



# Memo

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**To:** Andrew S. Todd, PhD., Manager - Water Quality Section, U.S. EPA Region 8

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**Cc:** Maggie Pierce

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**From:** Martina Wilson

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**Date:** October 13, 2022

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**Subject:** Water Quality Standards 2022 Triennial Review Priorities

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Dear Mr. Todd;

Thank you for the April 22, 2021 letter that outlined the EPA review priorities for the Water Quality Standards (WQS) Triennial Review for the updates intended by the Fort Peck Office of Environmental Protection (FP OEP). This memorandum is to explain how FP OEP addressed the priorities in the revised WQS, as required in 40 CFR § 131.20. It follows the same outline as your original letter of priorities. Each section below re-states the language from the letter and then includes explanations and rationale for responding to each issue. The edits/responses described here are reflected in the revised WQS.

### ***New or Updated Section 304(a) Criteria Recommendations***

**Updated aluminum criteria:** EPA published new criteria for aluminum in 2018 and are appropriate for application to aquatic life uses. The criteria are complex and multi-variable; derivation relies on an EPA-developed calculator. The aluminum criteria rely on several water quality inputs (i.e., pH, total hardness and dissolved organic carbon). The 2018 criteria and adjustments reflect the latest science. However, because the FP OEP does not monitor dissolved organic carbon, and has no historic data to take into consideration, the decision was made to postpone adopting the new aluminum standards until the tribes can add the sampling of dissolved organic carbon to the current monitoring locations.

**Microcystins and cylindrospermopsin:** The EPA released national recommendations for microcystins and cylindrospermopsin in May 2019. These values are both to protect the recreational use and can be used for swimming advisories. They accurately reflect the latest scientific knowledge on the potential human health effects from recreational exposure to these two cyanotoxins. However, as of 2021, the Office of Environmental Protection of the Fort Peck tribes is not aware of any cyanobacteria blooms occurring on the reservation that would produce microcystin and cylindrospermopsin. OEP intends to investigate whether blooms routinely occur in any tribal waterbodies and whether there is a concern related to the presence of cyanotoxins before adopting the recommended values.

### ***Other Criteria Considerations***

**Recreational and cultural criteria:** The Tribes previously had criteria for both *Escherichia coli* (*E. coli*) and fecal coliforms. In accordance with EPA's recommendation for deleting the fecal coliforms criteria, all references to fecal coliforms have been removed, including in Table C-1 and in footnotes.

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**Selenium:** The Tribes currently have old selenium criteria. The EPA released an updated aquatic life criterion for selenium in 2016. It includes four criteria elements. EPA recommends that Tribes and States adopt all four criteria elements. EPA has recommended that Tribes and States adopt all four criteria elements of the updated (2016) aquatic life criterion for selenium.

FP OEP recognizes the importance of accurately assessing selenium concentrations in the water column and in fish tissue. However, FP OEP does not currently have the monitoring resources to implement the recommended selenium criteria for fish tissue (eggs/ovaries and muscle) or for frequent analysis of water column samples. Therefore, the new criteria will not be adopted at this time.

**Ammonia:** The Tribes currently have EPA's 1999 recommended ammonia aquatic life criteria. The EPA released updated ammonia criteria in 2013. These criteria are protective of freshwater mussels, unlike the previous 1999 criteria. The criteria vary with pH and temperature and are generally more stringent than the 1999 criteria. As discussed further below, we also recommend the Tribes consider clarifying the definitions for aquatic life uses so it is clearer if and where either the 1999 or 2013 ammonia criteria protective of salmonids should be applied.

EPA has recommended that the FP OEP adopts updated (2013) aquatic life criteria for ammonia. FP OEP updated the relevant footnote of the criteria table with the 2019 formulae and tables relating criteria for ammonia relative to pH, temperature, and the presence or absence of salmonid *Onchorynchus spp.* FP OEP will continue to determine appropriate application of the criteria in waterbodies with regard to salmonid fish presence or absence.

**Nutrients:** The EPA recognizes the importance of developing numeric water quality criteria to protect the designated uses of waterbodies from nutrient pollution that is associated with increases in concentrations of nitrogen and phosphorus. To address nutrient pollution, EPA has encouraged States and Tribes to adopt numeric nutrient standards or numeric translators for narrative standards. Numeric standards will facilitate more effective program implementation and are more efficient than site-specific application of narrative water quality standards. The EPA would like to discuss options for adoption of nutrient criteria or identification of numeric nutrient translators with the Tribes.

At this time FP OEP is collecting nutrient data and looking at ways to interpret their narrative standard. For the current revision, numeric nutrient criteria will not be adopted. In the future OEP will explore options for adopting numeric nutrient criteria.

**Metals aquatic life criteria footnotes:** It appears that the footnote with the aquatic life criteria for metals are for the total recoverable fraction and do not include conversion factors for the dissolved portion of the metals. EPA recommends use of the dissolved fraction for most aquatic life criteria for metals. The conversion factors to convert from total to dissolved fraction are in Appendix A of EPA's website for its national recommended aquatic life criteria.

FP OEP will revise the WQS to reflect that the criteria pertain to the dissolved fractions for metals. A conversion table was added to footnotes of the criteria table. Aluminum criteria are an exception, in the Total Recoverable form.

**Copper:** Although the Tribes have adopted the biotic ligand model (BLM)-based criteria for copper, Footnote B-12 still has the hardness-based equation inputs for copper. We recommend deleting these. We also recommend adoption of a footnote that provides more detail regarding how the BLM-based criteria for copper will be implemented.

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FP OEP added details for calculation of the BLM-based criteria for copper and added clarifying language regarding options for calculation when all variables in the model have not been recorded for samples. The hardness dependent criteria was deleted.

**Biological Criteria footnote to Appendix C-1:** A footnote to Table C-1 indicates that biological criteria do not apply to the Missouri River. EPA recommends considering deleting this footnote. Currently, this footnote seems to indicate that bacterial water quality criteria do not apply. EPA believes this may be in error. FP OEP removed the footnote.

**Dissolved oxygen:** Footnote 15 to Table B-1 presents the dissolved oxygen (DO) criteria. These criteria are not linked to designated uses but instead what appear to be holdovers from Montana's classifications (e.g., A-1, B-1, B-2). We recommend correcting this footnote so it links the DO criteria to the Tribes' aquatic life uses. FP OEP made this correction.

**Silver:** Table B-12 incorrectly identifies the bA value as -6.52. It should be -6.59. FP OEP made this correction.

**Aquatic Life Use Definitions:** EPA recommends that the Tribes consider whether current aquatic life use definitions should be clarified with respect to protection of salmonids. It is currently unclear if any of the uses fully protect salmonids. It may be helpful to review any available fish, other aquatic life, habitat and temperature data to determine if salmonids are found regularly and, if so, when, where and which species are present. If these types of data are not available from sites within the reservation, consideration of data outside of the reservation from the same ecoregions and ecoregional expectations may be helpful.

FP OEP has initiated research on salmonid distribution and habitat suitability on the reservation. This research will continue so that the ALU definitions can be clarified and appropriately applied. For the current WQS revision, no change in the ALU definitions will be made. FP OEP anticipates that the language can be clarified in the next triennial review.

## Formatting and Cleanup

- *Table of Contents:* Consider adding a table of contents to increase usability.
  - An index was added
- *Footnotes to Criteria Table:* The Tribal WQS include many footnotes. It is unclear if all these footnotes are currently being applied to the criteria in the Tribal Water Quality Criteria Table.
  - Footnotes were reviewed and edited for clarity and appropriate application.
- *Pesticides:* The Tribes have many criteria for pesticides that the State of Montana has also adopted. Many of these pesticides do not have EPA-recommended 304(a) criteria and many have been discontinued. EPA recommended reviewing the Tribal pesticide criteria to determine if all of them are necessary.
  - The EPA headquarters provided a list of cancelled pesticide active ingredients. The EPA stated that the list was not comprehensive, should not be widely distributed, and should not be used for enforcement purposes. Active ingredients on the list were removed from the Fort Peck WQS criteria table unless the pesticides with the active ingredients were detected or used on the reservation, as determined by the Fort Peck OEP. The pesticides in the criteria table were reviewed and 37 were removed (see list at the end of this memo. Pesticides were removed when they met the following criteria:
    - Pesticides listed as cancelled products in the Excel file provided by EPA (file = 'NEW-AIs in cancelled products but not active products.xlsx').

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- Pesticides were not detected anywhere on the reservation during an intensive analysis in 2012-2013.
  - Pesticides were not known to be sold on or near the reservation as determined by OEP.
- *Required Reporting Levels & Trigger Values:* The required reporting values do not appear to be WQS. EPA recommends that the Tribes consider whether it is necessary to include these.
  - The trigger values and reporting levels were removed in the criteria table and any associated footnotes.
- Deleting references to specific individuals: Section XI(2) contains references to specific individuals. We recommend deleting these references.
  - References were removed.

#### List of pesticides removed from the criteria table.

Pollutant (removed)	CASN	Pollutant (as listed by EPA)	Comment
Acrylonitrile	107131 or 107-13-1	Acrylonitrile	
Alachlor	15972608 or 15972-60-8	Alachlor	
Asbestos	1332214 or 1332-21-4	Asbestos	Only removed Asbestos 1332-21-4 , did not remove variants of Asbestos
Benzene	71432 or 71-43-2	Benzene	
Chlordane	57749 or 57-74-9	Chlordane, technical	Only removed Chlordane 57-74-9, did not remove alpha-__ or gamma-__ variants
Chlorobenzene	108907 or 108-90-7	Chlorobenzene	
2-Chlorophenol	95578 or 95-57-8	2-Chlorophenol	
Cyanazine	21725462 or 21725-46-2	Cyanazine	
Dalapon	75990 or 75-99-0	Dalapon	Also removed Dalapon, sodium salt 127-20-8 with nearly identical components
1,2-Dibromo-3-Chloropropane	96128 or 96-12-8	1,2-Dibromo-3-chloropropane	
1,2Dichlorobenzene	95501 or 95-50-1	Orthodichlorobenzene	Did not remove 1,3 Dichlorobenzene or 1,4 Dichlorobenzene
1,2-Dichloroethane	107062 or 107-06-2	1,2-Ethylene dichloride	Did not remove variants of Dichloroethane
Dichloromethane (HM)	75092 or 75-09-2	Methylene chloride	
1,2-Dichloropropane	78875 or 78-87-5	1,2-Dichloropropane	
Dimethrin	70382 or 70-38-2	Dimethrin	
4,6DinitroCresol	534521 or 534-52-1	Phenol, 2-methyl-4,6-dinitro-	
Dinoseb	88857 or 88-85-7	Dinoseb	
Diquat	85007 or 85-00-7	Diquat	

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<b>Pollutant (removed)</b>	<b>CASN</b>	<b>Pollutant (as listed by EPA)</b>	<b>Comment</b>
Endosulfan	115297 or 115-29-7	Endosulfan	Did not remove variants of Endosulfan
Endrin	72208 or 72-20-8	Endrin	
Fenamiphos	22224926 or	Fenamiphos	
Fonofos	944229 or 944-22-9	Fonofos	
Guthion	86500 or 86-50-0	Azinphos-Methyl	
Heptachlor	76448 or 76-44-8	Heptachlor	
Hexachlorobenzene	118741 or 118-74-1	Perchlorobenzene	
Hexachlorocyclopentadiene	77474 or 77-47-4	Hexachlorocyclopentadiene	
Methoxychlor	72435 or 72-43-5	Methoxychlor	
Nitrobenzene	98953 or 98-95-3	Nitrobenzene	
4-Nitrophenol	100027 or 100-02-7	4-Nitrophenol	
Parathion	56382 or 56-38-2	Parathion	
Propazine	139402 or 139-40-2	Propazine	
Tetrachloroethylene	127184 or 127-18-4	Tetrachloroethylene	
1,2,4-Trichlorobenzene	120821 or 120-82-1	1,2,4-Trichlorobenzene	
1,1,1-Trichloroethane	71556 or 71-55-6	Methyl chloroform	
2,4,5-Trichlorophenol	95954 or 95-95-4	2,4,5-Trichlorophenol	
2,4,6-Trichlorophenol	88062 or 88-06-2	2,4,6-Trichlorophenol	
2 (2,4,5-Trichlorophenoxy) Propionic Acid	93721 or 93-72-1	Silvex	

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