UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8
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November 30, 2021

Ref: 8WP-CWQ

SENT VIA EMAIL
DIGITAL READ RECEIPT REQUESTED

Mr. L. David Glatt, Director
North Dakota Department of Environmental Quality
4201 Normandy Street
Bismarck, North Dakota 58503-1324

Re: EPA Action on Revisions to Standards of Quality for Waters of the State

Dear Mr. Glatt:

The U.S. Environmental Protection Agency (EPA) Region 8 completed its review of North Dakota's revisions to its Standards of Quality for Waters of the State of North Dakota Administrative Code (NDAC) ch. 33.1-16-02.1. These revisions were presented to the Legislative Rules Committee for review and adopted by the North Dakota Department of Environmental Quality (DEQ) on June 8, 2021. The revised rules were submitted to EPA for review with a letter dated June 15, 2021. The submittal package included: (1) proposed NDAC Chapter 33.1-16-02.1 Standards of Quality for Waters of the State with strikeout and revisions in color; (2) NDAC Chapter 33.1-16-02.1 Standards of Quality for Waters of the State; (3) the Attorney General's Opinion; (4) Copies of the 2019 and 2020 Public Notices as they appeared in the Newspaper; (5) Copy of the 2019 Public Notice as it appeared on the DEQ website; (6) Copy of the 2020 Public Notice that included a summary of proposed changes to the standards, proposed rules, supporting information, regulatory analysis, takings assessment, small entity economic analysis, and small entity regulatory analysis as it appeared on the DEQ website; and (7) Copy of public comments and the DEQ responses to comments.

As part of the review process, the draft revisions were made available for public review and comment from July 12 to September 30, 2019. The public hearing was held on September 17, 2019. A second public hearing was held on October 12, 2020, and a public comment period was provided from August 20 through October 23, 2020. The North Dakota Attorney General determined that the rules are compliant with state law and approved their legality on April 26, 2021. Receipt of the submittal package on June 18, 2021 initiated EPA's review pursuant to Section 303(c) of the Clean Water Act (CWA) and the implementing federal water quality standards regulation (40 C.F.R. Part 131).

We commend the DEQ for the improvements to North Dakota's water quality standards. Key revisions include updates to the state's ammonia criteria and the addition of selenium fish flesh criterion

elements.[1]

Clean Water Act Review Requirements

Section 303(c)(2) of the CWA requires states and authorized Indian tribes[2] to submit new or revised water quality standards to EPA for review. EPA is required to review and approve, or disapprove, the submitted standards. Pursuant to CWA Section 303(c)(3), if EPA determines that any standard is not consistent with the applicable requirements of the CWA, the Agency shall, not later than the ninetieth day after the date of submission, notify the state or authorized tribe and specify the changes needed to meet the requirements. If such changes are not adopted by the state or authorized tribe within ninety days after the date of notification, EPA is to propose and promulgate such standards pursuant to CWA Section 303(c)(4)(A). The Region's goal has been, and will continue to be, to work closely with states and authorized tribes throughout the standards revision process so that submitted revisions can be approved by EPA. Pursuant to EPA's Alaska Rule (40 C.F.R. § 131.21(c)), new or revised state and authorized tribal standards submitted to EPA after May 30, 2000 are not effective for CWA purposes until approved by EPA.

Today's Action

Today EPA is approving most of the revisions to the state water quality standards. The rationale for EPA's action is discussed in detail in the enclosure. These actions are summarized below:

1) **Water Quality Standards Approved That Are Not Subject to Endangered Species Act (ESA) Consultation**

- Revised the example calculation of the hardness dependent criteria for cadmium, chromium(III), copper, lead, nickel, silver, and zinc to more accurately reflect the hardness present in North Dakota waters;
- Updated formatting in the River Basins, Subbasins and Tributaries Classification table in Appendix 1 to clearly define which watershed each stream belongs in;
- Updated formatting in the Lake and Reservoir Classification table in Appendix II by placing borders in the table to improve ease of reading;
- Updated the Mixing Zone and Dilution Policy and Implementation Procedure in Appendix III by correcting spelling and adding clarification language to Step 1;
- Updated North Dakota Antidegradation Procedure in Appendix IV by revising the review process language in Procedures for Category 3 Waters; and
- Made clarifying edits, improvements to spelling and grammar, and format modifications to existing rule.

[1] See https://www.epa.gov/wqc/national-recommended-water-quality-criteria-aquatic-life-criteria-table

[2] CWA Section 518(e) specifically authorizes EPA to treat eligible Indian tribes in the same manner as states for purposes of CWA Section 303. See also 40 CFR Section 131.8.

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2) **Water Quality Standards Approved Subject to ESA Consultation**

- Updated acute and chronic freshwater aquatic life criteria for ammonia;
- Added fish tissue elements of EPA's recommended chronic freshwater aquatic life criterion for selenium;
- Removed site-specific chronic ammonia criterion applied to the Red River of the North beginning at the 12th Avenue North bridge in Fargo, North Dakota, and extending approximately 32 miles downstream to its confluence with the Buffalo River, Minnesota, and replaced it with updated Section 304(a) ammonia criteria recommendations for the protection of aquatic life; and
- Updated pH criteria for Class I and Class IA streams.

3) **Provisions EPA is Not Acting on Today**

- Updated chronic aquatic life criterion for mercury in Section 33.1-16-02.1-09 (Table 2); and
- Updated language in Section 33.1-16-02.1-11 regarding the discharge of wastes to reflect the process of reporting any spill or discharge of waste that is likely to cause pollution of waters.

Endangered Species Act Requirements

EPA's approval of North Dakota's water quality standards is considered a federal action which may be subject to the Section 7(a)(2) consultation requirements of the ESA. Section 7(a)(2) of the ESA states that "each federal agency… shall… insure that any action authorized, funded or carried out by such agency is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat of such species which is determined to be critical…"16 U.S.C. § 1536.

EPA initiated consultation with the U.S. Fish and Wildlife Service (FWS) under Section 7(a)(2) of the ESA on March 11, 2021 regarding our potential action on the revised water quality standards summarized in Category 2 above and discussed in the enclosure. EPA's approval of revisions to North Dakota's water quality standards, pending completion of ESA consultation under Section 7(a)(2), is fully consistent with Section 7(d) of the ESA because it does not foreclose either the formulation by the FWS or the implementation by EPA of any alternatives that might be determined in the consultation to be needed to comply with ESA Section 7(a)(2). Proceeding with a CWA Section 303(c) approval action prior to the completion of Section 7 consultation provides a more protective condition for listed species and/or designated critical habitat during the interim period while EPA is completing the Section 7 consultation requirements on the water quality standards approval. Under CWA Section 303(c)(4)(B), EPA has authority to take additional action regarding the revision of water quality standards for North Dakota if the consultation with the FWS identifies deficiencies in the revised water quality standards requiring remedial action by EPA, after EPA has approved the revisions.

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Indian Country

EPA's approval of North Dakota's submitted water quality standards does not extend to Indian country as defined in 18 U.S.C. Section 1151. Indian country in North Dakota generally includes (1) lands within the exterior boundaries of the following Indian reservations located within North Dakota: the Fort Berthold Indian Reservation, the Spirit Lake Reservation, the Standing Rock Sioux Reservation, and the Turtle Mountain Reservation; (2) any land held in trust by the United States for an Indian tribe; and (3) any other areas that are "Indian country" within the meaning of 18 U.S.C. Section 1151. EPA, or eligible Indian tribes, as appropriate, will retain responsibilities under Clean Water Act Section 303 for water quality standards in Indian country. Today's action is not intended as an action to approve or disapprove water quality standards for waters within Indian country.

Conclusion

EPA Region 8 thanks DEQ for its efforts to improve the water quality standards that protect the waters of North Dakota. The recent revisions clarify North Dakota's existing regulations and improve the state's water quality program. EPA commends DEQ's commitment to protecting its waters by establishing water quality standards and adopting numeric criteria that significantly improves environmental protection to aquatic life for the waters of North Dakota. EPA looks forward to working with DEQ to make additional improvements to the state's water quality standards. If you have any questions, please call Holly Wirick on my staff at (303) 312-6238.

Sincerely,

JUDY BLOOM Digitally signed by JUDY BLOOM Date: 2021.11.30 13:44:02 -07'00'

Judy Bloom, Manager
Clean Water Branch

Enclosure

Cc: Mr. Peter Wax,
Division of Water Quality, North Dakota Department of Environmental Quality

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Rationale for EPA's Action on North Dakota's Revised Surface Water Quality Standards

Today's EPA action letter addresses the revisions to North Dakota's water quality standards adopted by DEQ on June 8, 2021. This enclosure provides a summary of the revisions and a rationale for the action taken by EPA. The discussion below covers the following categories of changes made to the state's water quality standards: (1) revisions that are approved for purposes of CWA Section 303(c) that are not subject to ESA consultation, (2) revisions that are approved for purposes of CWA Section 303(c) that are subject to ESA consultation, and (3) provisions that EPA is not acting on today.

1) WATER QUALITY STANDARDS APPROVED THAT ARE NOT SUBJECT TO ESA CONSULTATION

Hardness Dependent Example Calculation Revision (Section 33.1-16-02.1-09 Table 2)

North Dakota amended NDAC Section 33.1-16-02.1-09 Table 2 by revising the example calculation of the hardness dependent criteria for cadmium, chromium(III), copper, lead, nickel, silver, and zinc, from a hardness of 100 mg/l to 400 mg/l. The state asserted that it made this revision to more accurately reflect the hardness that is present in North Dakota waters. The revised values for these parameters listed in the table are example calculations, they are not the actual criteria; the equations are the criteria. EPA considers non-substantive edits to existing water quality standards to constitute new or revised water quality standards that EPA has the authority and duty to approve or disapprove under Section 303(c)(3) of the CWA.[3] While these revisions do not substantively change the meaning or intent of the existing water quality standards, EPA believes that it is reasonable to treat such non-substantive changes in this manner to ensure public transparency as to which provisions are applicable for purposes of the CWA. EPA notes that the scope of its review and action on non-substantive edits or editorial changes extends only to the edits or changes themselves. EPA is not re-opening or reconsidering the underlying water quality standards that are the subject of the non-substantive edits or editorial changes. EPA has determined that the hardness dependent example calculation revision is consistent with CWA Section 303(c) and 40 C.F.R. § 131.11; accordingly, this revision is approved.

River Basins, Subbasins, and Tributaries Classification (Section 33.1-16-02.1 Appendix I)

North Dakota revised NDAC Section 33.1-16-02.1 Appendix I, River Basins, Subbasins and Tributaries Classification table, by updating the formatting to clearly define in which watershed each stream belongs. This revision does not affect or alter how the water quality standards apply; it provides clarification. EPA has determined that this revision is consistent with the CWA and the requirements of 40 C.F.R. Part 131. Accordingly, the revision to Appendix I is approved.

Lake and Reservoir Classification (Section 33.1-16-02.1 Appendix II)

North Dakota revised NDAC Section 33.1-16-02.1 Appendix II, Lake and Reservoir Classification, by

[3] See EPA's October 2012 *What is a New or Revised Water Quality Standard Under CWA 303(c)(3)? – Frequently Asked Questions* available at https://www.epa.gov/sites/production/files/2014-11/documents/cwa303faq.pdf

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updating the formatting and creating a table into which each lake name, county and classification has been placed. This change does not affect or alter how the water quality standards apply; it was made to improve ease of reading. EPA has determined that this revision is consistent with the CWA and the requirements of 40 C.F.R. Part 131. Accordingly, the revision to Appendix II is approved.

Mixing Zone and Dilution Policy and Implementation Procedure (Section 33.1-16-02.1 Appendix III)

North Dakota revised NDAC Section 33.1-16-02.1 Appendix III, Mixing Zone and Dilution Policy and Implementation Procedure, by correcting spelling and adding language to Step 1. This change does not affect or alter how the water quality standards apply; it was made to provide clarification on the mixing zone implementation procedure; specifically, adding the phrase "during critical low-flow conditions" at the end of Step 1. EPA has determined that this revision is consistent with the CWA and the requirements of 40 C.F.R. Part 131. Accordingly, the revision to Appendix III is approved.

North Dakota Antidegradation Procedure (Section 33.1-16-02.1 Appendix IV)

North Dakota revised NDAC Section 33.1-16-02.1 Appendix IV, North Dakota Antidegradation Procedure, by updating language in the review process for Category 3 waters; primarily by removing reference to the water pollution control board. This change does not affect or alter how the water quality standards apply; it was made to accurately reflect the review process. EPA has determined that this revision is consistent with the CWA and the requirements of 40 C.F.R. Part 131. Accordingly, the revision to Appendix IV is approved.

Non-Substantive Changes to Approved Water Quality Standards (Section 33.1-16-02.1)

North Dakota amended NDAC Section 33.1-16-02.1 by improving grammar and correcting spelling errors. EPA considers non-substantive edits to existing water quality standards to constitute new or revised water quality standards that EPA has the authority and duty to approve or disapprove under Section 303(c)(3) of the CWA.[4] While these revisions do not substantively change the meaning or intent of the existing water quality standards, EPA believes that it is reasonable to treat such non-substantive changes in this manner to ensure public transparency as to which provisions are applicable for purposes of the CWA. EPA notes that the scope of its review and action on non-substantive edits or editorial changes extends only to the edits or changes themselves. EPA is not re-opening or reconsidering the underlying water quality standards that are the subject of the non-substantive edits or editorial changes. EPA has determined that the non-substantive edits to Section 33.1-16-02.1 are consistent with the CWA and the requirements of 40 C.F.R. Part 131; accordingly, they are approved. The non-substantive edits include:

- Revision to NDAC Section 33.1-16-02.1-05 Variances and Compliance Schedules corrects the spelling of the word "exceedance."
- Revision to NDAC Section 33.1-16-02.1-09 Table 1 adds the word "None" in the "CAS No." column when no CAS number exists for the substance.
- Revision to NDAC Section 33.1-16-02.1-09 Table 2 corrects the spelling of "Chromium."

[4] See EPA's October 2012 *What is a New or Revised Water Quality Standard Under CWA 303(c)(3)? – Frequently Asked Questions* available at: https://www.epa.gov/sites/production/files/2014-11/documents/cwa303faq.pdf

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2) WATER QUALITY STANDARDS APPROVED THAT ARE SUBJECT TO ESA CONSULTATION

Revisions in this category are water quality standards approved for purposes of CWA Section 303(c) that are subject to the results of consultation under Section 7(a)(2) of the ESA. Should the consultation process with the FWS identify information that supports a conclusion that one or more of the revisions in this category are likely to jeopardize the continued existence of any listed endangered or threatened species, or result in the destruction or adverse modification of designated critical habitat of such species, EPA can, pursuant to CWA Section 303(c)(4)(B), take additional action regarding the revision of water quality standards for North Dakota. The discussion below identifies revisions in this category and the basis for EPA's approval action.

Surface water classifications, mixing zones, and numeric standards (Section 33.1-16-02.1-09 (Table 1) - Ammonia

North Dakota amended NDAC Section 33.1-16-02.1-09 Table 1 by updating acute and chronic freshwater ammonia criteria to be consistent with EPA's nationally recommended 2013 CWA Section 304(a) freshwater ammonia criteria,[5] published for the protection of aquatic life from the toxic effects of ammonia.

EPA's 2013 ammonia criteria reflect new data on sensitive freshwater mussels and snails, and incorporate scientific views that EPA received on its draft 2009 criteria. The criteria recommendations, which reflect the latest scientific information, are based on additional information regarding the toxicity of ammonia to freshwater unionid mussels. When ammonia is present in water at high enough levels, it is difficult for aquatic organisms to sufficiently excrete it, leading to toxic build-up in internal tissues and blood, and potentially death. EPA's updated acute and chronic ammonia criteria were developed to protect organisms from both immediate effects such as mortality, and longer-term effects on reproduction growth and survival, respectively.

DEQ adopted both of EPA's acute criteria equations (one for when *Oncorhynchus* species are present and one for where *Oncorhynchus* species are absent) to protect aquatic organisms from immediate effects, such as mortality. DEQ also adopted EPA's chronic criterion to protect against the long-term effects of ammonia on reproduction, growth and survival of aquatic organisms. EPA approves DEQ's ammonia criteria revision as scientifically defensible, and consistent with the requirements of the CWA Section 303(c) and 40 C.F.R. § 131.11.

Surface water classifications, mixing zones, and numeric standards (Section 33.1-16-02.1-09 Table 1) - Selenium

North Dakota amended NDAC Section 33.1-16-02.1-09 by adding selenium fish flesh criterion to Table 1. The revision was made to reflect the fish tissue elements of the 2016 *Aquatic Life Ambient*

[5] See https://www.epa.gov/sites/default/files/2015-08/documents/aquatic-life-ambient-water-quality-criteria-for-ammonia-freshwater-2013.pdf

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Water Quality Criterion for Selenium – Freshwater, 2016,[6] which presents EPA's updated chronic ambient water quality criterion recommendation for the protection of aquatic life based upon consideration of all available information relating to effects of selenium on aquatic organisms. The criterion is composed of four elements, all of which are protective against chronic effects of selenium. Two of the elements are based on the concentration of selenium in fish tissue, and two elements are based on the concentration of selenium in the water column. The recommended elements are (1) a fish egg-ovary element; (2) a fish whole-body and/or muscle element; (3) a water column element (one value for lentic and one value for lotic aquatic systems); and (4) a water column intermittent element to account for potential chronic effects from short-term exposures. The assessment of the available data for fish, invertebrates, and amphibians indicates that a criterion value derived from fish will protect the aquatic community. All four criterion elements applied together should protect aquatic life from the chronic effects of exposure to total selenium in waters inhabited by fish, as well as "fishless waters."

Table 1. DEQ Maximum Limits for Substance in or Characteristics of Classes I, IA, II, and III Streams

CAS No.	Substance or Characteristic	Maximum Limit
7782-49-2	Selenium in Fish Flesh[7] (aquatic life)	Egg-Ovary: 15.1 mg/Kg Dry Weight Whole Body: 8.5 mg/Kg Dry Weight Muscle: 11.3 mg/kg Dry Weight

When the CWA Section 304(a) national recommendation was issued, EPA recommended that states and tribes adopt all four elements of the criterion into their water quality standards. Alternatively, EPA recommended that states develop, adopt, and submit for EPA approval, either a site-specific water column criterion element (or set of lentic/lotic criterion element value), or a set of procedures to facilitate the translation of the fish tissue criterion concentration elements into site-specific water concentration values. The water column values recommended by EPA as water column criterion elements were selected to be protective of 80% of the nation's water bodies.[8]

DEQ's decision to adopt just the fish tissue elements of EPA's recommended selenium criterion is to improve protection of North Dakota's aquatic resources while the state continues to collect additional data to derive water concentration values from the fish tissue criterion elements. DEQ believes that

[6] See https://www.epa.gov/sites/default/files/2016-07/documents/aquatic_life_awqc_for_selenium_-_freshwater_2016.pdf

[7] Fish tissue elements are expressed as steady-state instantaneous measurement not to exceed. When fish egg/ovary concentrations are measured, the egg/ovary criterion element supersedes any whole-body, or muscle criterion element. The fish flesh values in Table 1 and the water column criteria in Table 2 are independently applicable. Water column criterion elements that are derived site-specifically using an empirical bioaccumulation factor approach or a bioaccumulation mechanistic model approach, once duly established under the provisions of 40 C.F.R. Part 131 will supersede the criteria in Table 2 and will be subordinate to fish tissue criterion elements when both fish and water concentrations are measured. Any site-specific water column criterion element established under the provisions of 40 C.F.R. Part 131 is the applicable criterion in the absence of fish tissue measurement, or in waters with new discharges of selenium where steady state has not been achieved between water and fish tissue at the site.

[8] See EPA Response to Public Comments on the 2015 Draft Selenium Aquatic Life Ambient Water Quality Criterion at: https://www.epa.gov/sites/default/files/2016-07/documents/selenium_freshwater_2016_response_to_comment.pdf

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based on its analysis of a preliminary dataset reflecting the physical, chemical and biological characteristics of North Dakota waters, EPA's national recommended water column elements are not appropriate for the state at this time and that different water column values may be more appropriate for North Dakota.

DEQ is moving forward to quantify the relationship between water column concentration of selenium and fish flesh concentrations in North Dakota lakes and streams. This spring, the state began its multi-year study to collect fish tissue and water samples in multiple ecoregions across the state. The sampling plan was developed with EPA input. Following completion of the study, data will be used to assess the relationship between fish tissue values and water column values, and to develop site-specific selenium water column elements. Dischargers will be required to continue to meet the state's current water quality criterion for selenium (20 ug/L for acute and 5 ug/L for chronic), independently from also being required to ensure attainment of the state's newly adopted fish tissue values. Fish tissue values will supersede water column values, as expressed in footnote 6 to Table 1 (above), until the study is completed, data are analyzed, and site-specific water column elements are developed. EPA intends to assist DEQ to analyze the data and develop protective water column values.

EPA applauds DEQ's work to evaluate development of site-specific water column values for selenium and looks forward to reviewing the results of the study. EPA has determined that this revision is consistent with CWA Section 303(c) and 40 C.F.R. § 131.11. Accordingly, this revision is approved by EPA.

Update to pH Criteria for Class I and Class IA Streams (Section 33.1-16-02.1-09 Table 1)

North Dakota amended NDAC Section 33.1-16-02.1-09 Table 1 by updating pH criteria for Class I and Class IA streams from 7.0-9.0 to 6.5-9.0. The revision was made to reflect the CWA Section 304(a) criteria recommendation for the protection of aquatic life. The updated pH criteria are protective of the fish and aquatic biota use in North Dakota and EPA has determined that this revision is consistent with CWA Section 303(c) and 40 C.F.R. § 131.11. Accordingly, this revision is approved by EPA.

Removal of site-specific chronic ammonia criterion applied to the Red River of the North (Section 33.1-16-02.1-09 Table 1)

North Dakota amended NDAC Section 33.1-16-02.1-09 Table 1 by removing the site-specific chronic ammonia criterion applied to the Red River of the North beginning at 12th Avenue North bridge in Fargo, North Dakota, and extending approximately 32 miles downstream to its confluence with the Buffalo River, Minnesota, and replacing it with CWA Section 304(a) ammonia criteria recommendations for the protection of aquatic life. EPA has determined that this revision is consistent with CWA Section 303(c) and 40 C.F.R. § 131.11. Accordingly, this revision is approved by EPA.

3) PROVISIONS EPA IS NOT ACTING ON TODAY

- NDAC Section 33.1-16-02.1-11 Discharge of Wastes – update to language on methods for reporting a spill or discharge of wastes to DEQ.
- NDAC Section 33.1-16-02.1-09 Aquatic Life Criteria (Table 2) – EPA intends to take a separate action on the update to the chronic aquatic life criterion for mercury.