



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Region 1

5 Post Office Square, Suite 100

Boston, MA 02109-3912

Feb. 1, 2023

Mr. John Beling, Commissioner
Department of Environmental Conservation
1 National Life Drive, Davis Building
Montpelier, VT 05620-3520

Re: Action Letter for Vermont's Triennial Review Water Quality Standards Amendments -
Environmental Protection Rule Chapter 29A

Dear Mr. Beling:

On November 2, 2022, the Vermont Department of Environmental Conservation (DEC) submitted new and revised Water Quality Standards (WQS) contained in Environmental Protection Rule Chapter 29A (Chapter 29A) in accordance with Section 303(c) of the Clean Water Act (CWA). The public comment period for this rulemaking was held from May 25 – July 22, 2022, and a public hearing was held on July 12, 2022. Vermont's WQS revisions were adopted by the Vermont Agency of Natural Resources under the Vermont Administrative Procedures Act on October 25, 2022, and became effective on November 15, 2022. The revisions were certified by Sarah E.B. London, Chief Assistant Attorney General, on October 28, 2022, as having been duly adopted pursuant to state law.

Pursuant to Section 303(c)(3) of the CWA and 40 C.F.R. Part 131, EPA hereby approves Vermont's revisions to the following provisions of Chapter 29A as more specifically described and for the reasons explained in Attachment A:

- 29A-101: Applicability – Except item 29A-101(c), which was amended to specify that the rules apply to wetlands as articulated in sections 29A-104(e) and 29A-105(e).
- 29A-102: Definitions – Except the definition of “wetland” at 29A-102(53).
- 29A-103: General Policies
- 29A-104: Classification of Uses – Except 29A-104(e), which incorporates the functions and values for Class I and Class II wetland as the uses to be protected.
- 29-A-105: Antidegradation Policy – Except 29A-105(e), which provides for the protection of wetlands and their function and values.
- 29A-106: Discharge Policy
- 29A-201: Sampling and Analysis
- 29A-206: Water Quality Certifications Issued Pursuant to § 401 of the Clean Water Act
- 29A-301: Natural Influences

- 29A-302: Criteria Applicable to Waters Based Upon Fish Habitat Designation, Use Classification, or Type of body of Water
- 29A-303: General Criteria Applicable to all Waters
- 29A-304: Hydrology Criteria
- 29A-305: Numeric Biological Indices and Aquatic Habitat Assessments
- 29A-306: Use-Specific Management Objectives and Criteria by Class
- Appendix A: Fish Habitat Designation
- Appendix C: Water Quality Criteria for the Protection of Human Health and Aquatic Biota, except as noted below.
- Appendix F: Water Quality Classifications – Except for classification changes to Alder Brook, Blue Bank Brook, and Goshen Brook.
- Appendix G: Application of Biocriteria for Fish and Macroinvertebrate Communities in Vermont Wadeable Streams and Rivers

Consistent with the requirements of the Endangered Species Act (ESA), EPA evaluated the potential impacts of this current action on federally-protected species and their critical habitat and determined that consultation with the U.S. Fish and Wildlife Service (USFWS) was necessary. In a letter dated August 26, 2022, the USFWS, New England Field Office, concurred with EPA's findings that Vermont's adoption of EPA's CWA § 304(a) tributyltin aquatic life criteria recommendation is not likely to adversely affect listed species under its jurisdiction.

EPA is not taking action on the following items at this time pending consultation under the ESA with USFWS:

- Appendix C - Revised acute and chronic ALC for aluminum to be consistent with EPA's 2018 304(a) recommendation and associated footnotes r and s.
- Appendix C - Footnote o, which requires the use of EPA's 304(a) recommendation for acute and chronic ALC for copper, which utilizes the biotic ligand model. This shall be used in place of the hardness-based criteria for copper when site specific data are available.
- Appendix C - Revised acute and chronic ALC for selenium to be consistent with EPA's 2021 304(a) recommendation and associated footnotes i, p, and q. Chronic ALC for guthion, mirex, and methoxychlor to be consistent with EPA's 1986 304(a) recommendations.
- Appendix F – Water classification upgrades for Alder Brook, Blue Bank Brook, and Goshen Brook

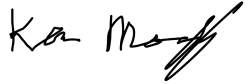
Additionally, EPA is not taking action at this time on the following items pending further coordination with Vermont DEC:

- Item 29A-101(c) in the Applicability section, which was amended to specify that the rules apply to wetlands as articulated in sections 29A-104(e) and 29A-105(e).
- The definition of "wetland" at 29A-102(53).
- Item 29A-104(e) in the Classification of Uses section, which incorporates the functions and values for Class I and Class II wetlands as the uses to be protected.

- Item 29A-105(e) in the Antidegradation Policy Section, which provides for the protection of wetlands and their function and values.

We look forward to continued cooperation with Vermont in the development and review of WQS pursuant to our responsibilities under the CWA. If you have any questions, please contact Dan Arsenault (617-918-1562) or Mike Knapp (617-918-1053).

Sincerely,

A handwritten signature in black ink, appearing to read "Ken Moraff". The signature is written in a cursive style with a long, sweeping underline.

Ken Moraff, Director
Water Division
EPA Region 1

Cc:

Pete LaFlamme, Director, Watershed Management Division, VTDEC
Bethany Sargent, Program Manager, Watershed Management Division, VTDEC

Attachment A
Technical Support Document for EPA Decisions on Revisions to
VT WQS Amendments at Environmental Protection Rule 29A
Submitted November 2, 2021

29A-101: Applicability

Vermont amended 29A-101(b) and (c). Item 29A-101(b) was amended to read as follows:

“The applicable Water Quality Standards shall be those in effect at the time of final permit or certification issuance. Concerning Water Quality Certification for a License, or the renewal of a License, issued by the Federal Energy Regulatory Commission (FERC), the applicable Water Quality Standards shall be those in effect at the time that the FERC issues notice of application ready for environmental analysis for a License.”

EPA approves these revisions as they provide greater specificity on the applicability of the water quality standards (WQS) contained in 29A.

EPA is not taking action on item 29A-101(c), which was amended to specify that the rules apply to wetlands as articulated in sections 29A-104(e) and 29A-105(e).

29A-102: Definitions

The definition of a “mixing zone” at 29A-102(26) was expanded to specify that “A mixing zone shall not be used to meet water quality criteria for bioaccumulative toxins.”

The definition of “physical habitat structure” at 29A-102(33) was expanded to include “as well as the portion of the riparian area that supports woody debris recruitment and temperature refuge.”

A definition for “seven day low flow, ten year return period (7Q10)” was revised at 29A-102(41) and reads: “Seven day low flow, ten year return period (7Q10)” means a flow equal to the lowest mean flow for seven consecutive days, adjusted to nullify any effects of artificial flow regulation, that has a 10% chance of occurring in any given year.” The word “drought” was removed.

The definition of “stream processes” at 29A-102(43) was revised to include “and the riparian area, which support woody debris recruitment and temperature refuge.”

A new definition for “thirty day low flow, 10 year return period (30Q10)” was added at 29A-102(46) and reads: “Thirty day low flow, ten year return period (30Q10)” means a flow equal to the lowest mean flow for 30 consecutive days, adjusted to nullify any effects of artificial flow regulation, that has a 10% chance of occurring in any given year.”

EPA is not taking action on a new definition for “wetland” that was added at 29A-102(53).

EPA approves these new and revised definitions, with the exception of “wetland,” as they provide necessary information to apply and implement Vermont’s WQS.

EPA also approves all renumbering and editorial revisions at 29A-102 as non-substantive revisions. EPA considers non-substantive revisions to existing Water Quality Standards (WQS) to constitute new or revised WQS that it has the authority to approve or disapprove under Section 303(c)(3). While these revisions do not substantively change the meaning or intent of the existing WQS, EPA believes it is reasonable to treat such revisions in this manner to ensure public transparency as to which provisions are applicable for CWA purposes. EPA notes that the scope of its review and action on non-substantive edits or editorial changes extends only to the edits or changes themselves. EPA is not re-opening or reconsidering the underlying WQS that are the subject of the non-substantive edits or editorial changes.

29A-103: General Policies

Items (1) and (2) at 29A-103(f) – Hydrology Policy were revised to read as follows:

(1) The proper management of water resources now and for the future requires careful consideration of the interruption of the natural flow regime and the fluctuation of water levels resulting from the construction of new, and the operation of existing, dams, diversions, and other control structures. These rules, in conjunction with other applicable law, provide a means for determining conditions which preserve the natural flow regime of waters.

(2) When determining necessary streamflows or conditions necessary to further the goals of this policy through application of the applicable procedures or regulations, the Secretary, as provided for in 10 V.S.A. § 1003, may cooperate with appropriate federal, state, municipal, and private interests to assure consistency with these rules.

At 29A-103(f)(1) “to the extent practicable” was removed from the last sentence. At 29A-103(f)(2) “Agency of Natural Resources” and “in achieving voluntary agreements relating to artificial streamflow regulations that” were removed. EPA approves these revisions as they provide greater specificity on the Hydrology Policy.

EPA approves all other formatting and editorial revisions to 28A-103 as non-substantive revisions.

29A-104: Classification of Uses

The order of the designated uses at 29A-104(d) was revised. EPA approves this revision as a non-substantive revision and also notes that the order of the designated uses listed in this section does not infer greater importance to items that appear higher in the list. All designated uses shall receive equal protection.

EPA is not taking action on a new item that was added at 29A-104(e), which incorporates the functions and values for Class I and Class II wetland as the uses to be protected.

29-A-105: Antidegradation Policy

Vermont revised 29A-105(b) to include “the designated uses, and” in the last sentence of this paragraph. EPA approves this revision as it provides greater specificity as to the uses and factors considered in Vermont’s Antidegradation Policy.

EPA approves all other editorial revisions to 29A-105 as non-substantive revisions.

EPA is not taking action at this time on the addition of a new item to the Antidegradation Policy at 29A 105(e), which provides for the protection of wetlands and their function and values.

29A-106: Discharge Policy

EPA approves editorial revisions to 29A-106 as non-substantive revisions.

29A-201: Sampling and Analysis

Revisions to section 29A-201 Sampling and Analysis does not relate to designated uses, water quality criteria, or antidegradation, and are therefore not new or revised WQS subject to EPA review under section 303(c) of the CWA.

29A-206: Water Quality Certifications Issued Pursuant to § 401 of the Clean Water Act

Section 29A-206 is a new addition to Vermont's WQS. This section does not relate to designated uses, water quality criteria, or antidegradation and are therefore not new or revised WQS subject to review under section 303(c) of the CWA.

29A-301: Natural Influences

EPA approves editorial revisions to 29A-301 as non-substantive revisions.

29A-302: Criteria Applicable to Waters Based Upon Fish Habitat Designation, Use Classification, or Type of body of Water

EPA approves editorial revisions to 29A-302 as non-substantive revisions.

29A-303: General Criteria Applicable to all Waters

Vermont added a provision to 29A-303(7)(c)(i) that pertains to flows to be used to prevent acute and chronic toxicity for the aquatic life criteria listed in Appendix C. The new provision states:

“For chronic criteria that utilize 30-day average, 30Q10 flows shall apply. The 30Q10 flow is a biologically based design flow used to protect aquatic life from chronic effects.”

EPA approves the addition of this provision as it is consistent with those 304(a) recommended criteria that utilize a 30-day average.

EPA approves editorial revisions to 29A-303 as non-substantive revisions.

29A-304: Hydrology Criteria

At 29A-304(b)(2) Vermont added “The method for ensuring compliance with this subsection is a site-specific flow study or studies.”

At 29A-304(c)(1) Vermont replaced “the Instream Flow Incremental Methodology (IFIM)” with “hydraulic habitat studies.”

Vermont revised 29A-304(e)(2) to read as follows:

“Class A(2) and B(2) Waters for Aquatic Habitat or Recreation – Boating. No change from the natural flow regime that would result in a change in the timing or an increase in the frequency, magnitude, rate of change, or duration of peak flows adversely affecting channel integrity or prevent the full support of uses.”

EPA approves these revisions as they provide greater specificity concerning methods and conditions to comply with hydrology criteria.

EPA approves editorial revisions to 29A-304 as non-substantive revisions.

29A-305: Numeric Biological Indices and Aquatic Habitat Assessments

Vermont revised 29A-305(a) to read as follows:

“The Secretary shall determine whether there is full support of the aquatic habitat use through appropriate methods of evaluation, including hydrogeomorphic assessments of flow characteristics, physical habitat structure, and stream processes for rivers and streams and aquatic habitat studies for lakes, ponds, and reservoirs. Applicants shall obtain the Secretary’s approval of study plans prior to conducting an evaluation.”

Vermont also removed an item previously found at 29A-305(b), which read:

“In addition, the Secretary may determine whether there is full support of the aquatic habitat use through other appropriate methods of evaluation, including habitat assessments.”

EPA approves these revisions as they provide greater specificity concerning the attainment of aquatic habitat use.

EPA approves editorial revisions to 29A-305 as non-substantive revisions.

29A-306: Use-Specific Management Objectives and Criteria by Class

For the use specific management objective of Recreation – Swimming and Other Primary Contact Recreation, Vermont added a new classification at 29A-306(f)(3). The new classification is Class B(1) and has the following management objectives:

- (A) Management Objectives. Where sustained direct contact with the water occurs, waters shall be managed to achieve and maintain a level of water quality compatible with very good quality swimming and other primary contact recreation with negligible risk of illness or injury from conditions that are a result of human activities.
- (B) Criteria. *Escherichia coli* – Not to exceed a geometric mean of 126 organism/100ml obtained over a representative period of 60 days, and no more than 10% of samples above 235 organism/100 ml.

EPA approves the establishment of the B(1) classification for the recreation use as the management objective is protective of the designated use and the *Escherichia coli* criteria are consistent with EPA's 2012 Recreational Water Quality Criteria (Office of Water 820-F-12-058)¹. EPA notes that no waters listed in Appendix F have been assigned B(1) classification for recreational use. If any waters are proposed to be upgraded to Class B(1) for recreation use this would be a change to Vermont's WQS and would require EPA approval pursuant to 40 C.F.R. § 131.5. Also, if any waters are proposed to be downgraded to Class B(1) for recreation use, a Use Attainability Analysis would be required to justify the removal of the use consistent with 40 C.F.R. § 131.10(g).

At 29A-306(g), Public Water Sources, item (2)(B) was revised to include the criteria for *Escherichia coli* for Class B(2) waters. The previous WQS referenced the *Escherichia coli* criteria in 29A-306(f)(2)(B). This section now contains the following criteria:

- (B) Criteria. *Escherichia coli* – Not to exceed a geometric mean of 126 organism/100ml obtained over a representative period of 60 days, and no more than 10% of samples above 235 organism/100 ml.

EPA approves this revision as it more clearly describes the *Escherichia coli* criteria for the Class B(2) public water source use and is consistent with EPA's 2012 Recreational Water Quality Criteria. EPA notes that Class B(2) waters shall be managed to achieve and maintain a level of quality that is suitable for use as a public water source with filtration and disinfection or other required treatment.

EPA approves editorial revisions to 29A-306 as non-substantive revisions.

Appendix A: Fish Habitat Designation

EPA approves editorial revisions to Appendix A as non-substantive revisions.

Appendix C: Water Quality Criteria for the Protection of Human Health and Aquatic Biota

Vermont has made the following revisions to the WQS in Appendix C for the protection of human health and aquatic biota:

1,1-Dichloroethylene:

Vermont has revised the 1,1-dichloroethylene human health criteria (HHC) for the protection of consumption of organisms only to be consistent with EPA's nationally recommended 2015 CWA recommendation, which reflects the latest science for the protection of human health. Pursuant to 40 C.F.R. § 131.11(a), EPA's review of Vermont's revised 1,1-dichloroethylene HHC for the consumption of organisms only is based on whether or not the revised criteria are based on sound scientific rationale. EPA finds that Vermont's revised criteria are scientifically defensible and protective of human health for the consumption of organisms only for the reasons described in EPA's 2015 Final Updated Ambient Water Quality Criteria for the Protection of Human Health (80

¹ <https://www.epa.gov/sites/default/files/2015-10/documents/rwqc2012.pdf>

FR 36986)². EPA approves the adoption of the 2015 CWA § 304(a) recommended 1,1-dichloroethylene HHC for the protection of consumption of organisms only.

Tributyltin:

Vermont adopted chronic and acute freshwater aquatic life criteria (ALC) for tributyltin to be consistent with EPA's nationally recommended 2003 CWA tributyltin ALC, which reflect the latest science for the protection of aquatic life. Pursuant to 40 C.F.R. § 131.11(a), EPA's review of Vermont's revised tributyltin ALC is based on whether the criteria protect aquatic life uses and are based on sound scientific rationale. EPA finds that Vermont's revised criteria are scientifically defensible and protective of designated uses for the reasons explained in EPA's 2003 tributyltin criteria document³. EPA approves the adoption of the 2003 CWA § 304(a) recommended chronic and acute freshwater ALC for tributyltin.

In a letter dated July 5, 2022, EPA consulted with the U.S. Fish and Wildlife Service (USFWS) under the Endangered Species Act (ESA) for concurrence that Vermont's adoption of EPA's CWA § 304(a) tributyltin aquatic life criteria was not likely to adversely affect species under its jurisdiction. In a letter dated August 26, 2022, the USFWS, New England Field Office, concurred with EPA's findings.

General Notes:

Vermont has removed the note that stated "The most significant changes from previous versions of this appendix are to Human Health criteria and reflect EPA's 2015 update to Human Health Ambient Water Quality Criteria (EPA 820-F-15-001, June 2015) as published in 80FR36986-02. Additional notes and information concerning these criteria can be found in the documents referenced here." EPA approves this removal as it is no longer relevant to this version of their water quality standards and was exclusive to the previous revisions.

Footnote c:

Footnote c has been revised to provide a link to EPA's 2013 Aquatic Ambient Criteria for Ammonia document. The following has been deleted from this footnote:

"Compound is not listed in EPA's Section 304(a) Criteria for Priority Toxic Pollutants as published in the December 22, 1992, pages 60911-60917, of the Federal Register but is included in this appendix of Vermont Water Quality Standards because the pollutant can be deleterious to aquatic life and criteria have been developed for the protection of aquatic organisms."

Pursuant to 40 C.F.R. § 131.11, EPA approves this revision as it provides greater detail for the ammonia ALC.

Footnote p:

² <https://www.federalregister.gov/documents/2015/06/29/2015-15912/final-updated-ambient-water-quality-criteria-for-the-protection-of-human-health>

³ <https://www.epa.gov/sites/default/files/2019-02/documents/ambient-wqc-tributyltin-final.pdf>

Vermont has added footnote p to Appendix C, which states the following, “For chronic criteria that utilize 30 average duration, 30Q10 flows shall apply.” This footnote applies to chronic ALC for selenium and ammonia. Pursuant to 40 C.F.R. § 131.11, EPA approves this footnote for ammonia as it is consistent with the CWA § 304(a) chronic criteria recommendations and ammonia⁴. EPA is not approving footnote p for selenium at this time since EPA is reviewing Vermont’s revised selenium criteria and is consulting with the USFWS under the ESA.

Non-Substantive Editorial Revisions:

EPA approves all editorial revisions to Appendix C as non-substantive revisions.

Items for which EPA is Currently Taking No Action:

EPA is taking no action on the following items pending consultation with the USFWS under the ESA.

- Revised acute and chronic ALC for aluminum to be consistent with EPA’s 2018 304(a) recommendation and associated footnotes r and s.
- Footnote o, which requires the use of EPA’s 304(a) recommendation for acute and chronic ALC for copper, which utilizes the biotic ligand model. This shall be used in place of the hardness-based criteria for copper when site specific data are available.
- Revised acute and chronic ALC for selenium to be consistent with EPA’s 2021 304(a) recommendation and associated footnotes i, p, and q.
- Chronic ALC for guthion, mirex, and methoxychlor to be consistent with EPA’s 1986 304(a) recommendations.

Appendix F: Water Quality Classifications

Vermont added items (d) to Appendix F, which states “The waters listed in the following table are those waters classified as A(1), A(2) or B(1) for one or more designated uses.” EPA approves item (d) as it provided greater specificity about the waters included in Appendix F.

Vermont also added three waterbodies to Appendix F in the Lower Otter Creek watershed. These include:

- Alder Brook. Alder Brook and all waters within its watershed.
- Blue Bank Brook. Blue Bank Brook and all waters within its watershed.
- Goshen Brook. Goshen Brook and all waters within its watershed upstream to the boundaries of the federally designated Joseph Battell Wilderness Area of the Green Mountain National Forest.

Each of these waterbodies has been upgraded from Class B(2) to A(1) for the aquatic biota, aquatic habitat, and aesthetic designated uses. EPA is not currently taking action on these classification upgrades pending consultation with the USFWS under the ESA.

⁴ <https://www.epa.gov/system/files/documents/2021-08/selenium-freshwater2016-2021-revision.pdf>

<https://www.epa.gov/sites/default/files/2015-08/documents/aquatic-life-ambient-water-quality-criteria-for-ammonia-freshwater-2013.pdf>

EPA approves all other editorial revisions to Appendix F as non-substantive revisions.

Appendix G: Application of Biocriteria for Fish and Macroinvertebrate Communities in Vermont Wadeable Streams and Rivers

Vermont made the following revisions to Appendix G:

- Revised language in “Macroinvertebrate Community Biocriteria” section for clarification of habitat conditions, sampling methods, and assessment protocols.
- Changed “Moderate” to “Medium” high gradient stream type to reflect the terminology found in DEC’s biocriteria development documents.
- Revised wording, abbreviations, and decimal places in macroinvertebrate tables for consistency throughout all tables.
- Added “>” and “<” symbols to ranges in macroinvertebrates tables to reflect values in DEC’s biocriteria development documents.
- Changed 4.80 threshold value to 4.90 in WWMG table to be consistent with the actual value used in DEC’s biocriteria development documents.
- Added point (4) in the low gradient IBI description for consistency with point (4) in the moderate and high gradient metric description.
- Removed footnote from Tables A-4 and A-5 describing rounding rules for richness values, as rounding is not applicable to these IBIs. Values in Tables A-4 and A-5 were also adjusted to remove gaps in the scoring matrices.
- Added assessment rating values for indeterminate IBI ranges in Table A(6).
- Revised language in Fish Community Biocriteria to fix typographical errors, increase clarity, and provide descriptions.
- Table A-7: Added ‘wetted width’ to clarify that section lengths are based on wetted width, not bankfull width and revised less than and greater than symbols to correctly address cutoffs between parameters.
- Table A-8: corrected mislabeled table numbers and scoring procedures and added “benthic” to Metric 6.
- Table A-10: Re-formatted this table to be consistent with Table A-13.
- Table A-11: Removed rounding rules because these rules are not applied to scoring guidelines. Corrected scoring rules to include all rules for metric scoring.
- Metric 1: Added to ‘native’ to clarify how this metric is scored.
- Table A-12: Revised the scoring rules to accurately represent the scores in Table A-11.
- Table A-13: Removed rounding rules because these rules are not applied to scoring guidelines and fixed score column to eliminate gaps between scores.

EPA approves these revisions as they provide greater clarity regarding the application of the biocriteria for fish and macroinvertebrate communities in Vermont wadeable rivers and streams.

EPA also approves all editorial revisions in Appendix G as non-substantive revisions.

EPA is not acting on any revisions to the section titled “Fish Community Sampling Methods” as it does not relate to designated uses, water quality criteria, or antidegradation, and are therefore not new or revised WQS subject to EPA review under section 303(c) of the CWA.