeholder input and include it in our analysis of the bill.

Dates for next year: WAC members considered a proposal to meet 5 times during 2020:

- Wednesday, February 19, 2020 – Perimeter Center
- Wednesday, April 15, 2020 – Perimeter Center
- Wednesday, July 15, 2020 – Sydnor Hydro
- Wednesday, September 16, 2020 – Sydnor Hydro
- Wednesday, December 16, 2020 – Perimeter Center

The WAC accepted the proposed schedule for next year without a formal vote or action.

The meeting adjourned at 1:17 pm.

Waterworks Operation Fee Stakeholder Group

Charter

ODW wishes to solicit stakeholders' input into the operation fee structure and determine if it is appropriate to serve its intended purpose going forward.

ODW will provide transparency, capture issues, input, and policy recommendations, and ultimately suggest implementation procedures to maximize the effectiveness of the Operation Fee Regulations.

Stakeholders

Waterworks owners, drinking water industry representatives, advocacy groups, and other knowledgeable parties

Stakeholder Group

Stakeholders (15 – 25)

- Community waterworks serving > 10,000 persons (2)
  - Norfolk, Fairfax, Hanover, Prince William
- Community waterworks serving < 10,000 persons (2)
  - Virginia American Water, Aqua Virginia,
- Community waterworks serving < 500 persons (2)
  - Sydnor Hydro, Virginia Rural Water Association
- Waterworks advocacy groups (2)
  - Mission H2O, Aqua Law, VA AWWA

Stakeholder Group

Stakeholders (15 – 25)

- Organization that represents localities/local governments (1)
  - Virginia Association of Counties, Virginia Municipal League
- County or PSA representative (1)
  - Fairfax, Prince William,
- Wholesale waterworks (1)
  - NRV, Appomattox Regional
- Nontransient noncommunity waterworks (1)
  - Virginia Manufacturers Association
- Transient noncommunity waterworks (2)

Stakeholder Group

Stakeholders (15 – 25)

- Organization or advocacy group w/members that own or operate TNC waterworks – such as campgrounds or restaurants (1)
  - Virginia Restaurant, Lodging, and Travel Association, Virginia Campground Owners Association,

VDH Staff to Support/Facilitate

- ODW staff
  - ODW Policy and Program Director
  - Noncommunity system coordinator
- VDH Shared Business Services (SBS) staff

Waterworks Operation Fee - Meetings

Meeting Dates

Monday, April 6, 1-4 pm
Tuesday, April 28, 1-4 pm
Tuesday, May 26, 1-4 pm

All meetings will be in the VDH Main Floor Conference Room
109 Governor Street, Richmond, VA 23219

Waterworks Operation Fee - Meetings

Meeting Agenda: Monday, April 6
1-4 pm, VDH Main Floor Conference Room

- Introduce the issue/background,
- Establish ground rules,
- Share perspectives
- Identify interests and stakeholder issues, and
- Develop options for addressing the issues

Waterworks Operation Fee - Meetings

Meeting Agenda: Tuesday, April 28,
1-4 pm, VDH Main Floor Conference Room

- Review specific issues in more detail
  - Budget
  - Needs
  - Sources of fees
- Develop options

Waterworks Operation Fee - Meetings

Meeting Agenda: Tuesday, May 26,
1-4 pm, VDH Main Floor Conference Room

- Seek consensus
- Craft recommendations for ODW action

Waterworks Operation Fee

Next Steps:

Contact stakeholders, confirm participation

Lead and Copper Rule Revisions

February 19, 2020

Timeline

- October 10, 2019 – Signed Proposal
- November 13, 2019 – Published Proposal in Federal Register – comment period opened
- January 13, 2020 – original end of comment period
- February 12, 2020 – extended – end of comment period
- Respond to comments and publish final rule in FR
- [three years after publication of the final rule in FR] – CWS and NTNC must comply

ODW Activity

- Lead and Copper Rule Committee met
  - Representatives of 6 Field Offices and Central Office
  - Review and understand what's new and different in the LCRR
  - Comment letter to EPA submitted February 10
    - Specific questions from EPA
    - VDH ODW specific comments and concerns
- ASDWA LCRR Workgroup
  - Three ODW staff participated (3 subcommittees)
  - Comment letter to EPA submitted February 10

ODW's Top Four Comments

1. LCRR complexity
2. Early Implementation Issues
3. Small water systems
4. Cost to VDH to implement

LCRR Complexity

- Existing LCR is already complex
- Exceeding 10 ppb TL or 15 ppb AL triggers many events
- Many milestones, transactions, interactions, approvals, etc.
- VDH anticipate guiding each waterworks owner step by step after exceeding a TL or AL.
- Recommendations:
  - Reduce the complexity, especially for small systems.
  - Keep pathways and requirements consistent across system sizes.

Early Implementation Issues

Concerned about requirements waterworks must complete before VDH receives primacy:

1. Lead Service Line Inventory
2. Lead Service Line Replacement Plan
3. Preparation for lead testing in schools and child day centers

Recommend: EPA publish guidance

Small Water System Issues

- Definition of small should be serving less than 3,301 persons
- Waterworks serving 3,301 to 10,000 persons have significantly more technical, managerial, and financial (TMF) capacity than those serving less than 3,300.
- Concerned about sufficient TMF for small waterworks, especially serving less than 3,301 persons.
- Not enough flexibility in LCRR for small water systems

Recommend: Additional flexibility or additional time for small waterworks to comply with LCRR

Cost to VDH to implement

- Many new tasks, new approvals and transactions to track
- ASDWA's update to the 2018 Cost of States' Transactions Study (CoSTS) predicts in increase of 11 full time equivalent employees.
- LCRR introduces new data tracking requirements.
- VDH expects EPA to update SDWIS State.
- If not, custom developed additional software could cost approximately $150,000.

Recommendations: EPA to update SDWIS State, simplify proposal.

Other Comments

- “Child care facility” – four categories in Virginia
- “Lead service Line” – galvanized d/s of LSL, pigtails, etc.
- “School” – overly broad and could include home schools
- “Small water system” – should be less than 3,301 persons
- Individual sample site – reporting requirement
- Corrosion control treatment steps – simplify, more flexibility
- Tap sampling protocol – retain 1L first draw, limit stagnation

Schools and Child Care Facilities

- VDH ODW proposed to reduce the scope of waterworks responsibility to:
  1. Providing a copy of the *3Ts* document
  2. Providing up to 5 samples per school and 2 samples per child care facility
  3. Notifying schools and child care facilities of sample results
  4. Tracking lists of schools and child care facilities
  5. Sampling at 20% of the listed facilities each year

Comments and Questions?

COMMONWEALTH of VIRGINIA
Department of Health
M. Norman Oliver, MD, MA
State Health Commissioner
P O BOX 2448
RICHMOND, VA 23218
TTY 7-1-1 OR
1-800-828-1120

February 12, 2020

Mr. Erik Helm
Standards and Risk Management Division
Office of Ground Water and Drinking Water
US Environmental Protection Agency
1200 Pennsylvania Ave. NW Mail Code 4607M
Washington, DC 20460

Re: Docket ID No. EPA-HQ-OW-2017-0300

Dear Mr. Helm:

The Virginia Department of Health (VDH), through its Office of Drinking Water, is the primacy agency responsible for the public drinking water program in the Commonwealth of Virginia. VDH thanks you for the opportunity to comment on the U.S. Environmental Protection Agency's (EPA) proposed Lead and Copper Rule Revisions (LCRR) and submits the following comments and concerns in response to EPA's November 13, 2019 request for public comment.[1]

The LCRR makes substantial changes that will reduce the risk of exposure to lead in drinking water, particularly from lead service lines. VDH supports EPA's efforts to strengthen public health protection from lead and copper in drinking water, but has questions, concerns, and comments about the LCRR. Considering the LCRR as a whole, VDH's primary concerns are summarized below. Detailed comments about specific LCRR sections follow the summary.

1. The Lead and Copper Rule is already a complicated drinking water treatment technique regulation.[2] As proposed, the LCRR is significantly more complex for public water systems (known as "waterworks" in Virginia[3]) to follow if they exceed the current 15 parts per billion (ppb) lead action level or the proposed 10 ppb lead trigger level. The number of comments, requests for guidance and clarification, staff needs, and implementation cost that are detailed in this letter are indicative of the challenges primacy agencies, such as VDH, will face if they have to implement and enforce the

[1] National Primary Drinking Water Regulations: Proposed Lead and Copper Rule Revisions, 84 Fed. Reg. 61684 (to be codified at 40 C.F.R. pt. 141 and 142).
[2] 40 C.F.R. §§ 141.80 through 141.91; *see also* 84 Fed. Reg. 61685-61686.
[3] *See* Code of Virginia § 32.1-167. "'Waterworks' means a system that serves piped water for human consumption to at least 15 service connections or 25 or more individuals for at least 60 days out of the year. "Waterworks" includes all structures, equipment, and appurtenances used in the storage, collection, purification, treatment, and distribution of pure water except the piping and fixtures inside the building where such water is delivered."

LCRR as proposed. VDH requests that EPA find ways to reduce the complexity of the LCRR, particularly the requirements for waterworks that serve 3,300 or fewer persons.

2. VDH is extremely concerned about the number of requirements that waterworks must complete before VDH expects to receive primacy to implement the LCRR in Virginia. In particular, waterworks will be required to complete the lead service line (LSL) inventory and replacement plans, and prepare for testing in schools and child care facilities within three years of the effective date of the final rule.[4]

   a. In the period between the LCRR's effective date and EPA granting VDH primacy, which has taken around three years with previous rules, VDH will not have EPA's approval for policies, procedures or state regulations, but waterworks will be contacting and relying on VDH for guidance and technical assistance to satisfy their requirements under the LCRR.
   b. The LCRR requires states to establish LSL replacement goal rates and designate acceptable methods for determining service line material for LSL inventories.[5] If VDH creates guidelines for waterworks to follow to meet the replacement goal rates and LSL inventory requirements, EPA could subsequently reject them, leaving waterworks without clear direction regarding compliance with the LCRR.

   To ensure VDH and other primacy agencies are able to provide guidance and technical assistance to waterworks that will be consistent with EPA's expectations for implementing the LCRR, VDH recommends EPA publish guidance for states on the special primacy requirements,[6] including guidance on approved methods to identify service line materials and for establishing LSL goal rates, concurrent with publication of the final rule. In addition, VDH and primacy agencies will need guidance at least one year before the effective date of the LCRR on parameters for developing the lists of schools and child care facilities that will be subject to lead testing by waterworks under proposed 40 C.F.R. § 141.92.

3. The LCRR, in proposed 40 C.F.R. § 141.93, does provide flexibility for small waterworks to comply with the rule's requirements. However the alternatives do not go far enough to aid small community and nontransient noncommunity (NTNC) waterworks, particularly when "small" waterworks are defined as those serving 10,000 persons or fewer.[7] There are approximately 1,456 community and NTNC waterworks in Virginia that serve 3,300 or fewer persons and 80 community and NTNC waterworks that serve between 3,301 and 10,000 persons.

   a. Using health-based violations and compliance history as an indicator of technical, managerial, and financial (TMF) capability, the waterworks serving more than 3,300

[4] 84 Fed. Reg. 61696; 84 Fed. Reg. 61745 (proposed 40 C.F.R. § 141.80 (a)).
[5] 84 Fed. Reg. 61774 (proposed 40 C.F.R. §142.16(d)(5-6)).
[6] 84 Fed. Reg. 61711; 84 Fed. Reg. 61774 (proposed 40 C.F.R. § 142.16).
[7] 84 Fed. Reg. 61744 (proposed 40 C.F.R. § 141.2).

persons in Virginia do not require the same degree of flexibility as those serving 3,300 or fewer persons.
- Many of the waterworks serving fewer than 3,301 persons are short-staffed, with only one or two persons operating and managing the waterworks.
- Overall, the small waterworks account for approximately 89% of the waterworks in Virginia with health-based violations and 90% of the waterworks with scores above 5 on EPA's Enforcement Targeting Tool report.[8]
- The lack of TMF capability, as demonstrated by compliance history, makes it highly unlikely they will be able to implement all parts of the LCRR as proposed.

b. EPA should consider adopting additional compliance strategies or allotting more time to these waterworks to comply with the LCRR.

4. The LCRR will be very costly for VDH to implement, requiring as many as 11 additional employees and expenses exceeding $150,000 to develop databases and/or software if EPA does not expand the capabilities of the Safe Drinking Water Information System (SDWIS) or replace it altogether, as EPA proposed to do with SDWIS Prime. The comments that follow, and the "Cost of Rule Implementation" beginning on page 16, contain more information about the fiscal impact on Virginia associated with the LCRR.

VDH's detailed comments about specific sections of the LCRR are below, beginning with the proposed revisions to 40 C.F.R. § 141.2.

§141.2 Definitions.

- "Child care facility" - the use of "…a licensed provider…" would limit the number of facilities in Virginia covered by the LCRR. Virginia's Department of Social Services is the licensing agency for "child welfare agencies," which include child care facilities. There are four classifications of facilities in Virginia: Licensed, Unlicensed but Regulated, Approved; and Unlicensed and Unregistered:[9]
  - Licensed childcare programs are inspected at least twice per year. They have requirements for background checks, training/orientation, and health and safety programs.
  - Some programs offering child day care obtain a general business license to operate, however this is not the same as a license from the Virginia Department of Social Services.
  - Voluntarily registered family day homes are required to be inspected prior to certification, and every two years thereafter, and must complete background checks as well as health and safety requirements.
  - Religiously exempt child day centers are required to complete background checks and must certify annually that the program is in compliance with background checks and health and safety requirements.

[8] Compliance statistics are based on EPA's October 2019 Enforcement Response Policy Targeting Tool (ETT).
[9] *See* Code of Virginia §§ 63.2-1705, 63.2-1715, 63.2-1716.

- Certified preschools are operated by an accredited private school and are required to complete background checks and must self-certify prior to certification, and annually thereafter, regarding criminal record clearances on all employees, a list of staff qualifications, and health and fire inspection reports.

VDH interprets "licensed provider" to include only those facilities described in the first bullet; if EPA expects more to be included in the LCRR requirements, please clarify if "licensed provider" also refers to religiously exempt child day centers, voluntarily registered, certified, approved by a local ordinance, or holding a business license. Alternatively, consider referencing the definition of "early childhood education program" in section 103(8) of the Higher Education Act of 1965.[10]

- "Consumer" and "customer" - although defined separately, "consumer" and "customer" do not appear to be used as separate and unique terms throughout the LCRR. Please clarify or distinguish between the intent when "consumer notification," "customer notification," and/or other terms that are used throughout the LCRR and explanation.

- "Lead service line" - the definition, "…a galvanized service line is considered a lead service line if it ever was or is currently downstream of any lead service line or service line of unknown material…" is problematic since many community waterworks have no records about service line materials and if they have been replaced. In Virginia, galvanized service lines are common. If a waterworks has no service line records on the original service line materials, and replaced the waterworks' side of a galvanized service line (say with copper tubing), this would result in a copper service line on the waterworks' side and a galvanized service line on the customer side. When the waterworks completed their lead service line inventory, this would be classified as a lead service line due to the original unknown material upstream of the customer galvanized service line. VDH recommends changing this to "a galvanized service line is considered a lead service line if records show it ever was or is currently downstream of any lead service line." If not changed, VDH is concerned that all galvanized service lines would be classified as lead service lines that must be inventoried and replaced.

- "Lead service line" – the definition, "…If the only lead piping serving the home or building is a lead gooseneck, pigtail, or connector, and it is not a galvanized service line that is considered an LSL the service line is not a lead service line…" is counter-intuitive. VDH requests EPA share the data to support excluding goosenecks and pigtails from the definition. Please include more information in the preamble that justifies EPA's decisions to eliminate these sources of lead from the LSL definition.

- "School" - VDH believes the proposed definition is overly broad and could be interpreted to include home schooled children, after school tutoring centers, church programs (not including church-based schools), and non-traditional learning activities. However, the

[10] 20 U.S.C. 1003(8).

definition of "local education agency" used in the section 1464(d)(1) of the Safe Drinking Water Act,[11] would be too narrow because it limits the population of schools to public schools. VDH requests EPA provide additional clarification about the definition.

- "Small water system" - in response to EPA's request for comment on the definition of "small water system,"[12] VDH believes that the definition of a "small" should remain less than or equal to 3,300 persons served. VDH's experience working with waterworks that serve more 3,301 to 10,000 persons and recognition of the costs associated with different requirements in the LCRR, suggests the larger waterworks do not need the same flexibility.
  - As an example, the small system flexibility options allow waterworks to install point of use treatment instead of completing corrosion control treatment studies followed by installing whole system treatment. For waterworks serving between 3,301 and 10,000 persons, the cost of installing and maintaining point of use treatment will be greater than the cost of completing the study and installing entry point treatment. There is no advantage to including waterworks serving more than 3,300 persons in the definition of a "small" waterworks.
  - As detailed below, the small system flexibility options are not necessary for waterworks serving more than 3,300 persons and this keeps the definition of "small" consistent with other rules in the National Primary Drinking Water Regulations, further simplifying the changes in the LCRR.

§ 141.31 Reporting Requirements (incl. §§ 141.201, 141.202, Appendix A to Subpart Q).

- VDH does not agree with the requirement to make a lead exceedance at individual sample sites a Tier 1 notification event. We believe that waterworks must confirm a lead exceedance with a second (confirmation) sample before proceeding with the Tier 1 notification. For individual exceedances, VDH proposes that the Tier 1 consumer notification be delayed until after a confirmation sample is collected and analyzed to confirm the individual sample site lead exceedance, as would be required for *E. coli* detections.
  - The health threat from lead follows a Tier 2 notification under the Public Notice Rule. VDH suggests the reporting requirement should match the health threat associated with the contaminant.

- Please identify how the EPA, serving as the Administrator, must be informed of any and all Tier 1 notices or any other notices required under the LCRR.

§ 141.80 General Requirements.

- Please verify that EPA intends to update the Safe Drinking Water Information System (SDWIS) to allow for the calculation of 90th percentile results under the new

[11] 42 U.S.C. § 300-j24.
[12] 84 Fed. Reg. 61736.

requirements of the LCRR. VDH has noted many places in the LCRR that SDWIS will need to be updated, or VDH would need to purchase additional record keeping software to determine compliance with the LCRR. Additional software that VDH, or other states, would need to purchase is not included in the cost estimation for the LCRR. However, software acquisition would be a substantial cost for VDH to bear: VDH would need to hire a contractor to develop the software at a cost of approximately $150,000.

- The requirement to create a lead service line inventory for all waterworks is a heavy burden, and made a lot more significant because of the requirement to log all customer-owned service lines. Small waterworks (serving less than 3,301 persons) in particular do not have the resources and staff needed to compile this data and investigate individual customer service line materials.
  - VDH would like EPA to allocate additional funds to organizations like rural water associations to deliver technical assistance to waterworks as well as contracting assistance to complete the lead service line inventory. For small waterworks in particular, the unfunded mandate will be a fiscal and technical challenge.

§ 141.81 Applicability of corrosion control treatment steps to small, medium, and large water systems.

- The LCRR includes specific requirements for corrosion control studies that detail requirements including studying the effects of two orthophosphate residuals, and using pipe rigs or metal coupon tests to determine treatment effectiveness. VDH's experience with lead and copper action level exceedances (ALEs) is that they most often occur in small waterworks in Virginia. These small waterworks do not have the technical expertise or funds they need to carry out such extensive studies.[13] Currently, VDH performs a "desk-top evaluation" using the March 2016 EPA guidance "Optimal Corrosion Control Treatment Evaluation Technical Recommendation for Primacy Agencies and Public Water Systems." This allows VDH to provide technical assistance to the waterworks quickly, and gives them a basis to decide which corrosion control methods to implement. The detailed studies required under the LCRR will impose a significant financial burden on small and medium sized waterworks. VDH requests that EPA continue to allow desktop evaluations in lieu of these physical studies.
  - In addition, the physical studies mentioned require months to collect sufficient data. When procurement time is added, VDH is concerned about the lengthy time between problem identification (action level exceedance) and resolution (treatment installed followed by reduction in action level), reducing the incentive to require physical studies for each ALE.

[13] Small system flexibility pushes small waterworks to implement an alternative like point of use treatment instead of corrosion control treatment (CCT). VDH cannot imagine a scenario involving waterworks serving 500 or fewer persons where CCT, preceded by corrosion control studies, or lead service line replacement would cost less than point of use treatment and maintenance. For a study that meets the pipe loop criteria noted in the LCRR, a waterworks would reasonably spend $100,000 or more.

§ 141.82 Description of corrosion control treatment requirements.

- VDH is concerned that the requirement to conduct pipe loop studies for corrosion control treatment will needlessly delay the installation of corrosion control treatment (CCT). These studies usually take 1-2 years, and may be longer. They are also costly, which greatly impacts the small waterworks. VDH recommends that EPA include state flexibility on determining what type of CCT study will be required in the LCRR.

- Chloride and sulfate concentrations and their ratio have shown up as important parameters in EPA's Optimized Corrosion Control Treatment (OCCT) guidance manual and scientific research. VDH recommends EPA require adding chloride and sulfate to the list of water quality parameters (WQPs) that waterworks should measure in some situations, particularly for new ALEs where the objective is to diagnose the best OCCT for the waterworks. VDH does not propose that these additional WQPs should be required for ongoing routine WQP monitoring due to the complexity of their analyses.

- VDH is concerned about including an additional WQP site in the monitoring plan if there are any individual site lead exceedances as required in § 141.82(j)(1). There is no process in which to eliminate the site in the future, or eliminate other sites in order to continue with the same number of WQP sites.
  - The number of samples pertains to SDWIS and the fixed monitoring schedules included in the database. There are set numbers of monitoring sites and frequencies associated with different analyte groups; if one additional site is added due to the individual exceedance, VDH will not be able to revise the SDWIS monitoring schedule for the analyte group to allow for this one additional site.
  - VDH recommends that EPA allow waterworks to use the new WQP site for special monitoring samples, but not for future routine monitoring, unless they can update their WQP monitoring plan to eliminate another site and add the new site. VDH recommends that the total number of WQP sites not increase as a result of individual site lead exceedances.

- The LCRR proposes that waterworks collect a second lead sample for individual sites that have a lead level greater than 15 µg/L (ppb);[14] however, it gives waterworks leeway in how to collect those samples. VDH prefers having waterworks collect the second sample using the same procedures as the first, allowing direct comparison between the two in a meaningful way. A non-stagnant 250 mL sample will mask a high lead level and would lead the customer to believe there was no risk associated with their water.

- VDH further requests that the EPA clarify the purpose of this second sample in the preamble to the rule. The sample required in § 141.82(j) may function as either a confirmation sample, in which case collecting it 30 days from receipt of results of the first sample may be too late, or as a test to see if changes altering CCT in the area have

[14] 84 Fed. Reg. 61754, proposed 40 C.F.R. § 141.82(j).

eliminated the issue, in which case EPA should extend the follow-up monitoring to 60 days from the learning the original sample result. For both instances, VDH cannot meet the goal of the follow-up monitoring unless the two samples are collected in the same manner or using the same sampling protocol.

- There appears to be a discrepancy between the preamble and the proposed Regulations. On page 61708 of the *Federal Register*, Volume 84, Number 219, the preamble states that only waterworks with corrosion control treatment are required to collect WQPs. However, in section § 141.82(j)(1), there is no reference to waterworks with or without corrosion control treatment and all waterworks are required to collect WQPs. Revise the language to clarify which waterworks are required to collect WQPs.

- The reporting and primacy agency record keeping requirements associated with the find-and-fix provisions are not clear or clearly defined in the proposed LCRR. VDH proposes that waterworks report any activities performed under the find-and-fix portion of the rule in their monthly operating reports, or they submit an annual report detailing all of their activities. This would also give the waterworks more time to report their activities, which helps the smaller waterworks with limited staff. VDH retains waterworks monthly operation reports in our records for 5 years; VDH proposes that EPA allow states flexibility regarding the required retention period for records related to find-and-fix.

§ 141.84 Lead service line inventory and replacement requirements.

- VDH proposes that in the absence of connection-specific information, a waterworks can make the presumption that service lines in a defined area are constructed of certain materials based on: the year of installation/construction, what is installed in the immediate neighborhood, and what was allowed by the state building code or local construction standards. Please add these to the sources of information a waterworks may use to identify service line materials for the initial lead service line (LSL) inventory.

- VDH is looking for guidance for waterworks constructed after 1993 and the lead service line era. As an example, the Dutch Hollow Subdivision and the waterworks that serves the subdivision [PWSID VA6104065] was constructed in 2000. There have been at least two owners of the waterworks since its construction, and the current owner may not be aware of each service line material, but it is certain that there are no LSLs. Please clarify if owners may include an "unknown-not lead" indicator in their service line inventory, or if they are exempt from submitting a service line inventory. VDH recommends a separate indicator of "unknown-not lead" be used and primacy agencies be allowed to waive the lead service line replacement plan requirement.
  - VDH recommends an analogous approach to § 141.92 and the exemption from monitoring lead in schools that were built in 2014 or later.

- VDH is concerned about the process of updating the initial LSL inventory. It appears the initial submitted inventory is locked-in and the options for updating or correcting the

information are very limited. Those options appear to include only visual observations, which is a time consuming method. A waterworks should be able to update or correct the original LSL inventory (including the LSL replacement rates) without visual observations after new information becomes available.

- VDH is concerned about the difficulty in collecting data on the customer-owned service lines. Many waterworks have no records for specific customer service lines and collecting this information by visual inspection inside customer homes or test pits at the meter setting requires cooperation and permission from customers. Please clarify if the customer service line material may be determined based on local building code regulation. In the absence of information of a customer service line replacement, please provide guidance on what the waterworks should assume. Please provide guidance on when a waterworks should assume all customer service lines are unknown. Provide additional guidance on this issue, through the LCRR or supporting documents.

- Please identify how much detail waterworks must reported in the LSL Inventory they will submit to the state. Please clarify if a summary of known (all types) and all unknown services lines is acceptable.

- Funding for private-side lead service line replacements (LSLRs) could prevent full LSLRs because waterworks cannot spend their funds on customer-owned service lines and work on private property. The states and waterworks need help from EPA and Congress to help bridge this gap.

- VDH has concerns about waterworks meeting LSLR goal rates. A waterworks that exceeds the trigger level for lead will begin to investigate their LSL inventory. This investigation may clear many service lines classified as "unknown" and reclassify them as "not lead", but the waterworks may spend half the year or more finding which connections do not have LSLs, which will allow less time replacing the actual LSLs. In addition, many waterworks in Virginia serve a public that cannot afford to replace their LSL. VDH anticipates a situation where the waterworks has identified many non-LSLs, and received many denials for replacing customer LSLs, but has made little progress in replacing full LSLs. The rule does not give any credit for this work, and may be setting the waterworks up for failing to meet the LSLR goal. VDH requests additional information on how to handle this type of situation, and recommend that the rule address how these two scenarios (i.e., significant effort needed to classify "unknown" service lines impacts the waterworks ability to actually replace LSLs and denials for replacing the customer owned LSLs) will affect LSLR goal rates.

- Provide guidance on when a shorter LSLR schedule is feasible.[15] The timeframe for state notification to the waterworks of its findings within six months after the waterworks is

[15] *See* 84 Fed. Reg. 61757 (proposed 40 C.F.R. § 141.84(g)(9)).

required to begin LSLR needs clarification. VDH recommends the timeframe be shorter, based on what makes the LSLR schedule "feasible."

- VDH is concerned about the amount of recordkeeping the LCRR requires. This section is a good example of the volume of records that waterworks will generate and provide to VDH. For instance, the requirement of the LSLR plan is very detailed and includes no less than seven sections, many of which are very detailed and must be executed at the same time. Small waterworks may have one office worker and one or two operators. Simply providing all the documentation required for the LCRR will prevent them from performing their normal job duties, which keeps safe water flowing to those that consume the water. This rule is too complicated for small to medium sized waterworks with limited staff. VDH does not have sufficient staff or other resources required to provide the technical assistance the small waterworks will require. Additional steps need to be taken, besides the small system flexibility options, to simplify the LCRR.

- VDH requests additional information on a pitcher replacement program. There are variabilities in number of persons in the house, water usage per person, etc., that will affect how often cartridges should be replaced, or how many pitcher filters should be given out. Please provide a model pitcher program document and guidance on cartridge replacement and number of pitcher filters.

- VDH is concerned about the requirement for waterworks to replace their portion of the LSL within 45 days of being informed that the customer intends to replace their LSL portion or the customer already has replaced it. VDH believes six months is a reasonable time frame for waterworks to complete this work given seasonal weather variations that routinely affect and influence construction schedules in Virginia.

- In addition to additional tracking on the part of the waterworks, there are items that a primacy agency cannot verify, and will not be able to determine compliance with the rule. These include:
  - When a waterworks replaces the portion of an LSL it owns due to an emergency repair, it must provide notification to the customer served by the LSL within 24 hours.
  - Waterworks must replace their portion of the LSL within 45 days of being informed that the customer intends to replace their LSL portion.
  - Waterworks must replace their portion of the LSL within 45 days if they've been informed that the customer has replaced their portion in the last 3 months.

  VDH suggests that the waterworks complete an annual summary report of their activities in LSL replacement, including compliance to LSLR plan requirements, regardless of whether or not they must meet a LSLR goal replacement rate.

- VDH requests EPA provide guidance to states on goal replacement rates so that the EPA does not overturn our approval of LSLR plans. If a 3% removal rate is required for

action level exceedances (ALEs), please provide guidance if states are to assume a 3% replacement rate is the lowest rate to be accepted in those plans.

- The first year of LSLR is to begin the first day following the end of the monitoring period when a lead ALE occurred. This is problematic since the owner and VDH do not necessarily know the lead 90th percentile on the first day. It may take VDH as long as 30 days after the end of the monitoring period to calculate the 90th percentile, due to the time necessary for the laboratory to complete analysis and transmit results to VDH. VDH recommends the LSLR be made on a calendar year annual basis, with encouragement to start early coming from the states.

§ 141.85 Public education and supplemental monitoring requirements.

- Please revise the first sentence of this section to state that "All water systems must deliver a consumer notice of lead and copper tap water monitoring…" unless the intent of the rule is to not inform the public of their copper results.

- Please see the comments under §§ 141.31 and 141.84 about the challenges VDH expects to face enforcing and monitoring a requirement for waterworks to provide notification of lead results and LSL replacement within 24-hours of receipt of lead results.
  - In the case of notification due to a disturbance of water service at a connection served by a lead service line, VDH feels that this pushes the attention away from the acute health risks associated with a disruption of service (bacteriological risks), in order to provide paperwork - which the customer and other consumers may not read - about a chronic contaminant. The education of what to do during/after a disturbance should be included in the annual education to LSL customers.

- Many of the prescribed outreach activities that are listed under required activities for failure to meet the LSLR goal do not appear to meet the aim of informing the public, or customers that have LSLs, of the dangers of lead service lines. VDH recommends shortening the list to only include types of direct contact for the appropriate customers.

§ 141.86 Monitoring requirements for lead and copper in tap water.

- VDH supports continuing an initial monitoring period of six months, and does not support an annual initial sample. The concern is that an annual initial sample may entice a new waterworks to start up in October, and not sample until the following September. The delayed sampling may negatively impact the health of consumers.

- VDH agrees with the LCRR to continue to collect the first draw samples for lead and copper analysis. While there is supporting research that states the highest influx of lead may come after the first liter, the difficulty in explaining this concept, and the time necessary for a customer to collect the fifth liter may affect the customer's willingness to cooperate in lead and copper monitoring. Many waterworks are reporting customer

fatigue with the present periodic monitoring and dropping out of participation. Increasing the mental effort will undoubtedly affect customer participation.

- VDH would like to see a maximum cap on the length of stagnation allowed prior to collection of lead and copper samples. VDH has seen where customers collected samples from taps that were not used for several days or weeks. The sample results caused a spike in the lead 90th percentile that did not represent a typical amount consumed. VDH proposes a 48-hour maximum cap on stagnation time.

- Please clarify if lead samples may be separated from copper samples when there has been a copper ALE. This is allowed after a lead ALE based on the LCRR.

- VDH is concerned that the new tier requirements may eliminate some existing monitoring locations with high copper levels. Please provide clarification on how to balance the new tier sites with sites that may affect the copper action level compliance.

- VDH agrees with eliminating the potential to take additional lead and copper samples to artificially reduce the 90th percentile. VDH also wants to point out that some waterworks routinely collect and analyze more than the minimum required number of samples to cover the possibility of a laboratory accident or rejected sample, which would otherwise result in them falling short of the minimum number of samples. However, since VDH currently uses SDWIS to calculate the 90th percentile, please update SDWIS to be able to meet the LCRR requirements.

- The existing LCR has a loophole in the tiering system that does not include multifamily residences (MFRs), such as condominiums, constructed prior to 1983 with copper plumbing and lead solder, as Tier 3 locations. The same type of residences are Tier 2 if they were constructed between 1983 and the lead solder ban (1986 in Virginia). VDH requests that MFRs with copper plumbing and lead solder be included within the revised Tier 3 category along with single family structures because they can represent a significant source of lead corrosion. If MFRs fall into Tier 4, the waterworks could avoid sampling these locations and legally substitute locations with newer plastic plumbing, hiding a risk to public health. VDH strives toward health equity, and believes that those who live in apartment complexes, or other MRFs, have the same right to safe drinking was as those that live in single family structures.

§ 141.87 Monitoring requirements for water quality parameters.

- VDH supports the requirement in § 141.87(d)(1) for small and medium waterworks that exceed the action levels to perform WQP monitoring for the two six month monitoring periods after the state specifies water quality parameters for optimal corrosion control. VDH does not support additional six-month monitoring beyond this for small waterworks because the majority of waterworks that exceed action levels are small waterworks that

frequently do not have the equipment on hand to complete some WQP monitoring, such as alkalinity testing. Most consecutive waterworks do not have the equipment necessary to monitor for WQPs. Virginia requires that waterworks providing corrosion control treatment perform regular finished water pH and orthophosphate (when applicable) testing and report this information on their monthly operation reports. These measurements are de-facto WQPs and adequate for monitoring corrosion control treatment effectiveness.

§ 141.90 Reporting requirements.

- Section (e)(3)(v) appears to make a requirement that consumers who have a lead sample collected at their home after a partial or full LSLR must be informed within 3 business days. VDH recommends requiring the same reporting timeframe as initial samples, as it would be a simple step to reduce the complexity of this rule.
  - This section further states that "Mailed notices post-marked within three business days of receiving the results shall be considered on-time." No other section in the LCRR details this level of proof of notification. VDH recommends allowing a simple certification statement to count as proof of providing the consumer notice.

- Section (h)(1) requires that states that calculate the 90th percentile must require a deadline to report all sample results before the end of the monitoring period. VDH has consistently calculated the 90th percentile for waterworks in Virginia since the original Lead and Copper Rule became effective in 1991 and has never required a shortened monitoring period to accomplish this task. VDH requests that this requirement be deleted from the rule, in order to provide the full four month monitoring period (in the case of June through September) to our waterworks.

- The existing LCR as it applies to NTNC waterworks presents confusing deadlines for Consumer Notification and Lead Public Notification. Under the existing LCR, Consumer Notification is required to be posted within 30 days, however lead Public Education is not required to be completed for 60 days. This leads to a situation at NTNC waterworks, such as schools, where elevated lead levels are "posted," but complete notification to all consumers can take up to 30 more days to happen. These dual deadlines are confusing for waterworks and the public. Much of the Consumer Notification information is the same as the Public Education language, leading to duplication of efforts. VDH recommends that these requirements be merged and streamlined into a single notification for NTNC waterworks with a deadline of 30 days.

§ 141.92 Monitoring for lead in school and child care facilities.

- Due to VDH's experience with the Water Infrastructure Improvement for the Nation (WIIN) Act and the grant funds for lead testing in school and childcare facilities, we have first-hand knowledge of the difficulties in identifying all schools and child care facilities in a given waterworks' distribution area. While the majority of waterworks in Virginia

are small, and should have an easy time identifying all schools because they serve a limited number of customers, there are many large waterworks in Virginia that have extensive distributions systems with countywide coverage areas and will experience more difficulties in creating this list. Please allow one to two years after the compliance date of the final rule for waterworks to create the final list of schools and child care facilities in their coverage area. Waterworks will need this additional time to determine which resources are available to create an accurate listing of all facilities. Remember that they will also be working on the LSL inventory and LSLR plans at the same time, and will need time to accomplish these tasks. Following creation of the list of schools and child care facilities, the waterworks would submit the list to the state and begin lead sampling in schools and child care facilities.

- Child care facilities open and close regularly, meaning creating a list once every five years may not be sufficient. VDH recommends that the list of child care facilities be refreshed by the waterworks and submitted to the state every year.

- The LCRR proposes to make community waterworks (CWS) responsible for collecting samples at schools and child care facilities, which in effect, makes waterworks responsible for, in part, carrying out the requirements of EPA's *3Ts for Reducing Lead in Drinking Water Toolkit*. The problem with this arrangement is assigning the waterworks with certain responsibilities and the remaining tasks to complete the approach in 3Ts are not specifically assigned. VDH is concerned that this approach will lead to problems with waterworks being expected to provide technical assistance with sample site selection, remediation, and public relations. These are services that many waterworks are not prepared to provide and should not be required to provide to schools and child care facilities, since facility owners should be responsible for maintaining the water quality in their facility by undertaking activities such as a facility water management plan.

- VDH proposes to reduce the scope of the responsibility of the waterworks to (1) providing a copy of the 3Ts document to each school and child care facility, (2) providing up to five lead sample analyses per school and two lead sample analyses per child care facility, and (3) notifying schools and child care facilities of their sample results. Waterworks would be required to track lists of schools and child care facilities and provide sample analysis for at least 20% of the listed facilities each year.

- The preamble to the rule specifically states, "The CWS would not be required under this proposal for taking any remedial action at the school or child care facility…"[16] However, section 141.92 (f)(1) requires CWSs to submit results with "information about remedial options." While waterworks operators know more about CCT than a typical school employee, not all operators are CCT experts. Requiring them to submit remedial options may lead to a spread of misinformation, and a delay in delivering safe water to children. As described above, VDH proposes that CWSs would provide a copy of the 3Ts

[16] 84 Fed. Reg. 61707.

document, which includes general information on remedial options, and delete the requirement for CWSs to provide additional "information about remedial options."

§ 141.93 Small Water System Compliance Flexibility.

- VDH appreciates the ability for small CWSs and NTNCs to have alternate compliance criteria and believes that some waterworks in Virginia will choose these options.

- The threshold for allowing the Small System Flexibility Options should be 3,300 or less persons served. Based on our experience and knowledge of our waterworks, and the likelihood that for larger waterworks, treatment of the entire source will be more cost effective than the proposed alternatives. VDH believes that waterworks serving over 3,300 persons likely would have adequate TMF to implement the LCRR requirements without the small system compliance flexibility. This also keeps the LCRR consistent with the LCR and other existing rules.

- The Small Water System Compliance options have no "off ramps" or mechanism to change or stop implementation of a selected option if the facts change. Please include language to allow a waterworks to change or stop a selected option, with state approval, if the facts change.
  - Possible examples of this would be a waterworks determined the costs of point-of-use (POU) treatment was too high, and wanted to revert to entry point treatment, or if they connected to a different source and became a consecutive system, in which case they may not need the treatment selected as a small waterworks compliance opiton.

- VDH proposes that small community waterworks should be allowed to use the option of replacing lead bearing materials. Due to the legal conflicts of replacing individual homeowner plumbing, VDH believes that this option would only be used for facilities such as nursing homes, boarding schools, correctional facilities, etc., where the owner is the owner of the waterworks and the building(s). VDH has advised such waterworks to replace copper plumbing, observed decreases in that contaminant as a result, and approved this process for practical, cost effective public health protection.

- Provide clarification for the POU devices alternative. Since one third of these devices must be tested annually, please clarify if these waterworks will be required to do routine lead and copper monitoring. VDH suggests that waterworks conduct annual monitoring on at least one third of POU devices, and provide a report of testing results each year, which will satisfy the requirement for routine lead and copper tap monitoring. The state would use the annual monitoring data to calculate the 90th percentile to determine if the waterworks exceeded the 15 ppb action level or 10 ppb trigger level.[17]

[17] The rule requires that 1/3 of the devices be tested per year. The point is that if waterworks are already testing 1/3 of them per year, they are in fact doing 100% testing every three years. There is no reason then for a monitoring plan to do even more monitoring.

Part 142 – National Primary Drinking Water Regulations Implementation.

- The Economic Analysis completed as part of the LCRR does not accurately reflect the cost to the Commonwealth of Virginia. Please see the section "Cost of Rule Implementation" located later in this letter for additional information concerning how this proposed regulation affects VDH.

- The LCRR has many facets that are not included in Part 142. This leads to confusion about the states' responsibilities in determining compliance, and tracking the components of this rule. Please clarify the states' responsibilities.

- Primacy agencies will need additional guidance on §142.16(d)(5)-(9) via the final LCRR or immediately after promulgation of the rule through guidance documents.
  - There is currently no guidance on setting lead service line replacement goal rates, and through §142.19(b), the Regional Administrator may issue an order overriding a state's determination. VDH requests additional clarification to prevent EPA from having to override a potential determination.
  - Some waterworks will want to start their LSL inventory immediately following the promulgation of the LCRR. VDH anticipates those waterworks will want some input from VDH regarding acceptable methods for determining service line material. VDH requests more information in the LCRR or guidance documents released immediately following rule promulgation, which will aid in VDH's determination of acceptable methods. The worst-case scenario is that VDH makes determinations and releases that information to waterworks, then, two years later during EPA's review of the primacy package, EPA rejects our determinations. VDH would like to work with EPA after final promulgation and before primacy is awarded to verify that the EPA will approve our determinations.

Cost of Rule Implementation

The Association of State Drinking Water Administrators (ASDWA) estimated the increased costs for implementing the LCRR in their update to the 2018 Cost of States' Transactions Study (CoSTS). Based on ASDWA's updated study, VDH estimates the additional cost of implementing the LCRR, as proposed by EPA, will be an increase of approximately 11 full time equivalent (FTE) employees.

	ASDWA CoSTS Hours[1]	Virginia Hours[2]
Total LCRR Hours (5 years)	4,537,514	108,560
Current LCR Hours (multiplied by 5 yrs)	380,830	9,111
Increased Hours from LCRR	4,156,684	99,449
Annual Increased Hours	839,848	19,890
Additional FTEs required[3]		11
Current FTEs and Wage Positions		128

[1]ASDWA CoSTS Model dated January 31, 2020, personal communication from Alan Roberson of ASDWA to Dwayne Roadcap (VDH).
[2]Virginia Hours are prorated based on the ratio of Virginia community and NTNC waterworks divided by the total waterworks in the CoSTS Model. For example, 4,537,514 (1,608/67,210) = 108,560.
[3]FTEs are based on the annual increased hours divided by 1,840 hours per year.

VDH recommends EPA recognize ASDWA's updated CoSTS model with the extremely large increase to state burden and requests EPA work to simplify the LCRR to reduce the implementation cost. Virginia will not have the resources or manpower to implement and track the required actions in the LCRR because the staffing level is controlled by the number of FTEs allocated by the State Health Commissioner. The overall number of FTEs at VDH is fixed and each program must compete with other programs within VDH for FTEs. Should VDH need to increase the overall number of FTEs at the agency, approval from the office of the Governor and/or the State General Assembly via a legislative process is required. Further, the number of FTEs is independent of the level of effort and the work required by EPA. While additional funding from EPA to support additional FTEs is helpful and welcome, VDH has no guarantee that additional funding will result in additional FTEs. Virginia will have to make tough decisions about how to prioritize support to existing programs and what VDH can forego to accomplish what is required in the LCRR.

In addition to the effort to implement LCRR requirements, VDH will need to track the data related to the LCRR requirements. VDH uses SDWIS State for data management related to the LCR and expects EPA to update SDWIS State to meet all the data management requirements for the LCRR. Should VDH need to supplement SDWIS State with additional software, we would need to hire a contractor to develop this at a cost of approximately $150,000.

VDH appreciates the opportunity to comment on this important drinking water issue. If you have any questions about these comments or need additional information, please feel free to email me at Dwayne.Roadcap@vdh.virginia.gov, or call me at (804) 864-7522.

Sincerely,

Dwayne Roadcap
Director, Office of Drinking Water
Virginia Department of Health

Proposed Amendments to the Waterworks Regulations

Robert D. Edelman, PE

Bennett Ragnauth, PE

Nelson Daniel

Office of Drinking Water

Safe Drinking Water for a Healthy Virginia

VDH VIRGINIA DEPARTMENT OF HEALTH

Protecting You and Your Environment

Timeline

- November 11, 2019 – Published Proposal in *Virginia Register* – comment period opened
- January 7, 2020 – Public Hearing
- January 10, 2020 – Comment period ended
- February 19, 2020 – WAC Meeting

Comments Summary

Town Hall	33 submittals	51 comments
Others: Fairfax Water	1 submittal	12 comments
Loudoun Water	1 submittal	13 comments
EPA Region 3	2 submittals	39 comments
Public Hearing	1 transcript	1 comment
Total	38	116 comments

Virginia.gov Agencies | Governor

Agency **Virginia Department of Health**

Board **State Board of Health**

Chapter **Waterworks Regulations [12 VAC 5 - 590]**

Action	**Amend and update the Waterworks Regulations**
Stage	**Proposed**
Comment Period	Ends 1/10/2020

33 comments

All comments for this forum

Back to List of Comments

Commenter: Scott Sande, Plumbing Contractor 11/20/19 10:53 pm

VDH VIRGINIA DEPARTMENT OF HEALTH
Protecting You and Your Environment

Who Commented?

No.	Commenter	Affiliation
1	Christopher P. Mayhew	Backflow Services, Inc., CCC Program Manager
2	Ben Jones	Operations Manager, Dinwiddie County Water Authority
3	Steven Herzog	Hanover County Department of Public Utilities - Director
4	Wade Gerze	American Backflow Prevention Association Member
5	Scott Sande	Plumbing Contractor
6	Ben Shoemaker	Fauquier County Water and Sanitation Authority
7	Dan Malloy*	Backflow Partners, Inc.
8	Donald N. Jennings, PE	Isle of Wight County Director of Utility Services
9	James M. Cherry	Virginia Beach DPU Operations Administrator
10	Tim Brown	Albemarle County Service Authority
11	VA ABPA	VA Chapter of the American Backflow Prevention Association
12	Timothy Mitchell	City of Lynchburg
13	Belinda Wilson	Public Utilities Cross Connection Control Program Manager
14	Belinda Wilson PE	Licensed Civil Engineer & Resident
15	Mark Titcomb	Newport News Waterworks
16	David Taylor	Dave's Testing
17	Rosemary Green	City of Richmond DPU, Deputy Department Director, Sr
18	Andrea Wortzel	Mission H2O
19	Ralph Claytor	Henrico County Department of Public Utilities – Design Division
20	Doug Powell	General Manager, James City Service Authority
21	Keith Chambers	Chesterfield Fire and EMS
22	Jethro H. Piland, III & Christopher J. Anderson	Fire Chief & Chief Fire Marshal, respectively. Hanover County Department of Fire & EMS
23	Mike Nannery	Chesterfield County Utilities Department - Assistant Director
24	Steven T. Edgemon	Fairfax Water
25	Jessica Edwards-Brandt	Loudon Water
26	EPA Region III	

Top Comment Topics

- Number of Sections Mentioned = 49
- Number of Sections likely to result in no change = 21
- Sections with likely changes = 28

10 - Definitions and units of measurement

  – 5 commenters

  – 20 definitions could change

Top Comment Topics

600 - Cross-connection control program responsibilities

- 20 commenters

610 - Containment of backflow

- 4 commenters

630 - Backflow prevention assemblies, devices, and backflow elimination methods for containment

- 6 commenters

1170 – Hydrants

- 10 commenters

Category 1 Changes

Many non-technical changes

- Corrections to typos, incorrect references
- Corrections to inadvertent deletions
- Other conflicts or omissions

39 comments from the US EPA

- Federal Requirements
- Definitions
- Do not change requirements for state or waterworks:
  - No significant impact
- No change

12 VAC 5-590-10. Definitions and units of measurement

- Comment
- Make definitions consistent with the National Primary Drinking Water Regulations:

- Initial compliance period
- Maximum contaminant level goal (MCLG)
- Primary maximum contaminant level (PMCL)
- Secondary maximum contaminant level (SMCL)

12VAC5-590-150 A 1. Exemptions

Comment

Match use of phrase as in 12VAC5-590-140 A 1 a. Variances

Proposed Regs.

“The waterworks is unable to implement measures to develop an alternative supply of source water”

Revised Proposal

“The waterworks must be unable to implement measures to develop an alternative water supply”

12VAC5-590-340 Compliance standards.

Comment

Sodium is not in Table 340.1. Although there is no PMCL established for sodium, community water systems are required to monitor in accordance with **40 CFR §141.41 Special monitoring for sodium**. Sodium is included under the current *Waterworks Regulations* 12VAC5-590-440 Table 2.2 – Inorganic Chemicals.

Response

ODW will add sodium to Table 340.1 and will provide language regarding the special monitoring requirements for sodium in accordance with 40 CFR §141.41. Sodium is also required to be reported in the CCR.

12VAC5-590-340. Compliance standards

Comment

A: Assure consistency in the reference to laboratories.

Proposed Regs.

A: All physical, chemical, bacteriological, or radiological analyses for the purpose of demonstrating compliance with the requirements of this chapter shall be performed by the DCLS or by laboratories certified by the DCLS for such purposes unless listed in 12VAC5-590-440 C. The owner is responsible for the collection and submission of all samples. The department may require sampling and testing that exceeds the minimal requirements specified in this chapter. A sample is deemed to have been collected only when its results are made known to the department.

12VAC5-590-340. Compliance standards (continued)

Comment

A: Assure consistency in the reference to laboratories.

Revised Proposal

A: All physical, chemical, bacteriological, or radiological analyses for the purpose of demonstrating compliance with the requirements of this chapter shall be performed by laboratories that have received certification by the EPA or DCLS as specified in 12VAC5-590-440. The owner is responsible for the collection and submission of all samples. The department may require sampling and testing that exceeds the minimal requirements specified in this chapter. A sample is deemed to have been collected only when its results are made known to the department.

12VAC5-590-370. Monitoring Requirements

Comment

A 14: Need to add missing information on “failure to analyze *E. Coli*” also a monitoring violation.

Proposed Regs.

A 14: “Failure to collect every required routine or additional routine sample in a compliance period is a monitoring violation and requires the owner to provide public notification under Tier 3 conditions in 12VAC5-590-540 A 3.”

12VAC5-590-370. Monitoring Requirements (continued)

Comment

A 14: Need to add missing information on “failure to analyze *E. Coli*” also a monitoring violation.

Revised Proposal

A 14: “Any one of the following is a monitoring violation: (i) failure to collect every required routine or additional routine sample in a compliance period, or (ii) failure to analyze for *E. coli* following a total coliform-positive sample. For each violation, the owner is required to provide public notification under Tier 3 conditions in 12VAC5-590-540 A 3.

12VAC5-590-370. Monitoring Requirements

Comment

A 15: Need to add missing information on “failure to submit a completed assessment form” and “failure to notify the state following an *E. Coli* positive sample.

Proposed Regs.

A 15: “Failure to submit monitoring results after the owner properly conducts monitoring is a reporting violation and requires the owner to provide public notification under Tier 3 conditions in 12VAC5-590-540 A 3.”

12VAC5-590-370. Monitoring Requirements (continued)

Comment

A 15: Need to add missing information on “failure to submit a completed assessment form” and “failure to notify the state following an *E. Coli* positive sample.

Revised Proposal

A 15: “Any one of the following is a reporting violation: (i) failure to submit monitoring results after the owner properly conducts monitoring, (ii) failure to submit a completed assessment form in a timely manner, (iii) failure to notify the department following an *E. Coli*-positive sample in a timely manner, or (iv) failure to submit certification of completion of a state-approved start-up procedure by a seasonal system. For each violation, the owner is required to provide public notification under Tier 3 conditions in 12VAC5-590-540 A 3.”

12VAC5-590-370. Monitoring Requirements

Comment

B 4: Unclear whether sampling schedules include the requirements for taking confirmation samples.

Proposed Regs.

B 4: “Failure to comply with the sampling schedules in this section shall require public notification pursuant to 12VAC5-590-540 A 3”.

12VAC5-590-370. Monitoring Requirements (continued)

Comment

B 4: Unclear whether sampling schedules include the requirements for taking confirmation samples.

Revised Proposal

B 4: "Failure to comply with the sampling schedules in this section, which includes the collection of confirmation samples cited in 12VAC5-590-382 A for inorganic chemicals, 12VAC5-590-382 B for nitrate and nitrite, and 12VAC5-590-383 A for organic chemicals, is a monitoring violation and shall require public notification pursuant to 12VAC5-590-540 A 3."

12VAC5-590-373. Organic chemicals monitoring

Comment

C 1 a: Grandfathered data should still be used to determine reduced monitoring of VOCs and SOCs.

Proposed Regs.

C 1 a: “The requirement for four quarterly samples during the initial monitoring period as specified in subsection B of this section may not be reduced.”

Revised Proposal

No change. With the implementation of the Standardized Monitoring Framework (which started January 1993), ODW no longer considers grandfathered data for reduced monitoring of VOC and SOC beyond January 1993.

12VAC5-590-373. Organic chemicals monitoring

Comment

In the current *Waterworks Regulations*, VOC monitoring waivers are allowed for both surface water and ground water systems. In the proposed rule, only ground water systems are allowed for VOC monitoring waivers. Does the proposed rule reflect a policy change?

Response

No change: In the proposed amendments, VOC waivers are not considered for surface water systems. This is a change from the existing *Waterworks Regulations* and reflects our current policy.

12VAC5-590-373. Organic chemicals monitoring (continued)

Comment

C 1: Reorganize text to improve readability. Move C 1 d & C 1 e right after C 1 a. At the end of C 1 e add “in accordance with 12VAC5-590-373 E 4 a (1)”.

Revised Proposal

C 1 e: “The owner of a groundwater system that has three consecutive annual samples with no detection of a contaminant may apply to the department for a waiver, in accordance with 12VAC5-590-373 E 4 a (1)”.

12VAC5-590-373. Organic chemicals monitoring (continued)

Comment

C 1 b: Move the text “In no case shall the department make this determination unless:” from C.1.b.(1) to the end of C.1.b. to be consistent with C.2.d.

Revised Proposal

C 1 b: “The department may decrease the requirement for quarterly monitoring during subsequent compliance periods provided it has been determined that the analytical results are reliably and consistently below the PMCL. In no case shall the department make this determination unless:”

12VAC5-590-373. Organic chemicals monitoring

Comment

C 3: Situations under C.3. may not always lead to a PMCL violation and therefore, there may not always be a corresponding “return to compliance.”

Proposed Regs.

C 3: “Return to compliance. The owner of a waterworks that exceeds the PMCLs listed in Table 340.2 for VOCs or SOCs, as determined by 12VAC5-590-383, shall monitor quarterly. After a minimum of four consecutive quarterly samples that show the waterworks is in compliance as specified in 12VAC5-590-383 and the department determines that the analytical results are reliably and consistently below the PMCL, the owner may monitor at the frequency and time specified in subdivisions C 1 c and C 2 e of this section.”

12VAC5-590-373. Organic chemicals monitoring (continued)

Comment

C 3: Situations under C.3. may not always lead to a PMCL violation and therefore, there may not always be a corresponding “return to compliance.”

Revised Proposal

C 3: “Returning to annual monitoring ~~after PMCL~~. The owner of a waterworks that exceeds the PMCLs listed in Table 340.2 for VOCs or SOCs, as determined by 12VAC5-590-383, shall monitor quarterly. After a minimum of four consecutive quarterly samples that show the waterworks is in compliance as specified in 12VAC5-590-383 and the department determines that the analytical results are reliably and consistently below the PMCL, the owner may monitor at the frequency and time specified in subdivisions C 1 c and C 2 e of this section.”

12VAC5-590-373. Organic chemicals monitoring

Comment

C 2 c: Text is redundant and should be deleted. C 2 d provides coverage.

Proposed Regs.

C 2 c: “The department may decrease the requirement for quarterly monitoring during subsequent monitoring periods as specified in subsection B of this section provided the analytical results of the four quarterly samples required during the initial monitoring are reliably and consistently below the PMCL.”

12VAC5-590-373. Organic chemicals monitoring (continued)

Comment

C 2 c: Text is redundant and should be deleted. C 2 d provides coverage.

Revised Proposal

C 2 c deleted
C 2 d becomes C 2 c
C 2 e becomes C 2 d
C 2 f becomes C 2 e

No changes in text.

12VAC5-590-373. Organic chemicals monitoring

Comment

C 2 a & C 2 b, change “initial compliance period” to “initial monitoring period”.

Proposed Regs.

C 2 a: “The owner of a waterworks serving more than 3,300 persons that does not detect any SOCs listed in Table 340.2 in the initial compliance period may reduce the sampling frequency to a minimum of two quarterly samples in one year during each repeat compliance period.”

12VAC5-590-373. Organic chemicals monitoring (continued)

Comment

C 2 a & C 2 b: change “initial compliance period” to “initial monitoring period”.

Revised Proposal

C 2 b: “The owner of a waterworks serving fewer than than or equal to 3,300 persons that does not detect any SOCs listed in Table 340.2 in the initial monitoring period may reduce the sampling frequency to a minimum of one sample during each repeat compliance period.”

12VAC5-590-373. Organic chemicals monitoring

Comment

D 2 & D 3: need to be stated simply as monitoring requirements that are separate from increased monitoring.

Proposed Regs.

D 2: “Vinyl chloride” with text in “a”, “b”, (3), and (4).

Revised Proposal

- Change D 2 title from “Vinyl chloride” to “Monitoring requirements”
- Change “(3)” to “c”
- Change “(4)” to “(3)”

12VAC5-590-373. Organic chemicals monitoring

Comment

D 2 b: The language under D 2 b is not clear. Suggest rewrite…

Proposed Regs.

D 2 b: “The owner of a waterworks that is required to monitor for vinyl chloride as specified by the department will monitor at each surface water source entry point, in whole or in part.”

Revised Proposal

D 2 b: “The owner of a waterworks that uses surface water in whole or in part is required to monitor for vinyl chloride, as specified by the department.”

12VAC5-590-373. Organic chemicals monitoring

Comment

E 3 b (4): Missing information on watershed protection for surface water systems.

Proposed Regs.

E 3 b (4): “The implementation of wellhead protection measures by the owner.”

Revised Proposal

E 3 b (4): “The implementation of a watershed protection program for surface water systems and wellhead protection measures for ground water systems by the owner.”

12VAC5-590-373. Organic chemicals monitoring

Comment

E 4 a (1): Restore missing language on updating vulnerability assessment as a VOC waiver condition.

Proposed Regs.

E 4 a (1): “As a condition of the VOC waiver,…. Based on this data, the department may reconfirm that the source is nonsusceptible. If the department does not make this reconfirmation within three years of the initial determination, then the waiver is invalidated and the owner is required to sample annually.”

12VAC5-590-373. Organic chemicals monitoring (continued)

Comment

E 4 a (1): Restore language on updating vulnerability assessment as a VOC waiver condition.

Revised Proposal

E 4 a (1) “As a condition of the VOC waiver, … and update the waterworks vulnerability assessment. Based on this data, the department may reconfirm that the source is nonvulnerable…. If the department does not make this reconfirmation within three years of the initial determination, then the waiver is invalidated and the owner is required to sample annually.”

”

12VAC5-590-374. Disinfectant…monitoring (continued)

Comment

B 2: Bromide was not included in the revised regulations under 12VAC5-590-374 B 2. This is not a policy change.

Revised Proposal

B 2: “Measurement under this section of daily chlorite samples at the entry point to the distribution system, residual disinfectant (free chlorine, combined chlorine, total chlorine, and chlorine dioxide), alkalinity, bromide, TOC, SUVA (DOC and UV254), pH, and magnesium shall be made by a party approved by the department.”

12VAC5-590-374. Disinfectant…monitoring (continued)

Comment

B 1: EPA is not mentioned for lab certification for TTHM and HAA5 analyses.

Revised Proposal

B 1: “Analysis under this section for DBPs (TTHM, HAA5, chlorite, and bromate) shall be conducted by laboratories that have received certification by the EPA or DCLS as specified in 12VAC5-590-440, except as noted in subdivisions B 2 and B 3 of this section.”

12VAC5-590-374. Disinfectant…monitoring (continued)

Comment

F 3 d: EPA is not mentioned for lab certification for TTHM and HAA5 analyses.

Revised Proposal

F 3 d: “The owner shall use an approved method listed in 12VAC5-590-440 for TTHM and HAA5 analyses. Analyses shall be conducted by laboratories that have received certification by the EPA or DCLS as specified in 12VAC5-590-440.”

12VAC5-590-374. Disinfectant…monitoring (continued)

Comment

F 4 b: Insert missing text.

Revised Proposal

"The owner may remain on reduced monitoring as long as the TTHM LRAA is less than or equal to 0.040 mg/L and the HAA5 LRAA is less than or equal to 0.030 mg/L at each monitoring location (for waterworks with quarterly reduced monitoring) or each TTHM sample is less than or equal to 0.060 mg/L and each HAA5 sample is less than or equal to 0.045 mg/L (for waterworks with annual or less frequent monitoring). In addition, the source water annual average TOC level, before any treatment, shall be less than or equal to 4.0 mg/L at each treatment plant treating a surface water source or a GUDI source, based on monitoring conducted under subsection J of this section."

12VAC5-590-380. Bacteriological compliance

Comment

H: EPA is not mentioned for lab certification for bacteriological analyses.

Proposed Regs.

H: “All samples shall be analyzed in accordance with 12VAC5-590-440 by the DCLS or by a laboratory certified by the DCLS for drinking water analyses.”

Revised Proposal

H: “All samples shall be analyzed by laboratories that have received certification by the EPA or DCLS as specified in 12VAC5-590-440 for drinking water analyses.”

•

12VAC5-590-382. Inorganic chemical compliance

Comment

A 2 b: Missing word alters meaning of sentence.

Proposed Regs.

A 2 b: “For the owner of a waterworks that monitors annually or less frequently, the waterworks is out of compliance with the PMCL for antimony….”

Revised Proposal

A 2 b: “For the owner of a waterworks that monitors annually or less frequently, the waterworks is not out of compliance with the PMCL for antimony….”

12VAC5-590-411. Disinfectant…techniques

Comment

A 1 d: Incorrect reference.

Proposed Regs.

A 1 d: “Additional… requirements in 12VAC5-590-374 I.”

Revised Proposal

A 1 d: “Additional… requirements in 12VAC5-590-374 J.”

12VAC5-590-411. Disinfectant…techniques

Comment

A 2 b: Delete reference to EPA manual and insert better reference - 40 CFR §141.135 (b).

Proposed Regs.

A 2 b: Step 1 Required removal of TOC by "Enhanced Coagulation and Enhanced Precipitative Softening Guidance Manual," May 1999, EPA Office of Water.

Revised Proposal

A 2 b: “Step 1 Required removal of TOC.”

12VAC5-590-430. Inorganic chemical compliance

Comment

B 2 a (2): Use consistent language for lab certification.

Proposed Regs.

B 2 a (2): “All bacteriological analyses shall be performed in accordance with 12VAC5-590-440 by the DCLS or by a laboratory certified by the DCLS for drinking water samples and by a test method that will yield both total coliform concentration and E. coli concentration.”

Revised Proposal

B 2 a (2): “All… shall be performed by laboratories that have received certification by the EPA or DCLS as specified in 12VAC5-590-440 for drinking… concentration.”

12VAC5-590-440. Analytical methods

Comment

A: Retain language in the current regulations to avoid omitting any analytes.

Proposed Regs.

A: “All drinking water analyses for compliance purposes with PMCLs and SMCLs or ALs shall be performed by analytical methods that are consistent with current EPA regulations found at 40 CFR Part 141 and 40 CFR Part 143 as well as 40 CFR Part 136, if applicable. Standards for laboratories seeking certification to perform drinking water analyses are found in the Regulation for the Certification of Laboratories Analyzing Drinking Water (1VAC30-41) and other applicable regulations promulgated by the Department of General Services and the DCLS.”

12VAC5-590-440. Analytical methods (continued)

Comment

A: Retain language in the current regulations to avoid omitting any analytes.

Revised Proposal

A: “All drinking water analyses for compliance purposes shall be performed by analytical methods that are consistent with current EPA regulations found at 40 CFR Part 141 and 40 CFR Part 143 ~~as well as 40 CFR Part 136, if applicable~~. Standards for laboratories seeking certification to perform drinking water analyses are found in the Regulation for the Certification of Laboratories Analyzing Drinking Water (1VAC30-41) and Regulations for the Accreditation for Commercial Laboratories (1VAC30-46) promulgated by the Department of General Services, DCLS.”

12VAC5-590-440. Analytical methods (continued)

Comment

B: Add “Regulations for the Accreditation for Commercial Laboratories (1VAC30-46)” to the text to improve usefulness of the section.

Revised Proposal

B: “For the purposes of determining compliance, the department will only accept results from samples that have been collected, handled, processed, and documented in accordance with the Regulations for the Certification of Laboratories Analyzing Drinking Water (1VAC30-41) and the Regulations for the Accreditation for Commercial Laboratories (1VAC30-46).”

12VAC5-590-440. Analytical methods (continued)

Comment

C: Bromide was not included in the revised regulations under 12VAC5-590-440 C. This is not a policy change.

Revised Proposal

C: “Testing for alkalinity, calcium, conductivity, residual disinfectant, orthophosphate, pH, silica, temperature, bromide, turbidity, TOC, DOC, SUVA, and UV254 for compliance may be performed by any person or party acceptable to the department in accordance with methods specified in 40 CFR Part 141.”

12VAC5-590-480. Operational control…

Comment

E 2: Delete requirement for calibration checks during peak hourly flow.

Revised Proposal

E 2: “The owner of a waterworks employing ozone for inactivation credit shall perform calibration checks on continuous, online ozone residual monitors at least weekly~~, during peak hourly flow~~. Inactivation credits for a multiple chamber contactor shall be based on only the chambers that have a measured ozone residual greater than 0.02 mg/L or higher, depending on residual analysis instrumentation.”

12VAC5-590-531. Reporting requirements...

Comment

D: Insert missing information.

Revised Proposal

No change: Missing text applies to the Stage 1 DBP Rule and is no longer applicable. G 1 Annual Averages is no longer applicable.

12VAC5-590-531. Reporting requirements...

Comment

E: Delete unnecessary text already noted in 12VAC5-590-530

Revised Proposal

E: “Reporting requirements for disinfectants. The owner shall report the information specified in this subsection to the department in accordance with 12VAC5-590-530~~. within 10 days after the end of each monitoring period in which samples were collected.~~ The department may choose to perform calculations and determine whether the MRDL was violated, instead of having the owner report that information:”

12VAC5-590-531. Reporting requirements... (continued)

Comment

F: Delete unnecessary text already noted in 12VAC5-590-530.

Revised Proposal

F: “Reporting requirements for DBPPs and enhanced coagulation or enhanced softening. The owner shall report the following information to the department ~~within 10 days after the end of each monitoring period in which the samples were collected in accordance with subsection A of this section.~~ in accordance with 12VAC5-590-530. The department …the owner report that information:”

12VAC5-590-531. Reporting requirements...

Comment

F 2: Incorrect reference

Proposed Regs.

F 2: “The owner of a waterworks monitoring monthly or quarterly for TOC under the requirements of 12VAC5-590-374 J and meeting one or more of the alternative compliance criteria in 12VAC5-590-411 A 1 b or A 1 c shall report:”

Revised Proposal

F 2: “The …in 12VAC5-590-411 A 1 c or A 1 d shall report:”

12VAC5-590-531. Reporting requirements...

Comment

F 2 f: Incorrect reference.

Proposed Regs.

F 2 f: “The RAA of source water alkalinity for a waterworks meeting the criterion in 12VAC5-590-411 A 1 c (3) and of treated water alkalinity for a waterworks meeting the criterion in 12VAC5-590-411 A 1 c (1).”

Revised Proposal

F 2 f: “The RAA of source water alkalinity for a waterworks meeting the criterion in 12VAC5-590-411 A 1 c (3) and of treated water alkalinity for a waterworks meeting the criterion in 12VAC5-590-411 A 1 d (1).”

12VAC5-590-531. Reporting requirements...

Comment

F 2 h: Incorrect reference.

Proposed Regs.

F 2 h: “The RAA of the amount of magnesium hardness removal (as CaCO3, in mg/L) for a waterworks meeting the criterion in 12VAC5-590-411 A 1 c (2).”

Revised Proposal

F 2 h: “The RAA of the amount of magnesium hardness removal (as CaCO3, in mg/L) for a waterworks meeting the criterion in 12VAC5-590-411 A 1 d (2).”

12VAC5-590-531. Reporting requirements...

Comment

F 2 i: Incorrect reference.

Proposed Regs.

F 2 i: “Whether the waterworks is in compliance with the particular alternative compliance criterion in 12VAC5-590-411 A 1 b or A 1 c.”

Revised Proposal

F 2 i: “Whether the waterworks is in compliance with the particular alternative compliance criterion in 12VAC5-590-411 A 1 c or A 1 d.”

12VAC5-590-545. Consumer confidence report

Comment

E 2: Error.

Proposed Regs.

E 2: "During the past year, we were required to conduct (insert the number of Level 1 assessments) Level 1 assessments. (insert the number of Level 1 assessments) Level 1 assessments were completed. In addition, we were required to collect (insert the number of corrective actions) corrective actions and we completed (insert the number of corrective actions) of these actions."

Revised Proposal

E 2: Change “collect” to “take”.

12VAC5-590-545. Consumer confidence report

Comment

E 3: Error.

Proposed Regs.

E 3: "During the past year (insert the number of Level 2 assessments) Level 2 assessments were required to be completed for our waterworks. (insert the number of Level 2 assessments) Level 2 assessments were completed. In addition, we were required to collect (insert the number of corrective actions) corrective actions and we completed (insert the number of corrective actions) of these actions." Revised Proposal

E 3: Change “collect” to “take”.

12VAC5-590-546. Regulated contaminants…

Comment

Clarify TT not defined in Table 546.1.

Proposed Regs.

Tabular item (3): {E. coli…TT…n/a…Human… E. coli …}

Revised Proposal

No need for any changes. TT already explained in 12VAC5-590-392 F and is a defined term in 12VAC5-590-10.

12VAC5-590-395. Surface water and GUDI sources, polymer, and recycle treatment techniques

Comment

Clarify if a facility remains in Bin 1, that no additional treatment is required by this new/revised language.

Response

Section 12 VACS-590-395 sets the minimum requirements for treatment of surface and GUDI sources. The additional cryptosporidium log removal requirements established by the LT2 Rule, including bin requirements are in 12VAC5-590-401. ODW is not changing these federal requirements and if a facility remains in Bin 1, no additional treatment is required.

12 VAC5-590-550 Recordkeeping

Comment

It seems unwarranted to keep disinfection profile and benchmarking results indefinitely. It is suggested that a 12-year period to match the maximum period for other record retention would seem sufficient.

Response

No change: recordkeeping for disinfection profiles is required indefinitely under 40 CFR 141.172 (b) (6).

12 VAC5-590-570 Operational Reporting Requirements

Comment

- Develop table for ozone reporting for Monthly Operation Reports.

Response

- ODW will provide a table.

12VAC5-590-874. Gravity filtration.

Comment

Section 12VAC5-590-874 H 2 b calls for a method for avoiding loss of filter media during backwashing. Clarify that methods can include operational strategies, filter design, or equipment installed on the troughs if the intent is to allow any of these as acceptable methods to prevent media loss.

Response

No change: This requirement is intentionally general to allow flexibility to the filter designer. As written, this allows for operational strategies, design features, or trough elements. This is consistent with the ***Ten States Standards***.

12VAC5-590-874. Gravity filtration.

Comment

Section 12VAC5-590-874 K 1 calls for a minimum 50% media expansion. This is very high and above typical AWWA recommendations of 20-30% and there is not necessarily significantly improved media scouring at higher expansions. Surface water plants would also find it difficult if not impossible to reach 50% expansion in summer months due to water temperature.

Response

No change: The 50% media expansion is a design criteria and is consistent with the ***Ten States Standards***.

12VAC5-590-930. Fluoridation

Comment

Section 12VAC5-590-930 B calls for fluoridation chemicals to conform to the applicable AWWA standards or NSF/ANSI Standard 60-2017, as appropriate. Request VDH to exercise reasonable implementation of this recommendation as design, implementation and operation of this addition could impose a financial burden on water systems.

Response

No change: The change provides clarification of the applicable standards and provides some flexibility, but does not tighten requirements.

12VAC5-590-1140 Installation and Testing of Water Mains

Comment

12VAC5-590-1140 D references AWWA Standards C600-**10**, C604-**11**, however the most current AWWA standards for those sections are C600-**17** and C604-**17**.

Response

ODW will update references to the most current standard.

12 VAC5-590-1180 Surface Water Crossings

Comment

In Surface Water Crossings 12 VAC5-590-1180 C 2 should be enhanced to include the use of hydrants as "easily accessible" locations to perform testing rather than just specifying taps.

Response

No change: The *Regulations* establish minimum design standards and do not preclude installation of hydrants at easily accessible locations.

12VAC5-590-1160. Valve, air relief, … (continued)

Comment

E 2 c: Requirements are too restrictive; need to be relaxed.

Revised Proposal

E 2 c : “The installation and testing specifications shall require field verification by the owner's engineer of the groundwater elevation and surface water drainage, as needed, in circumstances or situations where this is of potential concern, before ~~prior to~~ placement of the pit or chamber.”

12VAC5-590-1170. Hydrants

Comment

A: Fire hydrant drains should not be plugged.

Proposed Regs.

A: “Where hydrant drains are not plugged, they shall be drained to the ground surface or to dry wells provided exclusively for this purpose in a manner that will avoid contamination of the hydrant or water main from high groundwater, surface flooding and ponding, and contaminant or pollutant spills.”

12VAC5-590-1170. Hydrants (continued)

Comment

A: Fire hydrant drains should not be plugged.

Revised Proposal

A: “Under conditions where there is no high groundwater, surface flooding or ponding or contaminant or pollutant spills, fire hydrant drains shall drain to the ground surface or to dry wells provided exclusively for this purpose. In all other situations, fire hydrant drains shall either be drained in a manner that will avoid contamination of the hydrant or be plugged.”

12VAC5-590-1170. Hydrants (continued)

Comment

C: Clarify connection of fire hydrants to the water supply main and the limitation of pipe diameter.

Revised Proposal

C: “Fire hydrants shall be connected only to water mains adequately designed for fire flows in accordance with the requirements of 12VAC5-590-1120 B. Other hydrants, flushing devices or blowoffs may be connected to water mains of less than 6 inches in diameter in accordance with 12VAC5-590-1120 A.”

Category 3

600 - Cross-connection control program responsibilities

600 D Instead of annual operational tests, allows waterworks to substitute a public education program for residential and commercial consumers whose premise plumbing is not complex with no known or suspected high hazards PLUS remaining residential consumers.

600 - Cross-connection control program responsibilities

- Revisions in 600 D to avoid ambiguity, loopholes, and gray areas. Allows public education instead of testing and recordkeeping for very low risk systems, with a schedule for re-assessment.
- Opposes 600 D and recommends its deletion based on the public education program for backflow protection instead of annual testing & recordkeeping.
- Eliminate 600 D. Education not a substitute for annual testing & recordkeeping; complexity of premise plumbing is subjective.
- Educational program not a substitute for testing.
- Residential irrigation systems must be declared as high hazard and must be appropriately protected, tested annually, and tracked.

600 - Cross-connection control program responsibilities

Issues

- Annual testing and recordkeeping for residential properties = costly
- Public education program = less costly, less effective
- Residential irrigation system = high hazard?
- Annual testing and recordkeeping versus public education program
- Clarify scope covered by public education program
- Program approval required by VDH ODW
- Waterworks responsibility beyond meter?

610 - Containment of backflow

- 610 E is a list of types of facilities that must be protected.
  - Deleted “Lawn sprinkler systems, and irrigation systems” and “Fire service systems”
  - Added several new items (probably not an issue)

610 - Containment of backflow

Issues:

- Items on List
  - Lawn sprinkler systems and irrigations systems
  - Fire service systems
  - Other items
- List needs to work with Section 600
- Approved devices and methods.
- Coordination between owner and USBC.

630 - Backflow prevention assemblies, devices, and backflow elimination methods for containment

- Advocates that containment devices be approved and field tested in accordance with standards such as AWWA, ASSE, & USC.
- Recommends optimal coordination with the USBC. There should be an “approval” process in the regulations for devices used in the CCCP. Binary choice for classifying hazards - low or high.
- Recommends language to assure compliance with USBC, and equipment approved under USC standards.
- Owner should have overriding authority over USBC.
- State should appoint Cross Connection Director Office.

630 - Backflow prevention assemblies, devices, and backflow elimination methods for containment

Issues

- Clarify point of demarcation
- Clarify scope of responsibility for waterworks, local building official, USBC
- Clarify which standards apply for cross connections and where can be found
- Clarify coordination with USBC and who has authority to enforce it
- Clarify who approves devices, what standards apply for devices
- Review table with hazard classification, understand nexus with USBC
- Recommends language to assure compliance with USBC, and equipment approved under USC standards.
- Clarify if Owner has overriding authority over USBC.

10 - Definitions and units of measurement

New Definitions suggested:

ASSE, backflow prevention assembly, backflow prevention device, CCCP, double gate-double check valve assembly, pressure vacuum breaker assembly, reduced pressure principle backflow prevention assembly, service connection, service line, USC Foundation for Cross-Connection Control and Hydraulic Research

10 - Definitions and units of measurement

10 - Definitions and units of measurement

- Additional definitions (new/revised) – consumer, human consumption, service connection, service line, and waterworks.
- Advocates new/revised definitions on ASSE, backflow prevention assembly, backflow prevention device, CCCP, double gate-double check valve assembly, pressure vacuum breaker assembly, reduced pressure principle backflow prevention assembly, service connection, service line, USC Foundation for Cross-Connection Control and Hydraulic Research, & waterworks.
- Advocates revising definition on “source water” to include both surface and groundwater for clarity.
- Revise definitions of PMCL and SMCL for clarity.

Way Forward

- Obtain input from WAC subgroup
- Consider comments, input from WAC
- Draft final amendments to WWR
- Present final amendment to WAC
- Present final amendments to the Board of Health
- Executive Branch review
- Publication in Virginia Register
- 30-day public comment period

Comments and Questions?

Virginia.gov Agencies | Governor

Agency **Virginia Department of Health**

Board **State Board of Health**

Chapter **Waterworks Regulations [12 VAC 5 - 590]**

Action	**Amend and update the Waterworks Regulations**
Stage	**Proposed**
Comment Period	Ends 1/10/2020

33 comments

All comments for this forum

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Commenter: Scott Sande, Plumbing Contractor

11/20/19 10:53 pm

Cross connection control program requirements ambiguous and dangerous

12VAC5-590-600 Cross connection control program requirements

D. Instead of annual operational tests (12VAC5-590-600 C) and the related records and inventory of backflow prevention assemblies, backflow elimination methods, and backflow prevention devices (12VAC5-590-600 G), the owner may provide a public education program to residential and commercial consumers whose premise plumbing is not complex and where there are no known or suspected high hazards as identified in Table 630.1. For all other residential consumers, the department may approve a public education program provided by the owner as part of the CCCP.

This statement can be misconstrued and could lead to a dangerous situation. This could lead an owner to implement a program in which backflow prevention assemblies are not required to be tested annually. All backflow prevention assemblies need to be tested annually! These devices are required to be installed in systems meeting the criteria, so why would it not need to be tested if it is installed? If a device is required, it's required for a reason, and therefore, should be tested to ensure it's working to prevent "the reason".

Evidence has shown these devices fail periodically. A failed device can fail to prevent the cross connection of hazardous conditions into the water system.

The use of the term "high hazards" in this statement is ambiguous. The table referenced can be interpreted many different ways. Since the types of hazards are not specifically listed in the table, an owner could interpret a specific hazard to be "low", simply to avoid implementing a proper program with record keeping of annual testing of devices. The "public education program" could be used as a loophole for owners who may not have a proper program in place or choose not to implement one.

1. The public education program shall be designed to prompt consumer self-assessments, increase the awareness of cross-connections, and inform the consumer of the public health hazards of backflow.

As someone in the industry for over 20 years, I have never seen such a program. Should such a program be implemented, even in it's most effective method, it should be apparent to any objective party that "consumer self-assements" is an unrealistic ask. If we were to rely on consumers to "do the right thing" then why would any of these regulations even exist? It needs to be up to the owner, not the consumer, to ensure the owner's system and the public's safety is protected from hazards.

For all other residential consumers, the department may approve a public education program provided by the owner as part of the CCCP.

I don't understand this statement. The previous statement references consumers where there is no known or suspected high hazard. This would imply that "all other residential consumers" means those where there are known or suspected high hazard present. Does this mean the department will approve the public education program, in lieu of, annual testing records and a proper CCCP even for consumers with high hazards!? I may be reading it incorrectly, but it's ambiguous at best.

In summary, please consider eliminating or rewording this entire section ...

12VAC5-590-600 Cross connection control program requirements

D. Instead of annual operational tests (12VAC5-590-600 C) and the related records and inventory of backflow prevention assemblies, backflow elimination methods, and backflow prevention devices (12VAC5-590-600 G), the owner may provide a public education program to residential and commercial consumers whose premise plumbing is not complex and where there are no known or suspected high hazards as identified in Table 630.1. For all other residential consumers, the department may approve a public education program provided by the owner as part of the CCCP.

Commenter: Wade Gerze, American Backflow Prevention Association Member

12/2/19 10:44 am

Proposed regulation has potential to create additional hazards

The following proposed regulation statement has potential to create additional hazards by allowing for interpretation as to who has a complex plumbing system, and who knows (or doesn't) about "known or suspected" high hazards.

It's understandable that Backflow Prevention Assemblies (BPA) annual testing can be viewed as frustrating or inconvenient, much similar to the Virginia registered automobile safety inspection program, in which both programs require that equipment shall be verified in good mechanical working condition, annually. The only way to verify that a BPA is operating as designed is to perform an annual test. Through my experience in the industry, education will not take the place of insuring a BPA functions correctly, or identify where a BPA should be installed. Please consider the proposed regulation to provide concise direction and hazard identification through table 630.1, while requiring annual inspection/test of a BPA.

Proposed:

D. Instead of annual operational tests (12VAC5-590-600 C) and the related records and inventory of backflow prevention assemblies, backflow elimination methods, and backflow prevention devices (12VAC5-590-600 G), the owner may provide a public education program to residential and commercial consumers whose premise plumbing is not complex and where there are no known or suspected high hazards as identified in Table 630.1. For all other residential consumers, the department may approve a public education program provided by the owner as part of the CCCP.

Commenter: Hanover County Department of Public Utilities - Steven Herzog, Director

12/17/19 10:10 am

General Comments - Fire Hydrants and Cross Connection

12VAC5-590-1170 Hydrants:

Hanover County is concerned that the proposed changes will lead to fire hydrant drains being plugged regularly. The plugging of fire hydrants drains will lead to operational issues for the utility as hydrants will have to be regularly pumped to avoid freezing and posing extreme danger to the community and fire fighters when hydrants are found frozen much more when they are used for firefighting activities. Weep holes are an engineered solution to prevent the potential for hydrants to freeze and minimize the risk of backflow. Once that engineered solution is bypassed, the likelihood for problems increases dramatically. The risk of contamination through a hydrant drain to the water system does not out way the risk of a hydrant freezing and not being functional when needed to serve its primary purpose.

Hanover County recommends that 12VAC5-590-1170 be changed to read:

A. Where hydrant drains are not plugged, they shall be drained to the ground surface or to subsurface stone filled wells or other engineered solutions provided exclusively for this purpose.

B. Hydrant drains shall not be connected to sanitary sewers or storm drains.

C. Fire hydrants shall be connected only to water mains adequately designed for fire flows in accordance with the requirements of 12VAC5-590-1120 B.

12VAC5-590-600 Cross-Connection Control Programs:

Hanover County is concerned that that the proposed regulations require that all waterworks track annual testing for backflow devices for residential irrigation systems unless ODW approves a public education program. We estimate that Hanover would need to add 2-3 employees to move from our current public education program to a tracking program as proposed. We don't believe this is the best use of limited resources with the many challenges that we face. We recommend that waterworks have the option to choose whether to track the annual testing of backflow devices for residential customers or utilize a public education system at their discretion rather than the ODW discretion. We suggest that section 12VAC5-590-600 D. be changed to read:

D. Instead of annual operational tests (12VAC5-590-600 C) and the related records and inventory of backflow prevention assemblies, backflow elimination methods, and backflow prevention devices (12VAC5-590-600 G), the owner has the option to provide a public education program to residential consumers. The owner may also provide a public education program, instead of annual operational tests and the related records and inventory of backflow prevention assemblies, backflow elimination methods, and backflow prevention devices (12VAC5-590-600 G), to commercial consumers whose premise plumbing is not complex and where there are no known or suspected high hazards as identified in Table 630.1.

Commenter: Ben Jones, Operations Manager, Dinwiddie County Water Authority

12/18/19 11:37 am

12VAC5-590-600 Cross-Connection Control Programs (Protecting Our Drinking Water)

Water system utility owners and operators can do everything right, proper and compliant for 364 days a year, but they will only be remembered for the one day when everything goes terribly wrong. It is a cross that we in the water industry will always bear. When it comes to Backflow prevention, our regulations must remain strong. We can not sit back and allow high hazards to be interpreted by just anyone. Consumer self-assements will not be enough to protect our water supply. Backflow devices need to be installed correctly and to the specific hazard they are preventing. All Backflow devices must be tested annually and by a certified tester to prevent creating additional hazards. Let's make a difference by protecting our drinking water, thank you.

Commenter: Christopher P. Mayhew, Backflow Services, Inc., CCC Program Manager

12/18/19 2:10 pm

12VAC5-590-580 / General requirements for cross-connection control and backflow prevention. proposed

Let me begin with my appreciation to the members of WAC for their hard work and diligence in the preparation of the regulatory changes to the water works. This is a daunting task and a lot of effort has been put into these thoughts and proposed changes. I strongly support the Cross Connection Control and Backflow Prevention industry and I am deeply concerned for the safety of our drinking water.

My comments are as follows:

12VAC5-590-580, with regard to para "A" - striking the approval requirements for permitting should I assume that the CCCP will no longer have to be approved by the department (VDH) and if approval is needed what would the process be?

12VAC5-590-590, with regard to para "D" - this paragraph should be withdrawn from the proposed regulatory change. Replacing minimum testing requirements with educational programs is irresponsible at best. Although a public education program should be integral part of any CCCP it does nothing to ensure that all of the mechanical devices that are put in place to protect the safe drinking water from backflow are performing as designed. Backflow preventers have a specific purpose from protecting low to high hazards as well as protecting from backsiphonage and/or backpressure. Testing by a certified technician with an approved and certified test kit is the only way to determine if a backflow prevention assembly is working properly and this must be done after installation, after repairs or maintenance or at a minimum annually. These standards are repeated throughout the industry by the manufacturers, industry associations and labs. (USC, ASSE, etc.) The requirement for testing must not be reduce in any way and in most cases needs reinforcing through tighter legislation and more aggressive enforcement.

The residential communities are feared by the very departments and people that are entrusted to protect them and with regards to the residential lawn systems the sheer numbers of backflows not being tested annually is grossly negligent. Corpus Christi is a prime example of what not to do with regards to testing annually.

12VAC5-590-610 - Containment of backflow. This section can only work if the "Owner" and USBC officials come together in a common effort to enforce backflow prevention. This is an ongoing effort with some jurisdictions having a good working relationship with code officials and having a common interest in protecting the drinking water but in a lot of cases this does not happen and I see nothing here that will change that. Perhaps language that would promote the code officials communication with the owner and the owner taking responsibility for enforcement and record keeping.

One point of interest to add would be for the jurisdictions to **not** apply devices on connections with simple plumbing and that meet USBC. This is a wasteful practice and gives the jurisdiction a false sense of security and can in some cases create a hardship on the resident. (Hot water heater T&P valves)

with regards to para "E" - Why are we removing "Lawn Sprinkler systems"? Wording can get lost in a paragraph but on a list it is easier to locate. Removing or striking from the regulation can lead people to think that it is no longer necessary. Lawn sprinkler systems are high hazards even without chemical additives and again as mentioned earlier their numbers are insurmountable.

12VAC5-590-630, with regards to para "A" - shall comply with the USBC. The USBC should not have authority over containment assemblies. That authority should be with the owner.

I will conclude that in my years of working throughout the Commonwealth I have had many conversations with CCC Managers that desired more guidance from state in order for them to better organize and enforce their programs and perhaps standardize the CCCP in Virginia. What I have read and understand with regard to the proposed changes that there are some good and some not so good changes. I would respectfully request that the WAC add Cross Connection Professionals to the board and that the state appoint a Cross Connection Director Office dealing specifically with backflow prevention. Thank you.

Commenter: Chesterfield County Utilities Department - Mike Nannery, Assistant Director

1/8/20 9:32 pm

Amendments and Updates to the Waterworks Regulations Comments

Thank you for the opportunity to comment and listening previously to Chesterfield County Utilities' and Chesterfield County Fire Department's concerns regarding plugging fire hydrant drains. The Chesterfield County Utilities Department offers the following regarding the Waterworks Regulations Amendments and Updates.

12VAC5-590-1170 Hydrants:

The Chesterfield County Utilities Department is concerned that the proposed additional language will require fire hydrant drains, aka weep holes, to be plugged unnecessarily due to high groundwater and surface flooding and ponding. These are frequently seasonal conditions or happen periodically when there are periods of heavy precipitation. These conditions do not present a hazard of contaminating the fire hydrant barrel. If the groundwater were to become contaminated, once the fire hydrant is utilized, the pressurized water system would quickly force the water from the barrel. If the hydrant drains are plugged and water remains in the hydrant, it would be susceptible to a complete blockage by ice during periods of below freezing temperatures. Relying on manual removal of the water from the hydrant is not a practical solution. The weep holes are an engineered solution to automatically remove water from the fire hydrant barrel to prevent freezing. Frozen hydrants are believed to be a higher risk to public safety. The plugging of fire hydrants drains also may cause the fire hydrant to become pressurized if the hydrant foot valve were to have a leak. This puts utility workers and fire fighters at risk if they remove the hydrant cap and are not aware the hydrant was pressurized. In conclusion, the risk of contamination through a fire hydrant drain to the water system does not out way the risk of a fire hydrant freezing and not being functional when needed to serve its primary purpose of protecting life and property from damage by fire.

The Chesterfield County Utilities Department recommends that 12VAC5-590-1170 be changed to read:

A. *Where hydrant drains are not plugged, they shall be drained to the ground surface or to dry wells provided exclusively for this purpose.* **(Leave language as-is; no change recommended)**

B. *Hydrant drains shall not be connected to sanitary sewers or storm drains.*

C. *Fire hydrants shall be connected only to water mains adequately designed for fire flows in accordance with the requirements of 12VAC5-590-1120 B.* **(Agree with proposed language change)**

12VAC5-590-600 Cross-Connection Control Programs:

The Chesterfield County Utilities Department requests that the proposed regulations provide the owner an educational program option to satisfy requirements for residential customers of their Cross-Connection Control Program. This program is reviewed periodically by the Virginia Department of Health's Office of Drinking Water. Residential customers are generally required to adhere to the cross-connection control program due to their landscape and lawn irrigation systems. We believe that the best use of our resources should be dedicated to protecting the utility system from the commercial/non-residential users with complex plumbing systems or are suspected to be high hazards. An educational program should be allowed for residential customers at the owner's discretion rather than at the Office of Drinking Water's discretion.

The Chesterfield Utilities Department suggests that section 12VAC5-590-600 D. be changed to read:

D. Instead of annual operational tests (12VAC5-590-600 C) and the related records and inventory of backflow prevention assemblies, backflow elimination methods, and backflow prevention devices (12VAC5-590-600 G), the owner has the option to provide a public education program to residential consumers. The owner may also provide a public education program, instead of annual operational tests and the related records and inventory of backflow prevention assemblies, backflow elimination methods, and backflow prevention devices (12VAC5-590-600 G), to commercial consumers whose premise plumbing is not complex and where there are no known or suspected high hazards as identified in Table 630.1.

In conjunction with the proposed changes requested to section 12VAC5-590-600 D., the Chesterfield County Utilities Department suggest that section 12VAC5-590-600 G. be changed to read:

G. Except for options allowed in 12VAC5-590-600.D., the owner shall maintain an inventory and records of testing, repairs, and maintenance of all backflow prevention assemblies, backflow elimination methods, and backflow prevention devices required and installed under 12VAC5-590-610.

Commenter: Hanover County Department of Fire & EMS

1/9/20 9:22 am

15 VAC5-59-1170 – Hydrants

Hanover County Fire-EMS supports initiatives aimed to increase the safety of the community to include safeguards from water contamination. Consumers yield to the Utility and the regulatory authority to establish comprehensive laws that do not increase known risks. Although 15 VAC5-59-1170 – Hydrants is intended to increase safety, the

proposed language change decreases safety by increasing system failure. Not to mention, a decrease in reliability and in overall increase in maintenance.

The proposed language requires the Utility to either remove, relocate, or prevent contaminants from entering the water system by plugging the hydrants' drain valve. In many cases, removal or relocation is not an option as it may affect system maintenance or even service demand by emergency responders. Moreover, plugging of drain valve has an increased risk to the system. Drain valve are engineered on dry barrel hydrants to protect the system and improve reliability during freezing conditions by allowing the hydrant drain. Thus, returning the hydrant to its native "dry" barrel. If the drain valve is plugged, water will remain in the barrel which will create an environment to freeze during winter months.

Another consequence to plugging the drain valve is the increase maintenance demand. The maintenance demand will increase as plugged hydrants will need to be pumped out after each use to prevent freezing. Currently, the drain valve is engineered as a self-maintaining feature that allows for automatic water drainage. Inevitability, the increased maintenance cost will be passed to the consumer. Furthermore, drain holes are designed to be located on the dry side of the main valve. Therefore, decreasing the risk of contaminants entering the water system.

In conclusion, Hanover County Fire-EMS does not support the proposed language change to 15 VAC5-59-1170 – Hydrants. The proposed language change creates an unsafe environment by circumventing an engineered feature designed to maintain reliability in all environments. Thus, decreasing the reliability and unnecessarily increasing the risk to the community. Hanover County Fire-EMS echo's the recommended language to read: "Where hydrant drains are not plugged, they shall be drained to the ground surface or to subsurface stone filled wells or other engineered solutions provided for this purpose".

Respectfully,

Jethro H. Piland, III, Fire Chief
Christopher J. Anderson, Chief Fire Marshal

Commenter: Keith Chambers, Chesterfield Fire and EMS

1/9/20 9:30 am

Proposed language change regarding fire hydrants

Chesterfield Fire and EMS is concerned that language changes within 12VAC-590-1170 may lead to engineered weep holes being plugged and subsequently having fire hydrants highly susceptible to freezing during cold weather. We recommend that no language be added that would imply or indicate that weep holes should be plugged.

Weep holes are an engineered solution to prevent water accumulation within fire hydrants so they would not be susceptible to freezing, removing this engineered design would require that water removal be a manual process. Relying on a manual process over an engineered solution is not the most effective means to drain hydrants. We believe the probability and risk of having a frozen hydrant far outweighs the risk of contamination through a weep holes

Commenter: Doug Powell, General Manager, James City Service Authority

1/9/20 3:26 pm

Requirements for Cross Connection Control and Backflow Prevention

12VAC5-590-600. D. Cross Connection Control Program Responsibilities.

The James City Service Authority is concerned about this paragraph. Irrigation systems are high hazards – period. They are exposed to everything in or on the ground to include insects, animal feces, animal urine, and other chemical and biological contaminants. They also may be subject to various onsite conditions such as additional water supplies, booster pumps, and elevation changes. In addition, many are used to feed highly toxic fertilizers, herbicides, and pesticides. In most instances, without the consent or knowledge of the water system owner. These systems are required to have a backflow prevention assembly (BPA) for a reason - because they are a high hazard. They have

been identified as such by the Virginia Department of Health (VDH) for nearly 40 years. The hazard an irrigation system presents to the waterworks doesn't change based on whether it is zoned commercial or residential. Given the fact that they are clearly identified as a high hazard, this section, or any other section in these regulations should not be allowed to substitute a public education system for the required testing of irrigation system BPA's. The safety of the consumer should be paramount, regardless of staffing requirements. How much will it cost if one or more of these chemicals are back-flowed into one of our distribution systems? If, for the sake of argument, cost is a consideration for some municipalities, then we would point out the many companies that offer programs that can manage and track their cross connection control program with little, or even no cost for the municipality.

To conclude, it's an unfortunate fact that water distribution systems experience breaks on a somewhat frequent basis. When these breaks occur, it is a fair assumption that in many of these cases water is being back-siphoned back into our distribution systems. It is an undeniable fact. These breaks do not only occur on water lines serving commercial properties. Do we want to hope that the irrigation systems hazards noted above are being controlled because we sent the irrigation system owner an educational letter, or know we are protected because we ensured they were tested each year? Educational programs are a great way to enlighten consumers about the potential hazards associated with cross connections for properties that are without any known high hazards. An irrigation system simply does not fall into that category. The original regulations required that they be tested and tracked annually. There was a Working Memo (WM801) developed by the VDH that required that they be tested and tracked annually. If we want to keep our distribution systems safe, we should ensure that they continue to be tested and tracked at least annually. We suggest it be changed to read:

D. Instead of annual operational tests (12VAC5-590-600 C) and the related records and inventory of backflow prevention assemblies, backflow elimination methods, and backflow prevention devices (12VAC5-590-600 G), the owner may provide a public education program to residential and commercial consumers whose premise plumbing is not complex and where there are no known or suspected high hazards as identified in 12VAC5-590-610 C. through 12VAC5-590-610 E. or Table 630.1.

12VAC5-590-610. E. Containment of backflow.

The James City Service Authority is concerned about this section. Item 11 as written can leave potential hazardous situations as not requiring adequate protection. We suggest it be changed to state:

Item 11. Buildings with commercial, mixed use, industrial, or institutional occupants served through a master meter.

Additionally, the proposed wording at item 21 is not as concise as it was under the original regulation. The pressure created through elevation does not change for buildings above 3 stories based on the classification of use. The concerning backpressure that can be created is the same no matter what type of building it is. The proposed wording can create future loopholes in the requirement. We suggest to leave it as it is currently written in the existing cross connection regulations:

Item 21. Highrise buildings (four or more stories).

12VAC5-590-630 B.3. Backflow prevention assemblies, devices, and backflow elimination methods for containment.

The James City Service Authority is concerned about this paragraph. The protection of our water distribution systems should be of the highest priority. As such, we should want to ensure that the assemblies we utilize meet the highest quality approval standards. No other approval listing meets the standards as set forth by the University of Southern California's Foundation for Cross Connection Control and Hydraulic Research (USC CCC&FHR). Their rigorous testing program emphasizes what is the most important aspect of the BPA's we select to protect our water systems – does it actually work as it is designed under all possibilities of conditions and usage. AT the USC CCC&FHR the various sized BPA's are tested at various temperatures, pressures, and orientations. Most importantly they are field tested for one year so that we can be assured that it will continue to function properly over an extended time frame, and under the harsh field conditions that they are subject to be exposed to. It is under this final stage of field testing that upwards of thirty percent of the submitted BPA's fail to meet the standards. Since after the initial installation, or after repairs or relocation, we only require our BPA's be tested annually, shouldn't we want to have a containment BPA that has met this criteria? The VDH developed a Working Memo (WM801) that required this designation for our containment assembly. It stated:

Approved Containment Devices. Containment devices under the jurisdiction of the Waterworks Regulations (12 VAC 5-590-620) are those which meet AWWA standards, hold ASSE approval, and have an approval from the University of Southern California Foundation for Cross Connection Control and Hydraulic Research (USC). USC Foundation members are kept up to date on approvals. Otherwise, the supplier or manufacturer can supply approval documentation. NOTE: USC device approval is specific to orientation, horizontal or vertical, device model number and size. Approvals are continuously verified and can be rescinded.

The USC CCC&FHR no longer requires membership to access their approved listings, and it is a valuable tool that is available for all to utilize. We suggest the standard that was set by the VDH in its WM801 be similarly transferred to

replace the current wording:

12VAC5-590-630 B. 3. Containment devices under the jurisdiction of the Waterworks Regulations are those which meet AWWA standards, hold ASSE approval, and have an approval from the University of Southern California Foundation for Cross Connection Control and Hydraulic Research (USC). NOTE: USC device approval is specific to orientation, horizontal and vertical, device model, number and size. Approvals are continuously verified and can be rescinded.

Commenter: Henrico County Department of Public Utilities – Ralph Claytor, Design Divis

1/9/20 4:19 pm

12VAC5-590-1170 Hydrants

Henrico County Utilities Department is concerned that the proposed changes will lead to fire hydrant drains being plugged regularly. The plugging of fire hydrants drains will lead to maintenance and operational issues for the utility as hydrants will have to be regularly pumped to avoid freezing and posing extreme danger to the community and fire fighters when hydrants are used for firefighting activities and are found to be frozen more often . Weep holes are an engineered solution to prevent the potential for hydrants to freeze and minimize the risk of backflow. Once that engineered solution is bypassed, the likelihood for problems increases dramatically. The risk of contamination through a hydrant drain to the water system does not outweigh the risk of a hydrant freezing and not being functional when needed to serve its primary purpose.

Henrico County Utilities Department recommends that 12VAC5-590-1170 be changed to read:

A. Where hydrant drains are not plugged, they shall be drained to the ground surface or to subsurface stone filled wells or other engineered solutions provided exclusively for this purpose.

B. Hydrant drains shall not be connected to sanitary sewers or storm drains.

C. Fire hydrants shall be connected only to water mains adequately designed for fire flows in accordance with the requirements of 12VAC5-590-1120 B.

Commenter: Henrico County Department of Public Utilities – Ralph Claytor, Design Divis

1/9/20 4:20 pm

12VAC5-590-600 Cross-Connection Control Programs

The Henrico County Utilities Department requests that the proposed regulations be clarified regarding the owner's provision of an educational program option to satisfy requirements for residential customers of their Cross- Connection Control Program. This program is reviewed periodically by the Virginia Department of Health's Office of Drinking Water. Residential customers are generally required to adhere to the cross- connection control program due to their landscape and lawn irrigation systems. We believe that the best use of our resources should be dedicated to protecting the utility system from the commercial/non- residential users with complex plumbing systems and/or with suspected high hazards. The following modifications to the proposed regulation clarify the intent that an educational program be allowed for residential customers at the owner's discretion rather than at the Office of Drinking Water's discretion.

The Henrico County Utilities Department suggests that section 12VAC5-590-600 D. be changed to read:

D. Instead of annual operational tests (12VAC5-590-600 C) and the related records and inventory of backflow prevention assemblies, backflow elimination methods, and backflow prevention devices (12VAC5-590-600 G), the owner has the option to provide a public education program to residential consumers. The owner may also provide a public education program, instead of annual operational tests and the related records and inventory of backflow prevention assemblies, backflow elimination methods, and backflow prevention devices (12VAC5-590-600 G), to commercial consumers whose premise plumbing is not complex and where there are no known or suspected high hazards as identified in Table 630.1.

In conjunction with the proposed changes requested to section 12VAC5-590-600 D., the Henrico County Utilities Department suggest that section 12VAC5-590-600 G. be changed to read:

G. Except for options allowed in 12VAC5-590-600.D., the owner shall maintain an inventory and records of testing, repairs, and maintenance of all backflow prevention assemblies, backflow elimination methods, and backflow prevention devices required and installed under 12VAC5-590-610.

Commenter: Andrea Wortzel, Mission H2O

1/9/20 4:23 pm

MH2O Comments on Proposed Revisions to VDH Waterworks Regulations

Mission H_2O appreciates the opportunity to comment on the proposed revisions to the Virginia Department of Health ("VDH") Waterworks Regulation. Mission H_2O is an informal stakeholder group focused on the management of Virginia's water resources and, in particular, developments affecting water supply and water availability. Mission H_2O has a broad membership that ranges from municipal water providers and water supply professionals to manufacturers and agricultural operations. Many of our members operate in accordance with waterworks operating permits issued by VDH, and Mission H_2O is an active participant with the VDH-commissioned Waterworks Advisory Committee.

The Waterworks Regulations serve as an important component of assuring that citizens can obtain safe drinking water. These regulations have not been comprehensively updated since 1993. The changes that VDH is proposing are necessary and Mission H_2O supports the proposed revisions. The changes have been reviewed and considered by numerous stakeholders since the time the amendment process was initiated in 2014. Mission H_2O members have been active participants throughout this process, and appreciated the opportunity to work with VDH staff on the proposed revisions.

Safe Yield

During the regulatory development process, there was much discussion about the safe yield of surface water sources (12 VAC 5-590-830.A.2). At the heart of the discussion was the question of the respective roles and responsibilities of VDH and the Virginia Department of Environmental Quality ("DEQ") in determining source water

availability and the authorized volume of withdrawal. Mission H_2O supports VDH's decision to retain this provision as currently drafted. Entities subject to the waterworks regulation have the experience and expertise to develop the safe yield assessment required by the regulations and satisfy this requirement.

The purpose of the Waterworks Regulation is to ensure that the citizens of Virginia have safe, reliable drinking water. The regulation as drafted requires entities subject to the regulation to make a demonstration that their facility is able to safely and reliably provide drinking water. Broader questions regarding water rights, water withdrawal permitting and water allocation should be addressed outside the waterworks regulation. Mission H_2O has suggested that a broader stakeholder group be convened to address these issues, and remains willing to participate in such a meeting with VDH and DEQ.

Waterworks Advisory Committee

Mission H_2O supports the inclusion of provisions regarding the Waterworks Advisory Committee ("WAC") (12VAC5-590-45). The WAC has been an important opportunity for stakeholder involvement in issues affecting drinking water providers. Having industry experts with extensive experience provide input to VDH related processes assists VDH staff in identifying gaps in statutes, policies and regulations and making improvements to the waterworks program. Mission H_2O would welcome the opportunity to have a representative serve on the WAC.

Definitions

The definition of "source water" found at 12 VAC 5590-10 appears to reference only surface water sources. The definition should be revised to make clear that source water can be either surface water or groundwater.

Practical Implementation

As noted above, Mission H_2O supports the updates to the Waterworks Regulation, and agrees that they are needed for consistency with federal requirements and to more accurately reflect actual practice. Nonetheless, the changes that are proposed are significant. Mission H_2O urges VDH to take a practical approach to the implementation of these regulations. Waterworks have enjoyed a collaborative working relationship with VDH, focused on the shared goal of ensuring Virginia's citizens have safe and reliable drinking water. Maintaining that focus as these regulations are implemented will be of critical importance.

Fire Hydrants

Several of our members are concerned about the proposed amendment to 12 VAC 5-590-1170.A addressing fire hydrants. Many fire hydrants include weep holes or drain holes, designed to provide an outlet for any residual water, preventing harm to the hydrant should it freeze. Thus, plugging these holes creates a public health risk. Mission H_2O requests that the existing language in 1170.A remain unchanged.

Thank you again for the opportunity to provide comments on the proposed revisions to the waterworks regulation. Should you have any questions regarding these comments, please contact me at Andrea.Wortzel@troutman.com or (804) 697-1406.

Commenter: Rosemary Green, City of Richmond DPU, Deputy Department Director, Sr

1/9/20 6:23 pm

General Comments - Fire Hydrants and Cross Connection

The City of Richmond Department of Public Utilities (Richmond DPU) fully endorses the comments submitted December 17, 2019 by Steve Herzog, Hanover County Department of Public Utilities Director, and available at https://townhall.virginia.gov/L/viewcomments.cfm?commentid=78531.

Therefore, Richmond DPU joins in recommending that 12VAC5-590-1170 and 12VAC5-590-600 D read as follows:

12VAC5-590-1170

A. Where hydrant drains are not plugged, they shall be drained to the ground surface or to subsurface stone filled wells or other engineered solutions provided exclusively for this purpose.

B. Hydrant drains shall not be connected to sanitary sewers or storm drains.

C. Fire hydrants shall be connected only to water mains adequately designed for fire flows in accordance with the requirements of 12VAC5-590-1120 B.

12VAC5-590-600 D (in its entirety, without any subsections)

B. Instead of annual operational tests (12VAC5-590-600 C) and the related records and inventory of backflow prevention assemblies, backflow elimination methods, and backflow prevention devices (12VAC5-590-600 G), the owner has the option to provide a public education program to residential consumers. The owner may also provide a public education program, instead of annual operational tests and the related records and inventory of backflow prevention assemblies, backflow elimination methods, and backflow prevention devices (12VAC5-590-600 G), to commercial consumers whose premise plumbing is not complex and where there are no known or suspected high hazards as identified in Table 630.1.

Commenter: David Taylor, Dave's Testing

1/9/20 11:25 pm

Cross Connection Control and Backflow Prevention Proposal / 12VAC5-590-600.D

How serious is the state in protecting our drinking water?

What is the cost of even one contamination?

Residential lawn irrigation is not only a high hazard (pesticides, herbicides, fungicides, animal feces, mold, and other soil contaminates), but conditions change constantly. Backflow devices not only fail to operate over time, but any change to an existing irrigation system can result in a backflow device falling out of compliance. An annual visit by a state-certified backflow tester is needed not only to test the device, but make sure the device is in compliance with current regulations. Basically, every homeowner with a lawn irrigation system, would not only need to be able to pass the state certification exam (administered to backflow prevention specialists), but also have a working knowledge of lawn irrigation. A "public education program", as the sole source of backflow prevention, would be inadequate and potentially dangerous.

If there are concerns about the cost and implementation of this cross-connection and backflow prevention program, all you need to do is study the success of the program at James City County. Since 2008, residential lawn irrigation systems have been tested and cataloged with minimal cost to the homeowners and run by a very lean and efficient team of two. I can't see how a well-run "public education program" would cost any less than a well-run cross-connection department. And here I ask the question again, "What would be the cost of even one incident of contamination?".

Commenter: Mark Titcomb, Newport News Waterworks 1/10/20 1:00 pm

12VAC5-590-874 K 1

Minimum 50% media expansion is very high and above typical AWWA recommendations of 20-30% and there is not necessarily significantly improved media scouring at higher expansions. Surface water plants would also find it difficult if not impossible to reach 50% expansion in summer months due to water temperature.

Commenter: Mark Titcomb, Newport News Waterworks 1/10/20 1:10 pm

12VAC5-590-874 H 2 b

I'm assuming that operational backwash strategies and physical positioning of backwash troughs are adequate methods for avoiding media loss through backwash. I think it would be useful to clarify that methods can include operational strategies, filter design, or equipment installed on the troughs if the intent is to allow any of these as acceptable methods to prevent media loss.

Commenter: Belinda Wilson PE, Licensed Civil Engineer & Resident 1/10/20 3:15 pm

Residential irrigation systems are high hazard.

Please do not leave the safety of drinking water to public education programs. There are too many people who don't even what backflow protection is and to leave this extremely important, life threatening matter to informational packets, mailed letters that will never be read and websites that people won't check is irresponsible. There are many severe and even deadly health threats that can come from unprotected residential irrigation systems. These systems must have backflow protection device tests that are tracked by municipalities and must be stated in the regulations as high hazards because they absolutely are high hazard. Please revise the amendments to ensure that the residential irrigation systems must be protected and the testing of the devices must be tracked.

Commenter: Belinda Wilson, Public Utilities Cross Connection Control Program Manager 1/10/20 3:40 pm

Residential irrigation systems are high hazards that need to have annual testing.

The City of Virginia Beach Public Utilities Department considers residential irrigation systems to be high hazards that need to be regulated in order to protect the drinking water system. These systems which likely aren't complex can have severe and even deadly contaminants enter the water system (i.e. animal urine and feces, pesticides and other chemicals). These systems must have backflow prevention devices that are tested annually and are tracked through the municipality. In a city with over 450,000 people, a public outreach program will be extremely difficult and costly but more importantly it will not be sufficient enough to protect the drinking water system. The regulations need to state that residential irrigation systems are high hazards that need to have their backflow devices tested annually and submitted to the municipality for tracking. It is all of our responsibility to protect the drinking water system which includes protection from all irrigation systems.

Commenter: Tim Brown, Albemarle County Service Authority

1/10/20 3:59 pm

12VAC5-590-600.D

There are two separate, but related, issues associated with this section of the proposed regulations.

At the very least, and by far of most importance, is the recommendation that the last sentence of the paragraph be removed entirely. Leaving the sentence in place and unchanged is extremely ambiguous, and is likely to be interpreted that an educational program may be used in lieu of testing a residential backflow assembly that protects a potentially high-hazard situation. The first sentence of the Section focuses on situations where the "... premise plumbing is not complex and where there are no known or suspected high hazards...". The opening phrase of sentence #2 "... for all other residential consumers..." clearly implies the reverse of sentence #1; i.e., instances of complex premise plumbing and/or potential high hazards. Even the most robust educational program can never serve to replace the need for regular testing of a backflow assembly, particularly in a high-hazard situation.

Elimination of the last sentence of this Section will be a significant improvement. However, there is still concern with sentence #1 as a stand-alone sentence. While an educational effort will always be beneficial, if a backflow assembly has been installed, regardless of the level of potential hazard, the assembly needs to be tested on an annual basis. If the assembly is not to be tested, it needs to be removed.

Commenter: Timothy Mitchell, City of Lynchburg

1/10/20 4:26 pm

12VAC5-590-600.D.

The City of Lynchburg appreciates the opportunity to comment on the Proposed Revisions to the VDH Waterworks Regulations.

In the interest of public safety we oppose the changes to 12VAC5-590-600.D. Specifically we oppose allowing the substitution of education programs for the annual testing and record keeping requirement. The determination of whether the premise plumbing is not complex is subjective and allowing options opens water utilities further scrutiny and conflict over our CCCP. A review of a high hazard from Table 630.1, reinforces the need for annual operational tests, and the related records and inventory of backflow prevention assemblies, backflow elimination methods, and backflow prevention devices.

As a result of irrigation, irrigation-related, and fire sprinkler systems being added more frequently by residential consumers, as well as frequent changes to commercial consumer sites, etc., and restrictions on the owner with regard to determining if premise plumbing is or is not complex, we propose that 12VAC5-590-D be eliminated.

Commenter: VA Chapter of the American Backflow Prevention Association (VA ABPA)

1/10/20 4:27 pm

Cross Connection Control is not adequately addressed, continued

PART 2 - COMMENTS BY THE VIRGINIA CHAPTER OF THE AMERICAN BACKFLOW PREVENTION ASSOCIATION

12VAC5-590 Definitions, concerns and recommendations:

1. Add definition: “ASSE” means American Society of Sanitary Engineering.

2. “Backflow Prevention Assembly” CONCERNS: The definition oversimplifies and makes assemblies seem equivalent for all backflow conditions, but they are designed to control specific cross-connections; industry-accepted nomenclature and abbreviations should be used for all assemblies herein; and gate valves are no longer universally used on DCVA’s.
    a. RECOMMENDATION: Rephrase: “Backflow prevention assembly” means a mechanical unit designed to control various cross-connections and stop the reversal of flow, that includes an inlet and outlet shutoff valve and test cocks to facilitate testing of the assembly. Backflow prevention assemblies include the reduced pressure principle or reduced pressure zone (or RPZ) assembly, the double check valve (or DCVA) assembly, and the pressure vacuum breaker (or PVB) assembly.

3. “Backflow Prevention Device” CONCERNS are like those noted above, and verbiage should include important limitations.
    a. RECOMMENDATION: Rephrase: “Backflow prevention device" means a mechanical unit designed to control cross-connections and stop the reversal of flow, that is not testable because it does not have inlet and outlet shutoff valves or test cocks. A backflow prevention device is not generally designed or constructed to withstand backpressure, or continuous pressure over 12 hours, or to control high hazards. A backflow prevention device generally includes atmospheric type vacuum breakers and the dual check valve type devices.

4. Add definition: “CCCP” means Cross-Connection Control Program.

5. “Cross-connection”: After “contamination” add “or pollution” for consistency.

6. “Double gate-double check valve assembly” CONCERNS are like those noted for assemblies; gate valves are not universally used; “pet cocks” are actually “test cocks”; “test gauges” are not part of the assembly, and are used to test water-tightness and differential pressure, but no other assembly definition has such verbiage.
    a. Recommendation: Rephrase, for example: “"Double check valve assembly" (or DCVA) means an assembly composed of two single independently acting check valves including tightly closing shutoff valves located at each end of the assembly and test cocks to facilitate testing of the assembly.”

7. “Pressure Vacuum Breaker Assembly”: CONCERNS are like those noted above.
    b. RECOMMENDATION: Add “(or PVB)” and the phrase “to facilitate testing of the assembly.”

8. “Reduced pressure principle backflow prevention assembly”: CONCERNS are like those above.
    c. RECOMMENDATIONS: After “principle” add the phrase “or reduced pressure zone” and add “(or RPZ)”; and add “to facilitate testing of the assembly” at the end of the definition.

9. “Service connection” CONCERNS: the definition lacks examples where the waterworks generally ends. The phrase “and to all other points where finished water is delivered…to a consumer” seems to extend the waterworks beyond the actual service to all fixtures in the building. Many of the proposed regulations assume and rely on a clear definition of “service connection.” Eliminating verbiage referring to the meter or distribution main is inadvisable, and goes against the USBC (see 2015 VPC definition of “Water Service Pipe”) and the Memorandum of Agreement of 2013 between VDH & DHCD, Item 2, which states the USBC governs all buildings, structures and equipment up to the point of connection to the water meter or to the waterworks main. But flexibility is needed when exceptions exist. The proposed regulations should uphold these general distinctions, while retaining jurisdictional flexibility for containment backflow preventers installed downstream of a service connection, as approved by the owner.
    d. RECOMMENDATION: Rephrase: "Service connection" means the point of delivery of finished water from a waterworks to a consumer's water system. Generally, the service connection

occurs at the water meter, or at the distribution main if no water meter is installed, but may extend to a consumer's water system, fire protection system, or irrigation system and to all other points where finished water is delivered through the distribution system to a consumer's system. Service connections may be permanent, temporary, or emergency.

10. MISSING DEFINITION: "Service line" CONCERN: Undefined terms present a loophole for interpretation and lawsuits. 12VAC5-590-55 B refers directly to "water service piping from the service connection" identifying a service line, and 12VAC5-590-360 B and C refer directly to the "service line" as do many other of these regulations; and "service pipe" is used by the USBC.
    e. RECOMMENDATION: add a definition, for example: "'Service Line' means the pipeline or service pipe between the service connection and the building connection."

11. Add definition: "USC" means the University of Southern California Foundation for Cross-Connection Control and Hydraulic Research."

12. "Waterworks" CONCERN: As noted in "service connection" above, the phrasing "except inside the building where such water is delivered" extends the waterworks up to the building in all cases, rather than as an exception, conflicting with 12VAC5-590-55-B, the USBC, and the Memorandum of Agreement of 2013 between VDH & DHCD. The waterworks should be clearly defined as stopping at the service connection.
    f. RECOMMENDATION: rephrase by ending the definition with: "…and distribution of potable water up to the service connection."

REFERENCE MATERIALS:
While training and experience for CCCP personnel is a needed addition to the regulations, the department should direct owners to authoritative resources, to aid in development and implementation of the CCCP. We recommend incorporating VDH documents by way of reference, and including the others recommended below on a "Suggested Reference Materials" list or as an Appendix:

1. VDH - Working Memo 801 (WTR-801) – This document contains invaluable commentary and experience in backflow prevention and issues that impact CCCPs. Some information is outdated due to regulatory and USBC changes, however most of its content remains applicable and valid. WTR-801 and any future revisions should be incorporated by way of reference, and included in any suggested reference materials list.

2. VDH – Effective Cross Connection Control Programs (current and future revisions). This "Hip Pocket Tool for Operators" also contains valuable information and experience concerning backflow prevention. Like WTR-801, it contains some outdated information, but much of it is practical and useful for CCCPs. It and any future revisions should be incorporated by way of reference, and included in any suggested reference material list.

3. M-14 Backflow Prevention and Cross-Connection Control: Recommended Practices (4^{th} and subsequent editions) by the American Water Works Association (AWWA). These regulations incorporate many AWWA standards, and including Manual-14 is appropriate, as it provides practical general and technical guidance for CCCPs.

4. Backflow Prevention Theory and Practice (3rd and subsequent editions) by the University of Florida TREEO Center (UF-TREEO). Like AWWA M-14, UF-TREEO provides practical general and technical guidance for CCCPs.

5. Manual of Cross -Connection Control (10^{th} and subsequent editions) by the University of Southern California Foundation for Cross-Connection Control and Hydraulic Research (USC). Like AWWA M-14, USC provides practical general and technical guidance for CCCPs.

Commenter: VA Chapter of the American Backflow Prevention Association (VA ABPA) 1/10/20 4:36 pm

Cross Connection Control is not adequately addressed, continued

2. b.

VA ABPA COMMENTS, CONTINUED:

3. 12VAC5-590-610:

g. CONCERN: the word "reduce" is highly subjective, unreliable and insufficient for protection of the potable water. "Reduction" is an inferior level of protection, both physically and legally, versus "controlling" a cross-connection with an assembly, device or method that is approved by the USBC and recognized approval agencies.

ii. RECOMMENDATION: replace "reduced" with "controlled" in keeping with the stated purpose of the cross-connection Control program.

h. CONCERN in subsection 610 E: Containment is limited to specific facility types, while the original phrasing included "a consumer's water system serving the following types of facilities." This is an important distinction, since a low-hazard facility can install high-hazard cross-connections noted in this section, which does not change the facility type per se. For example, a low-hazard commercial or residential system can have high hazards, such as a swimming pool, spa, pier, brewery equipment (beverage processing), printing equipment, pesticide equipment, etc. The facility does not become a "health club," "waterfront facility," "beverage processing plant," "exterminating company," etc. and provides a loophole, since the verbiage specifies "facility type."

i. RECOMMENDATION: rephrase 610 E: "A backflow prevention assembly or backflow elimination method shall be installed at consumer water systems serving the following types of facilities, including:"

i. CONCERNS in subsection 610 E: Multi-use commercial, office and warehouse facilities have been rephrased and re-assigned on the containment facilities list, but some have been removed, likely unintentionally. For example, these facilities are not always served by a master meter (item 11) and frequently do not exceed three stories in height (item 21). But these facility types have always required containment because of the likelihood of high hazard cross-connections being created by owners and tenants, without the waterworks' knowledge or control once a service connection is established. In addition, not all residential buildings classified as commercial by the USBC are over 3 stories tall, but may also be served by a master meter. Often these facilities have high hazards requiring containment, but the CCCP may not have local authority or resources to properly assess them for these.

ii. RECOMMENDATION: Restore "Multi-use commercial, office or warehouse facilities" to the required containment list. The proposed items 11 and 21 should also remain on the list.

iii. RECOMMENDATION: add verbiage to proposed item 11 from proposed item 21 "including residential buildings classified by the USBC as commercial."

4. 12VAC5-590-630:

j. CONCERN in subsection 630 A: "The approved type" does not say who is doing the approving. The word "approved" has been omitted from much of the regulations, greatly limiting the context of its use. The regulations should specify that all assemblies & devices must be approved by the waterworks owner as an appropriate safeguard.

iii. RECOMMENDATION: Rephrase 630 A, for example: "Any backflow prevention assembly or device or backflow elimination method shall be approved by the owner [as an appropriate safeguard,] and comply with the USBC."

k. CONCERN in subsections 630 A & 630 B 3: "The approved type" is also implies that backflow preventers may be approved by any agency. For example, the Canadian Standards Association (CSA) is an approval agency, but is not in this country. Subsection 630 B 3 requires owners to consult the USBC and manufacturer specifications, but devices and assemblies must still hold recognized agency approvals. While the USBC recognizes ASSE standards for backflow prevention assemblies and devices used for isolation, assemblies used for containment have required approval from the University of Southern California Foundation for Cross-Connection Control and Hydraulic Research (or USC), as noted in Working Memo 801 (WTR-801) subsection III-F "Approved Containment Devices." While WTR-801 is not part of the regulations, it provides invaluable guidance from VDH for CCCPs, and uses the phrase "shall." Furthermore, USC approval is important for several reasons and should be included in these regulations, for example: USC approval is performance-based and includes exhaustive laboratory and field testing in real-world conditions; USC approval is only given for the specific device model type, size and valve tested; USC approval is rescinded for field modifications or improper installation; USC approval is specific to the direction of flow that is evaluated, whether horizontal, vertical, or some combination; and USC approval is continuously verified and can be revoked when an assembly proves to be defective. USC publishes this information, but CCCPs may not know to consult USC or verify USC approval for assemblies without guidance. Because assemblies are used for high hazards, contamination can result if they are not thoroughly evaluated or are installed with unapproved valves, unapproved field modifications, or in unapproved flow orientations, but these problems are commonly found in the field. For example, assemblies installed on vertical fire risers may meet ASSE design standards, but are not approved for vertical flow by USC (or ASSE). These problems could be dramatically reduced and eventually eliminated by requiring USC approval.

ii. RECOMMENDATION: The regulations should specify ASSE and USC approval for assemblies and devices used for containment, by adding verbiage to 630 A or 630 B 3 (or by creating item 630 B 4), for example: "Backflow prevention assemblies shall meet ASSE standards and hold USC approval, and shall be installed in the approved flow orientation. Backflow prevention devices shall meet ASSE standards."

l. CONCERN in subsection 630 B 3. In addition to the above, the USBC does not identify devices that are unfit for continuous pressure over 12 hours, which may render them useless. Manufacturer specifications generally disclose this information, but devices are often installed without regard pressure conditions, on both low and high hazards. Valves downstream of a backflow prevention device are a common source of continuous pressure. If non-testable devices are acceptable for isolation instead of containment, the regulations should clarify this issue and provide guidance.

iv. RECOMMENDATION: Clarify continuous and non-continuous pressure conditions to ensure owners require the appropriate safeguards. Rephrase 630 B 3, for example: "The USBC and the manufacturer specifications shall be used to determine the appropriateness of the backflow prevention assembly or device application for containment. Only backflow prevention devices approved for continuous pressure shall be used for continuous pressure conditions. Valves downstream of a backflow prevention device are sources of continuous pressure."

5. 12VAC5-590-630 Table 630.1:

m. CONCERN: High hazard examples are vague and may not prompt thorough evaluation, particularly if Table 630.1 is used solely for assessing commercial & residential consumers for exemption under 12VAC5-590-600 D. Fire sprinklers in general should be identified as potential high hazards, since most use nonpotable plumbing, where contaminants leach into stagnant water. These should not be considered a low hazard, as previously documented (see article "Wet-Pipe Fire Sprinklers and Water Quality" by Duranceau, Pool & Foster in AWWA Journal Vol. 91 Issue 7). Also, historic and recent case studies abound where e. coli outbreaks originated from residential and commercial irrigation systems. While Table 630.1 is not designed to be exhaustive, it should include examples of high hazard systems that are often overlooked, or considered to be "medium" hazards.

iv. RECOMMENDATION: Table 630.1 should include fire sprinklers*, lawn irrigation systems, and any other high hazards, including those previously considered to be medium hazards, that are common to commercial & residential systems.

v. EDITOR'S NOTE: (*) Fire sprinkler systems installed "as a portion of the building's water distribution system in accordance with" do not require isolation according to the USBC (2015 Va. Plumbing Code Sec. 608.16.4, Exception 1), but should be evaluated during hazard assessment. NOTE: while 2015 VPC Section 608.16.4 "Exception 2" does not require isolation, it conflicts with waterworks regulations because deluge, pre-action or dry pipe systems may contain stagnant water and/or contaminants from nonpotable pipes, and may be modified into different types of sprinkler systems without notice to the waterworks owner, thus posing a potential high hazard.

n. CONCERN: Low Hazard examples should not include "nontoxic" or "nonhazardous" chemicals. Chemicals are rightly prohibited from entering a potable supply by the USBC, and should be prohibited by these regulations. Waterworks owners & CCCPs should not be determining which chemicals are non-toxic or non-hazardous; chemical types can be changed by the consumer at any time, for any reason, without notice to the waterworks owner; low hazard devices and assemblies may not be approved for chemical use; there is no way to know how much chemical will enter a system or pass through an unapproved low-hazard device or assembly under backflow conditions; and "the dose makes the poison," where ingestion of high enough doses can result in injury or death, depending on the age and health status of the actual consumer. For example, Nitrogen is harmless at low levels and is present in food, but is found in fertilizer (from irrigation) and can be toxic at higher levels; and nontoxic chemicals such as propylene glycol or glycerin are often used in food processing equipment and fire sprinkler systems. In contrast, the USBC requires isolation from chemical contamination or pollution by installing high hazard assemblies or devices for these and other chemicals (2015 VPC Sec. 608.5, 608.16.2, 6083.16.4.1, 608.16.7).

iii. RECOMMENDATION: Remove "non-toxic chemicals" and "nonhazardous chemicals" from the "Examples of Low Hazards", and use appropriate examples.

6. 12VAC5-590-1170:

o. CONCERNS: Like backflow preventers, fire hydrants are a critical piece of health and life safety equipment. But the implied requirement that hydrants must be plugged if they do not comply with these regulations could result in freezing, inoperability, or other unintended consequences too numerous to discuss (and is better left to organizations that specialize in this equipment). That said, backflow prevention is critical to public health, but subsection 1170 A lacks examples of methods for owners to achieve the prescribed results, and should be included as subsections or as an appendix.

vi. RECOMMENDATION: the subsection should be revised to include clear examples, or an appendix should be added, for new and retrofitted hydrants, since modification of existing waterworks falls under Part III (12VAC5-590-50 B & C) and retrofits require specific guidance, and must comply with numerous other regulations.

Commenter: VA Chapter of the American Backflow Prevention Association (VA ABPA) 1/10/20 4:37 pm

Cross Connection Control is not adequately addressed

The majority of the Proposed Regulations are a welcome update. As backflow professionals from across the industry, the VA ABPA appreciates the Department for clarifying and aligning these regulations with the USBC, in cooperation with the DHCD. Waterworks owners & building officials share the responsibility of enforcing cross-connection

control, while consumers and other stakeholders must install, maintain & test backflow preventers. Eliminating redundancy & improving efficiency are important goals, but the Department must not lose sight of the ultimate goal: to ensure that waterworks furnish potable water to consumers, which requires protecting it from backflow & contamination. Waterworks and government agencies across the country are being scrutinized and legally challenged on the failure to protect this vital resource. The Department should not lower the standards of protection, especially for high hazard cross-connections of any kind. If waterworks are too complex or lack personnel or funding to implement an effective CCCP, the Department and each waterworks should develop ways to ensure regulatory compliance, rather than lowering the standards of protection. To do otherwise risks the safety of potable water and the public health, and could irreparably breach the public's trust. A mistrustful public could resort to installing auxiliary systems and create cross-connections with these systems, and negatively impact the public health. In the spirit of cooperation, and to ensure that potable water remains potable, we submit the following general and technical concerns that should be addressed and resolved before legislation:

Section Concerns & Recommendations:

1. 12VAC5-590-55 B:

    a. CONCERN: "Backflow prevention method" is a defined term, meaning a physical separation or air gap. However, the USBC governs backflow generally and specifically, and is not limited to backflow methods, devices and assemblies.

        i. RECOMMENDATION: Remove "method" to rephrase as "backflow prevention" in general. Alternatively, rephrase to include "backflow prevention methods, backflow prevention assemblies, and backflow prevention devices."

2. 12VAC5-590-600:

    b. CORRECTION in subsection 600 B, "consumer water system" should be plural, i.e. "systems."

    c. CORRECTION in subsection 600 D, "premise" should be plural, i.e. "premises."

    d. CONCERNS in Subsection 600 B & C: Consumer water systems are subject to change after assessment. Assessments should be performed annually or at some minimum specified interval.

        i. RECOMMENDATION: add the word "annually" or a minimum interval to subsection 600 B; or add the word "assessments" to the required testing and evaluations required in subsection 600 C.

    e. CONCERNS in Subsection 600 D: A public education program is a welcome improvement, to give owners a flexible option for low risk consumer systems. But any exemption increases the risk of contamination. However, 600 D is ambiguously worded, is dangerously lacking in detail and minimum standards, and includes unnecessary loopholes. Misinterpretation and/or misapplication could result in unintended consequences and contamination of water distribution systems across the State. It is arguable that such an exemption should be allowed by the Department of Health, since 12VAC5-590-450 & 12VAC5-590-461 requires competent and adequate staff to operate and maintain a waterworks (including the CCCP). Substantial modification is recommended to address the following concerns:

Commenter: Tim Brown, Albemarle County Service Authority

1/10/20 4:40 pm

12VAC5-590-610.E.21

I feel the language of this Section pertaining to the mandatory installation of a backflow prevention assembly, or backflow elimination method, in instances of building height of at least four (4) stories, needs to be simplified. A slight modification of the current verbiage of 610.E.20 would not only be adequate, but less complicated and thus less confusing.

A structure of four (4) or more stories above grade, whether multi-story office or other commercial buildings, or whether adjoining townhomes, duplexes or free-standing residences, all present the same issue and potential hazard to the municipal water supply. The hydraulics of downward force generated by water at this height does not distinguish between whether this water is contained within a commercial or residential building. It is unimportant whether the lowest level is an above-ground garage or the first floor of the residence or commercial building, and it is equally unimportant whether the 4th level is referred to as a "habitable space" less than 750 square feet if this space is plumbed to serve a bathroom and/or a wet bar.

My recommended wording for this Section is as follows: "Buildings, whether commercial or residential, and whether adjoined or free-standing, that are four (4) or more stories above the water meter serving the building".

Commenter: VA Chapter of the American Backflow Prevention Association (VA ABPA) 1/10/20 4:43 pm

Cross Connection Control is not adequately addressed, continued

12VAC5-590 Definitions, concerns and recommendations:

1. Add definition: “ASSE” means American Society of Sanitary Engineering.
2. “Backflow Prevention Assembly” CONCERNS: The definition oversimplifies and makes assemblies seem equivalent for all backflow conditions, but they are designed to control specific cross-connections; industry-accepted nomenclature and abbreviations should be used for all assemblies herein; and gate valves are no longer universally used on DCVA’s.
    a. RECOMMENDATION: Rephrase: “Backflow prevention assembly” means a mechanical unit designed to control various cross-connections and stop the reversal of flow, that includes an inlet and outlet shutoff valve and test cocks to facilitate testing of the assembly. Backflow prevention assemblies include the reduced pressure principle or reduced pressure zone (or RPZ) assembly, the double check valve (or DCVA) assembly, and the pressure vacuum breaker (or PVB) assembly.
3. “Backflow Prevention Device” CONCERNS are like those noted above, and verbiage should include important limitations.
    a. RECOMMENDATION: Rephrase: “Backflow prevention device" means a mechanical unit designed to control cross-connections and stop the reversal of flow, that is not testable because it does not have inlet and outlet shutoff valves or test cocks. A backflow prevention device is not generally designed or constructed to withstand backpressure, or continuous pressure over 12 hours, or to control high hazards. A backflow prevention device generally includes atmospheric type vacuum breakers and the dual check valve type devices.
4. Add definition: “CCCP” means Cross-Connection Control Program.
5. “Cross-connection”: After “contamination” add “or pollution” for consistency.
6. “Double gate-double check valve assembly” CONCERNS are like those noted for assemblies; gate valves are not universally used; “pet cocks” are actually “test cocks”; “test gauges” are not part of the assembly, and are used to test water-tightness and differential pressure, but no other assembly definition has such verbiage.
    a. Recommendation: Rephrase, for example: “"Double check valve assembly" (or DCVA) means an assembly composed of two single independently acting check valves including tightly closing shutoff valves located at each end of the assembly and test cocks to facilitate testing of the assembly.”

7. “Pressure Vacuum Breaker Assembly”: CONCERNS are like those noted above.
    b. RECOMMENDATION: Add “(or PVB)” and the phrase “to facilitate testing of the assembly.”

8. “Reduced pressure principle backflow prevention assembly”: CONCERNS are like those above.
    c. RECOMMENDATIONS: After “principle” add the phrase “or reduced pressure zone” and add “(or RPZ)”; and add “to facilitate testing of the assembly” at the end of the definition.

9. “Service connection” CONCERNS: the definition lacks examples where the waterworks generally ends. The phrase “and to all other points where finished water is delivered…to a consumer” seems to extend the waterworks beyond the actual service to all fixtures in the building. Many of the proposed regulations assume and rely on a clear definition of “service connection.” Eliminating verbiage referring to the meter or distribution main is inadvisable, and goes against the USBC (see 2015 VPC definition of “Water Service Pipe”) and the Memorandum of Agreement of 2013 between VDH & DHCD, Item 2, which states the USBC governs all buildings, structures and equipment up to the point of connection to the water meter or to the waterworks main. But flexibility is needed when exceptions exist. The proposed regulations should uphold these general distinctions, while retaining jurisdictional flexibility for containment backflow preventers installed downstream of a service connection, as approved by the owner.
    d. RECOMMENDATION: Rephrase: "Service connection" means the point of delivery of finished water from a waterworks to a consumer's water system. Generally, the service connection occurs at the water meter, or at the distribution main if no water meter is installed, but may extend to a consumer’s water system, fire protection system, or irrigation system and to all other points where finished water is delivered through the distribution system to a consumer’s system. Service connections may be permanent, temporary, or emergency.

10. MISSING DEFINITION: “Service line” CONCERN: Undefined terms present a loophole for interpretation and lawsuits. 12VAC5-590-55 B refers directly to “water service piping from the service connection” identifying a service line, and 12VAC5-590-360 B and C refer directly to the “service line” as do many other of these regulations; and “service pipe” is used by the USBC.
    e. RECOMMENDATION: add a definition, for example: “’Service Line’ means the pipeline or service pipe between the service connection and the building connection.”

11. Add definition: “USC” means the University of Southern California Foundation for Cross-Connection Control and Hydraulic Research.”

12. “Waterworks” CONCERN: As noted in “service connection” above, the phrasing “except inside the building where such water is delivered” extends the waterworks up to the building in all cases, rather than as an exception, conflicting with 12VAC5-590-55-B, the USBC, and the Memorandum of Agreement of 2013 between VDH & DHCD. The waterworks should be clearly defined as stopping at the service connection.
    f. RECOMMENDATION: rephrase by ending the definition with: “…and distribution of potable water up to the service connection.”

<u>Section Concerns & Recommendations:</u>

1. 12VAC5-590-55 B:
    a. CONCERN: “Backflow prevention method” is a defined term, meaning a physical separation or air gap. However, the USBC governs backflow generally and specifically, and is not limited to backflow methods, devices and assemblies.
        i. RECOMMENDATION: Remove “method” to rephrase as “backflow prevention” in general. Alternatively, rephrase to include “backflow prevention methods,

backflow prevention assemblies, and backflow prevention devices."

2. 12VAC5-590-600:

b. CORRECTION in subsection 600 B, "consumer water system" should be plural, i.e. "systems."

c. CORRECTION in subsection 600 D, "premise" should be plural, i.e. "premises."

d. CONCERNS in Subsection 600 B & C: Consumer water systems are subject to change after assessment. Assessments should be performed annually or at some minimum specified interval.

i. RECOMMENDATION: add the word "annually" or a minimum interval to subsection 600 B; or add the word "assessments" to the required testing and evaluations required in subsection 600 C.

e. CONCERNS in Subsection 600 D: A public education program is a welcome improvement, to give owners a flexible option for low risk consumer systems. But any exemption increases the risk of contamination. However, 600 D is ambiguously worded, is dangerously lacking in detail and minimum standards, and includes unnecessary loopholes. Misinterpretation and/or misapplication could result in unintended consequences and contamination of water distribution systems across the State. It is arguable that such an exemption should be allowed by the Department of Health, since 12VAC5-590-450 & 12VAC5-590-461 requires competent and adequate staff to operate and maintain a waterworks (including the CCCP). Substantial modification is recommended to address the following concerns:

i. As subsection 600 D is an exemption, the catch-all phrase "related records and inventory" implies that the owner does not need to perform, or retain records of, assessments, evaluations or inventories, to in fact prove that a consumer's system is not complex and has no known or suspected high hazards. Without assessment, high hazards cannot be "known or suspected," and without records, how can the owner comply with the department when records for exempt consumer systems are reviewed?

1. RECOMMENDATION: Reiterate that assessment is required to qualify for the public education exemption, and stipulate that all assessment and evaluation records shall be retained.

ii. Once a consumer's system is exempted, there is no requirement to re-assess it, and no guarantee that all high hazards were discovered. High hazards may exist, or could be installed later without the owner's knowledge; low hazard assemblies and devices could fail or be removed, and may not be repaired or replaced unless required by the owner; and other risks may also apply. Since the primary intent of 600 D appears to be to reduce the burden on CCCPs for low-risk consumer systems, the following recommendation is made, and is dependent on all other ambiguities and conflicts of 600 D being resolved:

1. RECOMMENDATION: Require re-assessment by the owner at a reduced but specified minimum interval, and only apply the exemption to consumer systems which are determined to be a low risk as specified by the recommended revisions.

iii. As written, this exemption specifically limits the assessment of high hazards to "Table 630.1." This is inadvisable because Table 630.1 provides insufficient guidance for a CCCP without substantial additions to the Table's examples, and the entire Chapter provides the necessary guidance that should be used.

1. RECOMMENDATION: replace the phrase "Table 630.1" with "this Chapter" to ensure all requirements for containment are considered.

iv. A public education program does not appear mandatory, but is only required for owners opting to exempt low-risk consumers from the requirements.

1. RECOMMENDATION: consider mandating a public education program as part of the CCCP.

v. The phrase “all other residential consumers” contradicts the previous provision that allows only systems of low complexity with no known or suspected high hazards to be exempt from testing, record-keeping and inventory. As written, it allows high-hazard residential systems to forego these requirements in lieu of a public education program. Public education is needed but cannot prevent backflow like a tested, functional backflow prevention assembly. WARNING: Exempting residential systems from annual testing violates and contradicts the USBC, and conflicts with numerous authorities who uphold annual or periodic testing of all backflow prevention assemblies, including AWWA, ASSE, EPA, UFL-TREEO, USC-FCCCHR, etc. In the event of litigation, an owner’s claim of “due diligence” based on 600 D could be refuted by plaintiffs citing the USBC and the aforementioned agencies’ standards. The department could become party to litigation for not requiring waterworks to ensure adequate protection due to reduced minimum standards that contradict established laws and precedents. Simply put, a high hazard cross-connection remains a high hazard, regardless of it being located on a residential system, and all backflow prevention assemblies should require testing annually.
    1. RECOMMENDATION: Remove the last sentence of subsection 600 D.

vi. Based on the above concerns, subsection 600 D should be rephrased to remove all ambiguity, and incorporate the recommended modifications.
    1. RECOMMENDATION: Rephrase: “A public education program is required for the CCCP. Where the owner’s assessment determines that a commercial or residential consumer’s premises plumbing is not complex, and there are no known or suspected high hazards as identified in this Chapter, the owner may provide a public education program instead of annual operational tests (12VAC5-590-600 C) and the related records and inventory of backflow prevention assemblies, devices or methods (12VAC5-590-600 G). Exempted consumer systems must be assessed by the owner every [specify minimum] years to ensure they qualify for exemption under this section. The owner shall retain records of all assessments (12VAC5-590-550).”

vii. In 600 D 2, the phrase “or reduce” is insufficient & improper. See comments under section 12VAC5-590-610 for an explanation.
    1. RECOMMENDATION: Replace the word “reduce” with “control”.

f. CONCERN in Subsection 600 E: Isolation by devices is allowed instead of containment (12VAC5-590-610 B) and referenced by (12VAC5-590-600 B, C & D) but devices could also be removed, faulty or bypassed.
    i. RECOMMENDATION: Add the phrase “backflow prevention device” after “backflow prevention assembly” in E1 and E2.

Commenter: VA Chapter of the American Backflow Prevention Association (VA ABPA) 1/10/20 4:44 pm

Cross Connection Control is not adequately addressed (Preface)

COMMENTS FROM THE VIRGINIA CHAPTER OF THE AMERICAN BACKFLOW PREVENTION ASSOCIATION

The majority of the Proposed Regulations are a welcome update. As backflow professionals from across the industry, the VA ABPA appreciates the Department for clarifying and aligning these regulations with the USBC, in cooperation with the DHCD. Waterworks owners & building officials share the responsibility of enforcing cross-connection control, while consumers and other stakeholders must install, maintain & test backflow preventers. Eliminating redundancy & improving efficiency are important goals, but the Department must not lose sight of the ultimate goal:

to ensure that waterworks furnish potable water to consumers, which requires protecting it from backflow & contamination. Waterworks and government agencies across the country are being scrutinized and legally challenged on the failure to protect this vital resource. The Department should not lower the standards of protection, especially for high hazard cross-connections of any kind. If waterworks are too complex or lack personnel or funding to implement an effective CCCP, the Department and each waterworks should develop ways to ensure regulatory compliance, rather than lowering the standards of protection. To do otherwise risks the safety of potable water and the public health, and could irreparably breach the public's trust. A mistrustful public could resort to installing auxiliary systems and create cross-connections with these systems, and negatively impact the public health. In the spirit of cooperation, and to ensure that potable water remains potable, we submit the following general and technical concerns that should be addressed and resolved before legislation. (Recommendations follow, with one partially duplicated section).

Commenter: Tim Brown, Albemarle County Service Authority 1/10/20 4:44 pm

12VAC5-590-610.A

It is recommended that the word "located" be removed as unnecessary.

Commenter: Tim Brown, Albemarle County Service Authority 1/10/20 4:55 pm

12VAC5-590-630.B.2. Table 630.1

The examples of water usage included under "High Hazard" fail to mention one of the most significant and most common potential high hazard situations, that being "irrigation and lawn sprinkler systems". This pertains to both commercial and residential water usage, and with most municipal water systems, represents by far the greatest hazard among residential water customers.

My recommendation would be to include "irrigation and lawn sprinkler systems" right after "sewage" in the list.

Commenter: Tim Brown, Albemarle County Service Authority 1/10/20 5:11 pm

12VAC5590-630.A

The approval of backflow prevention assemblies should include not only compliance with the Uniform Statewide Building Code, but also acceptance by the University of Southern California Foundation for Cross-Connection Control and Hydraulic Research (USC-FCCCHR). USC is the only organization that tests backflow assemblies under both laboratory and field conditions before granting their approval. Approval is based upon several criteria in addition to performance, including size, configuration, and flow orientation.

My recommended wording for this Section would be as follows: "Any backflow prevention assembly or device or backflow elimination method shall be in compliance with the USBC, and be approved by the University of Southern California Foundation for Cross-Connection Control and Hydraulic Research".

Commenter: James M. Cherry Virginia Beach DPU Operations Administrator 1/10/20 5:14 pm

12VAC5-590-600.D.

VBDPU opposes the changes to allow the substitution of education programs in lieu of annual testing and record keeping. The determination of whether the premise plumbing is or is not complex is subjective, subject to change, brings scrutiny on the safety of the public water system and conflicts with current CCCP in Virginia Beach. Ponding water in lawns is not potable water and this water can cover sprinkler heads. A review of a high hazard from Table 630.1, reinforces the need for annual operational tests, and the related records and inventory of backflow prevention assemblies, backflow elimination methods, and backflow prevention devices. Educational outreach has limited success and are not equivalent of the prevention provided by an annually tested device. VBDPU has encounter numerous homeowners who are not aware of our public water supply, its connection to their premise plumbing which they own should maintain.

VBDPU proposes that 12VAC5-590-D be eliminated.

Commenter: Donald N. Jennings, PE, Isle of Wight County Director of Utility Services

1/10/20 6:04 pm

Isle of Wight County Public Utilities Comments for 12VAC5-590

Isle of Wight County Public Utilities Comments for 12VAC5-590

CROSS CONNECTION CONTROL AND BACKFLOW PREVENTION:
When contamination of a waterworks occurs, the public outcry is typically “Who’s job was it to protect the water and the citizens?” and “Why wasn’t anything done to protect us better?” and “There ought to be more laws to protect us!” Illness and death can result, lawsuits ensue, and only then do waterworks realize the true cost and high responsibility of providing potable water. The cost to make water safe, and keep it safe, simply pales in comparison to plaintiff’s awards, penalties, and fines. But laws do not protect people: public servants and professionals tasked with implementing the laws do. As waterworks, we must uphold the laws and regulations we’re given, and depend on public and private sectors to do their part to ensure compliance. But laws require revision from time to time, and should always improve; they should never reduce the protections afforded to the public.

The proposed regulations include many improvements, but fall short in some areas concerning Cross-Connection Control. By reducing redundancy and making efficiencies, the Department has created loopholes and ambiguities that must be addressed prior to legislation. The Department should ensure its regulations do not conflict, violate or supersede other laws which play a role in backflow protection, such as the USBC. Otherwise, consumers may not have equal protection afforded by waterworks across the state, as intended by public health regulations in general. Regulations, after all, are minimum standards, leaving little room for error. Lack of enforcement and noncompliance both pose great risks to the public health, particularly when it comes to backflow prevention, as case histories and recent events irrefutably prove. American consumers have generally assumed that tap water is safe and potable. But due to recent contamination events across the country, whether from source water contamination to backflow events, the fact that water is safe cannot and should not be assumed. Making and keeping water safe is a constant task that requires diligence, and cannot rely on assumptions.

Backflow prevention is assumed to be adequate when a building is built or modified, but this is not always the case, and modifications are often made without permits or inspections. Cross-connections are often made by unqualified or unlicensed individuals out of ignorance of established codes, or for convenience. High hazard connections can just as easily be made that put the consumer and the waterworks at risk. For these reasons and more, the Department requires a CCCP, and to be effective, it must be competently staffed by an adequate number of personnel. Without the minimum prescribed protection required by implementation of the regulations, waterworks can be contaminated, resulting in numerous unintended consequences, and consumer confidence can fail. Again, the cost and ramifications of remedying a contamination event dwarfs the costs of a properly staffed and trained CCCP, to protect the waterworks from contamination in the first place.

As a utility, we wholeheartedly support and echo the recommendations offered by the VA ABPA and of those waterworks who seek to improve the regulations while keeping and improving the level of protection provided to the consumer.

Sections 12VAC5-590-55 and 12VAC5-590-630 should be carefully reviewed and rephrased to ensure optimal coordination with the USBC, and to ensure that owners and CCCPs are guided by the Department regarding the

limitations of backflow devices, assemblies, methods, and the hydraulic or other conditions which render them ineffective, whether or not they are mentioned in the USBC or the manufacturer's specifications.

Section 12VAC5-590-600 in its entirety should be carefully reviewed and reworded to remove all ambiguity, loopholes and gray areas. It should only allow public education to be used in place of CCCP required assessments and recordkeeping for consumers with very low risk systems. Because conditions can change over time, it should include a re-assessment clause, to ensure periodic assessment, rather than assuming nothing has changed.

12VAC5-590-610 Should be carefully reviewed; words like "reduced" should be replaced by "controlled" to remove ambiguity, since reduction is not the same as control or elimination of hazards.

12VAC5-590-610 E should be carefully reviewed and rephrased to restore or include unintentional deletions or reclassified facilities, such as "consumer systems" serving the listed facilities; multi-use commercial, office and warehouse facilities that are less than four stories tall and are not served by a master meter; and residential buildings classified by the USBC as commercial that are not four stories tall but are served by a master meter.

12VAC5-590-630 The word "approved" is conspicuously lacking for some reason throughout the proposed regulations. Approval is quantifiable and not subjective, and must be an integral part of any standard or regulation. Approval agencies recognized by industry standards and current regulations including the USBC and VDH regulations and memoranda should be included as approved agencies, including ASSE and USC-FCCCHR, as these agencies set standards and approve backflow preventers using different criteria, all of which is required to provide the best protection for the potable water, the public health and the waterworks.

12VAC5-590-630 Table 630.1 should be reviewed and further updated to reflect that anything not considered a low hazard is by default considered a high hazard or potential high hazard, and the appropriate backflow protection according to the regulations and the USBC. Table 630.1 should include additional examples of recognized high hazards which have previously been considered medium hazards, such as fire sprinkler systems, and include high hazard systems that are typical to residential and commercial consumers, such as lawn irrigation, swimming pools, and other high hazards. Low hazard examples should not include chemicals of any kind.

12VAC5-590-750 was repealed, but as worded appeared to provide a stronger reference to require a water purveyor to provide an adequate shop facility. The revised shop related references appear to be associated with the design of new building or the expansion of an existing building only *if* a locality is contemplating such construction activities. The new references do not appear to require construction of an adequate shop facility should one not already exist. Although the construction of an adequate shop seems basic enough to be inherently understood as necessary, a more direct reference (or allowing the previous reference to remain) would help smaller localities justify the establishment of an adequate shop facility.

DEFINITIONS RECOMMENDATIONS:

1. "Consumer" and "Human Consumption" are narrowly defined, and do not include the numerous uses of water or methods of consumption which actually exist by consumers of a waterworks. For example, hemodialysis and other medical procedures require potable water, but these are not considered methods of "human consumption," and a person using water for this purpose is not considered a "consumer" by such a strict definition. Numerous other examples could be made where potable water is used for residential, commercial and institutional uses which are outside these narrow definitions. The definitions should be modified and broadened to fit existing and anticipated conditions and consumers, to include general usage of potable water, and any method of consumption.

2. "Service Connection", "Service Line" and "Waterworks" should include verbiage and/or examples of where the service connection and waterworks generally end, and the consumer system begins. If possible, these should align with the USBC as this is a stated goal and intention of VDH and DHCD. The phrasing should retain the proposed flexibility to address containment of backflow downstream of the service connection.

Commenter: Dan Maloy, Backflow Partners, Inc. 1/10/20 7:22 pm

Lawn Irrigation; Education is a complement to annual testing

Thank you to the team for their time and hard work on this document.

I agree with the numerous posts advocating for the classification of lawn irrigation systems as “High Hazard” in table 630.1. To classify as “Low Hazard” would be a dangerous reversal.

I support public education programs as a vital component of a successful CCCP; however, it is a complement to annual inspections to confirm the operation of the backflow assemblies (12VAC5-590-600C).

- When you eliminate the requirement for annual inspection of backflow assemblies, even for a limited subsegment of consumers, you increase the risk to the owner and ultimately the consumers.
- When you eliminate the requirement for annual inspection of backflow assemblies, even for a limited subsegment of consumers, you immediately diminish the importance of the CCCP.
- Consider this analogy - with all the education provided, we have learned the dangers of speeding. Everyone chooses to obey or not obey the posted speed limits. Some choose to obey because of the education, and some obey because there is someone monitoring compliance. Regardless of the reason, we are all safer because of their compliance.

Commenter: Ben Shoemaker, Fauquier County Water and Sanitation Authority 1/10/20 11:54 pm

12VAC5-590-1170/A

We appreciate the opportunity to comment on the proposed regulatory changes. Fauquier County Water and Sanitation Authority strongly opposes language requiring fire hydrant weep holes to be plugged, and concurs with comments entered by other waterworks owners and public safety organizations. Specifically, the public safety risk posed by a frozen hydrant will always outweigh any theoretical public health risk from an "unplugged" weep hole. Consequently, we object to the inclusion of any language regarding fire hydrant weep holes and/or draining hydrants, and request removal of 12VAC5-590-1170/A entirely.

Fairfax Water

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January 9, 2020

Mr. Dwayne Roadcap, Director
Office of Drinking Water
Virginia Department of Health (VDH)
109 Governor Street
Richmond, VA 23219

Re: **Proposed Regulation: 12 VAC5-590**
Waterworks Regulations

Dear Mr. Roadcap:

The Fairfax County Water Authority ("Fairfax Water") appreciates the opportunity to comment on the proposed amendments to the above-referenced Waterworks Regulations (the "Regulations").

Fairfax Water is the largest water utility in Virginia, serving one out of every four citizens who obtain their water from public utilities. Nearly 2 million residents of Northern Virginia, including large portions of Fairfax, Loudoun, and Prince William Counties, the Towns of Herndon and Vienna, Dulles Airport, Ft. Belvoir and the Cities of Falls Church, Fairfax, and Alexandria, depend on Fairfax Water for their drinking water. Fairfax Water relies on the Potomac River and the Occoquan Reservoir as its water supply sources. Fairfax Water also purchases water from the Washington Aqueduct Division of the U.S. Army Corps of Engineers, a water supply sourced from the Potomac River.

The Regulations have largely remained unchanged since amendments in 1993 and their original promulgation in 1991. Overall, Fairfax Water has participated in the amendment process since the establishment of the Regulatory Advisory Panel in 2014 and supports the proposed amendments to the regulations. More recently, Fairfax Water appreciates the efforts of the Waterworks Advisory Committee to review and discuss substantive changes to the regulation. Fairfax Water strongly urges the Virginia Department of Health (VDH) to emphasize **practical implementation** of these Regulations so that VDH Central and Field Offices focus their resources on meaningful public health protection. Specific sections with additional comments are noted as follows.

Hydrants (12 VAC5-590-1170)

It is essential that VDH recognize that a frozen hydrant presents a greater public safety and health risk than any benefit that could be derived from plugging the hydrant weep holes. Practical implementation would recognize a Waterworks to be in full compliance with the Regulations if the fire hydrants on their approved products list all contain weep holes above the final seat (main valve) of the hydrant. This design allows the barrel to drain without the potential negative impacts of backsiphonage.

Cross Connection Control Program Responsibilities (12VAC5-590-600)

The last sentence in item D of the Section is unnecessary and could be misinterpreted. This sentence should be stricken.

Backflow Prevention Assemblies, Devices, and Backflow Elimination (12 VAC5-590-630)

This Section needs to clarify the approving organization (ASSE, USC-FCCCHR) and criteria. These more precise references had previously been provided in a working memo.

Surface Water Crossings (12 VAC5-590-1180)

Item (C) (2) in this Section should be enhanced to include the use of hydrants as "easily accessible" locations to perform testing rather than just specifying taps.

Operational Control and Testing (12 VAC5-590-480)

This section may include carryover wording from other sections, in regard to the use of the term "peak hourly flows". Specifying these calibration tests being performed during peak hourly flows is not practical.

Recordkeeping (12 VAC5-590-550)

It seems unwarranted to keep disinfection profile and benchmarking results indefinitely. It is suggested that a 12-year period to match the maximum period for other record retention would seem sufficient.

Operational Reporting Requirements (12 VAC5-590-570)

An Ozone Table should be included in this Section.

Surface Water and GUDI Sources Treatment Monitoring (12 VAC5-590-376)

The use of continuous monitors for compliance reporting may be less accurate than grab samples accomplished on more routinely calibrated lab equipment and may not meet EPA guidance. While continuous monitoring may be useful as an indicator of treatment processing, grab samples may be better for compliance sampling.

Surface Water and GUDI sources, polymers, and recycle treatment techniques (12 VAC5-590-395)

We were generally confused by the organization and interdependency with subsequent sections. To avoid an attempt to clarify the language at this late date, can VDH simply verify that; If a facility remains in Bin 1, that no additional treatment is required by this new/revised language?

Consumer Confidence Reports (12VAC5-590-545)

Section E.2&3, 3rd sentence should be changed back to read "*In addition, we were required to take (insert the number of corrective actions) corrective actions and we completed (insert the number of corrective actions) of these actions.*" The proposed change, to remove the underlined word "take" and replace it with "collect" makes no sense in the context of the sentence.

Regulated contaminants for the CCR and public notification (12VAC5-590-546)

In Table 546.1, item (3) *E. coli*, we suggest adding a clarification to explain that the "TT" for this *E. coli* violation applies to a failure to perform Level 2 assessments or corrective actions.

Definitions and units of measurement (12VAC5-590-10)

The definitions for PMCL and SMCL should be provided after each versus referencing back to MCL for their definitions. As written, PMCL and SMCL is being defined to mean the same as MCL.

Thank you in advance for the opportunity to participate in this important process. Please contact me at (703) 289-6011 if you have any additional questions or need additional information.

Sincerely,

Steven T. Edgemon
General Manager

cc: Phillip W. Allin, Chairman, Fairfax Water Board

bcc: Deputy General Manager
Director, Transmission and Distribution
Director, Planning and Engineering
Director, Production
Manager, Laboratory
Manager, Planning
Public Affairs Officer

LOUDOUN WATER

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January 10, 2020

Dwayne Roadcap
Office Director
Office of Drinking Water
Virginia Department of Health
109 Governor Street
Richmond, VA 23219
Dwayne.Roadcap@vdh.virginia.gov

RE: Comment on the Proposed Amendment and Update to the Waterworks Regulation, 12VAC5-590 *et seq.*

Dear Mr. Roadcap,

Loudoun Water appreciates the time and efforts of the Virginia Department of Health (VDH) in updating the proposed Waterworks Regulation. Loudoun Water provides drinking water to over 80,000 households in Loudoun County. Our drinking water comes from the Potomac River and is treated by Loudoun Water at our Trap Rock Water Treatment Facility, and by our wholesaler, Fairfax Water. Loudoun Water also owns and operates several small groundwater community water systems located in Loudoun County.

Loudoun Water supports the update of the Waterworks Regulation (Regulation). The proposed Regulations include substantial breadth of topics that impact both large and small community systems and non-transient community systems and may impose a financial burden if not reasonably implemented.

Loudoun Water has reviewed the proposed Regulation within the 60-day comment period and offers the following comments and recommendations related to 12VAC5-590 Parts I, II and III.

Part I

12VAC5-590-45. Waterworks Advisory Committee.: Loudoun Water fully supports the formation of the Waterworks Advisory Committee (WAC) and feels the cross section of industry related professionals will only improve the dialogue around regulation, policy, and legislation.

Part II

12VAC5-590-340. Compliance Standards.: The AWWA references within Part II are year specific and some listed are not the current versions. For example, 12VAC5-590-1140.D references AWWA Standards C600-**10**, C604-**11**, however the most current AWWA standards for those sections are C600-**17** and C604-**17**.

It is recommended the proposed language be updated to include current AWWA Standards.

12VAC5-590-480. E.2. Operational Control Testing and Monitoring.: The propose language states "The owner of a waterworks employing ozone for inactivation credit shall perform calibration checks on continuous, online ozone residual monitors at least weekly, during peak hourly flow".

How will VDH evaluate "peak hourly flow" related to calibration checks on continuous, online ozone residual monitors? Requiring a peak hourly flow calibration does not seem reasonable. It is recommended that "peak hourly flow" be deleted.

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12VAC5-590-570. Operational Reporting Requirements.: The proposed language provides several tables identifying reporting requirements.

Table 570.13 is designated for UV disinfection, but a table for ozone disinfection is not proposed. It is recommended that a similar ozone table be included.

12VAC5-590-580 through 630 Cross-connection control program responsibilities.:

> **12VAC5-590-600. C.:** The proposed language states "The owner shall establish procedures for completing operational tests or other evaluation procedures as appropriate at least annually and after installation, relocation, or repairs for testable backflow prevention assemblies, devices, and methods that provide containment".
>
> It is recommended that other evaluation procedures be described to include cross-connection inspection and/or survey or others.
>
> **12VAC5-590-630. A.:** There should be clarification of the various organizations and criteria. When the Regulations refer to the Uniform Statewide Building Code (USBC), is it the same as the Virginia Plumbing Code listed in the International Code Council?
>
> **12VAC5-590-630. D.:** If the owner conducts inspection on commercial customers and does not test or repair backflow prevention assemblies or devices, is the Waterworks trained individual required to be certified by DPOR?
>
> It is recommended that additional language be provided to include an apprentice under the designated individual's DPOR Backflow certification is allowable until requirements have been met to test for the DPOR certification.
>
> **12VAC5-590-480. A.:** The proposed language repeals **Appendix I. Suggested Outline of Contents of Cross Connection Control Program**.
>
> It is recommended additional guidance be provided to address administration and enforcement of ordinance from repealed Appendix I.

Part III

12VAC5-590-690. Capacity of Waterworks. (Repealed).: This section has been repealed. Will additional guidance be provided as a Working Memo or other?

12VAC5-590-930. B. Fluoridation.: Loudoun Water urges VDH to exercise reasonable implementation of this recommendation as design, implementation and operation of this addition could impose a financial burden on water systems.

12VAC5-590-1120. A. and B. Minimum pipe size.: The proposed regulation states **"**Fire hydrants shall not be connected to water mains that are not designed to carry fire flows. Connection of a fire hydrant to a pipe of less than six inches in diameter is prohibited."

LOUDOUN WATER

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Loudoun Water agrees that fire hydrants shall not be connected to water mains that are not designed to carry fire flow or smaller than 6-inches. The proposed Regulation includes the term “fire hydrant”, “hydrant”, and “flushing device” somewhat interchangeably. Depending on the interpretation, the language could cause significant misunderstanding of the regulatory intent. Additional language should be added that acknowledges hydrants not used for fire flow be allowed on water mains smaller than 6-inches, if used for flushing or related purpose. Definitions for fire hydrant, hydrants and flushing devices should be added.

12VAC5-590-1160. E. 2.c. Valve, air relief, meter, and blowoff chambers.: The proposed language states “The installation and testing specifications shall require field verification by the owner's engineer of the groundwater elevation and surface water drainage prior to placement of the pit or chamber”. The language indicates the intent is to protect Waterworks from groundwater intrusion at air relief valves.

It is recommended that the proposed language be modified to include field verification by the owner’s engineer of the groundwater elevation and surface water drainage in circumstances or situations where this is of potential concern and not for all installations.

12VAC5-590-1170. A. Hydrants.: The proposed language states “Where hydrant drains are not plugged, they shall be drained to the ground surface or to dry wells provided exclusively for this purpose in a manner that will avoid contamination of the hydrant or water main from high groundwater, surface flooding and ponding, and contaminant or pollutant spills.”

The public safety risks associated with freezing hydrants outweigh the benefit of plugging hydrant drain holes. The proposed language would impose a heavy financial burden to waterworks owners. It is recommended that the proposed language be deleted.

Loudoun Water appreciates the opportunity to review and comment on the proposed Regulations.
Please contact me at 571-291-7745 or jedwards@loudounwater.org if you seek any additional information.

Sincerely,

Jessica Edwards-Brandt
Director, Water Operations

Bcc: Deputy General Manager

By Email and Electronic Delivery: https://townhall.virginia.gov/L/comments.cfm?stageid=8497

January 9, 2020

Dwayne Roadcap
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RE: Comments on the Proposed Amendment and Update to the Waterworks Regulation, 12VAC5-590 *et seq.*

Dear Mr. Roadcap:

Mission H_2O appreciates the opportunity to comment on the proposed revisions to the Virginia Department of Health ("VDH") Waterworks Regulation. Mission H_2O is an informal stakeholder group focused on the management of Virginia's water resources and, in particular, developments affecting water supply and water availability. Mission H_2O has a broad membership that ranges from municipal water providers and water supply professionals to manufacturers and agricultural operations. Many of our members operate in accordance with waterworks operating permits issued by VDH, and Mission H_2O is an active participant with the VDH-commissioned Waterworks Advisory Committee.

The Waterworks Regulations serve as an important component of assuring that citizens can obtain safe drinking water. These regulations have not been comprehensively updated since 1993. The changes that VDH is proposing are necessary and Mission H_2O supports the proposed revisions. The changes have been reviewed and considered by numerous stakeholders since the time the amendment process was initiated in 2014. Mission H_2O members have been active participants throughout this process, and appreciated the opportunity to work with VDH staff on the proposed revisions.

Safe Yield

During the regulatory development process, there was much discussion about the safe yield of surface water sources (12 VAC 5-590-830.A.2). At the heart of the discussion was the question of the respective roles and responsibilities of VDH and the Virginia Department of Environmental Quality ("DEQ") in determining source water availability and the authorized volume of withdrawal. Mission H_2O supports VDH's decision to retain this provision as currently drafted.

Entities subject to the waterworks regulation have the experience and expertise to develop the safe yield assessment required by the regulations and satisfy this requirement.

The purpose of the Waterworks Regulation is to ensure that the citizens of Virginia have safe, reliable drinking water. The regulation as drafted requires entities subject to the regulation to make a demonstration that their facility is able to safely and reliably provide drinking water. Broader questions regarding water rights, water withdrawal permitting and water allocation should be addressed outside the waterworks regulation. Mission H_2O has suggested that a broader stakeholder group be convened to address these issues, and remains willing to participate in such a meeting with VDH and DEQ.

Waterworks Advisory Committee

Mission H_2O supports the inclusion of provisions regarding the Waterworks Advisory Committee ("WAC") (12VAC5-590-45). The WAC has been an important opportunity for stakeholder involvement in issues affecting drinking water providers. Having industry experts with extensive experience provide input to VDH related processes assists VDH staff in identifying gaps in statutes, policies and regulations and making improvements to the waterworks program. Mission H_2O would welcome the opportunity to have a representative serve on the WAC.

Definitions

The definition of "source water" found at 12 VAC 5590-10 appears to reference only surface water sources. The definition should be revised to make clear that source water can be either surface water or groundwater.

Practical Implementation

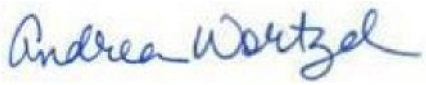
As noted above, Mission H_2O supports the updates to the Waterworks Regulation, and agrees that they are needed for consistency with federal requirements and to more accurately reflect actual practice. Nonetheless, the changes that are proposed are significant. Mission H_2O urges VDH to take a practical approach to the implementation of these regulations. Waterworks have enjoyed a collaborative working relationship with VDH, focused on the shared goal of ensuring Virginia's citizens have safe and reliable drinking water. Maintaining that focus as these regulations are implemented will be of critical importance.

Fire Hydrants

Several of our members are concerned about the proposed amendment to 12 VAC 5-590-1170.A addressing fire hydrants. Many fire hydrants include weep holes or drain holes, designed to provide an outlet for any residual water, preventing harm to the hydrant should it freeze. Thus, plugging these holes creates a public health risk. Mission H_2O requests that the existing language in 1170.A remain unchanged.

Thank you again for the opportunity to provide comments on the proposed revisions to the waterworks regulation. Should you have any questions regarding our comments, please contact me at Andrea.Wortzel@troutman.com or (804) 697-1406.

Sincerely,



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cc: Mission H_2O Members

Comments on the Proposed Virginia *Waterworks Regulations*
by U.S. Environmental Protection Agency, Region III
December 10, 2019

12VAC5-590-10. Definitions and units of measurements.

1. "Initial compliance period" – The revised definition: "Initial compliance period means the compliance period in which chemical monitoring begins." is too vague and is less specific than the definition in 40 CFR §141.2 which includes a starting timeframe designated by the rule promulgation dates. In addition, the initial compliance period applies to not only chemical contaminants but also radionuclides.
   Comment: Suggest adopting EPA's definition listed under 40 CFR §141.2 with modification of references of tables and contaminants.

2. "Maximum contaminant level goal" – the proposed definition alters the meaning of MCLG and MCL.
   Comment: Needs to retain the current definition of MCLG. Particularly, the text under the current regulations "... and that allows an adequate margin of safety" should be retained to define MCLG. The revised text "Applying an adequate margin of safety to the MCLG allows the MCL to be set as the standard" is inaccurate and should be deleted from the revisions.

3. "Membrane technology" – Cannot find the acronym for "EDR." Needs to spell it out.

4. "ND" – The revised definition explains that ND is typically used by laboratories to express the absence of an analyte in a test sample. It should be noted that an analyte can still be present at low concentrations in the test sample even though the instrument cannot detect it (non-detect).
   Comment: The definition should be revised to explain something like:
   " …. is typically used by laboratories to express that analyte in a test sample cannot be reliably detected with the laboratory instrumentation and the methods used."

Page 55, 12VAC5-590-150 A. 1. regarding exemptions.

5. Comment: Suggest changing " … an alternative supply of source water." to "… an alternative water supply." to be consistent with 12VAC5-590-140 A.1.a. regarding variances.

Page 89, 12VAC5-590-340 B, Table 340.1, Inorganic Chemicals.

6. Sodium is not included in Table 340.1. Although there is no PMCL established for sodium, community water systems are required to monitor in accordance with 40 CFR §141.41 Special monitoring for sodium. Sodium is being included under the current *Waterworks Regulations* 12VAC5-590-440 Table 2.2 – Inorganic Chemicals.
   Comment: Needs to add sodium to Table 340.1 and provide language regarding the special monitoring requirements.

Page109, 12VAC5-590-370 A.14. regarding bacteriological monitoring.

7. "Failure to collect every required routine or additional routine sample in a compliance period" is specified as a monitoring violation under A.14. However, in accordance with 40 CFR §141.860 (c), "failure to analyze E. Coli following a total coliform positive routine sample" is also a monitoring violation which is not included under 12VAC5-590-370 A.14. or other relevant sections, i.e., 12VAC5-590-380 (compliance) and 12VAC5-590-530 C (reporting).
   Comment: Suggest adding "failure to analyze E. Coli following a total coliform positive routine sample" to A.14.

Page 109, 12VAC5-590-370 A.15. regarding bacteriological monitoring.

8. "Failure to submit monitoring results" is specified as a reporting violation under A.15. However, in accordance with 40 CFR §141.860 (d), "failure to submit a completed assessment form" and "failure to notify the state following an E. Coli positive sample" are also reporting violations which are not included under 12VAC5-590-370 A.15 or other relevant sections, i.e., 12VAC5-590-391 & 392 (treatment technique), 12VAC5-590-380 F (compliance), or 12VAC5-590-530 C (reporting). "Failure to submit certification of completion of approved start-up procedure by a seasonal system" is included under 12VAC5-590-370 A.12.e. (monitoring requirements).

Comment: Suggest adding “failure to submit a completed assessment form” and “failure to notify the state following an E. Coli positive sample” to A.15.

Page 109. 12VAC5-590-370 B. 4. Chemical monitoring.

9. B.4. indicates that failure to comply with the sampling schedules in this section shall require public notification pursuant to 12VAC5-590-540 A 3, a Tire II notification. It is unclear whether sampling schedules mentioned in this section include the requirements for taking a confirmation sample within 24 hours after learning of exceedance of the nitrate and nitrite PMCL. If interpreted as such, then the Tire II notification could be misleading as failure to take a confirmation sample after exceedance of nitrate and nitrite PMCL requires a Tier 1 notification (40 CFR §141.202 (a), Table 1 and 12VAC5-590-382 B as proposed).
   Comment: Suggest clarifying whether nitrate and nitrite confirmation sampling are included under this section.

Pages 190-192. 12VAC5-590-373 C. regarding reduced monitoring for VOCs & SOCs.

10. 12VAC5-590-373 C.1.a. The initial quarterly monitoring for VOCs cannot be reduced. However, in accordance with 40 CFR §141.24(f)(5) and (18), data collected between 1/1/88 and 12/31/1992 may be used to satisfy the initial monitoring. If the data meet required qualities (grandfathered data) and did not show any detections of the VOCs, then the water system can start annual monitoring.

    Water systems that have no detects of VOCs during the initial quarterly monitoring can be reduced to annual monitoring in accordance with 40 CFR§141.24(f)(5).

    Comments: Needs to delete the proposed language under C.1.a. and replace it with the language under 590-370 B.2.d.1.(a) and B.2.d.1.(c) in the current *Waterworks Regulations*.

11. For VOCs, after three years of annual sampling, ground water systems (only) may be further reduced to one sample per each compliance period and after three consecutive annual samples with no detection, ground water systems may apply for a waiver. VOC waivers issued to the ground water systems are effective for six years (2 compliance periods) during which ground water systems must collect one sample at each entry point.

    Comment: Suggest moving C.1.d. & e. right after C.1.a.

    Comment: In C.1.e., add sampling frequency (one sample per two compliance periods) during the six-year waiver or reference B.E.4.a.1. This would show that the frequency is reduced from annual sampling.

12. For VOCs, water systems can be reduced from quarterly to annual sampling if: (1) they do not have detections during the initial monitoring (current regulations 590-370 B.2.d.1.(a) or proposed C.1.a to be revised above); (2) have detections > PMCL and later determined to be reliably and consistently below the PMCL after four quarterly samples taken by both surface water and groundwater systems (C.3); or (3) have detections (exceed detection limit) during the initial monitoring or on reduced monitoring and later determined to be reliably and consistently below the PMCL after a minimum of four quarterly samples taken by surface water systems and two quarterly samples by groundwater systems (C.1.b & D.1.).

    Comment: C.1.b has a general description regarding the reduced monitoring from quarterly to annual after a minimum of four quarterly samples taken by surface water systems and two quarterly samples by groundwater systems. This general description should be made clear that it applies when water systems had detections (exceed the detection limits). This is important to not be confused with C.3 where water systems exceeding the PMCL must conduct four quarterly sampling, both by surface water and groundwater systems. This point was made clear under 12VAC5-590-370 B.2.h in the current *Waterworks Regulations*. Suggest using the language in the current regulations.

Comment: Move the text “In no case shall the department make this determination unless:” from C.1.b.(1) to the end of C.1.b. to be consistent with C.2.d.

13. Water systems that conduct monitoring annually or less frequently and exceed VOC or SOC PMCL do not incur a PMCL violation in accordance with 12VAC5-590-383 C.2. (unless the one sample result would cause the RAA to be exceeded). Instead, water systems must begin quarterly monitoring (increased monitoring) until determined to be reliably and consistently below the PMCL. Compliance determination of PMCL violation is based on the running annual average of four consecutive quarterly monitoring results.

    Comment: Situations under C.3. may not always lead to a PMCL violation and therefore, there may not always be a corresponding “return to compliance.” In addition, determination of reliably and consistently below the MCL is not a compliance determination rather it is a determination related to reduced monitoring.

    Needs to delete the title “Return to compliance” under C.3. Suggest making the rest of the text under C.3 as D.2 (under “D. Increased monitoring”) and changing any reference of C.3 to D.2.

14. For SOCs, if no detections found during the quarterly initial monitoring (4 samples/3 yrs.), water systems can be reduced to one sample per compliance period (1 sample/3 yrs.) or two quarterly sample in one year during each compliance period (2 samples/3 yrs.). There is no option to reduce to annual sampling (3 samples/3 yrs.).

    Comment: Needs to delete C.2.c.

15. Like VOCs, waterworks have detections of SOCs (exceed detection limit) during initial monitoring or on reduced monitoring (D.1) need to monitor quarterly and can be reduced to annual sampling if determined to be reliably and consistently below the PMCL after a minimum of <u>four</u> quarterly samples taken by surface water systems and <u>two</u> quarterly samples by groundwater systems.

Comment: C.2.d refers to detections on reduced monitoring (D.1) and should be broadened to include detections during the initial monitoring. This point was clear under 12VAC5-590-370 B.2.h in the current *Waterworks Regulations*. Suggest using the language in the current regulations.

Page 193, 12VAC5-590-373 D.2 and D.3.

16. D2 and D.3 need to be stated simply as monitoring requirements that are separate from increased monitoring.

17. The language under D.2.b is not clear. Suggest replacing it with the language under 590-370 B.2.g.(5)9(a) in the current *Waterworks Regulations* – "Owners of waterworks that use surface water in whole or in part are required to monitor for vinyl chloride as specified by the department."

Page 194, 12VAC5-590-373 E.2.a. regarding no VOC monitoring waivers for surface water systems.

18. In the current *Waterworks Regulations*, VOC monitoring waivers are allowed for both surface water and ground water systems (590-370 B.2.e.(1) and B.2.g.(2)). In the proposed rule, only ground water systems are allowed for VOC monitoring waivers. Does the proposed rule reflect a policy change?

Page 195, 12VAC5-590-373 E.3.b.(4) regarding factors for waiver evaluation.

19. Needs to add watershed protection for surface water systems (40 CFR 141,24(f)(8)(ii)(E)). Watershed protection is included in the current *Waterworks Regulations* under 590-370 B.2.f.(4).

Page 196, 12VAC5-590-373 E.4.a.(1) regarding conditions for VOC waivers.

20. The proposed language does not include an update on vulnerability assessment as a VOC waiver condition (40 CFR§141.24(f)(9)). Needs to restore the relevant language under 590-370 B.2.g.(1) in the current *Waterworks Regulations*.

Page 267, 12VAC5-590-382 IOCs compliance

21. To be consistent with the current regulations 12VAC5-590-410B.1.c.(2), the proposed text under 590-382 A.2.b, first line, should have the word "not" preceding "out of compliance with the PMCL for antimony, arsenic, asbestos, barium, beryllium……."

Page 454, 12VAC5-590-440 A. Analytical Methods.

22. Under A., revisions mention that compliance with PMCLs and SMCLs or ALs shall be performed by analytical methods consistent with current EPA regulations found at 40 CFR Part 141, and 40 CFR Part 143 as well as 40 CFR Part 136, if applicable.

    The revisions do not cover all analytes that are required to be analyzed by EPA approved methods. Besides PMCL, SMCL, and ALs, many additional analytes also must be analyzed by EPA approved methods:

    - Analytes covered under treatment techniques and MRDLs;
    - Analytes for which no PMCLs were established but certain water systems are required to monitor, such as nickel (40 CFR §141.23) and sodium (40 CFR §141.41);
    - Analytes used for screening methods for which no PMCLs were established, such as total cyanide methods (PMCL based on free cyanide), and PCBs "as one of seven Aroclors" methods (PMCL based on PCBs "as decachlorobiphenyl"); and
    - Analytes used for treatment but no MRDL, such as ozone.

    Comment: Suggest retaining the language in the current regulations as follows: "All drinking water analyses for <u>compliance purposes</u> shall be performed by analytical methods that are consistent with current EPA regulations found at 40 CFR Part 141 ….." This would avoid omitting any analytes.

23. All EPA approved methods for analyzing drinking water compliance samples are listed under 40 CFR Part 141 and 40 CFR Part 143. *E. Coli* enumeration method in source water listed in 40 CFR §136.3 (a) is referenced under 141.704. 40 CFR Part 136 is primarily related to the drinking water laboratory's capability in meeting the Method Detection Limit (MDL)

requirements. In order to be certified, laboratories must demonstrate that they can meet the MDL requirements specified below and where appropriate, follow the MDL procedure described under 40 CFR Part 136, Appendix B.

- 40 CFR Part 141 (i.e.,141.24(f)(17)(i)(E); 141.24(f)(17)(ii)(C); 141.24(f)(20); 141.89(a)(1)(iii)); 141.89(a)(3));
- Each analytical method that they choose to be certified; and
- EPA's "*Manual for the Certification of Laboratories Analyzing Drinking Water, Fifth Edition"* (EPA 815-R-05-004 January 2005).

All the above requirements are included in the Virginia regulations governing laboratory certification (1VAC30-41) issued by the Department of General Services, Division of Consolidated Laboratory Services (DCLS).

Comment: Suggest retaining the language in the current regulations by not including 40 CFR Part 136. This would also be consistent with the language in 1VAC30-41.

24. Besides 1VAC30-41, the revisions mention other applicable regulations promulgated by the Department of General Services and DCLS.

Comment: To be specific, suggest replacing "other applicable regulations" with "Regulations for the Accreditation for Commercial Laboratories (1VAC30-46)" since the NELAP accreditation program is recognized by EPA as equivalent to the drinking water certification program (1VAC30-41).

Comment: Suggest replacing "and" with "," since DCLS is part of the Department of General Services.

25. Page 455, 12VAC5-590-440 B.

Comment: Similar to comment 24 Above, suggest adding "Regulations for the Accreditation for Commercial Laboratories (1VAC30-46)" to 12VAC5-590-440 B.

Comment: Needs to add sample collection which is different from sample handling based on 1VAC30-41. Suggest adding “collected” in front of “handled.”

26. Page 455, 12VAC5-590-440 C.

Comment: Under current regulations 12VAC5-590-370 B.3.b.(2) (page 127 in the proposed rule document), bromide along with other analytes such as TOC, DOC, SUVA, and magnesium shall be measured by a party approved by the commissioner rather than being analyzed by certified laboratories. However, bromide was not included in the revised regulations under 12VAC5-590-440 C (page 455) and 12VAC5-590-374 B.2. (page 197). Does the revision reflect a policy change?

Comments on the Proposed Virginia *Waterworks Regulations* by U.S. Environmental Protection Agency, Region III January 10, 2019

27. Page 194, 12VAC5-590-373 E 2 a. states that no VOC monitoring waivers shall be issued to surface water source entry points, in whole or in part. This is inconsistent with current provisions under 12VAC5-590-370 B 2 g (2) which grants monitoring waiver to surface water systems after completing the initial monitoring and are determined to be nonvulnerable based on vulnerability assessment during each compliance monitoring.

Comment: Is this a new policy change by not granting VOC monitoring waiver to surface water systems?

28. Page 196, 12VAC5-590-374 does not include provisions for identifying compliance monitoring locations under the Stage 2 Disinfection Byproduct Rule (Stage 2) in accordance with 40 CFR Subpart U, such as Initial Distribution System Evaluation (IDSE), standard monitoring, system specific studies, and 40/30 certification as well as the corresponding record keeping requirements.

Another related provision on reduced monitoring was included under current 12VAC5-590-370 B 3 e (3) f (v), but not under 12VAC5-590-374 F 4.

Other than subsequent changes to the monitoring plan as described under 12VAC5-590-374 F 3 (a) and (e), it is not clear whether new waterworks would be required to follow these provisions in identifying their monitoring locations and in keeping the necessary records.

Comment: Need to clarify how new waterworks would identify their Stage 2 monitoring locations and whether they must follow the provisions under current 12VAC5-590-370 B 3 e (2).

29. Page 199, 12VAC5-590-374 F 3 d. states that analysis for TTHM and HAA5 shall be conducted by laboratories that have received certification by EPA or DCLS whereas EPA is not mentioned under 12VAC5-590-374 B 1 as well as other sections.

Comment: Suggest making all sections consistent.

30. Page 203, 12VAC5-590-374 F 4 b. describes criteria for remaining on reduced monitoring by water systems with quarterly reduced monitoring but not by water systems with annual or less reduced monitoring (each TTHM sample is less than or equal to 0.060 mg/L and each HAA5 sample is less than or equal to 0.045 mg/L}.

Comment: Suggest retaining current language under 12VAC5-590-370 B 3 (f) (ii) in accordance with 40 CFR §141.623 (b).

31. Page 374, 12VAC5-590-411 A 1 d. references 12VAC5-590-374 I which should be revised as 12VAC5-590-374 374 J.

32. Page 375, 12VAC5-590-411 A 2 b. states: "Step 1 Required removal of TOC by "Enhanced Coagulation and Enhanced Precipitative Softening Guidance Manual," May 1999, EPA Office of Water".

It should be noted that EPA guidance manuals are not legally binding and may be updated periodically which may require updates to the Virginia *Waterworks Regulations*.

Comment: Suggest deleting the reference of the EPA manual or instead referencing 40 CFR §141.135 (b).

33. Page 545, 12VAC5-590-531 D deleted specific reporting requirements of TTHM and HAA5 for water systems with sampling frequency: (1) quarterly or more frequently, (2) less frequently than quarterly but at least annually, and (3) less frequently than annually in accordance with 40 CFR §141.134 (b).

Comment: Need to retain the language under current *Waterworks Regulations* 12VAC5-590-530 G 1 a, b, and c.

34. Page 547, 12VAC5-590-531 E references 12VAC5-590-530 which states that water systems shall report to the department all required monitoring activity no later than (i) the 10th day of the month following the month during which the test results were received, or (ii) the 10th day following the end of the monitoring period, whichever is shorter, unless stipulated by the department. 12VAC5-590-531 E further added a description of the reporting requirement (within 10 days after the end of each monitoring period in which samples were collected) which is inconsistent with 12VAC5-590-530.

Comment: Suggest deleting the extra text under 12VAC5-590-531 E that is inconsistent with 12VAC5-590-530.

35. Page 547, 12VAC5-590-531 F states: "… The owner shall report the following information to the department within 10 days after the end of each monitoring period in which the samples were collected in accordance with subsection A of this section …." Again, the additional description of the reporting requirement is inconsistent with the requirements under 12VAC5-590-530 which states that water systems shall report to the department all required monitoring activity no later than (i) the 10th day of the month following the month during which the test results were received, or (ii) the 10th day following the end of the monitoring period, whichever is shorter, unless stipulated by the department.

Comment: Suggest deleting the extra text under 12VAC5-590-531 E that is inconsistent with 12VAC5-590-530.

36. Page 548, 12VAC5-590-531 F 2. Reference "12VAC5-590-411 A 1 b or 411 A 1 c" should be "12VAC5-590-411 A 1 c or 411 A 1 d".

37. Page 549, 12VAC5-590-531 F 2 f. Reference 12VAC5-590-411 A 1 c (1) should be 411 A 1 d (1).

38. Page 549, 12VAC5-590-531 F 2 h. Reference 12VAC5-590-411 A 1 c (2) should be 411 A 1 d (2).

39. Page 549, 12VAC5-590-531 F 2 i. Reference "12VAC5-590-411 A 1 b or 411 A 1 c" should be "12VAC5-590-411 A 1 c or 411 A 1 d".