



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8**

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JUL 14 2010

Ref: 8EPR-EP

L. David Glatt, Chief
Environmental Health Section
North Dakota Department of Health
918 East Divide Avenue
Bismarck, ND 58501-1947

Re: EPA Action on Revisions to *Standards of
Quality for Waters Of The State*

Dear Mr. Glatt:

The U.S. Environmental Protection Agency (EPA) has partially completed its review of the final revisions to *Standards of Quality for Waters of the State* adopted by the North Dakota State Health Council (Council) on April 28, 2010. Receipt of the revised standards and Attorney General certification on June 15, 2010 initiated EPA's review pursuant to Section 303(c) of the Clean Water Act (CWA or the Act). EPA has partially completed its review, and this letter is to notify you of our action.

The Region commends the Council and the Department of Health (Department) for the revisions that were adopted. Especially commendable were the revisions to:

- complete the transition from fecal coliform to *E. coli* water quality criteria for protection of recreation uses (i.e., by deleting the fecal coliform criteria),
- adopt new water quality criteria for chlorpyrifos, tributyltin, and parathion for the protection of aquatic life uses,
- adopt updated human health criteria for acrolein and phenol,
- cap adjustment of hardness-dependent aquatic life criteria for metals at a hardness level of 400 mg/L, and
- assign a full set of protective water quality criteria and a Class 4 use (by default) to all lakes not specifically named in Appendix II.

Collectively, the revisions represent significant improvements to the State's water quality standards. Considerable progress was made as a result of this rulemaking action and we want to thank the Department and Council for developing and adopting the new and revised water quality standards.



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CLEAN WATER ACT REVIEW REQUIREMENTS

The Clean Water Act, Section 303(c)(2), requires States and authorized Indian Tribes¹ to submit new or revised water quality standards to EPA for review. EPA is 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 Act, the Agency shall, not later than the ninetieth day after the date of submission, notify the State or authorized Tribe and specify the changes 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 shall, where necessary to meet the requirements of the Clean Water Act, promulgate the needed standard pursuant to CWA Section 303(c)(4). EPA's goal has been, and will continue to be, to work closely with States and authorized Tribes throughout the standards revision process as a means to avoid the need for such disapproval and promulgation actions.

TODAY'S ACTION

I am pleased to inform you that, with two exceptions, the Region is approving the revisions to *Standards of Quality for Waters of the State* adopted by the North Dakota State Health Council on April 28, 2010. The exceptions include the revisions for the upper portion of the Sheyenne River, and the revisions to certain water quality criteria for reservoirs. On those revisions, the Region has not yet completed its review and therefore is taking no action today. Enclosure 1 presents a summary of the adopted revisions and a rationale for EPA's action.

The water quality standards approvals in today's letter apply only to water bodies in the State of North Dakota, and do not apply to waters that are within Indian country, as defined in 18 U.S.C. Section 1151. "Indian country" also includes any land held in trust by the United States for an Indian tribe and any other areas defined as "Indian country" within the meaning of 18 U.S.C. 1151. Today's letter is not intended as an action to approve or disapprove water quality standards applying to waters within Indian Country. EPA, or authorized Indian Tribes, as appropriate, will retain responsibilities for water quality standards for waters within Indian country.

ENDANGERED SPECIES ACT REQUIREMENTS

It is important to note that 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 Endangered Species Act (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..."

¹ 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.

EPA has initiated consultation under ESA Section 7(a)(2) with the U.S. Fish and Wildlife Service regarding our approval of certain new or revised water quality standards identified below. EPA also has a Clean Water Act obligation, as a separate matter, to complete its water quality standards approval action. Therefore, in approving these water quality standards revisions today, EPA is completing its CWA Section 303(c) responsibilities. However, because ESA consultation on EPA's approval of these standards is ongoing, EPA's approval is made subject to the outcome of the ESA consultation process. Should the consultation process with the U.S. Fish and Wildlife Service identify information regarding impacts on listed species or designated critical habitat that supports amending EPA's approval, EPA will, as appropriate, revisit and amend its approval decision for those new or revised water quality standards.

APPROVAL CATEGORIES

The revisions fall into three categories: (1) revisions approved without condition, (2) those that are approved, subject to ESA consultation, and (3) revisions EPA is not acting upon today.

1) Standards Approved Without Condition

Certain revisions to *Standards of Quality for Waters of the State* are approved without condition. Included in this category are the revisions to:

- 33-16-02.1-09(1)(b) – Class 1A Streams and Natural Conditions
- Table 1 – Fecal Coliform Criteria
- Table 2 – Acrolein and Phenol

2) Standards Approved Subject to ESA Consultation

Certain revisions are approved, subject to ESA consultation. Included in this category are the revisions to:

- Table 2 – Chlorpyrifos, Tributyltin, and Parathion
- Table 2 – Hardness-Dependent Aquatic Life Criteria
- Appendix II – Classification of Lakes Not Listed

3) Revisions EPA Is Not Acting Upon Today

- 33-16-02.1-09 – Revisions to Water Quality Standards for the Upper Portion of the Sheyenne River
 - 33-16-02.1-09(1)(b) – Municipal/Domestic Use Removal
 - 33-16-02.1-09(3)(b) – Revision to the Sulfate Criterion
- 33-16-02.1-09(3)(e) – Water Quality Criteria Applicable to Reservoirs

CONCLUSION

EPA Region 8 congratulates the Department for the significant improvements to *Standards of Quality for Waters of the State*. The Region looks forward to working with the Department to make additional improvements to the State's water quality standards. If you have questions concerning this letter, the most knowledgeable person on my staff is David Moon and he can be reached at (303) 312-6833.

Sincerely,

A handwritten signature in cursive script that reads "Carol L. Campbell".

Carol L. Campbell
Assistant Regional Administrator
Office of Ecosystems Protection
and Remediation

Enclosure

ENCLOSURE 1

RATIONALE FOR EPA’S APPROVAL OF REVISIONS TO NORTH DAKOTA WATER QUALITY STANDARDS

Today’s EPA action letter addresses the revisions to *Standards of Quality for Waters of the State* (Chapter 33-16-02.1) adopted by the North Dakota State Health Council on April 28, 2010. This enclosure provides a summary of the revisions and a rationale for the action taken by EPA.

The discussion below covers three categories of revisions: (1) revisions approved without condition, (2) revisions that are approved for purposes of CWA Section 303(c), subject to ESA consultation, and (3) revisions EPA is not acting upon today.

I. REVISIONS APPROVED WITHOUT CONDITION

EPA has concluded that approval of certain revisions either will have no effect on listed or proposed endangered or threatened species, or is otherwise not subject to ESA consultation. Revisions in this category are discussed below.

33-16-02.1-09(1)(b) – Class 1A Streams and Natural Conditions

A revision was adopted to 33-16-02.1-09(1)(b) to clarify that for Class 1A streams where natural conditions do not satisfy Class 1 water quality criteria for municipal and domestic use, the availability of softening or other treatment methods may be considered in determining whether ambient water quality meets the requirements of the Department. The provision was revised as follows:

Class 1A streams. The quality of the waters in this class shall be the same as the quality of Class I streams, except that ~~treatment for municipal use may also require softening to meet the~~ where natural conditions exceed Class I criteria for municipal and domestic use, the availability of softening or other treatment methods may be considered in determining whether ambient water quality meets the requirements of the department.

This revision authorizes the Department to consider, in addition to water softening, the availability of drinking water treatment processes such as ion exchange, reverse osmosis, or electrodialysis in determining whether waters with naturally elevated ambient conditions are attaining Class 1A requirements for protection of municipal and domestic use (i.e., for 303(d) assessment purposes). We recognize there may be circumstances where waters with naturally high concentrations of certain parameters are used (or could be used) as water supplies, and that advanced drinking water treatment processes may be available that are capable of delivering the removal efficiencies necessary to achieve protective post-treatment concentrations.

Existing provision 33-16-02.1-08(1)(f), which was not revised in this rulemaking action, authorizes the Department to establish site-specific criteria “[w]here natural chemical, physical, and biological characteristics result in exceedences of the limits set forth in this section.” This provision provides another option for situations where natural conditions exceed criteria. It is worth noting that site-specific criteria pursuant to 33-16-02.1-08(1)(f) would revise the water quality standard for both permitting and assessment purposes. Because the revisions to 33-16-02.1-09(1)(b) pertain to determining the suitability of ambient waters for municipal and domestic use, they will not alter the Department’s approach for all other purposes of water quality criteria, including the establishment of controls on anthropogenic sources. Essentially, the adopted revisions will help to ensure safe drinking water quality without modifying the protective water quality criteria applicable for purposes of regulating anthropogenic sources of pollutants.

The Region has determined that: (1) the revision provides a useful clarification regarding the requirements for Class 1A streams, and (2) the revision is consistent with the federal requirement to adopt water quality criteria that protect designated uses. See 40 CFR Section 131.11(a)(1). Accordingly, the revision to 33-16-02.1-09(1)(b) is approved without condition.

Table 1 – Fecal Coliform

Table 1 was revised by deleting the fecal coliform criteria. The *E. coli* criteria adopted previously, and approved by EPA previously, were retained for the protection of recreation uses. Footnote 2 was also modified to delete a reference to the fecal coliform criteria. As discussed in the 1986 criteria document for bacteria², epidemiological studies conducted by EPA at fresh water sites did not find a statistical relationship between fecal coliform densities and risk of illness in swimmers. By contrast, such a statistical relationship was found for *E. coli*, demonstrating that *E. coli* is a better indicator of the health risks associated with recreational uses. As presented in Table 2 of the 1986 criteria document, correlation coefficients for swimming-associated gastroenteritis rates against mean indicator densities were 0.80 and -0.08 for *E. coli* and fecal coliforms, respectively, at fresh water swimming beaches.

The Region has determined that deletion of the fecal coliform criteria is consistent with EPA guidance and the federal requirement to adopt water quality criteria that protect designated uses. See 40 CFR Section 131.11(a)(1). Accordingly, the revision to Table 1 is approved without condition.

Table 2 – Acrolein and Phenol

Revised human health criteria were adopted for acrolein and phenol consistent with recently issued changes to the EPA criteria recommendations³ for those parameters.

² *Ambient Water Quality Criteria for Bacteria – 1986*. U.S. EPA. 440/5-84-002. January 1986.

³ *Notice of Availability of National Recommended Water Quality Criteria for Acrolein and Phenol*. 74 Federal Register 27535-27536. June 10, 2009.

	Class I, IA, II (µg/L)	Class III (µg/L)
Acrolein	6 190	9 290
Phenol	10,000 21,000	860,000 1,700,000

The Region has determined that the revised criteria are consistent with EPA guidance and the federal requirement to adopt water quality criteria that protect designated uses. See 40 CFR Section 131.11(a)(1). Accordingly, the revisions to Table 2 are approved without condition.

II. REVISIONS APPROVED, SUBJECT TO ESA CONSULTATION

Revisions in this category are approved for purposes of CWA Section 303(c), subject to the results of consultation under Section 7(a)(2) of the ESA. Should the consultation process with the U.S. Fish and Wildlife Service 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 will revisit and revise, as necessary, its approval decision for the identified water quality standards. The discussion below identifies major revisions in this category and the basis for EPA’s approval action.

Table 2 – Chlorpyrifos, Tributyltin, and Parathion

New acute and chronic aquatic life criteria were adopted for chlorpyrifos, tributyltin, and parathion consistent with criteria recommendations⁴ issued by EPA pursuant to CWA Section 304(a).

	Acute (µg/L)	Chronic (µg/L)
Chlorpyrifos	0.083	0.041
Parathion	0.065	0.013
Tributyltin	0.46	0.072

The Region has determined that the new criteria are consistent with EPA guidance and the federal requirement to adopt water quality criteria that protect designated uses. See 40 CFR Section 131.11(a)(1). Accordingly, the revisions to Table 2 are approved subject to ESA consultation.

⁴ *National Recommended Water Quality Criteria*. U.S. EPA. 2009. <http://www.epa.gov/ost/criteria/wqctable/>

Table 2 – Hardness-Dependent Aquatic Life Criteria

For aquatic life criteria for metals that are expressed as a function of hardness, a new footnote 16 was added to Table 2. The text of new footnote 16 is as follows:

Hardness values shall be no greater than 400 mg/L. For waters with hardness levels greater than 400 mg/L. The actual ambient hardness may be used where a site-specific WER has been determined consistent with EPA’s water effect ratio procedure.

New footnote 16 increases the stringency of the North Dakota water quality criteria for metals in waters where hardness levels are greater than 400 mg/L. In addition, it is consistent with EPA guidance included in *National Recommended Water Quality Criteria: 2002* (EPA-822-R-02-047, November 2002), which provided that:

At high hardness there is an indication that hardness and related inorganic water quality characteristics do not have as much of an effect on toxicity of metals as they do at lower hardnesses. Related water quality characteristics do not correlate as well at higher hardnesses as they do at lower hardnesses. There is also increased uncertainty in this range because very limited data are available to clearly quantify the relationship between hardness and toxicity. Therefore, if hardness is over 400 mg/L as CaCO₃, EPA continues to recommend that a hardness of 400 mg/L be used with a default WER of 1.0; alternatively, the WER and actual hardness of the surface water may be used.

The Region has determined that adoption of new footnote 16 is consistent with EPA guidance and the federal requirement to adopt water quality criteria that protect designated uses. See 40 CFR Section 131.11(a)(1). Accordingly, the revision to Table 2 is approved subject to ESA consultation.

Appendix II – Classification of Lakes Not Listed

A revision was adopted to clarify that lakes not specifically named in Appendix II are Class 4:

For lakes not listed, the following default classification applies: Class 4.

33-16-02.1-09(3)(e) provides that “the beneficial uses and parameter limitations designated for Class I streams shall apply to all classified lakes...” An extensive list of defensible water quality criteria have been assigned to Class I streams. EPA considers the level of protection afforded to Class I streams to be consistent with the CWA Section 101(a)(2) goal. Accordingly, the adopted revision means that protective water quality standards apply to all lakes regardless of which lake classification has been assigned, and that even lakes not specifically named in Appendix II now are classified and subject to the same protective water quality criteria assigned to Class I streams.

The Region has determined that the revision to Appendix II is consistent with the federal requirements to: (1) designate appropriate water uses to be achieved and protected, and (2) adopt water quality criteria that protect designated uses. See 40 CFR Sections 131.10(a) and 131.11(a)(1). Accordingly, the revision to Appendix II is approved subject to ESA consultation.

III. REVISIONS EPA IS NOT ACTING UPON TODAY

For the water quality standards revisions in this category, EPA has not yet completed its review and is not acting today. Revisions in this category include revisions to the water quality standards for the upper portion of the Sheyenne River. These changes include the removal of the municipal and domestic designated use (33-16-02.1-09(1)(b)) and the associated adjustment to the sulfate criterion (33-16-02.1-09(3)(b)). In addition, revisions in this category include the changes to the water quality criteria for chloride, sulfate, sodium, and pH for reservoirs located on Class IA, Class II and Class III streams (33-16-02.1-09(3)(e)). The Region plans to act on these revisions as soon as possible.