Minnesota

State Register

(Published every Monday (Tuesday when Monday is a holiday.)

**Proposed, Adopted, Emergency, Expedited, Withdrawn, Vetoed Rules;
Executive Orders; Appointments; Commissioners' Orders; Revenue Notices;
Official Notices; State Grants & Loans; State Contracts;
Non-State Public Bids, Contracts &Grants**

Monday 18 November 2013

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Minnesota State Register

Judicial Notice Shall Be Taken of Material Published in the *Minnesota State Register*

The *Minnesota State Register* is the official publication of the State of Minnesota's Executive Branch of government, published weekly to fulfill the legislative mandate set forth in *Minnesota Statutes*, Chapter 14, and *Minnesota Rules*, Chapter 1400. It contains:

- **Proposed Rules** • **Adopted Rules** • **Exempt Rules** • **Expedited Rules** • **Withdrawn Rules**
- **Vetoed Rules** • **Executive Orders of the Governor** • **Appointments** • **Proclamations**
- **Commissioners' Orders** • **Revenue Notices** • **Official Notices** • **State Grants and Loans**
- **Contracts for Professional, Technical and Consulting Services** • **Non-State Public Bids, Contracts and Grants**

Printing Schedule and Submission Deadlines

Vol. 38 Issue Number	PUBLISH DATE (**BOLDFACE** shows altered publish date)	Deadline for: Emergency Rules, Executive and Commissioner's Orders, Revenue and Official Notices, State Grants, Professional-Technical-Consulting Contracts, Non-State Bids and Public Contracts	Deadline for Proposed, Adopted and Exempt RULES
# 22	Monday 25 November	Noon Tuesday 19 November	Noon Wednesday 13 November
# 23	Monday 2 December	Noon Tuesday 26 November	Noon Wednesday 20 November
# 24	Monday 9 December	Noon Tuesday 3 December	Noon Wednesday 27 November
# 25	Monday 16 December	Noon Tuesday 10 December	Noon Wednesday 4 December

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Website: *www.senate.mn*

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For additional grants go to the Office of Grants Management (OGM) at: *http://www.grants.state.mn.us/public/*

Minnesota Rules: Amendments and Additions

NOTICE: How to Follow State Agency Rulemaking in the State Register

The *State Register* is the official source, and only complete listing, for all state agency rulemaking in its various stages. State agencies are required to publish notice of their rulemaking action in the *State Register*. Published every Monday, the *State Register* makes it easy to follow and participate in the important rulemaking process. Approximately 80 state agencies have the authority to issue rules. Each agency is assigned specific **Minnesota Rule** chapter numbers. Every odd-numbered year the **Minnesota Rules** are published. Supplements are published to update this set of rules. Generally speaking, proposed and adopted exempt rules do not appear in this set because of their short-term nature, but are published in the *State Register*.

An agency must first solicit **Comments on Planned Rules** or **Comments on Planned Rule Amendments** from the public on the subject matter of a possible rulemaking proposal under active consideration within the agency (*Minnesota Statutes* §§ 14.101). It does this by publishing a notice in the *State Register* at least 60 days before publication of a notice to adopt or a notice of hearing, or within 60 days of the effective date of any new statutory grant of required rulemaking.

When rules are first drafted, state agencies publish them as **Proposed Rules,** along with a notice of hearing, or a notice of intent to adopt rules without a hearing in the case of noncontroversial rules. This notice asks for comment on the rules as proposed. Proposed emergency rules, and withdrawn proposed rules, are also published in the *State Register*. After proposed rules have gone through the comment period, and have been rewritten into their final form, they again appear in the *State Register* as **Adopted Rules.** These final adopted rules are not printed in their entirety, but only the changes made since their publication as Proposed Rules. To see the full rule, as adopted and in effect, a person simply needs two issues of the *State Register*, the issue the rule appeared in as proposed, and later as adopted.

The *State Register* features partial and cumulative listings of rules in this section on the following schedule: issues #1-13 inclusive; issues #14-25 inclusive (issue #26 cumulative for issues #1-26); issues #27-38 inclusive (issue #39, cumulative for issues #1-39); issues #40-52 inclusive, with final index (#1-52, or 53 in some years). An annual subject matter index for rules was separately printed usually in August, but starting with Volume 19 now appears in the final issue of each volume. For copies or subscriptions to the *State Register,* contact Minnesota's Bookstore, 660 Olive Street (one block east of I-35E and one block north of University Ave), St. Paul, MN 55155, phone: (612) 297-3000, or toll-free 1-800-657-3757. TTY relay service phone number: (800) 627-3529.

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Corrections Department

Education Department

Health Department

Labor and Industry Department (DLI)

Occupational SDafety and Health Division

Natural Resources Department (DNR)

Pollution Control Agency (MPCA)

Public Safety Department (DPS)

Gambling Control Board

Human Services Department

Proposed Rules

Comments on Planned Rules or Rule Amendments. An agency must first solicit Comments on Planned Rules or Comments on Planned Rule Amendments from the public on the subject matter of a possible rulemaking proposal under active consideration within the agency (*Minnesota Statutes* §§ 14.101). It does this by publishing a notice in the *State Register* at least 60 days before publication of a notice to adopt or a notice of hearing, and within 60 days of the effective date of any new statutory grant of required rulemaking.

Rules to be Adopted After a Hearing. After receiving comments and deciding to hold a public hearing on the rule, an agency drafts its rule. It then publishes its rules with a notice of hearing. All persons wishing to make a statement must register at the hearing. Anyone who wishes to submit written comments may do so at the hearing, or within five working days of the close of the hearing. Administrative law judges may, during the hearing, extend the period for receiving comments up to 20 calendar days. For five business days after the submission period the agency and interested persons may respond to any new information submitted during the written submission period and the record then is closed. The administrative law judge prepares a report within 30 days, stating findings of fact, conclusions and recommendations. After receiving the report, the agency decides whether to adopt, withdraw or modify the proposed rule based on consideration of the comments made during the rule hearing procedure and the report of the administrative law judge. The agency must wait five days after receiving the report before taking any action.

Rules to be Adopted Without a Hearing. Pursuant to *Minnesota Statutes* § 14.22, an agency may propose to adopt, amend, suspend or repeal rules without first holding a public hearing. An agency must first solicit **Comments on Planned Rules** or **Comments on Planned Rule Amendments** from the public. The agency then publishes a notice of intent to adopt rules without a public hearing, together with the proposed rules, in the *State Register*. If, during the 30-day comment period, 25 or more persons submit to the agency a written request for a hearing of the proposed rules, the agency must proceed under the provisions of §§ 14.14-14.20, which state that if an agency decides to hold a public hearing, it must publish a notice of intent in the *State Register*.

KEY: Proposed Rules - Underlining indicates additions to existing rule language. ~~Strikeouts~~ indicate deletions from existing rule language. If a proposed rule is totally new, it is designated "all new material." **Adopted Rules** - Underlining indicates additions to proposed rule language. ~~Strikeout~~ indicates deletions from proposed rule language.

Minnesota Department of Labor and Industry (DLI)

Proposed Amendment to Rules Governing State Building Code Administration, *Minnesota Rules*, chapter 1300 and Minnesota Provisions of the State Building Code, Minnesota Rules, parts 1303.1600 and 1303.2200

DUAL NOTICE: Notice of Intent to Adopt Rules Without a Public Hearing Unless 25 or More Persons Request a Hearing, and Notice of Hearing if 25 or More Requests for Hearing Are Received; Revisor's ID Number R-04140

Introduction. The Department of Labor and Industry intends to adopt rules without a public hearing following the procedures in the rules of the Office of Administrative Hearings, *Minnesota Rules*, parts 1400.2300 to 1400.2310, and the Administrative Procedure Act, *Minnesota Statutes*, sections 14.22 to 14.28. However, if 25 or more persons submit a written request for a hearing on the rules by 4:30 p.m. on December 23, 2013, the Department will hold a public hearing in the Minnesota Room, Department of Labor and Industry, 443 Lafayette Road North, St. Paul, Minnesota 55155, starting at 9:00 a.m. on Friday, January 10, 2014. To find out whether the Department will adopt the rules without a hearing or if it will hold the hearing, you should contact the agency contact person after December 23, 2013 and before January 10, 2014.

Agency Contact Person. Submit any comments or questions on the rules or written requests for a public hearing to the agency contact person. The agency contact person is: Colleen Clayton at the Department of Labor and Industry, 443 Lafayette Road North, St. Paul, Minnesota 55155, **telephone:** (651) 284-5867, **fax:** (651) 284-5749, and **e-mail:** *colleen.clayton@state.mn.us*.

Subject of Rules and Statutory Authority.

***Minnesota Rules*, chapter 1300.** This rule chapter provides code administration requirements for all the rule chapters that make up the Minnesota State Building Code. The code administration chapters in the various model codes that are incorporated by reference in Minnesota are not adopted and users are instead directed to use this rule chapter for purposes of code administration. The modifications to the proposed rules will provide local building officials with some updated code administration requirements and will provide clearer requirements where there are differences in each administrative chapter of the model codes.

The proposed rules contain modifications to rule parts pertaining to the following areas of code administration: purpose and application of the code; chapters that make up the Minnesota State Building Code; optional chapters in the Minnesota State Building Code; definitions, duties and powers of the building official; building permits; construction documents; building permit fees, stop work orders; unsafe buildings or structures; temporary structures and uses, building inspections; plumbing administration requirements; certificates of occupancy; required building maintenance; and final interpretive authority for the Board of Appeals.

Minnesota Rules, parts 1303.1600 and 1303.2200. This rule chapter provides construction code requirements that are specific to Minnesota. The requirements in this chapter apply to the entire Minnesota State Building Code. The proposed rules contain modifications to the requirements for soil under slab on grade construction for buildings and the requirements for simplified design wind pressures.

The statutory authority to adopt the rules is located in *Minnesota Statutes*, sections 326B.02, subdivision 5, 326B.101, and 326B.106, subdivision 1. A free copy of the proposed Rules and Statement of Need and Reasonableness ("SONAR") is available upon request from the agency contact person listed above. The proposed Rules can also be viewed on the Department's website at *http://www.dli.mn.gov/PDF/docket/1300notice.pdf*.

The SONAR can be viewed on the Department's website at *http://www.dli.mn.gov/PDF/docket/1300sonar.pdf*.

Comments. You have until 4:30 p.m. on Monday, December 23, 2013, to submit written comment in support of or in opposition to the proposed rules or any part or subpart of the rules. Your comment must be in writing and received by the agency contact person by the due date. Comment is encouraged. Your comments should identify the portion of the proposed rules addressed, the reason for the comment, and any change proposed. You are encouraged to propose any change that you desire. You must also make any comments about the legality of the proposed rules during this comment period.

Request for a Hearing. In addition to submitting comments, you may also request that the Department hold a hearing on the rules. You must make your request for a public hearing in writing, which the agency contact person must receive by 4:30 p.m. on Monday, December 23, 2013. You must include your name and address in your written request. In addition, you must identify the portion of the proposed rules that you object to or state that you oppose the entire set of rules. Any request that does not comply with these requirements is not valid and the agency cannot count it when determining whether it must hold a public hearing. You are also encouraged to state the reason for the request and any changes you want made to the proposed rules.

Withdrawal of Requests. If 25 or more persons submit a valid written request for a hearing, the Department will hold a public hearing unless a sufficient number of persons withdraw their requests in writing. If enough requests for hearing are withdrawn to reduce the number below 25, the agency must give written notice of this to all persons who requested a hearing, explain the actions the agency took to affect the withdrawal, and ask for written comments on this action. If a public hearing is required, the agency will follow the procedures in *Minnesota Statutes*, sections 14.131 to 14.20.

Alternative Format/Accommodation. Upon request, this information can be made available in an alternative format, such as large print, braille, or audio. To make such a request or if you need an accommodation to make this hearing accessible, please contact the agency contact person at the address or telephone number listed above.

Modifications. The Department may modify the proposed rules, either as a result of public comment or as a result of the rule hearing process. It must support modifications by data and views submitted to the agency or presented at the hearing. The adopted rules may not be substantially different than these proposed rules unless the Department follows the procedure under *Minnesota Rules*, part 1400.2110. If the proposed rules affect you in any way, the Department encourages you to participate in the rulemaking process.

Cancellation of Hearing. The Department will cancel the hearing scheduled for January 10, 2014, if the agency does not receive requests for a hearing from 25 or more persons. If you requested a public hearing, the agency will notify you before the scheduled hearing whether the hearing will be held. You may also call the agency contact person at (651) 284-5867 after December 23, 2013 to find out whether the hearing will be held.

Notice of Hearing. If 25 or more persons submit valid, written requests for a public hearing on the proposed rules, the Department will hold a hearing following the procedures in *Minnesota Statutes*, sections 14.131 to 14.20. The Department will hold the hearing on the date and at the time and place listed above. The hearing will continue until all interested persons have been heard. Administrative Law Judge Barbara L. Neilson is assigned to conduct the hearing. Judge Neilson can be reached at the Office of Administrative Hearings, 600 North Robert Street, P.O. Box 64620, Saint Paul, Minnesota 55164-0620, **telephone:** (651) 361-7845, and **fax:** (651) 361-7936.

Hearing Procedure. If the Department holds a hearing, you and all interested or affected persons, including representatives of associations or other interested groups, will have an opportunity to participate. You may present your views either orally at the hearing or in writing at any time before the hearing record closes. All evidence presented should relate to the proposed rules. You may also submit written material to the Administrative Law Judge to be recorded in the hearing record for five working days after the public hearing ends.

At the hearing, the Administrative Law Judge may order that this five-day comment period is extended for a longer period of time, but not more than 20 calendar days. Following the comment period, there is a five-working-day rebuttal period when the agency and any interested person may respond in writing to any new information submitted. No one may submit additional evidence during the five-day rebuttal period. The Office of Administrative Hearings must receive all comments and responses submitted to the Administrative Law Judge no later than 4:30 p.m. on the due date. All comments or responses received will be available for review at the Office of Administrative Hearings. This rule hearing procedure is governed by *Minnesota Rules*, parts 1400.2000 to 1400.2240, and *Minnesota Statutes*, sections 14.131 to 14.20. You may direct questions about the procedure to the Administrative Law Judge.

The agency requests that any person submitting written views or data to the Administrative Law Judge before the hearing or during the comment or rebuttal period also submit a copy of the written views or data to the agency contact person at the address stated above.

Statement of Need and Reasonableness. The Statement of Need and Reasonableness ("SONAR") summarizes the justification for the proposed rules, including a description of who will be affected by the proposed rules and an estimate of the probable cost of the proposed rules. It is now available from the agency contact person. You may review or obtain copies of the SONAR for the cost of reproduction by contacting the agency contact person or view the document on the Department's website at

http://www.dli.mn.gov/PDF/docket/1300sonar.pdf

Lobbyist Registration. *Minnesota Statutes*, chapter 10A, requires each lobbyist to register with the State Campaign Finance and Public Disclosure Board. Ask any questions about this requirement of the Campaign Finance and Public Disclosure Board at: Suite #190, Centennial Building, 658 Cedar Street, St. Paul, Minnesota 55155, telephone: (651) 296-5148 or 1-800-657-3889.

Adoption Procedure if No Hearing. If no hearing is required, the agency may adopt the rules after the end of the comment period. The Department will submit the rules and supporting documents to the Office of Administrative Hearings for review for legality. You may ask to be notified of the date the rules are submitted to the office. If you want to receive notice of this, receive a copy of the adopted rules, or to register with the agency to receive notice of future rule proceedings, then please submit your request to the agency contact person listed above.

Adoption Procedure After a Hearing. If a hearing is held, after the close of the hearing record, the Administrative Law Judge will issue a report on the proposed rules. You may ask to be notified of the date that the Administrative Law Judge's report will become available, and can make this request at the hearing or in writing to the Administrative Law Judge. You may also ask to be notified of the date that the agency adopts the rules and the rules are filed with the Secretary of State by requesting this at the hearing or by writing to the agency contact person stated above.

Order. I order that the rulemaking hearing be held at the date, time, and location listed above.

Dated: 8 November 2013

Ken B. Peterson, Commissioner
Department of Labor and Industry

Minnesota Pollution Control Agency (MPCA)

Division of Environmental Analysis and Outcomes

Proposed Permanent Rules Relating to Water Quality

NOTICE OF HEARING

Proposed Amendment of Water Quality Standards, *Minnesota Rules* pts. 7050.0150, 7050.0220, 7050.0221, 7050.0222, 7050.0467, 7050.0468 and 7053.0205 relating to Eutrophication of Rivers, Streams, Mississippi River Pools and Lake Pepin, the Revision of the Turbidity Standard to a Standard of Total Suspended Solids and Minor Clarifying Changes; Revisor's ID Number 4104.

Subject of Rules. The proposed rules establish new water quality standards for eutrophication in rivers, streams, Mississippi River pools and Lake Pepin and revise the existing water quality standard for turbidity to a standard of Total Suspended Solids (TSS). The amendments also make a number of minor, supporting changes and clarifications to existing rules.

Minnesota adopted eutrophication standards for lakes and reservoirs in 2008. The proposed amendments provide similar standards for rivers, streams, Mississippi River pools and Lake Pepin. The proposed standards establish numeric limits for phosphorus and for "response variables", such as chlorophyll-a, dissolved Oxygen, and five-day biochemical Oxygen demand. As proposed, a polluted condition will exist when the phosphorus standard and any one of the response variable standards are exceeded. The proposed numeric limits are specific to use designations and apply to river nutrient regions and to certain water bodies.

The proposed amendments replace the current water quality parameter "turbidity" with a standard of Total Suspended Solids (TSS), and provide a regional, seasonal, more accurate numeric standard for protecting beneficial uses.

In the course of developing the technical amendments addressing river eutrophication and TSS, the Minnesota Pollution Control Agency (MPCA) found several errors, obsolete information and inconsistent uses of terms in the existing rules. The proposed amendments make the necessary corrections.

Public Hearing. The MPCA intends to adopt rules after a public hearing following the procedures in the rules of the Office of Administrative Hearings (OAH), *Minnesota Rules*, parts 1400.2200 to 1400.2240, and the Administrative Procedure Act, *Minnesota Statutes*, sections 14.131 to 14.20. The MPCA will hold a public hearing on the above-named rules at the MPCA's offices at the following locations starting at 9:00 a.m. on January 8, 2014, and again starting at 6:00 p.m. on January 8, 2014.

The hearing of record will occur at the MPCA's office in Saint Paul, Minnesota. Video conference links at each of the locations listed will be provided for the convenience of the public. The hearing will not be rescheduled in the event that one or more of the video conference links fail.

- MPCA - Saint Paul: 520 Lafayette Road North, Saint Paul, Minnesota 55155
- MPCA - Duluth: 525 Lake Avenue South, Suite 400, Duluth, Minnesota 55802
- MPCA - Brainerd: 7678 College Road-Suite 105, Baxter, Minnesota 56425
- MPCA - Marshall: 504 Fairgrounds Road, Suite 200, Marshall, Minnesota 56258
- MPCA - Rochester: 18 Wood Lake Drive SE, Rochester, Minnesota 55904
- MPCA - Detroit Lakes: 714 Lake Avenue, Suite 220, Detroit Lakes, Minnesota 56501

Directions to these offices can be found at *http://www.pca.state.mn.us/iryp3e4*.

Additional days of hearing may be scheduled if necessary. All interested or affected persons will have an opportunity to participate by submitting either oral or written data, statements, or arguments. Statements may be submitted without appearing at the hearing. Refer to **Public Comment** section below for information on submitting statements.

The MPCA will be able to display any written documents presented at the hearing at its Saint Paul office to all video conference sites.

If you plan to use a document during the hearing, you are encouraged to file a copy of the document with the Administrative Law Judge and the MPCA contact person prior to the hearing.

Administrative Law Judge. Administrative Law Judge James LaFave will conduct the hearing. Judge LaFave can be reached at the Office of Administrative Hearings, 600 North Robert Street, P.O. Box 64620, Saint Paul, Minnesota 55164-0620, **telephone:** (651) 361-7875 and **fax:** (651) 361-7936. The rule hearing procedure is governed by *Minnesota Statutes*, sections 14.131 to 14.20, and by the rules of the OAH, *Minnesota Rules*, parts 1400.2000 to 1400.2240. You should direct questions about the rule hearing procedure to Judge LaFave.

MPCA Contact Person. The MPCA contact person is: Carol Nankivel, MPCA, 520 Lafayette Road North, Saint Paul, Minnesota 55155-4194; **telephone:** (651) 757-2597, 1-800-657-3864, **e-mail:** *minnrule7050.pca@state.mn.us*. **TTY** users may call the MPCA at (651) 282-5332.

Availability of Rules and Statement of Need and Reasonableness (SONAR). The proposed rules will published in the *State Register* on November 18, 2013. The SONAR contains a summary of the justification for the proposed rules, including a description of who will be affected and an estimate of the probable cost of the proposed rules. The proposed rules and SONAR can be viewed at the MPCA's website at *http://www.pca.state.mn.us/6paqdkc*. A copy of the rule is available upon request from the MPCA contact person identified above.

Public Comment. All interested or affected persons, including representatives of associations and other interested groups, will have an opportunity to participate in the hearing, or you may submit written comments to the Judge at the address above or to *rulecomments@state.mn.us*. If the proposed rules affect you in any way, the MPCA encourages you to participate.

All evidence you present should relate to the proposed rules. You may present your views either orally at the hearing or in writing at any time before the close of the hearing record. You may also submit written material to the Judge to be recorded in the hearing record for five working days after the public hearing ends. At the hearing the Judge may order this five-day comment period extended for a longer period but for no more than 20 calendar days. Following the comment period, there is a five-working-day rebuttal period during which the MPCA and any interested person may respond in writing to any new information submitted. No one may submit additional evidence during the five-day rebuttal period. All comments and responses must be submitted to the Judge no later than 4:30 p.m. on the due date. All comments or responses received are public and will be available for review at the OAH.

The MPCA requests that if you submit written views or data to the Judge before the hearing or during the comment or rebuttal period you also submit a copy of the written views or data to the MPCA contact person identified above.

Statutory Authority. The statutory authority for the proposed rules is *Minnesota Statutes* §115.03, subds. 1 and 5.

Alternative Format/Accommodation. Upon request, this information can be made available in an alternative format, such as large print, braille, or audio. To make such a request or if you need an accommodation to make this hearing accessible, please contact the MPCA contact person identified above.

Modifications. The MPCA may modify the proposed rules as a result of the rule hearing process. The MPCA must support modifications by data and views presented during the rule hearing process. The adopted rules may not be substantially different than these proposed rules, unless the MPCA follows the procedure under *Minnesota Rules*, part 1400.2110.

Adoption Procedure after the Hearing and Notice of Actions. After the close of the hearing record, the Judge will issue a report on the proposed rules. You may ask to be notified of the date when the Judge's report will become available, and can make this request at the hearing or in writing to the Judge. You may also ask to be notified of the date that the MPCA adopts the rules and files them with the Secretary of State, or ask to register with the MPCA to receive notice of future rule proceedings. You may make these requests at the hearing or in writing to the MPCA contact person identified above.

Lobbyist Registration. *Minnesota Statutes*, chapter 10A, requires each lobbyist to register with the State Campaign Finance and Public Disclosure Board. You should direct questions regarding this requirement to the Campaign Finance and Public Disclosure Board at: Suite #190, Centennial Building, 658 Cedar Street, Saint Paul, Minnesota 55155, telephone: (651) 296-5148 or 1-800-657-3889.

Order. I order that the rulemaking hearing be held at the dates, times, and locations listed above.

Dated: 25 October 2013

John Linc Stine, Commissioner
Minnesota Pollution Control Agency

7050.0150 DETERMINATION OF WATER QUALITY, BIOLOGICAL AND PHYSICAL CONDITIONS, AND COMPLIANCE WITH STANDARDS.

[For text of subps 1 to 3, see M.R.]

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

[For text of items A and B, see M.R.]

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.

~~C~~ D. "Chlorophyll-a" means a pigment in green plants including algae. The concentration of chlorophyll-a, expressed in weight per unit volume of water, is a measurement of the abundance of algae.

E. "Diel flux" means the daily change in a constituent, such as dissolved oxygen or pH, when 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.

~~D~~ 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.

~~E~~ 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.

~~F~~ H. "Fish and other biota" and "lower aquatic biota" mean the aquatic community including, but not limited to, game and nongame fish, minnows and other small fish, mollusks, insects, crustaceans and other invertebrates, submerged or emergent rooted vegetation, suspended or floating algae, substrate-attached algae, and microscopic organisms. "Other biota" includes aquatic or semiaquatic organisms that depend on aquatic systems for food or habitat such as amphibians and certain wildlife species.

~~G~~ I. "Hydraulic residence time" means the time water resides in a basin or, alternately, the time it would take to fill the basin if it were empty.

~~H~~ J. "Impaired water" or "impaired condition" means a water body that does not meet applicable water quality standards or fully support applicable beneficial uses, due in whole or in part to water pollution from point or nonpoint sources, or any combination thereof.

~~I~~ K. "Index of biological integrity" or "IBI" means an index developed by measuring attributes of an aquatic community that change in quantifiable and predictable ways in response to human disturbance, representing the health of that community.

~~J~~ L. "Lake" means an enclosed basin filled or partially filled with standing fresh water with a maximum depth greater than 15 feet. Lakes may have no inlet or outlet, an inlet or outlet, or both an inlet and outlet.

~~K~~ M. "Lake morphometry" means the physical characteristics of the lake basin that are reasonably necessary to determine the shape of a lake, such as maximum length and width, maximum and mean depth, area, volume, and shoreline configuration.

~~L~~ N. "Mixing status" means the frequency of complete mixing of the lake water from surface to bottom, which is determined by whether temperature gradients are established and maintained in the water column during the summer season.

~~M~~ O. "Measurable increase" or "measurable impact" means a change in trophic status that can be discerned above the normal variability in water quality data using a weight of evidence approach. The change in trophic status does not require a demonstration of statistical significance to be considered measurable. Mathematical models may be used as a tool in the data analysis to help predict changes in trophic status.

~~N~~ P. "Natural causes" means the multiplicity of factors that determine the physical, chemical, or biological conditions that would exist in a water body in the absence of measurable impacts from human activity or influence.

~~O~~ Q. "Normal fishery" and "normally present" mean the fishery and other aquatic biota expected to be present in the water body in the absence of pollution of the water, consistent with any variability due to natural hydrological, substrate, habitat, or other physical and chemical characteristics. Expected presence is based on comparing the aquatic community in the water body of interest to the aquatic community in representative reference water bodies.

~~P~~ R. "Nuisance algae bloom" means an 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.

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.

~~Q~~ T. "Readily available and reliable data and information" means chemical, biological, and physical data and information determined by the commissioner to meet the quality assurance and quality control requirements in subpart 8, that are not more than ten years old from the time they are used for the assessment. A subset of data in the ten-year period, or data more than ten years old can be used if credible scientific evidence shows that these data are representative of current conditions.

~~R~~ U. "Reference water body" means a water body least impacted by point or nonpoint sources of pollution that is representative of water bodies in the same ecoregion or watershed. Reference water bodies are used as a base for comparing the quality of similar water bodies in the same ecoregion or watershed.

~~S~~ 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~~.

W. "River nutrient region" 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.

~~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 upon raising it after it has been lowered beyond visibility. The Secchi disk measures water clarity and is usually used in lakes.~~

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.

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

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, one meter in length and 1-3/4 inch in diameter, with a mini-Secchi disk on a string. To measure water transparency, 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."

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

~~U~~ 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.

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

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

~~W~~ 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 usually 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 a transparency measurement.

~~X~~ FF. "Trophic status or condition" means the productivity of a lake as measured by the phosphorus content, algae abundance, and depth of light penetration.

~~Y~~ GG. "Water body" means a lake, reservoir, wetland, or a geographically defined portion of a river or stream.

Subp. 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 the 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 in rivers and streams, throughout the growing season~~; ~~and~~

D. representative summer-average concentrations of five-day biochemical oxygen demand 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 beds of rivers and streams during the summer season; and

~~D~~ H. any other scientifically objective, credible, and supportable factor.

Subp. 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 overenrichment ~~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~~ .

Subp. 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 under subpart 5, item A, and at least one factor showing impaired conditions resulting from nutrient overenrichment under subpart 5, item B, D, E, F, or H; or

B. elevated levels of chlorophyll-a (periphyton) under subpart 5, item G.

Subp. 5c. **Impaired condition; navigational pools.** For navigational pools, a finding of 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 overenrichment under subpart 5, item B.

[For text of subps 6 to 8, see M.R.]

7050.0220 SPECIFIC WATER QUALITY STANDARDS BY ASSOCIATED USE CLASSES.

[For text of subps 1 to 3, see M.R.]

Subp. 3a. **Cold water sport fish, drinking water, and associated use classes.** Water quality standards applicable to use Classes 1B, 2A, 3A or 3B, 4A and 4B, and 5 surface waters.

A. MISCELLANEOUS SUBSTANCE, CHARACTERISTIC, OR POLLUTANT

	2ACS	2AMS	2AFAV	1BDC	3A/3BIC	4AIR	4BIR	5AN
(1) Ammonia, un-ionized as N, µg/L	16	—	—	—	—	—	—	—
(2) Asbestos, >10 µm (c), fibers/L	—	—	—	7.0e+06	—	—	—	—
(3) Bicarbonates (HCO_3), meq/L	—	—	—	—	—	5	—	—
(4) Bromate, µg/L	—	—	—	10	—	—	—	—
(5) Chloride, mg/L	230	860	1,720	250(S)	50/100	—	—	—

	2ACS	2AMS	2AFAV	1BDC	3A/3BIC	4AIR	4BIR	5AN
(6) Chlorine, total residual, µg/L	11	19	38	—	—	—	—	—
(7) Chlorite, µg/L	—	—	—	1,000	—	—	—	—
(8) Color, Pt-Co	30	—	—	15(S)	—	—	—	—
(9) Cyanide, free, µg/L	5.2	22	45	200	—	—	—	—
(10) Escherichia (E.) coli bacteria, organisms/100 mL	See item D	—	—	—	—	—	—	—

	2ACS	2AMS	2AFAV	1BDC	3A/3BIC	4AIR	4BIR	5AN
(11) Eutrophication standards for lakes and reservoirs (phosphorus, total, µg/L; chlorophyll-a, µg/L; Secchi ~~depth~~ disk transparency, meters)	See part 7050.0222, subparts 2 and 2a	—	—	—	—	—	—	—
(12) 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 2 and 2b	—	—	—	—	—	—	—
~~(12)~~ (13) Fluoride, mg/L	—	—	—	4	—	—	—	—

~~(13)~~ (14) Fluoride, mg/L	—	—	—	2(S)	—	—	—	—
~~(14)~~ (15) Foaming agents, µg/L	—	—	—	500(S)	—	—	—	—
~~(15)~~ (16) Hardness, Ca+Mg as $CaCO_3$, mg/L	—	—	—	—	50/250	—	—	—

	2ACS	2AMS	2AFAV	1BDC	3A/3BIC	4AIR	4BIR	5AN
~~(16)~~ (17) Hydrogen sulfide, mg/L	—	—	—	—	—	—	—	0.02
~~(17)~~ (18) Nitrate as N, mg/L	—	—	—	10	—	—	—	—
~~(18)~~ (19) Nitrite as N, mg/L	—	—	—	1	—	—	—	—
~~(19)~~ (20) Nitrate + Nitrite as N, mg/L	—	—	—	10	—	—	—	—
~~(20)~~ (21) Odor, TON	—	—	—	3(S)	—	—	—	—

	2ACS	2AMS	2AFAV	1BDC	3A/3BIC	4AIR	4BIR	5AN
~~(21)~~ (22) Oil, µg/L	500	5,000	10,000	—	—	—	—	—
~~(22)~~ (23) Oxygen, dissolved, mg/L	7, as a daily minimum	—	—	—	—	—	—	—
~~(23)~~ (24) pH minimum, su	6.5	—	—	6.5(S)	6.5/6.0	6.0	6.0	6.0
~~(24)~~ (25) pH maximum, su	8.5	—	—	8.5(S)	8.5/9.0	8.5	9.0	9.0
~~(25)~~ (26) Radioactive materials	See item E	—	—	See item E	—	See item E	See item E	—

	2ACS	2AMS	2AFAV	1BDC	3A/3BIC	4AIR	4BIR	5AN
~~(26)~~ (27) Salinity, total, mg/L	—	—	—	—	—	—	1,000	—
~~(27)~~ (28) Sodium, meq/L	—	—	—	—	—	60% of total cations	—	—
~~(28)~~ (29) Specific conductance at 25°C, µmhos/cm	—	—	—	—	—	1,000	—	—
~~(29)~~ (30) Sulfate, mg/L	—	—	—	250(S)	—	—	—	—
~~(30)~~ (31) Sulfates, wild rice present, mg/L	—	—	—	—	—	10	—	—

	2ACS	2AMS	2AFAV	1BDC	3A/3BIC	4AIR	4BIR	5AN
~~(31)~~ (32) Temperature, °F	No material increase	—	—	—	—	—	—	—
~~(32)~~ (33) Total dissolved salts, mg/L	—	—	—	—	—	700	—	—
~~(33)~~ (34) Total dissolved solids, mg/L	—	—	—	500(S)	—	—	—	—
~~(34)~~ (35) ~~Turbidity, NTU~~ Total suspended solids (TSS), mg/L	~~10~~ See part 7050.0222, subpart 2	—	—	~~NA~~ —	—	—	—	—

B. METALS AND ELEMENTS

	2ACS	2AMS	2AFAV	1BDC	3A/3BIC	4AIR	4BLS	5AN
(1) Aluminum, total, µg/L	87	748	1,496	50-200 (S)	—	—	—	—
(2) Antimony, total, µg/L	5.5	90	180	6	—	—	—	—
(3) Arsenic, total, µg/L	2.0	360	720	10	—	—	—	—

(4) Barium, total, µg/L	—	—	—	2,000	—	—	—	—
(5) Beryllium, total, µg/L	—	—	—	4.0	—	—	—	—

	2ACS	2AMS	2AFAV	1BDC	3A/3BIC	4AIR	4BLS	5AN
(6) Boron, total, µg/L	—	—	—	—	—	500	—	—
(7) Cadmium, total, µg/L	1.1	3.9	7.8	5	—	—	—	—

Class 2A cadmium standards are hardness dependent. Cadmium values shown are for a total hardness of 100 mg/L only. See part 7050.0222, subpart 2, for examples at other hardness values and equations to calculate cadmium standards for any hardness value not to exceed 400 mg/L. (8) Chromium +3, total, µg/L

	207	1,737	3,469	—	—	—	—	—

Class 2A trivalent chromium standards are hardness dependent. Chromium +3 values shown are for a total hardness of 100 mg/L only. See part 7050.0222, subpart 2, for examples at other hardness values and equations to calculate trivalent chromium standards for any hardness value not to exceed 400 mg/L. (9) Chromium +6, total, µg/L

	11	16	32	—	—	—	—	—
(10) Chromium, total, µg/L	—	—	—	100	—	—	—	—

	2ACS	2AMS	2AFAV	1BDC	3A/3BIC	4AIR	4BLS	5AN
(11) Cobalt, total, µg/L	2.8	436	872	—	—	—	—	—
(12) Copper, total, µg/L	9.8	18	35	1,000(S)	—	—	—	—

Class 2A copper standards are hardness dependent. Copper values shown are for a total hardness of 100 mg/L only. See part 7050.0222, subpart 2, for examples at other hardness values and equations to calculate copper standards for any hardness value not to exceed 400 mg/L. (13) Iron, total, µg/L

	—	—	—	300(S)	—	—	—	—
(14) Lead, total, µg/L	3.2	82	164	NA	—	—	—	—

Class 2A lead standards are hardness dependent. Lead values shown are for a total hardness of 100 mg/L only. See part 7050.0222, subpart 2, for examples at other hardness values and equations to calculate lead standards for any hardness value not to exceed 400 mg/L. (15) Manganese, total, µg/L

	—	—	—	50(S)	—	—	—	—

	2ACS	2AMS	2AFAV	1BDC	3A/3BIC	4AIR	4BLS	5AN
(16) Mercury, total, in water, ng/L	6.9	2,400*	4,900*	2,000	—	—	—	—
(17) Mercury, total in edible fish tissue, mg/kg or parts per million	0.2	—	—	—	—	—	—	—
(18) Nickel, total, µg/L	158	1,418	2,836	—	—	—	—	—

Class 2A nickel standards are hardness dependent. Nickel values shown are for a total hardness of 100 mg/L only. See part 7050.0222, subpart 2, for examples at other hardness values and equations to calculate nickel standards for any hardness value not to exceed 400 mg/L. (19) Selenium, total, µg/L

	5.0	20	40	50	—	—	—	—
(20) Silver, total, µg/L	0.12	2.0	4.1	100(S)	—	—	—	—

Class 2A silver MS and FAV are hardness dependent. Silver values shown are for a total hardness of 100 mg/L only. See part 7050.0222, subpart 2, for examples at other hardness values and equations to calculate silver standards for any hardness value not to exceed 400 mg/L.

	2ACS	2AMS	2AFAV	1BDC	3A/3BIC	4AIR	4BLS	5AN
(21) Thallium, total, µg/L	0.28	64	128	2	—	—	—	—

(22) Zinc, total, µg/L	106	117	234	5,000(S)	—	—	—	—

Class 2A zinc standards are hardness dependent. Zinc values shown are for a total hardness of 100 mg/L only. See part 7050.0222, subpart 2, for examples at other hardness values and equations to calculate zinc standards for any hardness value not to exceed 400 mg/L.

C. ORGANIC POLLUTANTS OR CHARACTERISTICS

	2ACS	2AMS	2AFAV	1BDC	3A/3BIC	4AIR	4BLS	5AN
(1) Acenaphthene, µg/L	20	56	112	—	—	—	—	—
(2) Acetochlor, µg/L	3.6	86	173	—	—	—	—	—
(3) Acrylonitrile (c), µg/L	0.38	1,140*	2,281*	—	—	—	—	—
(4) Alachlor (c), µg/L	3.8	800*	1,600*	2	—	—	—	—
(5) Aldicarb, µg/L	—	—	—	3	—	—	—	—

	2ACS	2AMS	2AFAV	1BDC	3A/3BIC	4AIR	4BLS	5AN
(6) Aldicarb sulfone, µg/L	—	—	—	2	—	—	—	—
(7) Aldicarb sulfoxide, µg/L	—	—	—	4	—	—	—	—
(8) Anthracene, µg/L	0.035	0.32	0.63	—	—	—	—	—
(9) Atrazine (c), µg/L	3.4	323	645	3	—	—	—	—
(10) Benzene (c), µg/L	5.1	4,487*	8,974*	5	—	—	—	—

	2ACS	2AMS	2AFAV	1BDC	3A/3BIC	4AIR	4BLS	5AN
(11) Benzo(a)pyrene, µg/L	—	—	—	0.2	—	—	—	—
(12) Bromoform, µg/L	33	2,900	5,800	See sub-item (73)	—	—	—	—
(13) Carbofuran, µg/L	—	—	—	40	—	—	—	—
(14) Carbon tetrachloride (c), µg/L	1.9	1,750*	3,500*	5	—	—	—	—
(15) Chlordane (c), ng/L	0.073	1,200*	2,400*	2,000	—	—	—	—

	2ACS	2AMS	2AFAV	1BDC	3A/3BIC	4AIR	4BLS	5AN
(16) Chlorobenzene, µg/L (Monochlorobenzene)	20	423	846	100	—	—	—	—
(17) Chloroform (c), µg/L	53	1,392	2,784	See sub-item (73)	—	—	—	—
(18) Chlorpyrifos, µg/L	0.041	0.083	0.17	—	—	—	—	—
(19) Dalapon, µg/L	—	—	—	200	—	—	—	—
(20) DDT (c), ng/L	0.11	550*	1,100*	—	—	—	—	—

	2ACS	2AMS	2AFAV	1BDC	3A/3BIC	4AIR	4BLS	5AN
(21) 1,2-Dibromo-3-chloropropane (c), µg/L	—	—	—	0.2	—	—	—	—
(22) Dichlorobenzene (ortho), µg/L	—	—	—	600	—	—	—	—
(23) 1,4-Dichlorobenzene (para) (c), µg/L	—	—	—	75	—	—	—	—
(24) 1,2-Dichloroethane (c), µg/L	3.5	45,050*	90,100*	5	—	—	—	—
(25) 1,1-Dichloroethylene, µg/L	—	—	—	7	—	—	—	—

	2ACS	2AMS	2AFAV	1BDC	3A/3BIC	4AIR	4BLS	5AN
(26) 1,2-Dichloroethylene (cis), µg/L	—	—	—	70	—	—	—	—
(27) 1,2-Dichloroethylene (trans), µg/L	—	—	—	100	—	—	—	—
(28) 2,4-Dichlorophenoxyacetic acid (2,4-D), µg/L	—	—	—	70	—	—	—	—

(29) 1,2-Dichloropropane (c), µg/L	—	—	—	5	—	—	—	—
(30) Dieldrin (c), ng/L	0.0065	1,300*	2,500*	—	—	—	—	—

	2ACS	2AMS	2AFAV	1BDC	3A/3BIC	4AIR	4BLS	5AN
(31) Di-2-ethylhexyl adipate, µg/L	—	—	—	400	—	—	—	—
(32) Di-2-ethylhexyl phthalate (c), µg/L	1.9	—*	—*	6	—	—	—	—
(33) Di-n-Octyl phthalate, µg/L	30	825	1,650	—	—	—	—	—
(34) Dinoseb, µg/L	—	—	—	7	—	—	—	—
(35) Diquat, µg/L	—	—	—	20	—	—	—	—

	2ACS	2AMS	2AFAV	1BDC	3A/3BIC	4AIR	4BLS	5AN
(36) Endosulfan, µg/L	0.0076	0.084	0.17	—	—	—	—	—
(37) Endothall, µg/L	—	—	—	100	—	—	—	—
(38) Endrin, µg/L	0.0039	0.090	0.18	2	—	—	—	—
(39) Ethylbenzene (c), µg/L	68	1,859	3,717	700	—	—	—	—
(40) Ethylene dibromide, µg/L	—	—	—	0.05	—	—	—	—

	2ACS	2AMS	2AFAV	1BDC	3A/3BIC	4AIR	4BLS	5AN
(41) Fluoranthene, µg/L	1.9	3.5	6.9	—	—	—	—	—
(42) Glyphosate, µg/L	—	—	—	700	—	—	—	—
(43) Haloacetic acids (c), µg/L (Bromoacetic acid, Dibromoacetic acid, Dichloroacetic acid, Monochloroacetic acid, and Trichloroacetic acid)	—	—	—	60	—	—	—	—
(44) Heptachlor (c), ng/L	0.10	260*	520*	400	—	—	—	—
(45) Heptachlor epoxide (c), ng/L	0.12	270*	530*	200	—	—	—	—

	2ACS	2AMS	2AFAV	1BDC	3A/3BIC	4AIR	4BLS	5AN
(46) Hexachlorobenzene (c), ng/L	0.061	—*	—*	1,000	—	—	—	—
(47) Hexachlorocyclopentadiene, µg/L	—	—	—	50	—	—	—	—
(48) Lindane (c), µg/L (Hexachloro-cyclohexane, gamma-)	0.0087	1.0*	2.0*	0.2	—	—	—	—
(49) Methoxychlor, µg/L	—	—	—	40	—	—	—	—
(50) Methylene chloride (c), µg/L (Dichloromethane)	45	13,875*	27,749*	5	—	—	—	—

	2ACS	2AMS	2AFAV	1BDC	3A/3BIC	4AIR	4BLS	5AN
(51) Metolachlor	23	271	543	—	—	—	—	—
(52) Naphthalene, µg/L	65	409	818	—	—	—	—	—
(53) Oxamyl, µg/L (Vydate)	—	—	—	200	—	—	—	—
(54) Parathion, µg/L	0.013	0.07	0.13	—	—	—	—	—
(55) Pentachlorophenol, µg/L	0.93	15	30	1	—	—	—	—

Class 2A MS and FAV are pH dependent. Pentachlorophenol values shown are for a pH of 7.5 only. See part 7050.0222, subpart 2, for examples at other pH values and equations to calculate pentachlorophenol standards for any pH value.

	2ACS	2AMS	2AFAV	1BDC	3A/3BIC	4AIR	4BLS	5AN
(56) Phenanthrene, µg/L	3.6	32	64	—	—	—	—	—
(57) Phenol, µg/L	123	2,214	4,428	—	—	—	—	—

(58) Picloram, µg/L	—	—	—	500	—	—	—	—	
(59) Polychlorinated biphenyls (c), ng/L (PCBs, total)	0.014	1,000*	2,000*	500	—	—	—	—	
(60) Simazine, µg/L		—	—	—	4	—	—	—	—

	2ACS	2AMS	2AFAV	1BDC	3A/3BIC	4AIR	4BLS	5AN
(61) Styrene (c), µg/L	—	—	—	100	—	—	—	—
(62) 2,3,7,8-Tetrachlorodibenzo-p-dioxin, ng/L (TCDD-dioxin)	—	—	—	0.03	—	—	—	—
(63) 1,1,2,2-Tetrachloroethane (c), µg/L	1.1	1,127*	2,253*	—	—	—	—	—
(64) Tetrachloroethylene (c), µg/L	3.8	428*	857*	5	—	—	—	—
(65) Toluene, µg/L	253	1,352	2,703	1,000	—	—	—	—

	2ACS	2AMS	2AFAV	1BDC	3A/3BIC	4AIR	4BLS	5AN
(66) Toxaphene (c), ng/L	0.31	730*	1,500*	3,000	—	—	—	—
(67) 2,4,5-TP, µg/L (Silvex)	—	—	—	50	—	—	—	—
(68) 1,2,4-Trichlorobenzene, µg/L	—	—	—	70	—	—	—	—
(69) 1,1,1-Trichloroethane, µg/L	329	2,957	5,913	200	—	—	—	—
(70) 1,1,2-Trichloroethane, µg/L	—	—	—	5	—	—	—	—

	2ACS	2AMS	2AFAV	1BDC	3A/3BIC	4AIR	4BLS	5AN
(71) 1,1,2-Trichloroethylene (c), µg/L	25	6,988	13,976*	5	—	—	—	—
(72) 2,4,6-Trichlorophenol, µg/L	2.0	102	203	—	—	—	—	—
(73) Trihalomethanes, total (c), µg/L (Bromodichloromethane, Bromoform, Chlorodibromomethane, and Chloroform)	—	—	—	80	—	—	—	—
(74) Vinyl chloride (c), µg/L	0.17	—*	—*	2	—	—	—	—
(75) Xylenes, total, µg/L	166	1,407	2,814	10,000	—	—	—	—

[For text of items D and E, see M.R.]

Subp. 4. [Repealed, 24 SR 1105]

Subp. 4a. **Cool and warm water sport fish, drinking water, and associated use classes.** Water quality standards applicable to use Classes 1B or 1C, 2Bd, 3A or 3B, 4A and 4B, and 5 surface waters.

A. MISCELLANEOUS SUBSTANCE, CHARACTERISTIC, OR POLLUTANT

	2BdCS	2BdMS	2BdFAV	1B/1CDC	3A/3BIC	4AIR	4BLS	5AN
(1) Ammonia, un-ionized as N, µg/L	40	—	—	—	—	—	—	—
(2) Asbestos, >10 µm (c), fibers/L	—	—	—	7.0e+06	—	—	—	—
(3) Bicarbonates (HCO_3), meq/L	—	—	—	—	—	5	—	—
(4) Bromate, µg/L	—	—	—	10	—	—	—	—
(5) Chloride, mg/L	230	860	1,720	250(S)	50/100	—	—	—

	2BdCS	2BdMS	2BdFAV	1B/1CDC	3A/3BIC	4AIR	4BLS	5AN
(6) Chlorine, total residual, µg/L	11	19	38	—	—	—	—	—
(7) Chlorite, µg/L	—	—	—	1,000	—	—	—	—
(8) Color, Pt-Co	—	—	—	15(S)	—	—	—	—
(9) Cyanide, free, µg/L	5.2	22	45	200	—	—	—	—

(10) Escherichia (E.) coli bacteria, organisms/100 mL	See item D	—	—	—	—	—	—	—
	2BdCS	2BdMS	2BdFAV	1B/1CDC	3A/3BIC	4AIR	4BLS	5AN
(11) Eutrophication standards for lakes, shallow lakes, and reservoirs (phosphorus, total, µg/L; chlorophyll-a, µg/L; Secchi ~~depth~~ disk transparency, meters)~~.~~								
	See part 7050.0222, subparts 3 and 3a	—	—	—	—	—	—	—
(12) 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 3 and 3b	—	—	—	—	—	—	—
~~(12)~~ (13) Fluoride, mg/L	—	—	—	4	—	—	—	—
~~(13)~~ (14) Fluoride, mg/L	—	—	—	2(S)	—	—	—	—
~~(14)~~ (15) Foaming agents, µg/L	—	—	—	500(S)	—	—	—	—
~~(15)~~ (16) Hardness, Ca+Mg as $CaCO_3$, mg/L	—	—	—	—	50/250	—	—	—
	2BdCS	2BdMS	2BdFAV	1B/1CDC	3A/3BIC	4AIR	4BLS	5AN
~~(16)~~ (17) Hydrogen sulfide, mg/L	—	—	—	—	—	—	—	0.02
~~(17)~~ (18) Nitrate as N, mg/L	—	—	—	10	—	—	—	—
~~(18)~~ (19) Nitrite as N, mg/L	—	—	—	1	—	—	—	—
~~(19)~~ (20) Nitrate + Nitrite as N, mg/L	—	—	—	10	—	—	—	—
~~(20)~~ (21) Odor, TON	—	—	—	3(S)	—	—	—	—
	2BdCS	2BdMS	2BdFAV	1B/1CDC	3A/3BIC	4AIR	4BLS	5AN
~~(21)~~ (22) Oil, µg/L	500	5,000	10,000	—	—	—	—	—
~~(22)~~ (23) Oxygen, dissolved, mg/L	See part 7050.0222, subpart 3	—	—	—	—	—	—	—
~~(23)~~ (24) pH minimum, su	6.5	—	—	6.5(S)	6.5/6.0	6.0	6.0	6.0
~~(24)~~ (25) pH maximum, su	9.0	—	—	8.5(S)	8.5/9.0	8.5	9.0	9.0
~~(25)~~ (26) Radioactive materials	See item E	—	—	See item E	—	See item E	See item E	—
	2BdCS	2BdMS	2BdFAV	1B/1CDC	3A/3BIC	4AIR	4BLS	5AN
~~(26)~~ (27) Salinity, total, mg/L	—	—	—	—	—	—	1,000	—
~~(27)~~ (28) Sodium, meq/L	—	—	—	—	—	60% of totalcations	—	—
~~(28)~~ (29) Specific conductance at 25°C, µmhos/cm	—	—	—	—	—	1,000	—	—
~~(29)~~ (30) Sulfate, mg/L	—	—	—	250(S)	—	—	—	—
~~(30)~~ (31) Sulfates, wild rice present, mg/L	—	—	—	—	—	10	—	—
	2BdCS	2BdMS	2BdFAV	1B/1CDC	3A/3BIC	4AIR	4BLS	5AN

~~(31)~~ (32) Temperature, °F	~~See~~ item F	—	—	—	—	—	—	—
~~(32)~~ (33) Total dissolved salts, mg/L	—	—	—	—	—	700	—	—
~~(33)~~ (34) Total dissolved solids, mg/L	—	—	—	500(S)	—	—	—	—
~~(34)~~ (35) ~~Turbidity, NTU~~ Total suspended solids (TSS), mg/L	~~25~~ See part 7050.0222, subpart 3	—	—	~~NA~~ —	—	—	—	—

[For text of items B to F, see M.R.]

Subp. 5. [Repealed, 24 SR 1105]

Subp. 5a. **Cool and warm water sport fish and associated use classes.** Water quality standards applicable to use Classes 2B, 2C, or 2D; 3A, 3B, or 3C; 4A and 4B; and 5 surface waters. See parts 7050.0223, subpart 5; 7050.0224, subpart 4; and 7050.0225, subpart 2, for Class 3D, 4C, and 5 standards applicable to wetlands, respectively.

A. MISCELLANEOUS SUBSTANCE, CHARACTERISTIC, OR POLLUTANT

	2B,C&DCS	2B,C&DMS	2B,C&DFAV	3A/3B/3CIC	4AIR	4BLS	5AN
(1) Ammonia, un-ionized as N, µg/L	40	—	—	—	—	—	—
(2) Bicarbonates (HCO_3), meq/L	—	—	—	—	5	—	—
(3) Chloride, mg/L	230	860	1,720	50/100/250	—	—	—
(4) Chlorine, total residual, µg/L	11	19	38	—	—	—	—
(5) Cyanide, free, µg/L	5.2	22	45	—	—	—	—

	2B,C&DCS	2B,C&DMS	2B,C&DFAV	3A/3B/3CIC	4AIR	4BLS	5AN
(6) Escherichia (E.) coli bacteria, organisms/ 100 mL	Seeitem D	—	—	—	—	—	—

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

See part 7050.0222, subparts4, 4a, and 5	—	—	—	—	—	—

(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	—	—	—	—	—	—

~~(8)~~ (9) Hardness, Ca+Mg as $CaCO_3$, mg/L	—	—	—	50/250/500	—	—	—
~~(9)~~ (10) Hydrogen sulfide, mg/L	—	—	—	—	—	—	0.02
~~(10)~~ (11) Oil, µg/L	500	5,000	10,000	—	—	—	—

	2B,C&DCS	2B,C&DMS	2B,C&DFAV	3A/3B/3CIC	4AIR	4BLS	5AN
~~(11)~~ (12) Oxygen, dissolved, mg/L	See part 7050.0222, subparts4 to 6	—	—	—	—	—	—
~~(12)~~ (13) pH minimum, su	6.5 See item E	—	—	6.5/6.0/6.0	6.0	6.0	6.0
~~(13)~~ (14) pH maximum, su	9.0 See item E	—	—	8.5/9.0/9.0	8.5	9.0	9.0
~~(14)~~ (15) Radioactive materials	See item F	—	—	—	See item F	See item F	—
~~(15)~~ (16) Salinity, total, mg/L	—	—	—	—	—	1,000	—

	2B,C&DCS	2B,C&DMS	2B,C&DFAV	3A/3B/3CIC	4AIR	4BLS	5AN
~~(16)~~ (17) Sodium, meq/L	—	—	—	—	60% of total cations	—	—
~~(17)~~ (18) Specific conductance at 25°C, µ mhos/cm	—	—	—	—	1,000	—	—
~~(18)~~ (19) Sulfates, wild rice present, mg/L	—	—	—	—	10	—	—
~~(19)~~ (20) Temperature, °F	See item G	—	—	—	—	—	—
~~(20)~~ (21) Total dissolved salts, mg/L	—	—	—	—	700	—	—
~~(21)~~ (22) ~~Turbidity, NTU~~ Total suspended solids (TSS), mg/L	~~25~~ See part 7050.0222, subpart 4	—	—	—	—	—	—

[For text of items B to G, see M.R.]

Subp. 6. [Repealed, 24 SR 1105]

Subp. 6a. **Limited resource value waters and associated use classes.**

A. WATER QUALITY STANDARDS APPLICABLE TO USE CLASSES 3C, 4A, 4B, 5, AND 7 SURFACE WATERS

	7LIMITED RESOURCE VALUE	3C1C	4A1R	4BLS	5AN
(1) Bicarbonates (HCO_3), meq/L	—	—	5	—	—
(2) Boron, µg/L	—	—	500	—	—
(3) Chloride, mg/L	—	250	—	—	—
(4) Escherichia (E.) coli bacteria, organisms/100 mL	See item ~~C~~ B	—	—	—	—
(5) Hardness, Ca+Mg as $CaCO_3$, mg/L	—	500	—	—	—

	7LIMITED RESOURCE VALUE	3C1C	4A1R	4BLS	5AN
(6) Hydrogen sulfide, mg/L	—	—	—	—	0.02

(7) Oxygen, dissolved, mg/L	See item C	—	—	—	—
(8) pH minimum, su	6.0	6.0	6.0	6.0	6.0
(9) pH maximum, su	9.0	9.0	8.5	9.0	9.0
(10) Radioactive materials	—	—	See item D	See item D	—
	7LIMITED RESOURCE VALUE	3C1C	4A1R	4BLS	5AN
(11) Salinity, total, mg/L	—	—	—	1,000	—
(12) Sodium, meq/L	—	—	60% of total cations	—	—
(13) Specific conductance at 25°C, µmhos/cm	—	—	1,000	—	—
(14) Sulfates, wild rice present, mg/L	—	—	10	—	—
(15) Total dissolved salts, mg/L	—	—	700	—	—
(16) Toxic pollutants	See item E	—	—	—	—

[For text of items B to E, see M.R.]

Subp. 7. **Site-specific modifications of standards.**

[For text of items A to C, see M.R.]

D. Through the procedures established in items A to 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 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

7050.0221 SPECIFIC WATER QUALITY STANDARDS FOR CLASS 1 WATERS OF THE STATE; DOMESTIC CONSUMPTION.

Subpart 1. **General.**

[For text of item A, see M.R.]

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.

[For text of subps 2 to 6, see M.R.]

7050.0222 SPECIFIC WATER QUALITY STANDARDS FOR CLASS 2 WATERS OF THE STATE; AQUATIC LIFE AND RECREATION.

[For text of subp 1, see M.R.]

Subp. 2. **Class 2A waters; aquatic life and recreation.** The quality of Class 2A surface waters shall be such as to permit the propagation and maintenance of a healthy community of cold water sport or commercial fish and associated aquatic life, and their habitats. These waters shall be suitable for aquatic recreation of all kinds, including bathing, for which the waters may be usable. This class of surface waters is also protected as a source of drinking water. Abbreviations, acronyms, and symbols are explained in subpart 1.

Substance,Characteristic, or Pollutant(Class 2A)	Units	CS	Basisfor CS	MS	FAV	Basisfor MS,FAV
Acenaphthene	µg/L	20	HH	56	112	Tox
Acetochlor	µg/L	3.6	Tox	86	173	Tox
Acrylonitrile (c)	µg/L	0.38	HH	1,140*	2,281*	Tox
Alachlor (c)	µg/L	3.8	HH	800*	1,600*	Tox
Aluminum, total	µg/L	87	Tox	748	1,496	Tox
Ammonia un-ionized as N	µg/L	16	Tox	—	—	NA

The percent un-ionized ammonia can be calculated for any temperature and pH by using the following equation taken from Emerson, K., R.C. Russo, R.E. Lund, and R.V. Thurston, Aqueous ammonia equilibrium calculations; effect of pH and temperature. Journal of the Fisheries Research Board of Canada 32: 2379-2383 (1975):

$$f = \frac{1}{10^{(pk_a - pH)} + 1} \times 100$$

where: f = the percent of total ammonia in the un-ionized state
$pk_a = 0.09 + (2730/T)$ (dissociation constant for ammonia)
T = temperature in degrees Kelvin (273.16° Kelvin = 0° Celsius)

Substance,Characteristic, or Pollutant(Class 2A)	Units	CS	Basisfor CS	MS	FAV	Basisfor MS,FAV
Anthracene	µg/L	0.035	Tox	0.32	0.63	Tox
Antimony, total	µg/L	5.5	HH	90	180	Tox
Arsenic, total	µg/L	2.0	HH	360	720	Tox
Atrazine (c)	µg/L	3.4	HH	323	645	Tox
Benzene (c)	µg/L	5.1	HH	4,487*	8,974*	Tox
Bromoform	µg/L	33	HH	2,900	5,800	Tox
Cadmium, total	µg/L	equation	Tox	equation	equation	Tox

The CS, MS, and FAV vary with total hardness and are calculated using the following equations: The CS in µg/L shall not exceed: exp.(0.7852[ln(total hardness mg/L)]-3.490) The MS in µg/L shall not exceed: exp.(1.128[ln(total hardness mg/L)]-3.828) The FAV in µg/L shall not exceed: exp.(1.128[ln(total hardness mg/L)]-3.1349) Where: exp. is the natural antilogarithm (base e) of the expression in parenthesis. For hardness values greater than 400 mg/L, 400 mg/L shall be used to calculate the standard. Example of total cadmium standards for five hardness values:

TH in mg/L	50	100	200	300	400
Cadmium, total					
CS µg/L	0.66	1.1	2.0	2.7	3.4
MS µg/L	1.8	3.9	8.6	14	19
FAV µg/L	3.6	7.8	17	27	37

Substance,Characteristic, or Pollutant(Class 2A)	Units	CS	Basisfor CS	MS	FAV	Basisfor MS,FAV
Carbon tetrachloride (c)	µg/L	1.9	HH	1750*	3500*	Tox
Chlordane (c)	ng/L	0.073	HH	1200*	2400*	Tox
Chloride	mg/L	230	Tox	860	1720	Tox
Chlorine, total residual	µg/L	11	Tox	19	38	Tox

Chlorine standard applies to conditions of continuous exposure, where continuous exposure refers to chlorinated effluents that are discharged for more than a total of two hours in any 24-hour period.

Chlorobenzene (Monochlorobenzene)	µg/L	20	HH	423	846	Tox
Chloroform (c)	µg/L	53	HH	1,392	2,784	Tox
Chlorpyrifos	µg/L	0.041	Tox	0.083	0.17	Tox
Chromium +3, total	µg/L	equation	Tox	equation	equation	Tox

The CS, MS, and FAV vary with total hardness and are calculated using the following equations: The CS in µg/L shall not exceed: exp.(0.819[ln(total hardness mg/L)]+1.561) The MS in µg/L shall not exceed: exp.(0.819[ln(total hardness mg/L)]+3.688) The FAV in µg/L shall not exceed: exp.(0.819[ln(total hardness mg/L)]+4.380) Where: exp. is the natural antilogarithm (base e) of the expression in parenthesis. For hardness values greater than 400 mg/L, 400 mg/L shall be used to calculate the standard. Example of total chromium +3 standards for five total hardness values:

TH in mg/L	50	100	200	300	400
Chromium +3, total					
CS ~~g/L~~ µg/L	117	207	365	509	644
MS µg/L	984	1,737	3,064	4,270	5,405
FAV µg/L	1,966	3,469	6,120	8,530	10,797

Substance,Characteristic, or Pollutant(Class 2A)	Units	CS	Basisfor CS	MS	FAV	Basisfor MS,FAV
Chromium +6, total	µg/L	11	Tox	16	32	Tox
Cobalt, total	µg/L	2.8	HH	436	872	Tox
Color value	Pt/Co	30	NA	—	—	NA
Copper, total	µg/L	equation	Tox	equation	equation	Tox

The CS, MS, and FAV vary with total hardness and are calculated using the following equations: The CS in µg/L shall not exceed: exp.(0.620[ln(total hardness mg/L)]-0.570) The MS in µg/L shall not exceed: exp.(0.9422[ln(total hardness mg/L)]-1.464) The FAV in µg/L shall not exceed: exp.(0.9422[ln(total hardness mg/L)]-0.7703) Where: exp. is the natural antilogarithm (base e) of the expression in parenthesis. For hardness values greater than 400 mg/L, 400 mg/L shall be used to calculate the standard. Example of total copper standards for five total hardness values:

TH in mg/L	50	100	200	300	400
Copper, total					
CS µg/L	6.4	9.8	15	19	23
MS µg/L	9.2	18	34	50	65
FAV µg/L	18	35	68	100	131

Substance,Characteristic, or Pollutant(Class 2A)	Units	CS	Basisfor CS	MS	FAV	Basisfor MS,FAV
Cyanide, free	µg/L	5.2	Tox	22	45	Tox
DDT (c)	ng/L	0.11	HH	550*	1100*	Tox
1,2-Dichloroethane (c)	µg/L	3.5	HH	45,050*	90,100*	Tox
Dieldrin (c)	ng/L	0.0065	HH	1,300*	2,500*	Tox
Di-2-ethylhexyl phthalate (c)	µg/L	1.9	HH	—*	—*	NA
Di-n-octyl phthalate	µg/L	30	Tox	825	1,650	Tox
Endosulfan	µg/L	0.0076	HH	0.084	0.17	Tox
Endrin	µg/L	0.0039	HH	0.090	0.18	Tox
Escherichia (E.) coli	See below	See below	HH	See below	See below	NA

Not to exceed 126 organisms per 100 milliliters as a geometric mean of not less than five samples representative of conditions within any calendar month, nor shall more than ten percent of all samples taken during any calendar month individually exceed 1,260 organisms per 100 milliliters. The standard applies only between April 1 and October 31.

Ethylbenzene	µg/L	68	Tox	1,859	3,717	Tox

Substance,Characteristic, or Pollutant(Class 2A)	Units	CS	Basisfor CS	MS	FAV	Basisfor MS,FAV
Eutrophication standards for Class 2A lakes and reservoirs. ~~See definitions in part 7050.0150, subpart 4, and ecoregion map in part 7050.0467~~. Designated lake trout lakes in all ecoregions (lake trout lakes support natural populations of lake trout, Salvelinus namaycush):						
Phosphorus, total	µg/L	12	NA	—	—	NA
Chlorophyll-a	µg/L	3	NA	—	—	NA
Secchi disk transparency	meters	No less than 4.8	NA	—	—	NA
Designated trout lakes in all ecoregions, except lake trout lakes:						
Phosphorus, total	µg/L	20	NA	—	—	NA
Chlorophyll-a	µg/L	6	NA	—	—	NA
Secchi disk transparency	meters	No less than 2.5	NA	—	—	NA

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

Substance,Characteristic, or Pollutant(Class 2A)	Units	CS	Basisfor CS	MS	FAV	Basisfor MS,FAV
Fluoranthene	µg/L	1.9	Tox	3.5	6.9	Tox
Heptachlor (c)	ng/L	0.10	HH	260*	520*	Tox
Heptachlor epoxide (c)	ng/L	0.12	HH	270*	530*	Tox
Hexachlorobenzene (c)	ng/L	0.061	HH	—*	—*	Tox
Lead, total	µg/L	equation	Tox	equation	equation	Tox

The CS, MS, and FAV vary with total hardness and are calculated using the following equations: The CS in µg/L shall not exceed:

exp.(1.273[ln(total hardness mg/L)]-4.705) The MS in µg/L shall not exceed: exp.(1.273[ln(total hardness mg/L)]-1.460) The FAV in µg/L shall not exceed: exp.(1.273[ln(total hardness mg/L)]-0.7643) Where: exp. is the natural antilogarithm (base e) of the expression in parenthesis. For hardness values greater than 400 mg/L, 400 mg/L shall be used to calculate the standard. Example of total lead standards for five total hardness values:

TH in mg/L	50	100	200	300	400
Lead, total					
CS µg/L	1.3	3.2	7.7	13	19
MS µg/L	34	82	197	331	477
FAV µg/L	68	164	396	663	956

Substance,Characteristic, or Pollutant(Class 2A)	Units	CS	Basisfor CS	MS	FAV	Basisfor MS,FAV
Lindane (c) (Hexachlorocyclohexane, gamma-)	µg/L	0.0087	HH	1.0*	2.0*	Tox
Mercury, total in water	ng/L	6.9	HH	2,400*	4,900*	Tox
Mercury, totalin edible fish	mg/kgppm	0.2	HH	NA	NA	NA
Methylene chloride (c) Dichloromethane)	µg/L	45	HH	13,875*	27,749*	Tox
Metolachlor	µg/L	23	Tox	271	543	Tox
Naphthalene	µg/L	65	HH	409	818	Tox
Nickel, total	µg/L	equation	Tox/HH	equation	equation	Tox

The CS, MS, and FAV vary with total hardness and are calculated using the following equations: The CS shall not exceed the human health-based standard of 297 µg/L. For waters with total hardness values less than 212 mg/L, the CS in µg/L is toxicity-based and shall not exceed: exp.(0.846[ln(total hardness mg/L)]+1.1645) The MS in µg/L shall not exceed: exp.(0.846[ln(total hardness mg/L)]+3.3612) The FAV in µg/L shall not exceed: exp.(0.846[ln(total hardness mg/L)]+4.0543) Where: exp. is the natural antilogarithm (base e) of the expression in parenthesis. For hardness values greater than 400 mg/L, 400 mg/L shall be used to calculate the standard. Example of total nickel standards for five total hardness values:

TH in mg/L	50	100	200	300	400
Nickel, total					
CS µg/L	88	158	283	297	297
MS µg/L	789	1,418	2,549	3,592	4,582
FAV µg/L	1,578	2,836	5,098	7,185	9,164

Substance,Characteristic, or Pollutant(Class 2A)	Units	CS	Basisfor CS	MS	FAV	Basisfor MS,FAV
Oil	µg/L	500	NA	5,000	10,000	NA
Oxygen, dissolved	mg/L	Seebelow	NA	—	—	NA

7.0 mg/L as a daily minimum. This dissolved oxygen standard requires compliance with the standard 50 percent of the days at which the flow of the receiving water is equal to the $7Q_{10}$.

Parathion	µg/L	0.013	Tox	0.07	0.13	Tox
Pentachlorophenol	µg/L	0.93	HH	equation	equation	Tox

The MS and FAV vary with pH and are calculated using the following equations: The MS in µg/L shall not exceed: exp.(1.005[pH]-4.830) The FAV in µg/L shall not exceed: exp.(1.005[pH]-4.1373) Where: exp. is the natural antilogarithm (base e) of the expression in parenthesis. For pH values less than 6.0, 6.0 shall be used to calculate the standard and for pH values greater than 9.0, 9.0 shall be used to calculate the standard. Example of pentachlorophenol standards for five pH values:

pH su	6.5	7.0	7.5	8.0	8.5

Pentachlorophenol						
CS µg/L		0.93	0.93	0.93	0.93	0.93
MS µg/L		5.5	9.1	15	25	41
FAV µg/L		11	18	30	50	82

Substance,Characteristic, or Pollutant(Class 2A)	Units	CS	Basisfor CS	MS	FAV	Basisfor MS,FAV
pH, minimum	su	6.5	NA	—	—	NA
pH, maximum	su	8.5	NA	—	—	NA
Phenanthrene	µg/L	3.6	Tox	32	64	Tox
Phenol	µg/L	123	Tox	2,214	4,428	Tox
Polychlorinated biphenyls, total (c)	ng/L	0.014	HH	1,000*	2,000*	Tox
Radioactive materials	NA	Seebelow	NA	Seebelow	Seebelow	NA

Not to exceed the lowest concentrations permitted to be discharged to an uncontrolled environment as permitted by the appropriate authority having control over their use.

Selenium, total	µg/L	5.0	Tox	20	40	Tox
Silver, total	µg/L	0.12	Tox	equation	equation	Tox

The MS and FAV vary with total hardness and are calculated using the following equations: The MS in µg/L shall not exceed: exp.(1.720[ln(total hardness mg/L)]-7.2156) The FAV in µg/L shall not exceed: exp.(1.720[ln(total hardness mg/L)]-6.520) Where: exp. is the natural antilogarithm (base e) of the expression in parenthesis. For hardness values greater than 400 mg/L, 400 mg/L shall be used to calculate the standard. Example of silver standards for five total hardness values:

TH in mg/L		50	100	200	300	400
Silver, total						
CS µg/L		0.12	0.12	0.12	0.12	0.12
MS µg/L		1.0	2.0	6.7	13	22
FAV µg/L		1.2	4.1	13	27	44

Substance,Characteristic, or Pollutant(Class 2A)	Units	CS	Basisfor CS	MS	FAV	Basisfor MS,FAV
Temperature	°C or°F	Nomaterialincrease	NA	—	—	NA
1,1,2,2-Tetrachloroethane (c)	µg/L	1.1	HH	1,127*	2,253*	Tox
Tetrachloroethylene (c)	µg/L	3.8	HH	428*	857*	Tox
Thallium, total	µg/L	0.28	HH	64	128	Tox
Toluene	µg/L	253	Tox	1,352	2,703	Tox
Toxaphene (c)	ng/L	0.31	HH	730*	1,500*	Tox
1,1,1-Trichloroethane	µg/L	329	Tox	2,957	5,913	Tox
1,1,2-Trichloroethylene (c)	µg/L	25	HH	6,988*	13,976*	Tox
2,4,6-Trichlorophenol	µg/L	2.0	HH	102	203	Tox
~~Turbidity value~~ Total suspended solids (TSS)	~~NTU~~ mg/L	10	NA	—	—	NA

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

Vinyl chloride (c)	µg/L	0.17	HH	—*	—*	NA
Xylene, total m,p,o	µg/L	166	Tox	1,407	2,814	Tox
Zinc, total	µg/L	equation	Tox	equation	equation	Tox

The CS, MS, and FAV vary with total hardness and are calculated using the following equations: The CS in µg/L shall not exceed:

exp.(0.8473[ln(total hardness mg/L)]+0.7615) The MS in µg/L shall not exceed: exp.(0.8473[ln(total hardness mg/L)]+0.8604) The FAV in µg/L shall not exceed: exp.(0.8473[ln(total hardness mg/L)]+1.5536 Where: exp. is the natural antilogarithm (base e) of the expression in parenthesis. For hardness values greater than 400 mg/L, 400 mg/L shall be used to calculate the standard. Example of zinc standards for five total hardness values:

TH in mg/L	50	100	200	300	400
Zinc, total					
CS µg/L	59	106	191	269	343
MS µg/L	65	117	211	297	379
FAV µg/L	130	234	421	594	758

Subp. 2a. **Narrative eutrophication standards for ~~Class 2A~~ lakes and reservoirs.**

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.

[For text of item B, see M.R.]

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.~~

[For text of item D, see M.R.]

E. Eutrophication standards applicable to 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 Ecoregion must be applied on a case-by-case basis. The commissioner shall use the standards applicable to adjacent ecoregions as a guide.

Subp. 2b. **Narrative eutrophication standards for rivers and streams.**

A. Eutrophication standards for rivers and streams are compared to summer-average data or as specified in subpart 2. 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. For chlorophyll-a (periphyton), the standard is exceeded if concentrations exceed 150 mg/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 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 and streams 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.

Subp. 3. **Class 2Bd waters.** The quality of Class 2Bd surface waters shall be such as to permit the propagation and maintenance of a healthy community of cool or warm water sport or commercial fish and associated aquatic life and their habitats. These waters shall be suitable for aquatic recreation of all kinds, including bathing, for which the waters may be usable. This class of surface waters is also protected as a source of drinking water. The applicable standards are given below. Abbreviations, acronyms, and symbols are explained in subpart 1.

Substance,Characteristic, or Pollutant(Class 2Bd)	Units	CS	BasisforCS	MS	FAV	Basisfor MS,FAV
Acenaphthene	µg/L	20	HH	56	112	Tox
Acetochlor	µg/L	3.6	Tox	86	173	Tox
Acrylonitrile (c)	µg/L	0.38	HH	1,140*	2,281*	Tox
Alachlor (c)	µg/L	4.2	HH	800*	1,600*	Tox
Aluminum, total	µg/L	125	Tox	1,072	2,145	Tox
Ammonia un-ionized as N	µg/L	40	Tox	—	—	NA

The percent un-ionized ammonia can be calculated for any temperature and pH by using the following equation taken from Emerson, K., R.C. Russo, R.E. Lund, and R.V. Thurston, Aqueous ammonia equilibrium calculations; effect of pH and temperature. Journal of the Fisheries Research Board of Canada 32: 2379-2383 (1975):

$$f = 1/(10^{(pka-pH)} + 1) \times 100$$

where: f = the percent of total ammonia in the un-ionized state
$pk_a = 0.09 + (2730/T)$ (dissociation constant for ammonia)
T = temperature in degrees Kelvin (273.16° Kelvin = 0° Celsius)

Substance,Characteristic, or Pollutant(Class 2Bd)	Units	CS	BasisforCS	MS	FAV	Basisfor MS,FAV
Anthracene	µg/L	0.035	Tox	0.32	0.63	Tox
Antimony, total	µg/L	5.5	HH	90	180	Tox
Arsenic, total	µg/L	2.0	HH	360	720	Tox
Atrazine (c)	µg/L	3.4	HH	323	645	Tox
Benzene (c)	µg/L	6.0	HH	4,487*	8,974*	Tox
Bromoform	µg/L	41	HH	2,900	5,800	Tox
Cadmium, total	µg/L	equation	Tox	equation	equation	Tox

The CS, MS, and FAV vary with total hardness and are calculated using the following equations: The CS in µg/L shall not exceed: exp.(0.7852[ln(total hardness mg/L)]-3.490) The MS in µg/L shall not exceed: exp.(1.128[ln(total hardness mg/L)]-1.685) The FAV in µg/L shall not exceed: exp.(1.128[ln(total hardness mg/L)]-0.9919) Where: exp. is the natural antilogarithm (base e) of the expression in parenthesis. For hardness values greater than 400 mg/L, 400 mg/L shall be used to calculate the standard. Example of total cadmium standards for five hardness values:

TH in mg/L	50	100	200	300	400
Cadmium, total					
CS µg/L	0.66	1.1	2.0	2.7	3.4
MS µg/L	15	33	73	116	160
FAV µg/L	31	67	146	231	319

Substance,Characteristic, or Pollutant(Class 2Bd)	Units	CS	BasisforCS	MS	FAV	Basisfor MS,FAV
Carbon tetrachloride (c)	µg/L	1.9	HH	1,750*	3,500*	Tox
Chlordane (c)	ng/L	0.29	HH	1,200*	2,400*	Tox
Chloride	mg/L	230	Tox	860	1,720	Tox
Chlorine, total residual	µg/L	11	Tox	19	38	Tox

Chlorine standard applies to conditions of continuous exposure, where continuous exposure refers to chlorinated effluents that are discharged for more than a total of two hours in any 24-hour period.

Chlorobenzene (Monochlorobenzene)	µg/L	20	HH	423	846	Tox
Chloroform (c)	µg/L	53	HH	1,392	2,784	Tox
Chlorpyrifos	µg/L	0.041	Tox	0.083	0.17	Tox
Chromium +3, total	µg/L	equation	Tox	equation	equation	Tox

The CS, MS, and FAV vary with total hardness and are calculated using the following equations: The CS in µg/L shall not exceed: exp.(0.819[ln(total hardness mg/L)]+1.561) The MS in µg/L shall not exceed: exp.(0.819[ln(total hardness mg/L)]+3.688) The FAV in µg/L shall not exceed: exp.(0.819[ln(total hardness mg/L)]+4.380) Where: exp. is the natural antilogarithm (base e) of the expression in parenthesis. For hardness values greater than 400 mg/L, 400 mg/L shall be used to calculate the standard. Example of total chromium +3 standards for five total hardness values:

TH in mg/L	50	100	200	300	400
Chromium +3, total					
CS µg/L	117	207	365	509	644
MS µg/L	984	1,737	3,064	4,270	5,405
FAV µg/L	1,966	3,469	6,120	8,530	10,797

Substance,Characteristic, or Pollutant(Class 2Bd)	Units	CS	BasisforCS	MS	FAV	Basisfor MS,FAV
Chromium +6, total	µg/L	11	Tox	16	32	Tox
Cobalt, total	µg/L	2.8	HH	436	872	Tox
Copper, total	µg/L	equation	Tox	equation	equation	Tox

The CS, MS, and FAV vary with total hardness and are calculated using the following equations: The CS in µg/L shall not exceed: exp.(0.620[ln(total hardness mg/L)]-0.570) The MS in µg/L shall not exceed: exp.(0.9422[ln(total hardness mg/L)]-1.464) The FAV in µg/L shall not exceed: exp.(0.9422[ln(total hardness mg/L)]-0.7703) Where: exp. is the natural antilogarithm (base e) of the expression in parenthesis. For hardness values greater than 400 mg/L, 400 mg/L shall be used to calculate the standard. Example of total copper standards for five total hardness values:

TH in mg/L	50	100	200	300	400
Copper, total					
CS µg/L	6.4	9.8	15	19	23
MS µg/L	9.2	18	34	50	65
FAV µg/L	18	35	68	100	131

Substance,Characteristic, or Pollutant(Class 2Bd)	Units	CS	BasisforCS	MS	FAV	Basisfor MS,FAV
Cyanide, free	µg/L	5.2	Tox	22	45	Tox
DDT (c)	ng/L	1.7	HH	550*	1,100*	Tox
1,2-Dichloroethane (c)	µg/L	3.8	HH	45,050*	90,100*	Tox

Dieldrin (c)	ng/L	0.026	HH	1,300*	2,500*	Tox
Di-2-ethylhexyl phthalate (c)	µg/L	1.9	HH	—*	—*	NA
Di-n-octyl phthalate	µg/L	30	Tox	825	1,650	Tox
Endosulfan	µg/L	0.029	HH	0.28	0.56	Tox
Endrin µg/L	0.016	HH	0.090	0.18	Tox	
Escherichia (E.) coli	See below	See below	HH	See below	See below	NA

Not to exceed 126 organisms per 100 milliliters as a geometric mean of not less than five samples representative of conditions within any calendar month, nor shall more than ten percent of all samples taken during any calendar month individually exceed 1,260 organisms per 100 milliliters. The standard applies only between April 1 and October 31.

Ethylbenzene	µg/L	68	Tox	1,859	3,717	Tox

Substance, Characteristic, or Pollutant (Class 2Bd)	Units	CS	Basis for CS	MS	FAV	Basis for MS, FAV

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.~~ Lakes, Shallow Lakes, and Reservoirs in Northern Lakes and Forest Ecoregion

Phosphorus, total	µg/L	30	NA	—	—	NA
Chlorophyll-a	µg/L	9	NA	—	—	NA
Secchi disk transparency	meters	Not less than 2.0	NA	—	—	NA

Lakes and Reservoirs in North Central Hardwood Forest Ecoregion

Phosphorus, total	µg/L	40	NA	—	—	NA
Chlorophyll-a	µg/L	14	NA	—	—	NA
Secchi disk transparency	meters	Not less than 1.4	NA	—	—	NA

Lakes and Reservoirs in Western Corn Belt Plains and Northern Glaciated Plains Ecoregions

Phosphorus, total	µg/L	65	NA	—	—	NA
Chlorophyll-a	µg/L	22	NA	—	—	NA
Secchi disk transparency	meters	Not less than 0.9	NA	—	—	NA

Shallow Lakes in North Central Hardwood Forest Ecoregion

Phosphorus, total	µg/L	60	NA	—	—	NA
Chlorophyll-a	µg/L	20	NA	—	—	NA
Secchi disk transparency	meters	Not less than 1.0	NA	—	—	NA

Shallow Lakes in Western Corn Belt Plains and Northern Glaciated Plains Ecoregions

Phosphorus, total	µg/L	90	NA	—	—	NA
Chlorophyll-a	µg/L	30	NA	—	—	NA
Secchi disk transparency	meters	Not less than 0.7	NA	—	—	NA

Additional narrative eutrophication standards for Class 2Bd lakes, shallow lakes, and reservoirs are found under subpart 3a. 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.

Substance,Characteristic, or Pollutant(Class 2Bd)	Units	CS	BasisforCS	MS	FAV	Basisfor MS,FAV
Fluoranthene	µg/L	1.9	Tox	3.5	6.9	Tox
Heptachlor (c)	ng/L	0.39	HH	260*	520*	Tox
Heptachlor epoxide (c)	ng/L	0.48	HH	270*	530*	Tox
Hexachlorobenzene (c)	ng/L	0.24	HH	—*	—*	Tox
Lead, total	µg/L	equation	Tox	equation	equation	Tox

The CS, MS, and FAV vary with total hardness and are calculated using the following equations: The CS in µg/L shall not exceed: exp.(1.273[ln(total hardness mg/L)]-4.705) The MS in µg/L shall not exceed: exp.(1.273[ln(total hardness mg/L)]-1.460) The FAV in µg/L shall not exceed: exp.(1.273[ln(total hardness mg/L)]-0.7643) Where: exp. is the natural antilogarithm (base e) of the expression in parenthesis. For hardness values greater than 400 mg/L, 400 mg/L shall be used to calculate the standard. Example of total lead standards for five total hardness values:

TH in mg/L	50	100	200	300	400
Lead, total					
CS µg/L	1.3	3.2	7.7	13	19
MS µg/L	34	82	197	331	477
FAV µg/L	68	164	396	663	956

Substance,Characteristic, or Pollutant(Class 2Bd)	Units	CS	BasisforCS	MS	FAV	Basisfor MS,FAV
Lindane (c) (Hexachlorocyclohexane, gamma-)	µg/L	0.032	HH	4.4*	8.8*	Tox
Mercury, total in water	ng/L	6.9	HH	2,400*	4,900*	Tox
Mercury, totalin edible fish tissue	mg/kgppm	0.2	HH	NA	NA	NA
Methylene chloride (c)(Dichloromethane)	µg/L	46	HH	13,875*	27,749*	Tox
Metolachlor	µg/L	23	Tox	271	543	Tox
Naphthalene	µg/L	81	Tox	409	818	Tox
Nickel, total	µg/L	equation	Tox/HH	equation	equation	Tox

The CS, MS, and FAV vary with total hardness and are calculated using the following equations: The CS shall not exceed the human health-based standard of 297 µg/L. For waters with total hardness values less than 212 mg/L, the CS in µg/L is toxicity-based and shall not exceed: exp.(0.846[ln(total hardness mg/L)]+1.1645) The MS in µg/L shall not exceed: exp.(0.846[ln(total hardness mg/L)]+3.3612) The FAV in µg/L shall not exceed: exp.(0.846[ln(total hardness mg/L)]+4.0543) Where: exp. is the natural antilogarithm (base e) of the expression in parenthesis. For hardness values greater than 400 mg/L, 400 mg/L shall be used to calculate the standard. Example of total nickel standards for five total hardness values:

TH in mg/L	50	100	200	300	400
Nickel, total					
CS µg/L	88	158	283	297	297
MS µg/L	789	1,418	2,549	3,592	4,582
FAV µg/L	1,578	2,836	5,098	7,185	9,164

Substance,Characteristic, or Pollutant(Class 2Bd)	Units	CS	BasisforCS	MS	FAV	Basisfor MS,FAV
Oil	µg/L	500	NA	5,000	10,000	NA
Oxygen, dissolved	mg/L	See below	NA	—	—	NA

5.0 mg/L as a daily minimum. This dissolved oxygen standard may be modified on a site-specific basis according to part 7050.0220, subpart 7, except that no site-specific standard shall be less than 5 mg/L as a daily average and 4 mg/L as a daily minimum. Compliance with this standard is required 50 percent of the days at which the flow of the receiving water is equal to the $7Q_{10}$.

Parathion	µg/L	0.013	Tox	0.07	0.13	Tox
Pentachlorophenol	µg/L	1.9	HH	equation	equation	Tox

The MS and FAV vary with pH and are calculated using the following equations: The MS in µg/L shall not exceed: exp.(1.005[pH]-4.830) The FAV in µg/L shall not exceed: exp.(1.005[pH]-4.1373) Where: exp. is the natural antilogarithm (base e) of the expression in parenthesis. For pH values less than 6.0, 6.0 shall be used to calculate the standard and for pH values greater than 9.0, 9.0 shall be used to calculate the standard. Example of pentachlorophenol standards for five pH values:

pH su	6.5	7.0	7.5	8.0	8.5
Pentachlorophenol					
CS µg/L	1.9	1.9	1.9	1.9	1.9
MS µg/L	5.5	9.1	15	25	41
FAV µg/L	11	18	30	50	82

Substance,Characteristic, or Pollutant(Class 2Bd)	Units	CS	BasisforCS	MS	FAV	Basisfor MS,FAV
pH, minimum	su	6.5	NA	—	—	NA
pH, maximum	su	9.0	NA	—	—	NA
Phenanthrene	µg/L	3.6	Tox	32	64	Tox
Phenol	µg/L	123	Tox	2,214	4,428	Tox
Polychlorinated biphenyls, total (c)	ng/L	0.029	HH	1,000*	2,000*	Tox
Radioactive materials	NA	See below	NA	See below	See below	NA

Not to exceed the lowest concentrations permitted to be discharged to an uncontrolled environment as permitted by the appropriate authority having control over their use.

Selenium, total	µg/L	5.0	Tox	20	40	Tox
Silver, total	µg/L	1.0	Tox	equation	equation	Tox

The MS and FAV vary with total hardness and are calculated using the following equations: The MS in NA µg/L shall not exceed: exp.(1.720[ln(total hardness mg/L)]-7.2156) The FAV in µg/L shall not exceed: exp.(1.720[ln(total hardness mg/L)]-6.520) Where: exp. is the natural antilogarithm (base e) of the expression in parenthesis. For hardness values greater than 400 mg/L, 400 mg/L shall be used to calculate the standard. Example of total silver standards for five total hardness values:

TH in mg/L		50	100	200	300	400	
Silver, total							
CS µg/L		1.0	1.0	1.0	1.0	1.0	
MS µg/L		1.0	2.0	6.7	13	22	
FAV µg/L		1.2	4.1	13	27	44	

Substance,Characteristic, or Pollutant(Class 2Bd)	Units	CS	BasisforCS	MS	FAV	Basisfor MS,FAV
Temperature	°F	See below	NA	—	—	NA

5°F above natural in streams and 3°F above natural in lakes, based on monthly average of the maximum daily temperatures, except in no case shall it exceed the daily average temperature of 86°F.

1,1,2,2-Tetrachloroethane (c)	µg/L	1.5	HH	1,127*	2,253*	Tox
Tetrachloroethylene (c)	µg/L	3.8	HH	428*	857*	Tox
Thallium, total	µg/L	0.28	HH	64	128	Tox
Toluene	µg/L	253	Tox	1,352	2,703	Tox
Toxaphene (c)	ng/L	1.3	HH	730*	1,500*	Tox
1,1,1-Trichloroethane	µg/L	329	Tox	2,957	5,913	Tox
1,1,2-Trichloroethylene (c)	µg/L	25	HH	6,988*	13,976*	Tox
2,4,6-Trichlorophenol	µg/L	2.0	HH	102	203	Tox
~~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

Substance,Characteristic, or Pollutant(Class 2Bd)	Units	CS	BasisforCS	MS	FAV	Basisfor MS,FAV
Vinyl chloride (c)	µg/L	0.18	HH	—*	—*	NA
Xylene, total m,p,o	µg/L	166	Tox	1,407	2,814	Tox
Zinc, total	µg/L	equation	Tox	equation	equation	Tox

The CS, MS, and FAV vary with total hardness and are calculated using the following equations: The CS in µg/L shall not exceed: exp.(0.8473[ln(total hardness mg/L)]+0.7615) The MS in µg/L shall not exceed: exp.(0.8473[ln(total hardness mg/L)]+0.8604) The FAV in µg/L shall not exceed: exp.(0.8473[ln(total hardness mg/L)]+1.5536) Where: exp. is the natural antilogarithm (base e) of the expression in parenthesis. For hardness values greater than 400 mg/L, 400 mg/L shall be used to calculate the standard. Example of total zinc standards for five total hardness values:

TH in mg/L	50	100	200	300	400
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

Subp. 3a. **Narrative eutrophication standards for Class 2Bd lakes, shallow lakes, and reservoirs.**

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.

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.

[For text of item C, see M.R.]

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.~~

[For text of item E, see M.R.]

Subp. 3b. **Narrative eutrophication standards for rivers, streams, and navigational pools.**

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 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 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.

Subp. 4. **Class 2B waters.** The quality of Class 2B surface waters shall be such as to permit the propagation and maintenance of a healthy community of cool or warm water sport or commercial fish and associated aquatic life, and their habitats. These waters shall be suitable for aquatic recreation of all kinds, including bathing, for which the waters may be usable. This class of surface water is not protected as a source of drinking water. The applicable standards are given below. Abbreviations, acronyms, and symbols are explained in subpart 1.

Substance,Characteristic, or Pollutant(Class 2B)		Units	CS	BasisforCS		MS	FAV	Basisfor MS,FAV
Acenaphthene		µg/l	20	HH		56	112	Tox
Acetochlor		µg/L	3.6	Tox		86	173	Tox
Acrylonitrile (c)		µg/l	0.89	HH		1,140*	2,281*	Tox
Alachlor (c)		µg/L	59	Tox		800	1,600	Tox
Aluminum, total		µg/L	125	Tox		1,072	2,145	Tox
Ammonia un-ionized as N µg/L	40	Tox	—	—	NA			

The percent un-ionized ammonia can be calculated for any temperature and pH by using the following equation taken from Emerson, K., R.C. Russo, R.E. Lund, and R.V. Thurston, Aqueous ammonia equilibrium calculations; effect of pH and temperature. Journal of the Fisheries Research Board of Canada 32: 2379-2383 (1975):

$$f = 1/(10^{(pka-pH)} + 1) \times 100$$

where: f = the percent of total ammonia in the un-ionized state
$pk_a = 0.09 + (2730/T)$ (dissociation constant for ammonia)
T = temperature in degrees Kelvin (273.16° Kelvin = 0° Celsius)

Substance,Characteristic, or Pollutant(Class 2B)	Units	CS	BasisforCS	MS	FAV	Basisfor MS,FAV
Anthracene	µg/L	0.035	Tox	0.32	0.63	Tox
Antimony, total	µg/L	31	Tox	90	180	Tox
Arsenic, total	µg/L	53	HH	360	720	Tox
Atrazine (c)	µg/L	10	Tox	323	645	Tox
Benzene (c)	µg/L	98	HH	4,487	8,974	Tox
Bromoform	µg/L	466	HH	2,900	5,800	Tox
Cadmium, total	µg/L	equation	Tox	equation	equation	Tox

The CS, MS, and FAV vary with total hardness and are calculated using the following equations: The CS in µg/L shall not exceed: exp.(0.7852[ln(total hardness mg/L)]-3.490) The MS in µg/L shall not exceed: exp.(1.128[ln(total hardness mg/L)]-1.685) The FAV in µg/L shall not exceed: exp.(1.128[ln(total hardness mg/L)]-0.9919) Where: exp. is the natural antilogarithm (base e) of the expression in parenthesis. For hardness values greater than 400 mg/L, 400 mg/L shall be used to calculate the standard. Example of total cadmium standards for five hardness values:

TH in mg/L	50	100	200	300	400
Cadmium, total CS µg/L	0.66	1.1	2.0	2.7	3.4

MS µg/L	15	33	73	116	160	
FAV µg/L	31	67	146	231	319	

Substance,Characteristic, or Pollutant(Class 2B)	Units	CS	BasisforCS	MS	FAV	Basisfor MS,FAV
Carbon tetrachloride (c)	µg/L	5.9	HH	1,750*	3,500*	Tox
Chlordane (c)	ng/L	0.29	HH	1,200*	2,400*	Tox
Chloride	mg/L	230	Tox	860	1,720	Tox
Chlorine, total residual	µg/L	11	Tox	19	38	Tox

Chlorine standard applies to conditions of continuous exposure, where continuous exposure refers to chlorinated effluents that are discharged for more than a total of two hours in any 24-hour period.

Chlorobenzene (Monochlorobenzene)	µg/L	20	HH	423	846	Tox
Chloroform (c)	µg/L	155	Tox	1,392	2,784	Tox
Chlorpyrifos	µg/L	0.041	Tox	0.083	0.17	Tox
Chromium +3, total	µg/L	equation	Tox	equation	equation	Tox

The CS, MS, and FAV vary with total hardness and are calculated using the following equations The CS in mg/L shall not exceed: exp.(0.819[ln(total hardness mg/L)]+1.561) The MS in mg/L shall not exceed: exp.(0.819[ln(total hardness mg/L)]+3.688) The FAV in mg/L shall not exceed: exp.(0.819[ln(total hardness mg/L)]+4.380) Where: exp. is the natural antilogarithm (base e) of the expression in parenthesis. For hardness values greater than 400 mg/L, 400 mg/L shall be used to calculate the standard. Example of total chromium +3 standards for five total hardness values:

TH in mg/L	50	100	200	300	400
Chromium +3, total					
CS mg/L	117	207	365	509	644
MS mg/L	984	1,737	3,064	4,270	5,405
FAV µg/L	1,966	3,469	6,120	8,530	10,797

Substance,Characteristic, or Pollutant(Class 2B)	Units	CS	BasisforCS	MS	FAV	Basisfor MS,FAV
Chromium +6, total	µg/L	11	Tox	16	32	Tox
Cobalt, total	µg/L	5.0	Tox	436	872	Tox
Copper, total	µg/L	equation	Tox	equation	equation	Tox

The CS, MS, and FAV vary with total hardness and are calculated using the following equations: The CS in µg/L shall not exceed: exp.(0.6200[ln(total hardness mg/L)]-0.570) The MS in µg/L shall not exceed: exp.(0.9422[ln(total hardness mg/L)]-1.464) The FAV in µg/L shall not exceed: exp.(0.9422[ln(total hardness mg/L)]-0.7703) Where: exp. is the natural antilogarithm (base e) of the expression in parenthesis. For hardness values greater than 400 mg/L, 400 mg/L shall be used to calculate the standard. Example of total copper standards for five total hardness values:

TH in mg/L	50	100	200	300	400
Copper, total					
CS µg/L	6.4	9.8	15	19	23
MS µg/L	9.2	18	34	50	65
FAV µg/L	18	35	68	100	131

Substance,Characteristic, or Pollutant(Class 2B)	Units	CS	BasisforCS	MS	FAV	Basisfor MS,FAV

Cyanide, free	µg/L	5.2	Tox	22	45	Tox
DDT (c)	ng/L	1.7	HH	550*	1,100*	Tox
1,2-Dichloroethane (c)	µg/L	190	HH	45,050*	90,100*	Tox
Dieldrin (c)	ng/L	0.026	HH	1,300*	2,500*	Tox
Di-2-ethylhexyl phthalate (c)	µg/L	2.1	HH	—*	—*	NA
Di-n-octyl phthalate	µg/L	30	Tox	825	1,650	Tox
Endosulfan	µg/L	0.031	HH	0.28	0.56	Tox
Endrin	µg/L	0.016	HH	0.090	0.18	Tox
Escherichia (E.) coli	See below	See below	HH	See below	See below	NA

Not to exceed 126 organisms per 100 milliliters as a geometric mean of not less than five samples representative of conditions within any calendar month, nor shall more than ten percent of all samples taken during any calendar month individually exceed 1,260 organisms per 100 milliliters. The standard applies only between April 1 and October 31.

Ethylbenzene	µg/L	68	Tox	1,859	3,717	Tox

Substance,Characteristic, or Pollutant(Class 2B)	Units	CS	BasisforCS	MS	FAV	Basisfor MS,FAV

~~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.~~ Lakes, Shallow Lakes, and Reservoirs in Northern Lakes and Forest Ecoregions

Phosphorus, total	µg/L	30	NA	—	—	NA
Chlorophyll-a	µg/L	9	NA	—	—	NA
Secchi disk transparency	meters	Not less than 2.0	NA	—	—	NA

Lakes and Reservoirs in North Central Hardwood Forest Ecoregion

Phosphorus, total	µg/L	40	NA	—	—	NA
Chlorophyll-a	µg/L	14	NA	—	—	NA
Secchi disk transparency	meters	Not less than 1.4	NA	—	—	NA

Lakes and Reservoirs in Western Corn Belt Plains and Northern Glaciated Plains Ecoregions

Phosphorus, total	µg/L	65	NA	—	—	NA
Chlorophyll-a	µg/L	22	NA	—	—	NA
Secchi disk transparency	meters	Not less than 0.9	NA	—	—	NA

Shallow Lakes in North Central Hardwood Forest Ecoregion

Phosphorus, total	µg/L	60	NA	—	—	NA
Chlorophyll-a	µg/L	20	NA	—	—	NA
Secchi disk transparency	meters	Not less than 1.0	NA	—	—	NA

Shallow Lakes in Western Corn Belt Plains and Northern Glaciated Plains Ecoregions

Phosphorus, total	µg/L	90	NA	—	—	NA
Chlorophyll-a	µg/L	30	NA	—	—	NA
Secchi disk transparency	meters	Not less than 0.7	NA	—	—	NA

Additional narrative eutrophication standards for Class 2B lakes, shallow lakes, and reservoirs are found in subpart 4a.

Substance,Characteristic, or Pollutant(Class 2B)	Units	CS	BasisforCS	MS	FAV	Basisfor MS,FAV

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 40
Diel dissolved oxygen flux	mg/L	less than or equal to 5.0
Biochemical oxygen demand (BOD_5)	mg/L	less than or equal to 3.5
Site-specific standards for specified river reaches or other waters are:		
Mississippi River Navigational 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 Navigational Pool 2 (river miles 847.7 to 815.2 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 Navigational 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 Navigational Pool 4 (river miles 796.9 to 752.8 reach from Red Wing Dam to Alma Dam). Lake Pepin occupies majority of Pool 4 and Lake Pepin site-specific standards are used for this pool.		
Mississippi River Navigational 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.

Substance,Characteristic, or Pollutant(Class 2B)	Units	CS	BasisforCS	MS	FAV	Basisfor MS,FAV
Fluoranthene	µg/L	1.9	Tox	3.5	6.9	Tox
Heptachlor (c)	ng/L	0.39	HH	260*	520*	Tox
Heptachlor epoxide (c)	ng/L	0.48	HH	270*	530*	Tox
Hexachlorobenzene (c)	ng/L	0.24	HH	—*	—*	Tox
Lead, total	µg/L	equation	Tox	equation	equation	Tox

The CS, MS, and FAV vary with total hardness and are calculated using the following equations: The CS in µg/L shall not exceed: exp.(1.273[ln(total hardness mg/L)]-4.705) The MS in µg/L shall not exceed: exp.(1.273[ln(total hardness mg/L)]-1.460) The FAV in µg/L shall not exceed: exp.(1.273[ln(total hardness mg/L)]-0.7643) Where: exp. is the natural antilogarithm (base e) of the expression in parenthesis. For hardness values greater than 400 mg/L, 400 mg/L shall be used to calculate the standard. Example of total lead standards for five total hardness values:

TH in mg/L	50	100	200	300	400
Lead, total					
CS µg/L	1.3	3.2	7.7	13	19
MS µg/L	34	82	197	331	477
FAV µg/L	68	164	396	663	956

Substance,Characteristic, or Pollutant(Class 2B)	Units	CS	BasisforCS	MS	FAV	Basisfor MS,FAV
Lindane (c) (Hexachlorocyclo-benzene, gamma-)	µg/L	0.036	HH	4.4*	8.8*	Tox
Mercury, total in water	ng/L	6.9	HH	2,400*	4,900*	Tox
Mercury, totalin edible fish tissue	mg/kgppm	0.2	HH	NA	NA	NA
Methylene chloride (c) (Dichloromethane)	µg/L	1,940	HH	13,875	27,749	Tox
Metolachlor	µg/L	23	Tox	271	543	Tox
Naphthalene	µg/L	81	Tox	409	818	Tox
Nickel, total	µg/L	equation	Tox	equation	equation	Tox

The CS, MS, and FAV vary with total hardness and are calculated using the following equations: The CS in µg/L shall not exceed: exp.(0.846[ln(total hardness mg/L)]+1.1645) The MS in µg/L shall not exceed: exp.(0.846[ln(total hardness mg/L)]+3.3612) The FAV in µg/L shall not exceed: exp.(0.846[ln(total hardness mg/l)]+4.0543) Where: exp. is the natural antilogarithm (base e) of the expression in parenthesis. For hardness values greater than 400 mg/L, 400 mg/L shall be used to calculate the standard. Example of total nickel standards for five total hardness values:

TH in mg/L	50	100	200	300	400
Nickel, total					
CS µg/L	88	158	283	399	509
MS µg/L	789	1,418	2,549	3,592	4,582
FAV µg/L	1,578	2,836	5,098	7,185	9,164

Substance,Characteristic, or Pollutant(Class 2B)	Units	CS	BasisforCS	MS	FAV	Basisfor MS,FAV
Oil	µg/l	500	NA	5,000	10,000	NA

Oxygen, dissolved	mg/L	See below	NA	—	—	NA

5.0 mg/L as a daily minimum. This dissolved oxygen standard may be modified on a site-specific basis according to part 7050.0220, subpart 7, except that no site-specific standard shall be less than 5 mg/L as a daily average and 4 mg/L as a daily minimum. Compliance with this standard is required 50 percent of the days at which the flow of the receiving water is equal to the $7Q_{10}$. This standard applies to all Class 2B waters except for those portions of the Mississippi River from the outlet of the Metro Wastewater Treatment Works in Saint Paul (River Mile 835) to Lock and Dam No. 2 at Hastings (River Mile 815). For this reach of the Mississippi River, the standard is not less than 5 mg/L as a daily average from April 1 through November 30, and not less than 4 mg/L at other times.

Parathion	µg/L	0.013	Tox	0.07	0.13	Tox
Pentachlorophenol	µg/L	equation	Tox/HH	equation	equation	Tox

The CS, MS, and FAV vary with pH and are calculated using the following equations: For waters with pH values greater than 6.95, the CS shall not exceed the human health-based standard of 5.5 µg/L. For waters with pH values less than 6.96, the CS in µg/L shall not exceed the toxicity-based standard of exp.(1.005[pH]-5.290) The MS in µg/L shall not exceed: exp.(1.005[pH]-4.830) The FAV in µg/L shall not exceed: exp.(1.005[pH]-4.1373) Where: exp. is the natural antilogarithm (base e) of the expression in parenthesis. For pH values less than 6.0, 6.0 shall be used to calculate the standard and for pH values greater than 9.0, 9.0 shall be used to calculate the standard. Example of pentachlorophenol standards for five pH values:

pH su	6.5	7.0	7.5	8.0	8.5
Pentachlorophenol					
CS µg/L	3.5	5.5	5.5	5.5	5.5
MS µg/L	5.5	9.1	15	25	41
FAV µg/L	11	18	30	50	82

Substance,Characteristic, or Pollutant(Class 2B)	Units	CS	BasisforCS	MS	FAV	Basisfor MS,FAV
pH, minimum	su	6.5	NA	—	—	NA
pH, maximum	su	9.0	NA	—	—	NA
Phenanthrene	µg/L	3.6	Tox	32	64	Tox
Phenol	µg/L	123	Tox	2,214	4,428	Tox
Polychlorinated biphenyls, total (c)	ng/L	0.029	HH	1,000*	2,000*	Tox
Radioactive materials	NA	See below	NA	See below	See below	NA

Not to exceed the lowest concentrations permitted to be discharged to an uncontrolled environment as permitted by the appropriate authority having control over their use.

Selenium, total	µg/L	5.0	Tox	20	40	Tox
Silver, total	µg/L	1.0	Tox	equation	equation	Tox

The MS and FAV vary with total hardness and are calculated using the following equations: The MS in µg/L shall not exceed: exp.(1.720[ln(total hardness mg/L)]-7.2156) The FAV in µg/L shall not exceed: exp.(1.720[ln(total hardness mg/L)]-6.520 Where: exp. is the natural antilogarithm (base e) of the expression in parenthesis. For hardness values greater than 400 mg/L, 400 mg/L shall be used to calculate the standard. Example of total silver standards for five total hardness values:

TH in mg/L	50	100	200	300	400
Silver, total					
CS µg/L	1.0	1.0	1.0	1.0	1.0
MS µg/L	1.0	2.0	6.7	13	22
FAV µg/L	1.2	4.1	13	27	44

Substance,Characteristic, or Pollutant(Class 2B)	Units	CS	BasisforCS	MS	FAV	Basisfor MS,FAV
Temperature	°F	See below	NA	—	—	NA

5°F above natural in streams and 3°F above natural in lakes, based on monthly average of the maximum daily temperatures, except in no case shall it exceed the daily average temperature of 86°F.

1,1,2,2-Tetrachloroethane (c)	µg/L	13	HH	1,127	2,253	Tox
Tetrachloroethylene (c)	µg/L	8.9	HH	428	857	Tox
Thallium, total	µg/L	0.56	HH	64	128	Tox
Toluene	µg/L	253	Tox	1,352	2,703	Tox
Toxaphene (c)	ng/L	1.3	HH	730*	1,500*	Tox
1,1,1-Trichloroethane	µg/L	329	Tox	2,957	5,913	Tox
1,1,2-Trichloroethylene (c)	µg/L	120	HH	6,988	13,976	Tox
2,4,6-Trichlorophenol	µg/L	2.0	HH	102	203	Tox
~~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 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

Substance,Characteristic, or Pollutant(Class 2B)	Units	CS	BasisforCS	MS	FAV	Basisfor MS,FAV
Vinyl chloride (c)	µg/L	9.2	HH	—*	—*	NA
Xylene, total m,p,o	µg/L	166	Tox	1,407	2,814	Tox
Zinc, total	µg/L	equation	Tox	equation	equation	Tox

The CS, MS, and FAV vary with total hardness and are calculated using the following equations: The CS in µg/L shall not exceed: exp.(0.8473[ln(total hardness mg/L)]+0.7615) The MS in µg/L shall not exceed: exp.(0.8473[ln(total hardness mg/L)]+0.8604) The FAV in µg/L shall not exceed: exp.(0.8473[ln(total hardness mg/L)]+1.5536) Where: exp. is the natural antilogarithm (base e) of the expression in parenthesis. For hardness values greater than 400 mg/L, 400 mg/L shall be used to calculate the standard. Example of total zinc standards for five total hardness values:

TH in mg/L	50	100	200	300	400
Zinc, total CS µg/L	59	106	191	269	343

MS µg/L	65	117	211	297	379
FAV µg/L	130	234	421	594	758

Subp. 4a. **Narrative eutrophication standards for Class 2B lakes, shallow lakes, and reservoirs.**

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.

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.

[For text of item C, see M.R.]

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.~~

[For text of item E, see M.R.]

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.

[For text of subps 5 to 9, see M.R.]

7050.0468 MAP: MINNESOTA ECOREGIONS.

7053.0205 GENERAL REQUIREMENTS FOR DISCHARGES TO WATERS OF THE STATE.

[For text of subps 1 to 6, see M.R.]

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, except where a specific flow is identified in chapter 7050. 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.

[For text of subps 8 and 9, see M.R.]

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 to September) to ensure protection during the time period the standard is designed to protect.

[For text of subps 10 to 13, see M.R.]

REPEALER. *Minnesota Rules*, part 7050.0467, is repealed.

Errata

Appearing in this section are: corrections to agency or *State Register* rule errors, or in following rulemaking processes, as well as incomplete notices, mislabled rules, incorrect notices and citations. Whenever an error is corrected in this section, its corresponding rule number(s) will also appear in the *State Register's* index to rulemaking actibvity: ***Minnesota Rules*: Amendments and Additions.**

KEY: Proposed Rules - Underlining indicates additions to existing rule language. ~~Strikeouts~~ indicate deletions from existing rule language. If a proposed rule is totally new, it is designated "all new material." **Adopted Rules** - Underlining indicates additions to proposed rule language. ~~Strikeout~~ indicates deletions from proposed rule language.

Errata: ***Mistakes were found in the last paragraph (6) published at 38 SR 523, Monday 21 October 2013. The error is corrected below.***

Department of Corrections

Adopted Permanent Rules Relating to County Jail Facilities

The rules proposed and published at *State Register*, Volume 37, Number 44, pages 1531-1571, April 29, 2013 (37 SR 1531), are adopted with the following modifications:

2911.5800 AVAILABILITY OF MEDICAL AND DENTAL RESOURCES.

Subp. 6. **Medical screening.** A facility shall have a written policy and procedure that requires medical screening is performed and recorded by trained staff on all inmates on admission to the facility. The findings are to be recorded in a manner approved by the health authority. The screening process shall include procedures relating to:

A. Inquiry into:

(6) signs and symptoms of active tuberculosis to include weight loss, night sweats, persistent cough lasting three weeks or longer, coughing up blood, low grade fever, ~~test within last three months~~ fatigue, chest pain, prior history of active tuberculosis disease, and results~~, and tuberculin skin test~~ of previous tuberculin skin or blood testing.

Revenue Notices

The Department of Revenue began issuing Revenue Notices in July of 1991. Revenue Notices are statements of policy made by the department that provide interpretation, detail, or supplementary information concerning a particular statute, rule, or departmental practice. The authority to issue Revenue Notices is found in *Minnesota Statutes*, Section 270C.07.

KEY: Underlining indicates additions to existing language. ~~Strikeouts~~ indicate deletions from existing language.

Department of Revenue

Revenue Notice # 13-05: Lawful Gambling Tax - Linked Bingo Games

Electronic linked bingo games are expressly subject to the combined net receipts tax set forth in *Minnesota Statutes,* section 297E.02, subdivision 6. The term, "electronic linked bingo game" is not defined in statute. Since the selection of numbers or symbols in all linked bingo games are transmitted by electronic means, the Department will consider all linked bingo games, regardless of whether the bingo players are using paper cards or electronic devices, to be electronic and subject to the combined net receipts tax. All bingo games that are played at two or more locations will be considered to be linked bingo games.

Publication Date: November 18, 2013

Susan Von Mosch, Assistant Commissioner
for Tax Policy
Department of Revenue

Department of Revenue

Revenue Notice # 13-06: Tobacco Products Tax – Wholesale Sales Price Definition; Revocation of Revenue Notice # 12-13

Revenue Notice #12-13 sets forth the Department's position regarding the definition of "wholesale sales price" for purposes of *Minnesota Statutes*, section 297F.01, subdivision 23.

Minnesota Statutes, section 297F.01, subdivision 23 was amended by *2013 Minnesota Laws*, chapter 143, article 16, section 4. Those changes make Revenue Notice #12-13 obsolete.

Accordingly, Revenue Notice #12-13 is revoked. This revenue notice is effective for purchases made after December 31, 2013, which is the effective date of the law change discussed above.

Publication Date: November 18, 2013

Susan Von Mosch, Assistant Commissioner
for Tax Policy
Department of Revenue

Commissioners' Orders

Various agency commissioners are authorized to issue "commissioner's orders" on specified activities governed by their agency's enabling laws. See the *Minnesota Statutes* governing each agency to determine the specific applicable statutes. Commissioners' orders are approved by assistant attorneys general as to form and execution and published in the *State Register*. These commissioners orders are compiled in the year-end subject matter index for each volume of the *State Register*.

Minnesota Department of Natural Resources (DNR)

Commissioner's Order FAWO1-2013: Take a Kid Fishing and Take a Kid Ice Fishing Weekends 2014

Date: September 2013

Statutory authority: *Minnesota Statutes*, section 97A.445, subd. 1

☒ Supersedes Chapter 6262.0100 General Restrictions on Taking Fish, Subpart 3

☐ Supplements [describe with reference information]

BACKGROUND

- *Laws 2013*, chapter 121, section 32, amended *Minnesota Statutes*, section 97A.445, subdivision 1, to read, in part, that the commissioner may designate and publicize the three-day periods as "Take a Kid Fishing Weekend" for the open water angling season and "Take a Kid Ice Fishing Weekend" for the ice angling season, and that the commissioner shall announce the date of each three-day weekend at least 30 days in advance of the date it occurs.

- Many years, the weather and ice conditions have been such that the "Take a Kid Ice Fishing" event was cancelled or conducted during unsafe conditions. This change in law allows more flexibility for setting or changing these dates to accommo date having a successful event.

ORDER

NOW, THEREFORE, IT IS HEREBY ORDERED, pursuant to authority vested in me by law, including but not limited to *Minnesota Statutes*, section 97A.445, subdivision 1, that

- Take A Kid Fishing Weekend is the first Friday, Saturday, and Sunday after the first Monday in June.

- Take a Kid Ice Fishing Weekend is the Saturday, Sunday, and Monday that coincides with the third Monday of January each year.

Dated: 10/31/13

Tom Landwehr, Commissioner
Department of Natural Resources

Minnesota Public Utilities Commission (PUC)

Notice of Permit Decision in the Matter of the Route Permit Application by Northern States Power Company and Great River Energy for the Southwest Twin Cities Chaska Area 115 kV Transmission Line Project in Carver and Scott Counties

PUC Docket No. E002/TL-12-401

In an order issued October 15, 2013, the Minnesota Public Utilities Commission determined that the environmental assessment and record created at the public hearing adequately addressed the issues identified in the scoping decision for the project, and issued a high voltage transmission line route permit to Northern States Power Company and Great River Energy for the Southwest Twin Cities Chaska Area 115 kV Transmission Line Project.

The route permit authorizes Northern States Power Company and Great River Energy to upgrade an existing 69 kV transmission line and to construct a new 115 kV line in Carver and Scott Counties.

Further information about the project and the route permit can be found on-line at:
http://mn.gov/commerce/energyfacilities/Docket.html?Id=32771

and on the Commission's website at *www.puc.state.mn.us*, select "Search eDockets" and enter the year (12) and the docket number (401) and select "Search".

Inquiries about the project should be directed to Commission Staff Analyst, Tricia DeBleeckere at *tricia.debleeckere@state.mn.us* or (651) 201-2254.

Official Notices

Pursuant to *Minnesota Statutes* §§ 14.101, an agency must first solicit comments from the public on the subject matter of a possible rulemaking proposal under active consideration within the agency by publishing a notice in the *State Register* at least 60 says before publication of a notice to adopt or a notice of hearing, and within 60 days of the effective date of any new statutory grant of required rulemaking.

The *State Register* also publishes other official notices of state agencies and non-state agencies, including notices of meetings, and matters of public interest, state grants and loans, and state contracts

Minnesota Department of Agriculture

Agricultural Chemical Response & Reimbursement Account (ACRRA)

Notice of ACRRA Board Meeting Schedule for 2014

Listed below is the Agricultural Chemical Response and Reimbursement Account (ACRRA) Board meeting schedule for the 2014 calendar year. The ACRRA Board will meet at 9:30 a.m. in Conference Room OLF-B555, Minnesota Department of Agriculture Building, 625 Robert St. N., Saint Paul, Minnesota.

Pursuant to *Minnesota Statutes* 18E.05 Subd. 3. "The board must receive a completed application at least 30 days before a board meeting in order for a request for reimbursement or payment to be considered at that meeting." To help ensure your application is complete, submit 30 days prior to the deadline, 60 days prior to the ACRRA Board meeting. Regular ACRRA Board meetings are usually held quarterly on the third Wednesday of the month. A scheduled meeting may be canceled due to insufficient funds in the account or if there is insufficient business, or rescheduled.

Any changes to scheduled meetings will be announced in the *Minnesota State Register*.

Web site: *http://www.comm.media.state.mn.us/bookstore/state_register.asp*

If you would like to be placed on the ACRRA Board mailing/e-mail lists please contact ACRRA Program Staff at (651) 201-6138.

ACRRA Board 2014 Meeting Schedule

ACRRA Board Meeting	Complete Application Submittal Date for Staff Review
January 15, 2014	December 13, 2013
April 16, 2014	March 14, 2014
July 16, 2014	June 16, 2014
October 15, 2014	September 15, 2014

In accordance with the Americans with Disabilities Act, an alternative form of communication is available upon request. **TDD**: 1-800-627-3529.

Minnesota Department of Commerce

Notice of Request of Information (RFI) for Creation and Maintenance of a "No Transmit List" for Money Transmitters

The Minnesota Department of Commerce is requesting information from vendors regarding what organization and IT infrastructure and programs would be necessary to implement the recently enacted Minn. Stat. 53B.27, subd. 3 (2013), which provides for the creation and maintenance of an electronic "No Transmit List" of individuals for whom money transmitters may not make money transmissions.

The Request for Information will be available by email from this office through December 2, 2013.

A written request (by e-mail) is required to receive a copy of the Request for Information.

The Request for Information can be obtained from:

Sida LyXiong
Minnesota Department of Commerce
E-mail: *sida.lyxiong@state.mn.us*

Responses are due by December 10, 2013 at 4:00 p.m., Central Time. Responses received after this date will be reviewed only as time permits.

This request does not obligate the State to complete the work contemplated in this notice. The State reserves the right to cancel this solicitation. All expenses incurred in responding to this notice are solely the responsibility of the responder.

Minnesota Department of Employment and Economic Development (DEED)

State Services for the Blind (SSB)

REQUEST FOR COMMENTS on Possible Amendment to Rules Governing Rehabilitation Services to the Blind and Visually Impaired, *Minnesota Rules*, 3325.0100 to 3325.0490; Revisor's ID Number RD4224

Subject of Rules. The Minnesota Department of Employment and Economic Development requests comments on its possible amendment to and repeal of rules governing rehabilitation services to the blind and visually impaired. The department is considering rule amendments and repealing some rule parts. SSB revised Chapter 3325 in 2011. Since the promulgation of that rule, several items were discovered that needed to be revised or included. These items are categorized into three areas: clarify terms and processes, correct

oversights, and establish technology training policy. Comments on other areas of the current rule are welcome but will only be considered for this rule revision as the agency has time.

Persons Affected. The amendment to the rules would likely affect applicants and eligible individuals, including their designated/legal representatives, receiving rehabilitation services from SSB; SSB staff; and community rehabilitation programs and independent contractors providing services.

Statutory Authority. *Minnesota Statutes*, section 248.07, subd. 14a, requires the department to adopt rules to set standards for the provision of rehabilitation services, including program definitions; basic eligibility; financial need; definition of legal blindness; formal rehabilitation plans; placement in training programs; tools and equipment; and for appeals including timely agency response.

Public Comment. Interested persons or groups may submit comments or information on these possible rules in writing until 4:30 p.m. on December 31, 2013. The department does plan to appoint an advisory committee to comment on the possible rules. The advisory committee will include representatives of the State Rehabilitation Council for the Blind, consumer groups, community rehabilitation programs, independent contractors, SSB staff, and the Client Assistance Project.

Rules Drafts. The department has not yet prepared a draft of the possible rules amendments and repealers. When completed, a draft of the proposed rule amendments will be available at *http://mn.gov/deed/about/what-guides-us/rulemaking/*. A copy of the current rules is available at *https://www.revisor.mn.gov/rules/?id=3325*.

Agency Contact Person. Written comments, questions, requests to receive a draft of the rules when it has been prepared, and requests for more information on these possible rules should be directed to: Natasha Lemler at State Services for the Blind, 2200 University Ave. W. Suite 240, St. Paul, MN, 55114, **phone:** (651) 642-0466, **fax:** (651) 649-5927, and **e-mail:** *Natasha.Lemler@state.mn.us*. **TTY** users may call the department at (651) 642-0506.

Alternative Format. Upon request, this Request for Comments can be made available in an alternative format, such as large print, Braille, or audio format. To make such a request, please contact the agency contact person at the address or telephone number listed above.

NOTE: Comments received in response to this notice will not necessarily be included in the formal rulemaking record submitted to the administrative law judge if and when a proceeding to adopt rules is started. The agency is required to submit to the judge only those written comments received in response to the rules after they are proposed. If you submitted comments during the development of the rules and you want to ensure that the Administrative Law Judge reviews the comments, you should resubmit the comments after the rules are formally proposed.

Dated: 6 November 2013

Katie Clark Sieben, Commissioner
Department of Employment and Economic Development

Minnesota Department of Human Services (DHS)

Request for Information (RFI) on an Asset Verification System (AVS)

The Minnesota Department of Human Services, hereafter known as the Department, seeks information regarding a comprehensive solution to implement an online asset verification system to assist with program eligibility determinations. The Department is interested in a real-time online system that would provide county and state eligibility workers with personally identifiable applicant/client information for verification.

Specifically this RFI seeks the following information:

- The feasibility of implementing a real-time electronic online asset verification system to process information included in the Department's over 500,000 yearly Medicaid applications and renewals, and
- Estimate of the response time and accuracy of this information.

Requirements

The purpose of this RFI is to acquire information about the capabilities of vendors to provide an electronic online asset verification

system to assist the Department with program eligibility determination. Title VII, Section 7001(d) of P.L. 110-252 (Supplemental Appropriations Act of 2008), codified at 42 U.S.C. 1396w, requires that state Medicaid agencies implement an asset verification system (AVS) for verifying the assets of aged, blind and disabled applicants and recipients of Medicaid. The system must be consistent with the approach taken by the Social Security Administration in their Supplemental Security Income asset verification pilot project. Specifically, this means the AVS must meet the following requirements:

- The request and response system must be electronic;
- Verification inquiries must be sent electronically via the Internet or similar means from the Department to the financial institution (FI);
- The system cannot be based on mailing paper based requests;
- The system must have the capability to accept responses electronically;
- The system must be secure, based on a recognized industry standard (e.g. as defined by the U.S. Commerce Department's National Institute of Standards and Technology, or NIST);
- The system must establish and maintain a database of FIs that participate in the Department's resultant AVS;
- Verification requests must be sent to FIs other than those identified by applicants and recipients based on some logic such as geographic proximity to the applicant's home address, or other reasonable factors whenever the Department determines that such requests are needed to determine or re-determine the individuals' eligibility;
- The verification requests must include a request for information on both open and closed accounts, going back for a period up to 5 years, as determined by the Department;
- The Department must be able to generate reports on verification activity, including information such as: the number of requests, number of responses, amounts undisclosed assets found, etc.;
- The system must integrate with the Department's eligibility determination systems.

Responses to this RFI should describe how the respondent's electronic online asset verification system operates, including what information the Department would be required to provide and how the responding verification information would be provided to the Department. Responses to this RFI should include the following information:

1. Description of an online asset verification system including:
    - Personally identifiable information (SSN, for example) required from the Department;
    - Detailed list of sources/types of information that can be verified and/or obtained;
    - Capacity level to provide real-time responses;
    - Expected response times and formats; and
    - Anticipated accuracy of information.

2. Technical/Systems Security/System Administration including:
    - Federal and state data privacy compliance (e.g. HIPAA and Minn. Stat. Chap 13);
    - System maintenance;
    - System security;
    - System flexibility; and
    - System reporting capabilities.

3. Experience with other states in which the respondent is currently providing this or a similar service.

4. Any other pertinent information that would be informative and appropriate regarding a statewide, online eligibility verification system.

In the interests of minimizing your organization's work, we anticipate that you will need no more than twenty pages to adequately respond to this RFI. Responders may use additional attachments to provide information requested above, as appropriate. In doing so, please indicate which question the attachment addresses.

Respondents may collaborate with others in their responses to this RFI.

Respondents may be contacted by the Department for further information regarding their RFI response.

Submit responses electronically in MS Word-readable, PDF and/or MS Excel formats to troy.w.mangan@state.mn.us by December 15, 2013 and specify that the response is to the AVS RFI.

Official Notices

Minnesota Department of Labor and Industry (DLI)

Labor Standards Unit

Notice of Prevailing Wage Determinations for Commercial Construction Projects

On November 18, 2013, the commissioner determined and certified prevailing wage rates for Commercial construction projects in each of 87 regions statewide.

Copies may be obtained by writing the Minnesota Department of Labor and Industry, Prevailing Wage Section, 443 Lafayette Road North, St. Paul, Minnesota 55155-4306, or by calling (651)284-5091, or accessing our web site at www.dli.mn.gov. Charges for the cost of copying and mailing at $.25 per page for the first 100 pages, $.65 per page after that. Make check or money order payable to the State of Minnesota.

Ken B. Peterson, Commissioner
Department of Labor and Industry

Minnesota Department of Transportation (MnDOT)

Engineering Services Division,
Office of Construction and Innovative Contracting

Notices of Suspension and Debarment

NOTICE OF DEBARMENT

NOTICE IS HEREBY GIVEN that the Department of Transportation ("MnDOT") has ordered that the following vendors be debarred for a period of thirty (30) months, effective August 22, 2011 until February 22, 2014:

- Marlon Louis Danner and his affiliates, South St. Paul, MN
- Danner, Inc. and its affiliates, South St. Paul, MN
- Bull Dog Leasing, Inc. and its affiliates, Inver Grove Heights, MN
- Danner Family Limited Partnership and its affiliates, South St. Paul, MN
- Ell-Z Trucking, Inc. and its affiliates, South St. Paul, MN
- Danner Environmental, Inc. and its affiliates, South St. Paul, MN

NOTICE IS HEREBY GIVEN that MnDOT has ordered that the following vendors be debarred for a period of three (3) years, effective March 25, 2011 until March 25, 2014:

- Philip Joseph Franklin, Leesburg, VA
- Franklin Drywall, Inc. and its affiliates, Little Canada, MN
- Master Drywall, Inc. and its affiliates, Little Canada, MN

NOTICE IS HEREBY GIVEN that MnDOT has ordered that the following vendors be debarred for a period of three (3) years, effective May 6, 2013 until May 6, 2016:

- Gary Francis Bauerly and his affiliates, Rice, MN
- Gary Bauerly, LLC and its affiliates, Rice, MN
- Watab Hauling Co. and its affiliates, Rice, MN

Minnesota Statute section 161.315 prohibits the Commissioner, counties, towns, or home rule or statutory cities from awarding or approving the award of a contract for goods or services to a person who is suspended or debarred, including:

1) any contract under which a debarred or suspended person will serve as a subcontractor or material supplier,
2) any business or affiliate which the debarred or suspended person exercises substantial influence or control, and

3) any business or entity, which is sold or transferred by a debarred person to a relative or any other party over whose actions the debarred person exercises substantial influence or control, remains ineligible during the duration of the seller's or transfer's debarment.

State Grants & Loans

In addition to requests by state agencies for technical/professional services (published in the State Contracts Section), the *State Register* also publishes notices about grants and loans available through any agency or branch of state government. Although some grant and loan programs specifically require printing in a statewide publication such as the *State Register*, there is no requirement for publication in the *State Register* itself. Agencies are encouraged to publish grant and loan notices, and to provide financial estimates as well as sufficient time for interested parties to respond.

SEE ALSO: Office of Grants Management (OGM) at: *http://www.grants.state.mn.us/public/*

Minnesota Housing Finance Agency (MHFA)
Minnesota Department of Human Services (DHS)
Notice of Request for Proposals for Bridges Rental Assistance Program

Minnesota Housing and the Minnesota Department of Human Services (DHS), Adult Mental Health Division, announce the availability of $400,000 in grant funds through the Bridges program for the term April 1, 2014 to June 30, 2015.

Eligible Applicants: Eligible Applicants: A housing agency (HA) which is able to administer a Section 8 rental assistance type program, and which is partnered with an AMHI or Tribal mental health agency, may submit an application. Bridges rental assistance is limited to counties and tribal areas in which an existing Section 8 Housing Choice Voucher or NAHASDA program is administered under the jurisdiction of the U.S. Department of Housing and Urban Development (HUD).

Eligible uses include temporary rental assistance payments and security deposits paid directly to landlords on behalf of qualified participants. The head of household or other adult household member must have a serious mental illness and be eligible for a permanent federal rent subsidy. Rents may not exceed the amount determined by Fair Market Rent/Payment Standards and any HUD approved exceptions. Rental units must pass Housing Quality Standards.

Priority will be given to partnerships proposing to operate in areas not served by rental subsidies for persons with serious mental illness and/or those proposing to serve persons leaving institutional settings or disparately impacted groups, including persons who are experiencing homelessness.

Application materials are available on the Minnesota Housing website at: *www.mnhousing.gov* (Home -> Multifamily Rental Partners -> Programs & Funding -> Open RFPs). Questions about the program or the application process may be directed to Carrie Marsh at **phone:** (651) 215-6236, or **e-mail:** *carrie.marsh@state.mn.us.* Deadline for application is **4:00 p.m. on Tuesday, January 7, 2013.**

State Contracts

In addition to the following listing of state contracts, readers are advised to check the Statewide Integrated Financial Tools (SWIFT) Supplier Portal at: *http://supplier.swift.state.mn.us as well as the Office of Grants Management (OGM) at: http://www.grants.state.mn.us/public/*

Informal Solicitations: Informal soliciations for professional/technical (consultant) contracts valued at over $5,000 through $50,000, may either be advertised in the Supplier Portal (see link above) or posted on the Department of Administration, Materials Management Division's (MMD) Web site at: *http://www.mmd.admin.state.mn.us/solicitations.htm.*

Formal Solicitations: Department of Administration procedures require that formal soliciations (announcements for contracts with an estimated value over $50,000) for professional/technical contracts must be advertised in the SWIFT Supplier Portal or alternatively, in the *Minnesota State Register* if the procuments is not being conducted in the SWFT system.

Minnesota State Colleges and Universities (MnSCU)
Board of Trustees
Request for Proposals (RFP) for Designer Selection for: Comstock Memorial Union Renovation and Addition

NOTICE IS HEREBY GIVEN that the State of Minnesota, acting through its Board of Trustees of the Minnesota State Colleges and Universities, on behalf of Minnesota State University Moorhead (MSUM), through the MSUM Student Union and Student Activities department, is soliciting proposals from interested, qualified consultants for architectural and engineering design services for the above referenced project.

A full Request for Proposals is available on the Minnesota State Colleges and Universities website: *http://www.finance.mnscu.edu/facilities/index.html.*

Click on "Announcements." A copy of a predesign is available for review at the same website. An informational meeting is scheduled for 1:00pm on November 21, 2013 in the Comstock Memorial Union Room 205 on the Minnesota State University Moorhead campus, 1104 7th Avenue South, Moorhead, MN 56563. All firms interested in this meeting should sign up to attend. To sign up, or to ask project questions, contact Layne Anderson, Interim Director Student Union and Student Activities, at *layne.anderson@mnstate.edu.*

Proposals must be delivered to Layne Anderson, Minnesota State University Moorhead, Comstock Memorial Union Room 115, 1104 - 7th Ave. S., Moorhead, MN 56563, not later than 4:30pm December 4, 2013. Late responses will not be considered.

Minnesota State Colleges and Universities is not obligated to complete the proposed project and reserves the right to cancel the solicitation if it is considered to be in its best interest.

Minnesota State Colleges and Universities (MnSCU)
System Office
Notice of Request for Proposal (RFP) for Annual IT Conference - April 2015

The purpose of this RFP is for MnSCU to solicit proposals for a resort or hotel and/or conference center to hold the annual Information Technology (IT) conference within the boundaries of the State of Minnesota. This three day – three night conference event to be held in late April 2015.

MnSCU intends to enter into a one year contract through June 30, 2015, with the selected vendor. MnSCU reserves the right to extend the contract an additional thirty six (36) months through a formal amendment to the contract. The responders must have three nights of food and lodging for up to 350 MnSCU attendees and for up to 150 Vendors, all locations must be within a 10-15 minute walking distance, reception desk space, Vendor Show space for room up to 55 Vendor Tables (150 Vendors), large breakfast, lunch and dinner space for up to 500 individuals and eight breakout rooms for between 50-65 guests. This RFP is not limited to a single hotel/resort solution, but a

solution from a collaborative offering such convention center and hotel(s)/resorts is acceptable, if the requirements of the RFP can be met.

To request a copy of the RFP please contact Dan Duffy at MnSCU State Office: *dan.duffy@so.mnscu.edu*

All proposals must be received **no later than December 17, 2013 at 2:00 P.M. CT** at Minnesota State Colleges and Universities, System Office, 30 - 7th St. E., Suite 350, Receptionist Desk, St. Paul, MN 55101 (Attn: Dan Duffy)

Minnesota Department of Health (MDH)

Health Economics Program

DEADLINE EXTESION: Notice of Availability of Contract for Encounter Database Administrator

The Minnesota Department of Health is requesting proposals from vendors to collect data from payers to maintain Minnesota's all payer claims database starting on January 1, 2014. This data must be collected, aggregated, and stored with the highest standards of quality, timeliness, and security to support quality and cost transparency efforts, such as Provider Peer Grouping and studies including the evaluation of risk adjustment, as well as meet all federal and state confidentiality and data security requirements. Processed data must be made available to MDH and its designees on a biannual basis through regular data extracts of processed and consolidated data files. The selected vendor must work with MDH and any assigned MDH contractors on tasks related to determining the completeness and quality of the data and to assist in considerations of feasibility of performing state-based risk adjustment. This process may include auditing of data, comparing enrollment and claims counts by certain payer and market characteristics, troubleshooting data aggregation methodology, and preparing data files for use within sufficient timelines.

Throughout the contract, the vendor will communicate with MDH, reporters, and other MDH designees on a regular basis to maintain the database and ensure appropriate access to data for research and official use.

Work is proposed to start after December 20, 2013.

A Request for Proposals will be available by mail or email from this office through November 15, 2013. **A written or electronic request is required to receive the Request for Proposal.** After November 15, 2013, the Request for Proposal must be picked up in person or may be requested electronically.

The Request for Proposal can be obtained from:

Sue Manning
Health Economics Program
Minnesota Department of Health
Golden Rule Building, Suite 220
85 East 7th Place
St. Paul, MN 55101
E-mail: *Sue.manning@state.mn.us*
Fax: (651) 201-3561

Proposals submitted in response to the Request for Proposals in this advertisement must be received at the address above no later than 4:30p.m., Central Time, December 3, 2013. **Late proposals will NOT be considered.** Fax or emailed proposals will **NOT** be considered.

This request does not obligate the State to complete the work contemplated in this notice. The State reserves the right to cancel this solicitation. All expenses incurred in responding to this notice are solely the responsibility of the responder.

State Contracts

Minnesota Department of Health (MDH)

MN.IT Services at the Minnesota Department of Health

Notice of Request for Proposals for Electronic Messaging Services

NOTICE IS HEREBY GIVEN that the Minnesota Department of Health (MDH) is requesting proposals for the purpose of having a vendor provide the agency with a subscription service for secure electronic information exchange based on a directed push approach using the Direct Project specifications and standards (Direct). The vendor/service provider must also have the capability or be willing to develop the capability to provide future secure electronic information exchange service to MDH, via subscription, based on a query & response approach using the CONNECT open source software solution (CONNECT). The vendor/service provider will also develop an automated, secure electronic interface between the Direct implementation and MDH's internal messaging infrastructure and have the capability to extend the interface to support query and response.

CONNECT and Direct are protocols defined and supported by the Office of the National Coordinator for Health Information Technology (ONC) at the US Department of Health and Human Services (HHS), which has created a set of standards, services, and policies that enables the secure exchange of health information over the Internet.

Work is proposed to start January 6, 2014.

Prospective responders may request a copy of the Request for Proposals via e-mail through November 25, 2013. **A request must be sent via e-mail to receive the Request for Proposals.** The Request for Proposals can be obtained from:

D. William O'Brien, Project Manager
MN.IT Services at the Minnesota Department of Health
E-mail: *william.obrien@state.mn.us*

Proposals submitted in response to the Request for Proposals in this advertisement must be received at the email address above no later than 4:30 p.m., Central Standard Time, November 27, 2013. **Late proposals will NOT be considered.**

This request does not obligate the State to complete the work contemplated in this notice. The State reserves the right to cancel this solicitation. All expenses incurred in responding to this notice are solely the responsibility of the responder.

Minnesota Historical Society (MHS)

Request for a Printing Bid for MHS Northern Lights Annotated Teacher's Edition R2E

The Minnesota Historical Society is seeking bids for printing of the Northern Lights Annotated Teacher's Edition R2E. Detailed specifications are in the RFB. Please read them carefully, comply with them fully, and make sure the attached bid price form is filled out accurately and signed.

PLEASE NOTE: MHS requires complete, no-surprise bids and reserves the right to reject bids that do not address the all the information.

Specifications are available by e-mail to Mary Green Toussaint, Acting Contracting Officer at *mary.green-toussaint@mnhs.org*.

Sealed bid estimates must be received by Mary Green Toussaint, Acting Contracting Officer, Minnesota Historical Society, 345 Kellogg Boulevard West, Saint Paul, Minnesota 55102-1906 by **Tuesday, December 10, 2013**. Authorized agents for receipt of bids are Society staff located at the 1st Floor Information Desk of the Minnesota History Center. **Late bids will not be considered.**\

Dated: November 18, 2013

Minnesota Judicial Branch

Fourth Judicial District

Notice of Request for Proposals for Technology Infrastructure Assessment

The Fourth Judicial District is seeking a highly qualified technical consultant specializing in network resource management, data infrastructure and architecture solutions and data center management that can provide an overall assessment and provide recommendations to improve the efficiency and cost-effectiveness of the current data center model; offer a technical assessment of the shared infrastructure environment between the STATE (through the 4th Judicial District) and Hennepin County Information Technology Department; and recommend infrastructure improvements leading to a more responsive and cost-effective infrastructure support model.

A copy of the full RFP is posted on the **Fourth Judicial District's website.** RFP Submission Deadline Date is **Monday, November 25, 2013**. All proposers are encouraged to thoroughly read the entire RFP solicitation.

Questions may be directed to: John Erar, Chief Information Officer, 4th Judicial District, C-1250 Government Center, 300 South Sixth Street, Minneapolis, MN 55487-0421. E-mail: *john.erar@courts.state.mn.us*

Minnesota Department of Transportation (Mn/DOT)

Engineering Services Division

Notice of Potential Availability of Contracting Opportunities for a Variety of Highway Related Technical Activities ("Consultant Pre-Qualification Program")

This document is available in alternative formats for persons with disabilities by calling Kelly Arneson at (651) 366-4774; for persons who are hearing or speech impaired by calling Minnesota Relay Service at (800) 627-3529.

Mn/DOT, worked in conjunction with the Consultant Reform Committee, the American Council of Engineering Companies of Minnesota (ACEC/MN), and the Department of Administration, to develop the Consultant Pre-Qualification Program as a new method of consultant selection. The ultimate goal of the Pre-Qualification Program is to streamline the process of contracting for highway related professional/technical services. Mn/DOT awards most of its consultant contracts for highway-related technical activities using this method, however, Mn/DOT also reserves the right to use Request for Proposal (RFP) or other selection processes for particular projects.

Nothing in this solicitation requires Mn/DOT to use the Consultant Pre-Qualification Program.

Mn/DOT is currently requesting applications from consultants. Refer to Mn/DOT's Consultant Services web site, indicated below, to expenses are incurred in responding to this notice will be borne by the responder. Response to this notice becomes public information under the Minnesota Government Data Practices.

Consultant Pre-Qualification Program information, application requirements and applications forms are available on Mn/DOT's Consultant Services web site at: *http://www.dot.state.mn.us/consult.*

Send completed application material to:

Kelly Arneson
Consultant Services
Office of Technical Support
Minnesota Department of Transportation
395 John Ireland Blvd. - Mail Stop 680
St. Paul, MN 55155

State Contracts

Minnesota Department of Transportation (Mn/DOT)

Engineering Services Division

Notice Concerning Professional/Technical Contract Opportunities and Taxpayers' Transportation Accountability Act Notices

NOTICE TO ALL: The Minnesota Department of Transportation (Mn/DOT) is now placing additional public notices for professional/technical contract opportunities on Mn/DOT's Consultant Services **website** at: *www.dot.state.mn.us/consult*

New Public notices may be added to the website on a daily basis and be available for the time period as indicated within the public notice. Mn/DOT is also posting notices as required by the Taxpayers' Transportation Accountability Act on the above referenced website.

Minnesota Department of Transportation (MNDOT)

Ports and Waterways Section

Notice of Request for Project Proposal Applications from those Qualifying for the Minnesota Port Development Assistance Program

The Minnesota Department of Transportation, Ports & Waterways Section, is requesting project proposal applications from those qualifying for the Minnesota Port Development Assistance Program, Law 457A.01-06. Please review the Rules 8895.0100-1100 before filling out the application. Please follow the Rules format reference 8895.0500 in completing the application. The application filing will be open from Monday, November 4, 2013 through Tuesday, December 31, 2013. This request is for new applications only.

Applications are to be mailed to: Ports & Waterways Section, Mn. Dept. of Transportation, 395 John Ireland Blvd., St Paul, MN 55155-1899. If you have questions, please call Dick Lambert at (651) 366-3683

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Published by the Board of Dentistry, 8-1/2" x 11", Perfect bound, 146-pages, Stock No. 151, $16.95 + tax

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Published by the Department of Human Services, 6"x9", perfect bound, 193-pages, Stock No. 148, $19.95 + tax

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Published by the Department of Public Safety, 6"x9", perfect bound, 102-pages, Stock No. 126, $18.95 + tax

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Published by the Department of Public Safety, 6"x9", loose leaf, three-hole punched, 408-pages, Stock No. 116, $32.95 + tax

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Published by the Board of Nursing, 6"x9", Saddle Stitched, 32-pages, Stock No. 119, $11.00 + tax

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Published by the Pharmacy Board, 6"x9", perfect bound, 160-pages, Stock No. 114, $18.95+ tax.

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