

PART I

SURFACE WATER STANDARDS WITH GENERAL, STATEWIDE APPLICATION

9 VAC 25-260-5. Definitions.

The following words and terms when used in this chapter shall have the following meanings unless the context clearly indicates otherwise:

"Board" means State Water Control Board.

"Chesapeake Bay and its tidal tributaries" means all tidally influenced waters of the Chesapeake Bay, western and eastern coastal embayments and tributaries, James, York, Rappahannock and Potomac Rivers and all their tidal tributaries to the end of tidal waters in each tributary (in larger rivers this is the fall line). Includes sections 390 subsections 1, 2, 3, 4, 5, and 6, section 410 subsections 1, 1b, 1d, 1f and 1o, section 415 subsections 5 and 5a, section 440 subsections 1 and 1a, section 520 subsections 2, 3, 3a, 3b and 3e, section 530 subsection 1 of this chapter. This definition does not include free flowing sections of these waters.

"Criteria" means elements of the board's water quality standards, expressed as constituent concentrations, levels, or narrative statements, representing a quality of water that supports a particular use. When criteria are met, water quality will generally protect the designated use.

"Designated uses" means those uses specified in water quality standards for each water body or segment whether or not they are being attained.

"Drifting organisms" means planktonic organisms that are dependent on the current of the water for movement.

"Existing uses" means those uses actually attained in the water body on or after November 28, 1975, whether or not they are included in the water quality standards.

"Mixing zone" means a limited area or volume of water where initial dilution of a discharge takes place and where numeric water quality criteria can be exceeded but designated uses in the water body on the whole are maintained and lethality is prevented.

"Passing organisms" means free swimming organisms that move with a mean velocity at least equal to the ambient current in any direction.

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"Primary contact recreation" means any water-based form of recreation, the practice of which has a high probability for total body immersion or ingestion of water (examples include but are not limited to swimming, water skiing, canoeing and kayaking).

"Pycnocline" means the portion of the water column where density changes rapidly because of salinity and/or temperature. In an estuary the pycnocline is the zone separating deep, cooler more saline waters from the less saline, warmer surface waters. The upper and lower boundaries of a pycnocline are measured as a change in density per unit of depth that is greater than twice the change of the overall average for the total water column.

"Secondary contact recreation" means a water-based form of recreation, the practice of which has a low probability for total body immersion or ingestion of waters (examples include but are not limited to wading, boating and fishing).

"Swamp waters" means waters with naturally occurring low pH and low dissolved oxygen caused by: (i) low flow velocity that prevents mixing and reaeration of stagnant, shallow waters and (ii) decomposition of vegetation that lowers dissolved oxygen concentrations and causes tannic acids to color the water and lower the pH.

"Use attainability analysis" means a structured scientific assessment of the factors affecting the attainment of the use which may include physical, chemical, biological, and economic factors as described in 9 VAC 25-260-10 ~~G~~ H.

"Water quality standards" means provisions of state or federal law which consist of a designated use or uses for the waters of the Commonwealth and water quality criteria for such waters based upon such uses. Water quality standards are to protect the public health or welfare, enhance the quality of water and serve the purposes of the State Water Control Law (§ 62.1-44.2 et seq. of the Code of Virginia) and the federal Clean Water Act (33 USC § 1251 et seq.).

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9 VAC 25-260-10. Designation of uses.

A. All State waters, including wetlands, are designated for the following uses: recreational uses, e.g., swimming and boating; the propagation and growth of a balanced, indigenous population of aquatic life, including game fish, which might reasonably be expected to inhabit them; wildlife; and the production of edible and marketable natural resources, e.g., fish and shellfish.

Subcategories of the propagation and growth of a balanced indigenous population of aquatic life, including game fish designated use for waters in the Chesapeake Bay and its tidal tributaries are listed in subsection B of this section.

B. Migratory Fish Spawning and Nursery Designated Use: waters in the Chesapeake Bay and its tidal tributaries that protect the survival, growth and propagation of the early life stages of anadromous, semi-anadromous and tidal-fresh resident fish species inhabiting spawning and nursery grounds. This designated use extends from the end of tidal waters to the downriver end of spawning and nursery habitats that have been determined through a composite of all targeted anadromous and semi-anadromous fish species' spawning and nursery habitats (see boundaries in U.S. Environmental Protection Agency. 2004. *Technical Support Document for Identification of Chesapeake Bay Designated Uses and Attainability 2004 Addendum*. Chesapeake Bay Program Office, Annapolis, Maryland). This designated use extends horizontally from the shoreline of the body of water to the adjacent shoreline, and extends down through the water column to the bottom water-sediment interface. This use applies February 1 through May 31 and applies in addition to the open-water use described in this subsection.

Shallow-Water Submerged Aquatic Vegetation Designated Use: waters in the Chesapeake Bay and its tidal tributaries that support the survival, growth and propagation of submerged aquatic vegetation (rooted, underwater bay grasses). This use applies April 1 through October 31 in tidal-fresh, oligohaline and mesohaline Chesapeake Bay Program segments, and March 1 through November 30 in polyhaline Chesapeake Bay Program segments and applies in addition to the open-water use described in this subsection.

Open-Water Aquatic Life Designated Use: waters in the Chesapeake Bay and its tidal tributaries that protect the survival, growth and propagation of balanced, indigenous populations of aquatic life inhabiting open-water habitats. This designated use applies year-round but the vertical boundaries change seasonally. October 1 - May 31, the open water aquatic life use extends horizontally from the shoreline at mean low water, to the adjacent shoreline, and extending through the water column to the

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bottom water-sediment interface. June 1 - September 30, if a pycnocline is present and, in combination with bottom bathymetry and water column circulation patterns, presents a barrier to oxygen replenishment of deeper waters, this designated use extends down into the water column only as far as the upper boundary of the pycnocline. June 1 - September 30, if a pycnocline is present but other physical circulation patterns (such as influx of oxygen rich oceanic bottom waters) provide for oxygen replenishment of deeper waters, the open-water aquatic life designated use extends down into the bottom water-sediment interface (see boundaries in U.S. Environmental Protection Agency. 2004. *Technical Support Document for Identification of Chesapeake Bay Designated Uses and Attainability 2004 Addendum*. Chesapeake Bay Program Office, Annapolis, Maryland). This designated use includes the migratory fish spawning and nursery and shallow-water submerged aquatic vegetation uses.

Deep-Water Aquatic Life Designated Use: waters in the Chesapeake Bay and its tidal tributaries that protect the survival and growth of balanced, indigenous populations of aquatic life inhabiting deep-water habitats. This designated use extends to the tidally influenced waters located between the upper and lower boundaries of the pycnocline where, in combination with bottom bathymetry and water circulation patterns, a pycnocline is present and presents a barrier to oxygen replenishment of deeper waters. In some areas, the deep-water designated use extends from the upper boundary of the pycnocline down to the bottom water-sediment interface (see boundaries in U.S. Environmental Protection Agency. 2004. *Technical Support Document for Identification of Chesapeake Bay Designated Uses and Attainability 2004 Addendum*. Chesapeake Bay Program Office, Annapolis, Maryland). This use applies June 1 through September 30.

Deep-Channel Seasonal Refuge Designated Use: waters in the Chesapeake Bay and its tidal tributaries that protect the survival of balanced, indigenous populations of benthic infauna and epifauna inhabiting deep-channel habitats. This designated use extends to the tidally influenced waters at depths greater than the lower boundary of the pycnocline in areas where, in combination with bottom bathymetry and water circulation patterns, the pycnocline presents a barrier to oxygen replenishment of deeper waters (see boundaries in U.S. Environmental Protection Agency. 2004. *Technical Support Document for Identification of Chesapeake Bay Designated Uses and Attainability 2004 Addendum*. Chesapeake Bay Program Office, Annapolis, Maryland). This use applies June 1 through September 30.

-B.C. In designating uses of a water body and the appropriate criteria for those uses, the board shall take into consideration the water quality standards of downstream waters and shall ensure that its water quality standards provide for the attainment and

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maintenance of the water quality standards of downstream waters.

GD. The board may adopt subcategories of a use and set the appropriate criteria to reflect varying needs of such subcategories of uses, for instance, to differentiate between cold water (trout streams) and warm water fisheries.

DE. At a minimum, uses are deemed attainable if they can be achieved by the imposition of effluent limits required under §§ 301(b) and 306 of the Clean Water Act and cost-effective and reasonable best management practices for nonpoint source control.

EE. Prior to adding or removing any use, or establishing subcategories of a use, the board shall provide notice and an opportunity for a public hearing under the Administrative Process Act (§ 2.2-4000 et seq. of the Code of Virginia).

FG. The board may adopt seasonal uses as an alternative to reclassifying a water body or segment thereof to uses requiring less stringent water quality criteria. If seasonal uses are adopted, water quality criteria should be adjusted to reflect the seasonal uses; however, such criteria shall not preclude the attainment and maintenance of a more protective use in another season.

GH. The board may remove a designated use which is not an existing use, or establish subcategories of a use, if the board can demonstrate that attaining the designated use is not feasible because:

1. Naturally occurring pollutant concentrations prevent the attainment of the use;
2. Natural, ephemeral, intermittent or low flow conditions or water levels prevent the attainment of the use unless these conditions may be compensated for by the discharge of sufficient volume of effluent discharges without violating state water conservation requirements to enable uses to be met;
3. Human caused conditions or sources of pollution prevent the attainment of the use and cannot be remedied or would cause more environmental damage to correct than to leave in place;
4. Dams, diversions or other types of hydrologic modifications preclude the attainment of the use, and it is not feasible to restore the water body to its original condition or to operate such modification in a way that would result in the attainment of the use;
5. Physical conditions related to the natural features of the water body, such as the lack of a proper substrate, cover, flow, depth, pools, riffles, and the like, unrelated to water quality, preclude attainment of aquatic life protection uses; or

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6. Controls more stringent than those required by §§ 301(b) and 306 of the Clean Water Act would result in substantial and widespread economic and social impact.

~~H~~ I. The board may not remove designated uses if:

1. They are existing uses, unless a use requiring more stringent criteria is added; or
2. Such uses will be attained by implementing effluent limits required under §§ 301b and 306 of the Clean Water Act and by implementing cost-effective and reasonable best management practices for nonpoint source control.

~~I~~ J. Where existing water quality standards specify designated uses less than those which are presently being attained, the board shall revise its standards to reflect the uses actually being attained.

~~J~~ K. The board must conduct a use attainability analysis whenever:

1. The board designates or has designated uses that do not include the uses specified in § 101(a)(2) of the Clean Water Act, or
2. The board wishes to remove a designated use that is specified in § 101(a)(2) of the Clean Water Act or to adopt subcategories of uses specified in § 101(a)(2) of the Clean Water Act which require less stringent criteria.

~~K~~ L. The board is not required to conduct a use attainability analysis under this chapter whenever designating uses which include those specified in subsection A of this section.

9 VAC 25-260-50. Numerical criteria for dissolved oxygen, pH, and maximum temperature.***

CLASS	DESCRIPTION OF WATERS	DISSOLVED OXYGEN		pH	Maximum Temp. (°C)
		(mg/L)****			
		Min.	Daily Avg.		
I	Open Ocean	5.0	--	6.0-9.0	--
II	Estuarine <u>Tidal Waters in the Chowan Basin and the Atlantic Ocean Basin Tidal Water Coastal Zone to Fall Line</u>	4.0	5.0	6.0-9.0	--
II	<u>Tidal Waters in the Chesapeake Bay and its tidal tributaries</u>	<u>see 9 VAC 25-260-185</u>		<u>6.0-9.0</u>	
III	Nontidal Waters Coastal and Piedmont Zones	4.0	5.0	6.0-9.0	32
IV	Mountainous Zones Waters	4.0	5.0	6.0-9.0	31
V	Stockable Trout Waters	5.0	6.0	6.0-9.0	21
VI	Natural Trout Waters	6.0	7.0	6.0-9.0	20
VII	Swamp Waters	*	*	4.3-9.0*	**

*This classification recognizes that the natural quality of these waters may fall outside of the ranges for D.O. and pH set forth above as water quality criteria; therefore, on a case-by-case basis, criteria for specific Class VII waters can be developed which reflect the natural quality of the waterbody. Virginia Pollutant Discharge Elimination System limitations in Class VII waters shall meet pH of 6.0 - 9.0.

**Maximum temperature will be the same as that for Classes I through VI waters as appropriate.

***The water quality criteria in this section do not apply below the lowest flow averaged arithmetic mean over a period of seven consecutive days that can be statistically expected to occur once every 10 climatic years (a climatic year begins April 1 and

ends March 31.)

PART II

STANDARDS WITH MORE SPECIFIC APPLICATION

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.

A. Dissolved Oxygen

<u>Designated Use</u>	<u>Criteria Concentration/ Duration</u>	<u>Temporal Application</u>
<u>Migratory fish spawning</u> <u>and</u> <u>nursery</u>	<u>7-day mean > 6 mg/l</u> <u>(tidal habitats with 0-0.5 ppt salinity)</u>	<u>February 1 - May 31</u>
	<u>Instantaneous minimum > 5 mg/l</u>	
<u>Open-water</u> ^{1,2}	<u>30 day mean > 5.5 mg/l</u> <u>(tidal habitats with 0-0.5 ppt salinity)</u>	<u>year-round</u>
	<u>30 day mean > 5 mg/l</u> <u>(tidal habitats with >0.5 ppt salinity)</u>	
	<u>7 day mean > 4 mg/l</u>	
	<u>Instantaneous minimum > 3.2 mg/l at</u> <u>temperatures <29°C</u> <u>Instantaneous minimum > 4.3 mg/l at</u> <u>temperatures > 29°C</u>	
<u>Deep-water</u>	<u>30 day mean > 3 mg/l</u>	<u>June 1 - September 30</u>
	<u>1 day mean > 2.3 mg/l</u>	
	<u>Instantaneous minimum > 1.7 mg/l</u>	
<u>Deep-channel</u>	<u>Instantaneous minimum > 1 mg/l</u>	<u>June 1 - September 30</u>

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1 = See subsection aa of 9 VAC 25-260-310 for site specific seasonal open-water dissolved oxygen criteria applicable to the tidal Mattaponi and Pamunkey Rivers and their tidal tributaries.

2 = In applying this open-water instantaneous criterion to the Chesapeake Bay and its tidal tributaries where the existing water quality for dissolved oxygen exceeds an instantaneous minimum of 3.2 mg/l, that higher water quality for dissolved oxygen shall be provided antidegradation protection in accordance with section 30 subsection A.2 of this chapter.

B. Submerged Aquatic Vegetation and Water Clarity

If the submerged aquatic vegetation (SAV) acres in this subsection are met in any individual Chesapeake Bay Program segment as described in subsection D of this section, then the shallow-water submerged aquatic vegetation use is met in that segment. If the SAV acres in this subsection are not met in any individual Chesapeake Bay Program segment, then the water clarity criteria shall apply to the water clarity acres in that segment. If these water clarity criteria are met to the bottom water-sediment interface for the number of water clarity acres in that segment, then the shallow-water submerged aquatic vegetation use is met; regardless of the number of acres of SAV in that segment.

<u>Designated Use</u>	<u>Chesapeake Bay Program Segment</u>	<u>SAV Acres¹</u>	<u>Water Clarity Criteria (percent light-through-water)²</u>	<u>Water Clarity Acres¹</u>	<u>Temporal Application</u>
<u>Shallow-Water Submerged Aquatic Vegetation Use</u>	<u>CB5MH</u>	<u>7,633</u>	<u>22%</u>	<u>14,514</u>	<u>April 1 - October 31</u>
	<u>CB6PH</u>	<u>1,267</u>	<u>22%</u>	<u>3,168</u>	<u>March 1 - November 30</u>
	<u>CB7PH</u>	<u>15,107</u>	<u>22%</u>	<u>34,085</u>	<u>March 1 - November 30</u>
	<u>CB8PH</u>	<u>11</u>	<u>22%</u>	<u>28</u>	<u>March 1 - November 30</u>
	<u>POTTF</u>	<u>2,093</u>	<u>13%</u>	<u>5,233</u>	<u>April 1 - October 31</u>
	<u>POTOH</u>	<u>1,503</u>	<u>13%</u>	<u>3,758</u>	<u>April 1 - October 31</u>
	<u>POTMH</u>	<u>4,250</u>	<u>22%</u>	<u>10,625</u>	<u>April 1 - October 31</u>
	<u>RPPTF</u>	<u>66</u>	<u>13%</u>	<u>165</u>	<u>April 1 - October 31</u>

<u>RPPOH</u>	<u>0</u>	<u>:</u>	<u>0</u>	<u>:</u>
<u>RPPMH</u>	<u>1700</u>	<u>22%</u>	<u>5000</u>	<u>April 1 - October 31</u>
<u>CRRMH</u>	<u>768</u>	<u>22%</u>	<u>1,920</u>	<u>April 1 - October 31</u>
<u>PIAMH</u>	<u>3,479</u>	<u>22%</u>	<u>8,014</u>	<u>April 1 - October 31</u>
<u>MPNTE</u>	<u>85</u>	<u>13%</u>	<u>213</u>	<u>April 1 - October 31</u>
<u>MPNOH</u>	<u>0</u>	<u>:</u>	<u>0</u>	<u>:</u>
<u>PMKTF</u>	<u>187</u>	<u>13%</u>	<u>468</u>	<u>April 1 - October 31</u>
<u>PMKOH</u>	<u>0</u>	<u>:</u>	<u>0</u>	<u>:</u>
<u>YRKMH</u>	<u>239</u>	<u>22%</u>	<u>598</u>	<u>April 1 - October 31</u>
<u>YRKPH</u>	<u>2,793</u>	<u>22%</u>	<u>6,982</u>	<u>March 1 - November 30</u>
<u>MOBPH</u>	<u>15,901</u>	<u>22%</u>	<u>33,990</u>	<u>March 1 - November 30</u>
<u>JMSTF2</u>	<u>200</u>	<u>13%</u>	<u>500</u>	<u>April 1 - October 31</u>
<u>JMSTF1</u>	<u>1000</u>	<u>13%</u>	<u>2500</u>	<u>April 1 - October 31</u>
<u>APPTE</u>	<u>379</u>	<u>13%</u>	<u>948</u>	<u>April 1 - October 31</u>
<u>JMSOH</u>	<u>15</u>	<u>13%</u>	<u>38</u>	<u>April 1 - October 31</u>
<u>CHKOH</u>	<u>535</u>	<u>13%</u>	<u>1,338</u>	<u>April 1 - October 31</u>
<u>JMSMH</u>	<u>200</u>	<u>22%</u>	<u>500</u>	<u>April 1 - October 31</u>
<u>JMSPH</u>	<u>300</u>	<u>22%</u>	<u>750</u>	<u>March 1 - November 30</u>
<u>WBEMH</u>	<u>0</u>	<u>:</u>	<u>0</u>	<u>:</u>
<u>SBEMH</u>	<u>0</u>	<u>:</u>	<u>0</u>	<u>:</u>
<u>EBEMH</u>	<u>0</u>	<u>:</u>	<u>0</u>	<u>:</u>
<u>LAFMH</u>	<u>0</u>	<u>:</u>	<u>0</u>	<u>:</u>
<u>ELIPH</u>	<u>0</u>	<u>:</u>	<u>0</u>	<u>:</u>
<u>LYNPH</u>	<u>107</u>	<u>22%</u>	<u>268</u>	<u>March 1 - November 30</u>

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	<u>POCOH</u>	<u>0</u>	<u>=</u>	<u>0</u>	<u>=</u>
	<u>POCMH</u>	<u>4,066</u>	<u>22%</u>	<u>9,368</u>	<u>April 1 - October 31</u>
	<u>TANMH</u>	<u>13,579</u>	<u>22%</u>	<u>22,064</u>	<u>April 1 - October 31</u>

1 = The assessment period for SAV and water clarity acres shall be the single best year in the most recent three consecutive years. When three consecutive years of data are not available, a minimum of three years within the most recent five years shall be used.

2 = Percent Light through Water = $100e^{(-K_dZ)}$ where K_d is water column light attenuation coefficient and can be measured directly or converted from a measured secchi depth where $K_d = 1.45/\text{secchi depth}$. Z = depth at location of measurement of K_d .

C. Chlorophyll a

<u>Designated Use</u>	<u>Chlorophyll a Narrative Criterion¹</u>	<u>Temporal Application</u>
<u>Open Water</u>	<u>Concentrations of chlorophyll a in free-floating microscopic aquatic plants (algae) shall not exceed levels that result in undesirable or nuisance aquatic plant life, or render tidal waters unsuitable for the propagation and growth of a balanced, indigenous population of aquatic life or otherwise result in ecologically undesirable water quality conditions such as reduced water clarity, low dissolved oxygen, food supply imbalances, proliferation of species deemed potentially harmful to aquatic life or humans or aesthetically objectionable conditions.</u>	<u>March 1 - September 30</u>

1 = See subsection bb of 9 VAC 25-260-310 for site specific seasonal open-water chlorophyll a numerical criteria applicable to the tidal James River.

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D. Implementation

1. Chesapeake Bay program segmentation scheme as described in Chesapeake Bay Program. 2004. *Chesapeake Bay Program Analytical Segmentation Scheme-Revisions, Decisions and Rationales: 1983 -2003, CBP/TRS 268/04.* Chesapeake Bay Program, Annapolis, Maryland is listed below and shall be used as the spatial assessment unit to determine attainment of the criteria in this section for each designated use.

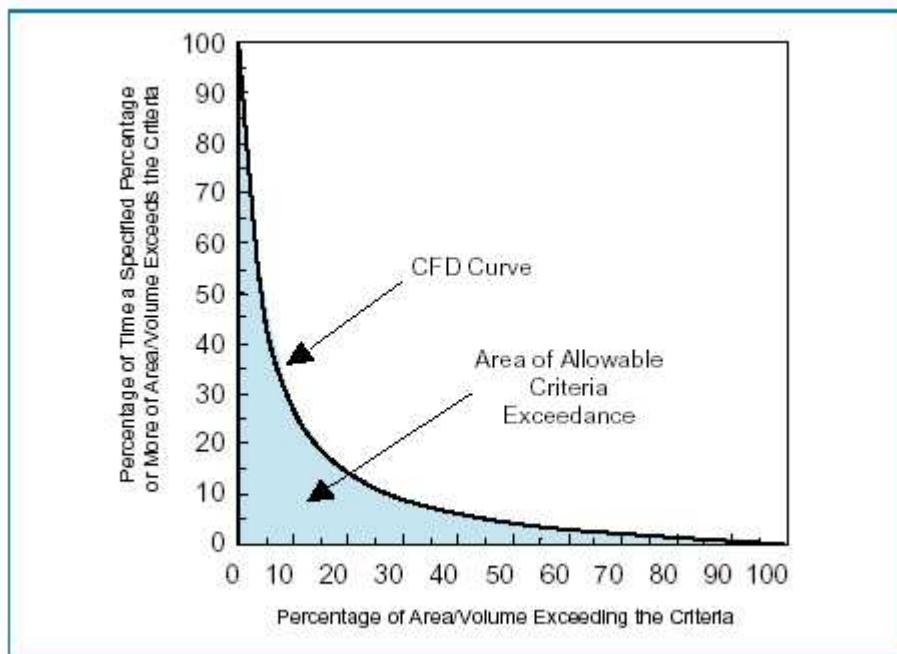
<u>Chesapeake Bay Segment</u>	<u>Segment</u>	<u>Chesapeake Bay Segment</u>	<u>Segment</u>
<u>Description</u>	<u>Name¹</u>	<u>Description</u>	<u>Name¹</u>
<u>Lower Central Chesapeake Bay</u>	<u>CB5MH</u>	<u>Mobjack Bay</u>	<u>MOBPH</u>
<u>Western Lower Chesapeake Bay</u>	<u>CB6PH</u>	<u>Upper Tidal Fresh James River</u>	<u>JMSTF2</u>
<u>Eastern Lower Chesapeake Bay</u>	<u>CB7PH</u>	<u>Lower Tidal Fresh James River</u>	<u>JMSTF1</u>
<u>Mouth of the Chesapeake Bay</u>	<u>CB8PH</u>	<u>Appomattox River</u>	<u>APPTF</u>
<u>Upper Potomac River</u>	<u>POTTF</u>	<u>Middle James River</u>	<u>JMSOH</u>
<u>Middle Potomac River</u>	<u>POTOH</u>	<u>Chickahominy River</u>	<u>CHKOH</u>
<u>Lower Potomac River</u>	<u>POTMH</u>	<u>Lower James River</u>	<u>JMSMH</u>
<u>Upper Rappahannock River</u>	<u>RPPTF</u>	<u>Mouth of the James River</u>	<u>JMSPH</u>
<u>Middle Rappahannock River</u>	<u>RPPOH</u>	<u>Western Branch Elizabeth River</u>	<u>WBEMH</u>
<u>Lower Rappahannock River</u>	<u>RPPMH</u>	<u>Southern Branch Elizabeth River</u>	<u>SBEMH</u>
<u>Corrotoman River</u>	<u>CRRMH</u>	<u>Eastern Branch Elizabeth River</u>	<u>EBEMH</u>
<u>Piankatank River</u>	<u>PIAMH</u>	<u>Lafayette River</u>	<u>LAFMH</u>
<u>Upper Mattaponi River</u>	<u>MPNTE</u>	<u>Mouth of the Elizabeth River</u>	<u>ELIPH</u>
<u>Lower Mattaponi River</u>	<u>MPNOH</u>	<u>Lynnhaven River</u>	<u>LYNPH</u>
<u>Upper Pamunkey River</u>	<u>PMKTF</u>	<u>Middle Pocomoke River</u>	<u>POCOH</u>
<u>Lower Pamunkey River</u>	<u>PMKOH</u>	<u>Lower Pocomoke River</u>	<u>POCMH</u>
<u>Middle York River</u>	<u>YRKMH</u>	<u>Tangier Sound</u>	<u>TANMH</u>
<u>Lower York River</u>	<u>YRKPH</u>		

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1=First three letters of segment name represent Chesapeake Bay segment description, letters four and five represent the salinity regime of that segment (TF = Tidal Fresh, OH = Oligohaline, MH = Mesohaline and PH = Polyhaline) and a sixth space is reserved for subdivisions of that segment.

2. The assessment period shall be the most recent three consecutive years. When three consecutive years of data are not available, a minimum of three years within the most recent five years shall be used.
3. Attainment of these criteria shall be assessed through comparison of the generated cumulative frequency distribution of the monitoring data to the applicable criteria reference curve for each designated use. If the monitoring data cumulative frequency curve is completely contained inside the reference curve, then the segment is in attainment of the designated use. The reference curves and procedures to be followed are published in the USEPA, *Ambient Water Quality Criteria for Dissolved Oxygen, Water Clarity and Chlorophyll a for the Chesapeake Bay and Its Tidal Tributaries*, EPA 903-R-03-002, April 2003. If no reference curve is published, the cumulative frequency distribution reference curve in Figure 1, which represents 10% allowable exceedences equally distributed between time and space, shall be the applicable reference curve. An exception to this requirement is in measuring attainment of the SAV acres, which are compared directly to the criteria.

Figure 1.



4. As deemed necessary to meet the requirements of this section, the board shall issue or modify Virginia Pollutant

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Discharge Elimination System permits for point source dischargers located throughout the tidal and non-tidal sections of the following river basins: Potomac (sections 390 and 400 of this chapter), James (sections 410, 415, 420 and 430 of this chapter), Rappahannock (section 440 of this chapter), York (section 530 of this chapter) and Chesapeake Bay/Small Coastal Basins (subsections 2 - 3g of section 520 of this chapter).

PART VII

SPECIAL STANDARDS AND SCENIC RIVERS LISTINGS.

9 VAC 25-260-310. Special standards and requirements.

The special standards are shown in small letters to correspond to lettering in the basin tables. The special standards are as follows:

a. Shellfish waters. In all open ocean or estuarine waters capable of propagating shellfish or in specific areas where public or leased private shellfish beds are present, including those waters on which condemnation or restriction classifications are established by the State Department of Health, the following criteria for fecal coliform bacteria will apply:

The geometric mean fecal coliform value for a sampling station shall not exceed an MPN (most probable number) of 14 per 100 milliliters. The 90th percentile shall not exceed an MPN of 43 for a 5-tube, 3-dilution test or 49 for a 3-tube, 3-dilution test.

The shellfish area is not to be so contaminated by radionuclides, pesticides, herbicides, or fecal material that the consumption of shellfish might be hazardous.

b. Policy for the Potomac Embayments. At its meeting on September 12, 1996, the board adopted a policy (9 VAC 25-415, Policy for the Potomac Embayments) to control point source discharges of conventional pollutants into the Virginia embayment waters of the Potomac River, and their tributaries, from the fall line at Chain Bridge in Arlington County to the Route 301 bridge in King George County. The policy sets effluent limits for BOD₅, total suspended solids, phosphorus, and ammonia, to protect the water quality of these high profile waterbodies.

c. Cancelled.

d. Cancelled.

e. Cancelled.

f. Cancelled.

g. Occoquan watershed policy. At its meeting on July 26, 1971 (Minute 10), the board adopted a comprehensive pollution abatement and water quality management policy for the Occoquan watershed. The policy set stringent treatment and discharge requirements in order to improve and protect water quality, particularly since the waters are an important water supply for Northern Virginia. Following a public hearing on November 20, 1980, the board, at its December 10-12, 1980, meeting, adopted as of February 1, 1981, revisions to this policy (Minute 20.) These revisions became effective March 4, 1981. Additional amendments were made following a public hearing on August 22, 1990, and adopted by the board at its September 24, 1990, meeting (Minute 24) and became effective on December 5, 1990. Copies are available upon request from the Department of Environmental Quality.

h. Cancelled.

i. Cancelled.

j. Cancelled.

k. Cancelled.

l. Cancelled.

m. The following effluent limitations apply to wastewater treatment facilities in the entire Chickahominy watershed above Walker's Dam (this excludes effluents consisting solely of stormwater):

CONSTITUENT	CONCENTRATION
1. Biochemical Oxygen demand 5-day at 20	6.0 mg/l monthly average, with not more than 5% of individual samples to exceed 8.0 mg/l
2. Settleable Solids	Not to exceed 0.1 ml/l

3. Suspended Solids 5.0 mg/l monthly average, with not more than 5% of individual samples to exceed 7.5 mg/l

4. Ammonia Nitrogen Not to exceed 2.0 mg/l as N

5. Total Phosphorus Not to exceed 0.1 mg/l monthly average for all discharges with the exception of Tyson Foods, Inc. which shall meet 0.3 mg/l monthly average and 0.5 mg/l daily maximum.

6. Other Physical and Chemical Constituents Other physical or chemical constituents not specifically mentioned will be covered by additional specifications as conditions detrimental to the stream arise. The specific mention of items 1 through 5 does not necessarily mean that the addition of other physical or chemical constituents will be condoned.

n. No sewage discharges, regardless of degree of treatment, should be allowed into the James River between Boshier and Williams Island Dams.

o. The concentration and total amount of impurities in Tuckahoe Creek and its tributaries of sewage origin shall be limited to those amounts from sewage, industrial wastes, and other wastes which are now present in the stream from natural sources and from existing discharges in the watershed.

p. Cancelled.

q. Cancelled.

r. Cancelled.

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- s. Chlorides not to exceed 40 mg/l at any time.
- t. Cancelled.
- u. Maximum temperature for the New River Basin from West Virginia state line upstream to the Giles - Montgomery County line:

The maximum temperature shall be 27°C (81°F) unless caused by natural conditions; the maximum rise above natural temperatures shall not exceed 2.8°C (5°F.)

This maximum temperature limit of 81°F was established in the 1970 water quality standards amendments so that Virginia temperature criteria for the New River would be consistent with those of West Virginia, since the stream flows into that state.

- v. The maximum temperature of the New River and its tributaries except trout waters from the Montgomery-Giles County line upstream to the Virginia-North Carolina state line shall be 29°C 84°F.

- w. Cancelled.

- x. Clinch River from the confluence of Dumps Creek at river mile 268 at Carbo downstream to river mile 255.4. The special water quality criteria for copper (measured as total recoverable) in this section of the Clinch River are 12.4 µg/l for protection from chronic effects and 19.5 µg/l for protection from acute effects. These site-specific criteria are needed to provide protection to several endangered species of freshwater mussels.

- y. Tidal freshwater Potomac River and tributaries that enter the tidal freshwater Potomac River from Cockpit Point (below Occoquan Bay) to the fall line at Chain Bridge. During November 1 through February 14 of each year the thirty-day average concentration of total ammonia nitrogen (in mg N/L) shall not exceed, more than once every three years on the average the following chronic ammonia criterion:

$$\left(\frac{0.0577}{1 + 10^{7.688 - \text{pH}}} + \frac{2.487}{1 + 10^{\text{pH} - 7.688}} \right) \times 1.45(10^{0.028(25 - \text{MAX})})$$

MAX = temperature in °C or 7, whichever is greater.

The default design flow for calculating steady state waste load allocations for this chronic ammonia criterion is the 30Q10, unless statistically valid methods are employed which demonstrate compliance with the duration and return frequency of

this water quality criterion.

z. A site specific dissolved copper aquatic life criterion of 16.3 µg/l for protection from acute effects and 10.5µg/l for protection from chronic effects applies in the following area:

Little Creek to the Route 60 (Shore Drive) bridge including Little Channel, Desert Cove, Fishermans Cove and Little Creek Cove.

Hampton Roads Harbor including the waters within the boundary lines formed by I-664 (Monitor-Merrimac Bridge Tunnel) and I-64 (Hampton Roads Bridge Tunnel), Willoughby Bay and the Elizabeth River and its tidal tributaries.

This criterion reflects the acute and chronic copper aquatic life criterion for saltwater in 9 VAC 25-260-140.B X a water effect ratio. The water effect ratio was derived in accordance with 9 VAC 25-260-140 F.

aa. The following site-specific dissolved oxygen criteria apply to the tidal Mattaponi and Pamunkey Rivers and their tidal tributaries because of seasonal lower dissolved oxygen concentration due to the natural oxygen depleting processes present in the extensive surrounding tidal wetlands. These criteria apply June 1 - September 30 to Chesapeake Bay segments MPNTF, MPNOH, PMKTF, PMKOH and are implemented in accordance with subsection D of 9 VAC 25-260-185. These criteria supercede the open-water criteria listed in subsection A of 9 VAC 25-260-185.

<u>Designated use</u>	<u>Criteria Concentration/ Duration</u>	<u>Temporal Application</u>
Open-Water	30 day mean > 4.0 mg/l	June 1 - September 30
	Instantaneous minimum > 3.2 mg/l at temperatures <29°C	
	Instantaneous minimum > 4.3 mg/l at temperatures > 29°C	

bb. The following site specific numerical chlorophyll a criteria apply March 1 - May 31 and July 1 - September 30 to the tidal James River (excludes tributaries) segments JMSTF2, JMSTF1, JMSOH, JMSMH, JMSPH and are implemented in accordance with subsection D of 9 VAC 25-260-185.

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<u>Designated Use</u>	<u>Chlorophyll a</u> <u>ug/l</u>	<u>Chesapeake Bay Program</u> <u>Segment</u>	<u>Temporal Application</u>
<u>Open-Water</u>	10	JMSTF2	<u>March 1 -</u> <u>May 31</u>
	15	JMSTF1	
	15	JMSTF1	
	10	JMSTF1	
	10	JMSTF1	
	15	JMSTF2	<u>July 1 -</u> <u>September</u> <u>30</u>
	20	JMSTF1	
	15	JMSTF1	
	10	JMSTF1	
	10	JMSTF1	

PART VIII**NUTRIENT ENRICHED WATERS****9 VAC 25-260-330. Purpose.**

The Board recognizes that nutrients are contributing to undesirable growths of aquatic plant life in surface waters of the Commonwealth. This standard establishes a designation of "nutrient enriched waters". Designations of surface waters of the Commonwealth as "nutrient enriched waters" are determined by the Board based upon an evaluation of the historical water quality data for one or more of the following indicators of nutrient enrichment: chlorophyll "a" concentrations, dissolved oxygen fluctuations, and concentrations of total phosphorus.

9 VAC 25-260-340. (Repealed.)**9 VAC 25-260-350. Designation of nutrient enriched waters.**

The following state waters are hereby designated as "nutrient enriched waters":

1. Smith Mountain Lake and all tributaries* of the impoundment upstream to their headwaters;
2. Lake Chesdin from its dam upstream to where the Route 360 bridge (Goodes Bridge) crosses the Appomattox River, including all tributaries to their headwaters that enter between the dam and the Route 360 bridge;
3. South Fork Rivanna Reservoir and all tributaries of the impoundment upstream to their headwaters;
4. New River and its tributaries, except Peak Creek above Interstate 81, from Claytor Dam upstream to Big Reed Island Creek (Claytor Lake.)
5. Peak Creek from its headwaters to its mouth (confluence with Claytor Lake), including all tributaries to their headwaters;
6. ~~Aquia Creek from its headwaters to the state line;~~ (Repealed.)
7. ~~Fourmile Run from its headwaters to the state line;~~ (Repealed.)
8. ~~Hunting Creek from its headwaters to the state line;~~ (Repealed.)
9. ~~Little Hunting Creek from its headwaters to the state line;~~ (Repealed.)
10. ~~Gunston Cove from its headwaters to the state line;~~ (Repealed.)

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11. ~~Belmont and Occoquan Bays from their headwaters to the state line; (Repealed.)~~
12. ~~Potomac Creek from its headwaters to the state line; (Repealed.)~~
13. ~~Neabsco Creek from its headwaters to the state line; (Repealed.)~~
14. ~~Williams Creek from its headwaters to its confluence with Lower Upper Machodoc Creek; (Repealed.)~~
15. ~~Tidal freshwater Rappahannock River from the fall line to Buoy 44, near Leedstown, Virginia, including all tributaries to their headwaters that enter the tidal freshwater Rappahannock River; (Repealed.)~~
16. ~~Estuarine portion of the Rappahannock River from Buoy 44, near Leedstown, Virginia, to the mouth of the Rappahannock River (Buoy 6), including all tributaries to their headwaters that enter the estuarine portion of the Rappahannock River; (Repealed.)~~
17. ~~Estuarine portion of the Mattaponi River from Clifton, Virginia, and estuarine portion of the Pamunkey River from Sweet Hall Landing, Virginia to West Point, Virginia, and the York River from West Point, Virginia, to the mouth of the York River (Tue Marsh Light) including all tributaries to their headwaters that enter the estuarine portions of the Mattaponi River, the Pamunkey River and the York River; (Repealed.)~~
18. ~~Tidal freshwater James River from the fall line to the confluence of the Chickahominy River (Buoy 70) including all tributaries to a distance five river miles above their fall lines that enter the tidal freshwater James River; (Repealed.)~~
19. ~~Estuarine portion of the James River from its confluence with the Chickahominy River (Buoy 70) to the mouth of the James River (Buoy 25), including all tributaries to their headwaters; (Repealed.)~~
20. ~~Chesapeake Bay and its small coastal basins from the Virginia state line to the mouth of the Bay (a line from Cape Henry drawn through Buoys 3 and 8) to Fishermans Island, and its tidal tributaries, excluding the Potomac tributaries, those tributaries listed above, and the Mattaponi River upstream of Clifton, Virginia, and the Pamunkey River upstream of Sweet Hall Landing, Virginia; and (Repealed.)~~
21. Tidal freshwater Blackwater River from the Norfolk and Western railway bridge at Burdette, Virginia, and tidal freshwater Nottoway River from the Norfolk and Western railway bridge at Courtland, Virginia, to the state line, including all tributaries to their headwaters that enter the tidal freshwater portions of the Blackwater River and the Nottoway River.

22. Stony Creek from its confluence with the North Fork Shenandoah River to its headwaters including all named and unnamed tributaries to their headwaters.

B. Whenever any water body is designated as "nutrient enriched waters," the board shall modify the VPDES permits of point source dischargers into the "nutrient enriched waters" as provided in the board's Policy for Nutrient Enriched Waters (9 VAC 25-40-10 et seq.).

9 VAC 25-260-410. James River Basin (Lower.)

SEC.	CLASS	SP. STDS.	SECTION DESCRIPTION
1	II	a,z, <u>bb</u> ,NEW-19	James River and its tidal tributaries from Old Point Comfort - Fort Wool to the end of tidal waters (fall line, Mayo's bridge, 14 th Street, Richmond) except prohibited or spoil areas, unless otherwise designated in this chapter.
1a	III	NEW-19	Free flowing or non-tidal portions of streams in Section 1, unless otherwise designated in this chapter.
1b	II	a,z,NEW-19	Eastern and Western Branches of the Elizabeth River and tidal portions of their tributaries from their confluence with the Elizabeth River to the end of tidal waters.
1c	III	NEW-19	Free flowing portions of the Eastern Branch of the Elizabeth River and its tributaries.
1d	II	a,z,NEW-19	Southern Branch of the Elizabeth River from its confluence with the Elizabeth River to the lock at Great Bridge.

1e	III	NEW-19	Free flowing portions of the Western Branch of the Elizabeth River and of the Southern Branch of the Elizabeth River from their confluence with the Elizabeth River to the lock at Great Bridge.
1f	II	a,NEW-19	Nansemond River and its tributaries from its confluence with the James River to Suffolk (dam at Lake Meade) unless otherwise designated in this chapter.
1g	III	NEW-19	Shingle Creek from its confluence with the Nansemond River to its headwaters in the Dismal Swamp.
1h	III	PWS,NEW-19	Lake Prince, Lake Burnt Mills and Western Branch impoundments for Norfolk raw water supply and Lake Kilby - Cahoon Pond, Lake Meade and Lake Speight impoundments for Portsmouth raw water supply and including all tributaries to these impoundments.
1i	III	NEW-19	Free flowing portions of the Pagan River and its free flowing tributaries.
1j			(Deleted)
1k	III	PWS,NEW-19	Skiffes Creek Reservoir (Newport News water impoundment.)
1l	III	PWS,NEW-19	The Lone Star lakes and impoundments in the City of Suffolk,

Chuckatuck Creek watershed which serve as a water source for the City of Suffolk.

- 1m III PWS,NEW-19 The Lee Hall Reservoir system, near Skiffes Creek and the Warwick River, in the City of Newport News.

- 1n III PWS,NEW-19 Chuckatuck Creek and its tributaries from Suffolk=s raw water intake (at Godwin=s Millpond) to points 5 miles upstream.

- 1o II PWS, NEW-18,bb James River from City Point (Hopewell) to a point 5 miles above American Tobacco Company's raw water intake.

- 1p III PWS, NEW-18 Free flowing tributaries to section 1o.

- 2 III NEW-18,19 Free flowing tributaries of the James River from Buoy 64 to Brandon and free flowing tributaries of the Chickahominy River to Walkers Dam, unless otherwise designated in this chapter.

- 2a III PWS,NEW-18 Diascund Creek and its tributaries from Newport News' raw water intake dam to its headwaters.

- 2b III PWS,NEW-18 Little Creek Reservoir and its tributaries from the City of Newport News impoundment dam to 5 miles upstream of the raw water intake.

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| 3 | III | m,NEW-18 | Chickahominy River and its tributaries from Walkers Dam to Bottoms Bridge (Route 60) bridge, unless otherwise designated in this chapter. |
| 3a | III | PWS,m,
NEW-18 | Chickahominy River from Walkers Dam to a point 5 miles upstream. |
| 4 | III | m | Chickahominy River and its tributaries, unless otherwise designated in this chapter, from Bottoms Bridge (Route 60 bridge) to its headwaters. |

9 VAC 25-260-530. York River Basin.

SEC.	CLASS	SP. STDS	SECTION DESCRIPTION
1	II	a,NEW-17, <u>aa</u>	York River and the tidal portions of its tributaries from Goodwin Neck and Sandy Point upstream to Thorofare Creek and Little Salem Creek near West Point; Mattaponi River and the tidal portions of its tributaries from Little Salem Creek to the end of tidal waters; Pamunkey River and the tidal portions of its tributaries from Thorofare Creek near West Point to the end of tidal waters.
2	III	NEW-17	Free flowing tributaries of the York River, free flowing tributaries of the Mattaponi River to Clifton and the Pamunkey River to Romancoke, unless otherwise designated in this chapter.
2a	III	PWS,NEW-17	Waller Mill Reservoir and its drainage area above Waller Mill dam which serves as a raw water supply for the City of Williamsburg.
2b	III	PWS,NEW-17	Jones Pond (a tributary of Queen Creek near Williamsburg which serves as the raw water supply for Cheatham Annex Naval Station) and its tributaries to points 5 miles upstream.

3	III		Free flowing portions of the Mattaponi and Pamunkey Rivers, free flowing tributaries of the Mattaponi above Clifton, and free flowing tributaries of the Pamunkey above Romancoke, unless otherwise designated in this chapter.
3a	III	PWS	South Anna River from Ashland's raw water intake to a point 5 miles upstream.
3b	III	PWS	Northeast Creek from the Louisa County Water Authority's impoundment dam (approximately 1/8 mile upstream of Route 33) to its headwaters.
3c	III		South Anna River from Route 15 upstream to a point 1.5 miles below the effluent from the Gordonsville Sewage Treatment Plant.
3d	III	PWS	Ni River and its tributaries from Spotsylvania's raw water intake near Route 627 to their headwaters.
3e	III	PWS	The North Anna River and its tributaries from Hanover County's raw water intake near Doswell (approximately 1/2 mile upstream from State Route 30) to points 5 miles upstream.
3f	III	PWS	Stevens Mill Run from the Lake Caroline water

impoundment, and other tributaries into the impoundment
upstream to their headwaters.