



Proposed Regulation Agency Background Document

Agency name	State Water Control Board
Virginia Administrative Code (VAC) citation	9 VAC 25 - 260
Regulation title	Water Quality Standards
Action title	Adopt, modify or cancel Water Quality Standards, including numerical and narrative criteria, use designations, classifications, site specific or special standards, stream descriptions and implementation requirements.
Date this document prepared	June 2007

This information is required for executive branch review and the Virginia Registrar of Regulations, pursuant to the Virginia Administrative Process Act (APA), Executive Orders 36 (2006) 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.

The most important potential changes to the water quality standards are a narrative criterion to recognize that certain waters in the Commonwealth are naturally low in dissolved oxygen and pH (swamp waters), updates to the toxics and bacteria criteria and special standards to reflect site specific conditions. There are changes in many other sections of the regulation during this review. These include the updates to the Chesapeake Bay nutrient related criteria, updates to stream classifications in the river basin section tables, deletions of sections that are unused or no longer needed and miscellaneous updates and clarifications.

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) require that water quality standards be adopted, modified or cancelled every three years. These are the most relevant laws and regulations. The promulgating entity is the State Water Control Board.

The Clean Water Act authorizes restoration and maintenance of 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 the purpose of reviewing applicable water quality standards and, as appropriate, modifying and adopting standards.

The Federal regulations at 40 CFR 131 authorize 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 State Water Control Law authorizes protection and restoration of the quality of state waters, safeguarding the clean waters from pollution, prevention and reduction of pollution and promotion of 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 authority to adopt standards as provided by the provisions in the previously referenced citations is mandated, although the specific standards to be adopted or modified are discretionary to the Environmental Protection Agency and the state.

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.

The rulemaking is essential to the protection of health, safety or welfare of the citizens of the Commonwealth because proper water quality standards protect water quality and living resources of Virginia's waters for consumption of fish and shellfish, recreational uses and conservation in general.

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. Waters not meeting standards will require development of a Total Maximum Daily Load under the Clean Water Act at 303(e). The Water Quality Standards are the cornerstone for all these other programs. It is the goal to provide the citizens of the

Commonwealth with a technical regulation that is protective of water quality in surface waters, reflects recent scientific information, reflects agency procedures and is reasonable and practical.

The environment will benefit because implementation of these amendments will result in better water quality in the Commonwealth for recreation, consumption of fish and shellfish and protection of aquatic life.

A specific goal of these amendments was to address several problems related to the clean up plans (known as total maximum daily loads or TMDLs) for impaired waters that became evident to the agency in the last several years. For example, the existing bacteria criteria resulted in unreasonable and unattainable end points. This makes many TMDLs impractical to implement and, for stakeholders, undermines the feasibility of achieving standards and the credibility of the program. Staff has done some preliminary modeling efforts and found that the slight adjustment from 126 CFU to 206 CFU provides more reasonable, but still very challenging, bacteria reduction targets in some watersheds. For example, at the current level many watersheds must eliminate 100% of the bacteria loading to the watershed, including natural input from wildlife. As illustrated in the following table, the suggested increase in the criteria allows for reasonable, but challenging, attainment compared to unrealistic bacteria loading caps.

Percent Reductions in Bacteria Loading from Source Categories Needed to Achieve Existing Criteria vs. Proposed Criteria

SOURCE CATEGORY	Lower Pigg River		Chestnut Creek		Northeast Creek	
	Existing	Proposed	Existing	Proposed	Existing	Proposed
Straight Pipes/Failing On-Site Systems	100	100	100	100	100	100
Livestock	100	80	65	0	100	98
Agricultural Runoff	100	0	98	76	100	86
Residential/Urban Runoff	100	0	98	78	100	100
Wildlife	30	0	0	0	92	86

Under the proposed criteria, a more cost-effective mix of approaches can be relied upon to achieve standards. Generally, direct inputs of bacteria, from straight pipes and livestock in streams, are primary implementation targets because of human health concerns and relative ease of corrective action. Reductions from runoff are more difficult to control and expensive to treat due to the large areas affected and diffuse nature.

The addition of several special site specific standards will prevent several unreasonable TMDLs from moving forward. For example, the special standard proposed in 9 VAC 25-260-310 paragraph “gg” is a new benthic numerical criterion for the Little Calfpasture River which

reflects a subcategory of aquatic life uses due to the presence of Goshen Dam. It is common that aquatic life uses will be modified below dams. However, the standards currently do not reflect this and the result was a TMDL that cannot be reasonably implemented without removal of the dam. If the standard is adopted, the TMDL will not need to include removal of the dam as an option. By adopting this and the other special standards, the goal of solving some of the problems related to unreasonable and unattainable TMDLs will be achieved.

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.)

Dissolved Oxygen, pH in Class VII, Swamp Waters § 9 VAC 25-260-50

Virginia has some unique aquatic ecosystems in eastern and southeastern Virginia that are naturally low in dissolved oxygen (D.O.) and pH and the aquatic biota have adapted to these conditions. While the regulation includes a separate classification for these waters (Class VII Swamp Waters), many waters have been listed as impaired under section 303(d) of the Clean Water Act for D.O. and pH because they were listed prior to having specific information about the natural conditions of these waters. To address this concern, a narrative exemption from the dissolved oxygen and pH criteria is proposed for these waters when it is determined that conditions are natural and not due to human-induced sources. It was decided that the most protective approach would be to use a narrative criterion to recognize the natural fluctuations of these waters rather than to develop numerical criteria for each swamp. This approach is supported by the Department of Game and Inland Fisheries and the US Fish and Wildlife Service. In addition to the narrative, the proposal includes an adjustment to the existing Class VII pH criterion from 4.3 – 9.0 to 3.7-8.0 to better reflect natural conditions.

The proposal also includes the deletion of section 55 (Implementation procedure for dissolved oxygen criteria in waters naturally low in dissolved oxygen). This section was designed to address natural dissolved oxygen impairments for the stratified waters of the Bay, stratified lakes and swamp waters. The Bay and lakes have been addressed via other rulemakings and since we are now addressing the swamp waters via a narrative criterion, the section is no longer needed.

Table of Parameters (Toxics) § 9 VAC 25-260-140

The Table of Parameters has been updated and 93 of the human health parameters have been recalculated using the EPA 2000 Human Health Methodology. The new methodology results in human health criteria that are 60-80% more stringent.

Also included in the Table of Parameters is a new fish tissue criterion for methyl mercury of 0.30 mg/kg. Mercury is methylated quickly in the environment and bioaccumulated in the fatty tissue of fish. EPA determined the best way to protect designated uses was to develop a fish tissue criterion rather than a water column number. This is agreeable to DEQ since we monitor fish tissue for many bioaccumulative substances; including mercury. This is the first fish tissue criterion for Virginia.

Nonylphenol is a new criterion proposed which is an organic chemical produced in large quantity in the United States. It is toxic to aquatic life, causing reproductive effects in aquatic organisms. It is used as a chemical intermediate and is often found in wastewater treatment plant effluent as a breakdown product from surfactants and detergents.

Diazinon is a new criterion proposed and is toxic to aquatic life, particularly invertebrates. Diazinon is frequently found in wastewater treatment plant effluent and urban and agricultural runoff.

A revision to the existing aquatic life criteria for cadmium is proposed based on more recent EPA guidance. The cadmium proposed criteria is more stringent than the existing criteria.

A revision to the existing aquatic life criteria for tributyltin based on more recent EPA guidance. The tributyltin revised criteria is less stringent than the existing

Bacteria for Recreational Waters § 9 VAC 25-260-170

Staff is proposing two alternatives for the geometric mean criteria for bacteria. The purpose of this is to receive public input on the pros and cons of both values. Only one value will be adopted into the final regulation. The first value is 126 colony forming units (CFU)/100 ml of water which is the existing criterion and is based on a risk level of 0.8% (8 out of 1000 swimmers may get gastrointestinal illness). The second value is 206 and is based on a risk level of 1.0% (10 out of 1000 swimmers may get gastrointestinal illness). It is the risk level that will be the focus of public comment. Note that the risk level for Virginia coastal beaches is, and always has been, 1.9% (19 out of 1000 swimmers – this is not a change from existing regulation). A risk level of 8 -10 is considered protective of primary contact recreation in freshwater and is acceptable to EPA.

The bacteria section has also been clarified to list the geometric mean as the main criteria to protect primary contact recreational uses as this is considered the environmentally relevant endpoint. Where there is insufficient data to calculate the geometric mean, then no more than 10% of the total samples in the assessment period shall exceed a maximum value (e.g. 235 or 384 for E. coli). This is a change from the existing regulation which lists both the geometric mean and the single sample maximum as the main criteria. Also, the presentation of two values (e.g. 235 or 384) is because these values are mathematically derived from the geometric means, which are presented as two alternatives. Only one single sample maximum criterion will be adopted based on the risk level decided upon for the geometric mean (e.g. 0.8% or 1.0%).

Also included in the regulation are single sample maxima criteria for use in establishing beach advisories and closures in freshwater and saltwater. Two values (e.g. 235 or 384) are presented here as well because these values are mathematically derived from the geometric means, which are presented as two alternatives. Only one will be adopted as previously stated.

Special Standards § 9 VAC 25-260-310

There are several new special site specific standards proposed. The first is a special pH standard for Lake Curtis to maintain the fishery, the second is a special manganese criterion for one intake location on the Kerr Reservoir to protect the aesthetic qualities of the water supply, another is a new benthic numerical criterion for the Little Calfpasture River which reflects a subcategory of benthic aquatic life uses due to the presence of Goshen Dam.

River Basin Section Tables § 9 VAC 25-260-390 – 540

There are revisions to trout streams designations, additions of new Class VII Swamp Waters, deletions of several pH non-limestone stream special standards and other made miscellaneous corrections.

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 to the public is that the updated numerical toxics criteria are based on better scientific information to protect water quality. The disadvantage is that the public may see the change to the bacteria criteria as an attempt to “lower the bar” on water quality. However, the goal is to set realistic, protective goals in water quality management and to maintain the most scientifically defensible criteria in the water quality standards regulation. EPA has also provided guidance that these criteria are "approvable" under the Clean Water Act.

The advantage to the agency or the Commonwealth that will result from the adoption of these amendments will be more accurate and scientifically defensible permit limits, assessments and clean up plans (TMDLs). These are discussed under the “Purpose” section where the goals of the proposal, the environmental benefits, and the problems the proposal is intended to solve are discussed.

The regulated community will find the amendments pertinent to their operations, particularly where the numerical criteria are more stringent since that may require additional capital or operating costs (see Economic Impact).

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

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 are no requirements that exceed applicable federal requirements.

Localities 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.

Localities particularly affected were considered those where a specific amendment was proposed to change a classification, designated use or criteria that was not statewide in nature. There is no expected monetary impact.

Counties: Alleghany, Amelia, Bath, Caroline, Charles City, Charlotte, Chesterfield, Dinwiddie, Essex, Frederick, Halifax, Hanover, Henrico, Isle of Wight, King George, King & Queen, King William, Mecklenburg, New Kent, Nottoway, Roanoke, Rockingham, Rockbridge, Richmond, Shenandoah, Southampton, Stafford, Westmoreland

Towns: Branchville, Blackstone, Burkeville, Clarkesville, Crewe, Montross,

Cities: Chesapeake, Lexington, Roanoke, Salem, Suffolk

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 regulated community.

In addition to any other comments, the board/agency is seeking comments on the costs and benefits of the proposal and the potential impacts of this regulatory proposal. Also, the agency/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 may do so by mail, email or fax to Jean Gregory, P.O. Box 1105, Richmond, VA 23218, (804) 698-4113, fax (804) 698-4116 and email jwgregory@deg.virginia.gov. Written comments (including emails) must include the name and address of the commenter. In order to be considered comments must be received by the last date of the public comment period.

Three public hearings will be held and notice of the public hearings appear on the Virginia Regulatory Town Hall website (www.townhall.virginia.gov) and 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.

A formal hearing will be held at a time and place to be determined if a request for a formal hearing is received by the contact person within 30 days of publication of the notice of public comment period in the Virginia Register of Regulations. The request for formal hearing is to include the information set forth in 9 VAC 25-230-130-B of the Board’s Procedural Rule No. 1.

Economic impact

Please identify the anticipated economic impact of the proposed regulation. v

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

There will be no additional costs to the state / agency. Existing water quality monitoring programs (and related funding sources) will continue to support the proposed changes.

Projected cost of the regulation on localities

There is no reported cost to localities. Estimated costs to affected businesses or other entities are explained below.

Description of the individuals, businesses or other entities likely to be affected by the regulation

Facilities likely to be covered by this regulation are VPDES permit based facilities and impaired water streams that need to have Total Maximum Daily Load under the Clean Water Act 303(e).

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.

Although a total of 103 facilities qualify for potential impacts as a result of proposed changes in limits to surface water criteria pollutants of which 53 are municipal localities and 50 are businesses, only 15 entities were expected to be “most-likely” affected by proposed changes and almost all of these facilities (localities and businesses) are small businesses.

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.

Proposed changes in the Water Quality Standards regulation through the federal and state mandated triennial review process are largely in part of methodological changes in the calculation of water quality parameters and/or procedural changes to make the regulation efficient in design and implementation. Over 25 “likely-to-be-impacted” VPDES dischargers were assessed for possible economic impact due to the following key changes in the WQS regulation (9 VAC 25- 260) that were expected to have economic implications to the facilities:

- **9 VAC 25 – 260-140: Criteria for Surface Water:**

An assessment of “likely-to-be-impacted” 25 facilities that typically comply with WQS based permit limits was conducted. Comparing the existing discharge limits (for aquatic and human health criteria) of the 25 likely facilities with proposed changes across indicated no significant economic impacts to the facilities in regards to capital investments, operational costs, recordkeeping or even use of other resources (time, labor). All facilities have either permit limits that are below existing detection limits or already in compliance with more stringent criteria (other pollutant driving the limit).

Beneficial impact of the regulation

There are three proposed changes in the WQS regulation that would have a net benefit. The first two as listed below would provide cost-savings and flexibility to the agency in terms of implementation of the proposed regulation.

- **Dissolved Oxygen, pH in Class VII, Swamp Waters § 9 VAC 25-260-50**
- **Special Standards § 9 VAC 25-260-310**

Changes in Section 50 of the proposed regulation with economic implications specifically involve the removal of TMDL impairment listing to some unique aquatic ecosystems in the eastern and southeastern Virginia. Such ecosystems naturally possess low levels of dissolved oxygen, pH and aquatic biota have adapted to such environmental attributes of these water-bodies. While there exists a classification of – Swamp Waters – for such ecosystems, that are naturally existing, the regulation is proposing that exceedances of the criteria for dissolved oxygen and pH in these waters are not considered violations of the water quality standards. Section 310 involves four new special standards- manganese for Kerr Reservoir near Clarksville, pH for Lake Curtis, new benthic criteria for the Little Calpasture River near Goshen Dam and temperature in certain warm water trout streams. These changes would also result in removal of some TMDL listings.

Such proposed changes would allow the agency to better manage the exempted ecosystems and collectively remove approximately 42 TMDLS from the TMDL development effort. This would provide a net economic cost-savings of \$600,000 in TMDL development costs that could be re-directed to implementing other TMDLS as required of the Agency under the Consent Decree. Removal of 42 TMDLS from the listing and classifying them as Swamp Waters will not exempt them from the usual water quality monitoring process.

- **Bacteria for Recreational Waters § 9 VAC 25-260-170**

Proposed changes in the Bacteria Standards for recreational waters would still conform to a risk level of 8-10 % as prescribed by EPA for primary contact with freshwater. The agency is seeking comment on both geometric means but only one geometric mean will be adopted subject to public comment. The change in criteria to 206 might benefit the citizens of the Commonwealth as it would offer them a more flexible, realistic, and attainable framework within which to invest cost effective best management practices that comply with bacteria criteria. In addition, Combined (Stormwater) Sewer Overflow (CSO) based wastewater treatment facilities may be able to better invest in installing economically feasible technological

upgrades for efficient regulatory compliance without calling for a drastic increase in cost of sewer treatment and water supply to the ratepayers.

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.

The board considered whether the antidegradation policy (9 VAC 25-260-30) should be changed to accommodate a more detailed implementation procedure that several members of the ad hoc advisory group preferred. The premise of the antidegradation policy is to maintain water quality when the background concentrations are better than the criteria concentrations. It was decided that agency procedures for implementation of the antidegradation policy could be accomplished without a change to the regulation but that these procedures should be discussed in another permit stakeholders group. This was a less burdensome alternative.

The board considered whether to adopt site specific dissolved oxygen numerical criteria for Class VII swamp waters to match the naturally occurring background concentrations. It was determined that the existing data was not adequate to develop protective criteria for swamp waters. It was decided, along with the Department of Game and Inland Fisheries and the U.S. Fish and Wildlife service that a narrative criterion that recognized the natural fluctuations of dissolved oxygen in these waters would be more protective and a better way to resolve the unneeded TMDLs in these natural watersheds that are not impacted by human activity. This narrative criterion was a less burdensome alternative for the agency since significantly more data and staff resources were needed to develop protective numerical criteria.

The board considered new information which indicated the ammonia and copper aquatic life criteria would be made more stringent than the EPA published values. However, staff decided not to incorporate this new information at this time. This decision was made because EPA is reviewing these issues on a national level, the issues are very complex and the impact may be very great, particularly to municipalities. These technical issues would be best worked out in a separate advisory committee and incorporated as a separate rulemaking at a later date after additional guidance is received from EPA. This is a least burdensome alternative taken for now due to the cost impact more stringent ammonia and copper criteria could have on municipalities. However, the next triennial review may find that a more protective ammonia and copper standard is needed to meet the purposes of the Clean Water Act.

The board considered many alternatives to the bacteria criteria to assist in implementation of these values. These alternatives included using criteria to protect primary contact based on a slightly higher allowable risk level (1.0% vs. .8%), a site specific criterion for the City of Richmond, an allowable exceedance rate (10.5%) for bacteria concentrations, how to apply the single sample 'grab' values (as maximums or 75th percentiles) and if one or both the geometric mean and maximum criteria apply.

The agency decided to recalculate the geometric mean criteria for freshwater using two values (126 and 206) based on two different risk levels (.8% and 1%) to receive public input on both. The marine risk level remains at 1.9% and has not changed. EPA gives States flexibility in choice of risk level (any rate between 8 -10 gastrointestinal illnesses per 1000 people is protective of primary contact). A higher value will allow a more cost-effective mix of approaches can be relied upon to achieve standards (see purpose section).

The geometric mean is also presented as the main criteria for protection of recreational uses and not both a mean and a maximum. Using only the geometric mean, also allows more cost-effective mixtures of approaches to achieve standards because it is an averaged value rather than a 'not to be exceeded value.' However, the geometric mean is the environmentally relevant endpoint according to EPA.

The agency also proposes a requirement that when there is insufficient data to calculate a geometric mean, that no more than 10% of the total samples in the assessment period shall exceed 235 or 384 E. coli CFU in freshwater (two alternatives are presented because these values are mathematically derived from the geometric means, which are presented as two values) and 104 CFU in saltwater. EPA gives states flexibility in application and expression of the single sample maximum. Allowing for a small exceedance allowance (10%) is a reasonable approach to assessing water quality for monthly 'grab' samples and has been used in the past. The requirement that no more than 10% of the total samples in the assessment period shall exceed a maximum value when there is not enough data to calculate a geometric mean will generally be used for DEQ monitoring and assessments since those programs will not usually have enough data to calculate a geometric mean. However, the TMDL program will always have sufficient data (through modeling) to calculate geometric means so the TMDL endpoints will be the geometric means. This expression of the criteria is protective of designated uses because it is more protective than the EPA published 75th confidence level (see EPA *Ambient Water Quality Criteria for Bacteria*, 1986, EPA440/5-84-002), it is consistent with the past expression of the fecal coliform criteria and we are applying criteria statewide to provide all waters the same level of protection intended for beaches. This format is also easier for the public to understand. Therefore, this was determined to be a less intrusive but still protective expression of the single sample criteria.

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.

The proposed changes in the WQS regulation provide for internal flexibility in regulatory recordkeeping and water quality monitoring efforts. Economic estimates of the same is provided above.

Public comment

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

Comments - General	Organization
Focus on inaccuracies or inflexible aspects of regulation.	VA Chamber of Commerce Natural Resources Committee, VMA
Improve in light of new EPA assessment guidance 303(d).	VA Chamber of Commerce Natural Resources Committee
Will be affected by a number of the issues identified in the NOIRA.	Dominion
Use best, current scientific information and make sure EPA guidance appropriate for VA.	VAMWA
Given the recent financial, technical burden placed upon WWTF due to the Bay commitments for nutrient reductions focus on streamlining or minimizing additional regulatory burdens where consistent with good science.	VAMWA
Request to participate on ad hoc committee.	CBF, Dominion, Navy, VAMWA, VA Chamber of Commerce Natural Resources Committee, VA Coalfields TMDL Group, VMA
Comments – Designated Uses	
Concern about the lowering of designated uses, move cautiously, specify what constitutes reasonable grounds documentation for a private party to conduct a use attainability analysis.	CBF
Use designations made in the 1970's without scientific foundation and in need of revision or refinement along with related criteria.	VA Coalfields TMDL Group, VMA
Comments – Criteria	
Supports development to total dissolved solids criteria.	CBF, SELC
Provided technical literature that evaluated total dissolved solids toxicity to aquatic organisms and provided general summaries of finding/conclusions. Also provided a summary of EPA and other states standards and TMDL targets. Believes via the information submitted that the goal used in Virginia for a TMDL endpoint (and presumably to be used for a water quality standard) was overly protective.	Draper Aden Associates
Supports updating numerical criteria for aquatic life and human health protection based on EPA guidance.	CBF
Comments – Mixing Zones	
Eliminate allocated impact zones to prevent lethality to resident aquatic life. This would require acute criteria to be met at the outfall.	CBF
Prohibit new or expanded mixing zones for persistent bioaccumulative toxics (PBTs).	CBF
Comments – Antidegradation	
Require a parameter by parameter approach for antidegradation protection.	CBF
Strengthen implementation of Tier 2 as some degradation has occurred in Tier 2 waters without the required analysis of social or	SELC

economic necessity.	
Include a Tier 2.5 designation between tier 2 and 3.	CBF
Encourage placement of high quality wetlands as tier 3.	CBF
Clarify in the regulation that either SAV or water clarity may be used to determine use attainment (don't need both to do an assessment).	CBF

Acronyms and Other Shortened Phrases Used in Table:

CBF = Chesapeake Bay Foundation

SELC = Southern Environmental Law Center

VAMWA = VA Association of Municipal Wastewater Agencies

Navy = Naval Facilities Engineering Command, Atlantic

VA Coalfields TMDL Group = Alpha Natural Resources, LLC, Arch Coal, Inc., Cumberland Resources Corporation and affiliates, Dickenson-Russell Coal Company, LLC, Lee County Board of Supervisors, Lone Mountain Processing Company, Inc., Paramount Coal Company Virginia, LLC, Powell Mountain Coal Company, Powell River Water Quality Partnership, Twin Star Mining, Inc., Virginia Mining Association

VMA = Virginia Manufacturers Association

AGENCY RESPONSE TO COMMENT: DEQ included all the organizations that requested to be on the ad hoc committee. Several issues were pursued (updating numerical criteria for aquatic life and human health protection based on EPA guidance, revisions of use designations). Total dissolved solids criterion was not developed due to comment. It was decided that antidegradation implementation comments did not need standards revisions; rather a change to agency policy. This will be discussed in a separate forum. All other comments were also discussed with the ad hoc.

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 and the protection of water quality in surface waters 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.

Section Number	Summary of Change (Current and Proposed)	Rationale/Comments/Consequences
9 VAC 25-260-10 Designation of Uses	Minimum effluent requirements in the antidegradation policy clarified to refer to §§ 301(b) (1)(A) and (B) and 306 of the Clean Water Act (Best Available Technology and National Performance Standards) instead of more generally §§ 301(b) since this section also includes water quality based permit limits.	This is a clarification consistent with EPA guidance. Water quality based permit limits should not be included because they are not 'minimum effluent requirements.' The consequence is that the public clearly understands the requirement of minimum effluent requirements.
9 VAC 25-260-20 General Criteria and Mixing Zones	Added a prohibition for mixing zones for bacteria and modifies subsection B.11 to match language in the antidegradation section 30.A.2 which refers to new and existing dischargers instead of new and increased dischargers.	Needed to replace the disinfection requirements proposed for deletion in the bacteria section (9 VAC 25-260-170). These changes reflect existing agency permitting practice and results in consistency within the regulation and with other states.
9 VAC 25-260-30 Antidegradation Policy	Removed words "is nominated" from Lake Drummond Exceptional Waters designation.	Lake Drummond is no longer 'nominated' but was adopted in August 2005 as an Exceptional Water. The change will reduce confusion (Is it nominated or final?).
9 VAC 25-260-50 Numerical criteria for dissolved oxygen, pH, and maximum temperature	Revised pH criteria for Class VII swamp waters from 4.3 – 9.0 to 3.7-8.0. Expanded narrative criteria for Class VII swamp waters to recognize natural quality for DO and pH will fluctuate and fall outside values presented and when this happens the values are not considered violations of the criteria. Site specific criteria may be developed but only when protective. VPDES limits should not cause significant changes to background levels. Currently, the VPDES requirement only addresses pH and states that permit requirements shall meet a permit limit of 6.0 – 9.0. Added a reference to other sections of the regulation that may contain site specific criteria to DO, pH and temperature.	This was done in corroboration with the Department of Game and Inland Fisheries and US Fish and Wildlife Service to eliminate incorrect impairment listings for these unique waters. A narrative criterion is deemed more protective because the dissolved oxygen fluctuates in these waters (sometimes down to zero) and the other natural resource agencies did not think minimum or average numerical criteria would be protective. Consequences - these changes will likely remove these naturally impaired waters from the 303(d) list and no clean up plan (total maximum daily load or TMDL) will be necessary. Permittees may find their pH limits adjusted slightly to better adhere to the background concentrations.
9 VAC 25-260-55 Implementation procedure for dissolved oxygen criteria in waters naturally low in dissolved oxygen	Deleted.	Procedure has been implemented and no longer needed. The section also contained a requirement to adopt site specific criteria for naturally low dissolved oxygen waters (i.e. swamps) and the natural resource agencies decided that approach was not protective so deleting the section will allow us to implement the more general narrative criterion (see section 50 above) rather than site specific criteria.
9 VAC 25-260-90 Site Specific Temperature Requirements	Deleted protocol for developing site specific temperature criteria but keeps language referring to thermal variances.	This protocol has never been used and staff believes it represents guidance rather than regulation. Site specific criteria for all criteria are allowed under another section of the regulation (9 VAC 25-260-140 D). The narrative that refers to thermal variance will remain since thermal variances under the Clean Water Act have been granted. One consequence could be that the state could accept alternate methods of developing site specific temperature requirements which is preferable.
9 VAC 25-260-140 Criteria for Surface Water	Added correct footnotes to opening paragraph to subsection A. Deleted Opening paragraph to subsection B that says the agency may use information from the EPA to establishing effluent limits as necessary until the board has completed the standards adoption process.	Footnotes were incorrect so this change reduces confusion. Staff believes the general criterion is the appropriate regulatory mechanism to regulate parameters that have no criteria. This allowance has never been used so there is no direct consequence of removing it.
9 VAC 25-260-140 Criteria for Surface Water,	Updated Table of Parameters to include the EPA 2000 Human Health Methodology (except for arsenic and	Fifteen of the human health criteria were published with the Relative Source

<p>continued....</p>	<p>nickel) and all updated aquatic life criteria.</p> <p>Also included in the Table of Parameters is a new fish tissue criterion for methyl mercury of 0.30 mg/kg.</p> <p>Radionuclide criteria updated to match drinking water regulations.</p>	<p>Contribution (RSC) factor and these have been included. The RSC assumes 80% of exposure to the pollutant comes from other sources (food, air). The other human health parameters did not use the RSC and the main difference between them and the existing criteria is the higher fish intake value of 17.5 g fish/day. Arsenic and nickel not updated as they are under review at EPA.</p> <p>The consequences resulting from these amendments are that the more stringent numerical criteria could result in economic impacts to the regulated communities that have any of these toxicants in their discharge. The environment may benefit from lower concentrations of toxic pollutants.</p>
<p>9 VAC 25-260-140 Criteria for Surface Water, continued...</p>	<p>Added a footnote to the table to clarify the criteria in the table are 2 significant digits and other criteria referenced in the table are the number of digits listed in their respective sections (e.g. dissolved oxygen is 2 and ammonia is 3 or 4 significant digits).</p>	<p>Footnote reflects existing agency practice that is currently in guidance. However, the guidance also states that</p>
<p>9 VAC 25-260-170 Bacteria; Recreational waters</p>	<p>Recalculated the geometric mean criteria for freshwater using two values (126 and 206) to receive public input on both. The two values are calculated using the risk level for freshwater at 1% and .8% (the marine risk level remains at 1.9%).</p> <p>Included amendments to explain where the means apply (fresh vs. saltwater), how to calculate the geometric means (4 weekly samples each month), a requirement that no more than 10% of the total samples in the assessment period shall exceed 235 or 384 E. coli CFU in freshwater (two alternatives are presented because these values are mathematically derived from the geometric means, which are presented as two values) and 104 CFU in saltwater when there is not enough data to calculate a geometric mean. Also, single sample maxima of 235 or 384 (in freshwater) and 104 (in saltwater) shall be used for beach advisories and closures.</p>	<p>The geometric mean is the environmentally relevant endpoint according to EPA. EPA gives States flexibility in choice of risk level (any rate between 8 -10 is protective of primary contact). EPA gives states flexibility in application and expression of the single sample maximum. This expression of the criteria is protective of designated uses because it is more protective than the EPA published 75th confidence level, it is consistent with the past expression of the fecal coliform criteria and we are applying criteria statewide to provide all waters the same level of protection intended for beaches. One consequence is that this format is easier for the public to understand.</p> <p>Two values are presented as alternatives for the geometric mean and the single sample values for the public to comment on. One will be chosen for the final.</p> <p>Consequences resulting from an upward adjustment of the bacteria criteria will make the TMDL endpoints more reasonable and attainable and may increase the willingness to participate in the voluntary aspects of the TMDL implementation plans.</p>
<p>9 VAC 25-260-170 Bacteria; Recreational waters, continued....</p>	<p>The permitting requirements are deleted.</p> <p>The disinfection waiver allowance is deleted.</p> <p>Subsection C (Secondary Contact Criteria) are revised to match the primary contact subsection format.</p>	<p>Existing practice not needed in the bacteria section since a prohibition to mixing zones (i.e. bacteria criteria are end of pipe limits) has been added to the mixing zone policy.</p> <p>Disinfection waivers more appropriately handled via the existing variance allowances in section 9 VAC 25-260-140 E.</p> <p>The consequence of removing the disinfection waivers is that the permittees with disinfection waivers now must pursue a variance and it must be approved by EPA.</p>
<p>9 VAC 25-260-185 Criteria to protect designated uses from the impacts of nutrients and suspended sediment in the Chesapeake Bay and its</p>	<p>Revised the open water dissolved oxygen criteria to indicate the assessment will be done in two seasons summer and non-summer. Simplified the introduction to the submerged aquatic vegetation (SAV) subsection to one sentence. Deleted the water clarity 'no grow</p>	<p>These changes reflect existing practices and existing methods of adding or updating new SAV acreages criteria when information becomes available.</p>

<p>tidal tributaries</p>	<p>zones' (no shallow water use in the Elizabeth River segments). There are four segments that currently have zero goals for SAV and water clarity acres but they are not 'no grow zones' like the Elizabeth River. New data indicates one of the segments has recovered 4 acres of SAV. These 4 acres along with the necessary water clarity acreages (10 acres) added to the table.</p>	<p>Consequence is that the regulation more accurately presents how we assess the Bay criteria to the public. The revised SAV and water clarity criteria adds a more protective measurement of SAV health to that Bay segment based on updated recovery information in shallow water habitats.</p>
<p>9 VAC 25-260-185 Criteria to protect designated uses from the impacts of nutrients and suspended sediment in the Chesapeake Bay and its tidal tributaries, continued....</p>	<p>Clarified that when the most recent three consecutive years of data are unavailable that the most recent three years within the data assessment window shall be used (rather than the most recent 5 years). Added a footnote to the chlorophyll criterion subsection to refer the public to section 310 which contains site specific criteria for chlorophyll. Added updated references for implementation.</p>	<p>These changes reflect existing practices. Consequence is that the regulation more accurately presents how we assess the Bay criteria to the public and gives the public more information on where to find site specific criteria.</p>
<p>9 VAC 25-260-290 Tidal Water Sampling</p>	<p>Section deleted.</p>	<p>This section indicates on what tide samples should be taken. This is information best place in guidance or standard operating procedures. Consequence is that what tide water samples are taken is no longer specified in the regulation which is preferred since some flexibility on timing is needed when working in the field.</p>
<p>9 VAC 25-260-310 Special Standards and Requirements</p>	<p>Updated special standard "m." Deleted special standard "s." Clarified special standard "y." Revised special standard "aa."</p>	<p>"m" and "y" updates based on current practice. "s" originally put in regulation because of a permittee concern from the 1970's. Standard is outdated and not needed. Special standard "aa" lower pH needed because of upstream swamp waters. Consequences are that the regulation more accurately presents how we interpret these special standards. The deletion of special standard "s" may result in more reasonable permit limits for any dischargers to the stream where that special standard applied.</p>
<p>9 VAC 25-260-310 Special Standards and Requirements, continued....</p>	<p>Added special standard "ee" to reflect higher pH values in lake fertilized to maintain a recreational fishery. Added special standard "ff" to clarify the appropriate form of manganese needed to protect the aesthetic qualities of drinking water. Added special standard "gg" to reflect subcategory of benthic aquatic life uses present below a dam. Added special standard "hh" to reflect seasonal summer temperatures in certain streams that are stocked with trout in the winter but warmwater in the summer.</p>	<p>New special standards needed to reflect existing conditions so that the streams will not be listed as impaired for unattainable and infeasible standards and permit limits not based on unattainable standards. Consequences resulting from the new special standards "ee", "gg" and "hh" will mean that no TMDL will be needed for those waters. Special standard "ff" will result in a more reasonable permit limit for one discharger on the stream where that special standard applies.</p>
<p>9 VAC 25-260-320. Scenic rivers</p>	<p>Deleted.</p>	<p>Scenic rivers are listed in the Code of Virginia and have no regulatory function for DEQ. Consequence is that the public will no longer be confused as to what water quality standards apply to scenic rivers (none).</p>
<p>9 VAC 25-260-350. Designation of nutrient enriched waters</p>	<p>Deleted 2 lakes and a stream from the nutrient enriched designation.</p>	<p>Currently waters designated in this section as "nutrient enriched waters" are subject to section 30 of 9 VAC 25-40 (Regulation for Nutrient Enriched Waters and Dischargers to the Chesapeake Bay Watershed) and Bay watershed dischargers are subject to section 70 of 9 VAC 25-40. These waters are in the Bay watershed and now fall under section 70 of 9 VAC 25-40.</p>

		Consequence is that there will be no appearance of dual requirements for 'nutrient enriched waters' dischargers vs. dischargers to the Bay.
9 VAC 25-260-360. Section number and description columns.	Revised James and Yadkin references.	To match changes made to river basin tables which results in consistency within the regulation and easier for the public to understand.
9 VAC 25-260-380. Special standards column	Changed 'all other surface waters' to 'recreational waters' Added explanation of new acronym for exceptional state waters in special standards column.	To match title of bacteria section for recreational use protection which results in consistency within the regulation and easier for the public to understand.
9 VAC 25-260-390 through 540	Revised and/or deleted in the River Basin Section Tables several trout streams, added new Class VII Swamp Water, identified Exceptional State Waters (ESW), deleted several pH non-limestone stream special standards and made miscellaneous corrections.	Trout streams recommended by DGIF. Limestone streams previously misidentified and now corrected. Consequences resulting from these amendments will mean that no TMDL will be needed for those waters. ESWs were already adopted previous rulemaking but this new identifier in the river basin tables gives more information to the user about that water body.