



COMMONWEALTH of VIRGINIA

Karen Shelton, MD
State Health Commissioner

Department of Health
P O BOX 2448
RICHMOND, VA 23218

TTY 7-1-1 OR
1-800-828-1120

STATE BOARD OF HEALTH ORDER BY CONSENT ISSUED TO THE Rapidan Service Authority FOR THE Wilderness Waterworks PWSID No. 6137999

This is a Consent Order issued under authority granted by Va. Code § 32.1-26 between the State Board of Health and Rapidan Service Authority, for the Wilderness waterworks for the purpose of resolving certain violations of the Public Water Supplies Law (as defined below) and the applicable regulations.

Section A. Definitions

Unless the context clearly indicates otherwise, the following words and terms have the meaning assigned below:

1. “Board” means the State Board of Health, a permanent citizens’ board of the Commonwealth of Virginia, as described in Va. Code § 32.1-5.
2. “CFO” means the ODW Culpeper Field Office, located in Culpeper, Virginia.
3. “Commissioner” means the State Health Commissioner, who supervises and manages the Department, as described in Va. Code §§ 32.1-16 and 17.
4. “Department” or “VDH” means the Department of Health, an agency of the Commonwealth of Virginia, as described in Va. Code § 32.1-16.
5. “DEQ” means the Virginia Department of Environmental Quality.
6. “EPA” means the U.S. Environmental Protection Agency.
7. “Human consumption” means drinking, food preparation, dishwashing, bathing, showering, hand washing, teeth brushing, and maintaining oral hygiene.

8. “Notice of Alleged Violation” or “NOAV” means a type of notice of alleged violation issued under 12VAC5-590-110 of the Regulations.
9. “ODW” means the VDH Office of Drinking Water.
10. “Order” means this document, also known as a “Consent Order” or “Order by Consent,” which the Board is authorized to issue to require any person to comply with the provisions of any law administered by it, the Commissioner or the Department or any regulations promulgated by the Board or to comply with any case decision, as defined in Va. Code § 2.2-4001, of the Board or Commissioner.
11. “Permit” means Waterworks Operation Permit No. 6137999.
12. “Public Water Supplies Law” or “PWSL” means Chapter 6, Article 2 of Title 32.1 of the Va. Code.
13. “Pure water” means water fit for human consumption that is (i) sanitary and normally free of minerals, organic substances, and toxic agents in excess of reasonable amounts and (ii) adequate in quantity and quality for the minimum health requirements of the persons served.
14. “PWSID” means Public Water System Identification.
15. “Regulations” means the Waterworks Regulations, 12VAC5-590-10, *et seq.*
16. “RSA” means Rapidan Service Authority.
17. “Va. Code” means the Code of Virginia (1950), as amended.
18. “VAC” means the Virginia Administrative Code.
19. “Waterworks” means a system that serves piped water for human consumption to at least 15 service connections or 25 or more individuals for at least 60 days out of the year. Waterworks includes all structures, equipment, and appurtenances used in storage, collection, purification, treatment, and distribution of pure water except the piping and fixtures inside the building where such water is delivered.

Section B. Findings of Fact and Conclusions of Law

1. RSA owns and holds the Permit to operate the Wilderness waterworks in Orange County, Virginia. The Wilderness waterworks draws water from the Rapidan River. The Wilderness waterworks provides drinking water to a population of about 13,000 people and has over 5,400 service connections. The Wilderness waterworks operates 14 to 18 hours per day, treating and delivering about 1.2 million gallons per day to subdivisions, restaurants, businesses, medical facilities, and other industries. The Wilderness waterworks has several chemical feeds for treatment, including poly-aluminum chloride and sodium permanganate (pre-filter), caustic soda, chlorine, and fluoride (post-filtration).

Odor Event Caused by Catastrophic Failure of Raw Water Pump

2. On August 19, 2024, an RSA contractor installed temporary wiring to the raw water pumps serving the Wilderness waterworks. RSA's outside project engineer later determined that this wiring installed by RSA's contractor was undersized. The undersized wiring starved the pumps of current and led to a thermal overload of the pumps, which caused the pump failures, discussed below.
3. On August 20, 2024, a raw water pump at the intake from the Rapidan River suffered a catastrophic electrical failure that led to the release of approximately one to three gallons of food grade mineral oil from the pump.
4. On August 21, 2024, RSA began receiving complaints from customers about an odor in the water. After consultation with VDH, RSA issued a do not use water advisory associated with the drinking water. Customers were asked to only use the water for toilet flushing. Customers described the objectionable odor in various ways, including "WD-40," "diesel," "gasoline," or a "mechanics shop." RSA confirmed the objectionable odor was also evident at the Wilderness waterworks. VDH and DEQ began assisting RSA in its emergency response to the odor complaints and the shutdown of Wilderness waterworks' operations.
5. Although RSA was aware of the three pump failures, it was not initially aware of the catastrophic nature of the intake pump failure on August 20, 2024. In an interview with ODW on September 6, 2024, Atlantic Pump, which serviced the failed pumps, stated that they informed an RSA employee of the catastrophic nature of the pump failures on August 27, 2024.
6. It is understood by ODW that from August 21 through August 23, 2024, DEQ asked RSA and its contractors about equipment function at Wilderness waterworks and understood from both that there were no concerns at that time.
7. On August 24, 2024, following extensive water quality sampling, RSA, with VDH support, changed the do not use water advisory to a do not drink advisory, meaning that water could be used for all purposes other than consumption.
8. On August 27, 2024, RSA lifted the do not drink advisory with VDH support, which allowed customers to use the drinking water for all purposes.
9. On September 4, 2024, RSA management learned of the catastrophic nature of the pump failure, and informed the state agency investigative team.
10. On September 13, 2024, VDH determined that the effects of the August 20, 2024, catastrophic failure of a raw water pump at the intake from the Rapidan River caused the objectionable odor. Approximately one to three gallons of food grade mineral oil had been released into the water supplied to the Wilderness waterworks due to the catastrophic pump failure. The food grade mineral oil was likely thermally altered, burned, or scorched from the catastrophic pump failure. As described in the VDH-ODW Investigative Summary Report issued on September 25, 2024, J. Hunter Adams, a biologist in Texas specializing in taste and odor who was working with ODW, recreated the "WD-40" odor by

heating a water sample spiked with the mineral oil. Mr. Adams followed the new *Standard Method* 2150D Attribute Rating Test to determine that the food grade mineral oil in the pump matched the odor experienced by customers. Additionally, the pump's stator showed that internal components of the pump were scorched, burned, or heated because of the catastrophic pump failure. The findings of VDH's investigation are contained in VDH-ODW's Investigative Summary Report.

11. On September 25, 2024, VDH issued an NOAV to RSA regarding the odor incident caused by the catastrophic failure of the raw water pump. The NOAV states that RSA did not "identify and evaluate factors with the potential for impairing the quality of the water delivered to customers by not sufficiently overseeing the work of its contractors when the electrical contractor installed the undersized, temporary wiring and when the general contractor had cause to remove the failed pumps." The NOAV states that RSA did not further investigate the nature and extent of the August 20, 2024, pump failure when RSA began receiving customers' reports of odor the day after the pump failure. The NOAV states that RSA's "monitoring systems and early warning mechanisms were either insufficient or not utilized effectively such that RSA did not identify the odor at the Wilderness WTP waterworks until RSA began receiving complaints from customers."
12. The Waterworks Regulations, at 12VAC5-590-360.A, state, "The [waterworks] owner shall provide and maintain conditions throughout the entirety of the waterworks in a manner that will assure a high degree of capability and reliability to comply with Part II (12VAC5-590-340 et seq.) of [the Waterworks Regulations]. This requirement shall pertain to the source water, transmission, treatment, storage, and distribution system facilities and the operation thereof. The owner shall identify and evaluate factors with the potential for impairing the quality of the water delivered to the consumers. Preventative control measures identified in Part II of [the Waterworks Regulations] shall be promptly implemented to protect public health."
13. On November 14, 2024, RSA provided ODW with RSA's response to the September 25, 2024, NOAV, and RSA's investigative report regarding the objectionable odor event.
 - a. In its investigative report, RSA states, "When the objectionable odor event began on August 21, 2024, it did not occur to RSA that the failed pump and objectionable odor were related as pump failures are not uncommon."
 - b. RSA's investigative report states that it investigated the electrical sufficiency of the temporary wiring installed by a subcontractor and determined "the temporary wiring used was not only smaller than the then current permanent wiring, but it was also significantly smaller than the new permanent wiring called for in the project specifications and contract."
 - c. RSA's outside project engineer ultimately confirmed that failure of the raw water pump was due to the undersized temporary wiring installed by the subcontractor.
 - d. While RSA's response questions the analytical methods and results provided by Mr. Adams, the biologist who VDH used, RSA's investigative report states that RSA does not disagree that the failure of the raw water pump was the probable cause of the odor event.
 - e. RSA's response to the NOAV explains that while RSA does not agree with the VDH-ODW investigative report in full, RSA does "acknowledge, in hindsight, that the timing of the first pump failure and the objectionable odor beginning, should have raised a red flag for RSA. From that, we learned that we need to investigate more thoroughly any routine equipment failures to determine potential causes and water quality impacts before continuing with regular operations."

14. The National Primary Drinking Water Regulations (40 CFR Part 141), the Public Water Supplies Law (Va. Code § 32.1-167, et al.), and the Waterworks Regulations (12VAC5-590) establish standards for drinking water quality, drinking water infrastructure, and oversight of the drinking water program.
15. Pursuant to Va. Code § 32.1-26, the Board may issue orders requiring compliance with any law or regulation administered by the Board.
16. Based on a review of ODW records, the Board concludes that RSA has violated 12VAC5-590-360.A of the Regulations, as described in paragraphs B.2 through B.13, above.

Subsequent RSA Action

17. Since VDH-ODW issued its investigative report and NOAV on September 25, 2024, RSA has begun improving its operations as follows:
 - a. RSA has begun soliciting engineering assistance in pursuing granular activated carbon filtration.
 - b. RSA's outside project engineer and certain staff are on-hand regularly throughout any construction activity, including being present when critical equipment is removed for repair.
 - c. RSA will revise its procedures for monitoring raw water quality.
 - d. RSA has modified its operating protocol in the event of a pump failure so it will no longer immediately activate another pump. Instead, the plant operator will immediately investigate to determine the cause of the failure before activating another pump. This investigation will include, at a minimum, going to the river intake wet well and collecting a sample from the wet well to determine whether there is any food grade mineral oil in the water prior to activating another pump. If any food grade oil is detected, whether through sight or smell, RSA management will be immediately notified and the wet well will be isolated, pumped out, and cleaned before further use. An emergency pump will be used and the wet well will be bypassed until the wet well is clean.
 - e. RSA's operators have been told to collect a sample entering the plant pre-sedimentation basin on four-hour intervals when the plant is operating, beginning with plant start-up. The sample can be checked for odor or other abnormalities and noted on the plant's daily bench sheet.
 - f. RSA will have an inspector on-site two to three days a week or when there is any activity surrounding the placement or start-up of equipment.
 - g. RSA is investigating how it can increase its social media presence to allow for better communication with customers. RSA is also looking into sending an "email blast" to all customers. RSA currently has a text/email alert system for customers who have signed up for it. As part of its customer outreach, RSA took part in a "town hall" regarding the odor incident during the November 20, 2024, Orange County Board of Supervisors meeting, which included answering questions from customers.
 - h. RSA will perform a full review and, if necessary, revision of its emergency response plan in 2025.
 - i. As set forth in Appendix A, RSA is actively developing an asset management plan, to be completed after implementation of new asset management software.

- j. CFO and RSA held monthly meetings in November, December, January, March, and April 2025 to review progress on RSA's plan, including RSA's asset management, emergency response, and capital improvement plans.
18. At the time of the pump failures and odor incident, RSA was working towards upgrading the existing water treatment plant, consisting of a new one million gallons per day treatment train and raw water intake modification. RSA continues to move forward with those planned upgrades.

Section C. Agreement and Order

Accordingly, by virtue of the authority granted it in Va. Code §§ 32.1-26 and 32.1-27, the Board orders RSA, and RSA agrees to:

1. Perform the actions described in Appendix A of this Order.
2. Pay a civil charge of \$683.00 within 30 days of the effective date of this Order in settlement of the violation cited in this Order.

Payment shall be made by check, certified check, money order or cashier's check payable to the "Treasurer of Virginia," and shall be delivered to:

Virginia Department of Health
Office of Drinking Water
109 Governor Street, 6th Floor
Richmond, Virginia 23219

RSA shall indicate that the payment is being made in accordance with the requirements of this Order for deposit into the Virginia Water Supply Assistance Grant Fund. If VDH has to refer collection of monies due under this Order to the Department of Law, the Owner shall be liable for attorneys' fees of 30% of the amount outstanding.

Section D. Administrative Provisions

1. This Order addresses and resolves the violation specifically identified in Section B of this Order. This Order shall not preclude the Board, the Commissioner, or VDH from taking any action authorized by law regarding subsequently discovered violations or violations alleged to have arisen after the violation identified in Section B of this Order.
2. This Order does not suspend, minimize, or otherwise alter RSA's obligation to comply with federal, state, and local laws and regulations. The Board does not waive any lawful means of enforcing the laws it administers, the regulations it has adopted, or this Order.
3. RSA agrees that it has received fair and due process under the Administrative Process Act (Va. Code § 2.2-4000, *et seq.*) and waives its rights to further hearings or challenges, whether civil or administrative, regarding the terms, conditions, or issuance of this Order and specifically waives its rights to a hearing

under Va. Code §§ 2.2-4019 or 2.2-4020 as a predicate for issuance of this Order. RSA consents to the issuance of this Order freely, voluntarily, and after an opportunity to consult counsel of its choice.

4. Any plans, reports, schedules, or specifications submitted by RSA and approved by the Department pursuant to this Order are incorporated into this Order. Any non-compliance with this Order shall be considered a violation of this Order.
5. To the fullest extent authorized by law, this Order is binding on RSA and its agents and legal representatives, heirs, devisees, executors, administrators, and any successors in interest, jointly and severally as applicable.
6. The Board may modify, rewrite, or amend this Order with the express written consent of RSA. This Order shall not preclude the Board from taking any action authorized under the Administrative Process Act, Va. Code §§ 2.2-4000 *et seq.*, Title 32.1 of the Code of Virginia, or the Waterworks Regulations after RSA has received notice under the Administrative Process Act and opportunity to be heard thereunder. But unless this Order is terminated pursuant to Section D.11.c of this Order, such action shall not be contrary to Section C of this Order. Any request by RSA for modification of this Order shall be submitted to VDH in writing to be considered for approval by the Board or its designee.
7. Failure by RSA to comply with any terms of this Order shall constitute a violation of an order of the Board. Nothing herein shall waive the initiation of appropriate enforcement actions or the issuance of additional orders as appropriate by the Board or Department as a result of such violations. Nothing herein shall affect appropriate enforcement actions by any other federal, state, or local regulatory authority.
8. If any provision of this Order is found to be unenforceable for any reason, the remainder of the Order shall remain in full force and effect.
9. RSA shall be responsible for failure to comply with any of the terms and conditions of this Order unless compliance is made impossible by earthquake, flood, other acts of God, war, strike, or such other unforeseeable circumstances beyond its control and not due to a lack of good faith or diligence on its part. RSA shall demonstrate that such circumstances were beyond its control and not due to a lack of good faith or diligence on its part. RSA shall notify the Department in writing within three business days when circumstances are anticipated to occur, are occurring, or have occurred that may delay compliance or cause noncompliance with any requirement of this Order. Such notice shall set forth:
 - a. The reasons for the delay or noncompliance;
 - b. The projected duration of any such delay or noncompliance;
 - c. The measures taken and to be taken by RSA to prevent or minimize such delay or noncompliance; and
 - d. The timetable by which RSA will implement such measures and the date full compliance will be achieved.

Failure by RSA to notify the Department verbally within 24 hours and in writing within three business days of learning of any condition above, which RSA intends to assert will result in the impossibility of compliance, shall constitute a waiver by RSA of any claim to inability to comply with a requirement of this Order.

10. This Order shall become effective on the 15th day after a copy of it is mailed to RSA by certified mail. Va. Code § 32.1-26.
11. This Order shall continue in effect until:
 - a. The Commissioner or the Commissioner's designee terminates this Order, which must occur forthwith after RSA has completed the items set forth in Section C of this Order;
 - b. The Commissioner or the Commissioner's designee terminates this Order after finding that the circumstances that led to this Order's issuance no longer exist, and that this Order is no longer needed to enforce the PWSL and Regulations to protect the public health; or
 - c. The Commissioner or the Commissioner's designee, or the Board, in their sole discretion, terminates this Order upon 30 days written notice to RSA. Termination of this Order pursuant to this authority without RSA having satisfied all terms of this Order due to RSA's failure to submit a Corrective Action Plan and Schedule satisfactory to ODW pursuant to Appendix A of this Order may result in VDH pursuing further enforcement related to the violation identified in Section B of this Order.
12. Termination of this Order, or any obligation imposed in this Order, shall not operate to relieve RSA from its obligation to comply with any statute, regulation, permit condition, other order, certificate, standard, or requirement otherwise applicable.
13. The undersigned representative of RSA certifies that he is a responsible official authorized to enter into the terms and conditions of this Order and to execute and legally bind RSA to this document. Any documents to be submitted pursuant to this Order shall also be submitted by a responsible official of RSA.
14. By RSA's signature below, RSA voluntarily agrees to the issuance of this Order.

It is SO ORDERED this day, May 28, 2025.

STATE BOARD OF HEALTH
Commonwealth of Virginia

Karen Shelton MD
box SIGN 1VV6QY85-4YJ9VJ55

Karen Shelton, MD
State Health Commissioner

SIGNATURE AND NOTARY PAGE

Rapidan Service Authority voluntarily agrees to the issuance of this Order.

Timothy L. Clemens
Name

General Manager
Title

Timothy L. Clemens
Signature

May 15, 2025
Date

Notary Public:

Commonwealth of Virginia

City/County of Orange

The foregoing document was signed and acknowledged before me this 15th day of

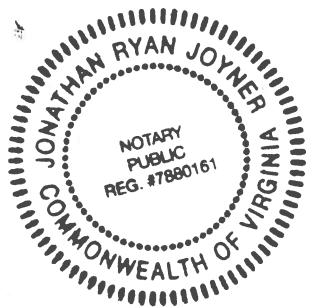
May, 2025, by Timothy Clemens, on
behalf of Rapidan Service Authority.

John G. Grier
Notary Public
7880161

Registration No.

My commission expires: 3/31/28

Notary seal:



Appendix A
Corrective Action Plan and Schedule for Compliance

RSA shall:

- a. Within 30 days of the effective date of this Order, submit to CFO a Corrective Action Plan (CAP) and Schedule for Compliance (Schedule) for review and approval setting forth actions that RSA has taken or plans to take, and a schedule within which to take them, to comply consistently with the PWSL and the Regulations and to accomplish the following:
 1. Continue implementing operational changes to actively and routinely monitor raw water quality and odor, including an updated raw water monitoring schedule and recording results on daily bench sheets.
 2. Continue implementing policies and procedures to ensure infrastructure improvements at Wilderness waterworks are closely monitored and overseen with a proactive construction inspection program before equipment is placed into operation.
 3. Create an asset management plan.
 4. Review, and revise if necessary, RSA's emergency management plan as required by the EPA for community water systems.
 5. Develop and implement a standard operating procedure to improve methods of customer notification and outreach for both emergency and non-emergency events.
 6. Complete ongoing upgrades to the existing water treatment plant consisting of a new one million gallons per day treatment train and raw water intake modifications.
 7. Install security upgrades, including a camera at the intake.
 8. Submit to CFO, for review and approval, a preliminary engineering report, signed and sealed by a professional engineer, for installation of granular activated carbon filtration (the PER).
- b. Upon ODW's approval of the CAP and Schedule, RSA can begin implementing the CAP in accordance with the Schedule. The approved CAP and Schedule shall become a part of, and enforceable under, the terms of this Order. If RSA does not present a CAP and Schedule with terms that are acceptable to ODW such that ODW cannot approve it, and RSA and ODW are unable to reach agreement on the terms of a mutually agreeable CAP and Schedule, the Commissioner or the Commissioner's designee, or the Board, may terminate this Order subject to Section D.11.c of this Order, which may result in further enforcement action against RSA as stated therein.
- c. After initial approval of the CAP and Schedule by ODW, RSA may submit any proposed modifications to the CAP and Schedule to CFO for review and approval prior to RSA implementing

the proposed modified CAP and Schedule. RSA shall submit any proposed modification of the CAP and Schedule to CFO at least 30 days prior to expiration of a deadline that RSA seeks to modify.

- d. Within 30 days after approval of the PER by CFO, RSA must submit to CFO for review and approval an amended CAP and Schedule that includes actions that RSA will take to implement the PER's recommendations. If RSA does not present an amended CAP and Schedule with terms that are acceptable to ODW such that ODW cannot approve it, and RSA and ODW are unable to reach agreement on the terms of a mutually agreeable CAP and Schedule, the Commissioner or the Commissioner's designee, or the Board, may terminate this Order subject to Section D.11.c of this Order, which may result in further enforcement action against RSA as stated therein.
- e. Submit to CFO quarterly reviews relating progress to the CAP and Schedule. RSA shall send quarterly submissions to CFO by the 10th day of the month following the end of the reported quarter (for example, the report for the second quarter of 2025 would be due by July 10, 2025).
- f. Upon completion of the CAP, submit to CFO a final report verifying that the CAP has been completed in accordance with the terms of this Order.
- g. Mail, email, fax, and/or personally deliver all submittals and reports required by this Order to:

VDH - Office of Drinking Water - Culpeper Field Office
c/o Compliance Specialist
400 S. Main Street, 2nd Floor
Culpeper, Virginia 22701
Office phone number: (540) 829-7340
Email address: ODWFieldOffice6@vdh.virginia.gov
Fax number: (540) 829-7337