

Attachment 3



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Proposed Regulation Agency Background Document

Approving authority name	State Water Control Board
Virginia Administrative Code (VAC) citation	9 VAC 25-260
Regulation title	Water Quality Standards
Action title	Amendments to Water Quality Standards – Criteria to Protect the Designated Uses of Lakes and Reservoirs from the Impacts of Nutrients
Document preparation date	September 15, 2005

This information is required for executive branch review and the Virginia Registrar of Regulations, pursuant to the Virginia Administrative Process Act (APA), Executive Orders 21 (2002) and 58 (1999), and the *Virginia Register Form, Style, and Procedure Manual*.

Brief summary

In a short paragraph, please summarize all substantive changes that are being proposed in this regulatory action.

Substantive changes are proposed to amend the state's Water Quality Standards regulation to add new numerical and narrative criteria to protect designated uses of man-made lakes and reservoirs as well as the two natural lakes in the state from the impacts of nutrients. The rulemaking also proposes clarifying that the existing dissolved oxygen criteria during times of thermal stratification should only apply to the upper layer (epilimnion) in man-made lakes and reservoirs where nutrient enrichment is controlled by applicable nutrient criteria in section 9 VAC 25-260-187 of the regulation.

Legal basis

Please identify the state and/or federal legal authority to promulgate this proposed regulation, including (1) the most relevant law and/or regulation, including Code of Virginia citation and General Assembly

chapter number(s), if applicable, and (2) promulgating entity, i.e., the agency, board, or person. Describe the legal authority and the extent to which the authority is mandatory or discretionary.

Federal and state mandates in the Clean Water Act at 303(c), 40 CFR 131 and the Code of Virginia in §62.1-44.15(3a) are the sources of legal authority identified to promulgate these amendments. The most relevant law is the Code of Virginia at §62.1-44.15(3a). The promulgating entity is the State Water Control Board.

The scope and objective of the Clean Water Act is to restore and maintain the chemical, physical, and biological integrity of the Nation's waters. The Clean Water Act at 303(c) (1) requires that the states hold public hearings for review of applicable water quality standards and, as appropriate, modification and adoption of standards.

The scope of the Federal regulations at 40 CFR 131 is to describe the requirements and procedures for developing, reviewing, revising and approving water quality standards by the States as authorized by section 303(c) of the Clean Water Act 40 CFR 131 specifically requires the states to adopt criteria to protect designated uses.

The scope and purpose of the State Water Control Law is to protect and to restore the quality of state waters, to safeguard the clean waters from pollution, to prevent and to reduce pollution and to promote water conservation. The State Water Control Law (Code of Virginia) at §62.1-44.15(3a) requires the Board to establish standards of quality and to modify, amend or cancel any such standards or policies. It also requires the Board to hold public hearings from time to time for the purpose of reviewing the water quality standards, and, as appropriate, adopting, modifying or canceling such standards.

The correlation between the proposed regulatory action and the legal authority identified above is that criteria and designated uses are requirements of the Water Quality Standards and the amendments being considered are modifications of criteria that will protect designated uses.

The authority to adopt standards is mandated, although the specific standards to be adopted or modified are discretionary to the Environmental Protection Agency and the state.

Federal Regulation web site:

<http://www.epa.gov/epahome/cfr40.htm>

Clean Water Act web site:

<http://www4.law.cornell.edu/uscode/33/1313.html>

State Water Control Law (Code of Virginia) web site:

<http://leg1.state.va.us/cgi-bin/legp504.exe?000+cod+62.1-44.2>

<http://leg1.state.va.us/cgi-bin/legp504.exe?000+cod+62.1-44.15>

Purpose

Please explain the need for the new or amended regulation by (1) detailing the specific reasons why this regulatory action is essential to protect the health, safety, or welfare of citizens, and (2) discussing the goals of the proposal, the environmental benefits, and the problems the proposal is intended to solve.

This rulemaking is needed to establish the appropriate nutrient criteria for lakes and reservoirs in the Commonwealth of Virginia because:

- 1) The U.S. Environmental Protection Agency (EPA) has published ecoregion water body specific nutrient related criteria and stated its intent in a National Nutrient Strategy (1998) to promulgate these default nutrient criteria for a state if the state does not adopt nutrient criteria by December 31, 2004 or submit a nutrient development plan with timelines for adoption of this criteria that are accepted by EPA. As discussed below, Virginia decided to take the latter approach.
- 2) These standards will be used in setting Virginia Pollutant Discharge Elimination System Permit limits and for evaluating the waters of the Commonwealth for inclusion in the Clean Water Act 305(b) report and on the 303(d) list, and
- 3) Waters not meeting standards will require development of a Total Maximum Daily Load (TMDL) under section 303(d) of the Clean Water Act. Adoption of water body type specific criteria and uses is necessary to define the most accurate water quality goals for clean up or TMDL development and to protect the appropriate aquatic life and recreational uses of lakes and reservoirs.

Since Virginia intended to develop state specific criteria rather than adopt the EPA published national nutrient criteria, the state submitted to EPA a nutrient criteria development plan for Virginia that EPA has accepted. EPA will use the plan to track the State's progress in nutrient criteria development. If the Commonwealth keeps to the schedule contained in the Plan, EPA is not expected to promulgate nutrient criteria for the State.

Virginia is committed through its Nutrient Criteria Development Plan to adopt new and revised water quality standards for estuaries, lakes and reservoirs, and rivers and streams. The Department is using a two step process - technical development of nutrient criteria and administrative adoption of the criteria - for each water body type. Prioritization of waters for criteria development and adoption is based on availability of data to proceed with a rulemaking. This sequential approach to the development and regulatory adoption of nutrient criteria was initiated in 2003 for estuaries; the current rulemaking is for lakes and reservoirs and in 2006 a separate rulemaking will be initiated for rivers and streams.

Since mid-2003 an Academic Advisory Committee (AAC) on Freshwater Nutrient Criteria - that was formed by the Virginia Water Resources Research Center under contract to DEQ - has been providing advice to the Department on nutrient criteria development for lakes and reservoirs. The documents produced by the AAC and used by the Department in developing these amendments can be found on the Department's web site at: <http://www.deq.virginia.gov/wqs/rule.html#NUT2>.

Substance

Please briefly identify and explain the new substantive provisions, the substantive changes to existing sections, or both where appropriate. (More detail about these changes is requested in the "Detail of changes" section.)

The substantive changes that are being proposed in this regulatory action are: special nutrient standards for the two natural lakes in Virginia – Mountain Lake and Lake Drummond, chlorophyll a and total phosphorus criteria for 116 man-made lakes and reservoirs that the Department has previously monitored or plans to monitor (The total phosphorus criteria apply only when algicide treatments are made during the monitoring period of April 1 through October 31) and application of existing dissolved oxygen criteria during thermal stratification to only the upper layer in the lake-like portion of man-made lakes and reservoirs that will be protected from the effects of nutrient enrichment by the proposed numerical criteria. In addition, a statement is included to allow for site specific modifications to the criteria if the nutrient criteria specified for a man-made lake or reservoir do not provide for the attainment and maintenance of the water quality standards of downstream waters; this was proposed to address the phased development of nutrient criteria for lakes and reservoirs preceding those for rivers and streams.

This rulemaking effort also involved an evaluation of the applicability of Virginia's current regulatory program (Nutrient Enriched Waters) for controlling nutrients in surface waters, including lakes and

reservoirs. The concept of Nutrient Enriched Waters was not incorporated into the final approach selected by the State, so a plan was developed to transition from the existing regulatory Nutrient Enriched Waters listings to the new regulatory approach by sequentially deleting currently designated Nutrient Enriched Waters as the Commonwealth adopts nutrient criteria for those waters. Therefore, this rulemaking proposes the repeal of the following nutrient enriched waters designations in 9 VAC 25-260-350, Designation of Nutrient Enriched Waters: Smith Mountain Lake, Lake Chesdin, South Fork Rivanna Reservoir, and Claytor Lake.

Issues

Please identify the issues associated with the proposed regulatory action, including:

- 1) the primary advantages and disadvantages to the public, such as individual private citizens or businesses, of implementing the new or amended provisions;*
- 2) the primary advantages and disadvantages to the agency or the Commonwealth; and*
- 3) other pertinent matters of interest to the regulated community, government officials, and the public.*

If the regulatory action poses no disadvantages to the public or the Commonwealth, please so indicate.

The primary advantage/benefit to the public is that the proposed nutrient criteria, once implemented fully, will result in the protection of the fishery and other associated recreational uses in identified lakes and reservoirs from the effects of nutrient enrichment. The disadvantage is that 22 entities currently discharging to these waters may have to incur the costs of installing treatment for nutrient reduction

The advantage to the agency is that the adoption of these criteria will continue to meet the phased obligations to EPA of the Commonwealth's nutrient criteria development plan and to develop nutrient criteria appropriate for Virginia waters instead of EPA promulgating default national criteria.

The advantage to the Commonwealth is that the adoption of these criteria will help protect the public water supplies and recreational lakes listed in these proposed amendments from the effects of nutrient enrichment.

There is no disadvantage to the agency or the Commonwealth that will result from the adoption of these amendments.

Pertinent matters of interest to the regulated community, government officials, and the public are the potential costs to meet the requirements of this regulation.

Requirements More Restrictive Than Federal

Please identify and describe any requirement of the proposal which are more restrictive than applicable federal requirements. Include a rationale for the need for the more restrictive requirements. If there are no applicable federal requirements or no requirements that exceed applicable federal requirements, include a statement to that effect.

There is no requirement of the proposal that is more stringent than federal recommendations, guidance or regulation. Federal regulation requires states to adopt criteria to protect designated uses. The proposal accurately provides that protection in accordance with EPA guidance.

Locality Particularly Affected

Please identify any locality particularly affected by the proposed regulation. Locality particularly affected means any locality which bears any identified disproportionate material impact which would not be experienced by other localities.

Counties of Albemarle, Alleghany, Amelia, Amherst, Appomattox, Augusta, Bath, Bedford, Botetourt, Brunswick, Buckingham, Campbell, Charles City, Charlotte, Chesterfield, Culpeper, Dickenson, Fairfax, Frederick, Greensville, Halifax, Henry, Isle of Wight, James City, Lee, Loudoun, Louisa, Mecklenburg, Montgomery, Nelson, New Kent, Nottoway, Patrick, Pittsylvania, Prince Edward, Prince William, Pulaski, Roanoke, Rockbridge, Rockingham, Russell, Scott, Shenandoah, Spotsylvania, Smyth, Stafford, Sussex, Washington, Wythe, Wise, York

Cities of Newport News, Norfolk, Suffolk, Virginia Beach

Towns of Lawrenceville and Victoria

Public Participation

Please include a statement that in addition to any other comments on the proposal, the agency is seeking comments on the costs and benefits of the proposal and the impacts of the regulation on farm or forest land preservation.

In addition to any other comments, the Board is seeking comments on the costs and benefits of the proposal and on any impacts of the regulation on farm and forest land preservation. Also, the Board is seeking information on impacts on small businesses as defined in § 2.2-4007.1 of the Code of Virginia. Information may include 1) projected reporting, recordkeeping and other administrative costs, 2) probable effect of the regulation on affected small businesses, and 3) description of less intrusive or costly alternative methods of achieving the purpose of the regulation.

Anyone wishing to submit written comments for the public comment file may do so at the public hearing or by mail, email or fax to Jean W. Gregory, Office of Water Quality Programs, Department of Environmental Quality, P.O. Box 10009, Richmond, VA 23240, (804) 698-4113, by fax to (804) 698-4522, or e-mail jwgregory@deq.virginia.gov. Written comments must include the name and address of the commenter. In order to be considered comments must be received by 5:00 p.m. on the date established as the close of the comment period.

A public hearing will be held and notice of the public hearing can be found in the Calendar of Events section of the Virginia Register of Regulations. Both oral and written comments may be submitted at that time.

Economic impact

Please identify the anticipated economic impact of the proposed regulation.

<p>Projected cost to the state to implement and enforce the proposed regulation, including (a) fund source / fund detail, and (b) a delineation of one-time versus on-going expenditures</p>	<p>The additional permitting requirements for nutrient (total phosphorus) control can be handled at the time of permit issuance or reissuance rather than incur the cost to the state of reopening the estimated 22 discharge permits. Restricting the application of the existing dissolved oxygen criteria to the epilimnion of a man-made lake or reservoir during thermal stratification and controlling nutrient enrichment through the imposition of regulatory controls on nutrient concentrations should result in cost savings from not having to initiate the TMDL process for many of these waters.</p>
<p>Projected cost of the regulation on localities</p>	<p>A wastewater treatment plant for one locality and one water treatment plant in each of seven localities would incur the additional cost of phosphorus controls, but the capital and operation and maintenance costs of such treatment is unknown for these facilities. It is probable, since all of the water treatment plants discharge to the Chesapeake Bay drainage, that they may already have been required to improve phosphorus control at their facility. The wastewater treatment plant drains to the Roanoke River so it does not have Chesapeake Bay nutrient control requirements. There is also a discharge from Norfolk International Airport that may already be facing Bay related nutrient control requirements.</p>
<p>Description of the individuals, businesses or other entities likely to be affected by the regulation</p>	<p>No individuals are likely to be affected by the regulation. In addition to the small businesses and localities described, there are two federal and two power station facilities.</p>
<p>Agency’s best estimate of the number of such entities that will be affected. Please include an estimate of the number of small businesses affected. Small business means a business entity, including its affiliates, that (i) is independently owned and operated and (ii) employs fewer than 500 full-time employees or has gross annual sales of less than \$6 million.</p>	<p>An estimated 22 entities will be affected, of which an estimated 5 are small businesses: Nine O Three Inc, Simmons Terminal and Restaurant, Callebs Cove Campground, Lake Anna Family Campgrounds, and Bolar Mountain Complex. An additional two facilities -Burlington Industries BM Combing Plant and United Company STP - may also meet the small business criteria. River Ridge Association, Inc, has a private sewage treatment plant but it is unknown whether it is a residential or business facility.</p>
<p>All projected costs of the regulation for affected individuals, businesses, or other entities. Please be specific. Be sure to include the projected reporting, recordkeeping, and other administrative costs required for compliance by small businesses.</p>	<p>Reporting and record keeping requirements should not increase but for those entities that do not discharge to the Bay drainage, thee will be the additional costs of controlling total phosphorus in their discharges through such processes as precipitation and settling and solids disposal.</p>

Alternatives

Please describe any viable alternatives to the proposal considered and the rationale used by the agency to select the least burdensome or intrusive alternative that meets the essential purpose of the action.

Also, include discussion of less intrusive or less costly alternatives for small businesses, as defined in §2.2-4007.1 of the Code of Virginia, of achieving the purpose of the regulation.

In compliance with the State Water Control Board’s Public Participation Guidelines (9 VAC 25-10-20 C), the Department will consider all alternatives which are considered to be less burdensome and less intrusive for achieving the essential purpose of the amendment, and any other alternatives presented during the proposed rulemaking.

Regulatory Flexibility Analysis

Please describe the agency’s analysis of alternative regulatory methods, consistent with health, safety, environmental, and economic welfare, that will accomplish the objectives of applicable law while minimizing the adverse impact on small business. Alternative regulatory methods include, at a minimum: 1) the establishment of less stringent compliance or reporting requirements; 2) the establishment of less stringent schedules or deadlines for compliance or reporting requirements; 3) the consolidation or simplification of compliance or reporting requirements; 4) the establishment of performance standards for small businesses to replace design or operational standards required in the proposed regulation; and 5) the exemption of small businesses from all or any part of the requirements contained in the proposed regulation.

Since development of criteria for protection of lakes and reservoirs from the effects of nutrient enrichment is a national EPA initiative, EPA will promulgate the criteria if a state fails to do so. Therefore, the Department is proceeding with their nutrient criteria development plan that proposes fewer criteria and regulatory requirements that are not as burdensome as the federal criteria. An estimated five to eight small businesses have been discharging to the man-made lakes and reservoirs identified for nutrient control measures. Since these small businesses are already VPDES permit holders with reporting requirements, the additional reporting requirements should not be overly burdensome.

Public comment

Please summarize all comments received during public comment period following the publication of the NOIRA, and provide the agency response.

Commenter	Comment	Agency response
MWV for VMA or MWV, SML, Timmons, VML, VACo, HRPDC	Volunteers for ad hoc	Invited these representatives to be members of the ad hoc advisory committee.
MWV, VAMWA, HRPDC	Support for effects-based criteria linked to designated use	*
USFWS	Support for establishment of reference conditions as they represent least impacted	*
HRPDC	Use VA data (rather than ecoregion)	*
VAMWA	Support for AAC recommendations <ul style="list-style-type: none"> • Base criteria development on designated use • Rely on effects-based methods • Use criteria to support recreational fishing 	*

	<ul style="list-style-type: none"> Response variable – chlorophyll a 	
MWV	<p>Support for ACC recommended implementation process for systematic review of criteria</p> <ul style="list-style-type: none"> Consistent monitoring for more complete data record Characterize VA lakes responses to nutrient inputs Characterize VA lakes based on water body usage, morphometric/physiographic features Include a process to respond to numeric criteria violations that includes an evaluation of designated uses Review/evaluate monitoring locations 	*
VAMWA	<p>Concerns on AAC recommended criteria</p> <ul style="list-style-type: none"> Uncertainty and variability in the fishery-water quality linkage (no clear line – more like a range) Concerns that values chosen at lower end of range when higher levels may also support excellent fisheries Consider a range for criterion (lower = need data/upper = impairment) Concerns with role of antidegradation as <p>driver for criteria/consider how antidegradation can protect specific reservoirs but still set reasonable target ranges for different fishery categories</p>	*
MWV, VAMWA	Not appropriate to apply criteria at depth	*
MWV	<p>Shortcomings of lakes/reservoirs data base</p> <ul style="list-style-type: none"> Need fisheries data Small number water quality observations 	
MWV	Recommend narrative criteria	*
EPA	Recommend numerical criteria	*
VAMWA	Data needs to recognize the normal and natural variation found in each reservoir	*
VAMWA	Monitoring consistent with criteria	*
MWV	Consider frequency/duration	*
HRPDC	Clarify applicability to storm water management facilities (many originally constructed for other uses but incorporated into storm water system)	*

Agency Response: The agency response to the public comments is that we implemented the participatory approach and convened a technical advisory committee to advise staff on these amendments. All comments were discussed in the advisory committee and where appropriate, changes were made.

List of Acronyms Used for the Organizations:

EPA =US Environmental Protection Agency Region III, Robert A. Koroncai, Chief, VA/MD/DC Branch

HRPDC = Hampton Roads Planning District Commission, John M. Carlock, Deputy Executive Director

MWV = MeadWestvaco, Thomas Botkins, Jr

SML = Smith Mountain Lake Association, Stanley W. Smith

Timmons = Timmons Group, Peter Brooks, Senior Project Manager
 USFWS = US Fish and Wildlife Service, Karen L. Mayne, Supervisor, Virginia Field Office
 VACo = Virginia Association of Counties, Larry Land, Director of Policy Development
 VAMWA = Virginia Association of Municipal Wastewater Agencies, Mark Haley, President
 VML = Virginia Municipal League, Denise Thompson, Director of Environmental Policy

Family impact

Please assess the impact of the proposed regulatory action on the institution of the family and family stability including to what extent the regulatory action will: 1) strengthen or erode the authority and rights of parents in the education, nurturing, and supervision of their children; 2) encourage or discourage economic self-sufficiency, self-pride, and the assumption of responsibility for oneself, one’s spouse, and one’s children and/or elderly parents; 3) strengthen or erode the marital commitment; and 4) increase or decrease disposable family income.

The direct impact resulting from the development of water quality standards is for the protection of public health and safety, which has only an indirect impact on families.

Detail of changes

Please detail all changes that are being proposed and the consequences of the proposed changes. Detail all new provisions and/or all changes to existing sections.

If the proposed regulation is intended to replace an emergency regulation, please list separately (1) all changes between the pre-emergency regulation and the proposed regulation, and (2) only changes made since the publication of the emergency regulation.

For changes to existing regulations, use this chart:

Current section number	Proposed new section number, if applicable	Current requirement	Proposed change and rationale
9 VAC 25-260-5		Definitions	Added definitions for new terms used in the proposed amendments: ‘algicide’, ‘epilimnion’, ‘lacustrine’, ‘man-made lake or reservoir’, and ‘natural lake.’
9 VAC 25-260-50		Lists dissolved oxygen, pH and temperature criteria for Class I - VII waters.	Added a fourth footnote to the table in the dissolved oxygen column to recognize that for a thermally stratified man-made lake or reservoir, the dissolved oxygen criteria only apply to the epilimnion in the lacustrine portion of the water body.
none	9 VAC 25-260-187	None since this is a new section.	Lists man-made lakes and reservoirs that the Department has previously monitored or plans to monitor and the waterbody specific

			chlorophyll <i>a</i> and total phosphorus criteria to protect aquatic life and recreational designated uses in these waters from the impacts of nutrients.
9 VAC 25-260-310		Contains site-specific and effluent criteria for various water bodies.	Adds two new site-specific criteria numerical nutrient criteria for the two natural lakes in Virginia: Mountain Lake and Lake Drummond.
9 VAC 25-260-350		Four lakes (Smith Mountain Lake, lake Chesdin, South Fork Rivanna Reservoir, and Claytor Lake) are listed as "nutrient enriched waters." Waters listed in this section are subject to phosphorus limits under the Nutrient Enriched Waters Policy (9 VAC 25-40 et seq.)	These four lakes are repealed from the list of nutrient enriched water since the new method of controlling nutrients in these and other man-made lakes and reservoirs will be from implementation of the criteria set forth in 9 VAC 25-260-187.
9 VAC 25-260-415		James River Basin, Appomattox references the "nutrient enriched waters" status of Lake Chesdin as NEW-2.	Deletes reference to NEW-2 because is being repealed in 9 VAC 25-260-350.
9 VAC 25-260-420		James River Basin, Middle references the "nutrient enriched waters" status of South Fork Rivanna Reservoir as NEW-3.	Deletes reference to NEW-3 because is being repealed in 9 VAC 25-260-350.
9 VAC 25-260-450		Roanoke River Basin Roanoke subbasin references the "nutrient enriched waters" status of Smith Mountain Lake as NEW-1.	Deletes reference to NEW-1 because is being repealed in 9 VAC 25-260-350.
9 VAC 25-260-480		Chowan and Dismal Swamp Basin Albemarle Subbasin section table.	Adds to special standards column the new site-specific criteria numerical nutrient criteria "dd" for Lake Drummond.
9 VAC 25-260-540		New River Basin section table references the "nutrient enriched waters" status of Claytor Lake as NEW-4.	Adds to special standards column the two new site-specific criteria numerical nutrient criteria "cc" for Mountain Lake and deletes reference to NEW-4 because is being repealed in 9 VAC 25-260-350.