

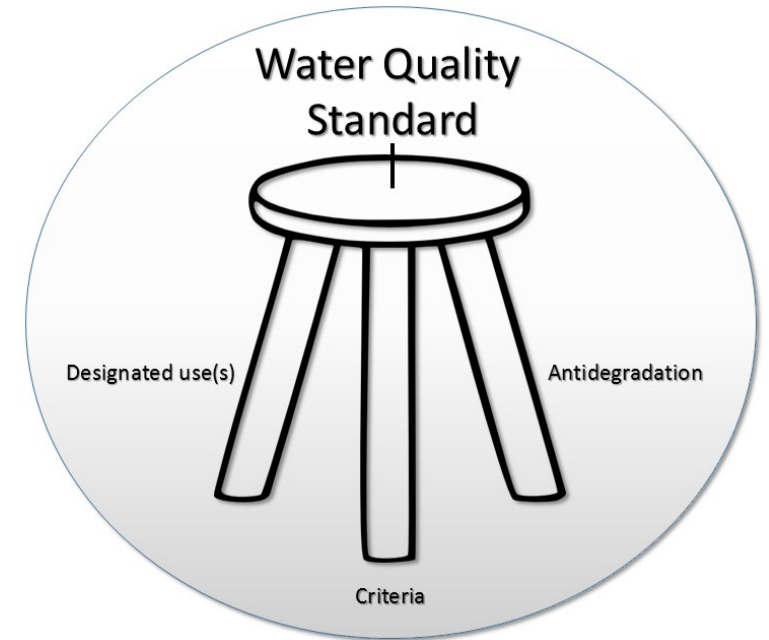


Human Health Criteria and State Water Quality Standards Public Scoping

Alaska Department of Environmental Conservation
AFE 2023

What are Water Quality Standards (WQS)

- The foundation of state/tribal water quality-based pollution control programs under the Clean Water Act (CWA)
- Designed to protect public health or welfare (*designated use*) (e.g., water supply, protection of aquatic life)
- Provide acceptable maximum concentration (generally) of a pollutant in the water (*criteria*)
- Process for determining whether degradation should be allowed (*antidegradation*)
- Help prevent polluted water; identify polluted waters; and clean-up polluted water



Human Health Criteria (HHC)



<https://glacierbayalaska.com/alaska-fishing/fish-species-guide/>



- A human health criterion is the highest allowable concentration of a pollutant in surface water considered protective of human health
 - designed to **minimize the risk** of adverse effects from exposure to different contaminants
 - Based on a **chronic (lifetime) exposure** to contaminants
 - Includes **the ingestion of drinking water** from surface water sources and/or
 - The **consumption of aquatic life** obtained from surface waters.



Historical Context - Continued

ALASKA 2012-2022

- DEC/ADF&G actively reviews available research and policy issues
 - Literature Review
 - Engagement with ADF&G-Division of Subsistence
 - published multiple papers pertaining to subsistence and fish consumption
 - HHC Technical Workgroup and Report
 - Reviews all aspects of the EPA recommended HHC formula and potential inputs
 - Issues recommendations and dissenting opinions
 - Staff engage with other states conducting HHC rulemaking
- 2022 - EPA and DEC engage on a formal timeline for HHC rulemaking

EPA recommended formulas for Human Health Criteria

BAF: Bioaccumulation

BW: Body Weight

CRL: Cancer Risk Level

CSF: Cancer Slope Factor

DI: Drinking Water Intake

FCR: Fish Consumption Rate

RfD: Reference Dose

RSC: Relative Source Contribution

Consumption of Organisms and Water

Consumption of Organisms Only

Criteria for Carcinogens

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

$$\frac{CRL \times BW}{CSF \times FCR \times BAF}$$

Criteria for Non-Carcinogens

$$\frac{RfD \times RSC \times BW}{(FCR \times BAF) + DI}$$

$$\frac{RfD \times RSC \times BW}{FCR \times BAF}$$

Existing Values and Workgroup Recommendations

	Current Value	Workgroup Recommendations
BAF	BCF-values applied (1992)	Apply Trophic Level 4
BW	70 kg (~154 lb.)	Change to 80 kg (~176 lb.)
CRL	1 in 100,000 (1997)	Majority recommended to retain 1 in 100,000
CSF	Pollutant specific	Apply EPA recommended values
DI	2.0 liters/day	Change to 2.5 liters/day
FCR	6.5 g/day. Does not include anadromous fish and other marine species	Majority recommended: Anadromous and non-anadromous local fish, and use rural consumers as target population
RfD	Pollutant specific	Apply EPA recommended values
RSC	N/A	Apply EPA values (did not deliberate on the adjustment of RSCs to account for inclusion of marine species)



Sources of Information

- DEC posted these informational documents on the DEC Human Health Criteria webpage.
 - ADF&G Fish Consumption Rate Analysis (2019)
 - DEC Human Health Criteria Technical Workgroup Report
 - EPA-contracted statistical analysis of ADF&G Fish Consumption Rate Analysis (2019)
 - HHC Factsheet (2023)



Implementation

- DEC raised implementation concerns with EPA on multiple occasions
- EPA provided responses to DEC's concerns most recently in their 2022 correspondence with DEC about the HHC rulemaking process
 - All letters are available on the DEC HHC Website
- DEC is very aware of the challenges associated with implementation of criteria (e.g., criteria v. method detection limits, fish tissue criteria)



Implementation

- Likely that some criteria will be set **below** current laboratory detection limits
 - Could result in increased costs to APDES permittees for more robust analysis.
- Introduction of a fish tissue-based criterion for methylmercury
 - Considered to be a “new” pollutant
 - Will require a different approach to sample collection and analysis
 - EPA does have implementation guidance for DEC to consider as do other states that DEC will be reviewing.
 - Criteria updates will not be applicable until permit renewal – allows for time to engage with the department regarding background levels and potential issues.
- Certain pollutants (e.g., PCBs) may be especially challenging and require additional engagement with DEC regarding implementation.



Next Steps

- **DEC is accepting “scoping” comments on this issue via state SMART COMMENT website**
- Public scoping closes March 12th 2023
- Future opportunities to comment once draft regulations are public noticed
- DEC is in the process of scheduling other outreach opportunities



Schedule

Spring 2023	Public scoping and comment solicitation
Summer 2023	Develop draft rulemaking and guidance
Fall 2023	Agency review of draft rulemaking and guidance
Spring 2024	Public notice for draft regulations
Fall 2024	State adoption of new HHC; submission to EPA

Questions?

Thank you!

