



Commonwealth of Massachusetts
Executive Office of Energy and Environmental Affairs

Department of Environmental Protection

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Summary of Draft Amended Regulations

314 CMR 4.00: Massachusetts Surface Water Quality Standards (MA SWQS)

The purpose of the MA SWQS regulation is to restore, enhance and protect the chemical, physical, and biological integrity of surface waters in Massachusetts. The Massachusetts Department of Environmental Protection (MassDEP) adopted the MA SWQS under the authority of the state Clean Waters Act, M.G.L. c. 21, §§ 26-53, which directs MassDEP to take all action necessary to secure for the Commonwealth the benefits of the Federal Water Pollution Control Act, 33 U.S.C. § 1251 *et seq.* (the Clean Water Act or CWA), and to adopt standards of minimum water quality applicable to waters of the Commonwealth.

MassDEP is proposing to amend the MA SWQS regulation, which was last revised in 2021. MassDEP's amendments will update bacteria criteria for secondary contact recreation and copper criteria adjustment procedures; clarify narrative nutrient criteria language; remove unused surface water classifications; and make minor improvements and corrections. The amendments will make the MA SWQS clearer and easier to apply, improve human health and environmental protections, employ the latest science, and align with requirements from the U.S. Environmental Protection Agency (USEPA). More information is provided below.

Background

The MA SWQS were adopted to designate the most sensitive uses (e.g., swimming, aquatic life, public water supply) for which surface waters are to be regulated, prescribe the minimum water quality criteria required to sustain those designated uses, and outline steps necessary to achieve designated uses and maintain high quality waters. The MA SWQS are comprised of a narrative section and accompanying tables and figures. The classification tables are organized by river basin and coastal drainage area and only list surface waters that have qualifiers (special considerations and uses applicable to the waterbody or waterbody segment) and/or special classes. All surface waters in the Commonwealth are not listed in the classification tables; surface waters that are not listed have default classifications (Class B for freshwater and Class SA for coastal and marine water). In addition, the MA SWQS include criteria tables that establish ambient water quality criteria concentrations necessary to support designated uses.

The CWA and federal regulations require MassDEP to periodically review and amend the MA SWQS. The MA SWQS is enforceable by the Commonwealth, but federal Water Quality



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Standards regulations at 40 Code of Federal Regulations (CFR) Part 131, pursuant to the CWA, 33 USC 1251 *et seq.*, require that revisions to state water quality standards be approved by the USEPA for the revisions to be federally enforceable for CWA purposes. States must adopt any new or updated criteria recommended by the USEPA or develop scientifically defensible alternatives. Effluent limits in surface water discharge permits issued by MassDEP's Surface Water Discharge Permit Program and USEPA's National Pollutant Discharge Elimination System (NPDES) Program are based on the MA SWQS.

Summary of Proposed Amendments to the MA SWQS

1. Secondary Contact Recreation (SCR) Bacteria Criteria

In 2006, MassDEP adopted the current SCR criteria in the MA SWQS, which are protective of limited-contact recreational activities. USEPA has not approved or disapproved the existing SCR criteria in the MA SWQS; therefore, these criteria are not in effect for CWA purposes. USEPA has instead recommended a different approach to derive SCR criteria that is supported by epidemiological data.

USEPA published a 2022 white paper and 2024 user guide that recommended SCR criteria calculations that are proportional to primary contact recreation criteria and use a linear equation based on water ingestion rates. States select ingestion rates for recreational activities that align with their SCR uses.

MassDEP reviewed ingestion rates for various activities with reference to the MA SWQS SCR definition, which includes boating, fishing, and shellfishing uses. The amendments will update SCR water quality criteria by using the ingestion rate represented by "Kayaking – All Activities" and provides a conservative yet practical benchmark that accounts for average water exposure, including incidental ingestion from occasional capsizing. For the update, the *Escherichia coli* (*E. coli*) geometric mean criterion will decrease from ≤ 630 to ≤ 244 colony-forming units (cfu)/100 milliliter (mL), and the statistical threshold value will decrease from $\leq 1,260$ to ≤ 794 cfu/100 mL (i.e., no more than ten percent of samples shall exceed this criterion). For enterococci, the geometric mean criterion will decrease from ≤ 175 to ≤ 68 cfu/100 mL, and the statistical threshold value will decrease from ≤ 350 to ≤ 252 cfu/100 mL.

2. Removal of Class C and Class SC Surface Water Designations

The designated uses and use goals in the MA SWQS are organized by the surface water classification system outlined at 314 CMR 4.05: *Classes and Criteria*. Classes A, B, SA, and SB support more sensitive uses and require higher water quality than Classes C or SC. No surface waters are currently designated as Class C or Class SC in the MA SWQS. Furthermore, the MA SWQS antidegradation provisions at 314 CMR 4.04 mandate that



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existing water quality and designated uses be maintained; therefore, no future Class C or SC designations are anticipated. The amendments will therefore remove Class C (freshwater) and Class SC (coastal and marine water) designations from the MA SWQS.

3. Revisions to Qualifiers and Site-Specific Criteria Listings

Qualifiers are assigned to certain surface waters or surface water segments listed in the classification tables at 314 CMR 4.06(1)(d): *Figure A; Figures and Tables 1 through 27* to indicate special considerations or uses applicable to surface waters, such as a Public Water Supply (PWS). One of the existing qualifiers in the MA SWQS is “Aquatic Life”. This qualifier “denotes those waters where Class C dissolved oxygen and temperature criteria apply. This designation is made only where natural background conditions prevent the attainment of a ‘higher use’ designation.” A waterbody assigned the Aquatic Life qualifier has specific oxygen and temperature criteria due to natural conditions, not human activity. The applicable dissolved oxygen and temperature criteria are in the *Class C Inland Waters* section at 314 CMR 4.05(3)(c). The proposed amendments to 314 CMR 4.00 include removal of the Class C designation, which necessitates revision to the Aquatic Life qualifier.

The MA SWQS include classification Tables 1-27 that list surface water segments with qualifiers and/or special classes (see 314 CMR 4.06(6)(b): *Figure A; Figures and Tables 1 through 27*) and tables listing criteria specific to certain surface waters (see 314 CMR 4.06(6)(c): *Table 28: Site-specific Criteria*). Four surface water segments in the classification tables are assigned the Aquatic Life qualifier (314 CMR 4.06(6)(b)), as indicated in the table below.

Table and Basin	Surface Water Name	Surface Water or Segment Boundary	Mile Point	Class	Qualifiers
<u>Table 5:</u> Charles River Basin	Charles River	From Dilla Street, Milford to Milford POTW discharge	75.8 - 72.7	B	Aquatic Life
<u>Table 16:</u> Millers River Basin	Otter River	Source to Gardner POTW discharge	12.2 - 9.7	B	Aquatic Life
<u>Table 24:</u> SuAsCo River Basin	Sudbury River	From outlet of Saxonville Pond to confluence with Hop Brook, Wayland	16.2 - 10.6	B	Aquatic Life High Quality Water



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Table and Basin	Surface Water Name	Surface Water or Segment Boundary	Mile Point	Class	Qualifiers
<u>Table 24:</u> SuAsCo River Basin	Sudbury River	From confluence with Hop Brook, Wayland to confluence with the Assabet River forming the headwaters of the Concord River	10.6 - 0.00	B	Aquatic Life

Because the Aquatic Life qualifier assigns specific criteria to certain surface waters, the appropriate location to list these waters is Table 28, instead of Tables 1-27. The amendments therefore include the removal of the Aquatic Life qualifier and instead provide site-specific criteria in Table 28 for the four surface waters identified above.

The amendments also include the addition of a new qualifier, “Public Water Supply – Abandoned”, as defined at 314 CMR 4.06(1)(d)2, which applies to public water supplies and their tributaries that were formally abandoned under MassDEP’s Drinking Water Program. Waterbodies listed in the classification tables with this new qualifier will have the same requirements under the MA SWQS as waterbodies with the PWS qualifier, but waterbodies with the “Public Water Supply – Abandoned” qualifier are no longer regulated under 310 CMR 22.00 (the Massachusetts Drinking Water Regulations).

4. Clarification of Narrative Nutrient Criteria

The amendments will clarify 314 CMR 4.05(5)(c) by replacing references to total maximum daily load (TMDL) “criteria” with “target threshold concentrations” to distinguish statewide or site-specific criteria established in the MA SWQS from threshold concentrations developed for specific TMDLs.

5. Table Updates, including Revisions to Coastal and Marine Copper Criteria Adjustment Procedures

In the MA SWQS classification Tables 1-27 at 314 CMR 4.06(6)(b), the amendments will update seven waterbodies with the new “Public Water Supply - Abandoned” qualifier.

Town names and Class SA boundary descriptions were inserted as needed to provide greater clarity, and in Table 1 MassDEP moved the High Quality Water qualifier from the second Mumford River segment to the first segment to correct a typographical error.

In Tables 2 and 5, MassDEP updated information in footnotes regarding Combined Sewer Overflow (CSO) variances to reference current variances.



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In Tables 11 and 18, MassDEP corrected the classification of the Lower Sackett and Ashby Reservoirs from Class B to Class A Outstanding Resource Water (ORW) to restore these surface waters to the previously attained higher water quality classification. This is a technical change made in response to a USEPA comment.

In Table 17, MassDEP re-inserted the Cold Water qualifier for Shad Factory Pond that was removed in 2021. There are insufficient data or procedures to support the removal of the Cold Water qualifier. This is a technical change made in response to a USEPA comment.

The amendments will also revise Table 29a, Appendix E, to clarify that the streamlined Water Effects Ratio (WER) procedure is only applicable to copper in coastal and marine waters and applies to surface waters impacted by continuous point source discharges. MassDEP reviewed the following USEPA documents to identify appropriate test species that can be used in the procedure: (1) *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms*¹ and (2) *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms*². The amendments to Appendix E list the test species and appropriate USEPA references. In addition, MassDEP may, at its discretion, approve the use of other test organisms consistent with USEPA guidance documents. The Appendix E revisions clarify the procedures and make the procedures consistent with the USEPA guidance documents cited in the appendix. The revisions are responsive to USEPA comments.

¹ USEPA. 2002a. *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms*. Fifth Edition. October 2002. EPA-821-R-02-012.

² USEPA. 2002b. *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms*. Third Edition. October 2002. EPA-821-R-02-014.