RULE-MAKING ORDER
PERMANENT RULE ONLY

CR-103P (December 2017)
(Implements RCW 34.05.360)

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STATE OF WASHINGTON
FILED

DATE: August 14, 2024
TIME: 7:56 AM

WSR 24-17-048

Agency: Department of Ecology AO # 22-04

Effective date of rule:

Permanent Rules

☒ 31 days after filing.

☐ Other (specify) _____ **(If less than 31 days after filing, a specific finding under RCW 34.05.380(3) is required and should be stated below)**

Any other findings required by other provisions of law as precondition to adoption or effectiveness of rule?

☐ Yes ☐ No If Yes, explain:

Purpose: The Washington State Department of Ecology is adopting amendments to chapter 173-201A WAC, Water Quality Standards for Surface Waters of the State of Washington. We adopted revisions in this rulemaking to the following:

- WAC 173-201A-240, Toxic substances, specifically updating aquatic life toxics criteria in Table 240 and footnotes.
- Minor, non substantive edits to rule language in WAC 173-201A-240 to correct typographical, calculation, and formatting errors, and to cite federal regulations for human health criteria where they apply for Clean Water Act purposes.

We are adopting revisions to aquatic life toxics criteria to provide additional water quality protection for organisms that live in water.

We reviewed all of Washington's current aquatic life toxics criteria to ensure they are consistent with nationally recommended water quality criteria issued by the Environmental Protection Agency (EPA). We evaluated the current published science for each of Washington's aquatic life toxic criteria and new aquatic life criteria for toxic substances. We also evaluated information on pollutant protection levels for endangered species in Oregon and Idaho and used that information to develop state-specific protection levels for endangered species and their populations in Washingtons waters.

We evaluated current scientific data, methods, and modeling tools to update protection levels necessary for aquatic life in Washington's surface waters. We have also added new toxic substances into the water quality standards that EPA has recommended or that the state of Washington designates as high priority for the protection of aquatic life. In total, we added criteria for 14 new toxic chemicals and updated criteria for 16 toxic chemicals that are currently in our water quality standards.

The lists below show existing criteria that we updated, and new criteria we adopted that were not previously included in Washington's water quality standards for aquatic life toxics.

Revisions to existing criteria in WAC 173-201A-240

- Aldrin (freshwater and saltwater acute)
- Arsenic (freshwater acute and chronic)
- Cadmium (freshwater acute and chronic and saltwater acute and chronic)
- Chromium III (freshwater acute and chronic)
- Chromium VI (freshwater acute and chronic)
- Copper (freshwater acute and chronic)
- Cyanide (freshwater acute and chronic)
- Dieldrin (freshwater acute and chronic)
- Endrin (freshwater acute and chronic)
- gamma-BHC (freshwater acute)
- Mercury (freshwater acute)
- Nickel (freshwater acute and chronic)
- Pentachlorophenol (freshwater acute and chronic and saltwater chronic)
- Selenium (freshwater acute and chronic)
- Silver (freshwater acute and saltwater acute)
- Zinc (freshwater acute and chronic)

New criteria adopted into WAC 173-201A-240

- 6PPD-quinone (freshwater acute)
- Aluminum (freshwater acute and chronic)
- Acrolein (freshwater acute and chronic)
- Carbaryl (freshwater acute and chronic and saltwater acute)
- Demeton (freshwater and saltwater chronic)
- Diazinon (freshwater acute and chronic and saltwater acute and chronic)
- Guthion (freshwater and saltwater chronic)
- Malathion (freshwater and saltwater chronic)
- Methoxychlor (freshwater and saltwater chronic)
- Mirex (freshwater and saltwater chronic)
- Nonylphenol (freshwater acute and chronic and saltwater acute and chronic)
- PFOS (freshwater acute and chronic and saltwater acute)
- PFOA (freshwater acute and chronic and saltwater acute)
- Silver (freshwater and saltwater chronic)
- Tributyltin (freshwater acute and chronic and saltwater acute and chronic)

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Citation of rules affected by this order:

New:
Repealed:
Amended: Chapter 173-201A WAC
Suspended:

Statutory authority for adoption: Water Pollution Control, Chapter 90.48 RCW, provides clear and direct authority to Ecology to revise the Surface Water Quality Standards (RCW 90.48.035)

Other authority: 40 CFR 131.20 requires states to periodically review and update the Water Quality Standards.

PERMANENT RULE (Including Expedited Rule Making)

Adopted under notice filed as WSR 24-07-035 on March 13, 2024 (date).
Describe any changes other than editing from proposed to adopted version:

Below is a summary of changes to WAC 173-201A-240, organized by toxic substance. For a full description of changes, including a table listing changes to the numeric criteria from the rule proposal to adoption, see the Concise Explanatory Statement available on the rulemaking webpage, at https://ecology.wa.gov/regulations-permits/laws-rules-rulemaking/rulemaking/wac-173-201a-aquatic-life-toxics-criteria.

Invasive Species

We have decided to include invasive species into the criteria derivation if they have established resident populations in North America. This decision is based on EPA's comment that invasive species should be included because they can serve as a surrogate for native species in North America. The reincorporation of invasive species into criteria derivations has resulted in slight changes to the proposed criteria. We have detailed specific changes to criteria in the sections below.

6PPD-quinone

We integrated methods used in EPA's 6PPD-quinone screening level calculations that utilize time-weighted average median lethal concentrations (LC50s) and incorporated additional scientific studies released since the rule proposal, resulting in an increase (i.e., less stringent) in the 6PPD-quinone criterion.

Aluminum and Copper

We changed the geographical representation of default criteria for freshwater aluminum and copper (acute and chronic) criteria from eastern and western Washington to EPA level II ecoregions. Level II ecoregions represent three geographic areas in Washington State: western cordillera, marine west coast forest, and cold desert. This better represents the geographical features that contribute to water quality conditions. Our dataset has limited geospatial representation in some EPA level III ecoregions, and we were unable to develop default criteria at a finer scale.

Aluminum

We added a footnote to the freshwater aluminum multiple linear regression (MLR)-based criteria indicating the criteria are based on total recoverable aluminum. We further noted that analytical methods that measure the bioavailable fraction in ambient waters may be utilized when allowed by state and federal regulations (e.g., utilizing a less aggressive initial acid digestion, such as to a pH of approximately 4 or lower). The bioavailable fraction method more accurately reflects toxicity under natural instream conditions.

Arsenic
We changed the saltwater arsenic criteria (acute and chronic) from state-specific criteria to EPA national recommendations for aquatic life. The EPA's recommendations are less stringent than the saltwater arsenic criteria that was proposed during the rule proposal. During the rule proposal, we mistakenly used the 1st percentile of the genus sensitivity distribution for the saltwater arsenic criteria. Our rule strategy indicates that the 1st percentile should only be used when there is a jeopardy determination in another Region 10 state. While the Swinomish Tribe Biological Evaluation suggests effects from the saltwater arsenic criteria, we believe the data used in the analysis is out of date and that more recent data will significantly lower the magnitude of effects described. We encourage EPA and the Services to reevaluate saltwater arsenic criteria when able. We did not find any new marine arsenic studies that would effectively lower the arsenic criteria using EPA 1985 guidance.

Chromium III
We changed the proposed freshwater chromium III (acute and chronic) from EPA national recommended values to more stringent state-specific criteria.

Our rule strategy includes evaluating new scientific studies when a Region 10 state received a "likely to adversely affect" ESA determination, which occurred for bull trout in Oregon. Two new toxicity studies have been incorporated into the freshwater acute chromium III criterion, leading to lower acute chromium III criteria compared to EPA recommendations. This subsequently led to a lower freshwater chronic chromium III criterion because the chronic criterion is based on an acute-to-chronic ratio (ACR). A chronic criterion dependent upon an ACR uses the final acute value to derive the criterion. Thus, the chronic criterion is directly linked to any changes to the acute criterion.

Chromium VI
We removed some toxicity studies used in the proposed rule that did not meet data qualifications. This resulted in an increased freshwater chronic chromium VI criterion compared to the rule proposal.

Cyanide
The incorporation of new scientific studies and recalculation of toxicity values to the free cyanide form led to a decrease (i.e., more stringent) in the criterion. This subsequently led to a decrease in the freshwater chronic cyanide criterion because the chronic criterion is based on an acute-to-chronic ratio (ACR). A chronic criterion dependent upon an ACR uses the final acute value to derive the criterion. Thus, the chronic criterion is directly linked to any changes to the acute criterion.

Methoxychlor
We incorrectly reported EPA recommended criteria as 0.3 micrograms per liter (µ/L) for methoxychlor chronic criteria (freshwater and saltwater) in our proposed rule language. EPA recommends 0.03 µ/L. The number was incorrectly reported in the draft rule language, but correctly reported in the Technical Support Document. We have made the correction in our final rule language.

Nickel
We incorporated new scientific studies into the freshwater acute and chronic nickel criteria that were suggested during the public comment period as well as the reincorporation of invasive species studies that were previously removed. The addition of new chronic studies allowed for the use of the eight-family approach for the derivation of the chronic criterion rather than the acute-to-chronic ratio approach used in the rule proposal. The result is an increased (i.e., less stringent) acute and chronic criteria for nickel.

Pentachlorophenol
The freshwater acute pentachlorophenol criterion was recalculated using GMAVs ranked 2-5, in accordance EPA 1985 derivation guidelines for aquatic life criteria when there are greater than 59 GMAVs. This led to an increase (i.e., less stringent) in the freshwater acute pentachlorophenol criterion. This subsequently led to a reduced freshwater chronic pentachlorophenol criterion because the chronic criterion is based on an acute-to-chronic ratio (ACR). A chronic criterion dependent upon an ACR uses the final acute value to derive the criterion. Thus, the chronic criterion is directly linked to any changes to the acute criterion.

Silver
We removed scientific studies that did not meet data qualifications from the freshwater acute silver criterion derivation, resulting in a decrease (i.e., more stringent) in the criterion. This subsequently led to a lower freshwater chronic silver criterion because the chronic criterion is based on an acute-to-chronic ratio (ACR). A chronic criterion dependent upon an ACR uses the final acute value to derive the criterion. Thus, the chronic criterion is directly linked to any changes to the acute criterion.

We added a new scientific study to the saltwater acute derivation, resulting in an increased (i.e., less stringent) criterion. This subsequently led to a higher saltwater chronic silver criterion because the chronic criterion is based on an ACR. A

chronic criterion dependent upon an ACR uses the final acute value to derive the criterion. Thus, the chronic criterion is directly linked to any changes to the acute criterion.

Zinc
We added scientific studies to the freshwater acute zinc criterion that met data qualifications, resulting in an increase in the criterion (i.e., less stringent). The freshwater acute zinc criterion was also recalculated using genus mean acute values (GMAVs) ranked 2-5, in accordance EPA 1985 derivation guidelines for aquatic life criteria when there are greater than 59 GMAVs.

The addition of new chronic studies allowed for the chronic zinc criterion to be calculated using the eight-family approach rather than the acute-to-chronic ratio approach used in the rule proposal**.** The incorporation of new scientific studies into the freshwater chronic zinc criterion led to a decreased (i.e., more stringent) criterion.

If a preliminary cost-benefit analysis was prepared under RCW 34.05.328, a final cost-benefit analysis is available by contacting:

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Email: swqs@ecy.wa.gov
Web site: https://apps.ecology.wa.gov/publications/SummaryPages/2410033.html
Other: N/A

Note: If any category is left blank, it will be calculated as zero. No descriptive text.

Count by whole WAC sections only, from the WAC number through the history note. A section may be counted in more than one category.

The number of sections adopted in order to comply with:

Federal statute:	New	____	Amended	1	Repealed	____
Federal rules or standards:	New	____	Amended	1	Repealed	____
Recently enacted state statutes:	New	____	Amended	____	Repealed	____

The number of sections adopted at the request of a nongovernmental entity:

New ____ Amended 1 Repealed ____

The number of sections adopted on the agency's own initiative:

New ____ Amended 1 Repealed ____

The number of sections adopted in order to clarify, streamline, or reform agency procedures:

New ____ Amended ____ Repealed ____

The number of sections adopted using:

Negotiated rule making:	New	____	Amended	____	Repealed	____
Pilot rule making:	New	____	Amended	____	Repealed	____
Other alternative rule making:	New	____	Amended	____	Repealed	____

Date Adopted: August 14, 2024	**Signature:** 
Name: Laura Watson	
Title: Director	