

# WATERWORKS ADVISORY COMMITTEE MEETING AGENDA

Glen Allen Library, 10501 Staples Mill Road, Glen Allen, VA 23060

September 18, 2024; 10:30 AM to 1:00 PM

Subject	Time (Estimated)
<ul style="list-style-type: none"><li>• Establish quorum, welcome – Grant Kronenberg</li></ul>	10:30 – 10:35 AM
<p style="text-align: center;"><b>Waterworks Advisory Committee Administrative Matters</b></p> <ul style="list-style-type: none"><li>• Introduction and review of agenda items – Chair David Van Gelder</li><li>• Review and adoption of minutes from June meeting – Grant Kronenberg</li></ul>	10:35 – 10:40 AM
<p style="text-align: center;"><b>ODW Funding Discussion</b></p> <ul style="list-style-type: none"><li>• ODW Funding – Now and in the Future – Rebecca Bliley/Anthony Hess</li><li>• ARPA – Barry Matthews</li></ul>	10:40 – 11:10 AM
<ul style="list-style-type: none"><li>• Revised Remote Participation Policy – Grant Kronenberg</li></ul>	11:10 – 11:20 AM
<p style="text-align: center;"><b>Development of Amendments to the Waterworks Regulations</b></p> <ul style="list-style-type: none"><li>• Updates to proposed amendments to the Waterworks Regulations – Jane Nunn</li></ul>	11:20 AM – 12:00 PM
<p style="text-align: center;"><b>Licensed Operator Waiver and Remote Monitoring Policies</b></p> <ul style="list-style-type: none"><li>• Discussion of Draft Proposed Policies – Grant Kronenberg</li></ul>	12:00 PM – 12:20 PM
<p style="text-align: center;"><b>Drinking Water Program Discussion</b></p> <ul style="list-style-type: none"><li>• ODW staffing update – Grant Kronenberg</li><li>• Compliance, Enforcement &amp; Policy update – Grant Kronenberg</li><li>• Lead and Copper Rule Revisions/Improvements Update – Bob Edelman</li><li>• Source Water Manual Revisions – Bob Edelman</li></ul>	12:20 PM – 12:50 PM

<b>Public Comment Period</b>	12:50 – 12:55 PM
<b>Other Business</b>	12:55 – 1:00 PM
<ul style="list-style-type: none"> <li>Planned upcoming meeting dates: December 11, 2024 (all virtual)</li> </ul>	

**The method by which the Waterworks Advisory Committee chooses to meet shall not be changed unless the Waterworks Advisory Committee provides a new meeting notice in accordance with Code of Virginia § 2.2-3707.**

### **Information and Protocol for Joining the Meeting Electronically**

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**DRAFT**  
**Waterworks Advisory Committee Meeting Minutes**  
Electronic Meeting via WebEx  
Wednesday, June 12, 2024, 10:00 a.m.

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Members Present: David Van Gelder (Chair), Water Operator; Skip Harper, Virginia Plumbing & Mechanical Inspectors Association; Michelle Caruthers, VWEA; Ignatius Mutoti, VSPE; Tom Fauber; VA ABPA; Mark Estes, VRWA, Joey Hiner, VA SERCAP; Anthony Morris, DEQ; Shane Wyatt, DCLS; Jesse Royall, Sydnor Hydro; Geneva Hudgins, VA AWWA; Whitney S. Katchmark, PE, Principal Water Resources Engineer

Members Absent: Christopher D. Pomeroy, Virginia Municipal Drinking Water Association; Andrea Wortzel, Troutman Pepper; Russ Navratil, VA AWWA; Kathleen Banfield, Virginia Health Catalyst; Caleb Taylor, Virginia Municipal League

Stakeholders and Public: Steven Herzog, Callie Guy, Ivy Ozmon, T.J. Gordon, Mac Suskind, John Kingsbury, Barbara Walsh, Charlie Paullin, Astrika Adams, Joe DiNardo, Jessica Edwards Brandt, Tanya Pettus, Pat Calvert, Alexa Sinha, Anjali Jarral, Pat Calvert, Richard Watson

Office of Drinking Water (ODW) Staff: Dwayne Roadcap, Robert Edelman, Barry Matthews, Grant Kronenberg, Dan Horne, Jeremy Hull, James Reynolds, Steve Kvech, Ray Weiland, Julie Floyd, Keith Kornegay, Jessica Coughlin, Jane Nunn

### **Introductory Remarks**

The Waterworks Advisory Committee (WAC) met electronically via WebEx on June 12, 2024. The meeting began at approximately 10:00 a.m. In addition to the WAC members in attendance, ODW stakeholders, ODW staff, and the public also joined. WAC Chair David Van Gelder presided at the meeting.

Dwayne Roadcap recognized three new members of the WAC: Michelle Caruthers, Shane Wyatt, and Kathleen Banfield. Ms. Caruthers and Mr. Wyatt introduced themselves. Mr. Roadcap thanked Steve Herzog for his 10 years of service on the WAC.

Chair David Van Gelder covered the meeting agenda in brief.

### **Review and Adopt Minutes of Meeting**

The WAC unanimously approved the December meeting minutes and the March meeting minutes on a voice vote.

### **Waterwork Regulations**

Jane Nunn presented an update on the draft proposed amendments to the Waterworks Regulations. The WAC members present provided feedback on the draft proposals. The slides presented by Ms. Nunn as to each item can be found with the WAC meeting materials.

Ms. Nunn gave an overview of her presentation, including that there are four old proposed amendments remaining for discussion, three new amendments based on the new Code of Virginia § 32.1-172.1, and there are two new or revised federal rules in PFAS Rule and the Consumer Confidence Report (CCR) Rule Revisions.

Item 1 – 12VAC5-590-200 and -260

Ms. Nunn discussed proposed substantive changes to these sections concerning construction permits and operation permits related to the Waterworks Business Operation Plan (WBOP) requirement.

Ms. Nunn discussed language regarding the ability to waive requiring a WBOP with a permit application. The proposed language adds language requiring that an owner apply for an additional or amended construction permit if the owner plans to make changes, alterations, or improvements to a waterworks for which a construction permit has been granted. Ms. Nunn discussed that the proposed regulation allows an owner to use a WBOP that is on file so long as the owner confirms the information in that WBOP is current. The proposed regulation allows ODW to grant a waiver to the WBOP requirement for applicants who have demonstrated a three-year history of acceptable compliance. Ms. Nunn clarified that the three-year period begins at the time of application and looks back for three years from then.

Mr. Royall stated that when the statutory requirement for a comprehensive business plan, which is reflected by the WBOP in the Waterworks Regulations, was put into place, it was to respond to situations where there was no history of the applicant in the waterworks business, such as a developer. Mr. Royall stated that he would like the waiver to be automatically granted for an existing waterworks that meets the acceptable compliance history requirement.

Ms. Nunn discussed input from the Office of the Attorney General and that the statute reflects that a WBOP is required for all applications for a construction permit. Ms. Nunn stated that ODW does not believe it can change the waiver to a requirement on the agency rather than a “may.” Ms. Nunn noted that the proposed regulation attempts to make the requirement less burdensome by allowing reliance on an existing WBOP and a waiver request.

Mr. Kronenberg discussed a situation where there is a good compliance history but the owner is applying for a construction permit that would dramatically alter the technical, managerial, and financial needs to safely operate the waterworks.

Ms. Caruthers asked about a situation about history of good compliance where we would still want a WBOP.

Ms. Nunn stated we have discussed a situation where the owner owns one waterworks but wants to build a second one. This would be a significant increase in business and there is a concern whether the owner can show the necessary capacity.

Mr. Van Gelder asked if there will be guidance on this. Ms. Nunn replied that ODW is planning on a guidance document.

Mr. Royall stated the concern is a vast majority of construction permits are probably relatively minor changes in the capacity of the system and those could be covered in a guidance document.

Mr. Royall asked whether this requirement applies to municipal owned systems. Ms. Nunn confirmed that it does.

Mr. Van Gelder said the WAC would like to participate in creating a guidance document. Ms. Nunn said ODW will include the WAC in that process.

Mr. Royall raised a concern with this requirement increasing the complexity of the process and causing an issue for small utilities.

Ms. Nunn discussed adding a general phrase, such as “on a case-by-case basis,” for waiving the WBOP requirement. Ms. Nunn stated a guidance document would be developed to address when the WBOP can be waived. Mr. Matthews noted that ODW cannot anticipate every situation in a guidance document and cannot address every case-by-case situation.

Mr. Mutoti asked whether the guidance document would exclude emergency situations where modifications to the waterworks are needed to ensure compliance. Mr. Matthews stated this is a good point and ODW is not trying to prevent someone from doing emergency work where the customers are at risk of losing service because ODW is waiting on a WBOP. Mr. Royall stated that situation should be covered in a guidance document. This sentiment was supported by Mr. Van Gelder, Mr. Hiner, and Ms. Caruthers.

Ms. Nunn discussed language on Slide 7 adding a WBOP requirement to the operation permit regulation. Ms. Nunn discussed the proposed changes including rearranging the order of the current regulation to make it more logical. Ms. Nunn discussed the proposal to allow submission of as-built drawings/specifications. Ms. Nunn also discussed allowing an existing WBOP to meet the requirement for inclusion of a WBPO in the permit application, as well as additional language added in subsections D, regarding a waiver of the WBOP requirement and E, which mirrors statutory language and clarifies that a new owner must apply for an operation permit. Ms. Caruthers asked whether “potable water” is defined. Mr. Kronenberg stated that “potable water” and “pure water” are both defined in the regulations to be synonymous.

In response to a question from Mr. Horne about the issuance of an amended permit due to an ownership change, Ms. Nunn said she would look into the question.

#### Item 2 – 24-hour rule for repeat bacti samples in 12VAC5-590-380(D)(1)

Ms. Nunn discussed the 24-hour rule and fielded questions about its implementation. Ms. Nunn stated that ODW has talked to EPA about handling a situation like the positive result comes in at 4:00 p.m. on a Friday and normally the repeat sample would be taken on Monday. Ms. Nunn stated that EPA pointed to the section saying there must be a logistical problem and ODW can make a determination on a case-by-case basis. Ms. Nunn stated the field office considers the 24 hours to begin when it notifies the waterworks of the positive result.

Further discussion with the WAC included Ms. Nunn stating that the ODW field office needs to be able to document the extension is granted and, per the federal government, ODW must set a new deadline if ODW grants an extension.

Mr. Van Gelder stated there is a slippery slope if ODW tries to provide too many examples of what would qualify.

Mr. Royall stated he would state whatever EPA says, and mention in accordance with EPA regulations.

### Item 3 – 12VAC5-590-475 B

Ms. Nunn stated that at the December meeting of the WAC, someone mentioned the private well regulations, which are not as burdensome. ODW also discussed with DEQ what they would recommend regarding well abandonment. The proposed amendment deletes some current requirements and requires compliance with the remaining requirements in the regulation and the Private Well Regulations.

Ms. Nunn discussed proposed regulatory language regarding emergency wells. Ms. Nunn stated that Mr. Royall had raised situations with clay slurry in other states and WAC members expressed concerns about reducing requirements with unintended consequences because of the greater threat from public wells. Ms. Nunn stated she asked VDH's Office of Environmental Health Services (OEHS) about the definition of clay slurry or any guidance on clay slurry from the Private Well Regulations. OEHS did not have any information. At its March meeting, the WAC decided to defer discussion until June so Mr. Royall could be in attendance.

Mr. Royall stated that they had significant problems in Michigan with well grout disappearing. Mr. Royall also discussed clay slurry.

Mr. Matthews stated agreement with Mr. Royall and said that the term "clay slurry" should not be used. He stated that the regulations should be specific where if we are going to allow clay slurry, we should specify bentonite slurry as bentonite has the correct hydrophilic properties to seal voids.

Mr. Royall stated he would pull some information and send it to Ms. Nunn. He believes he can find something that defines grout with at least 20% solids as probably okay and we can cover it then.

Ms. Nunn stated we will table this until September.

Mr. Royall stated that VDH has in the past required a licensed water system provider to abandon the well. OEHS, however, has now determined the Private Well Regulations do not require someone to be a licensed well driller to abandon a well and OEHS is allowing anyone to get a license to abandon a well. Mr. Royall stated he does not know if we want a requirement for abandonment of public water wells to be done by licensed water system providers.

Ms. Nunn stated that the existing language references water systems and the new language requires abandonment in accordance with this regulation and the Private Well Regulations.]

Mr. Royall stated the interpretation of the Private Well Regulations has changed but he doesn't know if the regulation has changed. He said that needs to be covered.

#### Item 4 – 12VAC5-590-476

Ms. Nunn stated that the proposed amendment defines what is an emergency well. ODW had a lot of internal discussion about this language, including with Bob Edelman and the field offices and they had similar concerns about the existing language not being clear. The proposed revised language describes an emergency well, addresses safety, and if part of a community system then additional testing is required to ensure it is safe. Ms. Nunn asked whether this resolves some of the issues.

Mr. Van Gelder stated this looks pretty reasonable on first glance.

Ms. Nunn clarified in response to a comment by Mr. Estes that this is for waterworks only.

Mr. Royall stated that if the hospital turns on its well supply, then it becomes a waterworks.

Mr. Mutoti stated a concern about different treatment of wells and trying to clarify between an emergency well and a back-up well or a redundant well.

Mr. Edelman said there are no back-up wells or redundant wells in the Waterworks Regulations.

Mr. Van Gelder said perhaps it is defined as a well being inactive for one or more years.

Mr. Mutoti stated that he thinks somewhere in the regulations we do not need as much storage capacity if there is a back0up or redundant well than if there is a single well. He stated that some systems may leave a well unused for several years, but they can activate it.

#### Item 5 – Code of Virginia § 32.1-172.1, Attendance by licensed operator

Ms. Nunn stated that the next few slides are about the new law that goes into effect on July 1. ODW knows regulations will be needed for at least part B of the section. ODW is discussing possible regulatory language. ODW plans to work with Chris Pomeroy on that language, but he is not in attendance today.

Ms. Nunn stated that Section A allows for a temporary waiver for the unexpected vacancy of the licensed operator. Section B is an opportunity for remote monitoring for systems rather than having the properly classed operator on-site. Section C allows VDH to modify the operator requirements for waterworks Classes 1 through 6, which is an easy change from the current regulations which say Classes 3 through 6, which ODW will make.

Ms. Nunn stated that if you have an unexpected vacancy the statute provides some examples. She went through the statutory requirements. Ms. Nunn stated that the waiver can be revoked for failure to fulfill the statutory requirements or if VDH finds continued operation is a public health threat.

Ms. Nunn discussed the remote monitoring credit. ODW hopes to soon have a draft policy to present to the WAC for review and comment in September. Ms. Nunn will be working with Chris Pomeroy on regulations to present in September. Ms. Nunn stated it is important for the WAC members to look at the statutory language, think about what important items are needed for a remote monitoring plan, and be prepared to provide that input by September so we can move quickly on this.

Mr. Van Gelder said the WAC would be happy to assist with this effort.

#### Item 6 – New Federal Rules/Revisions

Ms. Nunn stated that a new PFAS rule was issued in May. ODW will promulgate regulations. There is also a new CCR Rule. ODW does not plan on making any changes from the federal regulatory language.

#### **ODW Staffing and Budget Update**

Dwayne Roadcap provided the update.

ODW has a new business manager, new accountant and new financial analyst who started with in April. Part of their role is to keep a close eye on the ODW budget. In the past, ODW had a significant budget shortfall and part of the issue was lack of connection between the program and the budget. One corrective action on that was bringing business administration unit in-house and they report to Mr. Roadcap. ODW expects to roll out new budgets pretty soon. ODW is in the process of trying to hire field directors for Danville and Abingdon. There is still an open field director position for Lexington that ODW is trying to find additional funding for. ODW has four positions on hold for lack of funding.

The ODW Richmond Field Office is looking at a new organizational structure as a pilot program. It would pull engineers into one work unit and have environmental and inspector positions in another work unit so engineers can focus on engineering.

ODW has had good organizational change in moving construction permit review to the central office. A permit transparency project will likely be going online in August so people can review the status of permit applications. ODW has managed to get quarterly permit and plan review done in about 30 days with the central office, but there are still some backlogs from the field offices. James Reynolds and Bailey Davis are leading the effort on the RFO pilot program.

In total, ODW has 120 full-time employees and of those there are around 15 vacancies. ODW has a 14% vacancy rate and 11% turnover rate. Due to the new federal rules coming down, there is lots of additional work for staff with new the rules.



Mr. Roadcap discussed the funding cliff that is on the horizon for 2026. At that point, ODW will see significantly reduced federal funding for staffing. All but 10 of ODW's 120 positions are federally funded. Congressionally directed spending has resulted in ODW receiving \$6.9 million of funding for the state revolving fund program, which is a decrease from the \$17.9 to \$18.1 million that ODW had traditionally received. The Bilateral Infrastructure Law has served as a separate revenue source allowing ODW to cover the gap, but that ends in 2026. Starting in 2027, ODW will have significant issues with funding staff positions if there is not a federal change or the state allows for additional revenue for the program.

Mr. Royall asked, if the funding is not replaced then would ODW have significant staffing changes.

Mr. Roadcap responded that unless there are additional state funding sources, the federal funding will be significantly pinched. It would impact about 48 positions. On staffing, EPA had CADMUS do a third-party analysis, which found that for ODW to implement the minimum federal requirements, ODW needs an additional 42 full-time equivalents. Currently, ODW has 120 positions funded and the federal report said ODW needs 42 more.

Mr. Royall asked about Virginia's ability to maintain primacy if positions have to be eliminated. Mr. Roadcap responded that was part of the reason for the workload analysis EPA had performed. Mr. Roadcap noted that EPA does not have control over the federal funding, as that is Congress's responsibility. Mr. Roadcap stated every state is facing this problem.

Ms. Caruthers stated she has been involved with discussions with five or six congressional offices about this issue.

Mr. Royall stated the WAC needs to think about what recommendations it wishes to provide to the Commissioner and to take back to the WAC's constituents. Mr. Royall noted there is probably not a lot the WAC can do about federal funding, but the other issue is the fee structure and whether we want to modify the fee structure.

Mr. Van Gelder said we need to be active on this issue.

It was agreed that discussion of budget issues will be on the agenda for the September WAC meeting.

### **Compliance, Enforcement and Policy Update**

Grant Kronenberg provided an update on compliance and enforcement efforts by ODW. The slides presented by Mr. Kronenberg can be found with the meeting agenda packet.

Mr. Kronenberg reported that the April EPA Enforcement Targeting Tool (ETT) report showed nine "serious violators," which is an ETT score of 11 or more. This was the same number as in the last ETT report in January. Three of the serious violators in the April report were holdovers from the January report. Of the six new serious violators, one is under a consent order, one has

connected to a public service authority, one contends it does not meet the definition of the waterworks and ODW is assessing that claim, one resolved its violations, and two others have been actively working to address the violations.

Mr. Kronenberg reported that ODW sent 26 warning letters to waterworks in April, which is over a 50% increase from January. ODW held its first informal conference in over two years. The informal conference concerned a claim of operation of a waterworks without a permit. The matter is decision is pending. ODW has two court actions pending. One involves enforcement of a court order where the court order, entered in 2020, was necessary to enforce a 2017 administrative order. The other court action seeks enforcement against a waterworks owner for failure to comply with an administrative order and for violations of the Waterworks Regulations that resulted in a major distribution system failure. ODW has resolved two enforcement matters through consent orders so far this year and five proposed consent orders have been sent or will soon be sent.

Mr. Kronenberg stated that ODW is working on developing policies for the implementation of the remote monitoring operator attendance credit and licensed operator temporary waiver contained in the new law that goes into effect on July 1, which Ms. Nunn discussed in her presentation. Mr. Kronenberg stated that ODW would be seeking feedback from the WAC regarding the two policies, which are currently being developed by ODW.

### **PFAS Rule, Lead and Copper Rule, and Consumer Confidence Report Rule**

Bob Edelman provided the update. The slides presented by Mr. Edelman can be found with the WAC meeting materials.

Mr. Edelman stated that the EPA announced the final PFAS rule in April. It includes maximum contaminant levels (MCLs) for five chemicals and a hazard index for mixes of chemicals. The deadline for compliance with the MCLs is five years from the date of publication of the rule. This will allow time for testing and planning capital improvements. Waterworks must complete initial monitoring by April 2027. ODW is waiting on additional information and guidance from EPA. Beginning three years from rule promulgation, so from 2027-2029, waterworks need to include the results of initial monitoring in their CCR report. If there is a monitoring or testing violation, then the waterworks must share that with customers.

Mr. Van Gelder asked if a water plant started in 2027, would it have two years to come into compliance. Mr. Edelman responded that is his understanding.

Mr. Edelman stated that the Waterworks Regulations do not currently require a waterworks developing a new source to test for PFAS chemicals so ODW cannot require them to do so, but he highly recommends it so personnel at the waterworks can make appropriate decisions in designing treatment.

Mr. Edelman discussed a chart showing a summary of results of ODW's PFAS sampling.

Mr. Edelman discussed a chart showing the UCMR5 PFAS summary, data release 4. He noted that needing to address PFAS does not necessarily mean a need to install treatment. If there is a detection above the PFAS MCL, then the waterworks would do additional sampling to identify the occurrence of the PFAS and determine if it is truly above the MCL, looking at an annual average. Next steps could include blending, installing treatment, or continuing to sample.

Mr. Edelman stated that ODW is currently planning Phase 3 PFAS sampling for this year. This is focused on small, disadvantaged communities that were not in the UCMR5 sampling plan.

Mr. Edelman stated that under the General Assembly's budget, ODW has been provided with \$500,000 to perform a cost analysis for the implementation of federal PFAS and Lead and Copper Rule Revisions (LCRR) and Lead and Copper Rule Improvements (LCRI) rules on waterworks. The analysis is due to the General Assembly by December 1, 2024.

Mr. Edelman mentioned grants available to address emerging contaminants. The Emerging Contaminants in Small or Disadvantaged Communities grant program targets communities smaller than 10,000 people or disadvantaged criteria can be met. Mr. Edelman said now is the time to apply for this funding if needed and people can contact him about it.

Mr. Edelman discussed the LCRR and LCRI. EPA has said it will promulgate the LCRI, modifying the LCRR, by October 16, 2024, which is when the LCRR's requirements take effect. The LCRI will push back a lot of the LCRR's requirements to 2028. Mr. Edelman pointed to the ODW website as containing information on changes from the LCRR to the LCRI.

Mr. Edelman stated that the initial inventory of lead service lines is due by October 16, 2024. Mr. Edelman discussed related requirements. Mr. Edelman pointed to certain technical bulletins on ODW's website. Mr. Edelman stated that ODW has set up SWIFT Submittals, which is a web portal where waterworks staff can type in or upload their lead service line inventory information. Mr. Edelman recommended that the regulated community obtains their user credentials for that system now. Mr. Edelman recommended uploading information in chunks rather than trying to do it all at once.

Mr. Edelman recommended preparing a lead service line replacement plan now if the inventory shows lines that are lead or galvanized requiring replacement (GRR). He also recommends applying for lead service line replacement funding now. Mr. Edelman stated that waterworks need to think about how they will go about replacing lines on the utility and the customer side and provided some suggestions on the accompanying slide.

Mr. Edelman said that ODW will present a webinar in August on LCRR consumer notification requirements.

Mr. Edelman stated that the EPA also finalized CCR Rule Revisions. They were announced on May 15, and published in the Federal Register on May 24, 2024. There is a compliance date of January 1, 2027, so the CCR delivered in 2027 must meet the new requirements. Among the things that are new in the revision is those waterworks serving 10,000 people or more must deliver the CCR due on July 1, and then send a six-month update for January through June by

December 31. Systems without a violation or action level exceedance may resend the original report to satisfy the December deadline. A certification of delivery is due to ODW no less than 10 days after the distribution deadline. Mr. Edelman discussed other changes reflected on the slides.

Mr. Edelman noted that states must submit compliance monitoring data for all national primary drinking water regulations on an annual basis.

### **Centralized Plan Review and Data Management Update**

Aaron Moses provided the update.

Mr. Moses reported that the current time period for approval of construction permits is 24 days from receipt. The main challenge currently is sufficient staff. ODW recently posted position openings for project engineers with the statewide plan review program and got more interest by not locating the positions in Richmond.

Mr. Moses stated that ODW is nearing completion on joining the Virginia permit transparency system, which will allow applicants to review the status of permit applications. ODW hopes to test it in the next week or two. Staff will need to be trained on data entry procedures.

Mr. Moses stated there is no big news on the data management front. There is a current focus on data clean-up. There are three sizeable projects in the pipeline, with one being implementation of updated tracking software. Next year, ODW will implement a portal for uploading Monthly Operation Reports, which is expected to provide gains in efficiency to ODW. Around 2027, ODW expects to transition from SDWIS to DW-SFTIES, which EPA has been working on for a sometime. It is expected this new system will be similar to SDWIS but with a modern interface and a cloud-based structure.

### **Financial and Construction Assistance Program (FCAP) Update**

Keith Kornegay provided the update. The slides presented by Mr. Kornegay can be found with the WAC meeting materials.

Mr. Kornegay reported that the Drinking Water State Revolving Fund (DWSRF) base grant has gone from \$18 million in the past to \$6.5 million due to congressional earmarks. EPA has said to budget that amount for 2025 too. There is a 20% state match required. ODW has received approximately \$15 million in loan repayments. These amounts result in approximately \$22.8 million being available this year.

Mr. Kornegay stated that ODW has about \$99.7 million in Bipartisan Infrastructure Law (BIL) funding available, of which the BIL Supplemental fund has the most flexibility when it comes to what it can be used for. More information is provided on the accompanying slide.

Mr. Kornegay stated that the due date for FCAP construction applications was May 3, 2024. ODW received 35 applications seeking DWSRF or BIL Supplemental funding of \$176 million,

while ODW has \$61.8 million available to provide. ODW also received four applications for \$74 million from the Emerging Contaminants fund, for which \$10.7 million is available; and nine applications for \$67 million for lead service line replacement, for which \$50 million is available.

Mr. Kornegay stated that ODW continues to prioritize public health in scoring and ranking applications. EPA has told Virginia, and other states, to move the money quickly. EPA wants FCAP to prioritize closing loans within 12 months and completing construction within three years. FCAP needs to prioritize “shovel-ready” projects and EPA may push FCAP to bypass projects that are lagging when it comes to moving the project forward.

Mr. Kornegay identified a challenge for FCAP in dealing with reduced federal funding from congressional earmarks. There is Bipartisan Infrastructure Law funding through fiscal year 2026, but ODW has to commit its 2026 funding in 2025 because it takes a year to go through the FCAP process for money. This creates the fiscal cliff. There are also other federal requirements that must be accounted for.

### **Public Comment**

Pat Calvert asked about the cost for addressing PFAS, which Mr. Mutoti had mentioned in the electronic WebEx chat. Mr. Roadcap responded that the \$500,000 budget line item is intended for VDH to look into the cost question.

### **Conclusion**

The 2024 WAC meetings are scheduled for September 18, 2024 (in person) and December 11, 2024 (all virtual).

The meeting adjourned at approximately 12:33 p.m.

# Budget Overview

Office of Drinking Water/VDH  
September 2024

# Budget Considerations

- EPA Workload Analysis – 2023
  - Additional FTEs needed
- Business Unit added – April 2024
  - Response to ODW budget shortfall (2021 - 2022)
  - Financial management transformation
  - Adding Business Manager, two accountants, and fiscal technician
- Financial Cliff looming – 2027
  - Effects of Congressionally directed spending

# Program Operations Funding

## 1. EPA Grants:

- DWSRF/BIL: \$17.9 - \$18.12 Million (48 full-time employees)
- PWSS: \$2.0 - \$2.3 Million (25 full-time employees)

## 2. State Funds:

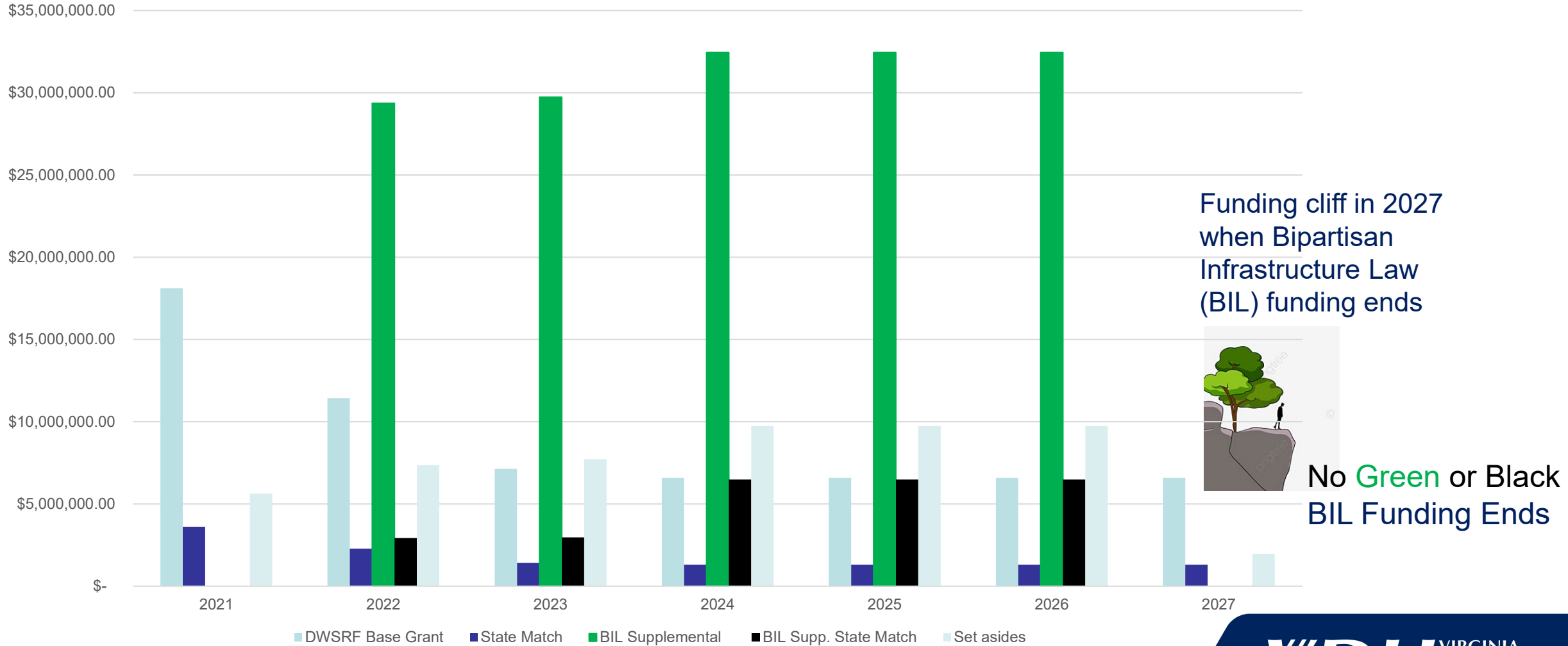
- \$10.1 Million DWSRF / BIL Match
- \$0.82 Million PWSS
- \$4.86 Million General Funds (18 full-time employees + operations)
- \$1.5 Million Sampling Verification (12 full-time employees)

## 3. Operation Fees from Waterworks:

- \$4.8 Million (18 full-time employees + operations)

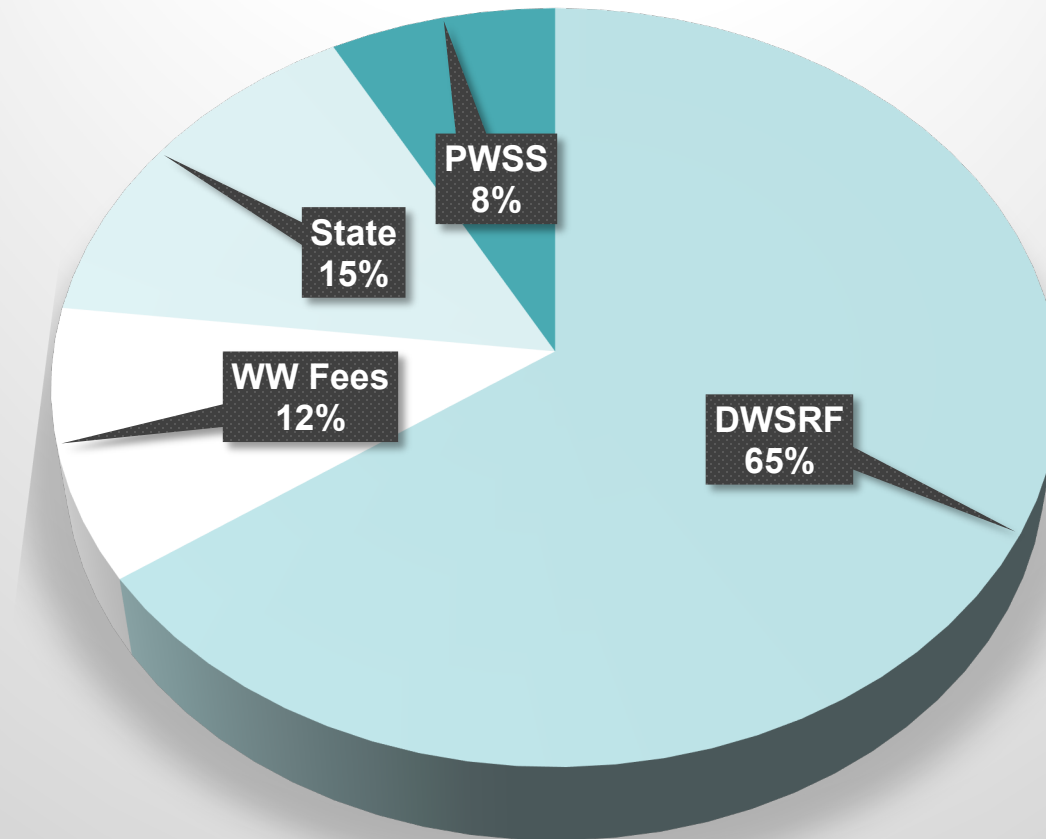


# DWSRF Funding

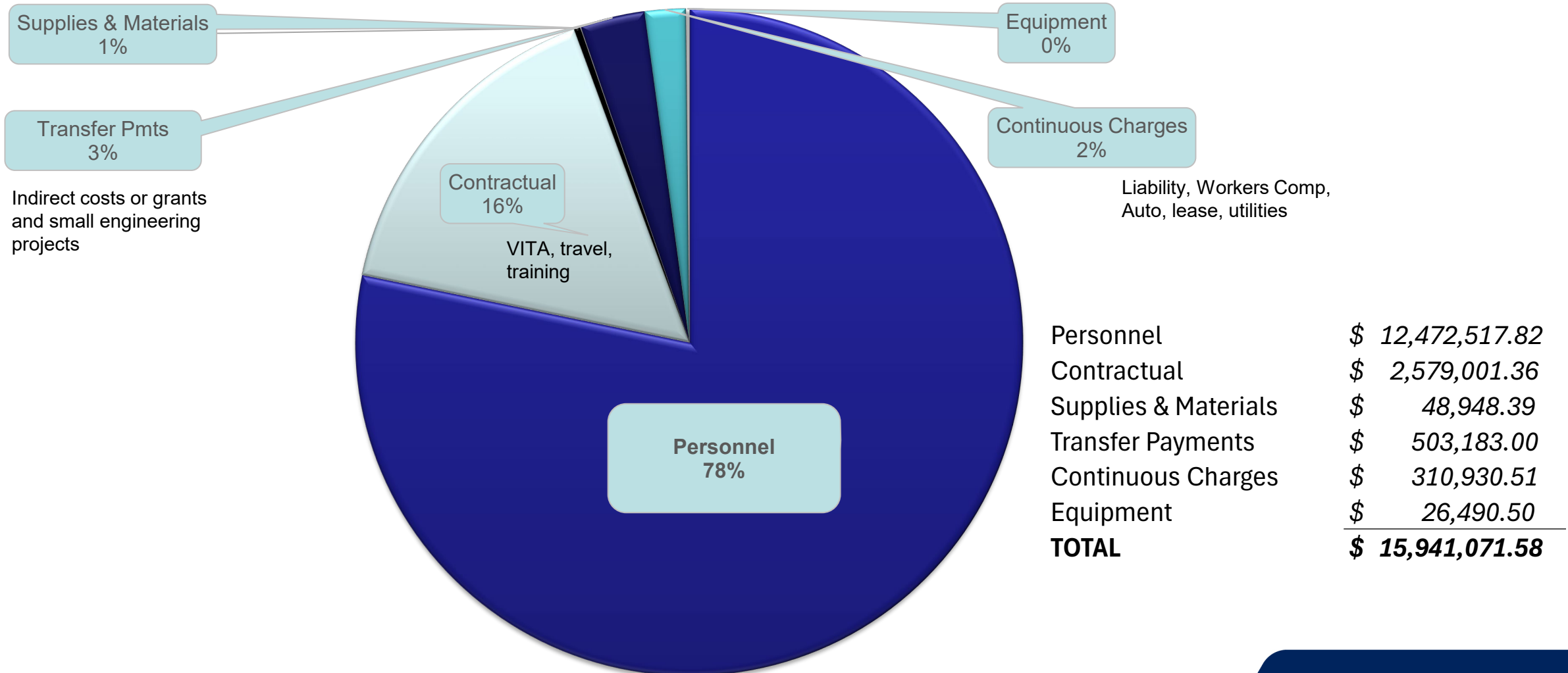


# Source of Funds

\$41.5 Million Per Year



# Operational Costs: \$ 15.9 Million/Yr



# Questions?

Office of Drinking Water/VDH  
September 2024



**Policy on All-Virtual Meetings of the Waterworks Advisory Committee  
Pursuant to Code of Virginia § 2.2-3708.3**

It is the policy of the Waterworks Advisory Committee (“WAC”) that the WAC may conduct all-virtual meetings as permitted by Code of Virginia (Va. Code) § 2.2-3708.3.

This policy shall be applied strictly and uniformly, without exception, to the entire membership of the WAC and without regard to the matters that will be considered or voted on at the meeting.

As used in this policy, an “all-virtual public meeting” means a public meeting conducted by the WAC using electronic communication means during which all members of the WAC who participate do so remotely rather than being assembled in one physical location, and to which public access is provided through means of electronic communication. As used in this policy, “electronic communication” has the same meaning as that term is defined in Va. Code § 2.2-3701.

This policy shall not govern an electronic meeting conducted to address a state of emergency declared by the Governor or by the locality in which the WAC is located. Any meeting conducted by electronic communication means under such circumstances shall be governed by the provisions of Va. Code § 2.2-3708.2.

The WAC may convene an all-virtual public meeting when: (1) it is impracticable or unsafe to assemble a quorum of the WAC in a single location but a state of emergency has not been declared by the Governor and a state of emergency has not been declared in the locality where the WAC is located; or (2) other circumstances warrant the holding of an all-virtual public meeting, including, but not limited to, for the convenience of the members of the WAC.

The number of all-virtual public meetings convened by the WAC in a calendar year shall not exceed the greater of: (1) two, or (2) 50 percent of the WAC’s meetings in the calendar year rounded up to the next whole number. Additionally, the WAC shall not hold consecutive meetings that are all-virtual public meetings.

The WAC may schedule its all-virtual public meetings at the same time and using the same procedures used by the WAC to set its meetings calendar for the calendar year. If the WAC wishes to have an all-virtual public meeting on a date not scheduled in advance on the WAC’s meetings calendar, and an all-virtual public meeting is otherwise authorized by this policy and the Virginia Freedom of Information Act, the Chair of the WAC may schedule an all-virtual public meeting at the Chair’s discretion. If a WAC member wishes to request that an all-virtual public meeting be convened for a date that such a meeting is not already scheduled, they shall notify the Secretary of the WAC who shall then inform the Chair of the WAC of the request. The Chair may then decide to schedule an all-virtual public meeting of the WAC.

The public notice of an all-virtual public meeting of the WAC shall identify that it will be an all-virtual public meeting. The public notice shall include a statement that the method by which the WAC chooses to meet shall not be changed unless the WAC provides a new meeting notice in accordance with Va. Code § 2.2-3707.

Public access to the all-virtual public meeting shall be provided by means of electronic communication. The means of electronic communication used at the all-virtual public meeting shall allow the public to hear all members of the WAC participating in the all-virtual public meeting and, when audio-visual technology is available, to see the members of the WAC as well. When audio-visual technology is available, a member of the WAC will be considered absent for purposes of quorum from any portion of the meeting during which the visual communication with the WAC member is voluntarily disconnected or otherwise fails or during which audio communication voluntarily fails.

A phone number or other live contact information shall be provided so the public may alert the WAC if the audio or video transmission of the meeting fails, and the WAC shall monitor such designated means for the public to contact the WAC concerning a transmission failure. In the event the WAC is informed of transmission failure during an all-virtual public meeting, the meeting shall be in recess until the public access is restored.

A copy of the proposed agenda for the all-virtual public meeting and all agenda packets and, unless exempt, all materials furnished to members of the WAC for a meeting shall be made available to the public in electronic format at the same time that such materials are provided to the members of the WAC.

The public shall be afforded the opportunity to comment through electronic means, including by way of written comments, at meetings where public comment is customarily received.

No more than two members of the WAC shall be gathered at any one remote location unless that remote location is open to the public to physically access it.

If the WAC enters into a closed session, transmission of the meeting to the public shall be suspended until the WAC resumes to certify the closed meeting in open session pursuant to the Virginia Freedom of Information Act.

Minutes of an all-virtual public meeting shall be taken as required by Va. Code § 2.2-3707 and include the fact that the meeting was held by electronic communication means and the type of electronic communication means by which the meeting was held.

This policy applies to all committees, subcommittees, or any other subgroup of the WAC.

**Policy on Individual Participation in Waterworks Advisory Committee Meetings by Electronic Communication Means Pursuant to Code of Virginia § 2.2-3708.3**

It is the policy of the Waterworks Advisory Committee (“WAC”) that individual members of the WAC may participate in meetings of the WAC by electronic communication means as permitted by Code of Virginia (Va. Code) § 2.2-3708.3. This policy shall apply to the entire membership of the WAC and without regard to the identity of the member requesting remote participation by electronic communication or the matters that will be considered or voted on at the meeting. As used in this policy, “electronic communication” has the same meaning as that term is defined in Va. Code § 2.2-3701.

If a member of the WAC wishes to participate through electronic communication means due to being unable to attend the meeting in-person as the result of: (1) a temporary or permanent disability or other medical condition preventing the WAC member’s physical attendance, (2) a family member’s medical condition that requires the WAC member to provide care for such family member thereby preventing the WAC member’s physical attendance or the WAC member is a caregiver, as defined in Va. Code § 2.2-3701, for a person with a disability at the time of the meeting that prevents the WAC member’s physical attendance, (3) the WAC member’s personal residence being more than 60 miles from the meeting location identified in the required notice for such meeting, or (4) a personal matter preventing the WAC member’s physical attendance, then on or before the day of the meeting the WAC member shall notify the Secretary of the WAC of the member’s request to attend by electronic communication means and which one of the enumerated reasons applies. If the WAC member’s absence is due to a personal matter, the WAC member shall also identify with specificity the nature of the personal matter. The Secretary of the WAC shall notify the Chair of the WAC of the request.

Whenever a WAC member wishes to participate remotely by electronic means, the law requires a quorum of the WAC to be physically assembled at the primary or central meeting location, and arrangements must be made for the voice of the remote participant to be heard by all persons at the primary or central meeting location. For purposes of determining whether there is a quorum of the WAC physically assembled at the primary or central meeting location, a member of the WAC who is a person with a disability as defined in Va. Code § 51.5-40.1, or who is a caregiver, as defined in Va. Code § 2.2-3701, for a person with a disability, and attends the meeting through electronic communication counts toward the quorum as if they were physically present.

The reason that the WAC member is unable to attend the meeting – whether due to the WAC member’s temporary or permanent disability or other medical condition preventing their attendance, a family member’s medical condition requiring the WAC member to provide care for their family member thereby preventing the WAC member’s physical attendance, the distance between the WAC member’s principal residence and the meeting location, or due to a personal matter – and a general description of the remote location from where the member participates will be recorded in the meeting minutes. If the WAC member’s participation by electronic communication means is due to a personal matter, the minutes will include the specific nature of the personal matter cited by the member.



*FOR CONSIDERATION OF THE WATERWORKS ADVISORY COMMITTEE*

An individual WAC member's participation by electronic communication due to a personal matter is limited by law to two meetings each calendar year or 25 percent of the meetings held per calendar year rounded up to the next whole number, whichever is greater.

A WAC member's participation by electronic communication means shall be approved unless such participation would violate this policy or the provisions of the Virginia Freedom of Information Act. If a WAC member's participation by electronic communication means is challenged, then the WAC shall vote on whether to allow such participation. If the WAC votes to disapprove of the member's participation by electronic communication because such participation would violate this policy, such disapproval shall be recorded in the minutes with specificity.

This policy applies to all committees, subcommittees, or any other subgroup of the WAC.

# Waterworks Regulations

September 18, 2024

Jane S. Nunn, JD, MPA  
Policy and Program Coordinator



# Remaining Topics

2 old amendments remaining for discussion:

- WBOP in 12VAC5-590-200 and
- Well abandonment in 12VAC5-590-475

3 new amendments based on new Code of Va § 32.1-172.1 :

- § 32.1-172.1(A) Operator requirements
- § 32.1-172.1(B) Remote monitoring credit
- § 32.1-172.1(C) Reduced operator attendance

Proposed regulatory language is in **red**

# Item #1 – 12VAC5-590-200

- Substantive change
- Only remaining question on this regulatory section was to -200.A.7 related to the granting of a waiver of the WBOP requirement request
- Proposed language to -200.A.7

7. An owner applying for an additional or amended permit may request that the department waive the requirement to submit a waterworks business operation plan. The department shall consider all requests for a waiver on a case-by-case basis. Only applicants who have demonstrated a minimum of a 3-year history of acceptable compliance with the requirements of this Chapter as determined by the department will be considered for this waiver.

- ODW has not begun work on the guidance document that's needed to ensure that all waiver requests are considered using the same criteria
- The WAC will be asked to participate in the drafting of this guidance document

# Item #2 – 12VAC5-590-475 B

- Proposed language, -590-475 B Permanent abandonment.
  1. Well abandonment shall be supervised by a certified water well systems provider.
  2. All well abandonments shall be documented on a Uniform Water Well Completion Report, Form GW-2, and submitted to the department within 30 days of completing the physical abandonment.
  3. Groundwater wells that are abandoned shall be sealed by methods that will restore to the fullest extent possible the controlling geological conditions that existed before the wells were constructed.
  - 4~~5~~. The well shall be checked from land surface to the entire depth of the well before it is sealed to ascertain freedom from obstructions that may interfere with sealing operations. Effort shall be made to remove or clear any obstacles that may prohibit sealing by grouting the complete well depth.
  - 5~~10~~. The location of the well shall be permanently documented for future reference.
  6. Permanent abandonment of a well shall be in accordance with both this subsection and the Private Well Regulations, 12VAC5-630.
- Reduced cost

# Item #3 – Code of VA § 32.1-172.1, Attendance by licensed operator

- Substantive item
- New section of the Code of Virginia became effective on July 1, 2024
- New regulations needed, but not for all sections of the Code
- Divided into 3 sections for ease of review
  - § 32.1-172.1(A), Temporary waiver of operator requirement
  - § 32.1-172.1(B), Remote monitoring credit
  - § 32.1-172.1(C), Reduced operator attendance
- Cost savings

# Item #3A - § 32.1-172.1(A) Attendance by licensed operator

- Statutory language: A. The owner of every waterworks or treatment facility identified as a classified waterworks or treatment facility by the Department shall employ or contract an operator who holds a current waterworks operator license, issued in accordance with Chapter 23 (§ 54.1-2300 et seq.) of Title 54.1, of the appropriate class for the classification of the waterworks or treatment facility, as determined by the Board, or higher class at the owner's option. If the position of the licensed operator of the appropriate class is unexpectedly vacated due to death, extended illness, firing for cause, resignation, or similar cause, the classified waterworks or treatment facility owner shall notify the Department promptly and in accordance with any specific timeframe directed by the Board. The Department shall temporarily waive the licensed operator requirement for the interim, provided the owner (i) informs the Department in writing of its designation of another licensed operator responsible for interim operations within five days of the vacancy, (ii) informs the Department in writing within 10 days of the vacancy arising of its plan to hire a replacement licensed operator of the appropriate class as soon as practicable, (iii) implements the hiring plan diligently, and (iv) provides a monthly report to the Department on the implementation and progress of such hiring plan. The Department may revoke the temporary waiver if the Department finds that continued operation pursuant to the waiver presents a public health threat due to statutory, regulatory, or permit violations.

## Item #3A cont. - § 32.1-172.1(A) Temporary waiver of operator requirement

- ODW's recommendation is to not draft a regulation for this subsection of the statute
- This subsection doesn't include any language giving ODW discretion in the granting of a temporary waiver, so any regulatory language would just be a repetition of that in the statute
- The Registrar's Office discourages agencies from creating a regulation that doesn't add anything additional to a statute's language



# Item # 3B – § 32.1-172.1(B), Remote Monitoring Credit

- § 32.1-172.1(B) language: B. Where a waterworks or treatment facility identified as a classified waterworks or treatment facility by the Department is equipped with adequate technological capability, the Department shall credit remote monitoring of the facility by a licensed operator of the appropriate class as operator attendance, provided that the owner submits and the Department approves a remote monitoring plan demonstrating that the waterworks or treatment facility possesses sufficient technology for the remote operator to adequately monitor the waterworks or treatment facility and manage onsite operators with a lower license class, mechanics, or other staff to operate the waterworks or treatment facility under the remote operator's direct supervision. In determining whether to approve a remote monitoring plan for multiple waterworks or treatment facilities, the Department may consider the number of waterworks or treatment facilities the remote operator is monitoring simultaneously, whether the multiple facilities being monitored remotely are under common ownership, whether the remote operator is employed by the owner of the multiple facilities, and whether occasional in-person attendance is provided, among other factors. The Department may cease crediting remote monitoring if the Department finds that continued operation pursuant to the remote monitoring plan presents a public health threat due to statutory, regulatory, or permit violations. The Department shall not credit remote monitoring by an operator without the appropriate license class who is operating the waterworks or treatment facility pursuant to a temporary waiver issued under paragraph A of this section.

# Item # 3B cont. – § 32.1-172.1(B) , Remote Monitoring Credit

New subsection, 12VAC5-590-461.F

1. In accordance with § 32.1-172.1 of the Code of Virginia, the department shall consider the following factors in determining whether to approve a remote monitoring plan:
  - a. The ability of the waterworks to continue to comply with applicable statutory, regulatory, and permit obligations;
  - b. The ability of the waterworks to timely respond to any emergency;
  - c. Whether the plan accounts for cybersecurity risks and potential disruptions to remote monitoring or the remote operator's communications with onsite staff;
  - d. The performance of a cybersecurity assessment within 12 months of submission of the remote monitoring plan for approval, implementation of the findings of the cybersecurity assessment, and creation of a cybersecurity risk mitigation and response plan; and
  - e. Other relevant factors identified by the department.

# Item # 3B cont. – § 32.1-172.1(B) , Remote Monitoring Credit

12VAC5-590-461.F (cont.)

2. For multiple waterworks or treatment facilities, the department shall consider the following factors in determining whether to approve a remote monitoring plan:
  - a. The requirements listed in subpart 1 of this section;
  - b. The number of waterworks or treatment facilities the remote operator is monitoring simultaneously;
  - c. Whether the multiple facilities being monitored remotely are under common ownership,
  - d. Whether the remote operator is employed by the owner of multiple facilities;
  - e. Whether occasional in-person attendance is provided; and
  - f. Other relevant factors identified by the department.

# Item # 3B cont. – § 32.1-172.1(B) , Remote Monitoring Credit

12VAC5-590-461.F (cont.)

3. The owner shall: 1) perform a cybersecurity assessment at least annually; 2) implement the findings of the assessment; 3) update the cybersecurity and risk mitigation plan in accordance with the assessment's findings; and 4) within **xx** days of the assessment, certify to the department that these requirements have been completed. An extension beyond the **xx** days may be granted for good cause at the discretion of the department
4. The department may cease crediting remote monitoring upon finding that continued operation pursuant to the remote monitoring plan presents a public health threat due to statutory, regulatory, or permit violations.
5. Remote monitoring will not be credited as operator attendance in the circumstance of an operator who does not possess a license with a classification equal to or higher than the classification of the waterworks or water treatment plant being operated and is operating such facility pursuant to a variance issued under 12VAC5-590-140 or a temporary waiver issued under § 32.1-172.1 A of the Code of Virginia.

## Item # 3C – § 32.1-172.1(C) Reduced operator attendance

- Statutory language: C. Reduced operator attendance for Class I through Class 6 waterworks may be considered by the Department on a case-by-case basis.
- Only a simple change is need to 12VAC5-590-461.D.2.
- Current regulatory language: Reduced operator attendance for Class 3 through Class 6 waterworks may be considered by the department on a case-by-case basis.
- Proposed regulatory language: Reduced operator attendance for Class **1** through Class 6 waterworks may be considered by the department on a case-by-case basis.

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VDH Office of Drinking Water  
Waterworks Remote Monitoring Policy

I. Background

The Code of Virginia § 32.1-172.1.B (Code) requires the Virginia Department of Health (VDH) to credit remote monitoring of a classified waterworks facility as satisfying the operator attendance requirement if the system “is equipped with adequate technological capability” and the waterworks owner submits and VDH approves “a remote monitoring plan demonstrating that the waterworks...possesses sufficient technology for the remote operator to adequately monitor the waterworks...and manage onsite operators with a lower license class, mechanics, or other staff to operate the waterworks...under the remote operator’s direct supervision.”

The Code provides factors that VDH may consider in deciding whether to approve a remote monitoring plan (RMP) for multiple waterworks, including the number of waterworks being simultaneously remotely monitored, whether the multiple waterworks are under common ownership, whether the remote operator is employed by the owner of multiple waterworks, and the frequency of in-person attendance at the waterworks.

The Code allows VDH to stop crediting remote monitoring as attendance if VDH “finds that continued operation pursuant to the [RMP] presents a public health threat due to statutory, regulatory, or permit violations.” Additionally, the Code prohibits VDH from crediting remote monitoring as attendance if the operator is operating the waterworks pursuant to a temporary waiver of the licensed operator requirement under § 32.1-172.1.A of the Code.

II. Purpose

This Waterworks Remote Monitoring Policy (Policy) establishes how VDH’s Office of Drinking Water (ODW) will receive, review, and approve or deny applications for approval of RMPs pursuant to the Code.

III. Application Intake

A waterworks owner (Owner) that wishes to receive credit for meeting the operator attendance requirements of the Waterworks Regulations through remote monitoring must submit a completed RMP and may use the Remote Monitoring Plan Application (Application; see attached document) provided by ODW. The application, including any supplemental documentation provided by the Owner, will serve as the required RMP. If the Owner chooses not to use the Application, then the RMP submitted by the Owner must include all the information requested in the Application.

The ODW field office where the waterworks is located will receive the RMP and be responsible for initial review. If an Owner submits an RMP for multiple waterworks and the waterworks are located in the territory of more than one ODW field office, then the field office that is home to the greatest number of the waterworks will be responsible for intake responsibilities. If the waterworks are evenly distributed among ODW field offices, then the

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field office that receives the application will be responsible for intake responsibilities unless decided otherwise between the respective field directors or the ODW Chief of Field Operations.

The field director at the field office charged with intake responsibilities will identify the person in the field office who will be chiefly responsible for review of the RMP. If the RMP is for multiple waterworks and the systems are located in the jurisdictions of more than one field office, then the field director for the field office responsible for intake duties will inform the field director(s) for the other field office(s) that an RMP has been submitted in order to coordinate review among the field offices.

The field director should confer with the Director of the Division of Technical Services (DTS) before any decision to approve or deny an RMP is finalized. DTS is responsible for ensuring that decisions regarding approval of RMPs are consistent.

#### IV. RMP Review

##### A. Field Office Responsibility for Review

If ODW determines it needs more information from the applicant, ODW staff may contact the “Contact Person” identified in the application to discuss ODW’s request for more information and set a timeframe for the Owner to submit a revised RMP. If the Owner fails to submit a revised RMP within the time period set by the ODW field office, then ODW must evaluate the materials as submitted and approve or deny the RMP.

##### B. RMP Requirements

For VDH to credit remote monitoring as operator attendance pursuant to the Waterworks Regulations, ODW must have approved an RMP.

An approved RMP must demonstrate that the waterworks has sufficient technology for the remote operator to adequately monitor the waterworks and manage onsite staff who are operating the system under the remote operator’s direct supervision. To satisfy this standard, the RMP must not compromise the ability of a waterworks to continue to comply with the waterworks’ statutory, regulatory, and permit obligations, including the ability to timely respond to any emergency. Additionally, there is an increasing threat of cyberattacks against waterworks. For ODW to approve an RMP, the plan must demonstrate that the technology employed accounts for cybersecurity concerns and the threats posed to the waterworks’ operation and the drinking water supply by bad actors that could prevent the remote operator from adequately monitoring the waterworks or communicating with onsite staff. Additionally, for ODW to approve an RMP, the RMP must state that a cybersecurity assessment using an ODW-approved method has been performed in the last 12 months and that the waterworks owner commits to having cybersecurity assessments performed in the future on at least an annual basis.

ODW’s decision to approve or deny an RMP will be a case-by-case determination. An Owner may submit an RMP for ODW’s review that includes more than one waterworks. In such a case, the RMP must provide information that is specific to each waterworks covered by the



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RMP. ODW must approve or deny an RMP covering multiple waterworks as a group, rather than approving or denying it separately for each waterworks in the RMP.

ODW must not approve an RMP that provides for remote operation of the waterworks.

Among the factors ODW must consider in reviewing an RMP are:

- Whether the RMP would cause the waterworks to be in violation of any statutory, regulatory, or permit requirement
- Whether the RMP is for passive monitoring only or also includes operational control of the waterworks
- Operational and compliance history
- Population served
- Water source(s)
- Type of treatment
- Facility capacity
- Hours of operation, including in-person and remote monitoring
- Proposed in-person attendance by the operator and unlicensed personnel
- Suitability and reliability of remote monitoring controls, alarms, and communications
- Communication plan for waterworks staff in the event of an emergency or a remote monitoring failure
- Availability of emergency power and the operability of remote monitoring systems and communication with onsite staff during a power outage
- Existence of a Cybersecurity Risk Mitigation and Response Plan and emergency response plan
- The circumstances under which the properly licensed operator will report onsite to the waterworks in the event of an incident and the expected response time for the operator to arrive at the waterworks
- Type and reliability of remote monitoring controls, alarms, and communications
- Availability to remote operator of complete piping and instrumentation diagrams for the waterworks, including proposed instrumentation and controls
- Availability to remote operator of documentation about the waterworks' design and operation that the remote operator will have access to when monitoring the waterworks remotely
- How information about the waterworks' operation will be monitored remotely, including:
  - Availability to remote operator of all alarm and setpoint levels for various parameters
  - How the remote monitoring systems will be monitored and staffed
  - How remote monitoring system data will be recorded and archived
  - How remote monitoring system data will be reviewed and analyzed to identify problems
  - The data streams that will be graphed to help visualize trends
- Process for handling system alarms during periods of remote operation

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- Operation and maintenance of the remote monitoring system, including relevant personnel and resources to keep the system monitoring as designed and protecting against disruption.
- Capacities of chemical tanks and needed frequency of refilling or replacement
- Compliance with 12VAC5-590-725
- The identity of other waterworks that the remote operator is, or will be, monitoring, including the classification of such systems and the remote operator's schedule for monitoring each system
- Cybersecurity and risk mitigation assessments and plans
- Finished water storage to meet system demands and contact time (CT) requirements whenever normal treatment is interrupted
- Physical security of the waterworks if it is relevant in reviewing the RMP
- Other criteria as ODW determines are necessary

While ODW must consider the above-listed items in determining whether to approve an RMP, ODW also must consider the entire RMP and any relevant ODW records concerning the waterworks.

### V. Notification to Owner of Review Decision

The field director for the relevant ODW field office sends a letter notifying the waterworks owner of ODW's approval or denial of the Owner's RMP. Template letters for an approved RMP and a denied RMP are attached.

### VI. Authority to Cease Crediting Remote Monitoring

If ODW identifies any violation of statute, regulation, or permit condition while an approved RMP is in effect, ODW must examine the violation to determine whether continuing to grant remote monitoring attendance credit presents a public health threat. This analysis should focus on whether the properly licensed operator being remote to the waterworks, rather than physically present at the waterworks, likely caused or contributed to the violation.

### VII. Right to an Administrative Hearing

If ODW denies an RMP or stops providing credit for remote monitoring in relation to an approved RMP, the Owner has a right to an administrative proceeding pursuant to the Administrative Process Act and the Waterworks Regulations.

# Remote Monitoring Application

## VIRGINIA DEPARTMENT OF HEALTH (VDH) OFFICE OF DRINKING WATER (ODW)

*Return Application to the Appropriate Office of Drinking Water Field Office  
Go to [www.vdh.virginia.gov/drinking-water/contact-us/](http://www.vdh.virginia.gov/drinking-water/contact-us/) for Field Office contact information*

*See ODW's Waterworks Remote Monitoring Policy for more information  
about ODW's review of Remote Monitoring Plans*

**WATERWORKS INFORMATION** (if submitting a Remote Monitoring Plan for more than one waterworks, provide responsive information for every waterworks subject to the Plan)

1. PWSID Number: Click or tap here to enter text. System Name: Click or tap here to enter text.

2. Location (City/County): Click or tap here to enter text.

3. Owner of Waterworks:

Name: Click or tap here to enter text.

Address: Click or tap here to enter text.

Town/City: Click or tap here to enter text.

State/Zip: Click or tap here to enter text.

Contact Person: Click or tap here to enter text.

Telephone Number: Click or tap here to enter text. Alternate Number: Click or tap here to enter text.

E-mail Address: Click or tap here to enter text.

4. Preferred Contact Info

Contact Person: Click or tap here to enter text.

*Name/Title*

Telephone Number: Click or tap here to enter text. Alternate Number: Click or tap here to enter text.

E-mail Address: Click or tap here to enter text. Alternate E-mail Address: Click or tap here to enter text.

FAX Number: Click or tap here to enter text.

5. Hours of waterworks operation (specify if it varies by day): Click or tap here to enter text.

*Answers to the following questions may be provided below and serve as the submitted Remote Monitoring Plan or through a separate document. If this application is for more than one waterworks, provide responsive information for each waterworks.*

6. Describe the scope of the proposed remote monitoring. For example, what functions of the waterworks

will the remote operator be able to monitor directly? What functions of the waterworks will the remote operator be unable to monitor directly? Will the remote operator have access to live video of operations and, if so, what portions of the waterworks will be shown via live video? For those functions that the remote operator will be unable to monitor directly, who will monitor those functions, how will they monitor them, and how will the remote operator be informed of the on-site monitoring? [Click or tap here to enter text.](#)

7. Identify the operator class of all personnel who are proposed to serve as remote operators at the waterworks, including whether the operator is an employee of the owner of the waterworks or an independent contractor. [Click or tap here to enter text.](#)
8. Identify the days/hours: (1) when the waterworks will satisfy the operator attendance requirement through remote monitoring by a properly licensed operator, and (2) when the waterworks will satisfy the operator attendance requirement through on-site attendance by a properly licensed operator. A “properly licensed operator” is a licensed waterworks operator who holds a license that is of the same class, or a higher class, as the waterworks. [Click or tap here to enter text.](#)
9. Identify any properly licensed operators who will be able to respond to the waterworks in-person, if necessary, during periods of remote operation. [Click or tap here to enter text.](#)
10. Identify waterworks staff positions that will be on-site during periods of remote operation and their duties and responsibilities when the properly licensed operator is operating the waterworks remotely. [Click or tap here to enter text.](#)
11. Will the remote operator be remotely monitoring any other waterworks during days when the remote operator is monitoring the waterworks under this Application? If so, identify the other waterworks, including its classification, and identify the remote operator’s schedule for monitoring each waterworks. [Click or tap here to enter text.](#)
12. Will the remote operator have access to all standard operating procedures, design documents, guides, manuals, or other documentation that an operator who is on-site at the waterworks would normally rely upon during the course of their duties? If not, what documents will the remote operator be unable to access? How will the remote operator have access to these documents? Will the remote operator have access to these documents during any period of power loss at the waterworks or at the remote operator’s location? [Click or tap here to enter text.](#)
13. Identify all critical features in the pumping and treatment facilities that will be remotely monitored, have alarms, and can be operated automatically or remotely. Include a description of automatic plant shutdown controls with alarms and conditions that would trigger shutdowns, including the use of any dual or secondary alarms for critical functions. [Click or tap here to enter text.](#)
14. Describe the remote monitoring controls, alarms, and communications in place at the waterworks:
  - a. All alarm and setpoint levels for relevant parameters [Click or tap here to enter text.](#)
  - b. Piping and instrumentation diagrams including proposed instruction and controls [Click or tap here to enter text.](#)
  - c. How the remote monitoring systems will be monitored and staff assigned to monitor alarms [Click](#)

or tap here to enter text.

- d. How the remote monitoring system data will be recorded and archived Click or tap here to enter text.
- e. How the remote monitoring system data will be reviewed and analyzed to identify problems Click or tap here to enter text.
- f. Which data streams will be graphed to help visualize trends Click or tap here to enter text.
- g. Other relevant controls, alarms, or communications not covered above Click or tap here to enter text.

15. Describe the communication plan for waterworks staff in the event remote monitoring capabilities are not working, alarms become triggered, or there is an emergency or other urgent matter impacting the waterworks' operation, including the water supply. In responding, identify who will be notified of such an incident and their location, actions triggered, back-up power and communication resources, the number of operators available for system monitoring, and the circumstances when the properly licensed operator will report to the waterworks in-person to respond to an incident and the expected response time to do so. Click or tap here to enter text.

16. Cybersecurity Assessment and Cybersecurity Risk Mitigation and Response Plan (ODW is not seeking any information that if shared could potentially compromise the security of the waterworks. If the Applicant would rather provide a response through a conversation with ODW staff, please state that below.)

- a. Has a cybersecurity assessment of the planned remote operation of the waterworks been conducted in the last 12 months? If not, when will such an assessment be performed? (More information on cybersecurity issues related to waterworks, including information about cybersecurity assessments, can be found on ODW website: [www.vdh.virginia.gov/drinking-water/waterworks-cybersecurity/](http://www.vdh.virginia.gov/drinking-water/waterworks-cybersecurity/).) Click or tap here to enter text.
- b. Have all recommendations of the cybersecurity assessment been implemented? If not, when will they be implemented? Click or tap here to enter text.
- c. Will cybersecurity needs and vulnerabilities be reassessed at least annually and the risk mitigation and response plan updated accordingly? Click or tap here to enter text.
- d. What practices and procedures are in place to ensure that cybersecurity is maintained on an ongoing basis? Click or tap here to enter text.
- e. Has a Cybersecurity Risk Mitigation and Response Plan been developed specific to remote monitoring? If not, when will it be developed? Click or tap here to enter text.
- f. Has a Cybersecurity Risk Mitigation and Response Plan been implemented? If not, when will it be implemented? Click or tap here to enter text.

17. Describe the processes and procedures that are in place to ensure that the waterworks complies with 12VAC5-590-725 of the Waterworks Regulations. Click or tap here to enter text.

18. Has the waterworks' emergency management plan been updated to reflect remote monitoring by a properly licensed operator? If not, when will the emergency management plan be updated? Click or tap here to enter text.

19. Describe instrument calibration processes and schedules that have been implemented to ensure accurate data is provided to the remote operator. Click or tap here to enter text.

20. Describe the maintenance schedule for the remote monitoring system, including the personnel and resources to keep the system monitoring as designed and protecting against disruption. Click or tap here to enter text.
21. Describe the schedule and process for testing remote monitoring equipment, including related to testing alarms and shutdowns, to confirm that it is working as designed. Click or tap here to enter text.
22. What are the capacities of treatment chemical tanks at the waterworks and the needed frequency of refilling? How will the level of treatment chemical tanks be remotely monitored, and how will treatment chemical tanks be refilled during periods of remote operation? Click or tap here to enter text.
23. Describe the procedures in place to ensure that finished water storage will meet system demands and contact time requirements when normal treatment is interrupted during a period of remote operation. Click or tap here to enter text.
24. Describe any emergency power provided at the treatment plant and at the remote monitoring location.
  - a. Will the remote monitoring equipment be operable during a power outage at either the waterworks or where the remote operator is located? Click or tap here to enter text.
  - b. Will a power outage at either the waterworks or the remote monitoring location prevent the remote operator from observing the waterworks' operations or impact communication between the remote operator and on-site staff? Explain how a power outage will or will not impact remote operations. Click or tap here to enter text.
  - c. Is the equipment provided with Uninterruptable Power Supplies? Can the emergency power system power the entire waterworks? If not, what equipment will be offline when the waterworks is running on emergency power? What functions, operations, or information regarding the waterworks will the remote operator be unable to monitor when the waterworks is operating on emergency power? Click or tap here to enter text.
25. Is there anything else that ODW needs to know about the proposed remote monitoring plan in order to decide whether to approve the Application? Click or tap here to enter text.

Based on the responses to the above questions, ODW may contact the preferred contact identified above to ask questions about the remote monitoring plan and gain additional information.

Submission of incomplete information in this application may delay ODW in deciding whether to approve the Application or may result in ODW denying the Application request.

## **APPLICATION CERTIFICATION**

The Owner, or the undersigned representative of the Owner, certifies that they are a responsible official authorized to submit this Application on behalf of the Owner.

The Owner, or undersigned representative of the Owner, certifies that the information contained herein and any documents provided in support of this Application are true, correct, and complete to the best of

their knowledge and belief.

The Owner agrees to clarify or supplement information pertaining to this application upon request by the Office of Drinking Water. The Owner recognizes that the information contained herein may be subject to the Virginia Freedom of Information Act.

The Owner agrees that if the Remote Monitoring Plan Application is approved by the Virginia Department of Health, the Owner will ensure that the approved Remote Monitoring Plan is followed. The Owner agrees that if modifications are needed to the Remote Monitoring Plan, the Owner will notify the Virginia Department of Health and seek approval for any proposed modifications in order to continue to receive credit for operator attendance by remote monitoring.

**Owner or Representative of the Owner:**

NAME: Click or tap here to enter text.

TITLE: Click or tap here to enter text.

SIGNATURE: \_\_\_\_\_ DATE: Click or tap to enter a date.

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VDH Office of Drinking Water  
Waterworks Licensed Operator Waiver Policy

I. Background

The Code of Virginia § 32.1-172.1.A (the Code) establishes a statutory obligation for a classified waterworks to employ or contract with an operator holding a current waterworks operator license that is of at least the same class as the waterworks. The Waterworks Regulations, at 12VAC5-590-461, also establish operator attendance requirements.

Code § 32.1-172.1.A also establishes a temporary waiver of the operator requirement when there is an unexpected vacancy in the appropriately classed licensed operator position and certain specific requirements are met by the waterworks. Death, extended illness, firing for cause, resignation, or “similar cause” all qualify as an “unexpected vacancy.”

In the case of an unexpected vacancy under the Code, the owner of the waterworks (Owner) is required to notify the Virginia Department of Health (VDH) “promptly and in accordance with any specific timeframe directed by the” State Board of Health which, per 12VAC5-590-461.B of the Waterworks Regulations, is “as soon as practicable but no later than 24 hours” after the waterworks is without the required operator.

If the Owner provides timely notice of the unexpected vacancy, and the nature of the vacancy meets the statutory definition of “unexpected,” then VDH waives the licensed operator requirement. To continue to receive the benefit of the waiver, the Owner must: (1) within five days of the vacancy, notify VDH in writing of its designation of another licensed operator who will be responsible for interim operations; (2) within 10 days of the vacancy, notify VDH in writing of the Owner’s plan to hire a replacement operator who holds the required class of license; (3) implement the hiring plan diligently; and (4) provide VDH with a monthly report on the implementation and progress of the hiring plan.

The Code allows VDH to revoke the temporary waiver if the Owner fails to meet any of the four steps required by the statute or if VDH “finds that continued operation pursuant to the waiver presents a public health threat due to statutory, regulatory, or permit violations.”

II. Purpose

VDH establishes this Waterworks Licensed Operator Waiver Policy (the Policy) to establish how VDH’s Office of Drinking Water (ODW) will: (1) review circumstances where an Owner may be eligible for a waiver of the licensed operator requirement; (2) determine whether the statutory requirements for the waiver are met; and (3) determine whether revocation of a waiver is appropriate.

III. Waiver Request Intake

An Owner must notify ODW promptly, and within 24 hours pursuant to 12VAC5-590-461.B of the Waterworks Regulations, of an unexpected vacancy causing the waterworks to be



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unable to meet the licensed operator requirement. If the Owner provides this notice then the waiver of the licensed operator requirement goes into effect.

The ODW field office responsible for the locality in which the waterworks is located makes the initial determination as to whether the Owner has satisfied all statutory obligations to receive the benefit of the temporary waiver of the licensed operator requirement. The field office director identifies who within the field office is chiefly responsible for making the initial determination of eligibility for this waiver. The assigned member of field office staff completes the Temporary Waiver of Operator Attendance Review Sheet (Review Sheet), a copy of which is attached.

Before informing the Owner of any decision regarding a licensed operator waiver, the field office informs the Director of the Division of Compliance, Enforcement, and Policy (CEP) about the request and provides all supporting documentation. CEP is responsible for ensuring consistent application of the Code's requirements between field offices.

#### IV. Waiver Review

##### A. Timely Notice

In deciding whether a temporary licensed operator waiver must be granted, ODW first determines whether the Owner provided ODW with timely notice of the vacancy. The Owner must provide ODW with notice within 24 hours. The Owner may provide notice either orally or in writing. The ODW field office staff member who receives the initial communication from the Owner asks the Owner for the date and time that notice of the vacancy was first provided by the former operator. In order to determine whether notice was provided timely, the responsible field office staff member may ask the Owner to provide documentation establishing the date and time when the vacancy occurred.

##### B. Unexpected Vacancy

The Code states that an unexpected vacancy includes the operator position becoming vacant due to death, extended illness, firing for cause, resignation, "or similar cause." The use of the words "vacated" and "vacancy" in the Code indicate that the licensed operator position must no longer be filled for the temporary waiver to potentially apply. An operator position is not considered to be vacant if the Owner is not seeking to hire a new licensed operator of the appropriate class to fill the position.

In considering whether a particular vacancy fits within the term "similar cause," ODW analyzes whether the reason for the waterworks' vacancy is similar to the reasons for an unexpected vacancy specifically set forth in the statute. In doing so, ODW should consider whether the vacancy was in some manner unexpected and could not have been anticipated, as opposed to something that could have been planned for, such as the retirement of a licensed operator for which significant notice was provided.

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A waterworks might require multiple licensed operators of a particular class in order to cover a waterworks' hours of operation. While a waterworks that requires multiple sufficiently licensed operators may still have some properly licensed operators despite having a vacancy, the Owner would still be eligible for the licensed operator waiver if all requirements are met and an unexpected vacancy causes the waterworks to be unable to meet the operator attendance requirement.

### C. Initial Granting of the Waiver

If the Owner provides timely notice to ODW of an unexpected licensed operator vacancy, VDH grants a waiver from the licensed operator requirement. To avoid any misunderstanding on the part of the Owner regarding ongoing requirements to continue to receive the benefit of the temporary waiver, the ODW field office confirms in writing that the Owner qualifies for the waiver and directs the owner to Code § 32.1-172.1.A. A template letter providing notification of the requirements to receive the ongoing benefit of the waiver is attached. The field office can also send the template letter as an email.

### D. Continued Benefit of the Waiver

As explained in further detail below, to continue to receive a waiver from the licensed operator requirement, the Owner must: (1) timely designate an interim operator in writing; (2) timely submit a written hiring plan to ODW; (3) diligently implement the hiring plan; and (4) submit monthly reports to ODW explaining the Owner's progress in implementing the hiring plan.

#### i. Designation of an Interim Operator

The Owner must provide ODW with a written designation of an operator holding an operator's license who will be responsible for interim operations until the Owner fills the vacancy with an operator holding a license of the appropriate class. The Owner must provide this written designation to ODW within five days of the vacancy. The ODW field office reviews documentation regarding the date of the vacancy to determine whether the Owner satisfies this requirement.

#### ii. Hiring Plan Submission

The Owner must provide ODW with the Owner's plan to hire a properly licensed operator to fill the vacant operator position within 10 days of the vacancy. The ODW field office reviews the submission to confirm it states a plan to hire a properly licensed operator to fill the vacancy. The field office's review of the hiring plan is focused on whether the Owner has made a good faith effort to state a hiring plan that is reasonably calculated to fill the vacancy. Additionally, the field office reviews documentation regarding the date of the vacancy to determine whether the Owner timely submitted the written hiring plan.

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iii. Hiring Plan Implementation and Monthly Report

The Owner must implement the hiring plan diligently, meaning that the Owner is constantly working to hire an operator pursuant to the hiring plan, and provide a monthly report to ODW regarding the implementation and progress of the Owner carrying out the submitted hiring plan. The Owner complies with this requirement if they submit the required report at any point during every month until the vacancy is filled and if the report shows continued efforts to fill the vacancy in accordance with the hiring plan.

The ODW field office tracks whether the monthly report has been received. The field office also reviews the monthly report to determine if the Owner is diligently implementing the hiring plan. The field office may ask for more information, including documentation, from the Owner with respect to efforts to hire an operator to determine whether the hiring plan is being implemented diligently.

E. Determination of Failure to Satisfy Requirements for Continued Benefit of the Waiver

The ODW field office notifies the Director of CEP, including providing a completed Review Sheet, if the field office determines that the Owner failed to meet any of the requirements in Section D.

Upon notice from the field office, CEP reviews the Review Sheet, including all supporting documentation, confers with the field office as needed, and determines whether the Owner has failed to comply with the requirements to continue to receive a temporary waiver from the licensed operator requirement. CEP informs the field director of CEP's determination, and the field director discusses the determination with CEP as needed. The field director sends a letter notifying the Owner that the temporary waiver has been revoked due to the Owner's failure to comply with the statutory requirements. A template letter notifying the Owner of the revocation of the waiver is attached.

V. Authority to Revoke a Temporary Waiver of the Operator Requirement

If ODW identifies any violation of statute, regulation, or permit condition, whether occurring prior to the unexpected vacancy of the licensed operator position or after the vacancy has occurred, the ODW field office examines the violation to determine whether the waterworks operating under a temporary waiver of the licensed operator requirement is a public health threat. The field office's analysis focuses on whether the violation, and the associated public health threat, is unlikely to be resolved without the waterworks having a properly licensed operator.

The field office confers with CEP before any letter is sent to the Owner notifying them that the temporary waiver has been revoked. A template letter informing an Owner that a temporary waiver is revoked is attached.

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VI. Right to an Administrative Hearing

If ODW denies or revokes a temporary waiver, the Owner has a right to an administrative proceeding pursuant to the Administrative Process Act and the Waterworks Regulations.

VII. Other Options to Address Operator Attendance Challenges

Code of Virginia § 32.1-172.1.C authorizes VDH to reduce operator attendance requirements on a case-by-case basis for all classified waterworks. Consequently, if a waterworks does not qualify for the licensed operator waiver, ODW can consider approving a reduction in the operator attendance requirement for the waterworks.

# Compliance, Enforcement & Policy Update

September 18, 2024

Grant E. Kronenberg  
ODW Director of Division of  
Compliance, Enforcement & Policy

# Compliance, Enforcement & Policy Update

- The July Enforcement Targeting Tool (ETT) report - 11 “serious violators” under EPA’s scoring system. Up from 9 in the April ETT report.
- Seven serious violators were holdovers from the April ETT. Five of those have returned to full compliance and another system is nearly back in compliance.
- Of the four new serious violators, one has returned to full compliance.

# Compliance, Enforcement & Policy Update

- 12 Warning Letters sent from the July ETT report. Over 50% decrease from April.
- Eight consent orders entered into so far this year.
- One Special Order issued by the Commissioner due to operation without a permit.

# Lead and Copper Rule Revisions Update Waterworks Advisory Committee September 18, 2024

Robert D. Edelman, PE  
Director, Division of Technical Services





# ODW LCRR Activities

## Accomplishments

- Technical Assistance Provider (TruePani) + others
- Signed Primacy Extension Agreement
- GEC SWIFT Submittals and related training deployed
- Guidance, recordings, slide decks on website
- Webinar: What's new and different in the LCRI?
- August 22 Webinar on October 16, 2024, LCRR Requirements
- Inventory submittal review materials and business process

## Next steps

- FAQs from August 22 Webinar
- Review service line inventories and issue acceptance letters
- 90<sup>th</sup> percentile determinations for June - September LCR tap sampling
- Informational Notices (SL inventory violations)
- Tracking Consumer Notifications of lead, GRR, unknown material SLs
- LCR Committee is meeting every two weeks

# Service Line Inventories Submitted So Far

300 Inventories Submitted

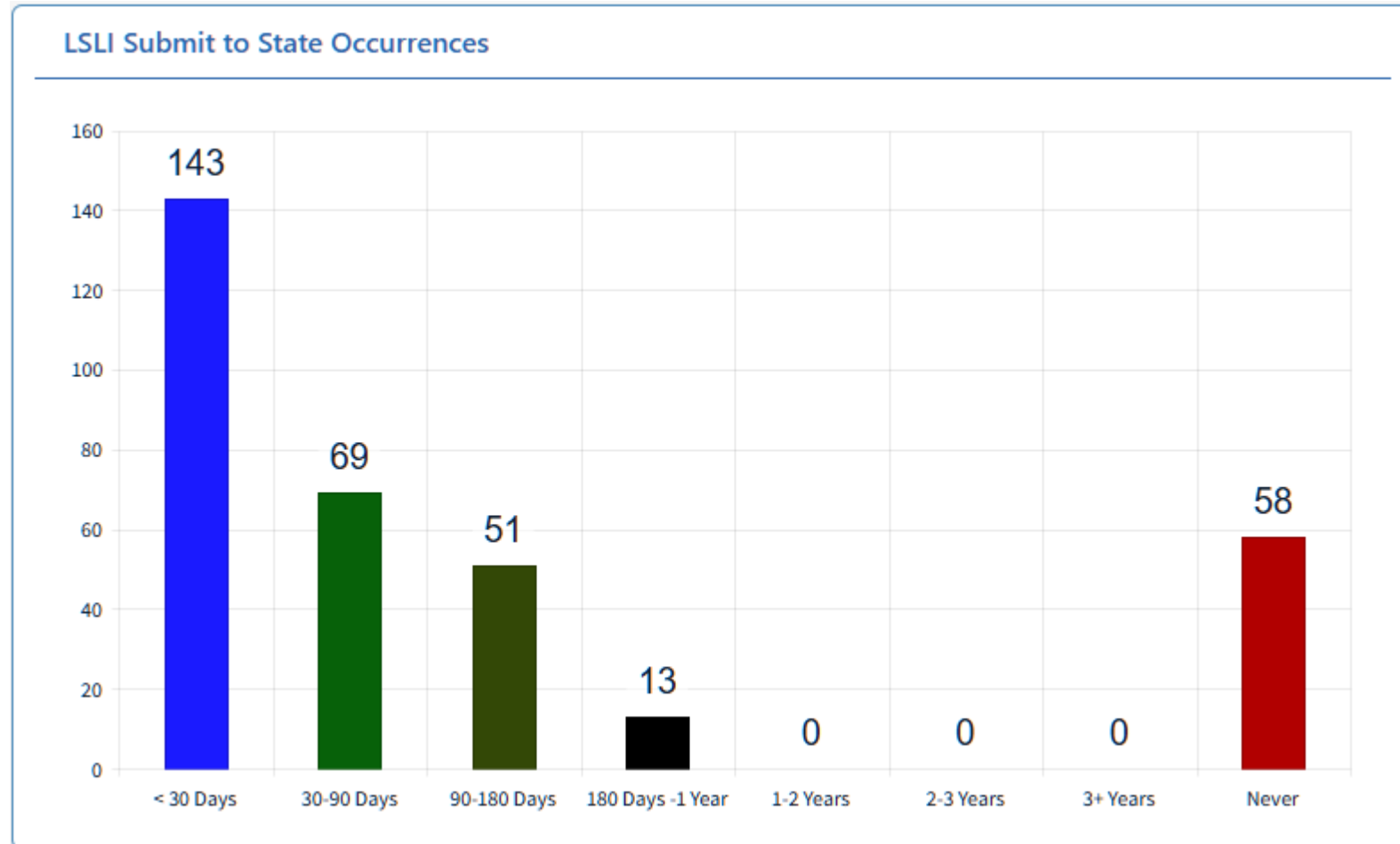
55 In Progress

4 LSLs

3371 GRR

89830 Non-Lead

8933 Unknown



# LCRR/LCRI Update – What becomes effective on October 16, 2024

1. Initial Service Line Inventory - Due October 16, 2024
  - Must be made publicly available; for systems serving 50,000 and more - available online
2. Notification of Service Line Material and associated reporting
3. Tier 1 public notification for action level exceedance (15 ppb AL until LCRI Compliance Date) and associated reporting
4. Revised health effects language
5. Consumer Confidence Reports

# LCRR/LCRI Update – What’s does not change on October 16, 2024 – LCRR Items

1. Lead action level (10 ppb)
2. Trigger level and associated requirements
3. Changes to sample tiers and sample site selection
4. 5<sup>th</sup> Liter samples in homes with LSLs
5. Tap sampling frequency
6. WQPs and monitoring
7. Corrosion Control Treatment Options
8. Sanitary surveys must review Corrosion Control Treatment data
9. Find and Fix
10. Mandatory LSL replacement requirements
11. Lead Service Line Replacement Plans & Lead Mitigation (Filters)
12. Small system flexibility options
13. Consumer notifications of work that could disturb LSLs
14. School and child day care sampling program, including list of facilities

# Submitting the Service Line Inventory

You are not done until you upload your service line inventory through SWIFT Submittals and click **SUBMIT TO STATE**.

ODW rolled out SWIFT Submittals:

- ODW staff received training December 14
- ODW provided training webinars:
  - February 8 - Community Waterworks
  - February 13 - NTNC Waterworks
- Recordings and slide decks on [LCRR Guidance Webpage](#)
- Quick Start Guide and additional FAQs posted on the [LCRR Guidance Webpage](#)

Recommendations:

- Get user credentials now (SWIFT Submittals)
- Start with small chunks of inventory data (learn how to use tools)
- Upload inventory in chunks (no need to upload entire inventory in one file)

# Making your inventory publicly available

40 CFR 141.84 (a)(8) and (9)

The service line materials inventory must be publicly accessible.

- Include a location identifier for each LSL and GRR.

Options include:

- Printed service line maps
- Printed tabular data
- Information in water utility mailings or newsletters
- Information available at the water system's office

Water systems serving greater than 50,000 persons must make the publicly accessible inventory available online.

When a water system has no lead, galvanized requiring replacement, or lead status unknown service lines in its inventory, it may use a written statement, in lieu of the inventory, declaring that the distribution system has no lead service lines or galvanized requiring replacement service lines. The statement must include a general description of the methods used to make this determination.

# Notification of Service Line Materials

40 CFR 141.85(e)

## **Notification of known or potential service line containing lead:**

- Lead Service Line
- Galvanized Requiring Replacement (GRR) Service Line
- Unknown Material Service Line

**Due:** within 30 days of completion of the inventory (initial), no later than November 15, 2024

**Frequency:** Annual thereafter

**New customer:** At the time of service initiation

**Templates:** On LCRR Guidance Webpage

**Deliver to:** persons served at the service connection.

**Delivery Method:** Mail or another method approved by the State

**Community Waterworks:** Mail, hand delivery

**NTNC Waterworks:** Mail, hand delivery, posting

All other methods are approved on a case-by-case basis

**Delivery Certification Statement:** Available on ODW LCRR Guidance webpage

**Due:** 30 days following completion and no later than July 1

**Frequency:** Annual

**Attach:** Copies of notifications and information materials

# Templates Available

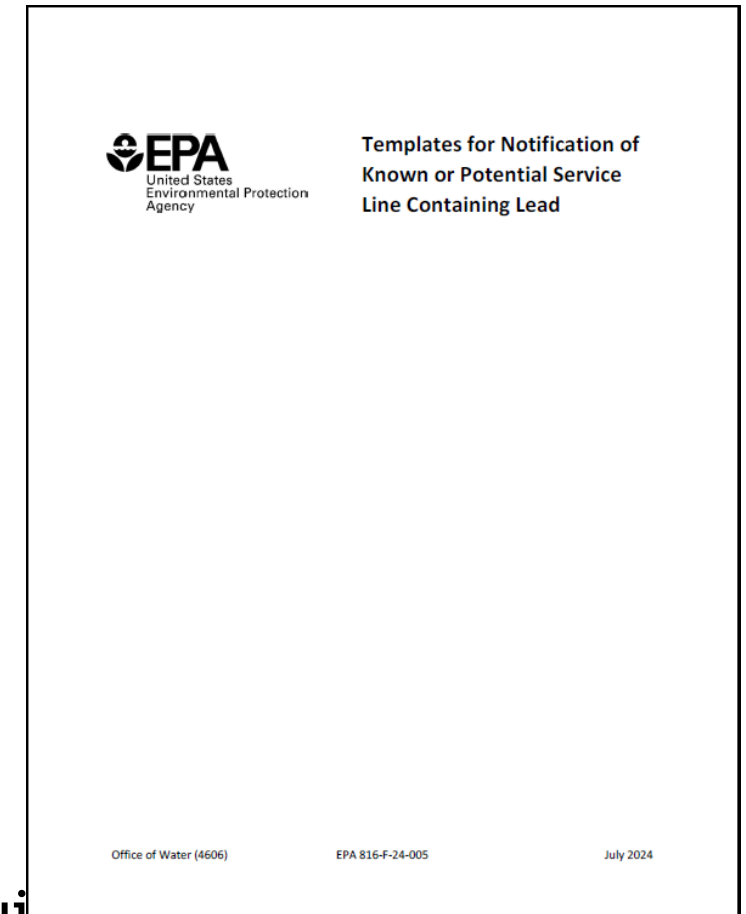
EPA Templates

VDH Templates

- Links on VDH LCRR Guidance Webpage
- Templates don't need ODW approval
- Deviations from templates need ODW approval

[VDH ODW LCRR Guidance Webpage](https://www.vdh.virginia.gov/drinking-water/lcrr-guidance/)

<https://www.vdh.virginia.gov/drinking-water/lcrr-guidance/>





# Harmful Algal Bloom (HAB) Policy Update

## Background

Chapter 4 of ODW's Source Water Manual

- WTR-2019-01 Source Water Manual 11/19/2019 - on Town Hall

2021 - HAB event on North Fork Shenandoah River

- VDH Toxicology staff provided health advisory levels for two additional cyanotoxins: Anatoxin-a and Saxitoxin

2022 - As a result of lessons learned, Emergency Services Coordinator advanced a revised draft of Chapter 4

2024 - Potential HAB event on North Fork Shenandoah River

- Highlights that Chapter 4 is a draft
- ODW is moving forward with updating Chapter 4

# HAB Policy Update

## HAB Policy Overview

Step 1 - Monitor for algal bloom

Step 2 - Monitor raw water for cyanotoxins

Step 3 - Monitor finished water for cyanotoxins

Step 4 - Consider issuing a Do Not Drink Notice

# HAB Policy Update

## Current Policy

Toxin	Health advisory levels for children less than 6 years old	Health advisory levels for children 6 years old through adults
Microcystins	0.3 µg/L	1.6 µg/L
Cylindrospermopsin	0.7 µg/L	3.0 µg/L

## Proposed Policy

Toxin	Health Advisory Level (10-day)
Microcystins	0.3 µg/L
Cylindrospermopsin	0.7 µg/L
Anatoxin-a	0.4 µg/L
Saxitoxin	0.2 µg/L

# HAB Policy Update

## Possible Next Steps:

1. Convene a subgroup of stakeholders to review policy in detail - proposed changes
2. Toxicologist presentation of analysis for:
  - Anatoxin-a
  - Saxitoxin
3. Compare to other states
4. Report back to WAC

# Questions?



## **Chapter 4 – Harmful Algal Bloom Monitoring and Response**

### **Summary**

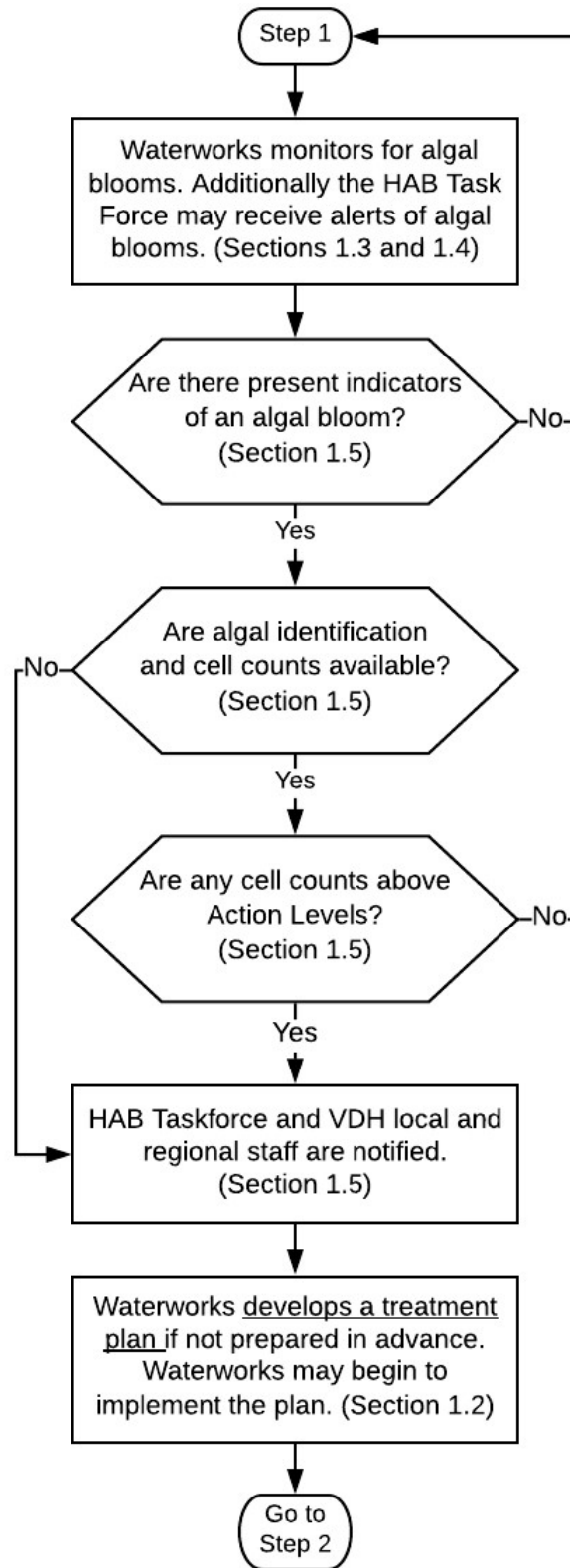
This chapter is an informational resource for ODW staff and waterworks owners and operators. It includes recommendations for waterworks using surface water to assess, monitor for, and respond to a harmful algal bloom (HAB). It also includes directions for ODW staff to support waterworks' efforts to detect and respond to HABs. This chapter recommends coordination between waterworks, ODW, and Virginia's HAB Task Force, and provides information about cyanotoxin analysis, waterworks operational changes, coordination within VDH and external state agencies, and public notification.

ODW encourages waterworks to develop site-specific plans to assess, monitor for, and respond to a HAB based on the source water history of algae blooms and the needs and treatment capabilities of the waterworks.

Although this chapter includes recommendations for managing cyanotoxin issues in raw and potable water, the recommendations may not be appropriate for all situations and alternative approaches may be applicable.

Mention of trade names or commercial products does not constitute a VDH-ODW endorsement or recommendation for use.

## 1. Monitor for Algae



Flow Chart 1. *Recommended Process for Step 1: Monitor for Algae.*

## 1.1. Introduction

Algal blooms are overgrowths of algae in a saltwater, brackish water, or freshwater environment. In fresh water, a bloom that consists of “blue-green algae” is made of cyanobacteria, a class of photosynthetic bacteria. Cyanobacteria have the ability to produce cyanotoxins, which can affect human health. Certain conditions, such as high concentration of nutrients in warm water, can allow a cyanobacterial bloom, also known as a harmful algal bloom (HAB), to form.

The EPA has not established a standard in the National Primary Drinking Water Regulations for cyanotoxins, but has issued health advisories on two cyanobacterial toxins in drinking water: microcystins and cylindrospermopsin. Health advisories provide information on the chemical and physical properties, occurrence and exposure, health effects, quantification of toxicological effects, and other regulatory standards, analytical methods, and treatment technology for drinking water contaminants. Health advisories describe concentrations of drinking water contaminants at which adverse health effects are not anticipated to occur over specific exposure durations (e.g., one-day, ten-days, several years, and a lifetime). Health advisories also contain a margin of safety to address uncertainties. Health advisories serve as informal technical guidance to assist federal, state and local officials, as well as managers of public or community water systems in protecting public health when emergency spills or contamination situations occur.

Due to the risks that a HAB can pose to humans and the potential for a HAB to form in a waterworks’ surface water source, ODW has developed guidance to provide recommendations for waterworks using surface water to assess, monitor for, and respond to a HAB. It also includes direction for ODW staff to support waterworks’ efforts to detect and respond to HABs.

## 1.2. HAB Planning and Prevention

Advanced planning for a HAB may allow a waterworks to prevent a cyanotoxin health advisory exceedance, or potentially prevent a HAB from forming. The EPA has developed a cyanotoxin management plan template and example plans that are available for use by waterworks to develop a plan to prevent or respond to HABs. A link to this template is in section 5 of this chapter. Waterworks may choose to implement source water protection or source water treatment strategies in an effort to reduce the amount of cyanotoxins present in the source water.

### Source Water Protection

Source water protection measures that reduce the nitrogen and phosphorus load on a watershed have the potential to decrease the frequency and severity of HABs. The following are three categories of source water protection measures that may reduce nutrient loading:

Public education – This can include informing residents of the need for best practices that they can perform to reduce nutrient pollution. Information about these best practices are on the EPA’s “Nutrient Pollution, What You Can Do” webpage located at <https://www.epa.gov/nutrientpollution/what-you-can-do>.



Agricultural and stormwater Best Management Practices (BMP)- These can include a wide variety of practices and constructed facilities such as detention and retention ponds to settle out nutrients, or conservation buffers, which are strips of vegetation along stream banks to remove nutrients before they reach the water.

Wastewater improvements – These can include improvements intended to reduce combined sewer overflows, or to improve nutrient removal at wastewater treatment plants.

ODW can aid waterworks serving total populations less than or equal to 50,000 in developing and implementing SWP Plans through our source water protection contractors (private consultants contracted by ODW to provide assistance). ODW can also provide direct technical assistance (or aid the field office in providing direct technical assistance) to waterworks serving a total population of greater than 50,000. For more information on these programs, see ODW’s Source Water Protection webpage: <http://www.vdh.virginia.gov/drinking-water/source-waterprograms/source-water-protection-assistance-funding-opportunities/>

For general instructions on source water protection planning, ODW recommends “AWWA G30014 Source Water Protection”. ODW staff can access this document through a link in section 5.

### Source Water Treatment

There are a wide variety of methods available to limit the growth of algae or remove algae from the source water. The waterworks must exercise caution in selecting a source water treatment method. Some treatment methods, such as algacides and ultrasound, have the potential to release cyanotoxins from the cyanobacterial cells, which makes the removal of the toxins at the water treatment plant much more difficult. For further information on available source water treatment methods see the resources in section 5 of this chapter.

### Water Treatment Optimization

ODW recommends that all surface water treatment plants assess their capability to remove or inactivate cyanotoxins and develop a strategy or treatment plan to optimize treatment for cyanotoxin removal. Owners may choose to implement some optimization strategies following the identification of an algal bloom, following detection of cyanotoxins, or throughout the bloom season as a precautionary measure.

The following documents provide information on optimization of water treatment for cyanotoxin removal, and links to this information are in section 5 of this chapter:

- Water Treatment Optimization for Cyanotoxins, Section 2.5 (EPA, 2016)
- Generalized Cyanotoxin Treatment Optimization Recommendations (Ohio EPA, 2016)
- Algae: Source to Treatment, AWWA Manual M57, Chapter 14 (AWWA, 2010)

### 1.3. State Monitoring Programs (HAB Task Force)

The Virginia Department of Health (VDH) works in cooperation with the Virginia Department of Environmental Quality (DEQ), Old Dominion University, and the Virginia Institute of Marine Science at the College of William and Mary to monitor Virginia's waters for harmful algae and to prevent illness associated with these organisms. This group is the Virginia HAB Task Force (HAB Task Force) and was formed in 1997. These primary support members coordinate and conduct surveillance in shellfish growing areas, estuaries, as well as coastal beaches and inland freshwater lakes and rivers. This group communicates routinely with a large group of secondary support members throughout the state to facilitate awareness, discussions, and to share research findings in order to protect human health. VDH has representatives on the HAB Task Force from the Office of Environmental Health Services (OEHS) and ODW. The HAB Task Force member information is in the "Commonwealth of Virginia Harmful Algal Bloom Response Plan" located at [http://www.vdh.virginia.gov/content/uploads/sites/12/2018/05/Virginia\\_HAB\\_ResponsePlan\\_Final\\_2018.pdf](http://www.vdh.virginia.gov/content/uploads/sites/12/2018/05/Virginia_HAB_ResponsePlan_Final_2018.pdf).

DEQ and OEHS have programs that involve sampling specific to fresh water bodies for cyanotoxins or cyanobacteria. Most of these freshwater bodies do not serve as drinking water supplies. Additionally, the OEHS monitors the HAB Hotline (1-888-238-6154) and operates the Harmful Algal Bloom Report Form (<http://www.vdh.virginia.gov/environmentalepidemiology/harmful-algal-bloom-online-report-form/>), a service that allows community members to report an algae bloom, fish kills, and suspected HAB-related health effects. When ODW is made aware of an algal bloom related to source water utilized by a waterworks, ODW field staff complete the Harmful Algal Bloom Report Form, or request that the waterworks complete the Harmful Algal Bloom Report Form.

When the HAB Task Force becomes aware of a potentially harmful algae bloom in a drinking water supply, the ODW HAB Task Force member shares this information with the respective ODW field office. The ODW field office contacts the potentially impacted waterworks to inform them of the condition and recommended response.

### 1.4. Source Water Observation and Monitoring

EPA guidelines referenced in section 5 of this chapter recommend that waterworks owners and operators that use surface water sources monitor for the following algal bloom indicators throughout the algal bloom season, typically March – November in Virginia:

Visual Indicators – Waterworks owners and operators should perform visual inspections of the water source on at least a twice per week basis during the season in which blooms typically occur. More frequent inspections may be called for during the hottest months of the year, or during hot sunny weather following a storm. Visual indicators of a bloom can include reduced water clarity, discoloration, or surface scum formation. Surface scum is more visible early in the morning when most HAB species are near the water surface. Note that some HAB species remain

distributed throughout the water column and do not produce a surface scum. Reference information for visually identifying a bloom is in section 5 of this chapter.

Other Indicators - Operators should closely watch the following parameters during algae bloom season:

- Raw water pH - The most reliable algal bloom indicator routinely monitored by waterworks is raw water pH. During an algal bloom, pH increases during daylight hours as algae grow and consume dissolved CO<sub>2</sub> from the water. Decreases in pH may also occur at night.
- Raw water odor – Most species of HAB can produce earthy or musty odors.
- Raw water turbidity, decreased filter run times, need for increased coagulant dose, and increased chlorine demand – These parameters can indicate an algae bloom, but are of less use because other suspended matter in the water may significantly affect them.

When possible, monitoring of the following parameters is also useful for detecting an algae bloom:

- Algae identification and counts
- Algal bio volumes
- Chlorophyll-a and phycocyanin concentrations

### 1.5. Is an Algal Bloom Occurring?

The determination of when to initiate raw water cyanotoxin monitoring is complicated by the variability of HAB species and further hampered by the inability of many Virginia waterworks to identify and count algae at the water treatment plant.

When observing visual or other indicators of an algal bloom:

Cyanobacteria identification and counts are useful parameters to evaluate the risk imposed by an algal bloom quickly. The World Health Organization has developed the following Cyanobacteria Cell Count Action Levels (cite source: [WHO document](#)) that trigger toxin sampling for raw water:

Table 1: Cyanobacteria Cell Count Action Levels

Species	Action Level
Microcystis spp.	2,000 cells/mL
Combination of all potentially toxic cyanobacteria species present	15,000 cells/mL

When cyanobacteria identification and counts are not available or they indicate a risk of cyanotoxin contamination, ODW recommends proceeding to section 2: “Monitor Raw Water”.

If the waterworks reports indicators of an algal bloom to ODW, the ODW field office director, or designee, will inform the local health director(s) that ODW received reports of indicators of an algal bloom, and may provide a brief description of the actions that will be taken to respond to the bloom. Additionally, ODW field staff will complete the online Harmful Algal Bloom Report Form, or request that the waterworks complete the HAB Report Form located at <http://www.vdh.virginia.gov/environmental-epidemiology/harmful-algal-bloom-online-reportform/>.

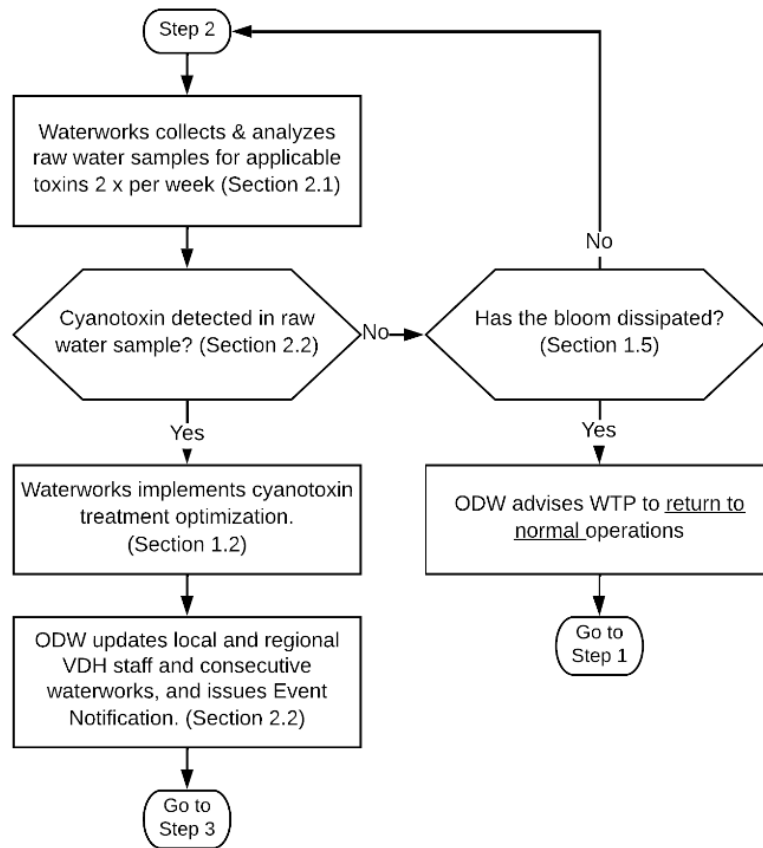
ODW field office will contact all potentially impacted waterworks and offer to coordinate with waterworks owners and operators to develop a strategy to optimize treatment for cyanotoxin removal if a cyanotoxin optimization treatment plan has not been developed as described in section 1.2.

*Caution: If the waterworks utilizes algaecides, oxidants, or other treatment methods with the potential to cause algae cell lysis (rupture of cells) prior to filtration, this may compromise the capacity of sedimentation and filtration treatment processes to remove cyanotoxins. In this case, the waterworks may choose to proceed to section 3: “Monitor Finished Water”.*

When there are no visual or other indicators of an algal bloom:

Waterworks with a history of frequent HABs may perform raw water cyanotoxin monitoring throughout the season in which blooms historically occur. Otherwise, ODW recommends that waterworks continue Step 1 - Monitor for Algae.

## 2. Monitor Raw Water



### 2.1. Raw Water Cyanotoxin Analysis

ODW recommends that waterworks run field tests or onsite laboratory analyses for detection of cyanotoxins in the raw water following the determination of a bloom as described in section 1.5. ODW field office staff may perform field test kit raw water cyanotoxin analysis or provide field kits to the water plant operators if the waterworks does not have the ability to perform the analysis.

ODW maintains Eurofins Abraxis field test kits at the following locations. In order to ensure adequate supply, test kits should be replaced as soon as the first strip is used. Test kits should also be replaced on or before the expiration date. During a HAB, ODW may wish to purchase a 20-strip kit instead of the standard 5-strip kit to ensure adequate supply.

Toxin	Quantity	Location	Colonial Scientific Model No.
Microcystins	2 5-strip kits	CO (1), AFO (1)	99-520020-5PK
Anatoxin-a	2 5-strip kits	CO (1), LFO (1)	99-520042-5PK

Cylindrospermopsis	1 5-strip kit	CO	99-520029-5PK
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When providing field kits to operators, ODW staff should remind the operator that the field tests are time and temperature-sensitive. The operator must take care to ensure that analysis of samples occurs within the required temperature range, and each step of the analysis process is accurately timed. In addition to the instructions that are provided with each test kit, the operator should use the Eurofins Abraxis Test Strip Visual Interpretation Guide (<https://abraxis.eurofins-technologies.com/media/6659/test-strip-interpretation-reference-guide-r110519.pdf>) to interpret the results.

ODW will request that operators report test result(s) to the ODW field office immediately after completing each analysis. ODW will recommend that operators submit a photograph of the test results including the test strip, type of toxin, water tested (source, raw, or finished), date, time, and interpretation, as seen in Figure 1 below. If the ODW field office receives monitoring results, staff will evaluate and record those results in the Cyanotoxin Results Recording Spreadsheet (link provided in section 5 of this chapter).

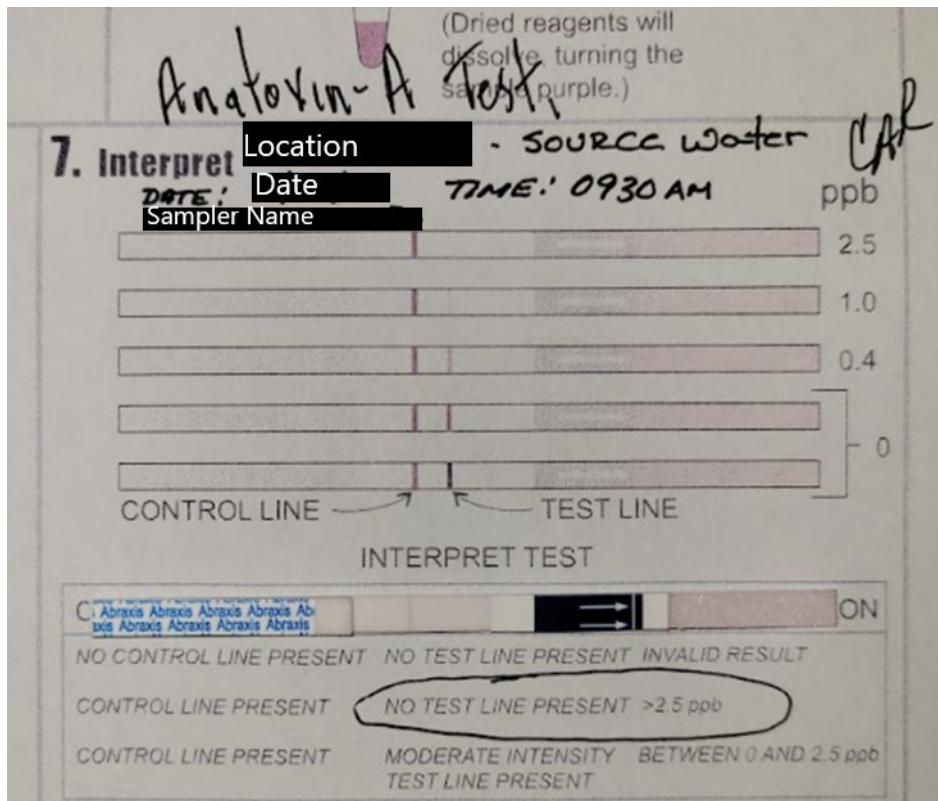


Figure 1. Example test strip photograph including test strip, toxin type, water source, date, and interpretation.

Waterworks should continue raw water cyanotoxin analysis two to three times per week until the bloom has dissipated, or a positive result triggers laboratory analysis as described in section 3

of this chapter. If ODW is providing the test kits, then the responsible ODW field office will need to order replacements through the ODW business office. Note that each field test kit contains five test strips.

## **2.2. Raw Water Cyanotoxin Analysis Results Evaluation & Communication**

### Raw water cyanotoxins below the limit of detection:

If the raw water cyanotoxin analysis results indicate cyanotoxins below the limit of detection, field office staff will recommend the waterworks owner or operator continue raw water cyanotoxin analysis two to three times per week until the bloom has dissipated or a positive result triggers laboratory analysis.

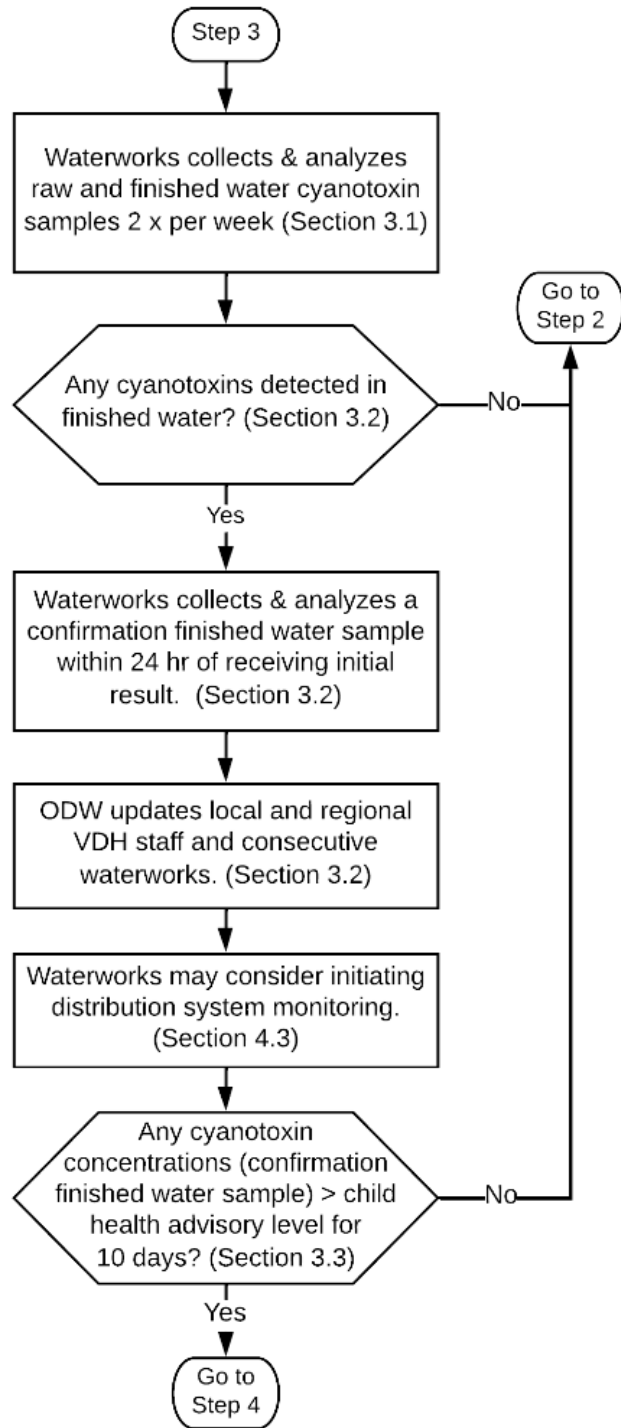
If the raw water cyanotoxin analysis results indicate a positive result, the ODW field office will:

- Recommend to the operator the collection of raw and finished water samples for cyanotoxin analysis, as described in section 3.
- Recommend implementation of cyanotoxin treatment optimization to the operator (see section 1.2).
- Update the Emergency Services Coordinator.

The Emergency Services Coordinator will:

- Update local and regional VDH staff, OEHS, and the HAB Task Force.
- If the ability of the water treatment plant to treat the cyanotoxin is unknown, issue an Event Notification in compliance with the VDH Communications Handbook.

### 3. Monitor Finished Water



Flow Chart 3. *Recommended Process for Step 3: Monitor Finished Water.*

#### **3.1. Raw and Finished Water Cyanotoxin Analysis**

Following the detection of cyanotoxins in a raw water sample as described in section 2.2, additional sampling and analysis from the raw water and finished water sample taps provide



information to assist the decision-making process. ODW will perform, or recommend that the waterworks perform, analysis for microcystins, cylindrospermopsin, anatoxin-a, and saxitoxin using laboratory enzyme-linked immunosorbent assay (ELISA), liquid chromatography– tandem mass spectrometry (LC/MS/MS), or high performance liquid chromatography–tandem mass spectrometry (HPLC/MS/MS) techniques. If the waterworks performs cyanobacteria cell counts and identification, then the analysis can be limited to the specific cyanotoxins produced by the cyanobacteria identified.

Note that laboratory cyanotoxin analysis can significantly delay a HAB response. *To ensure the timeliness of a HAB response, maintain a supply of sample bottles and dechlorination reagent, collect samples as soon as possible, contact the laboratory in advance to arrange for expedited analysis and reporting, and ship the samples via overnight delivery.*

The following list provides information on some laboratories available to waterworks for cyanotoxin analysis (as of June 2022). The Office of Drinking Water does not endorse any specific laboratory, and this list may not be exhaustive.

Table 2. Laboratories.

<b>Laboratory</b>	<b>Testing Offered</b>	<b>Standard TAT &amp; Notes</b>	<b>Contact</b>
GreenWater Laboratories (Florida)	ID & Enumeration ELISA LC-MS/MS qPCR	Usually 2-3 business days, but no more than 5 business days	386-328-0882 info@greenwaterlab.com
BSA Environmental Services (Ohio)	ID & Enumeration ELISA LC-MS/MS	ELISA – results on Friday if samples received by Thu. AM; LC-MS/MS – 7-10 business days	Dr. John Beaver 216-765-0582 j.beaver@bsaenv.com
Northeast Ohio Regional Sewer District (Ohio)	ID & Enumeration ELISA LC-MS/MS	Different pricing tiers for 1-10 business days	Cheryl Soltis-Muth 216-641-6000 x2501 soltis-muthc@neorsd.org
Eurofins Eaton Analytical (Indiana or California)	ELISA LC-MS/MS	10 business days  Uses in-house LC-MS/MS method at IN lab; can perform EPA methods in CA.	Taylor Sullivan 304-207-3467 taylor.sullivan@et.eurofinsus.com
Wayne State University (Michigan)	ELISA LC-MS/MS	2-3 weeks (48 hours with >10 samples)	Dr. Judy Westrick 313-577-2579 judy.westrick@wayne.edu
EnviroScience (Ohio)	ID & Enumeration ELISA qPCR	No LC-MS/MS	Jen Vydra 330-688-0111 jvydra@enviroscienceinc.com

In the event that the waterworks is unable to take responsibility for laboratory cyanotoxin analysis, ODW may provide for the laboratory analysis. If VDH arranges for the laboratory analyses, the following laboratories may be used.

Table 3. Laboratories.

Laboratory	Testing Offered	Standard TAT & Notes	Contact
GreenWater Laboratories (Florida)	ID & Enumeration ELISA LC-MS/MS qPCR	Usually 2-3 business days, but no more than 5 business days	386-328-0882 info@greenwaterlab.com
BSA Environmental Services (Ohio)	ID & Enumeration ELISA LC-MS/MS	ELISA – results on Friday if samples received by Thu. AM; LC-MS/MS – 7-10 business days	Dr. John Beaver 216-765-0582 j.beaver@bsaenv.com

ODW may utilize other laboratories if the laboratories can perform the required analysis in the required timespan and if the laboratories are in the eVa system. Laboratory procurement should be performed in accordance with VDH’s standard or emergency procurement procedures as appropriate. See attachments for a Statement of Work template should a quote be required.

Raw and finished water cyanotoxin analysis should continue two to three times per week until cyanotoxin results fall below the detection limit in both the raw and finished water.

### 3.2. Finished Water Cyanotoxin Analysis Results Evaluation/Confirmation Sampling & Communication

ODW requests that all laboratory analysis results be reported to the ODW field office by the waterworks. If ODW has arranged for laboratory analyses, the laboratory will report results to ODW directly and ODW will share the results with the owner. The ODW field office will evaluate and record the cyanotoxin results in the Cyanotoxin Results Recording Spreadsheet (link provided in section 5 of this chapter).

**If any cyanotoxin concentration exceeds the detection limit in the finished water, a finished water confirmation sample should be collected within 24 hours of receipt of results. ODW recommends that the confirmation sample be analyzed using LC/MS/MS or HPLC/MS/MS analysis because there appears to be potential for ELISA analysis to result in a false positive.**

LC/MS/MS analysis takes longer to perform than ELISA analysis. If operators would like to pursue LC/MS/MS analysis for confirmation sampling, they should research options in advance to ensure they can receive results within an appropriate timeframe.

The ODW field office director, or designee, will inform all consecutive waterworks and the regional public information officer of the initial sample results, and that additional follow-up steps, including the decision to issue a “Do Not Drink” notice depending on the results of confirmation sampling. The ODW field office director, or designee, will issue a precautionary Event Notification in accordance with the ODW Event Notification guidance document.

### 3.3. Confirmation Finished Water Cyanotoxin Analysis Results Evaluation

ODW has adopted the following 10-day health advisory levels based on EPA Health Advisory Levels where available, and VDH toxicologist analyses when EPA recommendations were not available. EPA designates separate advisory levels for children <6 years old and for children >6 years old and adults. To avoid public confusion, ODW does not recommend distinguishing between the health advisory levels for children < 6 years old and the health advisory levels for children > 6 years old and adults.

Table 4. VDH Cyanotoxin 10-day drinking water health advisories

Toxin	Health Advisory Level (10-day)
Microcystins	0.3 µg/L
Cylindrospermopsin	0.7 µg/L
Anatoxin-a	0.4 µg/L
Saxitoxin	0.2 µg/L

All entry point cyanotoxin results < health advisory level:

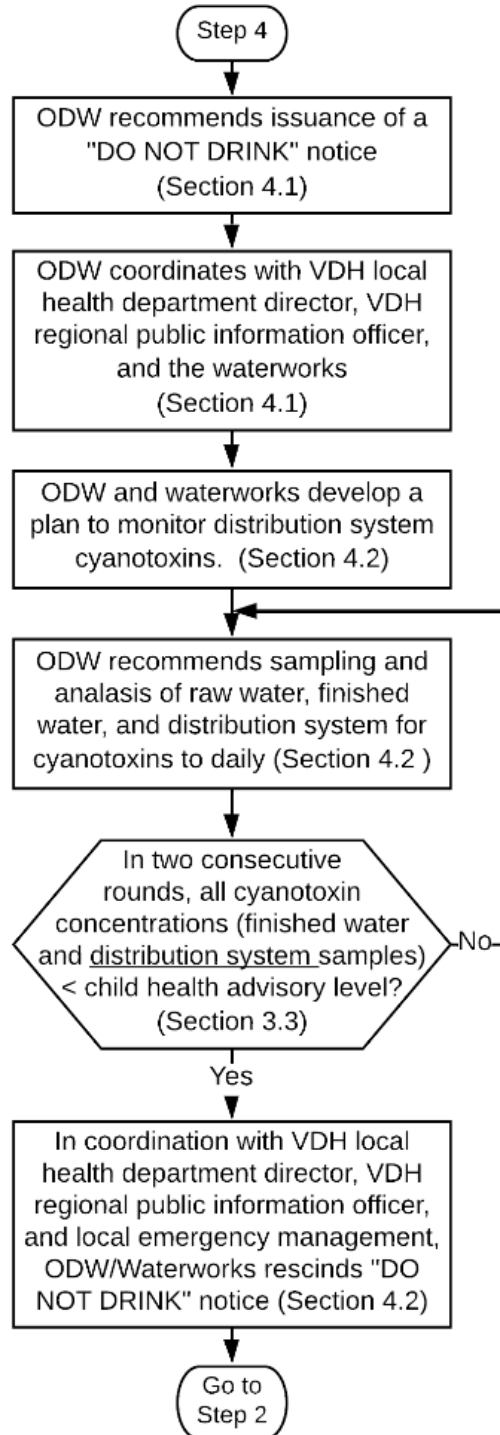
ODW will recommend continuing raw and finished water cyanotoxin analysis as described in section 3.1.

Any entry point cyanotoxin result ≥ health advisory level:

The basis of health advisories is a 10-day exposure duration; ODW will recommend that the waterworks issue a “Do Not Drink” Notice, as described in section 4, within 10 days of collection of the initial sample exceeding the child health advisory level.

NOTE: There is potential for the issuing of a recreational water advisory by the OEpi - DEE and the local health department when cyanotoxin concentrations in the finished water are below the health advisory levels. In this case, ODW and the waterworks will collaborate with OEpi – DEE to develop messaging to inform the public that measures are in place to treat and monitor their drinking water.

**4. Consider Issuing a “Do Not Drink” Notice**



Flow Chart 4. *Recommended Process for Step 4: Issue Advisory.*

#### **4.1. Consider issuance of a “Do Not Drink” Notice**

When one or more of the health advisory levels are exceeded, the ODW field office director, or designee, will recommend issuance of a Do Not Drink notice. They will further coordinate with the local health department director and the waterworks owner to recommend immediate actions to minimize risk to public health (including the issuance of a public notice.)

##### If a waterworks issues a “Do Not Drink” notice:

Although the *Waterworks Regulations* do not require owners to notify consumers of any bloom or cyanotoxin occurrence and they are not required to include detections as part of the waterworks’ Consumer Confidence Report, ODW recommends owners communicate with their consumers if cyanotoxins in finished water are confirmed in additional samples.

The ODW field office director, or designee, will contact the ODW Emergency Services Coordinator and refer to the ODW Emergency Response Plan for emergency response guidance. The ODW Emergency Services Coordinator, will issue an updated Event Notification in accordance with the ODW Event Notification guidance document.

The ODW field office director, or designee, may provide the waterworks owner with a draft “Do Not Drink” notice, for distribution by the waterworks. A HAB “Do Not Drink” notice template is available in Attachment 2 of this chapter. Adequate communication between VDH and the waterworks owner is essential to ensure that everyone stays informed prior to the issuance of an advisory.

In conjunction with the issuing of a “Do Not Drink” notice, the ODW field office director, or designee, will coordinate with the VDH regional Public Information Officer to ensure the dissemination of clear and accurate information to the public. ODW has provided a message mapping template for this purpose in Attachment 3. ODW has also provided links in section 5 of this chapter for the EPA’s Drinking Water Cyanotoxin Risk Communication Toolbox and the AWWA’s Public Communications Toolkit, which provide tools and information that may aid in this process.

#### **4.2. Distribution System Cyanotoxin Analysis**

Following the issuance of a “Do Not Drink” notice, ODW recommends monitoring the distribution system for cyanotoxins. The ODW field office should work with the waterworks owner to develop a plan to monitor and address residual cyanotoxins in the distribution system. This plan should consider water age and cyanotoxin oxidation, and determine monitoring locations and plans for flushing, if deemed necessary. The AWWA CyanoTOX© tool kit can be used to estimate the rate of cyanotoxin oxidation in the distribution system. ODW has provided a link to the tool kit in section 5 of this chapter. Note that this tool kit may overestimate cyanotoxin oxidation.

The monitoring plan should require continued cyanotoxin sampling from the finished water and from distribution system locations defined in the plan. Ideally, this sampling should occur daily while the ‘Do Not Drink’ advisory is in effect. ODW recommends LC/MS/MS or HPLC/MS/MS techniques for these samples. In addition, waterworks should consider requesting expedited sample analysis and reporting.

All distribution system cyanotoxins < health advisory levels:

After two consecutive finished water samples indicate that all cyanotoxins are below all health advisory levels and all distribution system sample results indicate that all cyanotoxins are less than the health advisory level:

- ODW field office director, or designee, will notify the waterworks, consecutive waterworks, the local health department, and local emergency management of results.
- ODW field office director, or designee, will coordinate with the waterworks, the local health department, and the regional public information officer to issue a notice to rescind the “Do Not Drink” notice. The model notice includes tap flushing instructions for the public. A “Do Not Drink” rescission notice template is available in Attachment 4 of this chapter and a message-mapping template is available in Attachment 5.
- ODW will recommend that the waterworks return to raw water monitoring as described in section 2.

## **5. Resources**

Online resources:

1. Harmful Algal Blooms webpage (VDH-OEHS) <http://www.vdh.virginia.gov/environmental-epidemiology/harmful-algal-blooms-habs/>
2. Visual Guide for Observing Blooms (CA SWAMP, 2017) [http://www.ccamp.net/Swamp/images/3/33/SOP-Visual\\_Guide\\_to\\_Observing\\_Blooms.pdf](http://www.ccamp.net/Swamp/images/3/33/SOP-Visual_Guide_to_Observing_Blooms.pdf)
3. Water Treatment Optimization for Cyanotoxins, Version 1.0 (EPA, 2016) <https://www.epa.gov/ground-water-and-drinking-water/water-treatment-optimization-cyanotoxins-document>
4. Generalized Cyanotoxin Treatment Optimization Recommendations (Ohio EPA, 2016) <http://epa.ohio.gov/Portals/28/documents/habs/Generalized%20Cyanotoxin%20Treatment%20Optimization%20Recommendations.pdf>
5. Drinking Water Cyanotoxin Risk Communication Toolbox (EPA) <https://www.epa.gov/ground-water-and-drinking-water/drinking-water-cyanotoxin-riskcommunication-toolbox>
6. AWWA’s Public Communications Toolkit <https://www.awwa.org/resources-tools/public-affairs/communications-tools/publiccommunications-toolkit.aspx>
7. CyanoTOX, Ver. 2.0 (AWWA) <https://www.awwa.org/resources-tools/water-knowledge/cyanotoxins.aspx>



8. Recommendations for Public Water Systems to Manage Cyanotoxins in Drinking Water (EPA, June 2015)  
<https://www.epa.gov/sites/production/files/2017-06/documents/cyanotoxin-managementdrinking-water.pdf>
9. Cyanotoxin Management Plan Template and Example Plans (EPA, 2016)  
<https://www.epa.gov/ground-water-and-drinking-water/cyanotoxin-management-plan-template-and-example-plans>
10. Nutrient Pollution Policy and Data (EPA) <https://www.epa.gov/nutrient-policy-data>
11. Public Water System Harmful Algal Bloom Response Strategy (Ohio EPA)  
[https://epa.ohio.gov/Portals/28/documents/habs/2017\\_PWS\\_HAB\\_Response\\_Strategy\\_5-1517-FINAL.pdf](https://epa.ohio.gov/Portals/28/documents/habs/2017_PWS_HAB_Response_Strategy_5-1517-FINAL.pdf)

Other resources are available to ODW staff at:

12. ODW Algae and HABs Technical Resources  
Y:\06-Technical Resources\670-Contaminants\Algae-HABs
13. Virginia HAB Task Force Contact List  
Y:\30-HABs\HAB Taskforce
14. Cyanotoxin Results Recording Spreadsheet  
Y:\05-Incidents\511-HAB Events\Cyanotoxin Lab Information
15. Cyanotoxin Lab Information  
Y:\05-Incidents\511-HAB Events\Cyanotoxin Lab Information
16. Algae: Source to Treatment, AWWA Manual M57, Chapter 14 (AWWA, 2010)  
Y:\06-Technical Resources\670-Contaminants\Algae-HABs\AWWA & WRF\AlgaeSourceToTreatment\_M57\_Ed1.pdf
17. Source Water Protection, AWWA G300-14 (AWWA, 2014)  
Y:\06-Technical Resources\610-AWWA Standards\Most Current\Latest Updates - Dec 2021\G

## Appendix

Attachments are located at: <\\odwsrv1\odwshare\13-Manuals\06-Source Water Manual\attachments>

SWM-C4-Attachment 1-Laboratory Statement of Work Template

SWM-C4-Attachment 2-Do Not Drink Notice Template

SWM-C4-Attachment 3-Do Not Drink Notice Message Map Template

SWM-C4-Attachment 4-Do Not Drink Rescission Template

SWM-C4-Attachment 5-Do Not Drink Rescission Message Map Template

*SWM-C4-Attachment 3: Do Not Drink Rescission Template*

*Instructions: Complete the italicized text. Further modifications may be required specific to each incident.*

## **DRINKING WATER PROBLEM CORRECTED**

Customers of *Waterworks name* were notified on *date of original notice* of a problem with our drinking water, and were advised to only use bottled water for drinking and cooking purposes as a safety precaution. We are pleased to report that the problem has been corrected and that it is no longer necessary to only use bottled water for drinking and cooking purposes as a safety precaution. We apologize for any inconvenience and thank you for your patience.

Samples collected from *Name of waterworks* on *dates* show *Cyanotoxin name* in the drinking water at *concentration range*, which is less than the U.S. Environmental Protection Agency's national drinking water Health Advisory of *concentration*.

**Because *Cyanotoxin name* may still be present within household plumbing, your taps should be flushed as a safety precaution prior to use of water for drinking and cooking purposes.** Allow the water to run at each tap for 5 minutes before using it for drinking or cooking. If hot water is to be used for drinking or cooking, first drain the water heater according to the manufacturer's instructions, and then allow hot water to run at each tap for 30 seconds to 2 minutes before using it for drinking or cooking.

As always, you may contact *name* at *phone number* or *address* with any comments or questions.

*do this by posting this notice in a public place or distributing copies by hand or mail. Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can*

This notice is being sent to you by *Waterworks name*

Date *Insert date*

*SWM-C4-Attachment 1: Do Not Drink Notice Template*

*Instructions: Complete the italicized text. Modify as required for the specific incident.*

Notice to Customers of *Name of Waterworks* Waterworks

Este informe contiene información muy importante sobre su agua potable.  
Tradúzcalo o hable con alguien que lo entienda bien.

# DO NOT DRINK TAP WATER

**Failure to follow this advisory could result in illness.**

The Virginia Department of Health in conjunction with the *Local Health Department Name* Health Department, and *Name of Waterworks* are advising residents to only use bottled water for drinking and cooking purposes as a safety precaution. This precaution is necessary because *Cyanotoxin name*, a toxin produced by cyanobacteria (formerly known as blue-green algae) was detected in the drinking water from *Name of Waterworks* on *date*.

**Only bottled water should be used for drinking, beverage and food preparation, making infant formula, brushing teeth, and making ice until further notice.**

The tap water is safe to use for washing dishes and clothes, cleaning, flushing toilets, and bathing. However, infants and young children under the age of six should be supervised while bathing and during other tap water-related activities to prevent accidental ingestion of water.

Do not drink tap water that you have boiled. Boiling water will not remove the contamination.

Potable water is available at the following locations: *Provide locations where bottled water is available, and any special instructions.*

We will inform you when your tap water is safe to drink. We are *describe corrective actions*. We anticipate resolving the problem within *provide estimated days/date*.

For more information, call:

Waterworks contact: *contact name, address, phone*

*Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.*

Date: *Date of notice*

*SWM-C4-Attachment 2: Do Not Drink Notice Message Map Template*

*Instructions: Complete the italicized text. Modify as required for the specific incident.*

**SCENARIO/CONCERN: “DO NOT DRINK” NOTICE ISSUED**

**STAKEHOLDER: GENERAL PUBLIC, MEDIA**

KEY MESSAGE 1 →	KEY MESSAGE 2 →	KEY MESSAGE 3
<p><i>Cyanotoxin name</i>, a toxin produced by cyanobacteria, was detected in the drinking water from <i>Name of waterworks</i> on <i>date</i>.</p>	<p>Customers of <i>Name of waterworks</i> are advised to only use bottled water for drinking and cooking purposes as a safety precaution.</p>	<p>The Virginia Department of Health is working with the <i>Name of waterworks</i> to resolve this issue and will inform you when the water is safe for drinking and cooking purposes.</p>
<p><b>Support Point 1.1</b></p> <p><i>Cyanotoxin name</i> was detected in the drinking water at a concentration exceeding the U.S. Environmental Protection Agency’s national drinking water Health Advisory of <i>concentration</i>.</p>	<p><b>Support Point 2.1</b></p> <p>Potable water is available at the following locations: <i>Provide locations where bottled water is available, and any special instructions</i>.</p>	<p><b>Support Point 3.1</b></p> <p>The <i>Name of waterworks</i> has made appropriate treatment adjustments, to minimize the breakthrough of harmful toxins into the final drinking water produced.</p>
<p><b>Support Point 1.2</b></p> <p>The <i>Cyanotoxin name</i>, is the result of a harmful algal bloom in the <i>waterbody name</i>.</p>	<p><b>Support Point 2.2</b></p> <p>Do not drink tap water that you have boiled. Boiling water will not remove the contamination.</p>	<p><b>Support Point 3.2</b></p> <p>The <i>Name of waterworks</i> will continue testing the drinking water produced <i>testing frequency</i>, until they have confirmed that the water is safe to drink.</p>
<p><b>Support Point 1.3</b></p>	<p><b>Support Point 2.3</b></p> <p>The tap water is safe to use for washing dishes and clothes, cleaning, flushing toilets, and bathing. However, infants and young children under the age of six should be supervised while bathing and during other tap water-related activities to prevent accidental ingestion of water.</p>	<p><b>Support Point 3.3</b></p> <p>The Virginia Department of Health and the <i>Name of waterworks</i> will issue an alert when it has been determined that the water is safe to drink.</p>

*SWM-C4-Attachment 4: Do Not Drink Rescission Message Map Template*

*Instructions: Complete the italicized text. Further modifications may be required specific to each incident.*

**SCENARIO/CONCERN: “DO NOT DRINK” RESCISSION ISSUED**

**STAKEHOLDER: GENERAL PUBLIC, MEDIA**

KEY MESSAGE 1 →	KEY MESSAGE 2 →	KEY MESSAGE 3
The problem has been corrected.	Household taps should be flushed as a safety precaution prior to use of water for drinking and cooking purposes <i>(if applicable)</i> .	<i>If applicable</i> : A recreational advisory remains in place for the <i>waterbody name</i> .

Support Point 1.1	Support Point 2.1	Support Point 3.1
Samples collected from <i>name of waterworks</i> on <i>dates</i> show <i>cyanotoxin name</i> in the drinking water at <i>concentration range</i> .	<i>Cyanotoxin name</i> may still be present within household plumbing.	Contact Office of Environmental Epidemiology-Division of Environmental Epidemiology for supporting points

Support Point 1.2	Support Point 2.2	Support Point 3.2
These detected levels are less than the U.S. Environmental Protection Agency’s national drinking water Health Advisory of <i>concentration</i> .	Allow the water to run at each tap for 5 minutes before using it for drinking or cooking <i>(if applicable)</i> .	Contact Office of Environmental Epidemiology-Division of Environmental Epidemiology for supporting points

Support Point 1.3	Support Point 2.3	Support Point 3.3
It is no longer necessary to only use bottled water for drinking and cooking purposes as a safety precaution.		Contact Office of Environmental Epidemiology-Division of Environmental Epidemiology for supporting points