REGION 10
SEATTLE, WA 98101

December 20, 2024

Vince McGowan
Water Quality Program Manager
Washington State Department of Ecology
PO Box 47600
Olympia, Washington 98504

Dear Mr. McGowan:

The U.S. Environmental Protection Agency has completed its Clean Water Act review of the new and revised water quality standards at Chapter 173-201A of the Washington Administrative Code, submitted to the EPA by the Washington State Department of Ecology by letter dated December 2, 2024. Under section 303(c) of the CWA,33 U.S.C. § 1313(c), and the EPA implementing regulations, states must submit new and revised WQS to the EPA for review and action, and the EPA must review those WQS for consistency with the CWA and its implementing regulations. The details of the EPA's action are outlined below and are further described in the enclosed technical support document.

The EPA's action applies only to waters in the state of Washington and does not apply to waters that are within Indian Country, as defined in 18 U.S.C. § 1151. Nothing in this action shall constitute an approval or disapproval of a WQS that applies to waters within Indian Country. The EPA, or authorized Indian Tribes, as appropriate, retain the authority to establish WQS for waters within Indian Country.

Summary of the EPA's Action

I. Pursuant to the EPA's authority under CWA section 303(c) and the implementing regulations at 40 C.F.R. Part 131, the EPA is approving certain revisions to Chapter 173-201A-240 WAC:

- 145 human health criteria for 75 pollutants contained in Table 240
- Footnote F and portions of footnotes A, C, and E associated with Table 240

II. The EPA is taking no action on certain parts of the new and revised provisions in the following sections of Chapter 173-201A-240 WAC, because the EPA has determined they are not new or revised WQS that the EPA has the authority to review and approve or disapprove pursuant to CWA section 303(c), 33 U.S.C. § 1313(c)(3):

- Portions of footnotes A, C, and E associated with Table 240

- Renumbering of footnotes associated to Table 240
- Narrative revisions at WAC 173-201A-240(5)(b)

Additionally, the EPA is deferring action on new revisions to Washington's aquatic life criteria in Table 240. The EPA is in the process of evaluating these aquatic life criteria revisions and intends to address them in a subsequent and separate CWA section 303(c) action.

The EPA commends Ecology for its efforts to protect Washington's waters. We look forward to continuing close collaborations with you and your staff. If you have any questions regarding this letter, please contact me at (206) 553-0171 or Shaw.Hanh@epa.gov or Lindsay Guzzo, the EPA staff lead, at (206) 553-0268 or Guzzo.Lindsay@epa.gov.

Sincerely,

HANH SHAW Digitally signed by HANH SHAW Date: 2024.12.20 15:53:39 -08'00'

Hanh Shaw, Manager
Standards, Assessment and Watershed Management Branch
Water Division

ENCLOSURE
1. Technical Support Document

cc: Melissa Gildersleeve, Section Manager, Water Quality Program, Washington State Department of Ecology
Leanne Weiss, Unit Supervisor, Water Quality Program, Washington State Department of Ecology

U.S. ENVIRONMENTAL PROTECTION AGENCY – REGION 10

Technical Support Document

The EPA's Clean Water Act Action on the New and Revised Water Quality Standards at Chapter 173-201A-240 of the Washington Administrative Code: Human Health Criteria

Submitted on December 2, 2024

December 20, 2024

Table of Contents

I. Introduction

This Technical Support Document provides the basis for the U.S. Environmental Protection Agency's action under section 303(c) of the Clean Water Act (CWA), 33 U.S.C. § 1313(c), and the federal water quality standards (WQS) regulations at 40 C.F.R. Part 131, to approve certain WQS that the Washington State Department of Ecology (Ecology) submitted to the EPA on December 2, 2024.

A. Clean Water Act Requirements for WQS

The objective of the CWA is to restore and maintain the chemical, physical, and biological integrity of the Nation's waters with an interim goal, where attainable, to achieve water quality that provides for the protection and propagation of fish, shellfish, and wildlife and recreation in and on the water. Under section 303(c) of the CWA and federal implementing regulations at 40 C.F.R. § 131.4, states and authorized Tribes[1] have the primary responsibility for reviewing, establishing, and revising WQS. These standards include the designated uses of a waterbody or waterbody segment, the water quality criteria necessary to protect those designated uses, and an antidegradation policy. This statutory and regulatory framework allows states to work with local communities to adopt appropriate designated uses (as required in 40 C.F.R. § 131.10(a)) and to adopt criteria to protect those designated uses (as required in 40 C.F.R. § 131.11(a)).

States are required to hold public hearings for the purpose of reviewing applicable WQS periodically but at least once every three years and, as appropriate, modifying and adopting standards (40 C.F.R. § 131.20). Each state must follow applicable legal procedures for revising or adopting such standards (40 C.F.R. § 131.5(a)(6)) and is required to submit a certification by the state's attorney general, or other appropriate legal authority within the state, that the WQS were duly adopted pursuant to state law (40 C.F.R. § 131.6(e)). The EPA's review authority and the minimum requirements for state WQS submittals are described at 40 C.F.R. §§ 131.5 and 131.6, respectively.

Section 303(c) of the CWA requires states and authorized Tribes to submit new or revised WQS to the EPA for review and action. The EPA reviews these changes and approves the WQS if they meet the requirements of the CWA and the EPA's implementing regulations.

The EPA considers four questions (described below) when evaluating whether a particular provision is a new or revised WQS. If all four questions are answered "yes" then the provision would likely constitute a new or revised WQS that the EPA has the authority and duty to approve or disapprove under CWA section 303(c)(3).[2]

1. Is it a legally binding provision adopted or established pursuant to state or Tribal law?
2. Does the provision address designated uses, water quality criteria (narrative or numeric) to protect designated uses, and/or antidegradation requirements for waters of the United States?

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[1] The term "authorized Tribe" means a Tribe eligible under CWA section 518(e) and 40 C.F.R. § 131.8 for treatment in a similar manner as a state (TAS) for the purpose of administering a WQS program.

[2] What is a New or Revised Water Quality Standard under 303(c)(3)? Frequently Asked Questions, EPA No. 820F12017 (Oct. 2012). Available at https://www.epa.gov/sites/production/files/2014-11/documents/cwa303faq.pdf

3. Does the provision express or establish the desired condition (e.g., uses, criteria) or instream level of protection (e.g., antidegradation requirements) for waters of the United States immediately or mandate how it will be expressed or established for such waters in the future?
4. Does the provision establish a new WQS or revise an existing WQS?

According to the federal WQS regulations at 40 C.F.R. § 131.21, when the EPA approves a state's WQS submission, such standard(s) become the applicable standard(s) for CWA purposes unless the EPA has promulgated a more stringent federal WQS, in which case the federal WQS is the applicable standard until EPA withdraws it. When the EPA disapproves a state's WQS, the EPA shall notify the state and specify why the WQS is not in compliance with the requirements of the CWA and federal WQS regulations and specify any changes that are needed to meet such requirements (40 C.F.R. § 131.21).

Finally, the EPA considers non-substantive edits to existing WQS to constitute new or revised WQS that the EPA has the authority to approve or disapprove under CWA section 303(c)(3). While such edits and changes do not substantively change the meaning or intent of the existing WQS, the EPA treats such edits and changes in this manner to ensure public transparency as to which provisions are applicable for CWA purposes. The EPA notes that the scope of its review and action on non-substantive edits or editorial changes extends only to the non-substantive edits or changes themselves. The EPA does not re-open or reconsider the underlying WQS that are the subject of the non-substantive edits or editorial changes.

B. Regulatory Requirements for Criteria

The federal WQS regulations at 40 C.F.R. Part 131 require that states and authorized Tribes adopt designated uses for their waters, water quality criteria to protect those designated uses, and an antidegradation policy. States and authorized Tribes may, at their discretion, also adopt general policies affecting application and implementation of WQS. WQS adopted in regulation or statute on or after May 30, 2000, require the EPA's approval before they become applicable WQS for purposes of implementing the CWA (40 C.F.R. § 131.21(c)).

States and Tribes must adopt water quality criteria that protect designated uses. Such criteria must be based on sound scientific rationale and must contain sufficient parameters or constituents to protect the designated use. For waters with multiple use designations, the criteria shall support the most sensitive use (40 C.F.R. § 131.11).

Generally, in establishing criteria, states and Tribes should establish numeric values based on one of the following:

(1) CWA section 304(a) guidance
(2) CWA section 304(a) guidance modified to reflect site-specific conditions; or,
(3) other scientifically defensible methods (40 C.F.R. §131.11(b)(1)).

In addition, states and authorized Tribes should establish narrative criteria where numeric criteria cannot be established or to supplement numeric criteria (40 C.F.R. § 131.11(b)(2)).

Special requirements apply to certain pollutants. Specifically, CWA section 303(c)(2)(B) requires states and authorized Tribes to adopt numeric criteria, where available, for all toxic pollutants listed pursuant to CWA section 307(a)(1) for which the EPA has published CWA section 304(a) criteria, as necessary to support the states' and authorized Tribes' designated uses.

II. History of Washington's HHC

In 1992, the EPA promulgated HHC for the state of Washington as part of the National Toxics Rule (NTR) (amended in 1999 for polychlorinated biphenyls (PCBs)), using the Agency's recommended criteria values at the time. On September 14, 2015, the EPA Administrator determined that updated HHC for Washington were "necessary" to meet CWA requirements pursuant to CWA section 303(c)(4)(B). The EPA proposed HHC to protect the health of Washington residents, including Tribes and other high fish-consuming populations.[3]

In August 2016, Washington submitted HHC to the EPA for review under the CWA, which the EPA partially approved and partially disapproved in November 2016. The EPA's partial disapproval was predicated on Washington's use of certain input values to calculate the criteria that were not reflective of sound scientific rationale. For the HHC that the EPA disapproved, the Agency promulgated federal HHC to protect Washington's waters designated as fish and shellfish harvesting and drinking water supplies. [4] In May 2019, the EPA reversed its prior partial disapproval of certain HHC and approved them in response to a 2017 petition from several regulated entities. In May 2020, the EPA withdrew the federally promulgated HHC, with the exception of HHC for three pollutants.[5] The EPA's actions in 2019 and 2020 prompted legal challenges from the state of Washington, several Washington Tribes, conservation groups and fishing associations.[6]

On June 30, 2021, the Court granted the EPA's request for the litigation to be held in abeyance so that it could reconsider the challenged actions. On reconsideration, the EPA concluded that the Washington HHC it disapproved in 2016 and later approved in 2019 were not based on a sound scientific rationale and were therefore not protective of the applicable designated uses in Washington. Accordingly, the EPA made a determination pursuant to CWA section 303(c)(4)(B) that revised HHC were necessary for Washington waters to meet CWA requirements. This determination was set forth in an April 2022 proposed rule.

On November 18, 2022, the EPA published a final rule to reestablish federal criteria for 72 different pollutants (70 organism-only criteria and 71 water + organism criteria) applicable to surface waters in the state of Washington. The EPA's final rule did not change or supersede the federal HHC that

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[3] 80 FR 55063 (September 14, 2015) Revision of Certain Federal Water Quality Criteria Applicable to Washington: Proposed Rule.

[4] 81 FR 85417 (November 28, 2016) Revision of Certain Federal Water Quality Criteria Applicable to Washington: Final Rule. (With respect to the HHC for arsenic, the EPA did not revise the applicable arsenic HHC but moved the criteria from the National Toxics Rule at 40 C.F.R § 131.36 to the new Washington HHC rule at 40 C.F.R. § 131.45 to have one comprehensive HHC rule for Washington. *Id.* 85431).

[5] The EPA did not withdraw criteria for arsenic, methylmercury, or bis (2-chloro-1-methylethyl) ether, and therefore the federal HHC for these three pollutants remained in place at 40 C.F.R. § 131.45.

[6] *State of Washington v. U.S. Envt'l Prot. Agency*, No. 2:19-cv-884-RAJ (W.D. Wash.); *Puget Soundkeeper Alliance et al. v. U.S. Envt'l Prot. Agency*, No. 2:20-cv-907-RAJ (W.D. Wash.).

remained in place for CWA purposes after the EPA's 2020 withdrawal (i.e., the HHC for arsenic, methylmercury, and bis (2-chloro-1-methylethyl) ether), nor Washington's HHC that the EPA approved in 2016. The 2022 final rule also did not change or supersede Washington's HHC for dioxin and thallium that the EPA approved in 2019.

On November 27, 2024, Ecology adopted into state law all of the federal HHC that were in effect for CWA purposes (40 C.F.R. § 131.45), consolidating the HHC with the state's other CWA-effective WQS for surface waters in Chapter 173-201A of the Washington Administrative Code (WAC).[7]

In accordance with the EPA's WQS regulation at 40 C.F.R. § 131.21(c), because the HHC adopted by Washington are as stringent as the corresponding federal HHC, these state-adopted HHC become the applicable HHC for CWA purposes upon this approval. Subsequent to this approval, the EPA will undertake a ministerial rulemaking to remove the corresponding federal HHC from the Code of Federal Regulations.

III. Washington's WQS Submittal

By letter dated December 2, 2024, Ecology submitted revisions to various sections of WAC 173-201A to the EPA for review and action under section 303(c) of the CWA. The revisions were adopted on November 27, 2024, and were certified by the Washington State Office of the Attorney General on December 2, 2024, as duly adopted pursuant to state law. Prior to adopting the revisions, the state provided the opportunity for public comment on the proposed rule from September 17, 2024 through October 25, 2024, and held a public hearing on October 22, 2024.

Ecology submitted the following documents via electronic transmission to the EPA. The submittal included documentation in accordance with the minimum requirements of a WQS submittal at 40 C.F.R. § 131.6 and other accompanying documents:

- Cover letter from Vince McGowan, P.E., Water Quality Program Manager, to Mat Martinson, EPA Region 10 Water Division Director, dated December 2, 2024
- Attachment A: Memorandum from the Washington State Office of the Attorney General certifying the standards were duly adopted pursuant to state law
- Attachment B: Track-changes version of the Water Quality Standards for Surface Waters of the State of Washington, Chapter 173-201A WAC (WAC 173-201A-240), as revised and adopted on Nov. 27, 2024
- Attachment C: Clean copy of revised Water Quality Standards for Surface Waters of the State of Washington, Chapter 173-201A WAC (WAC 173-201A-240), effective December 28, 2024
- Attachment D: Concise Explanatory Statement
- Attachment E: Rule Implementation Plan
- Attachment F: Environmental Justice Assessment

[7] At the same time, Ecology removed from WAC 173-201A the state-adopted criteria that were not in effect under the CWA. Letter from Vincent McGowan, Wash. Dept. of Ecology, to Matt Martinson, U.S. Envtl. Prot. Agency, Re: Submittal of Washington Water Quality Standards for Clean Water Act review and approval (Dec. 2, 2024). The EPA initially disapproved these criteria in 2016 and again determined the criteria did not meet CWA requirements in 2022. 87 FR 19046 (Apr. 1, 2022) Restoring Protective Human Health Criteria in Washington: Proposed Rule.

- Attachment G: SEPA Determination of Nonsignificance and Environmental Checklist

The new and revised WQS submitted to the EPA for review and action pursuant to CWA section 303(c) include updates to Washington's WQS provisions at:

- WAC 173-201A-240, including 145 human health criteria for 75 pollutants contained in Table 240.

Ecology also submitted provisions that do not constitute new or revised WQS actionable under section 303(c) of the CWA because they do not establish the desired condition or instream level of protection for any waters to which the EPA's authorities apply under CWA section 303(c) and 40 C.F.R. Part 131. These non-WQS provisions are discussed in section V, *The EPA's Action on Washington's New and Revised WQS*.

IV. Washington's Amended Human Health Water Quality Criteria

A. Washington's Designated Uses Related to the Protection of Human Health

The HHC apply to the following designated uses in WAC 173-201A: Fresh waters – Harvesting (fish harvesting), Domestic Water (domestic water supply), and Recreational Uses; Marine waters – Shellfish Harvesting (shellfish, clam, oyster, and mussel harvesting), Harvesting (salmonid and other fish harvesting, and crustacean and other shellfish (crabs, shrimp, scallops, etc.) harvesting), and Recreational Uses (see WAC 173-201A-600 and WAC 173-201A-610).

Washington's "water + organism" criteria apply where Washington has designated domestic water supply as a use. The "organism only" criteria apply where Washington has designated one of the uses listed above, but not the domestic water supply use.

B. National Recommended Human Health Criteria Methodology and Input Variables Used to Derive the Federal Criteria Adopted by Washington

Table 240 of WAC 173-201A-240 includes Washington's HHC for toxic substances. The HHC adopted by Washington are identical to the federally promulgated HHC which were derived utilizing the EPA's *Methodology for Deriving Ambient Water Quality Criteria for the Protection of Human Health* ("2000 Human Health Methodology")[8] and applicable CWA section 304(a) HHC recommendations.[9,10]

The EPA establishes HHC based on two types of toxicological endpoint categories: (1) cancer; and (2) noncancer toxicity (i.e., all adverse effects other than cancer). The EPA takes an integrated approach and considers both cancer and non-cancer effects when deriving HHC. When sufficient data are

[8] USEPA. October 2000. Methodology for Deriving Ambient Water Quality Criteria for the Protection of Human Health. U.S. Environmental Protection Agency, Office of Water, Washington, D.C. EPA-822-B-00-004

[9] USEPA. June 2015. Final Updated Ambient Water Quality Criteria for the Protection of Human Health. U.S Environmental Protection Agency. 80 FR 36986.

[10] USEPA. (2002). National Recommended Water Quality Criteria: 2002 Human Health Criteria Calculation Matrix. EPA-822-R-02-012. http://water.epa.gov/scitech/swguidance/standards/upload/2002_12_30_criteria_wqctable_hh_calc_matrix.pdf.

available, the EPA derives criteria using both cancer and noncancer toxicity endpoints and selects the lower (i.e., more health-protective) value for the HHC. The EPA calculates HHC for cancer effects using the following input parameters: cancer slope factor (CSF), cancer risk level (CRL), body weight, drinking water intake rate (DI), fish consumption rate (FCR), and pollutant-specific bioaccumulation factors (BAFs) where available or bioconcentration factors (BCF) when BAFs are not available. The EPA calculates HHC for both non-cancer and nonlinear carcinogenic effects using a reference dose (RfD) and relative source contribution (RSC) instead of a CSF and CRL (the remaining inputs are the same for both toxicology endpoints). The RSC is applied to apportion the RfD among the media and exposure routes of concern for a particular chemical to ensure that an individual's total or aggregate exposure from all exposure sources does not exceed the RfD.[11] Each of these inputs are discussed in more detail below and in the EPA's 2000 Human Health Methodology. While the EPA's guidance provides national default values, it also recommends that states derive criteria that appropriately reflect local conditions and that priority be given to identifying and protecting the most highly exposed population.[12]

The federal HHC adopted by Washington were calculated using the equations in Figures 1 and 2 to derive criteria for carcinogens and non-carcinogens, respectively.

Figure 1. Simplified version of the equation used in deriving the HHC for carcinogens.

$$AWQC = \frac{(CRL * BW)}{[CSF * (DI + (FCR * BAF))]}$$

where:

AWQC	=	Ambient Water Quality Criterion (milligrams per liter)
CRL	=	Cancer risk level (unitless)
CSF	=	Cancer slope factor (milligrams per kilogram per day)
BW	=	Human body weight (kilograms)
DI	=	Drinking water intake (liters per day)
FCR	=	Fish consumption rate (kilograms per day)
BAF	=	Bioaccumulation factor (liters per kilogram)

As recommended in the EPA's 2000 Human Health Methodology, the organism only criteria were derived by removing the DI term.

[11] While the FCR input is generally based on fish and shellfish from inland and nearshore waters, the RSC component accounts for other exposures where relevant, including from consumption of other species (e.g., reptiles, birds, and marine mammals and fish). Alternatively, consumption of these other species could be included in the FCR input if data are available to determine the consumption rates and the associated bioaccumulation factor(s) for these other species. If the FCR includes additional species beyond fish and shellfish from inland and nearshore waters, the EPA recommends that states adjust the RSC component accordingly.

[12] USEPA. 2000. Methodology for Deriving Ambient Water Quality Criteria for the Protection of Human Health. U.S. Environmental Protection Agency, Office of Water, Washington, D.C. EPA 822-B-00-004. Pages iii, 1-11, 2- 2.

Figure 2. Simplified version of the equation used in deriving the HHC for non-carcinogens.

$$AWQC = RfD * RSC * \frac{(BW)}{\left(DI + (FCR * BAF)\right)}$$

where:

AWQC	=	Ambient Water Quality Criterion (milligrams per liter)
RfD	=	Reference dose for noncancer effects (milligrams per kilogram per day)
RSC	=	Relative source contribution factor to account for other sources of exposure (unitless)
BW	=	Human body weight (kilograms)
DI	=	Drinking water intake (liters per day)
FCR	=	Fish consumption rate (kilograms per day)
BAF	=	Bioaccumulation factor (liters per kilogram)

As recommended in the EPA's 2000 Human Health Methodology, the organism only criteria were derived by removing the DI term.

1. *Cancer Risk Level*

The EPA's CWA section 304(a) HHC recommendations are typically based on the assumption that carcinogenicity is a "non-threshold phenomenon," which means that there are no "no-effect" levels, because even extremely small doses are assumed to cause a finite increase in the incidence of cancer. Therefore, the EPA calculates CWA section 304(a) HHC for carcinogenic effects as pollutant concentrations corresponding to lifetime increases in the risk of developing cancer. The EPA calculates its 304(a) HHC values at a 10^{-6} (one in one million) CRL and recommends lifetime excess CRLs of 10^{-6} or 10^{-5} (one in one hundred thousand) for the general population. The EPA notes that states and authorized Tribes can also choose a more stringent risk level, such as 10^{-7} (one in ten million), when deriving HHC.[13]

If the pollutant is not considered to have the potential for causing cancer in humans (i.e., systemic toxicants), the EPA assumes that the pollutant has a threshold (i.e., the RfD) below which a physiological mechanism exists to avoid or overcome the adverse effects of the pollutant.

Consistent with the EPA's recommended CRLs, the HHC for carcinogens adopted by Washington were derived using a CRL of 10^{-6}.

2. *Pollutant-Specific Cancer Slope Factors and Reference Doses*

A dose-response assessment is required to understand the quantitative relationships between the exposure to a pollutant and the onset of human health effects. The EPA evaluates dose-response relationships derived from animal toxicity and human epidemiological studies to derive dose-response

[13] USEPA. October 2000. Methodology for Deriving Ambient Water Quality Criteria for the Protection of Human Health. U.S. Environmental Protection Agency, Office of Water, Washington, D.C. EPA-822-B-00-004 at 1-12.

metrics.[14] For carcinogenic toxicological effects, the EPA uses an oral CSF to derive HHC. The oral CSF is an upper bound, approximating a 95 percent confidence limit, on the increased cancer risk from a lifetime oral exposure to a stressor. For non-carcinogenic effects, the EPA uses the RfD to calculate HHC. A RfD is an estimate of a daily oral exposure of an individual to a substance that is likely to be without an appreciable risk of deleterious effects during a lifetime. A RfD is typically derived from a laboratory animal dosing study in which a no-observed-adverse-effect level (NOAEL), lowest- observed-adverse-effect level (LOAEL), or benchmark dose can be obtained. Uncertainty factors are applied to reflect the limitations of the data.[15] The EPA's Integrated Risk Information System (IRIS)[16] was the primary source of toxicity values (i.e., RfD and CSF) for the EPA's 2015 CWA section 304(a) recommended HHC.[17] For some pollutants, however, more recent peer-reviewed and publicly available toxicological data were available from other EPA program offices (e.g., Office of Pesticide Programs, Office of Water, Office of Land and Emergency Management), other national and international programs, and state programs.

The criteria adopted by Washington were calculated using pollutant-specific RfDs and CSFs that correspond to the toxicity values used to derive the current CWA section 304(a) HHC recommendations for each pollutant.[18]

3. *Exposure Assumptions*

The EPA's general population default exposure assumptions provide an overall level of protection targeted at the high end of the general population, as stated in the 2000 Human Health Methodology. The EPA selects a combination of high-end and central tendency inputs to the criteria derivation equation. To derive its 2015 CWA section 304(a) HHC recommendations protective of the general population, the EPA used a default drinking water intake rate of 2.4 liters per day (L/day) and default FCR of 22 g/day for consumption of fish and shellfish from inland and nearshore waters, multiplied by pollutant-specific BAFs to account for the amount of the pollutant in the edible portions of the ingested species. The EPA's 2000 Human Health Methodology emphasizes using, when possible, measured or estimated BAFs, which account for chemical accumulation in aquatic organisms from all

[14] *Id.* at 1-2.
[15] USEPA. (2000). Methodology for Deriving Ambient Water Quality Criteria for the Protection of Human Health (2000). Technical Support Document Volume 1: Risk Assessment. EPA-822-B-00-005. https://www.epa.gov/sites/default/files/2018-12/documents/methodology-wqc-protection-hh-2000-volume1.pdf
[16] USEPA. Integrated Risk Information System (IRIS). U.S. Environmental Protection Agency, Office of Research and Development, Washington, D.C. www.epa.gov/iris.
[17] Final Updated Ambient Water Quality Criteria for the Protection of Human Health, (80 FR 36986, June 29, 2015). See also: USEPA. 2015. Final 2015 Updated National Recommended Human Health Criteria. U.S. Environmental Protection Agency, Office of Water, Washington, D.C. https://www.epa.gov/wqc/human-health-water-quality-criteria-and-methods-toxics.
[18] In 2015, the EPA updated its CWA section 304(a) HHC recommendations for 94 pollutants. For those pollutants where the EPA did not update criteria recommendations in 2015 (e.g., methylmercury), the adopted HHC were calculated using the toxicity values that the Agency used the last time it updated its CWA section 304(a) criteria recommendations based on a sound scientific rationale, as described in the EPA's CWA section 304(a) criteria technical support documents.

potential exposure routes.[19,20] To develop the 2015 CWA section 304(a) HHC recommendations, the EPA primarily used field-measured BAFs and laboratory-measured BCFs with applicable food chain multipliers available from peer-reviewed, publicly available databases to develop national BAFs for three trophic levels of fish. If this information was not available, the EPA selected octanol-water partition coefficients (K_{ow} values) from peer-reviewed sources for use in calculating national BAFs.[21]

The EPA's national default drinking water intake rate of 2.4 L/day represents the per capita estimate of combined direct and indirect community water ingestion at the 90th percentile for adults ages 21 and older.[22] The EPA's national default FCR of 22 g/day represents the 90th percentile consumption rate of fish and shellfish from inland and nearshore waters for the U.S. adult population 21 years of age and older, based on National Health and Nutrition Examination Survey (NHANES) data from 2003 to 2010.[23,24] The EPA calculates HHC using a default body weight of 80 kilograms (kg), the average weight of a U.S. adult age 21 and older, based on NHANES data from 1999 to 2006.

Although the EPA uses these default values to calculate national CWA section 304(a) recommended HHC, the EPA's 2000 Human Health Methodology notes a preference for the use of local data (e.g., locally derived FCRs, DIs, and body weights, and waterbody-specific BAFs) to calculate HHC over national default values, where data are sufficient to do so, to better represent local conditions.[25]

The criteria adopted by Washington were calculated using a drinking water intake of 2.4 L/day, a default body weight of 80 kg, and pollutant specific BCF and BAF values informed by the inputs used to derive the EPA's current CWA section 304(a) HHC recommendations for each pollutant. The adopted criteria were calculated using a FCR of 175 g/day which is consistent with the consumption rate that both Washington and the EPA have used since 2016.

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[19] USEPA. 2000. Methodology for Deriving Ambient Water Quality Criteria for the Protection of Human Health. U.S. Environmental Protection Agency, Office of Water, Washington, D.C. EPA-822-B-00-004. https://www.epa.gov/wqc/human-health-water-quality-criteria.

[20] USEPA. (2003). Methodology for Deriving Ambient Water Quality Criteria for the Protection of Human Health (2000). Technical Support Document Volume 2: Development of National Bioaccumulation Factors. EPA-822-B-03-030. https://www.epa.gov/sites/default/files/2018-10/documents/methodology-wqc-protection-hh-2000-volume2.pdf

[21] Final Updated Ambient Water Quality Criteria for the Protection of Human Health, (80 FR 36986, June 29, 2015). See also: USEPA. 2015. Final 2015 Updated National Recommended Human Health Criteria. U.S. Environmental Protection Agency, Office of Water, Washington, D.C. https://www.epa.gov/wqc/human-health-water-quality- criteria.

[22] USEPA. 2011. EPA Exposure Factors Handbook. 2011 edition (EPA 600/R-090/052F). http://cfpub.epa.gov/ncea/risk/recordisplay.cfm?deid=236252.

[23] USEPA. 2014. Estimated Fish Consumption Rates for the U.S. Population and Selected Subpopulations (NHANES 2003-2010). United States Environmental Protection Agency, Washington, DC, USA. EPA 820-R-14- 002.

[24] The EPA's national default FCR is based on the total rate of consumption of fish and shellfish from inland and nearshore waters (including fish and shellfish from local, commercial, aquaculture, interstate, and international sources). This is consistent with a principle that each state does its share to protect people who consume fish and shellfish that originate from multiple jurisdictions. USEPA. January 2013. Human Health Ambient Water Quality Criteria and Fish Consumption Rates: Frequently Asked Questions. https://www.epa.gov/wqc/human-health-ambient-water- quality-criteria-and-fish-consumption-rates-frequently-asked.

[25] USEPA. 2000. Methodology for Deriving Ambient Water Quality Criteria for the Protection of Human Health. U.S. Environmental Protection Agency, Office of Water, Washington, D.C. EPA-822-B-00-004. https://www.epa.gov/wqc/human-health-water-quality-criteria.

4. *Relative Source Contribution*

When deriving HHC for non-carcinogens and nonlinear carcinogens, the EPA recommends including an RSC value to account for sources of exposure other than drinking water and fish and shellfish from inland and nearshore waters, so that the pollutant effect threshold (i.e., RfD) is not apportioned to drinking water and fish consumption alone. The rationale for this approach is to ensure that, for pollutants exhibiting threshold effects, an individual's total exposure from all sources does not exceed that threshold level. These other exposures include exposure to a particular pollutant from ocean fish and shellfish consumption (which is not included in the EPA's national default FCR), non-fish food consumption (e.g., fruits, vegetables, grains, meats, poultry), dermal exposure, and inhalation exposure. The EPA's 2000 Human Health Methodology includes a procedure for determining an appropriate RSC value ranging from 0.2 to 0.8 for a given pollutant.[26]

The EPA's guidance provides that it may be appropriate for states to adjust the RSC to reflect a greater proportion of the RfD being attributed to water, fish and shellfish intake in instances where the FCR includes marine, as well as freshwater and estuarine, fish consumption (e.g., total seafood).[27]

The HHC adopted by Washington were calculated using RSCs adjusted to account for salmon consumption being included in the state's FCR of 175 g/day.

V. The EPA's Action on Washington's WQS Submittal

The EPA has completed its review and is acting on the Ecology's December 2, 2024, WQS submittal, as described below. The submittal adopts into Washington state law the HHC at 40 C.F.R. § 131.45 that were in effect under the CWA immediately prior to the date of this action.

This action applies only to water bodies under the jurisdiction of Washington and does not apply to waters within Indian Country. Nothing in this action shall constitute an approval or disapproval of WQS that apply to waters within Tribal jurisdiction.

A. The EPA's Action on Amendments to WAC 173-201A-240: Table 240 Toxic Substances Criteria and associated footnotes, except for Arsenic

Ecology updated Table 240 in WAC 173-201A to (1) adopt into state law 145 criteria for 75 pollutants, consistent with the federally promulgated HHC, (2) remove the state-adopted HHC, and associated footnotes, that the EPA disapproved in 2016, and (3) include miscellaneous clarifying changes.

The HHC adopted by Washington, with the exception of arsenic, were informed by the EPA's current CWA section 304(a) HHC recommendations, modified to include the state's selected fish consumption rate of 175 grams per day. Table 1 below provides the amendments made to Table 240 of WAC Chapter 173-201A. Underlined text indicates the new and revised criteria values adopted in state law, and strikeout text indicates Washington's previous criteria, which have been replaced by the new and

[26] EPA's 2000 Human Health Methodology, pp. 4-5

[27] USEPA. January 2013. Human Health Ambient Water Quality Criteria and Fish Consumption Rates: Frequently Asked Questions. https://www.epa.gov/sites/default/files/2015-12/documents/hh-fish-consumption-faqs.pdf

revised criteria.

The HHC for arsenic adopted by Washington are addressed separately in section B of this Technical Support Document.

Table 1: WAC Chapter 173-201A Table 240

Compound/Chemical	Chemical Abstracts Service (CAS) #	Water & Organisms	Organisms Only
Aluminum	7429905	-	-
Antimony	7440360	~~12 (H)~~ 6	~~180 (H)~~ 90
Arsenic	7440382	~~10 (A,H)~~ 0.018 (A)	~~10 (A,H)~~ 0.14 (A)
Asbestos	1332214	7,000,000 fibers/L ~~(C)~~ (B)	-
Beryllium	7440417	-	-
Cadmium	7440439	-	-
Chromium (III)	16065831	-	-
Chromium (VI)	18540299	-	-
Copper	7440508	1,300 ~~(C)~~ (B)	-
Lead	7439921	-	-
Mercury	7439976	~~(G)~~	~~(G)~~
Methylmercury	22967926	-	~~(H)~~ 0.03 (C)
Nickel	7440020	~~150 (H)~~ 80	~~190 (H)~~ 100
Selenium	7782492	~~120 (H)~~ 60	~~480 (H)~~ 200
Silver	7440224	-	-
Thallium	7440280	0.24	0.27
Zinc	7440666	~~2,300 (H)~~ 1,000	~~2,900 (H)~~ 1,000
1,1,1-Trichloroethane	71556	~~47,000 (H)~~ 20,000	~~160,000 (H)~~ 50,000
1,1,2,2-Tetrachloroethane	79345	~~0.12 (B,H)~~ 0.1 (D)	~~0.46 (B,H)~~ 0.3 (D)
1,1,2-Trichloroethane	79005	~~0.44 (B,H)~~ 0.35 (D)	~~1.8 (B,H)~~ 0.90 (D)
1,1-Dichloroethane	75343	-	-
1,1-Dichloroethylene	75354	~~1200 (H)~~ 700	~~4100 (H)~~ 4,000
1,2,4-Trichlorobenzene	120821	~~0.12 (B,H)~~ 0.036 (D)	~~0.14 (B,H)~~ 0.037 (D)
1,2-Dichlorobenzene	95501	~~2000 (H)~~ 700	~~2500 (H)~~ 800
1,2-Dichloroethane	107062	~~9.3 (B,H)~~ 8.9 (D)	~~120 (B,H)~~ 73 (D)
1,2-Dichloropropane	78875	0.71 ~~(B)~~ (D)	3.1 ~~(B)~~ (D)

1,3-Dichloropropene	542756	~~0.24 (B)~~ 0.22 (D)	~~2 (B)~~ 1.2 (D)
1,2-Diphenylhydrazine	122667	~~0.015 (B,H)~~ 0.01 (D)	~~0.023 (B,H)~~ 0.02 (D)
1,2-Trans-Dichloroethylene	156605	~~600 (H)~~ 200	~~5,800 (H)~~ 1,000
1,3-Dichlorobenzene	541731	~~13 (H)~~ 2	~~16 (H)~~ 2
1,4-Dichlorobenzene	106467	~~460 (H)~~ 200	~~580 (H)~~ 200
2,3,7,8-TCDD (Dioxin)	1746016	0.000000064	0.000000064
2,4,6-Trichlorophenol	88062	0.25 ~~(B)~~ (D)	0.28 ~~(B)~~ (D)
2,4-Dichlorophenol	120832	~~25 (H)~~ 10	~~34 (H)~~ 10
2,4-Dimethylphenol	105679	85	97
2,4-Dinitrophenol	51285	~~60 (H)~~ 30	~~610 (H)~~ 100
2,4-Dinitrotoluene	121142	0.039 ~~(B)~~ (D)	0.18 ~~(B)~~ (D)
2,6-Dinitrotoluene	606202	-	-
2-Chloroethyvinyl Ether	110758	-	-
2-Chloronaphthalene	91587	~~170 (H)~~ 100	~~180 (H)~~ 100
2-Chlorophenol	95578	15	17
2-Methyl-4,6-Dinitrophenol (4,6-dinitro-o-cresol)	534521	~~7.1 (H)~~ 3	~~25 (H)~~ 7
2-Nitrophenol	88755	-	-
3,3'-Dichlorobenzidine	91941	0.0031 ~~(B)~~ (D)	0.0033 ~~(B)~~ (D)
3-Methyl-4-Chlorophenol (parachlorometa cresol)	59507	36	36
4,4'-DDD	72548	~~0.000036 (B,H)~~ 0.0000079 (D)	~~0.000036 (B,H)~~ 0.0000079 (D)
4,4'-DDE	72559	~~0.000051 (B,H)~~ 0.00000088 (D)	~~0.000051 (B,H)~~ 0.00000088 (D)
4,4'-DDT	50293	~~0.000025 (B,H)~~ 0.0000012 (D)	~~0.000025 (B,H)~~ 0.0000012 (D)
4,4'-DDT (and metabolites)	50293	-	-
4-Bromophenyl Phenyl Ether	101553	-	-
4-Chorophenyl Phenyl Ether	7005723	-	-
4-Nitrophenol	100027	-	-
Acenaphthene	83329	~~110 (H)~~ 30	~~110 (H)~~ 30
Acenaphthylene	208968	-	-
Acrolein	107028	1.0	1.1
Acrylonitrile	107131	0.019 ~~(B)~~ (D)	0.028 ~~(B)~~ (D)

Aldrin	309002	~~0.0000057 (B,H)~~ 0.000000041 (D)	~~0.0000058 (B,H)~~ 0.000000041 (D)
alpha-BHC	319846	~~0.0005 (B,H)~~ 0.000048 (D)	~~0.00056 (B,H)~~ 0.000048 (D)
alpha-Endosulfan	959988	~~9.7 (H)~~ 6	~~10 (H)~~ 7
Ammonia	7664417	-	-
Anthracene	120127	~~3,100 (H)~~ 100	~~4,600 (H)~~ 100
Benzene	71432	0.44 ~~(B)~~ (D)	1.6 ~~(B)~~ (D)
Benzidine	92875	0.00002 ~~(B)~~ (D)	0.000023 ~~(B)~~ (D)
Benzo(a) Anthracene	56553	~~0.014 (B,H)~~ 0.00016 (D)	~~0.021 (B,H)~~ 0.00016 (D)
Benzo(a) Pyrene	50328	~~0.0014 (B,H)~~ 0.000016 (D)	~~0.0021 (B,H)~~ 0.000016 (D)
Benzo(b) Fluoranthene	205992	~~0.014 (B,H)~~ 0.00016 (D)	~~0.021 (B,H)~~ 0.00016 (D)
Benzo(ghi) Perylene	191242	-	-
Benzo(k) Fluoranthene	207089	~~0.014 (B,H)~~ 0.0016 (D)	~~0.21 (B,H)~~ 0.0016 (D)
beta-BHC	319857	~~0.0018 (B,H)~~ 0.0013 (D)	~~0.002 (B,H)~~ 0.0014 (D)
beta-Endosulfan	33213659	9.7	10
Bis(2-Chloroethoxy) Methane	111911	-	-
Bis(2-Chloroethyl) Ether	111444	0.02 ~~(B)~~ (D)	0.06 ~~(B)~~ (D)
~~Bis(2-Chloroisopropyl)~~ Bis(2-Chloro-1-Methylethyl) Ether	~~39638329~~ 108601	~~-(H)~~ 400	~~-(H)~~ 900
Bis(2-Ethylhexyl) Phthalate	117817	~~0.23 (B,H)~~ 0.045 (D)	~~0.25 (B,H)~~ 0.046 (D)
Bromoform	75252	~~5.8 (B,H)~~ 4.6 (D)	~~27 (B,H)~~ 12 (D)
Butylbenzyl Phthalate	85687	~~0.56 (B,H)~~ 0.013 (D)	~~0.58 (B,H)~~ 0.013 (D)
Carbaryl	63252	-	-
Carbon Tetrachloride	56235	0.2 ~~(B)~~ (D)	0.35 ~~(B)~~ (D)
Chlordane	57749	~~0.000093 (B,H)~~ 0.000022 (D)	~~0.000093 (B,H)~~ 0.000022 (D)
Chloride (dissolved)	168870	-	-
Chlorine (total residual)	7782505	-	-
Chlorobenzene	108907	~~380 (H)~~ 100	~~890 (H)~~ 200
Chlorodibromomethane	124481	~~0.65 (B,H)~~ 0.60 (D)	~~3 (B,H)~~ 2.2 (D)
Chloroethane	75003	-	-
Chloroform	67663	~~260 (H)~~ 100	~~1200 (H)~~ 600
Chlorpyrifos	2921882	-	-
Chrysene	218019	~~1.4 (B,H)~~ 0.016 (D)	~~2.1 (B,H)~~ 0.016 (D)
Cyanide	57125	~~19 (D,H)~~ 9 (E)	~~270 (D,H)~~ 100 (E)
delta-BHC	319868	-	-

Demeton	8065483	-	-
Diazinon	333415	-	-
Dibenzo(a,h) Anthracene	53703	~~0.0014 (B,H)~~ 0.000016 (D)	~~0.0021 (B,H)~~ 0.000016 (D)
Dichlorobromomethane	75274	~~0.77 (B,H)~~ 0.73 (D)	~~3.6 (B,H)~~ 2.8 (D)
Dieldrin	60571	~~0.0000061 (B,H)~~ 0.000000070 (D)	~~0.0000061 (B,H)~~ 0.000000070 (D)
Diethyl Phthalate	84662	~~4,200 (H)~~ 200	~~5,000 (H)~~ 200
Dimethyl Phthalate	131113	~~92,000 (H)~~ 600	~~130,000 (H)~~ 600
Di-n-Butyl Phthalate	84742	~~450 (H)~~ 8	~~510 (H)~~ 8
Di-n-Octyl Phthalate	117840	-	-
Endosulfan Sulfate	1031078	~~9.7 (H)~~ 9	10
Endrin	72208	~~0.034 (H)~~ 0.002	~~0.035 (H)~~ 0.002
Endrin Aldehyde	7421934	0.034	0.035
Ethylbenzene	100414	~~200 (H)~~ 29	~~270 (H)~~ 31
Fluoranthene	206440	~~16 (H)~~ 6	~~16 (H)~~ 6
Fluorene	86737	~~420 (H)~~ 10	~~610 (H)~~ 10
Guthion	86500	-	-
Hexachlorocyclohexane (gamma-BHC; Lindane)	58899	~~15 (H)~~ 0.43	~~17 (H)~~ 0.43
Heptachlor	76448	~~0.0000099 (B,H)~~ 0.00000034 (D)	~~0.00001 (B,H)~~ 0.00000034 (D)
Heptachlor Epoxide	1024573	~~0.0000074 (B,H)~~ 0.0000024 (D)	~~0.0000074 (B,H)~~ 0.0000024 (D)
Hexachlorobenzene	118741	~~0.000051 (B,H)~~ 0.0000050 (D)	~~0.000052 (B,H)~~ 0.0000050 (D)
Hexachlorobutadiene	87683	~~0.69 (B,H)~~ 0.01 (D)	~~4.1 (B,H)~~ 0.01 (D)
Hexachlorocyclopentadiene	77474	~~150 (H)~~ 1	~~630 (H)~~ 1
Hexachloroethane	67721	~~0.11 (B,H)~~ 0.02 (D)	~~0.13 (B,H)~~ 0.02 (D)
Indeno(1,2,3-cd) Pyrene	193395	~~0.014 (B,H)~~ 0.00016 (D)	~~0.021 (B,H)~~ 0.00016 (D)
Isophorone	78591	27 ~~(B)~~ (D)	110 ~~(B)~~)(D)
Malathion	121755	-	-
Methoxychlor	72435	-	-
Methyl Bromide	74839	~~520 (H)~~ 300	2,400
Methyl Chloride	74873	-	-
Methylene Chloride	75092	~~16 (B,H)~~ 10 (D)	~~250 (B,H)~~ 100 (D)
Mirex	2385855	-	-
N-(1,3-Dimethylbutyl)-N'-phenyl-p-phenylenediamine-		-	-

quinone (~~((6PPD-q))~~) (6PPD-quinone)			
Napthalene	91203	-	-
Nitrobenzene	98953	~~55 (H)~~ 30	~~320 (H)~~ 100
N-Nitrosodimethylamine	62759	0.00065 ~~(B)~~ (D)	0.34 ~~(B)~~ (D)
N-Nitrosodi-n-Propylamine	621647	0.0044 ~~(B)~~ (D)	0.058 ~~(B)~~ (D)
N-Nitrosodiphenylamine	86306	0.62 ~~(B)~~ (D)	0.69 ~~(B)~~ (D)
Nonylphenol	84852153	-	-
Parathion	56382	-	-
Pentachlorophenol (PCP)	87865	~~0.046 (B,H)~~ 0.002 (D)	~~0.1 (B,H)~~ 0.002 (D)
Perfluorooctane sulfonic acid (PFOS)		-	-
Perfluorooctanoic acid (PFOA)		-	-
Phenanthrene	85018	-	-
Phenol	108952	~~18,000 (H)~~ 9000	~~200,000 (H)~~ 70000
Polychlorinated Biphenyls (PCBs)		~~0.00017 (E,H)~~ 0.000007 (F)	~~0.00017 (E,H)~~ 0.000007 (F)
Pyrene	129000	~~310 (H)~~ 8	~~460 (H)~~ 8
Tetrachloroethylene	127184	~~4.9 (B,H)~~ 2.4 (D)	~~7.1 (B,H)~~ 2.9 (D)
Toluene	108883	~~180 (H)~~ 72	~~410 (H)~~ 130
Toxaphene	8001352	0.000032 ~~(B)~~ (D)	0.000032 ~~(B)~~ (D)
Tributyltin		-	-
Trichloroethylene	79016	~~0.38 (B,H)~~ 0.3 (D)	~~0.86 (B,H)~~ 0.7 (D)
Vinyl Chloride	75014	0.02 ~~(B,F)~~ (D)	~~0.26 (B,F,H)~~ 0.18 (D)

The EPA Action

In accordance with CWA section 303(c), and implementing regulations at 40 C.F.R. Part 131, the EPA approves Washington's newly adopted "water+ organism" and "organism only" HHC for the pollutants identified in Table 1 above, and the update to the naming convention for Bis(2-Chloroisopropyl) to Bis(2-Chloro-1- Methylethyl) Ether including the updated CAS number. The EPA's action on the HHC for arsenic is discussed in section B.

Rationale

As discussed in Section II of this Technical Support Document, the EPA previously promulgated federal HHC for Washington to protect Washington's designated uses. In its December 2, 2024, submittal, Washington adopted those federal HHC into state law. Accordingly, the criteria that Washington

adopted and submitted to the EPA are identical to the science-based federal criteria that the EPA promulgated.[28,29]

The EPA evaluated Washington's newly adopted HHC and has determined they are protective of the state's designated uses and scientifically defensible. The EPA's evaluation and analysis of the HHC adopted by Washington is provided below.

The input parameters that were used to develop the newly adopted HHC in Ecology's Table 240 were informed by the EPA's 2000 Human Health Methodology and current CWA section 304(a) HHC recommendations for each pollutant. Those input factors are provided in Table 2 and each of the HHC inputs is discussed in more detail below.

Table 2. Inputs used to derive Washington's HHC (except for arsenic)

Input	Magnitude	Source
CRL	1 x 10^{-6} or one in one million	Within the recommended range in the EPA's 2000 Human Health Methodology
CSF	Pollutant-specific values	Values in the EPA 2015 CWA section 304(a) HHC recommendation documents (or earlier CWA section 304(a) HHC recommendation documents for pollutants not updated in 2015)
RfD	Pollutant-specific values	Values from EPA 2015 CWA section 304(a) HHC recommendation documents (or earlier 304(a) HHC recommendation documents for pollutants not updated in 2015)
RSC	Majority 0.5 or 50%; all less than 1	Pollutant-specific values from CWA section 304(a) HHC recommendations, adjusted to account for the inclusion of salmon in the FCR input
BW	80 kilograms	National default in 2015 CWA section 304(a) HHC recommendations
DI	2.4 liters per day	National default in 2015 CWA section 304(a) HHC recommendations
FCR	175 grams per day	Rate based on state-specific data
BCF/BAF	Pollutant-specific values (for trophic level 4, where applicable)	Values from 2015 CWA section 304(a) HHC recommendation documents; (or earlier CWA section 304(a) HHC recommendation documents for pollutants not updated in 2015)

In addition to adopting new and revised HHC in Table 240, Ecology also renamed Bis(2-Chloroisopropyl) Ether to Bis(2-Chloro-1-Methylethyl) Ether and revised its associated CAS number to 108601. These changes are consistent with the EPA's final federal criteria and current CWA section 304(a) criteria recommendations.

[28] Restoring Protective Human Health Criteria in Washington. EPA-HQ-OW-2015-0174; FRL-7253.1-02-OW. November 2022. (87 FR 69183)

[29] Revision of Certain Federal Water Quality Criteria Applicable to Washington. EPA-HQ-OW-2015-0174; FRL-9955-40-OW. November 2016. (81 FR 85417).

1. *Cancer Risk Level*

Washington's newly adopted HHC for carcinogens were calculated using a risk level of 1 x 10^{-6} (one in one million). The state's risk management decision to use a CRL of 1 x 10^{-6} is codified at WAC 173-201A-240(5)(b), which identifies the fish consumption rate and CRL used to calculate the HHC in Table 240. Ecology's CRL aligns with the EPA's 2000 Human Health Methodology which recommends a CRL of 10^{-5} or 10^{-6} to protect the general population.[30] The use of a CRL of 1x 10^{-6} is also consistent with the CRL used to calculate the state's existing HHC that were previously approved by the EPA in 2016 and the federal criteria that the EPA promulgated for the state in both 2016 and 2022.

Washington's adoption of HHC calculated using a CRL of 1 x 10^{-6} is consistent with the CRL that the EPA uses when developing CWA section 304(a) recommended HHC and promulgating criteria for states and Tribes, informed by the EPA's 2000 Human Health Methodology, and consistent with the state's longstanding policy preference.[31]

2. *Pollutant-Specific Cancer Slope Factors and Reference Doses*

As part of the EPA's 2015 updates to its CWA section 304(a) recommended HHC, the EPA conducted a systematic search of eight peer-reviewed, publicly available sources to obtain the most current toxicity values for each pollutant (RfDs for non-carcinogenic effects and CSFs for carcinogenic effects).[32] For the majority of the EPA's 2015 updated national CWA section 304(a) recommended HHC, the EPA's Integrated Risk Information System[33] was the source of both cancer and noncancer toxicity values (i.e., RfDs and CSFs).

Washington's newly adopted HHC are calculated using pollutant specific RfDs for noncarcinogenic pollutants and CSFs for carcinogenic pollutants that correspond to those used to develop the EPA's 2015 CWA section 304(a) HHC recommendations for those pollutants. For those pollutants where the EPA did not update criteria recommendations in 2015 (e.g., methylmercury), the adopted HHC were calculated using the toxicity values that the Agency used the last time it updated its CWA section 304(a) criteria recommendations based on a sound scientific rationale, as described in the EPA's CWA section 304(a) criteria technical support documents.

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[30] EPA's 2000 Human Health Methodology, pages 2-6.

[31] When the EPA was promulgating federal HHC for the state in the 1992 National Toxics Rule, the state requested the EPA to promulgate using a CRL of 10^{-6} saying, "The State of Washington supports adoption of a risk level of one in one million for carcinogens. If EPA decides to promulgate a risk level below one in one million, the rule should specifically address the issue of multiple contaminants so as to better control overall site risks." 57 FR 60848, December 22, 1992.

[32] Final Updated Ambient Water Quality Criteria for the Protection of Human Health, (80 FR 36986, June 29, 2015). See also: USEPA. 2015. Final 2015 Updated National Recommended Human Health Criteria. U.S. Environmental Protection Agency, Office of Water, Washington, D.C. http://water.epa.gov/scitech/swguidance/standards/criteria/current/hhfinal.cfm.

[33] USEPA. Integrated Risk Information System (IRIS). U.S. Environmental Protection Agency, Office of Research and Development, Washington, DC www.epa.gov/iris.

3. *Fish Consumption Rate*

As indicated above, the HHC adopted by Washington were derived using a state-developed FCR of 175 g/day, the same FCR used to calculate the state's 2016 HHC, to protect high fish consumers in the state, including recreational and subsistence fishers.[34] Washington's FCR was informed, in part, by local fish consumption surveys conducted by the Tulalip, Squaxin Island, and Suquamish Tribes[35] and aligns with the 95th percentile consumption rate of a regional fish consumption study, *A Fish Consumption Survey of the Umatilla, Nez Perce, Yakama, and Warm Springs Tribes of the Columbia River Basin*.[36] Washington's decision to use a FCR of 175 g/day to derive HHC is codified at WAC 173-201A-240(5)(b).

In 2016, Ecology described its FCR selection as a Washington-specific risk management choice to use a value that: (1) is representative of state-specific information; and (2) was determined through a process that included consideration of the EPA's guidance and precedent, and input from multiple groups of stakeholders.[37] Specifically, in selecting a FCR of 175 g/day, Ecology stated:

> "Since Washington has a strong tradition of fish and shellfish harvest and consumption from local waters, and within-state survey information indicates that different groups of people harvest fish both recreationally and for subsistence (Ecology, 2013), Ecology has made the risk management decision to base the [FCR] used in the HHC equation on "highly exposed populations," which include, among other groups, the following: tribes, Asian Pacific Islanders (API), recreational and subsistence fishers, immigrant populations."[38]

The EPA's 2000 Human Health Methodology recognizes the variability of FCRs among population groups and by geographic region and emphasizes that states and authorized Tribes should consider developing criteria to protect highly exposed population groups and use local or regional data where available. Ecology's selected FCR is based on local data and is consistent with the EPA's 2000 Human Health Methodology which includes the following four-preference hierarchy concerning the use of fish consumption data: (1) use of local data; (2) use of data reflecting similar geography/population groups; (3) use of data from national surveys; and (4) use of the EPA's default intake rate.

Washington's selection of an FCR of 175 g/day is consistent with the FCR used to develop the state's existing HHC that were previously approved by the EPA in 2016 and in 2019 and the federal criteria that the EPA promulgated for the state in both 2016 and 2022.

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[34] See page 43 of Concise Explanatory Statement WAC 173-201A-240 Toxic Substances – Human Health Criteria, Summary of Rulemaking and Response to Comments. November 2024.

[35] Department of Ecology. Washington State Water Quality Standards: Human health criteria and implementation tools, Overview of key decisions in rule amendment. August 2016. Ecology Publication no. 16-10-025. Pp. 29-30. https://fortress.wa.gov/ecy/publications/documents/1610025.pdf

[36] This study surveyed Tribal members of four Tribes along the Columbia River in Washington, Oregon, and Idaho and incorporated the fish/shellfish consumption of freshwater, estuarine, and anadromous species. Fish Consumption Survey of the Umatilla, Nez Perce, Yakama, and Warm Springs Tribes of the Columbia River Basin (Columbia River Inter-Tribal Fish Commission (CRITFC), 1994).

[37] Department of Ecology. Washington State Water Quality Standards: Human health criteria and implementation tools, Overview of key decisions in rule amendment. August 2016. Ecology Publication no. 16-10-025. Page 27. https://fortress.wa.gov/ecy/publications/documents/1610025.pdf

[38] *Id*. At page 28.

4. *Relative Source Contribution*

Washington's FCR of 175 g/day includes the consumption of anadromous fish along with freshwater and estuarine fish and shellfish.[39] The inclusion of anadromous fish (e.g., salmon) in the FCR is reasonable given that these species reside in Washington's nearshore (*i.e.,* within three miles of the coast) waters, especially Puget Sound, and accumulate pollutants discharged to these waters during a significant portion of their lives. As previously stated, Washington's newly adopted HHC are consistent with the criteria that the EPA promulgated for the state. Therefore, they were calculated using the same adjusted RSC values – 0.5 for the majority of pollutants – that the EPA used to develop the federal criteria that the EPA promulgated for the state in both 2016 and 2022.

In the EPA's federal rules, the EPA accounted for the inclusion of anadromous fish in the 175 g/day FCR by examining the ratio of the national data characterizing total fish consumption versus inland and nearshore-only fish consumption and applying that ratio to the proportion of the RfD reserved for inland and nearshore fish consumption in the RSC. The EPA's federal rules explain how the EPA calculated the adjusted RSC values.[40]

The RSC values used to calculate Washington's HHC are consistent with those used to calculate the current CWA section 304(a) recommendations and EPA's 2000 Human Health Methodology (i.e., ranging between 0.2 to 0.8) and were adjusted using a scientifically defensible approach.

5. *Bioaccumulation Factors and Bioconcentration Factors*

Washington's newly adopted criteria are calculated using BAFs informed by the EPA's 2015 CWA section 304(a) criteria recommendations and associated supporting documents.[41] For pollutants for which science-based BAFs are not currently available, the criteria were developed using BCFs from the current CWA section 304(a) HHC recommendations for those pollutants as the best available scientific information. Specifically, the criteria were developed using trophic level four BAFs where available, based on data and information showing that trophic level four fish species (e.g., salmon) are commonly consumed in Washington.[42] The EPA's national recommended BAFs and BCFs are based on peer-reviewed, publicly available data and were developed consistent with the EPA's 2000 Human Health Methodology and its supporting documents.[43] The EPA published supplemental information on development of the national recommended BAFs in January 2016.[44]

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[39] *Id*. Page 29.

[40] https://www.federalregister.gov/documents/2016/11/28/2016-28424/revision-of-certain-federal-water-quality-criteria-applicable-to-washington#p-162

[41]National Recommended Water Quality Criteria – Human Health Criteria Table https://www.epa.gov/wqc/national-recommended-water-quality-criteria-human-health-criteria-table

[42] Fish Consumption Survey of the Umatilla, Nez Perce, Yakama, and Warm Springs Tribes of the Columbia River Basin (Columbia River Inter-Tribal Fish Commission (CRITFC), 1994).

[43] https://www.epa.gov/wqc/human-health-water-quality-criteria-and-methods-toxics

[44] USEPA. January 2016. Development of National Bioaccumulation Factors: Supplemental Information for EPA 's 2015 Human Health Criteria Update. Office of Water, Washington, D.C. EPA 822-R-16-001. http://www.epa.gov/sites/production/ti les/2016-01 /documents/national-bioaccumulation-factors-supplementalinformation.pdf.

The BAF and BCF values used to calculate Washington's HHC are consistent with those used to calculate the EPA's 2015 CWA section 304(a) recommendations and the federal criteria that the EPA promulgated for the state in both 2016 and 2022.

6. Drinking Water Intake

The HHC adopted by Washington were derived using a DI rate of 2.4 L/day. In the absence of reliable local or regional data, the EPA recommends that states refer to the most current available national data on drinking water intake rates. The EPA's national default DI rate of 2.4 L/day for deriving ambient water quality criteria represents the per capita estimate of combined direct and indirect community water ingestion at the 90th percentile for adults.

Washington's HHC were derived using a DI of 2.4 L/day, consistent with the national default used to calculate the EPA's 2015 CWA section 304(a) recommendations, the state's existing HHC that were previously approved by the EPA, and the federal criteria that the EPA promulgated for the state in both 2016 and 2022.

7. Body Weight

The HHC adopted by Washington were derived using a body weight input of 80 kg based on survey data relevant to Washington[45] and the EPA's 2011 Exposure Factors Handbook.[46] The EPA's national default body weight of 80 kg represents the average weight of a U.S. adult, age 21 and older, according to NHANES data from 1999 to 2006.

The selection of a body weight factor of 80 kg to derive HHC is consistent with the national default used to calculate the 2015 CWA section 304(a) HHC recommendations,[47] the state's existing HHC that were previously approved by the EPA, and the federal criteria that the EPA promulgated for the state in both 2016 and 2022.

B. The EPA Action on Washington's HHC for Arsenic

The EPA Action

In accordance with its authority pursuant to CWA section 303(c), and its implementing regulation at 40 C.F.R. Part 131, the EPA approves Washington's adoption of a water + organism criterion of 0.018 µg/L and organism only value of 0.14 µg/L for arsenic in Ecology's Table 240.

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[45] Department of Ecology. Washington State Water Quality Standards: Human health criteria and implementation tools, Overview of key decisions in rule amendment. August 2016. Ecology Publication no. 16-10-025. Pp. 38-39. https://fortress.wa.gov/ecy/publications/documents/1610025.pdf

[46] Exposure Factors Handbook: 2011 Edition, U.S. Environmental Protection Agency, Office of Research and Development, EPA 600/R-090/052F (Sept. 2011).

[47] https://www.epa.gov/sites/default/files/2015-10/documents/human-health-2015-update-factsheet.pdf (Explaining that "EPA updated the default body weight for human health criteria to 80 kilograms based on National Health and Nutrition Examination Survey (NHANES) data from 1999 to 2006 (USEPA 2011).").

Rationale

In 1992, the EPA promulgated HHC (including criteria for arsenic) for Washington and several other states in the NTR. The NTR arsenic criteria were calculated using the following inputs based on the CWA section 304(a) HHC recommendations and national defaults at the time and the 1980 Human Health Methodology:[48,49]

- CRL: 1 x 10^{-6} (Washington's CRL)
- FCR: 6.5 g/day (EPA's national recommended default in 1992, Washington's FCR in 1992)
- CSF: 1.75 (mg/kg)/day[50] (IRIS value in 1992, used to calculate the CWA section 304(a) criteria recommendation)
- BCF: 44 L/kg (value used to calculate the CWA section 304(a) criteria recommendation)
- DI: 2.0 L/day (EPA's national recommended default in 1992)
- BW: 70 kilograms (EPA's national recommended default in 1992)

The EPA did not revise the arsenic criteria applicable in Washington for CWA purposes (i.e., the NTR criteria) in its 2016 or 2022 rules, citing scientific uncertainty surrounding the toxicological assessment with respect to human health effects, notably the CSF and the characterization of bioconcentration/bioaccumulation. Washington's newly adopted arsenic criteria approved in this action are identical to the federal NTR criteria, which were derived using the national default inputs available in 1992, including a FCR of 6.5 g/day. Given the difference in inputs used to derive the arsenic criteria versus the other criteria adopted by Washington, for this action, the EPA evaluated the arsenic criteria against values that the EPA calculated using updated inputs consistent with Washington's other adopted criteria and based on the latest scientific understanding.

To derive values for the evaluation, the EPA used a CSF consistent with EPA's current quantitative estimate of carcinogenic risk from oral exposure to arsenic, contained in the EPA's Integrated Risk Information System[51] and updated information on arsenic bioaccumulation.[52,53] The EPA compiled and published available information on arsenic bioconcentration and bioaccumulation in 2003 and did not reach any conclusion regarding an appropriate single input for use in HHC derivation. Current data indicate that the bioaccumulation rates for arsenic are variable, bioaccumulation of arsenic may be dependent on the ambient water concentration, and concentrations of inorganic arsenic in fish are low relative to concentrations of organic arsenic (organic forms of arsenic typically found in fish are not as toxic as inorganic arsenic). More recently, Idaho developed a trophic-level weighted BAF based on site-specific field data collected across Idaho waters and used it to derive HHC for arsenic, which the EPA approved on September 29, 2023. The EPA used Idaho's trophic-level weighted BAF for this

[48] https://www.epa.gov/sites/default/files/2019-02/documents/ambient-wqc-arsenic-1980.pdf
[49] Guidelines and Methodologies Used in the Preparation of Health Effects Assessment Chapters of the Consent Decree Water Criteria Documents (45 FR 79347)
[50] The q1* of 1.75 mg/kg-d was derived from the risk per unit concentration in drinking water from IRIS: 5x10^{-5} risk per ug/L in drinking water.
[51] https://iris.epa.gov/ChemicalLanding/&substance_nmbr=278
[52] DEQ (Idaho Department of Environmental Quality). 2020. 2019 Arsenic Accumulation in Fish Tissue: Preliminary Monitoring Results. Boise, ID: Idaho Department of Environmental Quality.
[53] See Idaho Aquatic Human Health Criteria for Arsenic Technical Justification for a full description of the TL-weighted BAF calculation.

comparison calculation in accordance with the Agency's guidance which recommends the use of available local and regional data when developing criteria.[54]

Using the approach described above, the EPA calculated a water + organism value of 0.02 µg/L and organism only value of 0.16 µg/L. The EPA used the following input values to calculate these values.

- CRL: 1 x 10^{-6} (Washington's CRL)
- FCR: 175 grams/day (Washington's FCR)
- CSF: 1.5 (mg/kg)/day (current IRIS value)[55]
- BAF: 1.87 L/kg (based on trophic level weighted BAF developed using Idaho data)[56,57]
- DI: 2.4 L/day (consistent with the EPA's current national recommended default)
- BW: 80 kilograms (consistent with the EPA's current national recommended default)

In comparison, Washington adopted the following criteria for arsenic consistent with the NTR criteria: a water + organism criterion of 0.018 µg/L and organism only value of 0.14 µg/L. Both Washington-adopted values are more stringent than the values that EPA calculated above using updated inputs.[58] Accordingly, the EPA is approving Washington's arsenic HHC in Table 240 because they are protective of Washington's designated uses and consistent with CWA requirements and the EPA's implementing regulations, specifically 40 C.F.R. § 131.11.

C. The EPA Action on Footnotes to Table 240

Washington's adoption of HHC addressed certain footnotes to Table 240 excerpted below, with added language underlined and bolded and removed language in strikeout.

~~[A].~~ ~~This criterion for total arsenic is the maximum contaminant level (MCL) developed under the Safe Drinking Water Act. The MCL for total arsenic is applied to surface waters where consumption of organisms only and where consumption of water + organisms reflect the designated uses. When the department determines that a direct or indirect industrial discharge to surface waters designated for domestic water supply may be adding arsenic to its wastewater, the department will require the discharger to develop and implement a pollution prevention plan to reduce arsenic through the use of~~

[54] EPA. 2000. Methodology for Deriving Ambient Water Quality Criteria for the Protection of Human Health. U.S. Environmental Protection Agency, Office of Water, Washington, D.C. EPA-822-B-00-004. page 2-6.

[55] This value represents the current oral cancer slope factor contained in EPA's Integrated Risk Information System (IRIS) at the time of this approval. The EPA is currently in the process of reassessing the cancer assessment for inorganic arsenic. USEPA. Integrated Risk Information System (IRIS). U.S. Environmental Protection Agency, Office of Research and Development, Washington, DC www.epa.gov/iris

[56] See Idaho Aquatic Human Health Criteria for Arsenic Technical Justification for a full description of the trophic level weighted BAF calculation.

[57] For this comparison, the EPA used a trophic level weighted BAF for inorganic arsenic. However, this selection may be conservative since a number of Washington's HHC are calculated using only trophic level four BAFs. Idaho identified a trophic level four BAF of 0.24 L/kg for arsenic based on state-specific data. Using the trophic level four BAF and other Washington specific and updated HHC inputs results in a water + organism value of 0.02 µg/L and organism only value of 1.3 µg/L.

[58] Section 510 of the CWA expressly preserves the authority of states to adopt WQS that are more stringent than required by the Act. 33 U.S.C. § 1370; 40 C.F.R. § 131.4.

~~AKART. Industrial wastewater discharges to a privately or publicly owned wastewater treatment facility are considered indirect discharges.~~

A. **This criterion refers to the inorganic form of arsenic only. These criteria were promulgated for Washington in the National Toxics Rule at 40 C.F.R. 131.36 and are moved to 40 C.F.R. 131.45 to have one comprehensive human health criteria rule for Washington.**

B. ~~[C]~~ This criterion is based on a regulatory level developed under the Safe Drinking Water Act.

C. **This criterion is expressed as the fish tissue concentration of methylmercury (mg methylmercury/kg fish). See Water Quality Criterion for the Protection of Human Health: Methylmercury (EPA-823-R-01-001, January 3, 2001) for how this value is calculated using the criterion equation in EPA's 2000 Human Health Methodology rearranged to solve for a protective concentration in fish tissue rather than in water.**

D. [~~B~~] This criterion was calculated based on an additional lifetime cancer risk of one-in-one-million (1×10^{-6} risk level).

E. [~~D~~] This recommended water quality criterion is expressed as total cyanide, even though the integrated risk information system RfD used to derive the criterion is based on free cyanide. The multiple forms of cyanide that are present in ambient water have significant differences in toxicity due to their differing abilities to liberate the CN-moiety. Some complex cyanides require even more extreme conditions than refluxing with sulfuric acid to liberate the CN-moiety. Thus, these complex cyanides are expected to have little or no "bioavailability" to humans. If a substantial fraction of the cyanide present in a water body is present in a complexed form (e.g., Fe4[Fe(CN)6]3), this criterion may be overly conservative.

F. [~~E~~] This criterion applies to total PCBs, (e.g., the sum of all congener or all isomer or homolog or Aroclor analyses). ~~The PCBs criteria were calculated using a chemical-specific risk level of 4 x 10-5. Because that calculation resulted in a higher (less protective) concentration than the current criterion concentration (40 C.F.R. 131.36) the state made a chemical-specific decision to stay at the current criterion concentration.~~

[~~F~~] ~~This criterion was derived using the cancer slope factor of 1.4 (linearized multistage model with a twofold increase to 1.4 per mg/kg-day to account for continuous lifetime exposure from birth).~~

[~~G~~] ~~EPA has removed Washington from the National Toxics Rule at 40 C.F.R. 131.36 for mercury and promulgated new human health criteria for methylmercury in the EPA's final rule at 40 C.F.R. 131.45.~~

[~~H~~] ~~Human health criteria applicable for Clean Water Act purposes in the state of Washington are contained in 40 C.F.R. 131.45 and effective as of December 19, 2022 (87 FR 69183)~~

The EPA Action

In accordance with its authority pursuant to CWA section 303(c), and its implementing regulation at 40 C.F.R. Part 131, the EPA approves new footnote F and portions of new footnotes A, C and E.

The EPA is taking no action on the deletion of previous footnotes A, F, G, and H because they are not WQS subject to the EPA's review and action under 303(c) of the CWA. The EPA is also taking no action on portions of new and revised footnotes A, and C, and E and renumbered footnotes B and D because they do not constitute WQS subject to the EPA's review and action under 303(c) of the CWA.

Rationales

1. Revisions to Footnote A Associated with Arsenic

The previously adopted language of footnote A was disapproved in the EPA's 2016 CWA 303(c) action and therefore, was not effective for CWA purposes. Accordingly, the EPA is not taking action on the removal of footnote A because it is not a new or revised WQS subject to the EPA's review and action under 303(c) of the CWA.

The language of new footnote A indicates that Washington's arsenic criteria are applicable to the inorganic form of arsenic, describes where the criteria are codified, and is consistent with footnotes provided with the federal criteria that the EPA promulgated for the state in both 2016 and 2022. The EPA is approving the first sentence of footnote A because it provides accurate information about the form of arsenic the criteria apply to, consistent with the EPA's federal rules and CWA section 304(a) HHC recommendations. The EPA is not taking action on the second sentence of new footnote A because the information regarding where the criteria are codified does not establish a legally binding requirement under state law and it does not describe a desired ambient condition of a waterbody to support a particular designated use. Therefore, it is not considered a WQS subject to the EPA's review and action under 303(c) of the CWA.

2. New Footnote C and Removal of Previous Footnote G Associated with Mercury

The previously adopted language of footnote G was disapproved in the EPA's 2016 CWA action for being inaccurate and was therefore not effective for CWA purposes. Ecology amended the footnote and submitted new language on August 22, 2024. The EPA has not taken CWA action on the August 22, 2024, submittal, so the footnote is not in effect for CWA purposes. The previous footnote G removed from this version, which states where Washington's methymercury criterion is codified, does not establish a legally binding requirement under state law, nor does it describe a desired ambient condition of a waterbody to support a particular designated use. Accordingly, the EPA is not taking action on the removal of footnote G because it is not a new or revised WQS subject to the EPA's review and action under 303(c) of the CWA.

New footnote C specifies that the state's methylmercury criterion is expressed as a fish tissue concentration, clarifies the units of the criterion, and cites to the CWA section 304(a) HHC

recommendation document for methylmercury.[59] The language of the footnote is consistent with a footnote provided with the federal criteria that the EPA promulgated for the state in 2016 and aligns with the CWA section 304(a) HHC recommendation for methylmercury. The EPA is approving the first sentence of new footnote C because it specifies the applicable expression and units for the state's methylmercury criterion. The EPA is not taking action on the rest of footnote C because the reference to the EPA's CWA section 304(a) HHC recommendation document is not a new or revised WQS subject to the EPA's review and action under 303(c) of the CWA.

3. Renumbered Footnotes D and B

Ecology did not make amendments to former footnotes B and C, but they were renumbered as new footnotes D and B, respectively. In its 2016 action, the EPA did not take action on the footnotes because they do not establish a legally binding requirement under state law and do not describe a desired ambient condition of a waterbody to support a particular designated use. The EPA is again not taking action on the renumbered footnotes because they are not considered WQS subject to the EPA's review and action under 303(c) of the CWA.

4. Revisions to New Footnote E Associated with Cyanide

Footnote E pertains to Washington's HHC for cyanide and is consistent with former footnote D in Washington's WQS. In its 2016 action, the EPA disapproved footnote D together with the state's previous HHC for cyanide. Footnote E provides supporting information relevant to Washington's adopted cyanide criteria, which were first promulgated in the EPA's federal rules, and was informed by the EPA's CWA section 304(a) criteria recommendation document for cyanide.[60] The EPA is approving the first portion of footnote E since it specifies the applicable expression of Washington's adopted criteria for cyanide. The EPA is taking no action on the rest of the footnote because, though it provides accurate supporting information about the state's cyanide criteria, the language does not establish a legally binding requirement under state law and it does not describe a desired ambient condition of a waterbody to support a particular designated use. Therefore, it is not considered a WQS subject to the EPA review and action under 303(c) of the CWA.

5. Revisions to New Footnote F Associated with Total PCBs

New footnote F is a revised version of former footnote E, which was disapproved by the EPA in 2016 together with the state's previous HHC for PCBs. Footnote F clarifies that the applicable expression of Washington's HHC for PCBs is total PCBs. The footnote is consistent with a footnote provided with the federal criteria that the EPA promulgated for the state in both 2016 and 2022and the CWA section 304(a) recommended criteria for total PCBs. Therefore, the EPA is approving new footnote F.

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[59] USEPA. (January 8, 2001). Water Quality Criterion for the Protection of Human Health: Methylmercury. 66 FR 1344-1359. https://www.govinfo.gov/content/pkg/FR-2001-01-08/html/01-217.htm.

[60] See page 16 of Update of Human Health Ambient Water Quality Criteria: Cyanide 57-12-5. June 2015. U.S. Environmental Protection Agency. EPA 820-R-15-031.

6. Removal of Former Footnote F Associated with Vinyl Chloride

Washington removed footnote F associated with the state's vinyl chloride HHC, stating that the footnote incorrectly listed the CSF used to derive the state's water + organism criterion for vinyl chloride and is not needed. The footnote also is not needed for the newly adopted organism only criteria for vinyl chloride.

The EPA took no action on the previously submitted footnote F in 2016 because it was not considered a WQS subject to the EPA review and action under CWA section 303(c). Since the footnote does not establish a legally binding requirement under state law and it does not describe a desired ambient condition of a waterbody to support a particular designated use, the EPA is not taking action on the removal of footnote F.

7. Deletion of Footnote H Associated with Where Criteria are Codified

Previous footnote H was adopted by the state on August 14, 2024, and submitted for CWA section 303(c) action on August 22, 2024. The EPA has not acted on this footnote; therefore, it is not effective for CWA purposes. Deleted footnote H indicates where the criteria are codified and does not establish a legally binding requirement under state law, nor does it describe a desired ambient condition of a waterbody to support a particular designated use. Accordingly, the EPA is not taking action on the removal of footnote H because it is not a new or revised WQS subject to the EPA's review and action under 303(c) of the CWA.

D. The EPA Action on Narrative Revisions at WAC 173-201A-240(5)

Along with the criteria in Table 240, Washington revised the narrative provision at WAC 173-201A-240(5) below, which provides narrative criteria and background information on the HHC for toxic substances in Table 240.

All strikeout text indicates the language that Ecology removed.

> (b) **Human health protection.** The following provisions apply to the human health criteria in Table 240. All waters shall maintain a level of water quality when entering downstream waters that provides for the attainment and maintenance of the water quality standards of those downstream waters, including the waters of another state. The human health criteria in the tables were calculated using a fish consumption rate of 175 g/day. Criteria for carcinogenic substances were calculated using a cancer risk level equal to one-in-one-million~~, or as otherwise specified in this chapter~~. The human health criteria calculations and variables include chronic durations of exposure up to 70 years. All human health criteria for metals are for total metal concentrations, unless otherwise noted. Dischargers have the obligation to reduce toxics in discharges through the use of AKART.

Washington revised WAC 173-201A-240(5)(b) to remove a reference to CRLs other than 10^{-6} being specified in Table 240. This reference is now obsolete since Washington's HHC are all based on a CRL of one-in-one-million or 10^{-6}.

In 2016, the EPA did not act on the amended portion of the provision because it is not a WQS subject to the EPA's review and action under 303(c) of the CWA. The amended portion of the provision does not establish a legally binding requirement under state law, nor does it describe a desired ambient condition of a waterbody to support a particular designated use. Accordingly, the EPA is not taking action on the amendment because it is not a new or revised WQS subject to the EPA's review and action under 303(c) of the CWA.

E. Amendments to Aquatic Life Criteria in Table 240

In its December 2, 2024, submittal, Washington also submitted amendments associated with the new and revised aquatic life criteria that the state previously adopted on August 14, 2024, and submitted to the EPA for CWA section 303(c) action on August 22, 2024. The EPA has not yet acted on the August 22, 2024, submittal. The amendments change the significant figures for certain aquatic life criteria. In today's action, the EPA is not reviewing and evaluating any revisions to Washington's aquatic life criteria in Ecology's Table 240. The EPA separately considering these amendments to Ecology's aquatic life criteria, along with the new and revised aquatic life criteria in the August 22, 2024, submittal, and will act on all aquatic life criteria revisions in a future CWA section 303(c) action.