ENFORCING WATER QUALITY STANDARDS

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WHY IT MATTERS

Virginia has surface waters, including streams, rivers, lakes, estuaries, and coastal bays, that make up nearly 8% of the state's area. These waters provide drinking water, commercial opportunities, venues for recreation, tourism draws, and much more. At the same time, Virginia's waterways are widely degraded. In its 2024 statewide water quality assessment, the **Department of Environmental Quality (DEQ)** determined that:

Wildlife populations, including insects, mollusks, and other invertebrates across more than 2,300 miles of streams have been harmed and are in need of pollution diets and cleanup plans;

3,351 acres of lakes and reservoirs are degraded by **harmful algal blooms (HABs)**;

139 stream segments and 44 lakes have **dissolved oxygen (DO)** levels insufficient to fully support aquatic life. [1]

What's more, DEQ and the **Virginia Department of Health (VDH)** have advised that children and pregnant women not eat fish from the Middle Chickahominy River watershed due to newly discovered high concentrations of so-called "forever chemicals" (page 15).[2] These problems result in the loss of habitat for aquatic life, reduced economic returns from recreation and fishing, and unnecessary harm to residents who rely on our waterways for drinking water, subsistence fishing, and their livelihoods.

State and federal statutory and regulatory systems are designed to prevent the kinds of impairments reported. Right now, there is an important opportunity for Virginians to protect our state waters and our communities by improving the ways we implement these laws and regulations. Permits that govern discharges of pollution into waterways can be improved by setting limitations that enforce all **water quality standards (WQS)** and by adopting new water quality criteria. If all parts of the WQS are enforced, Water quality assessments and cleanup plans will be more accurate and protective.

CURRENT LANDSCAPE

WQS are a crucial part of the regulatory framework established by the **Clean Water Act (CWA)**. These standards encompass both **numeric and narrative criteria** that specify acceptable pollutant levels and overall water conditions necessary to support beneficial uses like swimming and fishing. Currently, state discharge permits and water quality assessments do not comprehensively address impairments caused by pollutants such as sediment, nutrients, **turbidity**- and color-producing substances, and certain hazardous chemicals. These pollutants may frequently exceed the specified narrative water quality criteria.[3] Moreover, essential numeric criteria for turbidity and suspended solids have yet to be implemented.

Narrative water quality criteria prohibit pollution that "interfere[s] directly or indirectly with designated uses of [state waters] or which are inimical or harmful to human, animal, plant, or aquatic life," including "substances that produce color, tastes, turbidity, odors, or settle to form sludge deposits" or "which nourish undesirable or nuisance aquatic plant life."[4] In other words, they describe conditions that are essential for a healthy waterway; conditions which are not only essential for human uses, but for the natural assemblage of wildlife and plant life native to the waterbody to thrive.

Waterways can become degraded, and more specifically the aquatic plant and animal communities therein negatively impacted, by sediment or nutrient pollution.[5] However, DEQ does not assess violations of the narrative criteria for these pollutants until after the health of aquatic life has become degraded. Likewise, excess nutrients pollute our water, but DEQ does not impose limits on nitrogen and phosphorus for most streams. Certain toxic pollutants, such as **per- and polyfluoroalkyl substances (PFAS)**, may also violate narrative criteria by creating conditions that harm people and wildlife but are not controlled or monitored in discharge permits.

Numeric criteria set maximum allowable concentrations of specific pollutants that must not be exceeded in waterbodies. Virginia does not have numeric criteria to protect streams from substances such as phosphorus and nitrogen (nutrient pollutants), sediment and other turbidity-causing substances, and color-producing waste. Turbidity-causing substances, such as sediment, are widespread, prompting the **State Water Control Board** (Board) to pass a motion "to direct the DEQ staff to develop numeric turbidity standards for use across the Commonwealth."[6] DEQ took initial actions to carry out the Board's instruction in 2021 but has not completed that process.

OPPORTUNITIES

DEQ should designate streams and reservoirs as "impaired" waters under its Clean Water Act authority in circumstances where the narrative criteria are violated by the presence of excessive sediments or turbidity, unnatural colors, high levels of polluting nitrogen and phosphorus, and nuisance algal blooms. In developing permits for discharges to surface waters, the potential of activities to violate the narrative criteria must be assessed and permit limitations or other conditions must be imposed to prevent violations of Virginia's water quality standards.

DEQ should require that PFAS and other toxic pollutants be eliminated from discharges where they may violate narrative criteria. Given that Virginia has yet to begin processes to adopt numeric criteria for forms of PFAS and that it will be impossible to develop them for the thousands of different chemicals in the PFAS family, narrative criteria should be implemented now (page 15).

DEQ should re-initiate the regulatory process to develop numeric criteria for turbidity and/or solids and the Board should adopt appropriate criteria in 2025.

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TOP TAKEAWAYS

Many of Virginia's waters are degraded by pollutants such as sediments, nutrients, color-producing waste, and toxic chemicals not yet addressed by numeric water quality criteria.

Currently, DEQ does not designate waters as impaired by these types of pollutants until harm to aquatic ecosystems is shown or human health threats emerge.

Virginia has an important chance to improve protections and clean up many waterbodies by fully enforcing narrative criteria and adopting long-planned numeric criteria for turbidity and/or solids.

Sinking Creek turbidity pollution
Photo provided by POWHR/Mountain Valley Watch

ENDNOTES

1. Review of Virginia DEQ, Virginia's 2024 305(B)/303(D) Water Quality Assessment Integrated Report, Appendix 1a - 2024 Impaired Waters - 303(D) List, Category 5 - Waters Needing Total Maximum Daily Load Study. *Virginia Department of Environmental Quality*. https://www.deq.virginia.gov/home/showpublisheddocument/23287/638490456973830000.
2. "Middle Chickahominy PFAS Study." ArcGIS StoryMaps. (February 9, 2023). https://storymaps.arcgis.com/stories/1d68144adf54432198e7d56229862d31.
3. Wasteload allocations for nutrients and sediment, set in relation to the Chesapeake Bay TMDL, are imposed through permits but do not ensure compliance with WQS in local streams.
4. 9 VAC 25-260-20.A. https://law.lis.virginia.gov/admincode/title9/agency25/chapter260/section20.
5. Virginia Department of Environmental Quality. n.d. Review of Approved TMDLs. Accessed June 12, 2024. https://www.deq.virginia.gov/our-programs/water/water-quality/tmdl-development/approved-tmdls.
6. Sierra Club Virginia Chapter. "We Are Back at the State Water Control Board!" Facebook video, June 26, 2024. https://www.facebook.com/vasierraclub/videos/2310315712360416.
7. Virginia Code Commission. 2021. Review of Virginia Register of Regulations, April 12, 2021. https://register.dls.virginia.gov/vol37/iss17/v37i17.pdf.