



Water Quality Standards Regulation (9 VAC 25-260) Rulemaking: Bacteria, Ammonia, Cadmium, and Human Health Criteria

State Water Control Board Presentation

December 12, 2016

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Background:

- SWCB approved most recent Triennial Review amendments to WQ Standards in January 2016
- TR Executive Review completed in August 2016
- TR Approval package sent to EPA in November
- Several items pulled from Triennial Review, to be addressed in separate rulemaking:
 - Revised bacteria criteria for recreation waters
 - Updated ammonia criteria for aquatic life
 - Revised cadmium criteria for aquatic life
 - Amendments to 94 human health criteria

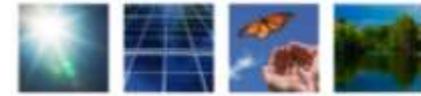


Background (cont.):

- NOIRA for Triennial Review included all parameters under consideration for this rulemaking
- Reconvened TR Regulatory Advisory Panel
- RAP met four times in 2016 – March, May, June and July

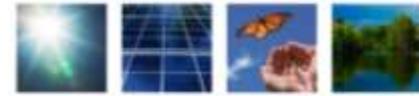
Bacteria Criteria

Criteria Elements	EPA Recommendation 1	Theoretical Illness Rate (STV) (36/1000 illness rate)	Alternate EPA Recommendation 2	Theoretical Illness Rate (STV) (32/1000 illness rate)
Indicator (<u>freshwater</u>)	Geometric Mean (cfu/100 ml)	Statistical Threshold Value (cfu/100 ml) 10% exceedence	Geometric Mean (cfu/100 ml)	Statistical Threshold Value (cfu/100 ml) 10% exceedence
Current VA Criterion E. coli	126	235		
EPA 2012 E. coli	126	410	100	320
Indicator (<u>marine water</u>)	Geometric Mean (cfu/100 ml)	Statistical Threshold Value (cfu/100 ml) 10% exceedence	Geometric Mean (cfu/100 ml)	Statistical Threshold Value (cfu/100 ml) 10% exceedence
Current VA Criterion Enterococci	35	104		
EPA 2012 Enterococci	35	130	30	110



Bacteria Criteria

Issue	Options	Recommendation
Assumed illness rate (36 or 32/1,000)	<ul style="list-style-type: none"> • Consider both illness rates; EPA criteria documentation states both are protective and acceptable 	<ul style="list-style-type: none"> • Base criteria on 36/1,000 illness rate; consistent with current policy and existing TMDLs
BEACH Action Value (notification threshold for grant-funded States)	<ul style="list-style-type: none"> • Include in Regulation • EPA recommends not including in Standards 	<ul style="list-style-type: none"> • Do not include BAV in Regulation; provide reference to VDH authority
Geographic application	<ul style="list-style-type: none"> • EPA recommendations applicable to “Coastal Recreation Waters” • All State surface waters designated for primary contact recreation 	<ul style="list-style-type: none"> • Provide same level of protection to all State waters; apply criteria statewide



Ammonia Criteria:

- EPA issued revised ammonia criteria for protection of aquatic life in August 2013
- Adding sensitive mussels and snails in toxicity database made criteria about twice as stringent
- Concerns raised about impacts to regulated dischargers and cost to upgrade/run treatment systems
- No comments on technical basis for revised criteria



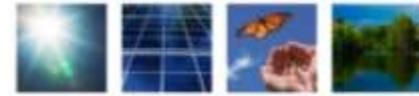
Ammonia Criteria

Issue	Options	Recommendation
Capital and operating costs for compliance	<ul style="list-style-type: none"> • DEQ cost info provided to Dept. of Planning & Budget • VAMWA engineer's report 	<ul style="list-style-type: none"> • VAMWA's report has representative order-of-magnitude estimates • DEQ analysis of # and type of affected dischargers • State can't lobby for \$
Compliance schedule	<ul style="list-style-type: none"> • Limit to permit term • Allow for schedule beyond permit term, in accord with Federal requirements • "As soon as possible" • "As soon as practicable" 	<ul style="list-style-type: none"> • DEQ Draft "Strawman" revisions to WQ Stds Regulation may allow extended schedule if justified



“Strawman” Amendments for Ammonia Compliance Schedule

- Compliance schedule not limited to permit term by Federal regulations; “as soon as possible”
- State preference to match Federal requirement
- Proposed language would Amend WQ Standards Regulation:
 - Specific to ammonia criteria implementation
 - Include factors to consider on a case-by-case basis
 - Set interim milestones and reporting requirements



Cadmium Criteria:

- EPA issued revised cadmium criteria for protection of aquatic life in April 2016
- Reflects data for 75 new species and 49 new genera
- Modest changes to criteria due to new toxicity studies



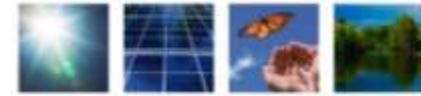
EPA's Updated Water Quality Criteria for Cadmium

Freshwater Criterion	Acute ug/L at hardness 100	Chronic ug/L at hardness 100
Virginia (1984)	3.9	1.1
EPA (2001)	2.0	0.25
EPA (2016)	1.8	0.72



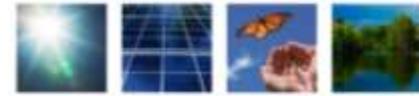
Updated Criteria for Cadmium: with and without extra protection for rainbow trout

Criterion	Acute	Chronic
	ug/L at hardness 100	ug/L at hardness 100
EPA (2016) ; criterion lowered to protect rainbow trout	1.8	0.72
EPA (2016) ; criterion NOT lowered to protect rainbow trout	2.7	0.72 (no change to chronic)



EPA's Updated Water Quality Criteria for Cadmium (Estuarine)

Estuarine Criterion	Acute (ug/L)	Chronic (ug/L)
Virginia	40	8.8
EPA 2016	33	7.9



Cadmium Criteria

Issue	Options	Recommendation
<p>Include F.W. criterion calculated by DEQ for “Trout Absent”?</p>	<ul style="list-style-type: none"> • Include “Rainbow Trout Absent” criteria • Don’t include “Rainbow Trout Absent” criteria 	<ul style="list-style-type: none"> • Following past policy, propose only EPA recommended criterion; provides add’l protection for non-tested species that may be more sensitive



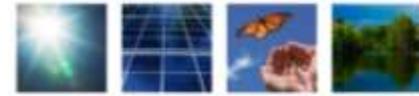
Human Health Criteria:

- DEQ staff were preparing to address 8 human health parameters in original Triennial Review
- EPA issued revised recommendations for 94 chemical pollutants in June 2015, including the 8 being considered
- Updated recommendations for human health parameters reflect the latest scientific information and EPA policies, including updated exposure factors, bioaccumulation factors, and toxicity factors



Human Health Criteria

Issue	Options	Recommendation
20% "Relative Source Contribution" is arbitrary	<ul style="list-style-type: none"> • Further consider the matter • Accept that RSC is established EPA policy 	<ul style="list-style-type: none"> • Propose EPA's criteria; have gone through peer review, public comment, and no add'l data will be developed by DEQ
Benzene criteria shown as a range	<ul style="list-style-type: none"> • Can't adopt a range as a WQ Standard • Use drinking water MCL (5 ug/L) as a guide 	<ul style="list-style-type: none"> • Propose conservative criteria (5.8 ug/l for PWS; 160 ug/l for all other waters) based on MCL

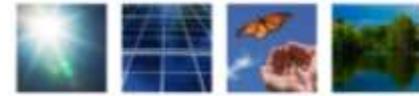


Attorney General Review and Statutory Authority

- AG's Office has certified that the Board has the authority to adopt the proposed amendments



Questions?



Staff Recommendations:

- 1. Authorize staff to proceed to public comment with proposed amendments to the Water Quality Standards Regulation, 9 VAC 25-260, as presented today.**
- 2. Convene public hearing(s) on the proposed amendments with a Board member serving as hearing officer.**