Chickaloon Village Traditional Council

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(Nay'dini'aa Na' Kayax)

VIA EMAIL

March 10, 2023

Brock Tabor
Alaska Division of Environmental Conservation
Division of Water – Water Quality Program
PO Box 111800
Juneau, AK 99811
brock.tabor@alaska.gov

Re: Human Health (water quality) Criteria Scoping Comments

Ugheli Dzaen (Good Day) Mr. Tabor,

Chickaloon Native Village (CNV) is a federally-recognized Ahtna Dene Tribal government in southcentral Alaska, governed by Chickaloon Village Traditional Council (CVTC). CNV's ancestral territory includes much of southcentral Alaska including upper Cook Inlet, and our traditional area of influence overlaps neighboring Dena'ina Dene and Ahtna Dene Tribal governments. Actions that occur within CNV's traditional ancestral territory and customary area of use may impact our environment, our cultural resources, and the health of our Tribal citizens and community members.

We have provided public comments on the issues of fish consumption rates (FCR) and water quality criteria for the designated use of "Human Health" (Human Health Criteria, HHC) since at least 2015. The purpose of the HHC is not to protect aquatic life in state waters, but to protect the people that eat aquatic life. Therefore, it applies to contaminants that build up in aquatic animals or plants including fish and shellfish.

The process of updating the current HHC to have lower (more stringent) "safe levels" of contaminants may have potential impacts in two areas:

- What substances (and how much) the state of Alaska allows to be discharged into state waters, through wastewater discharge
- Which waters are considered "impaired".

A summary of our comments:

- use the formula that EPA provides,
- the body weight value should be lower,
- the drinking water intake value should be higher,
- the cancer risk factor value should be higher: a risk of 1 in 1 million (10^{-6}),
- marine mammals that live the majority of their lives in state waters should be included in the fish consumption value of the formula,

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- the fish consumption rate (FCR) should protect Alaskan that eat the most fish at the 90th percentile: an FCR of at least 379 grams per day,
- the FCR should be reviewed every 10 years and updated as more data is available.

DEC's Minimal Tribal Outreach

Leading up to the current 30-day public scoping period, the Alaska Department of Environmental Conservation (DEC) conducted public outreach through: 1) a single public workshop in 2015, 2) open Technical Working Group meetings (2015-2018) which culminated in an advisory report in 2018, and 3) through a presentation at the Alaska Forum on the Environment in February 2023.

This outreach is significantly insufficient for Tribal engagement or public engagement. The process of updating the HHC was requested by Tribes, and Tribal citizens are many of the most vulnerable Alaskans due to the high rates of wild-harvested-food consumption, including consumption of fish, shellfish, and seaweed. Therefore, DEC should have made outreach to Tribal Governments a high priority during this scoping period. For example, DEC could have: mailed a notice to all Tribal Governments in the state; asked EPA to provide a notice to all Tribal Governments with EPA General Assistance Program awards; provided presentations at conferences throughout the year, such as ATCEM (Alaska Tribal Conference on Environmental Management) and the Alaska Chapter of the American Fisheries Society; provided presentations as webinars through organizations such as the Alaska Native Tribal Health Consortium and the Native American Fish & Wildlife Society, contacted regional Tribal organizations such as the Tanana Chiefs Conference, Yukon-Kuskokwim Health Corporation, and Southcentral Foundation to set up calls or webinars. Additionally, 30 days is not enough time for Tribal Governments to be notified and for Tribal Government staff to examine and understand the information related to the methodology and inputs proposed for setting new HHC contaminant levels in order to provide advice to Tribal Government leadership, which then should be given time to deliberate the issue and provide feedback and comments.

We recommend that in the future, when DEC has a scoping period or considers a rule-making that has significant impact on Tribal citizens, it should:

- Conduct multiple outreach efforts to communicate with Tribes over the course of at least six-months,
- Engage in government-to-government consultation,
- Provide at least 90-day scoping periods; provide at least 90-day comment perioids.

Method formula and inputs

The formula that EPA recommends is the following:

For cancer-causing chemicals:

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

For chemicals that don't cause cancer:

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

- Both formulas consider how much a person weighs
    - Body weight = BW. Lower body weight calculates a more stringent HHC.

- Both formulas consider how much a person drinks
    - Drinking water intake = DI. Higher DI calculates a more stringent HHC.
- Both formulas consider how much aquatic life is eaten
    - Rate of fish consumption = FCR. Higher FCR calculates a more stringent HHC.
- Both formulas consider how contaminants concentrate in the food chain
    - Bioaccumulation factor = BAF. Higher BAF calculates a more stringent HHC.

The formulas also consider:

- Whether the level of contaminant could cause cancer in 1 in 10,000 people, 1 in 100,000 people, or 1 in 1 million people.
    - Cancer risk level = CRL. The lower the CRL (e.g. 1 in 1 million people) calculates a more stringent HHC.
- The degree to which there is a known relationship between being exposed to a cancer-causing chemical and actually getting cancer.
    - Cancer "slope factor" = CSF. This is set by EPA.
    - Reference Dose = RfD. This is set by the EPA.
- The degree to which people are exposed to contaminants in ways *other* than through fish consumption.
    - Relative Source Contribution = RSC.

CVTC Comments and Questions on Formulas and Inputs

CVTC agrees that the EPA formulas for determining HHC contaminant levels are appropriate, with the exception of the way the Relative Source Contribution (RSC) is applied. The relative source contribution – exposures that are not accounted for in the HHC but which affect human health – is only in the formula equation for non-cancer causing contaminants. However, people are exposed to carcinogens in potentially multiple ways through air, water, and food pathways in ways that are not accounted for by the HHC. How will EPA provide an equivalent method of accounting for other exposures in the carcinogen calculation?

Body weight (BW)

CVTC requests a lower body weight value be used in the calculation. CVTC disagrees with the Technical Working Group recommendation of assuming body weight of 80 kilograms (176 pounds), recommended by the EPA in 2015, for use in the formula. CVTC requests that the body weight should be set at a level that represents the average weight of healthy women and children in Alaska. Body weight for the formula should not be skewed by obesity. CVTC believes the body weight value should protect the most vulnerable groups of people: children and women of child-bearing-age.

Drinking water intake (DI)

CVTC recommends a higher drinking water intake value. CVTC disagrees with the recommendation of 2.5 liters per day as the amount of water consumed as an input to the formula. People who are properly hydrated consume higher quantities of water. A survey of medical literature should be used to determine appropriate value (often the recommendation is a person should drink up to the number of ounces equal to the number

of pounds that person weighs). If the BW is adjusted to a level that represents women, the DI might be similarly adjusted. This might make the DI closer to 4 liters per day (134 ounces).

Bio-accumulation factor (BAF)

CVTC agrees with the Technical Working Group recommendation to assume that all aquatic life consumed is at the highest trophic level (TL4), as the most protective method.

Cancer risk factor (CRF)

CVTC strongly requests that the CRF should be set to be the most protective level: a risk of 1 in 1 million (10^{-6}). This is one of CVTC's highest requests of formula adjustments. Even if this leads the EPA formula to calculate a contaminant value that is too low to measure with current instruments, since future technologies may be developed. The default HHC level would be the lowest concentration that can be reliably measured.

Relative Source Contribution

Currently, marine mammals are accounted for in the Relative Source Contribution under the assumption that they do not live solely in state waters, and therefore state discharges would have little impact on them. However, some marine mammals do live their lives solely or primarily in state waters: such as the Cook Inlet beluga whales, Iliamna Lake seals, and harbor seals. CVTC requests these should be moved out of the RSC part of the formula and into the FCR part of the formula, because they are exposed throughout their lives to discharges approved by the state of Alaska.

Fish consumption rate (FCR)

CVTC requests an FCR of at least 379 grams per day should be set as DEC codifies and implements an updated HHC. This is another one of CVTC's highest requests of formula adjustments. The DEC currently uses the value of 6.5 grams per day (about ¼ ounce) as the amount of fish and shellfish Alaskans eat in HHC calculations. All parties – DEC, EPA, and Tribes – agree that the current value of how much seafood Alaskans eat is exceptionally and unrealistically underestimated.

The Alaska Department of Fish & Game (ADFG) Subsistence Division documents household harvests through surveys. ADFG performed adjustments to harvest information from survey data from 2009-2016 to provide an estimate of consumption. EPA then commissioned a firm to review the information. The EPA review determined a lower FCR for every region in Alaska relative to what ADFG initially estimated. As the 90th percentiles, for consumption of salmon, halibut, herring, non-marine fish, and marine invertebrates in regions of Alaska:

Area	FCR from ADFG 2018 (grams per day)	FCR from EPA review 2019 (grams per day)
Statewide	--	308
Southeast	370	217
Southcentral	320	287
Southwest	425	379
Western	563	291
Arctic	488	246
Interior	313	308

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For context, 200 grams is about 7 ounces, 300 grams is about 11 ounces, 400 grams is about 14 ounces, and 500 grams is about 18 ounces.

There is significant uncertainty in the actual amount of fish and shellfish consumed through subsistence harvest, sports and personal use harvest, and commercial harvest (i.e. commercial fishermen who take fish home). In addition to the information provided above, EPA (15 years ago) recommended 142.4 grams per day as the value for subsistence users, and Seldovia Village Tribe calculated 247 grams per day as the 95th percentile based on surveys in Cook Inlet.

- We agree with the Working Group that rural residents should be the population that HHC should be set to protect. By default, protecting the rural people that eat a lot of fish and shellfish will protect others, often people living in urban areas, who eat less.
- We agree that the 90th percentile of calculated FCR is sufficient for protection. The mean or 50th percentile is not sufficient for protection.
- Locally-collected regional data is often the most accurate. This data may be collected and analyzed in the future, including by Tribal Governments. Data collected and analyzed using industry-approved methods, including data collected by Tribal Governments, needs to be accepted at the same level as agency-collected data.
- Because data may be updated in the future, the FCR should be reviewed every ten years.

Some populations of salmon (as well as halibut, shellfish and other species included in the FCR) in Alaska are greatly reduced from previous populations. For example, in what is now the Mat-Su Borough, Dene Peoples have harvested salmon and other fish for millennia. Along the Susitna and Deshka Rivers are hundreds of archaeological sites that have been used for thousands of years, including cache pits that held salmon for multiple families. Also, Chickaloon Native Village Tribal citizens remember fishing for salmon at Moose Creek near Palmer when the salmon runs were much greater. The populations of salmon in these specific systems (Susitna River, Deshka River, and Moose Creek) are greatly reduced from the past populations. Therefore:

- The FCR needs to be based on *what people would eat if fish and shellfish were available.*
    - Tribal Historic Preservation Officers, Tribal Culture Bearers and others may be able to estimate and document this number. Therefore, not only current data, but historic data is important to evaluate and apply when developing the FCR in future reviews. Tribes are deeply committed to not only maintaining the fish and seafood populations, but also restoring the populations to pre-colonial levels. Tribal stewardship includes methods of preparing the land and waters to enhance fish and shellfish populations. These cultural traditions are restoring ecosystems in some places (for example the rejuvenation of oyster gardens in the Pacific Northwest).
    - The state should NOT take FCR review periods as an opportunity to lower the FCR in areas where fish stocks have crashed.

Due to the uncertainties in actual rates of fish consumption and the mismanagement that has resulted in people eating less fish than they would,

- CVTC requests that an FCR of 379 grams per day should be set as DEC codifies and implements an updated HHC in the next 2 years. 379 grams per day is the 90th percentile of daily consumption of fish and shellfish for the southwest region of Alaska as reported in the 2019 report funded by EPA.

We appreciate that DEC is updating the HHC to protect the health of Alaskans and our aquatic environments. We strongly encourage DEC to engage with Tribes and to learn from them.

May Nek'eltaeni (Creator) Guide our Footsteps,

Chief Gary Harrison (Mar 10, 2023 13:29 AKST)

Chief Gary Harrison
Chairman

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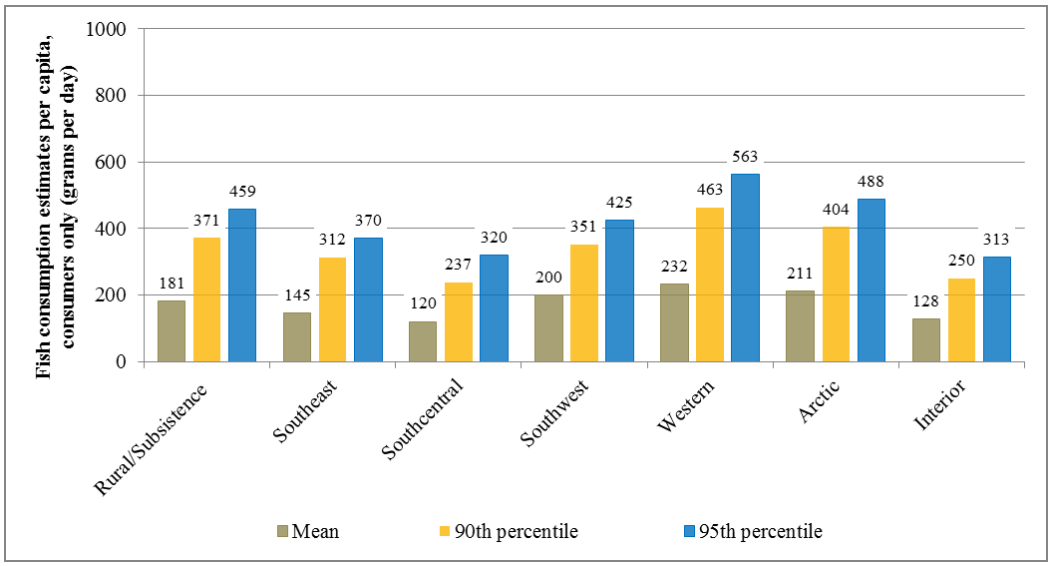
Fish Consumption Estimates (per person in grams per day) Developed by ADFG from ADFG Harvest Surveys (2009-2016).



Fish Consumption Estimates Reported by EPA from ADFG Harvest Survey Data (2009-2016). The columns titled "Mean" and "90th Percentile" are fish consumption estimates in of grams per day eaten per person.

Population, age; species consumed	No. of consumer respondents	Mean	90th Percentile
Alaska's six regions, rural communities, all ages; Salmon, Halibut, Herring, Non-marine Fish, and Marine Invertebrates A			
Statewide	6,632+	149	308
Southeast	499+	152	217
Southcentral	1,218+	113	287
Southwest	645+	145	379
Western	1,550+	190	291
Arctic	1,663+	125	246
Interior	1,057+	127	308