

Guy Archibald

March 13, 2023

Sent via email

Alaska Department of Environmental Conservation
Division of Water – Water Quality Program
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Re: Comments on the State of Alaska’s Revisions to the Water Quality Criteria for the Protection of Human Health

Mr. Tabor,

Please accept these comments on behalf of myself, a citizen and resident of Alaska.

The State of Alaska is far overdue in its revisions to the Human Health Criteria (HHC) water quality standards for the protection of human health and has done a severe disservice to the communities that rely on fish and clean water resources to an extent that ranks the highest in the nation.

EPA published updated criteria in 2000 and the state failed to act for 15 years afterward until it formed a workgroup to study the issues and offer recommendations. These recommendations languished for another 7 years. Finally, based on petitions submitted in 2015, the USEPA Region 10 issued a letter to the State in 2022 stating “[t]he EPA has identified these two petitions as particularly high priority because they identify potential human health and environmental justice issues that may be addressed by updating Alaska’s HHC to incorporate current information, and a significant amount of time has passed since Alaska last revised its HHC.”¹ The federal government had to step in to do what the state would not.

States have the primary responsibility under the Clean Water Act to develop, and periodically review and modify, water quality criteria to protect designated uses including human health for the waters within their jurisdictions. This duty extends to health of the communities most at risk due to the high consumption of aquatic life. The federal government would not have had to act if the State of Alaska had not failed in its primary duty to protect its own citizens.

Therefore, Alaska must act in reasonable haste. I recommend ADEC set a goal of final revised criteria by the end of 2023. Further delay is unconscionable.

The following are my recommendations:

1. Statewide or Regional Criteria

EPA recommends states consider developing criteria to protect exposed populations by using local data in place of national default data as more representative of the target populations, i.e. groups that consume the most aquatic life.

¹ Letter, Sixkiller to Brune Sept. 6 2022

Given the size of Alaska and the diversity of its citizens, regional criteria would be most protective of vulnerable populations. That has been apparent for a number of years but the state failed to collect the necessary data. We are at the point where measures must be taken now to prevent further erosion of human health.

I recommend criteria be adopted state-wide until such time as the necessary local data is collected to support regional criteria. I reject the argument that revising the human health criteria periodically is a burden on the state. The state has adopted site specific water quality criteria for many waterbodies in Alaska and indeed every mixing zone authorized to dilute a discharge represents a such a localized change in criteria. Revisions to the HHC to protect the health of its citizens in any locality should not be more cumbersome.

2. Consumption Rate.

Fish Consumption Rate (FCR) means the amount of aquatic life (e.g., finfish (in all life stages), marine invertebrates, aquatic plants and marine mammals) consumed by humans within a given time period as measured in controlled studies.

I recommend Alaska adopt a statewide FCR of 308grams/person/day (g/p/d) based on the Alaska specific data collected in Cook Inlet and on Kodiak which likely represents fish consumption levels in the majority of coastal, island and river communities across rural areas in Alaska. This rate would also protect the vast majority of Alaskan's.

3. Anadromous Fish Counted Toward Consumption Rate.

Anadromous fish species are those who spend at least some portion of their lives outside of Alaska's jurisdictional boundaries for applying the Clean Water Act. The argument has been made that some portion or all of these species should not count toward measuring the FCR since they may have been exposed to contamination outside these boundaries.

To support this argument, the HHC Work Group in 2015 considered a white paper from Idaho.² This paper does not make a clear case. The White paper attributes the loading of bioaccumulate toxins in salmon to the at-sea environment as described in O'Neill (2006), the lack of any difference between anadromous and resident fish species according to EPA (2002) and cites another study showing that salmon do acquire some of their body burden in freshwater habitats prior to migrating to the ocean.

O'Neill's analysis includes the observation that Pacific salmon species (e.g., coho and Chinook) spend more time in near-shore coastal distributions have higher concentrations of organic pollutants (POPs) than those measured in salmon species (e.g., chum, pink, sockeye) with more oceanic distributions. For instance, Chinook salmon that resided in Puget Sound in the winter rather than migrate to the Pacific Ocean ("residents") had the highest concentrations of organic pollutants than Puget Sound fish populations believed to be more ocean-reared.

² Idaho Fish Consumption Rate and Human Health Water Quality Criteria—Discussion Paper #5 Anadromous Fish. State of Idaho Department of Environmental Quality, July 2014.

As is noted in the Idaho white paper, the few available studies do exist seem to contradict each other and given that Alaska's territorial sea boundaries extend out to 12 nautical miles from the shore³, therefore, the State of Alaska must err to the side of protectiveness and treat anadromous fish the same as all other fish.

4. Final Fish Consumption Rate Must Account for Suppression

The FCR used to calculate the HHC must account for suppression. Suppression occurs when the current fish consumption rate for a given population is artificially diminished from an appropriate baseline level of consumption. Factors that contribute to suppression are changing regulatory limits on size, number and season, cost of fuel, avoidance due to safety concerns, competition with commercial and out-of-state sport fishers and average age of households among other variables. The final fish consumption rate must account for these factors.

When HHC are set using a fish consumption rate based upon an artificially diminished consumption level, they may set in motion a downward spiral whereby the resulting standards permit further contamination, depletion of the fish and aquatic resources or avoidance due to concerns about safety.

I recommend that a state-wide 308g/d/p fish consumption rate would be adequate to account from the effects of local suppression factors.

5. Target Population for Protection

In 2000, EPA published a new human health recommendation of 17.5g/d/p based on the mean consumption measured in a national survey. Using that same data at the 99th percentile, EPA derived the recommendation of 142.5g/d/p for subsistence users and populations that eat a lot of fish.

During the Workgroup meeting in 2015, ADEC questioned the EPA's methodology of using the 99th percentile.

“Setting the value at the 99th would be very problematic (although that is how EPA got the 142g/d for the national subsistence criteria in the 2000 recommendation) because it would create a situation that may be unrealistic-Do people really eat that much fish ALL their lives?”⁴

Given that the process of determining HHC should be driven by science and the science conducted does show that Alaskan's eat a lot of fish, coupled with the desire to eat more fish to promote healthy lifestyles, I recommend that if the HHC are based on any other data set other

³ Maritime Zones and Boundaries, NOAA. Available at: <https://noaa.gov/maritime-zones-and-boundaries>.

⁴ See Slide 48, Water Quality Standards, Human Health Criteria Presentation Technical Workgroup Meeting #1. August 20, 2015. Parenthetical in original.

than the two completed a fish consumption survey supporting a value of 308g/d/p, the 99th percentile must be used.

Just as data was used to derive the 308g/d/p value, any reduced values for rural populations must be based on survey data. 308g/d/p should remain the state-wide fish consumption rate until additional data indicates revisions or regional rates are needed.

6. Protection of High Consumer Populations Though the Cancer Risk Level (CRL).

Factors such as the CRL, body weight and water intake are policy decisions as much as they are based on science. Given that water intake and body weight are one-size-fits-all factors and that the same populations that consume a lot of fish tend to be the very populations not on treated municipal drinking water systems and happened to be located near contaminated sites, more protections are a sound policy call.

More than six percent of Alaskans are living without running water or sewage systems (about 10,000 people)⁵ and many of these same communities are adjacent to the at least 248 contaminated formally used Department of Defense sites. These sites have significant PCB contamination, have been subjected to fuel spills, and contain solvents, herbicides, pesticides, heavy metals, chemical warfare materials, and radioactive waste.⁶

Alaska Natives have the world's highest documented colorectal cancer rates and rates much higher than the national average of lung and bronchial cancer.⁷

Alaska must adopt the most protective CRL to help offset the systemic environmental injustice reality facing Alaska's most vulnerable populations. I recommend the CRL be set at 1:1,000,000 to help safeguard Alaska's citizens.

7. Steps toward Implementation

The DEC should move forward quickly with implementing HHC that are protective of human health. 22 years is long enough.

Cost benefit analysis.

A cost/benefit analysis is unnecessary and is only a delay tactic. The benefits of improving human health, protecting the safety of wild Alaska seafood and its related economic benefits and improvements to the aquatic ecosystem due to the application of more stringent effluent limitations is both uncalculatable and vast. Furthermore, cost/benefit analysis requires a dollar value be applied to human health; an impossibility.

⁵ See: <https://www.globalcitizen.org/en/content/not-everyone-in-the-united-states-has-running-water/#:~:text=And%20in%20rural%20Alaska%2C%20you,running%20water%20or%20sewage%20systems.>

⁶ See: <https://ejatlas.org/print/formally-used-defense-sites-in-alaska.>

⁷ See: <https://alaskapublic.org/2023/02/23/report-shows-wide-regional-disparities-seen-in-alaska-colorectal-and-lung-cancer-rates/>

In its November 1, 2022 response to the DEC, EPA notified the ADEC Commissioner Brune that:

“Neither the economic impacts of criteria nor the technological feasibility of meeting criteria concentrations may be considered where doing so could result in criteria that are not protective or based on sound science.”⁸

On the other side, industry routinely rejects alternative treatment options based on an adverse economic feasibility analysis without ever disclosing to the public the actual economic costs to the industry while hiding behind the mantra of “confidential business information”.

Under Alaska’s Antidegradation guidance, industry is allowed to degrade the state’s high-quality waters if it is determined the degradation will lead to economic or social development.⁹ This finding must be made in order to justify a ‘taking’ of water quality from the public domain.

Industry already is allowed to off-set costs onto the environment and the citizens of Alaska. Allowing industry to also lobby for reductions to the protectiveness of a revised HHC for the sake of profit-profits exported from the state for the most part-is a dereliction of the public trust responsibility fundamental to state government.

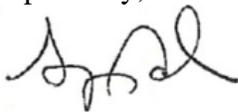
I recommend not wasting time on an economic cost benefits analysis that will only introduce politics into a process that should be based on sound science alone.

Conclusion

ADEC has some trust building to do on this issue after decades of delay and making statements such as “all mixing zones are prohibited in anadromous fish spawning waters, so they provide no benefits in much of Alaska” when in fact economic benefits are required under the mixing zone authorization process and spawning waters are essential to Alaska’s \$15 billion seafood industry.¹⁰

Thank you for the opportunity to comment on DEC’s continuing effort to revise Human Health Criteria. We look forward to continuing the discussion.

Respectfully,



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⁸ Letter Sixkiller to Brune, November 7 2022.

⁹ See: 40 CFR 131.12 (a)(2) and EPA’s Water Quality Standards Handbook section 4.5

¹⁰ The Economic Value of Alaska’s Seafood Industry, Jan. 2022. McKinley Research. Available at: https://www.mcdowellgroup.net/wp-content/uploads/2022/05/mrg_asmi-economic-impacts-report_final.pdf