Book 4
Rule by Rule Discussion of Proposed Changes

This Book identifies the changes made to each part of the Water Quality Standards and either briefly addresses the reasonableness of each proposed change or identifies which Book of this Statement of Need and Reasonableness (SONAR) provides a more complete discussion.

The changes will be presented for each change, starting with Minn. R. ch. 7050 and continuing through Minn. R. ch. 7053. The rule language appears in *italics*. New language is underlined and deleted language is shown by ~~strikeout~~. The discussion of each proposed rule change appears immediately below the rule language.

Many of the amendments have resulted in the re-numbering or changes to the lettering of items and subitems. Those types of formatting changes are insignificant and will not be identified and discussed in this Book.

Slight discrepancies may exist between the excerpted language shown in this Book and the rule amendments in the draft prepared by the Office of the Revisor of Statutes, which is the version formally proposed in the *State Register* for public comment. The rule language in the Revisor of Statutes version is the language that is justified in this Book and throughout the entire SONAR

Minn. R. ch. 7050 - Water Quality Standards for the Protection of Waters of the State

1. Proposed Change - Minn. R. 7050.0150 Determination of Water Quality, Biological and Physical Conditions, and Compliance with Standards, subpart 4, Definitions:

> *Subp. 4.* ***Definitions****. For the purposes of this ~~part~~ chapter and chapter 7053, the following terms have the meanings given them.*

Justification

The definitions in this subpart formerly applied only to the requirements of Minn. R. 7050.0150. In the course of developing the proposed amendments, the MPCA determined that these definitions are used throughout Minn. R. ch. 7050 and also throughout Minn. R. ch. 7053. The MPCA intends terms used throughout the rules to be adequately defined, and is reasonably extending the applicability of the definitions in this part to all places in Minn. R. chs. 7050 and 7053 where the terms are used.

2. Proposed Change - Minn. R. 7050.0150 Determination of Water Quality, Biological and Physical Conditions, and Compliance with Standards, subpart 4, Definitions, item C:

> *C. "BOD_5" or "five-day biochemical oxygen demand" means the amount of dissolved oxygen needed by aerobic biological organisms to break down organic material present in a given water sample at a certain temperature over a five-day period.*

Justification

A definition of the term BOD_5 (five-day biochemical oxygen demand) is reasonably added because it is a Water Quality Standard proposed to address the eutrophication of rivers and streams. A more complete discussion of the eutrophication standards is provided in Book 2.

3. Proposed Change - Minn. R. 7050.0150 Determination of Water Quality, Biological and Physical Conditions, and Compliance with Standards, subpart 4, Definitions, item E:

> *E. "Diel flux" means the daily change in a constituent, such as dissolved oxygen or pH, where there is a distinct daily cycle in the measurement. Diel dissolved oxygen flux means the difference between the maximum daily dissolved oxygen concentration and the minimum daily dissolved oxygen concentration.*

Justification

A definition of the term diel flux is reasonably added because it is a Water Quality Standard proposed to address the eutrophication of rivers and streams. A more complete discussion of the eutrophication standards is provided in Book 2.

4. Proposed Change - Minn. R. 7050.0150 Determination of Water Quality, Biological and Physical Conditions, and Compliance with Standards, subpart 4, Definitions, item F:

> *F. "Ecoregion" means an area of relative homogeneity in ecological systems based on similar soils, land use, land surface form, and potential natural vegetation. Minnesota ecoregions are shown on the map in part 7050.0468.*

Justification

A revised map of Minnesota ecoregions is proposed in this rulemaking and it is reasonable to provide a reference in the existing definition to the part of the rule where the map will be located. A more complete discussion of the development and use of the ecoregion map in Minn. R. 7050.0468 is provided in Book 2.

5. Proposed Change - Minn. R. 7050.0150 Determination of Water Quality, Biological and Physical Conditions, and Compliance with Standards, subpart 4, Definitions, item G:

> *G. "Eutrophication" means the increased productivity of the biological community in water bodies in response to increased nutrient loading. Eutrophication is characterized by increased growth and abundance of algae and other aquatic plants, reduced water ~~clarity~~ transparency, reduction or loss of dissolved oxygen, and other chemical and biological changes. The acceleration of eutrophication due to excess nutrient loading from human sources and activities, called cultural eutrophication, causes a degradation of ~~lake~~ water quality and possible loss of beneficial uses.*

Justification

The current definition of eutrophication was added through a previous rulemaking that adopted eutrophication standards applicable to lakes and shallow reservoirs. In this rulemaking the MPCA is adding eutrophication standards that apply to rivers and streams. Because the rules are expanding to consider eutrophication of waters other than lakes, it is reasonable to amend the definition of

eutrophication to remove the narrow reference to "lake" quality and make it broadly applicable to all types of lakes and flowing waters by the addition of the general term "water".

In this rulemaking the MPCA is also proposing clarifying changes to the terms "transparency," "clarity" and references to Secchi disk readings. Changing "clarity" to "transparency" is one of those changes. The changes are proposed to provide consistency in terms and no change in meaning or application is intended.

6. Proposed Change - Minn. R. 7050.0150 Determination of Water Quality, Biological and Physical Conditions, and Compliance with Standards, subpart 4, Definitions, item R:

> *R. "Nuisance algae bloom" means the excessive population of algae that is characterized by obvious green or blue-green pigmentation in the water, floating mats of algae, reduced light transparency, aesthetic degradation, loss of recreational use, possible harm to the aquatic community, or possible toxicity to animals and humans. Algae blooms are measured through tests for chlorophyll-a, observations ~~using a~~ of Secchi disk transparency, and observations of impaired recreational and aesthetic conditions by the users of the water body, or any other reliable data that identifies the population of algae in an aquatic community.*

Justification

In this rulemaking the MPCA is proposing clarifying changes to the terms "transparency," "clarity" and references to Secchi disk readings. The change to refer to Secchi disk "transparency" instead of "observations using a Secchi disk" is proposed to provide consistency in terms and no change in meaning or application is intended.

7. Proposed Change - Minn. R. 7050.0150 Determination of Water Quality, Biological and Physical Conditions, and Compliance with Standards, subpart 4, Definitions, item S:

> *S. "Periphyton" means algae on the bottom of a water body. In rivers or streams, these forms are typically found attached to logs, rocks, or other substrates, but when dislodged the algae will become part of the seston.*

Justification

A definition of periphyton is reasonably added because it is a term used in the proposed stream and river eutrophication standards discussed in detail in Book 2.

8. Proposed Change - Minn. R. 7050.0150 Determination of Water Quality, Biological and Physical Conditions, and Compliance with Standards, subpart 4, Definitions, item V:

> *V. "Reservoir" means a body of water in a natural or artificial basin or watercourse where the outlet or flow is artificially controlled by a structure such as a dam. Reservoirs are distinguished from river systems by having a hydraulic residence time of at least 14 days. For purposes of this item, residence time is determined using a flow equal to the $122Q_{10}$ for the months of June through September~~, a $122Q_{10}$ for the summer months~~.*

Justification

The last clause in the last sentence is being deleted because it is a drafting error from a previous rulemaking. The reference to the $122Q_{10}$ has been moved to a more logical location in the sentence. The reference to "summer months" is deleted because it is redundant with the current rule language of "June through September."

9. Proposed Change - Minn. R. 7050.0150 Determination of Water Quality, Biological and Physical Conditions, and Compliance with Standards, subpart 4, Definitions, item W:

> *W. "River Nutrient Region" or "RNR" means the geographic basis for regionalizing the river eutrophication criteria as described in Heiskary, S. and K. Parson, Regionalization of Minnesota's Rivers for Application of River Nutrient Criteria, Minnesota Pollution Control Agency (2010), which is incorporated by reference. The document is not subject to frequent change and is available through the Minitex interlibrary loan system.*

Justification

The amendments proposed to add eutrophication and total suspended solids (TSS) standards contain references to River Nutrient Regions. Therefore, it is reasonable to include a definition of the term "River Nutrient Region." A more complete discussion of the development and application of the River Nutrient Regions within those standards is provided in Books 2 and 3.

10. Proposed Change - Minn. R. 7050.0150 Determination of Water Quality, Biological and Physical Conditions, and Compliance with Standards, subpart 4, Definitions, item T

> ~~*T. Secchi disk transparency" means the average water depth of the point where a weighted white or black and white disk disappears when viewed from the shaded side of a boat, and the point where it reappears up on raising it after it has been lowered beyond visibility. The Secchi disk measures water clarity and is usually used in lakes.*~~

Justification

The existing definition of "Secchi disk transparency" is being deleted to reflect the addition of more specific and more accurate definitions for "Secchi disk," "Secchi disk transparency" and "Secchi tube."

The proposed addition of the terms "Secchi disk," "Secchi disk transparency" and "Secchi tube" in discussion points 11-13, below, are necessary to establish standard definitions that include all the mechanisms used for measuring water transparency. The proposed additional terms are also necessary to provide consistency wherever each term is used throughout the proposed standards as well as the existing standards.

11. Proposed Change - Minn. R. 7050.0150 Determination of Water Quality, Biological and Physical Conditions, and Compliance with Standards, subpart 4, Definitions, item X:

> *X. "Secchi disk" means a tool that is used to measure the transparency of lake water. A Secchi disk is an eight-inch weighted disk on a calibrated rope, either white or with quadrants of black and white. To measure water transparency with a Secchi disk, the disk is viewed from the shaded side of a boat. The depth of the water at the point where the disk reappears upon raising it after it has been lowered beyond visibility is recorded.*

Justification

A definition of "Secchi disk" is reasonably added to clarify the application of the term. The definition includes a description of the use of a Secchi disk taken from the existing definition of "Secchi disk transparency," with slight modifications to more accurately describe the disk and the monitoring process.

12. Proposed Change - Minn. R. 7050.0150 Determination of Water Quality, Biological and Physical Conditions, and Compliance with Standards, subpart 4, Definitions, item Y:

> *Y. "Secchi disk transparency" means the transparency of water as measured by either a Secchi disk, a Secchi tube, or a transparency tube.*

Justification
A new definition of "Secchi disk transparency" is reasonably added to ensure consistency of terms throughout the rules. The Water Quality Standards were developed over many rulemakings and the terms "water clarity," "transparency," "Secchi disk standard," "Secchi disk transparency," and "Secchi depth transparency" were used interchangeably causing potential confusion in the terms.

In addition, the existing definition of "Secchi disk transparency" only addressed the mechanism and use of a Secchi disk in lakes. In this rulemaking MPCA proposes standards relating to the eutrophication of rivers and streams, which expands the universe of waterbodies subject to transparency standards beyond the "lakes" that were previously identified in the definition of "Secchi disk transparency."

13. Proposed Change - Minn. R. 7050.0150 Determination of Water Quality, Biological and Physical Conditions, and Compliance with Standards, subpart 4, Definitions, item Z:

> *Z. "Secchi tube" means a tool that is used to measure the transparency of stream or river water. A Secchi tube is a clear plastic tube, 1 meter length, 1 ¾ inch diameter, with a mini-Secchi disk on a string that is used to measure water clarity. To measure water clarity, the tube is filled with water collected from a stream or river and, looking into the tube from the top, the weighted Secchi disk is lowered into the tube by a string until it disappears and then raised until it reappears, allowing the user to raise and lower the disk within the same water sample numerous times. The depth of the water at the midpoint between disappearance and reappearance of the disk is recorded in centimeters, which are marked on the side of the tube. If the Secchi disk is visible when it is lowered to the bottom of the tube, the transparency reading is recorded as "greater than 100 centimeters."*

Justification
A definition of "Secchi tube" is reasonably added to reflect the use of this tool in determinations of water transparency. The existing rules provide a definition of "transparency tube," which is also a tool for measuring transparency in running water. Although the two tools serve a similar purpose, they are not the same and it is reasonable to add a description of a "Secchi tube".

14. Proposed Change - Minn. R. 7050.0150 Determination of Water Quality, Biological and Physical Conditions, and Compliance with Standards, subpart 4, Definitions, item AA:

> *AA. "Seston" means particulate matter suspended in water bodies and includes plankton and organic and inorganic matter.*

Justification

A definition for "seston" is reasonably added because it is a term used in the proposed river eutrophication standards and is discussed in Book 2 of this SONAR.

15. Proposed Change - Minn. R. 7050.0150 Determination of Water Quality, Biological and Physical Conditions, and Compliance with Standards, subpart 4, Definitions, item BB:

> *BB. "Shallow lake" means an enclosed basin filled or partially filled with standing fresh water with a maximum depth of 15 feet or less or with 80 percent or more of the lake area shallow enough to support emergent and submerged rooted aquatic plants (the littoral zone). It is uncommon for shallow lakes to thermally stratify during the summer. The quality of shallow lakes will permit the propagation and maintenance of a healthy indigenous aquatic community and they will be suitable for boating and other forms of aquatic recreation for which they may be usable. ~~For purposes of this chapter~~ Shallow lakes are differentiated from wetlands and lakes on a case-by-case basis. Wetlands are defined in part 7050.0186, subpart 1a.*

Justification

At discussion point #1, MPCA discusses the fact that this rulemaking extends the applicability of definitions in this subpart to chapter 7053. The change to eliminate the limiting term, "for purposes of this chapter," is reasonable to reflect that change.

16. Proposed Change - Minn. R. 7050.0150 Determination of Water Quality, Biological and Physical Conditions, and Compliance with Standards, subpart 4, Definitions, item CC:

> *CC. "Summer-average" means a representative average of concentrations or measurements for nutrient enrichment factors, taken over one summer ~~growing~~ season ~~from June 1 through September 30~~.*

Justification

This definition is being amended in conjunction with the amendments being proposed to the eutrophication and TSS Water Quality Standards (Books 2 and 3). The amendments to this definition eliminate "growing" and remove the dated time period for a summer growing season. The adjective "growing" is unnecessary to the application of this term and is irrelevant to the development of summer-average data. The use of "growing" provides unnecessary detail to the definition without providing clarification or value and is therefore reasonably deleted.

The dated time period that is considered to be a summer season, for purposes of developing a summer average, is removed from this definition and is being added to a new definition of "summer season." The term "summer season" is frequently used in the eutrophication and TSS standards and it is reasonable to provide a separate definition of "summer season" rather than the current placement of this information within the definition of "summer-average." This change is reasonable to provide clarification of the term and consistency of use throughout the standards. Minor changes are proposed to several existing rules to maintain consistency with the use of the term "summer-average." The rules had previously used the terms "averaged over a summer season" interchangeably with "summer-average." The MPCA intends that both terms have the same meaning and is changing the rules to provide consistency.

17. Proposed Change - Minn. R. 7050.0150 Determination of Water Quality, Biological and Physical Conditions, and Compliance with Standards, subpart 4, Definitions, Item DD:

DD. "Summer season" means a period annually from June 1 through September 30.

Justification

A definition of "summer season" is reasonably added because this phrase is used at a number of places throughout Minn. R. 7050.0220 and 7050.0222. The rules currently specify the months considered to be the summer season at the location in the rule where the standard is listed. This is unnecessary repetition and the MPCA proposes adding the definition of "summer season" to establish the summer season as June 1 through September 30 wherever the term is used. There are some cases where the rules identify a standard based on an assessment season other than June 1 through September 30. In those cases, the months of the alternative season are specified as a condition of that particular standard.

18. Proposed Change - Minn. R. 7050.0150 Determination of Water Quality, Biological and Physical Conditions, and Compliance with Standards, subpart 4, Definitions, item EE:

EE. "Transparency tube" means a tool that is used to measure the transparency of stream or river water. A transparency tube is a graduated clear plastic tube, 24 inches or more in length by 1-1/2 inches in diameter, with a stopper at the bottom end~~.~~, the inside surface of ~~which~~ the stopper is painted black and white. To measure water transparency, the tube is filled with water from a surface water; the water is released through a valve at the bottom end until the painted surface of the stopper is just visible through the water column when viewed from the top of the tube. The depth ~~of water at the point of initial visibility is the transparency. The transparency tube measures water clarity and is used in rivers and streams.~~, in centimeters, is noted. More water is released until the screw in the middle of the painted symbol on the stopper is clearly visible; this depth is noted. The two observed depths are averaged to obtain the water transparency.

Justification

The rules are being amended to clarify the application of all the terms related to the measurement of water transparency. The definition of "transparency tube" is reasonably amended to correspond to the degree of information provided in definitions for similar mechanisms (e.g. "Secchi disk" and "Secchi tube"). The changes to the definition of transparency tube do not change the meaning or application of the term; they are intended to provide clearer information for the use of a transparency tube.

19. Proposed Change - Minn. R. 7050.0150 Determination of Water Quality, Biological and Physical Conditions, and Compliance with Standards, subpart 5:

Subpart 5. Impairment of waters due to excess algae or plant growth. *In evaluating whether the narrative standards in subpart 3, which prohibit any material increase in undesirable slime growths or aquatic plants including algae, are being met, the commissioner will use all readily available and reliable data and information for the following factors of use impairment:*

A. representative summer-average concentrations of total phosphorus and total nitrogen measured in the water body ~~throughout the summer growing season~~;

B. *representative summer-average concentrations of chlorophyll-a (seston) measured in a water body ~~throughout the summer growing season~~;*
C. *representative summer-average measurements of ~~light~~ Secchi disk transparency in the water body~~, as measured with a Secchi disk in lakes or a transparency tube or Secchi tube in rivers and streams, throughout the growing season~~; ~~and~~*
D. *representative summer-average concentrations of five-day biochemical oxygen demand (BOD_5) measured in rivers and streams;*
E. *representative diel dissolved oxygen flux measurements in rivers and streams as averaged over a minimum of four consecutive days during the summer season;*
F. *representative measurements of pH in the water body during the summer season;*
G. *representative measurements of chlorophyll-a (periphyton) on substrates on the bed of rivers and streams during the summer season; and*
H. *any other scientifically, objective, credible, and supportable factor.*

Justification

Subpart 5 is being amended as result of the river eutrophication amendments discussed in detail in Book 2. In addition to the technical reasons for this change, which are justified in detail in Book 2, subpart 5 is also amended to make the following minor adjustments to reflect a need for consistency and clarity in the phrases used throughout the rules.

First, a minor change is proposed to eliminate existing references to "throughout the summer growing season." This phrase is redundant with the use of "summer-average," for which a definition is already provided.

Second, the phrase "summer-average" is being added to item C and the phrase "throughout the summer growing season" is being removed. This change is reasonable to maintain consistency in the collection of data by providing a more specific time of year.

Third, item C is being amended to add a reference to Secchi disk transparency and delete references to either a Secchi disk or a transparency tube. The MPCA's water monitoring program is at a point of transition between using the data formerly collected by the use of transparency tubes and new data derived from the use of Secchi tubes. Because the data from both types of measuring devices are being used in the determination of water quality, it is reasonable to amend the rules to add a more general reference to the quality being measured (i.e. Secchi disk transparency), rather than references to the specific mechanism used for measuring that quality (e.g. Secchi tubes or transparency tubes.)

Changes to items D through G are more substantial changes to address conditions relating to the addition of the river eutrophication standards. The reasonableness of these technical amendments to the eutrophication standards are discussed in detail in Book 2.

20. Proposed Change - Minn. R. 7050.0150 Determination of Water Quality, Biological and Physical Conditions, and Compliance with Standards, subpart 5a:

Subpart 5a.Impaired condition; lakes, shallow lakes, and reservoirs.

A. For lakes, shallow lakes and reservoirs a finding of an impaired condition must be supported by data showing:

(1) elevated levels of nutrients ~~in~~ under subpart 5, item A~~,~~; and

(2) at least one factor showing impaired conditions resulting from nutrient over-enrichment ~~in~~ under subpart 5, items B and C.

B. The trophic status data described in subpart 5, items A to ~~D~~C and H must be assessed in light of the magnitude, duration, and frequency of nuisance algae blooms in the water body; and documented impaired recreational and aesthetic conditions observed by the users of the water body due to excess algae or plant growth, reduced transparency, or other deleterious conditions caused by nutrient overenrichment.

C. Assessment of trophic status and the response of a given water body to nutrient enrichment will take into account the trophic status of reference water bodies; and all relevant factors that affect the trophic status of the given water body appropriate for its geographic region, such as the temperature, morphometry, hydraulic residence time, mixing status, watershed size, and location. ~~The factors in this subpart apply to lakes, shallow lakes and reservoirs and where scientifically justified, to rivers, streams, and wetlands.~~

Justification

A new subpart 5a is proposed to separate the procedure for establishing a finding of impaired condition for waters in lakes, shallow lakes and reservoirs from procedures for impaired conditions in rivers and streams. The existing rule addressed both types of water bodies. This rulemaking proposes adding criteria to subpart 5applicable to rivers and streams but not to lakes, shallow waters and reservoirs. It is reasonable to clearly distinguish criteria which will apply to the specific types of water bodies through the addition of new subparts 5a, 5b, and 5c.. New item A only clarifies which existing criteria still apply to lakes, shallow waters and reservoirs. The criteria for lakes, shallow waters and reservoirs do not change from the existing rules.

The last sentence in item C is being deleted because those aspects as they apply to rivers and streams are moved to subparts 5b and 5c. The removal of the reference to "wetlands" is also reasonable because it is unnecessary in the context of the revised rule. The existing references to the factors that apply to lakes, shallow lakes and reservoirs are references to numeric standards, which are addressed in new subparts 5b and 5c. Numeric nutrient standards that apply to wetlands do not exist at this time. In the absence of specific numeric nutrient standards for wetlands, the existing rules provide general narrative protection in part 7050.0150, subp 3.

21. Proposed Change - Minn. R. 7050.0150 Determination of Water Quality, Biological and Physical Conditions, and Compliance with Standards, subpart 5b:

Subpart 5b. Impaired condition; rivers and streams. *For rivers and streams, a finding of an impaired condition must be supported by data showing:*

A. *elevated levels of nutrients in subpart 5, item A, and at least one factor showing impaired conditions resulting from nutrient over-enrichment under subpart 5, item B, D, E, F or H; or*
B. *elevated levels of chlorophyll-a (periphyton) under subpart 5, item G.*

Justification
This change is part of the river eutrophication standards discussed in detail in Book 2.

22. Proposed Change - Minn. R. 7050.0150 Determination of Water Quality, Biological and Physical Conditions, and Compliance with Standards, subpart 5c:

Subpart 5c. Impaired condition; navigational pools*. For navigational pools, a finding of an impaired condition must be supported by data showing:*

A. *elevated levels of nutrients under subpart 5, item A; and*
B. *impaired conditions resulting from nutrient over-enrichment under subpart 5, item B.*

Justification
This change is part of the river eutrophication standards discussed in detail in Book 2.

23. Proposed change - Minn. R. 7050.0220, Specific Water Quality Standards by Associated Use Classes, subpart 3a., item A, subitem (11):

(11) Eutrophication standards for lake and reservoirs (phosphorus, total, µg/L; chlorophyll-a, µg/L; Secchi ~~depth~~ disk transparency, meters)

Justification
This change is reasonable to maintain consistency among changes being made in this rulemaking to water transparency references.

24. Proposed change - Minn. R. 7050.0220 Specific Water Quality Standards by Associated Use Classes, subpart 3a., item A, subitem (12):

(12) Eutrophication standards for rivers, streams, and navigation pools (phosphorus, total µg/L; chlorophyll-a (seston), µg/L ; five-day biochemical oxygen demand (BOD_5), mg/L; diel dissolved oxygen flux, mg/L; chlorophyll-a (periphyton), mg/m^2)
See part 7050.0222, subparts 2 and 2b.

Justification
This change is part of the river eutrophication standards discussed in detail in Book 2.

25. Proposed change - Minn. R. 7050.0220 Specific Water Quality Standards by Associated Use Classes, subpart 3a., item A, subitem (35):

(35) ~~Tubidity, NTU~~ Total Suspended Solids (TSS) mg/L

~~10~~ - - ~~NA~~ - - - -

See part 7050.0222, subpart 2

Justification
This change is part of the TSS standards discussed in detail in Book 3.

26. Proposed change - Minn. R. 7050.0220 Specific Water Quality Standards by Associated Use Classes, subpart 4a., item A, subitem (11):

(11)Eutrophication standards for lakes, shallow lakes, and reservoirs (phosphorus, total, µg/L; chlorophyll-a, µg/L; Secchi ~~depth~~ disk transparency, meters)

Justification
This change is reasonable to maintain consistency among changes being made in this rulemaking to water transparency references.

27. Proposed change - Minn. R. 7050.0220 Specific Water Quality Standards by Associated Use Classes, subpart 4a., item A, subitem (12):

(12) Eutrophication standards for rivers, streams, and navigation pools (phosphorus, total µg/L; chlorophyll-a (seston), µg/L ; five-day biochemical oxygen demand (BOD_5), mg/L; diel dissolved oxygen flux, mg/L; chlorophyll-a (periphyton), mg/m^2)
See part 7050.0222, subparts 3 and 3b.

Justification
This change is part of the river eutrophication standards discussed in detail in Book 2.

28. Proposed change - Minn. R. 7050.0220 Specific Water Quality Standards by Associated Use Classes, subpart 4a., item A, subitem (35):

(35) ~~Tubidity, NTU~~ Total Suspended Solids (TSS), mg/L

~~25~~ - - ~~NA~~ - - - -
See part 7050.0222, subpart 3

Justification
This change is part of the TSS standards discussed in detail in Book 3.

29. Proposed change - Minn. R. 7050.0220 Specific Water Quality Standards by Associated Use Classes, subpart 5a., item A, subitem (7):

(7) Eutrophication standards for lakes, shallow lakes, and reservoirs ((phosphorus, total, µg/L; chlorophyll-a µg/L; Secchi ~~depth~~ disk transparency, meters)

Justification
This change is reasonable to maintain consistency among changes in this rulemaking to water transparency references.

30. Proposed change - Minn. R. 7050.0220 Specific Water Quality Standards by Associated Use Classes, subpart 5a., item A, subitem (8):

(8) Eutrophication standards for rivers, streams, and navigational pools (phosphorus, total µg/L; chlorophyll-a (seston),µg/L ; five-day biochemical oxygen demand (BOD_5), mg/L; diel dissolved oxygen flux, mg/L; chlorophyll-a (periphyton), mg/m^2)
See part 7050.0222, subparts 4 and 4b.

Justification
This change is part of the river eutrophication standards discussed in detail in Book 2.

31. Proposed change - Minn. R. 7050.0220 Specific Water Quality Standards by Associated Use Classes, subpart 5a., item A, subitem (22):

(22) ~~Tubidity, NTU~~ Total Suspended Solids (TSS), mg/L

~~25~~ - - ~~NA~~ - - - -
See part 7050.0222, subpart 4

Justification
This change is part of the TSS standards discussed in detail in Book 3.

32. Proposed change - Minn. R. 7050.0220 Specific Water Quality Standards by Associated Use Classes, subpart 6a., item A, subitem (4):

Escherichia (E.) coli bacteria, organisms/100 mL
See item ~~C~~ B

Justification
This change corrects an error from a previous rulemaking. Item C incorrectly cites to the discussion of the level of dissolved oxygen. The correct citation should be to item B, where the standard for E. coli is discussed.

33. Proposed change - Minn. R. 7050.0220 Specific Water Quality Standards by Associated Use Classes, subpart 7, item D:

D. Through the procedures established in this subpart, items A. through C., the following site-specific reservoir eutrophication standards apply to Lake Pepin (25-0001-00) in lieu of the water quality standards listed in this part 7050.0220 and part 7050.0222.

(1)	*Phosphorus, total*	*µg/L*	*Less than or equal to 100*
(2)	*Chlorophyll-a(seston)*	*µg/L*	*Less than or equal to 28*

Justification
The site-specific standards for Lake Pepin were developed as a part of the nutrient impairment study (Total Maximum Daily Load - TMDL) currently underway. This site-specific standard was developed using

similar scientific rigor as the proposed river eutrophication standards. In the case of Lake Pepin, the site-specific standards reflect years of work, application of model results, feedback from the Lake Pepin Science Advisory Panel, and consideration of the state of Wisconsin, which has promulgated eutrophication standards.

The site-specific standard for Lake Pepin is newly proposed through this rulemaking and the need for and reasonableness of it is extensively discussed in section 4-F of Book 2.

34. Proposed change - Minn. R. 7050.0221 Specific Water Quality Standards for Class 1 Waters of the State; Domestic Consumption, subpart 1, item B:

> *B. The Class 1 standards in this part are the United States Environmental Protection Agency primary (maximum contaminant levels) and secondary drinking water standards, as contained in Code of Federal Regulations, title 40, parts 141 and 143, as amended ~~through July 1, 2006~~. These Environmental Protection Agency drinking water standards are adopted and incorporated by reference with the exceptions in this item. The following standards are not applicable to Class 1 ground waters: the primary drinking water standards for acrylamide, epichlorohydrin, copper, and lead (treatment technique standards) and standards in the disinfectants and disinfection by-products categories. The following standards are not applicable to Class 1 surface waters: the primary drinking water standards for acrylamide, epichlorohydrin, copper, lead, and turbidity (treatment technique standards) and the standards in the disinfectants and microbiological organisms categories.*

Justification

This change deletes a date that limits the extent of the EPA standards addressed by this part. When this part was adopted, it was MPCA's intent to identify the most current list of primary and secondary drinking water standards so the date of the most current standards was included. However, the MPCA intends that the rule reference the most current drinking water standards, even if adopted by EPA after July 1, 2006. The MPCA considers this a reasonable change to ensure this rule remains current and consistent with underlying federal standards.

35. Proposed change - Minn. R. 7050.0222 Specific Water Quality Standards for Class 2 Waters of the State; Aquatic Life and Recreation, subpart 2:

Chromium +3, total						
CS	*~~g/L~~ µg/L*	*117*	*207*	*365*	*509*	*644*

Justification

This change is to correct a typographical error in the unit of measurement for the Class 2A trivalent chromium (Chromium +3) chronic standard. The Chromium +3 standard was first adopted into Minn. R. ch. 7050 in 1990 and the unit of measure was expressed as micrograms per liter (µg/L). The unit of measure for Chromium +3 was expressed as micrograms per liter in subsequent electronic and print versions of the rule from 1991 through the adoption of the rule amendments during the 2007 - 2008 Minn. R. ch. 7050 triennial review (see page 133 of the July 23, 2007 edition of the *State Register* [32 SR 133] and [32 SR 1699]). The typographical error occurred at some point during re-formatting and subsequent publication of Minn. R. ch. 7050 in 2008. Correcting this error is reasonable to ensure the correct application and implementation of this standard for the protection of Class 2A waters.

36. Proposed change - Minn. R. 7050.0222 Specific Water Quality Standards for Class 2 Waters of the State; Aquatic Life and Recreation, subpart 2:

> *Eutrophication standards for Class 2A lakes and reservoirs. ~~See definitions in part 7050.0150, subpart 4, and ecoregion map in part 7050.0467.~~*

Justification

References to the applicable definitions and ecoregion map are being deleted in this rulemaking on the advice of the Revisor of Statutes. They are unnecessary and are being removed to conform to rule drafting convention.

37. Proposed change - Minn. R. 7050.0222 Specific Water Quality Standards for Class 2 Waters of the State; Aquatic Life and Recreation, subpart2:

Eutrophication standards for Class 2A rivers and streams

North River Nutrient Region

Phosphorus, total	*µg/L*	*Less than or equal 50*
Chlorophyll-a (seston)	*µg/L*	*Less than or equal 7*
Diel dissolved oxygen flux	*mg/L*	*Less than or equal 3.0*
Biochemical oxygen demand (BOD_5)	*mg/L*	*Less than or equal 1.5*

Central River Nutrient Region

Phosphorus, total	*µg/L*	*Less than or equal 100*
Chlorophyll-a (seston)	*µg/L*	*Less than or equal 18*
Diel dissolved oxygen flux	*mg/L*	*Less than or equal 3.5*
Biochemical oxygen demand (BOD_5)	*mg/L*	*Less than or equal 2.0*

South River Nutrient Region

Phosphorus, total	*µg/L*	*Less than or equal 150*
Chlorophyll-a (seston)	*µg/L*	*Less than or equal 35*
Diel dissolved oxygen flux	*mg/L*	*Less than or equal 4.5*
Biochemical oxygen demand (BOD_5)	*mg/L*	*Less than or equal 3.0*

Additional narrative eutrophication standards for Class 2A rivers and streams are found under subpart 2b.

Justification
This change is part of the river eutrophication standards discussed in detail in Book 2.

38. Proposed change - Minn. R. 7050.0222 Specific Water Quality Standards for Class 2 Waters of the State; Aquatic Life and Recreation, subpart 2:

~~Turbidity value~~Total suspended solids (TSS) *~~NTU~~mg/L*

10 NA - - NA
TSS standards for Class 2A can be exceeded no more than ten percent of the time. This standard applies April 1 through September 30.

Justification
This change is part of the TSS standards discussed in detail in Book 3.

39. Proposed change - Minn. R. 7050.0222 Specific Water Quality Standards for Class 2 Waters of the State; Aquatic Life and Recreation, subpart 2a, item A:

A. Eutrophication standards for lakes and reservoirs are compared to summer-average data ~~averaged over the summer season (June through September~~). Exceedance of the total phosphorus and either the chlorophyll-a or Secchi disk transparency standard is required to indicate a polluted condition.

Justification
Three minor changes are proposed to item A. First is a clarification that the standards in this item apply to lakes and reservoirs. This clarification is necessary because of the addition, through this rulemaking, of eutrophication standards that apply to rivers and streams. The addition of this clarifying term does not affect the application of this rule.

Second, in this rulemaking "summer season" is being defined as the period from June 1 through September 30. Adding the term "summer-average" makes the phrase "averaged over the summer season (June through September)" unnecessary.

Third, the reference to the Secchi disk standard is being amended to more clearly identify it as the Secchi disk transparency standard. This change is being made throughout the rules to maintain consistency of terms.

40. Proposed change - Minn. R. 7050.0222 Specific Water Quality Standards for Class 2 Waters of the State; Aquatic Life and Recreation, subpart 2a, item C:

> C. *Lakes and reservoirs with a baseline quality that is poorer than the numeric eutrophication standards in subpart 2 must be considered to be in compliance with the standards if the baseline quality is the result of natural causes. The commissioner shall determine baseline quality and compliance with these standards using ~~summer-average~~ data and the procedures in part 7050.0150, subpart 5. "~~Natural causes" is defined in part 7050.0150, subpart 4, item N.~~*

Justification
The reference to "summer-average" is being deleted because not all of the requirements in part 7050.0150, subpart 5 are based on summer averages. The use of "data" is more accurate to describe the information addressed in part 7050.0150, subpart 5.

The direction to the definition of natural causes is unnecessary and is reasonably deleted by recommendation of the Revisor of Statutes in order to make the rules conform to standard rule format.

41. Proposed change - Minn. R. 7050.0222 Specific Water Quality Standards for Class 2 Waters of the State; Aquatic Life and Recreation, subpart 2a, item E:

> *E. Eutrophication standards applicable to lakes, shallow lakes, and reservoirs that lie on the border between two ecoregions, or that are in the Red River Valley (also referred to as Lake Agassiz Plains), Northern Minnesota Wetlands, or Driftless Area Ecoregions must be applied on a case-by-case basis. The commissioner shall use the standards applicable to adjacent ecoregions as a guide.*

Justification
This change is proposed to maintain consistency with how the eutrophication standards are applied under non-typical conditions. This language mirrors existing language found in part 7050.0222, subps. 3a and 4a.

42. Proposed change - Minn. R. 7050.0222 Specific Water Quality Standards for Class 2 Waters of the State; Aquatic Life and Recreation, subpart 2b:

> ***Subp. 2b. Narrative eutrophication standards for Class 2A rivers and streams.***
>
> *A. Eutrophication standards for rivers and streams are compared to summer-average data or as specified in subp. 2. Exceedance of the total phosphorus and chlorophyll-a (seston), five-day biochemical oxygen demand (BOD_5), diel dissolved oxygen flux, or pH is required to indicate a polluted condition.*
>
> *B. Rivers and streams that exceed the phosphorus levels but do not exceed the chlorophyll-a (seston), five-day biochemical oxygen demand (BOD_5), diel dissolved oxygen flux or pH levels meet the eutrophication standard.*

C. For chlorophyll-a (periphyton),the standard is exceeded if the concentration exceeds 150 milligrams/m^2 more than one year in ten.

D. It is the policy of the agency to protect all rivers and streams from the undesirable effects of cultural eutrophication. Rivers and streams with a baseline quality better than the numeric eutrophication standards in subpart 3 must be maintained in that condition through the strict application of all relevant federal, state, and local requirements governing nondegradation, the discharge of nutrients from point and nonpoint sources, including:

(1) the nondegradation requirements in parts 7050.0180 and 7050.0185;
(2) the phosphorus effluent limits for point sources, where applicable in chapter 7053;
(3) the requirements for feedlots in chapter 7020;
(4) the requirements for individual sewage treatment systems in chapter 7080;
(5) the requirements for control of stormwater in chapter 7090;
(6) county shoreland ordinances; and
(7) implementation of mandatory and voluntary best management practices to minimize point and nonpoint sources of nutrients.

E. Rivers and streams with a baseline quality that does not meet the numeric eutrophication standards in part 7050.0150, subp. 5b are in compliance with the standards if the baseline quality is the result of natural causes. The commissioner must determine baseline quality and compliance with these standards using data and the procedures in part 7050.0150, subpart 5.

Justification
These changes are part of the river eutrophication standards discussed in detail in Book 2.

43. Proposed change - Minn. R. 7050.0222 Specific Water Quality Standards for Class 2 Waters of the State; Aquatic Life and Recreation, subpart 3:

Eutrophication standards for Class 2Bd lakes, shallow lakes, and reservoirs. ~~See definitions in part 7050.0150, subpart 4, and ecoregion map in part 7050.0467.~~

Justification
The references to the applicable definitions and the ecoregion map are being deleted in this rulemaking on the advice of the Revisor of Statutes. They are unnecessary and are being removed to conform to rule drafting convention.

44. Proposed change - Minn. R. 7050.0222 Specific Water Quality Standards for Class 2 Waters of the State; Aquatic Life and Recreation, subpart 3:

Eutrophication standards for Class 2Bd rivers and streams.

North River Nutrient Region

Phosphorus, total	*µg/L*	*Less than or equal to 50*
Chlorophyll-a (seston)	*µg/L*	*Less than or equal to 7*
Diel dissolved oxygen flux	*mg/L*	*Less than or equal to 3.0*
Biochemical oxygen demand (BOD_5)	*mg/L*	*Less than or equal to 1.5*

Central River Nutrient Region

Phosphorus, total	*µg/L*	*Less than or equal to 100*
Chlorophyll-a (seston)	*µg/L*	*Less than or equal to 18*
Diel dissolved oxygen flux	*mg/L*	*Less than or equal to 3.5*
Biochemical oxygen demand (BOD_5)	*mg/L*	*Less than or equal to 2.0*

South River Nutrient Region

Phosphorus, total	*µg/L*	*Less than or equal to 150*
Chlorophyll-a (seston)	*µg/L*	*Less than or equal to 35*
Diel dissolved oxygen flux	*mg/L*	*Less than or equal to 4.5*
Biochemical oxygen demand (BOD_5)	*mg/L*	*Less than or equal to 3.0*

Additional narrative eutrophication standards for Class 2Bd rivers and streams are found under subpart 3b.

Justification

This change is part of the river eutrophication standards discussed in detail in Book 2.

45. Proposed change - Minn. R. 7050.0222 Specific Water Quality Standards for Class 2 Waters of the State; Aquatic Life and Recreation, subpart 3:

~~*Turbidity value NTU 25 NA – – NA*~~

Total suspended solids (TSS)

North River Nutrient Region	*mg/L*	*15*	*NA*	*-*	*-*	*NA*
Central River Nutrient Region	*mg/L*	*30*	*NA*	*-*	*-*	*NA*
South River Nutrient Region	*mg/L*	*65*	*NA*	*-*	*-*	*NA*
Red River mainstem - headwaters to border	*mg/L*	*100*	*NA*	*-*	*-*	*NA*

TSS standards for the Class 2Bd North, Central, and South River Nutrient Regions and the Red River mainstem may be exceeded for no more than ten percent of the time. This standard applies April 1 through September 30.

Total suspended solids (TSS), summer average Lower Mississippi River Mainstem - Pools 2 through 4	*mg/L*	*32*	*NA*	*-*	*-*	*NA*
Lower Mississippi River mainstem below Lake Pepin	*mg/L*	*30*	*NA*	*-*	*-*	*NA*

TSS standards for the Class 2Bd Lower Mississippi River may be exceeded for no more than 50 percent of the time. This standard applies June 1 through September 30.

Justification
This change is part of the TSS standards discussed in detail in Book 3.

46. Proposed change - Minn. R. 7050.0222 Specific Water Quality Standards for Class 2 Waters of the State; Aquatic Life and Recreation, subpart 3:

Zinc, total
CS µg/L 59 106 191 269 343
MS µg/L 65 117 211 297 379
FAV µg/L 130 ~~23~~ 234 421 594 758

Justification
This proposed change corrects a typographical error that occurred when the rule was re-formatted in 2008 after the MPCA's 2007 – 2008 triennial review rule amendment changes were adopted. The 2007 State Register notice of the Rule as Proposed accurately reflected the Class 2Bd FAV of 234 µg/L. (see the July 23, 2007 version of the State Register at page 113).
http://www.comm.media.state.mn.us/bookstore/stateregister/32_04.pdf

47. Proposed change - Minn. R. 7050.0222 Specific Water Quality Standards for Class 2 Waters of the State; Aquatic Life and Recreation, subpart 3a, item A:

A. Eutrophication standards applicable to lakes, shallow lakes, and reservoirs that lie on the border between two ecoregions or that are in the Red River Valley (also referred to as Lake Agassiz Plains), Northern Minnesota Wetlands, or Driftless Area ~~Ecoregions~~ Ecoregion must be applied on a case-by-case basis. The commissioner shall use the standards applicable to adjacent ecoregions as a guide.

Justification
This proposed change adds a clarifying reference to the ecoregion name for the Red River Valley.

48. Proposed change - Minn. R. 7050.0222 Specific Water Quality Standards for Class 2 Waters of the State; Aquatic Life and Recreation, subpart 3a, item B:

B. Eutrophication standards are compared to summer-average data ~~averaged over the summer season (June through September)~~. Exceedance of the total phosphorus and either the chlorophyll-a or Secchi disk transparency standard is required to indicate a polluted condition.

Justification
Two minor changes are proposed to item B. First, in this rulemaking "summer season" is being defined as the period from June 1 through September 30. Adding the term "summer-average makes the phrase "averaged over the summer season (June through September)" unnecessary.

Second, the reference to the Secchi disk standard is being amended to more clearly identify it as the Secchi disk transparency standard. This change is being made throughout the rules to maintain consistency of terms.

49. Proposed change - Minn. R. 7050.0222, Specific Water Quality Standards for Class 2 Waters of the State; Aquatic Life and Recreation subpart 3a, item D:

D. Lakes, shallow lakes, and reservoirs with a baseline quality that is poorer than the numeric eutrophication standards in subpart 3 must be considered to be in compliance with the standards if the baseline quality is the result of natural causes. The commissioner shall determine baseline quality and compliance with these standards using summer-average data and the procedures in part 7050.0150, subpart 5. ~~"Natural causes" is defined in part 7050.0150, subpart 4, item N.~~

Justification
The reference to the definition of natural causes is being deleted in this rulemaking on the advice of the Revisor of Statutes. It is unnecessary and is being removed to conform to rule drafting convention.

50. Proposed change - Minn. R. 7050.0222 Specific Water Quality Standards for Class 2 Waters of the State; Aquatic Life and Recreation, subpart 3b:

Subp. 3b. ***Narrative eutrophication standards for Class 2Bd rivers and streams.***
A. Eutrophication standards for rivers, streams and navigational pools are compared to summer average data or as specified in subpart 3. Exceedance of the total phosphorus levels and chlorophyll-a (seston), five-day biochemical oxygen demand (BOD_5), diel dissolved oxygen flux, or pH levels is required to indicate a polluted condition.

B. Rivers, streams and navigational pools that exceed the phosphorus levels but do not exceed the chlorophyll-a (seston), five-day biochemical oxygen demand (BOD_5), diel dissolved oxygen flux, or pH levels meet the eutrophication standard.

C. A polluted condition also exists when the chlorophyll-a (periphyton) concentration exceeds 150 mg/m^2 more than one year in ten.

D. It is the policy of the agency to protect all rivers, streams, and navigational pools from the undesirable effects of cultural eutrophication. Rivers, streams, and navigational pools with a baseline quality better than the numeric eutrophication standards in subpart 3 must be maintained in that condition through the strict application of all relevant federal, state, and local requirements governing nondegradation, the discharge of nutrients from point and nonpoint sources, including:

(1) the nondegradation requirements in parts 7050.0180 and 7050.0185;
(2) the phosphorus effluent limits for point sources, where applicable, in chapter 7053;
(3) the requirements for feedlots in chapter 7020;
(4) the requirements for individual sewage treatment systems in chapter7080;
(5) the requirements for control of storm water in chapter 7090;
(6) county shoreland ordinances; and
(7) implementation of mandatory and voluntary best management practices to minimize point and nonpoint sources of nutrients.

E. Rivers, streams and navigational pools with a baseline quality that does not meet the numeric eutrophication standards in part 7050.0150, subpart 5b, are in compliance with the standards if the baseline quality is the result of natural causes. The commissioner must determine baseline quality and compliance with these standards using data and the procedures in part 7050.0150, subpart 5.

Justification
These changes are part of the river eutrophication standards discussed in Book 2.

51. Proposed change - Minn. R. 7050.0222 Specific Water Quality Standards for Class 2 Waters of the State; Aquatic Life and Recreation, subpart 4:

Eutrophication standards for Class 2B lakes, shallow lakes, and reservoirs. ~~See definitions in part 7050.0150, subpart 4, and ecoregion map in part 7050.0467.~~

Justification
The references to the applicable definitions and the ecoregion map are being deleted in this rulemaking on the advice of the Revisor of Statutes. They are unnecessary and are being removed to conform to rule drafting convention.

52. Proposed change - Minn. R. 7050.0222 Specific Water Quality Standards for Class 2 Waters of the State; Aquatic Life and Recreation, subpart 4:

Eutrophication standards for Class 2B rivers and streams.

North River Nutrient Region		
Phosphorus, total	*µg/L*	*less than or equal to 50*

Chlorophyll-a (seston)	*µg/L*	*less than or equal to 7*
Diel dissolved oxygen flux	*mg/L*	*less than or equal to 3.0*
Biochemical oxygen demand (BOD_5)	*mg/L*	*less than or equal to 1.5*

Central River Nutrient Region

Phosphorus, total	*µg/L*	*less than or equal to 100*
Chlorophyll-a (seston)	*µg/L*	*less than or equal to 18*
Diel dissolved oxygen flux	*mg/L*	*less than or equal to 3.5*
Biochemical oxygen demand (BOD_5)	*mg/L*	*less than or equal to 2.0*

South River Nutrient Region

Phosphorus, total	*µg/L*	*less than or equal to 150*
Chlorophyll-a (seston)	*µg/L*	*less than or equal to 35*
Diel dissolved oxygen flux	*mg/L*	*less than or equal to 4.5*
Biochemical oxygen demand (BOD_5)	*mg/L*	*less than or equal to 3.0*

Site-specific standards for specified river reaches or other waters are:
Mississippi River Navigation Pool 1 (river miles 854.1 to 847.7 reach from Fridley to Ford Dam in St. Paul)

Phosphorus, total	*µg/L*	*less than or equal to 100*
Chlorophyll-a (seston)	*µg/L*	*less than or equal to 35*

Mississippi River Navigation Pool 2 (river miles 847.7 to 815.2 75.1 reach from Ford Dam to Hastings Dam)

Phosphorus, total	*µg/L*	*less than or equal to 125*
Chlorophyll-a (seston)	*µg/L*	*less than or equal to 35*

Mississippi River Navigation Pool 3 (river miles 815.2 to 796.9 reach from Hastings Dam to Red Wing Dam)

Phosphorus, total	*µg/L*	*less than or equal to 100*
Chlorophyll-a (seston)	*µg/L*	*less than or equal to 35*

Mississippi River Navigation Pool 4 (river miles 796.9 to 752.8 reach from Red Wing 75.10 Dam to Alma Dam). Lake Pepin occupies majority of Pool 4 and Lake Pepin site-specific standards are used for this pool.

Mississippi River Navigation Pools 5 to 8 (river miles 752.8 to 679.1 Alma Dam to Genoa Dam)

Phosphorus, total	*µg/L*	*less than or equal to 100*
Chlorophyll-a (seston)	*µg/L*	*less than or equal to 35*

Lake Pepin

Phosphorus, total	*µg/L*	*less than or equal to 100*
Chlorophyll-a (seston)	*µg/L*	*less than or equal to 28*

Crow Wing River from confluence of Long Prairie River to the mouth of the Crow Wing River at the Mississippi River

Phosphorus, total		*µg/L*	*less than or equal to 75*			
Chlorophyll-a (seston)		*µg/L*	*less than or equal to 13*			
Diel dissolved oxygen flux	*mg/L*	*less than or equal to 3.5*				
Biochemical oxygen demand (BOD_5)		*mg/L*	*less than or equal to 1.7*			

Crow River from the confluence of the North Fork of the Crow River and South Fork of the Crow River to the mouth of the Crow River at the Mississippi River						
Phosphorus, total		*µg/L*	*less than or equal to 125*			
Chlorophyll-a (seston)		*µg/L*	*less than or equal to 27*			
Diel dissolved oxygen flux	*mg/L*	*less than or equal to 4.0*				
Biochemical oxygen demand (BOD_5)		*mg/L*	*less than or equal to 2.5*			

Additional narrative eutrophication standards for Class 2B rivers and streams are found in subpart 4b.

Justification
These changes are part of the river eutrophication standards discussed in Book 2.

53. Proposed change - Minn. R. 7050.0222, subpart 4:

~~*Turbidity value*~~	~~*NTU*~~	~~*25*~~	~~*NA*~~	~~– –~~	~~*NA*~~
Total suspended solids (TSS)					
North River Nutrient Region	*mg/L*	*15*	*NA*	*– –*	*NA*
Central River Nutrient Region	*mg/L*	*30*	*NA*	*– –*	*NA*
Southern River Nutrient Region	*mg/L*	*65*	*NA*	*– –*	*NA*
Red River mainstem – headwaters to border	*mg/L*	*100*	*NA*	*– –*	*NA*
TSS standards for the Class 2B North, Central, and South River Nutrient Regions and the Red River mainstem may be exceeded for no more than ten percent of the time. This standard applies April 1 through September 30.					
Total suspended solids (TSS), summer average Lower Mississippi River mainstem - Pools 2 through 4	*mg/L*	*32*	*NA*	*– –*	*NA*
Lower Mississippi River mainstem below Lake Pepin	*mg/L*	*30*	*NA*	*– –*	*NA*
TSS standards for the Class 2B Lower Mississippi River may be exceeded for no more than 50 percent of the					

time. This standard
applies June 1 through September 30.

Justification
These changes are part of the TSS standards discussed in Book 3.

54. Proposed change - Minn. R. 7050.0222 Specific Water Quality Standards for Class 2 Waters of the State; Aquatic Life and Recreation, subpart 4a, item A:

> *A. Eutrophication standards applicable to lakes, shallow lakes, and reservoirs that lie on the border between two ecoregions or that are in the Red River Valley (also referred to as Lake Agassiz Plains), Northern Minnesota Wetlands, or Driftless Area ~~Ecoregions~~ Ecoregion must be applied on a case-by-case basis. The commissioner shall use the standards applicable to adjacent ecoregions as a guide.*

Justification
The proposed change adds a clarifying reference to the ecoregion name for the Red River Valley.

55. Proposed change - Minn. R. 7050.0222 Specific Water Quality Standards for Class 2 Waters of the State; Aquatic Life and Recreation, subpart 4a, item B:

> *B. Eutrophication standards are compared to summer-average data ~~averaged over the summer season (June through September)~~. Exceedance of the total phosphorus and either the chlorophyll-a or Secchi disk transparency standard is required to indicate a polluted condition.*

Justification
Two minor changes are proposed to item B. First, in this rulemaking "summer season" is being defined as the period from June 1 through September 30. Adding the term "summer-average makes the phrase "averaged over the summer season (June through September)" unnecessary.

Second, the reference to the Secchi disk standard is being amended to more clearly identify it as the Secchi disk transparency standard. This change is being made throughout the rules to maintain consistency of terms.

56. Proposed change - Minn. R. 7050.0222 Specific Water Quality Standards for Class 2 Waters of the State; Aquatic Life and Recreation, subpart 4a, item D:

> *D. Lakes, shallow lakes, and reservoirs with a baseline quality that is poorer than the numeric eutrophication standards in subpart 4 must be considered to be in compliance with the standards if the baseline quality is the result of natural causes. The commissioner shall determine baseline quality and compliance with these standards using ~~summer-average~~ data and the procedures in part 7050.0150, subpart 5. ~~"Natural causes" is defined in part 7050.0150, subpart 4, item N.~~*

Justification

The reference to "summer-average" data is being deleted because not all of the requirements in part 7050.0150, subpart 5 are based on summer averages. The use of "data" is more accurate to describe the information addressed in 7050.0150, subpart 5.

The reference to the definition of natural causes is being deleted in this rulemaking on the advice of the Revisor of Statutes. It is unnecessary and is being removed to conform to rule drafting convention.

57. Proposed change - Minn. R. 7050.0222 Specific Water Quality Standards for Class 2 Waters of the State; Aquatic Life and Recreation, subpart 4b:

Subp. 4b. ***Narrative eutrophication standards for Class 2B rivers and streams.***
A. Eutrophication standards for rivers and streams are compared to summer-average data or as specified in subpart 4. Exceedance of the total phosphorus levels and chlorophyll-a (seston), five-day biochemical oxygen demand (BOD_5), diel dissolved oxygen flux, or pH levels is required to indicate a polluted condition.
B. Rivers and streams that exceed the phosphorus levels but do not exceed the chlorophyll-a (seston), five-day biochemical oxygen demand (BOD_5), diel dissolved oxygen flux, or pH levels meet the eutrophication standard.
C. A polluted condition also exists when the chlorophyll-a (periphyton) concentration exceeds 150 mg/m^2 more than one year in ten.
D. It is the policy of the agency to protect all rivers, streams, and navigational pools from the undesirable effects of cultural eutrophication. Rivers, streams, and navigational pools with a baseline quality better than the numeric eutrophication standards in subpart 4 must be maintained in that condition through the strict application of all relevant federal, state, and local requirements governing nondegradation, the discharge of nutrients from point and nonpoint sources, including:

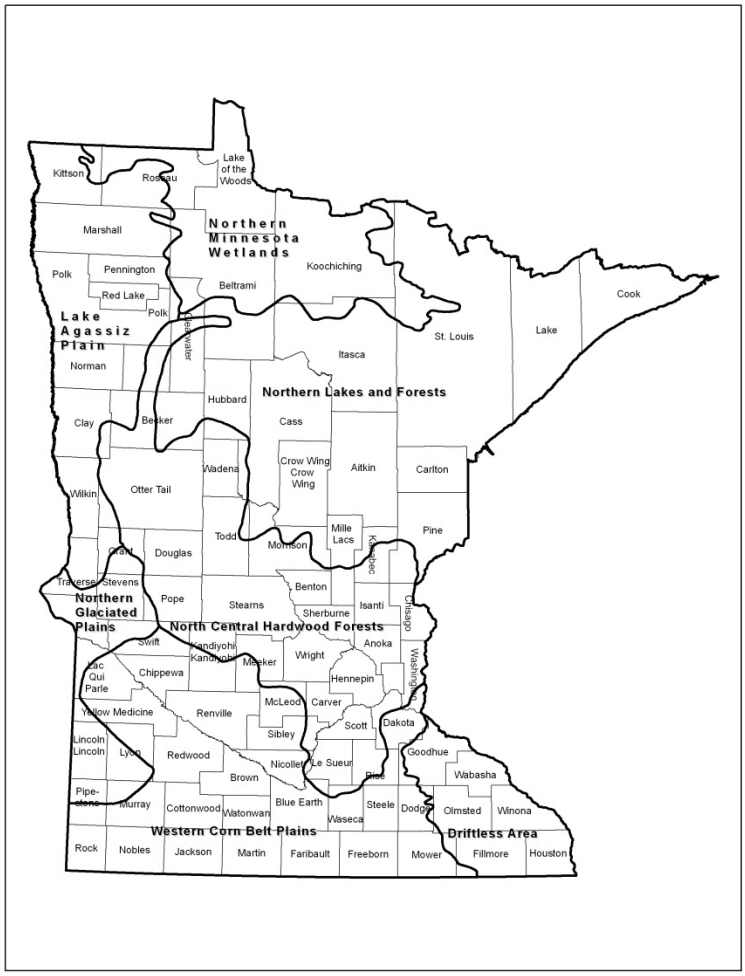
(1) the nondegradation requirements in parts 7050.0180 and 7050.0185;
(2) the phosphorus effluent limits for point sources, where applicable in chapter 7053;
(3) the requirements for feedlots in chapter 7020;
(4) the requirements for individual sewage treatment systems in chapter 7080;
(5) the requirements for control of storm water in chapter 7090;
(6) county shoreland ordinances; and
(7) implementation of mandatory and voluntary best management practices to minimize point and nonpoint sources of nutrients.

E. Rivers, streams, and navigational pools with a baseline quality that does not meet the numeric eutrophication standards in subpart 4 are in compliance with the standards if the baseline quality is the result of natural causes. The commissioner must determine baseline quality and compliance with these standards using data and the procedures in part 7050.0150, subpart 5.

Justification
This change is part of the river eutrophication standards discussed in detail in Book 2.

58. Proposed change - Minn. R. 7050.0467 and 7050.0468:

The map of Minnesota Ecoregions found at Minn. R. 7050.0467 is repealed and a revised map is being added at part 7050.0468.



Justification

This map is being revised and renumbered as Minn. R. 7050.0468. This change is part of the river eutrophication standards discussed in detail in Book 2.

Chapter 7053: General Requirements for Discharges to Waters of the State

59. Proposed change - Minn. R. 7053.0205, subpart 7:

Subp. 7. Minimum stream flow.

A. Except as provided in items B and C, discharges of sewage, industrial waste, or other wastes must be controlled so that the water quality standards are maintained at all

stream flows that are equal to or greater than the $7Q_{10}$ for the critical month or months~~, except for the purpose of setting ammonia effluent limits~~.

B. Discharges of ammonia in sewage, industrial waste, or other wastes must be controlled so that the ammonia water quality standard is maintained at all stream flows that are equal to or exceeded by the $30Q_{10}$ for the critical month or months.

C. Discharges of total phosphorus in sewage, industrial waste, or other wastes must be controlled so that the eutrophication water quality standard is maintained for the long-term summer concentration of total phosphorus, when averaged over all flows. When setting the effluent limit for total phosphorus, the commissioner shall consider the discharger's efforts to control phosphorus as well as reductions from other sources, including nonpoint and runoff from permitted municipal storm water discharges.

~~B~~ D. Allowance must not be made in the design of treatment works for low stream flow augmentation unless the flow augmentation of minimum flow is dependable and controlled under applicable laws or regulations.

Justification

The changes to this subpart relate to the river eutrophication standards discussed in Book 2. A specific discussion of the changes to address phosphorus discharges during minimum stream flow is provided in Section 4, item J of Book 2.

60. Proposed change - Minn. R. 7053.0205, subpart 9a:

Subp. 9a. Water quality standard-based TSS effluent limits.

A. When the agency establishes effluent limits to meet a total suspended solids (TSS) water quality standard and the water quality standard of the receiving water is:

(1) less than 30 mg/L and a continuous discharger is involved; or

(2) less than 45 mg/L and either an aerated pond or a controlled discharger is involved,

the agency shall establish an appropriate water quality-based effluent limit (WQBEL) considering the discharger's nonvolatile suspended solids (NVSS) concentration.

B. The WQBEL shall be determined by considering all of the individual suspended solids data points collected during the period for which the standard is designed to be protective. WQBEL calculations shall also consider the flow and TSS concentrations observed in the receiving water during the corresponding time period. WQBEL is expressed as long-term, 90th percentile values (for example, April 1 to September 30) to ensure protection during the time period the standard is designed to protect.

Justification

The changes to this subpart relate to the TSS standards discussed in Book 3. A specific discussion of these changes to address TSS effluent limits is provided in Section 3, item G of Book 3.